THE THEORIES AND PRACTICES OF REINFORCED CONCRETE DURING THE DISSOLUTION OF HISTORIC ARCHITECTURAL STYLES: FROM THE END OF RUSSO-JAPANESE WAR TO GREAT KANTO EARTHQUAKE

SHU JIANSHUO

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歴史的建築様式の解体過程における鉄筋コンクリートの理論と実践:
日露戦争後から関東大震災まで

By
Shu Jianshuo
舒　健碩

Doctorate Dissertation
February 2025

Department of Architecture and Architectural Engineering
Graduate School of Engineering
Kyoto University

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INTRODUCTION

0.1 Background: Stable period from the end of Russo-Japanese War to Great Kanto Earthquake as the dawn of modernist architecture in Japan

As has been mentioned by multiple scholars,[*1)] Russo-Japanese War (1904.2~1905.9) and Great Kanto Earthquake (1923.9) are two milestones in the architectural history of Japan, as the former marked the rise of Japan as a global power, which turned the direction of learning from the Occident in Meiji Period to the pursuit of national identity, and the latter is widely regarded as a rupture and shock for the development of architecture in the country. Between the two events, approximately from 1906 to 1923,[*2)] despite the outburst of World War I, the domestic environment was relatively stable, which is certainly a suitable specimen for observing the development of architecture. Meanwhile, during the period, regardless of the persisting influence of historic architectural styles, the enthusiasm in the discussions of architectural theories and multiple incipient transitions in real practices definitely appeared, right before the germination of modernist architecture in Japan.

The increasing publication of architectural magazines in Japan was no doubt the basis for the changes, which turned architecture into a prosperous public sphere, featured with numerous articles expressing the progressive spirit across a broad spectrum of architects. Also, the occurrences of architectural competitions, exhibitions and the movements around the end of the 1910s indicate the vigor of the era, as well as the momentum to leave the historical styles.

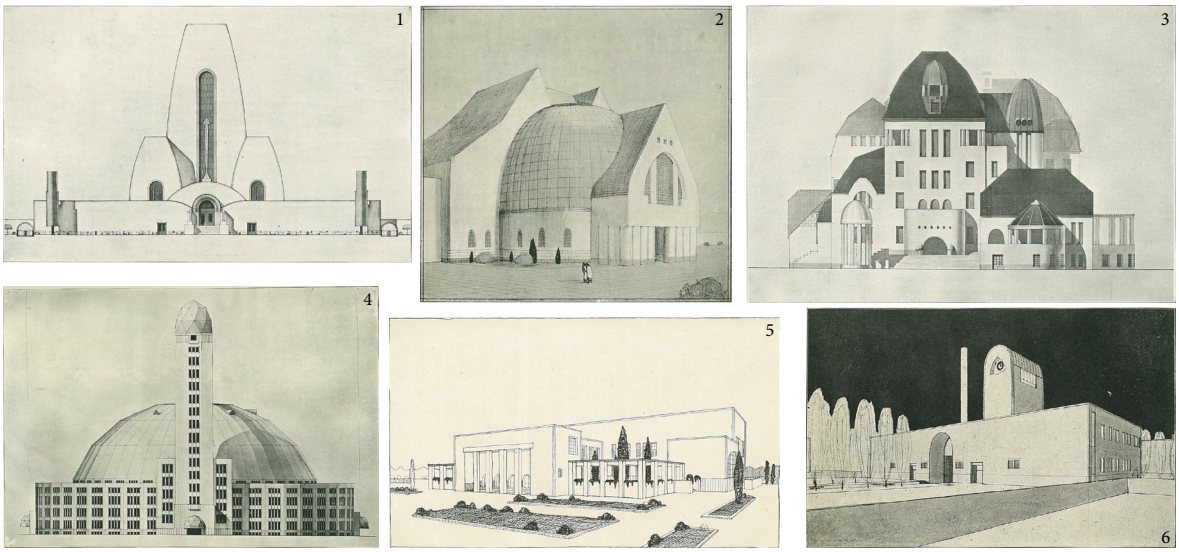
Amidst the magazines, *Kenchikuzasshi* 建築雑誌 (1886~) and *Kenchiku* 建築 (1900-1918) were the two pioneering forces, as the former is the journal of Architectural Institute of Japan,[*3)] which was also the most authoritative publication of architecture then, while the latter was disseminated among the members of Namiwa-kai 浪和会, an early group of architects and engineers aside from Architectural Institute of Japan. The foundation of *Kenchikusekai* 建築世界 (1907~1944), which coincidentally came to birth from the fortune found during Russo-Japanese War, marked the prosperity of architectural magazines expanding to the realm of popular publication.[*4)] In 1911, with *Kenchikugaho* 建築画報 (1911~1933) as another constant force presenting large numbers of plates and articles of architecture, albeit as membership magazine, the spectrum of architectural publications became even broader. Besides, several short-life magazines also sporadically appeared during the 1910s, contributing to the fervent discussion of architecture as well.

From the magazines, the trajectory of architectural history of the specific era can be briefly outlined. Not long after the end of Russo-Japanese War, under the rumors of the new construction of Parliamentary House, in 1908, Kingo Tatsuno 辰野金吾,[*5)] Yasushi Tsukamoto 塚本靖,[*6)] and Chuta Ito 伊東忠太[*7)] jointly published the article, “Of the Method of Parliamentary House”, calling for an open competition for the design.[*8)] Later at the end of the same year, Ito presented his theory of evolutionism in November as the speech for the normal meeting within Architects Institute of Japan, which was reprinted in *Kenchikuzasshi* and *Kenchikusekai* and became the most influential thought in the coming years.[*9)] In 1910, on the occasion of the issue of Parliamentary House, two consecutive discussions known as “How to Deal with the Architectural Style of Our Country in the Future” were consecutively held, in which Ito also expressed his opinion, whereas the most approved theory came from Tadashi Sekino 関野貞,[*10)] which

was, to some extent a hedge-podge of factors including climate, culture, structure, zeitgeist, etc. Besides, theories like the expression of force in structure from Toshikata Sano 佐野利器[*11] and the denial of national style from Tamisuke Yokogawa 横河民輔[*12] were also expressed during the discussions, showing the variety of ideas among the architects.[*13] Unfortunately, the competition was not implemented due to the problem of budget until the resumption in 1918. However, toward the winning designs, the opinions of Japanese architects varied.[*14] Especially, the younger generation were irritated with the results, as the first prize was nothing more than the cliché of Neoclassicism, against which the young architects even held a counter exhibition to show their spirits, whereas the resonance seemed negative.[*15]

Some smaller discussions also featured the tone of era. Beginning in 1915, the dispute on the issue of "Sham structure" was joined by multiple architects, including Tatsutaro Nakamura 中村達太郎,[*16] Seitaro Yamazaki 山崎静太郎,[*17] Keiji Goto 後藤慶二[*18] and Chuta Ito, in which the newly built reinforced concrete buildings with coverings and the wooden frame buildings covered with bricks were put under the lens. Although the divergent visions of ethics and pragmatism led to a futile end, the discourse definitely exposed the contradiction between the architectural theories from the Occident and the wooden frame buildings of Japan.[*19] In 1916, the article "Architecture as Non-art 建築非芸術論" from Toshihiko Noda 野田俊彦,[*20] as part of his undergraduate thesis and published in *Kenchikuzasshi*, also ignited ardent discussions and resonances of multiple architects, amidst which, nevertheless, Chuta Ito calmed down the metaphysical fervor and emphasized the importance of solving practical issues.[*21] Afterward, coincidentally or not, the topics in *Kenchikuzasshi* and *Kenchikusekai* turned to the issues of residential problems, urban planning, and disaster prevention, for which the annual meetings of Architects Institute of Japan are the best index.[*22]

In 1920, like a thunderclap, Bunriha Kenchikukai 分離派建築会 (Bunriha, hereinafter), a group



1: Kikuji Ishimoto 石本喜久治; 2: Sutemi Horiguchi 堀口捨巳; 3: Mayumi Takizawa 瀧澤真弓;
4: Mamoru Yamada 山田守; 5: Shigeru Yada 矢田茂; 6: Keiichi Morita 森田慶一

Fig. 0-1 Selected works from the first exhibition of Bunriha Kenchikukai.
Source: Bunriha Kenchikukai 分離派建築会, *Bunriha Kenchikukai Sengen to Sakuhin* 分離派建築会宣言と作品 (Tokyo: Iwanami Shoten, 1920).

formed by six undergraduate students from Imperial University of Tokyo, exhibited and published their designs and manifestos, declaring their attitude and determination to break up with the society of architects in the past and create new styles of architecture. In the following years, the group continued its activities and also influenced several avant-garde architectural groups like Sousha 創宇社, Meteōrメテオール, and Ratō ラトー.[*23)] All these groups also ardently participated in the Exhibition for Reconstruction of Capital (帝都復興創案展覧会) in 1924, right after the disaster of Great Kanto Earthquake, showing the enthusiasm and new spirits of architecture.[*24)]

Near the happening of Great Kanto Earthquake, the outcome of Imperial Hotel was another notable event. Wright's design manners with no doubt brought a gale to the Japanese architects. However, the project was not an unprecedented case as other works of Wright had been introduced in earlier years in different magazines, and the attitudes toward the hotel were either pros and cons in articles, indicating that the values of Japanese architects had already formed.[*26)] Moreover, in August 1923, *Kenchikusekai*, Kazue Yakushiji 薬師寺主計[*25)] recorded his encounter with Le Corbusier whom he highly praised, which could be the first introduction of the iconic architect in Japan. However, the resonance is not yet confirmed, and the Earthquake also happened just one month later.

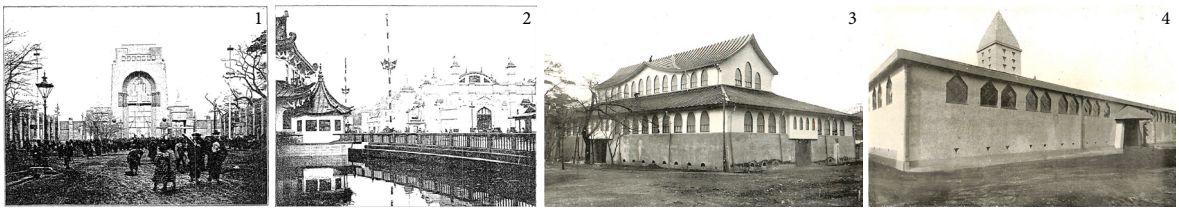
About the competitions, the design of Parliamentary House was not the only one during the 1910s. In the first half of the decade, the designs of Osaka City Hall 大阪市庁舎 and Osaka Central Public Hall 大阪市中央公会堂 had been implemented in 1912, followed by the competitions of Mitsubishi Headquarter 三菱合資会社本社 and Port Opening Memorial Hall of Yokohama 横浜市開港記念会館 in 1913, indicating the character of architecture as public sphere. In the second half, the national projects of Meijijingu Treasure Museum 明治神宮宝物殿 (1915) and Shotoku Memorial Hall 聖徳記念館 (1918) together with the headquarter of Nisshin Seimei Insurance 日清生命保険 (1916) show the focus on traditional Japanese motifs as well as the tendency of nationalism.[*27)] Multiple architects sent their comments on these three competitions, which are, however more of criticism than approval, as the aspiration on new style is manifest.

On another stage of architecture, the exhibition, things also look flourishing. From the middle of Meiji



1: Osaka Central Public Hall; 2: Osaka City Hall; 3: Port Opening Memorial Hall of Yokohama; 4: Mitsubishi Headquarter; 5: Parliamentary House; 6: Meijijingu Treasure Museum; 7 Shotoku Memorial Hall; 8: Nisshin Seimei Insurance

Fig. 0-2 First prizes of major competitions from 1906 to 1923.
Sources: 1: *Kenchikusekai* 7, no. 3 (March 1913); 2: *Kenchikusekai* 7, no. 1 (January 1913); 3: *Kenchikusekai* 8, no. 4 (April 1914); 4: *Kenchikusekai* 7, no. 9 (September 1913); 5: *Kenchikusekai* 13, no. 11 (November 1919); 6: *Kenchikusekai* 9, no. 12 (December 1915); 7: *Kenchikusekai* 12, no. 10 (October 1918); 8: *Kenchikusekai* 10, no. 6 (June 1916).

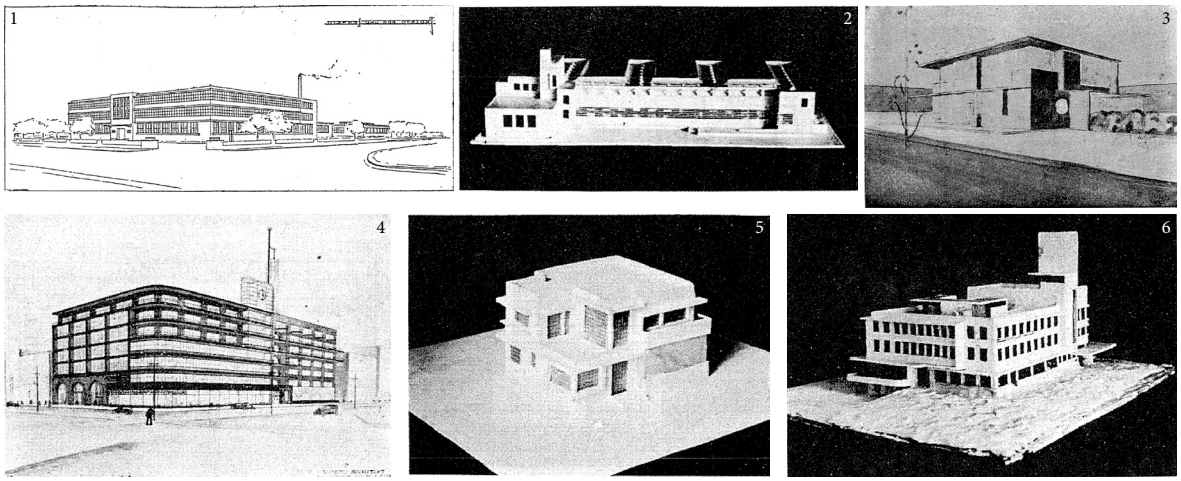


1: Front Gate of Taisho Expo, first venue; 2: Pavilion of agriculture, second venue of Taisho Expo;
3: Pavilion of Weaving and Dyeing, Peace Memorial Expo; 4: Pavilion of Seafood and Aliment, Peace Memorial Expo

Fig. 0-3 Sceneries of Taisho (1914) and Peace Memorial Expo (1922)
Sources: 1: *Kenchikuzasshi* 28, no. 329 (May 1914); 2: *Kenchikuzasshi* 28, no. 331 (July 1914); 3: *Kenchikusekai* 16, no. 4 (April 1922); *Kenchikusekai* 16, no. 3 (March 1922).

period, the Industrial Promoting Expo 勧業博覧会 had been a platform presenting the development of domestic industry. After Russo-Japanese War, the last time of the event was held in 1907 regardless of the recession right after the war.[*28)] Meanwhile, Japan Great Expo 日本大博覧会, which had been incubated for years, finally turned out stillborn regardless of the competition of master plan held in 1912.[*29)] In 1914, Taisho Expo 東京大正博覧会, a domestic fair finally came into being, in which the style of Vienna Secession became the protagonist. Years later, in 1922, Peace Memorial Expo 平和記念博覧会, an event for memorizing the peace of World War I, was held in Tokyo. In this fair, with the participation of the members of Bunriha, the Expressionist appearances of several pavilions showed the distinctive progression of architecture, Meanwhile, the Cultural Village was another notable part, in which couples of modular houses aiming to adapt to the new lifestyle were exhibited[*30)] Besides, the exhibitions of National Art Institute 国民美術協会 also need to be mentioned. With Sei-ichiro Chujo 中條精一郎[*31)] as the first chairman, a lot of architects also participated in the exhibitions, consecutively from 1913 to 1921, during which Keiji Goto was no doubt the most spotlighted figure, especially considering the memorial for him in 1917. In 1924, the Exhibition for Reconstruction of Capital was also held by National Art Institute, indicating the influence of the organization.[*32)] Although Japan also participated in some international exhibits, like Japan–British Exhibition (1910) and Panama–Pacific International Exposition (1915), different from the domestic environment, the pavilions of Japan still aimed at promoting the traditional Japanese architecture.[*33)]

After the earthquake, the shock to the society of architects in Japan quickly turned to post-disaster reconstruction, mainly in Tokyo and Kanto Area. The Dojunkai 同潤会 apartment houses, as one of the projects in the tide of reconstruction, showed the pioneering spirit of modernism, distinctively illustrating the change of era.[*34)] Meanwhile, some individuals also showed their motivation over the new forms of architecture. The projects of Kikuji Ishimoto 石本喜久治,[*35)] a member of Bunriha, who traveled to Europe in 1922 and stayed for almost one year, can be counted as the early pioneering works, which were deeply influenced by Expressionist architects and Gropius.[*39)] Other figures like Bunzo Yamaguchi 山口文象,[*36)] the member of both Bunriha and Sousha, and Tetsuro Yoshida 吉田鉄郎[*37)] were also the architects exploring the styles of new design.[*40)] Moreover, Arata Endo 遠藤新,[*38)] the apprentice of Frank Lloyd Wright, cannot be ignored for his efforts to develop the vocabularies of Wright.[*41)] When the time came to November 1927, the first exhibition of Japanese International Architects' Association 日本イン



Designs from 1: Seigo Motono 本野精吾; 2: Masafumi Ito 伊藤正文; 3, 4: Kikuji Ishimoto; 5: Isaburo Ueno 上野伊三郎; 6: Taneo Shinmyo 新名種夫

Fig. 0-4 Selected works from the first exhibition of International Architectural Association of Japan. Source: "International Exhibition," *Shinkenchiku* 3, no. 12 (December 1927): 2-15.

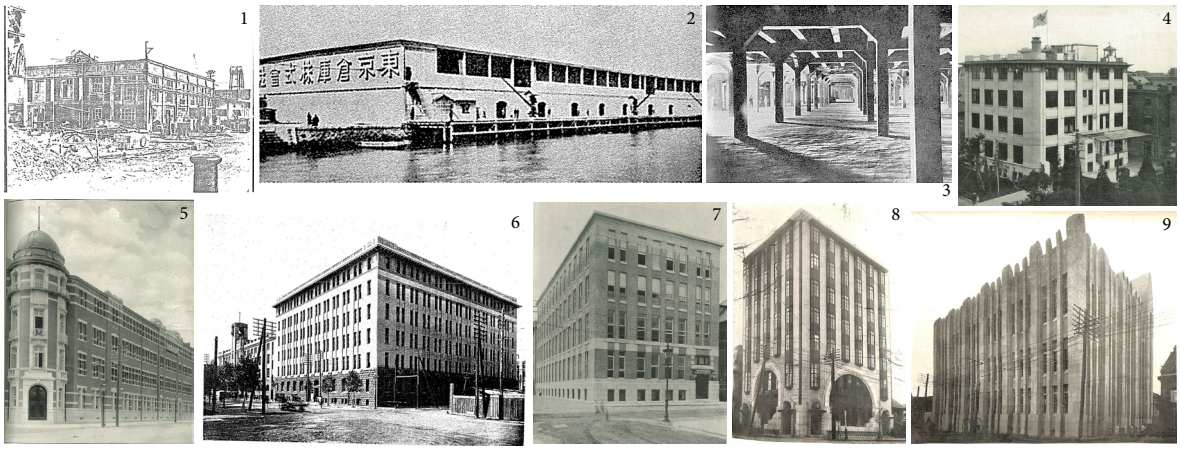
ターナショナル建築会 was held, in which Ishimoto and other young architects participated with their progressive designs. This exhibition can definitely be regarded as the first blossom of modernist architecture in Japan, which is, with no doubt the accumulation for years.

0.2 Why reinforced concrete

The early introduction of reinforced concrete (or RC, optional in tables, figures and related text) to Japan can be dated back to 1896, when the projects in Paris were introduced, of which the systems of Coignet and Hennebique were mentioned without using the translation of "鉄筋コンクリート" or "鉄筋混凝土".[*42)] Afterward, the new information of reinforced concrete were sporadically and continuously introduced in different publications. Nonetheless, the importance of reinforced concrete was not fully appreciated until 1906, when the earthquake in San Francisco happened. Japan also sent architects to investigate the disaster. When they came back and put out the results of investigation, the anti-seismic capacity of reinforced concrete was confirmed, which is widely regarded as the exact beginning of the rapid popularization of reinforced concrete in Japan.[*43)] From the point, numerous of textbooks and magazine articles were published for popularizing the knowledge of reinforced concrete, which no doubt pushed forward the theoretical level, regarding the slope-deflection method and the statically indeterminate system introduced in the mid-1910s. At the end of 1920, *Shigaichi Kenchikubutsu Ho* 市街地建築物法 (literally, Law on Urban Buildings), codified in 1919, was implemented, in which the construction of reinforced concrete is also regulated, implying the wide construction of reinforced concrete buildings regardless of the shortage of regulations. However, after the earthquake, the structure of reinforced concrete was largely reevaluated, marking a new episode of the structure.[*44)] Overall, it can be understood that the development of reinforced concrete actually underwent the whole period from 1906 to 1923, which could bear the possible correlations with the new rumors in the era.

About the design theories of reinforced concrete buildings, feverish discussions also showed up in the era, amidst which the topic of "Reinforced Concrete and New style" was predominant across numerous magazine articles. Back to 1908, when Seiichro Chujo came back from the 7th International Congress of Architects (London, 1906), the aesthetic aspect of reinforced concrete, discussed by Occidental architects, was already translated and published in *Kenchikuzasshi*.[*45)] Afterward, in 1912, about the 9th congress (Rome, 1911), the discussions on the design of reinforced concrete was also translated to *Kenchikuzasshi* by Toshikata Sano.[*46)] In Japan, the special volume of *Kenchiku-to-Soushoku* 建築ト装飾 (literally, Architecture and Decoration) in 1913, titled as "Reinforced Concrete", covered a large range of scholars and architects, who expressed their ideas over the design of reinforced concrete buildings.[*47)] Subsequently, in 1915 and 1916, "Reinforced Concrete and New Style" was set as one of the optional titles for undergraduate thesis by the professors in the department of architecture of Imperial University of Tokyo, showing the focus of top scholars.[*48)] In 1917, the 200th memorial volume of *Kenchiku* was published with the title of "Architecture in the Future", right before the abolishment of the magazine, in which several architects and scholars also covered certain topics related to the design of reinforced concrete buildings.[*49)]

In the aspect of practice, the early trials can be dated back to the 1905, including the pump warehouse in Sasebo 佐世保 Port (1905), and the warehouse of Tokyo Warehouse Company 東京倉庫株式会社 in Kobe (1905). In 1911, the construction of Mitsui Products, Yokohama Branch 三井物産横浜支店 marked the complete utilization of reinforced concrete in office buildings.[*50)] Until the late 1910s, reinforced concrete had realized huge growth. The continuous construction with reinforced concrete in Marunouchi, led by Mitsubishi Estate, was no doubt the most pioneering works, which had evolved from the imitation of British architecture to the adoption of American office buildings from the mid-1910s.[*51)]



1: Pump warehouse of Sasebo Port; 2, 3: Exterior and interior of Tokyo Warehouse Company in Kobe;
4: Mitsui Products, Yokohama Branch; 5: Mitsubishi bldg. # 21 (1914); 6: Mitsubishi Headquarter phase II (1921);
7: Mitsubishi bldg. Naka #12 (1920); 8: Yamaguchi Bank; 9: Ushigome Branch of Central Telecom Office of Tokyo

Fig. 0-5 Reinforced concrete buildings in early years, projects of Mitsubishi Estate and Bunriha members.
Sources: 1: Takeyoshi Hori 堀勇良, *Nihon ni okeru Tekkinkonkurīto Kenchiku Seiritsu Katei no Kouzougijutushi teki Kenkyu* 日本における鉄筋コンクリート建築成立過程の構造技術史的研究 (PhD diss., University of Tokyo, 1981), fig. 2.2.20; 2, 3: Mitsuo Toyoshima 豊島光夫, *E de miru Tekkin Senka: Tadashii Haikin no susume* 絵でみる鉄筋専科: 正しい配筋のすすめ (Tokyo: Kenchiku-Shizai-Kenkyuukai, 1972), 209, 225; 4: *Kenchikusekai* 9, no. 4 (April 1915); 5: *Kenchikusekai* 8, no. 7 (July 1914); 6: *Kenchikusekai* 15, no. 7 (July 1921); 7: *Kenchikusekai* 14, no. 9 (September 1920); 8: *Kenchikusekai* 17, no. 5 (May 1923); 9: *Kenchikusekai* 17, no. 2 (February 1923).

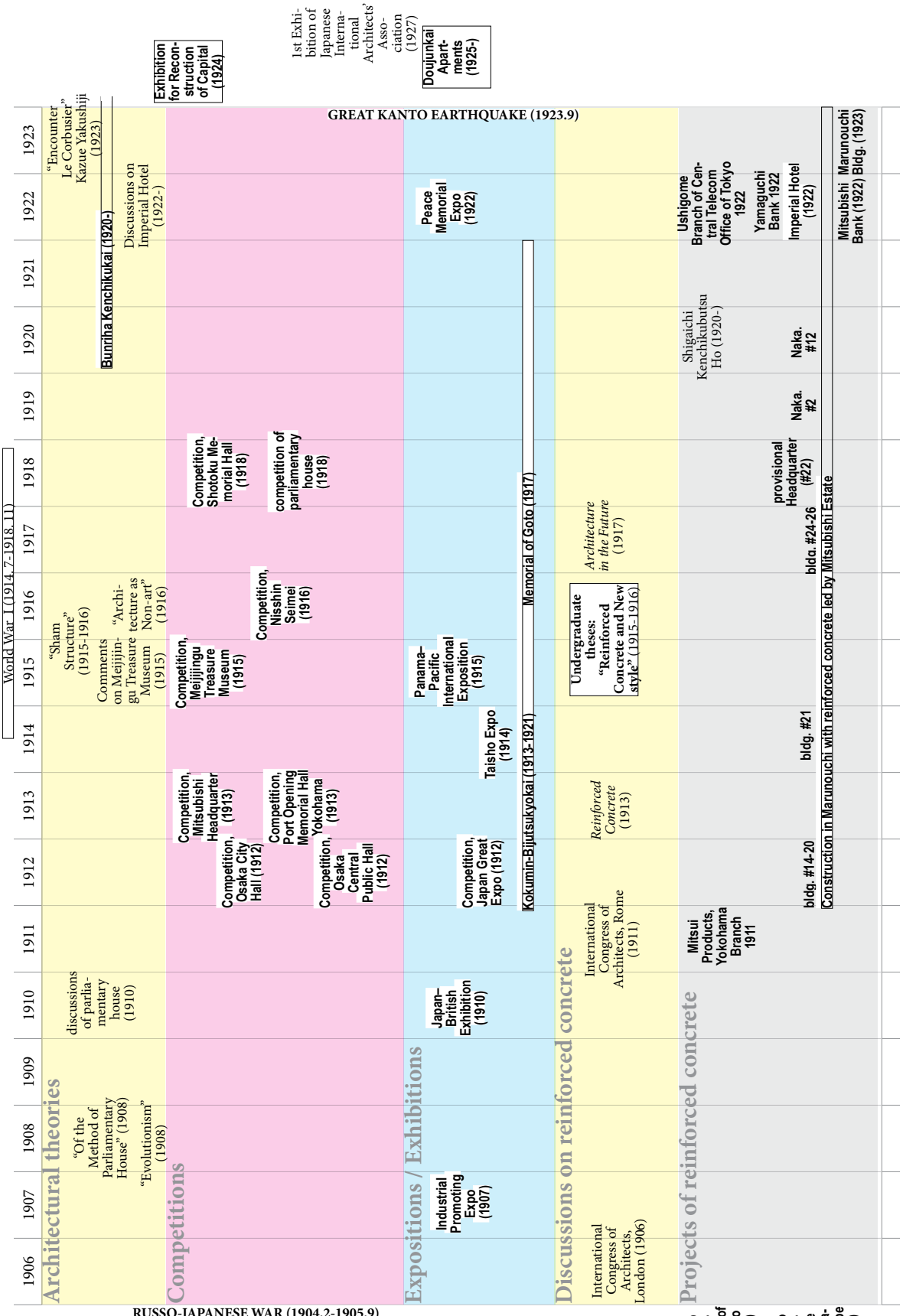


Fig. 0-6 Trajectory from 1906 to 1923, outstanding events and projects

After the #14-#20 buildings of Mitsubishi built in wall-floor system of reinforced concrete, from the #21 building, the frame of reinforced concrete was rapidly adopted in multiple projects, featured with the succinct appearances and the large scales of buildings, testifying the evolvement of taste and technology. In these projects, reinforced concrete was utilized both independently and together with steel frame, showing the variety of structures. Near the beginning of the 1920s, when the members of Bunriha started to participate in the design work, several remarkable works like Yamaguchi Bank 山口銀行 (1922) and Ushigome Branch of Central Telecom Office of Tokyo 東京中央電話局牛込分局 (1922) got on the stage, of which all the structures were built with reinforced concrete. Additionally, the project of Imperial Hotel was also constructed with reinforced concrete, which definitely added new vocabularies of the new structure to the architecture in Japan. Even though the anti-seismic design of the floating foundation of Imperial Hotel was progressive, it was only evaluated after the test of Great Kanto Earthquake.[*52)]

Moreover, reinforced concrete also dissolved in many historical events. As the extension of the discussions on Parliamentary House, Chuta Ito in his article, "Shorai no Kenchiku" 将来の建築 (literally, Architecture of the Future), clearly points out the direction of "Evolutionism" as architecture in steel, consisting of steel frame and reinforced concrete. In the ardent discussions over the issue of "Sham Structure", reinforced concrete is also one of the types of structures under scope. The initial essay from Toshihiko Noda, "Architecture as Non-art", is even part of his thesis under the title of "Reinforced Concrete and New Style". In the comments on the competition of Meijijingu Treasure Museum, mainly by Kitaro Matsui 松井貴太郎,[*53)] reinforced concrete is also an important vision for the discussion.[*54)] Later in 1920, even in the manifestos of Bunriha members, the influence of "Reinforced Concrete and New Style" can still be observed.[*55)]

Given all the facts above, it is reasonable to speculate that reinforced concrete could possibly have impact on the design and even development of architecture in the specific era from 1906 to 1923, which is also the hypothesis of this dissertation.

0.3 Previous studies and the contributions of this dissertation

About the general history of reinforced concrete from 1906 to 1923 in Japan, abundant literatures can be found, amidst which the most authoritative narrative comes from Teijiro Muramatsu's book, *Technological History of Architecture in Modern Japan*,[*56)] as Muramatsu is also the editor of *Encyclopedia of Science and Technology of Japan*, vol. 17,[*57)] and *History of the Development of Architecture in Modern Japan*.[*58)] Likewise, Eizo Inagaki is another important figure, who gives insight into the architectural history from the angle of industry, also sensibly illustrating the development of reinforced concrete.[*59)] In other general narratives like Shinjiro Kirishiki[*60)] and Yuichiro Kojiro,[*61)] reinforced concrete is slightly discussed amidst other historical facts of architecture. All these works give authentic facts about both architectural history and reinforced concrete. However, it cannot be ignored that all these scholars take the method of traditional historical study and restrain themselves, to some extent, to the epoch-making projects. Amidst the narratives, the evaluations on the role of reinforced concrete even vary, as Mura-

matsu regards the introduction of reinforced concrete as the beginning to topple the historical styles, while Inagaki claims that the new styles were irrelevant with the development of reinforced concrete. Kojiro, who mainly focuses on the theoretical aspect, points out that the consistency between theory and practice in terms of new forms for new structures, i.e., reinforced concrete and steel, was only realized since the generation of Bunriha. In addition, more specifically, Kirishiki talks about the tide of traditional Japanese motif in Taisho Period with the adoption of reinforced concrete and concludes that the pursuit of Japanese style with reinforced concrete was a special route rather than a universal phenomenon.

More specifically, focusing on the technological development of reinforced concrete, Koichi Tamura and Tokio Kondo's book, *History of Concrete*[*62)] and Mitsuo Toyoshima's *Special Course of Reinforced Concrete*[*63)] offer detailed information about both the facts and trajectory of history, covering the aspects of material, calculation, construction method, etc. Another important study about the very early development of reinforced concrete in Japan is the dissertation of Takeyoshi Hori, the student of Muramatsu. Hori's work offers authentic facts about the early introduction of reinforced concrete based on broad field researches, and presents his own insight into the explanation of the technological history of reinforced concrete.[*64)] Iwao Yamane's dissertation about the early development of reinforced concrete bridges in Japan is also a substantial work. Although it is about the field of bridge and more broadly, civil engineering, the facts presented in the dissertation cover many details about the textbooks and experiments of reinforced concrete in the early ages, providing valuable supplementary insights for accurately understanding the technology of reinforced concrete in the specific era.[*65)] All of these works help build a firm foundation for the initiation of this dissertation.

About the design theories of reinforced concrete, the discussions are much less and not systematic, amidst which, nonetheless, several sensible works can still be counted here. The discussion from Hiroyasu Fujioka who emphasizes that the architects in the 1910s regarded reinforced concrete structure as rigid frame and mentions the concept of "elastic arch" is undeniably an inspiring work.[*66)] In the narratives of Koichi Kato about Bunriha, the idea of the expression of force in reinforced concrete structure from Toshikata Sano, one of the important pioneers of reinforced concrete in Japan, and the ideas like free shape, parabola arch, and Expressionism presented in the works of Bunriha members are comprehensively rethought.[*67)] In recent years, Hori also talks about the concept of "elastic arch" proposed by Keiji Goto, of which the mechanical sense is affirmed from Hori's personal judgment.[*68)]

As to the practices of reinforced concrete, in the all literatures above, numerous projects are already picked up by the authors to prove their arguments, amidst which certain important buildings are in common while some others differ. More specifically, Gakuji Yamamoto presents a series of representative projects, illustrating his perspective on the relation between exterior architectural appearance and the structure of reinforced concrete in a chronological way.[*69)] Besides, the series of Meiji, Taisho, Showa is a monumental work participated by many authoritative scholars, which covers manifold chapters on different architects and their works. Especially, the 10th volume, consisting of two articles from Hori[*70)] and Sakae Omi,[*71)] present several important figures who featured the trajectory of architectural history throughout Meiji and Taisho Periods, in which the part of reinforced concrete is notable.

However, these researches about the design theories and the practices both have the problem over the selection of works. Although the sharp eyes of the scholars cannot be neglected, the arguments still need support from more instances of text and practices to ensure the reliability. Also, the relation between theories and practices seems to be ignored to some extent, which should be revealed in a more integral way. Furthermore, these researches, albeit substantial and meticulous, still fall short of clearly revealing the tribute of reinforced concrete in the form of architecture through the comparison with other structural forms due to the conventional method of narrative history.

Beyond Japan, some literatures can also be taken into account as the references. Giedion's *Building in France, Building in Iron, Building in Ferro-concrete*, from the stance of this dissertation, is a controversial work, which explores the roles of steel and reinforced concrete in modern history but ends up presenting his compatriot, Le Corbusier's works as the representative of reinforced concrete.[*72)] Frampton's book, *Studies in Tectonic Culture*, albeit giving credits to various works of reinforced concrete, adopts the strategy of case study, in which structure is simply taken as an angle to understand architecture, while the structure itself is not deeply contemplated.[*73)] More recently, Adrian Forty also talks about the early works of reinforced concrete, which, however, still focuses on the clichés like Hennebique System and Auguste Perret.[*74)] Similar with the studies on reinforced concrete in Japan, it can be discovered that these works also adopt the manner to select representative works through their eyes, and importantly, the role of structure itself, especially reinforced concrete, is avoided to be discussed in depth.

Given all these previous works, this study is trying to comprehensively grasp both the theories and practices of reinforced concrete in the specific era from 1906 to 1923 in Japan and explores the correlation in between. Also, the role of reinforced concrete in architectural history is also going to be recognized through the comparison with other structural forms rather than solitarily inspected. More importantly, the process of this dissertation is based on a large range of articles and projects rather than merely the representative works, with the adoption of new methods of study instead of the conventional way of narrative history. In this way, this dissertation can not only renew the cognition on reinforced concrete in architectural history during the specific period in Japan, but also work as a criticism to help correctly evaluate the tribute of reinforced concrete in the development of architecture worldwide.

0.4 Subject and objectives

0.4.1 The subject

As to the subject of this study, based on the historical facts, the sight is naturally put on the reinforced concrete during the era from the end of Russo-Japanese War to Great Kanto Earthquake, particularly, in the field of architecture. Rather than limited to the material itself, the "reinforced concrete" in this study consists of the technical and design theories, as well as the application in architectural practice.

0.4.2 The objectives

The principal objective of this dissertation, as indicated in the title, is set as to reveal the theories and practices of reinforced concrete in the dissolution of historic architectural styles in Japan, which, on the

stance of this dissertation, is based on abundant text and projects. Regarding the shortages in previous studies, four goals are erected in sequence to help establish a comprehensive and in-depth understanding the reinforced concrete in the particular era:

i. To build up a landscape of the theories of reinforced concrete including both the aspects of technique and design based on abundant literature;
ii. To illustrate the practices of reinforced concrete in the spectrum of all the structural forms based on abundant architectural projects, from which the role of reinforced concrete is clarified and the correlations with other structural forms are distinguished;
iii. To unveil the relations between technical theories, design theories and practices of reinforced concrete, and examine the compatibility of technical and design theories as well as the extent to which the theories were realized in real practices;
iv. To put the facts of reinforced concrete back into historical context for gaining in-depth understanding on the trends and features of reinforced concrete and developing a new narrative of architectural history in Japan.

0.5 Materials and methodology

0.5.1 The materials

a. Primary sources

The most important source are the architectural magazines in the era, including both the articles and plates, which offer direct insight into the historical reality. In this dissertation, seven nationwide magazines covering different types of buildings are collected, including *Kenchikuzasshi*, *Kenchikusekai*, *Kenchikugaho*, *Kenchiku*, *Kenchiku-Kougeigyoshi* 建築工芸業誌, *Kenchiku-to-Soushoku*, and *Kenchikuhyoron* 建築評論, amidst which the first three published both articles and plates consistently throughout the 1910s, and the other four provide valuable extra information for a better understanding of the era. Particularly, the special volumes of *Reinforced Concrete* from *Kenchiku-to-Soushoku* (1913) and *Architecture in the Future* (1917) from *Kenchiku* are included as two important materials for understanding the spirits in the past (see also 0.2, paragraph 2). Besides, *Tokyo 100 Buildings* 東京百建築,[*75)] an album of architecture edited by the chef editor of *Kenchikugaho*, Hoshin Kuroda 黒田鵬心,[*76)] and published by the owner of *Kenchikugaho*, Takasue Suwa 諏訪方季,[*77)] is regarded as a special volume of *Kenchikugaho*.

Nonetheless, some magazines like *Kenchiku-to-Shakai* 建築と社会, *Jutaku* 住宅, *Shinjutaku* 新住宅 and *Kenchiku-Kougeigakan* 建築工芸画鑑, published in limited regions and merely covering specialized contents like residential buildings and traditional Japanese architecture, are not included. Besides, some magazines can no longer be found, such as *Kenchiku-Shashinjiho* 建築写真時報 (only the special volume of "Taisho Expo" left), the predecessor of *Shinjutaku*, and *Gendai-no-Kenchiku* 現代の建築 (only certain articles left), in which a lot of architects also presented their theories.

Secondly, as are shown in figure 0-7, 16 textbooks of reinforced concrete during the specific era are collected, including all the accessible books found in the digital collections of National Diet Library 国立

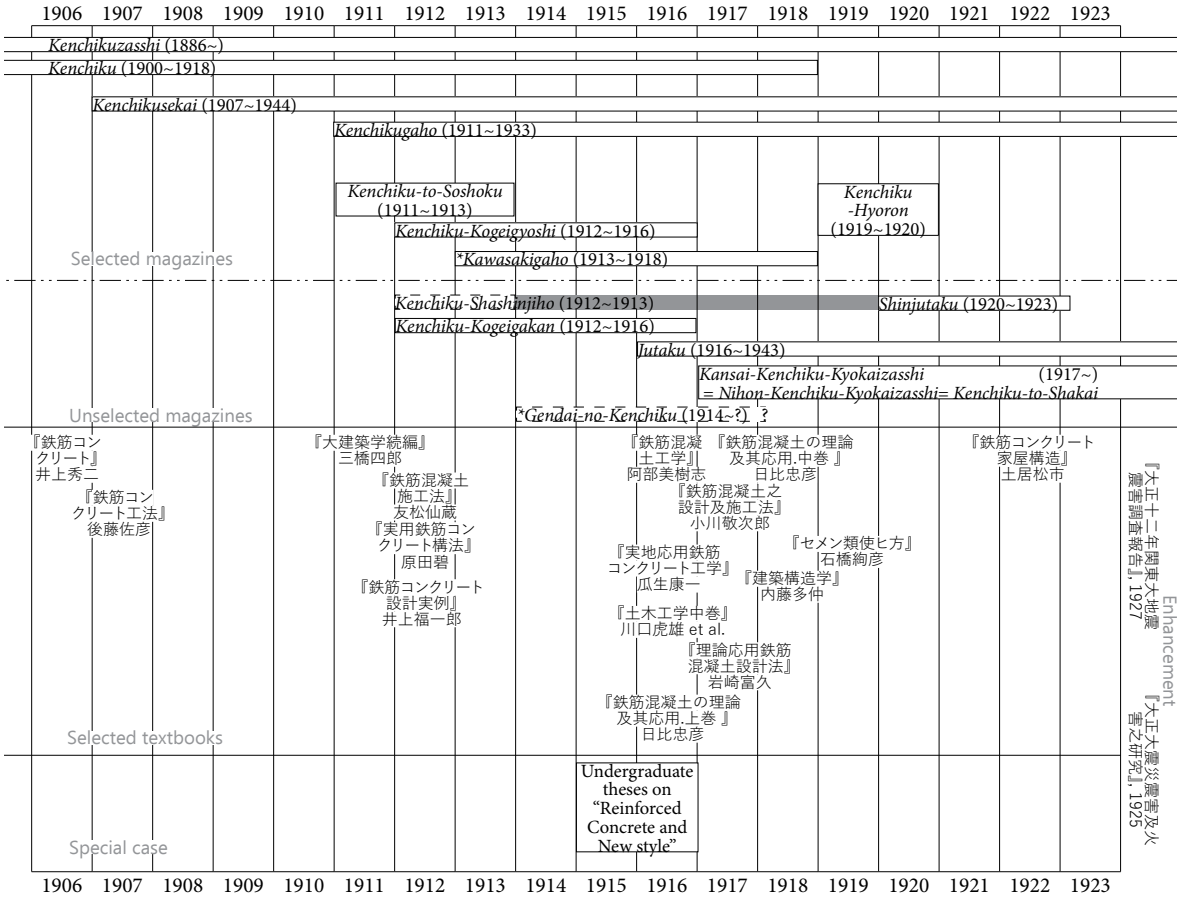


Fig. 0-7 Architectural magazines, textbooks, reports of Great Kanto Earthquake, and the undergraduate theses from Imperial University of Tokyo selected for this dissertation

国会図書館, about which more details are revealed in chapter 1. These textbooks serve as the materials for directly examining the knowledge level of reinforced concrete rather than relying on the narratives of other researchers.

To explore the design theories of reinforced concrete, besides the magazine articles, this dissertation also covers the undergraduate theses from the department of architecture in Imperial University of Tokyo, which were assigned with the topic of "Reinforced Concrete and New Style". These theses are no doubt the inevitable materials for revealing the design theories and even the tribute of reinforced concrete.

Moreover, some special first-hand materials are also covered. Two reports about Great Kanto Earthquake, i.e., *Taisho Juninen Kanto Daijishin Shingai Chousa Houkoku* 大正十二年関東大地震震害調査報告[*78)] (hereinafter referred to as *Earthquake Report*) and *Taishi Daishinsai Shingai oyobi Kagai no Kenkyu* 大正大震災震害及火害之研究[*79)] (hereinafter referred to as *Disaster Report*), which offer authentic information about the projects built before the earthquake throughout the direct investigation of the disaster, are included for consolidating the technological base of this dissertation. In the reports, not only the text, but also the photographs and drawings are covered, which largely help understand the reality of construction during the specific era. Moreover, *Kawasakigaho* 川崎画報, the internal publication of Kawasaki Factory, is extensionally adjoined, which provides authentic information about the reality of

wire mesh reinforced concrete, helping deepen the understanding of reinforced concrete.

b. Secondary sources

To integrally grasp the thoughts in magazines as well as the undergraduate theses in a broader context, at first, several publications are treated as important indices. About the magazines, the dissertation of Masaru Kawashima[*80)] and Mokujisoran[*81)] are two materials providing the contents and the context of the magazines, helping comprehensively grasp the magazines during the era. Besides, the *50-year Brief History of Architectural Institute of Japan*[*82)] is an important archive recording and classifying the activities within the institute, from the which the timeline of big events can be clearly grasped.

About the specific characters, both the authors of the articles and the undergraduate students, the book, Nihon Kenchikuka Sanmyaku[*83)] by Muramatsu and *Dictionary of Modern Japanese Architects*[*84)] by Hori in recent years are the most authentic sources in which the information of architects and their achievements are clearly recorded.

The archives of certain individuals and parties, specifically, the memoirs or posthumous works of architects are taken as the enhancement of magazine articles as well as the remedy for the loss of certain magazines. For instance, the posthumous works of Keiji Goto[*85)] and Masao Takamatsu 高松政雄[*87)] record certain articles from *Gendai-no-Kenchiku*, which offer extensive, sometimes even essential information for understanding the minds in the specific era. Besides, the memorial album of Toshikata Sano[*88)] and derivatively, the record of the construction of Meijijingu Treasure Museum[*89)] which provide important information relevant to the key concepts in the undergraduate theses are also covered.

To enhance the information of projects from the primary sources, some reliable publications are included. The series, *Architecture of Japan: Meiji, Taisho, Showa*,[*90)] is a tremendous work participated by multiple authoritative scholars, in which a lot of important figures in the architectural history of Japan are deeply inspected. At the end of each volume, some meticulous archives of architects and their works are offered, from which the relationships between the architects are also revealed. Other archives like *City and Architecture of Taisho Period Seen from Drawings* 図面で見る都市建築の大正,[*91)] *Album of Architecture in Modern Era* 近代建築画譜 (近畿),[*92)] *Collection of Architectural Photographs by Building Type* 建築写真類聚[*93)] and Collection of Architectural Photos in Meiji and Taisho Periods 明治大正建築写真聚覧[*94)] are also important works providing additional information about certain projects and broader perspective over the era. In addition, the special volume of *Kenchikuzasshi* for memorizing the 50-year anniversary of Architectural Institute of Japan[*95)] is a precious material recording the round table meetings between architects activating during Meiji and Taisho Periods, which also provides sensible and authentic details of certain important projects.

For getting deeper understanding of the projects in the era, the collections of drawings such as *Drawings of Marunouchi* 丸の内図集[*96)] and *Chromatic Drawings of Shimizu* 清水彩色図集[*97)] provide additional drawings of the projects in the magazines and even the design process in the past can be roughly conceived. Besides, the dissertation of Takeyoshi Hori[*98)] is also treated as an important secondary source regarding the substantial archiving work and field research, from which detailed information and drawings of specific projects can be found.

Moreover, to further replenish the understanding of architectural works and the historical background, this dissertation expands the perspective into broader materials of specific parties. The histories of the major contractors, such as Mitsubishi Estate,[*99)] Shimizu Group,[*100)] Okura Group[*101)] and Takenaka Corporation[*102)] are also collected, and for public sectors, Seiichi Furuyama's narration also provides abundant information about the buildings of Teishinsho 逓信省.[*103)] In most part of this dissertation, although they are not directly mentioned, the information largely enhanced the projects collected for analysis, and some precious details of history even help build up the final conclusion.

0.5.2 The methods

a. General strategy

To reveal the theories and practices of reinforced concrete, as well as the interrelations, this dissertation divides the whole process into four steps. At first, this dissertation attempts to meticulously investigate the technical level of reinforced concrete, providing a solid based for further inspections. Secondly, the design theories are thoroughly examined for revealing the perception of reinforced concrete during the era. In the third step, this dissertation tries to examine the tribute of reinforced concrete in real practices for obtain the materials for verifying the points found in the former two steps on theoretical side. Fourthly, different aspects of reinforced concrete are compared and synthesized for building up the final conclusion.

b. Principles of this dissertation

i. Principle of historiography

For inspecting the theories and practices of reinforced concrete, the principle of historiography, i.e., to set the foundation on the selection of authentic materials and synthesize the materials into sensible narratives, is the fundamental approach, which ensures that the inspections of this dissertation follow the facts of history rather than subjective judgment. This criterion is also adopted to the statistical analysis of actual projects, of which the information of structure only relies on the authentic coeval materials.

ii. Semantic vision

The vision of semantics is another important approach, especially for extracting the design conceptions of reinforced concrete buildings from magazines articles and undergraduate theses, by which the inspections are limited to the text directly related to the ideas of design and distinctively separated from the realm of pragmatics, as the context, especially of the abstract architectural theories, is regarded as peripheral. To ensure the objectivity of extraction, different from "KJ Method" which decides the keywords in the early stage by personal judgment or brainstorming, this dissertation only extracts the ideas which sensibly form statements in the context and retains the details to a large extent.

iii. Database and statistical tools

To conduct the analyses on theories and practices, the databases of magazine articles and projects are established, which are generally managed with Excel and Filemaker respectively. To analyze the data, the statistical tools integrated in programming languages are adopted, as in this study, the modules under Python environment, such as Scipy and Statsmodels are utilized, which allow the analysis on large-scale

samples in loops compared to the conventional softwares. By this means, the results ignored or inadequately examined with conventional manners of historical study can be excavated for providing new explanations for both reinforced concrete and architectural history.

iv. Synthetic inspection

With all the methods adopted above, it is important to go through all the findings and find the correlations and features to avoid getting partial conclusion. Thus, in this dissertation, the synthetic inspection in the end is an indispensable step, through which not only the different aspects of reinforced concrete but also the historical context is thoroughly verified for finally giving a pertinent conclusion.

0.6 Structure of dissertation

Generally, this dissertation consists of seven chapters, including the introduction and six chapters ranging from the inspections of theories and practices of reinforced concrete to the synthesis of findings and finally to the overall conclusion.

In chapter 1, this dissertation focuses on the technological development of reinforced concrete to set a firm foundation for correctly recognizing any further aspects of reinforced concrete. Based on the narratives in textbooks and *Earthquake Report*, the basic structural forms of reinforced concrete are roughly grasped. Subsequently, the level of knowledge, including strength of material, formulas of calculation, mechanical models, construction methods and experiment, is thoroughly reviewed for re-illustrating the reality of technical theories. Meanwhile, the process of popularization of reinforced concrete is revealed through the investigation into the educational articles in specific magazines, from which certain supplementary contents are also presented for better understanding the knowledge level throughout the decade. After the work above, the form of reinforced concrete is rethought and assessed with an authentic technical background.

In chapter 2, the lens is focused on the very special case of the undergraduate theses from the department of architecture in Imperial University of Tokyo. Through the inspection into historical context, the Moment of the topic, “Reinforced Concrete and New Style”, is revealed. By meticulously reviewing the text, on the one hand, the level of technical knowledge about reinforced concrete among the students is confirmed, and on the other hand, with the tangible ideas extracted from the text, the design conceptions of reinforced concrete buildings are grasped, amidst which, certain paradigms showing the connections between different conceptions are affirmed, and the central conceptions shared by the students are also identified. Moreover, this chapter digs deeper into the origins and connotations of the central conceptions with regard to the relevant figures and their theories for gaining a thorough understanding of the design conceptions in the theses.

In chapter 3, the investigation is expanded to the magazine articles concerning the design of reinforced concrete. To get an overall perception of the articles, the general trends of articles and the structure of authors are comprehensively investigated for revealing the key factors influencing the fervent discussions on the design of reinforced concrete. Similarly, this chapter also manages to classified the

tangible ideas in the articles into specific groups which are based on the natures of the ideas and enhanced from the results of the inspection into the undergraduate theses, which also verified the consistency between the students and architects then. Henceforth, the features and trends of specific design conceptions are cleared up and the connections between certain conceptions are also appreciated. Furthermore, the verification of the instances of architectural projects supporting the conceptions is conducted, which examines the pertinence of the design conceptions to real projects and helps consolidate the base of cognition on the conceptions.

In chapter 4, the sight is moved onto the practices of reinforced concrete. Given the real projects with structure information in the magazines collected, this chapter tries to explore the relation between reinforced concrete and exterior architectural appearance, regarding historical styles still as the main theme of the era. Based on the structural information, either detailed or simple, the structural components and general structural forms are redefined. Meanwhile, from the angle of historical styles, the exterior appearances are broken down into visual elements of different dimensions, and the sum of elements in each dimension is marked as the aggregation level of the elements. With specific statistical tools, a series of tests are casted for exploring the relations between structural forms and exterior appearance, from which the part of reinforced concrete is grasped both comparatively and chronologically. Moreover, with the results of statistical results, this chapter reviews the selected projects and finally manages to give a conclusion on the tribute of reinforced concrete in the relations with features and trends of exterior architectural appearance.

In chapter 5, corresponding to the objectives, the findings of previous chapters are put together, and the relations between different aspects of reinforced concrete are synthetically discussed, through which deeper understanding on the theories and practices of reinforced concrete is also formed reciprocally. Moreover, the findings about reinforced concrete above are put back into the historical context with a global vision for establishing a new explanation for both the reinforced concrete and architectural history in Japan during the specific era.

Finally, in chapter 6, the conclusion is made in a succinct way, with the findings of each chapter and the results of synthesis summarized in brief. The significance and contribution of this dissertation for the field of architecture are also contemplated. Furthermore, with the limitation of this dissertation examined, the directions for future researches are proposed at the very end.

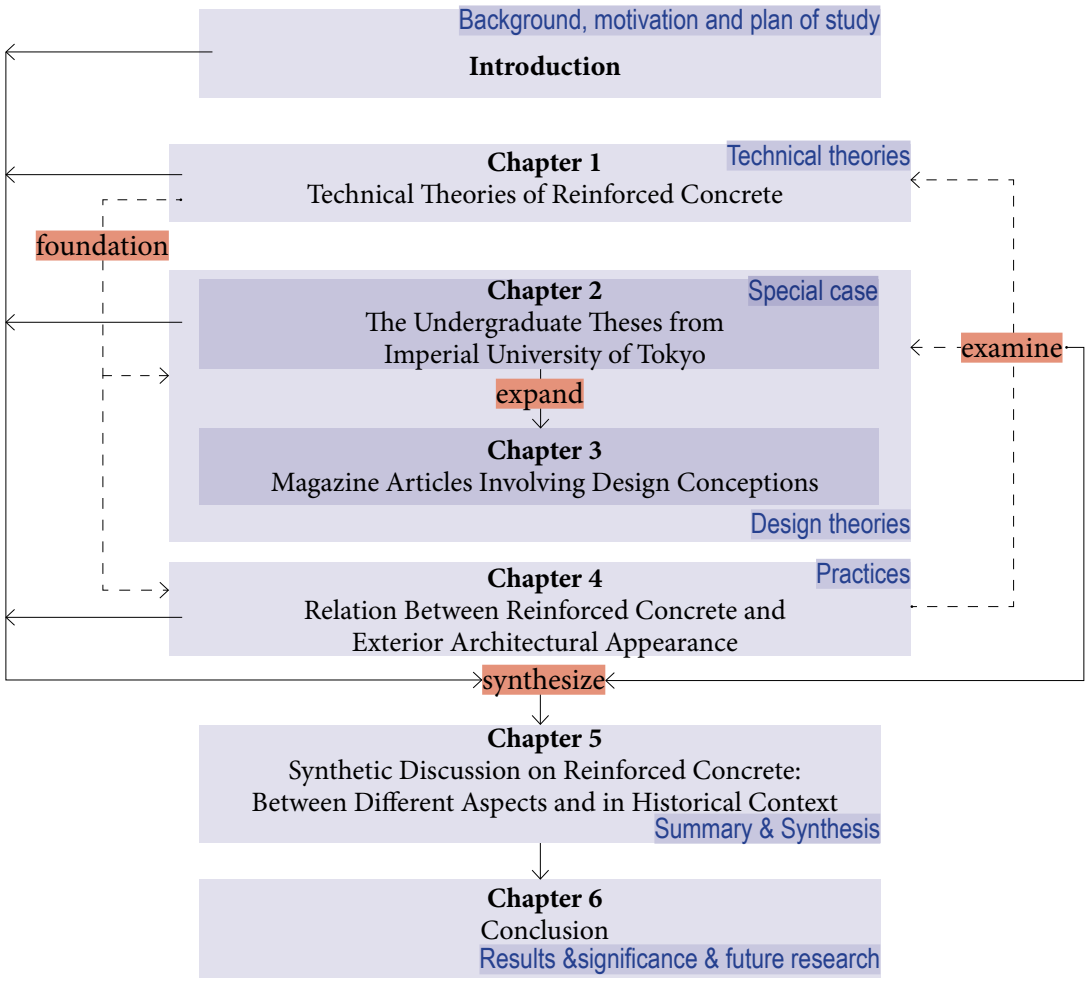


Fig. 0-8 Structure of dissertation

Notes

*1) The descriptions about Russo-Japanese War and Great Kanto Earthquake can be found respectively in Shinjiro Kirishiki 桐敷真次郎, *Meiji no Kenchiku: Kenchiku Hyakunen no ayumi* 明治の建築: 建築百年のあゆみ [Architecture of Meiji: The Footprint of Architecture in One Hundred Years] (Tokyo: Nikkei, 1966), 145-147, 186. The War as the Moments of the construction of Tokyo station and the tide of financial buildings can be found in Terunobu Fujimori 藤森照信, *Kindai Nihon no Youfuu Kenchiku Eigahen* 近代日本の洋風建築 栄華編 [Western Style Architecture of Modern Japan Volume of Prosperity] (Tokyo: Chikumashobo, 2017), 257, 311. About the changes brought by earthquake, more details are presented in Eizo Inagaki 稲垣栄三, *Nihon no Kindai Kenchiku: sono Seiritsu Katei* 日本の近代建築－その成立過程 [Modernist Architecture of Japan: The Process of Establishment] (Tokyo: Chuokouronbijyutsu, 2009), 211, 222.

*2) Although the war itself ended up in September 1905, the aftermath including Treaty of Portsmouth and the negotiation with the government of Qing dynasty continued until the end of the year, thus it is reasonable to set the targeted period of this study from 1906.

*3) In the notes and bibliography of this dissertation, 建築雑誌 is referred as *Kenchikuzasshi* rather than the formal name "Journal of Architecture and Buildings Science" for signifying the instances of magazines around the specific era.

*4) Masaru Kawashima 川嶋勝, *Study on the Historical Development of Architectural Publication Activities in Modern Japan: Formation of Architectural Publication Organizations and Roles of Architectural Books until the War in the Showa Period* 近代日本における建築出版活動の史的展開に関する研究－昭和戦前期までの建築出版組織の形成と建築図書の役割 (PhD diss., Nihon University, 2017), 85.

*5) Kingo Tatsuno 辰野金吾 (1854-1919) was a Japanese architect, who served as the dean of the Department of Architecture, Imperial University of Tokyo. As a student of Josiah Conder, he is regarded as the leading figure of the first generation of Japanese architects and famous for his design of Tokyo Station.

*6) Yasushi Tsukamoto 塚本靖 (1969-1937) was a professor of the Department of Architecture of Imperial University of Tokyo.

*7) Chuta Ito 伊東忠太 (1867-1954) was a professor of the Department of Architecture of Imperial University of Tokyo, as well as a theorist and historian of architecture. He is famous for his theory of "Architectural Evolutionism" and his investigation in Asian countries like Korea, China and India.

*8) Kingo Tatsuno 辰野金吾, Yasushi Tsukamoto 塚本靖, Chuta Ito 伊東忠太, "Giin Kenchiku no Houhou nitsuite" 議院建築の方法に就て [Of the Method of Parliamentary House], *Kenchikuzasshi* 建築雑誌 22, no. 255 (March 1908): 102-104.

*9) Evolutionism, the theory of Ito, was originally presented in the speech in Architects Institute of Japan in 1908 with the title "Kenchiku Shinka no Gensoku yori Mitaru Wagakuni Kenchiku no Zento" 建築進化の原則より見たる我邦建築の前途 [The Future of Our Country's Architecture Seen from the Principles of Architectural Evolution], and got republished in *Kenchikuzasshi* 建築雑誌 and *Kenchikusekai* 建築世界. The influence can be observed in many other articles in the coming years. For more details about the theory, check Rintaro Kawamichi 川道麟太郎, Tomoko Hashitera 橋寺知子, "On the Theory of Architectural Evolution by Chuta Ito: I. The Origin and the History of the Theory" 伊東忠太の「建築進化論」について (上) その由来, *Journal of Architecture and Planning* (Transactions of AIJ), no. 525 (November 1991): 281-285. DOI: https://doi.org/10.3130/aija.64.281_3

*10) Tadashi Sekino 関野貞 (1868-1935) was a professor of the Department of Architecture of Imperial University of Tokyo, as well as historian of architecture, who mainly focused on traditional Japanese architect.

*11) Toshikata Sano 佐野利器 (1880-1956) was a professor of the Department of Architecture of Imperial University of Tokyo. He was a leading figure in architectural structures. He is famous for his devotion in anti-seismic structure.

*12) Tamisuke Yokogawa 横河民輔 (1864-1945) was an architect and entrepreneur who founded Yokogawa Koumusho (now as Yokogawa Architects & Engineers). He also once worked as a lecturer in the Department of Architecture of Imperial University of Tokyo, responsible of steel frame structure. His office was one of most influential private party in the 1910s.

*13) "Wagakuni Shorai no Kenchiku Youshiki wo Ika ni subeki ya" 我国将来の建築様式を如何にすべきや [How to Deal with the Architectural Style of Our Country in the Future], *Kenchikuzasshi* 建築雑誌 24, no. 282 (June 1910): 252-289 and 284 (August 1910): 395-417.

*14) Numerous articles commenting on the results of Parliamentary House can be found in *Kenchikusekai* 建築世界 13, no. 12 (December 1919): 5-36.

*15) Wajiro Kon 今和次郎, "Kenchiku Seinenkai no Taian Tenrankai" 建築青年会の対案展覧会について [About the Counter Exhibition of Young Architects Group], *Kenchikusekai* 建築世界 14, no. 7 (July 1920): 58-60.

*16) Tatsutaro Nakamura 中村達太郎 (1860-1942) was a professor in the Department of Architecture of Imperial University of Tokyo, responsible for architectural structures. He was the predecessor of Toshikata Sano.

*17) Seitaro Yamazaki 山崎静太郎 (1885-1944), also known as Gakudo Yamazaki 山崎 楽堂, was an architect and architectural critic. He is also known for his specialty in Nogaku.

*18) Keiji Goto 後藤慶二 (1883-1919) was an architect active in the 1910s. He made ample contributions to both the fields of architectural theories and structures. Even though he died early at the age of 35, he is highly valued as the pioneer of Expressionist architecture in Japan.

*19) The direct discussions can be found in the following articles. Tatsutaro Nakamura 中村達太郎, "Kyogi Kenchiku nari yainaya" 虚偽建築なりや否 [Whether It Is Sham Architecture], *Kenchikuzasshi* 建築雑誌 29, no. 345 (September 1915): 658-659. Seitaro Yamazaki 山崎静太郎, "Kyogi Kenchiku nitsuite Nakamura Sensei he" 虚偽建築に就て中村先生へ [To Professor Nakamura for Sham Architecture or not], *Kenchikuzasshi* 29, no. 347 (November 1915): 767-769. Nakamura, "Futatabi Kyogi Kenchiku nitsuite" 再び虚偽建築に就て [About Sham Architecture Again], *Kenchikuzasshi* 30, no. 349 (January 1916): 25. Yamazaki, "Kenchiku Jiji Zakkan" 建築時事雑感 [Random Thoughts on Recent Happenings of Architecture], *Kenchikuzasshi* 30, no. 351 (March 1916): 130. Yamazaki, "Kenchiku no Shukanteki Igi" 建築の主観的意義 [Subjective Sense of Architecture], *Kenchikuzasshi* 30, no. 354 (June 1916): 323-328. Keiji Goto 後藤慶二, "Misukiatō"ミスキアトー [Mischiato], *Kenchiku* 建築 192 (March 1916): 11-17 and 196 (July 1916): 16-19. Yamazaki, "Kenchiku Nidai" 建築二題 [Two Themes of Architecture], *Kenchiku* 194 (May 1916): 5-6. Goto, "Keijika no Kouzou ni taisuru Keijijou no Hihan" 形而下の構造に対する形而上の批判 [Metaphysical Criticism on Physical Structure], *Kenchikuzasshi* 30, no. 355 (July 1916): 407-411. Chuta Ito 伊東忠太, "Sakuzekonhi 2" 昨是今非 (二) [Times Change 2], *Kenchikuzasshi* 30, no. 358 (October 1916): 617-619. Additionally, the idea of "truth of structure" also dissolves in many other articles, albeit indirectly discussed.

*20) Toshihiko Noda 野田俊彦 (1891-1929) was an architect. Regardless of his activities in public sectors, he is mainly famous for the theory of "Architecture as Non-art" (建築非芸術論), which is part of his undergraduate thesis.

*21) Toshihiko Noda 野田俊彦, "Kenchiku Hi-Geijutsu-ron" 建築非芸術論 [Architecture as Non-art], *Kenchikuzasshi* 建築雑誌 29, no. 346 (October 1915): 714-727. Seitaro Yamazaki 山崎静太郎, "Kenchiku Jiji Zakkan" 建築時事雑感 [Random Thoughts on Recent Happenings of Architecture], *Kenchikuzasshi* 30, no. 351 (March 1916): 130. Keiji Goto 後藤慶二, "Misukiatō"ミスキアトー [Mischiato], *Kenchiku* 建築 196 (July 1916): 19-20. Chuta Ito 伊東忠太, "Sakuzekonhi 1" 昨是今非 (一) [Times Change 1], *Kenchikuzasshi* 30, no. 357 (September 1916): 546-552. Noda, "Kenchiku Hi-Geijutsu-ron no Zoku" 建築非芸術論の続 [Continuation of 'Architecture as Non-art'], *Kenchikuzasshi* 30, no. 360 (December 1916): 706-710.

*22) Zoushutaro Takasugi 高杉造酒太郎, *Kenchikugakkai Gojuunen Ryakushi* 建築学会五十年略史 [Brief 50-year History of Architectural Institute of Japan] (Tokyo: Architectural Institute of Japan, 1936).

*23) Sousha 創宇社 was a group of architects led by Bunzo Yamaguchi 山口文象 and formed with his collegues in Teishinsho 逓信省 in 1923. Yamaguchi was also a member of Bunriha, as he joined in 1923. Meteōrメテオール, founded in 1924, contains the members of Takeo Sato 佐藤武夫 (1899-1972) and Yuuichi Ino 猪野勇一 (1877-1970). Ratō ラトー, also founded in 1924, is another architectural group, in which Hideto Kishida 岸田日出刀 (1899-1966) was the representative member. See also note 24.

*24) Eizo Inagaki 稲垣栄三, *Nihon no Kindai Kenchiku: sono Seiritsu Katei* 日本の近代建築-その成立過程 [Modernist Architecture of Japan: The Process of Establishment] (Tokyo: Chuokouronbijyutsu, 2009), 238-240.

*25) Kazue Yakushiji 薬師寺主計 (1884-1965) was an architect. Although there are not famous buildings from him, he worked as the editor of posthumous porfolio of Keiji Goto.

*26) About the pros of Imperial Hotel, evidences can be found in the following two. Yoshikazu Saito 斎藤佳三, "Teikoku Hoteru no Shikenchiku Youshiki 帝国ホテルの新建築様式 [New Architectural Style of Imperial Hotel], *Kenchikusekai* 建築世界 16, no. 9 (September 1922): 64-65. Setsuro Yamamoto 山本拙郎, "Rekishiteki Shuhou wo Yabut-

ta Teikoku Hoteru" 歴史的手法を破った帝国ホテル [Imperial Hotel Breaking Historical Manners], *Kenchikugaho* 建築画報 13, no. 8 (August 1922): 14-15. The cons can be found in, Kotaro Sakurai 櫻井小太郎, "Teikoku Hoteru no Kenchiku wo Mite" 帝国ホテルの建築を見て [To See the Building of Imperial Hotel], *Kenchikusekai* 16, no. 11 (November 1922): 3-6.

*27) For more plates of the competitions, see the following sources. Parliamentary House: *Kenchikuzasshi* 建築雑誌 33, no. 395 (November 1919), *Kenchikusekai* 建築世界 13, no. 11-12 (November-December, 1919). Osaka City Hall: *Kenchikuzasshi* 26, no. 311 (November 1912), *Kenchikusekai* 6, no. 11 (November 1912). Osaka Central Public Hall: *Kenchikuzasshi* 26, no. 312 (December 1912), *Kenchikusekai* 7, no. 1-3 (January-March, 1913), *Kenchikugaho* 建築画報 3, no. 2-3 (February-March 1913). Mitsubishi Headquarter: *Kenchikuzasshi* 27, no. 316 (April-July, 1913), *Kenchikusekai* 7, no. 6-10 (June-October, 1913), *Kenchikugaho* 3, no. 5-6 (May-June 1913) Port Opening Memorial Hall of Yokohama: *Kenchikuzasshi* 27-28, no. 323-325 (November 1913-January 1914), *Kenchikusekai* 7, no. 12 - 8, no. 5 (December 1913-May 1914). Meijijinggu Treasure Museum: *Kenchikuzasshi* 29, no. 347 (November 1915), *Kenchikusekai* 9, no.12 - 10, no. 5 (December 1915-May 1916), *Kenchikugaho* 5, no. 12 - 6, no.1 (December 1915-January 1916). Shotoku Memorial Hall: *Kenchikuzasshi* 32, no. 382 (October 1918), *Kenchikusekai* 12 no. 10-12 (October-December 1918), *Kenchikugaho* 8, no. 11 (November 1918). Nisshin Seimei Insurance: *Kenchikuzasshi* 30, no. 353 (May 1916), *Kenchikusekai* 10, no. 6-9 (June-September, 1916), *Kenchikugaho* 6, no. 6-8 (June-August 1916).

*28) Teikichi Shimizu 清水釘吉 et al., Toukyou Kangyou Hakurankai Shisatu Houkoku 東京勧業博覧会視察報告 [Report after Visiting Industrial Promoting Expo], *Kenchikuzasshi* 建築雑誌 21, no. 247 (July 1907): 360-382, no. 248 (August): 394-440, and no. 249 (September): 451-494.

*29) Takahisa Furukawa 古川隆久, *Kouki, Banpaku, Orinpikku: Koushitsu Burando to Keizai Hatten* 皇紀・万博・オリンピック: 皇室ブランドと経済発展 [Imperial Year, Expo, Olympic: Brand of Royal Family and Economic Development] (Tokyo: Yoshikawa Koubunkan, 2020), 29-63.

*30) For more plates of Taisho Expo, see *Kenchikuzasshi* 建築雑誌 28, no. 329-332 (May-August 1914). For more plates of Peace Memorial Expo, see *Kenchikusekai* 建築世界 16, no. 3, 4, 6 (March, April, June 1922) and *Kenchikugaho* 建築画報 12, no. 4-5 (April-May 1922).

*31) Seiichiro Chuujo 中條精一郎 (1868-1936) was an architect in Japan. He was one of the founders of Sone-Chuujo Office, a famous private architectural office until World War II. He was also the only participant from Japan in International Congress of Architects, London in 1906.

*32) Hakutei Ishii 石井柏亭, ed., Kokumin Bijutsu Kyoukai Ryakushi 国民美術協会略史 [Brief History of National Art Institute] (Tokyo: Kokumin-bijutsu-kyokai, 1930).

*33) For more plates of Japan-British Exhibition, see *Kenchikuzasshi* 建築雑誌 25, no. 289 (January 1911). About Panama Pacific International Exposition, plates can be found in *Kenchikuzasshi* 建築雑誌 29, no. 342 (June 1915) and *Kenchikusekai* 建築世界 9, no. 6-10 (June-October 1915).

*34) Marc Bourdier マルク・ブルディエ, Doujunkai Apato Genkei: Nihon Kenchikushi ni okeru Yakuwari 同潤会アパート原景: 日本建築史における役割 [Landscape of Dojunkai Apartments: The Role in Architectural History of Japan] (Tokyo: Sumai-no-Toshokan Shuppankyoku, 1992).

*35) Kikuji Ishimoto 石本喜久治 (1894-1963) was one of the founders of Bunriha Kenchikukai. He was also one of the pioneers of modernist architecture in Japan. He is famous for his work of the Headquarter of Asahi Shimbun (1927).

*36) About Bunzo Yamaguchi, see also note 23.

*37) Tetsuro Yoshida 吉田鉄郎 (1894-1956) was an architect originally from Teishinsho, who made great contribution to modernist architecture in Japan. He is famous for the design of Tokyo Central Post Office. He also guided the visit of Bruno Taut.

*38) Arata Endo 遠藤新 (1889-1951) was an important architect in Japan. Known as the apprentice of Frank L. Wright, he accomplished abundant works of architecture and made huge contribution to the society of architects in Japan. The most famous work of him is Koushien Hotel, a work utilizing the manners in Imperial Hotel by Wright.

*39) The photos taken by Ishimoto in Europe were collected in Kikuji Ishimoto 石本喜久治, *Kenchikufu* 建築譜 [Sheet of Architecture] (Osaka: Bunriha Kenchiku Kyoukai, 1924). In this album, not only the works of Expressionist architects then but also the works of Gropius and Wright are collected. An early project of Ishimoto can be found in Okada,

Tsunoo, Yoshioka 岡田、角尾、吉岡, "Hiraga Satoshi Shi no Shintei" 平賀敏氏の新邸 [New House of Satoshi Hiraga] *Shinkenchiku* 新建築 2, no. 8 (August 1926): 2-11, showing his pioneering spirit.

*40) Sakae Oomi近江栄, "Modanisuto no Shisou to Hyougen" モダニストの思想と表現 [Modernist Thoughts and Expressions], in *Nihon no Kenchiku: Meiji, Taisho, Showa 10* 日本の建築: 明治・大正・昭和 10 [Architecture of Japan: Meiji, Taisho, Showa, vol. 10], ed. Teijiro Muramatsu 村松貞次郎 (Tokyo: Sanshodo, 1981), 136-167.

*41) About Arata Endo, the projects can be found in Arata Endo 遠藤新, *Kenchikuka Endo Arata Sakuhinshuu* 建築家遠藤新作品集 [Portfolio of Architect Arata Endo] (Tokyo: Endo Arata Seitan Hyakunen Kinen Jigyou Iinkai, 1991). Some temporal barrack buildings designed by Endo can be found in Kenchiku Shashin Ruiju Kankoukai 建築写真類聚刊行会, *Kenchiku Shashin Ruiju Daiyonki Daijuuyon* 建築写真類聚 第四期第十四 [Collection of Architectural Photographs by Building Type, vol. 4, no. 14] (Tokyo: Kouyousha, 1924) and ibid., 4:19.

*42) The History of Science Society of Japan 日本科学史学会, ed., *Nihon Kagaku Gijutsu shi Taikei Daijuunanakan* 日本科学技術史大系 第17巻 [Encyclopedia of the History of Science and Technology in Japan vol. 17] (Tokyo: Daiichi-hoki, 1964), 341-345.

*43) Inagaki, *Nihon no Kindai Kenchiku*, 120.

*44) Teijiro Muramatsu 村松貞次郎, "Nihon Kenchikugaku shi" 日本建築学史 [Architectural History of Japan], in *Kenchikugaku Taikei* 建築学大系 37 [Encyclopedia of Architecture vol. 37], ed. Kenchikugaku Taikei Henshuu Iin 建築学大系編集委員 (Tokyo: Shokokusha, 1962), 154-156.

*45) Seiichiro Chuujo 中條精一郎, "Dainanakai Bankoku Kenchiku Taikai Gaikyou" 第七回万国建築大会概況 (3-5) [General Situation of the 7th International Congress of Architects], *Kenchikuzasshi* 建築雑誌 22, no. 261 (September 1908): 369-371, no. 262 (October 1908): 398-403, and no. 263 (November 1908): 446-450.

*46) Toshikata Sano 佐野利器, "Daikyuukai Bankoku Kenchikuka Taikai Sanretsu Houkoku" 第九回万国建築家大会参列報告 [Attendance Report of 9th International Congress of Architects], *Kenchikuzasshi* 建築雑誌 26, no. 303 (March 1912): 123-125.

*47) Mamoru Nakamura 中村鎮, ed., *Tekkin Konkurīto* 鉄筋コンクリート [Reinforced Concrete], special issue, *Kenchiku-to-Soushoku* 建築ト装飾 3, no. 7 (December 1913). The information of editor is not recorded in the volume itself. The affiliation of Nakamura can be confirmed in Tetsuji Miyawaki 宮脇哲司, "Kenchikushi Kenchiku-to-Soushoku, editor Tsukamoto Juugoro ni Kansuru Kenkyuu" 建築誌『建築ト装飾』、編集人・塚本重五郎に関する研究 [Study on the Editor of the Architectural Magazine Kenchiku-to-Soushoku, Juugoro Tsukamoto] in *Summaries of Technical Papers of Annual Meeting, Architectural Institute of Japan* 日本建築学会大会学術講演梗概集 (September 2012): 149-150.

*48) As unpublished manuscripts collected by the University of Tokyo. For more details, see chapter 2.

*49) *Shourai no Kenchiku* 将来の建築 [Architecture in the Future], special issue, *Kenchiku* 建築 200 (1917). According to some dates of signature, the volume is estimated to be published in January, which, however, is not reflected in notes.

*50) Teijiro Muramatsu 村松貞次郎, *Nihon Kindai Kenchiku Gijutsushi* 日本近代建築技術史 [History of Architectural Technology in Modern Japan] (Tokyo: Shokokusha, 1976), 144-148.

*51) Editing office of the history of Mitsubishi Estate 三菱地所株式会社社史編纂室, ed., *Marunouchi Hyakunen no ayumi: Mitsubishi Jisho Shashi* 丸の内百年のあゆみ: 三菱地所社史 [The Footprint of Marunouchi in One Hundred Years: History of Mitsubishi Estate] (Tokyo: Mitsubishi Estate, 1993).

*52) Joseph M, Siry, "The Architecture of Earthquake Resistance: Julius Kahn's Truscon Company and Frank Lloyd Wright's Imperial Hotel," Journal of the Society of Architectural Historians 67, no. 1, (March 2008): 84-88.

*53) Kitaro Matsui 松井貴太郎 (1883-1962) was an architect worked in Yokogawa Koumusho. He was also one of the main editors of *Kenchiku* after the transfer of the magazine to Yokogawa Koumusho. He is also the designer of Nihon Industrial Club 日本工業倶楽部.

*54) Kitaro Matsui 松井貴太郎, "Kenchiku Jigen" 建築時言 [Latest Commentary on Architecture], *Kenchiku* 建築 186 (September 1915): 36-38, 188 (November 1915): 23-28, and 189 (December 1915): 17-22.

*55) Bunriha Kenchikukai 分離派建築会, *Bunriha Kenchikukai Sengen to Sakuhin* 分離派建築会宣言と作品 [Manifestos and Works of Bunriha] (Tokyo: Iwanami Shoten, 1920).

*56) Muramatsu. *Nihon Kindai Kenchiku Gijutsushi*.

*57) The History of Science Society of Japan, ed., *Nihon Kagaku Gijutsu shi Taikei*.

*58) Architectural Institute of Japan 日本建築学会, ed., Kindai Nihon Kenchikugaku Hattatsushi 近代日本建築学発達史 [History of Development of Architecture in Modern Japan] (Tokyo: Maruzen, 1972).

*59) Eizo Inagaki, *Nihon no Kindai Kenchiku*.

*60) Shinjiro Kirishiki 桐敷真次郎, *Meiji no Kenchiku: Kenchiku Hyakunen no ayumi* 明治の建築: 建築百年のあゆみ [Architecture of Meiji: The Footprint of Architecture in One Hundred Years] (Tokyo: Nikkei, 1966).

*61) Yuichiro Kojiro 神代雄一郎, "Nihon ni okeru Kindai Kenchiku Shichou no Keisei" 日本における近代建築思潮の形成 [The Formation of the Trends of Modern Architectural Thoughts in Japan], in *Kenchikugaku Taikei* 建築学大系 6 [Encyclopedia of Architecture vol. 6], ed. Kenchikugaku Taikei Henshuu Iin 建築学大系編集委員 (Tokyo: Shokokusha, 1962), 283.

*62) Koichi Tamura 田村浩一, Tokio Kondo 近藤時夫. Kokurīto no Rekishi コンクリートの歴史 [History of Concrete] (Tokyo: Sankaido, 1984).

*63) Mitsuo Toyoshima 豊島光夫, *E de miru Tekkin Senka: Tadashii Haikin no susume* 絵でみる鉄筋専科: 正しい配筋のすすめ [Special Course of Reinforced Concrete Seen from Graphics: Correct Advice on Arrangement of Steel Bar] (Tokyo: Kenchiku-Shizai-Kenkyuukai, 1972).

*64) Takeyoshi Hori 堀勇良, *Nihon ni okeru Tekkinkonkurīto Kenchiku Seiritsu Katei no Kouzougijutushi teki Kenkyu* 日本における鉄筋コンクリート建築成立過程の構造技術史的研究 [A Historical Study of Construction Technology on the Process of Establishment of Reinforced Concrete Buildings in Japan] (PhD diss., University of Tokyo, 1981).

*65) Iwao Yamane 山根巌. *Wagakuni he no Tekkinkonkurīto Hashi Dounyuu no Gijutsushi teki Kenkyuu* 我国への鉄筋コンクリート橋導入の技術史的研究 [A Study of Technological History on the Introduction of Reinforced Concrete Bridges in Our Country] (PhD diss., Kyoto University, 2002).

*66) Fujioka Hiroyasu 藤岡洋保, "Nihon no Kenchikuka ga Tekkinkonkurīto ni Mita Kanousei: Katachi to Gijutsu no Intārakushon 日本の建築家が鉄筋コンクリート造に見た可能性ー形と技術のインターラクション [Possibilities seen from Reinforced Concrete by Architects of Japan: Interaction Between Form and Technology]", in *History of Cities and Architecture 9: Materials and Industries in the Modern Age* シリーズ 都市・建築・歴史 9: 材料・生産の近代, ed. Hiroyuki Suzuki 鈴木博之 et al. (Tokyo: University of Tokyo Press, 2005), 17-68.

*67) Kouichi Kato 加藤耕一, "Bunriha Toujou no Haikei toshiteno Toukyou Teikoku Daigaku 分離派登場の背景としての東京帝国大学 [Imperial University of Tokyo as the Background of the Appearance of Bunriha],"in *Bunriha Kenchikukai: Nihon no Modanizumu Kenchiku Tanjou* 分離派建築会: 日本のモダニズム建築誕生[The Birth of Modernism of Japan], ed. Takahiro Taji 田路貴浩 (Kyoto: Kyoto University Press, 2020), 164-183.

*68) Takeyoshi Hori 堀勇良, "Nihon ni okeru Shoki Tekkinkonkurīto Kenchiku no Shomondai" 日本における初期鉄筋コンクリート建築の諸問題 [Problems of Reinforced Concrete Buildings of Early Stage in Japan], Ibid., 148-163.

*69) Gakuji Yamamoto 山本学治, *Zoukei to Kouzou to* 造型と構造と [Form and Structure] (Kajima Institute Publishing, 2007).

*70) Takeyoshi Hori 堀勇良, "Doujidai toshiteno ‘Kindai'" 同時代としての「近代」 [Modern Era as Coevality], in *Nihon no Kenchiku: Meiji, Taisho, Showa 10* 日本の建築: 明治・大正・昭和 10 [Architecture of Japan: Meiji, Taisho, Showa, vol. 10], ed. Teijiro Muramatsu 村松貞次郎 (Tokyo: Sanshodo, 1981), 94-135.

*71) Sakae Oomi, *Modanisuto no Shisou to Hyougen*.

*72) Sigfried Giedion, *Building in France, Building in Iron, Building in Ferro-concrete*, trans. J. Duncan Berry (Santa Monica: The Getty Center for the History of Art and the Humanities, 1995).

*73) Kenneth Frampton, *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture* (Cambridge, Massachusetts: The MIT Press, 1995).

*74) Adrian Forty, *Concrete and Culture: A Material History* (London: Reaktion Books, 2012).

*75) Hoshi Kuroda 黒田鵬心, ed., *Tokyou Hyaku Kenchiku* 東京百建築 [Tokyo 100 Buildings] (Tokyo: *Kenchikugaho*-sha, 1915).

*76) Hoshin Kuroda 黒田鵬心 (1885-1967) was a famous and active architectural critic. He learnt literature in Imperial University of Tokyo and consecutively worked for Yomiuri Shimbun and the magazine of *Kenchikugaho*.

*77) Takasue Suwa 諏訪方季 (?-?) became the owner of Kenchikugaho from 1912. He also ran an office dealing with the business of telephone. For more details, see also note 4, 95-96.

*78) Japan Society of Civil Engineers 土木学会, ed., *Taisho Juuninen Kanto Daijishin Shingai Chousa Hokoku Daisankan*

大正十二年関東大地震震害調査報告 第三巻 [Report of the Disaster of Great Kanto Earthquake in Taisho 12 vol. 3] (Tokyo: Fukkoukyoku, 1928).

*79) Shigai Chousa Iinkai 震害調査委員会, ed., *Taisho Daishinsai Shingai oyobi Kagai no Kenkyu* 大正大震災震害及火害之研究 [Research on the Disasters of Tremor and Fire of (Taisho) Great Kanto Earthquake] (Tokyo: Koyosha, 1925).

*80) See also note 4.

*81) Tomoya Kikuoka 菊岡倶也 and Hatsuo Fujii 藤井肇男, ed., *Nihon Kindai Kenchiku, Doboku, Toshi, Juutaku Zasshi Mokuji Souran* 日本近代建築・土木・都市・住宅雑誌目次総覧 [Catalog of Tables of Contents of Magazines in Architecture, Civil Engineering, Urban Planning and Domestic House, in Modern Japan] (Tokyo: Kashiwashobo, 1990).

*82) See also note 22.

*83) Teijiro Muramatsu 村松貞次郎, *Nihon Kenchikuka Sanmyaku* 日本建築家山脈 [Mountain Ranges of Japanese Architects] (Tokyo: Kajima Institute Publishing, 1965).

*84) Takeyoshi Hori 堀勇良, *Nihon Kindai Kenchiku Jinmeisouran* 日本近代建築人名総覧 [Dictionary of Modern Japanese Architects] (Tokyo: Chuuokoronshinsha, 2022).

*85) Mamoru Nakamura 中村鎮, ed., *Goto Keiji shi Ikou* 後藤慶二氏遺稿[Posthumous Anthology of Keiji Goto] (Tokyo: Shukei Yakushiji, 1925).

*86) Masao Takamatsu 高松政雄 (1885-1934) was an architect affiliated to Sone-Chuujo Office. Besides his works in Marunouchi, he also wrote numbers of articles concerning architectural theories.

*87) *Takamatsu Masao Kun no Seisaku to Chosaku* 高松政雄君の制作と著作 [Productions and Publications of Masao Takamatsu], ed. Takujiro Nakamura 中村琢治郎 (Tokyo: Ko Takamatsu Masao kun Kinen Jigyou Kai, 1935).

*88) Sano Hakushi Tsuisouroku Henshu Iinkai 佐野博士追想録編集委員会. *Sano Hakushi Tsuisouroku* 佐野博士追想録 [Memoirs of Doctor Sano] (Tokyo: Sano Hakushi Tsuisouroku Henshu Iinkai, 1957).

*89) Seiichi Kobayashi 小林政一, *Meijijingu Gaien Kouji Dai-ni-shuu* 明治神宮外苑工事 第二輯 [Construction of Meijijingu Gaien, vol. 2] (Tokyo: Seiichi Kobayashi, 1929).

*90) Teijiro Muramatsu 村松貞次郎, ed., *Nihon no Kenchiku: Meiji, Taisho, Showa* 日本の建築: 明治・大正・昭和 10 [Architecture of Japan: Meiji, Taisho, Showa] (Tokyo: Sanshodo, 1981).

*91) Hiroyuki Suzuki 鈴木博之, Tooru Hatsuda 初田亨, eds., *Zumen de Miru Toshi Kenchiku no Taisho* 図面で見る都市建築の大正 [City and Architecture of Taisho Period Seen from Drawings] (Tokyo: Kashiwa Shobo, 1992).

*92) Kindai Kenchiku Gafu Kankoukai 近代建築画譜刊行会, ed., *Kindai Kanchiku Gafu* 近代建築画譜 [Graphic Index of Architecture in Modern Era] (Osaka: Kindai Kenchiku Gafu Kankoukai, 1936).

*93) *Kenchiku Shashin Ruishuu* 建築写真類聚 [Collections of Architectural Photos by Building Type] is long series of architectural albums published by Kouyousha 洪洋社 straddling from Taisho to Showa Period. The digital collections can be found in National Diet Library of Japan.

*94) Zoushutaro Takasugi 高杉造酒太郎, ed., *Meiji Taisho Kenchiku Shashin Shuuran* 明治大正建築写真聚覧 [Photo Collection of Buildings in Meiji-Taisho Period] (Tokyo: Architectural Institute of Japan, 1936).

*95) "Kaiko Zadankai no Kaisai" 回顧座談会の開催 [Holding the Round Table Meeting for Retrospection], in *Kenchikugakkai Souritsu Gojuu Shuunen Kinengo* 建築学会創立50周年記念号 [Memorial Volume for 50-year Anniversary of Architectural Institute of Japan], special issue, *Kenchikuzasshi* 建築雑誌 50, no. 617 (October 1936): 97-172.

*96) Mitsubishi Jisho Sekkei Kozumen Kenkyuukai 三菱地所設計古図面研究会, Shinkenchiku-sha 新建築社, eds., *Marunouchi Zushuu* 丸の内図集 [Drawings of Marunouchi] (Tokyo: Shinkenchiku-sha, 2020).

*97) Hideko Matsunami 松波秀子, *Shimizu-gumi Saishiki Sekkei Zushuu* 清水組彩色設計図集 [Chromatic Drawings of Shimizu Group] (Tokyo: Yumani Shobo, 2020).

*98) See also note 64.

*99) See also note 51.

*100) Shimizu Kensetsu Kabushikigaisha 清水建設株式会社, ed., *Shimizu Kensetsu Hyakuhachijuunen* 清水建設百八十年 [180 Years of Shimizu Corporation] (Tokyo: Shimizu Corporation, 1984).

*101) Shashi Hakkan Junbi Iinkai 社史発刊準備委員会, ed., T*aisei Kensetsu Shashi* 大成建築社史 [History of Taisei Corporation] (Tokyo: Taisei Corporation, 1963).

*102) Takanaka Koumuten Kyuujuunenshi Hensan Project Team 竹中工務店九十年史編纂プロジェクトチーム, ed., *Takenaka Koumuten Kyuujuunenshi 1899-1989* 竹中工務店九十年史 1899-1989 [90-year History of Takenaka Corporation 1899-1989] (Osaka: Takenaka Corporation, 1989).

*103) Seiichi Furuyama 古山精一, *Meiji Taisho ki no Teishin Kenchiku no Kenkyu* 明治大正期の逓信建築の研究 [Study on the Buildings of the Ministry of Communications in Meiji and Taisho Periods] (self-published, Kyoto, 2013).

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CHAPTER 1
TECHNICAL THEORIES OF REINFORCED CONCRETE

1.1 Introduction

1.1.1 The importance of technical theories as the foundation of further studies

The technology of reinforced concrete, different from the conventional masonry buildings, was not a field of construction without the guidance of technical theories. Although there already exist numbers of studies revealing the early facts of reinforced concrete in Japan, in many occasions, the facts are merely narrated as what they are without any further explanation of the theoretical aspect provided, which in reverse limits the understanding on the historical facts. In this sense, this chapter aims to elucidate the level of technical theories of reinforced concrete during the era from 1906 to 1923. Both the knowledge and the facts of popularization are meticulously examined, by which the inference on the form and specific features of reinforced concrete buildings is built under a clear technical background. The work of this chapter can be regarded as the foundation of further studies on other facts of reinforced concrete in the coming chapters.

1.1.2 Knowledge from previous researches

The technological history of reinforced concrete is indeed not a new field. In Japan, several studies have revealed manifold facts about the early technological development of reinforced concrete.

In the authoritative book series, principally thanks to the contribution of Teijiro Muramatsu, it has been revealed that relevant industries of concrete and steel in Japan developed at the end of Meiji, amidst which Japan accumulated the knowledge and technologies of reinforced concrete.[*1)] Meanwhile, according to Eizo Inagaki, certain offices and contractors started their business with considerable projects realized after Russo-Japanese War.[*2)] In the dissertation of Takeyoshi Hori, before reinforced concrete, the method of Teirentetsu (碇聯鉄構法, literally, steel anchored (masonry)) and fire-proof floor filled with concrete were already developed in masonry buildings, which set the foundation for reinforced concrete in the coming years. Through the process of adoption to entire buildings, in the department of architecture, the main paths of the reception were Hennebique System and Kahn System based on Hori's explanation, while in civil engineering, the similarity with the construction method of traditional Japanese wooden structure is confirmed in certain cases near the end of Meiji Period.[*3)]

Specifically, about the technical theories, Tamura and Kondo have tried to reillustrate the theories by referring to the textbooks in the past.[*4)] Also, Toyoshima uses photographs and drawings to vividly show the development in the past.[*5)] In several papers, Taira Masuda endeavors to review the formulae of neutral axis and the symbol systems, which is based on the textbooks and codes in the past,[*6)] and Uemoto Kohei also tries to examine the theories of Tadahiko Hibi, a representative scholar of reinforced concrete, through field research on real projects.[*7)]

Nevertheless, based on the specific stance of this study, there are some deficiencies need to be enhanced. In many authoritative books, the technological aspect of reinforced concrete is mainly narrated with chronological method while the knowledge of reinforced concrete itself not comprehensible enough. In some specific studies like the works of Masuda and Uemoto, the inspections are simply not abundant enough. Also, many narratives mainly focus on the representative figures without an overall

grasp of technical knowledge in the era. More importantly, the one-sided selection of materials adopted by the scholars, either textbooks or magazines, is no doubt the potential danger for the correct understanding of reinforced concrete in the specific era from 1906 to 1923.

1.1.3 Materials and methodology

To enhance the one-sided selection of literatures in previous researches, this study conducts inquiries into both 16 textbooks and 4 major magazines around the 1910s, together with one report of Great Kanto Earthquake. The 16 textbooks are all available in the digital collections of National Diet Library of Japan, also with consideration of several previous studies. The 4 magazines during the decade, i.e., *Kenchikuzasshi*, *Kenchikusekai*, *Kenchiku*, and *Kenchikugaho* are the ones which constantly published the educational article about reinforced concrete. Finally, the *Earthquake Report* in 1927, is adjoined as the supplementary material for reviewing the findings of the two previous aspects and consolidating the inference on structure forms.

Basically, the route of this chapter is set in four steps. At first, the structural forms of reinforced concrete are roughly grasped for providing a background and framework for the subsequent inspections. Subsequently, with the knowledge of today's reinforced concrete, the technical theories are grasped including the calculations featured with the strengths of materials, the representative algorithms, and the basic mechanical model, the construction methods concerning the handling of steel bars and the regulations in codes, and experiment covering both the tests in Japan and from overseas. Thirdly, the educational articles about reinforced concrete from the 4 magazines are collected and tested for figuring out the general features and trends of the popularization of reinforced concrete as well as specific contents for completing the cognition on the theories obtained from the second step. Finally, based on the inspections in both aspects, also with the consideration of Earthquake Report, the conclusion upon the development of reinforced concrete as well as the form of the structure is made to give a comprehensive understanding of the technical level of reinforced concrete throughout the 1910s.

1.2 Overview of the structure of knowledge in 16 textbooks

Before the inspection into the details, a general review is conducted over the 16 textbooks,[*8-*23] of which the result is briefly summarized in table 1-1. From the table, about the basics like the calculations of neutral axis and shear force of beam, the theories had been introduced in 1906 from Shuji Inoue 井上秀二. After 1916, it can be observed that, figures like Mikishi Abe's 阿部美樹志, Tadahiko Hibi, Keijiro Ogawa 小川敬次郎, and Tomihisa Iwasaki 岩崎富久 consecutively published their books with more complete contents, marking the progress of the knowledge of reinforced concrete, especially about the calculations of continuous beam and frame, as well as the contents about experiment. Among the scholars, apparently, Mikishi Abe's work is the most complete one regarding the coverage of different knowledge. Besides, by comparing the two versions of *Civil Engineering*, volume 2 (『土木工学中巻』) in 1916 and 1920, and *Architectural Engineering* (『建築構造学』) from Tachu Naito in 1918 and 1932, the two versions of both books are almost the same, except some specific contents as annex or additional chapters,

Table 1-1 Checklist of specific knowledge of reinforced concrete in main textbooks from 1906 to 1923

author. publication	year of 1st edition	bar system	mixture and strength of concrete	formula of rectangular beam (neutral axis)	formula of T-beam (neutral axis)	simplified algorithm of beam / graph	algorithm of shear force	algorithm of ultimate strength	algorithm of floor slab	algorithm of column (vertical bars / Eccentric load)	algorithm of column (spiral hoop)	algorithm of continuous beam	algorithm of frame	construction method	experiment of RC
井上秀二 . 鉄筋コンクリート	1906	○	○	○	○		○			○					
後藤佐彦 . 鉄筋コンクリート工法	1907	○	○	○	○		○			○				○	
三橋四郎 . 大建築学続編	1911	○	○	○	○		○							*	
友松仙蔵 . 鉄筋混凝土施工法	1912 (7)		○	○	○	○								○	
原田碧 . 実用鉄筋コンクリート構法	1912 (8)	○	○	○	○	○	○			○○	○			○	
井上福一郎 . 鉄筋コンクリート設計実例	1912 (9)		○	○	○		○								*
阿部美樹志 . 鉄筋混凝土工学	1916 (4)	○	○	○	○	○	○		○	○	○	○	○	○	○
瓜生康一 . 実地応用鉄筋コンクリート工学	1916 (7)		○	○	○		○		○	○	○			○	○
川口虎雄ほか . 土木工学中巻	1916 (11)		○	○	○		○			○	○	○		○	
日比忠彦 . 鉄筋混凝土の理論及其応用 (上巻、中巻)	1916-1918	○	○	○	○	○	○			○○	○	○	○	○	○
小川敬次郎 . 鉄筋混凝土之設計及施工法	1917 (4)	○	○	○	○	○	○		○	○○	○	○		○	
岩崎富久 . 理論応用鉄筋混凝土設計法	1917 (12)	○	○	○	○	○	○	○		○○	○		○	○	
内藤多仲 . 建築構造学	1918			○	○		○					○			
石橋絢彦 . セメント類使ヒ方	1919		○	○										○	○
土居松市 . 鉄筋コンクリート家屋構造	1922		○	○	○		○			○○	○				○

*In Shiro Mitsuhashi’ s book (row 3), in the part of construction method, only the method of piling is introduced; In Fukuichiro Inoue’ s book (row 6), the experiment is about reinforced concrete pipe only; Calculation of column also with eccentric load marked with “○○”.

indicating that the knowledge of reinforced concrete since the second half of the 1910s had reached a relatively high level which set the foundation for Showa Period.

1.3 Theories of reinforced concrete seen from textbooks

1.3.1 General perception of the structural forms of reinforced concrete

a. Choheki System (“Choheki-shiki”) and flat slab

Although in Inagaki[*24)] and Hori’s[*25)] narratives, the fact that reinforced concrete was initially utilized in single components of building, especially fire-proof floor (防火床) in the ending years of Meiji Period has been discussed, about the structural form afterward, there is not too much definite information. Actually, from the chapters of the textbooks, it can be discovered that from the very beginning, almost self-apparent, reinforced concrete had been conceived as structure of beam and column, i.e., framed structure, while another minor force of flat slab system, which is constructed with floor slabs and columns only, is also introduced in several works like Abe’s and Hibi’s books. From Earthquake Report, correspondingly, it can be confirmed that almost all of the reinforced concrete buildings were construct-

ed as Choheki-shiki (transliteration, 帳壁式, literally meaning curtain wall system).[*26)] According to the original context, Choheki System, actually, is interpreted as the system of frame filled with walls in between. In the report, over 70% the walls (of public buildings) were also built with reinforced concrete, i.e., these buildings were totally constructed with reinforced concrete. (figure 1-1) Also, the form of flat slab or called as mushroom floor sometimes can be sporadically found in several projects in Earthquake Report, which are, however, not specifically discussed.[*27)] Hence, the fact should be that around the end of the 1910s, Choheki System, namely frame structure, rather than the literal translation of curtain wall, had definitely become the general form of reinforced concrete buildings, with flat slab as another minor force.

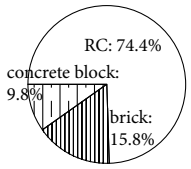


Fig. 1-1 Percentages of the materials (RC: 236, brick: 50, concrete block: 31) of wall in RC buildings of the first category (“第一種”, office, bank, school, shop and factory with considerable numbers of walls.)
* Pie chart rebuilt. Original chart presents wrong figures as 74.5%, 18.5%, 11%, *Earthquake Report*, p. 571.

b. Different systems seen from bar arrangements

The arrangement of steel bar in bending components is no doubt the most indicative aspect for distinguishing different systems of reinforced concrete as well as the trajectory of technological development. Of this topic, the most substantial discussion comes from the dissertation of Takeyoshi Hori, who reveals that Hennebique System and Kahn System were the two initial paths of the reception of reinforced concrete in Japan. However, the historical fact can be more than these two.

About Hennebique System, relevant introduction can be found in the very early work of Shuji Inoue, i.e., *Reinforced Concrete* 鉄筋コンクリート (1906).[*28)] According to Hori’s dissertation, within the 1910s, Hennebique System had lost its patent and been mastered by most Japanese constructors, i.e., popularized. Besides, Mitsuo Toyoshima’s research is another substantial work about Hennebique System, which is obtained from the dismantling of buildings in Taisho Period, showing some key features like stirrup and Y shape end of steel bar in the system,[*29)] as well as the diminishment of the system in the second half of the 1910s. About Kahn System, it can already be found in Shiro Mitsuhashi’s 三橋四郎 book, *Grand Architecture*, additional edition 大建築学続編 (1911),[*30)] of which the graph is the same with those advertisements in *Kenchikugaho* in the late 1910s. Hori reveals that the system was widely utilized in factories and schools around the middle of the 1910s but diminished after Great Kanto Earthquake. Also, Josephe S. Siry reveals the fact in his paper that by the time of 1923, there were over 160 Kahn System buildings in Tokyo and Yokohama by Truscon Steel Company of Japan, which was established after World War I, and over 500 such buildings were built in Japan.[*31)] Most scholars, including Hori, think that the abandonment of Kahn System owed to that Japanese architects and engineers recognized its defects of anti-seismic capability, which, conversely, is regarded as the result of the underdeveloped technology in Japan instead by Mitsuo Toyoshima.[*32)]

Despite the meticulous narratives about Hennebique System and Kahn System by previous scholars, Abe in his book gives important information about different arrangements of steel bar of the 1910s (figure 1-2).[*33)] From the narrative of Abe, the types of (イ), (ロ), and (ハ) were the most widely used arrangements. Meanwhile, about Hennebique System and Kahn System, Abe uses the word still (“尚”) to

depict the situation of the utilization of these two types. About type (ロ), actually, early in Shuji Inoue's book, the system of Coularon, which is quite similar with type (ロ) was already introduced.*34) Also, Tadahiko Hibi explained that Coularon System is similar with Hennebique System in *Kenchikuzasshi*, August 1906.*35) About type (イ) and type (ハ), the algorithms of these types of stirrup can be found in the books of Midori Harata 原田碧, Keijiro Ogawa and Matsuichi Doi 土居松市. In Earthquake Report, the instance of drawing no. 134, the combination of type (イ) and Kahn System can even be discovered.*36) Furthermore, if we compare the five types picked from Abe's introduction, it is clear that within the three so-called widely used types, (イ) and (ハ) are more similar with the modern arrangements of steel bar, which usually use the stirrup to hook both the top and bottom bars in a round for amplifying the compressive strength and unity of concrete, while the stirrups in Hennebique System and the bent up bars in Kahn System only resist shear force. In this sense, it can be confirmed that throughout the 1910s the arrangement of steel bar definitely evolved from the early types to more scientific methods.

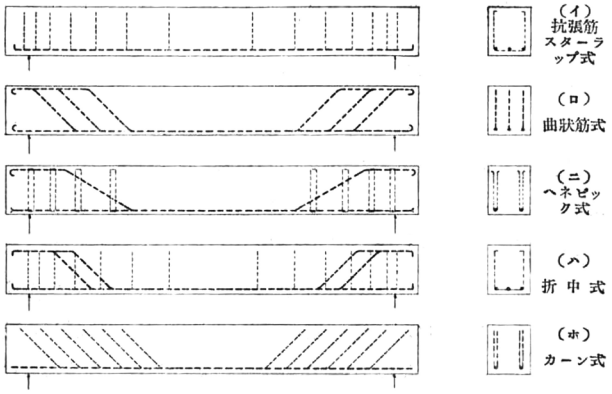


Fig. 1-2 Different systems of the arrangement of steel bars presented by Mikishi Abe (selected).
*From top to bottom as anti-tensile stirrup type, bent up bar type (translation), Hennebique System, eclectic type (translation), and Kahn System.

1.3.2 Calculation of reinforced concrete, including strength of materials and structural components

As the fundamental part of the technology of reinforced concrete, the calculation can be indeed sophisticated. Hence, to figure out the exact level of the development of calculation around the 1910s, here, several representative aspects are examined, including the strengths of materials, the normal algorithms of neutral axis, shear force and ultimate strength of beam, the simplified calculations of beam, and in the end, the calculations of column.

a. Strengths of concrete and steel bar, as the basis of calculation

As to concrete, in the book of Tamura and Kondo, the article of Takeshi Hiroi 広井勇, *Reinforced*

Table 1-2 Strengths of concrete in different publications from 1906 to 1923, selected

publication	author	publication year	mixture of concrete	curing time	data source	strength (kg/cm^2)	note
鉄筋混凝土橋梁	広井勇	1903	1:2:4	3 m	domestic	120 (average)	lower than 150 of Western countries
鉄筋コンクリート	井上秀二	1906	1:3 (mortar)	28d	domestic	132 (average)	1:3 mortar of Japan compared with 1:2:4 concrete overseas
鉄筋コンクリート工法	後藤佐彦	1907	1:2:4	1m & 2m	US & experiment in Tokyo University	171 & 188	Of domestic product, only the data of 2 months is given, higher than the value from the US of the same curing time
大建築学続編	三橋四郎	1911	1:2:4	1m	ハマーシ氏	157	design value (collapse strength)
鉄筋混凝土工学	阿部美樹志	1916	1:2:4	28d	Abe, Illinois University	148	normal outdoor curing (A type among those given by Abe)
鉄筋混凝土の理論及其応用 (上巻、中巻)	日比忠彦	1916-1917	1:2:4	28d	Onoda Cement Company (1913-1914)	185 / 151	185 is the data of concrete with filtered pebbles while 151 is the value of normal mixture.
鉄筋コンクリート家屋構造	土居松市	1921	1:2:4	30d	experiment by Doi (1917)	170 / 136	Volume of water: 0.85. 170 has bigger fragments. 136 is closer to the type used in real construction.

Concrete Bridge 鉄筋コンクリート橋梁 (1903) is presented, showing that the strength of concrete in Western countries (1:2:4, curing time 3 months) was around 150 kg/cm^2, which is approximately equal with the characteristic strength of C16/20 concrete today, way weaker than the widely utilized C30/45 or above,[*37)] while the strength of concrete (1:2:4) then in Japan was even lower at about 120 kg/cm^2, indicating the low strength of product in Japan at the beginning of the 20th century. Similarly, the narrative of Tadahiko Hibi, which is mentioned by Kohei Uemoto, shows the strength of concrete (1:2:4, 28 days) as 15N/mm^2.[*38)] Besides, Taira Masuda summarized the design values for the allowable stress of concrete from different building codes and books, which are also way weaker than the low rank products today, considering the range of 0.4*mean value of strength.[*39)] However, it is still necessary to review the publications in the past to see if there was any change of the quality of concrete in Japan throughout the 1910s.

To figure out the fact, the following publications are reviewed showing specific values in table 1-2, within which the values of strength are transformed to the unit of kg/cm2 with accuracy up to integer level, regarding some values originally recorded in pound per square inch (psi). The mixture of 1:2:4, which is the most widely used type around the 1910s, as is mentioned in Earthquake Report, and the curing time of one month, the most ordinary standard of today's design, are set as the criteria, albeit some longer periods in the table due to the lack of data. Here, not all the publications in table 1-1 are inspected since the figures in table 1-2 are enough to present the exact process.

From the table, comparing the strengths of concrete in different publications, e.g., the experiment held in Tokyo University revealed by Sukehiko Goto 後藤佐彦 (row 3) showing that the strength of concrete sample had surpassed the figure (171) from the US, and the product of Onoda Cement Company (row 7) reaching a relatively high quality of 185 as well. Hence, it can be seen that although at the beginning of the 20th century, Japan fell behind Western countries, it quickly caught up with their level, i.e., the strength of approximately 150kg/cm^2 around the beginning of the 1910s, which last for almost a decade.

About the strength of steel bar, even though the elastic modulus (about 2×10^5 MPa) then is almost the same with the value of today's products, however, the yield strength is only equal with the low-level products of today. In the publications throughout the 1910s, the advised design value of the tensile stress of steel bar is about 100 MPa (about 15,000 psi) from Shuji Inoue 井上秀二 (1906)[*40)] to Doi (1922),[*41)] universally. About the specific values, Keijiro Ogawa gives the most detailed information as the deformation of steel bar is set as about 2.4×10^{-3}m ("0.0008丈") which approximately generates the stress of 168 MPa (24,000psi), and the design value is two thirds of the stress under the deformation, namely 102Mpa (16000psi), less than half of the yield strength, which is about 245 MPa (35,000psi) and close to SR235 bar in Japan. However, in today's design, the design strength is set as two thirds of yield strength for long-term project and exactly yield strength for short-term project.[*42)] Hence, it can be discovered that about the handling with steel bar, the method in Japan around the 1910s was indeed conservative. Additionally, another fact should be mentioned is that numerous articles in the magazines around the 1910s indicated that the steel products utilized in Japan then, generally, still largely relied on import instead of domestic production, which were severely influenced by the outburst of World War I.

b. Standard formulae of neutral axis in beam

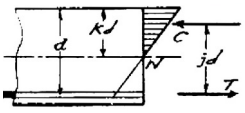


Fig. 1-3 Basic model (linear) for the calculation of neutral axis around the 1910s
*Linear, the same with today's basic model. Original figure from Mikishi Abe's textbook, 74.

As has been revealed by Taira Masuda, in the formulae of neutral axis, the systems of symbol had different versions at the beginning of the introduction of reinforced concrete, and the manifold models of stress within reinforced concrete beam also indicate the variety of the calculation at the very beginning. However, if we take a look at the algorithms from the textbooks, as are shown in table 1-3, it can be discovered that all of those are basically the same method around the 1910s, i.e., linear model (figure 2-2), except the books of Keijiro Ogawa, Mikishi Abe and the textbook from the Institute of Civil Engineering (row 6), which additionally introduced the moment model of parabola. Actually, this linear mode is still used in today's calculation. Hence, it can be affirmed that the formulae, i.e., the standard algorithm of neutral axis had been fixed in the 1910s in Japan.

Table 1-3 Formulas of neutral axis in different textbooks

publication	formula
鉄筋コンクリート 鉄筋コンクリート設計実例	$x = -\frac{m(a'+a)}{b} + \sqrt{\frac{m^2(a'+a)^2}{b^2} + \frac{2m}{b}(a'c + ah')}$
鉄筋コンクリート工法	$h_a = \frac{ma}{b}\{\sqrt{1+\frac{2hb}{ma}} - 1\}$
大建築学続編	$h = \frac{3ar}{4b}\{\sqrt{1+\frac{8bd}{3ar}} - 1\}$
鉄筋混凝土施工法	$X = Q[-1 + \sqrt{\frac{2h}{Q} + 1}]$
実用鉄筋コンクリート構法	$n = \frac{mAr}{b}[\sqrt{1+\frac{2bd}{mAr}} - 1]$
鉄筋混凝土工学 土木工学中巻 鉄筋混凝土之設計及施工法	$k = \sqrt{2pn + (pn)^2} - pn$ / $k = \sqrt{2 \cdot \frac{3pn}{3-q} + (\frac{3pn}{3-q})^2} - \frac{3pn}{3-q}$
実地応用鉄筋コンクリート工学	$x = \frac{nA_s}{b}(-1 + \sqrt{1+\frac{2bd}{nA_s}})$ / $k = \sqrt{2pn + (pn)^2} - pn$
鉄筋混凝土の理論及其応用上巻、中巻	$x = \frac{nA_s}{b}[\sqrt{1+\frac{2b(h-a)}{nA}} - 1]$
理論応用鉄筋混凝土設計法	$u = \sqrt{2mpd^2 + m^2p^2d^2} - mpd$
建築構造学	$n = \sqrt{\frac{e^2a^2}{b^2} + \frac{1eda}{b}} - \frac{ca}{b}$
セメント類使ヒ方	$n_1 = \sqrt{(\frac{mp}{100})^2 + \frac{2mp}{100}} - \frac{mp}{100}$
鉄筋コンクリート家屋構造	$n = n_1 d = d\{-mp + \sqrt{2mp + (mp)^2}\}$

In the formulae, the ratio of elastic modulus ("m" or "n" in most of the formulae, as E_s / E_c), which works as the main parameter, should be discussed more. According to Masuda, the ratio was initially set as 10 or 12, but finally standardized at 15 in the second half of the 1910s, which was used until Japan's code in 1999. Particularly, in the translation of Reinforced Concrete Regulation of New York from *Engineering News* (*Kenchikuzasshi*, 1912.3-4), the ratio was also 15.[*43)] About the codes of reinforced concrete in Japan, Masuda shows the allowable values of several kinds of stresses, explaining that the choices of the design values in Japan then was audacious. Nevertheless, it should be pointed out that according to the strength of concrete and steel bar, the actual ratio of elastic modulus can be less than 10 even for low strength concrete (e.g., C16/20: 29-30 GPa),[*44)] while the value of 15 itself is a conservative way to protect concrete from cracking, i.e., the design of reinforced concrete structure itself was quite conservative, even if Japan took certain higher design values than other countries in the past.

c. Shear force of and ultimate strength of beam

As the important part for reviewing calculation results, the algorithm of shear force, that the largest stress appears at the position of neutral axis, was actually mastered by all the scholars from the very beginning since Shuji Inoue, i.e., the formula of *3/2 * S/d* (S: overall shear force (linear), d: depth of beam).[*45)] In the two early publications of Shuji Inoue and Sukehiko Goto, the algorithm still contained the parameter of second moment of area, while scholars from Midori Harada utilized the parameter of

arm of the couple forces, changing it to a subsequent step after the calculation of neutral axis, which is the same with today's method.[*46)]

In terms of the ultimate strength of beam, or in Tomihisa Iwasaki's words, ultimate resisting moment, there is almost no narrative amidst the 15 publications except the book of Iwasaki, who introduced the result from Albert W. Buel and Charles S. Hill's book in 1906,[*47)] which is based on the results of experiment. In the model introduced by Iwasaki, the straight line is extended to parabola as enhancement of the linear model, different from the method of equivalent square in today's calculation.

d. Simplified formulae and graphs

In terms of the calculation around the 1910s, the simplified algorithm is another part discussed by Masuda,[*48)] who mentions that Keiji Goto 後藤慶二 set the position of neutral axis at 1/3 of the effective height. However, this is neither a special case nor an effective one, since setting the position of 1/3d actually leads the result of the ratio of steel bars' area to be 1/180 according to Goto's text,[*49)] which makes the calculation of the size of girder be the final stage. Actually, the method proposed by Toshikata Sano in 1908 by setting four different ratios of the steel bar as 1/100, 1/150, 1/200, 1/270 seems to be more flexible.[*50)] Moreover, the way that Abe set the arm of couple forces as 7/8d[*51)] based on more experiments is more reasonable and closer to today's theory.[*52)] Whatsoever, all of the simplified algorithms are principally based on the same original formula, i.e., Edwin Thacher's method, while the differences are the settings of constants.

Besides, couples of scholars also made graphs to visualize the change of neutral axis' position and target at the number of steel bars, which is more convenient for practice, considering the books of Abe, Hibi, and Ogawa. Some scholars like Harada and Iwasaki also choose to use table to record the parameters for calculation, reflecting the versatility of the algorithms of beam.

e. Algorithms of column

The algorithm of column is another fundamental part of the calculation of reinforced concrete structure. In all the textbooks, in terms of column with vertical bars, the basic way is to calculate the sum of the allowable compressive forces of concrete and steel bar with the parameter of area of section, which is similar with today's basic algorithm, while the column higher than 18 times of the side length was adopted with the method of Euler's formula ($F = n\pi^2 EI / L^2$), except Shiro Mitsuhashi, who only introduced the latter one. On the other hand, in terms of column with spiral hooping, which was introduced a little bit later than the simple arrangement, the algorithm is also similar with today's basic method, i.e., linear interpolation, which was adopted by almost all the cases around the 1910s.

Moreover, about the calculation of eccentric load, as is shown in table 1-1, there are also several scholars who covered it, regardless of the fact that the relationship between moment and compressive force based on experiment was not discussed in these textbooks. Noticeably, in 1922, the formulae in terms of the balance of forces utilized by Matsuichi Doi[*53)] were already basically the same with today's method.[*54)]

1.3.3 Mechanical models of reinforced concrete

a. Simply supported beam as the basic model and continuous beam

Table 1-4 Advised values for moment of distributed load in 15 textbooks, simply supported and continuous beam

publication	鉄筋コンクリート	鉄筋コンクリート工法	大建築学続編	鉄筋混凝土施工法	実用鉄筋コンクリート構法	鉄筋コンクリート設計実例	鉄筋混凝土工学	実地応用鉄筋コンクリート工学	土木工学中巻	鉄筋混凝土の理論及其応用（上巻、中巻）	鉄筋混凝土之設計及施工法	理論応用鉄筋混凝土設計法	建築構造学	セメント類使ヒ方	鉄筋コンクリート家屋構造
single-span	$wl^2/8$	$wl^2/10$	$wl^2/10$		$wl^2/8$	$wl^2/8$	$wl^2/8$		$wl^2/8$	$1/10$-$1/12$*wl^2	$wl^2/8$	ideal	ideal		$wl^2/12$
continuous							ideal		$1/10$~$1/12$*wl^2	$1/10(p+g)wl^2$	$1/10wl^2$	$1/12wl^2$	ideal		$2/25wl^2$, $1/40wl^2$

Besides the calculation of components of reinforced concrete, the basic mechanical mode, or representatively, the moment of beam, should be clear. The details are shown in table 1-4, within which the most typical value, the moment of distributed load is extracted.

From the table, we can see that both in single span or continuous beam, the advised values are of simply supported beam or conservative with limited consideration of rigid joint. These values, especially 1/10 or 1/12 are considered from, according to Hibi, the difficulty of construction of perfect joint as well as the influence of foreign codes.[*55)] In the most contradictory case of Abe, in one example of calculating the depth of reinforced concrete girder, the moment of distributed load is calculated with the formula of simply supported beam (center: $wl^2/8$) rather than the ideal moments of statically indeterminate beam (center: $wl^2/24$, ends: $wl^2/12$).[*56)] In this way, the calculated depth of girder can be larger than the outcome of today's algorithm of rahmen system. However, Abe himself advocated statically indeterminate system urgently based on his own experiment at Illinois University in the following chapters and revealed the fact that the existing theories of statically indeterminate system were rarely used in practical projects in Japan. Especially, in his work of Tokyo Vocational School of Commerce (東京高等商業学校), the center moment can be estimated at $wl^2/10$,[*57)] testifying the inspection above, which also proves that the narrative from Hiroyasu Fujioka who claims that Japanese scholars then regarded the joint of reinforced concrete structure as rigid is not fully correct, at least for the case of Abe.[*58)] Correspondingly, the Kurosawa Building (黒沢ビル) discussed by both Hori,[*59)] who emphasizes the similarity with the construction method of wooden structure as the "extreme point of idea" (理念の極点), and Uemoto,[*60)] who reveals the uncertainty of the joint, i.e., possibly not rigid, could be regarded as a typical example of the facts discussed above rather than a fortuitous case.

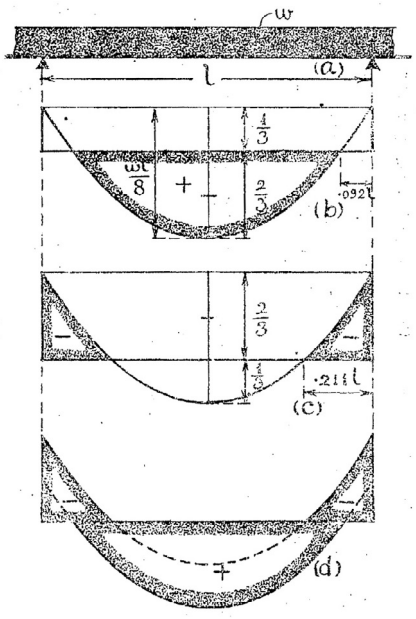


Fig. 1-4 Mechanical model for continuous beam with uniformly distributed load, in *Shigaichi Kenchikubutsu Ho*
* The moment comes from simply supported beam, i.e., $wl^2/8$, which is only moved downward to the position of 1/3.
Source: *Kenchikuzasshi* 35, no. 414 (April 1921): 174.

Actually, besides the evidences in the textbooks, even in 1921, Law on Urban Buildings (市街地建築物法), the basic model of $wl^2/8$ was still proposed, based on which the calculation of the moments in continuous beam was just to move the base line up and down to 1/3 and 2/3 position to get the positive and negative moments of center and joints, while for plastic structure, there was only the guideline recommending

the addition of moments of inertia to the perpendicular pressure of column with no formula given.[*61)] This part was generally similar with the code from the UK in 1907, in which simply supported beam was also adopted.[*62)]

b. The mechanical model in flat slab system

Actually, the mechanical model for flat slab system was also simply supported beam. In the books of Abe an Hibi, the two authors introduced almost the identical approach of calculation which is based on experiments rather than pure theories. According to Abe's narratives, the kernel is to calculate the pressure on the plate capital of the column, while the part between the edges of plate capitals is regarded as simply supported beam.[*63)]

In addition, it is notable that the flat slab in the era is similar with some works of Robert Maillart featured with octagon columns rather than the ordinary two-way floor slab today, which evolved from the Dom-Ino system proposed by Le Corbusier.

c. Statically indeterminate system in the calculation of frame

In the field of statically indeterminate system, couples of scholars like Abe, Hibi and Iwasaki (see also table 1-1) had shown the knowledge in the calculation of frame, among whom Abe and Hibi introduced the method of calculus, which is relatively complicated for practice, while Iwasaki introduced the algorithm of graph multiplication method, albeit about bridge. As has been mentioned before, based on Abe's narrative, in the early stage of the 20th century, the theories of statically indeterminate structure had been introduced to Japan, given the relevant theories from Takeshi Hiroi in 1905 and other Western scholars' publications.[*64)] It should be mentioned that Muramatsu's claim that the development of slope-deflection theory, mainly by Tachu Naito in the 1920s and 1930s, set the foundation of Japan's reinforced concrete technology[*65)] is actually not conclusive, regarding Hibi and Abe's method of calculus and the easier method introduced by Iwasaki (similar with slope-deflection method). Hence the historical fact should be that the advanced theories, especially statically indeterminate system, had been developed during the 1910s, which could definitely go ahead of the practice in architecture.

1.3.4 Construction method: codes and practice

About construction method, this study only treats specific aspects of form work and handling of steel bar as the indicative contents rather than the early step of mixture of concrete. The most general feature is that the construction methods were mainly introduced from overseas, except Tadahiko Hibi who mainly introduced the instances of domestic practice. Among all of the cases, Matsuichi Doi is the representative of those who introduced the overseas procedures as the code of London is translated in place of the chapters of construction method in his book.[*66)] By contrast, Harada Hibi gives the instance of the office of The Asahi Shimbun in Osaka, constructed by Takenaka Corporation, showing that the construction procedure of floor and the placement of steel bars for the foundation were very similar with today's construction.[*67)] In addition, although in Aoi Harada's book, some photos showing the constructions in Kyoto, such as the floors of Kyoto Products Exhibition Hall 京都商品陳列所 and several bridges on Takasegawa, the relevant construction methods, unfortunately, are not recorded.

1.3.5 Experiment

About experiment, here, only the mechanical tests on reinforced concrete are taken into account, without the basic test of concrete cube or cylinder. Similar with the aspect of construction method, the narratives of experiment mainly came from overseas in most cases, among which Abe is the representative who offers abundant information of experiment as basis for almost every chapter of his book. The experiments were either conducted by himself or other scholars of the US, showing his efforts in the University of Illinois. Other domestic cases like Ayahiko Ishibashi 石橋絢彦, who introduced the experiment of floor before the construction of Yoshida Bridge (吉田橋),[*68)] and Doi who revealed the experiment of reinforced concrete beam in Tokyo Advanced Technology College (東京高等工業学校) can be mentioned.[*69)] However, both experiments are testing the single structural components, and the sample used by Ishibashi was even Kahn System slab.

1.4 Popularization seen in the magazines around the 1910s

1.4.1 Procedure of analysis

In order to gain certain knowledge from the articles around the 1910s, it is necessary to select and classify the pieces in certain genres. However, due to the complexity of the contents, it is hard to classify all the articles systematically. Hence the classification adopted here is merely aiming at making the cognition of the development of reinforced concrete clearer. Firstly, the criteria to pick up articles is to choose the educational or introductory columns from the magazines, while those discussing reinforced concrete without technical basis are not included. Subsequently, the classification is conducted on two levels as the first is the genres or disciplines of the articles, which are defined as calculation, experiment, construction method, code, work intro, publication intro and Q&A, through a reciprocal work process, while the second level consists of the tags marking the contents of reinforced concrete with specific keywords in a horizontal structure, which can be retrieved with filter, considering cases like that an article about code of reinforced concrete can also consist of the content of calculation. Here, the class of experiment is given the priority over other classes, considering that the method of experiment of reinforced concrete (e.g., if an article about experiment also covers calculation, it is classified as experiment), indicatively, is actually the most important method for the study of reinforced concrete today. Overall, with the classification above, the analysis is conducted flexibly between the two levels, by which not only the specific disciplines can be shown clearly, but also the features within the disciplines can be observed.

1.4.2 Characters of the four magazines

Here, as have been mentioned before, *Kenchikuzasshi*, *Kenchikusekai*, *Kenchiku*, and *Kenchikugaho* are taken into the scope based on the life cycles and the coverage of educational articles of reinforced concrete. Initially, *Kenchikuzasshi* is the most orthodox journal in which almost all of the authoritative figures were making their contribution. By contrast, *Kenchikusekai* is the earliest published popular magazine which had predominant influence on the architects of Japan. Whatsoever, both of them were relatively stable regarding the style and the structure of edition. On the other hand, *Kenchiku* and *Kenchi-*

kugaho were not so consistent. According to the dissertation of Masaru Kawashima, *Kenchiku* was initially the internal publication of Namiwa-kai (浪和会), while in 1915, the magazine was transferred to the supervision under the office of Tamisuke Yokogawa 横河民輔,[*70)] and the magazine also started to cover more knowledge of engineering. For *Kenchikugaho*, there existed a gap around 1918 during which only photographs, news, and short comments were presented. After that, the style of *Kenchikugaho* turned to the proclivity on essay and literature, from which almost no articles concerning techniques of reinforced concrete can be found. In this sense, it is important to treat the data of *Kenchiku* and *Kenchikugaho* with caution, which sometimes can only be regarded as reference for the overall trends read from *Kenchikuzasshi* and *Kenchikusekai*.

1.4.3 Trends and features seen from the articles with classification

From 1906 to 1923, 589 articles are picked up within which there are 155 (KCZS) from *Kenchikuzasshi*, 338 from *Kenchikusekai*, 52 from *Kenchiku* and 44 from *Kenchikugaho* (KCZS, KCSK, KC, and KCGH in figure 1-4). Here, a problem is whether to count the articles of a serial as one or separated pieces. Compared to other single articles, the serials actually can be more intentional for the popularization reinforced concrete. Thus, for revealing the facts of popularization, it should be more reasonable to count these articles of serial as single pieces.

a. Peak of educational articles about reinforced concrete and calculations

On the level of general class, the most significant trend is the peak of educational articles about reinforced concrete in the middle of the 1910s, which mainly consist of articles about calculation in *Kenchikusekai* and publication introduction in *Kenchikuzasshi* (figure 1-4, upper). Regarding that the columns like basic introduction or code also consist of the contents of calculation, which are marked with the keyword of "algorithm" on the second level, a further inspection is conducted, and the results (figure 1-4, middle) shows a very similar appearance with the trend in the left graph, i.e., the fervent popularization of calculation. Moreover, the percentage of articles involving algorithms of reinforced concrete also roars in the middle and end of the 1910s, albeit the low absolute number of articles.

Nonetheless, it is never enough to see the numbers only, whereas taking a closer look at the details of the peak is necessary. Actually, all of the peaks are mainly composed with the serials from specific authors, as in *Kenchikusekai*, they are Shiro Sato/佐藤四郎 (1913.7-1915.1, 1915.7-1916.1, 1916.2-1917.9), Keiji Goto (1913.7-1915.12), and Mikishi Abe, in *Kenchiku*, it is Keikichi Ishii/石井敬吉(1915.1-1916.9), the engineer enrolled in the office of Tamisuke Yokogawa, and in *Kenchikugaho* it is Naoji Sumiki/住木直二 (1916.1-11), the engineer of Ministry of the Navy.[*71)] In *Kenchikusekai*, in the middle of the 1910s, both Sato and Goto published their serials, between which Sato mainly introduced the basic algorithms of beam and stirrup while Goto focused more on the algorithm of section of components, even though he also introduced some basic knowledge of calculation. In the serial of Ishii, in *Kenchiku*, although the contents were given by his own knowledge in the beginning, when it came to the later stages of the serial, the sources changed to be the book of George A. Hool[*72)] and *Second Report of Joint Committee on Concrete and Reinforced Concrete*, as both are from the US. Finally, in terms of Sumiki, in *Kenchikugaho*,

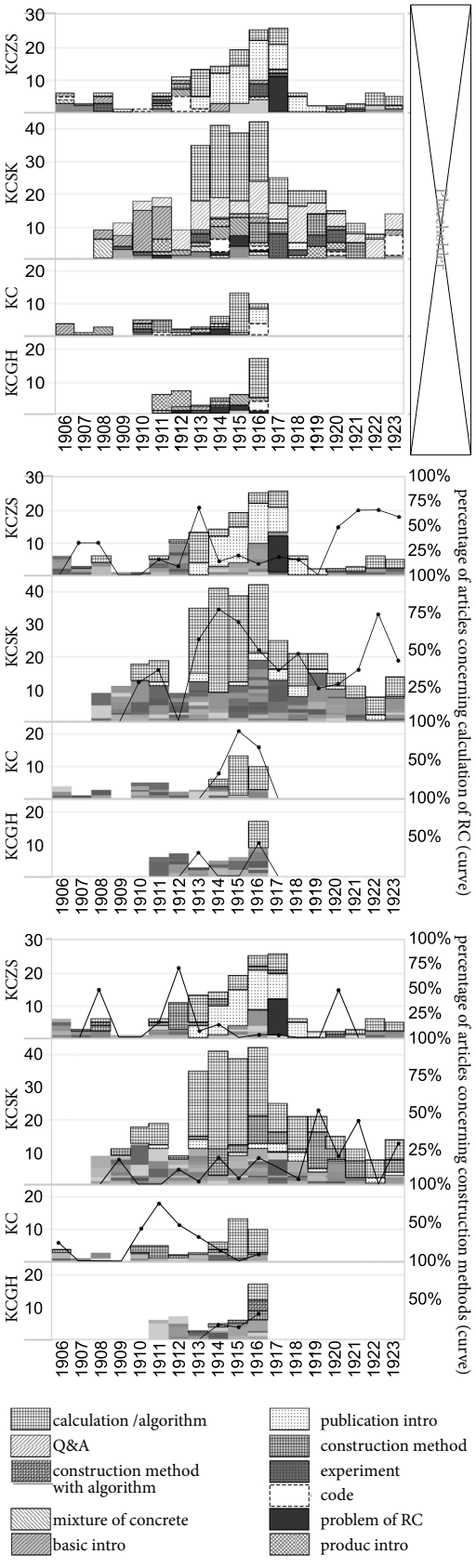


Fig. 1-5 Trends of general classifications (upper), trends of articles with algorithms of reinforced concrete (middle), trends of articles with construction methods of reinforced concrete (lower)

rather than the typical calculation of beam or column, the author mainly focused on the algorithm of foundation of reinforced concrete. Whatsoever, it cannot be ignored that all these serials are on the level of popularization of basic knowledge of reinforced concrete.

b. Consistent introduction of publication from overseas in the first half and domestic theories in the second half of the 1910s

The introduction of overseas publications seen from *Kenchikuzasshi* from 1913 to 1919 is another part in the graph. The sources of the long-lasting column mainly come from the UK, the US and Germany, amidst which the previous two are in quantity. From the UK, traditional journals like *The Builder*, *The Building News*, as well as magazines of engineering like *Concrete and Construction Engineering*, *The Engineer*, *The studio*, and *The Architectural Review* were introduced. From the US, the authoritative publications like *The Architectural Record*, *Architecture*, *The American Architect*, *Engineering News*, *Concrete-Cement Age*, and *Concrete* can also be counted. From March 1915, the column also started to introduce domestic magazines, which consisted of considerable number of articles about reinforced concrete, reflecting the fact that not only *Kenchikuzasshi*, but other publications were also taking part in the popularization of the new technology.

c. The conference about the crack of Reinforced Concrete seen from *Kenchikuzasshi*

The dark clots in the graphs of *Kenchikuzasshi* represent the conference held by Architectural Institute of Japan, discussing the crack of reinforced concrete in 1917,[*73)] within which the causes vary between scholars. Nevertheless, one important point is that almost no scholars ascribed the problem to the design of reinforced concrete components except the peripheral instances given by Yoshikazu Uchida 内田祥三 who mentioned the possible cause of structural design

without giving further evidence, and Yasuo Namie 波江悌夫 who thought that the beam of reinforced concrete only committing the duty for supporting vertical load lacked the capability resisting the compression and tension in horizontal direction. By contrast, most scholars regarded external problems like temperature and curing process as the main causes of crack, which reflects the confidence of the Japanese architects. Especially, an additional discovery in the conference is that Namie revealed the fact the buildings of reinforced concrete were basically constructed with the system of wooden structure, i.e., Magusa-shiki (楣式, literally, lintel system), within which he even used the terminologies of wooden structure to depict the problem of reinforced concrete.

d. The column of Q&A in *Kenchikusekai*

Another column with considerable quantity is the Q&A in *Kenchikusekai*. Although the fluctuations of different types of question can be marginal, the clots of Q&A seen from the graph (figure 1-4 upper) still show the prosperity of the reception of reinforced concrete techniques around the middle of the 1910s. In the column, there are two types of the most answered questions, i.e., introduction of publication and calculation of reinforced concrete. For introduction of publication, the answers consist of not only books from domestic market, but also couples of overseas scholars' works, which indicates that around the 1910s, the accessibility to foreign books about reinforced concrete had been relatively easy. For calculation, it is interesting to see that around the end of the 1910s, the questions usually refer to some specific issues from the textbooks of authoritative figures like Mikishi Abe, Tachu Naito and Shiro Mitsuhashi, rather than those questions in earlier years, which tended to be more relevant to specific components of reinforced concrete. This phenomenon definitely testifies the popularization of technologies of reinforced concrete realized with the textbooks.

e. Construction method

Here, it is important to look at the disciplines which do not have a significant trend, as some important points can still be discovered.

In terms of the articles of construction method, the quantity on the level the general class is in small scale. However, if we add the articles marked with the tags of construction method, form work, curing, arrangement of bar, spacer, casting of concrete, piling, and standard construction procedure, of the second level, things changed (figure 1-4, lower). In *Kenchikuzasshi* and *Kenchiku*, the articles about construction method aggregate at the beginning of the 1910s, while in *Kenchikusekai* and *Kenchikugaho*, the articles appear around the later stage of the decade. Furthermore, there are definitely some sensible features in detail. In *Kenchikuzasshi*, in the beginning of the decade, almost all the articles came from the codes of overseas, especially the UK and the US. Meanwhile, in the articles in *Kenchiku*, despite the unknown source, the construction methods introduced are recorded like the form of articles in a code. By contrast, in the articles in *Kenchikusekai*, except the introduction of Toronto's code from Ichiro Osawa 大澤一郎 (translator, 1914),[*74)] all the articles are all based on real practices, e.g., the actual construction procedure revealed by Narikichi Kasamatsu 笠松為吉(engineer of Mitsubishi Estate, 1916-1917),[*75)] the introduction from Sotokichi Nakashima 中島外吉 (engineer of Shimizu Group, 1919),[*76)] and the patent of form work invented by Koukichi Yamaguchi 山口孝吉 (1919).[*77)] Also, in *Kenchikugaho*, as is from

Table 1-5 Introductions of code from four magazines

Magazine	Article	Author	Year	Month	Source
KCZS	コンクリート構造法の識別に對する建築者の責務に就て	妻木頼黄 (donor)	1906	1	US
KCZS	鉄筋混凝土に就いての注意	木村調吉	1910	1	UK
KCZS	紐育市鐵筋混凝土條例	YU 生	1912	3	US
			1912	4	
KCZS	倫敦市鐵筋混凝土建築取締規程草案	none	1912	6	UK
KCZS	鐵筋混凝土に關する英國王立建築學會第二回報告	YU 生	1912	9	UK
			1912	10	
KCZS	英國鐵筋混凝土聯合委員會第二回報告 (二)	内田祥三	1913	1	UK
KCSK	加奈陀トロント市鉄筋混凝土条例	大澤一郎 (translator)	1914	3	CAN
			1914	4	
			1914	5	
			1914	6	
KCSK	ロンドン市鉄筋コンクリート条例	後藤正雄	1916	6	UK
KCSK	改正されたる『ポルトランド・セメント』試験規定	吉田享二	1920	5	JP
KCSK	鉄筋混凝土工学の教科書として観たる「アメリカ」連合委員会の最終報告	尾崎久助	1923	3	US
			1923	4	
			1923	5	
			1923	6	
			1923	7	
			1923	8	
KC	鉄筋コンクリート構造に就ての規定	none	1911	12	JP
KC	鉄筋混凝土構造の応用設計 (Second Report of Joint Committee of Concrete and Reinforced Concrete)	石井敬吉	1916	3	US
			1916	4	
			1916	5	
			1916	6	
KCGH	倫敦に於ける鉄筋コンクリート条例に関する講話	土居松市	1916	3	UK
			1916	4	
			1916	5	

the serial by Naoji Sumiki mentioned before, although the articles are mainly about piling procedure, the details were definitely gained from on-site practices. Hence, the trajectory is clear here that the introductions about construction method definitely changed from the subject of code to the knowledge obtained from practice with abundant details.

f. Experiment

Due to the priority given to the class of experiment, it can be easily seen that the total amount of the relevant articles. In *Kenchiku* and *Kenchikugaho*, there is only one instance on each side. In *Kenchikuzasshi*, there are also not too many instances, of which the main part is from domestic architects of Katsuya Yasuoka 保岡勝也,[*78)] Mikishi Abe[*79)] and Matsuichi Doi.[*80)] However, the experiment from Yasuoka is about adding volcanic ash to concrete, the experiments given by Abe were actually conducted in Illinois University, amidst which only one of the three experiments was implemented by Abe himself, and Doi's experiment was limited to the test of cube and cylinder. In terms of *Kenchikusekai*, much more articles about experiment can be found than the other three publications. Nonetheless, in almost all the articles, the introductions were from overseas, amidst which Abe contributed the most than anyone else, with the longest serial about the experiments in the US.

g. Code: Influences from the US and UK

Finally, as to the codes of reinforced concrete, the distribution is dispersed, in which two main forces of the UK and the US can be identified. Except the Toronto's code, a translated serial in *Kenchikusekai* in 1914, both the codes from the UK and US were introduced in a consecutive way, as those from the UK are mainly about the reports of RIBA and the code of London, while the contents from the US are briefly the code of New York City and the reports of Joint Committee of Concrete and Reinforced Concrete (table 1-5). Besides, sporadic instances can also be found in the magazines correlated with these codes such as two Q&A from *Kenchikusekai*, of which one refers to the code of New York City for answering the calculation of beam (*Kenchikusekai*, 1914)[*81)] and the other compares the ratio of height over diameter of column in the codes of London and Los Angeles (*Kenchikusekai*, 1922),[*82)] as well as the serial translated by J. I. (J. I. 生, *Kenchiku*, 1916, 7-10)[*83)] emphasizing the book from Oscar Faber and P. G. Bowie[*84)] as the foundation for the code of London to back the authoritativeness of the contents. Here, the narrative

from Iwao Yamane's thesis should be mentioned, which reveals that Sukehiko Goto introduced both the codes of the UK and US in 1916 after his study overseas,[*85)] definitely correspondent with the facts discovered in the magazines, indicating the predominant influence of the codes from the UK and US on the development of reinforced concrete in Japan around the 1910s.

1.4.4 Specific points: Completion of the cognition on reinforced concrete

a. Advanced theories seen in the magazines

As the most authoritative journal of architecture, the articles in *Kenchikuzasshi* are definitely one step ahead of the ordinary theories of reinforced concrete. Also, some advanced theories can also be found in the other magazines sporadically. From all these magazines, the works of three pioneering figures, i.e., Keiji Goto, Mikishi Abe and Tachu Naito, stand out.

About Keiji Goto, based on today's knowledge structure of reinforced concrete, he definitely went further than most of the architects regarding his text including the discussion of rigid joint (*Kenchikuzasshi*, 1914.12-1915.1 & 2),[*86)] calculations of irregular sections (*Kenchikusekai*, 1913-1915)[*87)] and ultimate strength (*Kenchikuzasshi*, 1917.11-12)[*88)] and the algorithm of graph multiplication (*Kenchikuzasshi*, 1918.12),[*89)] which are definitely beyond the ordinary knowledge introduced in the textbooks.

Another figure needed to be mentioned is Mikishi Abe, who learned the knowledge of reinforced concrete in Illinois University and came back to Japan, giving bunches of valuable information. The most impressive point is that almost all of Abe's theories are based on meticulous data of experiment. Aside from the textbook of Abe, the reports about the experiments of statically indeterminate system in *Kenchikuzasshi* (1916.10-12),[*90)] the serial about the algorithm of frame (*Kenchikusekai*, 1916.11-1917.1),[*91)] and the introduction about coherence of steel bar (*Kenchikusekai*, 1917.5-8, 11, 1918.1)[*92)] are all based on experiment, albeit all conducted in the US. Especially, about statically indeterminate structure, both in the report in *Kenchikuzasshi* in 1916 and his textbook, Abe advocated this system, among which the most import information comes from the report done by Abe Mikishi (*Kenchikuzasshi*, 1916.12), revealing that the reliable center moment of beam can be up to $wl^2/20$ according to his own experiment. However, this content, which he thought was beneficial for architecture in Japan, was not presented in his textbook, reflecting his cautiousness to the popularization of reinforced concrete.

The third one who is necessary to be counted is Tachu Naito. In 1923, Naito revealed his calculations of multiple projects (*Kenchikuzasshi*, 1923).[*93)] The point reached, i.e., the rigid outer and flexible inner system is impressive. Although the system was still one step away from the overall rigid frame which allows the emancipation of façade, and the calculation for anti-seismic frame was based on the model of wind load, it had largely progressed from the simply supported beam, helping realize the large scale and space for public buildings.

b. Developed construction methods

As has been revealed in the inquiry into general features of articles about construction method, which shows that the introduction changed from the form like articles of code to experience obtained from real practices, it is worthy to take a look at the most substantial information about the real practices in the in-

troduction by Narikichi Kasamatsu from Mitsubishi Estate. Kasamatsu's series shows the systematically managed process of the construction of reinforced concrete including patterns of form work, manufacturing and arrangement of steel bar, casting of concrete and curing, and entire manual for construction. From the photographs showing the form of steel bar and form work, it can be discovered that the procedure of construction had become highly systematic, which also verifies evolvement of the arrangements of steel bar mentioned in the previous section. Additionally, the spacer to fix the position of steel bars can also be discovered in one of Kasamatsu's plates, which was actually regulated in the codes in Showa Period according to the narrative of Mitsuo Toyoshima.[*94)]

1.5 Conclusion

Hitherto, with all the inspections in this chapter, specific points on the knowledge of reinforced concrete as well as the structural forms can be concluded as below.

As to the knowledge of reinforced concrete, generally, the theories actually reached a relatively high level throughout the 1910s regarding the knowledge in the textbooks and advanced studies of specific scholars in the magazines, which were relatively ahead of the practice of reinforced concrete, especially in the case of statically indeterminate system. Meanwhile, there is a peak of the popularization of the knowledge of reinforced concrete in the middle of the 1910s which mainly includes calculation and publication introductions, also with clues showing the growing acquaintance of textbooks and foreign codes.

Specifically, about the knowledge of calculation, the algorithms of the basics were already settled down before the decade of the 1910s, while more progress was made after 1916, throughout which, the point reached by Tachu Naito can be the climax of the era. As to the construction technologies of reinforced concrete, rapid development can be witnessed, which also reached a relatively high level in the second half of the decade, regarding the instances given by Hibi and Kasamatsu. Nonetheless, there were few mechanical experiments of reinforced concrete in Japan, as most of the cases in the textbooks and magazines were from overseas. Moreover, manifold introductions in the textbooks and the four magazines indicate the significant influence of the knowledge from the UK and the US upon the theories of reinforced concrete in Japan.

As to the form of reinforced concrete buildings, primarily, the basic structural form in the 1910s was already frame structure together with the minority of flat slab system. Also, the arrangement of steel bar definitely evolved from the early Hennebique System to more scientific forms with the evidences in multiple publications, regardless of the popularity of Kahn System near the end of the 1910s. Nevertheless, despite the proposal for rigid joint by certain figures, the basic mechanical model of structure then, explicitly, was still simply supported system with limited consideration of rigid joint, which, considering the low strengths of materials together, could lead to bigger sizes of components than today's technology and the similarity with traditional wooden structure of Japan could be a universal phenomenon due to the limit of technology rather than independent cases.

Notes

*1) Teijiro Muramatsu 村松貞次郎, "Nihon Kenchikugaku shi" 日本建築学史 [Architectural History of Japan], in *Kenchikugaku Taikei* 37 建築学大系 37 [Encyclopedia of Architecture], ed, Kenchikugaku Taikei Henshuu Iin 建築学大系編集委員 (Tokyo: Shokokusha, 1962), 146-156.

*2) Eizo Inagaki 稲垣栄三, *Nihon no Kindai Kenchiku: sono Seiritsu Katei* 日本の近代建築-その成立過程 [Modernist Architecture of Japan: The Process of Establishment] (Tokyo: Chuokouronbijyutsu, 2009), 238-240.

*3) Takeyoshi Hori 堀勇良, *Nihon ni okeru Tekkinkonkurīto Kenchiku Seiritsu Katei no Kouzougijutushi teki Kenkyu* 日本における鉄筋コンクリート建築成立過程の構造技術史的研究 [A Historical Study of Construction Technology on the Process of Establishment of Reinforced Concrete Buildings in Japan] (PhD diss., University of Tokyo, 1981).

*4) Koichi Tamura 田村浩一, Tokio Kondo 近藤時夫, *Kokurīto no Rekishi* コンクリートの歴史 [History of Concrete] (Tokyo: Sankaido, 1984).

*5) Mitsuo Toyoshima 豊島光夫, *E de miru Tekkin Senka: Tadashii Haikin no susume* 絵でみる鉄筋専科: 正しい配筋のすすめ [Special Course of Reinforced Concrete Seen from Graphics: Correct Advice on Arrangement of Steel Bar] (Tokyo: Kenchiku-Shizai-Kenkyuukai, 1972).

*6) Taira Masuda 増田泰良, Hidekazu Nishizawa 西澤英和, Hiroyasu Fujioka 藤岡洋保, "The Characteristic of The Introduction and Reception of the Theory of the Ferro-concrete Structure in Japan 日本における鉄筋コンクリート造の導入および算定理論の受容過程に見られる特徴について", *Journal of Architecture and Planning* (Transactions of AIJ) 73, no. 634 (December 2008): 2773-2782.

*7) Kohei Uemoto 上本晃平 et al., "An Exploration on Historic Reinforced Concrete Structures Part 5 Materials in the Writing by HIBI Tadahiko" 歴史的鉄筋コンクリート造建築物の保存に関する調査研究-その5 調査資料『鉄筋混凝土の理論及其応用』にみる材料, in *Summaries of Technical Papers of Annual Meeting*, Architectural Institute of Japan 日本建築学会大会学術講演梗概集 (August 2011): 861-862.

*8) Shuji Inoue 井上秀二, *Tekkinkonkurīto* 鉄筋コンクリート [Reinforced Concrete] (Tokyo: Maruzen, 1906).

*9) Sukehiko Goto 後藤佐彦, *Tekkinkonkurīto Kouhou* 鉄筋コンクリート工法 [Method of Reinforced Concrete], (Tokyo: Okura-shoten, 1907).

*10) Shiro Mitsuhashi 三橋四郎, *Daikenchikugaku Zokuhen* 大建築学続編 [Grand Architecture, additional edition] (Tokyo: Okura-shoten, 1911).

*11) Senzo Tomomatsu 友松仙蔵, *Tekkinkonkurīto Sekouhou* 鉄筋混凝土施工法 [Construction Method of Reinforced Concrete] (Tokyo: Hakubunkan, 1912).

*12) Midori Harada 原田碧, *Jitsuyou Tekkinkonkurīto Kouhou* 実用鉄筋コンクリート構法 [Practical Reinforced Concrete Structure] (Tokyo: Maruzen, 1912).

*13) Fukuichiro Inoue 井上福一郎, *Tekkinkonkurīto Sekkei Jitsurei* 鉄筋コンクリート設計実例 [Design Instances of Reinforced Concrete] (Tokyo: Kenchikushoin, 1912).

*14) Mikishi Abe 阿部美樹志, *Tekkinkonkurīto Kougaku* 鉄筋混凝土工学 [Engineering of Reinforced Concrete] (Tokyo: Maruzen, 1916).

*15) Koichi Uryu 瓜生康一, *Jicchi Ouyou Tekkinkonkurīto Kougaku* 実地応用鉄筋コンクリート工学 [Engineering of Reinforced Concrete for On-site Practice] (Tokyo: Hakubunkan, 1916).

*16) Torao Kawaguchi 川口虎雄 et al., *Doboku Kougaku Chuukan* 土木工学中巻 [Civil Engineering, vol. 2] (Tokyo: Maruzen, 1916).

*17) Tadahiko Hibi 日比忠彦, *Tekkinkonkurīto no Riron oyobi Sono Ouyou Joukan* 鉄筋混凝土の理論及其応用上巻 [Design and Application of Reinforced Concrete, vol. 1] (Tokyo: Maruzen, 1916).

*18) Tadahiko Hibi 日比忠彦, *Tekkinkonkurīto no Riron oyobi sono Ouyou Chuukan* 鉄筋混凝土の理論及其応用中巻 [Design and Application of Reinforced Concrete, vol. 2] (Tokyo: Maruzen, 1918).

*19) Keijiro Ogawa 小川敬次郎, *Tekkinkonkurīto no Sekkei oyobi Sekkouhou* 鉄筋混凝土之設計及施工法 [Design and Construction Method of Reinforced Concrete] (Tokyo: Shoukabou, 1917).

*20) Tomihisa Iwasaki 岩崎富久, *Riron Ouyou Tekkinkonkurīto Sekkeihou* 理論応用鉄筋混凝土設計法 [Theoretical and Applicable Design of Reinforced Concrete] (Tokyo: Okura-shoten, 1917).

*21) Tachu Naito 内藤多仲, *Kenchiku Kouzougaku* 建築構造学 [Theories of Architectural Structure] (Tokyo: Waseda University Press, 1918).

*22) Ayahiko Ishibashi 石橋絢彦, *Semento Rui Tsukaikata* セメント類使ヒ方 [Utilization Methods of Cement] (Tokyo: Okura-shoten, 1919).

*23) Matsuichi Doi 土居松市, *Tekkinkonkurīto Kaoku Kouzou*, 鉄筋コンクリート家屋構造 [Structure of Reinforced Concrete Building] (Dainihon Kougyou Gakai, 1922).

*24) Inagaki, *Nihon no Kindai Kenchiku*, 116-118.

*25) Takeyoshi Hori, *Nihon ni okeru Tekkinkonkurīto Kenchiku Seiritsu Katei no Kouzougijutushi teki Kenkyu*, 21-30.

*26) Japan Society of Civil Engineers 土木学会, ed., *Taisho Juuninen Kanto Daijishin Shingai Chousa Hokoku Daisankan* 大正十二年関東大地震震害調査報告 第三巻 [Report of the Disaster of Great Kanto Earthquake in Taisho 12 vol. 3] (Tokyo: Fukkoukyoku, 1928), 566. Original text as " 東京市に於ける鉄筋混凝土造建築物は殆ど総て帳壁式構造に據り,…鉄筋混凝土, 煉瓦又は石若くは鉄筋混凝土塊等を以て籠状架構の空間を塞ぎ以て籠状架構をして家屋の態をなさしめたるものなり。これ等の皮包又は填充さるべき壁体の部分を称して帳壁と称す。".

*27) Ibid., 590, 602.

*28) Shuji Inoue, *Tekkinkonkurīto*, 10-11.

*29) Mitsuo Toyoshima, *E de miru Tekkin Senka: Tadashii Haikin no susume*, 223-231.

*30) Shiro Mitsuhashi, *Daikenchikugaku Zokuhen*, 468-470.

*31) Joseph M, Siry, "The Architecture of Earthquake Resistance: Julius Kahn's Truscon Company and Frank Lloyd Wright's Imperial Hotel," *Journal of the Society of Architectural Historians* 67, no. 1, (March 2008): 78-105.

*32) Mitsuo Toyoshima, *E de miru Tekkin Senka: Tadashii Haikin no susume*, 256-257.

*33) Mikishi Abe, Tekkinkonkurīto Kougaku, 406-408.

*34) Shuji Inoue, *Tekkinkonkurīto*, 15.

*35) Tadahiko Hibi 日比忠彦, "Tekkotsu Kouzo Kenchikugaku (6)" 鉄骨構造建築学 (六) [Architecture of Steel Frame Structure], *Kenchikuzasshi* 建築雑誌 20, no. 236 (August 1906): 477-502.

*36) Drawing 134 for the part of buildings, in Japan Society of Civil Engineers, ed., *Taisho Juuninen Kanto Daijishin Shingai Chousa Hokoku Daisankan*. In drawing 134, "R.B" means "rib bar" and "K.B" means "Kahn bar" for which the proof can be found in drawing 109.

*37) European Committee for Standardization, Eurocode 2: Design of Concrete Structures – Part 1: General Rules and Rules for Buildings (Brussels: European Committee for Standardization, 2004), 29. Specifically, the value of f_{ck}.

*38) Kohei Uemoto et al., "An Exploration on Historic Reinforced Concrete Structures Part 5 Materials in the Writing by HIBI Tadahiko", in *Summaries of Technical Papers of Annual Meeting*, 862.

*39) European Committee for Standardization, Eurocode 2, 34.

*40) Shuji Inoue, *Tekkinkonkurīto*, 39-40. Inoue gives the range of 10,000-18,000 psi.

*41) Matsuichi Doi 土居松市, *Tekkinkonkurīto Kaoku Kouzou*, 46. Doi gives the exact value of 15,000 psi.

*42) Architectural Institute of Japan, *AIJ Standard for structural calculation of reinforced concrete structures, Based on Allowable Stress Concept, revised 1999* 鉄筋コンクリート構造計算基準・同解説 1999 改定 (Tokyo: Maruzen, 1999), 6.

*43) Y U sei Y U 生, "Tekkinkonkurīto Jourei" 鉄筋混凝土条例 [Regulation of Reinforced Concrete (New York)], *Kenchikuzasshi* 建築雑誌 26, no. 303 (March 1912), 134-137, no. 304 (April 1912), 170-172. The author is supposed to be Yoshikazu Uchida.

*44) See also note 37.

*45) For example, Shiro Mitsuhashi, Daikenchikugaku Zokuhen, 507-508.

*46) Yasuo Tanigawa 谷川恭雄 et al., *Tekkinkonkurīto Kouzou, Riron to Sekkei Daisanpan* 鉄筋コンクリート構造 理論と設計第3版 [Reinforced Concrete Structure: Theory and Design, 3rd edition] (Tokyo: Morikita Publishing, 2009), 68-70.

*47) Albert W. Buel, Charles S. Hill, *Reinforced Concrete*, Second Edition (New York: The Engineering News Publishing Company, 1906).

*48) See also note 6.

*49) Keiji Goto 後藤慶二, "Tekkinkonkurīto no Kantan naru Tokigata" 鉄筋混凝土の簡単なる解き方 [Simple Solution of Reinforced Concrete], *Kenchikuzasshi* 建築雑誌 28, no. 332 (August 1914), 410-416, no.333 (September 1914), 460-469.

*50) Toshikata Sano 佐野利器, "Koukinkonkurīto Yuka Keisanjou no Atarashiki Kanshiki oyobi Hyou" 鋼筋コンクリ

ート床計算上の新しき簡式及び表 [New Simplified Formula and Diagram for the Calculation of Reinforced Concrete Floor], *Kenchikuzasshi* 建築雑誌 22, no. 259 (July 1908), 288-295.

*51) Mikishi Abe, *Tekkinkonkurīto Kougaku*, 75.

*52) Yasuo Tanigawa et al., *Tekkinkonkurīto Kouzou, Riron to Sekkei Daisanpan*, 50-51.

*53) Matsuichi Doi, *Tekkinkonkurīto Kaoku Kouzou*, 201-204.

*54) Yasuo Tanigawa et al., *Tekkinkonkurīto Kouzou, Riron to Sekkei Daisanpan*, 57-59.

*55) Tadahiko Hibi, Tekkinkonkurīto no Riron oyobi Sono Ouyou Joukan, 280-281.

*56) Mikishi Abe, *Tekkinkonkurīto Kougaku*, 80.

*57) Mikishi Abe, *Tekkinkonkurīto Kougaku*, 435-436. In the narrative of Abe, the largest center height beam is about 1.5 feet (1.5 尺). If the center moment is the $wl^2/8$ and $wl^2/12$, the height should be about 1.7 and 1.3 feet respectively, based the method in previous chapters, so that the formula of center moment is estimated as $wl^2/10$.

*58) Fujioka Hiroyasu 藤岡洋保, "Nihon no Kenchikuka ga Tekkinkonkurīto ni Mita Kanousei: Katachi to Gijutsu no Intārakushon 日本の建築家が鉄筋コンクリート造に見た可能性ー形と技術のインターラクション [Possibilities seen from Reinforced Concrete by Architects of Japan: Interaction Between Form and Technology]", in *History of Cities and Architecture 9: Materials and Industries in the Modern Age* シリーズ 都市・建築・歴史 9: 材料・生産の近代 (Tokyo: University of Tokyo Press, 2005): 29. Original text as "… 当時の日本の構造学者にとって、鉄筋コンクリート造とは事実上柱・梁を剛節合したラーメン構造だったといってよい。…".

*59) Takeyoshi Hori 堀勇良, *Nihon ni okeru Tekkinkonkurīto Kenchiku Seiritsu Katei no Kouzougijutushi teki Kenkyu*, 91-98.

*60) Kohei Uemoto et al., "An Exploration on Historic Reinforced Concrete Structures Part 5 Building Constructions and the System of Floor Slab in the Writing by HIBI Tadahiko" 歴史的鉄筋コンクリート造建築物の保存に関する調査研究-その5 調査資料『鉄筋混凝土の理論及其応用』にみる床スラブ構法とSystem, in AIJ Tokai Chapter Architectural Research Meeting 日本建築学会東海支部研究報告書 (February 2013): 757-760.

*61) Yoshikazu Uchida 内田祥三 et al., "Shigaichi Kenchikubutsuhou oyobi sono Futai Meirei no Kougai" 市街地建築物法及其の附帯命令の梗概 [Law on Urban Buildings and the Supplementary Orders], *Kenchikuzasshi* 建築雑誌 35, no. 411 (January 1921): 15-27, no. 412 (February 1921): 39-84, no. 414 (April 1921): 163-199. About the diagram showing mechanical model, check the part in April 1921.

*62) Iwao Yamane 山根巖, Wagakuni he no Tekkinkonkurīto Hashi Dounyuu no Gijutsushi teki Kenkyuu 我国への鉄筋コンクリート橋導入の技術史的研究 [A Study of Technological History on the Introduction of Reinforced Concrete Bridges in Our Country] (PhD diss., Kyoto University, 2002), 248.

*63) Mikishi Abe, *Tekkinkonkurīto Kougaku*, 180-184.

*64) Ibid., 297-299.

*65) Teijiro Muramatsu 村松貞次郎, *Nihon Kindai Kenchiku Gijutsushi* 日本近代建築技術史 [History of Architectural Technology in Modern Japan] (Tokyo: Shokokusha, 1976), 151.

*66) Matsuichi Doi, *Tekkinkonkurīto Kaoku Kouzou*, 251-295.

*67) Tadahiko Hibi 日比忠彦, *Tekkinkonkurīto no Riron oyobi sono Ouyou Chuukan*, 452-456.

*68) Ayahiko Ishibashi, *Semento Rui Tsukaikata*, 303-309.

*69) Matsuichi Doi, *Tekkinkonkurīto Kaoku Kouzou*, 148.

*70) Masaru Kawashima 川嶋勝, *Study on the Historical Development of Architectural Publication Activities in Modern Japan: Formation of Architectural Publication Organizations and Roles of Architectural Books until the War in the Showa Period* 近代日本における建築出版活動の史的展開に関する研究ー昭和戦前期までの建築出版組織の形成と建築図書の役割 (PhD diss., Nihon University, 2017), 72-73.

*71) Check appendix A, 184.

*72) George A. Hool, *Reinforced Concrete Construction*, vol. 2 (New York: McGraw-Hill Book Company, 1912).

*73) "*Tekkinkonkurīto Kouzou no Kiretsu nitsuite*" 鉄筋コンクリート構造の亀裂に就て [About the Crack of Reinforced Concrete Structure], *Kenchikuzasshi* 建築雑誌 31, no. 366 (April 1917), 426-483.

*74) Ichiro Osawa 大澤一郎, Kanada Toronto shi *Tekkinkonkurīto Jourei* 加奈陀トロント市鉄筋混凝土条例 [Regulation of Reinforced Concrete for Toronto, Canada], *Kenchikusekai* 建築世界 8, no. 3 (March 1914), 78-80, no. 4 (April), 70-73, no. 5 (May), 81-83, no. 6 (June), 72-75.

*75) Narikichi Kasamatsu 笠松為吉, "*Tekkinkonkurīto Sekouho*" 鉄筋混凝土施工法 [Construction Method of Rein-

forced Concrete], *Kenchikusekai* 10, no. 5 (May 1916), 42-45, no. 6 (June), 44-48, no. 7 (July), 71-76, no. 11 (November), 49-51, no. 12 (December), 43-45, *Kenchikusekai* 11, no. 2 (February), 45-49, no. 4 (April), 40-42, no. 5 (May), 44-46.

*76) Sotokichi Nakashima 中島外吉, "Tekkinkonkurīto nitsuite" 鉄筋混凝土に就て [About Reinforced Concrete], *Kenchikusekai* 13, no. 2 (February 1919), 33-34, no. 5 (May), 29-30, no. 6 (June), 28-30, no.7 (July), 40-44, no. 10 (October), 23-26, no. 11 (November), 26-28, no. 12 (December), 37-39.

*77) Koukichi Yamaguchi 山口孝吉, "Tekkinkonkurīto no Katawakunitsuite" 鉄筋「コンクリート」の型枠に就いて [About the Formwork of Reinforced Concrete], *Kenchikusekai* 13, no. 3 (March 1919), 24-27, no. 5 (May), 22-24, no. 6 (June), 28-30, no. 7 (July), 34-39.

*78) Katsuya Yasuoka 保岡 勝也, "Semento oyobi Kasanhai Heiyou Koudei Shiken Seiseki Houkoku" セメント及火山灰併用膠泥試驗成績報告 [Report about the Results of the Mixture of Cement and Volcanic Ash], *Kenchikuzasshi* 建築雑誌 22, no. 257 (May 1908), 211-213, no. 258 (June), 260-261.

*79) Mikishi Abe 阿部美樹志, "Jikkenjou yori Mitaru Tekkinkonkurīto Kenchiku Kakubu no Sekkei" 実験上より見たる鉄筋混凝土建築各部の設計 [Design of Components of Reinforced Concrete Seen from Experiments], *Kenchikuzasshi* 30, no. 358 (October 1916): 574-586, no. 359 (November): 647-662, no. 360 (December), 739-753

*80) Matsui Doi 土居松市, "Konkurīto Kyoudo Shiken Houkoku" コンクリート強度試驗報告 [Report about the Strength of Reinforced Concrete], *Kenchikuzasshi* 31, no. 364 (October 1917), 280-299, 35, no. 417 (July 1921), 380.

*81) "Mondou" 問答 [Question and Answer], *Kenchikusekai* 建築世界 8, no. 9 (September 1914), 97.

*82) "Mondou" 問答 [Question and Answer], *Kenchikusekai* 建築世界 16, no. 4 (April 1922), 51.

*83) J. I. Sei J. I. 生, "Tekkinkonkurīto Hari no Kenkyu" 鉄筋コンクリート梁の研究 [Study on Reinforced Concrete Beam], *Kenchiku* 建築 196 (July 1916), 7-12, 197 (August 1916), 7-10, 198 (September 1916), 20-24, 199 (October 1916), 14-21. The original author is Oscar Faber, but the original source cannot be found through this study.

*84) Oscar Faber, P. G. Bowie, *Reinforced Concrete Design* (New York: Longmans, Green & Co., 1912).

*85) Iwao Yamane, *Wagakuni he no Tekkinkonkurīto Hashi Dounyuu no Gijutsushi teki Kenkyuu*, 67-71.

*86) Keiji Goto 後藤慶二, "Harikan tsuki Rokuzai Yakugama no Riron oyobi Keisan" 張釬付肋材屋構の理論及び計算 [Theory and Calculation of Roof Rib with Tension Robs], *Kenchikuzasshi* 建築雑誌 28, no. 336, (December 1914), 604, 616, 29, no. 337 (January 1915): pp. 16-22, 29, no. 338 (February): pp. 69-89.

*87) See also appendix A, 172.

*88) Keiji Goto, "Konkurīto oyobi Tekkinkonkurīto Hari no Shuukyokukyou no Santei" コンクリート及び鉄筋コンクリート梁の終極強の算定 [Calculations of Ultimate Strength of Concrete and Reinforced Concrete Beam], *Kenchikuzasshi* 建築雑誌 31, no. 371 (November 1917), 771-780, no. 372 (December), 844-850.

*89) Keiji Goto, "Tekkinkonkurīto Hari no Toukyoku: Fu Tekkinkonkurīto Koteiryou no Kyokunouritsu" 鉄筋コンクリート梁の撓曲: 附鉄筋コンクリート固定梁の曲能率 [Flexure of Reinforced Concrete Beam: With the Moments of Fixed Reinforced Concrete Beam], *Kenchikuzasshi* 32, no. 384 (December 1918), 603-624.

*90) See also note 78.

*91) Mikishi Abe 阿部美樹志 "Tekkinkonkurīto Kousou Kenchiku Youso no Rironteki Kaihou" 鉄筋コンクリート高層建築要素の理論的解法 [Theoretical Solution of Reinforced Concrete High-rise Building Components], *Kenchikusekai* 建築世界 10, no. 11 (November 1916), 19-23, no. 12 (December), 17-22, 11, no. 1 (January 1917), 28-32.

*92) Mikishi Abe "Tekkinkonkurīto Hari niokeru Tekkin to konkurīto to no Nenchakuryoku nitsuite (omoni Jikken Seiseki)" 鉄筋コンクリート梁に於ける鉄筋とコンクリートとの粘着力に就て（主に実験成績） [About the Adhesive Force between Steel Bar and Concrete in Reinforced Concrete Beam (mainly about experiment results)], *Kenchikusekai* 11, no. 5 (May 1917), 22-24, no. 6 (June), 23-25, no. 7 (July), 38-43, no. 8 (August), 15-21, no. 11 (November), 24-30, 12, no. 1 (January 1918), 36-41.

*93) Tachu Naito 内藤多仲, "Kakou Kenchiku Taishin Kouzouron" 架構建築耐震構造論 [Theories of Anti-seismic Structure for Framed Buildings], *Kenchikuzasshi* 建築雑誌 36, no. 436 (October 1922): 397-418, no. 437 (November 1922): 441-467, no. 438 (December 1922): 487-510, 37, no. 439 (January 1923): 3-18, no. 440 (February 1923): 39-53, no. 441 (March 1923): 69-86.

*94) Mitsuo Toyoshima 豊島光夫, *E de miru Tekkin Senka: Tadashii Haikin no susume*, 288. Although the version of JASS 5 is not exactly confirmed, it should be between the legislation year and the publication of the book, i.e., 1953-1972.

CHAPTER 2
THE UNDERGRADUATE THESES FROM IMPERIAL UNIVERSITY OF TOKYO

2.1 Introduction

2.1.1 Specialness of the undergraduate theses

As has been introduced in 0.2, "Reinforced Concrete and New Style" was a widely and consistently discussed topic as well as an ideology which appeared in a wide spectrum of historical events. From 1915 to 1920, in the department of architecture in Imperial University of Tokyo, the themes of the theses were changed from the introduction of graduation design to certain optional subjects given by the professors1), from which nineteen students chose the title of "Reinforced Concrete and New Style" in 1915 (5 students) and 1916 (14 students).[*1)] Back to Taisho Period, the professors of Imperial University of Tokyo were actually the leading party of architecture in Japan. Hence, the undergraduate theses, which not only reflect the ideas of the students, but also, to a large extent, the thoughts of the professors, are no doubt an entry point for understanding the ideas on reinforced concrete.

Given the technical aspect reviewed with textbooks and educational articles in advance, the inspection into the nineteen theses mainly sets the focus on the ideational, i.e., design thoughts of reinforced concrete, also with the technical background shown among the students reviewed in a succinct way. Regarding the situation that in many general narratives, the abstract ideas such as "Evolutionism", "Sham Structure" and "Structure as non-art" are put under magnifying glass, while the tangible ideas are to a large extent ignored, this chapter mainly focuses on the tangible ideas for obtaining a substantial understanding of the design conceptions directly related to reinforced concrete.

Hence, this chapter sets the main purpose as to figure out the tangible design conceptions of reinforced concrete in the theses, while the topic of "Reinforced Concrete and New Style" is treated as the background, since it is not feasible to verify if reinforced concrete indeed had influence on architectural styles with the with merely theories. Henceforth, this chapter also tries to explore the relations between the conceptions, the links to abstract thoughts, and the details of specific the central conceptions. Moreover, an additional purpose of this chapter is to set up the base for further study into the magazine articles in the next chapter.

Particularly, it has to be noted here that "idea" refers to the instances of thoughts in the theses, while "conception" is used to describe the ideas standardized in this chapter.

2.1.2 Knowledge from previous researches

About the undergraduate theses, certain detailed information can be found. Firstly, as has been mentioned in chapter 1, Hiroyasu Fujioka 藤岡洋保 (2005) who asserts that the architects in the 1910s regarded reinforced concrete as the structure of rigid joint also mentions the similarity between the concept of "elastic arch" proposed by Keiji Goto and "rigid joint" mention by Toshihiko Noda in his undergraduate thesis.[*2)] Hence, it can be estimated that Fujioka must have confirmed the thesis of Noda. Unfortunately, other students' theses are not mentioned by Fujioka, although it cannot be denied that Noda's undergraduate thesis was the most famous one in Taisho period. In recent years, more specifically about the undergraduate theses, some brief summaries are given by Koichi Kato 加藤耕一 (2018), from which not only the change of policy for the theses but also the issues related to reinforced concrete

are mentioned.[*3)] Moreover, Mayumi Tsunoda 角田真弓 (2019) also offers abundant information about both the professors and the students.[*4)] However, albeit inspiring, these studies are not yet close enough to each student's ideas as well as the conceptions of reinforced concrete.

Related to the theses, other than the students, two important figures, i.e., Toshikata Sano 佐野利器 and Keiji Goto, whose ideas are revealed in the later stage, are important for understanding the students' conception of reinforced concrete. The most authoritative narrative comes from Teijiro Muramatsu's book, *Mountain Ranges of Japanese Architects* 日本建築家山脈 (1965), in which a wide spectrum of architects from Meiji to Showa Period are covered with meticulous details about their affiliations and relationships, and Toshikata Sano is evaluated as the most import figure leading the mountain range of Imperial University of Tokyo.[*5)] Besides, Terunobu Fujimori's 藤森照信 (2005) research based on the anthology of eulogies for Sano is a valuable material,[*6)] within which many authentic facts are revealed9). About Goto, the most representative discussion should come from Takashi Hasegawa長谷川堯 (1968), who emphasizes the expressionist words and the concept of "space" of Goto and defines him as the iconic figure of the expressionist architecture in Japan during Taisho Period, followed by Bunriha, whose members are regarded as the successors of Goto and his expressionism.[*7)] More recently, Takeyoshi Hori 堀勇良 (2018) gives discussion about Goto's ideas of space and "elastic arch". Especially, Hori affirms the mechanical sense of "elastic arch" based on a semantic inspection into Goto's text.[*8)] However, both scholars' arguments about Goto are, to some extent, based on their personal judgment.

2.1.3 Methodology

As to the methods, firstly, this chapter conducts a comprehensive reading into all the manuscripts and extracts the typical statements, regardless of the variations of phrases. At the same time, an investigation of the relative figures is implemented as well. Secondly, a grouping of all these statements is conducted, through which the statements are divided into two genres, i.e., general / abstract thoughts and specific ideas.

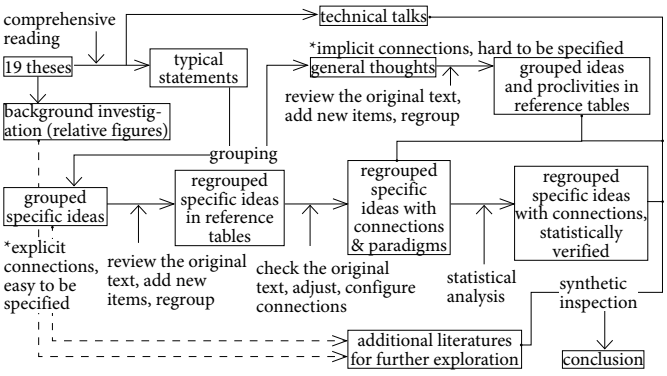


Fig. 2-1 The process and methods of this chapter

Thirdly, a regroup of all the statements is conducted and new items are added based on the method of reference table to ensure that every extracted statement has its own basis. Fourthly, this study specifies the connections between the ideas to specify certain paradigms, through which, the grouping is adjusted once more based on the original text. In the fifth step, this research conducts a statistical excavation of the data as well as a comprehensive inspection into the logic of abstract thoughts behind the ideas for gaining a deeper understanding of the theses. Finally, from certain points, a further exploration into the additional materials is conducted, especially the works of Toshikata Sano and Keiji Goto, and the conclusion is given through a process of synthesis in the end.

2.2 Overview of the theses and the technical basis

2.2.1 Curriculum in the department of architecture of Imperial University of Tokyo

Generally, the education in the department of architecture of Imperial University of Tokyo was a three-year program back to Meiji and Taisho Periods. Based on Mayumi Tsunoda's book,[*9)] in Meiji Period, the students were scheduled to receive knowledge in various fields in the first year, whereas in the second and third years, they were provided with less courses which mainly focused on the specialties of architecture and the training of drawing. Particularly, from 1908 to the end of Meiji Period, the courses were standardized and more integrated courses are formed. With basics like mathematics, mechanics, ruler-and-compass construction preserved, as well as some basic training of drawing, three major courses, i.e., calculation, architectural structure, and architectural history were integrated in the first academic year. In the second year, although the course of architectural structure continued, much more contents about architectural drawing, decoration and design are introduced. From the third year, with the course about the regulations and laws of architecture introduced and a large portion of contents concerning drawing and design continuing, the undergraduate design and thesis were finally tasked for the students. Moreover, although from 1915, optional courses were introduced in two aspects of structure and design, the actual separation of students did not happen in the department. Overall, it can be estimated that the students might fall short of the knowledge of mechanics regarding the course of calculation in the first year and the considerable training programs of drawing in the second and third years.

2.2.2 The setting of the theme: the influence of Toshikata Sano

According to Tsunoda's and Kato's narratives, the professors then were Chuta Ito 伊東忠太, Tadashi Sekino 関野貞, Yasushi Tsukamoto 塚本靖, Tatsutaro Nakamura 中村達太郎, Toshikata Sano and Yoshikazu Uchida 内田祥三.[*10)] The first three were the professors of design, while the others were responsible for structure. Noticeably, the change from the introduction of graduation design to assigned topics in 1915 just happened in the next year after Sano, one of the most influential pioneers of reinforced concrete in Japan, returned from overseas[*11)]. Moreover, from Muramatsu's narrative in *Nihon Kenchikuka Sanmyaku*, it can be confirmed that Teitaro Takahashi, Goro Kitazawa, Seiichi Kobayashi and Sadakichi Ibe (Japanese names in table 2-1) are Sano's students, who supported his work in the following decades.[*12)] Particularly, Kobayashi got the trust of Goto to take over the structural calculation of Meijijingu Gaien Stadium (明治神宮外苑競技場) merely one year after his graduation and took his doctorate under Sano by archiving the construction of Meijijingu Gaien, the biggest project of Sano's career, in which Takahashi also covered the drawings.[*13)] Considering all these facts, it is reasonable to speculate that the setting of the theme, i.e., "Reinforced Concrete and New Style" was deeply influenced by Toshikata Sano.

2.2.3 General structure of the theses

Seen from the general information of the theses (table 2-1), first of all, the numbers of pages which range from sixteen to sixty-two indicate that the theses are actually akin to academic reports. Secondly, according to the composition of chapters, it can be discovered that the students' works consist of three main parts, i.e., general architectural thoughts (text with dark grey background), technical talks of rein-

Table 2-1 Tables of contents of the nineteen theses

	Student	Table of contents (translated)
1915	久留弘文 Hirofumi Hisadome (34 pages)	chp. 1 Introduction chp. 2 Architecture and the significance of style chp. 3 Durability of RC chp.4 Rational form in RC chp. 5 Conclusion
	永澤毅一 Kiichi Nagasawa (16 pages)	preface chp. 1 General theory of Architecture chp. 2 Theory of style chp. 3 Theory of structure chp. 4 Theory of RC structure chp. 5 RC and architectural style
	今林彦太郎 Hikotaro Imabayashi (53 pages)	preface pt. 1-chp. 1 Brief of RC pt. 1-chp. 2 Features of materials, pt. 1-chp. 3 Features of RC and the strength pt. 1-chp. 4 Pros and cons of RC pt. 1-chp. 5 Utilization of RC pt. 2 RC structure and architectural style pt. 2-chp. 1 General theory pt. 2-chp. 2 Conclusion
	浦五十吉 Isokichi Ura (39 pages)	chp. 1-1 General theory chp. 1-2 History of concrete chp. 1-3 History of RC chp. 1-4 Mechanism of RC chp. 1-5 Walls of RC chp. 1-6 Features of RC chp. 2 Architectural dealing of RC buildings chp. 2-1 <Proportion> and decoration chp. 3 Style for RC chp. 4 Conclusion
	野田俊彦 Toshihiko Noda (50 pages)	preface pt.1 Theory of architecture pt. 2 Relation between material et structure and style & RC and style (*no chapters, division of parts based on the structure of the thesis and the note on page 34)
1916	高橋貞太郎 Teitaro Takahashi (62 pages)	pt. 1 Introduction pt. 2-chp. 1 General theory of architecture pt. 2-chp. 2 Architectural style pt. 2-chp. 3 Architectural structure pt. 3-chp. 1 Theory of RC structure—Material pt. 3-chp. 2 Transcending lintel system pt. 3-chp. 3 Rational structure form pt. 3-chp. 4 Expression of RC structure pt. 4 Conclusion
	大塚剛三 Kouzo Otsuka (25 pages)	chp. 1 Introduction chp. 2 Theory of architectural style chp. 3 RC structure chp. 4 Current structures of RC chp. 5 Current structures of RC and the architectural styles chp. 6 RC structure in the future chp. 7 RC structure in the future and the architectural style chp. 8 Conclusion
	柳澤彰 Akira Yanagizawa (23 pages)	chp. 1 Introduction chp. 1-1 What is architecture chp. 1-2 What is style chp. 2 Era and style chp. 3 Style and material et structure chp. 4 Era of structure and material chp. 5 RC structure chp. 6 RC structure and the style chp. 7 Conclusion
	北澤五郎 Goro Kitazawa (34 pages)	preface: Architecture and life chp. 1 What is architecture chp. 2 My theory of architecture chp. 3 Theory of expression chp. 4 Theory of structure = expression of structure and material chp. 5 Theory of RC structure chp. 6 Theory of architectural style chp. 7 Conclusion

	Student	Table of contents (translated)
	小林政一 Seiichi Kobayashi (41 pages)	chp. 1 Introduction chp. 2 Theory of architectural style chp. 3 Origins of style and the transition chp. 4 Architecture in Japan and recent department of architecture chp. 5 Reasons of new architectural style chp. 6 RC structure and architectural style chp. 6-1 Theory of RC structure chp. 6-2 structure and style chp. 6-3 material and style chp. 7 Conclusion on RC structure and architectural style
	桑田正一 Seiichi Kuwada (43 pages)	preface chp. 1 The significance of architecture chp. 2 Architectural material and architectural style chp. 3 Characteristics of RC chp. 4 RC structure and the architectural style chp. 5 Conclusion
	中西甚作 Jinsaku Nakanishi (25 pages)	preface chp. 1 General theory of architecture chp. 2 Theory of style chp. 3 Theory of structure chp. 4-1 RC structure and architectural style chp. 4-2 Conclusion
	伊部貞吉 Sadakichi Ibe (20 pages)	preface chp. 1 General theory of chp. 2 Theory of style chp. 3 Theory of Structure chp. 4 Theory of RC structure chp. 5 RC structure and style
	鳥井信 Nobu Torii (26 pages)	preface chp.1 General theory of architecture chp. 2-1 Theory of architectural style chp. 2-2 Influence of material in style chp. 3 Pros and cons of RC chp. 4 Theory of RC structure chp. 5 Japanese taste and the thoughts of modern era chp. 6 Conclusion
	小久保政春 Masaharu Kokubo (35 pages)	preface chp. 1 Essence of architecture chp. 2 Style of architecture and the significance chp. 3 Origins of styles and the transition chp. 4 Relation between architectural style and material chp. 5 RC structure chp. 6 RC structure and the appearance chp. 7 RC structure and architectural style chp. 8 Conclusion
	山田剛一 Kouichi Yamada (33 pages)	chp. 1-1 Significance of architecture chp.1-2 Significance of style chp. 2 Theory of architecture chp. 3 Relation between material et structure and style chp. 4 Theory of RC structure chp. 5 RC structure and architectural style
	原田俊雄 Toshio Harada (26 pages)	chp. 1 Introduction chp. 2 Theory of architecture chp. 3 Characteristics of RC structure chp. 4 Theory of RC structure chp. 5 Conclusion
	小倉強 Tsuyoshi Ogura (29 pages)	chp. 1 Theory of architecture chp. 2 Theory of style chp. 3 RC structure and the style
	山崎英二 Eiji Yamazaki (27 pages)	chp. 1 Introduction chp. 2 Theory of style chp. 3 Architectural material and RC chp. 4 Theory of RC structure chp. 5 Conclusion—RC structure and the style

forced concrete (light grey), and personal ideas upon the theme of "Reinforced Concrete and New Style". Globally, all the students covered the general thoughts, and thirteen out of nineteen students, more or less, handled the technical knowledge of reinforced concrete as independent chapters. As to the specific design ideas, although all the students give their own reflections, four students, Hisadome, Yanagizawa, Kuwada and Kokubo turn back to the general thoughts in the conclusions. Especially, Noda mainly focuses on his discussion of "Architecture as Non-art" 建築非芸術論[*14)] rather than the orthodox talks like the others, albeit his conclusion with some specific ideas.

Table 2-2 Five genres of general / abstract thoughts seen from the nineteen theses

Ideological	Pragmatism	Of material et structure	Of truth	Of historical styles
Evolutionism, National character, Individualism, Spirit of era	Practical architecture, Economical architecture, Based on science, Rational structure	Expression of structure / mechanics, Expression of material	Truth of structure, Truth of purpose / use	No imitation of historical styles, No [mere] replacement of material, Implication of historical styles

2.2.4 A brief look at the general / abstract thoughts

Despite the compositions of all the theses, the general thoughts are not going to be thoroughly dissected here, regarding their unclear boundaries and the implicit connections, which can make the inspection turn out to be a mess. Instead, the relevant discussions are integrated with personal ideas in later sections, while here, only a brief cast of these thoughts is given as below.

By going through all the theses, the general thoughts can be configured in five groups featured with specific keywords, as are shown in table 2-2. The third group, of material et structure[*15)] is actually connoted in the title of the theses, so that extensive discussion is halted here. For the group of "Ideological", certain ideological thoughts which are not technologically concerned with architecture are included. Particularly, "evolutionism" is an iconic and well-known theory mainly proposed by Chuta Ito[*16)], who acclaims that architectural styles are depended on a bunch of factors like national character, spirit of era, material, technology, and religion, which is also similar with the paper of Banister Fletcher in 189514). Hence, the other thoughts in the group are actually covered by "evolutionism". The other three groups, i.e., "pragmatism", "of truth", and "of historical styles", are covered by all the students, considering that at least one thought out of each group can be found amidst the theses, implicitly or explicitly, except Noda, who devoted a large extent of efforts to the discussion of "Architecture as Non-art". In fact, the thoughts like "truth" and "no imitation of historical styles" are universally found in the text of the figures like James Fergusson and John Ruskin, whose books were already collected in Imperial University of Tokyo since late Meiji Period.[*17)] All these thoughts definitely present the typical meditations of that specific era in Japan, i.e., having received the theories of British architects which was no doubt largely influenced by Josiah Conder, and meanwhile, getting encouraged by the spirit of individualism, pragmatism and the development of science and technology, trying to throw off the shackles of historical styles.

2.2.5 Technical talks about reinforced concrete

Before the inspection into the specific ideas of the students, it is necessary to take a look at the technical basis of the theses. Shown in table 2-3, the technical talks of the students are summarized in the form of keyword, which can be briefly divided into four groups, as are physical feature, mechanics and structural form, construction method, and anti-seismic.[*18)] Although all the students more or less touch the technical aspect of reinforced concrete, only 13 students used independent chapters to discuss the relevant issue, implying a relatively weak technical basis of the theses. Even though it is kind of unnatural to set anti-seismic as a single group, the reason is demonstrated in the following discussion. Particularly, it is necessary to mention that the discussions of structure directly involved in the context of "elastic arch", which is discussed in later sections, are not regarded as technical talks.

a. Physical and chemical features: concerns about the capacities of reinforced concrete

Table 2-3 Technical talks of the nineteen theses

Student	Physical and chemical features	Mechanics and structural form	Construction method	Anti-seismic
Hirofumi Hisadome	Fire-proof capacity and experiments [overseas], water-proof capacity and experiments [overseas], crack of RC, oxidation due to electric current and relevant experiments [overseas]	As anti-seismic structure = structure of frame (鳥籠), as an entity	Cost of formwork as the pending problem	See also Mechanics and structural form
Hikotaro Imabayashi	Strengths of steel and concrete, mixture of concrete, elastic ratios (弾性率) of materials, oxidation of steel, water-proof capacity and experiments [overseas], water-proof paintings, resistance against acid and electricity, fire-proof capacity, thermal expansion and contraction, thermal conduction		Construction in cold weather, arrangement of iron bars, economical issues of construction	Anti-seismic capacity [as a casted and plastic entity with rigid joints], resistance against subsidence
Isokichi Ura	Fire-proof capacity, durability of RC	RC as the combination of two materials; structural forms of RC divided as <bearing wall type> and <curtain wall type>, of which the latter forms <skeleton frame> with <wall>, <girder> and frame	RC as economical material; construction of RC easy and rapid; dealing of surface; formwork [uneconomical, should be abandoned.]	RC as anti-seismic structure [as an entity]
Toshihiko Noda		RC <combine>-s the components for compression and tension; The distribution of stress in <structural members> is the most developed in RC; RC is frame structure rather than <cast>-ed, as casting is only the method of construction.		
Teitaro Takahashi	Large strength against bending force, [RC] as plastic material, as unity with freedom of shape, fire-proof capacity, water-proof capacity, acoustic and thermal conduction, resistance against rust, durability	RC as cooperation of two materials	Points for the facility of construction	Anti-seismic capacity [as foundation, as an entity]
Kouzo Otsuka	Ingredients of concrete, strengths of materials, thermal impact, elastic ratio, as fire-proof material, durability, resistance against rust,	RC as cooperation of two materials; RC works after crack; RC consists of reinforcing system and curtain wall system = lintel system, arrangements of iron bars in column [vertical and spiral], in girder [Hennebique, Coignet, and Kahn System], in floor and wall [as mesh], structures of roofs	Difficulty of construction [curing of RC]	As anti-seismic material [as a whole stone, as foundation]
Akira Yanagizawa	As fire-proof material	RC as cooperation of two materials	Complexity of formwork	
Seiichi Kobayashi	Fire-proof capacity, durability [crack]	RC divided as <bearing wall system> (支壁式) and <curtain wall system> (張壁式), unsuitable for high-rise buildings	Budget of construction	Anti-seismic capacity [as an entire box]
Seiichi Kuwada	As fire-proof material			as anti-seismic material [no details]
Nobu Torii	Huge resistance against load, huge strength against impact, volume and weight, fire-proof capacity, durability, acoustic conduction, oxidation of iron bar, electrolysis, reaction with liquid, free shape, hardness of RC, permeation of water		Speed of construction, economical value of RC, complication of formwork	Anti-seismic capacity [frame merely mentioned]
Masaharu Kokubo	Durability of RC [mainly about rust of iron bar], fire-proof capacity, resistance against water and other liquid, thermal and acoustic capacities		Economic value [methods of quick construction [e.g., embedment with formwork] and the prices of materials]	Anti-seismic capacity [as an entity with rigid joints]
Toshio Harada	Volume and weight, fire-proof capacity, oxidation of iron bar, durability, thermal and acoustic conduction, influence of climate, thermal and acoustic conduction, influence of electricity, permeation of water	RC as the combination of two materials	Curing time and complication of formwork	Anti-seismic capacity [as an entity with rigid joints]
Eiji Yamazaki	Huge strength against bending force, as unity, as plastic material, as fire-proof material, as insect-proof and hygienic material, easy to reinforce, easy access to materials, huge cohesion of concrete, reaction [chemical] during curing, durable, reliable for hidden places [of construction], permeation of water, oxidation in the cracks	Less space [size] than masonry buildings, rigid joint	Economical compared with other materials, complexity of construction, necessity of form work as disadvantage	As anti-seismic material [no details]
*No independent technical talk: Kiichi Nagasawa, Goro Kitazawa, Jinsaku Nakanishi, Sadakichi Ibe, Kouichi Yamada, Tsuyoshi Ogura				

*Brackets: original Japanese text, angle brackets: original English text, square brackets: notes from editor

From the students covering independent chapters discussing the physical and chemical features of reinforced concrete, which mainly consist of the strengths of materials and the resistances against manifold external stimuli. Considering the topics like crack, oxidation of steel bar, or issues of electrical conductivity, it can be confirmed that these students were still concerned about the reliability of reinforced concrete.

b. The lack of mechanical talks and the cognition of existent structure as simply supported frame

Amidst the text of the students, an obvious feature is that no one talks about the calculation or mechanical models of reinforced concrete, which by contrast is the kernel of today's technology. However, it is hard to judge whether it is caused by the lack of knowledge or the limit of volume and time, since their

professor Sano was actually an advanced scholar in the field of structural calculation of reinforced concrete.

Regardless of the shortage of mechanical talks, it can be seen that many students regard the structure of reinforced concrete as frame (骨組 or 組立て), or in other phrases, curtain wall system (張壁式) or lintel system (楣式), which generally refers to simply supported frame. As to the variation of the terminologies, Isokichi Ura directly uses the English phrases of "curtain wall" and "skeleton frame" and explains that they are the same structure. Another student, Kouzo Otsuka, indicates that curtain wall system can also be called lintel system, as Hennebique, Coignet and Kahn System all belong to curtain wall system. Furthermore, Masaharu Kokubo asserts that the structure of reinforced concrete in that era was exactly lintel system, which, however, should evolve to rigid frame or in a broad sense, "elastic arch". Especially, some theses without independent chapters about the structure of reinforced concrete also show the similar cognition that lintel system should evolve to or be transcended by "elastic arch".

c. Construction method: Denial of formwork

About the construction methods of reinforced concrete, the utilization of formwork is the most discussed topic, on which many students show a negative attitude. They mainly claim that formwork is not economical, amidst which Torii even proposes the abandonment of formwork. Likewise, Otsuka and Harada also deny formwork, who complain about the curing process of concrete, which, however, is actually an important subject of today's construction management. By contrast, Kokubo gives some more reasonable narratives like speedy construction methods and the embedment of metal parts.

d. Under the discussion of anti-seismic structure: rigid frame and as a single entity

Amidst all the detailed discussions about anti-seismic structure, we can see that rigid frame and the structure of reinforced concrete as a single entity, regardless of the variations of description, are typically the consensuses. This vision is almost identical with Sano's Theory of Anti-seismic Structure for Buildings 家屋耐震構造論,[*19)] which was also included in many textbooks then. Noticeably, in many descriptions, "elastic arch" is depicted as monolithic or a single entity, albeit discussed later in this chapter, which is highly similar with the narratives about anti-seismic structure. In this sense, the consciousness about the anti-seismic capacity of reinforced concrete can definitely be the motivation and joint to more advanced structure theories or even design ideas.

2.3 The ideas about "Reinforced Concrete and New Style"

2.3.1 Ideas classified in five groups, through the method of reference table

After reading all the theses, this study collects the typical proposals from the students, which are arranged in the form of reference table (about the details, check appendix B). The statements (full expressions in figure 2-2) are marked with three symbols of "○", "∪", and "×", which refer to affirmative, approximately affirmative or merely not denied, and negative statements respectively. To alleviate the loss of some important details by using symbols, in figure 2-2, some notes are added. Hereinafter, phrases with single quotes refer to the statements, otherwise, as themselves. If the context is hard for using

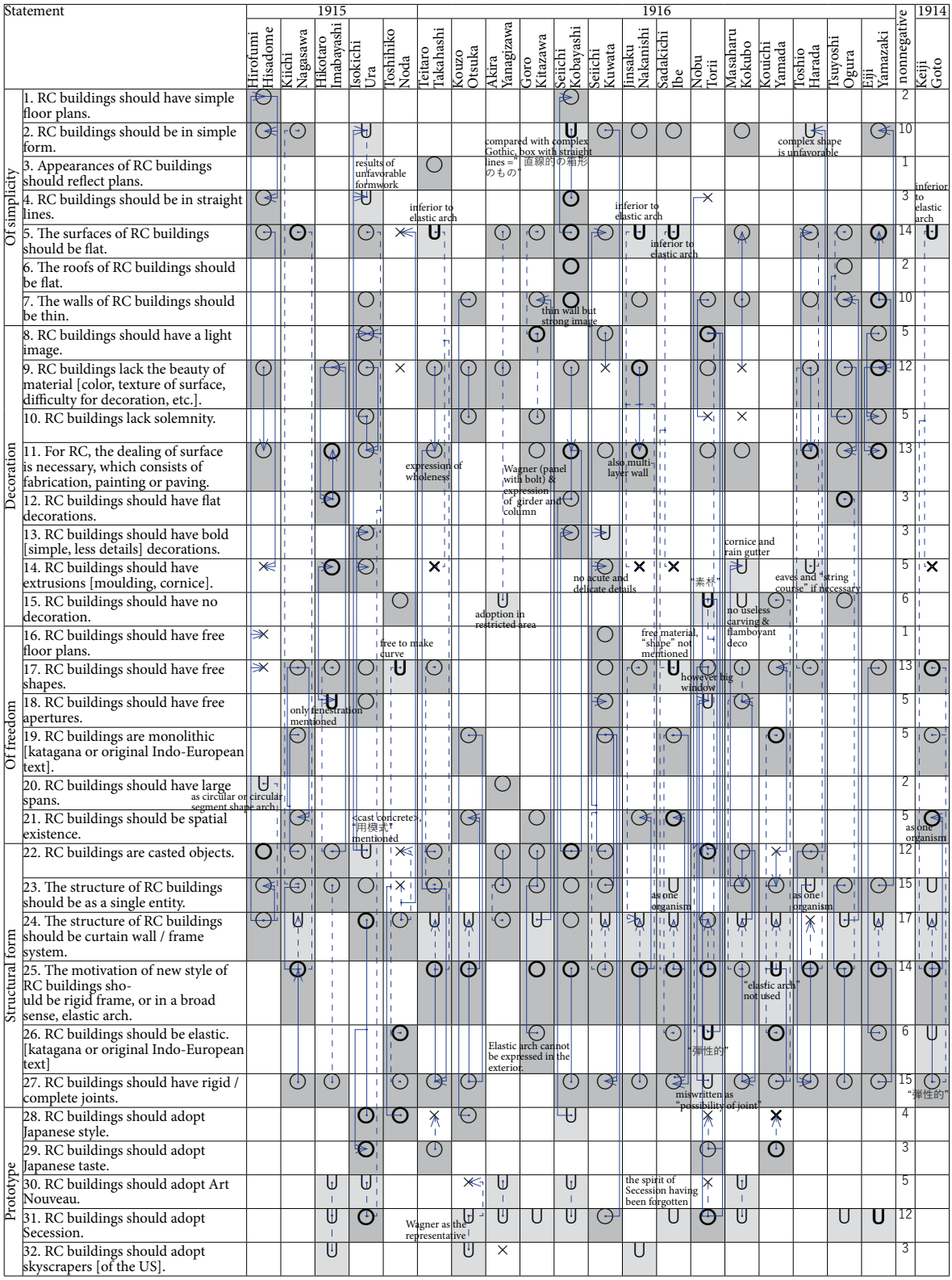


Fig. 2-2 Specific ideas of RC in the nineteen theses

*Particular senses of the marks are defined as follow. ○: affirmative, ∪: approximately affirmative or not denied, ×: denied. As to the connections, solid line with arrow: affirmative causal connection, dashed line with arrow: negative causal connection, solid line: connections of sets, inclusive or equivalent, dashed line: conjugated or juxtaposed. Bold font for the ideas also mentioned in conclusions.

quotes, the relevant text is underlined.

Generally, in figure 2-2, by classifying the statements principally based on the affinity between the keywords, ignoring the nuance of original context, there are five groups can be summarized, i.e., *of simplicity*, *decoration*, *of freedom*, *structural form* and *prototype*. Generally, it is not hard to discover that *structural form* is the most discussed group, which also means the ideas of students in this aspect are actually consistent, while in other groups the ideas vary to some extent.

2.3.2 Conceptions in five groups

Within the groups, from the frequencies of conceptions, several features can be already summarized.

Specifically, seen from the group *of simplicity*, we can learn that among the students, ‘flat surface’ (#5) is regarded as a common feature of reinforced concrete, followed by the ‘simple (form)’ (#2) and ‘thin (wall)’ (#7) images. These conceptions are actually relatively pictorial compared to the more detail depictions like ‘simple floor plan’ (#1) or ‘straight line’ (#4).

In the group *decoration*, many students think that reinforced concrete lacks the beauty of material (#9) and propose that ‘dealing of surface’ (#11) for reinforced concrete is necessary. Particularly, for most students ‘dealing of surface’ is generally discussed which contains different manners, whereas for specific techniques, less students give in-depth discourse.

As to the group *of freedom*, the most common conception is the ‘free shape’ (#17) of reinforced concrete, which, however, still contains the application to cornice or string course, showing the remaining of historical styles. The statement of ‘monolithic’ (#19) is mentioned by less students, which is usually discussed together with other conceptions and literally does not have a clear image in the context. The statement of ‘spatial existence’ (#21) is similar, which is actually fixed with the context of ‘elastic arch’ (#25). More specific ideas like ‘free plan’ (#16) and ‘free aperture’ (#18) are also not frequently discussed by contrast with ‘free shape’. Hence, in general, the ideas themselves are not distinctively conceived, which can largely rely on other ideas in different groups.

The issues about structural form are most ardently discussed, within which four clear images can be conceived, i.e., “casted object” (#22), “as a single entity” (#23), “curtain wall” (#24) and ‘elastic arch’ / “rigid joint” (#27), amidst which the proclivity of approving new forms is formidable over the conventional frame structure, i.e., curtain wall system.

As to the prototypes, it is noticeable that most students do not discuss or merely mention these coeval types. Explicitly, only three students approve the adoption of Japanese style (#28), and Secession (#31) is recurrently mentioned but not utterly appreciated.

Based on the count of positive statements (“◯” and “∪”), the most conspicuous ideas (no less than half, nine allowed) are picked up, which are ‘simple form’ (10x), ‘flat surface’ (14x), and ‘thin wall’ (10x) from of simplicity, ‘lack of beauty’ (12x) and ‘dealing of surface’ (13x) from decoration, ‘free shape’ (13x) from of freedom, ‘casted object’ (12x), ‘as a single entity’ (15x), ‘curtain wall’ (17x), ‘elastic arch’ (14x), and ‘rigid joint’ (15x) from structural form, and ‘Secession’ (12x) from prototype.

Particularly, it can be discovered that the proposal of “elastic arch” (#25), the most frequently shared idea among the students, is highly similar with Keiji Goto’s article, “The Motivation of Architectural

Style in Reinforced Concrete" 鉄筋コンクリートに於ける建築様式の動機 in *Modern Architecture* 現代之建築 in 1914, and some students even directly copied the narratives of Goto.[*20)] Generally, the statements claim that, "as the motivation of new style, rigid frame, or in a broad sense, elastic arch, which works as a single entity, should transcend lintel system." Furthermore, with the efforts of this study, the exact phrase of "elastic arch" cannot be found in any other architects' narratives in four major magazines during the 1910s, i.e., *Kenchikuzasshi*, *Kenchikusekai*, *Kenchiku*, and *Kenchikugaho*.

2.3.3 The specific paradigms

For further comprehension of the students' ideas, this chapter specifies the connections between different statements, which can be divided as three logical types, i.e., causal connections (affirmative or negative), connections of sets (inclusive or equivalent), positional connections (conjugated or juxtaposed). Regarding the occurrences of the statements, there is no doubt that the paradigms should be based on the most discussed ideas mentioned in 3.1 with the consideration of the connections marked in figure 2-2. To be cautious, the statements of 'thin wall' (#7) and 'Secession', whose connections with other statements are not so manifest, are halted here.

a. Simple form usually as independent statement or the result of other ideas

As is shown in figure 2-2, it can be observed that although the idea of 'simple form' is referred by quite a few students, it is usually the result of other ideas, and the connections between 'simple form' and the other ideas with the proclivity of simplicity are also rare, which indicate that simple form is actually not a central idea among the students.

b. Flat surface conjugated or juxtaposed with elastic arch

In some cases, 'flat surface' is put together with 'elastic arch'. For Takahashi, Nakanishi, and Ibe, the idea of flat surface is described as a subordinate issue, while the prioritized thing should be elastic arch. Actually, this narrative is almost identical with Keiji Goto.[*21)] Nonetheless, for Nagasawa and Harada, flat surface is conjugated with the idea of elastic arch without being in an inferior position.

c. Dealing of surface because of the lack of beauty in concrete

Even if it sounds like an excuse from the students to apply the decoration, this is definitely a paradigm shared by many students shown from the connections in figure 2-2. About the manners, the fabrication of concrete, painting and paving are all close to the meaning of flat decoration (#12). Also, with the sporadic statements of 'bold decoration' (#13), 'extrusion' (#14), and 'no decoration' (#15), among which, especially, bold decoration is opposite to the delicate decorations of Classical or Gothic architecture, it can be assured that quite a few students were definitely trying to find the new forms of reinforced concrete buildings from surface dealing or decoration under the awareness of the lack of beauty in reinforced concrete, albeit the proposal of 'no decoration' emphasized by certain ones.

d. Free shape barely as the result but connected with various ideas

Considering the connections, in contrast with the case of 'simple form', 'free shape' is barely regarded as the result of other ideas. In many cases, it is conjugated with or refers to other ideas as a relatively

independent force, which indicates the various understandings of this idea and also the fact that 'free shape' is not the destination of the students' reflections.

e. As a single entity having close relations with casted object and elastic arch

Amidst the students, it can be discovered that couples of students emphasize the close relation between the ideas of "casted object" and "as a single entity", including Yanagizawa, Kitazawa, Kokubo and Yamada. If we consider 'monolithic' as an alternative of 'as a single entity' to some extent, Nagasawa and Takahashi can also be counted. Meanwhile, there are many students showing the cognition of the relation between 'as a single entity' and 'elastic arch', or relevantly, 'rigid frame'. As has been introduced in 2.4.4, both conceptions are related to anti-seismic structure. Thus, it can be discovered that the conception of 'as a single entity' definitely has two characteristics, the pictorial and mechanical.

f. As spatial existence, elastic arch having close relation with rigid joint and denying / transcending curtain wall system

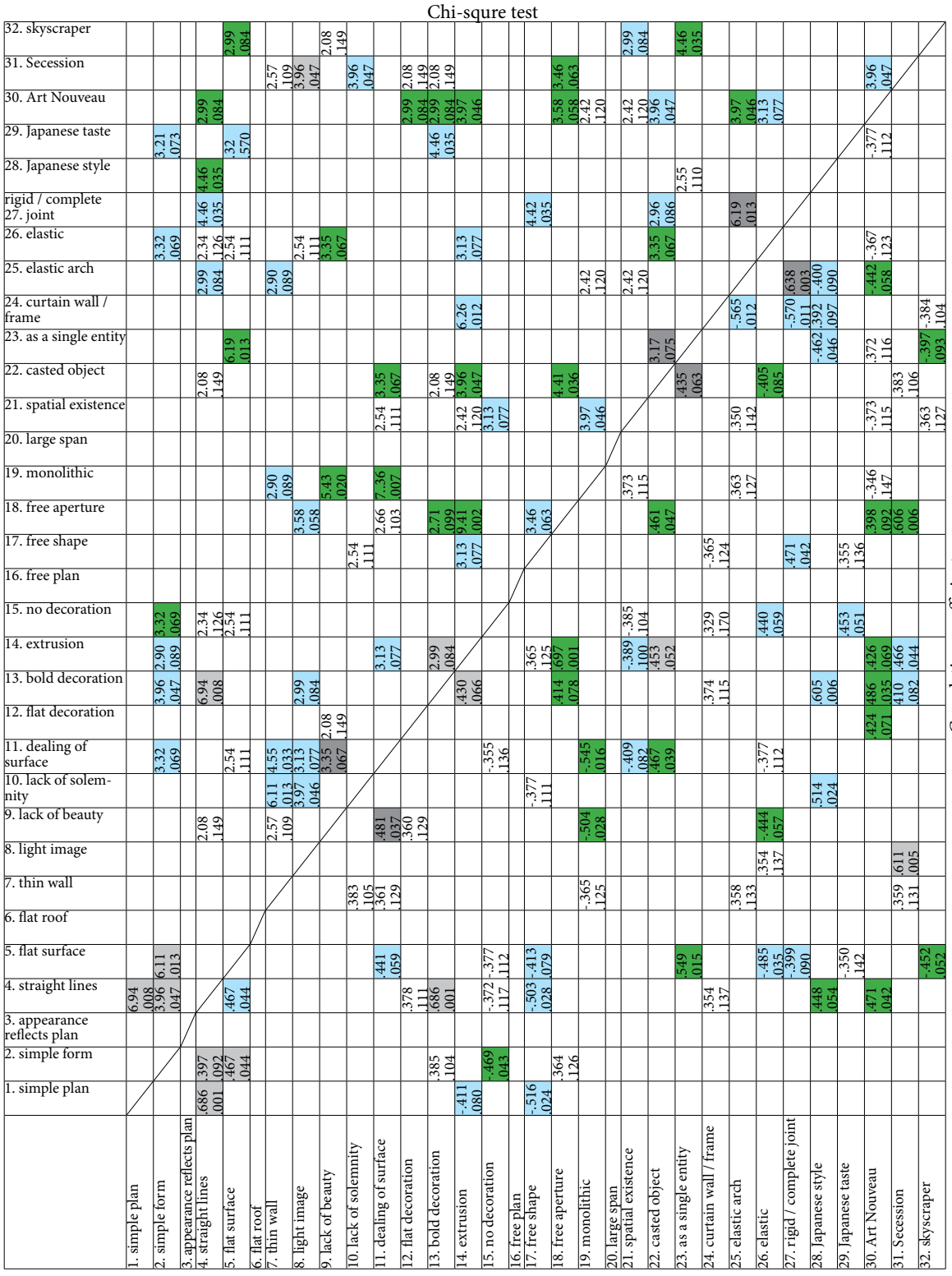
Finally, the most shared paradigm should be the priority of elastic arch, an explanation in the broader sense for rigid frame, which has very close or even self-evident relation with rigid joint, and denies the utilization of curtain wall system. However, only six students discussed the concept of "elastic" independently, which casts the doubt whether these students correctly understood the sense of this word. A few students assert that elastic arch is the requirement for spatial existence, the same as the text of Keiji Goto. However, although Goto's poetical text about space is also discussed by Takashi Hasegawa, it is deemed to stand for the capacity of elastic arch to resist forces from any direction in Goto's context, i.e., the principal idea is still the proposal of elastic arch.

2.3.4 Seen from statistical analysis

Based on the ideas and the connections configured in figure 2-2, this research conducts a statistical analysis to excavate further relations between different ideas, for which Pearson correlation coefficient and Pearson's chi-square test are utilized, and the significance level is set at 0.1 considering the relatively small number of students. To be cautious, only the correlations which are significant in both tests are picked up. It should be noted that this analysis can only measure the common features of the students by regarding them as a single group. Especially, although Noda's thesis is unique, it is still plausible to add him to the samples considering that he had the same knowledge as the others.

For chi-square test, the nonnegative statements, i.e., affirmative and quasi-affirmative, are assigned with value 1 and the negative statements and blanks are assigned with 0. For correlation coefficient analysis, negative statements, blanks, quasi-affirmative and affirmative statements are assigned with the values of 0, 1, 2, and 3. Meanwhile, the start points of causal relations (positive and negative), the link points of the relations on sets, and the link points of conjugation or juxtaposition are assigned with the values of 1, 1 and 0.5. The points are only counted once for each type of relation, but can be accumulated across different types. Particularly, assigning the value to the start point of causal relations is for configuring the principal ideas of the students rather than merely the consequences, since the reasons in causal relations are more important over the results in a mental process.[*22)]

Table 2-4 Pairs of correlated statements in both correlation coefficient and chi-square test



* p-value<0.1 in both chi-square and correlation coefficient tests; p-value<0.1 in either test; relation already discussed in paradigms; self-evident or semantically close relation;

As the result, thirty pairs of statements with p-values smaller than 0.1 in both texts can be identified, as are mark in green in table 2-4, while those results with p-values smaller than 0.1 only in one test

are marked in light blue. The relations already discussed in the paradigms are marked in grey, and the self-evident pairs, either based on the facts or the senses of words, are in light grey. Principally, some sensible relations can be read from the data as below.

a. Possible influence of Art Nouveau

An apparent result is that 'Art Nouveau' (#30) actually is related with many ideas about decoration as well as 'free aperture', while it is contradictory with 'elastic arch'. By contrast, 'Secession' is only correlated with 'free aperture' except the conspicuous relation with 'light image' (#8). In this sense, it is feasible to suppose that Art Nouveau still had influence on the thinking of architects in that era.

b. Appreciation of façade

Similar with 'Art Nouveau', it can be found that 'free aperture' is also correlated with couples of ideas, which even include the idea of "casted object". Meanwhile, the results also show the correlation between 'dealing of surface' and 'casted object'. From these, we can conceive that these students actually appreciate the dealing of façade, which is correspondent with the paradigm mentioned before, i.e., 'dealing of surface' because of the 'lack of beauty'.

c. Recognition of reinforced concrete structure: as a single entity and elastic in the mechanical sense

There are three pairs of statements should be noticed. The first pair consists of 'flat surface' and 'as a single entity'. Considering that as a paradigm, 'flat surface' is closely correlated with 'elastic arch' which is indiscriminately referred by the students and hard to be gauged in data analysis, the correlation between 'flat surface' and 'as a single entity', also the two most conspicuous features of reinforced concrete, possibly implicates the correlation between 'flat surface' and 'elastic arch', i.e., 'elastic arch' is a single entity. The other two are the pair of 'casted object' and 'elastic' (#26) and 'lack of beauty' together with 'elastic'. Both the two pairs are negatively correlated, which indicates that, on the one hand, although some students conjugate the discussion of 'elastic' with 'free shape' and 'monolithic', 'elastic' is actually contradictory with 'casted object', which implies that the students conceived the concept of "elastic" in the sense of mechanics rather than anything about shape, and 'elastic' is also contradictory with 'lack of beauty', which possibly points to the sense of beauty of structure in elastic, regarding that 'lack of beauty' almost refers to the color and barren surface of concrete among the students.

d. Traditional Japanese style and skyscraper not as the models

It can also be observed that both 'Japanese style' and 'skyscraper' are not highly involved with other ideas. For 'Japanese style', it is merely related with 'straight lines' (#4) and the correlation coefficient between 'Japanese style' and 'as a single entity' is actually [-.462, .046] (result of chi-square test not significant), i.e., negative, regardless of two students, i.e., Ura and Noda, who mention the similarity between Japanese architecture and the structure of reinforced concrete. Hence, for all the students, it is plausible to conceive that Japanese style was generally not appreciated for the new forms of reinforced concrete buildings. For 'skyscraper', the results that 'skyscraper' is contradictory with 'flat surface' and 'as a single entity' are rather not surprising considering that literally no student approves the utilization of high-rise buildings in Japan.

e. Monolithic against lack of beauty and dealing of surface: possibly the mechanical sense of elastic arch

It is kind of confusing to see the negative correlations between 'monolithic' and the two highly shared conceptions, 'lack of beauty' and 'dealing of surface'. In fact, 'lack of beauty' and 'dealing of surface' simultaneously show the relatively negative correlations with 'spatial existence' (correlation coefficient results: [-.497, .030], [-.409, .082], results of chi-square test not significant), which is also a fixed pattern in some narratives of 'elastic arch'. Meanwhile, 'monolithic' also shows a weak relation with 'spatial existence' (correlation coefficient result: [.373, .115], chi-square result: [3.97, .046]). Similar with the case of "elastic", it is plausible to assume that monolithic, possibly spatial existence as well, expresses the structural sense of the universally referred elastic arch against those ideas concerned with the surface of reinforced concrete.

2.3.5 General thoughts behind the tangible ideas of reinforced concrete: under the logics of truth of structure and rational structure

Even in many occasions, the general thoughts are implicitly discussed, there are also some commonly discussed patterns shared by the students, which can be confirmed in the diagram of figure 2-3. From the diagram, it becomes clear that there are two major general thoughts, i.e., "truth of structure" and "rational structure", setting up the basis of multiple ideas.

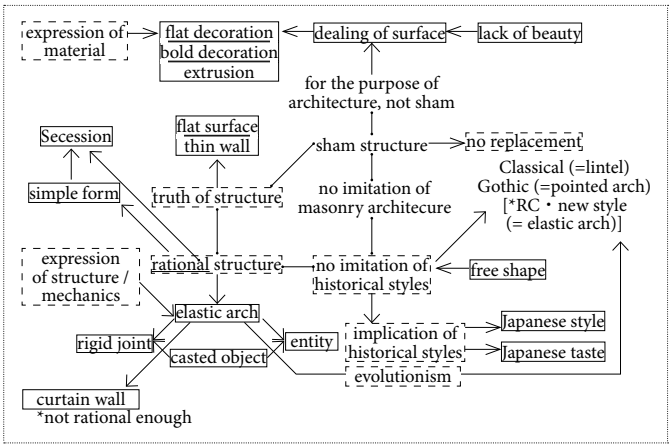


Fig. 2-3 General thoughts behind the ideas on reinforced concrete

On the one hand, for the students, truth of structure is actually the antithesis of "sham structure", as the latter refers to the method to cover reinforced concrete with other materials that imitate the appearance of masonry architecture, i.e., the buildings of historical styles. However, in the narratives of the students, if the covering is for the purpose or practicality of architecture, it is not called "sham", which stands for the proposal of certain manners of 'dealing of surface'. On the other hand, for many students, elastic arch is described as rational structure, which also leads to the antithesis of "imitation of historical styles", against which the free shape of reinforced concrete is taken as another major reason. Besides, the simple form of reinforced concrete is also recurrently described as rational, and Secession, albeit not fully appreciated by all the students, is referred to simple form and rational structure in some cases. Overall, it can be conceived that 'elastic arch' and the 'dealing of surface' are the two poles developed from the thoughts of "truth of structure" and "rational structure", together with manifold derivative ideas. Hence, the seemingly progressive abstract thoughts actually do not always lead to the progressive tangible ideas, but sometimes even the recession.

Additionally, for some students, rather than the absolute denial of historical styles, elastic arch is treated as the next phase of evolution after the lintel of Classical architecture and the pointed arch of Gothic architecture. This also indicates that these students, to some extent, regard elastic arch as a certain component or typical feature of a building.

2.3.6 Conceptions of elastic arch

Although many students refer to elastic arch, which no doubt is the most principal concept in the theses, the variants of discussion are definitely important for a thorough perception of the students' understanding over this idea. On the one hand, certain students show the conception of elastic arch in a structural sense, amidst which Kobayashi is the only one who mentions elastic arch together with the concepts of "continuous structure" and "no hinge" but does not deny the utilization of curtain wall system, while Torii contradictorily approves the utilization of curtain wall system and uses elastic arch to deny lintel system at the same time. Also, Kitazawa concludes that elastic arch, as structure, is hard to be expressed in the external, and Yamada, unlike other students utilizing the exact phrase of elastic arch, uses "elastic and monolithic rigid frame" instead, which reflects his structural consideration. Specifically, an explanation of elastic arch as brace given by Ibe is a sensible instance. On the other hand, Takahashi and Kitazawa refer to the image of T-shape girder to explain the concept of elastic arch, which, by contrast, is an insufficient cognition based on today's knowledge of reinforced concrete. Especially, about the sense of elastic, despite the result indicated in statistical analysis, i.e., the cognition of elastic arch as mechanical concept, Yamazaki equates "elastic" with "free", of which the text is highly similar with the narrative of Shin-ichiro Okada 岡田信一郎,[*23)] as is a relatively deviated conception. Meanwhile, Torii combines the concept of "dansei-teki" (弾性的, literally translated as elastic) with "chic" (瀟洒) and "casted" with "austere" (素朴) as synesthesia, which makes the connections between his ideas become complicated.

Particularly, albeit universally referred, elastic arch is approved to different extents in the conclusions. Among the students who advocate elastic arch, Kuwada and Kokubo emphasize the general thoughts without mentioning anything about elastic arch. For Kobayashi, elastic arch is merely counted as an item without further explanation in a series of bullet points. Moreover, as have been explained above, Kitazawa asserts that elastic arch cannot be expressed in the external and Torii combines elastic arch with other feelings as a synesthesia, which makes his conclusion look deviant. The other students, except Otsuka who simply asserts the doctrine that elastic arch should be the motivation of new style, all conjugate elastic arch, more or less, with the proposals of 'flat surface' or 'dealing of surface', showing the parallel consideration on both the new structural form and the conventional manners of decoration.

2.4 The most correlated figures: Keiji Goto and Toshikata Sano

In fact, there are several scholars' ideas clearly reflected in the students' text, like the explanation of reinforced concrete structure as mass, masonry and frame system from Tatsutaro Nakamura,[*24)] the quasi appreciation of Secession from Chuta Ito,[*25)] and the conception of reinforced concrete by approximately equating "elastic" with "free" and emphasizing the feature of flat surface from Shin-ichiro Okada,[*26)]

which can all be found in the special volume of *Kenchiku-to-Soshoku* in 1913. However, compared with the proposal of elastic arch, these details are relatively marginal for this chapter. Actually, there are also some topics like the disputes of Parliamentary House and the issues of "sham structure" which can be mentioned. Like the three figures above, certain ideas found in the topics, especially the abstract ones, are also reflected in the undergraduate theses, which, however, can make the discussion divergent. Here, only two essential characters closely related to the concept of elastic arch are meticulously inspected, i.e., Keiji Goto and Toshikata Sano.

2.4.1 Works of Keiji Goto and the concept of elastic arch

a. Keiji Goto's design of façade

Regarding the similarity between the students' and Goto's narratives, not to mention that Goto is the alumnus graduating from the same department in 1909, it can be assured that the students' opinions, to a large extent, came from Goto. Hitherto, although it is still difficult to have a specific image of elastic arch from all the inspections above, a plate in the posthumous anthology of Goto's work offers some essential clues. In the anthology, the plate is assigned with the title of "The Façade of Reinforced Concrete Shop" (鉄筋コンクリート造の商店正面図案) by the editor, while the plate itself is named as "STUDY FOR A SHOP FRONT OF REINFORCED CONCRETE RIGID FRAME CONSTRUCTION" (Fig. 2-4), which is fundamentally different from the editor's version, regarding that rigid frame is associated with elastic arch for Goto. Therefore, this plate can definitely be the very original design of elastic arch from Goto. Furthermore, even though this plate cannot be found in any magazines through the investigation of this dissertation, an important clue in *Kenchikuzasshi* shows that this design of façade was actually exhibited in the fourth exhibition of National Art Association (国民美術協会) in Ueno Park, adjacent to the campus of Imperial University of Tokyo, from February 2 to March 15 in 1916, right before the graduation of the students in 1916.[*27)] Therefore, it can be estimated that this plate was widely known among the students as well as the Japanese architects in that era.

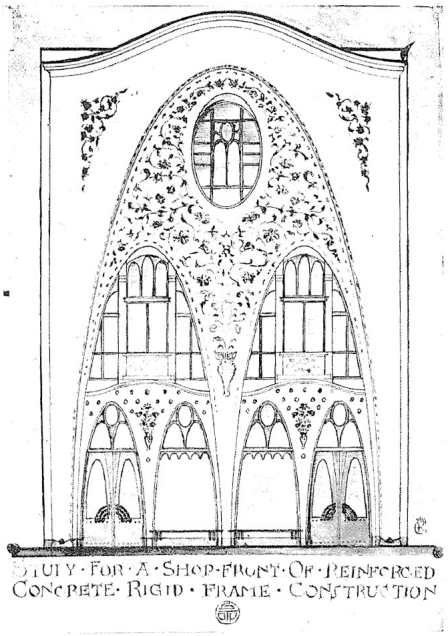


Fig. 2-4 Façade of "rigid frame", by Keiji Goto
Source: Mamoru Nakamura 中村鎮, ed., *Goto Keiji shi Ikou* 後藤慶二氏遺稿 (Tokyo: Shukei Yakushiji, 1925).

From this plate and Goto's text, on the one hand, the shape of parabola possibly implicates the moment in a girder or even the form of continuous arches, showing Goto's efforts to bring mechanical concepts into perceivable shapes, and on the other hand, the plate itself shows Goto's exact consideration on façade, also with some features resembling the details of Art Nouveau, which coincidentally match the speculations in 2.3.4.a and 2.3.4.b.

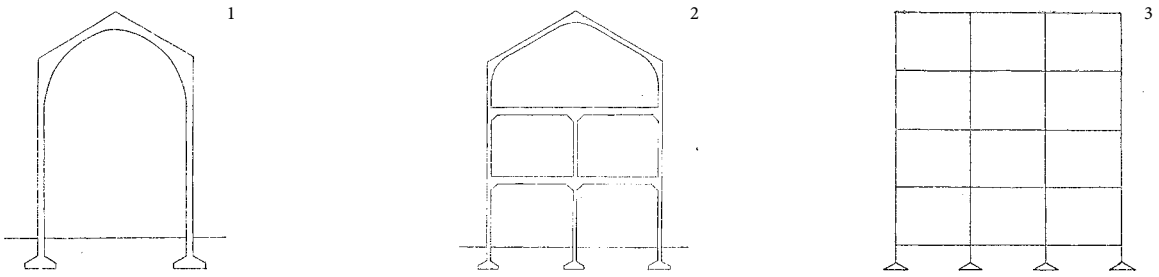
b. Technical studies of Goto and the concept of elastic arch

Actually, Goto was an advanced scholar in the field of reinforced concrete, whose studies can be found in multiple magazines in the 1910s. According to Goto's narratives in *Kenchikuzasshi* in 1915,[*28)] even if he mainly refers to the German scholars like Heinrich Müller-Breslau[*29)] and Hugo von Bronneck,[*30)] the exact German phrase of "elastischen Bogen" is found in another recommended book by Karl Wilhelm Schaechterle,[*31)] in which "elastischen Bogen" is a constrained arc applied with the elastic theory, which can be derivatively adopted to the calculation of continuous arches / arcs and rigid frame. Moreover, In Müller-Breslau and Bronneck's narratives, respectively, "elastischen" is almost restricted to its mechanical sense, while "Bogen", which can not only be translated as "arch" but also "arc", is usually utilized for depicting the arc shaped components or explaining the distribution of stress in rigid frame. Hence, it is plausible to conceive that, for Goto, elastic arch should be a mechanical concept derived from "elastischen Bogen", which is more than a mere building component.

2.4.2 Works of Toshikata Sano

a. "**General Theory of Reinforced Concrete Structure**"

Aside from Goto, Sano's article "General Theory of Reinforced Concrete Structure" 鉄筋コンクリート構法汎論,[*32)] also as the speech for the 30th anniversary of Architectural Institute of Japan in 1916, offers another precious perspective for understanding the proposals of the students. In this article, Sano mentions couples of concepts such as "hingeless arch" (無鉸式アーチ・ヒンジレッス、アーチ, Fig. 2-5, graph 1), rigid frame (剛節架構, Fig. 2-5, graph 2, 3), freedom and "three-dimensional frame" (立体架構), which are similar with the concepts from the theses in the sense of structure, especially the case of Kobayashi, who also mentions continuous structure and the structure with no hinge in his thesis. Actually, in Sano's own account, he recalls the experience of himself as a student and particularly the concept of "elasticity" taught by Aikitsu Tanakadate 田中舘愛橘,[*33)] which Sano might also have taught his students. Hence for the students, the hingeless arch and three-dimensional frame can probably be the counterparts of elastic arch and spatial existence mentioned by Goto. Noticeably, the free shape of reinforced concrete is also mentioned by Sano, which is explained as the flexibility to create large second moment of area,[*34)] and consequently referred to T shape girder. This might also be the reason why Taka-



1: Schema of "hingeless arch"; 2: Schema of rigid frame; 3: Diagram of rigid frame

Fig. 2-5 Schemas of Toshika Sano

Source: Toshikata Sano 佐野利器, "Tekkinkonkurīto Kouhou Hanron" 鉄筋コンクリート構法汎論, *Kenchikuzasshi* 30, no. 354 (June 1916): 300-310.

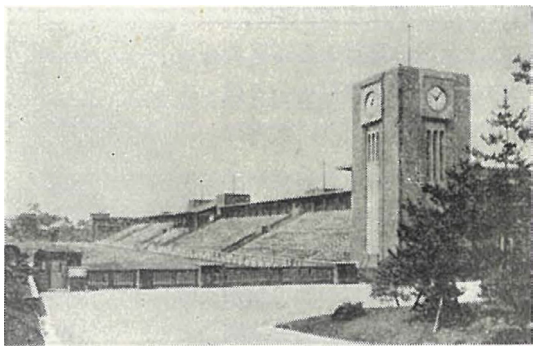


Fig. 2-6 Stand of Meijijingu Gaien Stadium
Source: "Meijijingu Gaien Kyougijou Kouji Gaioyou" 明治神宮外苑競技場工事概要, *Kenchikuzasshi* 39, no. 465 (January 1925): 38-41. (The same for fig. 2-7, 2-8)

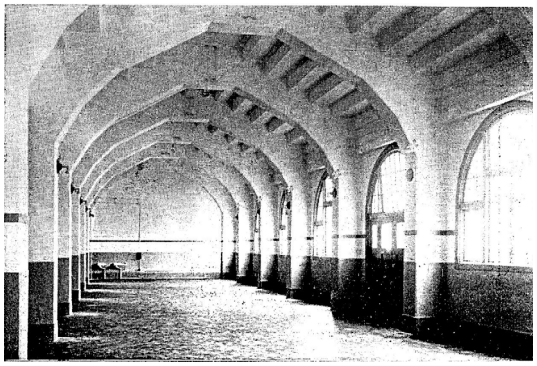


Fig. 2-7 Players' room under the stand

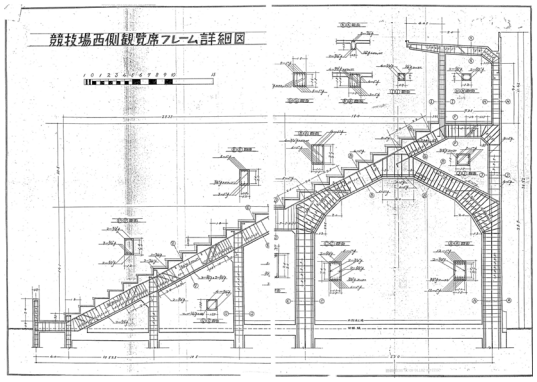


Fig.2-8 Section of stand, Meijijingu Gaien Stadium

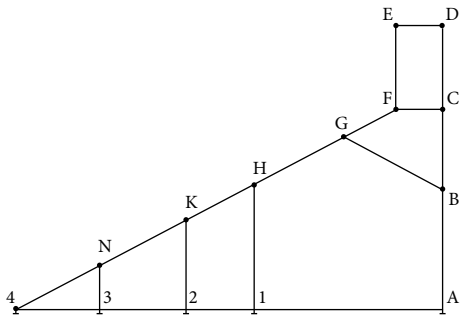


Fig. 2-9 Diagram of stress analysis for the stand by Kobayashi, re-edited
Original source: Seiichi Kobayashi 小林政一, *Meijijingu Gaien Kouji Dai-ni-shuu* 明治神宮外苑工事 第二輯 (Tokyo: Seiichi Kobayashi, 1929), 7-11.

hashi and Kitazawa use T shape girder to explain the concept of elastic arch.

b. About the stand of Meijijingu Gaien Stadium

According to Sano's account, under his supervision, Kobayashi did the structural calculation of the stand in Meijijingu Gaien Stadium, which started from October, 1917, one year after the graduation of Kobayashi. In this sense, the project of the stadium possibly has a close relation with the ideas of Sano as well as Kobayashi. Within the structure of the stand, the most notable feature is that a sequence of arches is set under the audience seats (Fig. 2-6, 2-7, 2-8), which reminds of the idea of elastic arch. However, according to Kobayashi's diagram of stress analysis, the mechanical model of the arches is actually assumed as straight lines (Fig. 2-9),[*35)] which implies, if the arches in the stand are the embodiment of elastic arch, the idea itself should be a mechanical concept rather than a mere tangible shape. Moreover, Kobayashi also uses the phrase "elastischen Gewicht" (elastic load) to explain his thoughts, which is exactly a mechanical concept.

2.5 Conclusion

First of all, confirmed in this chapter, the theses are primarily related to Toshikata Sano and Keiji Goto, as Sano assumably influenced the setting of the theme, i.e., "Reinforced Concrete and New Style" and most of the students adopted the narratives of Goto.

As to the contents of the theses, in the technical aspect, although the students come short of the knowledge of mechanics and construction methods, overall, they have a clear cognition on the structure of reinforced concrete then, and globally regard rigid frame as anti-seismic structure. In the ideational aspect, the specific ideas on reinforced

concrete can be configured in five clusters, i.e., of simplicity, decoration, of freedom, structural form and prototype, among which structural form is the most discussed realm. Amidst various ideas, elastic arch, or contextually, rigid frame in the broader sense, which works as a single entity and should transcend simply supported frame, i.e., curtain wall system, and dealing of surface for the lack of beauty in concrete are the two poles assimilated in parallel under the two general thoughts of rational structure and truth of structure.

Particularly, elastic arch is confirmed as a mechanical concept introduced by Goto from the German phrase "elastischen Bogen" rather than a tangible building component, which also has its basis in Sano's theories and embodiment in the project of Meijijingu Gaien Stadium. Certain students definitely show the comprehension of the mechanical sense in elastic arch to different extents, which is verified in both the original context and the statistical analysis, while some others give sentimental explanations, among which conceiving elastic arch as a phase of evolution after the lintel of Classical and the pointed arch of Gothic architecture is the most manifest vision. Meanwhile, distinct from the two scholars, the students paying large attention to the issues of decoration is another conspicuous feature, which is also corresponding to the likely influence of Art Nouveau and the focus on façade,shown in both statistical analysis and Goto's design of facade, indicating the remaining influence of decorative manners.

Notes

*1) Considering the issue of copyright, the instances of the manuscripts are not presented in this dissertation. Instead, the excerptions of the students' text are recorded in appendix B, corresponding to the design conceptions extracted.

*2) Fujioka Hiroyasu 藤岡洋保, "Nihon no Kenchikuka ga Tekkinkonkurīto ni Mita Kanousei: Katachi to Gijutsu no Intārakushon" 日本の建築家が鉄筋コンクリート造に見た可能性ー形と技術のインターラクション [Possibilities seen from Reinforced Concrete by Architects of Japan: Interaction Between Form and Technology], in *History of Cities and Architecture 9: Materials and Industries in the Modern Age* シリーズ 都市・建築・歴史 9: 材料・生産の近代, ed. Hiroyuki Suzuki 鈴木博之 et al. (Tokyo: University of Tokyo Press, 2005), 17-68.

*3) Kouichi Kato 加藤耕一, "Bunriha Toujou no Haikei toshiteno Toukyou Teikoku Daigaku" 分離派登場の背景としての東京帝国大学 [Imperial University of Tokyo as the Background of the Appearance of Bunriha], in *Bunriha Kenchikukai: Nihon no Modanizumu Kenchiku Tanjou* 分離派建築会: 日本のモダニズム建築誕生[The Birth of Modernism of Japan], ed. Takahiro Taji 田路貴浩 (Kyoto: Kyoto University Press, 2020), 164-183.

*4) Mayumi Tsunoda 角田真弓, *Meijiki Kenchikugakushi* 明治期建築学史 [History of Architecture in Meiji Period] (Tokyo: Chuokouronbijyutsu, 2019).

*5) Teijiro Muramatsu 村松貞次郎, *Nihon Kenchikuka Sanmyaku* 日本建築家山脈 [Mountain Ranges of Japanese Architects] (Kajima Institute Publishing, 1965).

*6) Terunobu Fujimori藤森照信, "Sano Toshikata Ron" 佐野利器論 [Of Toshikata Sano], in *History of Cities and Architecture* vol. 9, ed. Hiroyuki Suzuki 鈴木博之 et al., 369-417.

*7) Takashi Hasegawa 長谷川堯, *Shinden ka Gokusha ka* 神殿か獄舎か [Temple or Prison] (Tokyo: Kajima Institute Publishing, 2007), 32-62.

*8) Takeyoshi Hori 堀勇良, "Nihon ni okeru Shoki Tekkinkonkurīto Kenchiku no Shomondai" 日本における初期鉄筋コンクリート建築の諸問題 [Problems of Reinforced Concrete Buildings of Early Stage in Japan], in *Bunriha Kenchikukai*, ed. Takahiro Taji, 148-163.

*9) Mayumi Tsunoda, Meijiki Kenchikugakushi, 177-182, 456.

*10) Yoshikazu Uchida 内田祥三 (1885-1972) was one professor in the Department of Architecture of Imperial University of Tokyo. He is regarded as the successor of Toshikata Sano. He is famous for the design of Yasuda Auditorium in the University of Tokyo.

*11) See also Kouichi Kato, "Bunriha Toujou no Haikei toshiteno Toukyou Teikoku Daigaku", 178-179.

*12) Teijiro Muramatsu, *Nihon Kenchikuka Sanmyaku*, 27.

*13) Sano Hakushi Tsuisouroku Henshu Iinkai 佐野博士追想録編集委員会, *Sano Hakushi Tsuisouroku* 佐野博士追想録 [Memoirs of Doctor Sano] (Tokyo: Sano Hakushi Tsuisouroku Henshu Iinkai, 1957), 15-18, 68, 84-86.

*14) Toshihiko Noda 野田俊彦, "Kenchiku Hi-Geijutsu-ron" 建築非芸術論 [Architecture as Non-art], *Kenchikuzasshi* 建築雑誌 28, no. 346 (October 1915): 714-727.

*15) In most of the theses, the concepts of material and structure are interwoven with each other, sometimes equivalent. In this sense, this paper uses "et" instead of "and" to indicate the close relation between the two words.

*16) Other persons like Kingo Tatsuno 辰野金吾 and Shigetsura Shiga 滋賀重列 also showed or introduced the idea of evolutionism. See also Rintaro Kawamichi 川道麟太郎, Tomoko Hashitera 橋寺知子, "On the Theory of Architectural Evolution by Chuta Ito: I, The Origin and the History of the Theory" 伊東忠太の「建築進化論」について (上) その由来, *Journal of Architecture and Planning* (Transactions of AIJ), no. 525 (November 1991): 281-285. DOI: https://doi.org/10.3130/aija.64.281_3

*17) Mayumi Tsunoda, *Meijiki Kenchikugakushi*, 466-460.

*18) For the expediency of layout, mechanics and structural form are merged in table 2-3, as actually no students talk about the calculation of reinforced concrete.

*19) Toshikata Sano 佐野利器, "Kaoku Taishin Kouzouron" 家屋耐震構造論 [Theory of Anti-seismic Structure], in *Shinsai Yobou Chousakai Houkoku Dai-hachijuusann-go Otsu* 震災予防調査会報告第83号乙 [Reports for Preventing Disasters of Earthquake No. 83 II], ed. Shinsai Yobou Chousakai 震災予防調査会 (Tokyo: 震災予防調査会, 1917), 73-74. Original text as "3. 家屋全体ヲ単一体ニ築造シ得ルコト。".

*20) Goto Keiji 後藤慶二, "Tekkinkonkurīto ni okeru Kenchiku Youshiki no Douki" 鉄筋コンクリートに於ける建築様式の動機 [The Motivation of Architectural Style in Reinforced Concrete], in *Goto Keiji shi Ikou* 後藤慶二氏遺稿

[Posthumous Anthology of Keiji Goto], ed. Mamoru Nakamura 中村鎮 (Tokyo: Shukei Yakushiji, 1925), 61-65.

*21) Original text of Goto as, "鉄筋混凝土構造が単純な'式を超越して、リジッド接合の構造即ちリジッドフレムに趣くことの最も合理的なことは誰も認めて否まないことと思ふ、リジッドフレームは尚広い意味に於てエラスティックアーチと呼ぶことが出来る。...鉄筋混凝土構造の様式は表面が平面的なるべしとか、繰形を多く用ゐないとか云ふ種類のことはこれ亦要するに第二義的の論議である、吾人は須く第一義に逢着せねばならぬ。鉄筋混凝土は極めて自由な材料である、鉄筋混凝土構造が空間的に存在するためには多くの束縛を要しない、唯一の条件としてエラスティックアーチの理論があるのみである...".

*22) This rule is, to some extent, inspired by the priority of signifiant over signifié, proposed by Jacques Lacan. The analysis is conducted with PSPP.

*23) Shin-ichiro Okada 岡田信一郎, "Konkurītо Kenchiku no Torubeki Keishiki" コンクリート建築の採るべき形式 [The Form that Concrete Buildings Should Adopt], *Tekkinkonkurīto* 鉄筋混凝土 [Reinforced Concrete], special issue, *Kenchiku-to-Soushoku* 建築ト装飾 3, no.7 (December 1913): 20-24.

*24) Tatsutaro Nakamura 中村達太郎, "Tekkinkonkurītо to Youshiki" 鉄筋混凝土と様式 [Reinforced Concrete and Style], ibid.: 8-18.

*25) Chuta Ito伊東忠太, "Tekkinkonkurītо to Shinyoushiki" 鉄筋コンクリートと新様式 [Reinforced Concrete and New Style], ibid.: 4-6

*26) See also note 23.

*27) "Kokumin Bijutsu Kyoukai Dai-yon-kai Tenrankai" 国民美術協会第四回展覧会 [Fourth Exhibition of National Art Association], *Kenchikuzasshi* 建築雑誌 30, no. 351 (March 1916): 139-140.

*28) Keiji Goto後藤慶二, "Taishin Gousetsu Honegumi (1)" 耐震剛節骨組 (1) [Anti-seismic Rigid Frame (1)], *Kenchikuzasshi* 建築雑誌 29, no. 345 (September 1915): 622-644.

*29) Heinrich Müller-Breslau, *Die neueren Methoden der Festigkeitslehre und der Statik der Baukonstruktionen* (Leipzig: Alfred Kröner Verlag, 1913).

*30) Hugo von Bronneck, *Einführung in die Berechnung der im Eisenbetonbau gebrächlichen biegungsfestenn Rahmen* (Berlin: Verlag von Wilhelm Ernst & Sohn, 1913).

*31) Karl Wilhelm Schaechterle, *Beiträge zur Theorie und Berechnung der im Eisenbetonbau üblichen Elastischen Bogen, Bogenstellungen und mehrstieligen Rahmen* (Berlin: Verlag von Wilhelm Ernst & Sohn, 1912).

*32) Toshikata Sano 佐野利器, "Tekkinkonkurīto Kouhou Hanron" 鉄筋コンクリート構法汎論 [General Theory of Reinforced Concrete Structure], *Kenchikuzasshi* 建築雑誌 30, No. 354 (June 1916): 300-310.

*33) Aikitsu Tanakadate 田中舘愛橘 (1856-1952) was a physicist and professor in Imperial University of Tokyo. See also Sano Hakushi Tsuisouroku Henshu Iinkai, *Sano Hakushi Tsuisouroku*, 7.

*34) See also Toshikata Sano, "Tekkinkonkurīto Kouhou Hanron", 301-302. Original text of Sano as, "...鉄筋コンクリートの抵抗能率 [second moment of area] は是が為めに必ずしも木材又は鉄材よりに遥に下にあるといふ訳ではないのであります、なぜ然るかは主として鉄筋コンクリートの形の自由性に帰因するのである、即ち木材の構造に於て大きな梁を幅を極狭くして高さを高く木取らうとすれば非常に大きな丸太よりしなければならぬ、そこに大なる困難がある、併ながら鉄筋コンクリート構造に於ては其点は自由である...".

*35) Seiichi Kobayashi 小林政一, *Meijijingu Gaien Kouji Dai-ni-shuu* 明治神宮外苑工事 第二輯 [Construction of Meijijingu Gaien, vol. 2] (Tokyo: Seiichi Kobayashi, 1929), 7-11.

CHAPTER 3
MAGAZINE ARTICLES INVOLVING DESIGN CONCEPTIONS

3.1 Introduction

3.1.1 As the extension of the ideas from the undergraduate students

Aside from the undergraduate theses from Imperial University of Tokyo, during the period from the end of Russo-Japanese War to Great Kanto Earthquake, numerous articles discussing the design of reinforced concrete were also published in different magazines, showing the wide and consistent reflections on the structure among the Japanese architects. For fully understanding the tribute of reinforced concrete, i.e., if reinforced concrete had the impetus for the transition of architecture, considering that the magazines were the major media of architecture in that era, it is undoubtedly necessary to look into a broader spectrum of magazine articles involving the design conceptions of reinforced concrete buildings.

Given the technical aspects and the special case of the undergraduate theses revealed previously, this chapter mainly targets at obtaining an understanding of the design conceptions of reinforced concrete buildings in a much broader scope of materials, i.e., the magazine articles. Similarly, rather than any abstract concepts like evolutionism, truth of structure, rationalism revealed in chapter 2, which can be implicit and ubiquitous, the design conceptions in this chapter are extracted from the tangible ideas as well, and schematized with all the architects being regarded as an assembly, which allows gaining structured knowledge of the ideas and making the dig of connections between different ideas possible.*3)

Although the design conceptions of reinforced concrete buildings are sporadically discussed by certain scholars, there is yet a general landscape of the design conceptions found in anybody's work by systematically reviewing magazine articles, even if the facts in many studies are substantial and authentic. In this sense, this chapter is not only an important perspective for understanding the tribute of reinforced concrete under the framework of this dissertation, but also a supplement and criticism for these previous studies.

Similar with chapter 2, an single original thought in the articles is called "idea", while "conception" refers to the ideas standardized in this chapter.

3.1.2 Materials and methodology

The materials, in this chapter, are the architectural magazines, which cover the period from 1906 to 1923, completely or partially. Based on *Catalog of Tables of Contents of Magazines in Architecture, Civil Engineering, Urban Planning and Domestic House, in Modern Japan*,[*1)] a well-compiled work providing a brief perception of the engineering magazines in Meiji and Taisho Period, and Masaru Kawashima's dissertation,[*2)] which offers tons of details about most architectural magazines during the 1910s, this chapter makes a selection of seven relevant journals and magazines, i.e., *Kenchikuzasshi*, *Kenchiku*, *Kenchikusekai*, *Kenchiku-to-Soushoku*, *Kenchikugaho*, *Kenchiku-Kougeigyoshi*, and *Kenchikuhyoron*, which are deemed to be substantial for inspecting the design conceptions of reinforced concrete buildings, while those only consisting of specific contents such as the plates of traditional Japanese architecture, domestic house, or published in an indigenous area are excluded. Particularly, the magazine of *Gendai-no-Kenchiku* was another important publication in which quite a few architects presented their architectural theories. However, the instances of the magazine cannot be found yet, whereas only certain articles were

republished in other forms, amidst which the 4 pieces from Keiji Goto (1)[*3)] and Masao Takamatsu 高松政雄 (3, serialized)[*4)] involving the conceptions of reinforced concrete buildings can be found so far. In this study, the four articles are excluded from any analytic section but still taken into consideration as an important supplement.

As to the methods in this chapter, firstly, all the articles with tangible design ideas on reinforced concrete buildings are collected from the selected magazines with relevant text recorded in a reference table, while those with merely abstract narratives or slogans are abstained (3.2.1). Secondly, from the selection, the general statuses of all the articles (3.2.2.a) and the authors are grasped (3.2.2.b). In the third step, rather than directly simplifying to keywords, which can be influenced by personal judgment, the ideas are extracted from the text with the details preserved to a large extent, and classified into five major groups, i.e., image, freedom, structural form, architectural treatment and prototype (3.3.1), which are based on the natures of the ideas and developed from the categories established through the inspections into the graduation theses from Imperial University of Tokyo. Fourthly, this study reclassifies the ideas of each group into several subgroups according to their affinities and assigns specific tags to the subgroups, which also work as the foundation for the further inspections. Both the ideas extracted and the tags are added to the reference table through a process of trial-and-error. In the fifth step, this study conducts an analytic process by scrutinizing the ideas under each tag and comparing the ideas between different groups (3.3.2), reviewing the tags in a chronological way (3.3.3), excavating the correlations between different tags (3.3.4), and thoroughly checking the supporting instances for the ideas under different tags (3.3.5). Finally, throughout the whole process, the design conceptions are concluded in a synthesized and comprehensive way.

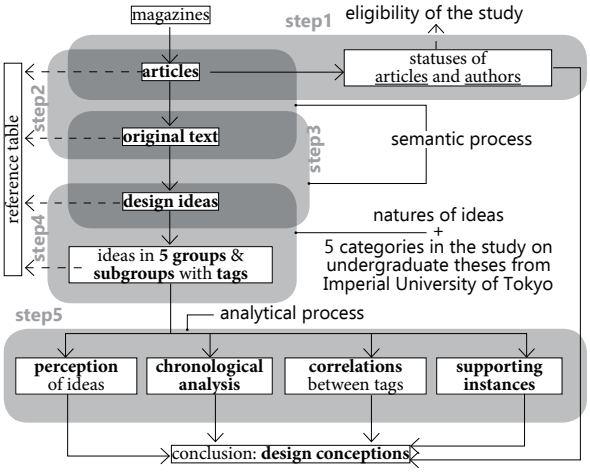


Fig. 3-1 Methods and procedure of this chapter

3.2 Establishment of data set and general statuses of articles and authors

3.2.1 Characters of magazines

About the seven magazines selected, *Kenchikuzasshi* is the most authoritative one presenting the articles of leading figures, while *Kenchikusekai*, as a popular magazine, published more articles from architects in a broader spectrum, even though some pieces from *Kenchikuzasshi* were also reprinted in *Kenchikusekai*. In terms of the contents, *Kenchikugaho* was similar with *Kenchikusekai* until 1918, after which the magazine turned to a more literary style. For *Kenchiku*, the contents were more about the techniques

of architecture while the articles concerning architectural theories or comments were mainly contributed from Kitaro Matsui and Shinichiro Okada, i.e., the members of editing office after the transfer to the office of Tamisuke Yokogawa. Likewise, *Kenchiku-Kougeigyoshi* was also a relatively technical magazine with a small quota of articles discussing the theoretical aspect of architecture. The magazines of *Kenchiku-to-Soushoku* and *Kenchikuhyoron* were relatively short-lived, as the former existed from 1911 to 1913 and the latter lasted from 1919 to 1920. However, it cannot be ignored that in these two magazines, several important articles showing precious information and opinions can also be founded. Overall, considering the numbers of articles and consistency of publication, the first two publications, i.e., *Kenchiku-zasshi* and *Kenchikusekai* are regarded as the prioritized sources.

3.2.2 Exclusions of articles, limit of the text extracted, and handle of special volumes

For selecting the articles with specific ideas involving the design of reinforced concrete buildings, there are still some exclusions which should be clarified. The specifications of actual projects without showing any attitude, in which the manners can be either the purpose of designer or the reconciliation with external forces (specifications of competition not excluded). are excluded. Also, the contents of Q&A in *Kenchikusekai*, which could be decided by the readers who casted the question rather than the editors, are also suspended.

Considering that identical articles in different magazines actually reflect their importance in repetition, these duplicate articles are also counted and recorded repetitively in the dataset. The translations of foreigners are also treated in the same way as Japanese authors, since the behavior of translation itself implies that the translators to some extent appreciate the ideas of the original authors.

The text extracted also has its boundaries. In this chapter, based on the principle of semantics, only the text directly concerned with reinforced concrete is extracted, while the narratives allusively related to reinforced concrete are not included. Also, the narratives showing ambiguity, such as either Secession or not, either Japanese style or not, are not considered as any idea. Hence, the ideas recorded in this study are the most direct and distinctive presentation of the contemplation on reinforced concrete rather than all genres of thoughts entangled.

Moreover, there are four special volumes of magazines included in the dataset, which are the special volume of *Secession* (せせっしよん号) in *Kenchiku-to-Soushoku* (July 1912),[*5)] *Reinforced Concrete* (鉄筋混凝土) in *Kenchiku-to-Soushoku* (December 1913),[*6)] *Bank Buildings* (no Japanese title) in *Kenchikusekai* (April 1915)[*7)] and *Architecture in the Future* (将来の建築) in *Kenchiku* (March 1917).[*8)] Regardless of the form of publication, these volumes are actually the historical happenings which reflect the

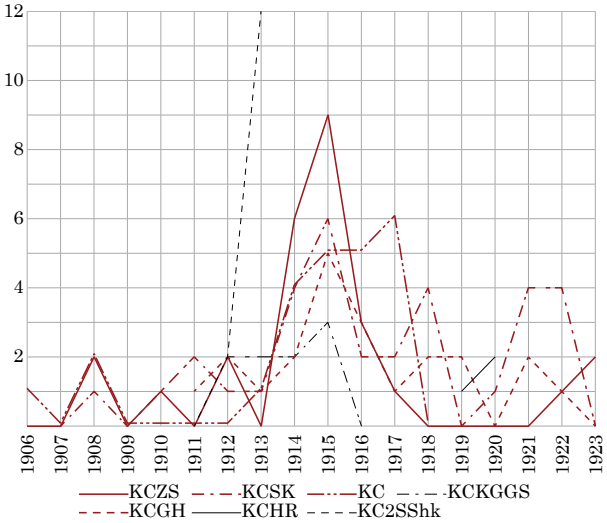


Fig. 3-2 The numbers of articles in different magazines

focuses of the architects in that era. In this sense, they are treated homogeneously as the other ordinary articles in this chapter.

3.2.3 Overview of articles and authors

a. Amounts and trends of articles in different magazines

Overall, there are 132 articles selected from the seven magazines with the addition of 4 pieces in *Gendai-no-Kenchiku* by Keiji Goto and Masao Takamatsu. Specifically, there are 27 pieces from *Kenchikuzasshi*, 33 from *Kenchikusekai*, 24 from *Kenchiku*, 9 from *Kenchiku-Kogei-Gyoshi*, 22 from *Kenchikugaho*, 3 from *Kenchikuhyoron*, and 14 from *Kenchiku-to-Soushoku* (as KCZS, KCSK, KC, KCKGGS, KCGH, KCHR, and KC2SShk in figure 3-2). From figure 3-2 showing the numbers and trends of articles in different magazines by publishing year, it can be discovered that the articles in *Kenchikuzasshi*, *Kenchikusekai*, *Kenchikugaho* and *Kenchiku-Kogei-Gyoshi* reach a peak in 1915, amidst which *Kenchikuzasshi* was no doubt leading the discourse, whereas the ardent discussions about reinforced concrete in *Kenchiku* last longer until 1917 when the special volume of *Architecture in the Future* was published in the penultimate year of the magazine's life cycle. It is notable that the special volume of *Reinforced Concrete* in *Kenchiku-to-Soushoku* spiking in 1913, albeit ephemeral, is earlier than any other magazines. However, in the late 1910s and early 1920s, there is almost no article in *Kenchikuzasshi* talking about the design of reinforced concrete, whereas slight rebounds can be observed in *Kenchikusekai* and *Kenchikugaho*.

b. Authors and major parties

Although the stance of this chapter is not to examine the ideas of each architect, the numbers of articles presented by the architects and the parties to which the architects belong are still valuable for a global understanding of the articles. As are shown in figure 3-3 (sorted in descending and Gojuon order), generally, it can be confirmed that not only the authoritative figures but also the less known architects participated in the discussion of reinforced concrete, which indicates the universality and versatility of the discussion. Among the figures, Kitaro Matsui 松井貴太郎[*9)] presented 9 pieces, more than

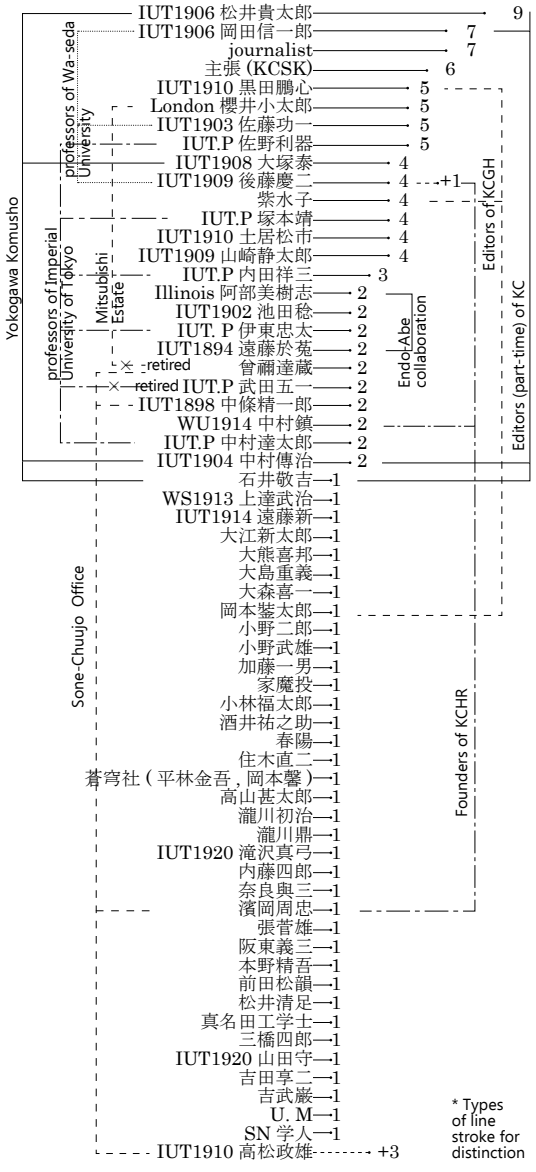


Fig. 3-3 The numbers of articles by author

any other individuals, and Shin-ichiro Okada 岡田信一郎[*10)] who published 7 pieces is no doubt another major force. Based on the affiliations of the architects, three main parties can be distinguished, i.e., the staff members of Yokogawa Komusho (横河工務所, 1903-, Yokogawa Architects & Engineers, Inc.), the professors of Imperial University of Tokyo and those of Waseda University. Besides, there are also some minor forces of private parties like the collaboration of Oto Endo遠藤於菟[*11)] and Mikishi Abe 阿部美樹志 (active time: 1914-1922), the Office of Tatsuzo Sone 曾禰達蔵[*12)] and Sei-ichiro Chuujo 中條精一郎 (active time: 1908-1936) in which Masao Takamatsu and Chikatada Hamaoka 濱岡周忠[*13)] also worked as staff members, and Kotaro Sakurai 櫻井小太郎,[*14)] who led Mitsubishi Estate as the successor of Sone after 1913. Additionally, the preface (主張, architectural criticism by editor) of *Kenchikusekai* and the articles of Hoshin Kuroda 黒田鵬心, a famous critic of architecture as well as the editor in chief for *Kenchikugaho* (1914-1915), are also unignorable forces.

Beneath the affiliations, we can also discover some correlations between the figures, amidst which the collaboration of Okada and the staff of Yokogawa Komusho for editing *Kenchiku*, the foundation of *Kenchikuhyoron* by Goto, Mamoru Nakamura 中村鎮[*15)] and Hamaoka can be counted. Some figures are even the graduates of the same grades, such as the top two figures of Matsui and Okada as classmates in 1906, Goto and Yamazaki in 1909.[*16)] Considering the experiences of education, it is apparent that Imperial University of Tokyo was the dominant agency influencing the discussion of the design of reinforced concrete.

Particularly, in 1914, Sano (March), Abe (August) and Matsui (September) all came back from the Occident. Sano and Abe became two of the most authoritative figures in the field of reinforced concrete in the coming years, and Matsui, as is shown in figure 3-3, wrote bunches of articles about the design of reinforced concrete buildings. Except Sano, both Abe and Matsui were undoubtedly influenced by the outburst of World War I. Besides, Chuujo, who participated in the International Congress of Architecture, came back in 1907, Sakurai resigned from Ministry of the Navy and joined Mitsubishi Estate in 1913, Goto published numerous educational articles about reinforced concrete in multiple magazines (1913-1916), and Kuroda also resigned from Yomiuri Shimbun to join *Kenchikugaho*. Hence it can be affirmed that the peak in 1915 is strongly influenced by the generation of Japanese architects who were ardent about the new technology of reinforced concrete, especially those who returned to Japan on the brink of World War I.[*17)]

3.3 Features of ideas in subgroups, based on tags

3.3.1 Reference table for articles, adjoined with ideas and subgroups with tags, in five major groups

Corresponding to the original text, “image” refers to the narratives depicting a picture, mainly distinguished with the descriptive adjectives like simple, flat, light, large, etc. “Freedom” refers to the statements containing the exact keyword of “freedom” or equivalent expressions, which, in reverse, are rather ambiguous for other groups. The other three groups cover their own semantic scopes, amidst which “structural form” refers to the schematic depictions of structure or the perceptible structural features,

"architectural treatment" consists of the ideas concerning the manners of surface finishing, decoration, detail, etc., and "prototype" refers to the stereotypes of architecture or the instances of actual buildings. For all the groups, both affirmative and negative ideas are horizontally recorded. And through the process of table 3-1, the tags assigned to the ideas are also horizontally recorded in the reference table. (For more details in reference table, see Appendix C)

3.3.2 Perception of five major groups from the numbers of tags

By summarizing all the data from the reference table, as is shown in table 3-1, the ideas plotted in five major groups, i.e., *image*, *freedom*, *structural form*, *architectural treatment* and *prototype*, are reclassified into certain subgroups according to the affinities of the ideas, and a tag is assigned to the ideas in each

Table 3-1 Design conceptions in five groups and subgroups with tags



* Continued on next page →



* +: affirmative ideas; –: negative ideas; └: branch; []: supporting instance; (): additional information; {}: number counted

subgroup. Several features can already be discovered on the level of major group. Quantitatively, *architectural treatment* is the most discussed realm, and the groups of *image*, *structural form*, and *prototype* also have considerable numbers, whereas the talks about *freedom* are not as abundant. The specific inspections into the five groups and the explanations of certain terms for the tags are given as below, in which the tags are marked with angle brackets corresponding to table 3-1, and some paraphrased text which is not convenient for using brackets are underlined.

a. Proclivities of images, and manifest features

From all the depictions, the images can be generally distinguished in three proclivities, i.e., simplicity, lightness and large spatial dimension. For the images concerning simplicity, there are mainly two aspects, as the one consists of simplicities of the whole and the parts, and the other is about the flatness of reinforced concrete. In terms of the lightness of reinforced concrete, the idea having the largest number is the thin wall of reinforced concrete buildings, which, together with the image of thin wall et large space,[*18)] is compared to traditional Japanese architecture in many cases, comparatively or allusively.[*19)] As to the large spatial dimension of reinforced concrete buildings, the Japanese architects not only discussed dimension of space but also illumination, aperture, and thin wall et large space, which also refer to the proclivity of lightness to some extent. It is noticeable that in most of the context, the <simple>, <flat / straight>, and <light / thin> images refer to wall or surface of reinforced concrete, i.e., the consideration on façade, which is much more than the discussion of spatiality.

b. Connotations of freedom and certain important conceptions

In this group, the character of <free shape> in reinforced concrete is apparently the most talked idea. However, it can be discovered that most narratives have not leave the traditional manners of historical styles and tend to be superficial (even some talks about free shape) or expedient (free structure) to some extent. Nonetheless, it also cannot be ignored that there are still 2 ideas involving the issue of <free plan>. About the conception of <free structure>, although the ambiguous statements are not considered as specific ideas (see also 3.2.2) so that the relevant statements are not classified in the group of structural form, the statements emphasizing that reinforced concrete can be adopted to different types of structural forms are defined as <free structure>. One important article addressing this vision comes from Tatsutaro Nakamura, one then-active professor of Imperial University of Tokyo. Interestingly, even though Nakamura claims that reinforced concrete is "free structure" for mass, masonry and frame structure, he eventually focuses on the issue of surface finishing of framed structure, showing the representative viewpoint of Japanese architects.[*20)]

c. Different cognitions on structural forms of reinforced concrete buildings

About some tags in the group of structural form, for conjugating "monolithic" with "as a single entity", in most of the cases, "as a single entity" refers to the indivisibility of structural components and "monolithic" is also discussed in the context of structure as the counterpart of other forms.[*21)] For the conjugation of "elastic arch" or the keyword of "elastic" with "rigid frame" is mainly based on the article of Keiji Goto in *Gendai-no-Kenchiku*, in which elastic arch is explained as the rigid frame in a broader sense. And for curtain wall system (帳壁式) and lintel system (楣式), they are the alternative terms of frame structure according to most context.[*22)]

It is noticeable that the major three types, i.e., <as a single entity>, <frame structure>, and <rigid frame> have the similar amounts of 19, 19 and 18, and even the structure of <concrete block> is discussed for 13 times. Meanwhile, there are also some other voices which cannot be ignored such as the desire to avoid formwork, the huge capacity of reinforced concrete structure, <flat slab> system and the

consideration of <reinforced concrete as roof>. Undeniably, the fact is that multiple cognitions on the structure form of reinforced concrete buildings coexisted around the 1910s.

d. Features of ideas on architectural treatment and the focus on façade

In this group, at first, <surface coating> refers to the method to coat the surface of reinforced concrete with paint or plaster, while <surface covering> refers to those solid pieces like brick, stone, terra cotta or the panels of other materials. And the fabrication of reinforced concrete refers to the way to make reinforced concrete as the decoration for itself. Correspondingly, surface finishing[*23)] refers to the narratives which simultaneously mention at least two of the treatments of coating, covering or fabrication of reinforced concrete. The manners other than these types are classified under <manners other surface finishing>.

The most manifest and common feature of the statements about architectural treatment is that most of the ideas, either affirmative or negative, are related the surface of reinforced concrete.[*24)] Although the reason is yet not clear, the direct cause, contextually, is the <lack of beauty> in reinforced concrete, which is not only the idea of Japanese architects but also the foreigners introduced to Japan.[*25)] Moreover, it can be discovered that most of the materials for the manners are still traditional, as stone, brick, terra cotta, plaster, and stucco can be verified.

Although the opinion of <no covering / no coating> is proposed for 18 times, the ideas under the tags of <surface covering>, <surface coating>, and the <fabrication of reinforced concrete> are still the strong voices with the support of certain instances introduced from the Occidental countries, and the traditional manners like mortar joint, extrusion (mainly signifying cornice), and even fresco in the group of other manners can also be distinguished. These facts indicate that the architectural treatment for the surface of reinforced concrete is regarded as a practical and manipulable means regardless of those denials of treatment on the surface.

e. Different forces of prototypes under the denial of historical styles

There is no doubt that the denial of historical styles (Occident) is the most overwhelming consensus in the group of prototype. Under this general ideology, another notable tag in the group is <the US>, under which many actual projects are included. However, it has to be explained that many cases are introduced by Shisuishi柴水子 in *Kenchikugaho* (1915).[*26)] Considering this factor, generally, the prototypes from the US deem to have approximately the same impact as the instances from Europe. Another strong force is the tag of <Japanese style / taste>, which consists of many specific contents and has much more numbers than the denial of the imitation of Japanese style. Under this tag, it should be noticed that Azekura style (校倉式)[*27)] is mentioned in multiple articles about the competition of Meijijingu Treasure Museum held in 1915, which, together with the case of Shinkabe (真壁),[*28)] also reflect the focus of Japanese architects on the issue of façade.

3.3.3 Chronological analysis of the tags

For a clearer understanding of ideas, the tags are arranged in a chronological way to discover more trends or features. In this analysis, the same tags assigned to two or more ideas in a single article are only

counted once for reducing the influence of introductory articles.

a. General trends of ideas and the themes of annual meeting of AIJ

Similar with the articles, after a preliminary wave due to the introduction of International Congress of Architects in London, serialized in *Kenchikuzasshi* (1908),[*29)] the tags of different groups reach a peak in the middle 1910s, literally 1915, especially for structural form, architectural treatment and prototype (figure 3-4), rather than 1913 or 1917 when the special volumes of Reinforced Concrete and Architecture in the Future were published. After 1917, the numbers of the tags decline rapidly, regardless of the slight rebounds in the beginning of the 1920s.

The annual meetings of Architectural Institute of Japan (AIJ) can be an index for this trend (table 3-2).[*30)] In 1914, together with the ceremony of Taisho Expo, both Shin-ichiro Okada[*31)] and Toshikata Sano[*32)] promoted reinforced concrete as the material for the future. And Sano presented his theories on reinforced concrete in 1916 again, including the concepts of hingeless arch and rigid frame.[*33)] However, after the meeting in 1917 about the crack of reinforced concrete, the themes turned to the new topics of domestic house, urban planning and disaster prevention, within which reinforced concrete, in the slight rebound, is also discussed. Meanwhile, the magazines discarded like *Kenchiku*, *Kenchiku-Kougeigyoshi*, and *Kenchiku-to-Soushoku* undoubtedly exacerbated the decline of the talks.

b. Trends of different groups and specific tags

Specifically, for the images, <light / thin> is the most consistent one, which is also the major image left in the rebound at the beginning of the 1920s, albeit the variety of images in the middle 1910s. It should be noticed that even the <simple> image of reinforced concrete looks fewer than <light / thin>, if we sum the tag of <simple> and <flat / straight> together, the total numbers and trend is approximately the same with <light / thin>. Moreover, it can be discovered that the local maxima of the two sides just pass by with each other, implying the contradiction to some extent.

Table 3-2 Main events in Architectural Institute of Japan from 1906 to 1923

Year	Month	Type	Theme	Author(s)
1905	1	Normal speech (通常講演会)	Reinforcement Concrete	Teitaro Shibagaki
1906	9	Normal speech	San Francisco Earthquake	Toshikata Sano
1906	10	Normal speech	San Francisco Earthquake	Tatsutaro Nakamura
1907	5	Normal speech	Reinforced concrete	Toshikata Sano
1908	6	Normal speech	Reinforced concrete	Shiro Mitsuhashi
1910	5	Normal speech	Parliamentary House (Future of our country's architecture)	multiple
1910	7	Normal speech	Parliamentary House (Future of our country's architecture)	multiple
1910	12	Normal speech	Parliamentary House	multiple
1911	4	**Annual meeting** (大会)	various, AIJ 25th anniversary	
1911	1	Normal speech	Parliamentary House	multiple
1913	12	Normal speech	Of the wall of Reinforced concrete	Matsuichi Doi
1914	6	**Annual meeting**	various, Taisho Expo	
1916	5	**Annual meeting**	various, AIJ 30th anniversary	
1916	3	Normal speech	Anti-seismic structure	multiple
1916	4	Normal speech	Design of reinforced concrete parts based on experiment	Mikishi Abe
1917	4	**Annual meeting**	Crack of reinforced concrete	
1918	4	**Annual meeting**	Urban planning	
1919	4	**Annual meeting**	Domestic house	
1920	4	**Annual meeting**	Disaster prevention	
1921	4	**Annual meeting**	Cultural life	
1922	4	**Annual meeting**	various, Peace Memorial Expo	
1923	4	**Annual meeting**	various	
1923	1	Normal speech	Reinforcement concrete block	Mamoru Nakamura
1923	6	Normal speech	Paint for concrete	Shigeyoshi Oshima
1923	7	Normal speech	Water-proof material for cement	Ryujiro Yanaka

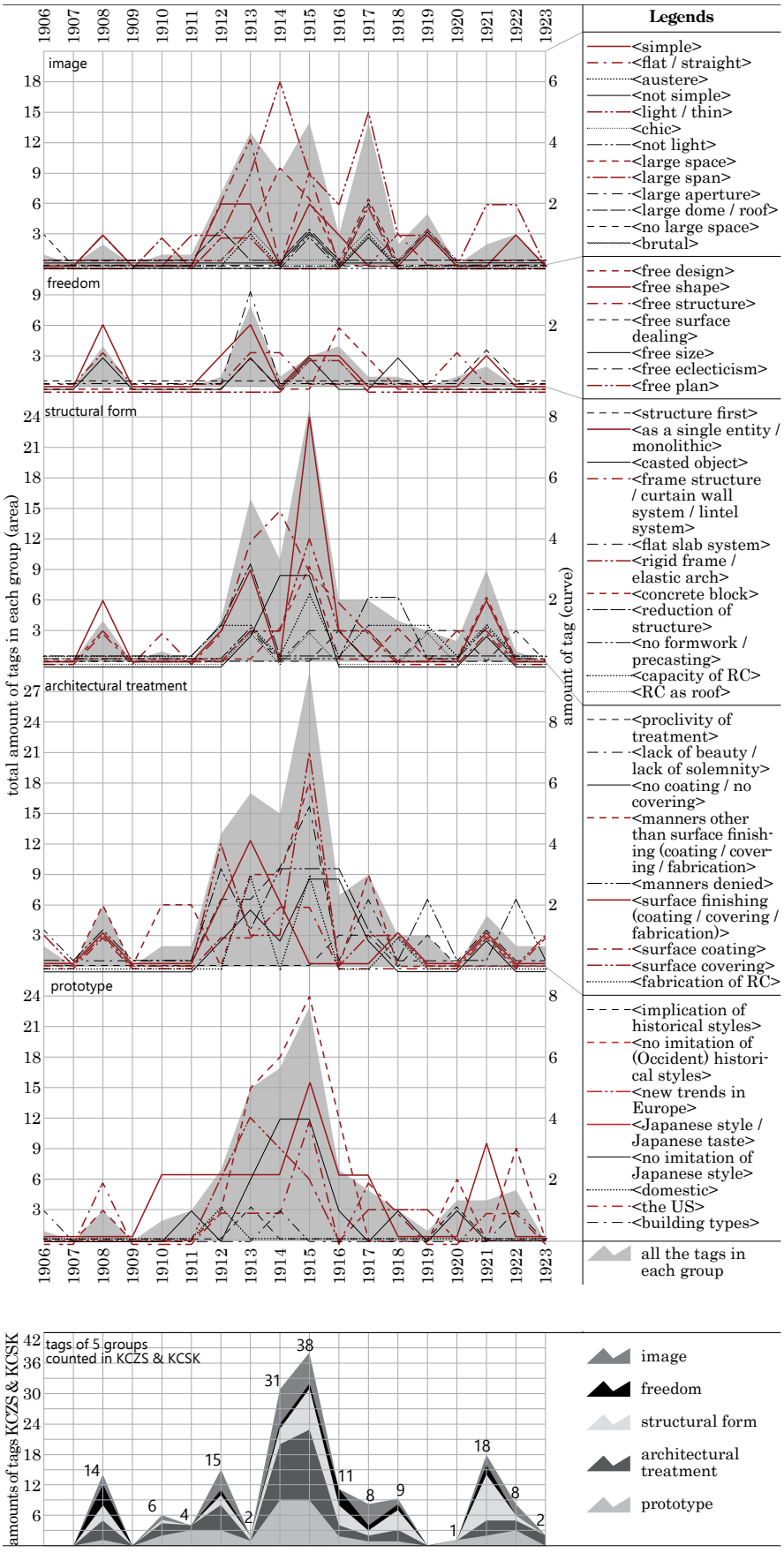


Fig. 3-4 Trends of tags in 5 groups in all 7 magazines, with reference to the numbers of tags in KCZS and KCSK

Meanwhile, <free shape> appears in different phases of the 1910s while other conceptions only appear sporadically throughout the period. The indicative conception, i.e., <free plan>, which is widely accepted in modernist architecture, only shows up in 1915 and 1916. Apparently, this is not contradictory with the era featured with historical styles and eclecticism.

The cognition of the structure of reinforced concrete as a single entity is the preeminent form in 1915 together with the conception of <rigid frame>. Regarding the technical theories of Mikishi Abe and Toshikata Sano, it can be estimated that the peaks are probably influenced by the returns of the architects in 1914. The ordinary <frame structure> comes to the peak one year before, coordinating with the peak of <light / thin> in 1914 but diminished in 1917 regardless of the rebound of <light / thin>.

Meanwhile, there are multiple manners of architectural treatment coexist in the middle 1910s, during which the compound narratives of <surface finishing> top earlier in 1913, whereas in 1915 the ideas are more specific regarding the peaks of <surface covering> and the <manners other than surface finishing> under the general awareness of the <lack of beauty> in reinforced concrete.

Also, the prototypes mentioned by the architects reach the climax featured with the denial of historical styles, the approval and denial of Japanese architecture and the cases from the US, two years after the wave of European cases. Particularly, it can be noticed that before 1917, the awareness of Japanese architecture is relatively more constant than other prototypes, suggesting the zeitgeist of nationalism. However, all these cases drop rapidly along with the slump of other ideas.

In different groups, the most manifest feature is that the total numbers of the tags in each group reached their peaks almost simultaneously, amidst which the peak of the images of reinforced concrete lasted longer from 1913 to 1917, and the trends in the groups of structural form, architectural treatment and prototype are almost identical, regardless of certain ideas assigned with multiple tags in different groups. This feature indicates that there is no discrepancy of the timeline between different groups, especially in the last three, i.e., structural form, architectural treatment and prototype, i.e., they were at least considered in parallel by Japanese architects then.

Particularly, it is interesting to discover that at the beginning of the 1920s, in the slight rebound, as is featured with the parallel curves,[*34)] multiple ideas coexist, albeit the tiny amount of each tag, which indicates that after feverish discussions on the design of reinforced concrete buildings, there was no specific opinion formed. Especially, some articles on the one hand appreciate the quality of reinforced concrete as a single entity and monolithic, while on the other hand propose for the application of concrete block, implying the complex situation for reinforced concrete.[*35)] Besides, if we compare these late-stage ideas with the proposals in the International Congress of Architects in 1906, it can be found that the treatments in the rebound are similar with those in London, while the ideas on structural form became more various, as frame structure, as a single entity, rigid frame and concrete block coexist across different articles.

3.3.4 Correlations of ideas seen in pairs of tags

For excavating the correlations between different ideas, considering the variety of the ideas, for which it is hard to conduct an orthodox statistical analysis, this study tries another way by combining the tags of one article into pairs for exploring the binary relations between different ideas (e.g., (<A>, <B>, <C>) to

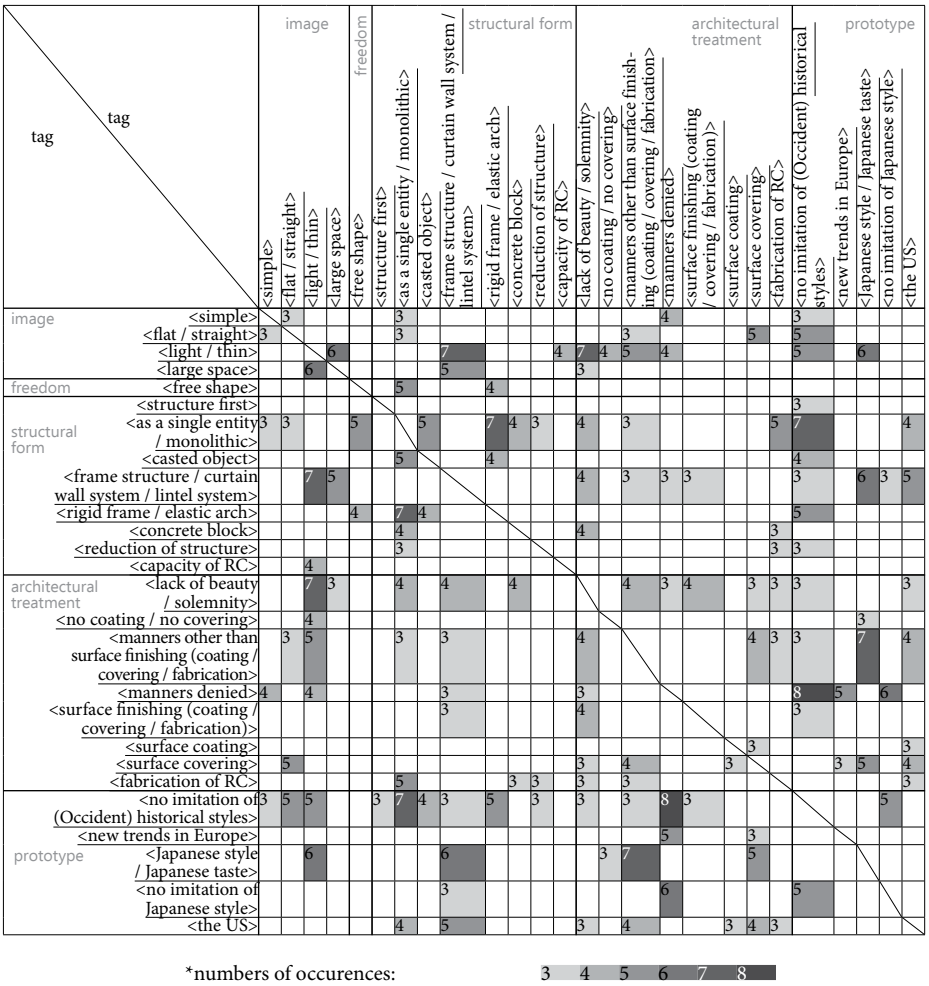


Fig. 3-5 Pairs of tags appearing over 3 times (including 3)

(<A>, <B>), (<A>, <C>), (<B>, <C>)). In this process, the types of correlations, i.e., causal, conjugated or inclusive are not specifically distinguished since the ideas are usually not systematically articulated in a short article and the correlations can be unconsciously expressed. The tags in pairs are fixed in the order as the legend of figure 3-4 for the convenience of generating data. Regarding the issue of fortuity, only the pairs appearing no less than three times are presented in figure 3-5.

a. Images of reinforced concrete involved with manifold ideas and the internal disparities

Amidst all the images of reinforced concrete, <light / thin> is the image having the most correlations with manifold tags, which vary in a large range in different groups. The following tags are <simple>, <flat / straight>, and <large space>. Aside from the general principle of <lack of beauty> and <no imitation of historical styles>, <light / thin> is frequently linked to, on the one hand, the denial of surface coating or covering and the <manners other than surface finishing>, on the other hand, <frame structure> and <Japanese style / taste>. Also, the quality of <large space> is linked to <light / thin> as well as <frame structure>, corresponding to the proclivity of lightness revealed in 3.3.2.a. For the <simple> image, links can only be found with <as a single entity> and the manners (of architectural treatment) denied. For <flat / straight>, the connections with <as a single entity>, <surface covering> and <manners other than

surface finishing> can be witnessed. Hence it can be distinguished that <flat / straight> and <simple> images are rather about the feature of reinforced concrete, i.e., <as a single entity>, while <light / thin> or <large space> concerns more about the nationality of Japan. Moreover, although the focus on façade can still be distinguished, these images, especially the <light / thin> image, do not have strong connections to the aspect of architectural treatment.

b. Free shape related to as a single entity and rigid frame

In the group of freedom, it is clear to see that <free shape> is the only tag frequently related with other ideas, i.e., <as a single entity> and <rigid frame>, showing the consideration of plasticity within the cognition of structure. Meanwhile, considering the narratives of <free plan> which is no doubt the result of structural capacity of reinforced concrete, it can be affirmed that in the Japanese architects' cognitions on the structural form of reinforced concrete, the momentum of emancipation definitely loomed, although this assertion could be reciprocal causation to some extent.

c. Ideas related to different structural forms and the detachment from architectural treatment

The three major tags of structural form, i.e., <as a single entity>, <frame structure>, and <rigid frame>, all have their own relations with other ideas, amidst which the pair of <as a single entity> and <rigid frame> is notable for the mechanical sense in between. Distinctively, it is important to notice that <as a single entity>, having some <simple> or <flat / straight> images, is not frequently conjugated with many tags in terms of architectural treatment except some manners other than surface finishing or the fabrication of reinforced concrete, of which the latter is actually from the proposal of concrete block as the alternative for casted concrete. By contrast, <frame structure> has the images like <light / thin>, <large space>, the correlations with <surface finishing> as well as the prototypes of <Japanese style / taste> and <the US>. For the form of <rigid frame>, which is closely bonded to <as a single entity>, except the general denial of historical styles and <free shape>, no frequent connections with other ideas can be discovered. Hence it can be witness that there is an increasing detachment between the groups of structural form and architectural treatment, from <frame structure> to <as a single entity> to <rigid frame>. However, it should be cautious with the detachment which can be simply caused by the topics of article, as Toshikata Sano also talked about the treatment of façade without mentioning the structure of reinforced concrete.[*36)] In this sense, the detachment can only be considered as motivational, indicating the vigor in the structural form itself which leads the discussions.

d. Ideas related to different manners of architectural treatment, under the universal consensus of lack of beauty

Generally, it can be observed that <lack of beauty> is a universal awareness concerned with not only the group of architectural treatment but also structural form, which, from another vision, indicates the coexisting consciousness of structural form and architectural treatment.

Aside from certain self-evident pairs caused by the tags assigned to certain ideas in both the groups of architectural treatment and prototype, including the pair of <manners other than surface finishing> (traditional Japanese components) and <Japanese style> and its negative version, the tag of <surface

covering> can be found with the <flat / straight> image, prototypes of Japan, <the US>, and <new trends in Europe>, while the connection with <the US> is the only inter-group relation for <surface coating>. Moreover, it can also be observed that <manners other than surface finishing> coexists with <light / thin>, <flat / straight>, <frame structure>, <as a single entity>, and <the US>, showing the variety of embellishment for reinforced concrete as well as the coexistence of structural form and architectural treatment, of which the latter issue is also supported by the pair of <surface finishing> and <frame structure>. Given these facts, it can be understood that the architects still preferred the decorative way.

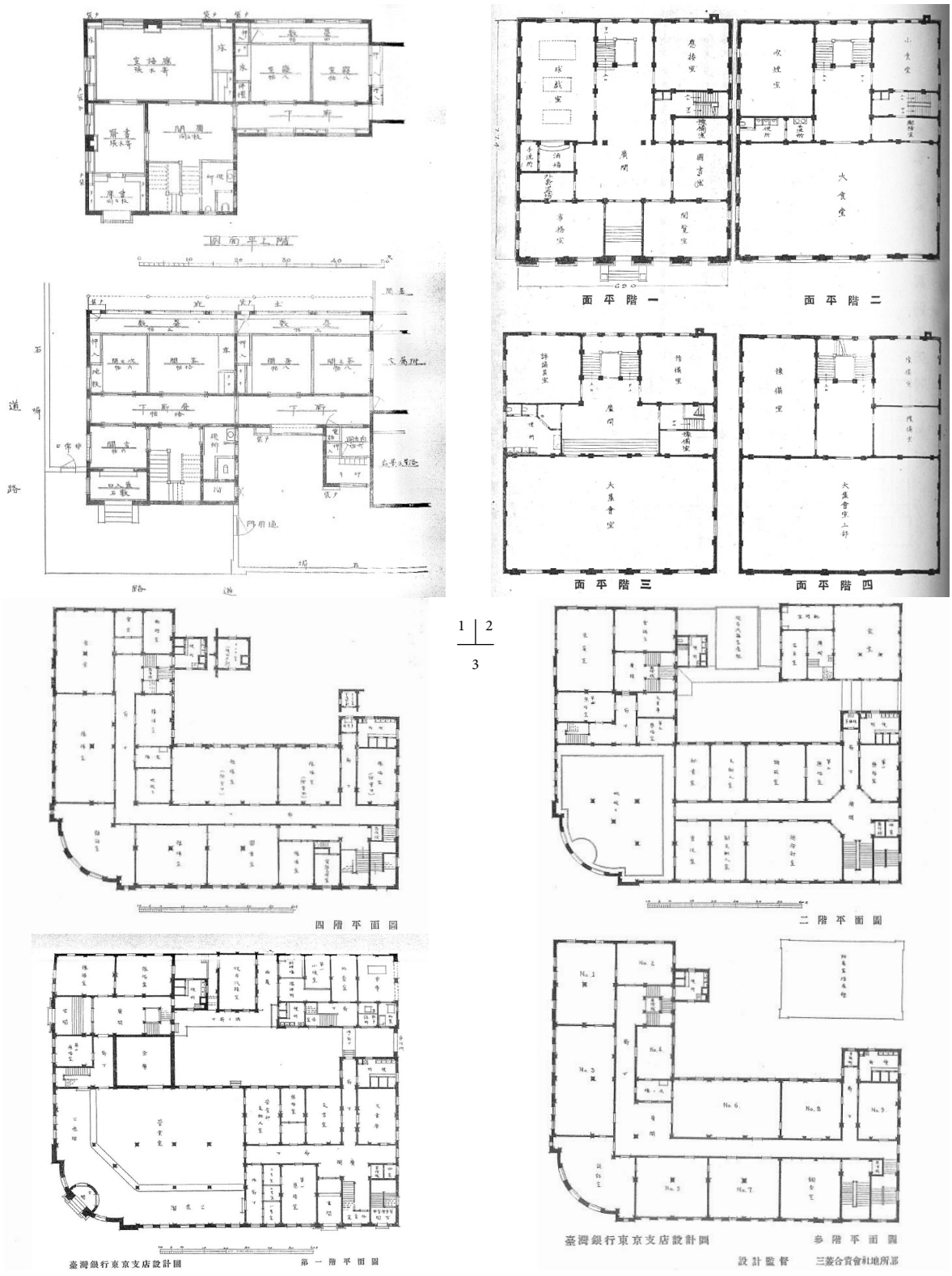
e. Ideas involved with prototypes from different countries, and the adaptivity of Japanese style

There is no doubt that the denial of (Occident) historical styles is the most prominent trend, considering multiple tags paired with it. Under this general trend, the tag of <the US> is connected with <frame structure> and <as a single entity>, as well as <surface coating>, <fabrication of reinforced concrete> and <manners other than surface finishing> without showing specific images, while the <new trends in Europe> is only frequently connected with <surface covering> and the denial of certain manners of architectural treatment, of which the difference, however, can be caused by the variety of the instances from Europe, since certain ideas only appear once or twice. Moreover, besides the apparent <light / thin> image of <Japanese style>, it is interesting to notice that either <Japanese style / taste> or the neglect is connected with <frame structure>, and both <surface covering> and <no coating / covering> are connected with <Japanese style>, which indicates that the Japanese architects were trying to adapt different types of traditional Japanese architecture to the new structure of reinforced concrete, showing the momentum of nationalism.

3.3.5 Supporting instances for ideas (except the group of prototype)

a. Images with rare supporting instances

If we see the instances of the images, it is interesting to discover that there are not too many cases besides the general approvals or denials of historical styles or Japanese style. Specifically, there are four showing specific images. The first instance is Dresden Hygiene Expo (1911) introduced by Minoru Ikeda池田稔 (1912),[*37)] in which the simplicity and minimal decoration of the pavilions are appreciated, and more importantly, Ikeda was also one of the consultants of Taisho Expo. The second is Futurism introduced by Keiji Goto (1917).[*38)] In the description, the architecture of Futurism seems to be the synthesis of all the images of reinforced concrete in that era together with the elasticity of structure. The third is Perret's Théâtre des Champs-Élysées (1913) introduced by Shinichiro Okada (1919),[*39)] as Okada appreciates the complex shape (structure) of the building and the simplified Neoclassical façade at the same time, which reflects the special perspective of Okada's contemplation on the simplicity of reinforced concrete. The appreciation of the chic details in Wright's works, presented by Goichi Takeda 武田五一,[*40)] is counted as another one. And the fifth, Rental Office of Mitsui commented by Hoshin Kuroda, supports the form of matchbox.[*41)] Other sporadic descriptions like the form of matchbox, large span or space in American office buildings are generally presented without showing exact instances of building. The final one, controversially, is Lavirotte Building (1901) introduced by Oto Endo (1915),[*42)] in which the lightness of



1: Villa of Tsunashiro Wada (1915); 2: Imperial Railway Institute (1916); 3: Taiwan Bank, Tokyo Branch (1916)

Fig. 3-6 Floor plans of works of Kotaro Sakurai

Sources: 1: *Kenchikuzasshi* 30, no. 349 (January 1916); 2: *Kenchikusekai* 8, no. 5 (May 1914); 3: *Kenchikuzasshi* 30, no. 350 (February 1916)

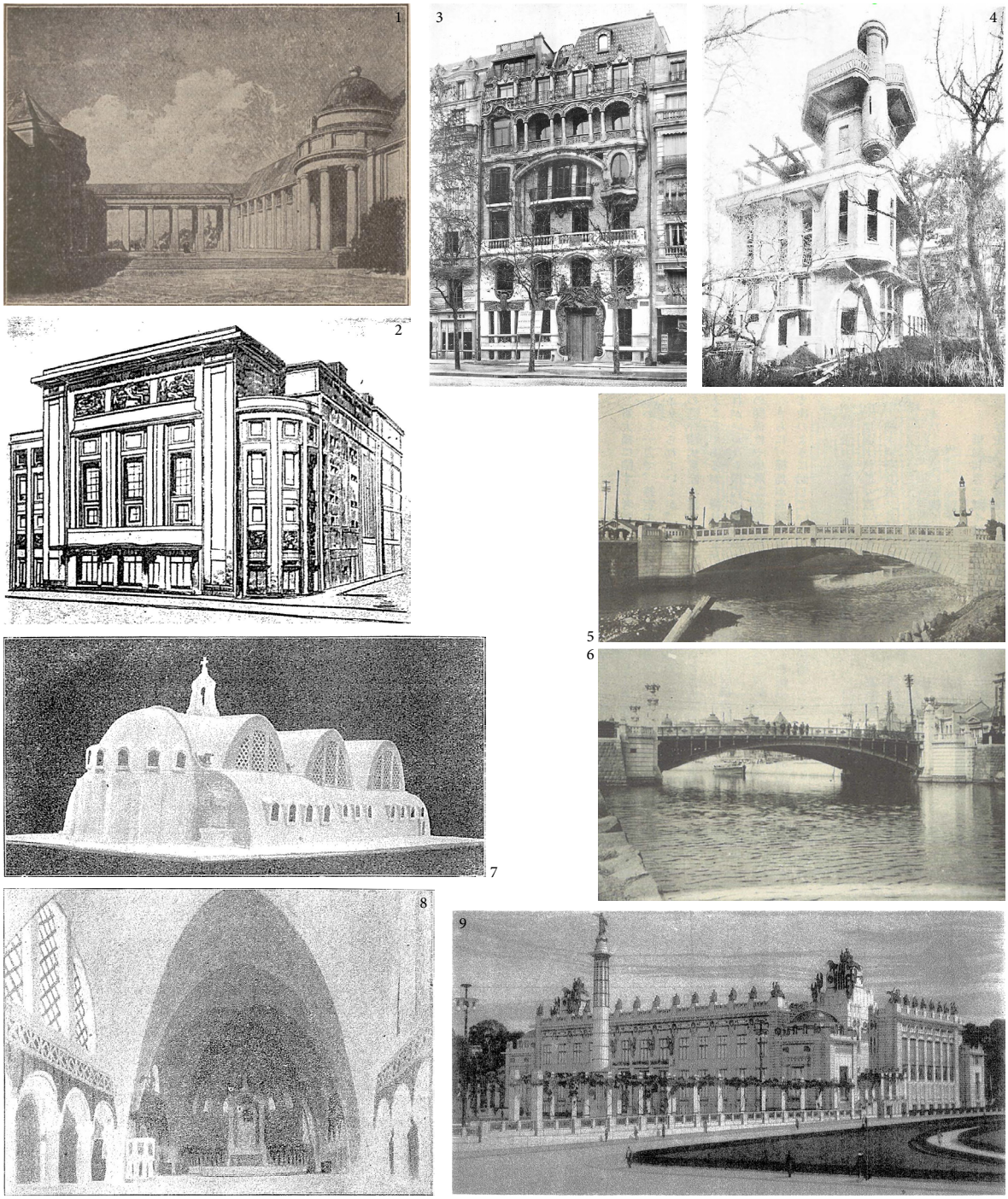
reinforced concrete structure is denied based on his technical knowledge.

b. Rare instances supporting the conceptions of free shape and free plan

In most of the cases, there is no instance directly supporting the conception of <free shape>, as the only two cases found are the promotion of concrete block by Yunosuke Sakai 酒井祐之助, which actually refers to the flexibility of masonry work,[*43] and the implication of Egypt and Babylon architecture considering the quality of free shape of reinforced concrete, proposed by Shin-ichiro Okada.[*44] Both figures show the proclivity of eclecticism, which is more obviously presented in the article of Matsuoto Maeda 前田松韻, who mentions the buildings of Germany, the UK and New York to back the freedom to create historical styles.[*45] About the rare narratives of <free plan>, the first one comes from Lavirotte Building introduced by Oto Endo, in which Endo appreciates the apartment, whose plans of different floors are freely arranged with no restriction of structure, regardless of its Art Nouveau façade.[*46] Another case is the slight complaint of Kotaro Sakurai that the plan of his client's domestic house should be closely related to the structure reinforced concrete (1916).[*47] Even if Sakurai does not directly point out the issue, possibly due to the etiquette, the regular grid of the house is distinctive different from the public buildings designed by Sakurai in the middle of the 1910s, like Tokyo Branch of Taiwan Bank (台湾銀行東京支店) and Imperial Railway Institute (帝国鉄道協会), whose floor plans are quite flexible between different floors, albeit the Renaissance style façades of the two works (figure 3-6). Both the articles of Endo and Sakurai show the fact that in the 1910s, even the real emancipation from historical styles had not happened, the conception of <free plan> definitely appeared.

c. Divergent supporting instances for different structural forms

As to the instances supporting the conceptions of specific structural forms, <frame structure> has the largest number of cases. On the one hand, the similarity with Japanese architecture is universally mentioned, usually in a comparative or indirectly way, on the other hand, it can also be discovered that many architects refer to the cases from the US, amidst which the introduction from Mikishi Abe is the most detailed one,[*48] not to mention his experience in the University of Illinois. For <as a single entity>, similar conceptions can already be found in the introduction of International Congress of Architects in London and Rome (*Kenchikuzasshi*, 1908, 1912),[*49] and integrated in the narratives of rigid frame from Keiji Goto[*50] and Toshikata Sano,[*51] whose theories are quite close. However, there are not too many actual cases supporting this conception, except some introductions of American buildings by Shisuishi, in which as a single entity is regarded as boredom and concrete block is promoted instead.[*52] Also, there is no instance directly supporting the conception of <rigid frame>. Nonetheless, it should be noticed that the elasticity in Futurism architecture is definitely mentioned by Goto, and the shapes of parabola arch in Kaji-bashi (鍛冶橋, 1914) and Gofuku-bashi (呉服橋, 1914)[*54] and elliptical arch in Southport War Memorial (model) designed by Maurice Adams[*55] could also be the important instances illustrating the concept of elastic arch, especially considering that the memorial was introduced by Mamoru Nakamura, a close friend of Keiji Goto, and both figures were the co-founders of *Kenchihyoron*. By contrast, there are several actual cases of concrete block from the US, as are mentioned above, introduced by Shisuishi, and Yunosuke Sakai also promotes his patent of concrete block, which was utilized in a Dozo-zukuri warehouse,[*56] appreciated by Hatsuji Takikawa瀧川初治 (1918) as well.[*57] Additionally, the overhanging tower of Villa Hennebique (1903) and the overhanging seats in Théâtre des Champs-Élysées are the two



1: Dresden Hygiene Expo; 2: Théâtre des Champs-Elysées; 3: Lavirotte Building; 4: Villa Hennebique; 5: Kajibashi; 6: Go-fukubashi; 7: Model of Southport War Memorial; 8: Interior of Southport War Memorial (estimated as model); 9: Design of Peace Palace, Otto Wagner

Fig. 3-7 Selected supporting instances of design conceptions

Source: 1: *Offizieller Führer durch die Internationale Hygiene-Ausstellung, Dresden 1911 und durch Dresden und Umgebung* (Berlin: Rudolf Mosse, 1911), 19; 2: Shinichiro Okada 岡田信一郎, “Pari Shan Zerize Shoumen oyobi Butai Gakubuchi 巴里シャン・ゼリゼー・正面及び舞台額縁, *Kenchikuhyoron* 1, no. 1 (May 1919): 7; 3,4: Oto Endo 遠藤於菟, “Tekkinkonkurītto-zo no Juutaku Kenchiku” 鉄筋混凝土造の住宅建築, *Kenchikukougeigyoshi* 2, no. 18 (August 1915): 627-629; 5, 6: Yu Nakai 中井祐, *The Modernization of Bridge Design in Japan: The Careers and the Works of the Three Japanese Civil Engineers* 近代日本の橋梁デザイン思想: 三人のエンジニアの生涯と仕事 (Tokyo: Seikosha, 2005), 158-160; 7, 8: Mamoru Nakamura 中村鎮, “Mottomo Arataishi Mottomo Gouriteki na Kenchiku” 最も新しい最も合理的な建築, *Kenchikuhyoron* 2, no. 3 (March 1920): 104-107; 9: Koichi Sato 佐藤功一, “Sesesshon-shiki Kenchiku” セセッション式建築, *Kenchiku-to-Soushoku* 2, no. 7 (July 1912): 40-45.

specific cases showing the huge capacity of reinforced concrete, even though they are merely spectacles to some extent.

d. Relatively few instances supporting the manners of architectural treatment

Despite the numerous ideas of architectural treatment, it is interesting to discover that for most of the narratives, there is no supporting instance. Amidst the rare cases, more than half are from the US, generally or specifically, especially from the series presented by Shisuishi, and the others from Europe consist of the cases mentioned above, including the minimal colorization of Dresden Hygiene Expo, the denial of wood, stone and plaster in Futurism, surface covering in Lavirotte Building, the denial of Art Nouveau and Secession details in Théâtre des Champs-Élysées and Southport War Memorial, with the addition of the stone panel covering in Otto Wagner's Peace Palace.[*58)] Also, there is no specific supporting instance of traditional Japanese architecture for architectural treatment, except some specific traditional components. Nevertheless, the Japanese architects who were familiar with the details of Japanese architecture definitely had no need to refer to a single instance from the acquainted and well-classed system. Whatsoever, it cannot be denied that in most of the occasions, the manners of architectural treatment are the dogmatic compliance to the conception of <lack of beauty> without the support of actual instances.

3.4 Conclusion

Based on the 132 articles selected from 7 magazines, generally, it can be confirmed that, after the introductions of International Congress of Architects around the beginning of the 1910s, a peak of the discussion on the design of reinforced concrete buildings appeared in the middle of the decade, which is owed to the involvement of architects from private parties, professors of top universities, and critics, among which certain important figures who returned from overseas right before World War I could be an important factor. However, the peak declined rapidly afterward, with only a slight rebound at the beginning of the 1920s.

The ideas in the articles, classified in five major groups, i.e., image, freedom, structural form, architectural treatment, and prototype in this chapter, also reach a peak in the mid-1910s, and the trends of different groups almost parallel. Specifically, light/thin is the most consistent image out of the coexistence of various images in the peak. Under the general proclivity of eclecticism, free shape, the major voice about freedom, appears in different phases of the decade while free plan shows up in 1915 and 1916. Both the ideas of structural form and architectural treatment reach their peaks in 1915, as the conceptions of as a single entity and rigid frame spike after the wave of frame structure earlier in 1914, and surface covering and fabrication of reinforced concrete come to the top under the general consciousness of lack of beauty in reinforced concrete. However, the ideas of both groups end up with no fixed opinions formed, as the ideas of structural form become various while those of architectural treatment do not change much from the ideas proposed in early years like the International Congress of Architects in London. Besides, under the general denial of historical styles, both the approval and denial of Japanese architecture and the cases from the US spike in 1915 after the peak of European cases in 1913. Nevertheless, all these prototypes

decline with the slump of other ideas.

Several features should be mentioned under these trends. Firstly, various conceptions of structural form coexist, amidst which as a single entity is the major one which conveys the character of plasticity and the mechanism of rigid frame at the same time, while frame structure consists of both the prototypes of traditional Japanese and American architecture. Secondly, the conceptions of free shape and free plan, albeit few, definitely emerge from the cognitions of structure. Thirdly, the ideas in the aspect of image as well as architectural treatment reflect the Japanese architects' focus on façade, even though there is no manifest connection shown between the two aspects.

Between the parallel groups of structural form and architectural treatment, even though there is a tendency that the new structural form, i.e., the rigid frame with the quality as a single entity, has a momentum to leave architectural treatment, what should be highlighted is the coexistence of structural form and the prominent architectural treatment, showing the attempts of Japanese architects who tried to apply the conventional rules to the new structure of reinforced concrete. Furthermore, both the aspects of image and architectural treatment lack the support of instances, which instead results from the imagination of nationality and the dogma that reinforced concrete lacks the beauty of material. The conceptions of as a single entity and rigid frame also lack substantial support, regardless of the sporadic cases of parabola arch and elliptical arch which possibly illustrate the concept of elastic arch. Therefore, it can be affirmed that the design conceptions of reinforced concrete buildings then were indeed utopian to some extent.

Notes

*1) Tomoya Kikuoka 菊岡倶也 and Hatsuo Fujii 藤井肇男, ed., *Nihon Kindai Kenchiku, Doboku, Toshi, Juutaku Zasshi Mokuji Souran* 日本近代建築・土木・都市・住宅雑誌目次総覧 [Catalog of Tables of Contents of Magazines in Architecture, Civil Engineering, Urban Planning and Domestic House, in Modern Japan] (Tokyo: Kashiwashobo, 1990).

*2) Masaru Kawashima 川嶋勝, *Study on the Historical Development of Architectural Publication Activities in Modern Japan: Formation of Architectural Publication Organizations and Roles of Architectural Books until the War in the Showa Period* 近代日本における建築出版活動の史的展開に関する研究ー昭和戦前期までの建築出版組織の形成と建築図書の役割 (PhD diss., Nihon University, 2017).

*3) Goto Keiji 後藤慶二, "Tekkinkonkurīto ni okeru Kenchiku Youshiki no Douki" 鉄筋コンクリートに於ける建築様式の動機 [The Motivation of Architectural Style in Reinforced Concrete], in Goto Keiji shi Ikou 後藤慶二氏遺稿 [Posthumous Anthology of Keiji Goto], ed. Mamoru Nakamura 中村鎮 (Tokyo: Shukei Yakushiji, 1925), 61-65.

*4) Takujiro Nakamura 中村琢治郎, ed., *Takamatsu Masao kun no Seisaku to Chosaku* 高松政雄君の制作と著作 [Productions and Publications of Masao Takamatsu] (ko Takamatsu Masao kun Kinen Jigyoukai 故高松政雄君記念事業会,1935), 178-201. Briefly, Takamatsu takes a historical stance by resorting to evolutionism which were promoted by Chuta Ito, the concrete buildings of ancient Rome, and the virtues of intellect, taste and piety like the British theorists in the 19th century.

*5) *Sesesshon go* せせっしよん号 [Volume of Secession], special issue, *Kenchiku-to-Soushoku* 建築ト装飾 2, no.6 (July 1912).

*6) Tekkinkonkurīto 鉄筋混凝土 [Reinforced Concrete], special issue, *Kenchiku-to-Soushoku* 建築ト装飾 3, no.7 (December 1913). Although the published month is implied as January of 1914 in *Kenchikuzasshi* 建築雑誌 28, no. 326 (February 1914): 132, the epilogue of the special volume by the editor is signed with the point of "end of November", indicating that all the architects offered their articles in 1913, and the printing was estimated to be implemented in December for publication.

*7) Tokubetsu Go 特別号 [Special issue (bank buildings)], *Kenchikusekai* 建築世界9, no. 4 (April 1915).

*8) Keiji Goto 後藤慶二, "Kako tomo Shourai tomo tsukanu Taiwa" 過去とも将来とも付かぬ対話 [Conversation not relevant to the Past or the Future], in *Shourai no Kenchiku* 将来の建築 [Architecture in the Future], special issue, *Kenchiku* 建築 200 (1917): 85-92.

*9) There are three articles presented by "KM生" in KC after the magazine was transferred to Yokogawa Komusho, based on Kawashima's dissertation (Ref. 11). Hence, it can be assumed that "KM" refers to the initials of Kitaro Matsui. This can also be verified in Takeyoshi Hori 堀勇良, *Nihon Kindai Kenchiku Jinmeisouran* 日本近代建築人名総覧 [Dictionary of Modern Japanese Architects] (Tokyo: Chuuokoronshinsha, 2022).

*10) Shinichiro Okada 岡田信一郎 (1883-1932) was an architect active in Taisho Period. He was also the professor of Waseda University. He is famous for the design of Osaka Central Public Hall.

*11) Oto Endo 遠藤於菟 (1866-1943) was an architect active in Meiji and Taisho Periods. His collaboration with Mikishi Abe is notable, which created many pioneering works of reinforced concrete. The most impressive work of them is the Headquarter of Tokyo Hibi Shimbun.

*12) Tatsuzo Sone 曽禰達蔵 (1853-1937) was an architect mainly active in Meiji Period and participated in the early projects of Mitsubishi Group in Marunouchi. He ran the Sone-Chuujo Office with Seiichiro Chuujo.

*13) Chikatada Hamaoka 濱岡周忠 (1895-1966), also known as Chikatada Kurada 蔵田周忠, was an architect active in Taisho and Showa Periods. He worked for Sone-Chuujo Office and joined Bunriha in 1921. He devoted to the pratices of architecture from Expressionism to Modernist Architecture, and wrote abundant articles concerning architectural theories and the introduction of foreign works.

*14) Kotaro Sakurai 櫻井小太郎 (1870-1953) was an architect from Meiji to Showa Period. He was the chief engineer of Mitsubishi Estate from the mid-1910s, and led the construction of Marunouchi throughout Taisho Period.

*15) Mamoru Nakamura 中村鎮 (1890-1933) was an architect and architectural critic. He also had a close relationship with Keiji Goto. In addition, he owned the patent of "Nakamura System" concrete block.

*16) The educational experiences of certain figures can be found in Mayumi Tsunoda 角田真弓, *Meijiki Kenchikugakushi* 明治期建築学史 [History of Architecture in Meiji Period] (Tokyo: Chuokouronbijyutsu, 2019), 445-439.

*17) The activities of the architects can be found in Takeyoshi Hori 堀勇良, *Nihon Kindai Kenchiku Jinmeisouran* 日本近代建築人名総覧 [Dictionary of Modern Japanese Architects] (Tokyo: Chuuokoronshinsha, 2022).

*18) In this chapter, "et" is utilized for conjugating the closely bonded words, as they are used together in most of the context.

*19) For example, in Yasushi Tsukamoto 塚本靖, "Taisho ninen Bijutsu Kenchiku kai wo Kaerimite" 大正二年美術建築界を顧みて [Recalling the Society of Art and Architecture in Taisho 2], *Kenchikuzasshi* 建築雑誌 28, no. 325 (January 1914): 107, the author writes, "此鉄筋混凝土なる構造法は、耐火耐震的である許りでなく、壁が薄いために地面を経済的に使ひ得る所は、宛も在来の日本建築の壁が薄いために、軽快な気持ちが滂湃としてただよひ、…".

*20) Tatsutaro Nakamura 中村達太郎, "Tekkinkonkurīto to Youshiki" 鉄筋混凝土と様式 [Reinforced Concrete and Style], *Tekkinkonkurīto* 鉄筋混凝土 [Reinforced Concrete], special issue, *Kenchiku-to-Soushoku* 建築ト装飾 3, no.7 (December 1913): 8-18.

*21) For example, in Yoshikuni Okuma 大熊喜邦, "Zairyou no Chikara" 材料の力 [Power of Material], *Kenchiku* 179 (February 1915): 179, Okuma writes, "…組立た木造建築を過去の遺例として葬り、鋳型建築を必要とする時代に到らしめた。(enter)鉄筋混凝土建築はセメント建築である、而して又鋳型建築である、現代に於て科学的基礎の上に樹った最も改進した建築の方法である、日本の如き地震国にはエラスチックなモノリシックな鉄筋混凝土は最も都合よき構造の一である、…".

*22) See also chapter 1, 1.4.3.c, chapter 2, 2.2.5.b.

*23) In most of the cases, the corresponding Japanese phrase is "表面仕上げ", and in Masao Takamatsu's article in Gendai-no-Kenchiku, the furigana is the transliteration of "surface finishing", hence in this study, the word "finishing" is utilized instead of "dealing" or "treatment". See also Takujiro Nakamura, ed., *Takamatsu Masao kun no Seisaku to Chosaku*, 192.

*24) Compared with the works of Anatole de Baudot, or Auguste Perret, who devoted largely to the exploration of inner space or the roofs, it is surprising that Japanese architects paid so much attention to the treatments of façade, which is rather similar with the architects like Semper who emphasized the lightness of iron and dealing with the subject of polychromy, and George Gilbert Scott who promoted various manners for the treatment of façade. About the works of Anatole de Baudot, proofs can be found in Takeshi Goto 後藤武, The Archaeology of Reinforced Concrete in Modern Architecture: Architect Anatole de Baudot and His Era 鉄筋コンクリート建築の考古学: アナトーノレ・ド・ボドーとその時代 (Tokyo: The University of Tokyo Press, 2020). About the theorists, their ideas are articulated by Nikolaus Pevsner in his book, Nikolaus Pevsner, Some Architectural Writers of the Nineteenth Century (London: Oxford University Press, 1972).

*25) Although it is hard to present all the relevance articles here, both the article of Jiro Ono and Koichi Sato, i.e., Jiro Ono 小野二郎, "Gendai no Kenchiku" 現代の建築 [Architecture of Modern Era], *Kenchikusekai* 建築世界 9, no. 2 (February 1915): 10-15 and 佐藤功一 Koichi Sato, "Shourai no Kenchiku" 将来の建築 [Architecture in the Future], in *Shourai no Kenchiku* 将来の建築 [Architecture in the Future], Special issue, *Kenchiku* 建築 200 (1917): 101-113, translated the text from William R. Lethaby, Architecture: An Introduction to the History and Theory of the Art of Building (London: Williams and Norgate, 1912), 237-251. Lethaby claims that although reinforced concrete is "an inartistic material," we should, "boldly build a railway station, a museum, or a cathedral, wide and simple, amply lighted, and call in our painters to finish the walls", of which the appreciation of craftsmen, or exactly, painters, is certainly inherited from Ruskin.

*26) In 1915, Shisuishi published a series of articles introducing the manners of architectural treatment in multiple instances from the US, i.e., Shisuishi 紫水子, "Biteki Konkurīto-kou" 美的混凝土工 [Aesthetic Concrete Crafts], *Kenchikugaho* 6, no. 2 (February 1915): 23-26, no. 3 (March): 23-24, no. 4 (April): 17-19, including Unity Temple by Wright, administration of Washington Park by Daniel H. Burhan, Slope Polytechnic (phonetic) Association in LA, Glenwood Mission Inn by Frank Miller, House of Alfred Hopkins, and House of Albert Mowell (phonetic).

*27) In the competition, Azekura style was adopted by Keiji Goto who won the first place of third prize (三等一席). In the design for construction by Shintaro Oe大江新太郎, rather than absorbing the first and second prizes, Azekura was utilized, which was also appreciated by certain editors of *Kenchikugaho*, albeit as compliment to some extent. Comparing with other styles of traditional Japanese architecture typically in wooden frame, Azekura style is obviously

more about the wall and façade. The plates can be found in *Kenchikusekai* 建築世界 13, no. 11-12 (November-December 1919).

*28) Kotaro Sakurai 櫻井小太郎, "Juutaku Kenchiku no Kairyou" 住宅建築の改良 [Renovation of Residential Buildings], *Kenchikusekai* 建築世界7, no. 10 (October 1913): 8-12. Shinkabe means the way to show the structural columns rather than cover them with mud or paint.

*29) Seiichiro Chuujo 中條精一郎, "Dainanakai Bankoku Kenchiku Taikai Gaikyou" 第七回万国建築大会概況 (3-5) [General Situation of the 7th International Congress of Architects], *Kenchikuzasshi* 建築雑誌 21, no. 261 (September 1908): 369-371, no. 262 (October 1908): 398-403, and no. 263 (November 1908): 446-450.

*30) Zoushutaro Takasugi 高杉造酒太郎, *Kenchikugakkai Gojuunen Ryakushi* 建築学会五十年略史 [Brief 50-year History of Architectural Institute of Japan] (Tokyo: Architectural Institute of Japan, 1936).

*31) Shinichiro Okada 岡田信一郎, "Shinkenchiku no Igi" 新建築の意義 [Significance of New Architecture], *Kenchikuzasshi* 建築雑誌 28, no. 331 (July 1914): 342-353.

*32) Toshikata Sano 佐野利器, "Gendai Oubei Kenchiku no Suusei" 現代欧米建築の趨勢 [Trends of Architecture in Modern Europe and the United States], *Kenchikuzasshi* 建築雑誌 28, no. 331 (July 1914): 357-364.

*33) Toshikata Sano 佐野利器, "Tekkinkonkurīto Kouhou Hanron" 鉄筋コンクリート構法汎論 [General Theory of reinforced concrete Structure], *Journal of Architecture and Building Science* 建築雑誌 30, no. 354 (1916): 300-310. See also chapter 2.

*34) For showing the curve of each tag more clearly, some curves deviate from the exact position to some extent.

*35) For example, Yoshizo Banto 阪東義三, "Toshi Keizai Seisaku to Tokkyo Tekkin Brokku nitsuite" 都市経済政策と特許鉄筋ブロックに就て [About Urban Economic Policy and Patented Reinforced Concrete Block], *Kenchikusekai* 建築世界 15, no. 2 (February 1921): 22-25, and Iwao Yoshitake 吉武巖, "Juutaku Kenchiku to Konkurīto" 住宅建築と混凝土 [Residential Buildings and Concrete], *Kenchikusekai* 15, no. 4 (April 1921): 10-11.

*36) Toshikata Sano 佐野利器, "Tekkinkonkurīto no Taishinteki Kachi" 鉄筋混凝土の耐震的価値 [Anti-seismic Value of Reinforced Concrete], *Kenchikusekai* 建築世界 8, no. 7 (July 1914): 5-10.

*37) Minoru Ikeda 池田稔, "Jidai no Youkyuu Suru Kenchikubutsu" 時代の要求する建築物 [Architecture Required by the Era], *Kenchikusekai* 建築世界 6, no. 3 (March 1912): 5-6.

*38) Keiji Goto 後藤慶二, "Kako to Shourai to mo Tsukanu Taiwa" 過去と将来とも付かぬ対話 [Dialogue neither connected to the past nor the future], *Kenchiku* 建築 no. 200 (1917): 85-92.

*39) Shinichiro Okada 岡田信一郎, "Pureeto Kaisetsu" プレート解説 [Explanation of Plate], *Kenchikuhyoron* 建築評論 1, no. 1 (1919): 1.

*40) Goichi Takeda 武田五一, "Furanku Roido Raito-shi no Kenchiku Youshiki" 孚蘭区魯異度雷都氏の建築様式 [Architectural Styles of Frank Lloyd Wright], *Kenchikugaho* 建築画報 8, no. 12 (December 1917): 1-2.

*41) Hoshin Kuroda 黒田鵬心, "Kenchikukai Jihyou" 建築界時評 [Comment on Recent Society of Architecture], *Kenchiku-to-Soushoku* 建築ト装飾 2, no. 12 (December 1913): 3-5.

*42) In the article of Oto Endo, i.e., Oto Endo 遠藤於菟, "Tekkinkonkurīto-zo no Juutaku Kenchiku" 鉄筋混凝土造の住宅建築 [Residential Buildings of Reinforced Concrete Structure], *Kenchiku-Kougeigyoshi* 2, no. 18 (August 1915): 627-629. Although the name of the apartment is not mentioned in the text of Endo, the plate can be confirmed as Lavirotte Building.

*43) Yunosuke Sakai 酒井祐之助, "Sakai-shiki Burokku Kouzou ni yoru Kenchiku" 酒井式ブロック構造に依る建築 [Building Constructed in Sakai System Block], *Kenchiku-Kougeigyoshi* 建築工芸業誌 2, no. 22 (December 1915): 788-791.

*44) Shin-ichiro Okada 岡田信一郎, "Konkurīto Kenchiku no Torubeki Keishiki" コンクリート建築の採るべき形式 [The Form that Concrete Buildings Should Adopt], Tekkinkonkurīto 鉄筋混凝土 [Reinforced Concrete], special issue, Kenchiku-to-Soushoku 建築ト装飾 3, no.7 (December 1913): 20-24.

*45) Matsumoto Maeda 前田松韻, "Kenchiku Youshiki to Tekkinkonkurīto" 建築様式と鉄筋コンクリート [Architectural Style and Reinforced Concrete], *Kenchiku-to-Soushoku* 建築ト装飾 3, no. 7 (December 1913): 26-32.

*46) Oto Endo, "Tekkinkonkurīto-zo no Juutaku Kenchiku", 629.

*47) Kotaro Sakurai 櫻井小太郎, "Wada Tsunashiro-shi Juutaku" 和田維四郎氏住宅 [House of Tsunashiro Wada], *Kenchikuzasshi* 建築雑誌 30, no. 349 (January 1916): 43.

*48) Mikishi Abe 阿部美樹志, "Ginkou Kaisha Kenchiku to Tekkinkonkurīto Sukereton Kouzouhou" 銀行会社建築と鉄筋「コンクリート、スケレトン」構造法 [Bank / Office Buildings and Reinforced Concrete Skeleton Construction], *Kenchikusekai* 建築世界 9, no. 4 (April 1915): pp. 50-56.

*49) Toshikata Sano 佐野利器, "Daikukai Bankoku Kenchiku Taikai Sanretsu Houkoku" 第九回万国建築大会参列報告 [Report of Participancy in the Ninth International Congress of Architects], *Kenchikuzasshi* 建築雑誌 26, no. 303 (March 1912): 123-134.

*50) Keiji Goto 後藤慶二, "Harikan tsuki Rokuzai Yakugama no Riron oyobi Keisan (Shouzenkanketsu)" 張釬付肋材屋構の理論及び計算(承前完結) [Theory and Calculation of Roof Rib with Tension Robs (final episode)], *Kenchikuzasshi* 建築雑誌 29, no. 338 (1915): pp. 69-89.

*51) See also note 32.

*52) Shisuishi 紫水子, "Biteki Konkurīto-kou (2)" 美的混凝土工 (二) [Aesthetic Concrete Crafts], *Kenchikugaho* 6, no. 3 (March 1915): 23-24.

*53) See also note 37.

*54) Kitaro Matsui 松井貴太郎, "Kenchiku Jigen" 建築時言 [Latest Commentary on Architecture], *Kenchiku* 建築 no. 176 (November 1914): 17-19. Actually, the arches of Kaji-bashi and Gofuku-bashi are circular segments, which are revealed in Yu Nakai 中井祐, *Kindai Nihon no Kyouryou Dezain Shisou* 近代日本の橋梁デザイン思想: 三人のエンジニアの生涯と仕事 [Design Conceptions of Bridge in Modern Japan: Careers and Works of Three Engineers] (Tokyo: University of Tokyo Press, 2005), 154-155. Hence, the "parabola" described by Kitaro Matsui is, to a large extent, his own imagination.

*55) Mamoru Nakamura 中村鎮, "Mottomo Arataishi Mottomo Gouriteki na Kenchiku" 最も新しい最も合理的な建築 [The Newest and Most Rational Architecture], *Kenchikuhyoron* 建築評論 2, no. 3 (March 1920): 104-107. Notice the title of the article, Nakamura's cognition is close to the shared cognition among the undergraduate students from the department of architecture in Imperial University of Tokyo, i.e., elastic arch as rational structure.

*56) See also note 42.

*57) Hatsuji Takigawa 瀧川初治, "Konkurīto Burokku ni Tsuite" 混凝土ブロックに就て [Of Concrete Block], *Kenchikusekai* 建築世界 12, no. 3 (March 1918): 45-48.

*58) Koichi Sato 佐藤功一, "Sesesshon-shiki Kenchiku" セセッション式建築 [Architecture of Secession Style], Kenchiku-to-Soushoku 建築ト装飾 2, no. 7 (July 1912): 40-45.

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CHAPTER 4
RELATION BETWEEN REINFORCED CONCRETE AND EXTERIOR ARCHITECTURAL APPEARANCE

4.1 Introduction

4.1.1 Exterior appearance as the indicative aspect showing the relation between reinforced concrete and architectural practice in the era of Eclecticism

In the previous chapters, the technical and design theories of reinforced concrete have been substantially grasped, in which the motivation of "Reinforced Concrete and New Style" sets the keynote of abundant tangible ideas, either progressive or conservative. However, if the relation between reinforced concrete and new styles definitely existed in real practices is yet to be verified. Around the 1910s, as the major media, certain architectural magazines published numerous photos of newly built projects. Amidst the projects, a considerable part is also attached with information about structure, which is no doubt the best material for excavating the exact relation.

Seen from the Collection of drawings from Shimizu Group,[*1)] a precious publication covering the projects from 1905 to 1923, it can be discovered that the design of façade was still the most important part in the design of architecture. Also, in the collection of drawings of Marunouchi from Mitsubishi Estate,[*2)] although the technical background is clearly stronger, the design of façade was no doubt a conspicuous part as well. Thus, it has to be admitted that the period from Russo-Japanese War to Great Kanto Earthquake was still the era of historical styles, and the exploration into the relation between exterior architectural appearance and reinforced concrete is the most straight forward way to examine the tribute of reinforced concrete in the society of architecture, through which the relations between theories in the previous chapters, either technical or design, and the practices of reinforced concrete can be deciphered afterward.

Hence, the objectives of this study are set to verify whether reinforced concrete is related to the changes in exterior appearances of real projects in the magazines and explain how reinforced concrete is related to any observed changes of historical styles. Although the analyses can get some hints from the previous chapters, this chapter is still a relatively independent work, which tries to avoid the preconception of the exterior appearance merely from the vision of the theories. Through an objective process based on analyses on abundant projects, the points made in this chapter also prepare the materials for synthetic discussion on the relation between the theories and practices.

4.1.2 Previous researches

About the relation between reinforced concrete and exterior architectural appearance in real practices, here, this chapter is not trying to reiterate the contents of the general narratives which have been presented in the introduction of this dissertation. Nonetheless, it has to be pointed out that all these works conduct the study by focusing on the epoch-making projects while the arguments are hard to be verified as either true or false beyond the projects presented, not to mention certain ambiguous depictions of the appearances of buildings, even if the sharp eyes of the authors cannot be neglected.

More recently, some analytic works can be discovered. Hiroshi Nakamura and Michihiko Shinozaki's study[*3)] analyzing the transition of visual elements of façade in the bank buildings from 1890 to 1929 is a sensible work, whose selection of elements, however, is relatively arbitrary and not well systematized.

Takuya Oki and Yoshiki Ogawa's research[*4)] using trained artificial intelligence model to predict the structure from the appearances of buildings shows the feasibility to explore the relation between structural form and exterior appearance with new technologies. Nonetheless, despite the regression models integrated in the artificial intelligence model, the internal algorithm is still relatively obscure.

In recent decades, the statistical tools integrated in programming languages have brought convenience and new possibilities to various fields, including architecture. Hence, this chapter aims at exploring the relation between reinforced concrete and exterior architectural appearance with specific statistical tools, seeking to make better understanding of the specific era and discover new visions beyond the epoch-making projects. Particularly, through the process, this chapter tries to implement a well-defined hierarchical break-down of the façade, also with the consciousness over all the statistical models utilized for analysis.

4.1.3 Materials and methodology

To achieve the objectives, this study chooses three magazines during the era, i.e., *Kenchikuzasshi*, *Kenchikusekai*, and *Kenchikugaho*, which were constantly published throughout the 1910s and covered a large number of plates of architectural works. Particularly, *Tokyo 100 Buildings*, regarded as a special volume of *Kenchikugaho*, is also added to the collection.[*5)]

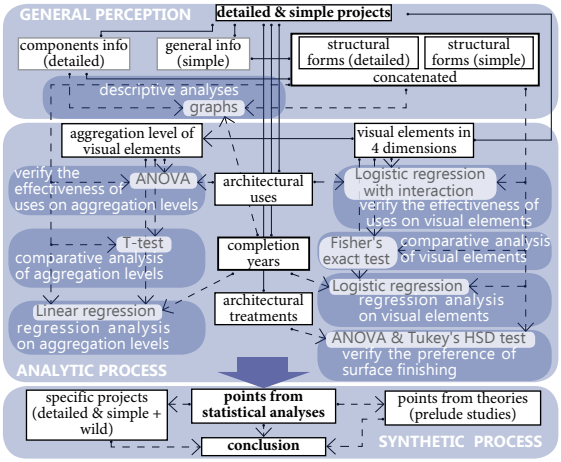


Fig. 4-1 Methods and procedure of this chapter

Subsequently, the projects with structural information are collected. To ensure the authenticity of information, only the coeval literatures are chosen as primary sources, including the three magazines and two reports on Great Kanto Earthquake, i.e., Earthquake Report and Disaster Report. Specially, *Kawasakigaho* is additionally taken into account for confirming the buildings of wire mesh reinforced concrete.

The collected projects are divided into two types, as the major one is covered with the sources showing specific structural components (detailed project, hereinafter), e.g., specifications, detailed news, educational articles or detailed drawings, while the other is featured with the simple comments of structure next to the plates or in magazine articles (simple project, hereinafter). Particularly, simple projects in magazines can be enhanced to detailed projects with the information from the two reports, whereas the information from *Kawasakigaho* does not change the original type of projects. The priority of information is set along the sequence of *Kenchikuzasshi*, *Earthquake Report*, *Disaster Report*, *Kenchikusekai*, then *Kenchikugaho* regarding the characters of the publications.[*6)]

Before the analysis, firstly, the structural forms are redefined based on information of main structural components from detailed projects and the comments for simple projects, through which the features and trends of the structural components and redefined forms are also grasped. Secondly, based on a hier-

archical system, the visual elements are extracted from the plates into different dimensions, and the types of elements in each dimension are summed up as the aggregation level of visual elements. Both steps are handled in Filemaker.

With the preparation above, a series of analyses is conducted. Primarily, to exclude the potential influence of architectural uses, two tests, i.e., ANOVA and logistic regression with interaction, are implemented on aggregation levels and specific elements to verify the correlation between architectural uses and structural forms. Subsequently, comparative and regression analyses are progressed on both sides for comparing the differences between the structural forms (T-test for aggregation levels, Fisher's exact test for specific elements) and finding the trends in single structural forms or general (linear regression for aggregation levels, logistic regression for specific elements), through which corresponding Python modules are utilized. Moreover, the techniques of surface finishing are also briefly examined (ANOVA and Tukey's exact test) with additionally recorded data to give more insight into the features of exterior appearance.

Based on the results of the analyses above, this study tries to find the exact projects corresponding to the results and the relevant points of architectural theories of reinforced concrete from prelude studies for finally making a synthetic conclusion.

4.2 Selected projects, the features and trends, and specific handling of the information of projects

4.2.1 Overview of projects

From three magazines, 263 detailed and 271 simple projects are selected, making 43.59% (534 / 1225) of the actually built projects in Japan. As to another important information, i.e., the completion year, or even the construction period, a broader range of literature and certified online information (owners' and administrative sectors' home pages only) are confirmed. The projects with unknown completion years are eliminated. Given the stance of this study, temples, shrines, buildings of traditional art, or the projects with overwhelming Japanese motif are excluded as well. Finally, the numbers for analysis come to 248 and 168 in detailed and simple projects.

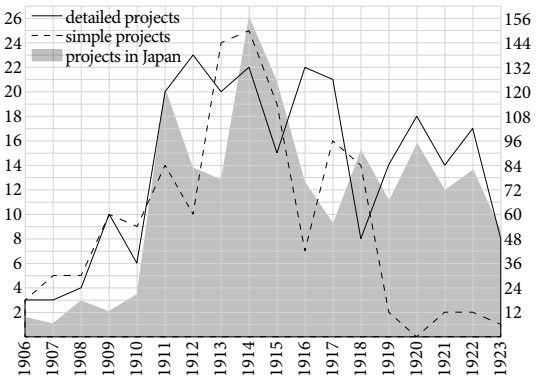


Fig. 4-2 Trends of detailed and simple projects (by completion year), and actual projects in Japan (by published year)

Generally, in figure 4-2, it can be witnessed that the publication of projects drastically increased from 1911 and dropped to a relatively stable status from 1916. Detailed projects show a similar but more stable trends after 1910 while simple projects appear aggregately around the mid-1910s due to the diminished comments on plates afterward.

4.2.2 Definitions of specific structural components in detailed projects

For both the detailed and simple projects, all the original text conveying structural information is recorded in the reference table with indexes to the sources.

In the detailed projects, according to the original text, this study identified the main structures of wall, floor, beam, and column (roof regarded as decorative element in this study). Especially, the frame of wall is also recorded, e.g., brick wall with wooden frame is changed as wooden framed brick (prefixed with "W-"), and the same applies to the walls with steel frame (prefixed with "S-"). For reinforced concrete, the handling is slightly different. Only the description with the term of curtain wall (帳壁) is reflected in the definition of wall structure (prefixed with "RC-") while the ring beams of reinforced concrete and reinforced concrete walls with decorative covering are not regarded as mixed structure.

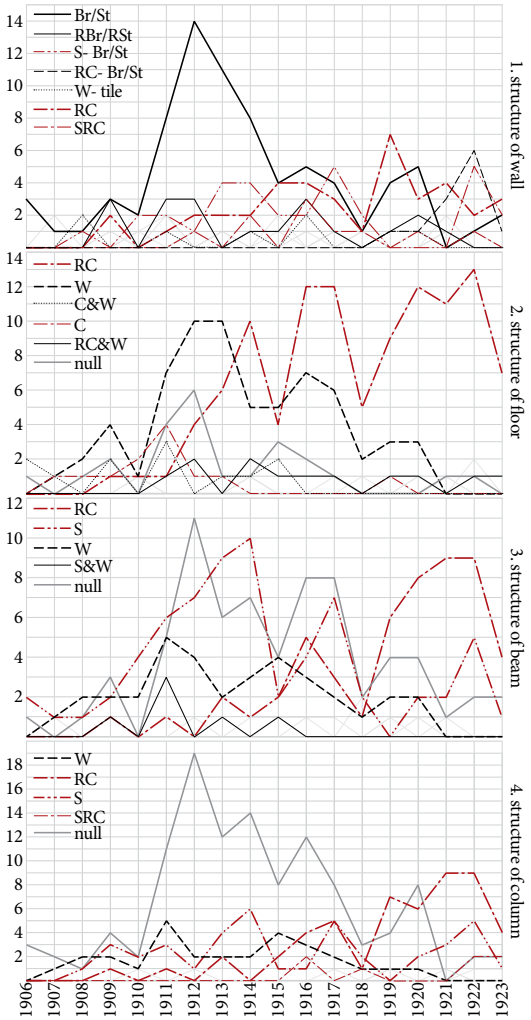


Fig. 4-3 Changes of structural components

Although, in many projects, the information of structural components is not abundant enough for conducting a comprehensive statistical analysis, some sensible trends can still be read from the graphs. Firstly, in figure 4-3, the first graph, despite the complicated combinations of the structures of wall, several main forces can be distinguished. Brick or stone (Br/St), are no doubt the most popular material in the mid-1910s, while reinforced and steel-framed brick or stone (RBr/RSt, S- Br/St) are evenly distributed. Around the end of the 1910s, reinforced concrete (RC), steel (S) or reinforced concrete framed masonry (RC-Br/St) walls became prosperous and intertwined together. In the other three graphs of figure 4-3, reinforced concrete independently became the most dominant force in the second half of the 1910s, taking over wood (W) and concrete (C) as floor, over steel and wood as beam and column. Nonetheless, it needs to be noticed that for many projects, the structures of beam and column are not mentioned (null). Actually, almost all the specifications were arranged under the framework of wall-floor system, indicating that the mode of thinking among the architects had not fundamentally changed. Particularly, from the four graphs of figure 4-3, three phases, i.e., 1906-1910, 1911-1915, 1916-1923 can be briefly distinguished, featuring the changes of structural components from masonry to reinforced concrete.

4.2.3 Definitions of general structural forms in detailed and simple projects

Instead of accepting the definition of general structure in original text, this study redefined the structural

forms of detailed projects based on the structural components as masonry, reinforced masonry, the frames of wood, steel, reinforced concrete, steel framed reinforced concrete, and some special cases of reinforced concrete in wall-floor system (recorded as masonry, R-masonry, W-frame, S-frame, RC-frame, SRC-frame, and RC wall-floor) or the combinations of these forms.

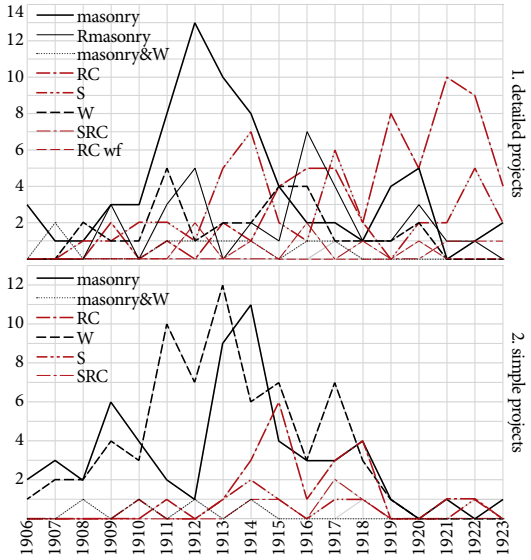


Fig. 4-4 Changes of general structural forms

Although most structural forms redefined are consistent with the original definition, some projects with steel framed masonry walls and steel beams are referred as masonry buildings or not generally defined in the magazines. In these conditions, this study redefines the overall structural forms as steel frame. The same applies to the buildings with wooden framed masonry walls and wooden beams. For reinforced concrete, the situation is more complex. Reinforced concrete merely utilized as ring beam are not regarded as reinforced concrete framed walls, whereas some projects, albeit no shape of column, with the walls of reinforced concrete casted together with the beams are counted as frame system. Besides, the projects of flat slab system without beams are also classified as RC-frame.[*7)] The issue of rigid frame is suspended in this study due to limited information, although the evidences chapter 1 show that the structure of reinforced concrete in the 1910s was incompletely rigid.

The definition of structural forms for simple projects principally follows the categories of detailed projects, and can be decided with the keywords in the comments of structure. However, two points need to be raised here. Firstly, according to the original sources and *Kawasakigaho*, buildings of wire mesh reinforced concrete (鉄網コンクリート) in this study are all identified as wooden frame[*8)] which was also a popular fashion in that era. Secondly, all the reinforced concrete buildings are defined as RC-frame due to the shortage of detailed information.

4.2.4 Trends of redefined structural forms, in detailed and simple projects

Generally, in figure 4-4, the first graph, detailed projects drastically increase after 1910, probably due to the prosperity of publication. In the boom, masonry architecture is clearly the protagonist, followed by steel and wooden frame buildings, while the period from 1916 to Great Kanto Earthquake is no doubt the stage of reinforced concrete frame buildings. In the second graph of figure 4-4, different from the detailed projects, no distinctive division of time can be seen for the simple projects. Particularly, buildings of wooden frame are the predominant force, of which most cases are published in *Kenchikugaho*, while masonry and reinforced concrete frame buildings follow closely after the peak of wooden frame.

4.2.5 Recording of uses of buildings and specific architectural treatments

Besides the structural and chronological information, some other types of information are also extracted. Firstly, the specific uses of buildings are extracted according to their names and affiliations, and then classified in larger genres, such as financial, office building, administrative, etc. Secondly, the information of architectural treatment of façade, mainly as surface finishing, which is frequently seen the specifications in the magazines and the comments of plate, is also extracted and collected. Since the details of the information are trivial and not directly related to the kernel of this study, they are explained in the corresponding discussions of the later sections.

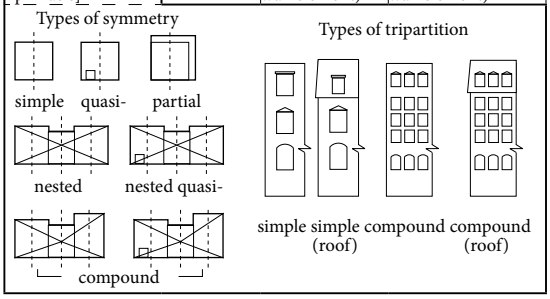
4.3 Build-up of the data of visual elements

4.3.1 Definition of visual elements

As mentioned in 4.1.3, the exterior appearance is broken down into visual elements in four aspects, both abstract and physical, i.e., façade pattern, and elements of wall, window and door, of which the catalog is shown in table 4-1.

Table 4-1 Definition of elements in four dimensions

Abstract element	Physical element		
façade pattern	wall element	window element	door element
‣symmetry [simple ", quasi- ", partial ", nested ", nested quasi- ", compound "]	‣column ‣pilaster ‣pillars ‣corbel ‣buttress ‣quoin ‣pediment /gable ‣balustrade /parapet ‣cornice /moulding ‣frieze /architrave ‣arch ‣rustication /ashlar ‣half-timber ‣foliage	‣column ‣pilaster ‣pillars ‣buttress ‣corbel ‣trim / quoin ‣pediment ‣balustrade ‣cornice /moulding ‣frieze /architrave ‣lintel ‣arch [circular ", triangular ", pointed ", Moorish ", trefoil "] ‣keystone ‣round window ‣rose window ‣foliage (*counted as wall element)	‣column ‣pilaster ‣pillars ‣buttress ‣corbel ‣trim / quoin ‣pediment / gable ‣balustrade /parapet ‣cornice / moulding ‣frieze / architrave ‣lintel ‣arch [circular ", triangular ", pointed ", Moorish "] ‣keystone ‣half-timber ‣tower ‣pitched roof ‣roof deco [dome, cupola] ‣canopy ‣foliage (*counted as wall element)
‣tripartition [simple ", simple(roof) ", compound ", compound(roof) "]			
‣window array [horizontal ", vertical ", even "(≥ 3 × 3)]			
‣arcade			
‣colonnade			
‣emphasized doorway [porch, portico, portal]			
‣tower			
‣pitched roof			
‣roof deco [dome, cupola, pinnacle]			



Some points here are necessary to be clarified. For façade pattern, only the main façade is counted (the one with the main entrance), while the elements of wall, window and door are not restricted to the main façade. About the types of symmetry and tripartition, some explanatory graphs are presented in table 4-1, whereas other elements can be literally conceived. Particularly, for symmetry, the appearance of a building is regarded as a two-dimensional visual object, regardless of the overall shape, since the visual system of human being is fundamentally two-dimensional.[*9)] In addition, only patterned symmetry is regarded as symmetrical, while simply geometrical symmetry is not.

As to specific physical elements, the distinction between Classical and Gothic manners is ignored, regarding the eclecticism since Victoria era. The foliage features found in window and door elements are all counted as wall elements for the sake of the graphic resolution of plates. Particularly, for door elements, not only of the aperture, but also the elements in porch, portico, or portal are counted. Furthermore, both the actual elements and the imitations, e.g., a painted pediment, are counted, since this study anticipates to find the distinctive change rather than the detailed process of gradual transition.

4.3.2 Values assigned to visual elements and the aggregation levels

Checking from the catalog, the presence and absence of the elements are marked with 1 and 0, regardless

of the extent of utilization due to the limited plates in the magazines. By counting the types of elements (up to the second level in brackets) utilized in each dimension, the total number is defined as the aggregation level of visual elements. Nonetheless, amidst the elements, window array and canopy of doorway are not counted into aggregation levels regarding the angle of historical styles. The details of visual elements and aggregation levels in four dimensions can be confirmed in Appendix D.

4.4 Analysis of the relation between structural form and exterior appearance, with focus on reinforced concrete

With all the preparations above, the statistical analyses are conducted. The data for analysis slightly varies across different tests for sake of the characteristics of data. Meanwhile, for the explanation of the results of analyses, in order to make reasonable and reliable points, this study endeavors to find the points in common rather than being obsessed with any single result.

4.4.1 Tests on the aggregation levels of visual elements

a. Verification of the influences of uses and structural forms on aggregation levels of visual elements

During the 1910s, except financial buildings (84 detailed, 47 simple), including banks, insurance companies and exchanges, and office buildings (48 detailed, 27 simple), including rental offices, offices of profit and non-profit groups, other genres of uses are not abundant enough. Hence, it is hard to conduct a thorough test over the influence of architectural use on exterior appearance. Considering the homogeneity of variances, this study chooses to test the differences between three groups, i.e., financial buildings (131), office buildings (75) and all the rest genres together (210) in terms of four types of aggregation levels, and verify, if the differences exist, whether they are cause by the differences of architectural uses or structural forms. To carry out the analysis, the method of ANOVA test is adopted with the formula of "aggregation_lv ~ use_ternary * structure".[*10)] Considering that the change by year is not controlled, the concatenated data of detailed and simple projects is utilized.

Table 4-2 ANOVA test on influences of use and structural forms on aggregation levels (concatenated projects)

Aggregation level	Variance	Sum_sq	df	F	PR(>F)
aggregation level in façade pattern	C(use_ternary)	2.5273	2	0.5560	0.5740
	C(strctr)	76.3745	4	8.4018	0.0000
	C(use_ternary):C(strctr)	22.3599	8	1.2299	0.2802
aggregation level in wall	C(use_ternary)	90.1686	2	14.0244	0.0000
	C(strctr)	92.3589	4	7.1826	0.0000
	C(use_ternary):C(strctr)	11.8933	8	0.4625	0.8822
aggregation level in window	C(use_ternary)	63.8607	2	7.6954	0.0005
	C(strctr)	253.9169	4	15.2988	0.0000
	C(use_ternary):C(strctr)	40.7289	8	1.2270	0.2818
aggregation level in door	C(use_ternary)	21.0013	2	3.3981	0.0345
	C(strctr)	59.7966	4	4.8377	0.0008
	C(use_ternary):C(strctr)	18.5844	8	0.7518	0.6457

As shown in table 4-2, the differences in terms of the aggregation levels in exterior appearance are both influenced by structural forms and architectural uses (PR value < 0.05, alternatively conceived as p-value), between which structural forms are the slightly more effective factors (i.e., smaller PR value). However, the high PR values of interactions of two variances indicate the irrelevance between structural forms and architectural uses, i.e., the independent analysis on the relation between structural form and exterior appearance is feasible.

b. Differences of aggregation levels between structural forms

In detailed projects, according to the phases of time revealed in 2.2, this study builds 15 subsets out of 3

different phases (1906-10, 1911-15, 1916-1923) and 5 different structural forms, from which the projects of mixed structures are excluded due to the scarce cases. The features of appearance in each phase are hypothesized as stable. To compare the aggregation levels between subsets, the t-test is conducted,[*11)] and the results with p-value smaller than 0.05 (i.e., structure 1 and 2 significantly different) are listed in table 4-3. Considering the division of time range, the detailed projects are chosen as the data for test and the results confirmed as false in concatenated data of both detailed and simple projects are omitted.

Table 4-3 T-test on aggregation levels, between different structural forms in different phases (detailed projects)

Aggregation level	Year range1	Structure 1	N1	Year range2	Structure 2	N2	t	P-value
aggregation level in façade pattern	1906-10	masonry	11	1911-15	W-frame	14	3.6132	0.0015
	1906-10	masonry	11	1916-23	RC-frame	48	4.0738	0.0001
	1906-10	masonry	11	1916-23	S-frame	19	3.6764	0.0010
	1911-15	masonry	43	**1911-15**	W-frame	14	2.5962	0.0121
	1911-15	masonry	43	1916-23	RC-frame	48	4.3350	0.0000
	1911-15	masonry	43	1916-23	S-frame	19	2.4936	0.0154
	1911-15	R-masonry	11	1916-23	RC-frame	48	3.2331	0.0020
	1911-15	R-masonry	11	1916-23	S-frame	19	2.7976	0.0092
	1916-23	R-masonry	18	1916-23	RC-frame	48	2.8556	0.0058
aggregation level in wall	1906-10	masonry	11	1911-15	W-frame	14	3.8583	0.0008
	1906-10	masonry	11	1916-23	RC-frame	48	3.1658	0.0025
	1911-15	masonry	43	**1911-15**	W-frame	14	3.4260	0.0012
	1911-15	masonry	43	1916-23	RC-frame	48	2.6775	0.0088
	1911-15	S-frame	17	**1911-15**	W-frame	14	3.3092	0.0025
	1911-15	S-frame	17	1916-23	RC-frame	48	2.2742	0.0264
	1911-15	W-frame	14	1916-23	R-masonry	18	-4.0874	0.0003
	1911-15	W-frame	14	1916-23	S-frame	19	-3.1569	0.0035
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	3.62	0.0006
	1916-23	RC-frame	48	**1916-23**	S-frame	19	-2.4456	0.0172
aggregation level in window	1906-10	masonry	11	1911-15	W-frame	14	3.3041	0.0031
	1906-10	**masonry**	11	1916-23	**masonry**	17	2.5027	0.0189
	1906-10	masonry	11	1916-23	RC-frame	48	6.9587	0.0000
	1906-10	masonry	11	1916-23	S-frame	19	2.9843	0.0058
	1911-15	masonry	43	**1911-15**	W-frame	14	2.9068	0.0053
	1911-15	masonry	43	1916-23	RC-frame	48	7.2118	0.0000
	1911-15	masonry	43	1916-23	S-frame	19	2.5488	0.0134
	1911-15	R-masonry	11	**1911-15**	W-frame	14	2.2130	0.0371
	1911-15	R-masonry	11	1916-23	RC-frame	48	5.1954	0.0000
	1911-15	S-frame	17	1916-23	RC-frame	48	4.3503	0.0001
	1916-23	masonry	17	**1916-23**	RC-frame	48	4.4951	0.0000
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	4.3065	0.0001
	1916-23	RC-frame	48	**1916-23**	S-frame	19	-2.8006	0.0067
aggregation level in door	**1911-15**	masonry	43	**1911-15**	W-frame	14	2.2828	0.0263
	1911-15	masonry	43	1916-23	RC-frame	48	3.6443	0.0005
	1911-15	R-masonry	11	1916-23	RC-frame	48	2.5248	0.0144
	1916-23	masonry	17	**1916-23**	RC-frame	48	2.1323	0.0369
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	2.6722	0.0095

*__Bold__: identical content; a : RC-frame

Across four dimensions, the distinctions mainly appear between masonry or reinforced masonry buildings and other structural forms, amidst which RC-frame in 1916-1923 is clearly the simplest shown from the t-values (structure 1 over 2). Notably, sporadic significant differences can be identified between reinforced concrete and steel frames, or steel and wooden frames, while between reinforced concrete and wooden frames no difference is found, implying the similarity between reinforced concrete and wooden frames in terms of the aggregation levels in façade. However, the difference between identical structural forms in different phases is only shown between the masonry buildings in 1906-1910 and 1916-1923, in the aggregation level of window elements.

c. Linear regression on trends of aggregation levels

To verify if there existed any change of the aggregation levels along with the passage of time, this study chooses to conduct a simple linear regression test in the four dimensions. In the test, structural forms in different ranges of time (3 phases independently or concatenated) are thoroughly tested, in which the completion years and aggregation levels are defined as independent and dependent.[*12)] Both detailed and

Table 4-4 Linear regression on aggregation levels, for different structural forms in different phases

detailed projects

Aggregation level	Year Range	Structural form	Case num	Intercept	Coeffi-cient	R	R^2	P-value
aggregation level in façade pattern	1906-23	all	248	172.1800	-0.0881	0.2365	0.0559	0.0002
	1906-15	"	126	247.2548	-0.1273	0.1867	0.0349	0.0363
	1911-23	"	222	158.3946	-0.0809	0.1923	0.0370	0.0040
	1906-15	masonry	54	372.0988	-0.1925	0.3157	0.0997	0.0200
	1911-15	"	43	827.0479	-0.4303	0.3881	0.1506	0.0101
	1911-15	masonry& R-masonry	54	634.6204	-0.3297	0.3147	0.0990	0.0205
aggregation level in wall	1916-23	R-masonry	18	834.6704	-0.4325	0.4821	0.2324	0.0427
aggregation level in window	1906-23	all	248	364.6289	-0.1887	0.3463	0.1200	0.0000
	1906-15	"	126	370.1090	-0.1916	0.1948	0.0380	0.0288
	1911-23	"	222	375.8763	-0.1946	0.3108	0.0966	0.0000
	1916-23	"	122	433.4132	-0.2246	0.2319	0.0538	0.0102
	1906-23	masonry	71	290.4738	-0.1496	0.2914	0.0849	0.0137
	1906-10	"	11	946.3553	-0.4934	0.6560	0.4303	0.0284
	1906-23	masonry& R-masonry	103	299.9923	-0.1546	0.2838	0.0805	0.0037
	1906-10	"	14	914.6381	-0.4768	0.6372	0.4060	0.0143
	1906-15	"	68	452.4754	-0.2344	0.2552	0.0651	0.0357
	1911-23	"	89	309.0966	-0.1594	0.2405	0.0578	0.0232
	1906-23	S-frame	40	387.2848	-0.2005	0.3636	0.1322	0.0211
	1911-23	RC-frame	56	316.1320	-0.1639	0.2964	0.0879	0.0265

simple projects

Aggregation level	Year Range	structural form	Case num	Intercept	Coeffi-cient	R	R^2	P-value
pattern complexity	1906-23	all	168	201.5968	-0.1036	0.2324	0.0540	0.0024
	1906-23	masonry	57	297.1909	-0.1535	0.3968	0.1575	0.0022
window complexity	1906-23	all	168	229.0422	-0.1180	0.1842	0.0339	0.0169
	1906-23	masonry	57	319.4544	-0.1650	0.2796	0.0782	0.0352

* a : RC-frame; a : ascending trend; a : descending trend

simple projects are examined while the results confirmed as false in concatenated data are filtered.

From the results of linear regression (p-value<0.05), in table 4-4, it can be discovered that the trend of simplification (coefficient<0), besides "all" (all the structural forms together), mainly gathers in masonry buildings in both detailed and simple projects, and reinforced masonry in detailed projects, whereas for other structural forms, the trend is only verified in RC-frame (1911-1923) and steel frame (1906-1923) in terms of the aggregation level of window elements. By comparing the declining periods of "all" with masonry or reinforced masonry buildings, along with the results of t-test, it can be estimated that the overall decline in the early years happened within masonry buildings, while in later years the change came from the shift to other structural forms. Although most R values show only limited goodness of fit to linear model, this can be tolerable for the study on historical facts.

4.4.2 Tests on visual elements of exterior appearance

a. Verification of the influences of uses and structural forms on visual elements

Before analyzing the influence of structural form on the visual elements of exterior appearance, similarly, a test on the influence of architectural use is conducted, in which the uses of projects are also divided as financial, office buildings and all the other types together. To do the test, this study chooses the method of logistic regression with the formula of "element ~ use_ternary * structure", for which the types of other uses and masonry are set as the references for architectural use and structural form.[*13)] Considering that the variance of time is not controlled, both detailed and simple projects are included.

In table 4-5, the results with LLR p-values[*14)] smaller than 0.05 and converged iteration are listed, followed by the variances with p-value less than 0.05 (i.e., P>|z|, if no value smaller than 0.05, the smallest one picked) and the coefficients. Generally, both the uses and structural forms have influences on the visual elements. However, as to the relatively rare interactions (multiplications in variance) of use and structural form, e.g., in window quoin or door frieze, the interactions are opposite to either use or structural form, indicating that the two sides are not consistent with each other, and therefore, the feasibility to independently analyzing the influence of structural forms on exterior appearance.

Table 4-5 Logistic regression with interaction on visual elements of exterior appearance, with uses and structural forms as variances

Element	Pseudo R-squ.	LLR p-value	Variance	Coefficient	P>|z|
window array	0.1489	0.000	RC-frame	2.2739	0.000
			S-frame	1.4937	0.006
pitched roof	0.1869	0.000	RC-frame	-2.2739	0.000
			S-frame	-1.8192	0.001
wall pediment	0.0475	0.038	RC-frame	-1.1039	0.032
wall balustrade	0.0973	0.000	financial	1.6762	0.000
			office bldg	1.3073	0.024
			S-frame	1.6868	0.003
wall frieze	0.0617	0.003	[financial *W-frame]	1.5164	0.025
wall rustication	0.059	0.012	[financial *W-frame]	-2.5592	0.029
wall foliage	0.0818	0.000	financial	1.5686	0.000
			office bldg	1.3657	0.017
window quoin	0.0595	0.000	RC-frame	-1.5939	0.005
			[financial *RC-frame]	1.9388	0.013
window balustrade	0.0884	0.015	financial	1.5571	0.050
			office bldg	2.3179	0.008
window pediment	0.0825	0.000	RC-frame	-1.7991	0.008
			W-frame	-1.0391	0.025
window cornice	0.1149	0.000	financial	0.9122	0.030
			RC-frame	-2.5421	0.017
window keystone	0.1495	0.000	financial	1.1525	0.007
			RC-frame	-2.2846	0.000
			W-frame	-0.7969	0.045
window arch	0.0512	0.001	RC-frame	-0.9005	0.047
			W-frame	-0.8518	0.033
door cornice	0.047	0.022	financial	1.1521	0.005
door frieze	0.0643	0.006	financial	1.1661	0.013
			[financial *S-frame]	-2.4113	0.051
door arch	0.0525	0.012	RC-frame	-1.3093	0.007
			W-frame	-0.9398	0.019
			[financial *S-frame]	2.0133	0.017
door keystone	0.0595	0.016	RC-frame	-1.7018	0.012
			W-frame	-0.9418	0.044

* a : positive correlation; a : negative

b. Differences of visual elements between structural forms

To cast a meticulous test on the influence of structural forms on the visual elements of exterior appear-

ance, this study conducts another analysis by using Fisher's exact text.[*15)] Similar with 4.1.2, 15 subsets are created with different structural forms and phases of time. All the pairs with significant difference (p-value < 0.05) are listed in table 4-6, while the results from subsets smaller than 10 records are removed to ensure reliability. To better conceive the results, the distributions (0;1;0;1) of the presence and absence of the visual elements are also added to the table. Considering the division of time range, detailed projects are used as the data for analysis and the records confirmed as false in concatenated data of detailed and simple projects are omitted.

In table 4-6, generally, for most elements, only rare distinctions between the same structural form in different phases exist (pediment of window, corbel of door in masonry buildings), which means almost no distinctive and large change of the elements exterior appearance happened in each single structural form, although this does not mean that no gradual change happened.

i. Elements of façade pattern

First of all, no distinctive difference of symmetry is found between any structural forms in any phases of the era, which indicates that all the structural forms still had symmetrical patterns in façades. By contrast, abundant differences are shown in tripartition, window array and pitched roof. As to tripartition, from 1911 to 1915, wooden frame was obviously the simpler side, while in the second half of the 1910s, RC-frame and reinforced masonry buildings, albeit moderate, utilized less the manner than steel frame. For window array, in the first half of the 1910s, steel frame had more arrayed window patterns, whereas from 1916 to 1923, both steel and RC-frame showed this feature. This trend is similar in pitched roof, as steel frame in the earlier phase and steel together with RC-frame in the latter phase of the era are the sides adopting fewer the manner. However, in the elements of roof decoration, only RC-frame buildings distinctively show the simple character. With more details shown in figure 4-5, it can be witnessed that even if more of simple symmetry are found in masonry, steel frame and RC-frame buildings, the differences are not significant, while the similar distribution of tripartition between wooden and RC-frame

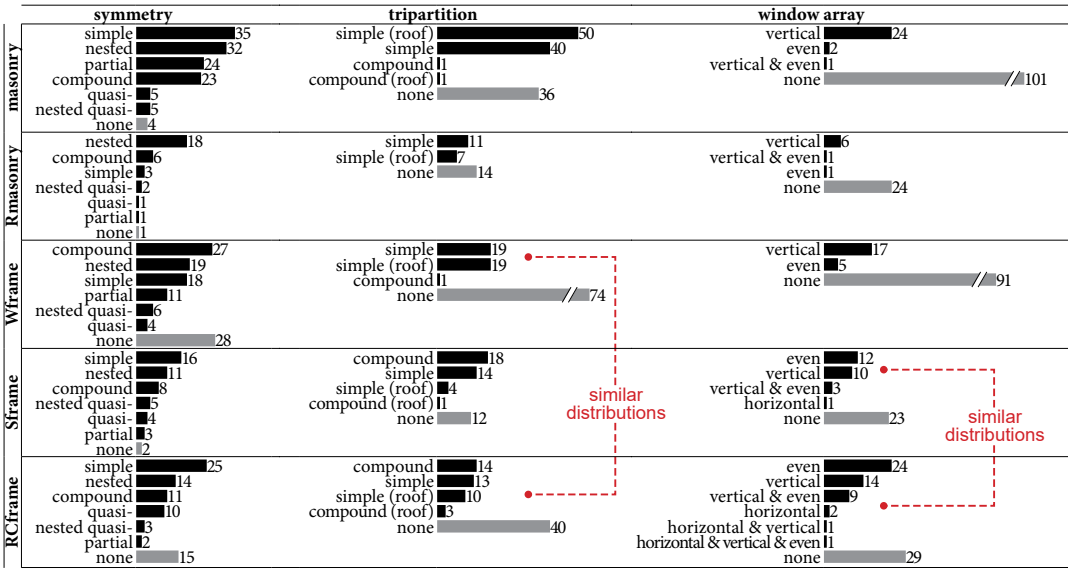


Fig. 4-5 Detailed distributions of symmetry, tripartition, and window array
(concatenated projects presented, SRC-frame and combined forms omitted)

and window array between steel and RC-frames can be confirmed, also aligning with the results of test above.

ii. Elements of wall

Generally, as to the vertical elements, the differences are relatively sparse. For column of wall, although no wooden frame building covers this manner, the utilization in masonry buildings from 1911 to 1915 also stayed low. For corbel of wall, the distinction is only discovered between RC-frame in 1916-1923 and steel frame buildings of 1911-1915, as the levels of utilization on both sides are also low. In addition, for the manner of pilaster of wall, the level of utilization is actually over half (not shown in table 4-6) across all the structural forms in concatenated data, i.e., no significant difference is found. By contrast, diversity can be discovered in many aspects of horizontal elements. In 1916-1923, the utilization of pediment in walls was scarce in reinforced concrete and steel frames compared to masonry or reinforced masonry buildings. As to balustrade, cornice, and frieze, generally, reinforced concrete and wooden frame have relatively lower rates of adoption than masonry, reinforced masonry and steel frame, showing the similarity between reinforced concrete and wooden frame buildings across these horizontal elements.

Table 4-6 Fisher's exact test on visual elements of exterior appearance, between different structural forms in different phases

Visual element	Year range1	Strctr1	N1	Year range2	Strctr2	N2	Distribution (0;1;0;1)	Odds	P-value
tripartition	1906-10	masonry	11	1911-15	W-frame	14	2;9;12;2	0.0370	0.0012
	1911-15	masonry	43	1916-23	R-masonry	18	11;32;10;8	0.2750	0.0382
	1911-15	masonry	43	**1911-15**	W-frame	14	11;32;12;2	0.0573	0.0001
	1911-15	masonry	43	1916-23	RC-frame	48	11;32;24;24	0.3438	0.0192
	1911-15	R-masonry	11	**1911-15**	W-frame	14	2;9;12;2	0.0370	0.0012
	1916-23	R-masonry	18	**1916-23**	S-frame	19	10;8;3;16	6.6667	0.0170
	1911-15	W-frame	14	1916-23	S-frame	19	12;2;3;16	32.0000	0.0001
	1911-15	S-frame	17	**1911-15**	W-frame	14	3;14;12;2	0.0357	0.0002
	1911-15	S-frame	17	1916-23	RC-frame	48	3;14;24;24	0.2143	0.0239
	1916-23	RC-frame	48	**1916-23**	S-frame	19	24;24;3;16	5.3333	0.0128
window array	1906-10	masonry	11	1911-15	S-frame	17	11;0;9;8	inf	0.0097
	1906-10	masonry	11	1916-23	RC-frame	48	11;0;12;36	inf	0.0000
	1906-10	masonry	11	1916-23	S-frame	19	11;0;5;14	inf	0.0001
	1911-15	masonry	43	1916-23	RC-frame	48	32;11;12;36	8.7273	0.0000
	1911-15	masonry	43	1916-23	S-frame	19	32;11;5;14	8.1455	0.0006
	1916-23	masonry	17	**1916-23**	RC-frame	48	11;6;12;36	5.5000	0.0067
	1916-23	masonry	17	**1916-23**	S-frame	19	11;6;5;14	5.1333	0.0425
	1911-15	R-masonry	11	**1911-15**	S-frame	17	10;1;9;8	8.8889	0.0491
	1911-15	R-masonry	11	1916-23	RC-frame	48	10;1;12;36	30.0000	0.0001
	1911-15	R-masonry	11	1916-23	S-frame	19	10;1;5;14	28.0000	0.0017
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	12;6;12;36	6.0000	0.0034
	1916-23	R-masonry	18	**1916-23**	S-frame	19	12;6;5;14	5.6000	0.0217
	1911-15	W-frame	14	1916-23	RC-frame	48	13;1;12;36	39.0000	0.0000
	1911-15	W-frame	14	1916-23	S-frame	19	13;1;5;14	36.4000	0.0002
	1911-15	S-frame	17	**1911-15**	W-frame	14	9;8;13;1	0.0865	0.0207
colonnade	1911-15	masonry	43	1916-23	R-masonry	18	41;2;13;5	7.8846	0.0196
	1916-23	masonry	17	**1916-23**	R-masonry	18	17;0;13;5	inf	0.0455
emphasized door	1911-15	W-frame	14	1916-23	R-masonry	18	11;3;6;12	7.3333	0.0155
	1911-15	S-frame	17	1916-23	R-masonry	18	13;4;6;12	6.5000	0.0176
pitched roof	1906-10	masonry	11	1911-15	S-frame	17	1;10;12;5	0.0417	0.0021
	1906-10	masonry	11	1916-23	RC-frame	48	1;10;41;7	0.0171	0.0000
	1906-10	masonry	11	1916-23	S-frame	19	1;10;16;3	0.0188	0.0001
	1911-15	masonry	43	**1911-15**	S-frame	17	11;32;12;5	0.1432	0.0025
	1911-15	masonry	43	1916-23	RC-frame	48	11;32;41;7	0.0587	0.0000
	1911-15	masonry	43	1916-23	S-frame	19	11;32;16;3	0.0645	0.0000
	1916-23	masonry	17	**1916-23**	RC-frame	48	7;10;41;7	0.1195	0.0009
	1916-23	masonry	17	**1916-23**	S-frame	19	7;10;16;3	0.1313	0.0140
	1911-15	R-masonry	11	**1911-15**	S-frame	17	2;9;12;5	0.0926	0.0183
	1911-15	R-masonry	11	1916-23	RC-frame	48	2;9;41;7	0.0379	0.0000
	1911-15	R-masonry	11	1916-23	S-frame	19	2;9;16;3	0.0417	0.0012
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	8;10;41;7	0.1366	0.0014
	1916-23	R-masonry	18	**1916-23**	S-frame	19	8;10;16;3	0.1500	0.0170
	1911-15	W-frame	14	1916-23	RC-frame	48	3;11;41;7	0.0466	0.0000
	1911-15	W-frame	14	1916-23	S-frame	19	3;11;16;3	0.0511	0.0005
	1911-15	S-frame	17	**1911-15**	W-frame	14	12;5;3;11	8.8000	0.0113
roof deco	1906-10	masonry	11	1916-23	RC-frame	48	4;7;36;12	0.1905	0.0277
	1911-15	R-masonry	11	1916-23	RC-frame	48	4;7;36;12	0.1905	0.0277
wall column	1906-10	masonry	11	1911-15	W-frame	14	7;4;14;0	0.0000	0.0261
	1911-15	masonry	43	1916-23	R-masonry	18	38;5;11;7	4.8364	0.0299
	1911-15	W-frame	14	1916-23	R-masonry	18	14;0;11;7	inf	0.0105
	1911-15	S-frame	17	**1911-15**	W-frame	14	12;5;14;0	0.0000	0.0482
wall corbel	1911-15	S-frame	17	1916-23	RC-frame	48	13;4;46;2	0.1413	0.0362
wall pediment	1906-10	masonry	11	1916-23	RC-frame	48	4;7;40;8	0.1143	0.0034
	1906-10	masonry	11	1916-23	S-frame	19	4;7;16;3	0.1071	0.0147
	1911-15	masonry	43	1916-23	RC-frame	48	21;22;40;8	0.1909	0.0007
	1911-15	masonry	43	1916-23	S-frame	19	21;22;16;3	0.1790	0.0115
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	9;9;40;8	0.2000	0.0104
	1916-23	R-masonry	18	**1916-23**	S-frame	19	9;9;16;3	0.1875	0.0382

* Continued on next page →

iii. Elements of window

About the elements of window, the distinctions are abundant in various aspects. Similar with wall elements, the utilization of vertical elements varies little across difference structural forms, regarding the sporadic discrepancies found in pilaster and corbel of window between RC-frame in 1916-1923 and other structural forms which also utilize the manners moderately. Actually, the utilization rate of window column in RC-frame is only 1 out of 48 (not shown in table 4-6), still not distinctive from other forms. Hence, it can be estimated that the vertical elements in window were already sparse in the period from 1906 to 1923. About the quoin / trim of window, vertical or rectangular, RC-frame is also the simplest

wall balustrade	**1916-23**	R-masonry	18	**1916-23**	RC-frame	48	4;14;25;23	0.2629	0.0498
	1911-15	W-frame	14	1916-23	R-masonry	18	9;5;4;14	6.3000	0.0293
	1911-15	W-frame	14	1916-23	S-frame	19	9;5;3;16	9.6000	0.0091
	1916-23	RC-frame	48	**1916-23**	S-frame	19	25;23;3;16	5.7971	0.0121
wall cornice	1906-10	masonry	11	1911-15	W-frame	14	0;11;5;9	0.0000	0.0464
	1906-10	masonry	11	1916-23	RC-frame	48	0;11;16;32	0.0000	0.0262
	1911-15	masonry	43	1916-23	RC-frame	48	3;40;16;32	0.1500	0.0020
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	1;17;16;32	0.1176	0.0266
	1911-15	S-frame	17	1916-23	RC-frame	48	1;16;16;32	0.1250	0.0286
	1916-23	RC-frame	48	**1916-23**	S-frame	19	16;32;1;18	9.0000	0.0266
wall frieze	1911-15	masonry	43	1916-23	R-masonry	18	30;13;3;15	11.5385	0.0002
	1916-23	masonry	17	**1916-23**	R-masonry	18	11;6;3;15	9.1667	0.0059
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	3;15;36;12	0.0667	0.0000
	1911-15	W-frame	14	1916-23	R-masonry	18	12;2;3;15	30.0000	0.0002
	1911-15	W-frame	14	1916-23	S-frame	19	12;2;8;11	8.2500	0.0151
	1916-23	RC-frame	48	**1916-23**	S-frame	19	36;12;8;11	4.1250	0.0207
wall arch	1911-15	masonry	43	1916-23	RC-frame	48	37;6;47;1	0.1312	0.0492
window pilaster	**1916-23**	R-masonry	18	**1916-23**	RC-frame	48	12;6;45;3	0.1333	0.0097
window corbel	1906-10	masonry	11	1916-23	RC-frame	48	7;4;47;1	0.0372	0.0033
	1911-15	masonry	43	1916-23	RC-frame	48	35;8;47;1	0.0931	0.0117
	1911-15	S-frame	17	1916-23	RC-frame	48	13;4;47;1	0.0691	0.0146
window quoin	1911-15	masonry	43	1916-23	RC-frame	48	18;25;38;10	0.1895	0.0005
	1916-23	masonry	17	**1916-23**	RC-frame	48	7;10;38;10	0.1842	0.0059
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	8;10;38;10	0.2105	0.0141
window pediment	1906-10	**masonry**	11	1916-23	**masonry**	17	2;9;13;4	0.0684	0.0056
	1906-10	masonry	11	1911-15	W-frame	14	2;9;11;3	0.0606	0.0048
	1906-10	masonry	11	1916-23	RC-frame	48	2;9;43;5	0.0258	0.0000
	1906-10	masonry	11	1916-23	S-frame	19	2;9;18;1	0.0123	0.0000
	1911-15	masonry	43	1916-23	RC-frame	48	24;19;43;5	0.1469	0.0003
	1911-15	masonry	43	1916-23	S-frame	19	24;19;18;1	0.0702	0.0027
	1911-15	R-masonry	11	1916-23	masonry	17	3;8;13;4	0.1154	0.0189
	1911-15	R-masonry	11	**1911-15**	W-frame	14	3;8;11;3	0.1023	0.0172
	1911-15	R-masonry	11	1916-23	RC-frame	48	3;8;43;5	0.0436	0.0001
	1911-15	R-masonry	11	1916-23	S-frame	19	3;8;18;1	0.0208	0.0002
	1911-15	S-frame	17	1916-23	RC-frame	48	11;6;43;5	0.2132	0.0284
wndw balustrade	**1916-23**	masonry	17	**1916-23**	RC-frame	48	12;5;44;4	0.2182	0.0451
window cornice	1906-10	masonry	11	1916-23	RC-frame	48	6;5;45;3	0.0800	0.0038
	1911-15	masonry	43	1916-23	R-masonry	18	24;19;15;3	0.2526	0.0472
	1911-15	masonry	43	**1911-15**	S-frame	17	24;19;15;2	0.1684	0.0193
	1911-15	masonry	43	1916-23	RC-frame	48	24;19;45;3	0.0842	0.0000
	1911-15	R-masonry	11	1916-23	RC-frame	48	7;4;45;3	0.1167	0.0183
	1911-15	W-frame	14	1916-23	RC-frame	48	10;4;45;3	0.1667	0.0401
	1916-23	RC-frame	48	**1916-23**	S-frame	19	45;3;14;5	5.3571	0.0359
window frieze	**1911-15**	R-masonry	11	**1911-15**	S-frame	17	6;5;16;1	0.0750	0.0221
	1911-15	R-masonry	11	1916-23	RC-frame	48	6;5;41;7	0.2049	0.0360
window lintel	1911-15	masonry	43	1916-23	RC-frame	48	28;15;42;6	0.2667	0.0137
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	11;7;42;6	0.2245	0.0327
window arch	1906-10	masonry	11	1911-15	W-frame	14	3;8;11;3	0.1023	0.0172
	1906-10	masonry	11	1916-23	RC-frame	48	3;8;30;18	0.2250	0.0463
	1911-15	masonry	43	**1911-15**	W-frame	14	17;26;11;3	0.1783	0.0148
	1911-15	masonry	43	1916-23	RC-frame	48	17;26;30;18	0.3923	0.0365
	1911-15	W-frame	14	1916-23	masonry	17	11;3;6;11	6.7222	0.0292
window keystone	1906-10	masonry	11	1911-15	W-frame	14	2;9;10;4	0.0889	0.0154
	1906-10	masonry	11	1916-23	RC-frame	48	2;9;43;5	0.0258	0.0000
	1911-15	masonry	43	**1911-15**	W-frame	14	13;30;10;4	0.1733	0.0110
	1911-15	masonry	43	1916-23	RC-frame	48	13;30;43;5	0.0504	0.0000
	1916-23	masonry	17	**1916-23**	RC-frame	48	7;10;43;5	0.0814	0.0002
	1911-15	R-masonry	11	**1911-15**	W-frame	14	2;9;10;4	0.0889	0.0154
	1911-15	R-masonry	11	1916-23	RC-frame	48	2;9;43;5	0.0258	0.0000
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	7;11;43;5	0.0740	0.0001
	1911-15	S-frame	17	**1911-15**	W-frame	14	4;13;10;4	0.1231	0.0122
	1911-15	S-frame	17	1916-23	RC-frame	48	4;13;43;5	0.0358	0.0000
	1916-23	RC-frame	48	**1916-23**	S-frame	19	43;5;9;10	9.5556	0.0005
door column	**1916-23**	R-masonry	18	**1916-23**	S-frame	19	10;8;17;2	0.1471	0.0293
door corbel	1906-10	masonry	11	1916-23	masonry	17	7;4;17;0	0.0000	0.0161
door pediment	1911-15	masonry	43	1916-23	RC-frame	48	29;14;42;6	0.2959	0.0248
door keystone	1911-15	masonry	43	1916-23	RC-frame	48	27;16;43;5	0.1962	0.0029
	1916-23	R-masonry	18	**1916-23**	RC-frame	48	10;8;43;5	0.1453	0.0042
	1911-15	S-frame	17	1916-23	RC-frame	48	9;8;43;5	0.1308	0.0028

*__Bold__: identical content; a : RC-frame; For distribution of (a, b, c, d), odds = ad / bc, the closer the odds are to 1, the smaller the differences are.

type, although the rate of utilization is not extremely low. By contrast, vast differences are shown in the horizontal elements. Briefly, in almost all the aspects, RC-frame in 1916-1923 is the simpler side. Although reinforced concrete and steel frame buildings are expected to be similar, in certain aspects, e.g., cornice and keystone of window, they are slightly contrast, showing the distance between the two. Besides, from 1911-1915, wooden frame buildings also consisted of less of certain elements such as pediment, arch and keystone as window elements, showing the similarity with reinforced concrete and wooden frame buildings.

iv. Elements of door

As to the elements of door, it is clear that less diversity is shown across different structural forms. Even if it can still be observed that RC-frame in 1916-1923 is the side which utilized less of the historical manners, e.g., in the aspects of pediment and keystone of door, there is definitely no distinction between RC-frame and other forms shown in the indicative aspects like the column and pilaster of doorway, showing the relative homogeneity in terms of door elements.

c. Logistic regressions on trends of visual elements

In this section, regarding 1 and 0 assigned to the visual elements, the test of logistic regression is cast on the elements to verify if any change happened throughout the whole period or any independent or concatenated phases in 2.2. In the test, completion years and the existence of elements are defined as independent and dependent.[*16)] In table 4-7, all the converged results with p-value smaller than 0.05 and the threshold years (|constant/coefficient|) within the year ranges are listed, also with the classification tables (TN, FP, FN, TP) to show more details. Both detailed and simple projects are examined and the records refuted in the concatenated data of both sides are removed.

Generally, the declines of elements in façade pattern and window are the main part, while the differences shown in the results of the wall and door elements are much less. Meanwhile, most trends are found on overall level or in masonry or reinforced masonry buildings, compared to the rare changes in wooden, steel and RC-frames.

i. Distribution of elements of façade pattern

In table 4-7, no change by year is found in the symmetry of façade, while for masonry and reinforced masonry buildings together, the decline of tripartition appeared in the 1910s, especially when the time extends to 1923. However, this drop does not show up for all the forms together, corresponding to the mediate level in RC-frame and reinforced masonry buildings observed in 4.2.2a. As to arrayed windows, not only all the structural forms together, but also steel frame in 1911-1923 and RC-frame in 1916-1923 show an increasing trend, featuring the prosperity of new structures. About the emphasized door way, it is noticeable that although all the forms together in 1911-1923 reduced the manner, the trend in RC-frame is controversially increasing. As to pitched roof, only all the forms together show the declining trend, also suggesting the cause as the shift of structural forms. The decrease also happened in roof decorations, amidst which both masonry in 1911-1915 and wooden frame throughout the era show a declining trend. In simple projects, the decreasing tripartition in masonry buildings, the overall drop of pitched roof, and the overall

Table 4-7 Logistic regression on visual elements of exterior appearance, for different structural forms in different phases

detailed projects

Visual element	Year range	Structural form	Constant	Coefficient	Threshold	P-value	TN	FP	FN	TP
tripartition	1906-23	masonry& R-masonry	248.6337	-0.1295	1920.2	0.0234	2	31	3	67
	1911-23	"	324.7684	-0.1692	1919.5	0.0155	5	24	8	52
window array	1906-23	all	-453.3186	0.2364	1917.9	0.0000	123	29	46	50
	1911-23	"	-408.4267	0.2130	1917.8	0.0000	98	29	45	50
	1916-23	"	-592.5385	0.3089	1918.3	0.0004	32	22	19	49
	1906-23	S-frame	-552.5642	0.2886	1914.9	0.0071	12	6	7	15
	1911-23	"	-437.0728	0.2283	1914.2	0.0466	8	6	7	15
	1906-23	RC-frame	-678.5433	0.3541	1916.2	0.0013	10	9	5	34
	1911-23	"	-643.8004	0.3360	1916.1	0.0038	8	9	5	34
	1916-23	"	-893.3755	0.4660	1917.0	0.0088	5	7	5	31
emphasized door	1911-23	all	-173.8990	0.0906	1918.6	0.0165	90	32	61	39
	1906-23	RC-frame	-553.4941	0.2883	1919.7	0.0066	21	11	9	17
	1911-23	"	-531.8867	0.2771	1919.7	0.0122	19	11	9	17
tower	1906-23	S-frame	426.7058	-0.2231	1912.5	0.0280	22	4	11	3
pitched roof	1906-23	all	369.1744	-0.1927	1915.7	0.0000	80	42	42	84
	1911-23	"	408.1495	-0.2130	1915.9	0.0000	80	35	42	65
	1916-23	"	542.4822	-0.2830	1916.6	0.0019	70	10	30	12
roof deco	1906-23	all	262.7501	-0.1374	1912.5	0.0000	123	24	56	45
	1906-15	"	503.2732	-0.2632	1912.0	0.0034	39	24	18	45
	1911-15	"	795.7596	-0.4161	1912.4	0.0089	39	16	18	27
	1911-23	"	238.2338	-0.1246	1912.0	0.0020	130	9	72	11
	1911-15	masonry	1325.8822	-0.6933	1912.4	0.0193	16	7	6	14
	1906-15	W-frame	1263.2406	-0.6607	1912.0	0.0336	6	3	2	7
	1906-23	"	787.4354	-0.4117	1912.6	0.0160	13	3	4	7
wall pilaster	1916-23	all	335.6961	-0.1747	1921.3	0.0346	13	37	12	60
wll pediment	1906-23	all	235.4066	-0.1233	1909.4	0.0003	156	10	72	10
wall cornice	1911-23	RC-frame	631.7244	-0.3286	1922.4	0.0182	2	14	2	38
wall frieze	1911-23	W-frame	-1134.7256	0.5918	1917.4	0.0290	16	1	3	3
wall foliage	1906-15	masonry& R-masonry	572.7794	-0.2995	1912.7	0.0270	13	17	12	26
	1916-23	RC-frame	780.3037	-0.4066	1918.9	0.0099	24	4	12	8
window corbel	1906-10	all	3970.9466	-2.0826	1906.8	0.0278	22	0	1	3
	1906-15	masonry	758.0097	-0.3972	1908.2	0.0107	41	1	8	4
	1906-10	masonry& R-masonry	3680.6156	-1.9297	1907.4	0.0378	9	1	1	3
	1906-15	"	647.2990	-0.3394	1907.4	0.0163	53	1	11	3
window quoin	1906-23	all	148.6801	-0.0778	1911.4	0.0131	115	28	87	18
	1911-23	"	207.2218	-0.1083	1913.2	0.0054	100	29	59	34
	1916-23	"	452.9700	-0.2363	1916.7	0.0068	66	11	34	11
window pediment	1906-23	all	343.9568	-0.1801	1909.9	0.0000	167	9	61	11
	1906-23	masonry	367.3448	-0.1921	1912.3	0.0102	27	12	12	20
	1906-15	"	749.8511	-0.3922	1912.1	0.0152	14	12	8	20
	1906-23	R-masonry	473.7036	-0.2474	1915.1	0.0367	12	4	6	10
	1911-23	"	588.4275	-0.3072	1915.4	0.0356	12	3	6	8
	1906-23	masonry& R-masonry	366.2757	-0.1914	1913.2	0.0015	34	21	16	32
	1906-15	"	608.4327	-0.3181	1912.6	0.0209	15	15	10	28
	1911-23	"	274.5763	-0.1436	1912.4	0.0429	40	12	20	17
	1906-23	S-frame	566.9004	-0.2967	1910.5	0.0251	29	2	7	2
window cornice	1906-23	all	298.8452	-0.1567	1907.4	0.0001	186	3	56	3
	1906-23	Rmasonry	556.6562	-0.2913	1911.1	0.0335	21	2	5	4
	1906-23	masonry& R-masonry	346.3708	-0.1813	1910.5	0.0039	59	7	30	7
	1911-15	"	1066.5628	-0.5578	1912.0	0.0267	17	14	8	15
	1911-23	"	400.7568	-0.2097	1911.3	0.0109	56	3	22	8
window arch	1906-23	all	138.5787	-0.0723	1915.9	0.0191	70	52	52	74
	1916-23	RC-frame	-648.5069	0.3375	1921.6	0.0379	24	6	11	7
window keystone	1906-23	all	298.3409	-0.1557	1915.8	0.0000	76	45	46	81
	1911-23	"	282.0268	-0.1472	1915.8	0.0002	76	39	46	61
	1906-23	R-masonry	668.6584	-0.3485	1918.7	0.0232	4	5	2	21
	1911-23	"	629.1595	-0.3279	1918.7	0.0408	4	5	2	18
	1906-23	masonry& R-masonry	251.1326	-0.1307	1920.9	0.0241	1	30	4	68
	1911-23	RC-frame	474.6825	-0.2483	1911.6	0.0465	46	1	9	0
round window	1906-23	S-frame	534.2984	-0.2797	1910.3	0.0296	30	1	6	3
	1906-15	"	1604.6008	-0.8396	1911.1	0.0200	13	2	2	4
door corbel	1906-10	all	1959.3394	-1.0276	1906.6	0.0280	20	1	3	2
	1906-23	masonry	670.8169	-0.3518	1906.9	0.0088	60	1	8	2
	1906-15	"	583.2300	-0.3059	1906.5	0.0427	43	1	8	2
door arch	1906-15	all	359.4180	-0.1881	1910.4	0.0258	61	11	39	15
	1916-23	"	-537.8391	0.2798	1921.9	0.0021	69	13	28	12
	1916-23	masonry& R-masonry	-791.3427	0.4121	1920.3	0.0317	22	1	8	4
	1916-23	RC-frame	-913.9758	0.4756	1921.9	0.0150	25	8	10	5

simple projects

Visual element	Year range	Structural form	Constant	Coefficient	Threshold	P-value	TN	FP	FN	TP
tripartition	1906-23	masonry	451.0665	-0.2353	1917.2	0.0130	4	13	3	37
window array	1906-23	all	-428.2004	0.2232	1918.5	0.0002	122	0	39	7
	1906-23	W-frame	-439.6454	0.2293	1917.6	0.0274	49	1	16	3
pitched roof	1906-23	all	300.7154	-0.1568	1917.5	0.0025	14	46	7	101
roof deco	1906-23	all	295.5310	-0.1546	1911.7	0.0020	77	18	45	28
	1906-23	masonry	472.7261	-0.2474	1910.4	0.0066	29	7	11	10
wndw_lintel	1906-23	W-frame	-523.5909	0.2730	1917.9	0.0166	50	3	15	1
door_ cornice	1906-23	W-frame	-353.2253	0.1845	1914.5	0.0414	31	8	17	13
door_frieze	1906-23	W-frame	-595.8357	0.3108	1916.9	0.0065	47	4	11	7

*TN / FN: true / false negative; TP / FP: true / false positive;
a↗: ascending trend; a↘: descending trend

increase of window array are generally consistent with the results from detailed project, with the rise of window arrays in wooden frame buildings adjoined.

ii. Distribution of elements of wall

For the elements of wall, briefly, the results are not so abundant in detailed projects and not found in simple projects, indicating that generally, the elements of wall do not change much across the structural forms. Nonetheless, there are still some results which need to be reviewed. For all the forms together, in detailed projects, the utilization of pilaster and pediment definitely decrease, which are estimated to be caused by the change of structural forms. As to cornice and foliage in the wall, a decline is observed in RC-frame buildings, although the threshold point of the distribution of cornice is close to the end of the time range. By contrast, in wooden frame buildings, an increase of frieze is verified in the results of detailed projects, implying the return to historical styles to some extent.

iii. Distribution of elements of window

As to the elements of window, the indicative vertical elements of column and pilaster are not shown in the results. For the more decorative corbel of window, all the results are before 1916 and the threshold points are skeptically close to 1906. Moreover, the decrease of quoins of window is only shown on an overall level. For the horizontal elements, more trends can be fit with logistic regression model. The declines of pediment, cornice and keystone in windows can be widely observed on an overall level and in masonry or reinforced masonry buildings, while only the keystone in RC-frame, the pediment and round window in steel frame buildings show diminishing trends. Particularly, the adoption of arch in window even increased in RC-frame, although the threshold year is relatively close to the margin. However, these changes cannot be found in simple projects, possibly due to the lack of data near the end of the 1910s. Additionally, the utilization of window lintel in wooden frame, in simple projects, increases from about 1918, also suggesting the return to historical styles.

iv. Distribution of elements of door

In detailed objects, throughout the whole period, there are certain results showing the decline of corbel in door, which, however, have some skeptical threshold years near 1906. For another element, arch of door, on the overall level and in masonry and reinforced masonry together, a decline can be observed before 1916 while the return appears in masonry and reinforced masonry together and even RC-frame from the middle of the 1910s. Meanwhile, for wooden frame in simple projects, the cornice and frieze of door also seem to return around the middle of the 1910s, in contrast with the general declining trend across various elements.

d. Test on the preference of techniques of surface finishing

As has been mentioned in 1.3, the information of the techniques of surface finishing is also recorded. However, it is hard to test the presence or absence of specific techniques. since the relevant information is not adequate enough. Hence, at current stage, this study focuses on the most iterated techniques of surface finishing, i.e., surface covering and coating, and additionally tests on the preference of the two techniques amidst the projects which adopt at least one technique. Here, this study sets the value of surface covering as -1, coating as 1 and the coexistence of both sides as 0, and conducts a simple ANOVA

test with structural forms as categorical variance, together with a Tukey's HSD[*17)] to give more insight across different structural forms. Considering that the factor of time is not controlled, the concatenated data of detailed and simple projects is utilized.

Table 4-8 ANOVA and Tukey's HSD tests on the preference of surface finishing techniques

ANOVA (detailed and simple projects)				
	sum_sq	df	F	PR(>F)
C(strctr)	16.0638	4.0	6.9335	0.0000
means of structural forms				
masonry	-0.569	R-masonry	-0.5217	
S-frame	-0.5588	W-frame	0.0282	
RC-frame	-0.4906			
Tukey HSD, FWER=0.05				
group 1	group 2	meandiff	p-adj	reject
RC-frame	R-masonry	-0.0312	0.9998	FALSE
RC-frame	S-frame	-0.0683	0.9941	FALSE
RC-frame	W-frame	0.5187	0.002	TRUE
RC-frame	masonry	-0.0784	0.9828	FALSE
R-masonry	S-frame	-0.0371	0.9998	FALSE
R-masonry	W-frame	0.5499	0.0239	TRUE
R-masonry	masonry	-0.0472	0.9991	FALSE
S-frame	W-frame	0.587	0.0025	TRUE
S-frame	masonry	-0.0101	1.0	FALSE
W-frame	masonry	-0.5971	0.0001	TRUE

From table 4-8, although in ANOVA test, the low p-value of the overall model (PR(>F)) shows the influence of structural form on the preference of surface finishing techniques, in the Tukey's HSD test, wooden frame is the only distinctive factor significantly influencing the preference of surface finishing techniques (p-adj<0.05, null hypothesis rejected), as the choices are more balanced in wooden frame buildings (mean=0.0282) while other forms are apt to choose covering (about -0.5) amidst which no significant difference is found. Actually, the top three materials of covering are brick, brick with stone, and stone, across masonry, reinforced concrete and steel frame buildings (27:13:5, 20:10:9, 11:9:4, not shown in table 4-8), suggesting the relatively homogeneous choices of materials for covering, as well as the irrelevance with structural forms. Additionally, it has to be noticed that the means of wooden frame in terms of the preference of surface finishing techniques is close to zero, which means the choices of covering and coating were almost equal, not to mention the buildings in wooden frame with masonry exterior walls. In this sense, it has to be understood that the actual difference between wooden frame and other structural forms might not be as distinctive as the results of the analyses.

4.5 Results of analyses, synthetic discussion with architectural projects and theories, and the conclusion

4.5.1 Summaries of statistical analyses

In this study, amidst the detailed projects, it can be found that for structural components, except walls which still consist of masonry work to a considerable extent, the components of columns, beams and floors are all replaced with reinforced concrete from the second half of the 1910s, resulting in reinforced concrete frame as the main force of general structural form from the mid-1910s. Also, the whole era can be divided into 3 phases, i.e., 1906-1910, 1911-1915, 1916-1923, which feature the shift of structure based on the detailed projects.

In the analyses on the relation between structural forms and exterior appearance, two aspects are inspected. In the aspect of the aggregation levels of visual elements, by casting t-test, it is clearly shown that reinforced concrete frame buildings in 1916-1923 have the simplest exterior appearance of historical styles, also similar with wooden frame in 1911-1915. By conducting linear regression, the declines of the aggregation levels in façade pattern, wall and window already existed in the early years amidst masonry buildings, not limited to reinforced concrete frame which only shows the drop in the aggregation level of window elements in 1916-1923.

In the aspect of specific visual elements, with Fisher's exact test, different structural forms are compared. In façade pattern, reinforced concrete and wooden frame buildings utilize less patterns of tripartition than masonry or reinforced masonry buildings, whereas in pitched roof and arrayed window, reinforced concrete and steel frames show the modernity. About wall elements, in vertical direction, the utilization of pilaster remains moderate and columns are naturally rare across the structural forms, whereas diversity spans across horizontal elements, amidst which reinforced concrete frame in 1916-1923 was the simplest one, similar with wooden frame in 1911-1915. Likewise, the ratios of vertical window elements utilized across the structural forms are also low and close, while horizontal window elements show the divergence between masonry or reinforced masonry buildings and the other forms. As to door elements, albeit the scarcity of results, for pediment, keystone of doorway, reinforced concrete frame in detailed projects was the simpler side, and wooden frame buildings in simple projects also show the simple image in terms of arch and pediment of doorway. With logistic regression, trends of specific visual elements are identified. As to façade pattern, the process of simplification is mainly discovered on an overall level. For wall elements, the rare results in detailed projects suggest the relatively unchanged status. As to window elements, the changes of vertical elements remain insignificant, while horizontal elements do drop in masonry and reinforced masonry buildings, contrast with the only decline of window keystone in reinforced concrete frame. Interestingly, the arch of window in reinforced concrete frame irregularly rises and the window lintel also surges in wooden frame. For door elements, in detailed projects, the increase of doorway arch is observed universally, including reinforced concrete frame, and some historical manners also return to wooden frame in simple projects.

Moreover, differences between identical structural forms in different phases are universally rare, suggesting the shift of structure rather than internal changes. And the test on the techniques of surface finishing shows that between covering and coating, except wooden frame, no significant difference exists, nor does the materials of covering, indicating the homogeneous influences of different structural forms.

4.5.2 Synthesis of data analyses with architectural projects and theories, leading to the conclusion

Based on the inspections in this study, primarily, it can be confirmed that, despite the simple image of reinforced concrete frame, similar features can also be observed in wooden frame in earlier years and the trend of simplification already exists in masonry buildings before the boom of reinforced concrete, suggesting the insufficiency of effect from reinforced concrete frame on the simplification of exterior architectural appearance. Seen in the actual projects, i.e., in figure 4-6 (codes of some projects in appendix D added as blue text, codes of projects collected in this study but excluded from appendix D marked in grey text), F. W. Horn bldg. エフ・ダブリュー・ホーン (#1), Miki clothing shop 三木洋布店 (#2), and Kurosawa typewriter shop 黒澤タイプライター商店 (#3) are the buildings with simple appearances, amidst which Kurosawa shop even imitated F. W. Horn building according to *Tokyo 100 Buildings*, Likewise, despite the simple façade of Sano's house 佐野博士邸宅 (#5), the house of Kasai 葛西博士邸 (#4) also has a simple countenance with wooden frame.

Secondly, despite the contrast with other structural forms, reinforced concrete frame shows rare internal changes of visual elements except the constant rise of window arrays, which had not been emancipat-



Fig. 4-6 Selected projects, corresponding to the points of statistical analysis

ed from historical styles regarding the intermediate adoptions of tripartition and wall pilasters, indicating that the transition to reinforced concrete was more of a technological shift. The divergence between the horizontal and vertical elements in both walls and windows can also be technologically conceived, since the horizontal elements are usually stone parts embedded in masonry walls as reinforcement, of which the diminish outlines the shift to framed buildings. In the reinforced concrete buildings like Ushigome Branch of Tokyo Central Telephone Office 東京中央電話局牛込分局 (#6), Yamaguchi Bank 山口銀行 (#7), and Aoyama telecom office 青山電話分局 (#8), related to Bunriha and featured with vertical or even window arrays, the historical manners like arch in #7 and column in #8 can still be found. Similarly, the Mitsubishi Naka Bldg. 2 三菱仲二号館 (#12) and Naka Bldg. 12 三菱仲十二号館 (#13) also show the remains of tripartition and wall pilasters, regardless of the relatively modern appearance similar with the purer Yokohama Shokin Bank in Koujimachi 横浜正金銀行東京支店 (麹町) (#14). In addition, window arrays can also be found in masonry and wooden frame buildings, e.g., Building for Chemistry of Physics and Chemistry Research Institute 理化学研究所化学部本館 (#9) and Oita Post Office 大分郵便局 (#10).

Nevertheless, some breakthroughs did happen within the manner of window array. Oto Endo's遠藤於菟 Meiji Middle School 明治中学校 (#15) shows the clue of modernity by creating transparency behind the pilasters of façade, and Bldg. 24 of Mitsubishi 三菱廿四号館 (#16) presents a rare image with horizontal window array, benefiting from the deemed shear walls in Nagaya arrangement, which, however, went extinct soon due to the requirement of large space,[*18)] reflecting the difficulty to handle both the apertures and space under the limit of technology. Against this, Annex of Mitsukoshi 三越呉服店別館 (#11) and Naigai Bldg. 内外ビルディング (#17) are notable trials,[*19)] which, unfortunately, were destroyed in Great Kanto Earthquake.

Thirdly, the similarity between reinforced concrete and wooden frames is evident. Despite the independence of samples assumed in comparative analyses, it is highly possible that reinforced concrete frame borrowed certain manners from other structural forms, especially the wooden frame with wire mesh reinforced concrete, as suggested by both statistical analyses and real projects, e.g., the plates of #18 & #19, #20 & #21, #22 & #27, #30 & #31.[*20)] Besides, the almost identical warehouses of Hakubunkan 博文館倉庫 (#23) and Fukaya Bank 深谷銀行 (#28) in *Kawasakigaho* built in wooden and reinforced concrete frames respectively with wire mesh reinforced concrete also consolidate this point. Moreover, the Library of Tokyo Higher Commercial School 東京高等商業学校御大典記念図書館 (#24) is a special case with wooden framed main part (right) adjacent to the storage in reinforced concrete, showing the compatibility of the two structures, and the office of Itochu 伊藤忠合名会社 (#25 & #26) presents the features of wooden frame buildings with reinforced concrete. Henceforth, the wooden frame buildings criticized in "sham structure" dispute may have influenced reinforced concrete buildings, and the thin wall mentioned in magazines articles and the undergraduate theses from Imperial University of Tokyo could emerge from wooden frame with wire mesh reinforced concrete.[*21)]

Furthermore, reinforced concrete does not always lead the progress of architecture. The return of both window and doorway arches in reinforced concrete frame, even if it could be linked to elastic

arch, together with certain historical manners in wooden frame buildings, indicate that history is not a straight line, for which the atavism shown in Naimusho 内務省 (#29), Sumitsu-in 枢密院 (#30), and Basei-kyoku 馬政局 (#31) can also be the footnote. Beyond statistical analyses, two special cases stand out. The Dormitory of Oufukai 桜楓会アパートメントハウス (#36) designed by Arata Endo 遠藤新 has a rather international style appearance in wooden frame, and the Ichigaya Prison 市ヶ谷監獄 (aka., Toyotama豊多摩, #32) by Keiji Goto applies manipulation of mass (insertion of side tower of Gothic church into the front, #33) in masonry structure, to which Goto's Ward Court of Tokyo 東京区裁判所 (#35) in reinforced concrete wall-floor system is similar.[*22)] In some sense, these works were ahead of the reinforced concrete frame buildings in the era, also not contradictory with the first point that reinforced concrete frame was insufficient for the trend of simplification. Specially, a precious photo of the medical office of Ichigaya Prison (#34) built in wooden frame with wire mesh reinforced concrete helps build the route from #32 to #35 and support the third point above as well.

4.5.3 The conclusion

Hence, it can be confirmed that, from 1906 to 1923, the influence of reinforced concrete on exterior architectural appearance was technological and insufficient, even if it could be the catalyst. The design manners of reinforced concrete buildings could also be borrowed from other types of structural forms, especially the coeval wooden frame.

Notes

*1) Hideko Matsunami 松波秀子, *Shimizu-gumi Saishiki Sekkei Zushuu* 清水組彩色設計図集 [Chromatic Drawings of Shimizu Group] (Tokyo: Yumani Shobo, 2020).

*2) Mitsubishi Jisho Sekkei Kozumen Kenkyuukai 三菱地所設計古図面研究会, Shinkenchiku-sha 新建築社, eds., *Marunouchi Zushuu* 丸の内図集 [Drawings of Marunouchi] (Tokyo: Shinkenchiku-sha, 2020).

*3) Hiroshi Nakamura 中村弘, and Michihiko Shinozaki 篠﨑道彦, "A Study on Bank Buildings Constructed Between 1890 and 1929: Common Architectural Elements in the External Appearances of the Buildings of Japan's Five Major Banks" 1890-1929年の銀行建物に関する研究: 五大銀行の建物外観に共通する建築要素について, *Journal of Architecture and Planning* (Transactions of AIJ) 日本建築学会計画系論文集, no. 732 (February 2017): 547–554. DOI http://doi.org/10.3130/aija.82.547

*4) Takuya Oki 沖拓弥, and Yoshiki Ogawa 小川芳樹, "Model for Estimation of Building Structure and Built-Year Using Building Facade Images and Attributes Obtained from Real Estate Database" 不動産データベースの外観画像と属性情報を用いた建物構造・築年代推定モデル, *Journal of Architecture and Planning* (Transactions of AIJ) 日本建築学会計画系論文集, no. 779 (January 2021): 357–367. DOI https://doi.org/10.3130/aija.86.357

*5) The book, i.e., Hoshi Kuroda 黒田鵬心, ed., *Tokyou Hyaku Kenchiku* 東京百建築 [Tokyo 100 Buildings] (Tokyo: *Kenchikugaho*-sha, 1915), is an architectural album published by *Kenchikugaho*, where Kuroda worked as the chef editor and Suwa was the founder. Many plates of the album were also published in *Kenchikugaho*.

*6) *Kenchikuzasshi*, as the most authoritative journal in the era which constantly and timely presented the newly built projects, is put to the first position. The two reports of Great Kanto Earthquake, based on field research, albeit later than 1923, is also handled in high priority. By contrast, *Kenchikusekai* and *Kenchikugaho* are less professional, between which *Kenchikusekai* shows a stronger knowledge background regarding more columns of educational articles about reinforced concrete than *Kenchikugaho*.

*7) About specific utilization of reinforced concrete, the following projects can be confirmed. For ring beam, 広島県物産陳列館 (1915, *Kenchikusekai* 8, no. 7 (July 1914)), 東京銀行集会所 (1916, *Kenchikusekai* 10, no. 10 (October 1916)), 三井銀行大阪西支店 (1916, *Kenchikuzasshi* 30, no. 356 (August 1916)), 株式会社第一銀行熊本支店 (1919, *Kenchikuzasshi* 34, no. 398 (February 1920)), 名古屋控訴院 (1922, *Kenchikuzasshi* 36, no. 437 (November 1922)), 日本紙器製造株式会社 (1917, *Kenchikusekai* 11, no. 10 (October 1917)); RC wall-floor system: 八十嶋氏邸内倉庫 (1909, *Kenchikugaho* 2, no. 3 (March 1911)), 三菱貸事務所十四号館 (1912, *Kenchikusekai* 6, no. 12 (December 1912)), 三菱貸事務所十六号館 (1912, *Kenchikusekai* 6, no. 12 (Decemeber 1912)), 清公会所属日光教会 (1914, *Kenchikusekai* 9, no. 12 (December 1915)), 東京区裁判所(1920, *Kenchikugaho* 9, no. 1 (January 1918)), *久松警察署(1923, *Kenchikusekai* 17, no. 6 (June 1923), "鉄筋コンクリート叩き煉瓦造"); for walls performing as part of frame: 新潟商業銀行(1914, *Kenchikugaho* 7, no. 8 (August 1916)), 和田維四郎邸(1915, *Kenchikuzasshi* 30, no. 349 (January 1916)), 東京高等商業学校専攻部(1916, *Kenchikusekai* 10, no. 5 (May 1916)), 不動貯金銀行函館支店 (1917, *Kenchikusekai* 13, no. 9 (September 1919)); for flat slab system, 東京日々新聞社(1917, *Kenchikusekai* 11, no. 5 (May 1917)), 三井物産株式会名古屋支店(1917, *Kenchikusekai* 12, no. 3 (March 1918)), 日米信託株式会社(1920, *Kenchikusekai* 15, no. 3 (March 1921)), 東京府商工奨励館(1921, foundation only, *Kenchikugaho* 12, no. 10 (October 1921)).

*8) The following projects, 豊国火災保険株式会社 (1915, *Kenchikusekai* 9, no. 11 (November 1915)), 庄司理髪店理髪室 (1914, *Kenchikugaho* 5, no. 12 (December 1914)), 日之出生命保険 (1913, *Kenchikusekai* 8, no. 1 (January 1914)), 泰明小学校 (1911, *Tokyo 100 Buildings*, plate 37), 大阪回生病院 (1915, *Kenchikugaho* 6, no. 11 (November 1915)), can be confirmed as wooden frame buildings in *Kawasakigaho* no. 43 (September 1916), 2, no. 19 (September 1914), 2, no. 12 (February 1914), 2, no. 12 (February 1914), and no. 43 (September 1916). The wooden frames of 川崎寛美別邸 (1911, *Kenchikugaho* 2, no. 11 (October 1911)), 東京堂書店 (1914, *Kenchikugaho* 5, no. 5 (May 1914), *Tokyo 100 Buildings*, plate 94), and 川崎肇氏邸 (1911, *Kenchikugaho* 7, no. 1 (January 1916)) can be confirmed with original information.

*9) For example, from unrecognizable sculpture to silhouette shows the mechanism of human's visual system. Similar perspective can be found in chapter VIII of part three in E. H. Gombrich, Art and Illusion (New York: Bollingen Foundation, 1965), 242-287.

*10) In Python, the formula is set as "aggregation_lv ~ C(use_ternary) * C(structure)" and passed to the function of

"statsmodels.formula.api.ols()". "C()" means to set the field as categorical variance, for which the dummies are assigned automatically based on the algorithms of statsmodels. To set the formula as "aggregation_lv ~ C(use_ternary) + C(structure) + C(use_ternary) * C(structure)" does not influence the p-values of all the variances.

*11) This study conducts the t-test by using the function of "scipy.stats.ttest".

*12) This study conducts the linear regressions by using the function of "statsmodels.api.ols()".

*13) This study sets the formula as "element ~ C(use_ternary, Treatment('others')) * C(structure, Treatment('masonry'))" and passes it to the function of "statsmodels.api.Logit.from_formula()". "Treatment" means to set the use of both non-financial and non-office buildings as comparison use, and masonry as comparison structural form, in order to fit the logistic regression with categorical variances. In addition, to set the formula as "element ~ C(use_ternary, Treatment('others')) + C(structure, Treatment('masonry')) + C(use_ternary, Treatment('others')) * C(structure, Treatment('masonry'))" does not influence the p-values of all the variances. About "C()", i.e., categorical variance, see also note 7.

*14) LLR p-value stands for "log-likelihood ratio p-value".

*15) This study conducts Fisher's exact test by using the function of "scipy.stats.fisher_exact". When the scale of sample is small, the p-values can be too small in ordinary Chi-square test, i.e., too many significant results, while Chi-square test with Yates's correction can sometimes overcorrect the p-values. Relatively, the p-values calculated with Fisher's exact test are between the former two and suitable for small scale samples.

*16) This study conducts the logistic regressions by using the function of "statsmodels.api.Logit()".

*17) Similar with the method in note 10, this study conducts the ANOVA test by utilizing the function of "statsmodels.formula.api.ols()". For Tukey's HSD test, this chapter uses the function of "statsmodels.stats.multicomp.pairwise_tukeyhsd".

*18) Mitsubishi Jisho Sekkei Kozumen Kenkyuukai, Shinkenchiku-sha, eds., *Marunouchi Zushuu*, 66-67.

*19) The large interior space with no partition can be seen from the plates in "Completion of Annex of Mitsukoshi" 丸之内別館の竣工, Mitsukoshi 三越 9, no. 9 (September 1919): 18.

*20) About the similarity, the differences should be no bigger than 2 in at least in 3 out of 4 dimensions, with at least half of the visual elements in common. The general clustering methods like K-means and DBSCAN do not work well on the projects due to the relatively flat distribution of aggregation levels.

*21) About the conception and thin wall and the contents about the undergraduate theses, see also chapter 2

*22) About Keiji Goto and Ichigaya Prison, see also Takeyoshi Hori 堀勇良, "Doujidai toshite no Kindai" 同時代としての「近代」 [Modern Era as Coevality], in *Nihon no Kenchiku: Meiji, Taisho, Showa 10* 日本の建築: 明治・大正・昭和 10 [Architecture of Japan: Meiji, Taisho, Showa, vol. 10], ed. Teijiro Muramatsu 村松貞次郎 (Tokyo: Sanseido, 1981), 120–122.

CHAPTER 5
SYNTHETIC DISCUSSION ON REINFORCED CONCRETE: BETWEEN DIFFERENT ASPECTS AND IN HISTORICAL CONTEXT

5.1 About the discussion: To understand reinforced concrete across different aspects and in the specific historical context

Corresponding to the objectives, this chapter scrutinizes the findings of previous chapters, also with deeper exploration into the details and extensive information, seeking to form an integrated understanding on the correlations between different aspects of reinforced concrete, i.e., the pairwise relations amidst technical theories, design theories, and practices, from which the reliability of the findings in previous chapters are also verified. Henceforth, the facts about reinforced concrete then are put back into the historical context with a global vision for extensively examining the historical events which influenced the trends and features of reinforced concrete, as well as gaining an integral understanding of the trajectory of history with the comparison to the facts of reinforced concrete. Particularly, this chapter endeavors to make the arguments based on authentic and abundant materials rather than any independent event in order to build a firm and reliable conclusion for the entire dissertation.

5.2 Landscape of the theories of reinforced concrete: The contradictions

i. Asynchrony of technical and design theories

Primarily, seen from the timeline, it can be distinguished that the year of 1915 is a watershed for the theories of reinforced concrete, as the design theories reached a peak in that year whereas advanced technical theories began to be popularized afterward, featured with the representative contributions from Mikishi Abe and Tachu Naito. Therefore, it can be distinguished that the fervor of discussion on the design of reinforced concrete buildings and the technical progress made after the mid-1910s certainly passed each other. Moreover, in the beginning of the 1920s, when the technical level of reinforced concrete gradually matured, the discussions on the design of reinforced concrete buildings in reverse fell apart and got replaced by the topics of residential and urban planning issues.

ii. Conventional frame structure versus elastic arch / rigid frame

This chronological discrepancy directly led to the contradictory state between the technical and design theories, within which the most manifest contrast is between conventional frame structure, i.e., simply supported beam, and elastic arch, or derivatively rigid frame, among the architects. On the side of techniques, throughout the era, although the calculation of neutral axis and shear force in beam had been close to today's methods and the calculation of the stress in frame also got on stage from the second half of the 1910s in the textbooks, the mechanical model maintained conservative and approximately as simply supported beam in both frame structure and flat slab system, regardless of the audacious coefficient (i.e., $1/20 \cdot (wl^2)$) in the formula for calculating the stress in beam proposed by Mikishi Abe.[*1)] Even though the point reached by Naito Tachu in the late 1910s,, i.e., the rigid outer and flexible inner system, is remarkable regarding the large-scale buildings calculated by him,[*2)] it was still one step away from the overall rigid frame which technically allows the emancipation of façade. On the side of design, by contrast, in both the undergraduate theses from Imperial University of Tokyo and the magazine articles, huge anticipation was put on the conception of elastic arch or rigid frame which had apparently sur-

passed the model of simply supported beam. However, the advanced conceptions were, to some extent a utopian idea, regarding the reality of mechanical models utilized in the calculations of reinforced concrete in the textbooks throughout the 1910s, also annotated with Goto's appreciation of Futurism, a movement featured with imaginary drawings.[*3)]

Derivatively, the light / thin image of reinforced concrete can also be contradictory to the reality of technical knowledge, since the calculated depth of beam in simply supported system can definitely be larger than the beam with plastic joint which generates smaller moment in the center of beam. Noticeably, the light / thin image was even advocated around the beginning of the 1920s, which implies that the image was not actually realized, and assumably, the contraction between technical and design theories continued until the early 1920s.

iii. Contradictions within design theories

Actually, if we compare certain conceptions in the design theories, it is not hard to discover that the contradictions even exist amidst the design conceptions. The most manifest contrast can be found within the connotations of elastic arch, as the conception of as a single entity or monolithic in its mechanical sense related to rigid frame, mainly presented in the undergraduate theses, stands against the imaginary shape of parabola, about which the best exemplar is the contrast between the technical background provided by Toshikata Sano, i.e, the hingeless arch and three dimensional frame, and the shop front designed by Keiji Goto, which is exactly featured with the rhythmic parabola arches. In addition, the misunderstanding of Kaji-bashi and Gofuku-bashi together with the Southport War Memorial introduced by Mamoru Nakamura[*4)] also consolidate the existence of the pictorial aspect of elastic arch, which is no doubt on the opposite side of the correct mechanical cognition.

Likewise, the fact that the new conceptions like as a single entity and rigid frame show a proclivity of detachment from architectural treatment while the coexisting focuses on structural form and architectural treatment still persisted among the architects is another conspicuous contradiction, at least during the specific era. In fact, this contrast also has its basis in the contradiction between the design and technical theories, regarding the close bond between conventional frame structure and the manners of architectural treatment shown in data analyses, i.e., the persisting simply supported beams and the ongoing ideal of new structural forms.

Moreover, it also needs to mention the divergence between the prototypes from the US and Europe behind the design conceptions. As is mentioned in chapter 3, the cases from the US concern more about conventional decorative manners, while those from Europe support the new conceptions of structural forms, which implies the possibility of confusion for Japanese architects to make choice between the two directions.

At the beginning of the 1920s, when the design theories went into a mess, the situation can be regarded as the contradictory status of the overall design theories, regarding the contrast between rigid frame and concrete block, or no imitation of historical styles against the implication of historical styles, which indicates that the contradictions within design theories continued throughout the era.

iv. Contradictions as subconscious phenomenon

Actually, the contradiction can even be subconscious between technical and design theories. Specifically, the technical cognition of reinforced concrete can be linear, i.e., one-dimensional, whereas many conceptions in design theories tend to be planar. Regarding the facts that the calculation mainly focused on bar arrangement in beams and columns; it can be understood that the most ordinary consideration of reinforced concrete was linear during the specific period from 1906 to 1923. This proclivity can even be found in some details of flat slab system, regarding the article of Keikichi Ishii, the structural engineer of Yokogawa Komusho, in *Kenchikuzasshi* (January-February 1913).[*5)] Ishii introduces the overseas theories of reinforced concrete slab, while the theories still to a large extent rely on the calculation of beam-column system, as the formulae of moment in slab are almost empirically estimated from the linear distribution of load. Interestingly, Ishii also argues that reinforced concrete should not learn from wooden and steel frames, implying that the flat slab is the future, while he also talked in 1917 *Architecture in the Future* about the pro Japanese style and the light / thin image of reinforced concrete,[*6)] indicating his complex cognition on reinforced concrete. By contrast, the design conceptions such as the simple / flat, light / thin (thin wall) images, and even the manners of surface finishing are all concerning the façade of building, i.e., planar. Correspondingly, the historical styles in such a system which is featured with the horizontal and vertical elements from ancient Greek culture no doubt fit well with the components linearly understood in the mechanical models, sometimes even symbolic, while the planar features mentioned by the architects require a new repertoire of vocabularies.

In summary, the design and technical theories, to some extent, passed each other during the period from 1906 to 1923, as the design theories culminated in 1915 right before the maturer technical theories of reinforced concrete in the second half of the 1910s. As the result, the contradiction between conventional frame structure and elastic arch became an irresolvable dilemma between technical and design theories. Even within the design theories, some minor contradictions can be observed, which definitely have the basis in the technical background, and the contradictory status of design theories also continued until the beginning years of the 1920s.

5.3 The technical background of the practices: the explicable and inexplicable

i. Simply supported beam with limited consideration of rigidity as the reality of practices

Considering the technical level, generally, it can be confirmed that the practices followed the level of calculation, in which, as revealed in chapter 1, the conservativeness of mechanical model is no doubt the indicator, which can be confirms in a large range of historical facts besides the textbooks. In the regulation of *Shigaichi Kenchikubutsu Ho* 市街地建築物法 implemented in 1920, the basic model of $1/8 \cdot wl^2$ was still advised,[*7)] showing that the general regarding was still cautiously based on simply supported beam. In some more advanced projects, e.g., 東京高等商業学校, the moment of beam is estimated as $1/10 \cdot wl^2$,[*8)] regardless of the audacious proposition of $1/20 \cdot wl^2$ in Mikishi Abe's speech made in Architectural Institute of Japan mentioned before. In the project of Mitsukoshi Department Store (1914, steel frame), calculated by Tachu Naito, two parameter, i.e., $m=1/10 \cdot wl^2$ and $m=1/12 \cdot wl^2$, are given for calcu-

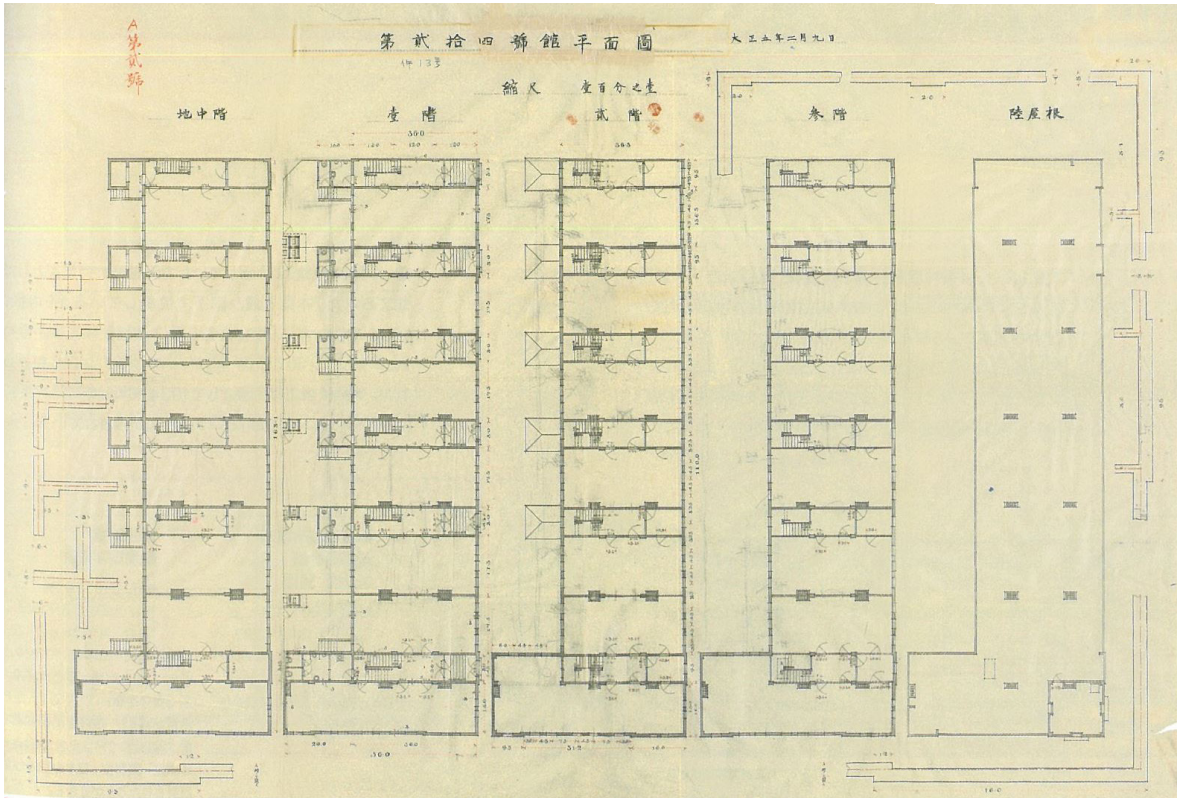


Fig. 5-1 Floor plans of #24 building of Mitsubishi.

*Notice, the façade of backyard side in original design was not equipped with horizontal window arrays.
Source: Mitsubishi Jisho Sekkei Kozumen Kenkyuukai 三菱地所設計古図面研究会, Shinkenchiku-sha 新建築社, eds., *Marunouchi Zushuu* 丸の内図集 (Tokyo: Shinkenchiku-sha, 2020): 66-67.

lating the number of steel bars for the T-shape beams of reinforced concrete floors,[*9)] showing a similar approach with Abe. Moreover, later in Osaka Branch of Takashimaya (1922, reinforced concrete frame), also calculated by Naito, $1/12 \cdot wl^2$ was utilized in both the calculation of the beams and the girders in the walls[*10)].

Hence, although in Hiroyasu Fujioka's narrative, the structure of reinforced concrete was recognized as rahmen structure (rigid frame in Japanese context) by the Japanese architects then,[*11)] this could be their anticipation rather than the reality of construction, i.e., the rigidity was still conservatively considered. Another probable mistake is shown in the collection of drawings of Marunouchi, in which the #24 bldg. of Mitsubishi is defined as rahmen structure by the editor.[*12)] However, the horizontal window arrays which did not exist in the original floor plan and benefited from the shear walls separating the space in Nagaya arrangement indicates that the structure was not a rigid frame. Likewise, in the collection, another work, Marunouchi building, is also defined as rahmen structure,[*13)] whereas the details recalled by Tatsuzo Sone in the 50-year anniversary of Architectural Institute of Japan reveals the fact that due to the advice from the side of George A.Fuller Company of The Orient Ltd., the calculation of rigid frame was not implemented and the endeavor of Sone only ended up with bulkier columns.[*14)]

Regarding all these facts, it can be estimated that the practices basically coordinated with the conservative mechanical model and did not surpass the technical theories in the era.

ii. The similarity with wooden frame and the technical basis

The similarity between reinforced concrete and wooden frame shown in statistical analyses is definitely consistent with the technical limit of reinforced concrete, i.e., the conception of conventional frame structure with limited consideration of rigid joint, which is basically mechanical model for wooden frame buildings, not to mention the estimation in chapter 1 that the similarity to wooden frame in Kurosawa Building discovered by Hori is not a single case.

Nonetheless, the similarity in terms of the skeleton is not enough to explain the similar features of exterior architectural appearance, for which, the influence of wire mesh reinforced concrete needs to be focused. As revealed in chapter 4, discovered in *Kawasakigaho*, the two cases, i.e., the warehouse of Hakubunkan and the warehouse of Fukaya Bank persuasively illustrate the similarity between wooden and reinforced concrete, regardless of the difference of roof structure. Also, the medical house of Ichigawa Prison built in wooden frame with wire mesh reinforced concrete, which is even not covered in the posthumous works of Keiji Goto, clearly shows the path from the front gate of Ichigaya Prison built in masonry structure to Tokyo Ward Court in concrete and the tribute of wire mesh reinforced concrete. Actually, the utilization of wire mesh reinforced concrete was far more universal beyond the three special projects above, as shown in *Kawasakigaho*, it can be witness that wire mesh reinforced concrete was utilized in a broad spectrum of projects, even including the garage of Prime Minister's Residential Quarters,[*15)] and the most popular combination, i.e., wooden frame with wire mesh reinforced concrete, could definitely be the technical basis of reinforced concrete in the specific era and far more than the cheaper substitute of ordinary reinforced concrete. Nonetheless, this relation is rarely discussed in depth across the previous studies.

In summary, it can be asserted that for reinforced concrete buildings, the similarity with wooden

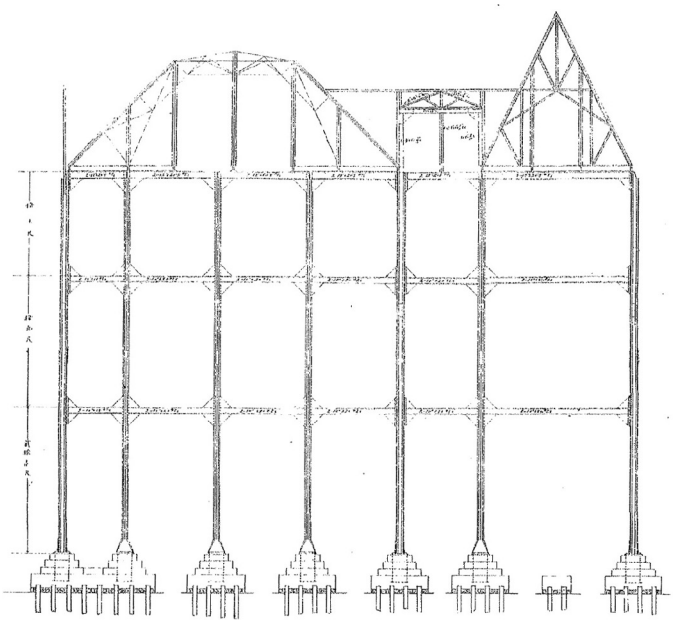


Fig. 5-2 Steel frame of Maruzen Headquarter (1910), north façade, reinforced with bracing
Source: *Kenchikusekai* 4, no. 4 (April 1910).

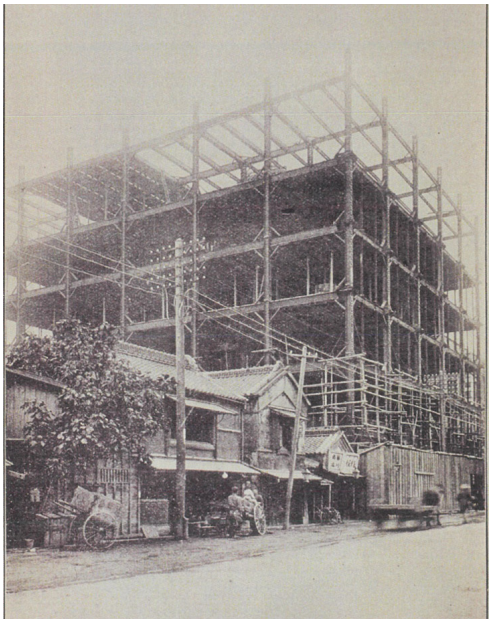


Fig. 5-3 Steel frame of Mitsui Rental Business Office (1912), façade with bracing under construction
Source: *Kenchikugaho* 2, no. 7 (August 1911)

frame buildings, and derivatively wire mesh reinforced concrete, was a universal technical fact in the specific era from 1906 to 1923. This point can also enhance the two routes of the reception of reinforced concrete in architecture proposed by Takeyoshi Hori, i.e., Hennebique and Kahn Systems.

iii. The similarity with steel frame and the technical basis

Despite the discussion above, the similarity with wooden frame was not the only path. With cautious inspection into the changes of exterior appearance, featured with the differences across structural forms in terms of tripartition and window array, as well as the distinction between horizontal and vertical visual elements, for reinforced concrete, the relation with steel frame can also be captured. Particularly, in terms of the window array, the distribution of different types of arrays in reinforced concrete and steel frame building are similar, for which the system of rigid exterior wall with flexible internal grid, i.e., the rigid outer and flexible inner system, sometimes with shear wall, is no doubt the most reasonable explanation. In the Tachu Naito's article in *Kenchikuzasshi*,[*16)] the system was adopted to both reinforced concrete and steel frame buildings including Takashimaya Osaka Branch (reinforced concrete, 1922), Headquarter of Osaka Shosen 大阪商船本社 (reinforced concrete, 1925, as Daibiru Building today), and Nihon Kougyou Bank (日本興業銀行, aka., The Industrial Bank of Japan, steel frame and reinforced concrete, 1923). Actually, it can be found that this system was already utilized in steel frame buildings several years ago. In the Headquarter of Maruzen and Rental Business Office of Mitsui (figure 5-2, 5-3), the joints of exterior walls reinforced with braces are the persuasive testimony, while in the office of Mitsui, the steel bar of reinforced concrete floors were simply hooked on I shape girder, indicating the lack of rigidity for the inner structure. Particularly, the large inner space of the two buildings is also notable. Moreover, from Earthquake report, it can be discovered that Naigai Building (figure 5-4), Okawa Tanaka Office (described as bold wall frame), and Attached Building of Mitsukoshi (bold wall frame connecting with the reinforced concrete floors, figure 5-5), as all three were built with Kahn System,[*17)] also highly possibly utilized system with rigid exterior wall and flexible internal grid. This also not contradictory with the change of design in construction of #24 bldg. of Mitsubishi mentioned before, which realized the manner of horizontal window array due to the partition of Nagaya Arrangement working as shear

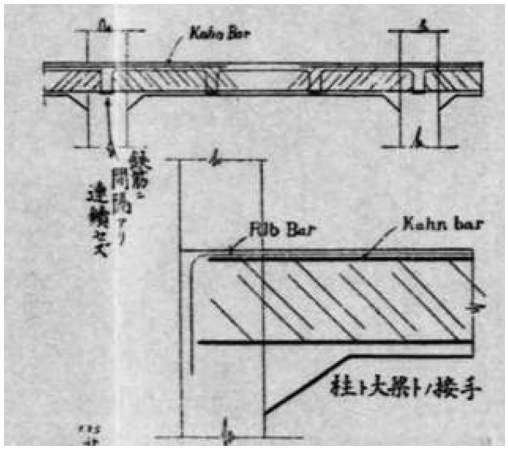


Fig. 5-4 Detail of joint in Naigai Building
* Original text as, 鉄筋ニ間隔アリ連続セズ
Source: Earthquake Report, attached drawing no. 64

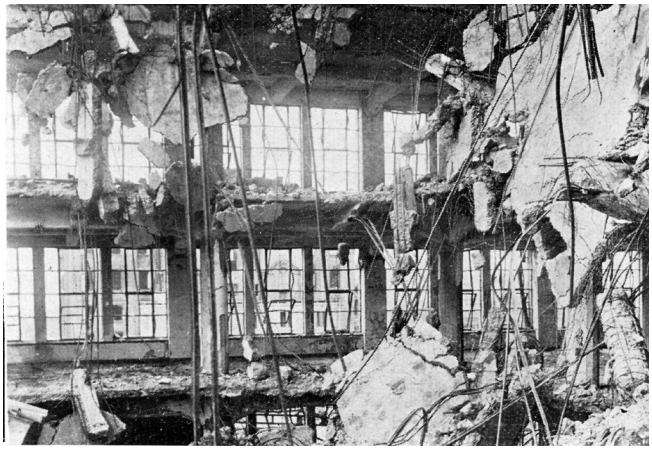
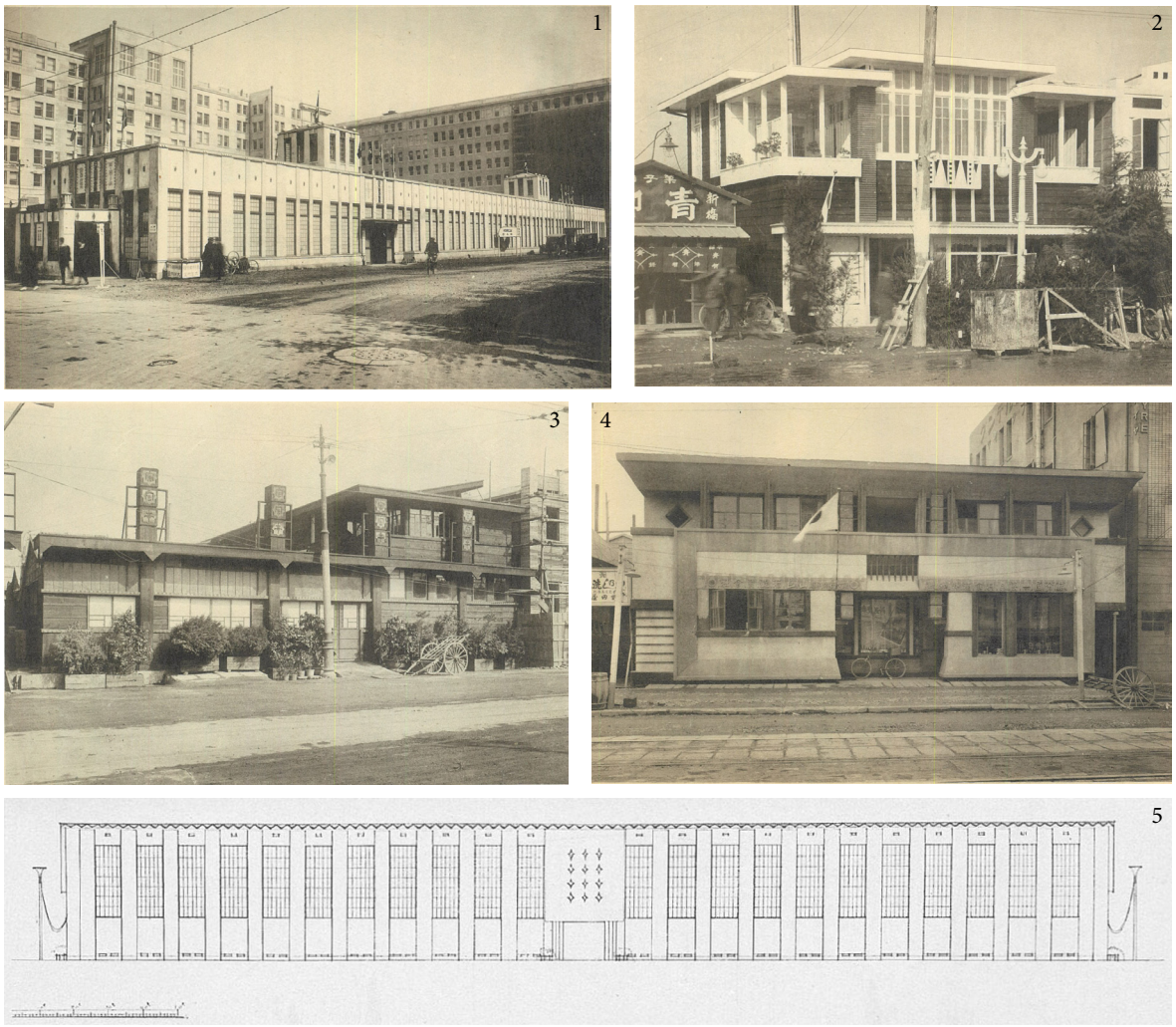


Fig. 5-5 Attached building of Mitsukoshi
*Note the floor connecting with bold beams in exterior wall
Source: Earthquake Report, photo no. 224



1. Shiragiya 白木屋 by Shimizu Group; 2. Sembikiya 千疋屋 by Kenjiro Maeda 前田健二郎; 3. Tototei 陶陶亭 by Arata Endo; 4. Yamamu Jouzou Co., Ltd. 山邑醸造株式会社 by A. Endo; 5. Façade of exhibition hall design by Mayumi Takizawa, second exhibition of Bunriha

Fig. 5-6 Barrack buildings after Great Kanto Earthquake and the design of Mayumi Takizawa
Source: 1: Kenchiku Shashin Ruishuu Kankoukai 建築写真類聚刊行会, ed., *Kenchiku Shashin Ruishuu Daiyonki Dainijuukai Barakku Kenchiku Kanichi* 建築写真類聚 第四期第二十回 バラック建築 巻一 (Tokyo: Kouyousha, 1924), plate 11; 2: *Barakku Kenchiku Kanichi*, plate 26; 3 *Barakku Kenchiku Kanichi*, plate 40; 4: Kenchiku Shashin Ruishuu Kankoukai 建築写真類聚刊行会, ed., *Kenchiku Shashin Ruishuu Daiyonki Daijuukyuukai Barakku Kenchiku Kanni* 建築写真類聚 第四期第十九回 バラック建築 巻二 (Tokyo: Kouyousha, 1924), plate 70; 5: Bunriha Kenchikukai 分離派建築会, *Bunriha Kenchikukai no Sakuhin Dainikan* 分離派建築会の作品 第二刊 (Tokyo: Iwanami Shoten, 1921), 159.

wall and emancipated the façade.

Hence, it can be confirmed that learning from the rigid exterior wall and flexible internal grid in steel frame was the juncture between reinforced concrete and steel frame in the specific era. However, this juncture did not happen in the early ages of the 1910s, regarding the scales of buildings, since large-scale buildings definitely need more rigidity in the overall structure. In this sense, it is also reasonable to estimate that the borrowing from wooden frame in the early 1910s just shifted to the rigid outer and flexible inner system in the second half of the decade which was originally utilized in steel frame.

iv. The process of simplification: inexplicable with techniques

However, about the simplification of historical styles discovered in chapter 4, it cannot be completely

explained from the aspect of structure. In the first half of the 1910s, there had been a trend of the simplification amidst masonry buildings, when reinforced concrete was not broadly popularized, suggesting that reinforced concrete was more of the catalyst than the direct and sufficient cause of the simplification of exterior appearance. Besides the projects of Toyotama Prison and Oufuukai Apartment, actually more proofs can be found in the barrack buildings after Great Kanto Earthquake, as multiple building showing new spirit and forms were built with wood for temporal use, which was not only highly praised in the prefaces of the two albums of *Kenchiku-Shashin-Ruishuu*,[*18)] but also appreciated by Kikuji Ishimoto in the preface of his own album, i.e., *Kenchiku-fu* after the tour in Europe.[*19)] Amidst the designers, rather than restricted to specific pioneering architects like Kenjiro Maeda and Arata Endo, even Shimizu Group, the general contractor, designed the building of Shiragi-ya with succinct appearance, which is, interestingly, similar with the design of exhibition hall by Mayumi Takizawa in the second exhibition of Bunriha.[*20)] All these works indicate that the momentum of simplification did not exist within the new structure of reinforced concrete but in the mind of designers. Moreover, here is another sensible story, the provisional headquarter Mitsubishi, which was built with steel frame wrapped with concrete. The building was originally designed in Tudor style by Kotaro Sakurai, who, however, asked the young staff member Nobuyuki Ishihara to simplify the design.[*21)] In this case, obviously, the action to simplify the design was not influence by the structure itself.

Regarding all these facts, it can be confirmed that the practices of reinforced concrete from the end of Russo-Japanese War to Great Kanto Earthquake principally followed the technical theories, i.e., simply supported beam with limited consideration of rigidity. Under this background, it can be affirmed that the absorptions from wooden and steel frames were deemed to be the two consecutive technical paths. Meanwhile, the technology of reinforced concrete itself did not perform as the sufficient cause of the simplification of historical style as well as the new forms of architecture, even if the technological shift to reinforced concrete definitely allowed less historical manners.

5.4 Between design theories and practices: The realized and unrealized

5.4.1 Of the undergraduate students in 1915 and 1916

Regarding the specialness of the undergraduate theses, it is necessary to look at the works of students after graduation. However, this is not easy to be fundamentally conducted. On the one hand, not all the students developed their careers as architect, and on the other hand, the cognition on reinforced concrete could have largely changed under the influence of modernist architecture in the 1920s. Among the students, besides Seiichi Kobayashi, whose work of Meijijingu Gaien Stadium has been discussed in chapter 2, proving the mechanical sense in “elastic”, only two students, i.e., Teitaro Takahashi and Tsuyoshi Ogura, actively participated in the design of architecture and accomplished considerable numbers of works.

From the late 1910s, for Kobayashi, other than Meijijingu Gaien Stadium, the building of Sumitsuin (1921, code 1534) is another work which can be confirmed. For Takahashi, Gakushi Kaikan (1923-1928)



1 | 2
3 | 4 | 5

1: Sumitsuin; 2: Nihon Seimei Kan; 3. Gakushikaikan; 4 Toukyo fu Shoukou Shourei Kan; 5. Saito Houon Kaikan

Fig. 5-7 Selected projects by the undergraduate students in 1915 and 1916
Source: 1: *Kenchikusekai* 16, no. 1 (November 1922); 2: *Kenchikuzasshi* 47 no. 572 (June 1933); 3: *Kenchikuzasshi* 42, no. 510 (June 1928); 4: *Kenchikusekai* 15, no. 12 (December 1921); 5: *Kenchikuzasshi* 48 no. 582 (March 1934).

is his representative work, and the Nihon Seimeikan日本生命館 is another notable work, even if it was already in 1933. For Ogura, it can be confirmed that he participated in the design of Rewarding Building for Commerce and Industry of Tokyo Prefecture 東京府商工奨励館 (1921, code 1538), and Saito Houon Kaikan 斎藤報恩会館 in Sendai is a later work finished in 1933.

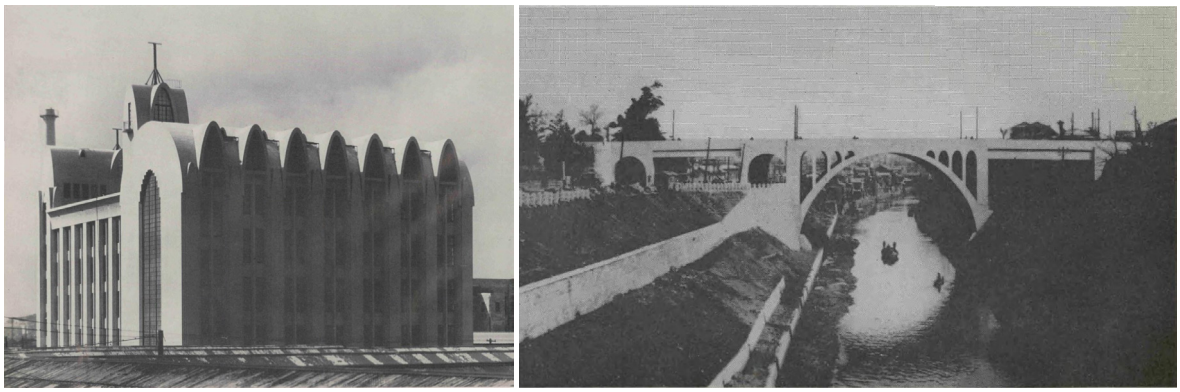
However, it is both surprising and disappointing that all of their works retained the basic appearances of historical styles, regarding their progressive ideas expressed in the theses. Even if the appearances look simplified regarding that almost no decoration is applied to the apertures, the general composition, or more specifically, the façade patterns of the projects were still following the conventional symmetry or tripartite patterns. In figure 5-7, although for the projects of 1, 2, 3 and 4, it cannot be denied that the designs were more or less influenced by the senior architects (e.g., for 2, Yasushi Kataoka, for 3, Toshikata Sano), in project 5, Ogura had been the faculty member of Tohoku University and the design was decided mainly on his own. In all these projects, it can be witnessed that the simple images and the manners of surface finishing are conspicuous while the conceptions of elastic arch and rigid frame are hard to identify, or not clearly expressed.

5.4.2 Other than the undergraduate students

i. Elastic arch in real practices

To compare the design theories and the practices in the era, firstly, the sight should be put on the outstanding conception, i.e., elastic arch. As explained in chapter 2 and chapter 3, the dual nature consisting of pictorial and mechanical senses should be inspected respectively.

About the mechanical aspect, as revealed in 5.3, even though the rigid frame was not fully realized, the endeavor of Japanese architects cannot be denied, amidst which the point reached by Tachu Naito



Left: Tokyo Central Telegraph Office; Right: Hijiri-bashi

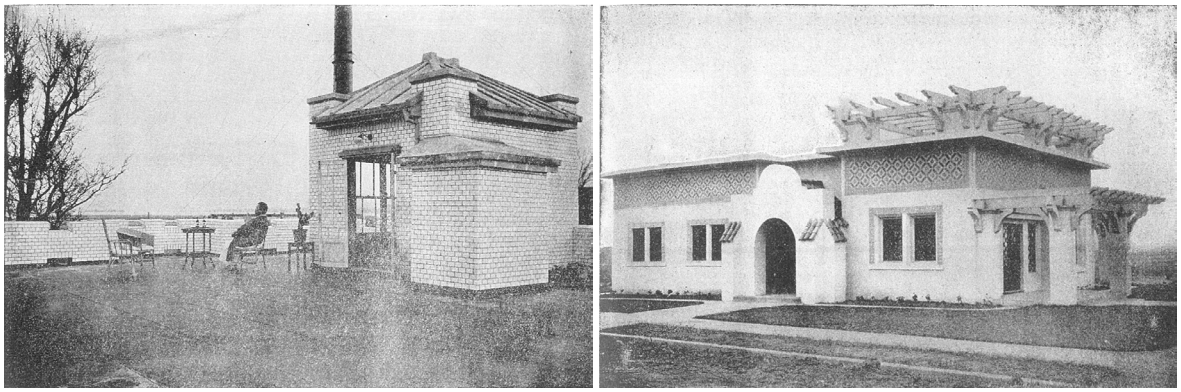
Fig. 5-8 Works of Mamoru Yamada showing the feature of parabola
Source: left: Yamada Mamoru Kenchiku Sakuhinshu Kankoukai 山田守建築作品集刊行会, ed., *Yamada Mamoru Kenchiku Sakuhinshu*, 山田守建築作品集 [Architectural Portfolio of Mamoru Yamada] (Tokyo: Tokai University Publishing Division, 1967), 18; right: *Yamada Mamoru Kenchiku Sakuhinshu*, 143

can be regarded as the technical boundary in the era. The work, Stadium of Meijijingu Gaien could be the testimony for the instance showing the mechanical sense of elastic arch, which was, however, late in the beginning of the 1920s. In the pictorial aspect, although the parabola arch depicted by Keiji Goto in the Shop Front and the misunderstanding the Kaji-bashi by Kitaro Matsui show the utopian character of the conception, it cannot be denied that the picture still had influence in real practices. The Tokyo Central Telephone office (1925, reinforced concrete, original design in 1921, second exhibition of Bunriha) and Hijiribashi 聖橋 (1927, reinforced concrete)[*22)] by Mamoru Yamada 山田守[*23)] can assumably be the results of the influence. Although it might seem far-fetching to link the works of Yamada to the ideals of reinforced concrete years before, the evidence can be found in Yoshizo Bando's 阪東義三 article in *Kenchikusekai* (February, 1921),[*24)] in which Bando paraphrased the ideas of Toshikata Sano, including rigid frame, as a single entity, freedom, casted object and elastic. Bando, particularly, was the classmate of Bunriha members,[*25)] even though he did not join the group. From this relationship, it is reasonable to estimate that the members of Bunriha were familiar with the theories of Sano and derivatively, highly possible also the ideas of Keiji Goto on reinforced concrete. In addition, the project of Library of First High School (old) 旧一高図書館 by Yoshikazu Uchida 内田祥三, another professor of Imperial University of Tokyo, is another work showing the feature of parabola arch,[*26)] even though the direct relation with the ideal of Goto is uncertain.

However, it cannot be ignored that the project realized in the text above were all constructed near the end of the 1910s, implying the limit of technology. In this sense, the conceptions of new structural forms including elastic arch and rigid frame were only realized to a limited extent, showing the hard situation.

ii. Architectural treatment in real practices

By contrast, the homogeneity of architectural treatment amidst masonry, reinforced masonry, steel frame and reinforced concrete frame, which is revealed in statistical analysis based on real projects in chapter 4, certainly corresponds to the parallel consideration of structural form and architectural treatment among Japanese architects, no matter in the connections between conventional frame structure and



Left: Roof garden of Hiromi Kawasaki's House (wooden frame with wire mesh reinforced concrete); Right: Building with mosaic decoration in Evergreen Park, Mayfield, California

Fig. 5-9 Projects exemplifying the techniques of surface finishing
Source: Akiya Nasu 那須彰弥, "Konkurīto no Hyoumen Shiage oyobi Chakushokuhou (sonosan)" 混凝土の表面仕上及着色法 (其三), *Kawasakigaho* 川崎画報 2, no. 20 (October 1914): 14-16.

various manners of architectural treatment demonstrated in chapter 3 or the Art-Nouveau ornaments coexisting with the parabola arches shown in the façade designed by Keiji Goto.

Even if the distinction between reinforced concrete and wooden frame buildings in terms of the techniques of surface finishing, as revealed through data analysis in chapter 4, 4.4.2.d, the difference could be smaller in real practices, which is not fundamentally contradictory with the similarities between the two structural forms shown across the historical manners. Actually, the architectural treatment in reinforced concrete could to some extent learn from the practices of wire mesh reinforced concrete. In *Kawasakigaho*, numbers of projects cladded with tiles or coated with painting are undoubtedly the proof, amidst which the plates of reporting the house of Hiromi Kawasaki distinctively show the implementation of white tiles on the surface,[*27)] whereas the plates in *Kenchikugaho* showing bare concrete surface can be misleading.[*28)] Interestingly, in the same article, a building in California decorated with the same techniques is juxtaposed with Kawasaki's house, implying the correlation with the US.

iii. The images in real practices

About the images of reinforced concrete, primarily, the light / thin image of reinforced concrete can be relatively imaginary. Particularly, the lightness was not considered by Oto Endo, who introduced his landmark work, Yokohama Branch of Mitsubishi Products as bold and sturdy during the 50-year anniversary of Architectural Institute of Japan.[*29)] This was also not the only time Endo denied the lightness of reinforced concrete, since in the article introducing Lavirotte Building, the thin walls and thin floors of reinforced concrete had already be neglected with the background of technical knowledge by Endo,[*30)] which proves that during the period of the 1910s, Endo already regarded reinforced concrete as nothing but light structure. In Naigai bldg. and attached building of Mitsukoshi (figure 5-10), it can be distinguished the large aperture and the endeavor in creating light image. However, the bold frame behind the exterior wall is inevitably the hurdle of the lightness of wall. Actually, the light / thin image could also inherit from the construction of wire mesh reinforced concrete, regarding the fact that the concrete smeared on the wire mesh does not bear any load, together with the manifold similarities with wooden

frame shown in data analysis, of which the combination with wire mesh reinforced concrete was certainly popular.

As to the image of large space, it might be the most successful aspect pursued by Japanese architects, which could be constantly discovered in the works like Taiwan Bank Tokyo Branch,[*31)] Attached building of Mitsukoshi, and the series of the offices owned by Mitsubishi. Nonetheless, as mentioned above, the large space had to rely on the rigidity of exterior wall, which gave little emancipation of exterior appearance in the end.

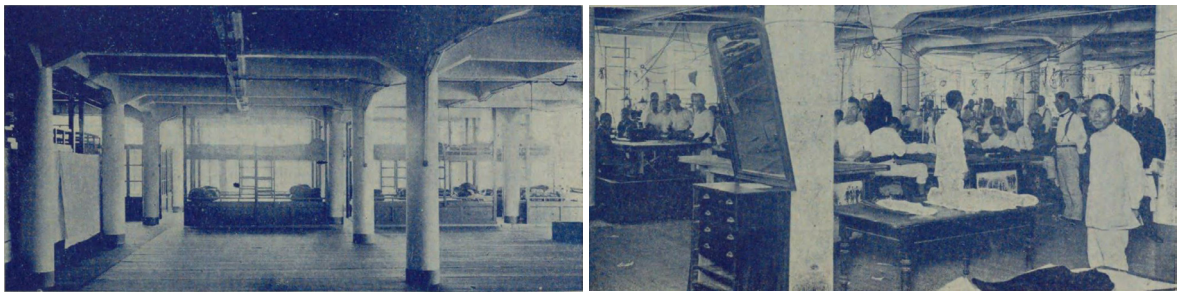
About the simple image, which has been shown in data analysis, albeit as non-identical feature for reinforced concrete, is indeed adopted in the practices of reinforced concrete, also similar with the manners in wooden frame buildings no matter in terms of the aggregation levels or visual elements of façade. However, this simple image to a large extent still remained in the domain of historical styles regarding the remains of certain manners like pilasters in walls and the tripartition pattern.

Nevertheless, it is always ambiguous to merely call something simple, whereas in the conceptions of the images of reinforced concrete, the process of synesthesia is no doubt plausible, i.e., the simple image in fact is linked to the light / thin and large space images, considering that they may all converge to the point consisting of different of aspects of the same material, i.e., reinforced concrete. In this sense, the simple image of reinforced concrete can be realized in two directions, as the one is the simple simplification of historical styles while the other is integrated into different images, for which the project of Tsunashiro Wada's house and the headquarter of Itochu clearly show the character integrating the simple image in a Japanese taste, which is closely linked to the light / thin image in the design theories.

iv. Freedom in real practices

For the most shared conception, i.e., free shape, if we notice the proclivity to specific manners of historical styles, it not hard to find that the conception itself was not fundamentally contradictory to the persisting eclecticism in the simplified appearances of reinforced concrete building, not to mention other conceptions of freedom more precisely featuring eclecticism. Also, about the conception of free plan, it was also realized through the image of large space mentioned before, which can definitely be discovered in the series of projects by Mitsubishi Estate. However, as has been iterated in the previous text, the space could largely rely on the rigid outer and flexible inner system.

Overall, although the conceptions like rigid frame/ elastic arch and light / thin were not amply realized,



Left: Fourth floor, dormitory for apprentices; right: Third floor for weaving factory

Fig. 5-10 Interior space of Attached building of Mitsukoshi, Kahn System
Source: "Completion of Annex of Mitsukoshi" 丸之内別館の竣工, Mitsukoshi 三越 9, no. 9 (September 1919): 18.

which were generally limited by the development of technology, between the theories and practices, still a lot of junctures can be discovered, indicating the fact that the design theories, i.e., the tangible conceptions actually did not surpass the practices too much except the ideal of elastic arch. By contrast, the abstract concepts, as revealed in chapter 2 from the undergraduate theses, including evolutionism, sham structure or rational structure, seemingly avant-garde, were actually compatible with both new structural forms and conventional decorative manners, regardless of the contradiction between the advanced design theories and lagging practices illustrated by other scholars. Moreover, the issues in this section also revealed an important paradigm that the imagination of a structure can lead the mechanical conceptions, while technical rationality is not the only route in architectural practice.

5.5 Reinforced concrete in historical context: A deeper understanding with a global vision

Beyond the structure itself, it is also necessary to put reinforced concrete back into the historical context in order to get a comprehensive and integral understanding of both sides.

i. Overseas origins of major conceptions

Firstly, it has to be noticed that the essential conceptions on reinforced concrete were not originally from Japan. The prominent conception of as a single entity was not exclusive for Japan, which already emerged at the beginning of the whole period from 1906 to 1923. Albeit closely bonded to the structural concept of rigid frame, the pictorial descriptions of this conception had been proposed in International Congress of Architects in London and Rome, which were not newly created by Japanese architects. In 1906, professor Louis Cloquet from Belgium in his article "L'emploi du Béton Armé en Architecture",[*33)] which was translated into Japanese by Seiichiro Chuujo, mentions many ideas on reinforced concrete which are close to the narratives about as a single entity among the Japanese architects in the coming years. In 1911, in Rome, Cloquet made similar speech, which was also translated to Japan by Toshikata Sano.[*34)] Meanwhile, about the technological conception of reinforced concrete as elastic arch, as has been revealed in chapter 2, came from the German terminology "elastischen Bogen", translated by Keiji Goto, of which the similar ideas were also promoted by Toshikata Sano. Although this situation at the early stage of reinforced concrete in Japan, the two aspects mixed with each other, causing the complex situation for understanding the structure of reinforced concrete, it cannot be denied that the correlation also in reverse reflected the fact that the Japanese architects in the era closely followed the global trends.

ii. Japanese style, Secession and Art Nouveau under the nationalism during World War I

About the similarity with wooden frame structure, although it could be the nature of Japanese architects, the specific influence of historical context is still notable. The returns of architects on the brink of World War I indicate that the cognition on overseas practices of reinforced concrete among the Japanese architects stayed before 1914, when Secession and Art Nouveau were still strong forces. Together with the prosperous discussion of new style and parliamentary house, the era had naturally narrowed the sight of Japanese architects to their traditional structural forms, i.e., wooden frame, and the prototypes

from Europe before 1914, for which numbers of proofs have been presented such as the design of shop front by Keiji Goto, the buildings of Taisho Expo, the headquarter of Itochu, and the house of Tsunashiro Wada. Moreover, it has to be noted that the topic of "Reinforced concrete and new styles" itself is one type of reification of nationalism, for which the proofs can be found in couples of articles during and around the period of World War I. In 1916, in the preface of *Kenchikusekai* opening the year,[*35)] the editor had claimed that the war was a chance for Japan to catch or even surpass the Western countries, and later in 1918, Otto Endo also expressed the idea of creating post-war style.[*36)] In this sense, the happening of World War I was even a catalyst which strengthened the awareness of nationalism among the Japanese architects.

iii. The turn to the US throughout World War I

About the return of historical styles shown in both reinforced concrete and wooden frame, the connection with the US throughout the period of World War I is no doubt the most sensible explanation. Although in chapter 3, the articles covering the contents related to the US were rare around the end of the 1910s, it should be noticed that the articles concerning the design of reinforced concrete themselves already dropped to a low level. Given the drastically increased telegraphs with the US and the visits of Japanese architects to the country for seeking the solutions of design, the trend, unfortunately, turned to eclecticism again, about which the Bank of Mitsubishi is the best footnote.[*37)] Another fact supporting the turn to the US is the prosperity of Kahn System, since the system was already introduced by Shiro Mitsuhashi back to 1913, while the products only realized the large-scale popularization after the established of the subsidiary of Truscon Company in Japan in 1918.[*38)] Particularly, it needs to be mentioned that due to the foreign policy of the US during the World War I, the steel products were also prohibited, for which Japan could not immediately turn to the market of the US after the outburst of the war,[*39)] while the option could be the development of domestic production until late 1910s, which is also corresponding to the threshold years of the distributions of window and door arches near 1922. In fact, if we check the projects of reinforced concrete with window and door arches, it is not hard to find the influence of Chicago School style.[*40)] Moreover, besides Mikishi Abe who came back from the US before the war, Tachu Naito also spent one year studying in the US before he published his textbook in 1918,[*41)] which indicates that not only the design theories, but also the technical theories received considerable influence from the US in the second half of the 1910s. Regarding these facts, it is reasonable to estimate that the emergence of Bunriha is a rebellion against the return to eclecticism rather than the historical styles inherited from Meiji Period.

iv. The trajectory

With the relations inspected above, it is clear that the development of reinforced concrete in Japan was never an independent track, which was influenced by the forefront of architecture in the Occidental countries as well as manifold overseas events, and the influence of World War I to Japan could be deeper than we imagined for the specific era. Under this context, the turn to the American office building within Mitsubishi Estate[*42)] was certainly not an isolated change. Likewise, the case of Kikuji Ishimoto's pursuit of modernist architecture, especially under the influence of Gropius,[*43)] was even not a sudden change

but a new chapter of the international connection after the disruption of World War I.

Nonetheless, there is still an issue on how to understand the historical necessity. According to the points revealed in previous sections in this chapter, if we consider that the simple image of reinforced concrete would converge to the point which also conveys the images of light / thin, large space, and Japanese style or taste, the simplification of historical styles would never be the destiny of the process, notwithstanding the strong influence of eclecticism from the US. Hence, it has to be admitted that the turn to the US and the return of historical styles can be more of a disturbance, which interrupted the progress of developing new styles of reinforced concrete which finally pointed to the images in typical Japanese taste.

Notes

*1) Mikishi Abe 阿部美樹志, "Jikkenjou yori Mitaru Tekkinkonkurīto Kenchiku Kakubu no Sekkei (2)" 実験上より見たる鉄筋混凝土建築各部の設計 (2) [Design of Components of Reinforced Concrete Seen from Experiments], *Kenchikuzasshi* 建築雑誌 30, no. 359 (November 1916): 647-662.

*2) Tachu Naito 内藤多仲, "Kakou Kenchiku Taishin Kouzouron" 架構建築耐震構造論 [Theories of Anti-seismic Structure for Framed Buildings], *Kenchikuzasshi* 建築雑誌 36, no. 436 (October 1922): 397-418, no. 437 (November 1922): 441-467, no. 438 (December 1922): 487-510, 37, no. 439 (January 1923): 3-18, no. 440 (February 1923): 39-53, no. 441 (March 1923): 69-86. The rigid outer and flexible inner system can be specifically confirmed in February and March of 1923.

*3) Keiji Goto 後藤慶二, "Kako tomo Shourai tomo tsukanu Taiwa" 過去とも将来とも付かぬ対話 [Conversation not relevant to the Past or the Future], in *Shourai no Kenchiku* 将来の建築 [Architecture in the Future], special issue, Kenchiku 建築 200 (1917): 85-92.

*4) About Kaji-bashi, Gofuku-bashi and Southport Memorial Hall, check chapter3, 3.3.5.c.

*5) Keikichi Ishii 石井敬吉, "Kenchikubutsu ni Shiyou suru Koukin Konkurīto Kouzou no Hirayuka (slab) nitsuite" 建築物に使用する鋼筋コンクリート構造の平床(Slab)に就て [About the Slab of Reinforced Concrete Structure Used in Buildings], *Kenchikuzasshi* 建築雑誌 27, no. 313 (January 1913): 47-53, no. 314 (February): 109-122.

*6) Keikichi Ishii 石井敬吉, "Koukin Konkurīto Kouzou no Kenchiku ni Kansuru Shourai" 鋼筋コンクリート構造の建築に関する将来 [The Future about Reinforced Concrete Buildings], in *Shourai no Kenchiku* 将来の建築 [Architecture in the Future], special issue, *Kenchiku* 建築 200 (1917): 33-37.

*7) Yoshikazu Uchida 内田祥三 et al., "Shigaichi Kenchikubutsuhou oyobi sono Futai Meirei no Kougai" 市街地建築物法及其の附帯命令の梗概 [Law on Urban Buildings and the Supplementary Orders], *Kenchikuzasshi* 建築雑誌 35, no. 411 (January 1921): 15-27, no. 412 (February 1921): 39-84, no. 414 (April 1921): 163-199.

*8) Mikishi Abe 阿部美樹志, *Tekkinkonkurīto Kougaku* 鉄筋混凝土工学 [Engineering of Reinforced Concrete] (Tokyo: Maruzen, 1916), 435-436. See also chapter 1, 1.3.3.a.

*9) Denji Nakamura 中村傳治, "Mitsukoshi Gofukuten no Kenchiku nitsuite" 三越呉服店の建築に就て [About the Building of Mitsukoshi Department Store], *Kenchikuzasshi* 建築雑誌 28, no. 340 (April 1915): 199-215. The calculation of Tachu Naito can be found in the attached diagram no. 2.

*10) The mechanical model of $wl^2/12$ can be confirmed in the calculation in Tachu Naito, "Kakou Kenchiku Taishin Kouzouron (5)" *Kenchikuzasshi*, 37, no. 440 (February 1923): 44.

*11) Fujioka Hiroyasu 藤岡洋保, "Nihon no Kenchikuka ga Tekkinkonkurīto ni Mita Kanousei: Katachi to Gijutsu no Intārakushon" 日本の建築家が鉄筋コンクリート造に見た可能性ー形と技術のインターラクション [Possibilities seen from Reinforced Concrete by Architects of Japan: Interaction Between Form and Technology], in History of Cities and Architecture 9: Materials and Industries in the Modern Age シリーズ 都市・建築・歴史 9: 材料・生産の近代, ed. Hiroyuki Suzuki 鈴木博之 et al. (Tokyo: University of Tokyo Press, 2005), 29. Although in German, "Rahmen" literally means "frame", in most of the Japanese literature, the word "ラーメン構造" refers to rigid frame. See also chapter 1, 1.3.3.a. The understanding of "Rahmen" related to rigid frame can also be read from the context in Teijiro Muramatsu 村松貞次郎, "Nihon Kenchikugaku shi" 日本建築学史 [Architectural History of Japan], in *Kenchikugaku Taikei* 37 建築学大系 37 [Encyclopedia of Architecture], ed, Kenchikugaku Taikei Henshuu Iin 建築学大系編集委員 (Tokyo: Shokokusha, 1962), 146-156.

*12) Mitsubishi Jisho Sekkei Kozumen Kenkyuukai 三菱地所設計古図面研究会, Shinkenchiku-sha 新建築社, eds., *Marunouchi Zushuu* 丸の内図集 [Drawings of Marunouchi] (Tokyo: Shinkenchiku-sha, 2020): 66-67.

*13) Mitsubishi Jisho Sekkei Kozumen Kenkyuukai, Marunouchi Zushuu, 80-84.

*14) "Kaiko Zadankai no Kaisai" 回顧座談会の開催 [Holding the Round Table Meeting for Retrospection], in Kenchikugakkai Souritsu Gojuu Shuunen Kinengo 建築学会創立50周年記念号 [Memorial Volume for 50-year Anniversary of Architectural Institute of Japan], special issue, *Kenchikuzasshi* 建築雑誌 50, no. 617 (October 1936): 161-162.

*15) "Shushou Kantei to Tetsumou Konkurīto" 首相官邸と鉄網混凝土 [Prime Minister's Residential Quarters and Wire Mesh Reinforced Concrete], 川崎画報 3, no. 33 (November 1915): 288-289.

*16) The list of Naito's projects can be found in Tachu Naito, "Kakou Kenchiku Taishin Kouzouron (6)," *Kenchikuzasshi* 37, no. 441 (March 1923): 69-86.

*17) The three projects of Kahn System in Earthquake report can be Japan Society of Civil Engineers 土木学会, ed., Taisho Juuninen Kanto Daijishin Shingai Chousa Hokoku Daisankan 大正十二年関東大地震震害調査報告 第三巻 [Report of the Disaster of Great Kanto Earthquake in Taisho 12 vol. 3] (Tokyo: Fukkoukyoku, 1928), 575, 578, 579.

*18) Kenchiku Shashin Ruishuu Kankoukai 建築写真類聚刊行会, ed., *Kenchiku Shashin Ruishuu Daiyonki Dainijuukai Barakku Kenchiku Kanichi* 建築写真類聚 第四期第二十回 バラック建築 巻一 [Collections of Architectural Photos by Building Type, 4-20, Barrack Buildings, vol. 1] (Tokyo: Kouyousha, 1924). Kenchiku Shashin Ruishuu Kankoukai 建築写真類聚刊行会, ed., *Kenchiku Shashin Ruishuu Daiyonki Daijuukyuukai Barakku Kenchiku Kanni* 建築写真類聚 第四期第十九回 バラック建築 巻二 [Collections of Architectural Photos by Building Type, 4-19, Barrack Buildings, vol. 2] (Tokyo: Kouyousha, 1924).

*19) Kikuji Ishimoto 石本喜久治, *Kenchikufu* 建築譜 [Sheet of Architecture] (Osaka: Bunriha Kenchiku Kyoukai, 1924).

*20) Bunriha Kenchikukai 分離派建築会, *Bunriha Kenchikukai no Sakuhin Dainikan* 分離派建築会の作品 第二刊 [Manifestos and Works of Bunriha Second Volume] (Tokyo: Iwanami Shoten, 1921).

*21) Editing office of the history of Mitsubishi Estate 三菱地所株式会社社史編纂室, ed., *Marunouchi Hyakunen no ayumi: Mitsubishi Jisho Shashi* 丸の内百年のあゆみ: 三菱地所社史 [The Footprint of Marunouchi in One Hundred Years: History of Mitsubishi Estate] (Tokyo: Mitsubishi Estate, 1993), 195-198.

*22) Katsuhiro Daiguji 大宮司勝弘, "Mamoru Yamada's Design Method at the Hijiri-hashi Bridge-Study on the works of Mamoru Yamada: 24" 聖橋における山田守のデザイン手法-山田守作品研究 24, in *Summaries of Technical Papers of Annual Meeting*, Architectural Institute of Japan 日本建築学会大会学術講演梗概集 (September 2020): 239-240. In the paper, Daiguji reveals that the parabola arches in Hijiribashi are decorative elements, while the structure behind is still orthodox reinforced concrete frame with straight beams and columns.

*23) Mamoru Yamada 山田守 (1894-1966), among the members of Bunriha, was iconic for his utilization of curves in design. He is also famous for the design of Kyoto Tower. Although many previous researches try to explain his works from his own words, according to the investigation of this dissertation, the connection with "elastic arch" is no doubt an eligible and reasonable explanation.

*24) Yoshizo Bando 阪東義三, "Toshi Keizai Seisaku to Tokkyo Tekkin Brokku nitsuite" 都市経済政策と特許鉄筋ブロックに就て [About Urban Economic Policy and Patented Reinforced Concrete Block], *Kenchikusekai* 建築世界 15, no. 2 (February 1921): 22-25. Actually, Banto also utilized the shape of parabola in his design of Iriya Normal Primary School (入谷尋常小学校), which was demolished in 2022. Due to the issue of copyright, there is not yet a usable image included in this dissertation. The relevant record can be found in Architectural Institute of Japan, ed., *Nihon Kindai Kenchiku Souran: Kakuchi ni Nokoru Meiji Taisho Shouwa no Tatemono* 日本近代建築総覧: 各地に遺る明治大正昭和の建物 [Catalog of Modern Architecture in Japan: Buildings of Meiji, Taisho, and Showa Periods left in Different Places] (Tokyo: Gihodo Shuppan, 1983), 113.

*25) Mayumi Tsunoda 角田真弓, *Meijiki Kenchikugakushi* 明治期建築学史 [History of Architecture in Meiji Period] (Tokyo: Chuokouronbijyutsu, 2019), 440.

*26) Uchida Yoshikazu Sensei Biju Shukuga Kinen Sakuhinshu Kankoukai 内田祥三先生眉寿祝賀記念作品集刊行会, ed., *Uchida Yoshikazu Sensei Sakuhinshu* 内田祥三先生作品集 [Portfolio of Professor Yoshikazu Uchida] (Tokyo Kajima Institute Publishing, 1969), 111-112.

*27) Akiya Nasu 那須彰弥, "Konkurīto no Hyoumen Shiage oyobi Chakushokuhou (sonosan)" 混凝土の表面仕上及着色法 (其三) [Surface Finishing and Colorization of Concrete], *Kawasakigaho* 川崎画報 2, no. 20 (October 1914): 14-16.

*28) The plates can be found in *Kenchikugaho* 建築画報 2, no. 11 (October 1911).

*29) "Kaiko Zadankai no Kaisai", in *Kenchikugakkai Souritsu Gojuu Shuunen Kinengo*, 145. Original text as "50周年座談会 山下町72番地三井物産会社横浜支店 鉄筋コンクリート造4階建物に地階付明治43年に酒井祐之助と私とが建てたものであります、此敷地に有った倉庫は建築の爲めに取壊した。それは維新前に西洋人が造らしたものと思はる太き柱に丈夫な梁を用ひ、柱間柱に外には厚き貫きを打ち平瓦張となし内は横板羽目とし其空隙には貝殻を填充して有りました。"

*30) Oto Endo 遠藤於菟, "Tekkinkonkurīto-zo no Juutaku Kenchiku" 鉄筋混凝土造の住宅建築 [Residential Buildings of Reinforced Concrete Structure], *Kenchiku-Kougeigyoshi* 2, no. 18 (August 1915): 627-629. See also chapter 3, 3.3.5.

*31) See also chapter 3, 3.3.5.b.

*32) About the plans of the offices of Mitsubishi, check Mitsubishi Jisho Sekkei Kozumen Kenkyuukai, Shinkenchiku-sha, eds., *Marunouchi Zushuu*.

*33) Seiichiro Chuujo 中條精一郎, "Dainanakai Bankoku Kenchiku Taikai Gaikyou 4" 第七回万国建築大会概況 4 [General Situation of the 7th International Congress of Architects], *Kenchikuzasshi* 建築雑誌 21, no. 262 (October 1908): 398-403. The original article is, Louis Cloquet, "L'emploi du Béton Armé en Architecture", in *Transactions of the 7th International Congress of Architects London 1906* (London: The Royal Institute of British Architects, 1908), 170-171. Relevant text as, "La logique réclame une solution plus radicale qui consisterait à solidariser non pas seulement les montants et les fermes, mais plutôt le mur et le toit. C'est ce que permet de réaliser l'emploi du béton armé. La paroi-mur peut même disparaître ou se confondre avec la voûte. L'ensemble présentera des surfaces à peu près continues au dehors et au dedans, avec suppression des encombrantes saillies internes des charpentes. Le dispositif nouveau revient donc à économiser les fermes, et à ne maintenir qu'une enveloppe qui se soutient toute seule. Or, l'expérience prouve que des constructions ainsi conçues ne coûtent pas plus cher que celles construites en grosse maçonnerie avec combles métalliques et qu'elles sont durables."

*34) Toshikata Sano 佐野利器, "Daikyukai Bankoku Kenchiku Taikai Sanretsu Houkoku" 第九回万国建築大会参列報告 [Attendance Report of the 9th International Congress of Architects], *Kenchikuzasshi* 建築雑誌 26, no. 303 (March 1912): 123-134.

*35) "Shinnen no Kakugo" 新年の覚悟 [Awareness in New Year], *Kenchikusekai* 建築世界 10, no. 1 (January 1916): 1-2. Original text as, "幸に今や欧洲の天地は混乱せり、文化は暫く彼等の頭脳よく遠ざからんとす。 若し夫れ今にして努力せば啻に彼等の優れる所を得るに止まらずして、進んで彼等の智識上に出てて遙に我後塵を拝せしむる亦難事に非らざるべし。...".

*36) Oto Endo 遠藤於菟, "Sengou no Kenchiku nitsui" 戦後の建築に就て [About Post-war Architecture], *Kenchikusekai* 12, no. 4 (April 1918): 3-5.

*37) Editing office of the history of Mitsubishi Estate, ed., *Marunouchi Hyakunen no ayumi: Mitsubishi Jisho Shashi*, 216-217.

*38) Joseph M, Siry, "The Architecture of Earthquake Resistance: Julius Kahn's Truscon Company and Frank Lloyd Wright's Imperial Hotel," *Journal of the Society of Architectural Historians* 67, no. 1, (March 2008): 89.

*39) J. P. Suzuki, "Future of the Japanese Steel Industry," *The Iron Trade Review* 63, no. 7 (August 15, 1918), 389-390.

*40) Projects of Chicago School style can be confirmed in Appendix D, e.g., code 1257, code 1258, code 1262, code 1529, code 1601, code 1662 of detailed projects, and code 821, code 1279 of simple projects.

*41) Takeyoshi Hori 堀勇良, *Nihon Kindai Kenchiku Jinmeisouran* 日本近代建築人名総覧 [Dictionary of Modern Japanese Architects] (Tokyo: Chuuokoronshinsha, 2022), 932.

*42) Editing office of the history of Mitsubishi Estate, ed., *Marunouchi Hyakunen no ayumi: Mitsubishi Jisho Shashi*, 188-230.

*43) Kikuji Ishimoto, *Kenchikufu*, I-VII.

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CHAPTER 6
CONCLUSION

6.1 Findings of previous chapters

This dissertation focuses on the architectural theories and practices of reinforced concrete in Japan during the period from the end of Russo-Japanese War to Great Kanto Earthquake, approximately from 1906 to 1923, which was featured with fervent discussions of architectural theories and incipient transitions in real projects, right before the germination of modernist architecture in Japan. Based on magazines, textbooks and specific first-hand materials in or around the specific era, this dissertation, consisting of 7 chapters, including introduction, 5 chapters discussing different aspects of reinforced concrete, and finally, the overall conclusion right here, tries to pursue the reality of reinforced concrete as well as a new explanation for the development of architecture.

Through the introduction, the background of the specific era, including the trajectory of history and the relevant facts concerning reinforced concrete, is generally grasped based on both previous studies and the magazines during the era, outlining the specialness of reinforced concrete then. Henceforth, with respect to the insufficiency in previous studies, the objectives of this dissertation are erected, which are supposed to be achieved through the inspections into the abundant and authentic materials through a well-structured process.

In chapter 1, this dissertation puts the sight on both the textbooks of reinforced concrete and the magazine articles conveying the knowledge of the new structure then, enhanced with one report of Great Kanto Earthquake, aiming to grasp the level of technical theories as well as the process of popularization of reinforced concrete throughout the specific era, and henceforth the structural form of reinforced concrete. Generally, the technical knowledge of reinforced concrete in 1906-1923 had reached a relatively high level featured with basic calculations close to today's methods regardless of the low strength of concrete, whereas the mechanical model was still simply supported beam with limited consideration of rigid joint. Meanwhile, the construction manners developed quickly out of the scarcity of experiment. In the mid-1910s, the popularization of knowledge of reinforced concrete reached a peak, within which the influences from the US and UK are notable, and the advanced theories of Keiji Goto, Mikishi Abe, and Tachu Naito stand out. As to the structural form of reinforced concrete, frame structure, or so-called "curtain wall" system, was confirmed as the mainstream with the minority of flat slab system. The arrangement of steel bars definitely evolved from early Hennebique system to more modern manners, albeit the popularity of Kahn System in the late 1910s. However, the rigidity of reinforced concrete frame then was limited, for which the similarity to wooden frame mentioned by other scholars is estimated to be a universal phenomenon.

In chapter 2, to figure out the facts of the other aspect of theories, i.e., the sphere of design, this dissertation starts from a special case, the undergraduate theses of Imperial University of Tokyo in 1915 and 1916, which were assigned with the topic of "Reinforced Concrete and New Style". Primarily, it is confirmed that Toshikata Sano, the professor who came back from Europe in 1914, directly influenced the setting of the topic, and the contents of the theses have a close relationship with one article of Keiji Goto in 1914. From the theses, the conceptions can be classified into five aspects, i.e., of simplicity, decoration, of freedom, structural form and prototype, based on the affinities of the students' ideas. Generally,

structural form is the most discussed realm regardless of the considerable focus on decoration. Amidst the conceptions on structural form, elastic arch is the most shared conception which is closely bonded to rigid frame and in contrast with ordinary frame structure. For decoration, led by the awareness of the lack of beauty in reinforced concrete, multiple manners are also proposed. In terms of the impressionistic conceptions, i.e., of simplicity, the simple / flat and light / thin images of reinforced concrete are the main voices among the students. Besides, the pursuit of freedom is also observed across the theses, covering the conceptions like free shape, free plan and free aperture. Nonetheless, the discussions on prototypes are multifaceted and less affirmative. Globally, elastic arch / rigid frame as the structural form surpassing conventional frame structure and dealing of surface for the sake of the lack of beauty in reinforced concrete are the two strong proclivities integrated under the general thoughts of rational structure and truth of structure. In particular, elastic arch is confirmed as a concept introduced by Keiji Goto from German, which consists of both pictorial and mechanical characters and shares similar features with the structural theories of Toshikata Sano.

In chapter 3, following the special case of undergraduate theses, the work is expanded to the inspection into the magazine articles discussing the design of reinforced concrete buildings from 1906 to 1923. Firstly, through the investigation into the general status of articles and the authors, it can be discovered that the discussions were participated by individuals and parties in a wide spectrum, and largely influenced by the architects coming back from overseas on the brinks of World War I. Subsequently, the ideas of articles are managed to be classified in five groups, i.e., image, freedom, structural form, architectural treatment and prototype, which are based on the natures of the ideas as well as the results obtained from the investigation into the undergraduate theses. Amplified from the classification, of simplicity in the undergraduate theses, the group of image contains impressions in three directions, i.e., simple, light / thin, and large spatial dimension. The group of freedom, albeit containing various conceptions like free shape, free plan and free aperture, shows the proclivity of eclecticism. In the group of structural form, the conceptions like elastic arch / rigid frame, as a single entity, and frame structure are similar with the graduation theses, while the proposal of concrete block adds variety to the group. The conceptions in the group of decoration are much more versatile than the theses, as numerous conceptions about and other than surface finishing show up. The group of prototype also contains different cases from Japan, Europe and the US, amidst which the influence of the US is notable. Particularly, the coexisting concerns on structural form and architectural treatment are conspicuous, whereas the detachment from architectural treatment and the emergence of freedom, as the motivation in new structural forms of as a single entity and rigid frame / elastic arch, can also be identified. The images of simplicity and large space mainly come from the new form of as a single entity while the light / thin image aligns with conventional frame structure, showing the different forces and the contradiction within the cognition of the structural forms of reinforced concrete. Nevertheless, most of the conceptions, especially about the new structural forms, lack the support of actual instances, and are limited by the traditional values like lack of beauty in reinforced concrete and eclecticism.

In chapter 4, to examine the tribute of reinforced concrete in real practices, the sight is moved onto

the architectural projects of reinforced concrete. Firstly, the projects built in Japan with plates and information of structure in the magazines are collected. For the purpose of comparison, not only reinforced concrete, but also the projects in other structural forms are collected. Subsequently, the structural forms of projects are redefined based on the information from both the magazines and two reports of Great Kanto Earthquake. Meanwhile, the exterior appearances are broken down into visual elements of façade in four hierarchical dimensions, i.e., façade pattern, element of wall, window, and door, and the sum of the types of elements in each dimension is defined as the aggregation level of elements for the dimension. By utilizing statistical tools, the relations between structural forms and exterior appearance are thoroughly tested, and a synthetic inspection is conducted based on the results of tests, also with the actual projects thoroughly reviewed and the theories understood in previous chapters integrated. Consequently, the simplification of historical styles is confirmed across different structural forms, for which the influence of reinforced concrete was certainly insufficient. The divergence between horizontal and vertical visual elements demonstrates the technological shift of structure, whereas the return to historical styles can also be found in reinforced concrete. Certain projects transcending the era were unexpectedly found to be built in earlier structural forms, i.e., masonry and wooden frame, also showing the indecisiveness of reinforced concrete. Meanwhile, reinforced concrete definitely shows similar features with wooden and steel frame in different aspects. Especially, the similarity between reinforced concrete and wooden frame in terms of the aggregation levels in four dimensions and certain elements illustrates the unique trajectory in Japan, suggesting the influence from wooden frame and derivatively pointing to wire mesh reinforced concrete in the era.

In chapter 5, corresponding to the objectives of this dissertation, different aspects of reinforced concrete are synthesized, through which certain additional details of history are also integrated for amplifying the reliability of discussion. Firstly, within the theories, the irresolvable contradiction between technical and design theories of reinforced concrete is revealed, no matter of the asynchrony or the distinct conceptions of structural forms between the two sides, i.e., the mechanical model was still immature as simply supported beam with limited consideration of rigid joint, while the design conceptions had reached the cognition of rigid frame and the ideal of elastic arch. The contradictory status can also be found within the design theories, which lasted until the relatively chaotic period around the beginning of the 1920s. Secondly, between the techniques and the architectural practice of reinforced concrete, it can be confirmed that the practice was basically consistent with the conservative mechanical model. Also, throughout the decade of the 1910s, both the similarities with wooden and steel frames shown in data analyses have the technical basis in real practices, as the former points to the widely utilized wooden frame wrapped with wire mesh reinforced concrete and the latter owes to the rigid outer and flexible inner system adopted in steel frame structure in earlier years. However, the simplification of exterior architectural appearance cannot be explained from the aspect of technique, as reinforced concrete itself in the era, even if it could be the catalyst, was not sufficient for the simplification of historical styles, and specific buildings of wooden frame or masonry manner were definitely ahead of reinforced concrete. Whatsoever, it can be asserted that, technically, reinforced concrete then in Japan was not an isolated

structure, which had close relations with wooden and steel frames other than the widely accepted paths of Hennebique and Kahn System. Thirdly, between the design theories and practices, a lot of junctures can also be discovered, even including the pictorial parabola shape for elastic arch. Although the extent of realization is limited such as for light / thin and as a single entity, and certain contradictions still existed, it cannot be denied that the practices basically followed the design conceptions, i.e., the theories did not surpass the practices too much, whereas the abstract architectural theories, including evolutionism, sham structure and architecture as non-art, seemingly avant-garde, were compatible with both new structural forms and conventional manners of decoration. Particularly, the relations between the design theories and practices also illustrate the fact that the imagination of structure, i.e., the impressionistic and pictorial aspects, can lead mechanics or derivatively, rationality, in real practices of reinforced concrete. Furthermore, by putting the facts of reinforced concrete back into historical context, it can be discovered that Japan was closely linked to the Occident, featured with the important conceptions like as a single entity and elastic arch originally from Europe. Also, the nationalism backing the topic of "Reinforced Concrete and New Style" around the mid-1910s and the return of historical manners in the second half of the decade illustrate the shift caused by World War I, i.e., the turn to the US. In this sense, the emergence of Bunriha should be understood as a rebellion against the return to eclecticism rather than the historical styles inherited from Meiji Period, and the activities of younger generation like Kikuji Ishimoto on modernist architecture was merely a new chapter of the international connection after World War I rather than a mutation. Nevertheless, regarding the convergence of the design conceptions, especially the multifaceted images, the turn to the US was more of a disturbance than the destined Japanese taste.

6.2 Results and significance of this dissertation

6.2.1 The important results

Primarily, for the technical theories of reinforced concrete, this dissertation systematically reviews the knowledge in textbooks rather than partially in certain disciplines, through which multiple aspects of the knowledge of reinforced concrete are integrally examined and the simply supported beam as the basic mechanical model is revealed, in contrast with the rahmen system discussed in many general narratives. Besides, this dissertation also elucidates the universal technical basis for the similarity between reinforced concrete and wooden frame buildings which is independently discussed in specific projects in the previous studies.

About the design theories, most importantly, this dissertation focuses on the tangible ideas rather than abstract architectural theories discussed in previous studies. The inspections are also based on both the manuscripts of undergraduate theses from Imperial University of Tokyo and large amount magazine articles rather than certain representative figures. As the result, not only the design conceptions are comprehensively perceived, but also the connotation of the most prominent conception, elastic arch, is comprehensively understood.

As to the practices of reinforced concrete, specifically, in the aspect of exterior architectural appearance, this dissertation examined hundreds of projects in which the tribute of reinforced concrete is objectively and clearly revealed with new methods of statistical analysis rather than only the epoch-making projects in previous studies. Basically, the clear judgment of reinforced concrete as insufficient cause of the simplification of historical styles clears the ambiguity in certain previous studies. Also, the correlation of reinforced concrete with wooden and steel frames instead of a close-up of reinforced concrete can largely enhance the cognition in previous studies. Derivatively, the tribute of wire mesh reinforced concrete is also reevaluated in this dissertation, through which the wide utilization of wire mesh reinforced concrete as one technical basis of reinforced concrete is confirmed and even the trajectory of Keiji Goto's works is reconstructed, whereas in many previous studies, the tribute of wire mesh reinforced concrete is underestimated or negatively evaluated.

Given the aspects of reinforced concrete unveiled above, this dissertation also gives insight into the interconnections between different aspects, whereas relevant works are rarely implemented in previous studies, which usually take efforts in certain aspect of reinforced concrete separately. In this dissertation, the internal contradiction within the theories of reinforced concrete, i.e., between the sides of techniques and design, both chronologically and inherently, and the contradictions between specific design conceptions as well, are clearly revealed. Also, the relations between practices and theories of reinforced concrete, both of techniques and design, are examined, from which the fact that the practices basically followed the tangible design conceptions is confirmed, and the technique basis of the connections with wooden and steel frames are identified, which definitely consolidate the findings in previous chapters. Particularly, the realization of elastic arch is also broadly investigated, which offers a new explanation for certain avant-garde projects. In addition, this dissertation offers in-depth exploration of reinforced concrete by plotting the facts of reinforced concrete back into historical context with a global vision, which, specifically, verifies the continuous connection between Japan and the Occident and reevaluates the influence of World War I. Particularly, the trajectory of history is compared with the design conceptions of reinforced concrete, indicating the internal divergence between the turn to the US and the converged ideal of Japanese architecture. All these points help build a synthetic understanding of reinforced concrete which usually falls short in the general narratives of previous studies.

6.2.2 Significance of this dissertation

At first, this dissertation chooses abundant and continuous materials to build the discussion. Rather than weaving the milestones into historical narrative, the materials covered in this study help reveal the continuity of history and the trends based on the fundamental and authentic happenings, which can surely be more convincing and reliable than ordinary story telling. Secondly, about the contents, as an enhancement for the previous narratives of architectural history, this dissertation reveals specific aspects which are rarely discussed or to some extent, ignored in previous studies, such as the mechanical model utilized in structural calculation, tangible design ideas, the trends and features of exterior architectural appearance in detail, and the correlations between reinforced concrete and other structural forms. All these aspects can be the supplement for understanding the reinforced concrete in the specific era, or even

the architecture in the following years. Thirdly, in terms of the methods in this dissertation, this dissertation does not choose a traditional way to narrate the history. With the vision of semantics which focuses on the tangible ideas of architects and the statistical tools for revealing the hidden features and trends, as well as the process of synthesis, the results challenging and enhancing the previous studies have shown the effectiveness of the methodology in this dissertation for gaining substantial understanding of the tribute of reinforced concrete and the historical context, which can certainly be implemented in the studies on other structural forms in different areas and eras. More importantly, instead of the relatively philosophical meditation in certain previous studies, the methods in this dissertation embracing the new technologies like database and statistical analysis, also combined with synthetic meditation, are no doubt the trends of today's society. Furthermore, this dissertation can also be a criticism on the tectonic studies on architecture, which, rather than adopting the tectonics as merely an angle of interpretation, offers an insight into the role of structure itself, i.e., in this study, the cognition (or even the imagination) of structure matters, but the structure itself is not sufficient for architecture.

6.3 Limitations and future researches

6.3.1 The limitations

For the sake of the limitation of time, this dissertation could not be a perfect work comprehensively covering all the aspects of reinforced concrete in the specific era. It has to be admitted that there are still a lot of shortages in this dissertation which, however, cannot be all counted. Here, two major limitations are reviewed, which can not only help shape the boundaries of this work, but also provide a ground for rethinking the value of this dissertation and future directions.

i. Limited field research

Obviously, this study is not a work based on abundant field researches like what Takeyoshi Hori and other scholars did. Although plenty of authentic literature is collected, which is believed to be reliable for grasping the facts of history to a large extent, field research is always a way to deeply understand any single building in detail, especially considering that the editors of magazines then or the researchers investigating the buildings after Great Kanto Earthquake could also make mistakes. Fortunately, numerous precious field researches have indeed been conducted by some scholars, from which this dissertation substantially benefits.

ii. Limited study on floor plans

As an important part of today's architecture, the study on floor plan is, for most of the time, the kernel to decipher the development of architecture. However, due to the accessible materials, i.e., the abundant photos of architecture which present the persisting eclecticism, as well as the proclivities shown amidst the design conceptions, this study prioritizes the investigation in the aspect directly showing the change of architecture, i.e., the exterior appearance. Derivatively, the relation between floor plan and exterior appearance is also limitedly discussed in this work, from which more discoveries can certainly be expected.

6.3.2 Future researches

i. Corresponding to the shortages

Considering the shortages exemplified above, one of the future directions can definitely be the field researches of existing projects and more investigations into the floor plans of specific projects, for which this dissertation can serve as an index or a reference for inspecting the projects integrally. Either the consistency or the differences between actual projects and the discoveries in this dissertation can bring knowledge to the reinforced concrete and architectural history in the specific era, and the investigations into floor plans can no doubt provide a new vision for examining the results of this dissertation.

ii. Connecting to the 1920s and beyond

With the results of this research, a firm foundation is definitely built for the investigation into the next decade or even more distant years in Japan. Especially, the conceptions of elastic arch and the works of Bunriha members indicate further interpretations for the early works of modernist architecture in Japan. The contrast between the modernist architecture in the 1920s and the persisting eclecticism in the 1910s is indeed distinctive. Nonetheless, the possible correlations are also an attractive field for study, and the comparison between the 1910s and the following years can certainly examine the continuity of history, or even shed light on better understanding of architecture in Japan.

iii. Beyond the specific period in Japan

Although this dissertation focuses on the specific era from the end of Russo-Japanese War to Great Kanto Earthquake in Japan, to utilized the methods of this study into other time and space is also the ambition. Compared with the conventional narratives of history, the approach of this dissertation can definitely provide new possibilities for various studies of architecture, especially in the field of tectonics, even if the results themselves could eventually turn out to be a mere criticism for the cognition on the tribute of structure in architectural practice. In addition, with the development of computer technologies or even artificial intelligence, the methods in this dissertation are undoubtedly expandable, which can certainly get better support in the future.

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APPENDICES

Appendix A

Educational articles of reinforced concrete selected

For abbreviations of magazines, KCZS, KCSK, KC, and KCGH stand for *Kenchikuzasshi*, *Kenchikusekai*, *Kenchiku*, and *Kenchikugaho* respectively.

Magazine	Title	Author	yyyy	mm	Serial	Origin	Class (lv.1)	Content (lv.2)	Note
KCZS	コンクリート構造法の識別に對する建築者の責務に就て		1906	1		US	code	attention for architects	米国建築雑誌1549号大蔵省臨時建築部員訳妻木頼黄寄贈
KCZS	鉄骨構造建築学	日比忠彦	1906	8	6	JP	basic intro	bar system	
KCZS	「セメント」一樽よりの「コンクリート」の出来高	藤井光蔵	1906	4		JP	mixture of concrete	mixture of concrete	affiliation speculated: 小野田セメント
KCZS	米国加州震災談	佐野利器	1906	11	2	US	report	anti-seismic	
KCZS	〃	〃	1907	1	3	US	report	anti-seismic	
KCZS	野口工学士の震災談	野口孫市	1906	10		US	report	anti-seismic, fire-proof	second research in SF
KCZS	鐵筋混凝土家屋の崩壊(黒き眼鏡と白き眼鏡)	佐野利器	1907	2		US	report	collapse of RC	report, bldg of Long Beach, California||lackness of natural coherence between iron bar and concrete, burden far over the theoretical result of column
KCZS	鉄筋コンクリート	佐野利器	1907	10		JP	calculation	algorithm of beam	Iron bar of floor hooked on I shape steel girder\\calculation of standard section, rectangular
KCZS	米国加州震災談	中村達太郎	1906	12		US	report	anti-seismic	
KCZSKG	桑港に於けるコンクリート建築構造	吉武長一	1908	4		US	basic intro	algorithm, mixture of concrete, construction method	
KCZS	セメント及火山灰併用膠泥試驗成績報告(一)	保岡勝也	1908	5	1	JP	experiment	mixture and strength	
KCZS	〃（二）	保岡勝也	1908	6	2	JP	experiment	curing	
KCZS	火山灰試驗報告	佐野利器	1908	10		JP	experiment	mixture and strength	
KCZS	鋼筋コンクリート床計算上の新しき簡式及び表	佐野利器	1908	7		JP	calculation	algorithm of beam	HTS, pp.43||revision of Edwin Thacher and Rankine's formulas with constant
KCZS	鐵筋混凝土並に其應用	三橋四郎	1908	12		JP	basic intro	character of RC, bar system, construction method	
KCZS	鉄筋コンクリートに関する英米著書畧評	佐野利器	1909	3		US, UK	publication intro	overseas publications	
KCZS	鉄筋混凝土に就いての注意	木村調吉	1910	1		UK	code	attention for architects	report of RIBA, 1907.5.27
KCZS	鐵網コンクリートに就て	三橋四郎	1911	5		JP	product intro	steel-net concrete	
KCZS	セメント或はコンクリート建造物にペイント塗を行ふことにつきて	疋田桂太郎	1911	6		US	finishing	paint	
KCZS	熱に對するコンクリートの性質	YU生	1911	7		US	experiment	thermal character of concrete	translation from the Builder, thermal experiment in Massachusetts
KCZS	コンクリートの新工事	薩塔	1911	7		FR	work intro	statue of RC	statue of RC

KCZS	寒天に行ふコンクリート工事の一法	KT	1911	12		UK	construction method	construction method	translation from the Builder
KCZS	鋼筋混凝土スラップの算式	YU生	1911	12		UK	calculation	algorithm of slab	translation from the Building News, mushroom floor, mainly about max moment
KCZS	鐵筋混凝土條例	YU生	1912	3	1	US	code	standard construction procedure and formulae	ratio of elastic modulus=15
KCZS	紐育市鐵筋混凝土條例(承前完結)	YU生	1912	4	2	US	code	standard construction procedure and stress	
KCZS	鐵筋コンクリートの金庫及安全庫	鳳嶺	1912	4		US	basic intro	fire-proof	oxygen fire can destroy steel treasury
KCZS	鉄筋コンクリートの新著	TN生	1912	4		US	publication intro	overseas publications	Reinforced Concrete Construction, Henry Adams, E R Matthews
KCZS	倫敦市鐵筋混凝土建築取締規程草案	なし	1912	6		UK	code	standard construction procedure and formulae	
KCZS	A Ferro-Concrete Warehouse at Kobe_(I)	白石直治	1912	8	1	JP	work intro	work intro	warehouse in Kobe
KCZS	〃(II)	白石直治	1912	10	2	JP	work intro	construction method, calculation	
KCZS	鐵筋混凝土に關する英國王立建築學會第二回報告	YU生	1912	9	1	UK	code	symbols, construction method	
KCZS	〃	YU生	1912	10	2	UK	code	construction method	
KCZS	英國鐵筋混凝土聯合委員會第二回報告(二)	内田祥三	1913	1	3	UK	code	construction method, principle of calculation	
KCZS	混凝土工事に關する注意事項	K.T.	1912	11		US	construction method	construction method	Building News, by Rudolph H. Maxwell
KCZS	鐵筋混凝土床標準仕様書	なし	1912	12		US	construction method	construction method	Y O生訳米国セメント需要者協会制定
KCZS	建築物に使用する鋼筋コンクリート構造の平床(Slab)に就て	石井敬吉	1913	1	1	JP	calculation	algorithm of slab	Illinois mentioned
KCZS	〃	石井敬吉	1913	2	2	JP	calculation	algorithm of slab	
KCZS	ムアシユルーム床に就て	安井武雄	1913	2	1	US	calculation	algorithm of slab	"mushroom", girderless floor
KCZS	〃	安井武雄	1913	4	2	US	calculation	algorithm of slab	
KCZS	〃	安井武雄	1913	6	3	US	calculation	algorithm of slab	
KCZS	鐵筋混凝土の圓體	中村達太郎	1913	4	1	JP	calculation	algorithm of cylinder	
KCZS	〃	中村達太郎	1913	5	2	JP	calculation	algorithm of cylinder	正誤表1913年6月掲載
KCZS	麥槽 Bins を鋼筋コンクリートにて築造する計算の一例	石井敬吉	1913	5		JP	calculation	algorithm of bin	
KCZS	新論新説		1913	8		multiple	publication intro	publication intro	1913, 8 --1916, 12; 1917, 2--1917, 8; 1917, 10; 1918, 3--4; 1918, 7; 1918, 9; 1918, 12; 1919, 1--2||constant introduction of Concrete and Constructional Engineering
KCZS	〃		1913	10		multiple	publication intro	publication intro	
KCZS	〃		1913	11		multiple	publication intro	publication intro	
KCZS	〃		1913	12		multiple	publication intro	publication intro	
KCZS	〃		1914	1		multiple	publication intro	publication intro	August Perret
KCZS	〃		1914	2		multiple	publication intro	publication intro	

KCZS	〃		1914	5		multi-ple	publication intro	publication intro	
KCZS	〃		1914	6		multi-ple	publication intro	publication intro	
KCZS	〃		1914	7		multi-ple	publication intro	publication intro	The Usher Hall of Music Edinburgh (possible connection with Goto's Tokyo Ward Hall)
KCZS	〃		1914	8		multi-ple	publication intro	publication intro	
KCZS	〃		1914	10		multi-ple	publication intro	publication intro	
KCZS	〃		1914	11		multi-ple	publication intro	publication intro	
KCZS	〃		1914	12		multi-ple	publication intro	publication intro	
KCZS	〃		1915	2		multi-ple	publication intro	publication intro	
KCZS	〃		1915	3		multi-ple	publication intro	publication intro	beginning of domestic magazines
KCZS	〃		1915	4		multi-ple	publication intro	publication intro	distortion of column influenced by bend of floor
KCZS	〃		1915	5		multi-ple	publication intro	publication intro	
KCZS	〃		1915	6		multi-ple	publication intro	publication intro	
KCZS	〃		1915	7		multi-ple	publication intro	publication intro	Concrete-cement Age
KCZS	〃		1915	8		multi-ple	publication intro	publication intro	
KCZS	〃		1915	9		multi-ple	publication intro	publication intro	
KCZS	〃		1915	10		multi-ple	publication intro	publication intro	
KCZS	〃		1915	11		multi-ple	publication intro	publication intro	
KCZS	〃		1915	12		multi-ple	publication intro	publication intro	
KCZS	〃		1916	1		multi-ple	publication intro	publication intro	
KCZS	〃		1916	2		multi-ple	publication intro	publication intro	
KCZS	〃		1916	3		multi-ple	publication intro	publication intro	
KCZS	〃		1916	4		multi-ple	publication intro	publication intro	
KCZS	〃		1916	5		multi-ple	publication intro	publication intro	
KCZS	〃		1916	6		multi-ple	publication intro	publication intro	
KCZS	〃		1916	7		multi-ple	publication intro	publication intro	Louis Sullivan
KCZS	〃		1916	8		multi-ple	publication intro	publication intro	
KCZS	〃		1916	9		multi-ple	publication intro	publication intro	
KCZS	〃		1916	10		multi-ple	publication intro	publication intro	
KCZS	〃		1916	11		multi-ple	publication intro	publication intro	
KCZS	〃		1916	12		multi-ple	publication intro	publication intro	
KCZS	〃		1917	2		multi-ple	publication intro	publication intro	
KCZS	〃		1917	3		multi-ple	publication intro	publication intro	
KCZS	〃		1917	4		multi-ple	publication intro	publication intro	
KCZS	〃		1917	5		multi-ple	publication intro	publication intro	
KCZS	〃		1917	6		multi-ple	publication intro	publication intro	
KCZS	〃		1917	7		multi-ple	publication intro	publication intro	

KCZS	〃		1917	8		multi-ple	publication intro	publication intro	
KCZS	〃		1917	10		multi-ple	publication intro	publication intro	
KCZS	〃		1918	3		multi-ple	publication intro	publication intro	
KCZS	〃		1918	4		multi-ple	publication intro	publication intro	
KCZS	〃		1918	7		multi-ple	publication intro	publication intro	
KCZS	〃		1918	9		multi-ple	publication intro	publication intro	
KCZS	〃		1918	12		multi-ple	publication intro	publication intro	
KCZS	〃		1919	1		multi-ple	publication intro	publication intro	
KCZS	〃		1919	2		multi-ple	publication intro	publication intro	
KCZS	コンクリートの壁體に就て	土居松市	1914	6	1	JP	basic intro	character of RC	
KCZS	〃	土居松市	1914	8	2	JP	basic intro	RC system, construction method, finishing	
KCZS	〃	土居松市	1914	9	3	JP	basic intro	construction method	
KCZS	鐵筋混凝土の簡單なる解き方	後藤慶二	1914	8	1	JP	calculation	algorithm of beam	
KCZS	〃	後藤慶二	1914	9	2	JP	calculation	algorithm of beam, algorithm of column	
KCZS	〃	後藤慶二	1915	2	3	JP	calculation	RC frame	RC and style discussed: rigid joint
KCZS	鐵筋コンクリート床版及梁計算圖表	内藤多仲	1915	4		JP	calculation	algorithm of beam	
KCZS	家屋耐震構造要梗	佐野利器	1915	5	1	JP	anti-seismic	anti-seismic	RC mentioned as anti-seismic structure in general only
KCZS	〃	佐野利器	1915	8	3	JP	anti-seismic	building system	
KCZS	〃	佐野利器	1916	5	4	JP	anti-seismic	anti-seismic	refering to colonnade of Golden Gate Park again
KCZS	〃	佐野利器	1916	9	6	JP	anti-seismic	anti-seismic	RC mentioned as anti-seismic structure in general only (repetition)
KCZS	〃	佐野利器	1916	10	7	JP	anti-seismic	anti-seismic	general discussion among different architects
KCZS	鐵筋混凝土梁計算圖表	内田祥三	1915	8	1	JP	calculation	algorithm of beam	
KCZS	〃	内田祥三	1915	9	2	JP	calculation	algorithm of beam	
KCZS	〃	内田祥三	1915	10	3	JP	calculation	algorithm of beam	
KCZS	〃	内田祥三	1916	1	4	JP	calculation	algorithm of beam	
KCZS	〃 v	内田祥三	1916	4	5	JP	calculation	algorithm of beam	
KCZS	鐵筋コンクリートに關する譯語並びに記號私案	佐野利器, 内田祥三, 後藤慶二, 内藤多仲, 神木健介	1915	11		JP	terminology	terminology, symbol	
KCZS	評論 : 鐵筋混凝土に關する譯語に就て	中村達太郎	1916	2		JP	terminology	terminology	
KCZS	ポートランド、セメント試驗器の器差微小限度	なし	1916	2		JP	experiment	method of experiment	農商務省発行
KCZS	論説 : 鐵筋コンクリート構造汎論	佐野利器	1916	6		JP	basic intro	RC frame	大会|| rigid frame
KCZS	鐵筋コンクリート煙突構築用螺旋状假枠	横河民輔	1916	6		JP	product intro	form work	patent of Yokogawa
KCZS	論説 : 鐵筋コンクリート梁材における繋筋の太さ及其配置圖表	土居松市	1916	8		JP	calculation	algorithm of stirrup	hooped stirrup

KCZS	演説 : 實驗上より見たる鐵筋混凝土建築各部の設計	阿部美樹志	1916	10	1	US	experiment	bar system	data mainly obtained from US
KCZS	〃	阿部美樹志	1916	11	2	US	experiment	strength of beam, strength of column, strength of floor	mushroom floor
KCZS	〃	阿部美樹志	1916	12	3	JP	experiment	RC frame	experiment of the author
KCZS	寒中のコンクリート工事	内藤多仲	1917	1		US	construction method	construction method	translation from Universal Cement Corp., Chicago
KCZS	鋼筋コンクリート烟突の計算新公式の研究及之に聯關する圖上計算の巧風	石井敬吉	1917	4	1	JP	calculation	algorithm of cylinder	
KCZS	〃	石井敬吉	1917	5	2	JP	calculation	algorithm of cylinder	
KCZS	〃	石井敬吉	1917	7	3	JP	calculation	algorithm of cylinder	
KCZS	コンクリート強度試驗報告	土居松市/阪口芳三郎	1917	4	1	JP	experiment	strength of concrete	Sample offered by Mitsubishi Estate, Kotaro Sakurai
KCZS	コンクリート強度試驗第二回報告(建築材料聯合調査會講演)	土居松市	1921	7	2	JP	experiment	strength of concrete	Sample offered by Mitsubishi Estate, Kotaro Sakurai||concrete with less water has better performance.
KCZS	鐵筋コンクリート構造の龜裂に就て : 鐵筋コンクリート龜裂の原因に就て	今村卯一郎	1917	6		JP	problem of RC	crack	大会
KCZS	鐵筋コンクリート構造の龜裂に就て : 鐵筋コンクリートの膨張と収縮	小林政一	1917	6		JP	problem of RC	crack	大会
KCZS	鐵筋コンクリート構造の龜裂に就て : 鐵筋コンクリートの龜裂に就て	藤村朗	1917	6		JP	problem of RC	crack	大会
KCZS	鐵筋コンクリート構造の龜裂に就て : 本演題に對する實驗的報告	新家孝正	1917	6		JP	problem of RC	crack	大会
KCZS	鐵筋コンクリート構造の龜裂に就て : 荷重によりて生ずるコンクリートの龜裂	土居松市	1917	6		JP	problem of RC	crack	大会， crack of cube sample rather than real project
KCZS	鐵筋コンクリート構造の龜裂に就て : 鐵筋コンクリートの収縮による罅裂に關する所感一二	内田祥三	1917	6		JP	problem of RC	crack	大会
KCZS	鐵筋コンクリート構造の龜裂に就て : 龜裂に就て	内藤多仲/吉田享二	1917	6		JP	problem of RC	crack	大会
KCZS	鐵筋コンクリート構造の龜裂に就て : 材料より見たる龜裂	吉田享二	1917	6		JP	problem of RC	crack	大会
KCZS	鐵筋コンクリート構造の龜裂に就て : 鐵筋「コンクリート」構造法の缺點に就て	波江悌夫	1917	6		JP	problem of RC	crack	大会
KCZS	鐵筋コンクリート構造の龜裂に就て : 龜裂に關する私見	片岡安	1917	6		JP	problem of RC	crack	大会
KCZS	鐵筋コンクリート構造の龜裂に就て : 閉會の辭	佐野利器	1917	6		JP	problem of RC	crack	大会

KCZS	コンクリート及び鐵筋コンクリート梁の終極強の算定	後藤慶二	1917	11	1	JP	calculation	algorithm of ultimate strength	
KCZS	〃	後藤慶二	1917	12	2	JP	calculation	algorithm of ultimate strength	
KCZS	鐵筋コンクリート梁の撓曲 : 附鐵筋コンクリート固定梁の曲能率	後藤慶二	1918	12		JP	calculation	algorithm of deflection	正誤表1919年1月掲載
KCZS	壓力と曲能率とを受くる鐵筋コンクリート材	内藤多仲	1920	2		JP	calculation	algorithm of eccentric load	
KCZS	專賣特許コンクリト壁體築造用型枠	なし	1920	7		JP	product intro	form work	山口孝吉発明; patents in US and Canada
KCZS	鐵筋コンクリート造煙突に於ける鐵筋の斷面積及びコンクリート輪壁の厚さを求むることに就て	村井武	1921	8		JP	calculation	algorithm of cylinder	
KCZS	曲能率と壓力を受ける鐵筋コンクリート梁の圖表	丸山茂樹	1921	9		JP	calculation	algorithm of beam	simple calculation with graph
KCZS	曲能率を受くる圓形鐵筋コンクリート柱及煙突の解法竝に圖表	内藤多仲, 河合清	1922	6		JP	calculation	algorithm of cylinder	
KCZS	壁體の耐震價値	内藤多仲	1922	7		JP	anti-seismic	anti-seismic	RC mentioned as fire-proof structure
KCZS	大正十年十月十日麻布區箪笥町所在コンクリート擁壁の崩壞について報告	村井武	1922	8		JP	report	collapse of RC	
KCZS	架構建築耐震構造論	内藤多仲	1922	10	1	JP	calculation	algorithm of deflection, algorithm of frame	
KCZS	〃	内藤多仲	1922	11	2	JP	calculation	algorithm of horizontal load	
KCZS	〃	内藤多仲	1922	12	3	JP	calculation	algorithm of horizontal load	
KCZS	〃	内藤多仲	1923	1	4	JP	calculation	algorithm of anti-seismic, RC system	
KCZS	〃	内藤多仲	1923	2	5	JP	calculation	algorithm of anti-seismic, work intro	
KCZS	〃	内藤多仲	1923	3	6	JP	calculation	algorithm of anti-seismic, work intro	
KCZS	コンクリート用ペイントに就て	大島重義	1923	7		US	finishing	paint	necessity of getting paint on the surface of concrete
KCZS	石灰及セメント防水劑に就て	矢中龍次郎	1923	8		JP	mixture of concrete	character of cement	
KCSK	建築材料ノ解　セメント（一）	金城不二夫	1908	1	1	JP	mixture of concrete	mixture of concrete	
KCSK	築設材料の解ボルトランドセメント試驗方法（続二）	金城不二夫	1908	2	2	JP	mixture of concrete	ingredient of cement	
KCSK	ボルトランドセメント試驗方法（其の三）	金城不二夫	1908	3	3	JP	mixture of concrete	mixture of concrete	
KCSK	セメント	金城不二夫	1908	7	1	JP	mixture of concrete	mixture of concrete	
KCSK	〃	金城不二夫	1908	8	2	JP	mixture of concrete	mixture of concrete	
KCSK	〃	金城不二夫	1908	9	3	JP	mixture of concrete	code of experiment	, 陸軍建築部が火山灰コンクリート適用
KCSK	鉄筋混凝土構造 (Amoured or Reinforecd concrep)	三橋四郎	1908	6		JP	basic intro	character of RC	
KCSK	鉄筋混凝土の特質	三橋四郎	1908	7	1	JP	basic intro	character of RC	
KCSK	〃	三橋四郎	1908	8	2	JP	basic intro	character of RC	
KCSK	コンクリト氷結に就て	なし	1909	1		JP	Q&A	construction method	Q&A

KCSK	磐城セメント	なし	1909	4		JP	experiment	product intro, experiment	
KCSK	耐火建築に就て	三橋四郎	1909	7	1	JP	fire-proof	fire-proof	Introdution of steel and RC at the end of article
KCSK	〃	三橋四郎	1909	8	2	JP	fire-proof	fire-proof	Classification of fire-proof materials
KCSK	〃	三橋四郎	1909	9	3	JP	fire-proof	fire-proof, bar system	Construction manners of fire-proof structure, fire-proof facilities (concrete floor included)
KCSK	ポートランドセメントの試験度	なし	1909	7	1	JP	Q&A	method of experiment	Q&A
KCSK	〃	なし	1909	8	2	JP	Q&A	method of experiment	Q&A
KCSK	鉄筋コンクリート構造	後藤正雄	1909	10	1	JP	basic intro	character of RC	後藤　不倒
KCSK	〃	後藤正雄	1909	11	2	JP	basic intro	character of RC, work intro	M G
KCSK	〃	後藤正雄	1909	12	3	JP	basic intro	ingredient of concrete	渋沢倉庫
KCSK	〃	後藤正雄	1910	1	4	JP	basic intro	general intro	mixture of cement
KCSK	〃	後藤正雄	1910	2	5	JP	basic intro	strength of concrete	strength of different cement
KCSK	〃	後藤正雄	1910	3	6	JP	basic intro	strength of concrete	strength of different cement
KCSK	〃	後藤正雄	1910	4	7	JP	basic intro	bar system	Hennebique
KCSK	〃	後藤正雄	1910	5	8_1	JP	basic intro	algorithm of column	
KCSK	〃	後藤正雄	1910	6	8_2	JP	basic intro	algorithm of column	
KCSK	〃	後藤正雄	1910	7	9	JP	basic intro	algorithm of beam	
KCSK	〃	後藤正雄	1910	8	10	JP	basic intro	algorithm of floor	
KCSK	〃	後藤正雄	1910	9	11	JP	basic intro	bar system	Hennebique beam
KCSK	〃	後藤正雄	1910	11	12	JP	basic intro	bar system	
KCSK	〃	後藤正雄	1910	12	13	JP	basic intro	bar system	
KCSK	〃	後藤正雄	1911	1	14	JP	basic intro	bar system	
KCSK	〃	後藤正雄	1911	2	15	JP	basic intro	bar system	
KCSK	〃	後藤正雄	1911	3	16	JP	basic intro	bar system	
KCSK	〃	後藤正雄	1911	4	17	JP	basic intro	algorithm of beam	
KCSK	〃	後藤正雄	1911	5	18	JP	basic intro	symbols, algorithm of beam	
KCSK	〃	後藤正雄	1911	6	19	JP	basic intro	algorithm of beam	
KCSK	〃	後藤正雄	1911	7	20	JP	basic intro	algorithm of beam	neutral axis
KCSK	〃	後藤正雄	1911	8	21	JP	basic intro	algorithm of beam	
KCSK	〃	後藤正雄	1911	9	22	JP	basic intro	algorithm of beam	
KCSK	〃	後藤正雄	1911	10	23	GER	basic intro	work intro	
KCSK	コンクリートの貯水池と水槽	なし	1909	10		JP	Q&A	construction method	Q&A, , revised
KCSK	「セメント」及石灰叩き用土に山砂利配合上の結果如何	なし	1910	4		JP	Q&A	mixture of concrete	Q&A, not in hand
KCSK	煙突などの如き角或は円形塔の地形コンクリートの厚さ算出法	なし	1910	4		JP	Q&A	algorithm of foundation of RC	三橋『大建築学』refered, not in hand
KCSK	コンクリート一立方方尺の破壊重量	なし	1910	4		JP	Q&A	strength of concrete	Q&A, not in hand
KCSK	鉄筋コンクリートに就ての実例及意見	中村彌生	1910	6	1	JP	basic intro	bar system	
KCSK		中村彌生	1910	7	2	JP	basic intro	bar system	
KCSK	鉄筋コンクリートを以て建築せる物に着色法	なし	1910	7		JP	finishing	paint	Q&A, not in hand, mortar or ペンキ
KCSK	石橋博士の鉄筋コンクリート荷重試験	後藤正雄	1910	8		JP	experiment	strength of floor	Kahn System

KCSK	MG生の「鉄筋コンクリートに就て」に追々御記載かとも存じ候も左の件質問仕候、基礎鉄筋コンクリートの敷幅を定むる算式法実地に就て	なし	1911	2		JP	Q&A	algorithm of foundation of RC	Q&A, see also 191004Q&A
KCSK	最近発明鉄網コンクリートに就て	三橋四郎	1911	7	1	JP	product intro	steel-net concrete	
KCSK	〃	三橋四郎	1911	9	2	JP	product intro	steel-net concrete	
KCSK	〃	三橋四郎	1911	11	3	JP	product intro	steel-net concrete	
KCSK	〃	三橋四郎	1911	12	4	JP	product intro	steel-net concrete	
KCSK	コンクリートの割合	なし	1911	7		JP	Q&A	mixture of concrete, strength of concrete	Q&A, 1:2:5.4, 1:2.2:5.2, 1:2.4:5.0 (result of experiment rarely exists)
KCSK	コンクリート下地用鋼鉄の腐食防御に就て	なし	1911	9		UK	problem of RC	rust of iron bar	散録
KCSK	鉄筋コンクリート建築を独学するに計算方の良書及工事方の参考書	なし	1911	11		JP	Q&A	publication intro	A鉄筋コンクリート工法 後藤佐彦; B鉄筋コンクリート 井上秀二||1. Concrete Plain and Reinforced by Taylor and Thompson; 2. Principle of Reinforcd Concrete Costruction by Turneaure and Maurer; 3. Architect's and Engineer's Handbook Reinforced Concrete Construction by L. T. Menson; 4. Reinforced Concrete by A. W. Buel and C. S. Hile; 5. Reinforced Concrete by Warren; 6. Reinforced Concrete Construction by Reit
KCSK	セメント造りの金庫	K．K	1911	12		Italy	work intro	work intro	珍聞奇聞, anonimous work, speculated to be in Italy
KCSK	鉄筋コンクリート中使用の鉄筋はコールタ又は其の他の錆止め薬を塗る方宜敷ヤ又鉄筋を繋ぐ場合亜鉛鍍金のものを使用なすや	なし	1912	1		JP	Q&A	construction method	Q&A
KCSK	第五巻第十二号中鉄鋼コンクリートの厚さ及オペリスクに就て	なし	1912	2		JP	Q&A	steel-net concrete	Q&A, 鉄網耐火について
KCSK	三菱鉄筋コンクリート製貸家	なし	1912	3		JP	work intro	work intro	news, 保岡勝也設計, terra cotta for exterial wall
KCSK	鉄筋混凝土に使用する砂利及砂、セメント配合方に就て	なし	1912	4		JP	Q&A	mixture of concrete	Q&A
KCSK	鉄筋コンクリートは其中に鉄分を含むが故に空中電気の良導体となり次第に極度を失うと果たして然る哉	なし	1912	6		JP	Q&A	electrics	Q&A
KCSK	設計便覧中石灰コンクリート調合分量に就て	なし	1912	8		JP	Q&A	mixture of concrete	Q&A
KCSK	鉄筋コンクリート構造上に就て	なし	1912	9		JP	Q&A	character of RC	Q&A
KCSK	厚サ二寸の垂直被覆壁	伴宜	1912	11		JP	work intro	work intro	RC covered cliff, 牛込

KCSK	混凝土（殊に鉄筋コンクリート）の表面打設法及仕上法	伴宜	1912	12	1	JP	finishing	paint	あと塗りではなく、モルタルを仮枠の内側に事前配置
KCSK	〃	伴宜	1913	1	2	JP	finishing	paint	
KCSK	混凝土の調合法	春木節郎	1913	1		JP	mixture of concrete	mixture of concrete	1st page only
KCSK	コンクリート造を花崗石造の如く仕上をなす方法	なし	1913	3		JP	finishing	stone-like surface	Q&A, mortar + cracked stones
KCSK	電流と混凝土家屋	なし	1913	3		US	experiment	electrics	news,
KCSK	普通コンクリート導水管の厚さを定むる公式及鉄筋コンクリート管の算式	なし	1913	4		JP	Q&A	algorithm of pipe	Q&A, ハーストとランキンの計算法を使い
KCSK	簡単なる鉄筋入混凝土の桁に就て	白金	1913	5	1	JP	calculation	algorithm of beam	simple calc of beam
KCSK		白金	1913	8	2	JP	calculation	algorithm of beam	simple calc of beam
KCSK	ギレット氏の混凝土調合法	なし	1913	5		JP	Q&A	mixture of concrete	Q&A, see also 1913. 1 by 春木
KCSK	コンクリートの応圧力一平吋毎に五十磅と仮定して…コンクリートの厚さは何程	なし	1913	5		JP	Q&A	algorithm of column	defective question
KCSK	鉄筋混凝土の抗震力	中村達太郎	1913	6	1	JP	calculation	algorithm of beam, algorithm of column	calculation of columns and beams rather than frame, wind burden and 周期、加速度mentined
KCSK	〃	中村達太郎	1913	7	2	JP	calculation	algorithm of cylinder	not in hand, calculation of chimney
KCSK	鉄筋混凝土柱の試験	春木雪浪	1913	6	1	GER	experiment	strength of column	
KCSK	〃	春木雪浪	1913	7	2	GER	experiment	strength of column	
KCSK	各種の調合に於けるコンクリートの容積	本田生	1913	6		JP	mixture of concrete	mixture of concrete, strength of concrete	散録
KCSK	鉄筋混凝土梁の図式計算法	後藤慶二	1913	7	1	JP	calculation	algorithm of irregular section	
KCSK	〃	後藤慶二	1913	8	2	JP	calculation	algorithm of irregular section	
KCSK	〃	後藤慶二	1913	9	3	JP	calculation	algorithm of irregular section	
KCSK	〃	後藤慶二	1913	10	4	JP	calculation	algorithm of irregular section	
KCSK	〃	後藤慶二	1913	11	5	JP	calculation	algorithm of irregular section, algorithm of standard section	
KCSK	〃	後藤慶二	1914	1	6	JP	calculation	algorithm of beam	rectangular
KCSK	〃	後藤慶二	1914	2	7	JP	calculation	algorithm of beam	T shape
KCSK	〃	後藤慶二	1914	4	8	JP	calculation	algorithm of beam	T shape
KCSK	〃	後藤慶二	1914	5	9	JP	calculation	algorithm of beam	円形断面梁
KCSK	〃	後藤慶二	1914	7	10	JP	calculation	algorithm of irregular section	, 不規則断面
KCSK	〃	後藤慶二	1914	10	11	JP	calculation	algorithm of irregular section	非対称断面
KCSK	〃	後藤慶二	1915	1	12	JP	calculation	algorithm of irregular section	, 非対称断面
KCSK	〃	後藤慶二	1915	3	13	JP	calculation	algorithm of irregular section	, 非対称断面
KCSK	〃	後藤慶二	1915	6	14	JP	calculation	algorithm of irregular section	, 非対称断面
KCSK	〃	後藤慶二	1915	7	15	JP	calculation	algorithm of irregular section	, stress in the direction of axis of beam
KCSK	〃	後藤慶二	1915	9	16	JP	calculation	algorithm of irregular section	, 不規則断面

KCSK	〃	後藤慶二	1915	12	17	JP	calculation	algorithm of irregular section	, 不規則断面
KCSK	床に於ける鉄筋経済的配置法	内藤多仲	1913	7		UK	construction method	arrangement of bar	, Jordan XXXX, RIBA, a bit of revision by Naito
KCSK	実用簡易鋼筋混凝土計算法	佐藤四郎	1913	7	1	JP	calculation	algorithm of beam	
KCSK	〃	佐藤四郎	1913	8	2	JP	calculation	algorithm of floor	, calculation of slab with beams
KCSK	〃	佐藤四郎	1913	9	3	JP	calculation	algorithm of stirrup	, calculation of stirrup
KCSK	〃	佐藤四郎	1913	10	4	JP	calculation	algorithm of stirrup	, diagram based on structure with stirrup
KCSK	〃	佐藤四郎	1913	11	5	JP	calculation	algorithm of stirrup	
KCSK	〃	佐藤四郎	1913	12	6	JP	calculation	algorithm of stirrup	
KCSK	〃	佐藤四郎	1914	1	7	JP	calculation	algorithm of beam	arrangement of bar calculated
KCSK	〃	佐藤四郎	1914	2	8	JP	calculation	algorithm of stirrup	
KCSK	〃	佐藤四郎	1914	4	9	JP	calculation	algorithm of beam	T shape
KCSK	〃	佐藤四郎	1914	5	10	JP	calculation	algorithm of beam	T shape
KCSK	〃	佐藤四郎	1914	6	11	JP	calculation	algorithm of beam	bundle of iron bars at the bottom of beam
KCSK	〃	佐藤四郎	1914	7	12	JP	calculation	algorithm of beam	T shape, top and bottom
KCSK	〃	佐藤四郎	1914	8	13	JP	calculation	algorithm of beam	T shape
KCSK	〃	佐藤四郎	1914	9	14	JP	calculation	algorithm of beam, algorithm of column	計算実例
KCSK	〃	佐藤四郎	1914	11	15	JP	calculation	algorithm of fundation	design and calculation of foundation
KCSK	〃	佐藤四郎	1915	1	16	JP	calculation	algorithm of fundation	design and calculation of foundation
KCSK	農商務省告示「ポートランド、セメント」試験法中第一条に就て	なし	1913	7		JP	Q&A	method of experiment	
KCSK	カーン式鉄筋混凝土家屋耐重試験	なし	1913	7		JP	work intro	work intro	日本電気㈱新築工場, general contractor from the US, experiment only refered as the promotion of the project
KCSK	煙突の強さ	中村達太郎	1913	9		JP	calculation	algorithm of cylinder	see also 1913.6
KCSK	鉄筋コンクリート桁に就きて	なし	1913	9		JP	Q&A	algorithm of beam	Q&A, 梁計算、中性軸
KCSK	鉄筋混凝土構造法に関する書籍	なし	1913	11		JP	Q&A	publication intro	Q&A, 後藤佐彦、友松仙蔵、原田碧
KCSK	鉄筋混凝土に於て上下に鉄筋を挿入する場合に就て	白金	1913	12		JP	calculation	algorithm of beam	
KCSK	建築に関する鉄筋混凝土の原書	なし	1913	12		JP	Q&A	publication intro	Q&A, Carver. Reinforced Concrete construction and concrete data; Twelverese. Concrete Steel; Considere, Armand. Experimental Researches on Reinforced Concrete
KCSK	鉄筋混凝土の壁厚	なし	1913	12		JP	Q&A	thickness of RC wall	Q&A, empirical method of brick wall
KCSK	鉄筋混凝土の書籍	なし	1913	12		JP	Q&A	publication intro	Q&A||後藤佐彦, Andrew. Practical Reinforced Concrete Standard
KCSK	セメントの耐伸強度に及ぼす砂糖の影響	服部武彦	1914	3		JP	mixture of concrete	mixture of concrete, strength of concrete	sugar increasing the straining strength of cement, not in hand
KCSK	鉄筋混凝土の四辺支承せられたる牀版に就て	白金	1914	3	4	JP	calculation	algorithm of floor	
KCSK	〃	白金	1914	4	5	JP	calculation	algorithm of floor	

KCSK	〃	白金	1914	9	6	JP	calculation	algorithm of floor	T beam (slab)
KCSK	建築世界7巻7号鉄筋コンクリート計算法欄にて	なし	1914	3		JP	Q&A	algorithm	
KCSK	加奈陀トロント市鉄筋混凝土条例	大澤一郎	1914	3	1	CAN	code	construction method	大澤一郎訳, Toronto
KCSK	〃	大澤一郎	1914	4	2	CAN	code	construction method	
KCSK	〃	大澤一郎	1914	5	3	CAN	code	construction method, calculation	
KCSK	〃	大澤一郎	1914	6	4	CAN	code	construction method, calculation	
KCSK	鉄筋混凝土丁形梁の剪断力に就て	Ｉ．Ｏ	1914	5	1	JP	calculation	algorithm of beam	shear force of T beam
KCSK	〃	Ｉ．Ｏ	1914	6	2	JP	calculation	algorithm of beam	shear force of T beam
KCSK	鉄筋コンクリート壁の堰板の構造法及材質寸法	なし	1914	5		JP	Q&A	form work	Q&A, 仮枠
KCSK	砂入セメントの凝結時間	服部武彦	1914	6		JP	Q&A	experiment of curing	experiment
KCSK	混凝土新建築法の発明	なし	1914	7		GER	construction method	form work	see also 1914.8 KCGH
KCSK	鍛冶橋鉄筋混凝土棋橋理論及設計	花房周太郎	1914	9	1	JP	work intro	algorithm of arch	
KCSK	〃	花房周太郎	1914	10	2	JP	work intro	algorithm of arch	
KCSK	〃	花房周太郎	1914	11	3	JP	work intro	algorithm of arch	
KCSK	〃	花房周太郎	1914	12	4	JP	work intro	algorithm of arch	
KCSK	〃	花房周太郎	1915	1	5	JP	work intro	algorithm of arch	
KCSK	〃	花房周太郎	1915	2	6	JP	work intro	algorithm of arch	
KCSK	〃	花房周太郎	1915	3	7	JP	work intro	algorithm of arch	
KCSK	〃	花房周太郎	1915	5	8	JP	work intro	algorithm of arch	
KCSK	〃	花房周太郎	1915	11	9	JP	work intro	algorithm of arch	
KCSK	鉄筋「コンクリート」床及び梁の強弱を分数及比例にて計算する方法	なし	1914	9		US	calculation	algorithm of beam	Q&A, building code of NYC
KCSK	セメント防水剤「パドロー」	なし	1914	9		UK	product intro	paint, water proof	
KCSK	コンクリートを堅牢にする塗料	なし	1914	9		UK	product intro	finishing	news
KCSK	混凝土に貫通孔明けの失敗	Ｒ．Ｃ	1914	10		UK	problem of RC	form work	anecdote
KCSK	鉄筋混凝土アーチの計算法	なし	1914	10		JP	Q&A	algorithm of arch	Q&A
KCSK	建築世界第八巻第七号30頁図中説明	なし	1914	10		JP	Q&A	algorithm of irregular section	
KCSK	鉄筋混凝土桁及床の中軸を求むる方法	なし	1914	10		JP	Q&A	algorithm of beam	Q&A
KCSK	鉄筋混凝土図式	白金	1914	12		JP	calculation	simplified algorithm	list of moments
KCSK	「セメント」及混凝土表面の「ペンキ」塗に就て	四現	1915	2		US	finishing	paint	experiment in Washington
KCSK	混凝土工防水論	園田中太郎	1915	3	1	JP	water proof	construction method	
KCSK	〃	園田中太郎	1915	7	2	JP	water proof	mixture of concrete	
KCSK	〃	園田中太郎	1915	10	3	JP	water proof	mixture of concrete	
KCSK	工学計算設計例8	し、よ、生	1915	3		JP	calculation	algorithm of floor	floor of bridge

KCSK	工学計算設計例9	し、よ、生	1915	5		JP	calculation	algorithm of beam	
KCSK	工学計算設計例11	し、よ、生	1915	7		JP	calculation	algorithm of floor	concrete floor with I shape steel beam inside
KCSK	工学計算設計例12	し、よ、生	1915	8		JP	calculation	algorithm of wall	
KCSK	セメントの亀裂に就て御説明を請う	なし	1915	3		JP	problem of RC	crack	Q&A
KCSK	銀行会社建築と鉄筋「コンクリート、スケレトン」構造法	阿部美樹志	1915	4		US	basic intro	RC system	flat slab mentioned,
KCSK	最大鉄筋コンクリート橋梁	なし	1915	4		US	work intro	work intro	news, Philadelphia
KCSK	鉄筋混凝土電柱設計	中川政次郎	1915	5		JP	calculation	algorithm of column	
KCSK	結氷と混凝土	山本富彦	1915	5		JP	problem of RC	crack	anecdote
KCSK	鉄筋混凝土煙突計算法	今井久吉	1915	6	1	JP	calculation	algorithm of cylinder	
KCSK	〃	今井久吉	1915	7	2	JP	calculation	algorithm of cylinder	
KCSK	〃	今井久吉	1915	8	3	JP	calculation	algorithm of cylinder	
KCSK	鉄筋混凝土構法を知るに最も実用的に好都合なるポケットブック在りや	なし	1915	6		JP	Q&A	publication intro	Q&A, 実用鉄筋コンクリート構法(田邉朔郎、星野一郎、原田碧); Manual of Reinforced Concrete and Concrete Block Construction by Marsh & Dunn
KCSK	鋼筋混凝土に於ける応力の研究	佐藤四郎	1915	7	1	UK	calculation	algorithm of mechanics	佐藤　四郎訳,Bernard E. Jones
KCSK	〃	佐藤四郎	1915	8	2	UK	calculation	algorithm of mechanics	
KCSK	〃	佐藤四郎	1915	9	3	UK	calculation	algorithm of mechanics	
KCSK	〃	佐藤四郎	1915	10	4	UK	calculation	algorithm of section	second moment of area
KCSK	〃	佐藤四郎	1915	11	5	UK	calculation	algorithm of section	
KCSK	〃	佐藤四郎	1915	12	6	UK	calculation	algorithm of section, algorithm of shear force	
KCSK	〃	佐藤四郎	1916	1	7	UK	calculation	algorithm of shear force	基本荷重原理
KCSK	渋沢倉庫云々の件以下活字不明	なし	1915	8		JP	Q&A	work intro	渋沢倉庫断面詳細図、大梁高さ0.66m*0.3, 小梁0.36*0.18
KCSK	抗剪力表の抗圧力不明	なし	1915	8		JP	Q&A	strength of concrete	
KCSK	両端固定せる欠圓形鉄筋コンクリート拱に於ける問題	なし	1915	9		JP	Q&A	algorithm of arch	Q&A
KCSK	寒中混凝土の失敗	十九二	1915	10		JP	problem of RC	construction method	anecdote
KCSK	鋼筋混凝土に於る理論の研究	佐藤四郎	1916	2	1	UK	calculation	algorithm of beam	佐藤　四郎, origin of Bernard E. Jones, ||ratio of elastic modulus as 15
KCSK	〃	佐藤四郎	1916	4	2	UK	calculation	algorithm of beam	
KCSK	〃	佐藤四郎	1916	5	3	UK	calculation	algorithm of beam	
KCSK	〃	佐藤四郎	1916	7	4	UK	calculation	algorithm of beam	
KCSK	〃	佐藤四郎	1916	8	5	UK	calculation	algorithm of check	
KCSK	〃	佐藤四郎	1916	9	6	UK	calculation	algorithm of floor	
KCSK	〃	佐藤四郎	1916	10	7	UK	calculation	algorithm of beam	, top and bottom bars arranged
KCSK	〃	佐藤四郎	1916	11	8	UK	calculation	algorithm of beam, algorithm of check	, check and T shape

KCSK	〃	佐藤四郎	1916	12	9	UK	calculation	algorithm of beam	
KCSK	〃	佐藤四郎	1917	2	10	UK	calculation	algorithm of beam	"両端緊結" moment=1/12wl, T shape
KCSK	〃	佐藤四郎	1917	3	11	UK	calculation	algorithm of beam	
KCSK	〃	佐藤四郎	1917	4	12	UK	calculation	algorithm of shear force	
KCSK	〃	佐藤四郎	1917	5	13	UK	calculation	algorithm of shear force	
KCSK	〃	佐藤四郎	1917	6	14	UK	calculation	algorithm of shear force	structure with stirrup
KCSK	〃	佐藤四郎	1917	7	15	UK	calculation	algorithm of column	calculation of column
KCSK	〃	佐藤四郎	1917	9	16	UK	calculation	algorithm of column	calculation of column
KCSK	鉄筋混凝土桁にして鉄條の非常に大なる場合例えば工字形梁をコンクリートにて包みたる如き場合	なし	1916	2		JP	Q&A	SRC beam	Q&A, better for concrete as the covering only for the I shape steel girder
KCSK	鉄筋混凝土構框	今井久吉	1916	3	1	JP	calculation	algorithm of frame	calculation of RC frame (single), refering to Müller Breaslau. Neuere Methoden der Festigkeitlehre, revised by the author
KCSK	〃	今井久吉	1916	4	2	JP	calculation	algorithm of frame	
KCSK	〃	今井久吉	1916	5	3	JP	calculation	algorithm of frame	page number wrong
KCSK	〃	今井久吉	1916	6	4	JP	calculation	algorithm of beam	, seemingly Kahn system
KCSK	〃	今井久吉	1916	8	5	JP	calculation	algorithm of frame	
KCSK	鉄筋コンクリートに使用する鉄ボールトに就て	なし	1916	3		JP	Q&A	rust of iron bar	Q&A
KCSK	鉄鋼「コンクリート」構造とは如何なるものなるや	なし	1916	3		JP	Q&A	steel-net concrete	Q&A
KCSK	新刊鉄筋混凝土工学	なし	1916	4		JP	publication intro	publication intro	ads, 阿部美樹志
KCSK	鉄筋混凝土施工法	笠松為吉	1916	5	1	JP	construction method	form work	
KCSK	〃	笠松為吉	1916	6	2	JP	construction method	form work	
KCSK	〃	笠松為吉	1916	7	3	JP	construction method	arrangement of bar	
KCSK	〃	笠松為吉	1916	11	4	JP	construction method	attention for architects	
KCSK	〃	笠松為吉	1916	12	5	JP	construction method	construction management	
KCSK	〃	笠松為吉	1917	2	6	JP	construction method	casting of concrete	
KCSK	〃	笠松為吉	1917	4	7	JP	construction method	casting of concrete	
KCSK	〃	笠松為吉	1917	5	8	JP	construction method	casting of concrete	
KCSK	鉄筋混凝土の防火効力	和田雄治	1916	5		Fr	fire-proof	fire-proof	new
KCSK	住宅の周囲に障壁を建設せんとす…鉄筋コンクリートにて築造計算法	なし	1916	5		JP	Q&A	algorithm of wall	Q&A
KCSK	ロンドン市鉄筋コンクリート条例	後藤正雄	1916	6		UK	code	all the articles	
KCSK	鉄筋コンクリート工法に適当なる和本の発売所及び其定価を問う	なし	1916	6		JP	Q&A	publication intro	Q&A, 日比と阿部||no need to find the text
KCSK	鉄筋混凝土建築は如何にして低廉に建設し得べきや	阿部美樹志	1916	7		JP	basic intro	basic knowledge of RC	

KCSK	鉄筋混凝土建築は如何にして低廉に建設し得べきや	阿部美樹志	1916	8		JP	basic intro	construction method, economics	
KCSK	コンクリート配合の失敗	蒙珠楼	1916	7		JP	problem of RC	mixture of concrete	anecdote,
KCSK	セメント叩付け壁塗の調合法	なし	1916	7		JP	Q&A	mixture of concrete	Q&A
KCSK	鉄筋混凝土丁梁の計算に就いてその質疑	なし	1916	8		JP	Q&A	algorithm of beam	Q&A
KCSK	（二）鉄筋混凝土工場のセメント壁に石灰を塗布する時その石灰の膠着有効期間	なし	1916	8		JP	Q&A	finishing	Q&A
KCSK	混凝土の仕上と硬化	石の人	1916	9		JP	construction method	curing	anecdote
KCSK	杭張鉄筋混凝土管に就きて	Ｓ．Ｙ	1916	10		UK	product intro	RC pipe	
KCSK	鉄筋混凝土建物の壁重及鉄筋装置の計算法	なし	1916	10		JP	calculation	algorithm of wall	Q&A
KCSK	鉄筋コンクリート高層建築の理論的解法	阿部美樹志	1916	11	1	JP	calculation	algorithm of frame	
KCSK	〃	阿部美樹志	1916	12	2	JP	calculation	algorithm of frame	
KCSK	〃	阿部美樹志	1917	1	3	JP	calculation	algorithm of frame	hinged and rigid
KCSK	電柱鉄筋コンクリート	なし	1916	11		JP	Q&A	algorithm of column	
KCSK	鉄筋コンクリート鉄筋結束に用ゆるワイヤーは亜鉛引鉄線と普通の鉄線を用うる其効力に相違ありや	なし	1916	12		JP	Q&A	spacer	Q&A, string as spacer
KCSK	コンクリート及びモルタルの容積に就て	なし	1916	12		JP	mixture of concrete	mixture of concrete	Q&A
KCSK	鉄骨鉄筋混凝土に付実用上の知識を得る適当なる良書	なし	1917	2		JP	Q&A	publication intro	建築世界社編.最新家屋建築設計便覧; 池田稔. 高層建築
KCSK	タービヤコンクリート	なし	1917	2		JP	Q&A	product intro	free from crack mixture of concrete
KCSK	湿潤せる混凝土の横圧力及測定法に就て	小林義雄	1917	4		US	experiment	strength of concrete	experiment at Illinois Univeristy
KCSK	鉄筋混凝土工学	なし	1917	4		JP	publication intro	publication intro	阿部
KCSK	(4)混凝土調和1:3:6及1:2:4以上各材の耐圧強、耐伸強度及弾性係数	なし	1917	5		JP	Q&A	strength of concrete	
KCSK	鉄筋混凝土高層建築に関する書籍	なし	1917	5		JP	Q&A	publication intro	阿部
KCSK	鉄筋コンクリート梁に於ける鉄筋とコンクリートとの粘着力に就て（主に実験成績）	阿部美樹志	1917	5	1	US	experiment	coherence of bar	, the experiment of Abe's professor, Illinois University
KCSK	〃	阿部美樹志	1917	6	2	US	experiment	coherence of bar	
KCSK	〃	阿部美樹志	1917	7	3	US	experiment	coherence of bar	
KCSK	〃	阿部美樹志	1917	8	4	US	experiment	coherence of bar	
KCSK	〃	阿部美樹志	1917	11	5	US	experiment	coherence of bar	
KCSK	〃	阿部美樹志	1918	1	6	US	experiment	coherence of bar	
KCSK	気温のコンクリートの強度に及ぼす影響	太田幸一	1917	10		US	experiment	influence of temperature on the strength of concrete	Illinois University
KCSK	「コンクリート」の厚さ及び巾を求むる法	なし	1917	11		JP	Q&A	algorithm of foundation	Q&A

KCSK	鉄材保護としてのポートランド、セメント、イベントに就て	井崎慎一	1917	11		UK	experiment	coherence of steel girder	concrete and concstructional engineering translated, 主に粘着力が研究された。
KCSK	鉄筋混凝土の建築（平床版式）	有一郎	1918	1	1	JP	calculation	algorithm of floor	floor slab
KCSK	〃	有一郎	1918	2	2	JP	calculation	algorithm of foundation	foundation of RC
KCSK	〃	有一郎	1918	10	3	JP	calculation	algorithm of foundation	
KCSK	鉄筋混凝土の基礎	有一郎	1918	12	4	JP	calculation	algorithm of foundation	of the same series of the previous ones
KCSK	〃	有一郎	1919	1	5	JP	calculation	algorithm of foundation	numbers of iron bars
KCSK	〃	有一郎	1919	2	6	JP	calculation	algorithm of foundation	
KCSK	珪藻土がコンクリート用として効力	なし	1918	2		JP	Q&A	mixture of concrete	Q&A
KCSK	岩崎富久著理論応用鉄筋混凝土設計法	なし	1918	2		JP	publication intro	publication intro	
KCSK	平床版式鉄筋混凝土建築物の床の撓度と	Ｂ．Ｍ生	1918	3		US	experiment	slope-deflection of floor	Ｂ．Ｍ生訳, in Buffalo, NY,
KCSK	混凝土ブロックに就て	瀧川初治	1918	3		JP	product intro	concrete block	, proposal for JP
KCSK	鉄筋混凝土工学第四版	なし	1918	3		JP	publication intro	ads	阿部
KCSK	鉄筋コンクリート製造工場のエンドフレーム壁はカーテンウォール	なし	1918	4		JP	Q&A	algorithm of column	耐風圧計算, T5.4参照と回答され||principle of calculation only
KCSK	鉄筋コンクリートの計算書籍に就て	なし	1918	4		JP	Q&A	publication intro	Q&A, 日比、小川敬次郎、阿部
KCSK	鉄筋コンクリートに於ける或る荷重により生じたる柱の地形の公式及例を問ふ	なし	1918	5		JP	Q&A	algorithm of foundation	
KCSK	鉄筋コンクリート梁に梁間30尺以上lattice girderを入る場合	なし	1918	5		JP	Q&A	algorithm of beam	Q&A, SRC
KCSK	鉄筋混凝土にて、柱、梁、床か…計算…以上何れも和文にして初学者に良り了解し得講義体	なし	1918	5		JP	Q&A	publication intro	Q&A, 三橋、小川、日比、池田
KCSK	鉄筋コンクリート柱の荷重と長さとを知りて柱の断面積並に鉄筋の断面積を求むる計算式	なし	1918	9		JP	Q&A	algorithm of column, algorithm of beam	
KCSK	鉄筋コンクリートは斜架梁の荷重と径間を知りて梁の断面積と鉄筋の断面積	なし	1918	9		JP	Q&A	algorithm of beam	
KCSK	タービヤコンクリートの調和及仕様	なし	1918	10		JP	Q&A	mixture of concrete	
KCSK	便所床鉄筋コンクリート構造セメントの配合と鉄筋配置の良否	なし	1918	10		JP	Q&A	arrangement of bar	bar arrangment in floor
KCSK	地形用コンクリートの調和割合	なし	1918	11		JP	Q&A	mixture of concrete	
KCSK	鉄筋混凝土格子桁の計算法	岸本董治	1918	12		JP	calculation	algorithm of truss	calculation of RC truss
KCSK	鉄筋混凝土に就て	中島外吉	1919	2	1	JP	construction method	mixture of concrete	清水組技師
KCSK	〃	中島外吉	1919	5	2	JP	construction method	categories of iron bars	categories of iron bars
KCSK	〃	中島外吉	1919	6	3	JP	construction method	categories of iron bars	, categories of iron bars

KCSK	〃	中島外吉	1919	7	4	JP	construction method	strength of bar	, strength of steel materials
KCSK	〃	中島外吉	1919	10	5	JP	construction method	form work	
KCSK	〃	中島外吉	1919	11	6	JP	construction method	mixture of concrete	
KCSK	〃	中島外吉	1919	12	7	JP	construction method	mixture of concrete	
KCSK	鉄筋「コンクリート」の型枠に就いて	山口孝吉	1919	3	1	JP	product intro	form work	
KCSK	〃	山口孝吉	1919	5	2	JP	product intro	form work	
KCSK	〃	山口孝吉	1919	6	3	JP	product intro	form work	
KCSK	〃	山口孝吉	1919	7	4	JP	product intro	form work	
KCSK	鉄筋混凝土工屋頂母屋算定一法	岸本董治	1919	3		JP	calculation	algorithm of roof	calculation of roof truss
KCSK	圧縮されたる混凝土力の増加に就て	村上夕陽	1919	6		US	experiment	strength of pressed concrete	, Delaware, Pennsylvania
KCSK	鉄筋コンクリート建築工事施工に対し極精細なる書物	なし	1919	6		JP	Q&A	publication intro	
KCSK	コンクリート容積一、ニ、七の調和二坪にて材料何程用ふ可きや	なし	1919	8		JP	Q&A	mixture of concrete	
KCSK	鉄筋コンクリート梁に於ける鉄筋の太さと應滑力	坂部保次	1919	9		US	calculation	algorithm of coherence	Journal of "Concrete", by C.W. Martin, 要確認
KCSK	鉄筋コンクリート煙突の基礎計算、同桁梁式床に於てスラブと桁梁とは全然別々に計算を取扱ふものなりや又は如何にして計算す可きものなりや	なし	1919	9		JP	Q&A	algorithm of cylinder, algorithm of beam	再確認が必要
KCSK	最近の試験に於て見たる鉄筋混凝土桁の應剪力	小林義雄	1919	10	1	US	experiment	strength against shear force	, experiment in Pennsylvania
KCSK	〃	小林義雄	1919	11	2	US	experiment	strength against shear force	
KCSK	鉄筋混凝土梁材の強度算定に使用するナヴィール仮定について	田中大作	1920	3		JP	calculation	algorithm of beam	calculation, Navier's Hypothesis (中性軸より均等変形)
KCSK	混凝土の彫刻	古塚正治	1920	3		US	finishing	carving	
KCSK	改正されたる『ポルトランド・セメント』試験規定	吉田享二	1920	5		JP	code	manual of experiment	より大きい強度を要求
KCSK	コンクリートと油タンク	なし	1920	8		US	work intro	work intro	
KCSK	メタル化セメント装飾	なし	1920	8		US	product intro	finishing	construction and decoration (gilt) methods of RC in US||ニュース
KCSK	型枠に働く混凝土の圧力	伊藤長好	1920	10	1	US	experiment	form work	
KCSK	〃	伊藤長好	1920	11	2	US	experiment	form work	
KCSK	床の硬化試験	T．N	1920	10		US	experiment	curing	news, 4 types of ingredients helping the solidification of RC, Concrete, June||p.279
KCSK	コンクリート表面の耐酸層	T．N	1920	10		US	experiment	finishing	news, Concrete June||p.267
KCSK	コンクリートブロックの話	中村鎮	1920	11		JP	basic intro	concrete block	

KCSK	左記の各項を六ヶ敷数字を要せず極く簡易に僅かの心得を有る初歩者に理解出来得る運算法…(4)鉄筋コンクリート梁の断面運算法	なし	1920	1		JP	Q&A	algorithm of beam	answered with reference and simple introduction
KCSK	(1)鉄筋コンクリート梁の計算法(2)鉄筋コンクリート、二階床計算法(3)中等教育以下の者に見て解り候や... 良書	なし	1920	2		JP	Q&A	algorithm of beam, algorithm of floor, publication intro	
KCSK	特許鉄筋ブロックの発明	なし	1920	11		JP	product intro	concrete block	
KCSK	鉄筋コンクリートの設計計算書籍最新の良書	なし	1920	12		JP	Q&A	publication intro	阿部、日比、土居, Handbook of structure Fool & Johnson
KCSK	阿部氏の鉄筋コンクリート中195ページの正方形フーチングスラブ	なし	1920	12		JP	Q&A	algorithm of foundation	
KCSK	コンクリートパイル	河合清	1921	4		UK	construction method	construction method	news ||seen at other place
KCSK	低温度中のコンクリート打工事	河合清	1921	4		US, UK	construction method	construction method	news
KCSK	鉄筋コンクリートの簡単なる解方	北川正彌	1921	5	1	JP	calculation	strength of material	strength of both materials as fundamental knowledge
KCSK		北川正彌	1921	6	2	JP	calculation	model of moment	safe level of strength
KCSK	パッドレスなき鉄筋混凝土擁壁	北川正彌	1921	3		UK	calculation	algorithm of wall	
KCSK	阿部美樹志氏著平版床設計計算実例について	なし	1921	6		JP	Q&A	algorithm of floor	
KCSK	一、大正9年2月号問答欄にて鉄筋コンクリート梁計算の内…二、鉄筋コンクリート柱…三、鉄筋楣…四、鉄筋コンクリート計算書…五、コンクリート調和	なし	1921	7		JP	Q&A	algorithm of beam, algorithm of column, algorithm of lintel, publication intro, mixture of concrete	
KCSK	鉄筋コンクリート梁計算御答記中左の條に…	なし	1921	8		JP	Q&A	algorithm of beam	
KCSK	鉄筋コンクリート用波形仮枠法	内田壽一	1921	9	1	JP	construction method	form work	富士製紙株式会社建築技師
KCSK	〃	内田壽一	1921	10	2	JP	construction method	form work	富士製紙株式会社建築技師
KCSK	〃	内田壽一	1921	11	3	JP	construction method	form work	富士製紙株式会社建築技師
KCSK	〃	内田壽一	1922	5	3	JP	calculation	algorithm of column	see annex 16-17
KCSK	〃	内田壽一	1922	8	4	JP	calculation	algorithm of beam	7/8d utilized
KCSK	鉄筋コンクリート単筋梁又は複筋梁に於て剪断力に対する「スタラップ」	なし	1922	7		JP	Q&A	algorithm of stirrup	shape of stirrup
KCSK	阿部美樹志氏著鉄筋混凝土工学195頁正方形フーチング・スラブの計算法	なし	1922	8		JP	Q&A	algorithm of floor	
KCSK	鉄筋コンクリートの柱はどの位の長さから長柱と云いますか又其の設計法を御教示下さい	なし	1922	4		JP	Q&A	algorithm of column	code of London referred

KCSK	内藤多仲先生著建築構造学231頁鉄筋コンクリート床の所にて例題	なし	1922	10		JP	Q&A	algorithm of floor	
KCSK	鉄筋コンクリート設計に必要な一般公式を知り度い	なし	1922	10		JP	Q&A	publication intro	内藤多仲
KCSK	鉄筋コンクリート建築に関する書籍	なし	1922	10		JP	Q&A	publication intro	小川、土居 recommended, 阿部 mentioned in question
KCSK	〃	西野利雄	1923	4	2	US	basic intro	construction method	way of mixing concrete||magazine started in Boston, Massachusetts
KCSK	〃	西野利雄	1923	6	3	US	basic intro	construction method	mixture of concrete and the strength
KCSK	内藤多仲が作った「簡易鉄筋コンクリート計算公式」小冊子	なし	1923	1		JP	Q&A	publication intro	
KCSK	地震の計算法を例題に依って御教示被下度候	なし	1923	1		JP	Q&A	algorithm of anti-seismic structure	according to Toshikata Sano's theory, mainly about the calculation of column
KCSK	「簡易鉄筋コンクリート計算公式」中柱の計算に於て	なし	1923	2		JP	Q&A	algorithm of column	
KCSK	混凝土ブロックは、普通の鉄筋混凝土に比べて如何なる得失	なし	1923	5		JP	Q&A	concrete block	Q&A, comparison between concrete block and RC
KCSK	家屋と地震（鉄筋大建築の震害程度）	大森房吉	1923	3	3	JP	report	anti-seismic	
KCSK	鉄筋混凝土工学の教科書として観たる「アメリカ」連合委員会の最終報告	尾崎久助	1923	3	1	US	code	character of RC	general knowledge and principles of the construction of RC, mainly about the mixture of concrete||単純紹介であり、内容はすべてUS
KCSK	〃	尾崎久助	1923	4	2	US	code	construction method	mainly about the construction method of RC bldgs, way of casting concrete
KCSK	〃	尾崎久助	1923	5	3	US	code	construction method, finishing	mainly about the construction method of RC bldgs, form work, joints, fire-proof and water-proof painting and decoration of surface
KCSK	〃	尾崎久助	1923	6	4	US	code	principles of calculation, algorithm of beam	basic hypotheses and principles of different components (calculation & design)||"masive concrete" mentioned referring to the gravity of concrete itself||連続梁mentioned
KCSK	〃	尾崎久助	1923	7	5	US	code	algorithm of columns, algorithm of floor	basic hypotheses and principles of different components (calculation & design)||tensile and shear force, design of columns and flat floor
KCSK	〃	尾崎久助	1923	8	6	US	code	algorithm of floor	design and methods of the calculation of flat floor
KCSK	三橋四郎著大建築学続編第二十二章床盤計算一例	なし	1923	8		JP	Q&A	algorithm of floor	simple supported
KC	鉄筋入「コンクリート」構造	岡本鑒太郎	1906	6	1	US	basic intro	character of RC	O.S.生訳
KC	〃	岡本鑒太郎	1906	7	2	US	basic intro	character of RC, arrangement of bar	
KC	〃	岡本鑒太郎	1906	8	3	US	basic intro	character of RC, fire proof	
KC	〃	岡本鑒太郎	1906	9	4	US	basic intro	character of RC	
KC	鉄筋「コンクリート」の建築	なし	1907	11		US	work intro	work intro	introduction from US||-mentioned by Hori

KC	倉庫建築	なし	1908	3		JP	work intro	work intro	news, warehouses in Kobe
KC	鉄筋「コンクリート」構造の一例	記者	1908	4		US	work intro	work intro	introduction from US, Kahn System and detailed info about construciton process
KC	コンクリート家屋	記者	1908	11		US	work intro	work intro, character of concrete	introduction from US, anonymous house
KC	鉄筋「コンクリート」構造の価い	F.M.P.	1910	2		JP	basic intro	fire proof, economics	
KC	鉄筋「コンクリート」に就て	S.O.生	1910	5		JP	economics	price of RC	materials
KC	鉄筋「コンクリート」試験を視る	なし	1910	7		JP	experiment	strength of floor	Kahn System
KC	鉄筋コンクリート施工に就て	なし	1910	10	1	JP	construction method	mixture of concrete	
KC	〃	なし	1910	11	2	JP	construction method	mixture of concrete, attention for constructor	
KC	鉄筋「コンクリート」構法の実施に就て	S.O.生	1911	6	1	JP	construction method	mixture of concrete	combination of 「ヒル」氏 and personal experience
KC	〃	S.O.生	1911	7	2	JP	construction method	mixture of concrete	
KC	〃	S.O.生	1911	8	3	JP	construction method	form work, curing	
KC	〃	S.O.生	1911	9	4	JP	construction method	arrangement of bar	
KC	鉄筋コンクリート構造に就ての規定	なし	1911	12		JP	code	attention for architects	source unknown
KC	鉄網コンクリート	S.O.生	1912	5		JP	product intro	steel-net concrete	Kawasaki
KC	簡易鉄筋コンクリート工法	なし	1912	12		US	construction method	construction method	painting concrete without form work
KC	福島鉄筋「コンクリート」仮枠新案	なし	1913	2		JP	product intro	form work	
KC	鉄筋コンクリートの失敗	なし	1913	3		JP	problem of RC	weakness of joint	縦の鉄筋に横の鉄筋が脱する
KC	鉄筋コンクリートの用い場所	なし	1913	10		JP	basic intro	character of RC	thinner walls and fire proofing, easy to transport
KC	鉄筋コンクリート構造の施工に就ての不安	なし	1914	1		JP	problem of RC	cultivation of constructor	RC as the variation of wooden structure
KC	鉄鋼コンクリートの亀裂	なし	1914	2		JP	problem of RC	crack, form work	have mortar inside form work to secure the water during curing
KC	混凝土と小住宅	眞名田工学士	1914	3		UK	work intro	types of concrete, work intro	translation
KC	鉄網混凝土工法に就て	なし	1914	7		JP	product intro	steel-net concrete	
KC	鉄筋混凝土構造の応用設計	石井敬吉	1914	11	0	JP	calculation	safe load, algorithm of beam, algorithm of floor	based on the committee of the US
KC	〃	石井敬吉	1914	12	0	JP	calculation	algorithm of consecutive beams	
KC	〃	石井敬吉	1915	1	0	JP	calculation	algorithm of beam	
KC	〃	石井敬吉	1915	2	0	JP	calculation	algorithm of column	間内柱 mentioned
KC	〃	石井敬吉	1915	3	0	JP	calculation	algorithm of column	
KC	〃	石井敬吉	1915	4	random	JP	calculation	algorithm of horizontal load, algorithm of foundation	
KC	〃	石井敬吉	1915	5	random	JP	calculation	algorithm of foundation	
KC	〃	石井敬吉	1915	6	random	JP	calculation	algorithm of floor	
KC	〃	石井敬吉	1915	7	random	JP	calculation	algorithm of SRC	replacement of bar with steel frame
KC	〃	石井敬吉	1915	8	random	JP	calculation	algorithm of SRC	

KC	〃	石井敬吉	1915	9	ran-dom	JP	calculation	algorithm of SRC	
KC	〃	石井敬吉	1915	10	ran-dom	US	calculation	algorithm of eccentric load, algorithm of wall	George A. Hool, first published by McGraw Hill
KC	〃	石井敬吉	1915	11	ran-dom	US	calculation	algorithm of consecutive beams	George A. Hool, first published by McGraw Hill
KC	〃	石井敬吉	1915	12	ran-dom	US	calculation	algorithm of consecutive beams	George A. Hool, first published by McGraw Hill
KC	〃	石井敬吉	1916	1	ran-dom	US	calculation	algorithm of consecutive beams	George A. Hool, first published by McGraw Hill
KC	〃	石井敬吉	1916	2	ran-dom	US	calculation	algorithm of consecutive beams	George A. Hool, first published by McGraw Hill
KC	〃	石井敬吉	1916	3	ran-dom	US	code	basic knowledge of RC	Second report of joint committee of concrete and reinforced concrete, see also KCSK 1923, 最終報告
KC	〃	石井敬吉	1916	4	ran-dom	US	code	basic knowledge of RC	Second report of joint committee of concrete and reinforced concrete
KC	〃	石井敬吉	1916	5	ran-dom	US	code	algorithm of floor	Second report of joint committee of concrete and reinforced concrete
KC	〃	石井敬吉	1916	6	ran-dom	US	code	construction method	Second report of joint committee of concrete and reinforced concrete
KC	塚本博士邸鉄筋混凝土土蔵に就て	内田祥三	1915	8		JP	work intro	specification	配筋図が重要
KC	鉄筋コンクリート梁の研究	J.I.生	1916	7	1	UK	publication intro	system of symbols, algorithm of beam	Oscar Faber, P. G. Bowie, as the foundation of the code of RC, London
KC	〃	J.I.生	1916	8	2	UK	publication intro	experiment of beam, algorithm of beam	
KC	〃	J.I.生	1916	9	3	UK	publication intro	experiment of beam, algorithm of beam	
KC	〃	J.I.生	1916	10	4	UK	publication intro	algorithm of beam	
KCGH	鉄網コンクリートの発明	記者	1911	8	1	JP	product intro	steel-net concrete	
KCGH	〃	記者	1911	9	2	JP	product intro	steel-net concrete	
KCGH	〃	記者	1911	10	3	JP	product intro	steel-net concrete	
KCGH	〃	記者	1911	11	4	JP	product intro	steel-net concrete	
KCGH	混凝土の調剤に就いて	宮本朴次郎	1911	10		JP	mixture of concrete	mixture of concrete	
KCGH	鉄網混凝土工法と本誌の声	なし	1911	12		JP	product intro	steel-net concrete	
KCGH	コンクリートブロックに就いて	内藤益二	1912	2	1	JP	product intro	concrete block	
KCGH	〃	内藤益二	1912	3	2	JP	product intro	concrete block	
KCGH	〃	内藤益二	1912	5	3	JP	product intro	concrete block	
KCGH	鉄筋コンクリート造貸家	時報子	1912	4		JP	work intro	work intro	Mitsubishi's estate, coating of RC building criticized
KCGH	鉄網コンクリート工法に就いて	記者	1912	6		JP	product intro	steel-net concrete	character of fire proof discussed
KCGH	コンクリートブロックの亀裂に就いて	内藤益二	1912	8		JP	problem of RC	crack of concrete block	
KCGH	鉄網コンクリートの耐火的価値	記者	1912	8		JP	product intro	steel-net concrete	fire-proof
KCGH	セメントの性質と其の試験方法	葛山	1913	3		JP	experiment	method of experiment	experiment of cement
KCGH	鉄筋コンクリートの防火力	Y．Y	1913	5		JP	basic intro	fire-proof	

KCGH	鉄筋「コンクリート、ビーム」簡易計算表	台好望	1913	11		JP	calculation	simplified algorithm	＊要検討, list offered in the next 2 pages
KCGH	鉄筋コンクリートの欠点	楠舟江	1914	5	1	JP	problem of RC	rust of iron bar, electrics	川崎工場技師
KCGH	コンクリート新建築法	なし	1914	8		GER	construction method	form work	see also 1914.7 KCSK雑報
KCGH	モツス式鉄筋コンクリート構造	Ｓ．Ｏ	1914	9		UK	work intro	RC system	
KCGH	再び鉄筋コンクリートの構造に就て	舟江生	1914	11	2	JP	problem of RC	rust of iron bar, electrics	
KCGH	川崎鉄鉱混凝土の特許	なし	1914	12		JP	product intro	steel-net concrete	news
KCGH	鉄筋混凝土の応用と土蔵	内田祥三	1915	2		JP	problem of RC	character of RC, problem of RC	
KCGH	美的混凝土工	紫水子	1915	2	1	US	work intro	decoration of RC	Wright in Oak Park
KCGH	〃	紫水子	1915	3	2	US	work intro	decoration of RC	
KCGH	〃	紫水子	1915	4	3	US	work intro	decoration of RC	Alfred Hopkins
KCGH	家屋耐震構造要梗	佐野利器	1915	4		JP	anti-seismic	anti-seismic	duplicate with KCZS
KCGH	混凝土雑感	紫水子	1915	6		JP	problem of RC	construction method, defection from construction	
KCGH	鉄筋混凝土基礎工法	住木直二	1916	1	1	JP	calculation	algorithm of foundation	
KCGH	〃	住木直二	1916	2	2	JP	calculation	algorithm of vertical load	
KCGH	〃	住木直二	1916	3	3	JP	calculation	algorithm of foundation	
KCGH	〃	住木直二	1916	4	4	JP	calculation	geological prospecting	
KCGH	〃	住木直二	1916	5	5	JP	calculation	piling	
KCGH	〃	住木直二	1916	6	6	JP	calculation	piling	
KCGH	〃	住木直二	1916	7	7	JP	calculation	piling, algorithm of foundation	
KCGH	〃	住木直二	1916	8	8	JP	calculation	piling, algorithm of foundation	
KCGH	〃	住木直二	1916	9	9	JP	calculation	piling, algorithm of foundation	
KCGH	〃	住木直二	1916	10	10	JP	calculation	algorithm of foundation	
KCGH	〃	住木直二	1916	11	11	JP	calculation	types of foundation	
KCGH	鉄筋コンクリート造の小住宅	瀧川鼎	1916	2		JP	work intro	economics	series abandoned
KCGH	倫敦に於ける鉄筋コンクリート条例に関する講話	土居松市	1916	3	1	UK	code	unknown	lost, contents can be found in Doi's textbook
KCGH	〃	土居松市	1916	4	2	UK	code	unknown	lost
KCGH	〃	土居松市	1916	5	3	UK	code	unknown	lost, 正誤表1916年10月
KCGH	鉄筋コンクリート煙突の設計	山縣章安	1916	4		JP	calculation	algorithm of cylinder	
KCGH	混凝土工事失敗の原因	田村豊	1916	12		UK	problem of RC	construction method	

Appendix B

Excerpts of undergraduate theses

Appendix B contains the original text extracted from the undergraduate theses, classified in five groups, from which the design conceptions are extracted, also with ideas concerning abstract architectural theories recorded.

The numbering of statements is not consistent with chapter 2 due to the concatenation of abstract architectural theories. Statements no. 16 and no. 47 are also not arranged in sequential order due to the procedure of study.

O, X, V stand for approval, denial and merely mentioned or neutral ideas.

For the sake of the layout, the contents start from the next page.

久留 弘文 Hirofumi Kuru

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts			
2. National character		X	p. 4 With the process of globalization, nationality is going to be fused.	p. 4 …世界の事物を益々共通ならしめむとする傾向を生じ、国民性は次第に融和せられつつあると以て…
3. Individualism				
4. Spirit of era		O	p. 3 The spirit of era and material have the closest relationships with style.	p. 3 [様式]然も最も密接なる関係を有するを時代精神と材料なりとす。
5. Practical architecture				
6. Economical		O	p. 33 …By making architecture economically with clear sense of mechanics, expressing the characteristics of casting (鋳造) object, i.e., architecture of the beauty of structure is the most proper.	p. 33今此来るべき形式の如何なるやを推定するは容易なる術にあらざるも種々の事項より考察するに、経済的にして力学的意味を明瞭にし其鋳造物たる性質を完全に表現したる所謂構造美の建築物を以て最も適合せるものとすべく。
7. Based on science		O	p. 25 RC can implicate (暗示) the forms of the past, but imitation (模倣) is implausible. RC has to be in rational form (合理的形式) based on science	p. 25 「されば新材料たる鉄筋混凝土構造のとるべき形式に於て其意匠を過去の形式より暗示を得るは可なるも、之を模倣するは不可なり。宜しく科学を根底とせる合理的形式ならざるべからず。次に構造上及表面意匠上の見地より之の形式を見んとす。」
8. Rational structure		O	p. 5 This thesis is about in which form can the rational structure (合理的構造) of RC get aesthetic effects;	p. 5 されば吾人は此論題に対しては其現るべき様式を論ずるを避けて単に鉄筋混凝土なる材料の性質を主なるものを論じ其合理的構造を如何なる形式に依て美的効果を得べきかに就て聊か論ずる所あらんとす。
9. Expression of structure / mechanics		O	See also 6	
10. Expression of material		O	See also 24	
11. Truth of structure				
12. Truth of purpose				
13. No imitation of historical styles		O	See also 7	
14. No replacement				
15. Implication of historical styles		O	See also 7	
17. Simple plan	Of simplicity	O	See also 16	
18. Simple form		O	p. 26 The appearance (外形) should be simple and in straight lines based on the requirement of plan, hence lintel (楣式) is more favorable than arch (迫持). When it has to be arch for large span, the shape should be circular or circular segment (弓形)	p. 26 外形に於ても、平面の要求上簡単にして直線的なるを以て最も合理的となる、故に迫持よりも楣式を望むも、止むを得ざる場合に於て大なる梁間を架する場合には迫持を有利とするも、鉄筋混凝土の迫持は石、煉瓦の場合の如く各個相扶けて構成するものにあらずして…(?)…為に円形或は弓形の迫持とは其形を異にすべきなり。
19. Appearance reflects plan				
20. Straight lines		O	See also 18	
21. Flat surface		O	p. 26 For RC with flat surface, it is difficult to have carvings and extruded eaves.	p. 26 一塊宛積上ぐる石造に於て之に彫刻を施し、或は蛇腹を使用するは難ずべきにあらざるも表面平滑なるを以て有利となす鉄筋混凝土構造に於て多大の困難、多額の費用を費して尚之を設くるの要あらむや。
22. Flat roof				
47. Thin wall				

23. Light image	Decoration			
24. Lack beauty		O	p. 27-30 RC has unpleasant color which is unsuitable to express the beauty of structure, so that the relief, i.e., dealings of surface are necessary, which contain paving (貼付), chemical method (corrosion), mechanical method, painting, and colorizing (ingredients mixture)… Despite the methods about the manner to express the character of concrete still needs to be studied.	p. 27-30 (二)表面の仕上…鉄筋混凝土構造に於てはセメント固有の不快なる色彩の為めに構造美を表はす上に於て適せざるを以て、之が救済策の要を認む。…1. 貼付材料の便; 2. 化学的方法; 3. 機械的方法; 4. 塗料を施す法; 5. 色彩…表面仕上としては上記の如々多様多種の方法あるも、未だ混凝土の性質を表はし而も美的価値を有する手法発見せられずして今尚研究中に属すや。」
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.		O	See also 24	
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion		X	See also 21	
30. No decoration				
31. Free plan	Of freedom	X	See also 16	
32. Free shape		X	See also 16	
33. Free aperture				
34. Casted object		O	See also 6	
35. As a single entity		O		p. 11 (under anti-seismic) 鉄筋混凝土構造は鳥籠的の構造なるを以て、壁体及床は梁、柱等に結合せられ完全に一物体として構成せられ均一の剛度を有するものなり。
36. Monolithic				
37. Large span		V	See also 18	
38. Spatial existence				
16. Curtain wall / frame	Structural form	O	p. 26 For masonry architecture, if only one can bear the complication of construction, walls with free shape can be produced, while [for RC] it is better to have uniform span of columns regarding the curtain wall (真壁式) structure of RC, which also results in simple plan. [This structure] lacks the freedom of plan in masonry buildings.	p. 26 また、石造煉瓦造に於ては多少の施工上の不便を忍べば、壁体の形状自由なるも、梁に依て其重量を支へ之を柱に伝ふべき鉄筋混凝土構造 (真壁式構造法(curtain wall)) に於ては出来得る限り柱間を一定する事を最も有利とする故に、従って其平面は簡単なるものならざるべからず。…為めに従の重畳式建築構造のプランに比して自由を欠く嫌なきにあらず。
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.				
40. Elastic (katagana, or original text)				
41. Rigid joint				
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau				
45. Secession				
46. Skyscraper				

永澤 毅一 Kiichi Nagasawa

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts			
2. National character		O	p. 3 1. Architecture is for the living of human beings; 2. Architecture gives pleasure of beauty. …However, the contents of living vary according to era, nationality and place.	p. 3 一、建築ハ人間住居ノ目的? (unreadable character) モノナリ; 二、建築ハ美的快感ヲ与フルヲ目的トス…然ルニ人間生活ノ内容ハ時代ト国民ト場所トニヨリ一定シナイ。従ッテ建築ニ対スル要求ノ範囲モ一般的ニ確定スル㇆ハムヅカシイ。…
3. Individualism		O	p. 1 Today, individualism has severe battle with the conventions.	p. 1 此ノ二ツノ主義ハ互ニ調和ヲ求メントシナガラソノ相反セル部分ヲ以テ断エズ争ヒツヽアル。殊ニ因襲ノ圧力ニ反抗シテ個性ガ発揮セント努力スル時ニ於テ甚ダシイ。
4. Spirit of era		O	See also 2	
5. Practical architecture		O	See also 2	
6. Economical				
7. Based on science		O	p. 2 Based on science, RC should not be restricted by the convention (因襲) of the past and current forms (現在ノ形式);	p. 2 鉄筋コンクリートノ如キ科学ノ堅実ナル基礎ノ上ニ樹ッタ革新的結構ノ実現ニ際シテハ過去ト現在トノ因襲ト形式トハ其ノ自由ナル権威ヲ失ハネバナラヌト云フ事ハ自然デアル。新シキ材料ノ新シキ結構ノ発動ハ過去ノ因襲ニトラワルヽ㇆ナク現在ノ形式ニ束縛セラルヽ㇆ナク一ニ光輝アル未来ヲ開拓シソシテ実現セントシテ居ル。
8. Rational structure		O	p. 8 Structure should be simple. In the era of following conventions and the era of replacement (置換, indicating to replace other structural materials with RC), sham (虚偽) and expedient (姑息) manners are negative methods; While replacement lacks the beauty of truth (真実), rational structure (合理的ナル構造) indicating the characteristics of material is the right way;	p. 8 (chapter 3) (subtitles) 第二節、合理的構造… (as a whole organism) 二、構造ニ最モ簡ナル可シ…第三節、材料ト構造ノ形式…踏襲ノ時代置換ノ時代ニハ虚偽ト姑息手段トガ行ハレル而シテ構造ノ形式ヲ支配スル権威ハ因習ト消極的ナ便宜トデアル、ソコニ吾人ハ真実ノ美ト徹底ノ快感トヲ求メル㇆ガ出来ナイ (enter) 置換ハ構造ノ奇道デアル、合理的ナル構造ハ材料ノ性ノ指示スルトコロニ従ッテ宜シク正道ヲ濶歩ス可キデアル。
9. Expression of structure / mechanics				
10. Expression of material		O	See also 8	
11. Truth of structure		O	See also 8	
12. Truth of purpose		O	p. 5 [construction of] Tower ignoring the practicality is not truth. The versatility of shape should also be based on the honesty of plan.	p. 5実用ヲ度外シテ塔ノ存在ノ意義ト真ノ越 (possible character) トガ認メラレナイ。輪郭ノ多趣モ誠実ナル平面ノ発展ノ意味ニ於テ真ニ感興ヲ呼ビ起サシムルモノデアラウ。
13. No imitation of historical styles		O	See also 7	
14. No replacement		O	See also 8	
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form		O	See also 8	
19. Appearance reflects plan				
20. Straight lines		O	p. 16 The motivation (動機) of the style of RC should be settled in elastic arch (k) within (コモル) flat and straight walls (平直ナル壁体).	p. 16 鉄筋コンクリートガ如何ナル様式ヲ事実ノ上ニアラワサンカハ吾人ノ聞知セザルトコロデアル然ラハ鉄筋コンクリート構造ノ当然トル可キ様式ハ如何ナル動機ニ成立ノ基ヲ置ク可キカ。凡テ建築ハ建築ニ対スル吾人ノ全的生活ノ誠実ナル発露デアラネバナラヌ㇆ハ建築概論(論as lost character, chapter 1)ニ於テ述ベタ誠実発露トハ他ナシ吾人ノ切実ナル要求ガ最モ合理的ナ構造ニヨリ真実ニ発露スル㇆デアル而シテソコニ建築ノ真ノ表現ガアル。…然ラバ鉄筋コンクリート構造ノトル可キ様式ハ正ニ平直ナル壁体ニコモルエラスチックアーチノ理法ニ動機ヲ置クモノデアラウ。
21. Flat surface		O	See also 20	
22. Flat roof				
47. Thin wall				

23. Light image	Decoration			
24. Lack beauty				
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.				
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration				
31. Free plan	Of freedom			
32. Free shape		O	p. 11 RC, as spatial existence (空間的ニ存在スル), is not restricted (拘束) regarding its monolithic (k) and castable (可鋳性) character. With the free quality, except the rational structure of RC, any imitation of other structures is implausible.	p. 11 施工ノ上ヨリ自然的ニモノリシック(corrected)デソノ可鋳性ハ材料ノ空間的ニ存在スル為メニ殆ンド何等ノ拘束ヲ受ケナイ点ニアルト思フ(enter) 而シテ此ノ自由ナル性ハ材料自身ノ合理的ナ構造形式以外ノ構造形式ヲ似スルフニ大ナル不都合ヲ生ズ(no imitation)…
33. Free aperture				
34. Casted object		O	See also 32	
35. As a single entity		O	See also 39, 8	
36. Monolithic		O	See also 32	
37. Large span				
38. Spatial existence		O	See also 32	
16. Curtain wall / frame	Structural form	V	p. 12 About how to ameliorate frame structure, I am going to talk about the general methods. (followed with the discussion of elastic arch)	p. 12 然ラバ柱ト梁トノ結合ニヨリ架構セラルー構造ヲ亦何ニ変化セシム可キカ、吾人ハ爰ニソノ大体ノ方寸ヲ述ブ可シ。
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 13 With complete joint (接合ノ完全) and massive bending stress, RC is the entity (全体ヲ一) of rigid frame (k) rather than separately arranged components, i.e., elastic arch (k) in broad sense (広義ニに解シテ);	p. 13 然ラバ鉄筋コンクリートノ構造設計ノ方寸ハ如何ニ他ナシ構造全体ガ、一、エラスチックアーチノ原理ニ従ッテ律セラル可キヲ信ズルモノデアル。…接合ノ完全ト弯曲力ノ絶大ナル新材料ノ特性ハ屋根、壁体、床等ヲ個々別々ニ考フル代リニ全体ヲ一ノリジッドフレーム即広義ニ解シテエラスチックアーチト考フルヲ最モ適当トスル。
40. Elastic (katagana, or original text)				
41. Rigid joint		O	See also 39	
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau				
45. Secession				
46. Skyscraper				

今林 彦太郎 Hikotaro Imabayashi

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts	O	p. 41- 42 The transition of style has been discussed by Prof. Ito under the title of The Future of the Architecture of Our Country Seen from the Principles of Evolutionism, which is omitted here.	p. 41-42 様式ハ変化スルモノトセバ其素因ヲナスモノ如何 (enter) 之ノ問題ニ就テハ既ニ伊東教授ノ「建築進化ノ原則ヨリ見タル我邦建築ノ前途」ナル論題ノ下ニ詳細ニ? (unreadable) リテ説明セラレタルヲ以テ今再ビ述ブルノ要ナシ。
2. National character		O	P. 41 As structure is made of material, the mechanical shape comes from the character of the nation's land, which shows the influence of climate, geography. In summary, systematic chains have to be discovered while looking at architecture, within which exists the style called by Prof. Ito.	p. 41 …構造ハ材料ニヨリテ作ラルヽガ故ニ此所ニ其国土ニテ得ラルベキ性質ノモノニヨリテ相当ナル力学的ノ形ヲ生ズ。又建築ハ実用ヲ目的トスルガ故ニ生活状態、其国ノ気候風土地質等ノ影響ヲ示ス。コレ等ヲ総括シテ建築ヲ見ルベキ時ハ、アル系統的連鎖ヲ発見ス。之レ即チ普通ノ様式ト云ハルヽモノニシテ、之ノ中ノアルモノガ伊東教授ノ所謂様式ナルモノナリ。
3. Individualism				
4. Spirit of era				
5. Practical architecture		O	p. 51 RC should take advantage of (活用) rather than stick to (固守) historical styles based on practical requirements and actual structure (実際ノ構造).	p. 52 1、「歴史的様式ハ尊重スベク盲従スベカラズ」…建築ハ須ラク有機的ナルベシ生命而モ溌剌タル精神ヲ有スル生命ヲ必要トス。即チ実際ノ目的ニ適シ、実際ノ需用ヲ満タシ、実際ノ構造ニヨラザルベカラズ。 (enter) 斯クノ如キ要件ヲ具備セズシテ徒ラニ形ノミニ腐心スルハ真ノ美ヲ得ルノ術ト云フベカラズ。
6. Economical		O	p. 44 Architecture in the future should be scientific structure (科学的構造) and economical object.	p. 44 以上ニヨリテ考フル時ハ将来ノ建築ハ「アラユル強度ニ於テ勝ル科学的構造ヨリ成リ」、「経済的ノモノタルヲ要ス」ル事ガ従来ノ建築ニ比シテ異ナルベシトス。
7. Based on science		O	See also 6	
8. Rational structure		O	p. 45 Utilization of historical manners is not rational and also inconvenient.	p. 45 歴史的手法ヲ其儘通用スルヿハ不合理ナルノミナラズ、実行ニ於テモ不便甚ダシキモノナリ、…
9. Expression of structure / mechanics		O	p. 41 Architecture should be clear mechanical expression (力学的表現) as has been mentions by Schopenhauer	p. 41 Schopenhauer 氏ハ建築美ヲ以テ「重量ト支持トノ明確ナル力学的表現ナリ」トセリ、斯クノ如キ見地ハ又一ノ真ナル事ヲ疑ハズ。
10. Expression of material		O	See also 11	
11. Truth of structure		O	New style has to flexibly take advantage of historical styles. Real structure has to make full use of the merits of material and be honest to the purpose of architecture (建築ノ目的ニ対シテ偽ラザル).	2、「鉄筋コンクリート構造ニハ新様式ヲ要ス」…ケレド歴史的様式ノ美点ニシテ真ニ活用シ得ベキモノハ以テ新様式ノ範トスベク強ヒテ之レニ反抗スルノ愚ヲ学ブベキニアラザルハ論ヲ待タズ、其本旨トスベキ処実ニ今日ノ世態ナリ、真ノ構造ナリ、真ノ需要ヲ満足セシムルニアリ。真ノ構造トハ其材料ノ長所ヲ発揮シ建築ノ目的ニ対シテ偽ラザル、構造ヲナスニアリ
12. Truth of purpose		O	See also 11	
13. No imitation of historical styles		O	See also 5	
14. No replacement				
15. Implication of historical styles		O	See also 11	
17. Simple plan	Of simplicity			
18. Simple form				
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface				
22. Flat roof				
47. Thin wall				

23. Light image				
24. Lack beauty	Of decoration	O	p. 45 Practices of the new architecture of RC usually gain the effect from flat decoration on monotonous surface.	p. 45 鉄筋コンクリート構造ニヨリテ新建築ヲ試シントスルモノハ多ク其構造ヨリ得ベキ自然ノ形、即チ単調ナル壁面ニ対シ平面装飾ヲ試シ以テ効果ヲ得ントスルガ如シ。斯カル系統ニ属スベキモノハ歴史上ニ於テモ其例少ナカラズ [Mission Style and Islamic]。
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.		O	p. 46 Dealing of surface can be artistic processing of concrete, painting, and paving (張付)	p. 46 今日行ハルヽ実際ノ方法ハ大別シテ次ノ三種トス。即チ、1.「コンクリート」其物ニ美術的加工ヲ施ス法; 2. 塗料ニヨル法; 3. 他ノ材料ヲ貼付スルノ法。
27. Flat decoration		O	See also 24	
28. Bold (less details) decoration				
29. Extrusion		O	See also 32	
30. No decoration				
31. Free plan	Of freedom			
32. Free shape		O	p. 52 Decorated structure rather than constructed decoration based on the harmony of entity, proportion, and colorization. As long-lasting, fire-proof and anti-seismic structure, the shape of RC is freer than other materials, which guarantees less loss of the strength of structure. Due to the casting method, the beauty of RC building should be obtained from fenestration (窓割), extrusion of extruded eaves (突出或ハ軒蛇腹) and shadow. Surface of RC should be painted or paved (貼付).	即チ (enter) 3、「構造ノ根本義ヲ尊重スベシ」(enter) 其美観ハ全体ノ調和、釣合、大小ノ配合、色彩ニヨリテ得ベク構造ハ須ク装飾スベク、装飾ヲ構造スベカラズ。 (enter) 鉄筋コンクリート構造ハ耐久、耐火、耐震的美点ヲ有スルモノニシテ構造的其形ニ対スル意匠ノ自由遥カニ他ノ材料ニ勝ルモノナリ、コレ形ノ変化ニヨリ強度ノ減退、他ノ構造ニ比シ一般ニ最少ナクト考ヘラルヽニヨル又構造ガ鋳造法ニヨルヲ以テOrnamentニヨリテ美観ヲ得ル事ハ実際上不便少ナカラズ。従ッテ (enter) 4、「其美観ハ窓割 (fenestration)、出窓ノ突出或ハ軒蛇腹、突出ニヨル陰影、効果ニ待チ。」…5、「其表面ハ塗料、貼付焼物ニヨリテ装飾スベシ。」
33. Free aperture		V	See also 32	
34. Casted object		O	See also 32	
35. As a single entity				
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form			
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.				
40. Elastic (katagana, or original text)				
41. Rigid joint				
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau		V	p. 42 New movements like the revivals of Classic, Gothic and Romanesque architecture, Art-Nouveau, Secession, skyscrapers and modern German style can be seen, but the main trend is yet clear.	p. 42 其新運動ト見ルベキハ「クラッシック」建築ノ再興ニ、「ゴシック」建築或ハ「ローマネスク」建築ノ復活ニ或ハ仏ノ「アール・ヌーボー」式、墺ノ「セセッション」式、北米ニ於ケル「スカイ・スクレーパー」及新「クラッシック」式、独乙近世式等ニ試シラレタリト雖 (possible character) モ、未ダ大勢ノ赴ク所トナラズ、恰カモ渦中ニ混乱セルノ状態ニアリ。
45. Secession		V	See also 44	
46. Skyscraper		V	See also 44	

浦 五十吉 Isokichi Ura

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts		p. 3 <進化> adopted, not evolution-ism	
2. National character		O	p. 38 The architecture of our country should be fire-proof, anti-seismic, durable and follow the economic condition. The style should express national character and the spirit of era.	p. 38 我国ニ将来発達セシムベキ建築ハ耐火的、耐震的ニシテ腐朽ノ恐レナキモノ即チ耐久的ノモノナラザルベカラズ、而シテ又我国ノ経済状態ヨリ押シ経路的ナルヿ亦大ナル要件ナリ。ソノ様式ニ於テハ我国民性ヲ現ハシ時代思想ヲ現ハセルモノナラザルベカラズ。…
3. Individualism				
4. Spirit of era		O	See also 2	
5. Practical architecture				
6. Economical		O	See also 18	
7. Based on science		O	p. 3-4 Regarding the progress of RC, the progress of science is astonishing.	p. 3-4 …今マタ鉄筋コンクリートノ発達ニヨリテ更ニ大ナル進歩ヲ促スニ至レリ、科学ノ進歩ヤ実ニ驚クベキモノナリト云フベシ。
8. Rational structure				
9. Expression of structure / mechanics		O	p. 1 As new material and new structure, the new style of RC should leave old styles and express structure.	p. 1 苟クモ鉄筋コンクリートハ新材料、新構造ナル以上ハ古キ様式ヨリ離シテソノ構造ヲ表現セル一新様式ヲ採ラザルベカラズ。
10. Expression of material				
11. Truth of structure		O	p. 32 Although the style of today is yet complete, but based on the principle of honesty, the styles should be different by the structures.	p. 32 鉄骨造ニ至リテハ発達ノ年月新ラシク未ダ充分ノ成熟ヲ遂グルニ至ラズ。現今尚進歩ノ域ニアリモノニシテ完全ナル様式ヲ有ゼザンドモ建築設計ノ原則トシテ誠実ヲ缺クヲ許サザル以上其構造ニヨリテ様式ヲ異ニスベキヤ明ナリ。
12. Truth of purpose				
13. No imitation of historical styles		O	p. 23 Utilizing the manners and <proportion> of stone or brick buildings is wrong; See also 15	p. 23 然シナガラ石造、煉瓦造ト己ニソノ性質、構造ヲ根本的ニ異ニスルモノナル以上ハ、此レラニ発達セル手法、proportionヲソノマヽ使用スルヿノ誤レルノハ明ナリ
14. No replacement				
15. Implication of historical styles		O	p. 34 RC can be paved with stones and bricks, but the imitation (模擬) of stone or brick buildings is implausible. Obtaining new expressions (表現) by implicating the designs (意匠) of the past can be the plausible method	p. 34 装飾煉瓦ヲ使用スルモ鉄筋コンクリート造ナルヿヲ表ハス如ク適当ニ使用セバ、敢テ排斥スベキニアラズ、要ハ鉄筋コンクリートヲ以テ石造煉瓦造ヲ模擬スルヿハ全然サケベキヿナリトス。…過去ヨリ離レタル新ラシキ様式ヲ採ルベキナリト信ズ。…過去ニ意匠ノ暗示ヲ求メテ、新ラシキ表現ヲ得ル事ハ適当ナリ一手段ナリトスベシ。
17. Simple plan	Of simplicity			
18. Simple form		V	p. 31-33 Although form work (仮枠) and the arrangement of materials are the life (生命) of RC, the elimination (消滅) of the utilization of form work should be the future of RC considering economical issues. Shape of RC has to be simple (簡単) and in straight lines (直線的) due to the restrict of today's formwork; See also 21	p. 31-33 (p. 31) 用模式トハ鉄筋コンクリート造ノ如ク先ヅ仮枠ヲ造リ之レニ材料ヲ注入シテ築造シ、仮枠及ビ材料ノ配列如何ヲモッテ生命トナスモノナリ。… (p. 32) モシ仮枠ヲ用ヒズシテ構造シ得ルニ至ラバ (uncertain) 鉄筋コンクリート建築ハ更に一大進歩発達ヲナスベキハ明ナルヿナリ。… (p. 33) 経済的材料ナル大ナル利点ヲ仮枠ノ為メ消滅セシムルニ至ルモノニシテ、又ソノ表ハスベキ形モ比較的ニ簡単ナル直線的ノモノトナルナリ。
19. Appearance reflects plan				
20. Straight lines		V	See also 18, 21	
21. Flat surface		O	p. 37 Regarding the prosperity of Secession style and RC, the structure of RC should have flat (平面的) surface with <simple> and <bold> decoration, which should be of light image. It is interesting (興味ヲ感セザルヲ得ザルナリ) when comparing (相対照シラウ見ル) Secession and RC;	p. 37 カクノ如クセセッション主義漸ク勢力ヲ得、盛ンニ研究サレツヽアル際ニ当リ、鉄筋コンクリート造建築ノ漸ク勢力ヲ得、先途益々発展セントスル傾向ヲ有スルハ実ニ注目スベキ現象ナリトス前ニモ述ベシ (uncertain) 如ク、鉄筋コンクリートハソノ構造トシラウ表面ノ平面的ニシテ又装飾体ノ如キモsimpleナル又boldナルモノナラザルベカラズ、ソノ表ハス所モ (uncertain) 軽快ナルモノナリ。此両者ヲ相対照シラウ見ル時ニソノ為ニ実ニ際キ興味ヲ感ゼザルヲ得ザルナリ
22. Flat roof				
47. Thin wall		O	p. 24	p. 24 元来鉄筋コンクリート構造ノ最大特徴ノ一トスル所ハ壁薄キモノヲ作リウルヿニシテ鉄筋コンクリートヲ以テ石造ノ如ク壁ヲ厚クシ石造ノproportionニ従ヘバ、不経済ニナルノミナラズ構造法ヲ誤リソノ美点ヲ没却スルヿハナルナリ。

23. Light image	Of decoration	O	See also 21	
24. Lack beauty		O	p. 23 The biggest difficulties of utilizing concrete are the lack of color, good shadow, and the unpleasantness of the plastic appearance.	p. 23 コンクリート建築的材料トシテ使用スル際最モ困難トスル所ハ一様ナル色ヲ缺クㄱ、心地ヨキ影ヲ得ルㄱノ能ハザルㄱ、及ビ外観ノplasticニシテ不快ノ感ヲ与フルㄱナリ。 (enter)…従ッテ種々ノ表面仕上ゲ法発達シテ幾分此レラノ缺点ヲ補ヒ得ルニ至レリ。
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.		O	p. 27 Dealings of surface can be to bare concrete, painting, and paving;	p. 27 表面仕上ゲノ方法 (title) (打チ放シノマヽ、表面ニ他ノ材料ヲ塗リ、表面に他ノ材料ヲ張リ付ケ)
27. Flat decoration				
28. Bold (less details) decoration		O	p. 26 <Bold> molding is better than delicate details for RC; See also 21	p. 26 (<cast concrete>)然レドモCast concreteノ表面ハクスミタル灰色、粒状ノ表面ヲ有スルモノナレバ、クラシックノdetailニ於テ見ル如キ良結果ヲ得(possibly miswritten？)ル (uncertain 3 characters) ㄱ到底不可能ナリ。従ッテ輪郭ハboldナモノナサザルベカラズ (bold outline of moldings with explanation of section drawings)。又コンクリートニテ精巧ナdetail又ハ複雑ナmoldingヲ使用シテモ到底良結果ヲ得(possibly miswritten？)ルコト能ハザルナリ。
29. Extrusion		O	p. 25	p. 25
30. No decoration				
31. Free plan	Of freedom			
32. Free shape			p. 32	p. 32
33. Free aperture		O	p. 24 In modern era, large <door opening> and <window area> are required, for which RC with free apertures on the wall (壁面ノ開孔全テ自由ナル) is better than steel structure;	p. 24 現代ニ於テハ銀行、会社、大高居、工坊等盛ニ建築セラルヽニ至リ、実用目的ノ要求トシラウ窓ヲ大トシラウ採光ヲ多量ニシ又door openingヲ大ニスルㄱ必要シイナレリ。又一方ニ於テハ高大ナル建築盛ニ起ルニ伴ヒテwindow areaヲ大トスル必要アルハ明ナリ。即現代建築ノ要求ハwindow areaヲ大ニシ、door openingヲ大ニスルㄱナリ。 (enter) 「鉄骨構造ニヨリテ此ノ目的ハ多少達セラレタツトハ (possible 6 characters)」 雖トモ、鉄筋コンクリート構造ノ壁面ノ開孔全テ自由ナルニハ到底及バザルナリ。即鉄筋コンクリート構造ハ現代建築ノ要求ヲ充タスモノナリ。
34. Casted object		V	See also 18	
35. As a single entity		O	p. 34 There is not joint on the surface of RC, i.e., all the building as a single entity, which looks safer than masonry buildings.	p. 34 鉄筋コンクリートノ表面ニ目地ナキハ此ノ構造ノ一ノ特色ナリ、即チ建築ヲ全体単一体ニ造ルㄱヲアラハスモノニシテ、石造煉瓦造ニ比シ遥カニ堅固安全ナルㄱヲ表現スルモノナリ。
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form		p. 39 Regarding that the mechanical relationships among components and the curtain wall of RC are similar with traditional wooden (伝統木造) architecture of Japan, the wooden architecture of Japan should evolve to be long-lasting (耐久的) building.	p. 39 構造上ヨリ見レバ構造自由ニシテ、柱、床、梁ニテ荷重ヲ支承セシメ壁ハ張壁トナス点ニ於テ我木造建築ニ相似タリ、此鉄筋コンクリートヲ以テ我国古来ノ日本建築ヲ基礎トシ日本趣味ノ建築ヲ造ルㄱ比較的困難ナラザルベシ、即チ此ノ鉄筋コンクリートハ我国将来ノ建築ヲ決定スベキモノナランカ。即今や我国ノ建築ハ木造ヨリ将来 (possibly lost character) ニ耐久的建築ニ進化セントシツヽアルナリ。
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.				
40. Elastic (katagana, or original text)				
41. Rigid joint				
42. Japanese style	Prototypes	O	See also 16	
43. Japanese taste				
44. Art Nouveau		V	p. 37 New attempts trying to create new style such as Art Nouveau and Secession can be counted.	p. 37 古キ様式ヨリ脱離シ新ニ一乾坤ヲ開カント試ムルニ至レリ、カヽル試ハ仏国ノアール・ヌーボーニ或ハ独ノセセッションとナリテ表ハレレ (uncertain character) モノナリ。
45. Secession		O	See also 21	
46. Skyscraper			* NY, Hyatt, the US mentioned, not skyscraper	

野田 俊彦 Toshihiko Noda

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts			
2. National character		O	p. 35 In the fixed time and place, there are three factors influencing the form of architecture, i.e., 1. National thoughts, albeit the differences between individuals, science, practicality.	p. 35時と処とを固定した時、建築の形を左右すべき上述の三理由中、先づ定めらるものは第三のものである。即ち一時代に於ける一国民の趣味思想は個人個人 (repeated words) に於て些小の差異はあるにしても或る範囲の外を出でない。之れに亜ぎものは第二の科学的条件である。第三の実用的条件に及んでは時と処とを固定したために限定せらるゝ事最も少ないものである。
3. Individualism		O	p. 36 Historical styles depend on the taste and thoughts of designer, spirit of era, and national character, followed by material, structure, climate, culture, etc.	p. 36 それ故に歴史的様式を支配する原因の最大なるものは作者の趣味、思想となるべき、時代精神や国民性であり、材料、構造、気候、風土、等は之に亜ぎものと考へたのは当然の事である。
4. Spirit of era		O	See also 3	
5. Practical architecture		O	See also 2	
6. Economical				
7. Based on science		O	See also 2	
8. Rational structure				
9. Expression of structure / mechanics				
10. Expression of material				
11. Truth of structure				
12. Truth of purpose				
13. No imitation of historical styles				
14. No replacement				
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form				
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		X	p. 47 Regarding RC structure as a single entity of rigid block and putting orders of column (柱型) inside with no specific reason and expressing <massive> feeling and <flat surface> intentionally (故らに), these methods are wrong.	p. 46-47 此構造 [RC] の建物が全体を一つのrigid なblockの如く考へられるのもcastして作られた建築と云ふ考から来るものであって、何か理由が無ければ外部までも表はれねばならぬ筈の柱型を故らに壁の内側に入れて、massiveな感を与ふるflat surfaceを作って、鉄筋混凝土構造を表現し得たらとする。誤れるの甚だしき物であると思ふ。
22. Flat roof				
47. Thin wall				

23. Light image	Of decoration			
24. Lack beauty		X		p. 46 混凝土の色が不快であるとか、入口や窓の懐が薄い故に貧弱であると云ふものは未だ共に建築を語るに足るものではない。
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.				
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration		O	See also 16	
31. Free plan	Of freedom			
32. Free shape		0	See also 40	
33. Free aperture				
34. Casted object		X	See also 16	
35. As a single entity		X	See also 21	
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form	O	p. 46 Decorating architecture is not allowed. …RC is frame structure rather than <cast>-ing, as casting is only the method of construction;	p. 46 建築物を飾らうとする考は最早どうしても許されぬ物となった。…鉄筋混凝土構造は決して、世の中で考へられる様なcastした建築ではない。成る程其施行の方法がcastingに類するけれ共それむ (も, possibly as miswritten) 甚皮相な見方で其の原理に於てはcastingに類する点はなく、純然たる組立構造である事は前に述べた。
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.				
40. Elastic (katagana, or original text)		O	p. 47 Considering RC as <elastic> material, it can be regarded as wooden structure with freedom to making <curve> and complete joint. Its essence should be similar with [Japanese] wooden structure.	p. 47 鉄筋混凝土もっとelasticなものである。curveを作る事が自由で且接合部構造の完全なる木材構造である。其構造の本質より生ずべき様式は恐らく木材構造の様式と相似たものと思はれる。
41. Rigid joint		O	See also 40	
42. Japanese style	Prototypes	O	See also 40	
43. Japanese taste				
44. Art Nouveau				
45. Secession				
46. Skyscraper				

高橋 貞太郎 Teitaro Takahashi

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts	O	p. 24 Current replacement (置換) is not the real replacement in evolutionism (進化主義), but rather the imitation of historical manners due to the obsession (眩惑サレテ) to Japanese taste (日本趣味) , which is mutant (変態);	p. 24 然シ? (possibly as comma) 直写模倣カラ醒メントシタル吾々ハ建築界ノ一角ニ此ニ不思議ニモ置換 (Takahashi's comprehension of Ito's evolutionism, of which as one stages by replacing the material of architecture) ニ煩シタ手法ヲヤル事ガ起ッタノデアリマス。然シ之ハ決シテ進化主義者ノ唱フル置換ノ時代デハアリマセヌ。直写カラ急ニ喚ビ起サレタル建築家ノ一部ガ日本趣味ナル覚醒ノ声ニ眩惑サレテ徒ラニ歴史的、懐古的ノ手法形式ヲ模シテ観者ニ特殊ノ衝動ヲ与 (possible character) ヘ、不当ノ効果ヲ収メヨートシタニ過ギマセン。之レ全ク一時的ノ変態ニ過ギナイノデアリマス。
2. National character		X	See also 4	
3. Individualism				
4. Spirit of era		O	p. 19 Architectural materials will be similar, and the thoughts of society will be similar around the world.	p. 19 然シ今後ノ建築材料ガ非常ニ共通的同質的デアッテ、社会思潮モ又世界的ニナッテ来ク傾向ガアリマス。
5. Practical architecture		O	See also 8	
6. Economical		O	p. 9 Architecture of modern era should be constructed based on the economic situation of the country.	p. 9 現代ノ建築ガ国家ノ経済状態ニ応ジ実用ニ基キ完全ニ構造サレル事ヲ? (unknown character) トスベシト云フニ付テハ正ニ当テ得テ居ルト思ヒマス。
7. Based on science		O	p. 2 New structure of RC based on science is on the opposite side of the styles in the past.	p. 2 今鉄筋混凝土ナル新材料カラ鉄筋混凝土構造ナル新シキ構造法ガ生ミ出デマシタ。ソーシテ、ソノ科学的ナ堅実ナル基礎ノ上ニ立ッテ古キモノト相対峙シタノデアリマス。
8. Rational structure		O	p. 7 The beauty of architecture should be truthful practicality (真実ナル実用), rational structure (合理ナル構造), honest expression (忠実ナル表現), sincere appearance (真摯ナル表徴).	p. 7吾々ノ求ムル美ハカレノ皮層 (should be 相) ノモノデアリマス。真実ナル実用、合理ナル構造、忠実ナル表現、真摯ナル表徴トニ基ヅイタ美デアラネバナリマセン。真実カラ自然ニ流シ出ヅル美デアラネバナリマセン。
9. Expression of structure / mechanics		O	p. 11 The expression of contents (内容ノ表現) in architecture can be divided as 1. The contents of our daily life; 2. External expression of the usages of rooms; 3. Expression of structure;	p. 11然ラバ所謂内容ノ表現トハ如何ナル事デアルカ。之ノ区分?? (two uncertain characters, possibly as シテ) 見マスト。I. 建築ニヨリテ包容セラレタル吾人生活ノ内容。即チ建築ニヨリテ吾々ガ如何ナル要望ヲ満足シツヽアルカト云フ事ノ表現。II. 更ニ大キク見テソノ各ノ室ノ役目ニ応ジテ夫々外部ノ現シ方ノ違ノ事。III. 構造ノ表現。
10. Expression of material				p. 30
11. Truth of structure		O	p. 29, 31-32 About the expression of architectural structure——so-called sham (虚偽) architecture (title of chapter 3-4, part 1) …Coverings (被覆材) with rational dealing is not sham. The dealing of covering should not be similar with wooden and brick buildings;	p. 29 「第四節　建築構造ノ表現ニ付テ—所謂"虚偽建築"ヲ論ジテ更ニ建築家ノ覚悟ニ及ブ」 (section title) p. 31-32 (following the section title p. 29) ソー (possible two characters) シテソノ被覆材ガソノ目的ニ向ッテ最モ合理的ニ処理セラレタナラバ之ハ決シテ虚偽建築デナイ。…然シ之ハ[similarity with wooden and brick buildings]被覆材トシテ適当ナ処理ヲ受ケタモノト云フ (possible 2 characters) ㇵ出来マセン。モト木造ト煉瓦造トハソノ構造形式ノ根本ニ於テ大ナル相違ガアルノデアリマス。
12. Truth of purpose		O	See also 8	
13. No imitation of historical styles		O	P. 20 Rather Than Truthful Practicality And Rational Structure, Styles Of Classic System Call Up The Taste Of People By Using The Existing Forms And Implicating Historical Prototypes, Which Is Not Our Pursuit Of Providing Common Taste (一般的ニ興味ヲ与ヘ); See also 1	p. 20 即チ之等ノ様式的建築 (classical system) ハ真実ナル実用合理ナル構造ヲ基トシテ自然的ノ美ヲ感ゼシメンノデハアリマセヌ。却ッテ過去ノ優秀ナル建築ニ由来シタ伝承的ノ形態ヲ用フル事ニヨッテ過去ノ優秀ナ形ヲ暗示シ又ハソノ歴史的趣味ヲ誘起シテ之等ノ説明的事項ニヨッテ強ヒテ観者ノ興味ヲ喚バウトスルノデアリマス。カヽル興味ハ専門的ナ説明的ナ聯想的ナモノデアリマシテ到底一般的ニ興味ヲ与 (possible character) へ得るモノデハナイノデアリマス。 (enter) 吾々ノ求ムル美ハモット一般的ノモノデアリマス。
14. No replacement		O	See also 1	
15. Implication of historical styles		X	See also 13	
17. Simple plan	Of simplicity			
18. Simple form				
19. Appearance reflects plan		O	p. 12 Regarding the plan (平面) as the most relevant feature of architecture, the expression of appearance (外面) should make the imagination on the entire architecture possible	p. 12 従ッテ最モカヽル平面ノ特性ヲ有シ、ソノ外面ガ直チニ平面ノ全体ヲ想像サセルヨ?? (possibly as 一ナ) 性質ノモノハ最モヨク、之ヲ表ハシ得ルデアリマセウ。
20. Straight lines				
21. Flat surface		V	p. 61	p. 61 鉄筋混凝土構造ノ建築様式ハ表面ヲ平直ニスベシトカ、繰形ノ少クスベシトカ云フ事ハ要スルニ第二義ノ事デアリマス。…
22. Flat roof				
47. Thin wall				

23. Light image	Of decoration			
24. Lack beauty		O		p. 47 吾々ハ不幸ニシテ、鉄筋混凝土ガソノ材料美ニ於テ大ナル欠点ヲ有スルモノデハアルコヲ認メナイワケニハ行キマセン。
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.		O	p. 57-58 We want perfect material without covering, however, the dealings of surface are still necessary. My most ideal method is to add mixture to concrete, and others like painting, colorization, and paving also exist.	p. 57-58 吾々ハ材料ノ完璧ハ望ミマス被覆ハ望ム所デハアリマセヌ。然シ材料ノ完璧ヲ期シ得ザル今日、要望ノ如何ニヨッテ、場合ニヨリテ、之ニ適当ナル表面仕上げ法 (*被覆モソノ一ト見テ差支ヘナイカモ知レマセヌ) ヲ用フルノハ止ムヲ得ナイ事デアリマス。 (enter) 最モ望マシキ事ハ適当ナル混合剤ニヨッテ、ソノ材料美ソノ防水性ヲ増シ更ニ音響ニ対スル…他ニ即チ塗料、色剤ノ配合及ビ貼付材ノ使用等デアリマセウ。…被覆トシテ最モ望マシキモノハソノ被覆材ガ片々ヨリナルモノデハナク、全体ガ一体トナッタモノデアルト思ヒマス。
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion		X	See also 21	
30. No decoration				
31. Free plan	Of freedom			
32. Free shape		O	p. 42 RC which is an entity (単一体) with free shape (成形) is called casted (鋳造) structure, having the quality of unity from construction;	p. 42 3) 鉄筋混凝土構造ノ単一体トナリ得ル事及成形ノ自由 (enter) 鉄筋混凝土構造ハ之ヲ鋳造構造ト呼バレノ (possible character) 如く、施工上自ラ全体ガ一ツノモノトナッテアッテ、之ヲ各部組合セタモノトスルニハ却ッテ色々ノ手段ヲ要シマス。従ッテソノ接合ハ自ラ剛トナリ、構造ノ何レノ部分ト雖も他ノ部分ヘノ影響関係ナシニ存在スルコハ許サレナクナルノデアリマス。
33. Free aperture				
34. Casted object		O	See also 32	
35. As a single entity		O	See also 26, 32, 39	
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form	V	p. 51 Up to now, the structural form [of RC] has not changed, which is still lintel system. Because of the expedience and convenience of calculation, RC structure is forced to stay with lintel system.	p. 51 …然モソノ構造形式ト云フ根本問題ニ至ッテハ殆ンド何等ノ変化ヲ見ナイノデアリマス。最近ニ至ルマデ殆ンド全ク楣式トシテノ構造法ヲ応用サレテオッタノデアリマス。ソレハソノ設計ニ付テ見レバ明カデアリマス。 (enter) 成程。コノ楣式ヲ応用スル事ハ鉄筋混凝土ニ対シテ無理ナ事デハアリマセヌ。計算モ簡単デス。従ッテ今日マデ鉄筋混凝土構造ト云ヘバ楣式トサレテ居ッタノモ致シ方アリマセヌ。
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 53 Rigid joint (剛節接合) is natural and rational for RC, and RC should transcend lintel system (楣式). The structure of rigid joint is rigid frame (架構), or in broad sense, elastic arch (k) p. 55 Although I do not have any idea on the specific form of elastic arch, but the T shape girder can be the hint.	p. 53 鉄筋混凝土ニ対シテハ剛節接合ガ自然デアリ合理的デアッテ、鉄筋混凝土構造ガ単純ナ楣式ヲ超越シテ剛節ナル接合ノ形式ニ進ム事ハ万人ノ等シク認ムル所デアルト思ヒマス。…剛節架構デアリマシテ広義ニ解釈シテ”エラスディックアーチ”、デアリマス。 p. 55 然ラバ即チエラスディックアーチノ理法カラ出発シタル合理的構造ノ具体的形式ハ如何ナルモノデアリマセウカ。浅学菲才ノ身遺憾ナガラ確タル案ハナイノデアリマス。 (enter) 然シ、漠然タル考ハ自ラナイデハアリマセン。ソレハ、現今用ヒラレテ?? (possibly as オル) T形梁ノ原理ヲモット広く有効ニ利用シタモノデ然モ今日見ルヨーナ形式ノモノデアハナカローカト考ヘルノデアリマス。…梁ト床等トガ一体チナッテ、所謂T形梁ノ原理ガ出来ルダケ広く用ヒラレタモノデナカローカト考ヘルノデアリマス。
40. Elastic (katagana, or original text)				
41. Rigid joint		O	See also 39	
42. Japanese style	Prototypes	X	p. 22 Calling up the taste of Japanese architecture by the previous methods (implication) is also implausible. Real Japanese taste can be obtain from pursuing natural beauty.	p. 22 己ニ述ベタ論法カラ? (uncertain) クト之モヤハリ過去ノ日本ノ様式ニ準拠シ之ニヨッテ歴史的懐古的ニ建築ニ所謂日本趣味ヲ喚ビ起サントスルノデアッテ、同ジク説明ニヨッテ美ヲ納得セシメヨートスル詐リノ手法デアリマアヌ。 (enter) 吾々ハ新た (possible character) ノ誰レヲ、自然的ナル美ヲ求ムベキデアリマス。ソコニ自ラ真ノ日本趣味モ求メ得ラレルデアリマセウ。
43. Japanese taste		O	See also 42	
44. Art Nouveau				
45. Secession				
46. Skyscraper				

大塚 剛三 Kouzo Otsuka

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts	O	p. 4 Rather than the route of merger (合成主義) or assimilation (literally naturalization, 帰化主義), the style of RC should choose Evolutionism, which however, could take a long time;	p. 4 扨て鉄筋混凝土構造の様式は如何なる主義を取るべきかこれとても破天荒の創意を許されざるべし必ずや以上の原則の何れかによらざるならず。敢へて云ふ進化主義なるべしと合成主義、帰化主義はこの材料の性質と相容れざるなり。然れども進化主義によりて形成するべき新様式は数十年の後の完成するべきか数百年の以後の大成するべきかまだ測り知るを得ざるなり。
2. National character		O	p. 6 In Europe, architects are creating identical styles of their own countries, among which Otto Wagner who creates light and clear design and harmonize structure et material with aesthetic taste, surpasses Art Nouveau and has become popular in Europe.	p. 6各国特有なる様式を形成せんとする気運は欧米の天地に漲れり其得意をする建築様式を立案して其各自独得の形態を大成せんとつとめつつあり、かのオットワグネル氏この中より出で其霊妙なる手腕を振ひ仏国のアールヌーボー以外に一の新領土を欠いた行くしつつあり其意匠軽快明瞭構造材料と美的趣味の調和を計る事に努力しアールヌーボーを凌いで欧州建築界を風靡せり。
3. Individualism		O	p. 6 Personal taste has become the global trend. Especially, the works of architects without confidence are not appreciated.	p. 6 個人的趣味の発達—世界今日の大勢は大に個人性を尊重するの傾向を生ぜり殊に自信なき建築家の製作物の価値なるや甚だ疑はしきものなり。
4. Spirit of era		O	See also 3	
5. Practical architecture				
6. Economical				
7. Based on science		O	p. 7 With the development of science, the form of architecture should also change.	p. 7 而も構造法は益々科学的に発達せり斯く材料構造に大変動あるにつれ建築の形式もそれに伴って変化すべき…
8. Rational structure		O	p. 7 Correct style should be the correct external expression of the internal structure, in other words, real style comes from rational structure	p. 7 建築様式と材料構造との関係 (as subtitle) 正しき建築の様式は建築の内部に於ける正しき構造を正しく外部に表示したる表現あり。換言すれば合理的構造ならざれば真の建築形式を形成し能はず。
9. Expression of structure / mechanics		O	See also 8	
10. Expression of material				
11. Truth of structure		V	See also 42	
12. Truth of purpose				
13. No imitation of historical styles			p. 6 & 8	
14. No replacement				
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form				
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface				
22. Flat roof				
47. Thin wall		O	See also 42	
23. Light image	Decoration			
24. Lack beauty		O	p. 15-16 RC lacks the beauty of material, so that it is not suitable to have bare concrete.	p. 15-16 建築材料として材料美のなき事 (subtitle) …其表面頗る単調に陥り易く建築の内外部に其儘便用する事到底不可能の問題なり。
25. Lack solemnity		O	p. 21 How to ameliorate the lack of firmness in RC is the subject in the future.	p. 21 (RC) 堅実の表現に乏しきものとなるなりかかる欠点を如何にして弥縫すべきか如何にして構造法と建築との調和を計り得るやの問題は必ず起り得るものにして鉄筋混凝土構造法が美的建築に応用さるるまでには必ずや解決せらるべき宿題なり。v
26. Dealing of surface with fabrication, painting or paving, etc.				
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration				

31. Free plan	Of freedom			
32. Free shape				
33. Free aperture				
34. Casted object				
35. As a single entity				
36. Monolithic		O	See also 39	
37. Large span				
38. Spatial existence		O	p. 24 The only theory for RC being free material and spatial existence is elastic arch, so that today's structure should evolve to elastic arch.	p. 24 鉄筋混凝土は極めて自由なる材料なり鉄筋混凝土構造が空間的に存在する為には唯一のエラスチックアーチの理論あるのみなり。
16. Curtain wall / frame	Structural form	V	p. 16 Today's RC structure has two methods, as the first is curtain wall system and the other is reinforcement system. Curtain wall system has columns, girders, lintels as frame (組立て) with walls hanging on, i.e., a type of lintel system (楣式); p. 20-21 Curtain wall system does not fully utilize the capacity of RC, as is still similar with wooden and masonry architecture;	p. 16 現今採用されつつある鉄筋混凝土構造 (as title) 構造上二大別する　補強式構造法　張壁式構造法…張壁式構造法とは外部の抵抗を柱、梁、桁等にて受け基礎によりて土地に伝ふる形式にして即柱梁桁等の骨格全部を鉄筋混凝土にて組立て張壁と称する…即ち一種の楣式建築なり。 p. 20-21 張壁式構造法は鉄筋混凝土の特性を遺憾なく発揮せるものとは云ひ難し須らく一の構造に到達すべきなり。材料の変化せる場合その構造は当分新材料を以て旧形式を採るものにして歴史に徴しても明かなり而も鉄筋混凝土構造は今やその状態を彷遑しつつあり。即ち張壁式構造が木造石造の構造に類似せる点多きを見てもこれを知り得べきなり。
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 22 RC in the future should have free (自由) and complete (完全) joint, which is naturally born from the monolithic (k) character seen from construction process. Rigid frame (k), or in broad sense, elastic arch, is the most rational for RC, as is admitted by thousands of people.	p. 22 将来完成さるべき鉄筋混凝土構造 (title) … 即ち接合の自由と完全とはその特性上の最も重要なるものなり。…(for RC) 楣式構造は稍不適当なり鉄筋混凝土はその施工上自然的にモノリシックにして各部の接合は求めずしてリジッドの傾向を有し梁は梁、柱は柱と個々に独立せしめるには反って特別の施工を要するものたり。 (enter) 鉄筋混凝土造のリジッド接合が自然にして合理的なる事は衆目の一致する所にして鉄筋混凝土構造が単純なる楣式以上にリジッド接合の構造、即ちリジッドフレームに趣くことの最も合理的なるは千 (possible character) 人の等しく認むる所なり。 (enter) リジッドフレームは広義のエラスチックアーチなり。
40. Elastic (katagana, or original text)				
41. Rigid joint		O	See also 39	
42. Japanese style	Prototypes	O	p. 21 As the closest structure to traditional Japanese architecture, there must be a style for RC. And the thin wall of RC should not be hidden.	p. 21 この日本建築構造法と最も類似せる鉄筋混凝土構造法にも其構造の原則より?? (unreadable, possibly as 打算) せられ—新建築の形式が必ずや成立すべきである。然もその形式は壁厚の薄き事を隠蔽せず好妙に利用して意匠せるものなるべしと信ず。
43. Japanese taste				
44. Art Nouveau		X	See also 2	
45. Secession		O	Today's new attempts like Neo-classicism, Secession and structural style in the US can be counted. However, if any of these can be the motivation of new style or something else is still in suspension.	p. 1-2 今や欧米の列国に於ては復興式の羈絆を脱してセセッション式或は新クラシック式或は亜米利加構造的様式等種々なる創作 (* not as prototypes) を試みつつあり。 (enter) その何れず (possibly reversed) 将来の様式の動機となるべきか又他に全く異なれる様式を生むべきかは未決の問題なれど…
46. Skyscraper		O	See also 45	

柳澤 彰 Akira Yanagizawa

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts	O	p. 16 The development of Western architecture is the process from clay to wood to masonry, as well as the evolution from lintel system (楣式) to arch system (拱式) to the mixture of these two.	p. 16 以上 (about historical styles of Western architecture) 述べ来 (possible character) レルトコロ、先近世ニ至ル迄ノ泰西建築構造ノ変遷概況ナルガ大体ニ於テ土造、木造ヨリ石造煉瓦造ニ移リ楣式ヨリ拱式ニ更ニ両者ノ混合式ニ進化シタルヲ見ルニ難カラズ。
2. National character		0	p. 22 The skyscrapers in the US are not suitable for Japan. Although the route of style might be influenced by national character, considering the increasingly developed transportation around the world, the difference between different places is becoming smaller.	p. 23 結論 (title) 建築ノ進歩ハ国ヨリ地理ニヨリテ方向ヲ一ニセズ、米国ニ於テ独リ盛ナリ (possible character) 高層建築モ地震多キ我国ノ如キニ於テハ栄ユ (regarding the item in Koujien) ベクモアラズ。又国民性ノカハハ (uncertain two characters) ルアリテ其進路ハ必シモ同ジラ (possible 2 characters) セザルモノナリト雖モ、新構造ノ現出ガ建築界ノ大勢ニ於テ様式ニ一大革命ヲモタラサントスルノ所 (uncertain character) 之ガ影響ヲ被ラサウントスルモ不可能ナリ (possible two characters)。 (enter) 況ヤ今交通ノ発達ハ世界ヲ縮小シテ互ニ近隣ノ (The US partially denied, hard working proposed)状ヲナシ (possible 4 characters) 思潮ニ文物ニ同ジ時代潮流浴スルノ時ナレバ地方的差異ノ如キハモハヤ末ナリ。
3. Individualism		O	p. 9 Together with the development of science, instead of afterlife, individualism, realism, hedonism became the mainstreams of society.	p. 9 今ヤ十五世紀ニ兆シタル批評的実験科学ノ精神ハ全リ独断的宗教信仰ニ代リ、来世ノ天国ヲ云々スル一切ノ思想ヲ放棄シテ現在ノ生活上満足ヲ得、充実ヲ求メントスルノ結果自我主義トナリ本能主義トナリ個人主義トナリ現実主義トナリ享楽主義トナリヲ現ハレ或ハ倫理上ニ所謂功利説快楽説ヲ盛ナラシムルノ動機トナリ。
4. Spirit of era		O	p. 11 Style emerges from the accomplishment of structure and is in accordance with the thoughts of era.	p. 11 換言セバ様式ハ構造法ノ段階的完成ニ伴ヒヲ生ジ時代思潮ニ適合シテ成立ス。
5. Practical architecture		O	p. 4 Architecture is the construction dividing space for the purpose (目的) of human's life	p. 4 曰ク建築トハ人間生活ノ目的ノ為メニ空間ヲ画ル構造物ナリト。
6. Economical				
7. Based on science		O	See also 3	
8. Rational structure				
9. Expression of structure / mechanics				
10. Expression of material				
11. Truth of structure		O	See also 21	
12. Truth of purpose				
13. No imitation of historical styles		O	See also 21	
14. No replacement				
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form				
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		O	p.20 If the utilization of formwork continues, RC should have flat surface, which forces the abstinence of historical styles. Regarding that the imitation of historical styles is sham, structure following the past is the most sham method (最偽ラサル手段).	p. 20 今日ノ仮枠ノ状態ガ持続スルモノトセバ表面ハ平滑ナルヲ適当トシ材料自身ノ容色モ石材其他ニ劣ルガ故ニ常ニ歴史的様式ヲ犠牲トサザルベカラズ。既ニ歴史的様式ノ模倣ヲ許サズ(ス)トセバ従ッテ構造ハタダソノ便ナルニ任セテ最偽ラサル手段ヲ用ヒザベカラズ (followed by 30)
22. Flat roof				
47. Thin wall				

23. Light image	Decoration			
24. Lack beauty		O	See also 16, 21	
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.				
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration		O	p. 20 Decoration like coloring and carving should be restricted to small areas, and historical styles should be abstained.	p. 20 ソノ装飾ハ又全然色彩ニヨルノ外已ムヲ得ズシテ彫刻類似モノハ極メテ小範囲ニ限ラレ張瓦、張石、ペイント、フレスコ等ニヨリテ之ヲナサザルベカラザルコトヽナルト既ニRenaissanceノ時代ヲ経過シ、Classicノ復活、Gothicノ復活ノ後ヲ受ケタル現代ニ於テハ歴史的様式ノ総テヲ放棄シテ、此ノ説ノ如ク新規ナル分離ヲナスモ亦可ナルベシ。
31. Free plan	Of freedom			
32. Free shape				
33. Free aperture				
34. Casted object		O	See also 16	
35. As a single entity		O	See also 16	
36. Monolithic				
37. Large span		O	p. 21 Given that it is easy to make large span and arch, this characteristic should be the momentum of creating new style	p. 21 …即張間ノ大ナル架構、迫持等ヲ容易ニ構造シ得ルガ(カ)如キ能力アルナリ。此能力ハヤガテ新様式ヲ創成スルノ原動力トナリ得ベ(ヘ)ク。
38. Spatial existence				
16. Curtain wall / frame	Structural form	O	p. 18-19 Today's RC is built in frame (架構) with walls hanging on, casted with formwork as a single entity (全部ヲ一個体). However, the water-proof capacity, the complexity of formwork, and the lack of beauty remain as the problems	p. 18-19 而シテ今日ニ於ケル鉄筋混凝土構造ニテハソノ過程トシテ先架構ヲ造リ床ヲ張リ壁ヲ張ルノ順序ヲ経レトモ結局仮枠ニヨリテ全部ヲ一個体トシテ鋳出セシメ得ルナリ。…シカノミナラズ此構造材料ハ夫自身既ニ抗圧強度ニ於テ石材ニ優リ抗張強度ニ於テモ抗剪強度ニ於テモ又同様ニシテ耐火性ノ如キニ至リテハ他ノ総テノ材料ノ到底及ブベキモアラザルコト幾多ノ実例徴シテ明ナリ。… (half a page) 唯其耐湿性、仮枠製造ニ煩累、材料自身ノ外観色彩ニ就キテハ猶未満足スベカラズル点ナキニシモアラザレド又 (uncertain 4 characters) 以テ他日進歩改良ノ余地ヲ存スルモノトシテ必ズシモ憂フルニ足ラザルナリ。
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.				
40. Elastic (katagana, or original text)				
41. Rigid joint				
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau		O	p. 10 Despite the popularity of Art Nouveau, Secession, Neo-classicism, Neo-Gothic, the style of future is still not clear	p. 10 …ヌーボートナリ、セセッショントナリ、ニュークラシックトナリ、ニューゴシックトナリヲ現ハレタリト雖モ果シテ如何ナル様式ヲ将来ニ帰一 (uncetain character) セントスルガ之容易ニ測断スベクモアラザ (possible character) ル重大ナル問題ナリトス。…
45. Secession		O	See also 44	
46. Skyscraper		X	See also 2	

北澤 五郎 Goro Kitazawa

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts			
2. National character		X	p. 32 Rather than national character, style in modern era should be decided by individuality, like Otto Wagner.	p. 32 (in modern era) 国民性に由って定し来たった、様式は個人性に由って定る様に変った。… オットーワグネルの如きは彼の様式を有する。
3. Individualism		O	p. 9 (as antithesis against Noda) Architects can explain personal taste with the contents of architecture, and spectators can feel the personality of architects	p. 9作者の気分とは建築家が建物の内容を自己の趣味性によって解釈して得た感じである。それが建物に表れて観者に伝はるならば、観者は其建築家の個人性をも同時に感得し得るものとさへ見てもよい。
4. Spirit of era				
5. Practical architecture			p. 3 Architecture should satisfy the convenience of daily life and amplify the life of spirit as well. p. 8 Architecture should have some atmosphere, which can convey something to the spirit of human	p. 3 然らば建築はまた、人の肉体的生活に便利に都合よき様にある可きである。かくして、精神生活も亦当然多趣にして豊富なるものとなら得ると思ふ。 p. 8 吾人は以上建築は或る気分を有す可きであって、その気分が人の精神に何等かの感を与へねばならぬ事を説いた。是れ人生をして多趣ならしめ情操の働を充分ならしめて以て人生を意義深きものとせんがためである。
6. Economical				
7. Based on science		O	p. 30 However, with the development of science and transportation, material and climate have been no longer the factors of the emergence of style.	p. 30 然し曽て其の様式発生の素因であった材料とか気候とかは科学の進歩と交通の発達とにつれて様式発生の素因でなくなった。
8. Rational structure		O	See also 38	
9. Expression of structure / mechanics		O	p. 22 Decorations at the joints of structure, even indicating [symbolic] the internal structure can be the hint; See also 11	p. 22 然し吾人に具体的の案がないではない。(enter) 柱と梁との合点に飾を付けるとか、彫刻を附するとかもよいであろう。梁の横はる表面に横に帯を入れるのもよかろう。四角の星を横に並べたるが如きは小梁の存在をも併せて暗示して一層好結果を得はせぬだろうか、梁の暗示はやがて床の暗示である。…
10. Expression of material		O	p. 24 The manner of Otto Wagner, i.e., stone panels nailed to walls make the characteristics of material clear as well as the truth of structure (構造の性質を表現する真)	p. 24 然しオットーワグネルの試みる如く、石の薄片をボルトを以て壁体に取付けその頭を飾ったものは一見材料の性質を明瞭にし、従って構造の性質を表現する真 (correspondent with sham structure) の建築である、貼付けた石にも意義がある。
11. Truth of structure		O	p. 17 Expression of structure can be sham, but nothing sham exists the dealing of material	p, 17 虚偽建築に就ての論争は吾人の所論に良き例なるが故に是に就て私見を述べて見様と思ふ。 (enter) 木骨構造に化粧煉瓦を貼って煉瓦積建築の如く表現するは虚偽なりや否やと云ふ事に就て二三の人が意見を戦はした。 (enter) 私の考ふる所では、これは構造の表現に虚偽が有って、材料の取扱及びその手法には虚偽がないと見る。
12. Truth of purpose		O	p. 13-14 The expression of the characteristics of architecture means appearance following the function of architecture. The windows of staircase being the same with other rooms is sham (虚偽).	p. 13-14 建築の特性の表現 (subtitle) 故に建物の様姿気分に就て考ふるに先ちて第一に建物の内容特性の研究を重しとする。 (enter) 茲に一言「新しき様姿」なる言葉の意味を明瞭にして於きたい。「新しき様姿」とは全然旧来の形式手法を採らぬ意味でない。内容を充実に表現して新しき気分が出ればよいである。 (enter) 形式手法の如きは手段に過ぎない。建築内各室の表現 (subtitle) 階段室の窓を他の室と同じ様に造って外観は恰も普通の室の如く表現する場合がある。之は虚偽である。
13. No imitation of historical styles				
14. No replacement				
15. Implication of historical styles				

17. Simple plan	Of simplicity			
18. Simple form				
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		O	p. 28-29 RC has flat image (平面的感). Unlike the heavy and solemn feeling of Classic, Renaissance and Gothic buildings, RC should be light and chic (瀟洒)	p. 28-29 …(RC) 平面的感が多い、深味のないさらりとした感が多い。…ただ軽快、瀟洒なる感は遺憾なく発揮し得るものである。…広壮、端麗、荘重と云ふが如きクラシック、ルネッサンス、ゴシ(ッ, lost character) クの普通表す気分は表し得ぬと断定して違はない。
22. Flat roof				
47. Thin wall		O	p. 21	p. 21 鉄筋コンクリート構造に於ては壁は荷重(垂直の)を負はない、外界と内部と区分するの役目のみである。故に構造上外壁は甚だ薄いものでよい。
23. Light image	Decoration	O	See also 21	
24. Lack beauty				
25. Lack solemnity		O	See also 21	
26. Dealing of surface with fabrication, painting or paving, etc.		O	p. 27 The expression of RC can be 1. Bare (露出) concrete, 2. Painting, 3. Tiled stone, 4. Tiles. Any of these four should indicate column or girder;	p. 27 以上の論議を総括すれば、鉄筋コンクリート構造に於てな可き表現は次の如くなる。一、コンクリート露出の場合、二、塗料の施せる場合、三、石を張れる場合、四、タイルを張れる場合。而して、何れの場合も柱と梁との存在を暗示して其の構造の表現をなす可きものであると云ふに帰着した而して之れがやがて或る共通点を有する様姿を造るものである。
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration				
31. Free plan	Of freedom			
32. Free shape				
33. Free aperture				
34. Casted object		O	See also 39	
35. As a single entity		O	See also 39	
36. Monolithic				
37. Large span				
38. Spatial existence		V	p. 16 Architecture is spatial existence. (RC not mentioned)	p. 16 建築は空間を占むる実体である。
16. Curtain wall / frame	Structural form	V	See also 47	
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 19-20 RC is casted entity (全体が一個の鋳物), i.e., all the components are elastically (エラスチックに) combined together, within which T shape girder is an example. All these characteristics indicate the more rational structure of RC	p. 19-20 鉄筋コンクリート構造は建物全体が一個の鋳物と同じ様の性質を有する、即ち柱も梁も壁も床も総てがエラスチックに結合されて居る。結合と云ふよりは総てが皆脈絡ある一つの固体である。…床の一部も梁と共に荷重を負ふものとして計算して居る。丁 (or T) 字梁は即ち是である。 (enter) 是等は鉄筋コンクリート構造に於てもっと合理的でもっとその性質に適応した構造法の有り得可き暗示である。 p. 34 …鉄筋コンクリート構造建築に於ては (possible character) 其の構造上の特長の有る可きは明かである。それはエラスチックアーチである。然し此のエラスチックアーチは表面に表れて来ない、故に吾人はその表現方法を研めて気分に及びそれによりて様式の特長を論ずるより他に途がないのである。
40. Elastic (katagana, or original text)		O	See also 39	
41. Rigid joint				
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau				
45. Secession		V	p. 34 It is clear that the style of RC should not be Classic, Gothic, or Renaissance, but Secession is not for sure the choice. The specialness of RC should be elastic arch, which, however, is inside the building, so that the method of expression should be considered.	p. 34そう考へて見ると鉄筋コンクリート構造の採る可き様式は気分の方から云ひて、純たるクラシック、ゴシック、ルネサンスの如きものでないことが明かである。手法の方から云ふも同様である。 (enter) 然らばセセッション式であろうか、それも今茲に断定し難い。何と (uncertain 2 characters) あれば吾の所謂様式は躍進するからである。 (enter) 然し現今の所を以て云へば其の気分に於て端麗広壮なる事を必要とせぬ事務所、商店、会社等に最も適した様式である。
46. Skyscraper				

小林政一 Seiichi Kobayashi

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts			
2. National character		O	p. 10 Architecture forgetting the spirit of era, national spirit and social situation is only a scoop of water from the whole bucket.	p. 10 時代思潮、民族的精神及び社会状態を忘却せる建築は桶に汲み取りし一掬の水の如し。
3. Individualism		O	p. 36	p. 36 感情表現
4. Spirit of era		O	p. 16-19 Reasons of new style: 1. change of the trends of thoughts, 2. economic condition, 3. change of the purpose of architecture, 4. development of science, 5. development of transportation, 6. change of living condition, 7. development of art and crafts.	p. 16-19第五章 新建築様式の原因 (一)思潮の変化…(二)経済状態は何れの時代に於ても建築上の大問題なり。…(三)建築の目的の変化。…(四)科学の発達。…(五)交通の発達。…(六)生活状態の変化。…(七)美術工芸の発達。是の発達と又影響少しとせず。
5. Practical architecture				
6. Economical		O	p. 23 Utilization (難易) of formwork as the most relevant factor to budget, this conception has the most influence on architectural style; See also 4	p. 23 故に同一の仮枠を使用する度数は勿論、仮枠の難易等は最も建築費に関係する処にして、此の構造様式も大に此の観念より支配されざ(さ)る可からず。
7. Based on science		O	See also 4	
8. Rational structure		O	p. 29 Regarding that the new style of RC is yet resolved, we architects should take advantage of the character of RC, and create correct style based on rational structure.	p. 29 目下の建築界は、鉄筋混凝土建築なる、新様式に対して十分なる解決を与えず、吾々建築家はよく其の特性を利用して、合理的構造に基き、吾々の真率なる熱情を発露し、而して成りたる建築様式は、現代の最も正しき様式なり。
9. Expression of structure / mechanics				
10. Expression of material				
11. Truth of structure				
12. Truth of purpose				
13. No imitation of historical styles		O	p. 38-39 Neither the utilization of RC in traditional Japanese nor Western architectures are only imitation of the shape. Also, it's not agreeable that Secession will be the new style, which is actually based on the spirit of reason of Germans, detached from traditions. However, the hint of the style of RC is fortuitously offered by Secession, so it is also plausible to utilize Secession	p. 38-39 (Secession) 或る国粋論者の如く、単に斗組、肘木を持ち来りて之を石造、又は鉄筋混凝土造に適用せんとするは、余りに乱暴なり吾人はその精神を取るものなり。徒に形骸に捕はる、は、欧米建築の皮相を模倣する者と又孰ぞ。 (enter) 近時セヽッション式なる流派盛んに行はる。或る人は之を以て、完全なる新様式なるかの如く説くを聞く。然し予は未だ之に賛成するを得ず。何となれば此式たるや、独乙人の理性にのみ発達せる頭脳を以て、従来の形式より、全く分離せる新様式を作り出さんとする努力の結果産出せしとのにして、…然し乍ら、セヽッションは偶然にも鉄筋混凝土建築様式には、非常なる暗示を与ふるものならざる可からず。或は目下の状態に於ては、之を一歩進めて、材料構造に於ける特長を十分発揮せしむるに於ては、其の儘適用すると不都合なしと言ふと大誤なからん。
14. No replacement		V	p. 38	p. 38
15. Implication of historical styles				
17. Simple plan	Of simplicity	O	p. 24 For RC, the floor plan should be regular with few variations.	p. 24 鉄筋混凝土に於ても、其の平面図は規則正しく、壁面に凹凸少し…
18. Simple form		O		p. 28 (enter) 又ゴシック建築には、複雑なる曲線的の装飾、又は尖塔は意味ある合理的のものなりき、鉄筋混凝土建築には直線的の箱形のもの、最も合理的なり。…
19. Appearance reflects plan				
20. Straight lines		O	See also 18	
21. Flat surface		O	See also 17	
22. Flat roof		O	p. 40	p. 40 …三、屋根は従来の如く勾配の急なるものより、極めて緩き又は平屋根、荷重を軽減する点に於て最も適当なり。
47. Thin wall				p. 28 …されど合理的建築より見れば、薄き壁厚は、此の建築の特長なり。此の建築の表情は其薄壁に無かる可からず。故其の完全なる様式は此の薄壁を十分利用せられたるものならざ(さ)る可からず。

23. Light image				
24. Lack beauty	Decoration	O	p. 25 In Japanese architecture, surrounding eaves, carvings and gables are adopted to prevent the dullness, and there can also be something done for preventing the dullness of RC walls. …For masonry buildings, carving is the best decoration, while for RC, flat decoration (平面装飾) is the most rational method.	p. 25 日本建築に於て、壁面の単調を防ぐに、軒廻り、彫刻、破風等を以てせり、鉄筋混凝土構造に於ける、壁面の単調を防ぐに、何を以てするか。…石造建築に於ける、彫刻的装飾の如く、鉄筋混凝土に於ては、平面装飾を以てするこ (as variant character of こ) そ、最も合理的のものと言はざる可からず。
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.		O	p. 32 Paving is not all sham, which could also be rational. …The dealing of surface has to reflect the characteristic of RC as casted object	
27. Flat decoration		O	See also 24	
28. Bold (less details) decoration		O	p. 40-41 Subordinate details about the style of RC can listed here as 1. Simple and linear decoration considering the utilization of formwork rather than complicated details like capitals, window lintels, extruded eaves, and hangovers…	p. 40 然れ共其は新様式に対しては、第二義の問題なり、枝葉の問題なり、故に此に列挙せるのみ。 (enter) 一、鋳造的構造法なるが(か)故に、木材を以て仮枠とする間は、複雑なる柱頭飾、窓楣、蛇腹、持送り等を鋳出するは困難なり。故に簡単にして直線的のものならざ(さ)る可からず。…
29. Extrusion				
30. No decoration				
31. Free plan	Of freedom			
32. Free shape				
33. Free aperture				
34. Casted object		O	See also 26	
35. As a single entity		O	p. 22	p. 22 (二) 耐震性。地震に対する耐力も又最なるとのと言はざる可からず。此構造 [RC] の建築は全体恰も一個の箱の如き観あり、…
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form		p. 20-21 Structure of RC can be mainly divided as <bearing wall system> (支壁式) and <curtain wall system> (張壁式), within which curtain wall system is the most suitable (最も当を得たる)	p. 20-21 鉄筋混凝土構造と大別して、支壁式 (*bearing wall system) 及張壁式 (*curtain wall system) の二式とす。前者は上層の荷重を壁体にて支持せしむる法にして、後者は之を梁柱等を使用にして総て之等によりて支持せしむる法にして、柱間の壁たるや、単に柱間を張り埋むるのみにして、力学上何等の意味を有せしめず、…故に其の構造法としては、支壁式の不当にして、張壁式最も当を得たるものと言はざる可からず。
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p, 27 Unlike steel structure, as is impossible to have hinged joint (可廻的接合) in RC, rigid joint (k) is natural for RC, so that the components like girders and columns are continuously constructed. In other words, this is <elastic arch>.	p. 27-28 (elastic arch) 鉄筋混凝土構造にては、之 (steel structure) と正反対にして、可廻的接合は不可能なれど、リジッドジョイントは求めずして得らる。即ち鉄筋混凝土構造にては、梁柱等別々のものに非ずして、力の作用こそ異なれ、連続的構造を施すとのものなり。これを見方を転じて考ふれば、エラスティックアーチ(*elastic arch)なり。前者 (steel structure) に於てはエラスティックアーチを作るは容易ならず。
40. Elastic (katagana, or original text)				
41. Rigid joint		O	See also 39	
42. Japanese style	Prototypes	V	See also 24	
43. Japanese taste				
44. Art Nouveau		V	p. 33	p. 33 …ルネサンス式は十八、九世紀に到りて、漸く堕落し、茲に新様式発生せんしつゝあり。已に仏にヌーボー式あり独にセセッション式起れるも未だ様式として完成せるものに非ず。
45. Secession		V	See also 13, 44	
46. Skyscraper				

桑田 正一 Seiichi Kuwada

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts	O	p. 13-14 As has been mentioned by B. F. Fletcher, truthful utilization of material forms architectural style	p. 13-14「建築は要するに材料の問題である、材料の真実なる使用即ち要求が建築様式を形成する、様式は畢竟するに使用せらるべき材料の諸性質より創造せらる」とはB. F. Fletcher氏の言である。
2. National character		O	p. 29-30 New style of RC has to fulfill three requirements as fully utilization of the essence (根本義) of structure, correspondent to modern era, correspondent to the nation and people.	p.29-30 鉄筋こんくりーと構造の新に斎すべき新様式は少くも次の三要件を容るゝものでなければならないと思ふ。1) 前掲の如き鉄筋こんくりーと構造の有する諸特質の発揮少くも該構造の根本義を没却せざること。2) 現代に対する適応。3) 本邦の国土、民族に対する適応。
3. Individualism		O	p. 21 Architectural style not only depends on material but also the creation (建築創作) of architects	p. 21 然し建築様式なるものは決して唯単に材料関係より成立すべきものに非 (possible character) ることは建築創作が作家の胸中を潜り出でる (possible 2 characters) ものなる (uncertain 2 characters) なることを知る者には明白な事実である。
4. Spirit of era		O	See also 2	
5. Practical architecture		V	p. 6-7 The practical and artistic aspects of architecture cannot be separated.	p. 6-7 建築を構成すべき要素を実利的と芸術的とに区分せるも之を単に説述上の方便に過ぎないのであって、実は此二要素は互に相独立し得べき性質のものに非ずして不離の関係を有すべきである。
6. Economical		O	p. 32 [For RC,] the relationship of economics cannot be ignored.	p. 32 …経済関係を無視することは出来ない。
7. Based on science				
8. Rational structure				
9. Expression of structure / mechanics		O	See also 2	
10. Expression of material		O	p. 22-23 [Capacity of RC contains] the freedom to make overhang, free shape (成形の自由), the advantage to make irregular plan (凸凹の有利). Bare concrete is not always bad, but adopting paving for the purpose of proofing water and decoration is the current situation. Facility to create extrusion, by which the effect of shadow can express the quality of the material [RC].	p. 22-23 (squares marked by Kuwada)…□持離し (editor: overhang) の自由…□成形の自由…□プランに於ける凸凹の有利。 (seemingly wrong) …□表面装飾。鉄筋こんくりーと構造に於て壁体、柱其他建築物の外面をなす所にこんくりーとの生地を其儘露出することは建築物の性質によりては必ずしも醜悪なる感を惹起するものに非ず。然れども防湿其他の理由よりして表面に相当物質を貼附し兼て装飾的意味を帯ばしむる現状なり。…□突出部を造ることの容易なること。…其陰影効果により美観を成さしむることは該構造の特質を表現する一良法なるべしと思ふ。
11. Truth of structure		O	See also 1	
12. Truth of purpose				
13. No imitation of historical styles		O	p. 42-43 Staying with styles of the past is cowardice.	p. 42 徒に姑息的に偸安的に過去の様式に低徊するは怯である。
14. No replacement				
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form		O	p. 36-38 Simplicity is the preference of modern people, of which <Secession> or <modern kunst> take full advantage better than others. RC should be adopted with this trend, or called <artless art>.	p. 36-38 現代人に普遍的な好尚即現代趣味は過去の夫に比し著しき相違を認むることが出来る。趣味の近代的傾向中最も著しきものは「簡潔」に対する愛好である。冗漫複雑は近代人の最も厭忌する所である。…而して此傾向 (simplicity) を最も徹底的に体現せるものは墺のSecession派及び独のmodern kunst派の或者であらう。…私は鉄筋こんくりーと構造の建築様式に此歓迎すべき傾向を取り入れ度いと思ふ。単純とは云へ夫は複雑以上の単純であって稚戯的単純では不可ない、所謂「Artless art」の境域を理想としたい。
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		O	p. 29-31 The characteristics of RC should be listed as 1. Adoption of elastic arch as the motivation of new style, 2. The feature as monolithic or casted object, which also has several derivations as flat surface, shortage for creating sharp or delicate details, free aperture (開孔), facility to create extrusion	p. 29-31 前掲の鉄筋こんくりーと構造の特質中最も著しきものとして第一に挙ぐべきはElastic archの原理に適応せる性質にして之はやがて新様式の動機たるべきものであらう。第二に挙ぐべきはmonolithicな性質或はcastされたる形式の構造なることにして之よりする時は下の如き数点が推論される。1. 表面の平板…2. 鋭角及び精緻なる造り出しの不適。…3. 開孔の自由。…4. 突出部を造ることの容易。
22. Flat roof				
47. Thin wall				

23. Light image	Decoration	O	p. 31 The cognition that RC is frivolous (軽薄) and lacks beauty is due to the lack of knowledge	p. 31 若し鉄筋こんくりーと造建築を見て其軽薄なるが為めに不快感を惹起するならば夫は建築の責に非ずして寧ろ観者の心境を咎むべきであらう——何故なれば彼の心胸が該建築の構造的理解に基いて起る外観上の快感を感得すべく余りに教養が貧弱なるがためであるから。
24. Lack beauty		X	See also 23	
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.		O	See also 10	
27. Flat decoration				
28. Bold (less details) decoration		V	See also 21	
29. Extrusion		O	See also 10	
30. No decoration				
31. Free plan	Of freedom	O	See also 10	
32. Free shape		O	See also 10	
33. Free aperture		O	See also 21	
34. Casted object		O	See also 21	
35. As a single entity		O	See also 16	
36. Monolithic		O	See also 21	
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form	V	p. 23-26 Considering the facility of construction, lintel system (楣式) is the most suitable for RC, but it is not the only solution regarding the free quality of RC. RC has rigid joints, assuring the structure as a single entity. <Rigid frame> or <elastic arch> can be the origin of new style.	p. 23-26 □楣式構造に対する適応。鉄筋こんくりーと構造に於ても其計算上の簡易及び施工上の便宜等より推す時は楣式構造を最も妥当なりと信ず。然し乍ら極めて自由なる性質を有する鉄筋こんくりーと構造に対して「鉄筋こんくりーと構造は楣式に限る」と断ずるならば誤れる独断なりと云ひ得る。□接合の自由と完全。前述のmonolithicなる性質は此接合の完全も自由に起因す。 (enter) 梁は梁に、梁は柱に、壁は柱と梁にすべてのものが互に相接合せられ其各し (possible character) は独立せる一箇のものをなすに非ずして全体の一部をなす。…□リジッド・フレーム。(*Rigid Frame)…之に応ずるものはRigid frame又はElastic archの形式であらう。…此弯曲力は脚柱に弯曲力を及ぼし横推力を脚柱に剪力を及ぼし何れも大地に運ばれる。…従って新様式の根源的要素 [elastic arch] をなす性質かも知れない。
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	See also 16	
40. Elastic (katagana, or original text)				
41. Rigid joint		O	See also 16	
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau				
45. Secession		O	See also 18	
46. Skyscraper				

中西 甚作 Jinsaku Nakanishi

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts			
2. National character				
3. Individualism		O	p. 23 The appearance (出現) of new structure can be motivated by individualism (個性主義)	p. 23 従ッテ新ラシキ材料新ラシキ結構ノ出現ハ個性主義ノ発動トナリ個性ノ活躍ガ争闘モ矛盾モ駆逐シ得テ魘テ新シキ材料新ラシキ結構ニ対スル建築ノ新様式ガ発生スルノデアル。
4. Spirit of era		O	p. 2 Today's architecture has been different from the past for which there are multiple reasons. The important ones are: 1. development of science, 2. change of the purpose of architecture, 3. change of material and structure, 4. change of the trends of thoughts, 5. development of transportation, 6. economic condition, 7. change of living condition, 8. development of art and crafts.	p. 2 併シ現今建築界ノ状態ハ過去ノ如何ナル時代ニモ見ナカッタ極メテ著シイ回転ノ気運ニ際会シテ居ル様ニ思ハレル其ノ原因ハ色々アレドモ其ノ中重要ナルモノヲ挙グレバ: 1. 科学ノ発達; 2. 建築目的ノ変化; 3. 材料及ビ構造ノ変化; 4. 思潮ノ変化; 5. 交通ノ発達; 6. 経済状況; 7. 生活状態ノ変化; 8. 美術工芸ノ発達;
5. Practical architecture				
6. Economical		O	p. 14 To be firm, rational and economical, the structure of architecture has to be studied and the truthful beauty has to be expressed.	p. 14 建築ガ丈夫デアランガ為メニ合理的デ経済的デアランガ為メニ其ノ構造ガ研究セラルベキハ言フ迄モナイ事デアルガ之レト同時ニ建築ノ真ノ美ヲ出来ル丈ケ発揮サセ度イ為メデアルト言ヒ度イノデアル。
7. Based on science		O	p. 3 Along with the development of science, it is easier to construct building inconceivable in the past, like skyscraper; p. 9 Art and science are inseparable.	p. 3 又構造法ハ益々科学的ニ発達シテ居ル。而シテ昔ノ人ノ思ヒモ及バナイ様ナモノガ容易ニ構造サレテ居ル。其ノ一例ハ摩天建築ノ如キデ… p. 9 要スルニ建築ハ科学的方面ト美術的方面トアリ此ノ両者ノ関係ニ就イテハ一見両者ガ相離ルヽコト遠キガ如クニ考ヘラルヽガ、然シ其ノ実際ノ上ニ於テハ決シテ順? (unreadable character) クモ相離シ得ベキモノデナイ。
8. Rational structure		O	p. 14-15 Beauty of architecture starts to gain real beauty from structure, and rational structure and free frame (自由ナ架構)	p. 14-15 蓋シ建築ノ美ハ構造ニ立脚シテ始メテ真ノ美ガ得ラルヽノデアル。建築ノ合理的ナ構造、自由ナ架構ヲ土台トセル建築美ハ吾々ノ目的トスルノデアル。
9. Expression of structure / mechanics		O	See also 6	
10. Expression of material			p. 13 Correct style has to correctly utilize materials to create correct representation	p. 13 要スルニ正シキ建築様式ハ構造ニ用フル材料ヲ正シク用ヒ、之レヲ外部ニ正シキ表ハシタモノデナケレバナラヌト云フ事ヲ一般ニ付イテ言フ事ガ出来ルト信ズル。
11. Truth of structure		O	p. 15 We must pursuit truthful and beautiful objects, and in structure, we must find the truthful and beautiful solution [truthful before beautiful in Japanese nuance].	p. 15 其故ニ吾人ハ真デ而シテ美ナルモノヲ求メナケレバナラナイ。一ツノ構造ノ問題ニ対シテモ数多ノ真ナル解決ガアル。吾人ハ其ノ中デ真ニシテ美ナル解決ヲ求メナケレバナラナイノデアル。
12. Truth of purpose				
13. No imitation of historical styles		O	p. 24 RC is at first extremely free. However, imitation of wooden and stone buildings is sham, while taking full advantage of the characteristics of the material to make it one organism is the plausible method.	p. 24 鉄筋混凝土構造ノ様式ヲ定ムルニ当ッテ第一ニ感ズル事ハ材料ノ極メテ自由ナ特性デアル。然シ之レヲ直チニ木材ノ手法ヲ模シ或ハ石材ノ手法ヲ模スルハ必 (should be 畢) 竟虚擬 (should be 偽) デアル故ニ賛成シ難イ。其ノ材料其自身ノ特性特質ヲ充分発露シ其ノ真ヲ発揮セシムルニ充分適切ナ手法ヲ取リ、全体ノ構造ガ一ツノ有機体的組織ノ下ニ統一セラレタ場合ニ始メテ其ノ建築様式ハ吾人ノ美的意識ヲ満足セシメ美的感覚ガ心ニ食ヒ入ルコトガ出来ル。
14. No replacement				
15. Implication of historical styles				

17. Simple plan	Of simplicity			
18. Simple form		O	p. 7-8 Many people around endeavor to pursue simplicity and honesty in architecture, while degenerate people also exist;	p. 7-8 吾人ノ周囲ニハ非常ナル勢ヲ以テ建テラレツヽアル多クノ建築中ニハ或ハ其ノ簡潔ト誠実トヲ得ントシテ努メツヽアルノ点ニ於テ或ハ其ノ真ニ偉大ニ且ツ価値ノアルモノニ対スル憧憬ヲ表ハシツヽアルノ点ニ於テ屡々抜群ノモノヽアルヲ見ルハ事実デアルガ同時ニ他ノ一方ニ於テ野鄙ナル堕落シタ分子ハ屡々目睹スル所デアル。
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		O	See also 39	
22. Flat roof				
47. Thin wall		O	p. 20	p. 20 鉄骨構造及ビ鉄筋混凝土構造ガ隆盛ニナッテ此ノ種ニ属スル建築ガ単ニ其ノ外壁ノ形式ノミニヨッテ左右サレテ支壁式構造法ト張壁式構造法ノ二大別ニサレテ居ル。此ノ二式共ニ鉄筋ノ有無ニ拘ラズ混凝土壁体ガ応用サレテ居ルモノハ其ノ壁厚ガ比較的ニ薄キコトガ其ノ特徴ノナッテ居ル。
23. Light image	Decoration			
24. Lack beauty		O	See also 26, 39	
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.		O	p. 21 The monotonous image of RC can be ameliorated with the utilization of multiple-layered walls with decoration, which is much better than imitating brick buildings with paving.	p. 21…自然ト壁面ガ単調トナリ…問題ニ対スル根本的解決ハ一朝一夕ニテ出来得ベカラザレドモ現今ノ状態ニテハ表面ヲ複壁トシ以テ陰影ヲ多クシ尚足ラザルヲ表面装飾ヲ施シテ其ノ欠点ヲ補フベキモノト思フ。蓋シ複壁ハ外気温度ノ調節ト湿気ヲ防リ上ニ於テ可成衛生的ノモノナレバ彼ノ無闇ニ外観ヲ煉瓦造ノ様ニスル為メニ無用ニ壁ヲ厚クスル他ノ姑息ナ手段ヨリ遥ニ勝ッテ居ルト思フ。
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration				
31. Free plan	Of freedom			
32. Free shape		O	See also 39	
33. Free aperture				
34. Casted object				
35. As a single entity				
36. Monolithic				
37. Large span				
38. Spatial existence		O	See also 39	
16. Curtain wall / frame	Structural form	V	See also 39	
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 18 RC with the features of complete joint (完全ナル接合) and free shape (成形ノ自由) is free (自由) to make lintel system construction. Especially, rigid joint is the nature of RC, which has been admitted by thousands of people. Hence RC should definitely transcend the lintel system to be rigid frame, which is rational for RC. In broad sense, rigid frame is called elastic arch. p. 25 The arguments that the style of RC should be flat, or with less moldings are subordinate. The fundamental (第一義) thing should be that the theory of elastic is the only requirement for RC, which is also free material and spatial existence. Therefore, the style of RC should be based on elastic arch, with decoration to ameliorate the lack of beauty in RC.	p. 18 然ルニ今日既ニ完全ナル接合ノ可能ト成形ノ自由トヲ有スル鉄筋混凝土構造ニアリテ楣式ニ満足スルニハ余リニ材料ガ自由デアル。其ノ接合ハ求メズシテ、リジッドノ傾向ヲ持ッテ居ル石材ニ於ケルガ如ク梁ハ梁、、柱ハ柱トシテ、個々ニ独立セシトルニハ寧ロ反ッテ特別ナル施工ヲ要スルリジッド接合ガ此ノ材料ニ対シテ自然デ且ツ合理的ナコトハ均シク万人ノ認メルトコロデアル。 (enter) 鉄筋混凝土構造ガ単純ナル楣式ヲ超越シテリジッド接合構造即チリジッドフレームニ趣クコトノ合理的ナコトハ誰モ認メテ否マナイコトヽ思フ。 (enter) リジッドフレームハ広イ意味デエラスチックアーチト呼ブ事ガ出来ル。 p. 25 …鉄筋混凝土ノ様式ハ平面的ナルベシトカ繰形ヲ多ク用ヒナイトカ云フ種類ノ事ハコレ亦要スルニ第二義的ノ論義デアル。…第一義ニ蓬 (should be 逢) 着セネバナラズ(ス)、即チ鉄筋混凝土ハ極メテ自由ナ材料デ空間ニ此ノ材料ガ存在スル為メニハ多クノ束縛ヲ要シナイ唯一ノ条件トシテ、エラスチックアーチノ理論ガアルノミデアル。此ノ理論ハ鉄筋混凝土構造ガ宇宙ノ一角ニ存在スルニ必要ニシテ充分ナル条件デアル。故ニ鉄筋混凝土構造ノ様式ハ此ノ理論ニ立脚シタ構造ヲ骨トシ、混凝土ノ材料美ノ缺陥ヲ表面装飾ニテ補ヒタル形式ノモノトナルベキデアルト信ズル。
40. Elastic (katagana, or original text)				
41. Rigid joint		O	See also 39	
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau				
45. Secession				
46. Skyscraper		V	See also 7	

伊部 貞吉 Sadayoshi Ibe

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts	O	p. 18 For steel structure and RC, the evolution from lintel system to elastic arch is the most proper process.	p. 18 鉄骨及ビ鉄筋混凝土構造ガ最初ノ楣式カラエラスチックアーチ向ッテ進マントスル傾向ハ最モ進化ノ原則ニ適シタプロセスデアルト。
2. National character				
3. Individualism		O	p. 6-7 The form (形骸) of architecture should adapt to the contents (内容) of architecture, which are also the feature of modern architecture. The contents should come from the spirit of architects rather than imitation, in other words, the expression of contents should be the application of individuality	p. 6-7其故ニ建築ハ最モ内容ニ適シタ形骸ヲ採る可キデアル。近世建築ノ主要トスル所モ亦其ノ充実シタ内容デアル。此ノ内容ハ建築家各自ニ自発スル精神カラ形成セレテ形骸ノ模倣ニアリテ得ラルヽモノデナイ。…即チ内容ニ於テモ其ノ表現ニ於テモ個性ノ発揚デアル。近世建築ニ於テ個性ノ重ンゼラルヽノハ之レニ依ッテデアル。
4. Spirit of era				
5. Practical architecture		O	p. 4-5 The necessary requirements for architecture are 1. Constructed on the ground, 2. To meet the requirements of human's life, 3. Consideration on beauty;	p. 4-5 「建築ノ必要条件」(一)地上ニ基礎ヲ有シ。(二)人間生活ノ実需要ヲ充ス構造物。(三)美的考量ヲ要ス。
6. Economical				
7. Based on science		O	See also 9	
8. Rational structure		O	p. 12-14 Architecture should be an organism rather than assembly material. Rational structure contains the points of 1. Structure should meet the universal purposes of architecture (建築的要望均等ニ充スベシ), 1. Structure should have simple forms, 1. Taking full advantage of the characteristics of material, 1. Complementing the defects of material. In the era of replacement [of material in traditional buildings], it is full of expedient and sham manners (姑息、虚偽ナ手段), while we need a new way;	p. 12-14 故ニ複雑ナル構造形式ノ下ニ如何ニ複雑ニ材料ガ排置サレテモ建築的要望ヲ充サナケレバソレハ建築デナイ。単ニ材料ノ集合堆積ニ過ギナイノデアル。(enter) 即チ建築ハ一ツノ有機体デアル。…第二節　合理的建築構造 (as subtitle) 一、構造ハ建築的要望均等ニ充スベシ…一、構造ハ最モ簡単ナル形式ヲトルベシ…一、材料ノ特性ヲ発揮スベシ…一、材料ノ欠点ヲ補足スベシ…新シキ材料ハ新シキ構造ヲ要求スルモ踏襲、置換ノ時代ニハ永キ因襲ニトラワレテ居ル為メニ構造ハ依然トシテ旧態ヲ脱セナイ。(enter) 之レハ材料ガ因襲ヲ破リテ新ナル形態ヲ取ル丈ケノ特性ヲ有セザルモノモアラン。(enter) ソノ理由ハ兎モ角モ新シキ材料ガ新シキ而モ正シキ道ニ向ッテ進マザルハ我々ノ取ラザル所デアル。(enter) 置換ノ時代ニハ姑息、虚偽ナ手段ガアル。
9. Expression of structure / mechanics		O	p. 10-11 Creating new style by following the route of historical styles is difficult. As has been mentioned in the previous session, i.e., "correct style should express the correct internal structure to the external based on science", the general solution should be "implicating the characteristics of architectural material" [The original sentence is a tautology, here only the intention is paraphrased]	p. 10-11 然シナガラ前節ニ述ベタル如ク「正シキ建築様式ハ建築ノ内部ニ於ケル正シキ構造ヲ正シク外部ニ表ハシタモノデナケレバナラヌ」更ニ「正シキ構造ナルモノハ材料ノ正シキ用ヒ方、換言スレバ正当ナル或ヒハ更ニ適切ニイフナラバ材料ノ科学的使用法ヲ以テ其ノ主要ナル第一ノ要件トスル」トイフ如キ観方ニ於テハ「建築材料ノ特性ハ軈テ建築材料ノ特性ヲ暗示スルモノデアル」(with examiners' underline, possibly indicating confusion) トイフ事ガ一般ニ就テイフ事ガ出来ルト信ズルノデアル。
10. Expression of material		O	See also 9	
11. Truth of structure		O	See also 8	
12. Truth of purpose				
13. No imitation of historical styles		O	p. 1 Hollow architecture as the imitation of tradition has become the past;	p. 1 徒ラニ因襲促ハレ模倣的ナ皮層的ナ空虚ナ建築ヲ乞ンダノハ過去ノ事デアル。
14. No replacement		O	See also 8	
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form		O	See also 8	
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		V	p. 20 The flat surface and less moldings are the subordinate aspects, As extremely free material, the fundamental issue should be elastic arch, which is the only condition (条件) for RC as spatial (空間的ニ存在スル) existence.	p. 20 …鉄筋コンクリート構造ノ様式ノ表面ガ平面ナルベシトカ繰リ形ヲ多ク用ヒナイトカイフ種類ノコトハコレ亦要スルニ第二義ノ論義。吾人ハ須ラク第一義ノ蓬 (should be 逢) 着セネバナラズ(ス)。鉄筋コンクリートハ極メテ自由ナ材料デアル。鉄筋コンクリート構造ガ空間的ニ存在スル為メニハ多クノ束縛ヲ要シナイ唯一ノ条件トシテエラスチックアーチノ理論ガアルノミデアル。…
22. Flat roof				
47. Thin wall				

23. Light image	Decoration			
24. Lack beauty				
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.				
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration				
31. Free plan	Of freedom			
32. Free shape		O	p. 19 In terms of the style of RC, at first the material itself is free (自由).	p. 19 鉄筋混凝土構造ノ様式ノ動機ヲ観察スル時、先ヅ第一ニ感ズル事ハコノ材料ノ極メテ自由ナ特性デアル。
33. Free aperture				
34. Casted object				
35. As a single entity		V	p. 19	p. 19 [RC not mentioned] ソノ材料ノ特性ヲ特質トシソノ真ヲ発揮セシムルニ充分適切ナル手法ヲ撰ンデ全体ノ構造ヲ一ツノ有機体的組織ノ下ニ統一セラレタ場合ニ始メテソノ建築様式ハ吾人ノ美的意識ヲ満足セシメ美的感受心ニ喰ヒ入ル事ガ出来ル。
36. Monolithic		O	p. 15 For Japan, a country with a lot of earthquakes, elastic (k) and monolithic (k) structure are necessary, for which RC the most suitable	p. 15 日本ノ如キ地震国ニハエラスチックナモノリシックナ構造ヲ要求スルノデアル。此ノ構造ニハ (possible 2 characters) 鉄筋混凝土構ハ最モ都合ヨキ材料ノ一ツデアルト思フ。
37. Large span				
38. Spatial existence		O	See also 21	
16. Curtain wall / frame	Structural form	V	See also 39	
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 17 RC can fully meet the requirements of lintel system. According to the construction method, RC naturally has the quality of being monolithic (k) and rigid (k) joints. Rigid joint as the natural and rational characteristic of RC has been admitted by thousands of people. Hence RC can transcend lintel system (楣式) to be rigid frame, or in broad sense, elastic arch; p. 18 Brace (筋違ヒ) equals with the form (形式) of elastic arch in RC building. For classic architecture, lintel is rational, for Gothic architecture, arch is ideal (合理想), and for RC, elastic arch is ideal;	p. 17 楣式デ満足スルニハ之等ノ材料ハ余リニ自由デアル鉄筋混凝土ニ於テ殊に其ノ感ヲ深クスルノデアル。 (enter) 鉄筋混凝土ハソノ施行上カラ自然的ニモノリシックデ各部ノ接合ハ求メズシテリヂッドノ傾向ヲ持ッテ居ル。石材ニ於ケル如ク梁ハ梁、柱ハ柱トシテ個々別々ニ独立セシムルニハ寧ロ却ッテ特別ノ施行ヲ要スル。 (enter) リヂッド接合ガコノ材料ニ対シテ自然ニシテ且ツ合理的ナ⺇ハ均シク (possible 3 characters) 万人ノ認ムル新デアロウ。 (enter) 鉄筋混凝土ガ単純ナル楣式ヲ超越シテリヂッド接合ノ構造、即チリヂッドフレームニ趣クコトノ最モ合理的ナ⺇ハ誰モ認メテ否マナイ⺇ト思フ。 (enter) ヂッドフレームハ尚オ広イ意味ニ於テエラスチックアーチト呼ブ事ガ出来ル。 p. 18 震力ニ対シテ筋違 (unreadable in the context) トエラスチックアーチヲ挙ゲネバナラズ(ス)。筋違ヒハ鉄筋混凝土ニアッテハ此ノ施行ニ於テモ出来上リノ形式ニ於テモエラスチックアーチノ如カナイノデアル。 (enter) クラシックニ於テ楣ガ合理的デアリ、ゴシックニ於テアーチガ合理想デアル。ヨリ以上ニ鉄筋コンクリート構造ニトッテハエラスチックアーチガ合理想デアル。
40. Elastic (katagana, or original text)		O	See also 36	
41. Rigid joint		O	See also 39	
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau				
45. Secession		V	p. 8 Although the form of Secession is imported, the spirit of it has been forgotten	p. 8 セヽッションノ形骸ガ輸入サレテカラ稍久シイ今日其ノ真精神ハ早クモ忘却セラレントスル観ガナイデ(テ)アロウカ。
46. Skyscraper				

鳥井 信 Nobu Torii

Statements		Check	EN	JP
1. Evolutionism				
2. National character		O	p. 21 Art conveying national character and reflecting the thoughts of era has the value of lively art.	p. 21 芸術はその何れかに国民性の閃きがあって時代の思潮を反映した場合に其国の芸術として生きた価値のあるものである。
3. Individualism				
4. Spirit of era		O	See also 2, 44	
5. Practical architecture		O	p. 2-3 Architecture of modern era (現代建築) has to correspond to national economy and based on practicality. Structure should not only be firm in conventional sense (因襲的で丈夫である) but also follow mechanics, being rational and triggering the feeling of beauty (猶美的情感);	p. 2-3 現代建築が(か)国家の経済状態に応じ(し)実用に基き完全に構造さる可き事を主とする此論者の言ふ所は正当である。…構造に於ても因襲的で丈夫であると云ふ丈で(て)はなく、自然の力学的法則に従って合理的に処理し、猶美的情感を促すものでなければならぬ。…
6. Economical		O	See also 5	
7. Based on science		O	p. 1 (of preface) Science should strip off the Greek orders of capital to show the real structure behind;	(preface) p. 2 当時 (Rome) 古い希臘の柱列範式は建物の前面を飾って構造上の真面目は其後ろに隠れて居たと同じ様に何者かに掩はれて居る我々は今や科学を以て此仮面を剥き美き以て粧はしめなければならぬ。
8. Rational structure	Abstract concepts	O	See also 5, 12	
9. Expression of structure / mechanics	Abstract concepts	O	p. 17-18 Unconcealed girders and beams with decoration offer pleasure, while the Japanese ceilings [with concealing] give the feeling of uncertainty. [The reason is that] RC structure utilizes elastic arch in an artistic and mechanical way, which gives non-sham expression.	p. 17-18 天井にては大梁、小梁が露出して之れに適応する装飾を施された室は愉快を感せしむると思ふ。仮令因襲的に慣れたるにもせよ、一牧 (character marked by the examiner) 見ゆる天井、又は日本式の天井、不安の念の伴ふのである、大きな室に於ては一層其感を深う (uncertain character) する。之れを要するに鉄筋コンクリート構造は「エラスチックアーチ」を美術的に力学的に建築物に運用して偽らざる表現を与ふるにあるのである。
10. Expression of material	Abstract concepts	O	See also 40	
11. Truth of structure	Abstract concepts	O	See also 9	
12. Truth of purpose	Abstract concepts	O	p. 2 Today's architecture is ugly stuff with beautiful clothes. Beauty should be based on truthful practicality, and rational structure.	p. 2 今日の所謂美なる建築とは美しき衣裳を着けた醜きものの謂である。真実な実用、合理なる構造を基として求められたる美でなければならぬ。
13. No imitation of historical styles	Abstract concepts	O	p. According to Fletcher, the appearance of new material ameliorates the conventional forms and fights with historical styles. Based on material, structure and economy, we must leave the imitation [of historical styles].	p. 20 「フレッチャー」氏の様式争闘論を思ひ起すのである。曰く新材料の出つるや因襲的の形体に幾分の改良を加へて表はれ茲に様式争闘起り漸次旧習古癖が消失し、材料の性質、構造経済を考え、真の様式が出来るのであると我々はかゝる模倣 [of historical style] を離れる事が尤大の急務である。
14. No replacement	Abstract concepts			
15. Implication of historical styles	Abstract concepts	O	See also 40	
17. Simple plan	Of simplicity			
18. Simple form	Of simplicity			
19. Appearance reflects plan	Of simplicity			
20. Straight lines	Of simplicity	X	See also 26	
21. Flat surface	Of simplicity			
22. Flat roof	Of simplicity			
47. Thin wall	Of simplicity	O	See also 25	
23. Light image	Decoration	O	See also 40, 42	
24. Lack beauty	Decoration	O	p. 14 (13) RC lacks attraction (無趣味) in the color and the composition (組織) of surface	p. 14 (17)構造の外観 (enter) 混凝土が其表面の色彩及組織に於て無趣味なることは争はれない欠点である。
25. Lack solemnity	Decoration	X	p. 19 The feeling of weakness and the lack of solemnity of the thin walls of RC are caused by the lack of knowledge;	p. 19 鉄筋コンクリート建築は窓大きく壁厚薄し一般に荘重を缺き其外観貧弱なりとの誹あり自分は今日の鉄筋コンクリート造の構造及外観を完全として満足し之れを弁護するものにあらざ(さ)るも、かゝる見界 (should be 解) は煉瓦は又は石造の因襲から来た判断と思ふ。其実質に於て鉄筋コンクリートの薄壁が(か)却って煉瓦若しくは石造の厚き者の比して其強度、安全等に於て優秀で(て)あるから人々の之れに馴致さるゝ迄はかゝる見界を抱くは無理ならぬことゝ思ふ。
26. Dealing of surface with fabrication, painting or paving, etc.	Decoration	O	p. 18 Masonry and wrapped frame (包蔵骨組) are not appreciable. For mass type, the dealing of surface causing the feeling of casted object is not economical and not rational. Therefore, bare frame (露出骨組式) is the most ideal solution. Also, the intersection of walls should be curved surface rather than straight lines. Architectural hardware on curved surface also helps convey the feeling of casted object. Dealings of surface like painting, corrosion, paving, brushing help proof water and realize artistic manners. Paving should have the feeling of paved object, for which bolt fixing can be interesting;	p. 18故に前に挙げ(け)た畳重式構造法は無論不適当である。又(三)骨組式構造中の包蔵骨組は面白とない。茲に余す団塊式構造と骨組式構造式中の露出骨組式の二つである。団塊式にありては外面壁仕上げ(け)により鋳出の感を与ふるも材料の不経済で猶ほ合理的構造と云ふを得ない。自分は露出骨組式が尤も適当であると思ふ。猶ほ鉄筋コンクリートの性質を考慮し二面の交りは直線でなく曲面にて連続するかよいと思ふ。其曲面は処に応じ(し)大小種々の美的曲線でありたい。之れは鋳た感じ(し)を与ふる一面に金物の打出したよりも鋳出した様の温みを与へると思ふ。今日の処で(て)は鉄筋コンクリートの色彩、組織、及滲透性より壁面に塗抹法蠢飾 (possibly should be 蝕) 法、張付法、磨出法其他種となる不滲透性の美術的仕上げ(け)を必要とする、張付法にありては一見張付の感を与ふるものにしたい。薄い石の大きな板を「ボルト」に止めたる風の仕方は面白いと (possible character, see also p. 2) である。

27. Flat decoration	Decoration			
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration		V	See also 44	
31. Free plan	Of freedom			
32. Free shape		O	p. 10-14 (13) RC can be freely made in any shape, and the way of receiving burden with girders, columns and floors [curtain wall] makes it possible for big fenestration.	P. 10-14 …(13)自由に任意の形状を作り得ること…又建物は梁と柱と床とにて総ての荷重に堪へ得る構造法として採光窓は幾許にても大にすることが(か)できる。
33. Free aperture		O	See also 32	
34. Casted object		O	See also 40	
35. As a single entity				
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form	O	See also 26, 39	
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 15-16 RC is free in different types of structure, i.e., mass (団塊式), masonry (畳重式), and frame (骨組式). For RC, which has free shape and the possibility of [rigid missed] joints, are constructed with columns and girders all together rather than separately. This structure, in broad sense, elastic arch, is natural and rational, transcending simple lintel system (楣式).	p. 15-16 実に鉄筋コンクリートは如何なる構造も自由である。即ち(1)団塊式構造(2)畳重式構造(3)骨組式構造…成形の自由と接合の可能なる鉄筋コンクリートにて施行上自然的に各部は架構を形造り、反って前者の如く柱、梁と分離せしむるは困難である。此架構は此材料に対して自然的且つ合理的である。此架構は単純な楣式を超越して広義のエラスチックアーチと云ふことが出来る。
40. Elastic (katagana, or original text)		V	p. 26 RC should be adopted to public buildings. The structure of RC buildings should be the utilization of elastic arch with the principles of art and science, bringing chic and austere (瀟洒、素朴) feeling, within which chic refers to the feeling of “elastic” (弾性) and austere refers to “casted”. New expression of style based on the proposal of Secession and implicating the past is plausible. Also, truthful expression of material based on science and art is indispensable.	p. 26 結論 (as title) …(RC) 依然として矢張り公共建築であるから茲には公共建築に於ける鉄筋コンクリート構造と様式として結論することとする。 (enter) 鉄筋コンクリート構造は「エラスチックアーチ」を科学と美術の許に建築に運用して瀟洒、素朴 {*瀟洒は弾性的気分をも意見し、素朴は鋳出の気分をも意見す。} なる様式を撰定するが宜しい。セセッションの主張に基き過去に暗示を求めて新らしい表現を得るが適当と思ふ。 (enter) 我々は充分誠実に科学と美術に従ひ (possible character) て材料を所処 (examiner's mark seen, possibly as wrong expression) り偽らざ(さ)る表現を? (possibly as 興) なければならぬ。
41. Rigid joint		V	See also 39	
42. Japanese style	Prototypes	X	p. 22-23 Japanese taste is not about some certain form, while the implication of the patterns (形を暗示し) in the past is better. From the proportion of entity to details, the clear and chic feeling of Japanese [nationality] should be expressed.	p. 22-23 日本趣味はかゝる一形式に捉はるべ(へ)きものでない。過去の建築に由来した伝承的の形態を用ふる事によりて、過去の優秀な形を暗示し、又は其歴史的興味を誘ひ、此等の説明的事項によって、強ひて観者の興味を喚はう (uncertain 2 characters) とするものではない…それが全体の恰好や釣合から細部にまで及んで(て)其れで一種の日本式の調子を持って建築に表はれるのである一種の色調とは豪家 (possibly should be 華)、優麗、高華 (confusion, examiners' mark underlined)、然かも清楚、瀟洒、洒脱ある神韻に富むものを言ふのである。
43. Japanese taste		O	See also 42	
44. Art Nouveau		X	p. 24 Emerged from France, Art Nouveau is not serious enough. Secession or Jugendstil is based on science and creating rational works. Secessionist architects are trying to create elegant and austere feeling (清雅、素朴) without vulgar (地味) colors. Although the works by them are not agreeable for Japanese people, the thoughts of era expressed by Secession, which is rational, should be learned	p. 24 「アールヌーボー」なる装飾美術の新派が起って、其影響を建築に迄及ぼ(ほ)したのは耳新らしい事で(て)ある。之は軽佻なる真面目を缺いた(だ)流行的のものであったから、大なる力ともならなかった様であるが、仏国に於ける此運動から刺激されて墺国に芽し延い (possible character) て独逸に及んだセセッション式若しくはユーゲント式は始め新奇な物と見做されて居たが、今や流行的でなく確実に研究されつゝあるのである。其主張する所は前章述べ(へ)たる如き頗る科学的態度で必要且つ充分の問題を絶えず(す)眼中に置き合理的作物を出さんとしつゝある。其態度は決して等閑に附すべ(へ)きで(て)はない。かゝる主張の下に分離派の建築家は努めて清雅、素朴を根本義として無用の華美を避け、黒、土色、地味な渋色を心掛けて居る。其出来上った物は往々見るに堪へない、吾人の趣味と全く背馳したものが多い。然し近代的思潮を反映して頗る合理的な点に於て其将来に注目したい。…
45. Secession		O	See also 40, 44	
46. Skyscraper				

小久保 政春 Masaharu Kokubo

Statements		Check	EN	JP
1. Evolutionism				
2. National character	Abstract concepts	O	p. 6-7 Style is designed based on the character of material, influenced by social life and tradition of the era, national character, of the indigenous situation, i.e., natural factors and manual factors.	p. 6-7 つまり其材料 [of style] 材料の性質によって意匠せられ、其の時代の社会生活状態風俗慣習や国民性やまた土地の情況即ち自然的要素と人為的要素に依って変化するものである。
3. Individualism		O	See also 18	
4. Spirit of era		O	p. 8 Material is the media for expression the spirit of era. The character of material should be fully utilized.	p. 8 建築は材料あって初めて生じ其の様式は初めて形成せらるるものである。それで建築様式が時代の精神を表現する点に於て材料は其表現の媒介となるものである。然も其表現は材料の性質をよく弁へて、其の性能即ち特性を発揮する様に意匠設計せらる可きもので、其の上に於て初めて光輝あるものとなるのである。
5. Practical architecture		O	p. 2 Architecture is the compound of science and art, in other words, structure based on science which meets the real [practical] requirements of society, so that choosing suitable materials to create rational and economical structure is the first requirement of architecture. Meeting the mental requirements is also necessary	p. 2 建築は科学と美術の融合であると云はれている。即ち建築は科学を基として現社会の実需要を充す為の構造であって兼ねて美術的効果を及ぼすべ(へ)きものであるといふのである。 (enter) それ故に建築は適当の材料を選択して、此の材料に従って合理的経済的に構造す可きを第一条件とす可きである。…其精神的方面の需要をも充分に満足せしるといふ事も亦一般需要を満すと云ふ上に於て缺く可からざるものなのである。…
6. Economical		O	See also 5, 18	
7. Based on science		O	See also 5	
8. Rational structure		O	See also 5	
9. Expression of structure / mechanics				
10. Expression of material		O	See also 4	
11. Truth of structure				
12. Truth of purpose				
13. No imitation of historical styles		O	p. 34-35 Architects should work on self-cultivation and the study of historical architectures rather than imitation. Learning from the history, can be the method of expressing of the character of material and the motivation of create great architecture.	p. 34-35 彼の過去の様式の模倣を避くと称し、反って因襲的の行動に出で、然も自由と称して、反って其の美点を失ひ、何等創意的の加ふものなきは…過去の理解はやがて将来の進歩の基礎となり其の畜 (should be 蓄) 積は無限の意匠に於ける変化の範囲として広大無窮ならしめ材料の天賦の性を遺憾なく表現するの手段となって創造さる可き優秀なる建築の原動力となるものならん (uncertain 2 characters)。
14. No replacement				
15. Implication of historical styles				
17. Simple plan				
18. Simple form	Of simplicity	O	p. 29-30 By taking advantage of the economical quality of RC, most buildings will be simple and clear, which is ideal. However, this should be based on genius architects and self-cultivation, which comes from the study of architectures in the past.	p. 29 此の故に鉄筋混凝土を用ひて、其の経済的特性を発揮し、最も大多数の建築は其の要求を満す為めに必然の結果として簡素明瞭を以て理想とするものである。 (enter) 簡単にして、然も美であるものを造る言は易くして実行は中々困難のものである。此れを実行するには天才者にあらざる限り建築家は常に不断の修養を要するものである。
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		O	p. 24	p. 24 然るに此の新らしい鉄筋混凝土構造に依れば其壁厚の如きは極めて薄くして充分強度の強いものが得らるる。従って凹凸陰影は甚だ少いのである。
22. Flat roof				
47. Thin wall		O	See also 21	
23. Light image				
24. Lack beauty	Decoration	X	p. 25-26 The weak feeling of the thin walls of RC will be ameliorated along with the popularization of the knowledge of RC, and the taste will also change. In the end, rather than covering RC with stones and bricks, the walls should be concrete itself with partial utilization of other materials. Dealings of surface like adding mortar layer, brushing the surface and water-proof painting are the most ideal solutions	p. 25-26 やがて薄壁を見る事に馴致し其の強度安定に関する優秀なる点が知らず知らずの内にでも一般に広がって其観念が脳里に刻まれて其の認識を以てするに至れば必ず(す)しも現在の様に唯に厚き壁にのみ信頼するのあやまれるを知って其の趣味も従って変化するに相違ないのである。… (about 1 page) 結局我々は表面の大部分に或は全部を石煉瓦等にて被覆するが如き路を取らず。大体の壁面は混凝土其のものとなし、他の材料は之れを其の一部に応用して其の発達を待つ可きものであらふ (possible 2 characters)。即ち混凝土壁に諸種のモルタル層仕入法又は表面摩擦法等の混凝土直接仕上げ(け)法を施すか。又は防水材料にして兼ねて着色塗料なるものの適当なものを以て色彩の応用をなし外観美を発揮するを最も理想的のものとするであらふし…
25. Lack solemnity		X	p. 24 RC is maybe receiving the critics of the lack of solemnity. (enter) However, there is no reason that the beauty of appearance only belongs to masonry buildings.	p. 24 従って荘重を缺くとか物足らぬものだとか云ふ批評も甘んじて受け収ばならないかも知れない。 (enter) 然し石造煉瓦造のみに外観美を専有せしむる理由はない。…

26. Dealing of surface with fabrication, painting or paving, etc.	Decoration	O	See also 24	
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion		V		p. 22
30. No decoration		V	p. 4 Architecture is the building with certain purposes built with proper material and rational structure, presenting proper beauty (適当なる美観). The beauty is without useless carving and flamboyant decoration.	p. 4 …実用即美といふ事も斯くて初めて意義あるものとなるのである。…それで建築は或る特種の目的を有して居る建物で適当なる材料及合理的な構造法に依って適当なる美観を呈する所の形に造り上げたものなりと云ふ事になるのである。勿論ではあるが、ここに美術的及美観といふのは所謂誤られたる建築美ではない無用の彫刻、贅沢な装飾を多く附加したるものを指すのではない。…
31. Free plan	Of freedom			
32. Free shape		O	p. 22 Like columns, RC can be constructed as any shape, any length. Also, the frame of RC allows large fenestration with any shapes. In general, RC structure is free, which, however, needs the maneuvering of craftsmen, like the embedded parts while doing formwork.	p. 22柱の如きものも鉄筋混凝土構造に於ては現場で自由に如何なる形状、如何なる長さにも之れを延長する事が出来る。また、建物が梁と柱と床とに依って総ての荷重を支へる構造法であるので採光窓の形及大さは自由勝手であり得る。要するに鉄筋混凝土構造に於ては総ての点に於て自由な点が多く、今後其の応用の学理の発達と施工の熟練とによっては真に応用自在のものであるべきである。…鉄筋混凝土構造の建物に於て最も不便を感じ(し)つゝある事は其壁に釘を打付く時に混凝土が硬質なるが為めに甚だ困難なる事なり、…工事前適当の場所に埋置ものとす。…
33. Free aperture		O	See also 32	
34. Casted object		O	p. 19 RC is casted structure, with which the house can be constructed as a single entity. Entry hall, balcony, pilaster, pediment can all be constructed as unity, and all the joints are almost rigid.	p. 19 また、鉄筋混凝土構造にあっては其構造が鋳性的であって家屋全体を単一体に築造する事が出来る。玄関、バルコニー、張出し柱 (pilaster?) やペジメント等も総て全く本屋と一体に造り上げる事も容易に出来るし、総ての接合がまた容易に固定的接合に近くする事が出来る。
35. As a single entity		O	See also 34	
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form	V	See also 32, 39	
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 32-33 RC should transcend lintel system considering the nature of rigid joint, in other words, rigid frame. Rigid frame in broad sense is elastic arch. Like the lintel system of Greek buildings and arch in Gothic buildings, elastic arch is not contradictory with history. For us, based on this rational structure [elastic arch], by taking advantage of the free shape and freedom of aperture, together with passion and understanding, we can create mature architecture meeting the practical needs and adapted to practical structure	p. 32-33 此の特性を有して居る鉄筋混凝土が現今の如く楣式構造を完全になすに満足するだけではなほ鉄筋混凝土はあまりに余力があり過ぎ(き)はしまいかと云ふ感がある。鉄筋混凝土構造はやがて此の単純な楣式構造を超越して自らの性能に合理的であって自然的である固定的接合の構造に趣くものと思はれる。即ちリジッドフレームに趣くものと思はれるのである。リジッドフレームは即ち広義に於けるエラスチックアーチである。…然らば(は)、鉄筋混凝土がエラスチックアーチとなる事は従来の歴史に悖るか否か、決して歴史と矛盾はしないのである。鉄筋混凝土を材料とするが故に鉄筋混凝土の特性を遺憾なく発揮した構造、即ちエラスチックアーチの方則に従ふ事は結局彼の希臘建築が大理石を使用して楣式構造を以て其の偽らざる表現の美を恣にせると彼のゴシック式構造としてアーチを力学的理論より演繹して (indicating the similarity) …吾々は鉄筋混凝土が此の合理的構造を基礎とし、其形態の自由開孔の束縛なき事を利用し、之を取扱ふ手法に於ても情熱と理解を以てしたならば、其結果として成型されたるものは必ず実際の需要、実際の構造に適合する有機的成熟の建築は得らるゝのである。
40. Elastic (katagana, or original text)				
41. Rigid joint		O	See also 34	
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau		V	p. 5-6 In modern era, styles are leaving the historical styles, such as Secession from Austria and Art Nouveau from France, but the future is still unknown.	p. 5-6 而して近世に至っては遂に過去の様式の流れより分離せむとする墺太利よりのセセッション式や仏蘭西からのアールヌーボー式其他の近世式となって建築様式手法は此処に益に多岐に分れて此の先は如何に千紫万紅の変化ある可きかは予想だに許さないもので勿論遂に知る事は到底出来ない事なのである。
45. Secession		V	See also 44	
46. Skyscraper				

山田 剛一 Kouichi Yamada

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts			
2. National character		O	p 8 Architecture should be based on national character and reflect the thoughts of the era;	p. 8 建築が国民性の基礎の上に立って時代思潮を反映した時に始めて芸術として生命あるものとなるのも此の為であります。建築が社会を啓発し、社会を指導する地位に立ち得た時、其の時は建築も最も光輝燦爛たる時であります。
3. Individualism		O	p. 21 Style is influenced by both the era and individuality	p. 21 様式が生れる時には材料に時代の影が働き (possible character) 個性の力が作用します。時代の力と個性の流露は過去の建築史を支配した無形の力の最なる者なる事は既に前章に論じました。
4. Spirit of era		O	See also 2	
5. Practical architecture		X	p. 2 Although buildings only meeting the practical purposes can also be called architecture, they are extremely poor and cannot satisfy human beings.	p. 2 単に実用の目的を最も消極的に満たしたのみでは是を建築と呼ぶ事は出来るものではありますけれども恰も人間がパンのみで生くる事の不可能な様に人類の生活の一部分然も重大な一部分をたむるものとして、極めて貧弱であって、人間は到底是に満足して居らるべきものではありません。
6. Economical				
7. Based on science		O	p. 12 Modern architecture has become scientific in both the aspects of structure and expression;	p. 12 近代の建築は余程科学的に成って来ました。構造の方面に於ても表現の方面に於ても、此の点に於ては幾分 (possible 2 characters) の進歩を認め得られましゃう。
8. Rational structure		O	p. 17 The beauty of structure comes from the truthful expression of rational structure, which incorrect utilization of material has no beauty;	p. 17 構造の美は合理的構造の卒 (possibly should be 率) 直な偽ない表現の中に其の全生命を持って居ります。材料の適用を誤った構造法には材料の美と構造の美も有りません。是は其の根本を誤ったからであります。
9. Expression of structure / mechanics		O	p. 20 Architecture is influenced by material et structure and style comes from the correct utilization of material et structure. The expression of destined result (of material et structure) will have infinite power and attraction, no matter how ordinary the shape may be. **See also 41**	p. 20 建築は材料、構造によって作用さるべきものであって、其の使用法、適用を誤まらない時に様式が形成され得るものであります。必要から来る必然の結果の表現は仮令其の形が如何に平凡であっても、その真から出た処に無限の力を持って居りますから、特に人目を引く様なものでなくても必ずや観る者の心弦に触れないでは居らないのであります。
10. Expression of material		0	See also 9	
11. Truth of structure		O	See also 8	
12. Truth of purpose				
13. No imitation of historical styles		O	p. 13 Today's architecture is still in the transitional era and restrained by the convention in the past	p. 13 現今の建築界は恰も過渡時代にあって過去の因襲の桎梏から未だ全く脱し得ないで、過去の為に苦 (possible character) むで居るのではないでしゃうか。
14. No replacement				
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form			* About painting and sculpture, not architecture	
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface				
22. Flat roof				
47. Thin wall				
23. Light image	Decoration			
24. Lack beauty				
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.				
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration		O	See also 41	

31. Free plan	Of freedom			
32. Free shape		O	See also 34	
33. Free aperture				
34. Casted object		X	p. 24 Although RC is casted with formwork, RC is not casted object. With the freedom of creating any shape, RC should be constructed after the set-up (組み立てた後) of iron components and casted as unity, so that no joint exists, which means RC is monolithic (k) or elastic (k);	p. 24 (RC) 基礎から、柱も梁も壁も床も一体として仮枠を使用する事に依って同時に恰も鋳造する様に造り出す事が出来ます。為に此の構造法を以て鋳造するものであるといふ様に解釈する説も有る様であります。然し此は此の構造法が鋳らるゝもので有るのでは無くて、其の施工法が鋳造に類似のものであるといふに止る事と思ひます。此の下に直に鉄筋混凝土構造は鋳るものであると断定するのは聊か当を得ない事では無いでしゃうか。只混凝土といふ材料が泥状をなしたものであって、此を使用する時に他の材料の様に一定の形状を備へて居りませんから仮枠の使用に依って任意な形状に自由自在に造る事が出来ます。為に補強材として使用される鋼材を組み立てた後には柱も梁も床も壁も同時に一体として出来上るだけの事であります。其の特色とする所は組み立てるものであり乍ら継目のない、従ってモノリシックな、又エラスチックな点にあります。
35. As a single entity		O	See also 34	
36. Monolithic		O	See also 34	
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form	V	p. 25 However, the buildings of RC can be all built with RC itself. As elastic structure (エラスチックな架構体) with rigidness constructed in a monolithic way, lintel system is not the destination (終局) of RC.	p. 25 …然し本構造は今も述べた様に全体を一のエラスチックな架構体としてモノリシックに剛に造り得る所に其の特長があります。是には柱は柱、梁は梁と別々のものを組み合せて出来上った単純な楣式の適用を以て其の終局をすべきものではありません。更に進むで其の材料の特色を最も良く発揮したエラスチックな剛架構体に其の生命を保有すべきであります。…
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		V	See also 41	
40. Elastic (katagana, or original text)		O	See also 34	
41. Rigid joint		O	p. 29-30 The coordination of structure and presentation is the deepest relationship between structure and style, for which the essence should be rational and honest spirit (合理的誠実な信念). From this point, covering RC [with other materials] is not appreciable; Monolithic and elastic rigid frame (剛架構体) also has different representations;	p. 29-30 構造と表現との一致すべき事は構造と様式との関係中最も深いものであります。此の一致の無い時に終 (see also p. 26) に意味ある建築は生れません。然し逆に構造と表現と一致した時直に生気ある芸術は生れるといふ理には行きません。…新材料が自由であります。従って此に向っては最も良く其の生れた時代の影が表現され得る理であります。…前章に論じた様に此の材料には剛なる架構体の形が採用さるべきであります。其の根本に?? (uncertain, possibly as 立ち, see also p. 8) 適って合理的誠実な信念を以て処理すべきであります。構造と表現との一致を得 (possible character) べき点から推して此 (possible character) 材料を以て被覆する事を喜びません。被覆は要するに粉黛に止るからであります。混凝土の表面は其の儘混凝土の表面を卒直に表したいものであります。モノリシックなエラスチックな剛架構体の表現にも幾 (possible character) 多の解決が有り得ます。此の解決は過去の因襲の手に依てされ得べきものではありません、時代を背景にした現代人の創造的な而して美術的な精神を以て処理さるべきであります。
42. Japanese style	Prototypes	X	p. 32-33 Revival of traditional Japanese architecture is not plausible. With certain forms and free (自由) material, architecture should express Japanese taste, thoughts of the era and national character. Elastic and monolithic rigid frame should be the starting point of RC.	p. 32-33 …過去の日本建築の形骸を復活したものでは何等の同感を起し得ません。其の建築は日本らしい匂い、日本らしい気分、色彩に依るべきであります。建築の原則に依り我々の日本人らしい趣味気分を表はすべきであります。而して歴史の示す様に然も敵視は繰り返す事が永久の真理であるならば、現代の日本人の趣味、是が現代思潮を背景として、我々の国民性に基したものであって、是が建築の上に何等かの形式として表現さるべきであります、殊に自由な新材料の処理に而て発動すべき、より多くの自由を持って居ります。エラスチックなモノリシックな特性に立脚した剛架構体の構造を出発点とし、建築の原則を離る事なく、此に現代人の思潮が食ひ込み、作者の信念が動いた時に夫れが有意義な日本に於ける鉄筋混凝土構造の様式となるべきであります。
43. Japanese taste		O	See also 42	
44. Art Nouveau				
45. Secession				
46. Skyscraper				

原田 俊雄 Toshio Harada

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts			
2. National character		O	p. 26 (conclusion)	
3. Individualism		O	p. 7 Architecture should utilize the materials economically, take full advantage of materials, sincerely express the ideas and emotions of architects;	p. 7 即チ材料ヲ最モ経済的シ使用シ其ノ材料ノ有スル特徴ヲ充分発揮セシメテ最モ堅牢ニシテ然モ芸術的価値アル建築物ヲ作ルトイフ㆓ハ吾人ノ建築ニ対シテ有スル理想タラズレバアラズ。 (enter) 建築ノ美術的価値ヲ有スル所以ノモノハ建築材料ナル石、土(*煉瓦ヲ含ム)、混凝土、鉄等ノ無機物ヲ或ル統一ノモノニ積上ゲ、或ハ組立テヽ生命アル有機的建築トナスニアリ。 (enter) 此生命タルヤ (uncertain 3 characters) 建築家ガ其内心ニ醗酵スル思想ト情緒ヲ真摯ナル態度ヲ特殊ノ技巧トニヨリテ此等ノ無生物ニ附与スル㆓ヲ得ルモノナリ。
4. Spirit of era		O	p. 3 As a result of following styles in the past, architecture has fallen behind other genres of art. Fortunately, with the development of science, appearance of steel and RC structure, change of the purpose of architecture, change of the trends of thoughts, development of transportation, economy, change of lifestyle, and the development of art and crafts, architects have been awakened.	p. 3 建築ニテハ様式ナル過去ノ因襲ヲ重ズル結果、他ノ諸芸術ニ遅レテ独リ生命ナキ形骸ヲ守ルニ汲々タル有様ナリシガ、近時科学ノ発達進歩ニ伴ヒ鉄骨構造、鉄筋混凝土構造ノ如キ新材料新構造法ノ発明セラルヽ有リ其他建築目的ノ変化、思潮ノ変化、交通ノ発達、経済状態及生活状態ノ変化、及ビ美術工芸ノ発達等種々ナル源因ニ刺激セラレテ、漸ク建築家ノ覚醒ヲ来シ今ヤ著シキ回転ノ気運ニ際会セリ…
5. Practical architecture		V	p. 2-3 Architecture is one kind of special art, which is independent from practicality to some extent. The influence of science is directly on the material of architecture rather than the beauty of architecture, with which the relationship is in the second place.	p. 2-3 …要スルニ建築ノ建築タル所以ノモノハ何処マデモ実用ヲ独立セシメタル特異ナル芸術ナラザル可カラズ。 (enter) 又建築ト科学ト交渉ヲ有スル㆓ハ其材料ノ性質ノ然ラシムル所ニシテ直接美術ニ関係ヲ有スルモノニ非ズ。 (enter) 材料ノ建築ニ於ケル価値ハ科学ノ関係ニヨリ多少左右ヲ支配サレ初メテ建築美ニ科学ノ交渉ガ及ブ訳ニテ到底第二次タルヲ免レズ。 (enter) 斯ノ如キ建築ノ芸術的価値ニ就テ種々異論アレドモ何レモ徹底セル議論ト称スベカラズ之ガ為メ建築ノ芸術的価値ヲ損スル㆓無キノミナラズ、却テ他ノ造形美術ニ見ル㆓能ハザル特権ヲ有スル㆓ヲ知ルヲ得ルナリ。
6. Economical		O	See also 2	
7. Based on science		O	See also 4	
8. Rational structure		O	See also 39	
9. Expression of structure / mechanics		O	p. 10 Correct style must correctly express the internal structure. It has to be admitted that the appearance (出現) of RC and the utilization of arch have huge influence on style;	p. 10 正シキ様式ハ必ズ内部ノ正シキ構造法ヲ表現シタルモノナラズル可カラザル理由ハ愈以テ明白トナルベシ。…即チ混凝土ナル新材料ノ出現及迫持ノ応用ガ其様式ニ大ナル影響ヲ与ヘシ事実ハ何人ニ拒ム能ハザル所タルベシ。
10. Expression of material		O	p. 9 Material and structure have close relationship, so that the character of material should be directly expressed in structure.	p. 9 前節ニ述ベタルガ如ク材料ト構造トハ密接ナル関係ヲ有シ従テ材料ノ有スル特色ヲ直チニ構造ニ表ルベキモノナリ。
11. Truth of structure		O	p. 8 There is no artistic value in sham architecture, which is caused by irrational dealing of material.	p. 8 虚偽建築ニシテ芸術的価値ノ存在ヲ認ムル能ハザルベシ。之ニ材料ノ不合理ナル取扱ニ起因シタル結果ナリ。
12. Truth of purpose				
13. No imitation of historical styles		O	See also 4	
14. No replacement				
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form		V	p. 23	p. 23 [RC] 従テ如何ナル形ニテモ鋳成シ得ルモ余リ複雑ナル形状ハ好マシキモノニハ非ルベシ。
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		O	See also 26	
22. Flat roof				
47. Thin wall		O	p. 21	p. 21 [RC] 其他壁厚小ナル故室ノ有効面積大ナル㆓、…

23. Light image	Decoration			
24. Lack beauty		O	See also 32	
25. Lack solemnity				
26. Dealing of surface with fabrication, painting or paving, etc.		O	p. 24 To make elaboration (精巧) in formwork for delicate details is not suitable for RC. Also, to complement the water-proof capacity of RC, it is necessary to pave tile or adopt painting on the surface, and implausible to have variation (凹凸) on the surface. Hence painting or paving for giving the effect of shadow are reliable methods. In this sense, RC should have flat surface, but eaves and <string course> are still acceptable if it is practically necessary;	p. 24 仮枠ニ混凝土ヲ流シ込ム際ニハ可ナリノ圧力ガ表面ニ働クモノナリ、従テ仮枠ニ此力ニ抗スルダケノ強サヲ有スルモノナラザル可カラズ。 (enter) 形ガ複雑ニナレバナル程仮枠ハ精巧ナルモノヲ要スベク。終ニ仮枠其物ニ価値ノ存スル程立派ナルモノヲ要ストイフ理屈ニナルベシ。 (enter) 之レ物ノ本末ヲ誤レルモノトイフベク甚ダ面白カラヌ事ナリ。 (enter) 彼ノ石材建築ノ柱頭其他ノ彫刻ハ其物ガ建築ノ表面ノ装飾ニ役立ツモノナレバ工費ノ点ニ於テ仮枠以上ノ費用ヲ要スルトモ決シテ本末ヲ誤リタルモノトハ言フ㇀ヲ得ズ。 (enter) 又他方面ヨリ考フルニ鉄筋混凝土ノ有スル缺点、即チ水ノ滲透作用ヲ防ギ、及材料美ノ缺存ヲ補フ為メ壁ノ表面ヘ装飾瓦ヲ張ルカ又ハ塗料ヲ塗ル必要アリ。 (enter) 之レガ為メニハ表面ニ余り凹凸ノアルハ面白カラズ。 (enter) 既ニ塗料ヲ用ヒ装飾瓦ヲ用フル㇀ハ表面装飾ヲ施セルモノナルヲ以テ鉄筋混凝土構造物ノ表面ハ陰影ノ手段ニヨリ美シク見センストスルヨリモ寧ロ表面装飾ニヨル方穏当ナルベシ。 (enter) 以上ノ二ツノ理由ヨリ鉄筋混凝土構造ノ表面ハ成ルベク平滑ナルヲ宜シトスルモノナリ、但シ軒蛇腹、ストリングコールス (*string course) ノ如キ実用上必要ノモノハ無論存生 (possibly should be 在) ノ必要アリ。唯其繰形ノ形ガ混凝土特有ノ形タルベキ必要アルノミ。
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion		V	See also 26	
30. No decoration				
31. Free plan	Of freedom			
32. Free shape		O	p. 21-22 (7) The shape of RC is extremely free. ⋯ RC lacks the beauty of material, so that the dealing of surface is important;	p. 21-22 (七)形状ノ極メテ自由ナル㇀。⋯⋯唯可ナリ重大ナル缺点ト見ラルヽモノハ材料美ヲ有セザル㇀ナリ、コレトテモ表面仕上ゲノ方法ニヨリテ適当ニ所理スルヲ得ベシ此事ニ就テ後ニ述ブル所アルベシ。
33. Free aperture				
34. Casted object		O	See also 39	
35. As a single entity		O	p. 26 Adopting elastic arch and making architecture as an entire organism can bring correct style of RC into being. In conclusion, style [of RC] should put its foundation on elastic arch and adopt surface decorations, despite the differences caused by national character, climate and culture.	p. 26 此ノ「エラスチックアーチ」ノ原理ヨリ出発シ此ノ材料ノ有スル特質ヲ正直ニ遺憾ナク発揮セシムルニ充分適切ナル手法ヲ撰ビテ全体ノ構造ヲ一ノ有機的租 (should be 組) 織ノ下ニ統一シタルトキニ初メテ鉄筋混凝土構造ノ正シキ様式ノ出現ヲ見ルニ至ルベシ。 (enter) 斯クシテ出来タル様式ト雖モ国民性及気候風土等ノ影響ヲ受ケテ地方的相違ノ有ルベキハ勿論ノ事ナリ。 (enter) 以上述ベタル㇀ニヨリ鉄筋混凝土構造ノ様式ハ「エラスチックアーチ」ヲ基礎トシ表面装飾ヲ用フルモノナリトノ結論ニ到達セリ。
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form	X	See also 39	
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 22-23 RC is extremely free and can be casted to any shape. Instead of separately constructed components, the joints of RC are naturally rigid. Namely, RC should be rigid frame, or in broad sense, elastic arch (k), which is the most rational [structure], should transcend lintel system;	p. 22-23 鉄筋混凝土ハ極メテ自由ナル特質ヲ有ス従テ如何ナル形状ニモ鋳成スル㇀ヲ得ベシ。⋯然シ鉄筋混凝土構造ハ鋳造ナルガ故ニ各部ノ接合ハ求メズシテ固定接合トナル傾向ヲ有ス石材ニ於ケルガ如ク梁ハ梁、柱ハ柱トシテ箇々別々ニ独立スルモノトハ自ラ異ナル所ナリ。 (enter) 即チ剛性接合ガ此材料ノ有スル特徴ナルガ故ニ楣式ヲ超越シテ剛性架構、広義に於ケル「エラスチックアーチ」ニ赴クベキハ最モ合理的ナリ。
40. Elastic (katagana, or original text)				
41. Rigid joint		O	See also 39	
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau				
45. Secession				
46. Skyscraper				

小倉 強 Tsuyoshi Ogura

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts	X	p. 24 Evolutionism is not suitable for Japan right now.	p. 24 現在の日本に於て進化主義は不適当であると思う。
2. National character		O		
3. Individualism		O	p. 22 Artistic manners should not imitate the past and other nations or individuals. Art has to express the emotion of individual person;	p. 22 更に建築に於ける芸術的手法に於ても、過去や、他国 (possible character)、他人の模倣は無意味である。芸術は自己の情緒の流れでなければならぬ。再現ではない、表現である。模倣は芸術の初階段である。芸術は極めて個性的でなければならぬ。斯くの如き意味に於ても、古来の建築の芸術的形式を模倣することは無意味である。学ぶことはよいけれどもとらわれてはならぬものである。
4. Spirit of era				
5. Practical architecture		V	p. 1 My definition: Architecture is the construction for the safety of human's life (生活) p. 18 As has been mentioned by Noda, is artistic architecture. There should be practical architecture and artistic architecture.	p. 1 …自分は建築の定義を左の如く定める。『建築とは人間の生活の安全のために造られたる構造物なり』。 p. 18野田学士が建築を{*実用建築　芸術的建築}に別けたのは穏当であると思ふ。…
6. Economical				
7. Based on science				
8. Rational structure		O	See also 39	
9. Expression of structure / mechanics		V	p. 9 There will be more pleasure, which comes from reasonable structure, if the significance of structure is clear. Within the range of this sense, any artistic manners are plausible.	p. 9 知的なる構造からくる快感は、其構造の意義が明かにせらるればせらるヽ程益多いものである。此構造的意味を妨げない範囲に於て芸術的手法を加へることは問題でない。
10. Expression of material		X	p. 16 Materials in architecture are restraint and it's not possible to have free expression.	p. 16 建築に於ける材料は甚羈絆的である、自由なる表現を為し得ない。
11. Truth of structure		O	p. 9 Pleasure can be felt from truthful structure, while antipathy can be felt from sham structure, such as columns bearing no load, buttresses bearing no stress.	p. 9 構造は真なれば真なる程快感を感ずる。虚偽に於て著しい不快をひき起す。荷を支へない偽柱、ストレスを受けないバットレスなどに於て不快を感ずる。
12. Truth of purpose		V	p. 14 Architecture should be as itself (らしく), which can be lost and hidden by many obstacles. In these situations, artistic manners are necessary, Factory being firm, domestic house being heart-warming should be conducted.	p. 14 建築家は内容の自然的表現が「らしく」ある様に努力するのが勿論でるけれども、諸種の妨害に遮ぎられて「らしい」事を失ふ。この場合ににはいかにすべきか。此欠点を補はんために芸術的手法を要する。建築家の感じの表現を以て之を補ふのである。工場は堅牢らしく、住宅は温かく、取扱ふのである。…
13. No imitation of historical styles		O	See also 3	
14. No replacement				
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form				
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		O	See also 26	
22. Flat roof		O	See also 26	
47. Thin wall		O	p. 26	p. 26 鉄筋コンクリートの壁は多くの場合、柱と柱との間に充填として役立てゐる。従来の煉瓦造石造の如き、其自身の重さで風圧と垂直重を支へたものと異ってゐる。従って風圧にのみ対して安全であればいい。煉瓦造、石造の厚い壁を見た目には、薄い鉄筋コンクリートの壁は危険に感ぜらるヽかもしれぬけれども、之は全く因習に捉はれた結果である。
23. Light image	Decoration	O	See also 39	
24. Lack beauty		O	p. 27	p. 27 表面仕上げ。 (enter) 現在のコンクリートの色質が余り美術的でない。此事は何等建築の目的には無関係であるけれども、材料が美しくない事は、往々其目的を妨げる故に、美しい材料を望む事は自然的である。
25. Lack solemnity		O	See also 26	

26. Dealing of surface with fabrication, painting or paving, etc.	Decoration	O	p. 27-29 The walls of RC, which is unlikely to have three-dimensional decoration, can bring pleasure by clearly showing the distribution of forces and the feeling of movement. For dealing of surface, plaster painting and the adoption of sand are the most proper. Because of the thin walls, RC, which has flat surface, lacks the solemnity, so that artistic manners [of other genres of architecture] cannot be directly utilized. For roofs, slight slope or flat roof is favorable. For decoration, rather than three-dimension, flat decoration should be utilized. Generally, the style of RC should be based on elastic arch, together with proper artistic manners and flat decorations.	p. 27-29 一、壁体論 (as subtitle) …立体装飾を施す余裕のない鉄筋コンクリートの壁は、力の分布の比較的分明なることを示すもので、壁としての快感をより多く感ずるものである。積上建築でない鉄筋コンクリートの壁は、煉瓦造の如き目地からくる視覚上の美は感じないが、運動感覚に対する快感がある。…表面仕上げ (as subtitle, should be 2) …コンクリートの性質を表現しえて始めて美しいものである。此意味に於て自分はかつ漆喰仕上げや、砂仕上げを最適当であると考へる。…p. 28 壁のうすい表面平滑な鉄筋コンクリート造は、従来の石造、煉瓦造に比してたしかに荘重をかい (possible character) てをる。荘重の要素なる量に関して欠乏を有してゐる。薄い壁は、量に?? (unreadable 2 characters) る貧弱さを感せしめて、荘重をかく念を思ひ起させる。此等の観念とても比較的の事である。従って芸術的手法を必要する建築に於ては之を直ちに (possible 5 characters) 採用しえないと思ふ。…二、 (should be 3) 屋根論 (as subtitle) …鉄筋コンクリートの屋根は屋根の架構上、ゆるい傾斜のものを適当としてゐる。陸屋根にし適当してゐる。四、芸術的手法 (as subtitle) …要するに鉄筋コンクリート構造法のとるべき様式は、エラステックアーチの原理によれる構造法と、此構造に適当した芸術的手法と、平面装飾とよりなりたるものであらう。(approximately as the conclusion)
27. Flat decoration		O	See also 26	
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration		O	p. 9 When I was requested by the students of civil engineering to design the decoration for the trusses of steel bridge, I said only when structural significance is clear can we feel the pleasure, while decoration could hurt the pleasure;	p. 9 よく土木の学生に頼まれて、鉄橋のトラスの間を飾ってくれと頼まれる事がある。自分は其時「構造物は其構造的意義が明かであって始めて吾人に快感を与へるものである、之を飾るといふ事はかへって其快感を傷けはしまいか」と答へた。
31. Free plan	Of freedom			
32. Free shape				
33. Free aperture				
34. Casted object				
35. As a single entity		O	See also 39	
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form	V	See also 47	
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 26 The features of RC are two, 1. Structure as entity, 2. Favorable for forces [or stresses]. [point 1] [RC] should follow the principle of elastic arch (k). For this method, different components are jointed rigidly. Even if there is deformation in some parts, the building will not be destructed. Iron bars for tensile stress and concrete for compressive stress is rational. [point 2] In terms of the favor of forces, RC does not need redundant size as before, so than walls can be thinner and the size of columns can be approximately (朧げ) [According to the nuance of the phrase, it can indicate the meaning of slight.] determined;	p. 26 鉄筋コンクリート構造の特質は左の二つある。一、全体の架構が一体なること　二、力に関する有利なる構造　…(as the explanation of 1) エラステックアーチの原則と称せられてゐる。此構造法の利点は各部の接合が極めてリジッドなる点である。床が折れる事はあっても、其 (possible character, see also p. 12) が壁を離れて墜落することがない。外力によって、建物全体として傾き又は歪む事があっても、各部が離れ離れになって破壊することがない。地震に際して極めて安全である。二は即、一つの梁を想像して、其に荷重がかゝった時、伸張側に鉄筋を配置し、圧縮側にコンクリートを置くといふ極めて合理的構造方法である。而して鉄筋コンクリート構造の大部は此合理的構造方法で組立てうるのである。 (enter) 力に関する有利なる構造法は各部でデメンション [size?] に従来の如き冗多な大き (possibly should be さ) を要さない。壁も厚くなくて済み、柱も太さも朧 (possible character) げながら定められるのである。…
40. Elastic (katagana, or original text)				
41. Rigid joint		O	See also 39	
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau				
45. Secession		V	p. 21 However, the form of straight line is about the decoration of Secession. Instead, architecture should remove unnecessary decoration and tricks of appearance against the contents of architecture.	p. 21 けれども、其 [straight lines of Secession] はセセッション式の装飾とは?? (2 uncertain characters, look like き違) へてゐるものである。建築に於けるセセッショニストの主張は、決して直線的な、装飾された建築をいふのでない。建築を建築としての美しさに達せしめんとするくわだてである。不必要な装飾や、建築の内容に背く様な外形の技巧を排する目覚ましき主張である。
46. Skyscraper				

山崎 英二 Eiji Yamazaki

Statements		Check	EN	JP
1. Evolutionism	Abstract concepts			
2. National character		V	p. 4 In the past, the factors of styles are various, like the thoughts of era and indigenous environment, which can produce differences. However, these are explanations in narrow sense, and far from the essence. (followed by the discussion of material et structure)	p. 4 元来様式成立ノ要素ハ甚ダ多イノデアル。自然的ニモ人為的ニモソレハ甚ダ雑多デアル。時代ノ思潮ニモヨリ、土地ノ風土ニモヨリ其処ニ生ズルモノニ差別ヲ生ズルモノデアル。…然シナガラ是ハ根本義ヲ遠ザカッタ見解デアル。勿論誤リデハ無イガ様式ヲ余リニ狭義ニ解シテ居ルト思フ。
3. Individualism				
4. Spirit of era		V	See also 2	
5. Practical architecture		V	p. 13 Also, only utilizing new material to practical [buildings] is not the goal of architecture;	p. 13 新材料ノ出現ニ際シテハ、其レハ新様式ニ対シテ不適当ラシク、又兎角其使用ノ法ヲ誤リ勝チデアッタ新材料ハ技術者ニ排斥セラレ、非美術的ノ形ニ発展シ、力ト頼ムハ只其実用ト必要ノ点ノミニテ、而メ此点ノミデ構造ニ応用セラレ決シテ建築ノ主眼トハ認メラレナカッタ。…
6. Economical		O	See also 45	
7. Based on science		O	p. 9 In modern era, steel and RC structure are becoming popular, which are hugely influenced by science and engineering.	p. 9 近世ニ至ッテ建築材料ハ甚ダ其範囲ガ広ガッテ来タ。鉄ガ用ヒラレ優秀ナル鉄筋混凝土ガ盛ニ使用モラルヽ様ニナッタ。 (enter) 此レ等二ツノ材料ニ伴ッテ其所ニ甚ダ? (unreadable character) クサイエンスゼロ―工学ガ大ナル勢力ヲ建築界ニ与フル様ニナッタ。
8. Rational structure				
9. Expression of structure / mechanics		O	p. 4-5 Correct style should be the correct presentation of internal structure, for which the correct utilization of material is the first step.	p. 4-5 「正シキ建築ノ様式ハ建築ノ内部ニ於ケル正シキ構造ヲ正シキ外部ニ表シタルモノデアル」。 (enter) 正シキ構造トハ其用材ノ正当ナル意味ヲ有スル使用法ヲ第一要件トスル。
10. Expression of material		O	p. 9 Certain dealing method comes from material and the presented form comes from the specific method, i.e., style depends on material.	p. 9 即材料ニヨリテ特異ノ取扱方ヲ生ジ此取扱方ニヨリテ表レタル形式ガ即其材料ニ対スル様式ト定マル可キデアル。
11. Truth of structure		O	p. 7 Sham architecture is not appreciable. RC's style should not imitate other materials, or the styles in the past;	p. 7 又虚偽建築ハ悪イト知リツヽ是ヲ遁 (possible) スル事ノ出来ヌモノモ甚ダ多イ。現在混凝土材ヲ用ヒテ様式ノ如何ハ兎モ角モ大低 (possibly should be 抵) 石造ヲ模シテ居ル、或ハ煉瓦造ヲ模シテ居ル。…鉄筋混凝土材ニハ慣例ガナイ。 (enter) 何モ真似事ノミヲ能事トシテ居ル必要ハナイ。宜シク過去ヲ離レタ新ラシイモノデアル可キデアル過去建築ノ構造法ト全然変ッタ (possible 2 characters) 此新材料カラ構造セラルヽモノノ表現ガ過去ノ建築様式ト全然異ルヿハ当然ノ事ト思フ。
12. Truth of purpose				
13. No imitation of historical styles		O	See also 11	
14. No replacement				
15. Implication of historical styles				
17. Simple plan	Of simplicity			
18. Simple form		O	p. 22	p. 22 元来建築構造ハ簡単ナル事ヲ上乗トスル此簡単ヲ求ムル為メニハ一ツノ建物ガ一体ヨリ出来、其各部ガ他ノ部分ヲ互ニ助ケ合フ事ガ必要トナル。 (following text implicating the adoption of elastic arch)
19. Appearance reflects plan				
20. Straight lines				
21. Flat surface		O	p. 24 …Point 2: The surface of RC is relatively flat.	p. 24 …第二ハ建物ノ表面ガ比較的平板的デアロート思ハレル。…
22. Flat roof				
47. Thin wall		O	p. 18	p. 18 又薄ク平板的ナルベキモノナリトモ何等カノヤリ方デ却テ面白キエキスプレッションヲ得ル事モ計ラレズ。…

23. Light image	Decoration	O	See also 35	
24. Lack beauty		O	See also 35	
25. Lack solemnity		O	See also 35	
26. Dealing of surface with fabrication, painting or paving, etc.		O	p. 26 There are two ways [to improve the aesthetic value of RC], 1. To endow decorative value to RC itself [mixing other materials to change the color or texture of concrete], 2. Dealing of surface.	p. 26 今次ノ二途ニ分ケテ考ヘンニ。 (enter) 一、混凝土自身ニ装飾的価値ヲツケル事 (mixing other materials to change the color or texture of concrete) 二、混凝土ノ表面装ヲ美シク仕上ゲル事。…
27. Flat decoration				
28. Bold (less details) decoration				
29. Extrusion				
30. No decoration				
31. Free plan	Of freedom			
32. Free shape		O	p. 18 RC is elastic (k) and has free shape, so that it is not difficult to imitate the styles in the past.	p. 18 猶此鉄筋混凝土材ノ特性ヲ特ニ面白キ事ハ其エラスチックニシテ自由ニ如何ナル形ヲモ造ル事ヲ得ル点デアル。 (enter) 其故ニ過去ノ如何ナル様式ヲモ真似ル事ハ困難デハナイ、過去ノ建築物其他ノ模造ニモ甚ダ良イ材料デアル。
33. Free aperture				
34. Casted object				
35. As a single entity		O	p. 15 RC is unity with the adoption of iron bars. Pros and cons of RC as [picked], for pros, 2. Constructed as a single entity regardless of the contents; 13. Free (自由) and complete (完全) joints, for cons, 1. RC lacks the beauty of material; 4. Difficult for the decoration of surface; 8. Having light image and lacking the feeling of solemnity.	p. 15 混凝土中ニ鉄筋ヲ入レ単一体トセルモノデアル、前者ノ抗圧性ト後者ノ抗張性トラ? (unreadable character, possibly as ウ) マリ合セシメ理想的構造材料トナッタノデアル。…鉄筋混凝土ノ長所ヲ挙ゲンニ。…二、内容不同ナラズシテ単一体ニ築造シ得ル事 …十三、接合自由ニシテ殆ド完全ト云フヲ得ル事 …次ニ其短所ヲ列記センニ。 (enter) 一、材料美ノ欠ケテ居ル事 …四、表面装飾ナシ難キ事 …八、甚ダ軽快アルガ為メニ壮 (should be 荘) 重ノ感ヲ建築ニ与ヘントスル時ノ手法比較的困難ナル事…
36. Monolithic				
37. Large span				
38. Spatial existence				
16. Curtain wall / frame	Structural form	V	See also 39	
39. The motivation of the style of RC as rigid frame, or in broad sense, elastic arch.		O	p. 20 Frame structure is the most convenient for RC and the easiest way for calculation. However, this is expedient. For RC, it is clumsy to imitate the separate components in stone buildings, while RC should transcend lintel system. Here, RC should be elastic arch which has rigid joints;	p. 20 鉄筋混凝土構造ニ於テハ骨組式構造法、即柱ヲ建テ梁ヲ渡ス構造法ハ此材料ノ性質上最モ簡便ニシテ計算法モ亦一番簡単デアル。現在多ク是ニヨッテ居ル。然シ是ガ最モ適シタ方法デハナイ、只新材料ノ出現後? (unreadable character) モナキ? (unreadable character, the same as the previous one) ノ一種ノ弥縫策デアル。又弥縫策トシテ適当ナル事デアル。…鉄筋混凝土材ニテハ自然的ニ求メ得ラレ石材建築ニ於ケルガ如ク梁ノ独立柱ノ独立ト云フ有様ヲ真似ル事ハ事 (uncertain character) 却ッテ面倒トナル。故ニ鉄筋混凝土構造ガ単純ナル楣式ノ形ヲ超越シテ完全接合ヲ有スル特殊ノ構造ニ進ム可キ事ハテ (confusing) 無理ナル推論デ無カロー。 (enter) 此処ニ於テ鉄筋混凝土構造ハ完全接合ヲ有スル一ツノエラスチックアーチトナル可キモノデアル。此構造方法ヲ得テ初メテ鉄筋混凝土ナル新材料ハ処ト時トヲ超越シテ建築界ニ重キヲナシウルト云フ事ガ出来ルノデアル。
40. Elastic (katagana, or original text)		O	See also 32	
41. Rigid joint		O	See also 35, 39	
42. Japanese style	Prototypes			
43. Japanese taste				
44. Art Nouveau				
45. Secession		V	27 Due to the thin walls, the image of RC is flat, which should be one of the features of RC considering the economical utilization of formwork. The prosperity of Secession and RC at the same time is an interesting phenomenon.	p. 27 又、在来ノ石材建築等ニ比シ構造上壁体ハ甚ダ薄ク、従テ窓其他ニ於ケル陰影ハ甚ダ単調ナルモノトナリ建物全体ハ比較的平板ナル感ジヲ与ヘル事ハ必然ノ結果デアル。一方経済上仮枠使用ノ束縛ヨリ考フルモ益々建築物ノ表面ハ平板的トナル可キ事ハ、此新材料ノ採ル可キ様式ノ一ツノ特長トナルデアロー。 (enter) 今ヤセセッション主義ガ建築界ニモ漸ク勢力ヲ得、真面目ニ研究サレツヽアル秋ニ当リ鉄筋混凝土材建築ガ益々隆盛ニ趣キツヽアル事ハ如上ノ意味ニ於テ面白イ現象デアル。
46. Skyscraper				

Appendix C

Magazine articles concerning design of reinforced concrete buildings

For Type: d=discussed, dd=denyingly discussed, cons=against “reinforced concrete and new style”.

The table in Appendix C spans the left and right sides of the facing pages.

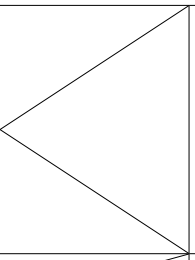
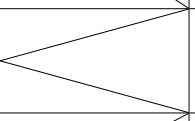
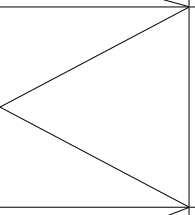
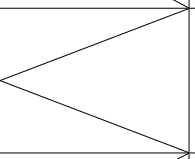
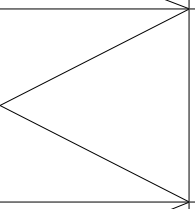
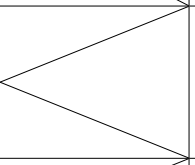
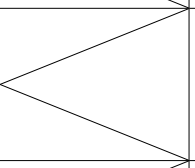
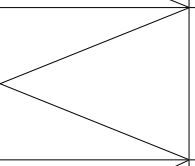
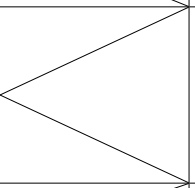
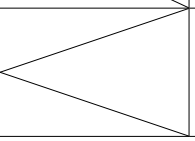
Reference and original text	Type	
"中條精一郎, “第七回萬國建築大會概況(四)”, Kenchikuzasshi (October 1908)： 398_403 若し穏当に此式を行ふときは建築の形状に一変化を来すを得べし其故は建築物の形状を簡単にし煩雑なる枠子及床を隠し四囲に於る壁面の区別は悉皆設用せず壁と屋根との区別をも棄去し建築物をして包囲するに必要なる空間に応じて任意の厚さの弾性ある強固なる周壁を有せしむるを得べし要するに此種の住屋の形状は上端「タレース」にて断面を形成せる長方形立体をなし若くは穹窿を有せる大建築なりと但し此建築には将来彫刻若くは型写の浮彫制作物は廃せられて着色的装飾の流行を見ること必然の結果なるべし蓋し此建築内外形状に一つの根本的変化を生ずる所以は旧式建築風に換ゆるにコンクリートなる同体一様の構造を以てするに依るならん而して従来主要の石材の配合若くは漆喰塗の如き建築の諸形式は自今後不要に帰すべければ其外観美の価値の如きも斯に論ずるの必要なきを以て之に代るに別種の法を発見せざるべからず。...之れが構造の各部を連通して大体を完備ならしむるを以て其理想とするなり然るに鉄筋コンクリート建築物に於ては技術家殊に彫刻家の手腕を振ふの余地は殆んど無しと雖も塗料陶画若くは其他の平面的装飾に於て色彩を用ゆる技術家には其創作の余地綽々として多しとす。"	d	
"中條精一郎, “第七回萬國建築大會概況(五)”, Kenchikuzasshi (November 1908)： 446_447 而して技巧を施すの見地より論ずるときは鉄筋コンクリート式は定形を有せざるがため他のコンクリートと一般如何様にも成すを得べく (either beam or arch)…更に又一方より観察するに良建築工事に於ては其出来得べき大さの最大限に達せしむるは殆んど之れなきことにして之れに施す技巧の如きも第一線、第二突起部、第三色彩より生ぜしめざる可からず蓋し前者即ち線の選定は建築家の自在になし得る処にして敢て制限あるなく第二者仮令ば刳方或は其他の装飾の如きものも亦た容易にして且つ比較的経済に為すを得べし第三色彩に関しては単にセメントのみ依頼すべからず現今のコンクリートと雖も古人の之を用ひしが如く使用するを要す即ち他物を以てコンクリートの全面若くは其一部を覆うて希望の配色を得るにありて現に或る建築家は此法に依りて其建築物に著しき美観を呈せしむるに於て成効せる人あり。"	d	
"家魔投, “吾等の意見(一)”, Kenchikuzasshi (June 1910)： 291_294 (議院建築)直に純日本式で設計して貰ひたい。…吾等は今少しく其方法を述べて置く。ソハ別に六つかしい方法でも新しい手段でも無い、鉄筋「コンクリート」で築造すのである、鉄材が「コンクリート」中に包蔵さるれば永久的になることは既に定論である、また此構造法は柱本位の建築に最も適する、鉄筋の按排を巧にすること丈が新案を要する処なるが、これは只細心もて違算無く計数する丈である、日本式の軒先に於ける棰下端より瓦上端までの厚サがあれば、軒の突出位の跳出は鉄筋「コンクリート」を以て堅実に構造することは甚容易である、又大体が鋳造法であるから、同形状の桝組や棰形や、妙に屈曲した蝦虹梁でも六つかしい事は無く、二タ軒でも三手先でも、何の心配は要らぬ、外面仕上げが醜いと云ふ人もあらんが、仕上面は粗にも密にも望み通りに出来、又如何様の色彩にも仕上ぐる方法は顔料の調和割まで挙げて、公刊の書籍に書いてある、が場合によりては日本的に布を被せて漆を塗ることも出来るだろふ、のみならず最も便利なことは、柱でも梁でも桁でも、若くは敷板の厚でも、木造と同一の寸法で十分なる強さを得る、故に棟柱連のヤカマシク云ふ木割は、少しも之を変更せずに其儘「コンクリート」割として使用することが出来る、…"	d	
"佐野利器, “第九回萬國建築大會參列報告”, Kenchikuzasshi (March 1912)： 123_134 (クロクェ・グラン)特に其の地形より、壁体、床、柱及び屋根に至る迄を全く結晶せる一大塊となす事を得るの機能に至りては他に及ぶものあるべからず。(中略)屋根は陸とするも穹窿とするも意の儘にして而して屋根と壁体とは連続的に構成せらるるが故に小屋組に場所を取らるる事なく屋根裏は直に普通の室として使用し得ることの妙あり。之を芸術上より見るに鉄筋混凝土は新様式を導くべき傾向を有すべしとは雖ども、兎も角も其の表面は平滑にして容色なきを免れず、故に遂に美術的大建築に直に適応するものとなす事を得べからず、凡ての歴史的建築様式の原素たる半肉彫り的装飾は鉄筋混凝土構造の最も好まざる所なるが故に常に歴史的様式を犠牲となさざるべからず、…最も偽らざる手法を以てし而して其の装飾は全然色彩に依るの止むなきものなり、彫刻類似のものは只極めて小範囲に用ひられ得べきのみ、斯くの如くして鉄筋混凝土構造は張瓦、張石、ペンキ、フレスコ等に依てのみ装飾せられざるべからざる運命にあるものなり。(レーリー氏)大塊の石材は建築に宏大てふ美観を与ふる事此伊国に於て数多く証明せらるる所なれども、形の一定せざる混凝土を以てしては此の種の美的表現を得る事甚だ難し、…唯表面上の所置にして様式の根本解釈に触るるものとなすべからず、実に其の主題は「鉄筋混凝土構造は自己特有の新様式を創成する能力ありや否や」と云ふ事にあり、鉄筋混凝土は石材又は煉瓦を以て構成せらるる凡てのものを模倣し得る事の外に石材又は煉瓦を以てしては甚だ困難なもの即ち例へば大なるスパンの架構及び穹窿等を容易に構成し得る能力あり此の能力はやがて新様式を創成するの原動力となり余輩が今日有する建築様式なるものの観念を変化し得るものなりや否やを厳密に考究せざるべからず。"	d	

	simplicity	lightness	spatial dimension	freedom	structural form	architectural treatment	prototype	tags	note
	simple shape			free thickness of elastic wall	no division of roofs and walls, as a single entity, free thickness of elastic wall	no carving or relief, no plastering, flat deco with color (painting or painting on pottery, etc.)	no imitation of masonry bldg	<simple>, <free size>, <as a single entity / monolithic>, <rigid frame / elastic arch>, <manners other than surface coating / coverage>, <manners denied>, <no imitation of (Occident) historical styles>	Louis Cloquet
				free shape, free structure (beam or arch)		line (personal creation), extrusion, coverage with color for surface		<free shape>, <free structure>, <manners other than surface coating / coverage / fabrication>, <surface coverage>	Joaquin Bassegoda
						RC for building components in traditional Japanese architecture	RC for building components in traditional Japanese architecture	<manners other than surface coating / coverage / fabrication>, <Japanese style / Japanese taste>	
	flat surface		large span, large dome	free shape	as a single entity, no division of roofs and walls, no roof trusses	lack of beauty, no relief, minimal deco, surface dealing (coverage, painting, fresco)	no imitation of historical styles, no imitation of masonry bldg	<flat / straight>, <large span>, <large dome / roof>, <free shape>, <as a single entity / monolithic>, <reduction structure>, <lack of beauty / lack of solemnity>, <manners denied>, <surface dealing (coating / coverage / fabrication)>, <no imitation of (Occident) historical styles>	

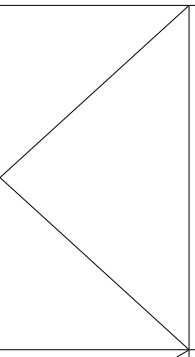
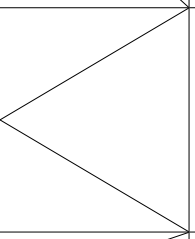
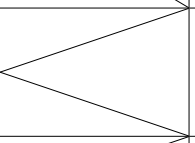
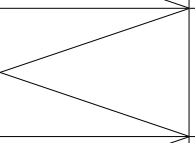
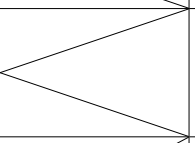
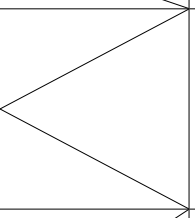
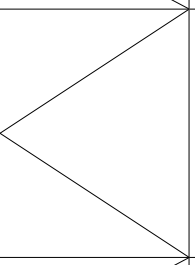
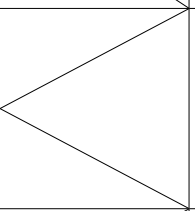
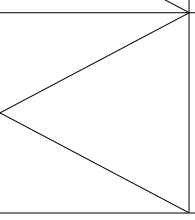
"塚本靖, “明治神宮の建設”, Kenchikuzasshi (September 1912)： 436 (明治神宮) 殊に現今では材料構造の取扱方が進歩したから、耐火耐震的にして伊勢大廟の様なものを建てる事も容易である。即ち鉄筋コンクリートであって、表面に木材を張ればいい。"	d	
"土居松市, “コンクリートの壁體に就て(一)”, Kenchikuzasshi (June 1914)： 10_12 (一)建築材料として材料美のなきこと。(二)施行法の比較的困難なること。(三)湿気止めの不完全にして表面装飾し難きこと。此の三つの缺点が其の重 (主?) なるものであると存じます…其の原料なるセメントの色が青味がかつて黒く大変冷い色合で極めて僅ばかり使用しても其の儘では見る人に不快な感じを与ふるばかりでなく其の表面が頗る単調に陥り易いから (中略) 他の材料を以て是を仕上ぐる即ち表面仕上の問題が起って参ります将来鉄筋コンクリート構造法が建築上に応用さるる程度は此の表面仕上の改良に基源するものなりと信じます。…(甲)鉄筋コンクリート構造法は鋳込法によるから(イ)鋳込型即ち仮枠の必要が起ります表面に凸凹があり装飾がありまして仮枠が困難なればなるほ程其の工事がむづかしいことになります。(ロ)鋳物であるが為に新しき部分と古き部分との接手に就て…且仮枠の簡単を主とする為に楣式、張壁式なる骨組構造なるものが適当ではあるまいかと存じます換言致しますれば鉄筋コンクリート家屋は柱類、梁桁類の骨格全部を鉄筋コンクリートで組立て張壁と称する単に壁自身の重みのみを支へて他に少しの荷重を受けず単に雨露を防ぐ極めて薄き羽目の如き作用をなす壁で柱間を仕切り湿気止め及び表面装飾によりて材料美其の他の欠点を補ひ漸々と所謂鉄筋コンクリート建築なる新しき様式を形造りつつあるものと考へられます。"	d	
"岡田信一郎, “建築學會大會講演 : 新建築の意義”, Kenchikuzasshi (July 1914)： 342_353 斯く材料、構造に大変化があるにつれ建築の形式もそれに伴って変化しなければならぬ場合であらうと思はれます、…此点でも新しい建築は過去の形式も異った新しい形式を採らなければならぬことは明かであります、又鉄筋コンクリート構造に於ては猶一層新形式が必要と云ふことは明瞭なことであらうと思ひます。…鉄筋コンクリートで造った場合にはポインテットアーチ(of Gothic architecture)は却って不便であってその存在の必要が無い、…実際私自身もセセッション式其他独逸、墺太利の新様式の外観及其現状に就ては多少の不満足を感じ…"	dd	
"佐野利器, “現代欧米建築の趨勢”, Kenchikuzasshi (July 1914)： 357_364 (RC) 其材質は鉄のやうな粘靭性を持って鉄以上の耐火性を有して居る、又石のやうに耐久的であって、石より遥に強い、鉄骨と同じやうに組立てて使ふことが出来る、又は煉瓦と同じやうに壁に用ふることが出来る、或は板のやうに床として使ふことが出来る、…(RC) 鉄と伴って局部に於て主要なる構造材であることは疑ひない、十階以下殊に五六階以下の低い建物、工場倉庫或は石炭及び殻物などの貯蔵用の所謂ジーロと名づくる建物等に対しては実に適材であります、殖産的方面の建物に向ては殊に益々主要なる構造となって来ることは明かであります。…今日の亜米利加の商業区域の建築は建築界の指導者であるべきこと、構造法に於ては鉄骨と鉄筋コンクリートとは益々主要なるものであると云ふこと等であります。(the end)"	d	
"土居松市, “コンクリートの壁體に就て(二)”, Kenchikuzasshi (August 1914)： 9_20 西洋建築と云ふものは壁体の建築でありますから此の壁体が建築の様式なり構造法なりに頗る重大な関係を持ちまして (中略) 例えば壁体と柱又は柱形、或は壁体と窓と云ふやうに西洋建築の様式は此の要素の為に甚しく左右されて居ることは明な事実であります。…斯様な訳で元来鉄筋コンクリート構造の建築は壁体が甚だ貧弱である上に更に以上の如く壁体以外のものをも貧弱に処理するとせばますます外観美の缺くる点が甚だしくなる気持が致します。 (中略) 然るにかかる根本問題をば余り考へないで其の枝葉問題たる方法即ち例をあげて申しますと構造上には少しの必要のないものを取り付けて装飾で胡麻化するとか或は必要もないのに壁を厚くするとか或は非常に無理な構造法で石材其の他の混用を企つるとか或は無闇に煉瓦造りらしくするとか其の他種々姑息な方法で鉄筋コンクリート構造の建築を取り扱ひつつある時代かと思はれます。…前者(curtain wall)に於きましては骨格さへ堅固ならば日本建築と同様に階を重ねても壁厚を増す必要もなく室の面積は壁厚を減じた丈広く使用されますから鉄骨若しくは鉄筋コンクリートの建築では至極適当な壁体構造法であると考へます。…(丙) 壁面の仕上げに就て…(ハ)洗ひ出し法…(ニ)塗料を用ふる法…(ホ)貼付材料を用ふる法…(ヘ)其の他の方法 (モルタル、表面凹凸、石膏)…"	d	
"土居松市, “コンクリートの壁體に就て(三)”, Kenchikuzasshi (September 1914)： 470_484 只今建設中のものを拝見しましてもコンクリート壁は貼付煉瓦を其の表面へ貼付け煉瓦造の模倣のやうな調子になって居るかと存じます、然し是は己に述べましたやうにコンクリート壁体としては適当なるものと云ふことを得ませんが差し当って他に名案がありませんから致し方のない訳であります然るに(i)貼付煉瓦の価額は比較的に高価なること。(ii)貼付方法は構造上不確実なること。此の二大缺点があるやうに思はれます、…次にコンクリート壁体は一般に其の厚さ薄き為と其の理論及び施工上の問題によって貼付材料以外の鉄材、石材、煉瓦等の混用は頗る不便で或る場合には絶対に応用し得ざるものであります。斯様なことは建築に応用する時には全く不適当でコンクリートの建築とても鉄材で補強する必要もあれば簡単に且確実なる構造法で石材を以て装飾を要求する場合もあるからコンクリート以外の材料の混用法は大に考へ大に改良せねばならぬことかと存じます。"	dd	
"山崎静太郎, “建築美私論(二)”, Kenchikuzasshi (November 1914)： 4_10 近世のコンクリート或は漆喰の類を以って、前代の建築様式を模倣して構造せられたものは、根本の作為に於て人間の自然力の表現に相反する所がある。…"	d	
"岡田信一郎, “新日本の建築”, Kenchikuzasshi (January 1915)： 40_43 鉄筋コンクリート等の新構造新材料が急激に勃興しつつある。…此等の新材料、新構造により合理的に且経済的に構造すべきである。而して其形式と表現とは材料、構造が異るにつれて過去のものとは全く異らねばならない、之れ新建築の意義ある所以の一である。…石造煉瓦造若くは鉄筋コンクリート建築にも昔の木造建築の優れた形式を捨てかねて木造のまま若くは僅少の変更を加へて斗組や肘木を適用して以て国民性を得たりと為て居る。私は之には賛成できない。…優秀な古建築を研究して自分の嗜趣を高め美術的性格を涵養し同時に民族性の表現を知る事は今の建築家に緊要なことであらう。"	dd	

						wooden coverage	Ise Shrine	<surface coverage>, <Japanese style / Japanese taste>	
		thin wall			casted object, frame structure	lack of beauty, surface deco		<light / thin>, <casted object>, <frame structure / curtain wall system / lintel system>, <lack of beauty / lack of solemnity>, <manners other than surface coating / coverage / fabrication>	
							no imitation of historical style, no pointed arch, Secession not satisfying	<no imitation of (Occident) historical styles>, <new trends in Europe>	Futurism, Wright mentioned, new spirit emphasized (no imitation) over merely form
				free structure (frame, masonry, as floor)			practical bldgs	<free structure>, <building types>	
		thin wall & large space	thin wall & large space		curtain wall system	lack of beauty, no meaningless deco, surface dealing (washed concrete, painting, coverage, mortar, extrusion, plaster)	no imitation of masonry bldg	<light / thin>, <large space>, <frame structure / curtain wall system / lintel system>, <lack of beauty / lack of solemnity>, <manners denied>, <surface dealing (coating / coverage / fabrication)>, <no imitation of (Occident) historical styles>	
		thin wall				no coverage (brick), mixed use of other materials (stone for deco as the example)	no imitation of masonry bldg	<light / thin>, <no coating / no coverage>, <manners other than surface coating / coverage / fabrication>, <no imitation of (Occident) historical styles>	
							no imitation of historical styles	<no imitation of (Occident) historical styles>	Otto Wagner mentioned
						no RC for building components in traditional Japanese architecture	no imitation of historical styles, no RC for building components in traditional Japanese architecture	<manners denied>, <no imitation of (Occident) historical styles>, <no imitation of Japanese style>	

"後藤慶二, “張釬付肋材屋構の理論及び計算(承前完結)”, Kenchikuzasshi (February 1915)： 69_89 我国の将来の建築様式と鉄筋混凝土との間に離るべからざる密接な関係があると云ふことが考へられる、鉄筋混凝土が石や木と違ふ点は、その弾性のあること、成形の自由なこと、接合をリジッドに仕易いこと、モノリシックに造り得ること等、で、即鉄筋混凝土に対して剛結構の構造法こそ最も適切な且つ合理的な構造法であると云ふことが出来る、必竟剛結構構造法は将来の建築様式にある暗示を与へるものと云ってよからうと思ふ、…これまでの結構の計算法を見るとすべて平面的に取扱はれて来たものである、然るに実際には立体に組み上げるのであるから、その間に多少の不合理な点が起って来る、ことに方形屋根とかドームの如きものでは平面的に取り扱かふのが余程無理に感ぜられる、立体結構(das Räumlich Fachwerk) の計算のごときはこれから盛んになって来る可きものであらう、…"	d	
"中村達太郎, “虚僞建築なりや否”, Kenchikuzasshi (September 1915)： 658_659 市街に鉄筋混凝土の表面を曝露することが不適当と認むる場合には他の材料を以て之を被覆することは毫も虚偽の行為では無い即ち必要から起ったのである。"	d	
"山崎静太郎, “虚僞建築に就いて中村先生へ”, Kenchikuzasshi (November 1915)： 767_769 然し建築の或る者の「虚偽」の中には単なる見やうではなく、どうしてもの虚偽だと考へられるものがあります。…抑々虚偽建築を忌むといふ根本義は、即ち言其者が道義的熟語である如く、これは美術道徳の一箇条でございませう…先生の御文中、鉄骨には鉄筋構造の表面に化粧材料を用ゐる事の一比喩として、人間でも「社交上」体裁を作らねばならぬ事を申されてゐます。 (中略) 被覆的社交の円満を保つといふ事は今の社界に必要であって、それが実に実に悲しい必要ではございませんか。…私はそれらを「泥棒構造」と名付けます。或は又「欺偽構造」と申しても差し支へはありません。"	d	
"伊東忠太, “明治神宮宝物殿懸賞競技審査批評”, Kenchikuzasshi (November 1915)： 775_777 構造材料に就ては佐野博士から御話があるだろうが多くは、日本趣味を基礎としたので、日本建築の特質とする楣式の軸部、深い軒の出や、反った屋根を不燃質、耐久的な材料即ち鉄筋コンクリート、鉄骨、石煉瓦等を以て旧来の木造式の型に則って構造し様と苦心して居るので、何れも多大の努力が認められる。"	d	
"大森喜一, “明治神宮寶物殿懸賞競技審査發表”, Kenchikuzasshi (November 1915)： 808_809 本屋を今日に於て最も進歩せる構造法の鉄筋コンクリートを以て壁より屋根までを一塊とし十分耐震耐火的ならしめ之に防火的構造にして而も重量も軽き耐震的構造たる庇を以て其軒出を多くし以て社殿との調和を考慮せり。…壁之部分は総て鉄筋コンクリートの張石したる其構造を忠実に表示する為め化粧鋲頭を附し柱も同様幾筋の金環を横に金線を縦に使用し柱頭及下部には飾金物を付し以て実用と体裁美観とを兼ねしむ。"	d	
"小林福太郎, “明治神宮寶物殿懸賞競技審査發表”, Kenchikuzasshi (November 1915)： 809_810 総て鉄骨鉄筋「コンクリート」構造とし要所に? (non-character, like 工) 及工形鋼鉄柱を建て工鋼鉄を以て連絡し鉄筋「コンクリート」を以て被覆す、外部柱長押其他外観上軸部構成する部分は花崗石及一部にテラコッタを使用す其の他の「コンクリート」の表はるる面は防水材を配合せる漆喰塗仕上とす但し窓下腰長押以下の壁等針雨に浸さるる部分には花崗石薄板を張付く。"	d	
"後藤慶二, “明治神宮寶物殿懸賞競技審査發表”, Kenchikuzasshi (November 1915)： 812_814 第二、様式　　精神を藤原時代にとり流れ造りに調和せしめ形式に於て鉄筋コンクリート構造の真髄を発揮せんことを勉む、而して大体の容姿は公館に相応せんことを期して同時に校倉の手法を取り用ひて建築の性質を表象し大体に於て品位の高雅を目的とせり。…第四、構造　　帳壁式鉄筋コンクリート構造として場所により鉄筋コンクリート及び鋼製ラスモルタル塗を用ふ外部は石及びテラコッタを以て被覆す。…"	d	
"遠藤新, “明治神宮寶物殿懸賞競技審査發表”, Kenchikuzasshi (November 1915)： 814_815 壁は二重にして外壁は鉄筋混凝土にして地形上より建てのぼせて欄間敷桁上端迄に及び内壁は単に室外を囲む部分のみなり、柱は両端に跨り荷重に対す。　但し内壁は鉄ラッスコンクリート (間柱は混凝土) を以てし、漆喰切上とす工事の順序は内壁完成後に外壁を造るものとす。小屋組は外壁地廻り及中仕切桁 (何れも混凝土) の三点にて支へらる。"	d	
"櫻井小太郎, “和田維四郎氏住宅”, Kenchikuzasshi (January 1916)： 43 従って内部の或部分は在来の日本家の形を崩すまいとすると為めに、コンクリートの構造を隠閉するの余儀ない所も出来て…平面図は和田氏自身室内配置を考案されたが其の注文を修整せずに其儘夫れに依る事としたので鉄筋コンクリートとして最も経済的ならしむるには今少し平面図を纏ったものとしたかったと思ふ。…和田氏の意匠になったものを鉄筋コンクリートに出来得る様に換へたもので、日本住宅の形式を換へても尚其の特徴を失はず大した矛盾も、困難もなく造り得たと云ふ迄のものです。"	d	
"山崎静太郎, “構造の主観的意義”, Kenchikuzasshi (June 1916)： 323_328 … (reference to Goto) 及び其鉄筋コンクリート造の学校の窓に過大なる石の楣を積み込み、石造又は煉瓦造の無意義なる模倣の目的に資してゐる例を挙げてゐる。此の二例の如きは正しく虚偽建築のである事に異論はない。"	dd	

				free shape	elastic, rigid joint, rigid frame, three-dimensional frame, monolithic			<free shape>, <as a single entity / monolithic>, <rigid frame / elastic arch>	立体結構 mentioned, ferro arch of parabola, plate of Behrens post
						surface coverage		<surface coverage>	
						no coverage		<no coating / no coverage>	
						RC for building components in traditional Japanese architecture	RC for building components in traditional Japanese architecture	<manners other than surface coating / coverage / fabrication>, <Japanese style / Japanese taste>	
					as a single entity	RC as (wall) panel tacked with hardware, RC for building components in traditional Japanese architecture	RC for building components in traditional Japanese architecture	<as a single entity / monolithic>, <manners other than surface coating / coverage / fabrication>, <fabrication of RC>, <Japanese style / Japanese taste>	
						plastering, surface coverage (granite)		<surface coating>, <surface coverage>	
					curtain wall system	surface coverage (stone, terra cotta)	Japanese style (Azekura), Nagare-zukuri	<frame structure / curtain wall system / lintel system>, <surface coverage>, <Japanese style / Japanese taste>	flat slab
						double-layer wall (outer: RC, inner: lace concrete)		<manners other than surface coating / coverage / fabrication>	
				plan related		no coverage (of structure)	Japanese style (domestic house)	<free plan>, <no coating / no coverage>, <Japanese style / Japanese taste>	Kotaro Sakurai
						no stone lintel for window	no imitation of masonry bldg	<manners denied>, <no imitation of (Occident) historical styles>	

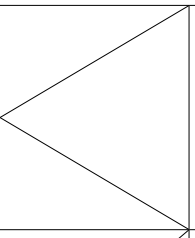
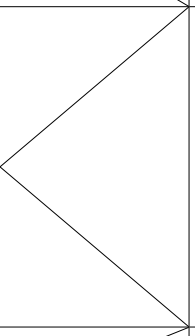
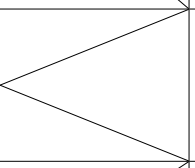
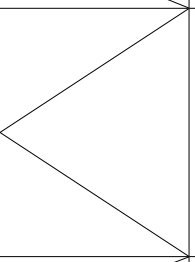
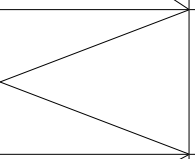
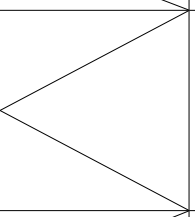
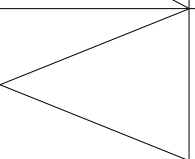
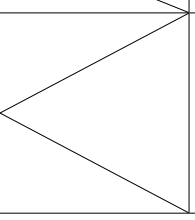
"佐野利器, “鉄筋コンクリート構造汎論”, Kenchikuzasshi (June 1916)： 300_310 鉄筋コンクリートの抵抗能率 [second moment of area] は是が為めに必ずしも木材又は鉄材よりに遥に下にあるといふ訳ではないのであります、なぜ然るかは主として鉄筋コンクリートの形の自由性に帰因するのである、即ち木材の構造に於て大きな梁を幅を極狭くして高さを高く木取らうとすれば非常に大きな丸太よりしなければならぬ、そこに大なる困難がある、併ながら鉄筋コンクリート構造に於ては其点は自由である (中略) 其非常に大なる抵抗能率を呈するは謂はゆる丁形梁なるものであります、…次に鉄筋コンクリート構造が構造力学上に及ぼす影響に付て所感を申上げたいと思ひます、(中略)然しながら又鉄筋コンクリート構造の与る所少くないものであります、其重もなる事項は何かと云ふと、連続的構造又は剛節的構造に関する理論及其適用であります、…然るに鉄筋コンクリート構造に於ては一方の地業下端から柱、小屋組を通り更に他方の柱より地業下端迄、自ら略完全なる連続的構造であるのみならず、(中略)茲に於て無鉸式アーチの理論は初めて机上のみの問題ではなくなりました…鉄筋コンクリート構造はどんな場合でも構造当然の性質としまして、剛節的に処理せられなければ満足しないものと思ひます、是まで御話したやうな平面的架構に於てのみならず立体架構の上に於ても矢張り剛節的所理の時期の来る事を予想致し得るのであります、…"	d	
"張菅雄, “我國將來の住宅建築 二”, Kenchikuzasshi (September 1917)： 674_688 [as the subtitle]美的方面より見たる鉄筋コンクリート造住家…鉄筋コンクリートは其の強度と其の構造の方法よりして、必ずしも石材の如く厚きを要せず、木造の如く柱の多きを要せず、為にその外観如何にも貧弱にして表面的感あり。…現今市井に築造せらるる鉄筋コンクリート建築は、石を張り煉瓦を張りてその外観を整ふ、茲に虚偽建築の論起り、様式論沸騰す、然れども籍すに時日を以てし、許すに精錬研磨の効を以てせよ、科学の進歩と研鑽の効と相俟って、やがて様式は大成せらるべし。[enter]我が住宅建築は古来の形式によりつつ、洋風の純粋を同化しセセッションを参酎しつつ、新時代の新生活に適し得べき一新様式を生むにあらざるか、只その成否はかかって吾人の努力に在り。"	d	
"滝澤真弓, “分離派建築会第二回展覧会”, Kenchikuzasshi (March 1922)： 145_148 (建築の権威たち)ゴシックかルネサンスでなくては建築の威厳も品格も保てぬと、何故と問へば、どうも歴史で浄化されたものは重味があってと、昔にでも鉄骨構造や鉄筋コンクリート構造があったと思召してか、情けない、素人の様な事を申される。"	d	
"蒼穹社(平林金吾, 岡本馨), “建築学会会館建築意匠設計懸賞当選図案説明書”, Kenchikuzasshi (January 1923)： 32_33 仕上げには鉄骨鉄筋コンクリート構造に最も適当な「テラコッタ」を選び壁面の大部分を張上げることとした。"	d	
"大島重義, “コンクリート用ペイントに就て”, Kenchikuzasshi (July 1923)： 324_327 コンクリート壁は外観が美しくないので装飾をしなければならないのでありますが、タイル其他高価な方法によることが出来ますけれども、若し安価に此目的を達しやうと思へば塗料を塗るのが一番よろしいであります。"	d	
"三橋四郎, “鉄筋混凝土の特質（其の二）”, Kenchikusekai (August 1908)： 3_6 (7)繰形の容易なること　適当なる形体に鉄筋混凝土を型にて作るは容易にして地上にて種々の形体に作り屈曲したる部分装飾等も石造より容易に型にて製作するを得るなり　混凝土瓦も亦た型にて製出し得るなり　(8)一枚石となること　鉄筋混凝土は石造や煉瓦造の如く小塊を集めたるものに非らずして全部の構造相連り一枚石の如きものなり故に震動なく夫れに取付けたる器械も滑に動き他の震動を受けざるが故に永く保存せららるなり　粗悪なる地質の所に鉄筋混凝土の杭を打ち其上に鉄筋混凝土の平板を以て根積を造れば地形の不定固定より生ずる力に抵抗し得るのみならず斯る建物は普通の煉瓦造或は石造よりも軽快なり"	d	
"主張, “鉄筋コンクリートと日本建築”, Kenchikusekai (May 1910)： 1_2 彼の材料の美を以て我の趣味に最好適するものを選ぶに非ずんば平滑なる発達を期することを覚えざる可し此見解より進めば我楣式建築に最も近くして採光其他に最も大なる間隙を採り得可きものならざる可からず此条件を容るるものは鉄骨構造及鉄筋コンクリート構造の二者の中に俟つの外なからん…若し之(RC)を極端に使用せんか我日本建築の深く突出せる軒先をも造るに困難ならず絵様繰方等も恰も人造石に於けるが如く精細に施す事を得可し、其我国に於て未だ広く用ひられざるのは考案日尚浅くして一般に之を知識する事少なきを以てなり雖然吾人は信ず若し日本建築をして耐火耐震の功を挙げしめんとせば先づ石造に移遷する経路として日本建築の形を其儘に鉄筋コンクリートに移すの他に平易なる道を発見する能はず此れ発達したる材料を以て馴れたる趣味を存する唯一の途なればなり…"	d	
"佐藤功一, “日本に於ける新建築式並に学生諸君のスタデー（其の三）”, Kenchikusekai (February 1911)： 7_8 鉄筋コンクリートでかたとするならばどんな形でもどんな細部迄でも、日本の木造と寸分違はないものが出来るが、併しそれでは何の価値もないものになってしまう、茲に申す事は木造より変化させて生じたる、希臘建築の様なものにせなければならないと云ふのであります。…日本の材料に合ふ様にスタデーされたいと云ふ事と、日本在来の様式を堅固な材料で出来る様に変化して後世へ伝へたいと云ふ事にあるのであります、"	d	
"U．M, “懸賞論文秀逸第一等　家屋建築改良論”, Kenchikusekai (February 1911)： 8_14 日本の建築独り其の趣味を発揮する為め、形式の是否に束縛せらる可き理由なきものと信ず。…鉄筋「コンクリート」は、日本住宅進化の為め、信切にも外国より、其の応用を促がしたるものなり。即ち柱梁をエ形鉄、又はコ古軋鉄に、換へ、桁貫を矩鉄又は渠鉄に換へ、間渡し塗込み木舞等を、棒角丸鉄等に換へ、之れ等を堅固に釘釘にし、壁土に換ふるに、「セメント」、「コンクリート」を以てせば、蓋し健全なる日本建築の、外形をなすものならん。屋根及び床の構造も同法なり。内部構造は木石材を使用する事、従来の通り、意匠図案等は望み次第なり。"	d	

				free shape (section of girder)	T shape girder, continuous structure, rigid frame, hinge-less arch, three-di-mensional frame			<free shape>, <as a single entity / mono-lithic>, <rigid frame / elastic arch>	section of girder, 3 di-mensional structure
		thin wall	less columns			weak image		<light / thin>, <large span>, <lack of beauty / lack of solemnity>	preset: RC
							no imitation of historical styles (Re-naissance, Gothic)	<no imitation of (Occident) historical styles>	
						surface coverage (terra cotta)		<surface coverage>	terra cotta
						surface coating		<surface coating>	
		light image		free shape (mould-ing)	monolithic			<light / thin>, <free shape>, <as a single entity / monolithic>	
			large span (good light-ing)		lintel sys-tem	RC for building components in traditional Japa-nese architecture	RC for building components in tradition-al Japanese architecture	<large span>, <frame structure / curtain wall system / lintel system>, <manners other than surface coating / coverage / fabrication>, <Japa-nese style / Japanese taste>	<free shape>, <as a single entity / monolithic / casted object>
							no imitation of Japanese style, Jap-anese style variant	<Japanese style / Japanese taste>, <no imitation of Japanese style>	evolution-ism?
						RC for building components in traditional Japa-nese architecture	Japanese taste, RC for building components in tradition-al Japanese architecture	<manners other than surface coating / coverage / fabrica-tion>, <Japanese style / Japanese taste>	

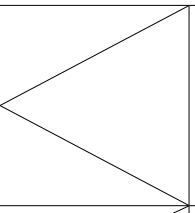
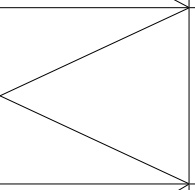
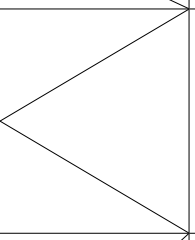
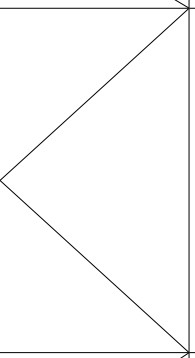
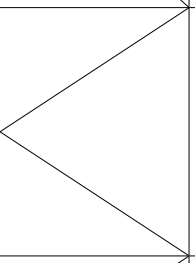
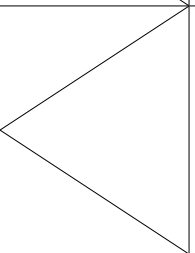
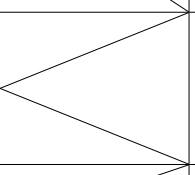
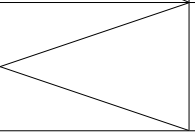
"池田稔, “時代の要求する建築物”, Kenchikusekai (March 1912)： 5_6 近頃建築界にて喧ましく唱へられて居る鉄筋コンクリートを採用するが宜しからう、鉄筋コンクリートでも近来は比較に廉く、…(Dresden Hygien Expo)最も能く時代趣味に合致し、其の要求を充たし得る最新式の構造を採用して居る、建築に多くの費用を投ずる如きとなく簡素なる建物に僅少の色彩を施し而も其の構造は極めて堅牢に出来て居る、経済と実用と美観とが能く調和されて居る点は今日迄多く其の類例を見ない、実に模範的新様式なりとの評がある…"	d	
"櫻井小太郎, “住宅建築の改良”, Kenchikusekai (October 1913)： 8_12 是れ同様に或は新材料、即ち鉄筋混凝土又は鉄網混凝土の如きものも、住宅建築に使用して好いと思ふ。日本従来の建築は柱及桁で成立って居るから、煉瓦又は石の様な壁と迫持とで構造するものとは直く折衷が六つかしい。然るに鉄筋混凝土の如きは柱及桁の構造には最適当なる材料である。柱と柱の間の真壁は直ぐ訳なく出来る。"	d	
"塚本靖, “大正二年美術建築界を顧みて”, Kenchikusekai (January 1914)： 106_107 此鉄筋混凝土なる構造法は、耐火耐震的である許りでなく、壁が薄いために地面を経済的に使ひ得る所は、宛も在来の日本建築の壁が薄いために、軽快な気持ちが滂湃としてただよひ、…鉄筋混凝土の建築は、単に日本人の趣味に一致するのみならず経済的、美術的、学術的の三方面から在来の日本建築と一致する、如上の理由から、若し従来の日本建築に取って代る可きものは何かと云ふことになれば、私はそれはこの鉄筋混凝土に他ならぬと云ふ事を断言するに憚らぬ"	d	
"高山甚太郎, “鉄筋混凝土建築を盛んにせよ”, Kenchikusekai (February 1914)： 3_5 而して夫れ (RC) は主として色に就ての好みが向かぬ点にあると思はれるが、近頃ではテラコッタの色が種々に出来る様になって居る。(中略)斯く張付煉瓦、装飾煉瓦として奇麗なものが盛んに製造されるのであるから、少し金を掛けると何んなものでも出来る。此等を鉄筋混凝土の上に張付ける様にしたらば、美観の上から言っても誠に心持ちの好い住宅が出来やう。加ふるに鉄筋混凝土の壁は従来のものの如き厚くないから、全体に於て夫れ丈け各部屋の広さを増すと云ふ訳になって、狭い地坪の上に比較的裕たりした建築が出来ると云ふ経済上の特質がある。"	d	
"佐藤功一, “建築の三位”, Kenchikusekai (March 1914)： 7_10 建築の真の三位は用途と材料と芸術思想とである。…併し乍ら其の日本的の表現のために桝組や蟇股を入れると云ふ事は末な皮相の事であって、石や鉄筋混凝土で造った物ならば、怎うしても石や混凝土から出た形でなければならない。而して其中には自ら日本的精神が其建築家の主観と時代思潮と共に表れ来る筈のものである。"	dd	
"佐野利器, “鉄筋混凝土の耐震的価値”, Kenchikusekai (July 1914)： 5_10 石造、煉瓦造を以って外観美の標準とするなれば、鉄筋混凝土造は終に是等に及び得ない。石又は煉瓦を用ひて之を表装して石造や煉瓦造に模擬することは出来ないではないが、不経済のことである。(中略)私の考へでは鉄筋混凝土造と云ふものは塗料及び張付焼物及び是等の処置法に依って、又一の外観美の標準を作るべき運命を持って居るものと思ふ。"	d	
"小野二郎, “現代の建築”, Kenchikusekai (February 1915)： 10_15 鉄骨鉄筋構造を学ぶ事に遥かに必須の要求である事を認むるものである。[enter]今や全世界の建築様式は総て歴史的に研究し尽くされて居る此上は構造の異同建築の傾向による新しき分類即ち建築形態学が必要となる、誠に過去を捨てて顧みぬは未来の希望を拒む事の愚に選ぶ事はない、…現代の鉄筋混凝土構造は羅馬の構造法が進歩したるものに過ぎない、若し鉄筋混凝土が非芸術的材料である事の迷信を去り何等の懸念なく簡易にして採光の豊なる停車場博物館教会堂を建て画家をして壮麗なる壁画を画かしめんには新建築の興趣は溢るるが如くに湧き出づるであらう、…"	d	
"岡田信一郎, “新日本の建築”, Kenchikusekai (February 1915)： 93_96 鉄骨構造、鉄筋コンクリート等の新構造新材料が急激に勃興しつつある。…此等の新材料新構造により合理的に且経済的に構造すべきである。而して其形式と表現とは、材料、構造が異るにつれ過去のものとは全く異らねばならない、之れ新建築の意義ある所以である。…石造煉瓦造若くは鉄筋コンクリート建築にも昔の木造建築の優れた形式を捨てかねて木造のまま若くは僅少の変更を加へて斗組や肘木を適用して以て国民性を得たりと為て居る。私は之には賛成できない。…"	dd	
"池田稔, “日本建築の将来”, Kenchikusekai (February 1915)： 96_97 英国は元来が保守的な国柄であるだけに建築も尚且材料には新式の鉄材などを用ひ又往々最新の智識を応用すれども更に急速の変化を見ない、然るに独逸は普仏戦争以来国家経済と一致する為め安価なる建築を造らんものと、最新科学を応用して改良に努め、遂にセセッションの如き経済的に効果のある建築物を創出して居る、…将来は益鉄骨鉄筋コンクリートが主要材料となり、屋根は陸屋根を造るべく、壁面には人造石、テラコットが発達するであらう。"	d	
"曾禰達蔵, “銀行会社の建築に就て”, Kenchikusekai (April 1915)： 10_15 旧構造法の煉瓦建築石造建築にては壁体に可なりの厚さを要すると間仕切壁を設くる必要ありて甚だ困難であったが、今日の構造は鉄骨煉瓦造、鉄骨混凝土造若くは鉄筋混凝土を外壁とし内部は鉄柱又は鉄筋混凝土柱を建つる儘にて彼の間仕切を設くるの要なきに至りたれば室の広大にするは容易の業である。"	d	

	[Dresden Hygiene Expo] simplicity					[Dresden Hygiene Expo] minimal colorization	Dresden Hygiene Expo	<simple>, <manners denied>, <new trends in Europe>	
					frame structure		Japanese style (Shinkabe)	<frame structure / curtain wall system / lintel system>, <Japanese style / Japanese taste>	
		thin wall, light image					Japanese taste	<light / thin>, <Japanese style / Japanese taste>	
		thin wall & large space	thin wall & large space			lack of beauty (color), surface coverage		<light / thin>, <large space>, <lack of beauty / lack of solemnity>, <surface coverage>	
						no RC for building components in traditional Japanese architecture	no RC for building components in traditional Japanese architecture	<manners denied>, <no imitation of Japanese style>	
						surface dealing (painting pottery)	no imitation of masonry bldg with stone or brick coverage	<surface dealing (coating / coverage / fabrication)>, <no imitation of (Occident) historical styles>	
	simplicity		good illumination (station, museum, church) [large aperture?]			RC not as non-artistic material, fresco		<simple>, <large aperture>, <lack of beauty / lack of solemnity>, <manners other than surface coating / coverage / fabrication>	Lethaby
						no RC for building components in traditional Japanese architecture	no imitation of historical styles, no RC for building components in traditional Japanese architecture	<manners denied>, <no imitation of (Occident) historical styles>, <no imitation of Japanese style>	duplicate, see also KCZS 1915-1
	flat roof					surface coverage (artificial stone, terra cotta)		<flat / straight>, <surface coverage>	
			large space (no partition)		frame structure			<large space>, <frame structure / curtain wall system / lintel system>	

"内田祥三,“銀行会社建築と鉄筋コンクリート”, Kenchikusekai (April 1915)： 44_49 それとこれとは材料を異にするから自ら手法も変らなければならないのは勿論である。これと同時に壁の厚い煉瓦造や石造と壁の薄い鉄筋混凝土造とは根本に於て其構造の方針が異ふのであるから其見やうも自ら異らなければならぬ。…此材料(RC)及構造に対して外観上如何なる手法を用ふるかといふとは重大なる事がらであって、現在では建築物の種類に因ては一概に完全なる美術的のものが出来るといふことは云ひ難かもしれぬ故に、一歩を譲って西洋風の手法を用ふる者として考へて見るのに銀行会社や事務所の建築に対して荘重なとやる威厳を有する事やはあまり必要なる条件ではなく反て其反対の軽快とか敏活とかいふ様な感じを現わす方が寧ろ適当なのではあるまいか、…"	d	
"阿部美樹志,“銀行会社建築と鉄筋「コンクリート、スケレトン」構造法”, Kenchikusekai (April 1915)： 50_56 そこで今後の銀行会社建築には是非鉄筋「コンクリート、スケレトン」構造法を採用することが必要である。此の構造法は世界中で尤も鉄筋「コンクリート」工の隆盛なる米国中部地方(シカゴ市よりセント、ルイに至る一帯)に起り今や各地方に普及せられて居る、此方法による時基礎、柱及び床を一体の鉄筋「コンクリート」とし建物の外周は煉瓦又は石等にて「カーテン、ウォール」(curtain wall)　として各種の建築的装飾を施して居るから鉄骨構造法による建築物の外観少しも異ならぬもので…今従来の「ビーム、ガーダー」式の代りに「フラット、スラブ」式とせば大体左の如き利益がある。一、床の下面が平坦であるから型枠の材料及び工費が著しく減少する　二、「ビーム、ガーダー」式に比して採光が充分である　三、天井が平坦で配光がよい　四、建物の軒高を減じ室の有効高を増加する　五、工事費の節減の竣工期間の短縮…四角形の柱は外観不愉快で銀行会社建築などには使用すること面白くないから是非円形若くは八角形とし縦鉄筋の外に「スパイラル、フープ」(Hpiral Hoop)を入れて応張力をとる様に鉄筋を挿入する事が必要である。"	d	
"主張,“十周年”, Kenchikusekai (July 1916)： 1_2 然るに最近鉄筋混凝土の新材料が出来てから様式は余り必要とせられなくなった。材料の性質より様式手法は何等の拘束なしに自由に設計さるべきものであると云ふことが略ぼ定論である。…十年後の今日は着実にして健全なる思想を以って、其の基礎を築いて行く壮年期と云へやう。是れが軈て将来の日本的スタイルが出来上るでありと信ずる。"	d	
"阿部美樹志,“鉄筋混凝土建築は如何にして低廉に建設し得べきや”, Kenchikusekai (July 1916)： 11_12 鉄筋混凝土建築では構造其の物が型により如何様にもなり、又配筋法等も自在であるから構造様式として必ずしも画一されて居らぬ。それが鉄筋混凝土の最大特徴で而も亦比較研究に苦心を要する所である。例へば全体の構造様式を桁梁式(Beam girder system)建築とすべきや、或は無桁床式(Girderless floor)とすべきや第一に攻究を要する点である。建築物層数の増加と共に桁梁式は余り経済に行かぬ(中略)故に無桁床式構造が近来中々盛んに会社及び工場建築等に応用さるるに至った次第である。又建築物に外廻りとか間仕切壁とかに鉄筋混凝土を応用する事は防火的には良好であるが然し工事費を増加し又事務所建築には音響が割合に多く不愉快であるから、多くの場合には鉄筋混凝土をスケレトン構造とし柱と床とのみにて建物としての強度を充分ならしめ、側壁、間仕切壁は煉瓦其他の材料にてカーテン・ウォールとする事が少くない。"	d	
"主張,“大正六年を迎ふ (昨年の建築界)”, Kenchikusekai (January 1917)： 2_3 建築様式に就てはセセッション式を口にするもの漸く少くなり、材料を鉄筋混凝土に取れるもの多き為めか、様式は自由なれる傾向がある。"	d	
"小野武雄,“米国最近の建築界（其の二）”, Kenchikusekai (December 1917)： 7_10 (the US)現今に於ては鉄筋混凝土を以て鉄骨の代用とし、其空間を煉瓦其他を以て充たすの有様である。…私は米国の建築物に於て材料的変化に対する建築様式の発達に多くの慊らぬ点を認めるのであって、日本の建築材料商の発奮を望むと共に建築家諸氏の材料に因る様式変化の研究を尚一歩進められんことを希望するのである。…(buildings of NYC)建築物の其必要上鉄筋混凝土を採用するのが一般である。之れは最下層に於ても其使用面積を減ぜらるるが如き憂ひがないから、尤も適当せる建築材料なりとせられて居るからである。"	d	
"内田祥三,“建築構造の設計と合理的判断”, Kenchikusekai (January 1918)： 17_18 今述べつつある梁 [RC] に就て考へて観ても、許容抵抗能率が丁度曲能率に等しくなるものであって、他の二つの式に満足する範囲に於て梁の幅と丈ィとはいくらも変化し得るのであって決して一組ではない。又小屋組の如きものに就て考へて観ると其変化は一層複雑になって来る。鉄筋コンクリートの如き二種の異った材料で成立って居るものに至っては更に更に複雑なるは申すまでもないことである。"	d	
"内田祥三,“建築構造の設計と合理的判断 (二)”, Kenchikusekai (February 1918)： 7_10 又鉄筋コンクリートの柱に於て吾人は其長さが最小径の十五倍以下とか最小有効径の十八倍以下とかいふ場合には之を短柱として計算する。(中略)恐らく鉄筋コンクリート柱に在ては其構造上この位の長さのものなれば多少の曲げんとする力に抵抗することも出来るし短柱として計算しても安全の上に於て差支へなしと云ふことの意味に外ならぬことと思ふ。(中略)現に煉瓦柱の如きは其最小径の六倍以内位、木柱であっても其最小径の十倍以内の長さを以て短柱として考ふる長さの限度となすのが普通である。煉瓦積の如きは曲力に対する抵抗が極めて小であるから斯の如き短き長さをとるといふことになるのである。"	d	

		thin wall, light image					no imitation of masonry bldg	<light / thin>, <no imitation of (Occident) historical styles>	
			larger space and better illumination (with flat slab system)		skeleton with curtain walls [the US], as a single entity, flat slab, round or octagon column		frame structure [the US]	<large space>, <as a single entity / monolithic>, <frame structure / curtain wall system / lintel system>, <flat slab system>, <the US>	
				free manners (no style)				<free design>	
					flat slab, skeleton with curtail walls			<frame structure / curtain wall system / lintel system>, <flat slab system>	
				freedom, (free style regarding the reduction of Secession)				<free design>	
		[bldgs of NYC] thin wall & large space	[bldgs of NYC] thin wall & large space		[the US] frame structure		the US	<light / thin>, <large space>, <frame structure / curtain wall system / lintel system>, <the US>	
				free size of girder section				<free size>	
		slim column (d>l/18h, compared to brick)			calculated as short column (d>l/18h)			<light / thin>, <capacity of RC>	

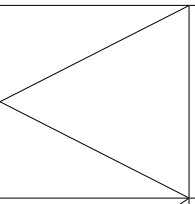
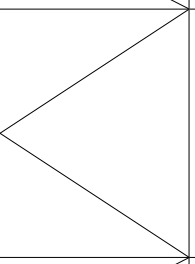
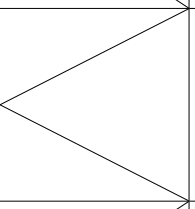
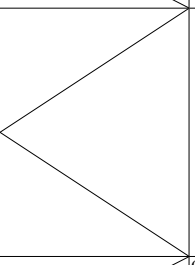
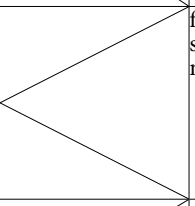
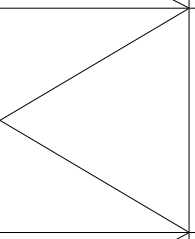
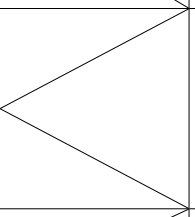
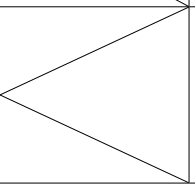
"瀧川初治,“混凝土ブロックに就て”, Kenchikusekai (March 1918)： 45_48 欧米等には主として住宅建築及び工場建築等に使用せられて居る、又塀工事などにも盛んに利用せられて居るが未だ高層建築には余り多く其れを使用したのは聞かないブロックの型にも多くありて、装飾的にも中々広く用ひられて居る。即ち柱の頭飾、柱のベース、及び蛇腹、其の他彫刻する部分に使はれる。…一体ブロックの特徴ともすべき点は表面に凹凸ある装飾を施し得る事、混凝土構造にして表面仕上を施し得る事、石又は煉瓦に比較して廉価なる事、取扱は割合簡便なる故に施工速き事、出来上った混凝土を積む故に期間の短き事、其の他混凝土構造の最も経費の用する堰板の不必要なる事、…"	d	
"遠藤於菟,“戦後の建築に就て”, Kenchikusekai (April 1918)： 3_5 之れは鉄でもなく、コンクリートでもなく、此等とは異った鉄筋コンクリートと云ふ一種の材料であることを忘れてはならぬ。此材料を盛んに用ふる時代が起って来る。日本でも近頃是れの柱を造って居るが、亜米利加では柱は柱、壁板は壁板、床板は床板、梁は梁と云った風に鉄筋コンクリートで造って置いて、夫を組み立てて小さい家を造って居る。(中略)さう云ふ工合に我々が木材を切り組んで造る様に、早くて安くて然かも耐火構造の家が出来るのである。"	d	
"山田守,“建築実態の研究に着目して建築観念を向上せしめよ”, Kenchikusekai (April 1920)： 13_14 学校に今学んで居る吾々学生は、我国現代の建築界の実状を嘆きながら、鉄筋鉄骨の構造を研究し、モダンスタイルの建築設計に熱狂してゐるが、吾人の先輩の多数と同様に建築観念を以て同様の経路を辿り一歩社会に踏出してパンの為に変態建築[鉄骨ルネサンス式]でデティルでも引いたり、計算でも手伝たりして十年卅年を過ぎ、自由に自己を展開する時期が到来したと考えて見るながらどうであらう、吾人の後輩は「あれ鉄筋鉄骨の感念が抜けない、やれセセッション式は最早現代に意義がない……」と云って吾人を攻撃罵倒するであらう、其所に吾人と時代の臭を異にした新構造新様式が出来てゐるであろう斯くの如く論じ来りて我国建築界の現状を維持し継続せば我国民は恒に変態的過渡期建築の犠牲となるより外はない。"	dd	
"阪東義三,“都市経済政策と特許鉄筋ブロックに就て”, Kenchikusekai (February 1921)： 22_25 ブロック建築に於ては、仮枠の省略、設計の容易、地形の軽減、施工の簡便、工期の短縮、工費の経済、耐火、耐震、耐久、防湿、保温、換気、配管配線の便、雑作取付の便、屋根の簡便、地坪の節約、外観の荘重、亀裂の皆無等に有す、殊に特許壁面装飾機の発明により、外壁の仕上、色彩の自由等其経済的に且つ其効果は、正にセメントガンに三舎を譲らざるもの謂ひつべし。[enter]工学博士佐野利器氏曰く、建築物の耐震、耐火、耐久、衛生等の諸点に於て鉄筋コンクリート構造が一般に最も優秀なることの提唱せらるるや久し、只其容易に普及を見る能はざりしは工費、工期等主として経済上の点に存せり。…工学博士佐藤功一氏曰く、近代の発明にかかる鉄筋コンクリート構造は、軽量なる原料を直接其建築場に搬入して、ここにコンクリートを作製し、其内部に適当に鉄筋を挿入しつつ剛節架構を、如何なる大量のものと雖も一体として、また如何なる形体のものと雖も比較的自由に、鋳造し得るの特質を有し、之れが物理的特性としては、弾性強く、(中略)しかも尚之が構造の最缺点とする所は之れが鋳造に必ず仮枠を要する事に存し、是等仮枠に依る鋳造は枠の製作に多額の工費と、其組立及び除去と竝にコンクリートの硬化とに多くの時日を要し、且つ其薄き単壁には防湿と保温に対して、相当の装置を施す必要あり。"	d	
"主張,“鉄筋コンクリートを励行せよ”, Kenchikusekai (March 1921)： 1_4 而して又面積の関係上煉瓦壁がは厚い壁を避けることが出来ないし又鉄骨は鉄材に乏しい我国では甚だ不経済なものとなるから、日常生活以外に於て鉄筋混凝土の構造が最も多く我国に適当されるといふ結論に達する。…この鉄筋コンクリート、は我国に於ては最も喜ばれる楣式であり、且壁厚が極めて薄くなり得らるるからして日本趣味を実現すには最適当である。けれ共今日迄割合に鉄筋コンクリートの盛大にならないのは、一は我が国一般の智識が幼稚であって鉄筋コンクリートの長所を知らないのと、今一つは我国民一般に新智識に就て疑惧の念を持って見る性癖があって、…若し現在の住居を鉄筋コンクリートに改めたならば交通の関係上、従来の四囲の発達は変じて上層への発達となり、多く居住者は二階三階に不自由なく生活し得ることとなりて、…"	d	
"吉武巌,“住宅建築と混凝土”, Kenchikusekai (April 1921)： 10_11 建築の外観と材料との関係に就て、其の異なりたる材料が建築に適合する様に為すと同時に、異なりたる材料間の釣合を考慮する必要が起って来る、尚建物の目的の為め形及び装飾上の構造方面も相当に考へて置かなければならない、所謂此処の材料美の発揮せる建築が得られるのである。…混凝土は煉瓦や石等の材料に比して、外形上の変化を多く認められるのである、勿論コンクリート・ブロック構造の住宅とモノリシック構造の住宅とは差別的感を受けるのである。以下コンクリート・ブロックに就き述べて見たのである。…一般表面仕上げとして、上塗或はラフカスト塗仕上げをなす必要が起って来る…而してコンクリート・ブロックの表面は主に凝結体に依る故に、自然の石を凝結体として用ひたる方が破砕したる石を用ひるよりも、良き感を吾人に与ふるものである。"	d	
"櫻井小太郎,“丸ノ内ビルヂング設計構造に就て”, Kenchikusekai (October 1921)： 4_6 例之地下室の物置の如き場所は日本では天上も壁もシックイで塗りたがるも米国ではコンクリートの打ちっ放し又は煉瓦の壁のままに置いてある。又上等のホテル等の非常用の階段は全くコンクリートの儘である様な風で実用以外には殆ど一文の金も使ってゐない。之は日本でも多少の参考にしても良かと思ふ処である…"	d	
"濱岡周忠,“漫評及評論に対す”, Kenchikusekai (May 1922)： 8_11 「建築様式なるものは材料によりて非常に変遷するは勿論で在る。」ならば、…蓋し最近建築様式の基準とする所は鉄筋コンクリートをその用材とするにあるのだから。用材のみこんなにも進歩した、その取扱が石煉瓦の繋縛から脱しないのは余りに時代錯誤であり、…"	d	

					concrete block as deco, no formwork (concrete block)	surface dealing (concrete block)		<concrete block>, <no formwork / precasting>, <surface dealing (coating / coverage / fabrication)>, <fabrication of RC>	
					[the US] precasting		the US	<no formwork / precasting>, <the US>	American method appreciated
							no imitation of historical styles	<no imitation of (Occident) historical styles>	
		thin wall		free shape, free surface dealing (block)	rigid frame, casted object, elastic, no formwork, solemn image (block), free surface dealing (block)	solemn image (block)		<light / thin>, <free shape>, <free surface dealing>, <as a single entity / monolithic>, <casted object>, <rigid frame / elastic arch>, <concrete block>, <no formwork / precasting>, <lack of beauty / lack of solemnity>	concrete block
		thin wall	multi-floor house		lintel system		Japanese taste	<light / thin>, <capacity of RC>, <frame structure / curtain wall system / lintel system>, <Japanese style / Japanese taste>	
					monolithic, surface dealing for concrete block (painting, roughcast, concretion of natural stone)	surface dealing for concrete block (painting, roughcast, concretion of natural stone)		<as a single entity / monolithic>, <concrete block>, <surface dealing (coating / coverage / fabrication)>	mainly about the deco of concrete block
						[the US] bare concrete	the US	<no coating / no coverage>, <the US>	
							no imitation of masonry bldg	<no imitation of (Occident) historical styles>	

"主張, “鉄筋混凝土と新様式”, Kenchikusekai (June 1922)： 1_3 就中最大なる束縛は建築の構造である建築の構造が今日の儘である間は恐らく今日以上に在来の形式を脱却することは甚だ困難である、建築は構造によって成立ち装飾によって装はれるのが本統である。…けれ共未だ之が真に鉄筋混凝土の外観として最適当であるといふ装飾法は未だに現はれて居ない、只今日使用されて居るものは従来の装飾法を以て此鉄筋混凝土なる骨骼に被せた迄であって此構造法の発見以来日尚未だ甚だ浅い点から論へて見ると言はば嬰児の身体を生衣で包んだ様なものと見得らるる…今日我国に於ける否世界に於ける最有望なる建築といへば誰しも鉄筋混凝土を挙げるに躊躇しない。此際に当りもっと徹底的に之を研究実行することに努力することは即ち世界建築に伍する最賢明な方法であって、新様式の如きは恐らく此構造法の完成と同時に期せずして成り立つことと思ふ。"	d	
"主張, “簡単第一”, Kenchikusekai (July 1922)： 2_4 建築の形式と材料とは離る可からざる関係を有って居る。…或は又鉄筋混凝土の建築が段々と多く使われる様になれば、自然と厚い壁の建築に用ひられた装飾や、大きな太い柱などが用ひられない様になり行くだらう。…地震の関係上我国では、純粋な煉瓦建築は恐らく不適当である、若し安全を第一とするならば、経済上の点と両方から考へて、今日の所では鉄筋コンクリートの上に出るものはない。…吾等は永久的形式の第一歩を形造る為めに、先づ第一に簡単に帰らなければならない。簡単第一之れが我国建築界の大方針でなければならない。而して次に夫に適ふ様な材料の生産を企図するのが、一番早く我建築界を進歩せしめる最賢い策であらう。"	d	
"櫻井小太郎, “帝国ホテルの建築を見て”, Kenchikusekai (November 1922)： 3_6 即ち構造或は材料からして自然に生れた式ではなくライト氏が頭に画いてゐる物を無理に当てはまてゐる傾向がある、…新規の建築スタイルは従来石造とか煉瓦造のやうに今後のスタイルは鉄筋コンクリートと鉄材と云ふ所から生れて来なければならぬと思ふ。此意味に於て私はライト氏の建築の或る一部は決して新らしいものではなく、寧ろ古いものの外表に新らしい鍍金をしたのにライト氏の採用せる構造としつくりあてはまって、つまりベニヤ建築貼付建築であるから(中略)言葉を変へて云へば或る局部の新しいものを編み出す上に於て巧妙であるが建築上の大天才としてライト氏を推奨するは私をして躊躇せしむるものである。"	dd	
"岡本鑒太郎, “鉄筋入「コンクリート」構造(承前)”, Kenchiku (July 1906)： 252_254 考へる迄もなひ性質上抗鋼と「コンクリート」とを柱材として比較して明かな事実でしょふ。即ち面積問題が摩天建築に「コンクリート」を用ゆるを躊躇する原因に外なりません。…此以外鉄筋「コンクリート」の構造上困難として感ずるのは。執工に精細なる注意で是れに欠くる所があると亀裂を生じ又は色合の不調面の不陸等を来たす恐れが多ひ。是ある時は其修理に他の材料よりは一不便である故に予め其覚悟を要する訳である。のみならず少しく美術的の仕上げを要する建物には甚だ不自由を感ずる次第で。何れ下地を作って塗師又は左官職の手を貸りて仕上げを為のであるが美的手腕を用ゆる事が六ヶ敷ひ。所詮化粧煉瓦又は「テラコッタ」様の材料で被覆するのではあるが困難は明らな事実と云わねばならんから化粧の考を外にした実用専門の建築に最も適切な構造法と云ふべきであろふ。"	d	
"journalist, “鉄筋「コンクリート」構造の一例”, Kenchiku (April 1908)： 420_423 「コンクリート」の調和は壁柱(一、二、四)。梁及び屋根(一、二半五)の割りで夫れに用ひられる鉄筋は大部分丸棒を採り局部に「カーン」式を採用した。[enter]外壁の仕上も亦た仮枠に便宜の為め十八吋の割合ひに目地を見て居る。是れは仮枠の取り除きに便にし一方化粧としての意味をも含まれてある。二階三階は十二吋の割合ひで石目地を模して荘重の観を得せしめてある。[enter]此種の構造には執工の上に化粧目地(モルタール仕上)が甚だ有効で仕事の逃げを取り得る便宜は実験上少なからず感ずる。[enter]…是れは外面を被覆する「モルタール」を整へるので時に強く道具を当てて砂利又は砕石を露出せしむるなんど美的趣味の手段として見るべきである。是れ等道具の種類使用の方法等で種々の外観を呈せしむるのも亦た一種の技術である。蛇腹。持送り。化粧廻り等には最も細蜜な調和を用ひて道具も緻蜜に当てるが適当する。"	d	
"journalist, “コンクリート家屋”, Kenchiku (November 1908)： 478_479 夫れ(house near NY)が単調な「コンクリート」壁でなしに種々の美的な手法が応用されて居る。例令ば階下を「コンクリート」の半壁とし階上を柱の塗込みをし夫れを面丈け化粧で見るなどの趣好である。而しも木造軸組みに比して割合廉価に為し遂げ得るのみならずより以上堅固である事が其理由の重なるものである。"	d	
"journalist, “鉄筋コンクリートの用い場所”, Kenchiku (October 1913)： 949 此構造の特色は屋壁として割合ひに厚さを要さないで相当の強さを得る。仮令ば市街の建築で隣同志肩を接する様な場合で幾分でも室内の広さを希望せる処などが応用すべき一つである。[enter]内の仕切り壁の如き分画を要すれど可成く薄からんを望む場合など其二である。[enter]床の懐ろを節約して而かも耐火ならん事を望むのが其三である。"	d	
"眞名田工学士, “混凝土と小住宅”, Kenchiku (March 1914)： 987_990 混凝土構法には次の五種あり。　一、型を用ひて塊又は盤となし恰も石材の如くに使用す之れは多く小住宅に応用さる。　二、木板仮枠の間に重続打立てたるもの。　三、家の鋳型を木又は鉄にて造り是れに液状混凝土を注入すエヂソン氏の所謂鋳造の家是れなり。　四、家の各面の型を地上に作り是れに混凝土を満たし其凝固せる時是等の各面を結合して完全の家となす。　五、張力の起る部分に鉄材を挿入し所謂鉄筋混凝土となす、斯く鉄材を挿入することは上述の各法に応用し得るものなり。[enter](subtitles) 混凝土塊…打立混凝土…鋳造混凝土…水平型混凝土…何れの構法に係らず混凝土壁面に於ける漆喰塗は極めて手軽に施行し得べく場合によりては混凝土の未だ全く凝固せざる内に鏝にて撫で其上に単にペンキを塗りて足ることもあるべし、去れば此方面に於ける費用の節約も亦看過する能はざるなり。"	d	

						no traditional deco (call for new deco)		<manners denied>	
	simplicity	no bulky column				no deco of thick wall		<simple>, <light / thin>, <manners denied>	
					[anti Imperial Hotel] structure rather than detail		Wright denied [nature of material, structure rather than detail proposed]	<structure first>, <the US>	
			larger size of column and less space (for skyscraper)			lack of beauty, surface coverage (brick, terra cotta)	suitable for practical bldg (not artistic)	<no large space>, <lack of beauty / lack of solemnity>, <surface coverage>, <building types>	O.S.生
					Kahn System	[press factory in Baltimore] [mortar joint (imitation of masonry bldg), surface dealing (crushed stone or sand in mortar), extrusion]	[press factory in Baltimore]	<frame structure / curtain wall system / lintel system>, <manners other than surface coating / coverage / fabrication>, <surface dealing (coating / coverage / fabrication)>, <the US>	
						[domestic house in a village near NY] surface coating	[domestic house in a village near NY] surface coating	<surface coating>, <the US>	
		thin wall & large space, thin floor	thin wall & large space					<light / thin>, <large space>	
					casted object, concrete block	surface coating (plastering or painting)		<casted object>, <concrete block>, <surface coating>	translation

"松井貴太郎, “建築時言”, Kenchiku (October 1914)： 1027_1031 今その構造(new office buildings in Tokyo)を通覧するに、その一二を除く外は、殆んど鉄骨か或は鉄筋コンクリートである。内には軽鉄骨のコンクリート構造もある三四階以上のものは、是非ともこのフレーム、コンストラクションによらねばならぬとしたならば自然建物の外観も其構造に供はねばならぬ、…常に建物は構造と適応したものにしたいものである、フレームの複雑なのは採りたくない、然し千篇一律な米国式なのも困る、構造から離れずに美観を与えるのは、建築家の手腕に待たねばならぬ、…"	d	
"松井貴太郎, “建築時言”, Kenchiku (November 1914)： 鍛冶橋は鉄筋コンクリート橋で、(中略)呉服橋は、スチール、アーチ、リッブで親柱、橋台及袖高欄共花崗石、手摺高欄は錬鉄製である、…先ず橋の生命、殊に迫持橋の生命は、その迫持の曲線である、前述の通り両橋ともこの曲線はパラボラだと思ふ、抛物線は二次のハイカーブで計算上からも亦その形からも優秀な曲線である、が吾人は計算上の曲線のみ盲従しないで、之れを根拠として尚自由な所がありたい、(中略)鍛冶橋呉服橋は今迄の橋に比して優秀なものであるが尚曲線に対する研究を要求したい、殊に鍛冶橋は迫持の頂部の所が非常に狭まく、要石が甚だ倭小で貧弱で力がない、自然曲線と上の蛇腹との間のスパンドレルが面白からざる形となって、橋全体に薄弱な感じを与える、これ等は土木家の呈供にのみよらず、建築家が形の上から大に研究せねばならぬ所である、…"	d	
"松井貴太郎, “建築時言”, Kenchiku (December 1914)： 1073_1075 然らばそれ等の新材料を以て、新しき形式のもとに、崇厳なる雄大なる、而してよく日本国民性を発揮したる―外国の模倣でない―日本独特の新神宮建築を得るかと聞かれたならば、吾人は言下に出来るとは言はない、…又神社建築の形式を用ひて、木材に換うるに不燃焼物の鉄筋混凝土を持ってせんとの説もあるが、これ亦甚だ誤れる案であって、詐ったる建築である、在来の日本建築は木造の建築である、コンクリートで造には又その形式がなければならぬ。"	dd	
"大熊喜邦, “材料の力”, Kenchiku (February 1915)： 1_3 材料が建築に致す力は偉大である、夫れが消長は曽て建築史の一面も支配した、形式手法を左右する権威をも保った。…世界の建築は木造もあった、石造もあった、鉄造の時代にも到達した、今はセメントを以て建造する時期である。…組立た木造建築を過去の遺例として葬り、鋳型建築を必要とする時代に到らしめた。[enter]鉄筋混凝土建築はセメント建築である、而して又鋳型建築である、現代に於て科学的基礎の上に樹った最も改進した建築の方法である、日本の如き地震国にはエラスチックなモノリシックな鉄筋混凝土は最も都合よき構造の一である、…新しき材料新しき結構発動は、過去の因襲に囚われる事なく現在の形式に束縛さるる事なく一に光輝ある未来を開拓し夫れを実現せん。(中略)新しき材料の出現したる時、即ち新しき材料が新しき時代、新しき形式を創り出さんとする時に個性の活躍が非常に大功である。"	d	
"岡田信一郎, “病床漫言”, Kenchiku (April 1915)： 1_5 材料と構造とに著しい発展を見た今日は過去の建築を模倣してそれから創出して美術的と称するやうな建築の存在を許さない。…鉄筋コンクリートの可鋳性、継目のないエラスチックな性質を充分発揮した形を採って居りはしない、コンクリート建築ももっと合理的にもっと真実に処理されねばならない。私は此等の構造の問題の解決にも創造的の美術的精神が加へられねばならないと信ずるのである。"	d	
"松井貴太郎, “近時建築に対する希望”, Kenchiku (May 1915)： 24_28 鉄筋混凝土床が施工されて居る、其他新材料新施工法など、輸入され発明され、(中略)構造法なり施工法が進んだ割りには美術的方面には一向進歩していない様である、…(subtitle)第三、構造を表顕の一致を得たい。(中略)木造は木造の表顕を持ち、煉瓦造は煉瓦造、鉄筋混凝土造は混凝土造、鉄骨は鉄骨造でなければならぬ、鉄筋コンクリート造或は鉄網コンクリート造に化粧煉瓦を張った建物も近時に大分出来る様だが、これ亦木骨張煉瓦と同様虚偽である、薄いコンクリート壁に煉瓦を張った見すぼらしさは、到底美ではない、…鉄筋混凝土は丈夫なものだと言うことは分って居るのであるから、その特色を発揮して薄い壁厚を利用するならば、外観も鉄筋コンクリートを表示せねばならぬ、…"	d	
"松井貴太郎, “建築時言”, Kenchiku (September 1915)： 36_38 主、(about the topic of Meiji Treasure Hall)…斗だの肘木だの木であって初めて意義があるが、これが石か混凝土になったら、其生命はなくなるだらう、絶対的に石の手法でない、……客、然し、純西洋の古典式でもいけなかろうし、復興式でも困る、そうかと言って独塊の分離派でも尚困る、要は石造或は混凝土造であって、その構造に対して少しの無理もなく、合理的であって、而して日本在来の建築の気分を発揮したものを採りたいネ。　主、左様だ在来の日本建築に絶対的に囚われない様にしたい、而して昔の日本建築の堂々たる姿態と悠容たる形趣を持って、今の浅薄なせせっこましい手法を避けたい。"	dd	
"松井貴太郎, “建築時言”, Kenchiku (November 1915)： 23_28 (小林福太郎案)在来の日本建築をそのまま持来って或部分を石にし或部分を漆喰塗にし、又或部分をテラコッタにし又コンクリートにしたのである、吾人は之れに対して多くを言うを欲しない、且一部分たりとも外部漆喰塗仕上などは永久建物に絶対的に用ゆべからざるものである、混凝土壁に石の取付法も甚だ不手極で且構造的でない、又全体の形の調った割に細部が甚だ功妙でない、…(後藤慶二案)それがテラコッタでありコンクリートであっても、見た感じは木造である、従って印象が甚だ貧弱である、…"	dd	

					frame structure (neither too complex nor monotonous like American office bldg)		frame structure (neither too complex nor monotonous like American office bldg)	<frame structure / curtain wall system / lintel system>, <the US>	KM生
					parabola arch [Kajibashi, Gofukubashi]	details (keystone, cornice, spandrel)		<rigid frame / elastic arch>, <manners other than surface coating / coverage / fabrication>	KM生, Parabola in bridges
						no RC for building components in traditional Japanese architecture	no imitation of occident architecture, no RC for components in traditional Japanese architecture	<manners denied>, <no imitation of (Occident) historical styles>, <no imitation of Japanese style>	KM生
					casted object, monolithic, elastic		no imitation of historical styles	<as a single entity / monolithic>, <casted object>, <rigid frame / elastic arch>, <no imitation of (Occident) historical styles>	
	flat surface(removed)				casted object, jointless, elastic		no imitation of historical styles	<flat / straight>(removed), <as a single entity / monolithic>, <casted object>, <rigid frame / elastic arch>, <no imitation of (Occident) historical styles>	see also KCZS 1915-1
		thin wall				no coverage		<light / thin>, <no coating / no coverage>	
							no imitation of Japanese style, Japanese taste	<Japanese style / Japanese taste>, <no imitation of Japanese style>	
						no plastering, no coverage (stone)	no imitation of wooden structure	<no coating / no coverage>, <no imitation of Japanese style>	

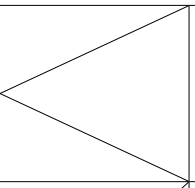
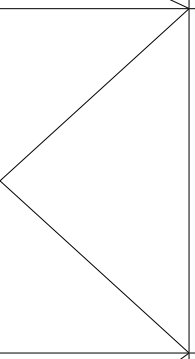
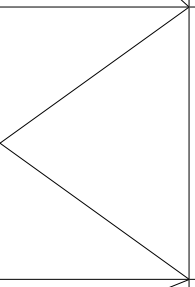
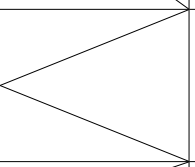
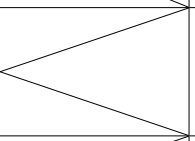
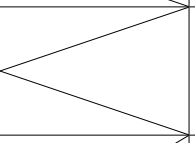
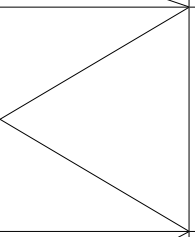
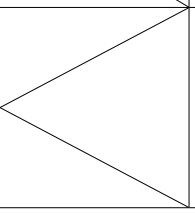
"松井貴太郎, “建築時言”, Kenchiku (January 1916)： 20_27 兎に角鉄骨混凝土の建物が、如貧弱なる形態を顕出することは、未だ鉄筋混凝土造の如何に美的に所理されべきかが、考究されて居ないのである、…無意義な装飾を捨て、実質的な力がある建物を得たい、人造石塗、セメント塗、化粧張付煉瓦を廃したい、煉瓦造はその煉瓦で化粧し、混凝土は混凝土として表顕したい、…"	d	
"後藤慶二, “ミスキアート”, Kenchiku (March 1916)： 11_17 (二等二席)その全形は木造楼門の模造で、鉄材と云ふことも石材と云ふことも無視して、只斗組や、棰や、長押を木で造ると寸分遠はずに作ったに過ぎない、…(自作)然も鉄筋コンクリート架骨構造に於てはレネッサンス風の形式を採ることが寧ろ不自然で、それを構法に準拠して合理的に架構すればそのものは自然木造架骨構造に近いものが出来るのは明かなことである、…自分の図が自分の考へを充分現はすには余り出来がよくなかったせいでもあらうと思ふ。"	d	
"松井貴太郎, “建築時言”, Kenchiku (April 1916)： 27_30 仮令内部が充分な鉄骨鉄筋コンクリート造になって居っても、薄いコンクリートの壁に煉瓦を張付けたのは、五寸角の木柱を持った木造壁に張付けられたものと、外観に於て選ぶ所はない、被覆した以上は外観から来る鑑賞以外にはない内部の何んであるかまで研究し鑑賞しろと言うことは無理である、…(criticism over Taiwan Bank)鉄筋コンクリート造のコンクリート壁体を露出した場合でも、外観は単なる混凝土造として処理せねばならぬ、観者をして鉄筋を想像せしむることは出来ない、(中略)その構造と表顕の一致を研究せねばならぬ、鉄筋混凝土は薄き壁厚を以て足るとが此構造の生命である、この生命を充分に保有して尚外観に安定の満足を得せしめねばならぬ、…"	d	
"松井貴太郎, “建築時言”, Kenchiku (June 1916)： 20_22 倉庫及び工場建築の如き、外観に重きを置かざる建物に於ては、鉄筋混凝土造の本領を有して居るを見るも、美観を主とする建物に於ては、唯内部の骨組みに使用するのみであって、外観は在来の石或は煉瓦の重積式方法を、殊更に模倣するに止まって居る、如斯して近時の人は構造と意匠とを切離して考えんとして居る、これ建築美術を根本的に誤って考えたものでなからうか。…又震災其他の関係上鉄骨煉瓦造或は鉄筋混凝土造、又は純鉄筋混凝土造とも為すことを得る、この計算法及び構造に関する設計は挙て建築工学者に委したとする、(中略)然し吾人はこれを以て満足し、絶好なる建物となすことに躊躇するのである、如何となれば此の設計は美的意匠を主とし構造を従として作られたる建物である、構造には何等の生命もない、(中略)寧ろ吾人は構造を最初に考えて、其の構造を意匠すべきものであらうと思ふ、…"	dd	
"吉田享二, “建築材料偶感”, Kenchiku (July 1916)： 13_15 (opinion of Fanning (transliteration), Illinois University)即ち材料の製造法よりも其材料を使用する意匠の研究が遅れて居る事を意味するのである、之れは鉄筋コンクリートと在来の石煉瓦等との関係に限らず、総ての新材料について考えられる。…鍍金、ベニア、マーブリング等にして、之れが社会の何物かに調和する物と見えて盛に使用される、虚偽也とは言はぬが、松の木を楓で包み、石膏を以て大理石に模し、天然大理石の斑紋に似せて成効也と祝す、然して新しい材料としての特長を発揮せずして、(中略)新しい材料は新しい構造と相待つべき事切に希望するので有る。"	d	
"松井清足, “将来の工業建築”, Kenchiku (March 1917)： 25_32 私は理想として将来之れ等の総ての問題の解決を付けたる最も簡単なる組立式の鉄筋コンクリートなるものが完成せらるることを期待するのである矣"	d	
"石井敬吉, “剛筋コンクリート構造の建築に関する将来”, Kenchiku (March 1917)： 33_37 惟ふに建築物に美観を添ふには精細なる強力計算を遂げ之に必要なる形状及寸法を基本として其精神を完全に発揚するものは必らず構造美の一なることを信ず、猶雨露の影響又は採光の必要或は使用の目的等の一切の条項を一括して其精神を発揚せしめば一線一円も忽ちして有意義のものとなりて構造美となるものと信ず、…従ってコンクリートの建物に被覆するに石材を以てするの習慣は容易に脱却することを得ずと雖も早晩コンクリート構造が露出独立して石材と対峙し敢て遜色なきを感ずるに至るは近き将来にあらんと考へざるを得ず。…梁及柱の形状其他鋼筋の状態又は仮枠の意匠に関しては幾多の特許巧風の進歩を見るに至るべく従って構造物の重量を軽減し経費を節約すること少々にあらざるべく工事も単日月の間に竣成するを得べし。(中略)仮枠なくして鋼筋コンクリートの工事を実行し得るの時代は近き将来に於て実現し得るであらうか、ワイヤラッスツ如き物に薄きモルタルを付け其凝固して外層の堅固なるを以て仮枠の代用と同時に補強の目的に達し単に内部のコンクリート填充にて事足る様の方法はなきものにや。　本邦式屋根の宏壮なる宮殿と粛洒たる邸荘又は簡単なる寓舎に論なく造作に関する木材の優秀なるは明白なるが其構造部に至りては梁柱又は床及基礎に至る迄鋼筋コンクリートを以て築造し腐朽と虫害と火災とに関する懸念を一掃し、地震又は風破の恐れなきに至るの時代は余り遠きことなかるべし、京間又は田舎間と称する好都合なる尺度の単位は構造を簡単ならしむる有効原素と云ふべくしてただ細き柱薄き梁及軽き床の意匠設計計算に応ずる細き鋼筋の使用に関する研究を進むれば足らん。…構造用テラコッタの供給が進歩せば鋼筋コンクリート床工事に大節約の益あるべく美術的テラコッタの応用が鋼筋コンクリートと調和の最良なることは人の普く知る所なり、結構及アーチに関する応用上の数量を指定する上に於て大進歩を見んこと希望へ堪にざる所なり。"	d	
"中村傳治, “将来の商店建築”, Kenchiku (March 1917)： 65_68 此の十九世紀に至って大なる板硝子の発達により窓面を一面の大硝子にて蔽ふ様になり、又鉄骨構造の発達から家屋は皆此鉄梁を利用して大きな径間の窓を作る様になり、尋で二十世紀の今日に鉄筋コンクリート建築の発達となり、此点が更らに容易に構造される様になって昔の陰鬱な陳列窓も今日の陽気な軽快なるものとなったのである。…先づ第一にデパートメント、ストアーの如き大賞典は如何になり行くか。(中略)従って建築用材料の日進月歩の状態に随伴して年と共に変遷して膨大なる高層建築を実現するであらう。即ち現今の鉄骨構造と鉄筋コンクリート構造以上に発達した構造法が現はるれば先づ第一に此の建築法を取入るるものは此種の商店でなければならない。"	d	

						no meaningless deco, no coverage (brick), no coating (painted artificial stone, painted cement), bare concrete		<no coating / no coverage>, <manners denied>	records of structure for many bldgs
					frame structure	no RC for building components in traditional Japanese architecture	no Renaissance, no RC for building components in traditional Japanese architecture	<frame structure / curtain wall system / lintel system>, <manners denied>, <no imitation of (Occident) historical styles>, <no imitation of Japanese style>	important, truth of structure
		thin wall				no coverage		<light / thin>, <no coating / no coverage>	truth of structure
					design of structure		no imitation of masonry bldg	<structure first>, <no imitation of (Occident) historical styles>	
							no imitation of masonry bldg	<no imitation of (Occident) historical styles>	
					precasting			<no formwork / precasting>	
		light image (slim column, slim girder, thin floor)			follow calculation, shape for practical use = beauty of structure, no formwork (lace concrete)	no coverage (stone), terra cotta for floor, RC for building components in traditional Japanese architecture	RC for building components in traditional Japanese architecture, Japanese style [Kyoma / Inakama]	<light / thin>, <structure first>, <no formwork / precasting>, <proclivity of treatment>, <no coating / no coverage>, <manners other than surface coating / coverage / fabrication>, <Japanese style / Japanese taste>	*treatment not connected with kyoma
		light image	large aperture, large span		high rise bldg			<light / thin>, <large span>, <large aperture>, <capacity of RC>	

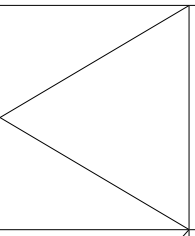
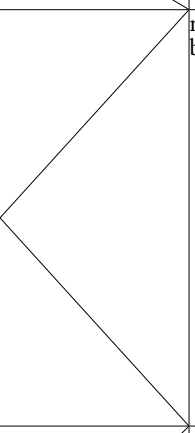
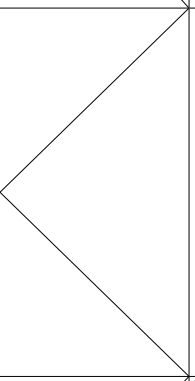
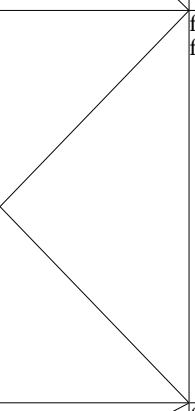
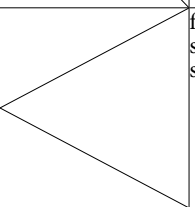
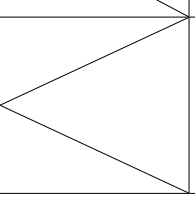
"後藤慶二, “過去と将来とも付かぬ対話”, Kenchiku (March 1917)： 85_92 未来派の建築は計算と大胆な蛮勇と素朴との建築である、木や石や漆喰を排し、鉄筋コンクリートと鋼鉄と硝子とより成り、極めて軽く且つ弾性に富んだものでなければならない、斯くの如き未来派の建築は実用的と功利的との無味乾燥な結合でない代りに、美術的な統合的な、そうして意味の深遠なものたるべきである、楕円的の線は力に富んだものである、此個有な性質を利用して、新建築は之までのやうな水平線や垂直線を用ゐた建築に比して数十倍の感動力を得ることが出来るのである、…"	d	
"櫻井小太郎, “将来の貸事務所建築”, Kenchiku (March 1917)： 93_98 大なる建物の構造上より見れば、無論、耐火耐震的でなければならぬ事に依り、鉄筋コンクリート若くは鉄骨構造に限られるに至るものであらう。…殊に鉄骨若くは鉄筋コンクリート構造は窓を天井近く開けることが容易なる為に、採光上必要なる丈の室の高さで良い事となる。…"	d	
"佐藤功一, “将来の建築”, Kenchiku (March 1917)： 101_113 近代の石、煉瓦を以て装甲する混凝土は単に羅馬式構造の更に高き権威に過ぎぬ、若し吾人が非芸術的材料なりと云ふ恐怖を去りて、大胆に停車場、博物館、或は広大にして単純に、採光の潤沢なる伽藍を築くに混凝土を以てし、画家をして其壁面の仕上げをなさしむるを得ば、吾人は殆ど直ちに再び建築に興味を有す得べく、而して此の建築の興味は必ず振興せらるに相違ない。…"	d	
"大塚泰, “東京市と高層建築”, Kenchiku-kougei-gyoushi (April 1912)： 3_5 鉄骨や、鉄筋コンクリートで、家屋を建設するのである。是等の建築では、低い家屋を建造していけぬと云ふ訳ではないが、重量が軽く、非常に堅牢なるものであるから、高層建築には最も適当して居る。(中略)殊に此壁を鉄筋コンクリートで作ったならば、其堅牢なる程度は、煉瓦のものと比較にならぬ。さうして、其壁の厚さも、五寸か六寸位の薄いもので充分である。…鉄骨で建築物の骨組を組立てたる丈けでは、家屋としての用をなさぬ。(中略)コンクリートの中に、鉄筋を挿入せる鉄筋コンクリートを以て、骨組に緊結したものを造った方が優れて居る。(中略)骨組も鉄筋コンクリートで造れるものの、高層建築に実現せらるる事の多きを、余は望むのである。"	d	
"大塚泰, “鉄筋コンクリート通俗的講話5”, Kenchiku-kougei-gyoushi (August 1912)： 31_33 矢張コンクリートも好ましい色でない。其故かで其外部を仕上げなければならぬ、そこで其仕上げ方法に就いては、外国でも経済的実用的美術的三方面から、建築家が種々苦心研究をして、其結果も大分発表されて居るが、三方面より見て充分といふ、仕上方法はない、まだ随分研究の余地のある問題である。(中略)比較的良好と信ずるものの三四種をここに御紹介する事とする。　(as the subtitles)石材の張付…人造石の張付…煉化の張付…漆喰仕上げ"	d	
"大塚泰, “建築の概念”, Kenchiku-kougei-gyoushi (January 1913)： 12_14 換言すれば装飾は殆んど凡て、其建築に於ける構造より導かれたものでなければならぬ。…鉄管或は鉄筋コンクリート建築は、木材、煉瓦石材、何れの性質を表はしても、鉄管等を露出する場合は殆んどなく、其外部を他の不燃物質で包むから、如何なる手法を試むるも奇を衒った様子は見えぬが、鉄管、鉄筋コンクリートは、其本来の性質が直線的のものであるから、其本来の性質を発揮する様に、その手法を試むるのが至当ではあるまいか。"	d	
"大塚泰, “建築の様式は何によって定まるか”, Kenchiku-kougei-gyoushi (April 1913)： 30_32 材料の建築様式に及ぼした影響は、前者[宗教]に比して劣らぬ。特に文明科学の進歩は、諸種の建築材料の発明を促すものであるから、将来の建築様式に及ぼす材料の影響は、寧ろ前者に優って居りはしまいかと思ふ。…鋼鉄材及鉄筋コンクリートが建築材料として、使用せらるる様になった。之は都市繁栄の結果、耐火建築や、高層建築が社会の趨勢につれて、必要となって来た為めに外ならぬ。其所で今の所では此等の建築材料が使はれ始めたから、俄かに建築様式の上に変化が来る様にも見へぬが、長き歳月の後には、建築家の研究の進むにつれて様式に変化が起りはしまいか。"	d	
"黒田鵬心, “明治神宮様式”, Kenchiku-kougei-gyoushi (August 1914)： 12 明治神宮の建築様式が「流造」と決定してゐる一方では、鉄骨建築、鉄筋凝灰土建築がどしどし建築されつつある。…斯くの如く新しい材料を以って、新しい様式の建築が建ちつつあるのに、明治神宮は木材を以て中世の様式によって建てられんとしてゐるのである。一種の時代錯誤と見れば見られる。併し何処の国でも、古い様式をとって建築する事がないではない。…而して再び明治神宮と「流造」、鉄筋凝灰土と其の様式とを顧みてみると、憮然たるものがないではない。"	d	
"黒田鵬心, “三越の新建築（上）”, Kenchiku-kougei-gyoushi (November 1914)： 17_18 三越の新建築を観て、所管を記すにあたり、少しく建築の材料と、様式と目的との関係を考へて見たい。(中略)今や東京市に於ては、既に竣工せる大築も三越を加へて十を越え、工事中のものも亦十を以て数へる事が出来やう。小なるものに至っては猶多い事と思ふ。而して其の内にはレインフォース・システムのものもあれば、カーテンウォール・システムのものもあり、鉄筋混凝土造のものもあり、それらを混用したものもあり。…従って新しい構造は行はれてゐるが、これに伴ふ新しい様式は未だ明瞭に現はれて居ない。セセッションも、決して鉄材建築の材料、構造から必然的に生れたものでは無い。(中略)鉄材を以って我国過去の様式を学ぶのも、面白いと云へば面白いが、あまり感服は出来ない。要するに、鉄材建築を輸入する以上は、其の材料の特色と、材料に伴ふ構造の特色とを発揮し、我が国民性と、現代の時代精神とを体現した新様式を開拓し、…併し様式といふ事は、又一概に材料や構造との関係のみから見る事も出来ないし、其の真意義を固執する事も困難である。といふのは、別に建築の目的、種類、換言すれば、その建築を実用上から見て、実際の生活との関係を考へねばならぬからである。…"	dd	

	[Futurism] [brutal, austere, light, elastic, (RC, steel, glass)]	[Futurism] [brutal, austere, light, elastic, (RC, steel, glass)]			[Futurism] [brutal, austere, light, elastic (RC, steel, glass), ellipse curve]	no wood, stone or plaster [Futurism]	Futurism	<austere>, <light / thin>, <brutal>, <rigid frame / elastic arch>, <manners denied>, <new trends in Europe>	
			large aperture (good illumination)					<large aperture>	
			large space and good illumination (station, museum, church)			RC not as non-artistic material, fresco		<large space>, <lack of beauty / lack of solemnity>, <manners other than surface coating / coverage / fabrication>	translation of Lethaby
		thin wall			high rise bldg, frame structure			<light / thin>, <capacity of RC>, <frame structure / curtain wall system / lintel system>	
						lack of beauty (color), surface dealing (stone panel, artificial stone, brick, plastering)		<lack of beauty / lack of solemnity>, <surface dealing (coating / coverage / fabrication)>	deco
	straight lines							<flat / straight>	
					high rise bldg			<capacity of RC>	
							no imitation of Japanese style (Nagare-zukuri)	<no imitation of Japanese style>	
					curtain wall system		no imitation of Japanese style, Secession not satisfying	<frame structure / curtain wall system / lintel system>, <new trends in Europe>, <no imitation of Japanese style>	

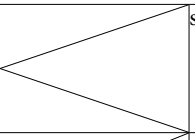
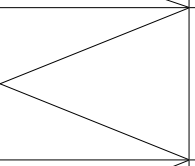
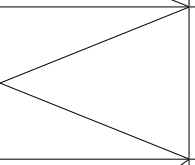
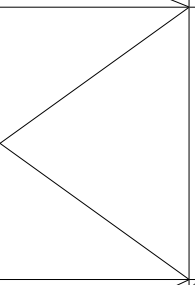
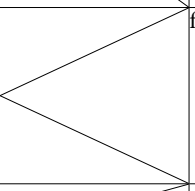
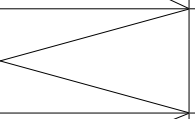
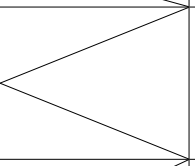
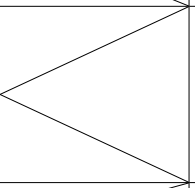
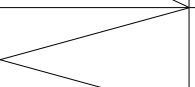
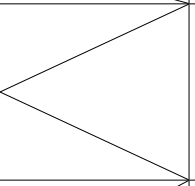
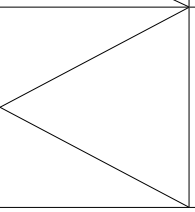
"佐野利器, “殖産的実用建築の美観”, Kenchiku-kougei-gyoushi (January 1915)： 1_2 第五はドレスデン市経営の瓦斯溜である。…第六はブレーメンに在る鉄筋コンクリートの倉庫であるが、…(no detailed description, industrial buildings with relatively simple appearance and minimal decoration, not modern)…予は曽て台北の郊外水源地にあるポンプ室を見たことがあった。恰も市中の官庁の如き形式で、而して其細部には緻密なる歴史的装飾が施されてあった。是等は其建築物の趣旨を誤ったもので、実用建築を美化しやうとする斯やうな努力は、決して成功したものとは思はれぬ。"	d	
"遠藤於菟, “鉄筋混凝土造の住宅建築”, Kenchiku-kougei-gyoushi (August 1915)： 4_5 然う云ふ人は、混凝土の方に重きを置き (ignoring the iron bar)、従って構造物に対する観念も、混凝土のみを以て造るが如くに見做す処から、壁の厚さが薄いとか、床の厚さが薄いとか、そんな事を云って、其の力即ち強さを非常に懸念する傾きがある。…仏国の於けるアパートメント・ハウス(p. 3)である。(中略)此の建築は、全部鉄筋混凝土造の構造であって、外部の装飾としては、石材及びテラカッタを貼付けたものである。(中略)其の上層は如何かと云ふに、三四五六階とも皆同じ構造であって、つまり此の建物は、六軒の貸家が上へ上へと重なって造られて居るのである。…爰に掲げた今一つの建築写真は仏国のブール・ラ・レーンに於けるヘネビックと云ふ人の別荘建築 (p. 5)である。(中略)如何に奇抜にして、且つ又如何に大胆なる構造でも、能く之を為し得らるると云ふ事を証明するに足るの実例となって居る。即ち此の建物の隅に見ゆる所の八角塔は、其の総重凡そ二百噸もあるのだが、それが十三尺以上も突出して、…之れに反して煉瓦造などになると、二階に間仕切のある場所には、其の下にも必らず間仕切を要するから、住居勝手の都合が悪くても、之れは構造上已むを得ないので、誠に不自由を感ずることがある。然るに鉄筋混凝土の建築に於ては、如何やうにでも都合の好いやうに間取りをする事が出来るから、…"	d	
"酒井祐之助, “酒井式ブロック構造に依る建築”, Kenchiku-kougei-gyoushi (December 1915)： 12_15 又壁の厚薄を、建築物の恰好に応じて、自由に調節せしむることも出来、亀裂を防ぐことも出来る。床の構造に至っては、普通の鉄筋「コンクリート」と大差はありませんのみならず、床構造に何れの式を採用するも、壁との取合せが簡単で、完全に出来ますから、…併し普通の鉄筋「コンクリート」構造は、壁が薄くして荘厳を缺く傾きがあるのみならず、往々雨水が侵入したり、寒暑の室内に影響すること等、種々の缺点がある由である、そこで、之等の諸缺点を補足することの出来るもので、…鉄筋「コンクリート」構造なるものは、殆んど外国の某式、某々式なるものの直写、又は混用の様に思はれます。併し何事も其国々に於て、風土、気候、習慣等の相違に応じ、適当なる構造を要求せらるるは、自明の理でありますから、早晩外国の直写的を脱し、日本国に適当したものの出現さるる時が来るのでありませう。(中略)高木男爵は、此最初の犠牲者となって、国家の為め、此新発明(concrete block)を採用せられた事と信じ、(Dozo-zukuri warehouse)…"	d	
"内藤四郎, “世界建築の趨勢”, Kenchikugaho (June 1911)： 32_34 (as the subtitle)鉄筋の時代　今日欧米の建築物は、将にコンクリートの時代で、煉瓦構造は極めて少なくなった。鉄筋へ薄く五寸位の厚さにコンクリートを施すのが一般の流風でである。而して石材の使用は何うかと言へば、全体より之を見ると、装飾用にのみ使はれて居る様である。花崗石を美しく磨き上げ、石材を以て建築材料の骨子と為すことは、殆んど皆無と言っても過言ではない。"	d	
"journalist, “鉄筋コンクリート造貸家”, Kenchikugaho (April 1912)： 16_17 (Mitsubishi's buildings in Kojimachi, Tokyo)鉄筋コンクリートを内壁とし、外部には化粧煉瓦色のテラケットを貼り、(中略)唯この一事に偏し、熊の如き男が褞袍を引っ懸けたやうなスタイルは、我が建築界に余り歓迎したくないと思ふ。"	dd	
"塚本靖, “明治神宮と建築様式”, Kenchikugaho (September 1912)： 14_15 明治神宮を建設することは私も賛成であるが、此建築様式は唯一神明造の様な在来の神社の様式を採る外はあるまい。…様式は然うであるが、材料構造に至っては最新式を採るべきである。…即ち鉄筋コンクリートを施して外面に木材を貼ると宜しい。"	d	
"SN学人, “表面仕上げに就て”, Kenchikugaho (March 1913)： 3 殊更に材料を偽はらんとするものがある。これを所謂模擬工事と云ふ。例之、荷受柱をコンクリート造と為て置きながら、其外部を薄い大理石で覆ひ、心からの大理石柱である如に見せ掛け、又は鉄板を折曲げて造った蛇腹などに、ペンキにて石の細粉を塗抹し、花崗石造の如く装ふなどの類である。斯の如きは時運の発展に伴へる外界の刺激に余儀なくせられたる姑息作ではあらうが、我が文明の建築物としては頗る心細い次第である。…この表面仕上げと云ふことは建築上極めて精緻を要する作業で、外観美を保持する為めには徹頭徹尾精巧を競ふべき重要なことである。乍然、模擬構造を以て外観美を糊塗しやうとするのは余りすべきことではなからうと思ふ。"	d	
"塚本靖, “建築界を顧みて”, Kenchikugaho (February 1914)： 2_4 (RC)壁が薄いために地面を経済的に使ひ得る所は、宛かも在来の日本建築の壁が薄いために軽快な気持ちが滂湃としてただよい、…後者(RC)は鳥籠のやうなものを組立てて行ってこれに壁を塗るのであるから構造の順序こそ違うやうに見えても其結果は同一である、かうなると鉄筋混凝土の建築は、単に日本人の趣味に一致するのみならず経済的、美術的、学術的の三方面から在来の日本建築と一致する、如上の理由から若し従来の日本建築に取って代る可きものは何かと云ふことになれば、私はそれはこの鉄筋混凝土に他ならぬと云ふ事を断言するのに憚らぬ。"	d	

						no historical deco	expression-ist industrial building in Germany	<manners denied>, <new trends in Europe>	
		no thin wall, no thin floor		[French apartment house] free plan	[French apartment house] high rise bldg (6 floors), [Villa Hennebique] overhanging octagon tower	[French apartment house] surface coverage (stone, terra cotta)	French apartment house, Villa Hennebique	<not light>, <free plan>, <capacity of RC>, <surface coverage>, <new trends in Europe>	free plan
		thin wall		free thickness of wall (block)	free thickness of wall (block), no crack (block), solemn image (block)	solemn image (block), lack of solemnity	Dozo-zukuri (block), no imitation of foreign styles	<light / thin>, <free size>, <concrete block>, <lack of beauty / lack of solemnity>, <no imitation of (Occident) historical styles>, <Japanese style / Japanese taste>	
		thin wall				stone as deco		<light / thin>, <manners other than surface coating / coverage / fabrication>	
						no coverage (terra cotta as the example)		<no coating / no coverage>	時報子
						wooden covering	Ise Shrine	<surface coverage>, <Japanese style / Japanese taste>	duplicate with KCZS
						surface dealing (no imitation of other materials)		<surface dealing (coating / coverage / fabrication)>	
		thin wall & large space, light image	thin wall & large space		frame structure	surface coating	Japanese taste	<light / thin>, <large space>, <frame structure / curtain wall system / lintel system>, <surface coating>, <Japanese style / Japanese taste>	Torikago, duplicate with KCSK

"奈良與三, “欧州の建築界に於ける新運動”, Kenchikugaho (December 1914)： 11_13 建築は他のアートよりも時代思想より後れる気味があったのは隠れもない事実である。此の理由は材料其の他の拘束があったからで、十九世紀から二十世紀へかけて科学の進歩に伴ふ材料及び構造法の自由は、一層時代思想に近づかすことを可能ならしめ、…之等を巧みに用ふる構造法が発明せられた。即ち鉄骨構造、鉄筋コンクリート構造等である。…建築は構造から別けると　一、フレームド・コンストラクション　二、ボンテッド・コンストラクション(bonded)　三、モウルテッド・コンストラクションとなる。[fallacious collage of melted and molten, or as moulded] (中略)そうして第三のが即ちコンクリート構造の如き新しきものである。…(RC)此の新材料の真価を発揮すべき様式はない。"	d	
"紫水子, “美的混凝土工”, Kenchikugaho (February 1915)： 23_26 全然材料の性質上、美的要素を備へて居ない混凝土使用に就ては多少前の箴言に反することもあらうが、科学的方面の研究の旺んなると共に混凝土を如何なる施工方法に依て装飾上に美的使ひ方をするのあらうか。…北米イリノイス州のオーク公園にある統一寺院(Wright)の建物は、普単一体性コンクリート造に過ぎないけれども、建物構成と同時に打上げて作った同一材料で装飾が施されて居る。(中略)設計者の多くは、その設計上の名誉を犠牲として迄も「マッチ」箱の様な不遠慮な建物で宇宙の大きな容積を満し、寧ろ美的方面を全然離れて、建物の大、材料使用の多少等実際の方面に於て設計の誇を数ふる愚を敢てして来たのである。其等の建物に比べると、此建物は単一体性コンクリート造の美的方面に於ける一大進歩として見逃すことの出来ない建物である。…ワシントン公園事務所 (Daniel H. Burnham) …而も二つ共に(with Wright's work) 単一体表面仕上げの好例であって、(中略)例へば此種の工事は湿煉 (high wate-cement ratio) コンクリートは必要でないと言っても、後者の一部緻密なる彫刻物に愉快な感じを与ふる様な功果を得やうと思へば、コンクリート造の建物の美は煉瓦や石と違ひ、決して表面の結構(トリートメント)にのみ依るものではないから、表面の結構と共に設計施工の注意を要するのであって、コンクリートの表面を完全に仕上げる為に一部湿煉コンクリートと、場所と物とを見分けて使用する要がある。…グレン・ウード旅館 (in California, unknown)…二十世紀の日干煉瓦のコンクリートブロックや、タイルを美術的に使った一例である。(plate: arcade of Mission style)"	d	
"紫水子, “美的混凝土工 (2)”, Kenchikugaho (March 1915)： 23_24 スロープ、ポリレクニック協会(in LA)…其の庭園には華麗な彫刻物数個を備へてゐる。それが全部鉄筋混凝土で出来たもので、その雌型は同地のアカデミーで製作せられ、紐育に於て施工を完成したものである。…フレデリック、スクエアー氏邸宅(中略)その手法は型に混凝土を流出する迄入れ、表面にモルタルの浮び出づる程度として、鋳型たるべき金属天井又は木彫の模様などをあてがひ、型諸共裏返へしになし、二週間以上経過して——混凝土の硬化の程度により多少期間に長短がある——型を取除けば其所に立派な模様付混凝土ブロックを得る。斯くして得たブロックを列べ用ふれば全体のものが一工作物として、美術的のものを得ることが出来る。(中略)此建物の趣味多き点は全体の羽目がブロックの集合で出来て居て尚ほ一工作物の様に見ゆる事である。一工作物に於て混凝土の構造が単一構造に陥り易く、且つ頗る無趣味であった過去の事実は、此方法を採用して充分に美的化することが出来る様になった。…アルバート・モエア氏邸…尚附属工事として、混凝土の表面に「モフビアン」陶器の装飾が施されてゐる。それは混凝土の表面に善く調和するもので、露台は陶器を敷き列べて居る。是れは特種の模様を象嵌する代りに使用したので、その形はバッス、レリーフで出来上り、設計には形象上何等の曲折はないけれども、此建物の用ひた葡萄蔓の意匠と共に稀に見る調和したものであらう。"	d	
"紫水子, “美的混凝土工 (3)”, Kenchikugaho (April 1915)： 17_19 此の建物は鉄筋混凝土用法の良例であって、(中略)此の建物は屋根迄総て鉄筋混凝土にして、屋根は「混凝土スラブ」葺の構造である。而して羽目や柱頭等の少しく複雑な凸凹ある箇所には「テラカッタ、タイル」を使用して居る。(中略)混凝土の外的装飾として、「テラカッタ」や、張付煉瓦の様な、彩色される集合体を使用する利益は、現今我国に於ても既に認められ、三菱二十一号館等もそれであるが、此方法は必ず利益であって、将来もきっと発達すべく、その張付け方法は大に考案を要する所である。混凝土自身に種々なる色合のものを得んとするのは今日の場合仲々困難のことで、将来とても此方面の発達は一寸望み得ぬだらう。故に色彩の変化は必ず他の補助材の力を待たねばならぬのである。(中略)且つ此材料に付随し来る美的観念から急勾配でない方が感じの良いものである。従って理想的の混凝土の家は陸屋根に作られて居る。…第七図に示したる様な格子工(ラティス、ウォーク=latticework)は混凝土の建物に繰形ある、混凝土片(ブロック)や「テラカッタ」等を使用したる装飾に調和せしむる為めに此邸宅を始め重なる亜米利加風の邸宅に使用して居る。(中略)「スタッコ」「ドレスコ」等の塗料を用ふるのがよろしい。尚ほ格子工の概念を与ふるために、木や混凝土で凸部を造らず壁の上に塗料で線を簡単に形付けして示すこともある。(中略)「スタッコ」や「ドレスコ」を混凝土表面仕上げに使用することは今日に状態に於ては最も面白いもので、建築材料として決して一時的のものではない。"	d	
"岡田信一郎, “建築に対する構造の価値”, Kenchikugaho (June 1915)： 鉄筋コンクリートの構造も同じく充分に理解されて居るとは認められない。其の鋳物的な、無関節の、エラスチックな性質は今日の鉄筋コンクリート建築では充分発揮されて居ない。今の所では在来の因襲的な形にどうにかして鉄筋コンクリートを応用してゐるに過ぎない。鉄筋コンクリート構造では柱も梁も若しくは床も壁も皆脈絡ある一つの固体であらねばならない。(中略)建築が其可鋳的性質條表面平板な四角な簡素の形態をとると云ふのは其一面である。ジョイントの無いエラスチックな性質を基にした新形式が創められねばならない。"	d	
"黒田鵬心, “停車場の建築（建築界時評）”, Kenchikugaho (October 1915)： 鉄と混凝土とが建築材料界に現はれ、非常な勢で用ひられて居り、其の構造法も可なり研究され、進歩しつつあるが、独り其の材料、構造に最も適応した様式、手法と云ふものは未だ現はれない。概して其の以前の材料、構造で出来た様式、手法を踏襲してゐるに過ぎない。…此新材料を用ふる為めに、従来より難しい構造が簡単に出来、或は従来不可能であった構造までも出来るやうになった。…停車場のプラットフォームを蔽ふ半円筒の雄大な屋根なども亦其の一例であると思ふ。"	d	

					[recent bldgs in Europe] casted object			<casted object>, <new trends in Europe>	
	no matchbox				[Unity Temple by Wright] as a single entity, [unknown hotel in California] concrete block for Mission style	lack of beauty, [Unity Temple by Wright] concrete as deco, [administration of Washington Park by Daniel H. Burnham] high water-cement ratio concrete for surface dealing	[unknown hotel in California] concrete block for Mission style	<not simple>, <as a single entity / monolithic>, <concrete block>, <lack of beauty / lack of solemnity>, <fabrication of RC>, <the US>	
					[Slope Polytechnic Association in LA] [concrete block as deco, concrete block for creating (mortar) joints], entity as boredom	[Slope Polytechnic Association in LA] [concrete block as deco, concrete block for creating (mortar) joints], entity as boredom, [House of Albert Mooer (transliteration)] surface deco (pottery)	the US	<as a single entity / monolithic>, <concrete block>, <lack of beauty / lack of solemnity>, <manners other than surface coating / coverage / fabrication>, <surface coverage>, <fabrication of RC>, <the US>	
	flat surface, flat roof					[House of Alfred Hopkins] [concrete panel for roof, surface coverage (brick, terra cotta), latticework, surface coating (stucco, doresuko?(unknown))], lack of beauty (color)	the US	<flat / straight>, <surface coverage>, <surface coating>, <manners other than surface coating / coverage / fabrication>, <lack of beauty / lack of solemnity>, <the US>	
	flat surface, simple shape				casted object, jointless, elastic, as a single entity		no imitation of historical styles	<simple>, <flat / straight>, <as a single entity / monolithic>, <casted object>, <rigid frame / elastic arch>, <no imitation of (Occident) historical styles>	
			roof of large vault		huge capacity of complex structure, roof of large vault		no imitation of historical styles	<large dome / roof>, <capacity of RC>, <RC as roof>, <no imitation of (Occident) historical styles>	

"瀧川鼎, “鉄筋コンクリート造の小住宅”, Kenchikugaho (February 1916)： 3_5 新らしき構造法に対する新しき様式の試み、それは正に新時代の建築家に与へられる絶好の謎であろう。…此頃鉄筋コンクリート造の小住宅の実例を得た。其簡単にして然かも意匠の自由なる、趣味津々たるを覚ゆる。…"	d	
"大江新太郎, “建築界時事論説:明治神宮宝物殿の設計変更に就いて”, Kenchikugaho (August 1916)： 28 入選者の中には日本建築古来の特色たる木材の表現法を採ったのもあったが、それを壁体主義[should refer to Azekura style]に改め近代建築の様式たる鉄筋コンクリートにしたのも此考へ[use changed from museum to treasure hall]に基いた為まである、鉄筋は七寸位の厚さで煉瓦壁体の三尺厚さ位のものに匹敵する力を持って居る、…"	d	
"黒田鵬心, “虚偽建築と真善美”, Kenchikugaho (October 1916)： 8_10 建築上の美とは、第一に表現である(=らしき)。(中略)第二には形式である(geometric)。(中略)第三には、実用上の快感である。…住宅を鉄筋混凝土で建てると、耐久の点はいいが、実用上の目的としてはあまり感心出来ない。又美の方から見ても、鉄筋混凝土の住宅は、表現上と実用上の快感との二点で、美の条件にあまりよく当嵌らないと思ふが公共建築ならば、表現上も実用上も快感としても美なるものとなり得る。"	dd	
"武田五一, “孚蘭区魯異度雷都氏の建築様式”, Kenchikugaho (December 1917)： 1_2 我邦の建築が次第に旧き材料を捨てて新しき材料に変遷しつつあるが為め其様式の上に将に大変化を来さんとしつつあるは識者の均しく認めつつある所なるも未だ我邦独異の新様式を樹立せるものあるを見ず、…雷都氏 (Wright) の様式に於て注意すべき美点は新材料コンクリート構造に最も適せるものなること之れなり。其直線配合の妙味は鋳造的構造の装飾に使用せられて最も効果ある貼付陶板の適用に好適するは衆目の見る所なり。…仏の其れ(Art Nouveau)は日本の骨董品に塺のもの(Secession)は日本現代の建築に著しき類似を有す、此際に当て同じく其淵源を我国芸術に得来れる雷都氏の様式は最も吾人の意を得たるものにして其主要なる線を水平垂直の二線となし其を結合して美妙なる格子となし其他の細部は一点一画を忽せにせず整正にして洒脱に肝要なる部位に極めて剴切 [=exactly suitable] にして要を得たる装飾を施せるは其効果に於て見るべきものあり含味して来て益す其妙味を増すが如し鬼才と云ふべし。"	d	
"journalist, “東京を上から見ると”, Kenchikugaho (August 1918)： 実は鉄筋コンクリートと、鉄骨の応用が発達して来たからである建築の様式も戦争前は独逸や塺太利で流行するセセッション式が大分行はれてゐる、これは建築の材料が多く独逸から供給を受けた関係にも依るであらう、戦争開始後は材料の輸入も杜絶したので自然此の様式も廃れ、主にルネサンス式が用ゐられ、次でゴシック式である、…近来の建築の特徴は外側は化粧煉瓦を用ゐること、屋上が平板になったことである、此れなどは鉄筋コンクリートの発達した賜である、…"	d	
"紫水子, “絵画館競技図案片々”, Kenchikugaho (November 1918)： 今一つ感じたのは鉄筋混凝土構造とするに比較的に縁の遠い日本風を、その構造に適用したために一寸与へられた予算で上りそうもなく見られた等も不利益な点でなかったらうか。"	dd	
"土居松市, “混凝土問題”, Kenchikugaho (February 1919)： 2_3 現在の我煉瓦造りなるものは高層建物で壁を厚くし床或は一部に鉄筋混凝土或は鉄材を用ゐ屋根は大概木造になって居る、故に壁を厚くする為め部屋の大きさが非常に縮少され従って鉄材や木材を混用し屋根は耐火的性質に缺て居る所がある、斯る缺点を補ひ得るものは鉄筋混凝土の構造を措いて外に無い、而して鉄筋混凝土は工事の期間は長くかかるが、建物の強さの点に於ては煉瓦に優ること数等である。"	d	
"住木直二, “建築芸術の新傾向に就て”, Kenchikugaho (November 1919)： 1_3 余は特に明治神宮宝物殿に於て其感を深からしめたり、(中略)一面構造上より観察する時は、即ち余が主張に反する装飾せんがために構造せるもの頗る多きと思ふ、(中略)建築美の革新は、鉄骨、鉄筋混凝土構造法の発達に伴ひ、形示上建築物の形状は殆んど類似のものとなり形示美は構造の犠牲を払ふにあらざれば殆んど得難き状態にあり、然も其美的方面は局部装飾集合装飾等の方法に依って其装飾的方面も亦偉大なる発達を遂げ、余の主張せる構造物を装飾するの基本に合一せるものあるを見る。"	d	
"journalist, “新機軸を開く神宮宝物殿”, Kenchikugaho (June 1921)： 4 (as the subtitle)世界建築界注視の的——鉄筋混凝土のあぜ倉造り——古今東西の様式を総合す——秋の大祭迄に竣工"	d	
"春陽, “新築枢密院庁舎を観る”, Kenchikugaho (December 1921)： 14_15 (枢密院)構造は鉄筋コンクリート造りであるが外見は天然石造の如く見える、それは此の種の建物に最も新しき試みとして外観は悉く人造石塗りに仕上げられたのであって、頗る雅趣あるものである。…(明治神宮宝物殿)明治神宮宝物殿が竣工しました。寧楽風の校倉式大床造りを御影石 [=granite] 張り鉄筋コンクリートで構造し、流れ造りを銅板で葺いた宝物殿の建築自身が好箇の明治時代を象徴する宝物です。生れ乍らにして宝物たる明治神宮宝物殿の建築の上に栄ゑあれ、とただ単に願って置きませう。"	d	
"加藤一男, “中毒せる建築”, Kenchikugaho (December 1922)： 8_9 鉄筋コンクリート建築法が、盛んなる勢を以て用ひられてきたから、石や煉瓦を以て造られたルネッサンスやゴシックは崩れる時代になったのである。鉄筋コンクリート構造は石造又は煉瓦造の如く大なる柱や厚き壁を要せず、充分に造り得る故、進歩したる建築法と云はねばならぬ、否寧ろ現今にありては是以上の物はないのである。建築の様式が材料に依りて変化するのは当然であるから様式を改きることに不賛成をするのではない、大いに勧むべきことであるが、博覧会の如き一時的の、人心を捉へる為に造られ建築の手法を、其儘一般建築物に用ゆるは大いに考ふ可きことであらう。"	d	

	simplicity			free design				<simple>, <free design>	next chapter not found
		thin wall					Japanese style (Azekura)	<light / thin>, <Japanese style / Japanese taste>	design: Ito, material [structure?]: Sano
						lack of beauty (form), beauty of -ness[表現, as it is] and practicality (public bldgs)		<proclivity of treatment>, <lack of beauty / lack of solemnity	
		chic details [Wright]				Wright (combination of straight lines, pottery tiles for casted structure), chic details	Wright (combination of straight lines, ceramic tiles for casted structure), Japanese taste	<chic>, <manners other than surface coating / coverage / fabrication>, <surface coverage>, <Japanese style / Japanese taste>, <the US>	
	flat roof					surface coverage (brick)	Secession	<flat / straight>, <surface coverage>, <new trends in Europe>	covering not directly connected with Secession
							no imitation of Japanese style	<no imitation of Japanese style>	紫水生
		thin wall & large space	thin wall & large space		RC as roof			<light / thin>, <large space>, <RC as roof>	strength of RC emphasized
					structure over deco	form [of deco] becoming similar, limited deco (to enhance structure)		<structure first>, <proclivity of treatment>, <manners denied>	
							Japanese style (Azekura)	<Japanese style / Japanese taste>	as is praised in the subtitle
						surface coating (artificial stone painting), surface coverage (granite),	Japanese style (Azekura), Nagare-zukuri	<surface coating>, <surface coverage>, <Japanese style / Japanese taste>	
		thin wall, slim column					no imitation of masonry bldg (Renaissance, Gothic), utilization of manners in expo bldg	<light / thin>, <no imitation of (Occident) historical styles>, <building types>	

"岡田信一郎, “プレート解説”, Kenchikuhyouron (May 1919)： 1 此の建物(Théâtre des Champs-Élysées)は全部鉄筋コンクリートより成って桟敷(seat)の構架其に新機軸を出して居る。始め鉄筋コンクリートは僅に四角な建物にのみ適用され、複雑なものには具合が悪いと考へられた、然し此の建築では、其桟敷等は受ける柱も無しに壁から拮出しに巧に構造され又其の全面の外観も快い曲線を描いて、建築材料と構造法と美観の三調子が具合よく調和し、完全に成就して居る。[enter]建物の正面外観も鉄筋コンクリート構造の特質を基礎となし、簡素な、原理的なものでアールヌーボーや又は現下の一般仏国建築のやうに贅沢な虚飾に富むだものではない。…猶ペレー兄弟は之より曩に1908年巴里のポンチアン街[Le garage Ponthieu]に構造的に徹底した自動車館を建設して人目をひいた。之も面白い建物である。"	d	
"journalist, “建築の革新”, Kenchikuhyouron (January 1920)： 1_4 第一合理的と云ふ点から観察すると——鉄筋コンクリートは近代文明の進歩を表象する現代最高の科学の力に依って哺育され大成せられた新材料、新構造である。…第二の経済的と云ふ点から観察すると、——鉄筋コンクリートの材料としての経済的なことも最早一般に承認せられて来た所である。…第三快感的と云ふ点から観察すると——まして之等の建築は建築の堅実性を与うると云ふ点に於て可からざる精神の満足を得らるるに於ておやである。(中略)斯くして次第に鉄筋コンクリート造の特徴が広く承認せられ普及せらるるに到ると人は其自然性に従って鉄筋コンクリート造の結構の合理性の美しさを感得して、之を以て其実際の力の感を生かした意匠を企てる様になり、又其結構の自由性の働き得る範囲内に於て之を活用して種々の人間の理想を語らんとし、或は又其面の感を最も現代人の感能に適する様に意匠して、其面より受くる印象を喜ばんとするが如き、幾多の精神的満足に向っての道を進むこととなる可きである。　斯くして鉄筋コンクリート造に依る独特の建築的形態が完成せらるるのである。そして之は決して木造や石造等の模倣や伝習に終るものでないのは勿論である。"	d	
"中村鎮, “最も新しい最も合理的な建築”, Kenchikuhyouron (March 1920)： 104_107 図に示すのは英国の建築家Maurice S. R. Adams氏に依って考案せられた戦争記念寺院の模型であるが、其形式が全く新しい事と、且つ其新しさが単に奇抜を衒ったのでなくて、新しいコンクリート構造に対する深い理解の上に起った、最も真摯な然も大胆な表現であることを見る時『これがあの保守的な英吉利人の計画であらうか』と疑ひを挟み度い位である。…其模型の示す通り、之は在来の石の尖頭拱の交錯穹窿の構造ではなくて、鉄筋コンクリートの楕円拱で出来た交錯穹窿である。(中略)恁うした場合(with the accumulation of the weight of structure itself)には前述の理由から抛物線の拱を架けるよりは楕円形の拱を架けたが合理的である。…尚は少し蛇足を加へ度い、それは斯かる新しい形でも其平面に構造に外観に幾多の歴史上の暗示がある事を一面に於て認めなければならないと云ふことである。其大体の形は中世紀前期の方法に、ビザンチン、及シリア、ササンペルシア等の影響がある。(中略)この建物の美しさを賛美する人は、それと共にこの歴史的の基礎に就て充分の観察をせられたら其処からも亦得られる事が少くなからうと思ふ。"	d	
"佐藤功一, “セセッション式建築”, Kenchiku-to-Soushoku (July 1912)： 40_45 壁面装飾(Peace Palace designed by Otto Wagner)として壁の表面に張り付けた石なども見らるる如く薄板を釘で取りつけたもので、どこまでも其真の性質を表わして居る、我々は習慣から此所の窓の上などは太い楣にするか或は楔形の石で迫持形にして、しっかりと上からの荷を受けて居る様に見えぬと一寸不思議に感じられるが実際其壁体が鉄骨か鉄筋コンクリートであるならばわざと必要もない楣や楔形石などを取り付けるよりも斯うする方が正直である。"	d	
"黒田鵬心, “建築界時評”, Kenchiku-to-Soushoku (December 1912)： 3_5 三井貸営業所の建築 [by 大塚泰、横河工務所所属] は材料構造の鉄骨、鉄筋コンクリートなのに注意すべきと同時に、其の様式手法に大なる注意を払ふ必要がある。殆んど真四角な凸た所も凹んだ所もない箱の様な六階建て、平面も立面もすべて直線直角で出来てゐる。斯う云ふと如何にも嫌な表現の建築だらうと見ない人は想像するであらうが事実は左様でない。貸営業所と云ふ建築から考へて十分適当な表現である許りでなく、卵白色の化粧煉瓦の壁と、花崗岩粉末を混じた漆喰塗の灰白色の柱とは可なりに美しく品もある。(中略)兎も角余は米国現代式の箱の様な建築を想像して嫌なものだらうと思って行ってみた所が、其の想像は殆んど破られた。併しこれが六階位だからいいが十階以上になると其の表現も全然変って、嫌なものになりはしまいか思ふ。"	d	
"伊東忠太, “鉄筋コンクリートと新様式”, Kenchiku-to-Soushoku (November 1913)： (い)和漢両系(和=wa refers to traditional wooden architecture of Japan, 漢=kan refers to masonry architecture of Western)を超脱し、しかも両系を自由自在に願使することが出来る。(ろ)無益な漢文系の難解の文字に脳まされたり、陳腐なる形容詞などに苦しめらるることが無い。(は)和文系にも漢文系にも屢見の所の迂遠にして要領を得ない弊を去て、直ちに要領を得ることが出来る。(に)新しい熟語でも文句でも遠慮なく創作して使用することが出来る。用語の出典用例などの詮議に苦しめられることが無い。(ほ)外国語でも俗語でも勝手次第に混用することが出来る。…今やセセッション主義が漸く勢力を得、真面目に研究されつつあるの秋に当り、鉄筋コンクリート建築が漸く勢力を得て、前途益要望ならんとするの徴を示すのは面白い現象である。両者相対照して考へて見ると、その間に甚大の趣味を感得せずには居らぬのである。"	d	

	[Théâtre des Champs-Élysées] [complicated shape, simple façade]	refreshing curve [Théâtre des Champs-Élysées]			[Théâtre des Champs-Élysées] overhang seats(no column)	[Théâtre des Champs-Élysées] no luxury deco of Art Nouveau or Secession	Auguste Perret (Théâtre des Champs-Élysées, Le garage Ponthieu)	<simple>, <not simple>, <chic>, <capacity of RC>, <manners denied>, <new trends in Europe>	
				free structure	expression of force as beauty of rationality		no imitation of wooden structure, no imitation of masonry bldgs	<free structure>, <structure first>, <no imitation of Japanese style>, <no imitation of (Occident) historical styles>	
					[Southport War Memorial by Maurice Adams] elliptical arch		[Southport War Memorial by Maurice Adams] implication of historical styles (Byzantine, Syrian, Sasanian)	<rigid frame / elastic arch>, <implication of historical styles>	
						[Peace Palace designed by Otto Wagner] surface coverage (nailed stone panel), no lintel or arch in apertures	[Peace Palace designed by Otto Wagner]	<manners denied>, <surface coverage>, <new trends in Europe>	relation between truth of structure and RC unclear
	flat surface, matchbox [Mitsui Rental Office], straight lines, [the US] matchbox					[Mitsui Rental Office]surface coverage (white brick), [Mitsui Rental Office] surface coating (plastering for columns)	American office bldg, Mitsui	<simple>, <flat / straight>, <surface coating>, <surface coverage>, <domestic>, <the US>	
				free manners of Japanese and Western architecture			Secession	<free eclecticism>, <new trends in Europe>	

"中村達太郎, “鉄筋混凝土と様式”, Kenchiku-to-Soushoku (November 1913)： 8_18 (RC)即ち極めて重宝なる材料で有ると云ふ事が確に其価値の一である。何が重宝であるかといふに、結構上実に自由自在に用ひ得らるるからである。或はメーソンリーとして之を応用する事も出来るが、又木鉄類似に骨組結構としても之を用ふることが出来る。…是の材料(RC)で出来得る構造上の種類に就て聊愚考のある所を明確にしたいと思ふのである。先づ其種類は　(一)団塊式構造。(二)畳重式構造。(三)骨組式構造。(中略)次に骨組式構造には二種類有りと言ふべきで有る。(イ)は鉄筋混凝土の本体の露出するもの、即ち柱梁等の存在を顕者なるものである。之を仮に「露出骨組式」と唱へやうと思ふ。尤も之をペンキ、セメント漆喰等を以て被覆しても斯く称するのである。次に(ロ)は鉄骨構造の鉄の柱梁の如く、石煉瓦等に包蔵されて混凝土製の柱梁等は存在を認められぬものである。之を「包蔵骨組式」と唱へやう。…余の考では、如何なる場合に於ても、決して包蔵主義を採り度く無いのである。是に於て壁面仕上に就て頗る困難が起るので、塗抹法、蠹蝕法、張付法、磨出法等あれど何れも荘重の感を与ふる事は出来ないと思ふ。寧ろ洒落若しくは素朴の感を起せしむるに適当であると考へる。是に於て余は左記(丙)の如く結論するのである。(丙)。答鉄筋混凝土造には素朴洒落なる様式を選定するを宜とす、セセッションの如き最も可なりである。但包蔵式及畳重式の構造の場合には敢て、様式に関して掣肘されることなし。[enter]茲に断はり置く事がある「包蔵」とは石積煉瓦積などを以て本躰を包裏して完く全形を隠匿することを言ふのだ。之に対して「被覆」とは張煉瓦、ペンキ、などで言ふことで、本躰の形態は其儘に存するものである。"	d	
"岡田信一郎, “コンクリート建築の採るべき形式”, Kenchiku-to-Soushoku (November 1913)： 之は全然仮枠を用ひずして、立派に便利にコンクリート構造が出来るやうになるに違いない。(中略)猶一つの改良はコンクリートの可浸透性である。之はコンクリートの性質を不浸透性ならしむるか、又は之に何かの被覆をやって、不浸透にする事で、…中でも特に面白いのは、其エラスチックで自由に如何なる形でも造る事が出来る点である。(中略)過去の石造建築で発達した様式を、此新材料で真似るのは無意義な事だ。コンクリートの建築形式は、宜しく過去を離れた新らしいものである可きだと思ふ。(中略)斯う云ったとて私はセセッション式等を唯一の形式と推するものではない。其の平板なる外部に平面装飾をやる点でコンクリート建築に適した一長所を持つと思うが、之が最良の式とは思はない。又過去の様式の石材等に於て発達したデティルを、其儘プラスチックな此材料にあてはめる事は不賛成だが、過去に意匠 (Egypt and Babylon) の暗示を求めて、新しい表現を得る事は適当なやりかたの一つだと信ずる。…兎に角今の所ではコンクリート建築は比較的に平板なもので、余計な凸凹が少ないもので、従って主として表面装飾で表現を得べきだと思ふ。石造建築に模倣を離れる事は急務である。"	d	
"前田松韻, “建築様式と鉄筋コンクリート”, Kenchiku-to-Soushoku (November 1913)： されば鉄筋コンクリートの近世の新工夫構造が様式に影響する点は余程微々たるものと考へらる。…殊に「アーチ」の如きは鉄材のみのときは「アーチドリップ」(arched rib)若くば「ツラスドアーチ」(trussed arch)となし小さなる径間の所には割合手数を要する不均、鉄筋「コンクリート」の場合に於ては比較的手軽に出来る訳であります。此等の点より鉄材のみのものより一層容易に形式を表現する適当なる材料があって、則ち当時の様式を自由に構造することが出来ます。…"	cons	
"山崎静太郎, “お答の一片”, Kenchiku-to-Soushoku (November 1913)： 建築はスタイルと呼ばるる因襲的の典型が種々存する。今新しい創作を生ずるに当って、この因襲に従へは最早そこにゼ、ホールとしての「新」といふ意義が成り立たない。…「新」は「ゼ、ホールとしての新」でなければならない。…建築に於ては第一にスタイルを離脱する事が「新」の意味を表示すべき第一程である。…故に将来鉄骨鉄筋コンクリートの上に行はるべき建築の形相は如何にといふ問題は、此の構法は如何なる新しい虚器(bldg or art without thoughts, mere form)によってドレッスされるかといふ事である。これに答へて曰く、その形式はセセッション式である。「式」の文字を沓に履いたセセッションである。今日謂ふセセッションが正しく「セセッション式」と呼ばれ得る後のその形式である。"	d	
"本野精吾, “鉄筋コンクリートと建築の形式”, Kenchiku-to-Soushoku (November 1913)： 鉄筋コンクリートが建築の形の上に及ぼす最も大なる影響はダイメンションの自由が他の材料に比較して著しく大きいと云ふ事であると想ふ。(中略)例へば一尺角の柱で外観上荘重の感に乏しい為め一尺三寸角にし度いと云ふ場合に、鉄材の減額とコンクリートの増額との差が極めて少なく、従って費用の上に大いなる相違なく外観上大ひなる変化を与ふる事が出来る。反対に瀟洒の感を与へたい場合に、九寸角にし様と云ふ事も出来る。… それ等 (materials before RC) 鉄筋コンクリートとを比較すると、後者に於てダイメンションの自由と云ふ事は著しく大きい。[enter] 次に形体の自由がある。形に於てはダイメンションよりは更に大きな自由がある。例へば窓の上の支へを直線にしても曲線にしても同様に出来る。… 最後に仕上げに就ては希臘で大理石の上に彩色を施こした様な工合に。随意の材料で蔽へば様々な表現が出来る訳であるから建築殊に建築の表現には余程都合のいい材料であると想ふ。"	d	
"佐藤功一, “新用途の建築と新材料”, Kenchiku-to-Soushoku (November 1913)： 様式と云ふ事は其のデテールや柱のプロポーションなど許りを云ふのではないと今日の自分は考て居る。プランにも様式はある一種の構造は一つの様式、丈けの高い或る型も亦一つの様式て見て差し支ない。…主観を貴ぶ二十世紀の選択主義(エクレクチズム)の時代であるものを。鉄骨摩天嶺が一つの様式であると云ふ例は、鉄筋コンクリートを例とした方がよく解かる。…鉄筋コンクリートは其骨(筋と云ふのが適当かも知れぬ)と肉とは一体として出来上がるもので、其れ丈けで既に建物の用途に充なものである。…何等か昔のデテールや形を附けるに適する様に、「簡単な形で済むと云ふ此の構造法の良点」を捨ててまで無理に骨や肉に余計な曲線や柱形などを附ける必要はない。(中略)そして其皮には昔しの型を真似たものもあるが、さうではない者が沢山に出来たのである、此所が面白い点だ。…唯其れを在りの儘に表はさず、又勿論一ツの様式に拘泥せずして自ら良しと思ふ歴史的モーチーブを随意に選択して、之れを主観をして或る形に作り出したものであると云ふ事が知られる。"	d	

	austere	chic		free structure (either masonry or frame structure)	free structure (either masonry or frame structure), bare frame structure (painting included)	lack of solemnity, bare frame structure (painting included), no total coverage to imitate other materials (stone, brick), surface dealing (brick coverage, painting) (preserve the form of structure)	Secession	<austere>, <chic>, <free structure>, <frame structure / curtain wall system / lintel system>, <lack of beauty / lack of solemnity>, <no coating / no coverage>, <surface dealing (coating / coverage / fabrication)>, <new trends in Europe>	Secession not connected with
	flat surface			free shape	no formwork, elastic	surface coverage, surface deco	no imitation of masonry bldg, no imitation of historical styles, implication of historical styles (Egypt and Babylon)	<flat / straight>, <free shape>, <rigid frame / elastic arch>, <no formwork / precasting>, <manners other than surface coating / coverage / fabrication>, <surface coverage>, <implication of historical styles>, <no imitation of (Occident) historical styles>	
				freedom to construct buildings of historical styles	ease to create arched rib and trussed arch (preserved)		Germany, the UK, Paris & NYC (cities mentioned)	<free eclecticism>, <RC as roof>, <new trends in Europe>	
							no imitation of historical styles, Secession	<no imitation of (Occident) historical styles>, <new trends in Europe>	山崎楽堂
				free dimension (size) of building components, free shape (window as the example)		surface dealing		<free shape>, <free size>, <surface dealing (coating / coverage / fabrication)>	
	simple shape, no complex curve or capital			free manners of historical styles (eclecticism)	as a single entity			<simple>, <free eclecticism>, <as a single entity / monolithic>	study of historical styles emphasized

"中村傳治, “鉄筋コンクリートと建築様式”, Kenchiku-to-Soushoku (November 1913)： 成程鉄筋コンクリートで造っても柱は柱、梁は梁迫持は迫持と云ふ様に応力の関係は昔からの材料と変化は無い併し今壁を拵らへるとして応力の関係は異ならないが、出来上った物は外部にConstructive Ornamentとなる可き目地も無ければ凹凸も無い一つの継ぎ目の無い物となるだらう。即ち斯ういふ様式をキャンチング(casting?)と云ふ事が出来る筈だ。…此上に鉄筋コンクリートを発達させやうと思ふならば、如何なる種類の装飾的建物でも、シャムコンストラクションをしないで、在来の物に優る結果を得る様に工夫しなくてはならないそこで自分は、鉄筋コンクリート装飾的価値を増すと云ふ事に二つの方法が有ると思ふ。一、コンクリート自身に装飾的価値を付ける事。二、コンクリートの表面を美しく仕上げる事。(中略)自分の考へるのには第一強さを表はす感じが変って来るだらう。(中略)其所で吾人が目地の無い迫持の無い楣の無い凹凸の少ない建築を想像して見ると、其所に在来の様式と変った物が浮んで来る筈である。…今日迄の建築様式と過去の建築様式との間に、一大区画が出来ると云ふ事は深く信じて疑がはない者である。"	d	
"上達武治, “鉄筋コンクリート構造と外観につきて”, Kenchiku-to-Soushoku (November 1913)： 本邦には古くより鉄筋コンクリート類似のものがあるではないか。即ち日本の壁を見よ、あれは鉄材こそ用ひないが、何所に今日の鉄筋コンクリートと異なる所があるか。其の製法は幼稚であるが、其の使用する考は全く違いはないのである。(中略)私の主張は本邦にも鉄筋コンクリート思想があったのを吾人が見ながら外国専売の如く称賛するものを大いに憾む所以である。[enter] 鉄筋コンクリートには色々の歴史がある、然して最もよく之を進歩させ改良したのは亜米利加である。アメリカは高層の家を連ねるに苦心する為めに鉄骨の進歩や鉄筋の進歩となった。故に鉄筋コンクリートの外観の研究もアメリカで最も良く研究されてゐる。…鉄筋混凝土になると従来の様式を用ふることが困難になって来る。…鉄筋は割合梁間の大なる楣式建築の一種の或る形式を成すのは自然である。其所で私は鉄筋コンクリート構造にてアーチや煉瓦造と同じ構造を取るは皆虚偽の建築であって鉄筋構造を鉄筋構造として立派なる設計とは云ふを得ないと思ふ。(中略)然るに此の特点を利用せずして隠す為めに故意に色々の手法や構造を施すことは技巧として良好かもしれぬが、自然に叛いた建築となることは当然である。…大体今迄の研究にては他の材料にて覆ふ方法は別として二大別することが出来るのである。手法の美 [surface fabrication]、色彩の美[surface colorization]…以上述べたる所は大体に過ぎぬが、鉄筋コンクリート構造の外観としては鉄筋コンクリートの特性である所の家が一つの塊であるの表現を外面にも表はさなければ鉄筋コンクリートの外観を無視した者となってしまう。故に何所迄も偽らざる構造でなくてはならない。之の構造を遺憾なく外観にも示して壁面の手法や、天然の材料の色等に依りて得来れる其の表現が建築家が将来持来るべ造多数の鉄筋コンクリート構造の家屋に対して自分の個性や自己の理想の実現もし表しもし易き方法である。"	d	
"曾禰達蔵, “鉄筋混凝土の長所と短所”, Kenchiku-to-Soushoku (November 1913)： 例へば最も考ふ可きは、之は建築材料ではあるが装飾的のものではなくて全く構造的のものである。…それ故[steel structure adopted from industrial bldgs to other genres]鉄筋コンクリートも最初は植木鉢から発達して倉庫工場に及び之から大厦高楼に及ぼうとして居るので、まだ発達の中途にあるものである。…発達上から見て最も眼を着ける可きは、之を如何に覆ふ可きかと云ふ事である。或は後来之を覆ふ事なく其ままを表現する様になるかも知れぬ。…次にこの鉄筋材料の特長として薄くして堅牢になる性である。(中略)それで何とか之を荘重にせねばなるまいが其ため壁を厚くするなどの事をやれば切角[should be 折角]の特長を零にしなければならぬ。…此頃日本でも出来る様になったテラコッタを用ふる様にしたら宜しからうと思ふ。…要するに鉄筋コンクリートは構造的には偉大であるが装飾的には之から何かなる可き時であると思ふ。"	d	
"武田五一, “鉄筋コンクリート雑感”, Kenchiku-to-Soushoku (November 1913)： 鉄筋コンクリートで造った壁の厚さの薄いことは、煉瓦造石造等に目馴れた人の目には一寸危険を感ぜられる、「見かけの強さと」云ふことが建築上必要なれば致方もなけれど。こは畢竟捕はれたる見方に過ぎない、…此構造法は全然アーチを必要としないで、楯柱の架構式の方に近い、日本建築の形式はよく此種の構造に適して居る。我国の新建築形式は此構造材料あって初めて創造の緒に就たものと信ずるのである。…我国の料拱の制は全然意義を失ふて来る何か其れに代るべき新しき或形式を考へるの必要が迫って来て居る。…鉄筋コンクリート構造の建築の色調をして不快なる灰色の單(単)調に陥らしめる欠点があるが、しかしてもよい憂に過ぎない。表面に塗るべき材料の色にて如何様にもなるし、又セメントの代わりに白セメントを使ふ之れは杞わけである。…之からの建築家は此便利な道具(RC)を使うて、思ふが儘に其天才を発揮せねばすまないわけである。"	d	
"中村鎮, “鉄筋混凝土と建築”, Kenchiku-to-Soushoku (November 1913)： 当時[1908 in Taiwan, projects of RC buildings]にあっては私の胸の中にも何等の鉄筋コンクリートに関する独特の形式の完成など云ふ考えはなかった。…私はこの新材料をクラシックや日本建築の表現の為めの奴隷にせいよとは言はない。然し又必ずしも之を以て彼のセセッションの如きものを作れとも言はない要は作者の主観其者にある事と思ふ。即ち作者はこの新材料の性質や特長を充分理解した上に於て之を自分の芸術的表現の最も自由な材料として用ふるにある事と思ふ。[enter]若し作者が此所にクラシックの何物かに暗示を得て其を表現しやうとする時に於て、其が石でなくては其感を表はす事が全然出来ないものならば兎も角、もし必しも表現上石である事を要さない場合に於て其施工上鉄筋コンクリートを用ふれば大に自由に表現さる場合があったとしたら、其時は即ち作者の主観の表現のためにこの新材料が今までの材料よりももっと力強く働く場合である。…或人々は又此の新材料を以て家を作るのには平面的のものが最も便利であるから結局マッチ箱の様なものになりはしないかと云ふ様な半ば失望的の意見を以って居らるる事と思ふ。然しこれは其を憂ふる為の憂であってあまり憂にすぎた事と思ふ物が平面的であると云ふことは差程苦にする事ではないと思ふ。(中略)よし現代の思想界があまり今日迄の芸術の無意義の賑やかさに反感を持って簡単な幼稚なものに内生命の真に漲って居るのを喜びつつあるとしても其は無意義の豊かさをのみ夢みて居たローマンチレズムに対しての簡単である。其が建築の如きに来て必ずしもマッチ箱のみを作ると早合点してはならない。…然し其は先の思想上の考へが変ったのと同様生活上からの変化である。即ち建築が思想と材料とによって成る所以のものである。之を以て鉄筋コンクリートの形式と混同する事は出来ない。"	d	

	flat surface				constructive ornament, jointless (継目, should be structural), casted object, expression of force, no lintel or arch	decorative concrete, surface dealing	no imitation of historical styles	<flat / straight>, <structure first>, <as a single entity / monolithic>, <casted object>, <reduction structure>, <manners other than surface coating / coverage / fabrication>, <fabrication of RC>, <no imitation of (Occident) historical styles>	
			lintel system with large span		lintel system with large span, no arch, as a single entity	no coverage, surface fabrication [the US], surface colorization [the US]	learning from the US, no imitation of historical styles, no imitation of masonry bldgs, surface fabrication [the US], surface colorization [the US], similarity with Japanese architecture	<large span>, <as a single entity / monolithic>, <frame structure / curtain wall system / lintel system>, <reduction structure>, <no coating / no coverage>, <fabrication of RC>, <no imitation of (Occident) historical styles>, <Japanese style / Japanese taste>, <the US>	
		thin wall, light image				surface dealing(coverage, coating or bare concrete), terra cotta		<light / thin>, <manners other than surface coating / coverage / fabrication>, <surface dealing (coating / coverage / fabrication)>	mainly as the popularization of RC
		thin wall			no arch, frame structure	lack of beauty (color), surface coating, colorization (white cement), no RC for building components of traditional Japanese architecture	no RC for building components of traditional Japanese architecture	<light / thin>, <frame structure / curtain wall system / lintel system>, <reduction structure>, <lack of beauty / lack of solemnity>, <manners denied>, <surface coating>, <fabrication of RC>, <no imitation of Japanese style>	
	flat surface, simplicity, matchbox			as free material for artistic (personal) expression			no imitation of Classical architecture, no imitation of Japanese style	<simple>, <flat / straight>, <free design>, <no imitation of (Occident) historical styles>, <no imitation of Japanese style>	

Appendix D

Architectural projects for statistical analysis

The projects are basically sorted by code. The codes are not continuous, only for uniquely marking the projects. Projects with no information of construction period or in overwhelming Japanese motif are already removed in the stage of analysis, which are also not recorded here.

For duplication, KCZS = *Kenchikuzasshi*, KCSK = *Kenchikusekai*, KCGH = *Kenchikugaho*, ZSSK = *Kenchikuzasshi* and *Kenchikusekai*, ZSGH = *Kenchikuzasshi* and *Kenchikugaho*, SKGH = *Kenchikusekai* and *Kenchikusekai*, ZSSKGH = *Kenchikuzasshi*, *Kenchikusekai*, and *Kenchikugaho*.

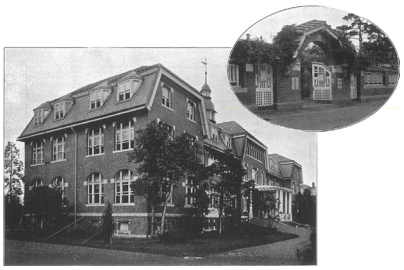
All the alias of structural forms and components align with chapter 4.

For (architectural) treatment, cv and ct stand for covering and coating, aSt and TC stand for terra cotta and artificial stone.

The figures behind façade pattern, wall element, window element and door element stand for the aggregation levels of visual elements.

For abbreviations in note, "g=", "w=", "f=", "b=", and "c=" stand for general structural form, wall, floor, beam and column. MTS stands for the series of *Nihon no Kenchiku: Meiji, Taisho, Showa*, published by Sanseido.

Detailed projects: 259-341; simple projects: 342-397.



code: 2 **聖心女学院**

city: Tokyo duplication: SKGH 1st published: 1911

use: schoolhouse academic cnstrctn period: 1908 — 1909

info type: detailed strctr system: Wframe

wall: W-Br floor: C&W beam: W column: W

treatment: St=cv

strctr source: KCSK191103_appndx_p.1

façade pattern:	5	portico;pitched rf;cupola;simple(rf) tripartition;nested symmetry
wall element:	0	
window element:	1	arch
door element:	1	column;canopy

original info about strctr	KCSK: 本館軸建張付煉瓦積三階建…外壁は軸建焼過煉瓦張付け二段乃至三段目に平違錻を以て繋付け積込石材は胴蛇腹及窓廻り相州産の横根沢石か叩とし…一、二階床梁は総て松材を使用し床板は亜米利加松を用ひ三階の床は畳敷となしまた洗面室及浴室は各コンクリート叩きとなし
note	see also Tokyo100_p34



code: 9 **帝国劇場本館**

city: Tokyo duplication: ZSSKGH 1st published: 1908

use: theatre cultural cnstrctn period: 1907 — 1911

info type: detailed strctr system: Sframe

wall: S-Br floor: RC&W beam: S column: S

treatment: Br&St=cv;metal=cornice

strctr source: KCZS190802_p.87; KCSK191106appndx_p.4

façade pattern:	4	simple symmetry;simple tripartition;vertical wndw array;pitched rf;cupola
wall element:	5	column;cornice / moulding;frieze / architrave;balustrade / parapet;foliage
window element:	5	pediment;keystone;foliage;arch;round window;trim / quoin
door element:	0	canopy

original info about strctr	KCSK: 構造ハ(omitted)英国ヨリ輸入ノ鉄骨ヲ以テ組成シ壁厚サハ煉瓦長手一枚半(omitted)外部ハ腰及窓廻リハ稲田御崗石ヲ使用シ其他窓廻リ胴蛇腹其外共凡テ備前伊部焼白煉瓦ヲ以テシ軒蛇腹ハ鉄骨金属板張リニテ特ニ舞楽面ノ彫刻ヲ打出シ…内部各階広間、便所主ナル階段等ノ床ハ凡テ鉄筋入コンクリート構造ニシテ其他ハ木造二重床板トセリ
note	see also Tokyo100_p53



code: 18 **警視庁**

city: Tokyo duplication: SKGH 1st published: 1911

use: administrative government cnstrctn period: 1906 — 1911

info type: detailed strctr system: masonry

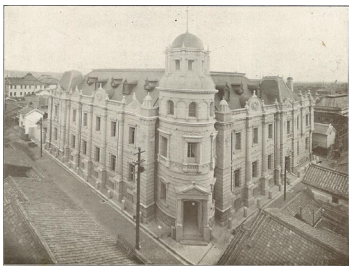
wall: Br floor: W beam: column:

treatment: not found

strctr source: see also Tokyo100_p10; 震害及火害之研究_p.27

façade pattern:	6	simple tripartition;nested symmetry;dome;pitched rf;cupola;portal
wall element:	3	ashlar / rustication;cornice / moulding;balustrade / parapet
window element:	7	column;corbel;pediment;keystone;arch;trim / quoin;cornice / moulding
door element:	4	arch;corbel;pediment / gable;keystone

original info about strctr	Tokyo100_p10: 煉瓦造 震害及火害之研究_p.27: 基礎一松杭打地業、軸部一煉瓦造、壁体一煉瓦造、床一木造、屋根一木造「スレート」葺
note	KCSK191103news_p.77: g=Br; KCSK191005news, KCSK191202, 03news: no structure info



code: 19 **三菱合資会社大阪支店**

city: Osaka duplication: ZSSK 1st published: 1910

use: office bldg office bldg cnstrctn period: 1907 — 1910

info type: detailed strctr system: masonry

wall: Br&S-Br floor: LC beam: S column: S

treatment: St=cv;TC=windowframe

strctr source: KCZS191102_p.110-116;KCSK191103_appndx_p.2-3

façade pattern: 6 simple(rf) tripartition;tower;pitched rf;dome;cupola;cmpnd symmetry
wall element: 6 column;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 4 column;pediment;keystone;trim / quoin
door element: 2 column;pediment / gable

original info about strctr	KCZS: 本建築外壁厚さは地中階に於て煉瓦長手四枚乃至四枚半(omitted)一階に於て同三枚半乃至四枚二階に於て三枚乃至四枚とし…銀行営業室の周囲は特に鋼骨構造とし一階二階を通じて四枚の壁厚を有せしめ米国カーネギー製鋼会社製作の形鋼柱十七本…一二階の床は前記米国カーネギー製鋼会社製の工形鋼梁を用ひて(omitted)其他の床(2f)は米国スチールワイヤ会社特製のトライノンギュラーメツシスチールワイアレンフォースメントを用ひ鋼梁上に厚五六吋の鋼筋混凝土を打立つ; KCSK: 軒廻りは主として白色「テラコッタ」を使用し…壁面の下層は大島産花崗石を用ゐ(omitted)側石上は北木島産花崗石の整層粧石積にして…
note	



code: 31 **大蔵省専売局新築**

city: Tokyo duplication: ZSSK 1st published: 1909

use: administrative government cnstrctn period: 1908 — 1911

info type: detailed strctr system: Rmasonry

wall: RBr floor: C&W beam: S&W column:

treatment: St=cornice

strctr source: KCSK191107_appndx_p.1; KCZS190904_p.178

façade pattern: 4 simple tripartition;tower;pitched rf;cmpnd symmetry
wall element: 1 cornice / moulding
window element: 2 arch;keystone
door element: 2 keystone;arch

original info about strctr	KCSK: 壁部ノ材料ニハ金町煉瓦株式会社製煉瓦ヲ主用シ側石蛇腹其他ノ部分ニ花崗石及白丁場石ヲ混用ス其外壁及中仕切壁ノ全部ニ亘リ鉄ばーると并ニ平鉄ヲ以テ構成セル締聯鉄ヲ三層ニ挿入シテ…床構造ニハ専ラ木材ヲ資用セルモ大室ノ床梁ニハ鋼鉄梁ヲ混用シ尚第二階合議室床ハ湯沸室及使丁室等ノ直上ニ位スルヲ以テ特二鉄梁混凝土造トナシ耐火的ニ構成セシメタリ、
note	see also Tokyo100_p9; KCZS190904_p.178: "防火床"; Earthquake report_p.521: finished in 1910, w=RBr,f=W



code: 36 **浅草国技館**

city: Tokyo duplication: ZSSKGH 1st published: 1911

use: arena cultural cnstrctn period: — 1911

info type: detailed strctr system: Wframe

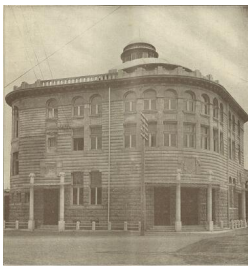
wall: floor: beam: W column: W

treatment: plaster=ct

strctr source: KCZS191106_p.358

façade pattern: 4 tower;dome;cmpnd symmetry;cupola
wall element: 2 balustrade / parapet;arch
window element: 2 keystone;round window
door element: 0 canopy

original info about strctr	KCZS: 営業上経済的の建築にせんとのことに方針一変し鉄骨を木骨に変化したるを始めとして更に新規設計をたてられたもの…外部は図にて見る如く色漆喰仕上げで…
note	KCZS191106_p.358: originally designed as steel frame, appearance adjusted due to the change of structure, construction expected to be finished in 191111; see also Tokyo100_p49



code: 43 **大日本私立衛生会**

city: Tokyo duplication: SKGH 1st published: 1911

use: office bldg office bldg cnstrctn period: 1910 — 1911

info type: detailed strctr system: masonry

wall: Br floor: W beam: S column:

treatment: St=cv

strctr source: KCSK191107news_p.91

façade pattern:	4	nested symmetry;simple tripartition;portico;dome;vertical wndw array
wall element:	3	ashlar / rustication;balustrade / parapet;cornice / moulding
window element:	1	arch
door element:	1	canopy;column

original info about strctr	KCSK: 石及び煉瓦造スレート葺き三階建にして小屋組に鉄材を用ひ Earthquake report: (煉瓦造に分類)壁厚1.5B, 高42尺, 丸屋根高68尺, 床木造, 屋根ドーム鉄骨 steel beams shown in the drawing of section in KCSK191108 structure of columns cannot be identified in the drawings in KCSK191108, 191110
note	Earthquake report_p.522: finished in M44, g=Br,f=W, dome in steel frame; Tokyo100_p47: コンクリート、ブロック及鉄筋コンクリート造



code: 44 **新築柏原洋紙店**

city: Tokyo duplication: SKGH 1st published: 1911

use: shop small-scale cnstrctn period: 1910 — 1910

info type: detailed strctr system: Wframe

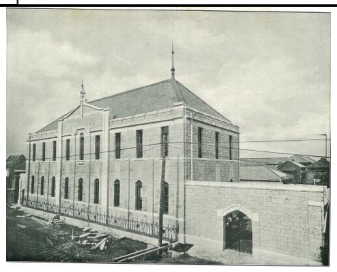
wall: floor: RC beam: W column: W

treatment: not found

strctr source: KCGH191109_plate

façade pattern:	6	partial symmetry;simple tripartition;pinnacle;tower;pitched rf;cupola
wall element:	4	pediment / gable;cornice / moulding;ashlar / rustication;corbel
window element:	2	arch;keystone
door element:	2	keystone;arch;canopy

original info about strctr	KCGH: 木骨組織なり。二階床は鉄筋コンクリートにて張詰め、…
note	



code: 62 **東京中央電話局本所電話分局新築**

city: Tokyo duplication: KCSK 1st published: 1911

use: telecom post&telecom cnstrctn period: 1910 — 1911

info type: detailed strctr system: masonry

wall: St floor: W beam: S&W column: S

treatment: aSt=ct

strctr source: KCSK191110appndx_p.1

façade pattern:	4	pinnacle;pitched rf;simple symmetry;simple(rf) tripartition
wall element:	3	pilaster;balustrade / parapet;cornice / moulding
window element:	1	triangular arch
door element:	1	triangular arch

original info about strctr	KCSK: 本館石造二階建…外壁の各必要なる部分には豆州産月出石を以て小叩き仕上積込み胴蛇腹下た各窓毎ペネル人造石塗とし…二階梁は松材使用大梁は鉄板を積み階下鉄柱にて支え床面は交換室事務室を亜米利加松にて専売床張とし
note	see also 明治大正期の逓信建築_p.166



code: 81 **新築千葉県庁舎**

city: Chiba duplication: KCSK 1st published: 1912

use: administrative government cnstrctn period: 1907 — 1912

info type: detailed strctr system: Rmasonry

wall: RBr floor: RC beam: S column: SLC

treatment: St=cv;mortar=ct

strctr source: KCSK191202appndx_p.2-3

façade pattern: 5 nested symmetry;simple tripartition;dome;portico;pitched rf

wall element: 7 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage

window element: 4 pediment;arch;keystone;cornice / moulding

door element: 4 column;pediment / gable;cornice / moulding;frieze / architrave

original info about strctr	KCSK: 一階及二階に在りては外壁二枚内壁二枚の煉瓦造にして耐震上各所に締連鉄を挿入し…、腰蛇腹以上は要部の花崗石を除き、石材との調和を保つ為め総て特種の手法を施したる「モルタル」塗とし…上部に位せる諸室は、其床を最近流行に係る鉄骨鉄筋混凝土構造とし、支柱の如きも鉄線及び「コンクリート」を以てこれを被覆し完全なる耐火構造にせり
note	



code: 82 **鉄道院万世橋停車場本館**

city: Tokyo duplication: ZSSKGH 1st published: 1911

use: railway station transportation cnstrctn period: 1909 — 1911

info type: detailed strctr system: masonry

wall: Br&St floor: C beam: S column:

treatment: Br=cv

strctr source: KCSK191201appndx_p.1-4; KCGH191112_p.32-34

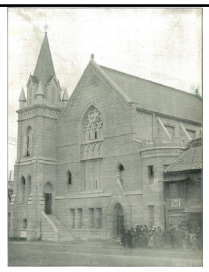
façade pattern: 5 cmpnd symmetry;simple(rf) tripartition;tower;pitched rf;cupola

wall element: 5 pilaster;cornice / moulding;ashlar / rustication;arch;foliage

window element: 6 pediment;corbel;pilaster;cornice / moulding;frieze / architrave;keystone;foliage

door element: 0 canopy

original info about strctr	KCSK: (階下) 天井は階上階下共木摺天井にして鉄梁に野縁受を渡し普通の通り施行せり… KCGH: 側及仕切は煉瓦及石積にして(omitted)表面には仝社特製磨きの二五分及半升を以て小口積の化粧張になし…二階床は全部コンクリート打にして三十尺持放の処にIビーム十八吋七吋を約七尺間に架渡し… shape of column not found in the floor plans in KCSK191201
note	KCSK191007news_p.70: g=Br&St, completion expected in 1911; Tokyo100_p52: 煉瓦造



code: 86 **日本メソヂスト銀座教会会堂**

city: Tokyo duplication: SKGH 1st published: 1912

use: church religious cnstrctn period: 1911 — 1912

info type: detailed strctr system: masonry&Wframe

wall: St floor: beam: column: W

treatment: not found

strctr source: KCSK191202, 03, 04_plate; Tokyo100_p21

façade pattern: 4 cmpnd symmetry;pitched rf;pinnacle;tower

wall element: 2 buttress;cornice / moulding

window element: 4 pointed arch;trefoil arch;rose window;trim / quoin

door element: 2 pediment / gable;pointed arch

original info about strctr	KCSK: grid of wooden columns inside the building shown in the drawings of floor plans in KCSK191203, 04. a few wooden columns in three sides of walls, not as grid, 2nd floor connected with the walls through laid-down I shape girder. overall structure as wooden frame wrapped in masonry shell Tokyo100_p21: 石及木造
note	



code: 92 **株式会社秀英社**

city: Tokyo duplication: ZSSKGH 1st published: 1912

use: office bldg office bldg cnstrctn period: 1910 — 1911

info type: detailed strctr system: Sframe

wall: S-Br floor: C&W beam: S column: S

treatment: Br=cv;plaster=ct

strctr source: KCZS191204_p.183-184

façade pattern: 2 even wndw array;simple tripartition;partial symmetry
wall element: 4 cornice / moulding;pediment / gable;frieze / architrave;foliage
window element: 3 lintel;arch;keystone
door element: 3 column;frieze / architrave;cornice / moulding

original info about strctr	KCZS: 本館煉瓦造三階建及一部四階建…壁体は鉄骨煉瓦造にして…二階床の大部分は鉄骨「コンクリート」構造の耐火床なり其他各階の床梁共全部工字梁にして(omitted)各階床板は杉板割の二重張なり…外壁は金町製瓦会社特等煉瓦を用ゐ石校は白丁場産小叩き仕立軒蛇腹は亜鉛引鉄板張同下部白色化粧煉瓦の張付とす
note	Tokyo100_p79: 煉瓦造、右側窓なき所は特許北田式安全倉庫あり



code: 111 **日比谷公園事務所**

city: Tokyo duplication: SKGH 1st published: 1912

use: accessory accessory cnstrctn period: 1911 — 1911

info type: detailed strctr system: masonry&Wframe

wall: Br&W floor: C&W beam: column:

treatment: pebble-dash&paint=ct

strctr source: KCSK1912appndx_p.2

façade pattern: 2 arcade;pitched rf
wall element: 1 ashlar / rustication
window element: 0
door element: 1 arch

original info about strctr	KCSK: 床板張畳敷き及コンクリート叩き壁は半地中階にては側壁玉石及腰煉瓦積間仕切木造及煉克積とす、一階にては側壁及間仕切共木造、外部南京下見張及ペツプルダツシユ塗木部メリグナム及ペンキ塗
note	



code: 115 **株式会社十五銀行日本橋支店**

city: Tokyo duplication: ZSSK 1st published: 1912

use: bank financial cnstrctn period: 1908 — 1911

info type: detailed strctr system: Rmasonry

wall: RSt floor: C beam: S column:

treatment: plaster=ct;St=cv

strctr source: KCZS191209_p.443; KCSK191207appndx

façade pattern: 2 simple(rf) tripartition;nested symmetry
wall element: 7 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 4 pilaster;keystone;foliage;cornice / moulding;balustrade
door element: 3 pilaster;cornice / moulding;frieze / architrave;foliage

original info about strctr	KCZS: 階上は工形鋼梁に孤状海鼠板挿し込み更に石炭殻「コンクリート」填充…壁根積上、胴蛇腹部、軒蛇腹部の三段に碇聯鉄を敷設要所に径一寸の「ボールト」を貫通せしめ…壁塗は白漆喰仕上げにして… KCSK: 壁に使用せる石材は都て堅牢なる鋲、鉄太枘を以て接合せしめ尚各種の繋鉄物を以て裏積壁と結合せしめ
note	KCSK191201news, KCSK191207appndx "壁心三段に碇聯鉄"; Tokyo100_p66: 鉄骨煉瓦造外部石張付



code: 144 **株式会社秋田銀行**

city: Akita duplication: KCSK 1st published: 1912

use: bank financial cnstrctn period: 1909 — 1912

info type: detailed strctr system: Rmasonry

wall: RBr&RSt floor: W beam: W column:

treatment: Br&St=cv

strctr source: KCSK191211appndx_p.1

façade pattern: 5 simple symmetry;simple(rf) tripartition;tower;pitched rf;cupola
wall element: 2 cornice / moulding
window element: 4 corbel;pediment;cornice / moulding;frieze / architrave;foliage
door element: 2 arch;keystone;foliage

original info about strctr	KCSK: 煉瓦造にして壁厚は地盤より(omitted)壁に使用せる石材は委く鉄物を以て裏積煉瓦壁に密着せしめ(omitted)夫々特種の鉄材を使用して接合し均一の一体となるを期し且つ階上階下に幅二寸五分厚三分の帯鉄を埋め込み以て耐震的ならしむ…二階床は根太板を木造とし其各根太間に漆喰塗…外部は大阪窯業株式会社の化粧煉瓦石を使用
note	



code: 151 **三菱貸事務所十四号館**

city: Tokyo duplication: KCSK 1st published: 1912

use: rental office office bldg cnstrctn period: — 1912

info type: detailed strctr system: RCwf

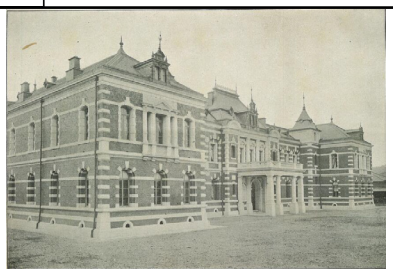
wall: RC floor: beam: column:

treatment: TC=cv

strctr source: KCSK191203news_p.81

façade pattern: 3 even wndw array;tower;cupola;partial symmetry
wall element: 3 pediment / gable;balustrade / parapet;cornice / moulding
window element: 4 cornice / moulding;lintel;trim / quoin;balustrade
door element: 2 cornice / moulding;corbel

original info about strctr	KCSK: 様式はレネッサンス式にて三階建鉄筋コンクリートの構造なり十四號から十七號迄に来る三月末日竣エの都合にて (omitted) 軒高各三十六尺あり前記の鉄筋コンクリート壁と外部には化粧煉瓦色のテラカッタを貼り三階に洗出し屋根はスレート葺の下にアスヘストを敷き…
note	Mistsubishi Estate history_p.190: finished in M45.4.4, w=RC,f=W



code: 156 **大日本赤十字本社**

city: Tokyo duplication: ZSSKGH 1st published: 1912

use: office bldg office bldg cnstrctn period: 1909 — 1912

info type: detailed strctr system: Rmasonry

wall: RBr floor: W beam: S column:

treatment: St=pile

strctr source: KCZS191301_p.60-61

façade pattern: 5 nested symmetry;simple(rf) tripartition;portico;pinnacle;pitched rf
wall element: 4 column;cornice / moulding;frieze / architrave;quoin
window element: 6 arch;keystone;pilaster;pediment;frieze / architrave;trim / quoin
door element: 6 column;cornice / moulding;frieze / architrave;arch;keystone;balustrade / parapet

original info about strctr	KCZS: 壁厚階下三枚階上二枚半積間仕切二枚積とし根積上胴蛇腹部軒蛇腹部の各層に碇聯鉄を挿入し其要所に径一寸長二尺の「ボールト」を貫通せしめ…階上床は床梁各室に応じて成ィ二十吋より十吋に至る工形鉄梁を用ゐ之れに根太を掛渡し…石材は外部並に内部階段、地覆等に常州産花崗石を使用し
note	Earthquake report_p.535: g=Br, b=S, f=W, no column; Tokyo100_p41: 煉瓦石混合造; see also Earthquake report_photo462



code: 157 **生命保険会社協会**

city: Tokyo duplication: ZSSKGH 1st published: 1913

use: office bldg office bldg cnstrctn period: 1910 — 1912

info type: detailed strctr system: masonry

wall: Br floor: C beam: S column:

treatment: Br=cv;St=brim

strctr source: KCSK191302_appndx_p.1

façade pattern:	5	porch;tower;pitched rf;cmpnd symmetry;simple tripartition
wall element:	5	pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication
window element:	8	lintel;arch;keystone;corbel;cornice / moulding;pediment;balustrade;pilaster;foliage
door element:	3	cornice / moulding;frieze / architrave;column

original info about strctr	KCSK: 全部を煉瓦造とし周壁の外面には化粧煉瓦を張り窓及出入口の周辺建物の脚部其他の要所には花崗石白丁場石を使用して装飾を施したり各階の床は鋼鉄梁と「コンクリート」を以て耐火床を構造し
note	see also 震害及火害之研究_p.61: w=Br, f=SC (fire proof); Tokyo100_p45: 煉瓦造



code: 167 **村井銀行神田支店**

city: Tokyo duplication: ZSSKGH 1st published: 1913

use: bank financial cnstrctn period: 1912 — 1912

info type: detailed strctr system: masonry

wall: Br floor: W beam: W column:

treatment: Br&St&tile=cv

strctr source: KCZS191403_p.189

façade pattern:	3	simple symmetry;vertical wndw array;pitched rf;portal
wall element:	4	pilaster;pediment / gable;cornice / moulding;foliage
window element:	2	arch;trim / quoin
door element:	3	pediment / gable;arch;keystone;foliage

original info about strctr	KCZS: フーティングを置き側壁は煉瓦造とし床梁及小屋組木造なり。…外壁は稲田産花崗石及煉瓦混造にして其石間はタイルはりとなし… no grid of columns identified in the floor plans in KCSK191302. except one in the lobby
note	two main façades



code: 168 **農商務省原蠶種製造所新築建物**

city: Tokyo Pref. duplication: KCSK 1st published: 1913

use: office bldg office bldg cnstrctn period: — 1912

info type: detailed strctr system: Wframe

wall: W floor: W beam: W column: W

treatment: plaster&paint=ct

strctr source: KCSK191302_appndx_p.2

façade pattern:	4	simple symmetry;portico;pinnacle;pitched rf
wall element:	2	pediment / gable;cornice / moulding
window element:	2	pediment;trim / quoin
door element:	5	cornice / moulding;frieze / architrave;balustrade / parapet;pilaster;column

original info about strctr	KCSK: 木造二階建て腰廻り煉瓦積み外側石粉入りモルタル塗り…床板張り…壁大壁漆灰塗外側下見板筋面張木部ペンキ塗
note	



code: 191 **村井銀行京都四条支店**

city: Kyoto duplication: ZSSK 1st published: 1913

use: bank financial cnstrctn period: 1911 — 1912

info type: detailed strctr system: masonry

wall: Br&St floor: beam: S column:

treatment: Br&St=cv

strctr source: KCZS191404_p.250

façade pattern: 6 porch;dome;vertical wndw array;arcade;cmpnd symmetry;simple(rf) tripartition;colonnade

wall element: 7 column;pediment / gable;cornice / moulding;frieze / architrave;ashlar / rustication;balustrade / parapet;foliage

window element: 4 trim / quoin;cornice / moulding;frieze / architrave;keystone

door element: 4 column;cornice / moulding;frieze / architrave;trim / quoin

original info about strctr	KCZS: 正面及右側は北米産花崗石と張付煉瓦の混造にして… 基礎はコンクリート地形にして側壁は煉瓦及石材混造二階梁I形鉄を用ひ屋根は木骨なり。 wooden floor (根太) identified the drawing of details in KCSK191306 structure of columns cannot be identified in the drawings in KCSK191305, 191306
note	



code: 205 **愛国生命保険株式会社**

city: Tokyo duplication: SKGH 1st published: 1913

use: insurance financial cnstrctn period: — 1912

info type: detailed strctr system: Rmasonry

wall: RCBlk floor: beam: column:

treatment: tile=cv

strctr source: Tokyo100_p.75; 震害及火害之研究_p.25

façade pattern: 4 nested symmetry;simple tripartition;tower;pitched rf

wall element: 5 pilaster;pediment / gable;cornice / moulding;frieze / architrave;foliage

window element: 3 keystone;trim / quoin;foliage;pediment

door element: 2 trim / quoin;keystone

original info about strctr	Tokyo100_p.75: 混凝土ブロック造 震害及火害之研究_p.25: 基礎ー「コンプレッソル」式地業、軸部ー「コンクリート・ブロック」鉄筋積込、壁体ー「コンクリート・ブロック」石造及タイル貼付…高サ三階ニシテ鉄筋ヲ積込ミタル壁厚厚キ「コンクリート・ブロック」造ナルト、… shape of column not found in KCSK191308
note	see also 明治の建築伊東黒田: finished in M45



code: 225 **村井銀行本店**

city: Tokyo duplication: ZSSKGH 1st published: 1913

use: bank financial cnstrctn period: 1911 — 1913

info type: detailed strctr system: Sframe

wall: S-Br&St floor: RC beam: S column: S

treatment: Br&St=cv

strctr source: KCZS191402_p.138

façade pattern: 4 simple symmetry;compound tripartition;vertical wndw array;colonnade;portal

wall element: 7 column;cornice / moulding;frieze / architrave;balustrade / parapet;corbel;quoin;foliage

window element: 5 corbel;pediment;arch;keystone;column

door element: 4 arch;keystone;cornice / moulding;balustrade / parapet

original info about strctr	KCZS: 骨構は鋼鉄材にて側壁は煉瓦及び石材を以て積み鉄柱を其の中に包ませ石材は各一個に付二個所以上の引鉄物にて鉄骨へ結続せしめ床は鉄筋入りコンクリート打となし…正面及左側は殆ど全部花崗石積にして少部分に張煉瓦を用ひ右側は胴蛇腹以下全部花崗石積上部は張付煉瓦とし see also the drawings of details in KCZS191402
note	Tokyo100_p64: 帳壁式鉄骨構造、外部石及タイル張; multiple main façades



code: 232 **神奈川県庁警察本部**

city: Yokohama duplication: SKGH 1st published: 1913

use: administrative government cnstrctn period: 1910 — 1912

info type: detailed strctr system: masonry

wall: Br&St floor: RC&W beam: S column:

treatment: Br=cv

strctr source: KCSK191402appndx_p.3

façade pattern:	5	nested symmetry;simple(rf) tripartition;porch;pitched rf;cupola
wall element:	6	pilaster;cornice / moulding;frieze / architrave;pediment / gable;ashlar / rustication;foliage
window element:	5	corbel;cornice / moulding;trim / quoin;arch;keystone
door element:	5	corbel;pilaster;arch;keystone;cornice / moulding

original info about strctr	KCSK: 構造は県庁舎本館と同一にして… (see also code 240)
note	現代之横浜出版部 編. 現代之横浜_p.64: finished in M45.6



code: 234 **岩井商店**

city: Tokyo duplication: SKGH 1st published: 1913

use: shop small-scale cnstrctn period: 1911 — 1913

info type: detailed strctr system: Sframe

wall: S-Br floor: RC beam: S column: S

treatment: St=cv

strctr source: KCGH191310_plate

façade pattern:	2	even wndw array;quasi-symmetry;tower
wall element:	3	pilaster;pediment / gable;cornice / moulding
window element:	1	pilaster
door element:	2	pilaster;frieze / architrave

original info about strctr	KCGH: 鉄骨石皮煉瓦造。外皮は稲田産花崗石を用ひ裏面腰部は須賀川石。石裏及各壁面は煉瓦積とし別に構造及装飾用楔として人造石を使用す。屋根は鉄骨構造上部鉄筋コンクリート打とし、スレート及銅板を被覆し、内部床は各階共鉄梁の上に鉄筋コンクリート構造を施す。…
note	Tokyo100_p90: 煉瓦造擬石塗



code: 238 **新築上智大学**

city: Tokyo duplication: SKGH 1st published: 1914

use: schoolhouse academic cnstrctn period: — 1913

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: not found

strctr source: Tokyo100_p32; 震害及火害之研究_p.91

façade pattern:	2	tower;portico
wall element:	1	balustrade / parapet
window element:	1	lintel
door element:	1	balustrade / parapet

original info about strctr	Tokyo100_p32: 煉瓦造 震害及火害之研究_p.91: 軸部及壁体一煉瓦造、床一木造、屋根一木造
note	Earthquake report_p.520: g=Br,f=W; Tokyo100: 煉瓦造; Tokyo100: finished in T3.10; 震害及火害之研究_p.91: finished in T2.3



code: 240 **神奈川県庁舎新築本館**

city: Yokohama duplication: SKGH 1st published: 1913

use: administrative government cnstrctn period: 1910 — 1912

info type: detailed strctr system: masonry

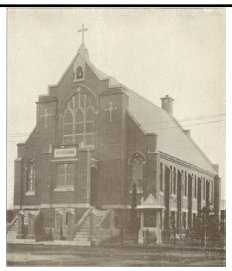
wall: Br&St floor: RC&W beam: S column:

treatment: Br=cv

strctr source: KCSK191401appndx_p.2

façade pattern: 5 nested symmetry;vertical wndw array;portico;tower;pitched rf;simple tripartition
wall element: 8 column;pilaster;quoin;pediment / gable;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 5 trim / quoin;pediment;arch;keystone;foliage;round window
door element: 2 pediment / gable;pillars

original info about strctr	KCSK: …(階下床面)以上は却て普通煉瓦石を畳積し外部表面は備前国伊部焼特製煉瓦を装飾す…地下室に暖房汽缶を設くるが為め其上部の床は鉄製防火構造とし其他は鋼鉄梁を骨子とし之れに木材を切組みて構造す(omitted)洗面所厠は鉄筋「コンクリート」床に「アスファルト」を塗布し… no grid of columns identified in the floor plans in KCSK191402
note	現代之横浜出版部 編. 現代之横浜_p.64: finished in M45.6



code: 248 **新築札幌組合教会**

city: Sapporo duplication: KCSK 1st published: 1914

use: church religious cnstrctn period: — 1913

info type: detailed strctr system: Wframe

wall: W-Br floor: W beam: W column: W

treatment: not found

strctr source: KCSK191404_plate

façade pattern: 3 simple symmetry;portico;pitched rf
wall element: 2 pilaster;buttress
window element: 1 pointed arch
door element: 1 arch

original info about strctr	structural components identified in the drawings of details in KCSK191404
note	新札幌市史 第3巻 通史3_p.600: finished in T2



code: 251 **紅葉屋銀行**

city: Tokyo duplication: ZSSKGH 1st published: 1914

use: bank financial cnstrctn period: 1913 — 1914

info type: detailed strctr system: masonry&Wframe

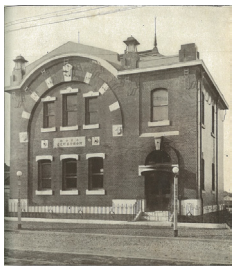
wall: Br&W floor: C&W beam: column:

treatment: aSt=ct;Br=cv

strctr source: KCZS191402_p.139

façade pattern: 5 nested symmetry;simple tripartition;tower;vertical wndw array;dome;pitched rf
wall element: 5 column;cornice / moulding;ashlar / rustication;foliage;pilaster
window element: 1 balustrade
door element: 0 canopy

original info about strctr	KCZS: 本館構造外壁は階下胴蛇腹まで煉瓦造とし其れより上は木造とす、床は金庫、書庫、公衆室、玄関はコンクリート造とし他は木造とす屋根は木造とす。壁は腰石まで花崗石を使用す其れより以上は擬石塗、卵色張付煉瓦を使用す、軒、蛇腹等亜鉛引鉄板ペンキ塗とす…
note	KCSK191401news: only treatment info; 清水組彩色設計図集vol.1_p.189: 1f=Br; Tokyo100_p71: 階下胴蛇腹まで煉瓦造、上部木造擬石塗及煉瓦張付



code: 256 **新築河合銀行番町支店**

city: Tokyo duplication: SKGH 1st published: 1914

use: bank financial cnstrctn period: 1912 — 1912

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: Br=cv

strctr source: KCGH191401_plate; Earthquake report_p.520

façade pattern:	4	partial symmetry;pinnacle;pitched rf;cupola
wall element:	3	pediment / gable;cornice / moulding;arch
window element:	2	lintel;arch
door element:	2	arch;canopy;keystone

original info about strctr	KCGH: 煉瓦造化粧煉瓦張地下室共三階建 Earthquake report_p.520: 長壁の長6間、壁厚階下2B、階上1B、高30尺、開口南面普通北面小、床及び小屋木造…
note	



code: 263 **東京帝国大学法科大学講堂**

city: Tokyo duplication: KCSK 1st published: 1914

use: schoolhouse academic cnstrctn period: 1912 — 1914

info type: detailed strctr system: masonry

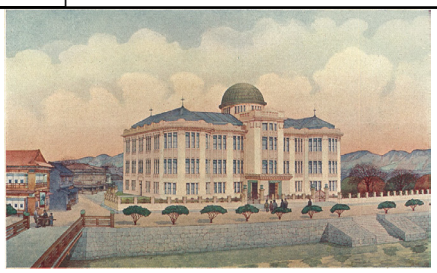
wall: Br floor: RC beam: RC column:

treatment: Br=cv;St=brim

strctr source: KCSK191405appndx_p.1

façade pattern:	3	nested symmetry;vertical wndw array;pinnacle;pitched rf
wall element:	4	pediment / gable;pilaster;cornice / moulding;frieze / architrave
window element:	3	pointed arch;trim / quoin;rose window
door element:	2	trim / quoin;pointed arch

original info about strctr	KCSK: 側及間仕切壁共煉瓦積とし各床及階段等は鉄筋「コンクリート」を以て構成し二階鉄筋コンクリート梁は五十尺の梁間に架渡しあるを以て世界中に於ても有数のものにして柴田博士の計算せられたるものなり小屋組は鉄骨とし屋根は裏板張リ「スレート」葺とす…外部化粧煉瓦積石腰石等は花崗石其他窓廻り胴蛇腹及軒廻り等の石材は月出石を使用し… RC beams and floors inserted in brick walls, in the drawing of details in KCSK191409 no grid of columns found in the floor plan in KCSK191405
note	



code: 274 **広島県物産陳列館**

city: Hiroshima duplication: KCSK 1st published: 1914

use: commercial large-scale cnstrctn period: 1913 — 1915

info type: detailed strctr system: Rmasonry

wall: RBr&RSt floor: W beam: RC&S column:

treatment: not found

strctr source: KCSK191407_plate; KCSK191410_plate

façade pattern:	4	nested symmetry;even wndw array;portico;dome;pitched rf
wall element:	3	pilaster;cornice / moulding;balustrade / parapet
window element:	0	
door element:	1	balustrade / parapet

original info about strctr	KCSK191407_plate: 煉瓦及石造 beams in the walls of central part (under the dome) and front identified as RC (simple stirrups), in the landing of stairs as S, floors with wooden features, 1st floor Doric columns not cast with RC, possibly as deco, in KCSK191410 plates no grid of columns found in the floor plans in KCSK191407
note	Construction period can be found on wikipedia (https://ja.wikipedia.org/wiki/%E5%BA%83%E5%B3%B6%E7%9C%8C%E7%94%A3%E6%A5%AD%E5%A5%A8%E5%8A%B1%E9%A4%A8). (202309 accessed)



code: 285 **新築高田商会**

city: Tokyo duplication: SKGH 1st published: 1914

use: office bldg office bldg cnstrctn period: 1911 — 1914

info type: detailed strctr system: masonry

wall: St floor: Br&C beam: S column:

treatment: not found

strctr source: KCZS191407_p.389-390

façade pattern: 3 simple symmetry;vertical wndw array;pitched rf;compound tripartition
wall element: 5 pilaster;pediment / gable;cornice / moulding;ashlar / rustication;foliage
window element: 3 arch;keystone;balustrade;foliage
door element: 2 arch;keystone

original info about strctr	KCZS: 外壁は全部石造の建築で…各階共床は鉄梁を使用し煉瓦陸道持(compared to 迫持?)積「コンクリート」打とし「セメントモルタル」塗「リノリューム」敷
note	tiny picture in KCZS; KCSK_plate: 鉄骨石造KCSK191407news_p.111: structure same as KCZS; Tokyo100_p88: 鉄骨石造



code: 291 **三井銀行大阪支店**

city: Osaka duplication: KCSK 1st published: 1914

use: bank financial cnstrctn period: 1913 — 1914

info type: detailed strctr system: Sframe

wall: S-Br&St floor: RC beam: S column: S

treatment: not found

strctr source: KCSK191409_plate; KCSK191401news_p.107

façade pattern: 2 simple tripartition;simple symmetry
wall element: 6 column;pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;foliage
window element: 5 pediment;keystone;corbel;frieze / architrave;balustrade
door element: 3 keystone;pediment / gable;corbel;foliage

original info about strctr	KCSK191409_plate: 鉄骨石造 KCSK191401news_p.107: 全部独逸産の巨石煉瓦鉄骨の三種を用ゐ…各階の床に用ゐるカアーン式の鉄筋にてことは大阪のみならず東京方面に行くも未だ曽て使用されたる事なき…
note	Kahn System; see also Lalande新発見作品集_p.430



code: 297 **横浜取引所**

city: Yokohama duplication: KCSK 1st published: 1914

use: exchange financial cnstrctn period: — 1913

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: not found

strctr source: KCSK191412_plate

façade pattern: 4 portico;colonnade;pitched rf;nested symmetry
wall element: 7 balustrade / parapet;pediment / gable;pilaster;column;cornice / moulding;frieze / architrave;foliage
window element: 7 cornice / moulding;keystone;arch;pediment;round window;trim / quoin;pilaster;foliage
door element: 5 pediment / gable;column;cornice / moulding;frieze / architrave;balustrade / parapet

original info about strctr	brick walls and wooden floors indentified in the drawings of details in KCSK191412, KCSK191501
note	横浜遊覧商業案内_p.31: rebuilt in T2; building divided as two independent bodies



code: 302 **三越呉服店**

city: Tokyo duplication: ZSSKGH 1st published: 1914

use: department large-scale cnstrctn period: 1911 — 1914

info type: detailed strctr system: Sframe

wall: S-Br&RC floor: RC beam: S column: S

treatment: Br&St=cv

strctr source: KCZS191504_p.204-205

façade pattern: 4 compound tripartition;simple symmetry;tower;portal
wall element: 2 balustrade / parapet;cornice / moulding
window element: 3 arch;keystone;column
door element: 5 column;arch;keystone;cornice / moulding;frieze / architrave;canopy

original info about strctr	KCZS: 構造はカーテン、ウォール式の鉄骨で、それに鉄筋コンクリートと煉瓦で大体の壁を造り、床及び階段は全部鉄筋コンクリートであります。…東側と北側の大窓のスパンドレルは鉄筋コンクリートでありますが、其他は総て煉瓦壁で、外部使用した石は稲田産花崗石と万成石で煉瓦の部分は日本窯業会社製品の白色煉瓦を張付けしました。 see also the drawings of details in KCZS191505
note	RC walls for sixth floor (behind balustrade / parapet / parapet and main facade) and parts above; construction period in MTS7_p.181; KCSK: 鉄骨石煉瓦; Tokyo100_p84: 鉄骨鉄筋混凝土及煉瓦造、表面装飾煉瓦張付; Doric capital



code: 303 **新築東京信託株式会社**

city: Tokyo duplication: SKGH 1st published: 1914

use: office bldg office bldg cnstrctn period: — 1912

info type: detailed strctr system: Rmasonry

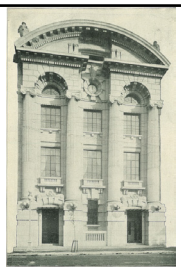
wall: S-Br floor: W beam: column:

treatment: Br=cv

strctr source: KCSK191411_plate

façade pattern: 3 cmpnd symmetry;simple tripartition;dome
wall element: 5 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave
window element: 5 pediment;lintel;arch;keystone;corbel
door element: 3 cornice / moulding;pediment / gable;pilaster

original info about strctr	KCSK: 鉄骨煉瓦造に化粧煉瓦を張付け Earthquake report_p.525: 長壁の長12間、壁厚一階及び二階2B、三階1.5B、高40尺、柱形3B*1B、9尺及び18尺間、開口少、間仕切壁なし、床及び小屋木造。 no grid of steel frame found in the drawings of floor plans in KCSK191411
note	Earthquake report_p.525: finished in T1



code: 306 **森村銀行本店**

city: Tokyo duplication: ZSSKGH 1st published: 1914

use: bank financial cnstrctn period: 1911 — 1914

info type: detailed strctr system: Sframe

wall: SRC floor: RC beam: S column: S

treatment: St=cv

strctr source: KCZS191411_p.592-593

façade pattern: 2 simple symmetry;vertical wndw array;compound tripartition
wall element: 6 column;corbel;pediment / gable;cornice / moulding;ashlar / rustication;foliage
window element: 4 trim / quoin;keystone;arch;balustrade
door element: 2 arch;keystone;foliage

original info about strctr	KCZS: (壁工事)鉄柱鉄梁を組み平均厚七寸乃至一尺「鉄筋コンクリート」にて打ちかたむ特に正面には厚二尺の「鉄筋コンクリート」打固め其の表面ほ常州羽黒産花崗石積とす (床工事)鉄梁をかけ「鉄筋コンクリート」にて造る
note	see also 森村銀行 KCSSRS_5_19vol6bank_p259; KCSK191412plate: g=SSt; KCSK191412news: structure same as KCZS; KCSK: 鉄骨石; Tokyo100_p65: 鉄骨鉄筋コンクリート、正面花崗石張付



code: 320 **東京中央停車場（東京駅）**

city: Tokyo duplication: ZSSKGH 1st published: 1910

use: railway station transportation cnstrctn period: 1908 — 1914

info type: detailed strctr system: Sframe

wall: S-Br&St floor: RC beam: S column: S

treatment: not found

strctr source: KCZS191512_p.838; 震害及火害之研究_p.40

façade pattern: 7 cmpnd symmetry;simple tripartition;portico;tower;dome;arcade;pitched rf

wall element: 4 pilaster;balustrade / parapet;ashlar / rustication;frieze / architrave

window element: 7 arch;keystone;corbel;cornice / moulding;pediment;pilaster;trim / quoin

door element: 9 column;pediment / gable;cornice / moulding;frieze / architrave;arch;keystone;trim / quoin;balustrade / parapet;cupola

original info about strctr	KCZS: 鉄骨煉瓦造 震害及火害之研究_p.40: 軸部一鉄骨構造煉瓦積。壁体一煉瓦及石積。床一鉄筋混凝土耐火構造
note	Obayashi Group 80yr history_p.69: construction period from M41.3-T3.3; 震害及火害之研究_p.40: f=RC (fire proof); Tokyo100: 補強式鉄骨煉瓦造; existing bldg



code: 333 **住友銀行東京支店**

city: Tokyo duplication: ZSSKGH 1st published: 1915

use: bank financial cnstrctn period: 1913 — 1917

info type: detailed strctr system: Sframe

wall: S-Br floor: RC beam: S column: S

treatment: Br&St=cv;aSt=ct;S&St&aSt=brim

strctr source: KCZS191710_p.760

façade pattern: 4 simple symmetry;simple tripartition;dome;colonnade

wall element: 6 column;balustrade / parapet;cornice / moulding;ashlar / rustication;frieze / architrave;foliage

window element: 7 arch;keystone;trim / quoin;cornice / moulding;frieze / architrave;foliage;pediment;round window

door element: 1 canopy;trim / quoin

original info about strctr	KCZS: 壁体 本館は鉄骨煉瓦造にして外面は主として伊豫国大島産花崗石及化粧煉瓦を使用す(omitted)外部は擬石塗…床 本館及附属家は鋼梁を掛け鉄筋「コンクリート」造とし…出入口及窓額縁は鉄、大理石、鉄平石、人造石など
note	KCSK191711_plate: g=SBr; KCSK: 鉄骨煉瓦及石煉瓦張付コンクリート混用



code: 335 **八十四銀行本店**

city: Tokyo duplication: ZSSKGH 1st published: 1913

use: bank financial cnstrctn period: 1912 — 1913

info type: detailed strctr system: masonry

wall: Br floor: C&W beam: S column:

treatment: Br&St=cv

strctr source: KCZS191404_p.251

façade pattern: 4 nested symmetry;simple tripartition;vertical wndw array;tower;dome

wall element: 7 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage

window element: 4 trim / quoin;lintel;arch;keystone

door element: 4 column;cornice / moulding;frieze / architrave;pilaster

original info about strctr	KCZS: 煉瓦造家屋にして外面は稲田産花崗石及び日本窯業会社製貼附化粧煉瓦を以て之を被覆し…屋根は鉄梁に鉄筋コンクリートを以て構造せる no grid of columns identified in the floor plans in KCSK191504 paired I-shape steel beams as girder; 3rd floor as wooden structure, 4th floor wooden framing above concrete grounding wrapping the steel girders and beams, in KCSK191505 possibly I-shape columns in the walls, not clear enough to be identified
note	roof girder=S,roof=RC; KCSK191311: g=Br; KCSK191504_plate: g=Br&St



code: 337 **日本銀行京都支店**

city: Kyoto duplication: ZSSK 1st published: 1906

use: bank financial cnstrctn period: 1903 — 1906

info type: detailed strctr system: masonry

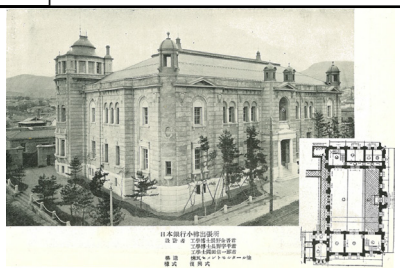
wall: Br&St floor: C&W beam: S column:

treatment: Br=cv

strctr source: KCZS190611_p.747

façade pattern:	4	nested symmetry;simple(rf) tripartition;pitched rf;porch
wall element:	4	pilaster;balustrade / parapet;cornice / moulding;foliage
window element:	5	corbel;pediment;cornice / moulding;arch;keystone
door element:	2	arch;corbel

original info about strctr	KCZS: 外壁は(omitted)花崗石と煉瓦表積に大阪窯業会社製化粧煉瓦又裏積に同社製並焼煉瓦を用ふ…一階に於ては工形梁を架し其間波形鉄板を掛渡し「コンクリート」を填充す(omitted)二階床は総て木造とす。
note	KCSK: 煉瓦石



code: 338 **日本銀行小樽支店**

city: Otaru duplication: ZSSK 1st published: 1912

use: bank financial cnstrctn period: 1909 — 1912

info type: detailed strctr system: masonry

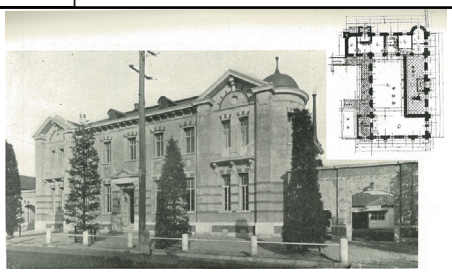
wall: Br&St floor: W beam: S column:

treatment: cement&mortar=ct

strctr source: KCZS191210_p.500

façade pattern:	7	pinnacle;nested symmetry;porch;tower;pitched rf;cupola;simple(rf) tripartition
wall element:	5	pediment / gable;cornice / moulding;pilaster;frieze / architrave;foliage
window element:	6	frieze / architrave;pediment;column;arch;keystone;trim / quoin
door element:	3	cornice / moulding;frieze / architrave;column

original info about strctr	KCZS: 壁 主として煉瓦積にして外側腰部及窓出入口廻りは備中国北木島花崗石を使用す(omitted)外面はセメントモルタル塗を施す。床及小屋組 鉄構造にして事務室の床板は北海道産蝦夷松材を用ひ…
note	roof built with concrete; KCSK: 煉瓦セメントモルタール塗



code: 339 **日本銀行福島支店**

city: Fukushima duplication: ZSSK 1st published: 1914

use: bank financial cnstrctn period: 1912 — 1913

info type: detailed strctr system: masonry

wall: Br floor: S beam: S column: S

treatment: cement=ct;Br=extrusion;St=brim

strctr source: KCZS191409_p.501

façade pattern:	5	nstd quasi-symmetry;tower;dome;pitched rf;simple(rf) tripartition
wall element:	5	pediment / gable;corbel;pilaster;cornice / moulding;foliage
window element:	4	trim / quoin;arch;keystone;lintel
door element:	3	pediment / gable;frieze / architrave;pilaster

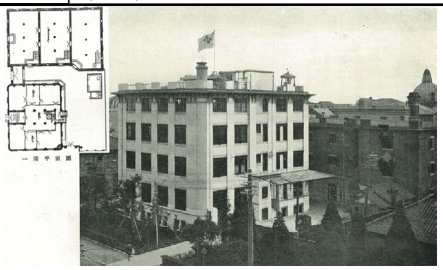
original info about strctr	KCZS: 煉瓦造本館…壁体は煉瓦積、二階間仕切は鉄筋「コンクリート」造、小屋組、床組、柱等は鋼鉄造にして屋根「スレート」葺なり…煉瓦平壁面は「セメント」塗にして(omitted)腰、帯、窓廻に於て赤煉瓦を顕に積とし、(omitted)腰石、窓台石、露縁等に配せられたる石材石材は常陸稲田産花崗石にして、切妻の彫刻部分は須賀川産砂岩石なり…天井及床は木造仕上にして…
note	inner separation=RC; not steel frame; KCSK: 煉瓦セメン塗



code: 343 **東京海上保険株式会社**
city: Tokyo duplication: SKGH 1st published: 1915
use: insurance financial cnstrctn period: 1914 — 1917
info type: detailed strctr system: Sframe
wall: S-Br floor: RC beam: S column:RC&S
treatment: St&tile=cv;RC=brim
strctr source: KCGH191511_p.348; Earthquake report_p.556

façade pattern: 2 cmpnd symmetry;even wndw array;compound tripartition
wall element: 5 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave
window element: 2 arch;lintel
door element: 1 arch

original info about strctr	KCGH: 一人で現場に行って見た、…鉄骨に壁体は煉瓦床階段支柱等は鉄筋コンクリート造りで… Earthquake report_p.556: 煉瓦1.5枚積とす平鉄を挿入して鉄骨と連続補強す煉瓦は小なる穴2箇を有する…窓の上下には別に鉄筋混凝土に依れる楣及び窓台を添加す。外壁の仕上は一階は白丁場堅石厚1.5寸のものを張り付け二階以上はタイル張りとたす。
note	KCSK191504_plate: g=S; KCSK191702news: g=SRC; KCSK191711news_p.80: g=SBr,f=C; see also Earthquake report_p.556: T3.2-T7.9; no structure info in KCGH plates



code: 356 **横浜三井物産株式会社**
city: Yokohama duplication: ZSSKGH 1st published: 1911
use: office bldg office bldg cnstrctn period: 1910 — 1911
info type: detailed strctr system: RCframe
wall: RC floor: RC beam: RC column:RC
treatment: Br&St=cv;S=cornice
strctr source: KCZS191205_p.237

façade pattern: 1 quasi-symmetry;even wndw array
wall element: 3 pilaster;cornice / moulding;balustrade / parapet
window element: 1 lintel
door element: 0 canopy

original info about strctr	KCZS: 地形、柱、壁、天井兼床、階段及屋根に至る迄総て内部に軟鋼鉄の鉄筋を縦横に入れ之を包む上等のセメントコンクリートを以てなしたるものにして…外部 腰廻りは花崗石及薬掛化粧煉瓦の貼付とし其上部は花崗煉瓦を貼付し軒先は鉄製持送りの安全蛇腹を付す。
note	Hennebique System in Hori dissertation, p.78; construction period in MTS10_p.199; KCSK: RC化粧煉瓦張付



code: 359 **台湾銀行東京支店**
city: Tokyo duplication: ZSSKGH 1st published: 1915
use: bank financial cnstrctn period: 1913 — 1916
info type: detailed strctr system: SRCframe
wall: SRC floor: RC beam: S column:SRC
treatment: Br&St=cv
strctr source: KCZS191602_p.101; 震害及火害之研究_p.48

façade pattern: 4 tower;compound(rf) tripartition;vertical wndw array;cupola;cmpnd symmetry
wall element: 5 pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication;foliage
window element: 2 trim / quoin;keystone
door element: 4 pilaster;cornice / moulding;arch;balustrade / parapet

original info about strctr	KCZS: 鉄骨鉄筋混凝土造石及化粧煉瓦張付 震害及火害之研究_p.48: 基礎一鉄筋「コンクリート」総地業。軸部一鉄骨鉄筋「コンクリート」造。壁体一同上外面石及化粧煉瓦張付。床一鉄筋「コンクリート」造。屋根一鉄筋「コンクリート」造陸屋根
note	KCSK191504: g=SRC; KCSK: RC石、化粧煉瓦張付;



code: 361 **大同生命保険株式会社東京支店**

city: Tokyo duplication: ZSSKGH 1st published: 1915

use: insurance financial cnstrctn period: 1914 — 1916

info type: detailed strctr system: RCframe

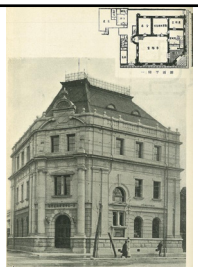
wall: RC floor: RC beam: RC column: RC

treatment: Br&St=cv

strctr source: KCZS191611_p.697

façade pattern:	5	nested symmetry;compound(rf) tripartition;vertical wndw array;tower;dome;cupola
wall element:	5	pilaster;ashlar / rustication;cornice / moulding;pediment / gable
window element:	0	
door element:	2	column;frieze / architrave;foliage

original info about strctr	KCZS: 壁、床及階段鉄筋「コンクリート」とし周囲壁体の第一階は石第二階以上は煉瓦一枚半厚の「パネル」となし窓のなき「パネル」は中央縦に八分三吋鋼棒四本を置き横煉瓦五段毎に川崎式山形網を目地に積込めり。 RC beams and columns hidden in the walls, shown in the drawing of details in KCZS191611
note	KCSK191504, KCSK191605; KCSK: RC化粧煉瓦張付; KCGH191607_plate: g=RC



code: 362 **第一生命保険相互会社（旧）**

city: Tokyo duplication: ZSSK 1st published: 1907

use: insurance financial cnstrctn period: — 1906

info type: detailed strctr system: masonry

wall: Br floor: beam: column:

treatment: Br&St&tile=cv;cement&plaster=ct

strctr source: KCZS190704_p.244

façade pattern:	3	nstd quasi-symmetry;simple tripartition;pitched rf
wall element:	8	column;pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element:	6	lintel;arch;keystone;corbel;trim / quoin;pediment
door element:	3	trim / quoin;keystone;arch

original info about strctr	KCZS: 本館は煉瓦造三階建…全外壁を一週する「ラチース」を積込みたりと云ふ…一階外面は煉瓦にしてセメント漆喰を塗り二階三階の外面は凡て(omitted)陶器張付、柱、胴蛇腹等は横根沢石を用ひ、階級羽目板、窓枠、扉は第一階は槻第二階三階は[木屑]を用ゐ…次ぎに本館床は総てリノリュームを敷き…
note	KCSK191504: g=Br&St; construction period in MTS7_p.181; Tokyo100_p77: 第一階石造、二、三階石煉瓦混合造



code: 364 **中井銀行浦和支店**

city: Saitama duplication: ZSSK 1st published: 1914

use: bank financial cnstrctn period: 1913 — 1914

info type: detailed strctr system: masonry

wall: Br floor: RC&W beam: RC&W column:

treatment: St&tile=cv

strctr source: KCZS191409_p.502

façade pattern:	2	simple symmetry;pitched rf
wall element:	4	pilaster;pediment / gable;cornice / moulding;foliage
window element:	2	lintel;keystone
door element:	2	keystone;foliage;lintel;canopy

original info about strctr	KCZS: 構造は本館全部煉瓦造にして小屋組は木造なり床梁は鉄筋「コンクリート」梁と木材を併用し…外装は日本窯業会会社製薬掛卵色張付瓦と須賀川石稲田花崗石を併用し…
note	KCSK191504: g=Br&St



code: 366 **村井銀行京都七条支店**

city: Kyoto duplication: ZSSK 1st published: 1914

use: bank financial cnstrctn period: 1913 — 1914

info type: detailed strctr system: masonry

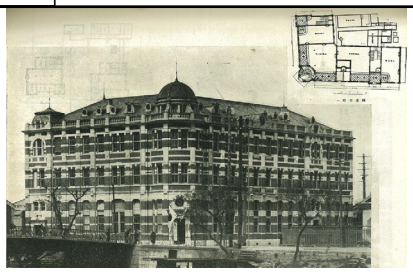
wall: Br floor: W beam: W column:

treatment: aSt=ct

strctr source: KCZS191404_p.250

façade pattern: 1 simple symmetry;vertical wndw array
wall element: 4 column;cornice / moulding;frieze / architrave;balustrade / parapet
window element: 0
door element: 4 column;pediment / gable;cornice / moulding;frieze / architrave

original info about strctr	KCZS: 構造 基礎はコンクリート地形にて側壁は煉瓦造りとし梁床及小屋組は木骨なり。 外観 煉瓦壁へ人造石塗りとなし切り目地を施し腰積は北木産花崗石を用ひ屋根は石盤葺となしたり。
note	KCSK191504: g=Br&St; KCSK: 煉瓦人造石; two main façades



code: 367 **安田商事株式会社大阪堂島事務所**

city: Osaka duplication: ZSSK 1st published: 1914

use: office bldg office bldg cnstrctn period: 1911 — 1913

info type: detailed strctr system: Sframe

wall: S-Br floor: RC beam: S column:

treatment: Br=cv;aSt=ct

strctr source: KCZS191411_p.600

façade pattern: 5 simple tripartition;tower;dome;pitched rf;cmpnd symmetry
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;pediment / gable
window element: 4 lintel;keystone;arch;round window
door element: 4 pilaster;frieze / architrave;cornice / moulding;keystone

original info about strctr	KCZS: 壁は鉄骨煉瓦造にして(omitted)外部化粧煉瓦張付けとし帯石、窓、入口廻りは全部人造石塗仕上とす…階下床は客溜を除くの外全部木製とし二、三階床は鉄梁入鉄筋「コンクリート」造の上床板張りとす…屋根は「スレート」葺とし固屋組は全部鉄骨構造とす… arrangement of columns irregular, shown in the drawings of floor plans in KCZS191411
note	KCSK191504: g=Br&St



code: 369 **帝国海上運送保険株式会社**

city: Tokyo duplication: ZSSK 1st published: 1908

use: insurance financial cnstrctn period: 1906 — 1908

info type: detailed strctr system: masonry

wall: Br&St floor: beam: column:

treatment: Br=cv

strctr source: KCZS190808_p.356

façade pattern: 5 tower;dome;pitched rf;partial symmetry;simple(rf) tripartition
wall element: 3 pilaster;cornice / moulding
window element: 7 pediment;cornice / moulding;corbel;lintel;arch;keystone;round window
door element: 3 arch;cornice / moulding;corbel;foliage

original info about strctr	KCZS: 外壁の厚は煉瓦三枚にして其外面は石材の部分を除き全部備前陶器会社製作の紫黒色の煉瓦を張附したり石材は根石以下を花崗石とし其上は白丁場石なり
note	KCSK191504: g=Br; KCSK: 煉瓦外部化粧煉瓦石混用



code: 376 **百三十銀行大阪曽根崎支店**

city: Osaka duplication: ZSSK 1st published: 1914

use: bank financial cnstrctn period: 1912 — 1913

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: aSt=ct;Br=cv

strctr source: KCZS191404_p.250

façade pattern:	4	simple tripartition;tower;dome;cmpnd symmetry
wall element:	4	pilaster;balustrade / parapet;cornice / moulding
window element:	4	arch;pilaster;balustrade;foliage;trim / quoin
door element:	0	canopy

original info about strctr	KCZS: 構造は全部鉄筋コンクリート造にして「コンクリート調合は一・二・四とし」鉄筋は全部丸鉄を使用し「スターラップ」は主として丸鉄を使用せり。 壁厚は(柱形を除く)九吋、六吋、四吋等にして入口、窓廻り及帯石、柱形等の人造石塗を除くの外全部赤色化粧煉瓦張とす
note	KCSK: RC化粧煉瓦張付



code: 389 **石原時計店**

city: Osaka duplication: ZSSK 1st published: 1915

use: shop small-scale cnstrctn period: 1913 — 1914

info type: detailed strctr system: Sframe

wall: S-LC floor: RC beam: S column: S

treatment: Br&St=cv

strctr source: KCSK191401news_p.108

façade pattern:	3	compound tripartition;vertical wndw array;tower;partial symmetry
wall element:	5	pilaster;corbel;cornice / moulding;ashlar / rustication;balustrade / parapet
window element:	2	trim / quoin;keystone
door element:	0	

original info about strctr	KCSK: 建物は総て鉄骨鉄網コンクリートに装飾煉瓦及び石材を加へた…尚此建築の特長は一層毎に鉄筋コンクリートの床を用ゐ…
note	appndx pages lost in KCSK191505, Kyoto Univ.; first floor show windows



code: 404 **国分商店1**

city: Tokyo duplication: ZSSKGH 1st published: 1915

use: shop small-scale cnstrctn period: 1914 — 1915

info type: detailed strctr system: Sframe

wall: S-Br floor: W beam: S column: S

treatment: Br&St=cv;aSt=ct

strctr source: KCZS191508_p.603

façade pattern:	2	simple symmetry;compound tripartition;vertical wndw array
wall element:	5	pilaster;quoin;cornice / moulding;balustrade / parapet;ashlar / rustication
window element:	6	column;pediment;corbel;arch;keystone;trim / quoin
door element:	3	column;cornice / moulding;keystone

original info about strctr	KCZS: 壁工事 鉄骨煉瓦造リ.(omitted)外部ハ花崗石、貼付煉瓦、擬石塗ヲ以テ仕上グ…床工事 鉄骨木製 steel columns in the walls shown in the drawings of details in KCZS191508, grid of columns also confirmed
note	清水組彩色設計図集vol.3_p.192: T3.2-T4.4, g=SBr; KCSK: 鉄骨石化粧煉瓦張付



code: 416 **市ヶ谷監獄事務所**

city: Tokyo Pref. duplication: ZSSKGH 1st published: 1915

use: administrative government cnstrctn period: 1909 — 1915

info type: detailed strctr system: masonry

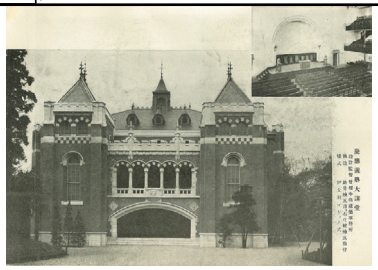
wall: Br floor: RC beam: column:

treatment: not found

strctr source: KCZS191506_p.477

façade pattern: 3 simple symmetry;tower;pitched rf
wall element: 2 buttress;arch
window element: 1 arch
door element: 1 arch

original info about strctr	KCZS: 煉瓦造、地階付二階建、床、階段等鉄筋混凝土造
note	built by prisoners; staircase built with RC; KCSK191507: g=SBr; KCSK: 鉄骨煉瓦; About the therapeutic house of the prison, see 川崎画報2 (15): 木骨鉄網混凝土



code: 430 **慶応義塾大講堂**

city: Tokyo duplication: SKGH 1st published: 1915

use: schoolhouse academic cnstrctn period: 1913 — 1915

info type: detailed strctr system: Sframe

wall: S-Br floor: W beam: S&W column:

treatment: St&TC=cv

strctr source: KCSK191507news_p.110

façade pattern: 7 nested symmetry;arcade;tower;pinnacle;pitched rf;cupola;portal
wall element: 5 column;buttress;balustrade / parapet;frieze / architrave;cornice / moulding
window element: 2 arch;keystone
door element: 2 arch;trim / quoin

original info about strctr	KCSK: 構造は四壁を鉄骨煉瓦造残部内外壁を普通煉瓦造とし外壁に石「テラコッタ」を交へ積み屋根は講堂上を鉄造に他を木造にて石板葺に仕上げ床は講堂の桟敷下に鉄梁を用ゐし他木造骨組の板張とし壁は白漆喰木部はペン及びワニシュ塗上げ上、…
note	KCSK191508_plate: g=SBr; Earthquake report_p.537: g=Br, f=W, roof with wood, lecture hall built in steel frame



code: 431 **大日本人造肥料株式会社**

city: Tokyo duplication: KCSK 1st published: 1915

use: office bldg office bldg cnstrctn period: 1913 — 1914

info type: detailed strctr system: Wframe

wall: floor: W beam: W column: W

treatment: Br=cv;aSt=ct

strctr source: KCSK191508news_p.99

façade pattern: 4 vertical wndw array;dome;tower;pitched rf;partial symmetry
wall element: 3 pilaster;cornice / moulding;foliage
window element: 0 foliage
door element: 3 pilaster;balustrade / parapet;cornice / moulding;foliage;canopy

original info about strctr	KCSK: 一階床下全部煉瓦及石造、一階以上木造外部化粧煉瓦張付及擬石塗…床、公衆室コンクリート打鉄平石敷其他全部木造…
note	KCSK191508_plate:g=W; see also 清水組彩色設計図集vol.3_p.192: T3.11-T4.7, g=W



code: 432 **栄太楼貸事務所**

city: Tokyo duplication: KCSK 1st published: 1915

use: rental office office bldg cnstrctn period: — 1915

info type: detailed strctr system: masonry

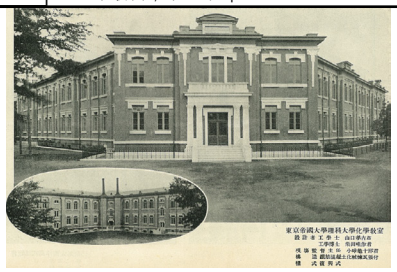
wall: Br floor: RC&W beam: RC&W column:

treatment: Br=cv

strctr source: KCSK191508_plate

façade pattern:	3	quasi-symmetry;simple tripartition;cupola
wall element:	4	pediment / gable;balustrade / parapet;cornice / moulding;foliage
window element:	5	lintel;pediment;trim / quoin;round window;balustrade
door element:	4	arch;keystone;corbel;cornice / moulding

original info about strctr	KCSK: 鉄骨化粧煉瓦張付 Earthquake report_p.525: 東京市日本橋区西河岸二号…壁厚一階 2.5B, 二階 2B, 三階 1.5B, 高36尺, 開口多, 床建物南部木造, 北部鉄筋混凝土梁, 北部屋根鉄筋混凝土, 他は木造。 …鉄筋混凝土床梁に裂あり。 鉄筋混凝土屋根異状なし。 structure form cannot be identified from the drawings in KCSK191605
note	Earthquake report_p.525 address = next to Kokubun shop (photo) at the west corner of Nihonbashi; 黒田鵬心. "青山より" in 趣味叢書 ; 第10篇 p.411: under construction. Article written as the final phase in T4, completion estimated in 1915



code: 440 **東京帝国大学理科化学教室**

city: Tokyo duplication: KCSK 1st published: 1915

use: schoolhouse academic cnstrctn period: 1913 — 1915

info type: detailed strctr system: RCframe

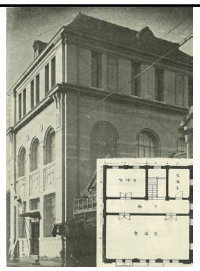
wall: RC floor: C&W beam: column:

treatment: Br&St=cv;copper=cornice

strctr source: KCSK191509_plate; KCSK191506news_p.90

façade pattern:	2	nested symmetry;simple(rf) tripartition
wall element:	5	pilaster;pediment / gable;cornice / moulding;frieze / architrave;foliage
window element:	4	lintel;arch;keystone;pediment
door element:	6	pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;lintel;trim / quoin

original info about strctr	KCSK191506news_p.90: 純粋の鉄筋混凝土造にして外部は品川煉瓦会社に特性せしめたる(omitted)化粧煉瓦を張付け是に常陸花崗石を配せり檐蛇腹は鉄製の芯を銅板にて包み…内部床をセメントと板張とに分ち… no distinctive shape of column found in the floor plans in KCSK191509, only several columns in large rooms shape of beam with no hatch shown in the drawings of details in KCSK191510, the structure cannot be identified
note	existing bldg



code: 459 **十二銀行東京支店**

city: Tokyo duplication: KCSK 1st published: 1915

use: bank financial cnstrctn period: — 1915

info type: detailed strctr system: RCframe

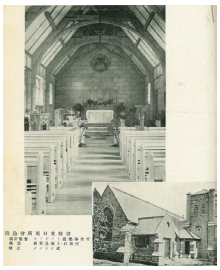
wall: RC floor: RC beam: S column: RC

treatment: Br=cv

strctr source: KCSK191511_plate

façade pattern:	3	simple symmetry;simple tripartition;pitched rf
wall element:	3	pilaster;corbel;cornice / moulding
window element:	1	arch
door element:	0	canopy

original info about strctr	KCSK: 鉄筋混凝土装飾煉瓦張付 no shape of column shown in the floor plans in KCSK191511 RC floor and I-shape beams in the wall can be identfied in the drawing of details in KCSK191511, RC columns also hidden in the walls
note	pending銀行通信録60(361)?



code: 470 **清公会所属日光教会**
city: Nikko duplication: KCSK 1st published: 1915
use: church religious cnstrctn period: — 1914
info type: detailed strctr system: RCwf
wall: RC floor: beam: column:
treatment: St=cv
strctr source: KCSK191512_plate

façade pattern: 3 cmpnd symmetry;tower;pitched rf
wall element: 2 buttress;cornice / moulding
window element: 2 pointed arch;rose window
door element: 0

original info about strctr	KCSK: 鉄筋混凝土、石張付 RC walls covered with stones shown in the drawing of section in KCSK191512, floor not cast together with RC walls, possibly as wooden structure
note	finished in 1914 (https://www.inishie.tochigi.jp/detail.html?course_id=4&id=8) (202309 accessed)



code: 477 **新築大倉組**
city: Tokyo duplication: SKGH 1st published: 1915
use: office bldg office bldg cnstrctn period: 1913 — 1915
info type: detailed strctr system: RCframe
wall: RC floor: RC beam: RC column: RC
treatment: Br&St=cv
strctr source: KCSK191512news_p.89; KCGH191511_p.349

façade pattern: 2 cmpnd symmetry;compound tripartition;even wndw array
wall element: 5 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;ashlar / rustication
window element: 4 lintel;arch;keystone;pediment
door element: 3 pediment / gable;arch;keystone

original info about strctr	KCSK: 五階建鉄筋コンクリート造にして(omitted)今度の様な高さに総てを用ひたのは日本では嚆矢でせう四寸壁も理論通りの完全なもので… KCGH: 表面の柱形は十一本、其中六本は白色化粧煉瓦を以てはられ、味もそつけも無いオーナメントが附してある。其他は赤色化粧煉瓦を以てはられ…
note	Hennebique System in Hori dissertation, p.78



code: 479 **秩父銀行**
city: Chichibu duplication: KCSK 1st published: 1916
use: bank financial cnstrctn period: 1915 — 1915
info type: detailed strctr system: Wframe
wall: W-LC floor: beam: W column: W
treatment: not found
strctr source: KCSK191601appndx_p.5

façade pattern: 2 partial symmetry;tower
wall element: 3 balustrade / parapet;cornice / moulding;foliage
window element: 2 lintel;balustrade
door element: 0 canopy

original info about strctr	KCSK191601appndx_p.5: 構造「コンクリト」地形上に煉瓦積をなし腰部稻田花崗石及秩父產飯田石を以て積み上げ上に土台置き木骨構造とし外部は鈴木式網鉄なす張りに「コンクリート」塗をなし鳥井製白掛「テラコッタ」張付の屋根はスレート葺とし軒廻り其他錺工事に一切銅板を用ふ…
note	



code: 492 **帝国鉄道協会**

city: Tokyo duplication: ZSSKGH 1st published: 1914

use: office bldg office bldg cnstrctn period: 1913 — 1916

info type: detailed strctr system: RCframe

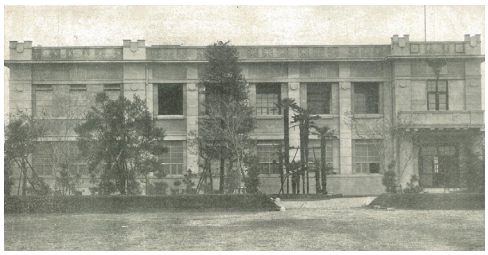
wall: RC floor: RC beam: RC column: RC

treatment: St=cv;mortar=ct

strctr source: KCZS191603_p.146

façade pattern: 2 simple symmetry;simple tripartition
wall element: 7 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage;ashlar / rustication
window element: 4 pediment;arch;keystone;trim / quoin
door element: 1 keystone

original info about strctr	KCZS: 鉄筋混凝土造正面白丁場石貼付両側面及背面モルタル塗 震害及火害之研究_p.60: 軸部ー「鉄筋コンクリート」造、壁体ー「鉄筋コンクリート」造帳壁、正面白丁場石貼付、側面及北面「モルタル」塗、床ー「鉄筋コンクリート」造、屋根ー「鉄筋コンクリート」造陸屋根 grid of columns confirmed in the floor plans in KCZS191603
note	KCSK191603: g=RC;



code: 511 **東京高等商業学校専攻部**

city: Tokyo duplication: KCSK 1st published: 1916

use: schoolhouse academic cnstrctn period: — 1916

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column:

treatment: not found

strctr source: KCSK191605_plate

façade pattern: 0
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave
window element: 1 lintel
door element: 3 column;cornice / moulding;balustrade / parapet

original info about strctr	KCSK191605_plate: 鉄筋混凝土 no distinctive shape of column found in the floor plans in KCSK191605, several round columns in the large rooms of the 1st floor RC beams and floor identified in the drawing of details in KCSK191605, iron bars of RC walls also identified
note	MTS10_p.184: finished in 1916



code: 549 **東京銀行集会所**

city: Tokyo duplication: ZSSKGH 1st published: 1915

use: assembly assembly cnstrctn period: 1914 — 1916

info type: detailed strctr system: Rmasonry

wall: RBr floor: RC beam: S column:

treatment: not found

strctr source: KCZS191701_p.69-70

façade pattern: 5 portico;tower;pinnacle;pitched rf;cmpnd symmetry
wall element: 6 pediment / gable;cornice / moulding;corbel;balustrade / parapet;pilaster;frieze / architrave
window element: 5 arch;keystone;pediment;pilaster;balustrade
door element: 1 pitched rf

original info about strctr	KCZS: 壁体煉瓦構造、各階に鉄筋コンクリート帯を廻し、床コンクリートと連結、煉瓦壁内に竪に径一吋鉄筋を一尺間に建て、之を以て各階帯ををを繋ぎ、同竪筋を横に径四分の一吋筋を以て煉瓦五六段毎に結び、…床 煉瓦壁上に鉄梁を架し凡てほ鉄筋コンクリートとす
note	KCSK191610plate: g=Br&St; see also KCGH191511_p.349; Earthquake report_p.523: ring beam in RC connected with SRC floor, w=RBr; KCZS191701_p.69: 建物空郭線



code: 550 **合名会社田中銀行**
city: Tokyo duplication: ZSSKGH 1st published: 1916
use: bank financial cnstrctn period: 1914 — 1916
info type: detailed strctr system: Rmasonry
wall: S-Br floor: RC beam: column:
treatment: Br&St=cv
strctr source: KCZS191611_p.698

façade pattern: 2 simple symmetry;porch
wall element: 6 column;balustrade / parapet;cornice / moulding;frieze / architrave;pilaster;foliage
window element: 1 keystone
door element: 4 column;pilaster;corbel;pediment / gable;foliage

original info about strctr	KCZS: 壁体 補強式鉄骨構造にして標準壁厚二枚半、表側二面稲田産花崗石積、他面花崗石色張付煉瓦張とす。…床 鉄筋混凝土構造にして
note	ring beam in RC, see plate of section in KCSK191610: g=St; KCGH191610_plate: g=Br; two façades



code: 551 **共保生命保険株式会社東京支店**
city: Tokyo duplication: ZSSK 1st published: 1916
use: insurance financial cnstrctn period: 1915 — 1916
info type: detailed strctr system: Wframe
wall: W-tile floor: W beam: column:
treatment: Br=cv;aSt&mortar=ct
strctr source: KCZS191705_p.420

façade pattern: 3 simple symmetry;porch;pitched rf
wall element: 3 pilaster;cornice / moulding;pediment / gable
window element: 2 pediment;pilaster
door element: 3 cornice / moulding;frieze / architrave;column;canopy

original info about strctr	KCZS: 壁 腰廻り及正面玄関廻り煉瓦造其他木骨竪瓦張り「モルタル」塗り外部腰積及正面玄関廻り相州産自丁場石を使川し上部は淡黄色貼付煉瓦並に石粉入擬石塗を以て化粧す 床 公衆室、金庫室、便所「コンクリート」造人造石研き出し及び「タイル」張り其他木造床とす porch built with SRC lintel and hidden I-shape columns, shown in the drawing of details in KCZS191705
note	KCSK191610: g=W; KCSK: 木骨化粧煉瓦張付; see also 清水組彩色設計図集vol.3_p.192: T4.12-T5.8, g=W



code: 560 **川崎貯蓄銀行番町支店**
city: Tokyo duplication: KCSK 1st published: 1916
use: bank financial cnstrctn period: — 1916
info type: detailed strctr system: masonry
wall: Br floor: W beam: column:
treatment: not found
strctr source: Earthquake report_p.520

façade pattern: 5 partial symmetry;simple(rf) tripartition;pitched rf;pinnacle;porch
wall element: 8 column;pilaster;ashlar / rustication;corbel;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 4 arch;keystone;trim / quoin;lintel
door element: 1 column;canopy

original info about strctr	Earthquake report_p.520: …壁厚2B、開口普通、床及び屋根木造
note	官報 1916年09月20日_p.425: moved the new address in T5.9.11



code: 567 **大阪朝日新聞社**

city: Osaka duplication: ZSSK 1st published: 1916

use: office bldg office bldg cnstrctn period: 1915 — 1916

info type: detailed strctr system: SRCframe

wall: SRC floor: RC beam: SRC column: SRC

treatment: Br&St=cv;aSt=ct;RC=cornice

strctr source: KCZS191707_p.588

façade pattern: 2 cmpnd symmetry;tower
wall element: 5 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;foliage
window element: 0
door element: 0 canopy

original info about strctr	KCZS: 本館 鉄骨鉄筋コンクリート造…壁体 コンクリート造、外面は石材、化粧煉瓦、擬石塗 床 鉄筋コンクリート造、上面タービヤコンクリート、リノリューム敷 beams as SRC, cornice cast with RC, shown in the drawing of details in KCZS191707
note	KCZS191707,KCSK191612plate,news: g=SRC



code: 574 **三井銀行神戸支店**

city: Kobe duplication: ZSSK 1st published: 1917

use: bank financial cnstrctn period: 1914 — 1916

info type: detailed strctr system: RCframe

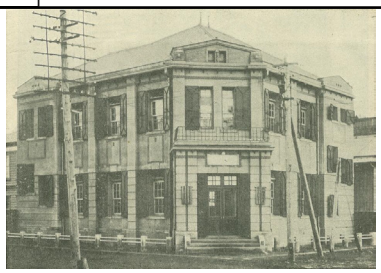
wall: St floor: RC beam: RC column: RC

treatment: St=cv

strctr source: KCZS191702_p.156

façade pattern: 3 nested symmetry;colonnade;simple(rf) tripartition
wall element: 5 column;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 3 lintel;balustrade;corbel
door element: 1 column

original info about strctr	KCZS: 煉瓦工事 外側壁、間仕壁、柱下、防湿壁、床か束、…石工事 外側の仕上げに用ふる石材一即ち腰石、片蓋積出、軒長押、同小壁、軒蛇腹、軒台輪、軒欄干。…鉄筋コンクリート構造部分一即ち一階各室床、二階各室床、一階営業場の柱及梱、営業場刎出廊下、 小階段、地階々段金庫文書庫間仕切壁、同天井、陸屋根、表車寄天井等… RC beams and columns shown in the drawing of details (no. 7) in KCSK191701
note	KCSK191701: g=St



code: 580 **根室銀行釧路支店**

city: Kushiro duplication: SKGH 1st published: 1916

use: bank financial cnstrctn period: 1915 — 1915

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: mortar=ct;Br&St=cv

strctr source: KCGH191603_p.23-24

façade pattern: 3 cmpnd symmetry;porch;pitched rf
wall element: 4 pilaster;pediment / gable;cornice / moulding;ashlar / rustication
window element: 2 keystone;balustrade
door element: 3 pilaster;balustrade / parapet;cornice / moulding

original info about strctr	KCGH: 本館(omitted)煉瓦造二階建…周壁煉瓦積、厚階上二枚階下二枚半、…外部「モルタル」塗とし階下は石目地を附す腰石積及窓及入口廻り石材は硬質の石を使用し階上下窓間飾及階上窓上及仝列帯飾は装飾煉瓦を貼付し、…内部床、階下客溜りは「コンクリート」叩き其他階上下共木製とす。
note	



code: 584 **横浜生命保険株式会社**

city: Yokohama duplication: ZSSK 1st published: 1917

use: insurance financial cnstrctn period: 1915 — 1916

info type: detailed strctr system: Rmasonry

wall: RBr floor: W beam: column:

treatment: Br&St=cv;mortar=ct

strctr source: KCZS191702_p.166

façade pattern: 2 nested symmetry;dome;vertical wndw array
wall element: 6 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 3 frieze / architrave;balustrade;trim / quoin
door element: 0 canopy

original info about strctr	KCZS: 壁ハ食堂小使室ノ一部ヲ木製、壁トシタルノ外凡テ鉄筋入煉瓦構造ニシテ腰廻リ柱型、窓出入口、廻リ軒蛇腹下等ニ月出石ヲ各階段地覆石ニハ花崗石ノ使用シタリ道路に面スル外部及中庭ノ壁面ニハ化粧張瓦ヲ為シ背面ハ「モルタル」塗ヲ施シタリ…一階廊下玄関広間客溜一二階便所、湯沸場、地下室等ノ床ハ「コンクリート」ニシテ其ノ他ハ全部木床ナリ
note	KCSK191611news: only wall structure recorded



code: 597 **日本紙器製造株式会社**

city: Tokyo duplication: KCSK 1st published: 1917

use: office bldg office bldg cnstrctn period: — 1917

info type: detailed strctr system: RCframe

wall: Br floor: RC beam: RC column: RC

treatment: not found

strctr source: KCSK191704_plate

façade pattern: 3 simple(rf) tripartition;pitched rf;quasi-symmetry
wall element: 3 pediment / gable;cornice / moulding;foliage
window element: 1 trim / quoin
door element: 2 pediment / gable;corbel

original info about strctr	structural components identified in the drawing of details in KCSK191704
note	官報 1917年11月08日_p.188: moved to the new bldg on T6.10.1



code: 598 **大阪控訴院**

city: Osaka duplication: ZSSK 1st published: 1916

use: court government cnstrctn period: 1911 — 1916

info type: detailed strctr system: Rmasonry

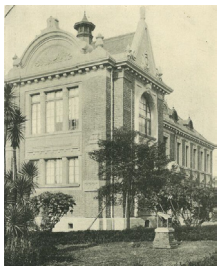
wall: RBr floor: RC beam: S column:

treatment: Br=cv

strctr source: KCZS191607_p.427

façade pattern: 5 nested symmetry;tower;dome;portico;simple tripartition
wall element: 6 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 8 lintel;keystone;arch;pediment;column;pilaster;trim / quoin;round window
door element: 6 frieze / architrave;cornice / moulding;column;balustrade / parapet;arch;keystone

original info about strctr	KCZS: 軸壁 煉瓦積各要所及塔部は形鋼及棒鋼縦横に組立て且つ煉瓦数段毎に鉄網を積込み補強し外部は赤及白色貼付煉瓦…床 一階床コンクリート打石敷及アスハルト塗二階及三階鉄梁鉄筋コンクリートとし…
note	KCSK191705_plate: g=SRC&Br; KCSK191603, 06news: mainly about treatments



code: 600 **女子大学家政研究館**

city: Tokyo duplication: KCSK 1st published: 1916

use: research academic cnstrctn period: 1916 — 1917

info type: detailed strctr system: masonry

wall: Br floor: W beam: W column:

treatment: not found

strctr source: KCZS191704_p.323; Earthquake report_p.531

façade pattern:	5	partial symmetry;vertical wndw array;portico;pitched rf;cupola;simple(rf) tripartition
wall element:	5	pediment / gable;balustrade / parapet;cornice / moulding;foliage;buttress
window element:	7	cornice / moulding;frieze / architrave;arch;keystone;pediment;pilaster;trim / quoin;foliage
door element:	5	pediment / gable;cornice / moulding;frieze / architrave;column;pilaster

original info about strctr	KCZS: 二階建煉瓦造 Earthquake report_p.531: 二階建、(omitted)壁厚一、二階共2B、柱形なし、床木造屋根木造瓦葺、間仕切少し wooden beam found in the drawing of details in KCSK191607
note	KCSK191705: g=Br&St



code: 603 **東京日々新聞社**

city: Tokyo duplication: KCSK 1st published: 1917

use: office bldg office bldg cnstrctn period: 1916 — 1917

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: column: RC

treatment: aSt&cement&mortar=ct

strctr source: KCZS191705_p.411-412

façade pattern:	3	even wndw array;tower;simple symmetry;porch
wall element:	4	pilaster;balustrade / parapet;cornice / moulding;foliage
window element:	0	
door element:	3	balustrade / parapet;cornice / moulding;column

original info about strctr	KCZS: 基礎、壁体、柱床及屋根共鉄筋コンクリート造…外部は人造石塗及セメントモルタル塗内部は漆喰塗…; Hori dissertation: p.97-98: flat slab system
note	KCSK191705: g=RC



code: 607 **不動貯金銀行上野支店**

city: Tokyo duplication: KCSK 1st published: 1917

use: bank financial cnstrctn period: 1916 — 1917

info type: detailed strctr system: masonry&Wframe

wall: Br&W floor: RC&W beam: column: RC

treatment: aSt&tile=cv

strctr source: KCZS191705_p.413-414

façade pattern:	1	simple symmetry
wall element:	4	cornice / moulding;frieze / architrave;ashlar / rustication
window element:	4	arch;keystone;column;trim / quoin
door element:	0	foliage

original info about strctr	KCZS: 構造 階下鉄筋コンクリート造二階以上木造…外部入口前面及腰廻石造、腰上二階迄人造石、三階以上タイル張り。内部 営業室床及び柱鉄筋コンクリート。一階床迄煉瓦造、以上木造、… walls of 1st floor built with brick shown in the floor plan in KCSK191706
note	B1&f1:c=RC,f=RC;f2&f3:w=W,f=W



code: 612 **東京高等商業学校御大典記念図書館**

city: Tokyo duplication: KCSK 1st published: 1917

use: library academic cnstrctn period: 1916 — 1917

info type: detailed strctr system: Wframe&RCframe

wall: RC&W floor: W beam: W column: W

treatment: Br=cv;aSt&plaster=ct

strctr source: KCZS191710_p.753

façade pattern: 4 simple symmetry;vertical wndw array;tower;portico;pitched rf;even wndw array
wall element: 3 pilaster;foliage;cornice / moulding
window element: 3 corbel;keystone;trim / quoin
door element: 4 dome;cornice / moulding;frieze / architrave;column

original info about strctr	KCZS: 構造は 本館木造化粧煉瓦張二階建、書庫鉄筋コンクリート四階建…周壁 本館階段室軸部総て木骨とし、外部根石月出石張り腰廻り窓額縁及彫刻物等人造石塗、其の他は化粧タイル張付とす。書庫壁体凡て鉄筋コンクリートとし外部腰人造石塗其の他セメント入漆喰塗仕上とす。…二階大閲覧室は床杉板割、壁漆喰下地にジュレスコ塗り模様描き、…
note	KCSK191707: g=W,library archive built in RC; KCSK: 木骨タイル張付, 書庫RC; special case, half wood half RC



code: 628 **東京山中銀行**

city: Tokyo duplication: ZSSK 1st published: 1917

use: bank financial cnstrctn period: 1914 — 1917

info type: detailed strctr system: Sframe

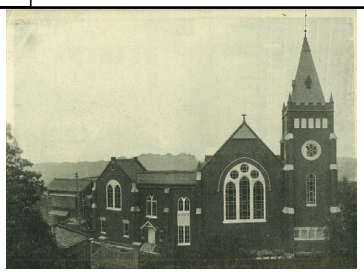
wall: S-Br floor: RC beam: S column: S

treatment: Br&St=cv;aSt=ct

strctr source: KCZS191803_p.243

façade pattern: 3 quasi-symmetry;simple tripartition;vertical wndw array;porch
wall element: 5 pilaster;balustrade / parapet;cornice / moulding;corbel;foliage
window element: 4 lintel;frieze / architrave;cornice / moulding;balustrade
door element: 5 balustrade / parapet;cornice / moulding;pilaster;arch;keystone;foliage

original info about strctr	KCZS: 本館、四階建鉄骨煉瓦造…壁体 軸部は鉄骨構造にして側壁は二枚に煉瓦積を為し、特に正間には表積化粧石として稲田産花崗石を使用し、側面併に背面は貼附煉瓦若くは擬石塗仕上とす…床 二、三、四階及中二階床は床鉄梁間に鉄筋「コンクリート」床片を出構設し、「モルタル」塗仕上、…
note	see also KCZS191707_p.580; KCSK: g=St



code: 642 **霊南坂教会**

city: Tokyo duplication: KCSK 1st published: 1917

use: church religious cnstrctn period: 1916 — 1917

info type: detailed strctr system: Wframe

wall: W-Br floor: beam: column: W

treatment: Br&aSt=cv

strctr source: KCZS191709_p.698

façade pattern: 4 tower;pinnacle;cmpnd symmetry;pitched rf
wall element: 2 buttress;balustrade / parapet
window element: 5 rose window;arch;pointed arch;pediment;trim / quoin
door element: 1 balustrade / parapet

original info about strctr	KCZS: 構造はベースメントのみ煉瓦造他は木造煉瓦及人造石貼付…大講堂の柱、腰羽目は檜、杉材ワニス塗仕上とす…
note	KCSK191711: g=WBr; see also 日本基督教壇霊南坂教会礼拝堂構造部分の耐久性調査報告: wall for 2f = W



code: 646 **中井銀行本店**

city: Tokyo duplication: ZSSKGH 1st published: 1917

use: bank financial cnstrctn period: 1915 — 1917

info type: detailed strctr system: Sframe

wall: S-Br floor: RC beam: S column: S

treatment: aSt=ct

strctr source: KCZS191710_p.754

façade pattern:	3	simple tripartition;simple symmetry;porch
wall element:	8	pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;column;pilaster;foliage
window element:	2	trim / quoin;keystone
door element:	2	arch;keystone;foliage

original info about strctr	KCZS: 壁体 本館は鉄骨煉瓦造にして外面主として伊豫國大島花崗石及化粧煉瓦を使用す但五階中央客室の外壁に四階各室の間仕切壁は鉄骨の兩面に小舞を張り「セメントモルタル」塗とし外部は擬石塗内部は漆喰塗とす…床 本館及附属家は鋼梁を掛け鉄筋「コンクリート」造とし上部に厚一寸鋸屑入「コンクリート」打となし…
note	KCSK191711news: mainly about treatment; KCSK: 基礎RC天井木造階段RC内壁大理石張



code: 656 **上田屋川島東京店**

city: Tokyo duplication: ZSSK 1st published: 1917

use: shop small-scale cnstrctn period: 1917 — 1917

info type: detailed strctr system: masonry&RCframe

wall: Br&RC floor: W beam: RC column:

treatment: Br=cv;aSt=ct

strctr source: KCZS191711_p.816

façade pattern:	3	quasi-symmetry;simple tripartition;pitched rf
wall element:	4	frieze / architrave;ashlar / rustication;pilaster;corbel
window element:	2	lintel;keystone
door element:	0	

original info about strctr	KCZS: 構造は一、二階煉瓦造、三階鉄筋コンクリート造にて (contradictory with drawings)、外面は化粧煉瓦張付及擬石塗とし…屋根木造瓦葺…床木造、墾漆喰塗り、… 1st floor built with RC, 2nd & 3rd floors piled with bricks, shown in the drawing of details in KCZS191712, irregular shaped RC beams (possibly for the placement of deco) in the wall also identified
note	ground floor show windows



code: 662 **開港記念横浜会館**

city: Yokohama duplication: ZSSKGH 1st published: 1917

use: assembly assembly cnstrctn period: 1914 — 1917

info type: detailed strctr system: Rmasonry

wall: RBr&RC floor: W beam: S column:

treatment: Br=cv

strctr source: KCZS191709_p.704-705

façade pattern:	7	tower;simple(rf) tripartition;pinnacle;pitched rf;cupola;cmpnd symmetry;portal
wall element:	8	pilaster;quoin;pediment / gable;cornice / moulding;frieze / architrave;foliage;ashlar / rustication;corbel
window element:	9	pilaster;trim / quoin;arch;keystone;corbel;cornice / moulding;frieze / architrave;lintel;round window
door element:	7	arch;keystone;pediment / gable;corbel;frieze / architrave;cornice / moulding;pilaster

original info about strctr	KCZS: 壁体及床 腰石迄表面を江戸切花崗石積とし裏は全部「コンクリート」を使用し壁内には六尺間内外に一吋半の鋼鉄棒を樹立して之れに連結して地下より各階に渉り厚三分幅三寸の錠聯鉄を繋き高塔には特に堅牢なる鉄骨を構成し一階及二階は費用精査の結果煉瓦を使用し側廻の石材は花崗石煉瓦表面は有田產化粧瓦を張付たり…床全部リノリウム張天井は階上大食堂に大鉄梁を使用したるを以て之れを檜材を以て包み
note	f=RC in KCZS191311_p.614, KCZS191312_p.718; KCSK191706news: mainly about treatment; KCSK: 一階基礎コンクリート鉄棒入り二階以上煉瓦小屋根組鉄骨



code: 663 **丁酉銀行本店**
city: Tokyo duplication: ZSSK 1st published: 1918
use: bank financial cnstrctn period: 1915 — 1917
info type: detailed strctr system: Rmasonry
wall: RBr floor: LC beam: S column:
treatment: Br&St=cv
strctr source: KCZS191801_p.55

façade pattern: 3 simple(rf) tripartition;dome;nstd quasi-symmetry
wall element: 7 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 6 pilaster;trim / quoin;pediment;foliage;cornice / moulding;frieze / architrave;keystone
door element: 1 canopy;keystone

original info about strctr	KCZS: 壁体及外装 壁内部に煉瓦積、仕切壁は煉瓦若くは鉄筋混凝土造とし、側壁及仕切壁の煉瓦積中心には各隅角、各取合部、入口及窓脇等に於て地盤線下約四尺五寸の位置より壁頭に達するまで直徑一時の丸鉄を入れ、…壁の外装材は石材及装飾瓦にして、街路面に於ては其腰廻り、軒長押、蛇腹、柱形、窓及入口周等に茨城縣稻田産花崗石た、其他の壁面に白丁場石を使用し…階上床は内地製鋼梁を架渡し、其大部分は梁間に米国製ハイ・リブ・メタル・ラッスを張込み、尚補強の為要部にリブ・バーを挿入し、混凝土を打施したる grid of columns not found in the floor plans in KCZS191801
note	KCSK: 煉瓦石; see also KCSK191802appndx



code: 667 **三井物産株式会名古屋支店**
city: Nagoya duplication: KCSK 1st published: 1918
use: office bldg office bldg cnstrctn period: — 1917
info type: detailed strctr system: RCframe
wall: floor: RC beam: column: RC
treatment: not found
strctr source: KCSK191803_plate

façade pattern: 2 simple symmetry;even wndw array;portico
wall element: 5 pilaster;balustrade / parapet;frieze / architrave;cornice / moulding;foliage
window element: 1 pilaster
door element: 2 pediment / gable;cornice / moulding;canopy

original info about strctr	KCSK: 鉄筋コンクリート grid of octagon columns shown in the drawings of floor plans in KCSK191803, estimated as flat slab system, exterior walls possibly as RC
note	MTS10_p.111: finished in T6



code: 671 **三越呉服店大阪支店**
city: Osaka duplication: KCSK 1st published: 1918
use: department large-scale cnstrctn period: — 1917
info type: detailed strctr system: Sframe
wall: SRC floor: RC beam: RC&S column: S
treatment: tile=cv
strctr source: KCZSZ191802_p.128-129

façade pattern: 2 nstd quasi-symmetry;compound tripartition;even wndw array
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;foliage
window element: 1 pilaster
door element: 0 canopy

original info about strctr	KCSK: 構造は耐震耐火を主とし、カーテン・オール式鉄骨に鉄筋コンクリート及煉瓦を以て壁及床を構成せり。…間内鉄柱下には各荷重に應じ(omitted)柱の間には厚一尺のコンクリートの上に防水層を施し、更に厚一尺五寸のコンクリートを打ちて、…床及階段は全部鉄筋コンクリート造とし…二階以上は褐色セメント、タイルを以て之を被覆せり。… compound use of S and RC beams shown in the drawings of details in KCSK191804, floor slab cast together with RC beam high-web beams and][shape columns in the walls, in KCSK191804, structure of wall identified as SRC
note	KCSK191905news: at 高麗橋二丁目, additional construction, not the major house of code 671; KCSK191710news_p.81: 鉄骨



code: 677 **三菱合資会社仮本社**

city: Tokyo duplication: ZSSKGH 1st published: 1918

use: office bldg office bldg cnstrctn period: 1915 — 1918

info type: detailed strctr system: Sframe

wall: S-Br floor: RC beam: S column: S

treatment: Br=cv

strctr source: KCZS191805_p.291

façade pattern:	3	cmpnd symmetry;compound tripartition;tower
wall element:	3	balustrade / parapet;cornice / moulding;ashlar / rustication
window element:	3	arch;column;balustrade
door element:	1	arch

original info about strctr	KCZS: 鉄骨煉瓦造、地下室付四階建(一部五階)一階迄石造、一階以上白色化粧煉瓦貼付、床鉄筋「コンクリート」屋根陸屋根 震害及火害之研究_p.50: 軸部一鉄骨構造、壁体一煉瓦帳壁外面横根沢石及白色化粧煉瓦張、床一鉄筋「コンクリート」造、屋根一鉄筋「コンクリート」造陸屋根ニシテ I-shape beams inside RC floor slabs, shown in the drawing of details in KCZS191904
note	see also KCZS191904; KCGH191804_plate: 三菱貸事務所; see also 震害及火害之研究_p.50



code: 682 **第八十五銀行**

city: Kawagoe duplication: ZSSK 1st published: 1918

use: bank financial cnstrctn period: 1916 — 1918

info type: detailed strctr system: Rmasonry

wall: SRC floor: LC&RC beam: column:

treatment: Br&St=cv;steel&copper=cornice

strctr source: KCZS191805_p.290

façade pattern:	3	dome;tower;nstd quasi-symmetry
wall element:	6	buttress;quoin;balustrade / parapet;cornice / moulding;frieze / architrave;arch
window element:	1	lintel
door element:	1	lintel;canopy

original info about strctr	KCZS: 壁体 鉄骨構造にして四周壁体は鉄筋「コンクリート」造…窓廻り 帯石蛇腹石等は相州白丁場石壁は磁器質薬掛け化製煉瓦張付け…床 鈴木式鋼鉄「ラス」迫持形に置渡し「コンクリート」打ちとす但し金庫床は「モニエー」式鋼筋「コンクリート」…軒廻り 壁体上部軒廻り鉄骨空虚銅板打出しとし塔屋根亦之に準ず SRC parts as the reinforcement of masonry wall, connected with wire mesh reinforced concrete floor, overall structure still as reinforced masonry manner, shown in sections in KCSK191805.
note	



code: 689 **如水会館**

city: Tokyo duplication: ZSSKGH 1st published: 1918

use: assembly assembly cnstrctn period: 1916 — 1919

info type: detailed strctr system: RCframe

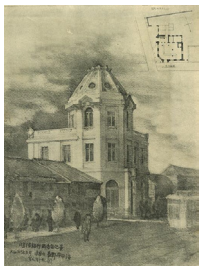
wall: RC floor: RC beam: RC column: RC

treatment: Br&tile=cv

strctr source: KCZS191909_p.458

façade pattern:	4	portico;arcade;dome;pitched rf
wall element:	4	cornice / moulding;pilaster;foliage;ashlar / rustication
window element:	2	arch;round window
door element:	1	canopy;arch

original info about strctr	KCZS: 壁体 鉄筋「コンクリート」腰相州堅石又は黒煉瓦張上部品川白煉瓦會社製品「タイル」張　床 全部鉄筋「コンクリート」にして上に「コルク」板を敷きに「リノリュム」を敷きたるものこ直に「リノリュム」を敷きたるものとあり又寄木張をも用ひたり;
note	震害及火害之研究_p.143-144: 軸部&w=RC, 堅石又ハ煉瓦張り上部タイル張り, f=RC, 帳壁式



code: 690 **株式会社明治銀行西支店**

city: Nagoya duplication: KCSK 1st published: 1918

use: bank financial cnstrctn period: — 1923

info type: detailed strctr system: masonry

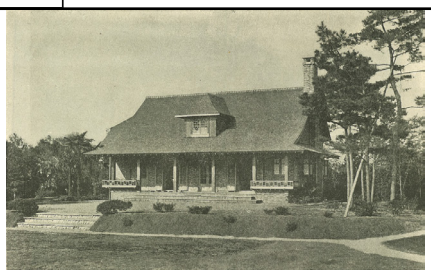
wall: St floor: RC beam: column:

treatment: not found

strctr source: KCSK191807_plate

façade pattern: 5 dome;tower;nstd quasi-symmetry;porch;pitched rf
wall element: 5 pilaster;pediment / gable;balustrade / parapet;cornice / moulding
window element: 3 arch;keystone;foliage;balustrade
door element: 2 pilaster;arch

original info about strctr	KCSK: 石造、床及屋根鉄筋コンクリート造
note	KCSK191807_plate: completion expected in 1919; MTS3_p.178: finished in 1923



code: 693 **誠之堂**

city: Tokyo Pref. duplication: ZSSK 1st published: 1917

use: house residential cnstrctn period: 1915 — 1916

info type: detailed strctr system: masonry&Wframe

wall: Br floor: beam: column:

treatment: not found

strctr source: KCZS191703_p.242

façade pattern: 3 colonnade;simple symmetry;pitched rf
wall element: 1 column
window element: 0
door element: 0

original info about strctr	KCZS: 壁体 大日本煉瓦株式会社製品一枚半厚洗出積煙突外側に朝鮮風「喜寿」を顕す　木材 外廻り、縁側、玄関の上部は杉材窓廻り其他造作材は「タモ」材何れも「ラック」、漆、防腐剤を塗り木理を示し「ペンキ」を用ひず
note	see also 清水組彩色設計図集vol.4_p.208: T5.3-T5.11, g=Br



code: 698 **山形屋デパートメントストーア**

city: Kagoshima duplication: KCSK 1st published: 1918

use: department large-scale cnstrctn period: 1914 — 1916

info type: detailed strctr system: Sframe

wall: SRC floor: RC beam: S column: S

treatment: tile=cv

strctr source: KCSK191808appdx_p.1-2

façade pattern: 4 nested symmetry;dome;tower;simple tripartition
wall element: 6 pilaster;column;balustrade / parapet;cornice / moulding;ashlar / rustication;foliage
window element: 5 arch;keystone;trim / quoin;round window;foliage;balustrade
door element: 3 keystone;pediment / gable;canopy;corbel

original info about strctr	KCSK: 鋼鉄材、石材、鉄筋「コンクリート」及ビ張付「タイル」木材等 鉄骨筋「コンクリート」構造ニシテ柱梁等ノ主要部ハ鋼材用に壁、床屋根等ハ鉄筋コンクリート」ヲ以テ構成シ、更ニ木骨ニテ復壁ヲ設ケ寒暑ノ度ヲ調和セシム
note	



code: 717 **不動貯金銀行函館支店**
city: Hakodate duplication: KCSK 1st published: 1918
use: bank financial cnstrctn period: — 1917
info type: detailed strctr system: RCframe
wall: RC floor: RC beam: column:
treatment: not found
strctr source: KCSK191809_plate

façade pattern: 4 simple symmetry;porch;pitched rf;cupola
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;foliage
window element: 1 arch
door element: 1 corbel

original info about strctr	RC walls and floors cast together shown in the drawing of details in KCSK191809 shape of beam not found in the drawing of details in KCSK191809 no grid of columns shown in the floor plan in KCSK191809
note	官報 1917年12月17日付録_p.3: set in T6.11.22



code: 718 **日本工業倶楽部**
city: Tokyo duplication: ZSSKGH 1st published: 1918
use: assembly assembly cnstrctn period: 1918 — 1920
info type: detailed strctr system: RCframe
wall: RC&SRC floor: RC beam: RC&S column: RC&S
treatment: Br&St&tile=cv
strctr source: KCZS192102_p.91

façade pattern: 3 compound tripartition;portico;nstd quasi-symmetry;even wndw array
wall element: 5 column;balustrade / parapet;cornice / moulding;pilaster;ashlar / rustication
window element: 1 arch
door element: 7 column;balustrade / parapet;cornice / moulding;frieze / architrave;arch;pilaster;keystone

original info about strctr	KCZS: 二階より以上は化粧煉瓦貼付屋上正面にファーネスを挟みて彫像を置く…壁体 鉄筋コンクリート構造に一部分鉄骨構造を併用す　床 鉄筋コンクリート特に大なる梁間の床に鉄組立梁を用ふ; 震害及火害之研究_p.41: 軸部ー鉄筋「コンクリート」造、大広間廻リノ柱及ビ持放シ大ナル床梁等ハ鉄骨造。壁体ー鉄筋「コンクリート」造、外装ハー階花崗石、二階以上ハ「タイル」張、間壁鉄筋「コンクリート」造及木造。床ー鉄筋「コンクリート」造、屋根鉄筋「コンクリート」造陸屋根「ラバロイド」三重張「シンダーコンクリート」打「モルタル」塗
note	g=RC in KCZS192001; see also Earthquake report_p.576-577 & plate 209 for column structure



code: 735 **青山学院**
city: Tokyo duplication: SKGH 1st published: 1918
use: schoolhouse academic cnstrctn period: — 1917
info type: detailed strctr system: Rmasonry
wall: Br floor: W beam: column:
treatment: not found
strctr source: KCGH191812_plate; Earthquake report_p.533

façade pattern: 4 nested symmetry;vertical wndw array;portico;tower;pitched rf
wall element: 5 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;pediment / gable
window element: 1 lintel
door element: 4 pilaster;balustrade / parapet;pediment / gable;cornice / moulding

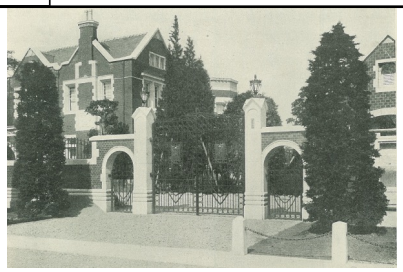
original info about strctr	KCGH: 煉瓦 (一部鉄骨コンクリート) Earthquake report_p.533: 壁の長 5間, 壁厚階下3B, 階上 2B, 地下室 3.5 B, 高地上30尺, 柱形 6.5尺間に3Bx0.5B, 開口 3/7, 間仕切多き方,平面凹字形をなし中央部に高約50 尺の塔体あり。 床及び屋根木造。
note	Earthquake report_p.533: finished in T6



code: 750 **日本製麻株式会社**
city: Tokyo duplication: SKGH 1st published: 1919
use: office bldg office bldg cnstrctn period: 1917 — 1919
info type: detailed strctr system: RCframe
wall: RC floor: RC beam: RC column: RC
treatment: tile=cv
strctr source: KCGH192010_Ads; 震害及火害之研究_p.64-65

façade pattern: 5 nested symmetry;tower;porch;cupola;simple tripartition
wall element: 7 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;corbel;ashlar / rustication;foliage
window element: 2 lintel;balustrade
door element: 4 pilaster;cornice / moulding;frieze / architrave;balustrade / parapet

original info about strctr	KCGH192010_Ads: Kahn System RC 震害及火害之研究_p.64-65: 軸部一鉄筋「コンクリート」造、壁体一鉄筋「コンクリート」造「タイル」貼付、床一鉄筋「コンクリート」造
note	大日本銀行会社沿革史. 東都通信社. T8_p.64-65: T6-T8.4; Kahn System



code: 779 **尚候爵家西洋館**
city: Tokyo duplication: ZSSKGH 1st published: 1919
use: house residential cnstrctn period: 1916 — 1919
info type: detailed strctr system: masonry
wall: Br floor: W beam: W column:
treatment: not found
strctr source: KCZS192104_p.211

façade pattern: 3 partial symmetry;portico;pitched rf
wall element: 1 foliage
window element: 2 trim / quoin;cornice / moulding
door element: 5 arch;keystone;foliage;column;cornice / moulding;frieze / architrave

original info about strctr	KCZS: 煉瓦壁体、木造屋根小屋組、及床組となし、…
note	



code: 790 **丸ノ内仲十五号館**
city: Tokyo duplication: ZSSKGH 1st published: 1919
use: rental office office bldg cnstrctn period: 1917 — 1919
info type: detailed strctr system: RCframe
wall: RC-Br floor: C beam: RC column: RC
treatment: Br=cv;aSt&mortar=ct
strctr source: KCZS191908_p.428

façade pattern: 2 simple symmetry;compound tripartition;vertical wndw array
wall element: 2 pilaster;ashlar / rustication
window element: 2 pediment;balustrade
door element: 0 canopy

original info about strctr	KCZS: 床「ステールフロアタイル」上に混凝土を打立て更に電線埋設の爲石炭殻混凝土を打足す、…柱、梁、は鉄筋混凝土にして壁体には煉瓦を積上ぐ、側壁外装材は横根澤石、白色化粧煉瓦、モルタル投付け、及び人造石塗等こす、… see also the drawing of details in KCSK191908
note	steel floor tiles filled with concrete; Kahn System utilized in foundation; originally as 27号館



code: 806 **大阪国技館**

city: Osaka duplication: KCSK 1st published: 1919

use: arena cultural cnstrctn period: 1918 — 1919

info type: detailed strctr system: masonry

wall: Br&St floor: RC&W beam: column: RC

treatment: Br=cv;aSt&mortar=ct

strctr source: KCSK191910news_p.67

façade pattern:	1	nested symmetry;vertical wndw array
wall element:	4	pilaster;column;frieze / architrave
window element:	1	trim / quoin;foliage
door element:	1	keystone;canopy

original info about strctr	KCSK: 壁体 煉瓦石造、人造石モルタル塗、張付煉瓦　屋根 ドウムトラス鉄骨其他木造葺、一部鉄筋コンクリート陸屋根 床ノ支柱 鉄筋コンクリート　客席床 木造　廊下床 鉄筋コンクリート
note	



code: 828 **両国国技館**

city: Tokyo duplication: SKGH 1st published: 1918

use: arena cultural cnstrctn period: — 1920

info type: detailed strctr system: Sframe

wall: S floor: RC beam: S column: S

treatment: mortar=ct

strctr source: KCSK192002_plate; 震害及火害之研究_p.158

façade pattern:	4	nested symmetry;dome;tower;even wndw array;portal
wall element:	4	balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	3	lintel;round window;keystone
door element:	2	keystone;lintel

original info about strctr	steel frame shown in the photo of construction, in KCSK192002 震害及火害之研究_p.158: 軸部及壁体一徑間二百尺ノ「リップ」 三十二組ヨリ成ル半球形鉄骨構造トシ、観覧席桟敷三階建「リップ」中心トシ鉄筋混凝土ヲ以テ構成シ、桟敷ノ荷重ハ「リップ」ニ関係ナク単独に構築ス、外部「モルタル」 塗仕上げ、屋根屋蓋浪形淺野スレート葺、…
note	震害及火害之研究_p.158: finished in 1920;



code: 842 **浜町電話分局**

city: Tokyo duplication: KCSK 1st published: 1920

use: telecom post&telecom cnstrctn period: 1919 — 1919

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: not found

strctr source: Earthquake report_p.588

façade pattern:	0	vertical wndw array
wall element:	2	ashlar / rustication;foliage
window element:	1	frieze / architrave
door element:	0	

original info about strctr	Earthquake report_p.588: 鉄筋混凝土造にして軒部は帳壁式鉄筋混凝土造、外壁の厚8寸鉄筋混凝土造なりとす、内部は壁体極めて少く階段廻りの壁体及びその他の内壁厚5寸の鉄筋混凝土造なり。
note	see also Earthquake report_p.588: g=RC, 帳壁式; see also 明治大正期の逓信建築_p.201: T8.2-T8.11, floor & roof = RC



code: 844 **横浜正金銀行下関支店**

city: Shimonoseki duplication: ZSSK 1st published: 1920

use: bank financial cnstrctn period: 1918 — 1920

info type: detailed strctr system: masonry

wall: Br&St floor: RC beam: RC column:

treatment: not found

strctr source: KCZS192010_p.481

façade pattern: 2 simple symmetry;simple(rf) tripartition
wall element: 3 balustrade / parapet;cornice / moulding;frieze / architrave
window element: 3 corbel;cornice / moulding;trim / quoin
door element: 2 trim / quoin;frieze / architrave

original info about strctr	KCZS: 外壁 表面は石積、裏面は煉瓦積、壁厚二尺五寸、石材は徳山產花崗石及白丁場石、正面紋章及標札は青銅製にして水谷鐵也の作 床及屋根 各階の床、階段は鉄筋コンクリート造、屋根は鉄筋コンクリート造アスファルト葺、各部鉄筋材はカーン式
note	Kahn System; identical specs in KCSK192004appndx; beam seen in the sections in the KCSK plates



code: 854 **東京区裁判所**

city: Tokyo duplication: ZSSKGH 1st published: 1918

use: court government cnstrctn period: — 1920

info type: detailed strctr system: RCwf

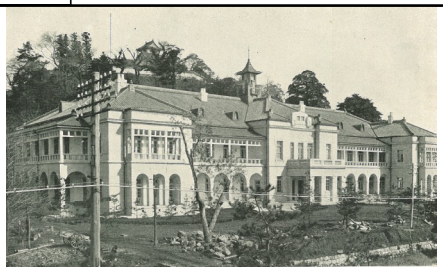
wall: C floor: RC beam: RC column:

treatment: St&aSt=trim;aSt=cornice;mortar=ct

strctr source: KCZS192009_p.428-429

façade pattern: 4 compound(rf) tripartition;portico;pitched rf;simple symmetry
wall element: 3 cornice / moulding;frieze / architrave
window element: 3 frieze / architrave;arch;trim / quoin;foliage
door element: 5 column;cornice / moulding;frieze / architrave;arch;keystone;foliage

original info about strctr	KCZS: 壁体 庁舎側廻に厚一尺五寸蛇腹に至る迄混凝土打ち、間仕切の一部一階三ヶ所二階二ヶ所は柱木摺打ちになし 階段家根裏界間仕切は木骨片面「モルタル」塗り其他總て厚一尺の混凝土打ちをなし表側廻り仕上は地階窓迫持及腰廻り横根澤産粗面仕上 石積にして主なる …床 屋根裏會議室上の一部は格子式、廊下通りは平板式其他一階、二階及屋根裏共梁式、外桔出廊下腕梁式、車寄露室は穹狀式に大法廷傍聽席に段形に、何れも鉄筋混凝土打ちをなし、…裏側廻り仕上は出入口楣、方立及腰廻り人造石、表面は「モルタル」塗りをなし…
note	construction period not recorded in KCZS192009; MTS10_p.187: finished in 1920.3.30; KCSK: RC



code: 862 **高知県庁舎改築**

city: Kochi duplication: KCSK 1st published: 1920

use: administrative government cnstrctn period: 1917 — 1920

info type: detailed strctr system: masonry

wall: Br floor: RC&W beam: RC&W column: RC

treatment: Br=cv;RC=column&cornice

strctr source: KCSK192007appndx_p.75

façade pattern: 6 nested symmetry;simple(rf) tripartition;arcade;portico;pitched rf;cupola
wall element: 4 column;pediment / gable;cornice / moulding;arch
window element: 2 lintel;keystone
door element: 3 balustrade / parapet;cornice / moulding;pilaster

original info about strctr	KCSK: 壁体は煉瓦積南東西三面に化粧煉瓦花崗煉瓦を貼付し北側は煉瓦洗出積とす(omitted)蛇腹外縁柱共鉄筋コンクリート造りとす 露台及便所床組は鉄筋コンクリート造りとす 各室の床組、小屋組は木材とし及桷を混用
note	



code: 874 **三菱仲十二号館**

city: Tokyo duplication: ZSSK 1st published: 1920

use: rental office office bldg cnstrctn period: 1919 — 1920

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: tile=cv

strctr source: KCZS192009_p.430; 震害及火害之研究_p.55

façade pattern: 1 quasi-symmetry;even wndw array
wall element: 3 ashlar / rustication;cornice / moulding;pilaster
window element: 0
door element: 2 corbel;frieze / architrave

original info about strctr	KCZS: 地階付四階建、鉄筋「コンクリート」造 震害及火害之研究_p.55: 軸部一鉄筋「コンクリート」造、壁體一鉄筋「コンクリート」造「タイル」張、間仕切及階ハ煉瓦造、其他ハ木骨ラス張漆喰塗、床一鉄筋「コンクリート」造、屋根一鉄筋「コンクリート」造陸屋根
note	



code: 875 **大阪税関庁舎**

city: Osaka duplication: ZSSK 1st published: 1920

use: administrative government cnstrctn period: 1918 — 1920

info type: detailed strctr system: Wframe

wall: W floor: W beam: W column:

treatment: Br=cv

strctr source: KCZS192007_p.351

façade pattern: 5 cmpnd symmetry;porch;tower;vertical wndw array;pitched rf;colonnade
wall element: 6 column;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 3 lintel;keystone;trim / quoin
door element: 4 column;balustrade / parapet;cornice / moulding;frieze / architrave;foliage

original info about strctr	KCZS: 壁体及外装 木骨構造化粧煉瓦貼付文書庫は煉瓦及鉄筋「コンクリート」構造…床 木造復式床組、…
note	library archive built with Br and RC; KCSK192004news: g=WRC; KCSK: RC化粧煉瓦張付



code: 879 **日本興業銀行大阪支店**

city: Osaka duplication: ZSSK 1st published: 1919

use: bank financial cnstrctn period: 1918 — 1920

info type: detailed strctr system: masonry

wall: Br&St floor: RC beam: RC column: RC

treatment: not found

strctr source: KCZS192010_p.482

façade pattern: 2 simple tripartition;nstd quasi-symmetry
wall element: 7 column;quoin;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 6 corbel;trim / quoin;pediment;arch;keystone;balustrade
door element: 3 arch;keystone;cornice / moulding

original info about strctr	KCZS: 外壁 石造、外壁の石裏及内壁は煉瓦積、…床及屋根 各階の床、階段及柱は鉄筋コンクリート造、屋根は鉄筋コンクリートにしてラバロイド製アスファルト葺、鉄筋材はカーン式 floor slabs inserted in the walls, shown in the drawing of sections (no. 3) in KCSK191906
note	Kahn System; KCSK192010appndx: identical specs with KCZS, KCSK: 外壁石造内壁煉瓦基礎コンクリート床屋根階段柱RC



code: 880 **三井合名会社本町事務所（四号館）**

city: Tokyo duplication: ZSSK 1st published: 1920

use: office bldg office bldg cnstrctn period: 1919 — 1920

info type: detailed strctr system: RCframe

wall: RC-Br floor: RC beam: RC column: RC

treatment: not found

strctr source: KCZS192010_p.486

façade pattern: 4 simple symmetry;compound tripartition;even wndw array;pinnacle;portal

wall element: 2 cornice / moulding;pilaster

window element: 0

door element: 1 arch;canopy

original info about strctr	KCZS: 壁体 側柱及間内柱、梁、桁、階段の軸部を凡て鉄筋コンクリートにて構成し外部側壁は煉瓦一枚半のカーテン、ウォール式して耐震耐火の目的を達するに努めたり 床 地下室床を地下五尺にして四周及底部共何れも防水材入コンクリートを施しモルタル塗仕上一階以上各階床及階段は全部鉄筋コンクリート床上に電線埋設のめシンダーコンクリートを施し練革床リグノイドにて仕上げたり
note	curtain wall



code: 889 **三井銀行下関支店**

city: Shimonoseki duplication: ZSSK 1st published: 1919

use: bank financial cnstrctn period: 1918 — 1920

info type: detailed strctr system: masonry

wall: St floor: RC beam: RC column:

treatment: not found

strctr source: KCZS192010_p.483; KCSK192011appndx_p.64

façade pattern: 1 simple symmetry;vertical wndw array

wall element: 6 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage

window element: 4 arch;keystone;trim / quoin;balustrade

door element: 2 cornice / moulding;frieze / architrave;canopy

original info about strctr	KCZS: 外部外面主要部は徳山産の花崗石にて仕上ぐ 床体 米国カーン式鉄筋コンクリート造、地階床には防湿工を施し、営業室一階二階各室はリノリーーム敷、客溜は敷瓦張り、地階室は人造研出し仕上げ
note	specs in KCSK identical with KCZS: Kahn System, roof built with RC, attached bldg constructed with RC walls



code: 946 **三菱合資会社第十二号館**

city: Tokyo duplication: ZSSK 1st published: 1909

use: rental office office bldg cnstrctn period: 1907 — 1910

info type: detailed strctr system: masonry

wall: St floor: C beam: W column:

treatment: TC=cornice

strctr source: KCZS191107_p.401-402

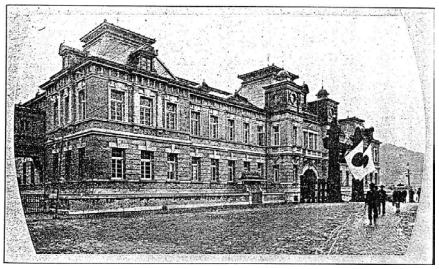
façade pattern: 6 nested symmetry;simple tripartition;porch;pinnacle;pitched rf;cupola

wall element: 5 quoin;arch;cornice / moulding;pediment / gable;foliage

window element: 3 trim / quoin;keystone;balustrade

door element: 4 pediment / gable;cornice / moulding;frieze / architrave;pilaster

original info about strctr	KCZS: エレベーションの上から云ふと十二號館の腰石は稻田產花崗石を用ゐ、腰石以上は矢吹石を使ふつもりで仕事を始め、…両館共、軒の出にテラコッタを使った。…ただ、十三号館の小屋組が軟鋼製であり、十二号館の方は木材であるの違ひだけである。… 木材(米松、松、ビハ、モミ)三二八四尺&九〇八 波形鉄板(カンメリッヒ)三三〇〇枚 セメント四〇四八樽
note	



code: 948 **長崎県庁**

city: Nagasaki duplication: KCZS 1st published: 1911

use: administrative government cnstrctn period: 1907 — 1911

info type: detailed strctr system: masonry

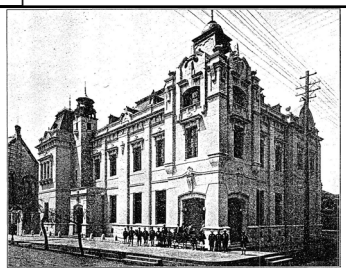
wall: Br&St floor: W beam: S&W column:

treatment: cement=ct

strctr source: KCZS191108_p.446

façade pattern:	6	nested symmetry;simple(rf) tripartition;tower;dome;pitched rf;portal
wall element:	4	cornice / moulding;ashlar / rustication;balustrade / parapet;frieze / architrave
window element:	8	keystone;round window;pediment;pilaster;balustrade;lintel;frieze / architrave;cornice / moulding
door element:	2	arch;keystone

original info about strctr	KCZS: 本庁舎地階壁外面花崗石積一階以上は県会議事院と等しく花崗石煉瓦混合積にして煉瓦面はセメント塗なり…二階床は主なる梁を鋼鉄製とし「ヂョイストハンガー」を鋲綴し、之に木梁を架設と米松床板張りとし正廳及應接室等は二重床張にして楢及マホガニーを以て寄木張りを施せり。
note	



code: 950 **第一銀行横浜支店**

city: Yokohama duplication: ZSGH 1st published: 1911

use: bank financial cnstrctn period: 1909 — 1911

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: Br&St=cv

strctr source: KCZS191109_p.493

façade pattern:	6	tower;portico;pitched rf;cupola;cmpnd symmetry;simple(rf) tripartition
wall element:	6	pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	5	corbel;cornice / moulding;arch;keystone;foliage;column
door element:	4	arch;keystone;foliage;cornice / moulding;balustrade / parapet

original info about strctr	KCZS: 外壁 煉瓦造 間仕切壁 木造 外部化粧材、腰、花崗石、上部、日出石及日本窯業会社製強付煉瓦強 床 木造…
note	



code: 953 **慶応義塾記念図書館**

city: Tokyo duplication: KCZS 1st published: 1911

use: library academic cnstrctn period: 1908 — 1912

info type: detailed strctr system: masonry

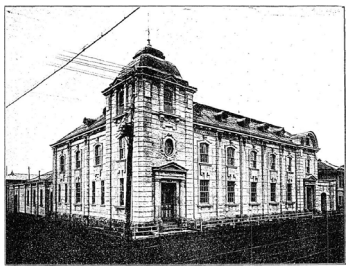
wall: Br floor: RC beam: column:

treatment: not found

strctr source: Tokyo100_p38

façade pattern:	6	cmpnd symmetry;simple tripartition;portico;tower;pinnacle;vertical wndw array;pitched rf
wall element:	4	buttress;quoin;balustrade / parapet;cornice / moulding
window element:	4	trim / quoin;pointed arch;rose window;trefoil arch
door element:	6	column;pointed arch;pediment / gable;cornice / moulding;balustrade / parapet;pillars

original info about strctr	Tokyo100_p38: 煉瓦石混合造 Earthquake report_p.537: 壁厚階下 2.5B、階上 2B, 壁高 40 尺, 柱形なし, 開口多し、 床及び屋根, 図書室は床筋混凝土, 小屋鉄骨…
note	structure info not found in KCZS 191111 specs



code: 955 **日本銀行函館支店**

city: Hakodate duplication: KCZS 1st published: 1911

use: bank financial cnstrctn period: 1910 — 1911

info type: detailed strctr system: Wframe

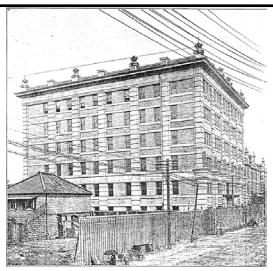
wall: W-tile floor: beam: W column: W

treatment: plaster=ct

strctr source: KCZS191112_p.613

façade pattern: 5 simple(rf) tripartition;dome;tower;pitched rf;cmpnd symmetry
wall element: 3 pilaster;cornice / moulding;foliage
window element: 7 pilaster;pediment;cornice / moulding;arch;keystone;trim / quoin;round window;foliage
door element: 4 column;pediment / gable;cornice / moulding;frieze / architrave

original info about strctr	KCZS: 本館 木造外壁竪瓦張、漆喰塗、屋根スレート葺…
note	



code: 972 **三井貸営業所**

city: Tokyo duplication: ZSGH 1st published: 1911

use: rental office office bldg cnstrctn period: 1910 — 1912

info type: detailed strctr system: Sframe

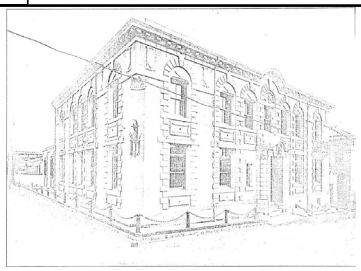
wall: SRC floor: RC beam: RC&S column: S

treatment: not found

strctr source: KCZS191210_p.482-492

façade pattern: 3 simple symmetry;compound tripartition;even wndw array;cupola
wall element: 4 pilaster;cornice / moulding;balustrade / parapet;frieze / architrave
window element: 1 pilaster
door element: 0 canopy

original info about strctr	KCZS: 本基礎は建築の総荷重を鋼鉄柱により支持する所謂カーテンウォール、システムなれば…今各階に於ける鋼鉄梁の床面石一平方尺に対する重量は(omitted. 1-6f)本建築に使用せる鋼鉄柱及梁の総重量は五五四噸なりとす 床スラブ及第二、四、六の三階に於ける床梁は鉄筋混凝土を使用せり…周壁及び建築内部に於ける壁にして鉄筋混凝土の部分は八分の五吋角の鉄條を五寸角に縦横に配置し壁の中心にあらしめたり…
note	KCSK191004news: g=SRC; see also KCGH191201_p.23 (photo); Tokyo100_p82: 鉄骨鉄筋混凝土造, finished in M44.10



code: 986 **北海道銀行**

city: Otaru duplication: KCZS 1st published: 1913

use: bank financial cnstrctn period: 1910 — 1912

info type: detailed strctr system: masonry

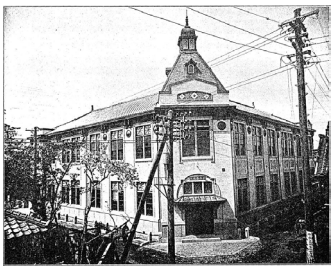
wall: St floor: W beam: W column:

treatment: not found

strctr source: KCZS191302_p.136

façade pattern: 3 simple symmetry;porch;simple(rf) tripartition
wall element: 2 cornice / moulding;frieze / architrave
window element: 4 trim / quoin;lintel;arch;keystone
door element: 3 pediment / gable;cornice / moulding;pilaster

original info about strctr	KCZS: 本館は石造にして腰石及玄關周園に於ける登り石を除くの外全部札幌軟石を使用せらる小屋組及床組に於ける構造材並に天井、床、羽目、枠、建具、階段等の仕上材は悉く北海道産の木材とす。
note	existing bldg



code: 993 **四谷区役所**

city: Tokyo duplication: KCZS 1st published: 1913

use: administrative government cnstrctn period: 1912 — 1913

info type: detailed strctr system: Wframe

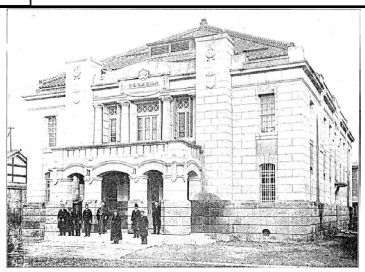
wall: floor: W beam: W column: W

treatment: tile=cv;aSt&plaster=ct

strctr source: KCZS191308_p.440

façade pattern:	4	nested symmetry;tower;pitched rf;cupola
wall element:	2	pilaster;cornice / moulding
window element:	1	trim / quoin
door element:	1	arch;canopy

original info about strctr	KCZS: 本館木造…床は事務室板張り公衆溜はコンクリート…壁は表側外部腰人造石洗出し上部化粧タイル張額縁人造石磨き裏側腰横鼻黒煉瓦上部セメント入漆喰塗…
note	



code: 1010 **北海道拓殖銀行旭川支店**

city: Asahikawa duplication: KCZS 1st published: 1914

use: bank financial cnstrctn period: 1912 — 1913

info type: detailed strctr system: masonry

wall: St floor: beam: column:

treatment: St=extrusion

strctr source: KCZS191403_p.189

façade pattern:	5	nested symmetry;portico;tower;pitched rf;simple(rf) tripartition
wall element:	6	column;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	3	lintel;arch;keystone
door element:	4	arch;cornice / moulding;balustrade / parapet;pilaster

original info about strctr	KCZS: 基礎は堅牢なる砂利層の上に在る混凝土地形、外壁及内壁共に石造にして其厚さ平均一尺八寸とし、腰石、蛇腹其他の突出部は場所に應じ美瑛硬石又は登り別硬石を資用し踏石は花崗石他は悉く軟石を用ひたり。金庫室天井昇降口上陸屋根は之を鐵筋混凝土を以て構成し、…
note	roof built with RC



code: 1011 **第二十三銀行本店**

city: Oita duplication: KCZS 1st published: 1914

use: bank financial cnstrctn period: 1910 — 1913

info type: detailed strctr system: masonry

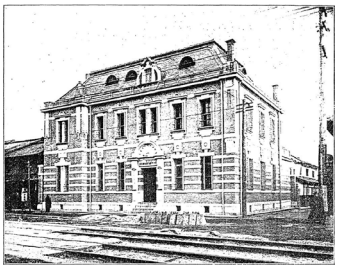
wall: Br floor: W beam: column:

treatment: St=extrusion;Br=cv

strctr source: KCZS191403_p.190

façade pattern:	4	partial symmetry;tower;pitched rf;simple(rf) tripartition
wall element:	5	pilaster;cornice / moulding;balustrade / parapet;corbel
window element:	9	column;pilaster;arch;keystone;corbel;pediment;cornice / moulding;frieze / architrave;round window
door element:	3	column;pediment / gable;frieze / architrave;foliage

original info about strctr	KCZS: 壁は煉瓦壁にして(omitted)外部化粧煉瓦張とし腰部帯石入口窓廻り等は全部北木島産花崗石を使用す。 床客溜はコンクリート打の上「ミントンタイル」敷仕上とし他全部木製床とす。
note	existing bldg, in Oita



code: 1012 **三十四銀行日本橋支店**

city: Tokyo duplication: KCZS 1st published: 1914

use: bank financial cnstrctn period: 1912 — 1913

info type: detailed strctr system: masonry

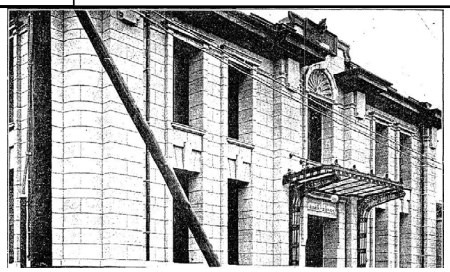
wall: Br floor: W beam: column:

treatment: St=extrusion;Br=cv

strctr source: KCZS191404_p.249

façade pattern: 3 simple(rf) tripartition;pitched rf;partial symmetry
wall element: 6 pilaster;corbel;cornice / moulding;balustrade / parapet;ashlar / rustication
window element: 5 trim / quoin;cornice / moulding;lintel;keystone;pediment
door element: 3 pediment / gable;cornice / moulding;corbel;foliage

original info about strctr	KCZS: 壁は煉瓦壁にして(omitted)外部は玉子色張付煉瓦張とし帯石腰石入口窓廻り等凡て北木島産花崗石を使用す。…床は客溜「コンクリート」厚四寸打ちの上「ミントンタイル」敷とし営業室、応接室等は木製床とす。
note	



code: 1013 **大阪貯蓄銀行京都支店**

city: Kyoto duplication: KCZS 1st published: 1914

use: bank financial cnstrctn period: — 1912

info type: detailed strctr system: masonry

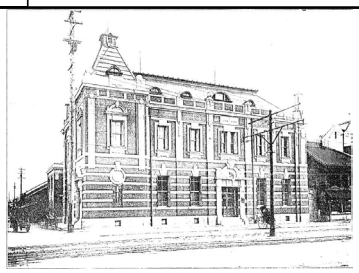
wall: Br&St floor: beam: column:

treatment: Br=cv

strctr source: KCZS191404_p.249

façade pattern: 2 simple symmetry;vertical wndw array;simple(rf) tripartition
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;foliage
window element: 4 cornice / moulding;keystone;pediment;trim / quoin;foliage
door element: 0 canopy

original info about strctr	KCZS: 本館七十五坪 煉瓦造 二面石造 一部二階建…本建物は三条通麩町屋角屋にして四面石造其他二方石色化粧煉瓦張腰積江戸切同上部平目地花崗石積…屋根陸屋根、鉄ガーダー架渡し鉄筋コンクリート上部一寸勾配に、亜鉛引波板葺
note	roof girder=S,roof=RC; MTS7_p.181: finished in 1912



code: 1082 **浪速銀行南支店**

city: Osaka duplication: KCZS 1st published: 1914

use: bank financial cnstrctn period: 1912 — 1913

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: Br&St=cv;mortar=ct

strctr source: KCZS191409_p.501

façade pattern: 4 simple(rf) tripartition;tower;pitched rf;partial symmetry
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication
window element: 5 trim / quoin;pediment;cornice / moulding;keystone;round window
door element: 5 pilaster;cornice / moulding;frieze / architrave;keystone;arch

original info about strctr	KCZS: 壁は煉瓦壁にして(omitted)外部張付煉瓦張として帯窓廻りモルタル塗りにして腰石入口廻り等北木産花崗石を使用す…床は客溜コンクリート(omitted)営業室床は木製床とす…
note	



code: 1083 **日本生命保険会社名古屋支店**

city: Nagoya duplication: KCZS 1st published: 1914

use: insurance financial cnstrctn period: 1908 — 1910

info type: detailed strctr system: Sframe

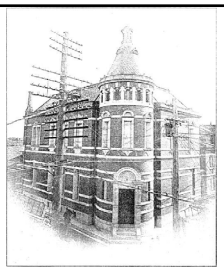
wall: S-Br floor: C beam: S column:

treatment: Br=cv;St=extrusion

strctr source: KCZS191410_p.555

façade pattern: 6 partial symmetry;tower;dome;pitched rf;cupola;simple(rf) tripartition
wall element: 4 corbel;pilaster;cornice / moulding;ashlar / rustication
window element: 6 arch;keystone;pediment;cornice / moulding;frieze / architrave;column
door element: 2 trim / quoin;arch

original info about strctr	KCZS: 壁は鉄骨煉瓦造にして階下三枚階上二枚にして外部は化粧煉瓦張とし帯石、窓、入口廻り等は北木島産花崗石を使用す(omitted)腰羽目は玄関のみ大理石にして他は全部檜材を使用し「ワニス」塗とす… 各床は鉄梁「コンクリート」打ちの上板床張とす no distinctive shape of frame shown in the drawings of floor plan shown in KCZS191410
note	



code: 1084 **日本教育生命保険株式会社**

city: Osaka duplication: KCZS 1st published: 1914

use: insurance financial cnstrctn period: 1900 — 1912

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: Br=cv;St=extrusion

strctr source: KCZS191410_p.555

façade pattern: 5 simple tripartition;tower;pitched rf;cupola;cmpnd symmetry
wall element: 1 cornice / moulding
window element: 4 lintel;trim / quoin;pediment;arch
door element: 2 corbel;pediment / gable

original info about strctr	KCZS: 壁は煉瓦壁にして(omitted)外部は化粧煉瓦張付けとす 帯石、窓、入口廻り等凡て北木島産花崗石を使用す…床、客溜及玄関は「コンクリート」打の上「ミントンタイル」敷其他凡て板張床とす
note	



code: 1086 **大阪株式取引所貸家**

city: Osaka duplication: KCZS 1st published: 1914

use: rental office office bldg cnstrctn period: 1912 — 1913

info type: detailed strctr system: RCframe

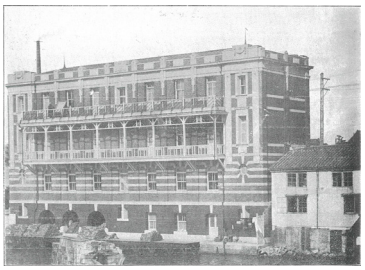
wall: RC floor: RC beam: RC column: RC

treatment: Br=cv;St=brim;aSt=ct

strctr source: KCZS191411_p.599

façade pattern: 2 simple tripartition;cmpnd symmetry
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave
window element: 4 arch;keystone;trim / quoin;lintel
door element: 4 pediment / gable;cornice / moulding;frieze / architrave;column

original info about strctr	KCZS: 構造は全部鉄筋「コンクリート」造にして「コンクリート」調合は一・二・四とし鉄筋は全部丸鉄を使用し「スターラップ」は主として平鉄を使用せり 壁厚は柱(形を除く)地下室尺三寸他は全部七寸にして外部は赤色化粧煉瓦張付とし腰部、入口、窓楣等は北木島産花崗石を使用し窓、廻り帯石等は人造石塗りとす
note	



code: 1087 **大阪窯業株式会社**

city: Osaka duplication: KCZS 1st published: 1914

use: office bldg office bldg cnstrctn period: 1912 — 1913

info type: detailed strctr system: Sframe

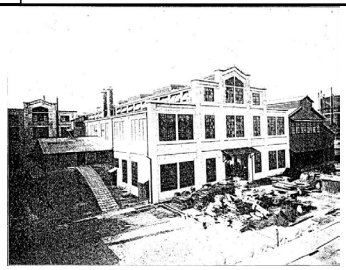
wall: S-Br floor: RC beam: S column:

treatment: aSt=brim;St=cv

strctr source: KCZS191411_p.599

façade pattern: 3 nstd quasi-symmetry;compound tripartition;arcade
wall element: 6 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 4 arch;keystone;round window;trim / quoin
door element: 2 arch;keystone

original info about strctr	KCZS: 壁は鉄骨煉瓦造にして側壁鉄骨組みの上煉瓦二枚積とし帯石、窓、入口及び柱形共に全部人造石塗りとし腰石は北木島産花崗石を使用す…床、地下室は「コンクリート」床とし他の三層共鉄梁を架渡し床片は凡て鉄筋「コンクリート」とし…
note	plate as back side façade, front façade not found



code: 1101 **芝浦製作所第二期工場**

city: Kawasaki duplication: KCZS 1st published: 1915

use: plant industrial&stor cnstrctn period: 1913 — 1914

info type: detailed strctr system: Sframe

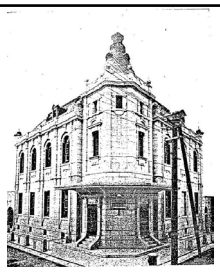
wall: SRC floor: S beam: S column: S

treatment: paint=ct

strctr source: KCZS191502_p.123

façade pattern: 1 simple symmetry
wall element: 2 pediment / gable;cornice / moulding
window element: 0
door element: 0 canopy

original info about strctr	KCZS: カーテンウォール式、鉄骨を主として基礎壁屋根等は鉄筋コンクリートとなす…床 …南側二階は網目付鉄物張洗鉄投入場となす…壁 六吋厚の鉄筋コンクリート(一・二・四)として(omitted)外面には防水の為めシルベスター(Sylvester?)法を施せり
note	floor built with iron bar, no concrete



code: 1104 **日本生命保険株式会社京都支店**

city: Kyoto duplication: KCZS 1st published: 1915

use: insurance financial cnstrctn period: 1912 — 1914

info type: detailed strctr system: Sframe

wall: S-Br&St floor: RC beam: S column:

treatment: Br=cv

strctr source: KCZS191503_p.173

façade pattern: 6 tower;dome;pitched rf;cupola;nstd quasi-symmetry;simple(rf) tripartition
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;corbel
window element: 5 trim / quoin;pediment;cornice / moulding;arch;keystone
door element: 3 pilaster;cornice / moulding;frieze / architrave;canopy

original info about strctr	KCZS: 壁 鉄骨構造にして側壁の厚さ煉二枚半、間仕切二枚にして外部表通二面全部北木島産花崗石積とし他は花崗石色張付煉瓦張とす内部は全部白漆喰塗にして羽目は客溜及玄關は大理石を用ひ他は艦及檜材を使用し「ワニス」塗となす 床 鉄梁及鉄筋「コンクリート」構造にして玄関、客溜、階段室は「ミントンタイル」敷とし他は床板張の上「リノリユム」敷とす…
note	existing bldg



code: 1105 **神戸銀行集会所**

city: Kobe duplication: KCZS 1st published: 1915

use: assembly assembly cnstrctn period: 1913 — 1914

info type: detailed strctr system: Wframe

wall: W-tile floor: W beam: W column: W

treatment: Br=cv;aSt&mortar=ct

strctr source: KCZS191503_p.174

façade pattern:	3	arcade;pitched rf;cmpnd symmetry
wall element:	7	pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element:	6	corbel;pediment;cornice / moulding;frieze / architrave;lintel;keystone
door element:	5	arch;column;keystone;balustrade / parapet;cornice / moulding

original info about strctr	KCZS: 構造は本館全部木造にして外部竪瓦張の上化粧煉瓦張付とし帯石軒小壁其他の飾物等は人造石にして背面廻りは「モルタル」塗とす… 床は玄関、階段室及便所は「コンクリート」打ちの上「ミントンタイル」敷となし其の他は全部床及板「リノリュム」敷き及竪木を以て寄木張とす
note	



code: 1106 **三十四銀行京都支店**

city: Kyoto duplication: KCZS 1st published: 1915

use: bank financial cnstrctn period: 1913 — 1914

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: Br=cv;St=brim

strctr source: KCZS191503_p.175

façade pattern:	5	cmpnd symmetry;simple(rf) tripartition;porch;pitched rf;cupola
wall element:	6	pilaster;pediment / gable;balustrade / parapet;cornice / moulding;ashlar / rustication;foliage
window element:	3	pilaster;lintel;keystone
door element:	5	trim / quoin;frieze / architrave;cornice / moulding;balustrade / parapet;pilaster

original info about strctr	KCZS: 壁 煉瓦壁にして厚二枚とし外部藥掛黄色化粧煉瓦張付けとす 根石、帯石、窓廻等凡て北木島産花崗石を使用す内部は全部白漆喰にして腰羽目は客溜は大理石を用ひ營業室及階上、下應接室は檜材「ペンキ」仕上とす 床 客溜は「コンクリート」打ちの上「ミント ンタイル」敷き金庫及文庫は人工「アスファルト」塗仕上とし其他は凡て床板張りとす
note	



code: 1107 **加島銀行京都支店**

city: Kyoto duplication: KCZS 1st published: 1915

use: bank financial cnstrctn period: 1913 — 1914

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: Br&St=cv;St=brim;aSt=ct

strctr source: KCZS191503_p.176

façade pattern:	4	simple symmetry;simple(rf) tripartition;pitched rf;cupola
wall element:	5	pilaster;balustrade / parapet;cornice / moulding;pediment / gable;ashlar / rustication
window element:	6	lintel;keystone;trim / quoin;pediment;cornice / moulding;round window
door element:	2	canopy;trim / quoin;keystone

original info about strctr	KCZS: 壁 煉瓦壁にして側壁及金庫仕切壁共厚さ二枚とし外部は花崗石及深紅色化粧煉瓦張付けとす 根石及表通帯石は窓廻り入口、廻等凡て北木島産花崗石を使用し同側面及背面は人造石塗とす 床 客溜は「コンクリート」打ちの上備前陶器瓦を張詰め(玄關風除内は花崗四盤石敷)其他は凡て床板張りとす
note	



code: 1109 **大阪倶楽部**

city: Osaka duplication: ZSGH 1st published: 1915

use: assembly assembly cnstrctn period: 1914 — 1915

info type: detailed strctr system: Wframe

wall: W-LC floor: C&W beam: W column: W

treatment: aSt&mortar=ct

strctr source: KCZS191504_p.237; KCGH191506_p.173

façade pattern: 3 tower;pitched rf;cmpnd symmetry
wall element: 3 pilaster;cornice / moulding;pediment / gable
window element: 6 pillars;arch;column;cornice / moulding;frieze / architrave;lintel
door element: 1 pilaster

original info about strctr	KCZS: 壁 木骨、外部は鉄網張り「コンクリート」塗として人造石及「モルタル仕上とし玄関入口廻り及地石は花崗石を用ひたり、内部は木摺漆喰塗の上壁紙及「ペンキ」塗仕上とせり… ニ階及拾(三?)階の主要なる諸室は欅寄木張、球戯室は「リノリューム」敷とし其他の諸室は亜米利加松材を用ひ一階は表階段、玄関及理髪室は「コンクリート」打の上人造石「タイル」を張り其他の諸室は「コンクリート」打「モルタル」塗とせり
note	KCSK191502news_p.92: g=W; 川崎画報3 (29) (191507), p. 185: 木骨鉄網混凝土, construction T3. 1-12



code: 1110 **増田ビルブローカー銀行**

city: Osaka duplication: ZSGH 1st published: 1915

use: bank financial cnstrctn period: 1914 — 1914

info type: detailed strctr system: masonry

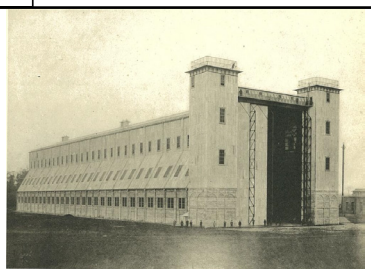
wall: Br&St floor: RC&W beam: S column:

treatment: Br=cv

strctr source: KCGH191507_p.204

façade pattern: 3 simple symmetry;pitched rf;simple(rf) tripartition
wall element: 6 corbel;cornice / moulding;balustrade / parapet;frieze / architrave;foliage;pediment / gable
window element: 5 column;pilaster;pediment;cornice / moulding;keystone
door element: 1 canopy;keystone

original info about strctr	KCZS: 壁 側壁厚さ煉瓦二枚半にして外部表通り全部北木産花崗石積とし他は花崗石色張付煉瓦張りとす… 床 地下室天井は鉄梁及鉄筋「コンクリート」構造にして玄関風除け内部安路産花崗四盤石、客溜は「セメントタイル」敷きとし他は床板張り上「クノリューム」敷きとす地上室空濠は全部「アスフルト」 塗
note	floor above B1=RC, floor above 1f=W; S beam for the floor of 1f (above B1)



code: 1112 **所沢飛行場飛行船庫**

city: Tokorozawa duplication: KCZS 1st published: 1915

use: plant industrial&stor cnstrctn period: 1911 — 1913

info type: detailed strctr system: Sframe

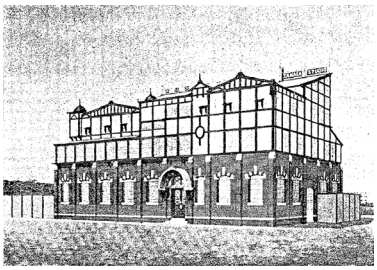
wall: SRC&S floor: C beam: S column: S

treatment: not found

strctr source: KCZS191505_p.407

façade pattern: 3 simple symmetry;tower;simple tripartition
wall element: 5 pilaster;arch;cornice / moulding;frieze / architrave;foliage
window element: 1 trim / quoin
door element: 0

original info about strctr	KCZS: 架骨 柱、小屋組其他架骨は全部鉄骨構造として屋根、側壁及び扉共垂直平面一平方尺につき五十听の水平風圧に対して安全なるものたらしめたり 壁体 地盤上二十六尺迄は鉄筋混凝土造とし上部は亜鉛引波形鉄板張とす… 床 全部「コンクリート」打の上「アスファルト」敷とす
note	



code: 1147 **田中製版所**

city: Tokyo duplication: KCZS 1st published: 1907

use: plant industrial&stor cnstrctn period: — 1907

info type: detailed strctr system: masonry&Wframe

wall: Br&W floor: C beam: S column:

treatment: not found

strctr source: KCZS190710_p.563

façade pattern: 3 porch;pitched rf;cupola
wall element: 2 buttress;half-timber
window element: 2 arch;keystone
door element: 2 arch;corbel

original info about strctr	KCZS: 地階を煉瓦造造為し、製版印刷用各種機械及び働力機を要するの室に充て、二階床は防火及び機械運転の振動を遮断する爲め鉄梁「コンクリート」床と爲し、此階及び三階は總て木造にして…
note	KCZS190710_p.563: photo sent by the owner after the launch of factory; KCZS191512_p.838: designed in 1903.12地階煉瓦造、二階床鉄梁コンクリート、二階三階全部木造



code: 1160 **第一生命保険相互会社本社**

city: Tokyo duplication: ZSSKGH 1st published: 1915

use: insurance financial cnstrctn period: 1915 — 1921

info type: detailed strctr system: Sframe

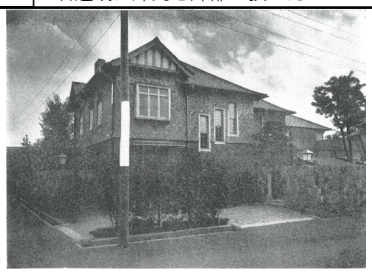
wall: S-Br&St&SRC floor: RC beam: S column: S

treatment: St=pile;Br=cv;aSt=ct

strctr source: KCZS192109_p.524

façade pattern: 4 nstd quasi-symmetry;dome;even wndw array;cupola;compound tripartition
wall element: 5 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;foliage
window element: 3 cornice / moulding;arch;keystone
door element: 2 arch;canopy;foliage;corbel

original info about strctr	KCZS: 外部は地上三階窓台迄常陸産御影石積、六階軒蛇腹迄化粧煉瓦張付七階以上は人造石塗仕上とす… 軸部鉄骨、(omitted)⊏L等鋼鉄材を以て柱、梁、胴差となし… 壁体、外部三階迄花崗石裏積煉瓦石、六階屋根迄煉瓦石二枚厚、以上は鉄筋「コンクリート」とし間内柱、防火壁は鉄筋「コンクリート」其他仕切壁は鉄骨「メタルラッス」張こなす 床、地下室床を地下七尺とし四周及底部は「アスファルト」厚五分燒付「トラスコンモルタル」塗、一階以上各階床及階段は全部鉄筋「コンクリート」床に… steel frame shown in the photo of construction in KCZS192109
note	KCZS192109: 間内柱=RC; construction period recorded in KCSK192105news_p.65, g=SRC; KCSK: 鉄骨鉄筋コンクリートに石造或は煉瓦を外部に張った



code: 1172 **和田維四郎氏住宅**

city: Tokyo duplication: KCZS 1st published: 1916

use: house residential cnstrctn period: — 1915

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column:

treatment: asbestos&Br=cv

strctr source: KCZS191601_plates (details)

façade pattern: 1 pitched rf
wall element: 2 cornice / moulding;half-timber
window element: 1 trim / quoin
door element: 0

original info about strctr	structural components shown in the drawing of details in KCZS191601 no shape of column shown in the drawings of plans and details in KCZS191601
note	KCKGGH2_15_p.514: T4.9 owner interviewed



code: 1174 **四十三銀行本店**

city: Wakayama duplication: KCZS 1st published: 1916

use: bank financial cnstrctn period: — 1916

info type: detailed strctr system: masonry

wall: Br&St floor: W beam: column:

treatment: Br=cv

strctr source: KCZS191604_p.207

façade pattern: 3 simple symmetry;pitched rf;simple(rf) tripartition

wall element: 5 pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication;foliage

window element: 3 trim / quoin;keystone;column

door element: 4 frieze / architrave;column;cornice / moulding;balustrade / parapet;canopy

original info about strctr	KCZS: 壁体構造 煉瓦…其外面に日本窯業株式会社特製の淡橙色及花崗石色煉瓦を貼付す。… 石材…又本館屋根、床材及附属舎、及倉庫用材全部日向産松荒角を以て直営製材夫々使用せり。…
note	KCZS191512_p.844: construction from T2-T5



code: 1180 **三井銀行大阪西支店**

city: Osaka duplication: KCZS 1st published: 1916

use: bank financial cnstrctn period: 1914 — 1916

info type: detailed strctr system: Rmasonry

wall: Br&St floor: RC&W beam: RC column:

treatment: Br=cv

strctr source: KCZS191608_p.493-494

façade pattern: 6 nested symmetry;colonnade;porch;tower;dome;vertical wndw array;pitched rf

wall element: 6 column;pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave

window element: 1 keystone

door element: 3 column;keystone;cornice / moulding

original info about strctr	KCZS: 壁体 北東両側幷に西側一部は花崗石積み壁厚普通の部分は煉瓦三枚厚、柱形の部分は四五尺に及ぶ、南西両側は花崗石色化粧煉瓦貼付、…床 営業室木造其他凡て鉄筋混凝土構造、客溜は本花崗石及普通花崗石四枚半敷き外縁に黒花崗石を用ゆ、支店長室及特別応接室は奇木張其他凡てリノリュム敷とす。 RC beams in the walls identified in the drawings of details in KCZS191608
note	



code: 1181 **岩井氏本邸**

city: Kobe duplication: KCZS 1st published: 1916

use: house residential cnstrctn period: 1911 — 1914

info type: detailed strctr system: Rmasonry

wall: RBr floor: RC beam: column:

treatment: St&tile=cv

strctr source: KCZS191608_p.495

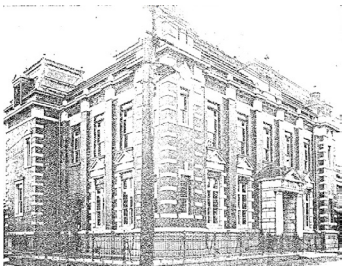
façade pattern: 4 cmpnd symmetry;tower;porch;pitched rf

wall element: 4 ashlar / rustication;quoin;balustrade / parapet;cornice / moulding

window element: 6 trim / quoin;column;arch;keystone;pediment;frieze / architrave

door element: 3 balustrade / parapet;frieze / architrave;column

original info about strctr	KCZS: 外壁及間仕切共に煉瓦壁にして厚さ二枚又は三枚積要所に鉄骨を用ひ石材は外部腰廻りは御影産自然石他は伊豫産花崗石上々小叩き又は鑿切り又荒石、貼付瓦は白色花崗石焼とす。 床工事 各階共鉄筋「コンクリート」防火床にして根太を用ひ寄木張り又は米国産松板にて張立てとす。
note	



code: 1183 **高岡共立銀行本店**

city: Takaoka duplication: KCZS 1st published: 1916

use: bank financial cnstrctn period: 1913 — 1914

info type: detailed strctr system: Rmasonry

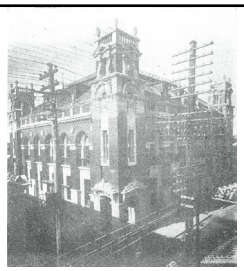
wall: S-Br floor: RC beam: column:

treatment: Br&St=cv

strctr source: KCZS191609_p.567

façade pattern:	5	nested symmetry;porch;pitched rf;cupola;simple(rf) tripartition
wall element:	3	pilaster;cornice / moulding;balustrade / parapet
window element:	5	trim / quoin;pediment;frieze / architrave;lintel;keystone
door element:	5	column;pediment / gable;cornice / moulding;frieze / architrave;balustrade / parapet

original info about strctr	KCZS: 壁及屋根 壁は補強式鉄骨煉瓦造にして標準壁厚一尺二寸とす外部には大阪窯業会社製装飾煉瓦を貼付け北木產花崗石を使用す正面昇降口は総体花崗石とす、屋根鉄骨造「スレート」葺き… 床及階段 二階、階段室同廊下は「鉄筋コンクリート」公衆室は服部製砥出し敷瓦とし其他は板張り「リノリウム」敷とす、階段は鉄製にして段端には「ゴム」入り金具を取付く
note	existing bldg



code: 1184 **大分銀行本店**

city: Oita duplication: KCZS 1st published: 1916

use: bank financial cnstrctn period: 1914 — 1915

info type: detailed strctr system: masonry

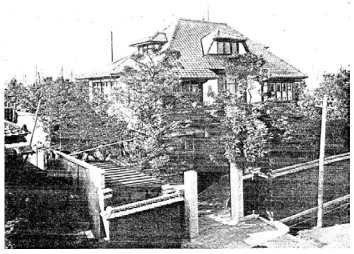
wall: Br floor: W beam: column:

treatment: Br=cv

strctr source: KCZS191609_p.568

façade pattern:	5	nested symmetry;arcade;tower;pitched rf;simple(rf) tripartition
wall element:	5	pilaster;arch;balustrade / parapet;cornice / moulding;ashlar / rustication
window element:	8	arch;keystone;pediment;corbel;round window;cornice / moulding;frieze / architrave;trim / quoin
door element:	5	arch;pediment / gable;column;cornice / moulding;frieze / architrave

original info about strctr	KCZS: 壁及屋根 壁は煉瓦造にして標準壁厚一尺二寸とす、外部には大阪窯業会社製装飾煉瓦を貼り附け、中國產花崗石を使用す、正面昇降口は総体花崗石造りとす 屋根構造は木骨「スレ ト葺きとし「スレート」と屋根板の間には全部約二寸厚に漆喰を塗布す 床及び階段 階下営業室及び応接室床かは「アスハアルト」敷き公衆室は人造石塗り其の他は総て木造にして「リノリューム」敷き又は絨壇敷きとす
note	entrance columns shown in the plate of façade



code: 1197 **森井啓之助氏本邸**

city: Tokyo duplication: ZSGH 1st published: 1916

use: house residential cnstrctn period: 1915 — 1916

info type: detailed strctr system: Wframe

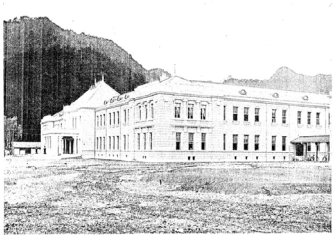
wall: W-tile floor: W beam: W column: W

treatment: Br=cv;cement&mortar&paint=ct

strctr source: KCZS191703_p.243

façade pattern:	3	simple symmetry;portico;pitched rf
wall element:	0	
window element:	0	
door element:	2	balustrade / parapet;pitched rf

original info about strctr	KCZS: 壁身 周囲壁身は木骨組外部竪瓦張り中仕切壁は木骨に両面木摺打ちとす 床及小屋組 木骨にして… 壁外面 根石上部、表廻りは二階窓迄裏廻りは一階窓迄大阪窯業会社装飾煉瓦を貼り付け、其の他の壁表面は「セメントモルタル」塗りの上に防水ペンキ白色仕上とし…
note	



code: 1198 **山口県庁庁舎及県会議事堂**

city: Yamaguchi duplication: KCZS 1st published: 1917

use: administrative government cnstrctn period: 1913 — 1916

info type: detailed strctr system: Rmasonry

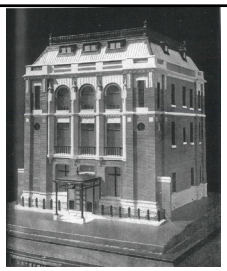
wall: RBr&W floor: W beam: column:

treatment: mortar=ct;St=brim

strctr source: KCZS191704_p.335

façade pattern:	5	nested symmetry;portico;colonnade;pitched rf;simple(rf) tripartition
wall element:	5	pilaster;column;balustrade / parapet;cornice / moulding;frieze / architrave
window element:	5	pilaster;trim / quoin;keystone;corbel;balustrade
door element:	4	column;balustrade / parapet;cornice / moulding;frieze / architrave

original info about strctr	KCZS: 本館煉瓦造二階建…壁 川崎式小形金網入煉瓦及木骨外部「モルタル」塗玄関廻根石窓台等徳山産花崗石、…床 主要なる室は寄木張他は拭ひ板張、濡縁、露台は鉄筋混凝土打の上「タイル」張叩き床は「モルタル」塗及人造石塗仕上 drawings of details in KCZS191704 not distinctive enough for identifying structural components
note	existing bldg



code: 1199 **鍵三銀行**

city: Niigata duplication: KCZS 1st published: 1917

use: bank financial cnstrctn period: 1915 — 1917

info type: detailed strctr system: masonry

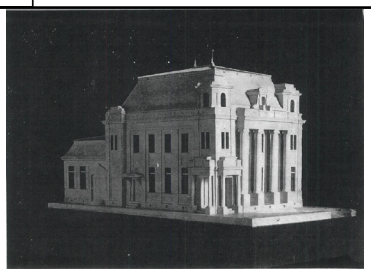
wall: Br floor: RC beam: column:

treatment: Br&St=cv;aSt=ct

strctr source: KCZS191705_p.419

façade pattern:	4	simple symmetry;simple tripartition;vertical wndw array;portico;pitched rf
wall element:	4	pilaster;corbel;balustrade / parapet;cornice / moulding
window element:	4	arch;frieze / architrave;round window;balustrade
door element:	0	canopy

original info about strctr	KCZS: 本館(三階建煉瓦造)… 壁 煉瓦造り但し外部は稲田産花崗石及同石粉入擬石塗を取り混ぜ其他の部分は赤色貼付煉瓦を貼付く 床 階下客溜並に金庫はコンクリート造擬石塗とし営業室は木造とす 二階三階全部鉄筋コンクリート造となし主要なる室は其上を木造床とす structures of beams and columns cannot be confirmed in the drawing of details in KCZS191705
note	清水組彩色設計図集vol.2_p.202: T4.8-T5.7



code: 1201 **富山県農工銀行**

city: Toyama duplication: KCZS 1st published: 1917

use: bank financial cnstrctn period: 1915 — 1916

info type: detailed strctr system: Wframe

wall: W-Br floor: W beam: W column: W

treatment: Br&St=cv;aSt=ct

strctr source: KCZS191705_p.419

façade pattern:	4	quasi-symmetry;portico;colonnade;pitched rf
wall element:	5	column;pilaster;balustrade / parapet;cornice / moulding;frieze / architrave
window element:	7	pediment;cornice / moulding;frieze / architrave;pilaster;arch;keystone;lintel
door element:	4	column;cornice / moulding;frieze / architrave;balustrade / parapet

original info about strctr	KCZS: 本館(二階建木骨造)… 壁 廻り煉瓦造其他木骨メタルラス張りモルタル塗とし外部入口廻り 腰積に北米産花崗石を使用し上部は鼻黒色貼付煉瓦並に花崗石粉入擬石塗を以て化粧す 床 公衆室及金庫コンクリート造人造石研き出し其他木造床とす
note	see also 清水組彩色設計図集vol.2_p.202



code: 1206 **株式会社六十九銀行本店**

city: Nagaoka duplication: KCZS 1st published: 1917

use: bank financial cnstrctn period: 1914 — 1916

info type: detailed strctr system: Rmasonry

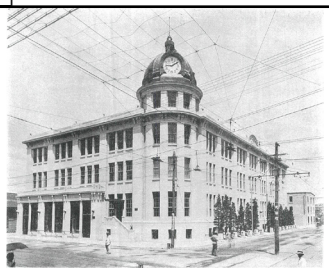
wall: S-Br floor: RC beam: column:

treatment: Br&St=cv

strctr source: KCZS191711_p.822-823

façade pattern:	4	nested symmetry;tower;dome;pitched rf
wall element:	5	column;pilaster;pediment / gable;cornice / moulding;frieze / architrave
window element:	5	trim / quoin;column;pediment;arch;keystone
door element:	2	arch;canopy;keystone

original info about strctr	KCZS: 壁 外壁は煉瓦二枚半壁にて積み上り各要部には鉄柱及び鉄梁を組み立て建物の外壁全部を補強し、外面は茶褐色貼付煉瓦及び稻田産花崗石を以て装飾す…金庫 煉瓦壁の内部に防湿装置を施し其内面は壁、天井共鉄筋コンクリート造となし床はコンクリートにて打ち固め… 床 玄関は縁大理石中央タイル敷とし公衆室は縁同上中央人造石研ぎ出しとす客室は寄木張こし其他の各室はリノリウム敷板張りす RC floor shown in the drawing of details & only three columns in the lobby shown in the floor plans, in KCZS191711
note	see also 清水組彩色設計図集vol.2_p.202; addtional plate only for personal use, from 『北越銀行創業140年10年のあゆみ』



code: 1207 **九州電灯鉄道会社**

city: Fukuoka duplication: KCZS 1st published: 1917

use: office bldg office bldg cnstrctn period: 1916 — 1917

info type: detailed strctr system: RCframe

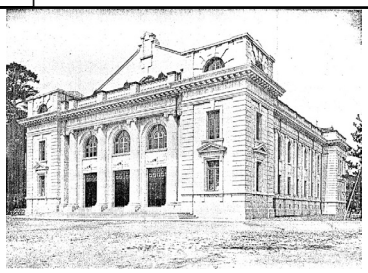
wall: RC floor: RC beam: RC column: RC

treatment: Br=cv;aSt=ct

strctr source: KCZS191712_p.877

façade pattern:	3	cmpnd symmetry;even wndw array;tower;dome
wall element:	4	corbel;balustrade / parapet;cornice / moulding;pediment / gable
window element:	0	
door element:	0	canopy

original info about strctr	KCZS: 本館基礎…同壁体 カーン式鉄筋コンクリート造外面下部花崗石上部は伊部装飾煉瓦及擬石塗… 本館床 地中室アスファルト敷、一階よりカーン式鉄筋コンクリート造、リノリューム敷(omitted) 貴賓室絨氈敷 本館陸屋根 カーン式ハイリブコンクリート造防水層ラバロイド葺小砂利撒但三階運動場床は防水層上細粒コンクリート表面モルタル四半塗; columns shown in drawings of plans in KCZS191712
note	"Kahn System"; "陳列窓" written in ground floor plan in KCZS191712



code: 1208 **海軍兵学校大講堂**

city: Aki-gun duplication: KCZS 1st published: 1918

use: schoolhouse academic cnstrctn period: 1913 — 1917

info type: detailed strctr system: Rmasonry

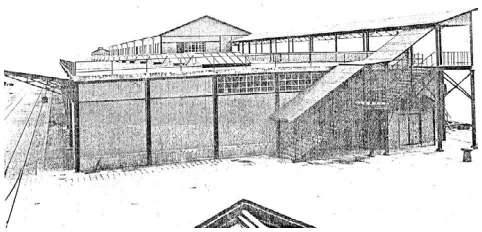
wall: S-Br&St floor: W beam: column:

treatment: not found

strctr source: KCZS191801_p.56

façade pattern:	5	nested symmetry;simple tripartition;vertical wndw array;pitched rf;colonnade;porch
wall element:	7	column;pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	7	trim / quoin;pilaster;pediment;frieze / architrave;cornice / moulding;arch;keystone
door element:	2	column;keystone

original info about strctr	KCZS: 壁体 鉄骨にして外部總体徳山產花崗石 内側煉瓦積漆喰塗及紙張仕上げ 床 陛下平面図中及の ABCDEF及びK各室は花崗石に色瓦を混用し敷詰め其他の階上下床は木製にして全部リノリューム式
note	only one major floor; existing bldg



code: 1209 **神戸税関第一鉄造上屋**

city: Kobe duplication: KCZS 1st published: 1918

use: plant industrial&stor cnstrctn period: 1914 — 1917

info type: detailed strctr system: Sframe

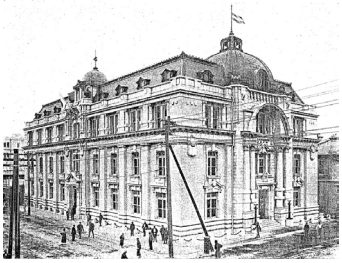
wall: S floor: RC beam: S column: S

treatment: not found

strctr source: KCZS191803_p.184-185

façade pattern: 1 horizontal wndw array;pitched rf
wall element: 0
window element: 0
door element: 0

original info about strctr	KCZS: 柱及壁体一階柱は凡て溝形鋼と板鋼とを以て組立たる「ボックスエラム」、根石は花崗石を用ひ、壁は鋼林間柱及銅縁に亜鉛鍍波形鉄板張りと爲し、階上は工形鋼を用ひ側壁は陛下同様にして内面「エツキスパンデットメタル」張り「セメントモルタル」及漆喰塗し… 二階床は「プラットガーダー」及鉄筋「コンクリート」構造とし…
note	川崎画報5, p. 129-132.



code: 1235 **日本郵船株式会社神戸支店**

city: Kobe duplication: KCZS 1st published: 1919

use: office bldg office bldg cnstrctn period: 1915 — 1918

info type: detailed strctr system: Sframe

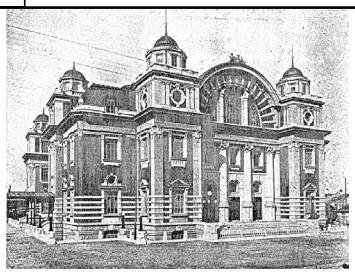
wall: S-Br floor: RC beam: S column: S

treatment: Br=cv

strctr source: KCZS191901_p.52

façade pattern: 6 simple symmetry;simple tripartition;dome;pitched rf;portal;porch
wall element: 7 column;pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;arch;foliage
window element: 7 column;arch;corbel;keystone;lintel;cornice / moulding;trim / quoin
door element: 6 column;pediment / gable;balustrade / parapet;cornice / moulding;arch;frieze / architrave

original info about strctr	KCZS: 外壁 鉄骨煉瓦造にして大島北米産花崗石を交ふ、外面の化粧瓦は肥前有田製乳色薄煉瓦の張付、間仕切壁は鉄骨メタルラス張 床 床体は一階をアスファルトの防湿層入コンクリートとし其他の階を鉄筋コンクリートとす、…][shaped columns and I-shape beams in the walls found in the drawing of details in KCZS191901
note	see also the photos; KDKCGH: SRC; existing bldg



code: 1239 **大阪中央公会堂**

city: Osaka duplication: KCZS 1st published: 1915

use: assembly assembly cnstrctn period: 1913 — 1918

info type: detailed strctr system: SRCframe

wall: S-Br&St&SRC floor: RC beam: SRC column: SRC

treatment: Br&St=cv;aSt=ct

strctr source: KCZS191905_p.259

façade pattern: 6 nested symmetry;simple tripartition;porch;tower;dome;pitched rf
wall element: 8 column;pilaster;arch;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 10 column;pilaster;pediment;cornice / moulding;corbel;frieze / architrave;trim / quoin;round window;arch;keystone
door element: 3 arch;keystone;column

original info about strctr	KCZS: 壁体 鉄骨煉瓦石造ニシテ鉄筋混凝土ヲ混用ス側壁外部ハ石材及化粧煉瓦ヲ張付ケ其他ハ擬石塗ヲ施ス… 屋根 鉄骨構造ニシテ銅板ヲ以テ被覆ス… 室内柱 鉄骨鉄筋混凝土大理石張リ又ハ人造石塗 床 鉄骨鉄筋混凝土ニテ上端ハ大理石、アスファルト各種タイル、木製床「リノリュム」敷又ハ寄木張等…
note	structure speculated to some extent



code: 1246 **伊藤忠合名会社**

city: Osaka duplication: KCZS 1st published: 1919

use: department large-scale cnstrctn period: — 1916

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC&S column: RC

treatment: Br=cv

strctr source: KCSK191601news_p.99; KCKGGS2-24_p.13-14

façade pattern: 1 pitched rf;even wndw array
wall element: 0
window element: 1 trim / quoin
door element: 0

original info about strctr	KCSK: 鉄筋混凝土 KCKGGS: 左側の一部が蛇腹付きの張り煉瓦家屋であるが如くに、将来黒塗の土蔵の如き外観を剥げ取り…凡ての庇や屋根は、鉄筋コンクリート壁にボールトにて締め付けてある丈けで、建物の本体は壁、柱、床階段とも、凡て鉄筋(及び鉄梁)コンクリートで仕上げたのである。…煉瓦化粧及耐火煉瓦合計二十八万一千八百六十三本…
note	KCKGGS2-24_p.13: use as wholesale



code: 1254 **古河商事株式会社大阪支店**

city: Osaka duplication: KCZS 1st published: 1919

use: office bldg office bldg cnstrctn period: 1916 — 1918

info type: detailed strctr system: RCframe

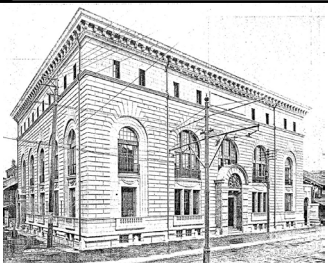
wall: RC floor: RC beam: SRC column:

treatment: St=cv;aSt=ct

strctr source: KCZS191908_p.426

façade pattern: 3 simple symmetry;simple tripartition;porch
wall element: 7 column;pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 5 trim / quoin;pediment;cornice / moulding;frieze / architrave;foliage;keystone
door element: 4 pilaster;cornice / moulding;balustrade / parapet;frieze / architrave

original info about strctr	KCZS: 壁体鉄筋「コンクリート」造り(間仕切壁共)正面及左右は外部大島産花崗石積脊面は人造石塗り 正面玄関及東側面昇降口階段大島産花崗石構造 床面各階共鉄骨鉄筋「コンクリート」造り 屋根陸屋根鉄材構造鐵筋「コンクリート」打とし「アスファルト」及「マルソイド」銅板葺 grid of columns shown in the drawings of floor plan in KCZS191908, speculated as RC frame
note	see also 近代建築画譜_p.137



code: 1255 **横浜正金銀行神戸支店**

city: Kobe duplication: KCZS 1st published: 1919

use: bank financial cnstrctn period: 1917 — 1919

info type: detailed strctr system: masonry

wall: Br&St floor: RC beam: RC column: RC

treatment: St=pile

strctr source: KCZS191910_p.490

façade pattern: 3 simple symmetry;porch;vertical wndw array;simple(rf) tripartition
wall element: 2 cornice / moulding
window element: 4 arch;keystone;foliage;trim / quoin;balustrade
door element: 2 pilaster;pediment / gable;foliage

original info about strctr	KCZS: 外壁 表面は花崗石積み裏面は煉瓦積み…内壁 主要なる壁及柱は鉄筋コンクリート造、主要ならざる壁は煉瓦造、三階間仕切は木骨鉄綱漆喰塗 床及屋根 各階の床力は鉄筋コンクリート造、営業室上部の陸屋根は鉄筋コンクリート造アスファルト葺仝中央に明取硝子屋根を設け営業室に光線を採る、該陸屋根及三階室の重量を支持する為めに長さ六十尺持放しの鉄筋コンクリート大梁二本を架渡す、三階室の屋根は木造にしてコンクリト防火層を設けアスファルト葺 鉄筋コンクリート 前記の鉄筋材ハカー式、コンクリートの調合は一、二、四 no grid of RC shown in the plans in KCZS191910
note	Kahn System



code: 1257 **日本郵船株式会社本社**

city: Tokyo duplication: ZSSKGH 1st published: 1920

use: office bldg office bldg cnstrctn period: 1920 — 1923

info type: detailed strctr system: Sframe

wall: S-Br floor: RC beam: S column: S

treatment: Br&St&TC=cv

strctr source: KCZS192001_p.67

façade pattern: 3 cmpnd symmetry;compound tripartition;even wndw array;vertical wndw array;porch

wall element: 7 pilaster;corbel;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage

window element: 0

door element: 3 corbel;cornice / moulding;balustrade / parapet

original info about strctr	KCZS: 鉄骨鉄筋コンクリート構造の地階付の六階建、…;床鉄筋コンクリート造、屋根陸屋根、外観、腰廻り花崗石、腰蛇腹迄張石以上化粧煉瓦及テラカッタ使用 震害及火害之研究_p.35: 軸部一鉄骨造煉瓦積、壁体煉瓦造、外部「テラコッタ」張、間壁ハ鉄筋「コンクリート」、空胴煉瓦又ハ鉄骨金網張。屋根一鉄筋「コンクリート」造陸屋根…柱梁等ノ鉄骨露出セル箇所夥シク…
note	completion expected in 1922; KCZS192303_p.85: "(鉄骨造) 丸ノ内ビルヂングと略同様なり"; construction period in Earthquake report_p.551;



code: 1258 **東京会館**

city: Tokyo duplication: ZSGH 1st published: 1920

use: assembly assembly cnstrctn period: 1920 — 1922

info type: detailed strctr system: Sframe

wall: S-Br floor: SRC beam: S column: S

treatment: Br&St=cv;aSt&mortar=ct

strctr source: KCZS192302_p.65

façade pattern: 3 simple symmetry;compound tripartition;vertical wndw array;portico

wall element: 5 balustrade / parapet;cornice / moulding;ashlar / rustication;foliage;frieze / architrave

window element: 5 arch;keystone;pilaster;trim / quoin;balustrade

door element: 0 canopy

original info about strctr	KCZS: 柱及梁 鉄骨構造とし鉄柱は煉瓦又はコンクリートを以て被覆し鉄梁は鉄筋コンクリート又は鉄網張モルタル塗を以て被覆す。 壁 外壁は帳壁式煉瓦一枚半積こし川崎式山型金網を以て補強す。… 床 各階床及屋根スラブは鉄骨鉄筋コンクリート造とす。… 外部仕上 東面、西面の胴蛇腹以下及東面、北面の根石、腰石等は常陸産小花崗石を使用し其他石材の外観を呈する部分は擬石塗とし平壁は貼付煉瓦或は擬石塗又はモルタル塗とす。
note	completion expected in 1922 in KCZS192001 (g=SBr); 帳壁式, for most part, S is covered by RC for fire proofing; KCGH192303_p.2: completion in 1922; see also Earthquake report_p.554



code: 1259 **日本倶楽部会館**

city: Tokyo duplication: ZSSKGH 1st published: 1920

use: assembly assembly cnstrctn period: 1919 — 1921

info type: detailed strctr system: RCframe

wall: RC-Br floor: RC beam: RC column: RC

treatment: Br=cv;aSt&mortar=ct

strctr source: KCZS192110_p.610

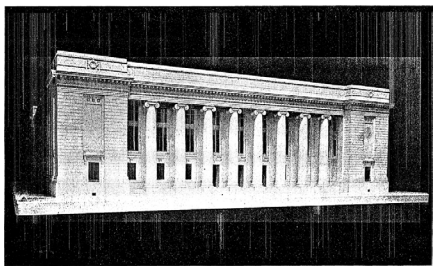
façade pattern: 2 vertical wndw array;tower;dome;horizontal wndw array

wall element: 2 pilaster;foliage

window element: 2 pilaster;frieze / architrave

door element: 0 canopy

original info about strctr	KCZS: 壁体 鉄筋混凝土構造にして鉄筋は「トラスコン」会社製品を用ひ内側に「ホロー、ブリック」半枚厚を積み… 外部表面は大体化粧煉瓦張りなれども一部分人造石洗出塗を用ひ背面を部分は附属家に相当する部分は「モルタル」疎面仕上げとせり 但し玄関額縁廻り各窓台下及塔屋「パネル」に特に池田泰山氏製作の和風化粧瓦を使用せり 床 全体「フロアータイル」を用ひ鉄筋混凝土構造なせり… 震害及火害之研究_p.68: 軸部及壁体一鉄筋「コンクリート」造、外壁内面ニハ空胴煉瓦ヲ使用ス、床一鉄筋「コンクリート」造
note	g=RC, completion expected in 192004 (KCZS192001); iron bars from Truscon (Kahn System); see also 清水組彩色設計図集vol.4_p.209: T8.1-T10.6, g=Br; see also



code: 1260 **三菱銀行本店**

city: Tokyo duplication: ZSSKGH 1st published: 1920

use: bank financial cnstrctn period: 1916 — 1922

info type: detailed strctr system: Sframe

wall: S-St floor: SRC beam: S column: S

treatment: not found

strctr source: KCZS192208_p.355

façade pattern:	2	nested symmetry;colonnade;vertical wndw array
wall element:	5	column;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	3	corbel;cornice / moulding;keystone
door element:	4	column;balustrade / parapet;cornice / moulding;pediment / gable

original info about strctr	KCZS: 壁体 鉄骨構造、外面全部稲田花崗石積、間壁煉瓦又ホロータイル 床 鉄骨鉄筋コンクリート構造 屋根 陸屋根鉄骨鉄筋コンクリート構造 震害及火害之研究_p.56: 軸部一鉄骨構造、壁体一外壁仕上花崗石積、間壁煉瓦又ハ「ホロータイル」積、床一鉄骨鉄筋「コンクリート」造、屋根一鉄骨鉄筋「コンクリート」造陸屋根
note	construction period not recorded in KCZS192001 (g=SSt); KCSK192205news: no structure info recorded;



code: 1261 **朝鮮銀行東京支店**

city: Tokyo duplication: ZSSKGH 1st published: 1920

use: bank financial cnstrctn period: — 1922

info type: detailed strctr system: SRCframe

wall: SRC floor: RC beam: SRC column: SRC

treatment: Br&St=cv

strctr source: KCZS192001_p.68

façade pattern:	2	simple symmetry;compound tripartition
wall element:	5	corbel;balustrade / parapet;cornice / moulding;ashlar / rustication;foliage
window element:	5	arch;round window;keystone;balustrade;trim / quoin
door element:	3	column;pediment / gable;frieze / architrave

original info about strctr	KCZS: 鉄筋コンクリート造外面石張 震害及火害之研究_p.48: 軸部一鉄骨鉄筋「コンクリート」造。壁体一同上外面石及化粧煉瓦張付。床一鉄筋「コンクリート」造。屋根一鉄筋「コンクリート」造陸屋根
note	震害及火害之研究. 洪洋社. 1925: finished in T11.4; similar with 報知新聞社; see also Earthquake report_photo440



code: 1262 **日本石油会社**

city: Tokyo duplication: ZSSKGH 1st published: 1920

use: office bldg office bldg cnstrctn period: 1920 — 1922

info type: detailed strctr system: Sframe

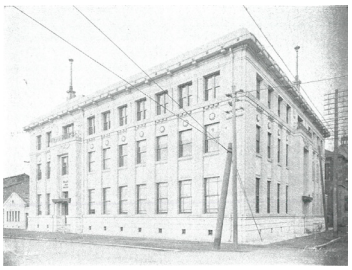
wall: S-Br floor: RC beam: S column: S

treatment: St&TC&tile=cv

strctr source: KCZS192306_p.270

façade pattern:	3	compound tripartition;even wndw array;vertical wndw array;porch;simple symmetry
wall element:	4	pilaster;cornice / moulding;frieze / architrave;foliage
window element:	1	balustrade
door element:	4	pilaster;balustrade / parapet;cornice / moulding;frieze / architrave

original info about strctr	KCZS: 地上壁体 壁体鉄骨造煉瓦張壁積、床体鉄筋「コンクリート」造、間壁中空煉瓦積、金庫室鉄筋「コンクリート」及煉瓦壁屋根陸形鉄筋「コンクリート」造 内外壁面 外路に面する外壁は腰部栃木県渡良瀬川沿岸産花崗石、中部月出石殘余上部「テラカタ」積、中央採光屋根を囲む外壁は白色「タイル」貼り、… Earthquake report_p.553: 柱: 鉄柱はその脚部に於て鉄筋混凝土梁にて繋ぐ… 梁: 梁は鉄骨, 床は鉄筋混凝土とす。…
note	construction period not recorded in KCZS192001; see also Earthquake report_p.553



code: 1265 **株式会社岩井商店横浜支店**

city: Yokohama duplication: KCZS 1st published: 1920

use: shop small-scale cnstrctn period: 1918 — 1919

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: column:

treatment: Br&St=cv;aSt=ct

strctr source: KCZS192002_p.128

façade pattern: 4 simple tripartition;even wndw array;porch;pinnacle;partial symmetry
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;foliage
window element: 1 pilaster
door element: 0 canopy

original info about strctr	KCZS: 本館(三階建鉄筋混凝土造)… 壁体 周壁は鉄筋混凝土造とし仕上は主として稲田産、花崗石、貼付化粧瓦(花崗石色)及び擬石塗等を以てし、背面の一部にはモルタル塗を用ひたり、 間仕切壁の主要なるものは鉄筋混凝土造なし 他は木造とす、仕上は両者共漆喰塗す、 床 一階の玄関、広間、廊下、金庫室等は混凝土叩き床となし他の諸室は木造床とす、 二階以上は鉄筋混凝土造とし但し拝見場は鉄筋混凝土床上に木造床を設置す、…
note	清水組彩色設計図集vol.3_p.195: T7.8-T8.9, g=RC



code: 1266 **株式会社第一銀行熊本支店**

city: Kumamoto duplication: KCZS 1st published: 1920

use: bank financial cnstrctn period: 1917 — 1919

info type: detailed strctr system: Rmasonry

wall: RBr floor: RC beam: column:

treatment: Br&St=cv;aSt=ct

strctr source: KCZS192002_p.129

façade pattern: 3 cmpnd symmetry;vertical wndw array;tower;simple(rf) tripartition
wall element: 3 cornice / moulding;balustrade / parapet;ashlar / rustication
window element: 4 lintel;arch;keystone;balustrade
door element: 4 cornice / moulding;corbel;pediment / gable;keystone

original info about strctr	KCZS: 壁体一周壁は煉瓦造、各階に鉄筋「コンクリート」の「バンド」を廻し床「コンクリート」に連結し耐震的補強の一端となす 外部壁面は花崗石、化粧煉瓦、及擬石塗りとす 床一鉄筋「コンクリート」構造、「アスファルト」塗りの上「リノリウム」敷 屋根一鉄筋「コンクリート」構造「マルソイド」及「アスファルト」を以て防水工事を施す
note	see also 清水組彩色設計図集vol.2_p.204: T6.4-T8.5, g=Br&RC



code: 1267 **藤山工業図書館**

city: Tokyo duplication: ZSGH 1st published: 1920

use: library academic cnstrctn period: — 1923

info type: detailed strctr system: masonry

wall: Br floor: RC&W beam: column:

treatment: Br&St=cv

strctr source: KCZS192002_p.130

façade pattern: 6 cmpnd symmetry;arcade;tower;dome;pitched rf;simple(rf) tripartition
wall element: 6 pilaster;arch;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 5 pilaster;pediment;arch;round window;keystone
door element: 2 pilaster;arch;foliage

original info about strctr	KCZS: 壁体は 煉瓦積とし外面花崗石色貼付煉瓦及花崗石及 月出石を以て装飾す 床は 木骨造とし一部鉄筋コンクリート造とす 屋根 木骨小屋組の上に瓦葺とす
note	completion expected in 1921; Earthquke report_p.536: finished in T12, g=Br, f=W, balcony and small lintels with RC; see also 清水組彩色設計図集vol.4_p.207: T8.8-T10.12, g=RC



code: 1268 **神戸川崎銀行本店**

city: Kobe duplication: KCZS 1st published: 1920

use: bank financial cnstrctn period: 1916 — 1919

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC&S column: RC&S

treatment: St=cv;aSt=ct

strctr source: KCZS192003_p.121

façade pattern:	3	quasi-symmetry;compound tripartition;porch
wall element:	6	pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element:	6	arch;keystone;pediment;cornice / moulding;frieze / architrave;trim / quoin
door element:	2	cornice / moulding;pilaster

original info about strctr	KCZS: 各部壁体は三四五階に於ける間仕切壁の一部を除くの外全鉄筋コンクリート構造なり、各階床渠(梁?)及柱等亦共主要部に鉄骨を使用したる外皆鉄筋コンクリート造を採用し、耐火耐震耐室耐虫性の堅牢無比なる高層建築たり、北部及西部の主要壁体の下層は北木島産花崗石を使用して外容を整へ、他は總べて人造石塗とす、…
note	g=RC; page numbers mishandled by KCZS; foundation year recorded as T6 at the end of specs, contradiction; RC frame shown in the relic in Meiji Mura



code: 1269 **内外ビルディング**

city: Tokyo duplication: KCZS 1st published: 1920

use: office bldg office bldg cnstrctn period: 1921 — 1923

info type: detailed strctr system: RCframe

wall: RC-Br floor: RC beam: RC column: RC

treatment: St=cv

strctr source: KCZS192003_p.122; 震害及火害の研究_p.33

façade pattern:	5	nstd quasi-symmetry;compound tripartition;vertical wndw array;even wndw array;tower;pinnacle;portal
wall element:	3	balustrade / parapet;cornice / moulding;ashlar / rustication
window element:	2	arch;keystone
door element:	1	arch

original info about strctr	KCZS: 鉄筋コンクリート構造 震害及火害の研究_p.33: 軸部一鉄筋「コンクリート」造(カーン・システム)。壁体一外壁 (帳壁) 一階及二階煉瓦(一枚半) 積月出石張、間壁ハ木造「メタル・ラス」張。床一鉄筋「コンクリート」造(カーン・システム)。屋根一鉄筋「コンクリート」造陸屋根。
note	construction period not recorded in KCZS192003; 大正大震災震害及火害の研究_p.33: from T10.1 to T12.7; see also Earthquake report_p.575: b=RC (Kahn System)



code: 1276 **三菱仲二号館**

city: Tokyo duplication: KCZS 1st published: 1920

use: rental office office bldg cnstrctn period: 1918 — 1919

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: Br&RC column: Br&RC

treatment: Br&St=cv;aSt=ct

strctr source: KCZS192009_p.431

façade pattern:	2	simple symmetry;compound tripartition;even wndw array
wall element:	4	cornice / moulding;frieze / architrave;ashlar / rustication;pilaster
window element:	1	lintel
door element:	1	corbel;canopy

original info about strctr	KCZS: 正面は二階窓下迄月出石貼付裏側三方は二階窓下迄人造石塗二階以上は四方共赤色化粧煉瓦貼付 軒廻りは人造石塗… 震害及火害之研究_p.54: 軸部一鉄筋「コンクリート」及煉瓦造、壁体一外壁鉄筋「コンクリート」造、間仕切及地階ハ煉瓦造、其他ハ木骨「ラス」張漆喰塗、床一鉄筋コンクリート」造、屋根一鉄筋コンクリート」造陸屋根
note	



code: 1277 **白木屋呉服店大阪支店**

city: Osaka duplication: ZSSK 1st published: 1920

use: department large-scale cnstrctn period: 1920 — 1921

info type: detailed strctr system: SRCframe

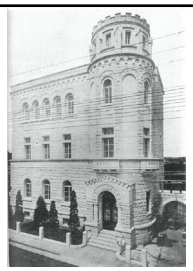
wall: S-Br&SRC floor: RC&SRC beam: SRC column: RC&SRC

treatment: Br&St=cv;aSt=ct

strctr source: KCZS192203_p.152

façade pattern: 5 nested symmetry;compound tripartition;even wndw array;pinnacle;tower;portal
wall element: 5 buttress;pediment / gable;balustrade / parapet;corbel;cornice / moulding
window element: 0
door element: 3 balustrade / parapet;arch;triangular arch

original info about strctr	KCZS: 壁体 鉄骨鉄筋混凝土並に煉瓦造とす 外部仕上は表通り並に左側面は一階陳列窓出入口、周囲を花崗石、大理石又は擬石塗仕上とし其他は花崗石色貼付煉瓦貼り並に擬石塗仕上とす　右側面は主として貼付煉瓦及擬石塗とす　背面は主として擬石塗とす 床 第一階床は全部鉄筋混凝土造とし其他は総て鉄骨鉄筋混凝土造とす、各出入口及地階を除き 室内は上記混凝土上に木造床を設け表面薄縁敷又は絨檀敷きとなす 柱 地階の柱及背面に於ける側柱は鉄筋混凝土造とし其他は鉄骨鉄筋混凝土造とす as to beam structure, see the plates of section in KCZS192202; B1 shown in section in KCZS192202
note	RC for ground floor



code: 1280 **明治生命保険株式会社仙台支店**

city: Sendai duplication: KCZS 1st published: 1920

use: insurance financial cnstrctn period: 1918 — 1920

info type: detailed strctr system: masonry

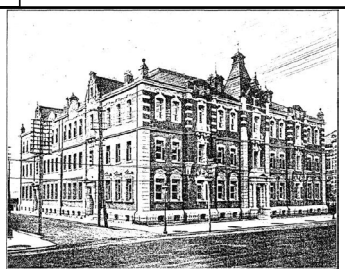
wall: Br floor: RC beam: RC column:

treatment: St=pile;Br=cv

strctr source: KCZS192010_p.485

façade pattern: 5 simple tripartition;porch;tower;arcade;partial symmetry
wall element: 3 balustrade / parapet;cornice / moulding;buttress
window element: 2 arch;column
door element: 3 column;arch;pitched rf

original info about strctr	KCZS: 壁体及外装 本体を煉瓦積とし建物を二分して南半分の外壁面を稲田産花崗石積とし北寄半部の外壁面を化粧煉瓦張となす 屋根 「カーン」式鉄筋コンクリート」構造「マルソイド」及「アスファルト」を以て防水工事を施し小砂利敷仕上とす 床 全部「カーン」式鉄筋「コンクリート」構造にして玄関、客溜床は「モザィック」「タイル」敷き一階廊下及二階便所は人造石塗其の他各室は「コルク」板貼付の上「リノリーム」仕上となす
note	Kahn System



code: 1297 **三菱合資会社第十三号館**

city: Tokyo duplication: ZSSK 1st published: 1910

use: rental office office bldg cnstrctn period: 1907 — 1911

info type: detailed strctr system: masonry

wall: St floor: C beam: column:

treatment: TC=cornice

strctr source: KCZS191107_p.401-402

façade pattern: 4 simple tripartition;pitched rf;cupola;nested symmetry
wall element: 6 pilaster;corbel;quoin;cornice / moulding;pediment / gable;foliage
window element: 7 trim / quoin;arch;keystone;frieze / architrave;pediment;cornice / moulding;corbel
door element: 7 column;trim / quoin;pediment / gable;cornice / moulding;frieze / architrave;arch;keystone

original info about strctr	KCZS: 十三號館も同じく上は一階以上は須賀川石を用ゐるつもりでであったが、工事中、この二つの石は元來非常に需要多きを以て、間に合はず、止むを得ず、三階以上は花崗石を使った。…ただ、十三号館の小屋組が軟鋼製であり、十二号館の方は木材であるの違ひだけである。 木材(米松、檜)二六九九尺&六一四 波形鉄板(カンメリッヒ)三一六六枚 セメント三七六〇樽
note	structure speculated from the specs



code: 1351 **三菱貸事務所十六号館**

city: Tokyo duplication: KCSK 1st published: 1912

use: rental office office bldg cnstrctn period: — 1912

info type: detailed strctr system: RCwf

wall: RC floor: beam: column:

treatment: TC=cv

strctr source: 三菱社史chp3sec2_p.189

façade pattern: 4 even wndw array;tower;dome;pitched rf;nstd quasi-symmetry
wall element: 2 cornice / moulding;half-timber
window element: 2 lintel;balustrade
door element: 2 arch;keystone

original info about strctr	KCSK: 様式はレネッサンス式にて三階建鉄筋コンクリートの構造なり十四號から十七號迄に来る三月末日竣 エの都合にて (omitted) 軒高各三十六尺あり前記の鉄筋コンクリート壁と外部には化粧煉瓦色のテラカッタを貼り三階に洗出し屋根はスレート葺の下にアスヘストを敷き…
note	KCSK191203news: g=RC; Mistsubishi Estate history_p.190: finished in the spring of M45



code: 1366 **丸善株式会社**

city: Tokyo duplication: ZSSKGH 1st published: 1910

use: shop small-scale cnstrctn period: — 1910

info type: detailed strctr system: Sframe

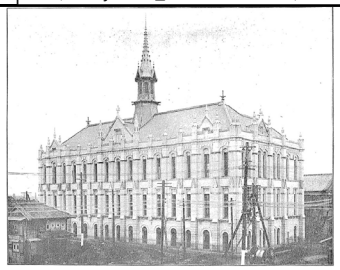
wall: S-Br floor: C&RC& beam: S column: S

treatment: not found

strctr source: KCZS191009_p.498

façade pattern: 6 simple tripartition;tower;dome;pitched rf;cupola;cmpnd symmetry
wall element: 4 pilaster;cornice / moulding;balustrade / parapet;pediment / gable
window element: 4 lintel;arch;keystone;round window
door element: 3 Moorish arch;pediment / gable;pilaster

original info about strctr	KCZS: 鋼骨煉瓦造にして東部第二階床全部、第三階便所床並に間仕切壁の一部に鋼筋コンクリートを用ひ他を板敷又はコンクト叩きとなす屋根にはスレート及び亜鉛引鉄板を用ふ… 柱は各四本のアンカー、ボルトを以て深く基礎中のアンカープレートに連絡す壁梁には四枚のアングルを以て組立たるラティス梁及び溝形二枚の組立梁を用ふ床梁には凡て工形を用ひ梁間に応じて大小あり… 其他一壁は主として煉瓦一枚半の厚さとなし特に側柱の個所は柱形として外にのみ突出せしむ、壁の重量は壁梁に依て鋼柱に傳達し得べからしめたり、煉瓦壁中には平鉄及びボルトを縦横に配置して主として水平方向の強さを補ふ… I-shape steel columns in pilasters, shown in the floor plan in KCSK191003
note	see also 丸善株式会社 (日本橋) 中村田邊 KCSSRS_4_19vol2barrack_p53; 大正大震災震害及火害之研究_p.124: finished in M43; Tokyo100_89: 鉄骨煉瓦造; covering cannot be found in the sections in KCZS191009



code: 1404 **東京中央電話局京橋電話分局**

city: Tokyo duplication: ZSSKGH 1st published: 1910

use: telecom post&telecom cnstrctn period: 1909 — 1910

info type: detailed strctr system: masonry

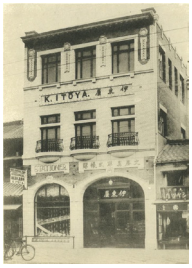
wall: Br&St floor: W beam: S column: SC

treatment: Br=cv;aSt=tower

strctr source: KCZS191012_p.643; KCSK191012appndx_p.1

façade pattern: 5 tower;pinnacle;simple symmetry;simple tripartition;pitched rf
wall element: 5 pediment / gable;buttress;ashlar / rustication;balustrade / parapet;cornice / moulding
window element: 3 pointed arch;arch;trim / quoin
door element: 0

original info about strctr	KCZS: 煉瓦造三階建… 壁 外壁の積込石材は胴蛇腹以下常陸産小花崗石小叩とし以上伊豆産月出石小叩仕上とし平壁表積及軒蛇腹は日本窯業株式会社の白色化粧煉瓦裏積は並上燒煉瓦地中積は同燒過煉瓦を使用し軒上飾の塔形は人造石とす壁厚各階通して二尺乃至二尺四寸さし別に所々扣柱を設く。 床 二階三階の床梁は工字形鋼鉄梁を用ひ、荷持柱は煉瓦(in KCSK, not "煉瓦", but "錬鉄")製コンクリート巻となし床面は交換室事務室及食堂を専売床と床板亜米利加松目板を用ひ又宿直室休憩室を畳敷又洗面室及浴室を人造石敷とし試験室を板張とし其他一階のと所をコンクリート叩と為したり。
note	see also Tokyo100_p12: 煉瓦造、テラカッタを使用せる箇所が多々あり; see also 明治の建築伊東黒田; entrance facing backyard, not found; see also Earthquake report_photo436-439



code: 1413 **伊藤屋文房具店**

city: Tokyo duplication: ZSGH 1st published: 1910

use: shop small-scale cnstrctn period: 1909 — 1909

info type: detailed strctr system: Rmasonry

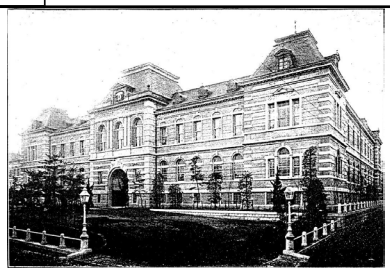
wall: RBr floor: beam: column: W

treatment: Br=cv

strctr source: KCZS191003_p.167-168

façade pattern: 2 quasi-symmetry;simple tripartition
wall element: 3 pilaster;cornice / moulding;foliage
window element: 5 lintel;arch;keystone;trim / quoin;balustrade
door element: 2 arch;keystone;foliage

original info about strctr	KCZS: 構造の大要本館煉瓦造三階建…新築の部分は全部壁中に一間乃至九尺間に鉄棒及平鉄を積込堅牢に資せら側石は二層常陸産花崗石積同上壁石、 迫持石、胴蛇薬石、窓台石其他其全部白丁場石を使用何れも小叩き仕上とす但し階下看板石は水戸産の純白寒水石にして文字は真鍮板製金箔仕上なり正面は全部薬引化粧煉瓦の貼付とし階下及軒蛇腹下は茶褐色二階三階は白色何れも覆輪目地仕上とす側面赤煉瓦の洗出し仕上なり 木造の分は(omitted)腰巻煉瓦積を施し夫より土台を置き軸組をを構成せり而して外部は目地は石色漆喰塗り仕上とす
note	plate from MTsssr154; see also Tokyo100_p98: 煉瓦造 (画面左側一間増築あり)



code: 1419 **神戸市庁舎新築**

city: Kobe duplication: KCZS 1st published: 1910

use: administrative government cnstrctn period: 1907 — 1909

info type: detailed strctr system: masonry

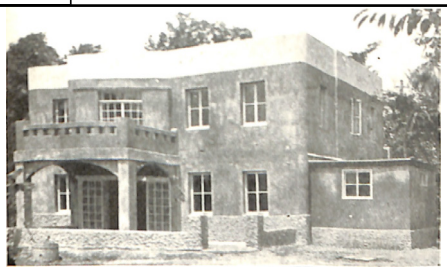
wall: Br&St floor: W beam: Br column:

treatment: not found

strctr source: KCZS191008_p.451

façade pattern: 4 nested symmetry;simple tripartition;pitched rf;portal
wall element: 4 pilaster;quoin;cornice / moulding;frieze / architrave
window element: 5 arch;keystone;pediment;frieze / architrave;trim / quoin
door element: 3 arch;keystone;trim / quoin

original info about strctr	KCZS: 外壁は泉州産煉瓦石及び備中北木産及び小豆島福田産の花崗石を用ひ… 床及天井階下廊下通り及小使室、湯沸所、汽鑵室等の上は六十听レールを架し煉瓦アーチを掛け渡し耐火構造とし其他各室床組は日向生松材を使用し米利堅松板床張り…
note	



code: 1466 **山内邸**

city: Tokyo Pref. duplication: SKGH 1st published: 1921

use: house residential cnstrctn period: — 1920

info type: detailed strctr system: Rmasonry

wall: RCBlk floor: RCBlk beam: column:

treatment: not found

strctr source: KCGH192102_plate

façade pattern: 1 portico
wall element: 0
window element: 0
door element: 2 arch;balustrade / parapet

original info about strctr	KCGH: 鉄筋ブロックニテ壁、床、屋根等構造セラレタル新様式ノ物ナリ
note	construction period not recorded in KCGH192102_plate; 官報1921年04月19日付録_p.2_row2: moved to the new house on T9.10.20



code: 1477 **日米信託株式会社**

city: Tokyo duplication: SKGH 1st published: 1921

use: office bldg office bldg cnstrctn period: — 1920

info type: detailed strctr system: RCframe

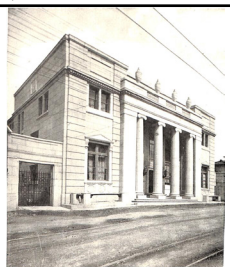
wall: RC floor: RC beam: column: RC

treatment: not found

strctr source: Earthquake report_p.589

façade pattern:	3	simple symmetry;compound tripartition;even wndw array;portal
wall element:	4	pilaster;buttress;balustrade / parapet;cornice / moulding
window element:	1	frieze / architrave
door element:	5	arch;pediment / gable;buttress;Moorish arch;cornice / moulding

original info about strctr	Earthquake report_p.589: 帳壁式鉄筋混凝土造、床フラット・スラブ、外壁厚6寸鉄筋混凝土造、工場に見るが如き窓その他の開口大にして壁体部分の極めて少き建物なり… Mikishi Abe as the iconic figure of RC in the 1910s
note	see also Earthquake report_p.589: g=RC, floor=flat slab, 帳壁式; 鉄筋コンクリートにかけた生涯阿部美樹志_p.58: finished in T9; see also KCGH192206news_p.21 (no structure info); no structure info in KCGH plates



code: 1479 **株式会社津田銀行本店**

city: Okayama duplication: ZSSKGH 1st published: 1921

use: bank financial cnstrctn period: 1918 — 1920

info type: detailed strctr system: Rmasonry

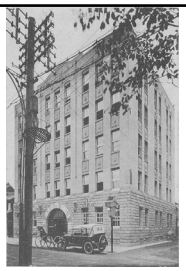
wall: RBr floor: RC beam: column:

treatment: St=cv

strctr source: KCZS192103_p.155

façade pattern:	4	nested symmetry;colonnade;porch;simple(rf) tripartition
wall element:	5	column;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	3	corbel;pediment;trim / quoin
door element:	3	corbel;cornice / moulding;column

original info about strctr	KCZS: 本館壁体内部締聯補強鋼入煉瓦造り外装全部北木島産花崗石を使用し營業室吹抜造の部に限り鐵骨構造とし其他屋根床階段及附属屋共全部鉄筋「コンクリート」造とす 内部は漆喰塗り及石膏を主要被覆とし客溜り腰羽目は長州産大理石を使用し営業室の腰羽目等は楢材を用ひ床は「キルク」を下敷にし「リノリューム」を上敷とす no grid of columns found in the floor plans in KCSK192103
note	roof, staircase built with RC; KCSK192103appndx: identical specs with KCZS



code: 1483 **皆川ビルディング**

city: Tokyo duplication: SKGH 1st published: 1921

use: office bldg office bldg cnstrctn period: — 1920

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: not found

strctr source: Earthquake report_p.590

façade pattern:	2	simple symmetry;portal;vertical wndw array;even wndw array
wall element:	2	ashlar / rustication;balustrade / parapet
window element:	2	lintel;arch
door element:	2	arch;keystone

original info about strctr	Earthquake report_p.590: 帳壁式鉄筋混凝土造、外壁及び床同じく鉄筋混凝土造、帳壁は厚6寸内部階段傍の壁体は厚4寸の鉄筋混凝土造その他の間仕切壁は木造又は煉瓦半枚積なり、外壁の開口は概して少なり
note	see also Earthquake report_p.590: g=RC, w&f=RC, 帳壁式; 皆川広量.生活改善1.皆川広量.T10_p.14-15: built in the spring of T9; no structure info in KCGH plates



code: 1494 **高島屋新築（大阪）**

city: Osaka duplication: KCSK 1st published: 1921

use: department large-scale cnstrctn period: 1921 — 1922

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: not found

strctr source: KCZS192302_p.39-53

façade pattern: 4 simple symmetry;compound tripartition;even wndw array;tower;portal
wall element: 3 pilaster;buttress;balustrade / parapet
window element: 1 trefoil arch
door element: 2 pointed arch;pillars

original info about strctr	KCZS: structure shown in the explanations of calculations, the form of wall designed as rigid RC grid
note	structure info not recorded in KCGH192211news_p.23; see also KDKCGH_p.330



code: 1510 **三菱合資会社増築**

city: Tokyo duplication: ZSSKGH 1st published: 1921

use: office bldg office bldg cnstrctn period: 1918 — 1921

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: Br&St=cv

strctr source: KCZS192111_p.679

façade pattern: 2 simple symmetry;compound tripartition;even wndw array
wall element: 3 balustrade / parapet;cornice / moulding;ashlar / rustication
window element: 1 arch
door element: 1 arch

original info about strctr	KCZS: 壁体 鉄筋「コンクリート」造にして外面は主として新小松石及白色化粧煉瓦を使用す、内面は地階モルタル塗、各階事務室白漆喰仕上げとす。 床 鉄筋「コンクリート」造にして地階は「モルタル」塗、各階事務室は「リノリウム」敷き、各階広間、廊下は「リグノイド」塗一階広間各階便所は「モザイクタイル」敷きとす… 屋根 鉄筋「コンクリート」造陸屋根… Earthquake report_p.579: 床鉄筋混凝土造、軸部帳壁式鉄筋混凝土造、外壁及び内部主要間仕切壁は共に鉄筋混凝土にして… 但この建物の南に隣接したる鉄骨造五階建の三菱假本社(旧) との接合面震災により幾分か分離せるを見る、火災なし。
note	see also 震害及火害之研究_p.51: 軸部一鉄骨構造…, 新小松石及タイル張



code: 1519 **横浜社会館**

city: Yokohama duplication: KCSK 1st published: 1921

use: dormitory accommodatio cnstrctn period: 1920 — 1921

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: tile=cv;aSt&mortar=ct

strctr source: KCSK192108_plate,KCSK192108appndx_p.72

façade pattern: 1 nested symmetry;even wndw array
wall element: 1 pilaster
window element: 0
door element: 0

original info about strctr	KCSK: 外廓梁桁式鉄筋コンクリート造内部間仕切木造とす。… 外部仕上 一部化粧タイル張幷に人造石塗とし其他全体モルタル塗仕上とす。… structure components shown in the drawing of details in KCSK192108 arrangement of iron bars largely developed
note	as to the structure, see the plates of section in KCSK192108; similar with 1634社会局（元国勢院）



code: 1523 **加島銀行**

city: Tokyo duplication: ZSSKGH 1st published: 1921

use: bank financial cnstrctn period: 1919 — 1921

info type: detailed strctr system: RCframe

wall: Br&RC floor: RC beam: RC column: RC

treatment: not found

strctr source: KCZS192110_p.611

façade pattern:	4	simple symmetry;compound tripartition;even wndw array;porch;colonnade
wall element:	5	column;pilaster;cornice / moulding;frieze / architrave;foliage
window element:	3	arch;round window;trim / quoin
door element:	4	column;cornice / moulding;frieze / architrave;arch

original info about strctr	KCZS: 柱 鉄筋「コンクリート」造 壁 鉄筋「コンクリート」造及煉瓦造間仕切の一部は木造 梁及床 鉄筋「コンクリート」造 屋根 鉄筋「コンクリート」造にて防水被覆床
note	see also Earthquake report_p.586



code: 1529 **丸ノ内ビルディング**

city: Tokyo duplication: SKGH 1st published: 1921

use: office bldg office bldg cnstrctn period: 1920 — 1922

info type: detailed strctr system: Sframe

wall: S-Br floor: RC beam: S column: S

treatment: aSt&TC=cv;aSt=ct

strctr source: KCSK192110comment_p.4-6; Earthquake report

façade pattern:	3	compound tripartition;even wndw array;nstd quasi-symmetry;portal
wall element:	3	balustrade / parapet;cornice / moulding;ashlar / rustication
window element:	0	
door element:	2	pilaster;arch

original info about strctr	KCSK: …一階は白セメントで造った人造石を以て築き上げてあるが、(omitted)二階以上淡黄色のテラカッタ煉瓦を張り付け、最上層及蛇腹其他を白セメントで擬石塗に仕上げるのである。… Earthquake report_p.546: 鉄骨煉瓦造にして外壁は煉瓦及び中空煉瓦1.5枚積、間壁は全部中空煉瓦とす、床は鉄筋混凝土とす。 structural components shown in Earthquake report part2 付図15
note	comment by Kotaro Sakurai, g=SBr; KCZS192303_p.85: beam&column wrapped by RC; see also Earthquake report_p.546



code: 1534 **枢密院庁舎**

city: Tokyo duplication: ZSSKGH 1st published: 1921

use: administrative government cnstrctn period: 1920 — 1921

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: aSt&mortar=ct;aSt=cv

strctr source: KCZS192112_p.742; KCSK192111news_p.57-58

façade pattern:	3	nested symmetry;portico;colonnade
wall element:	5	column;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	2	frieze / architrave;trim / quoin
door element:	4	column;balustrade / parapet;cornice / moulding;frieze / architrave

original info about strctr	KCZS: 壁及床 鉄筋コンクリート造 壁外装 人造石張付、人造石塗及モルタル塗 屋根 一般屋根ハスレート葺及コンクリート造、塔屋は鉄骨コンクリート造瓦張 震害及火害之研究_p.82: 軸部及壁体一鉄筋「コンクリート」造、外壁人造石塗及「モルタル」塗、床一階上床鉄筋「コンクリート」造、階下床一部木造、屋根一木造「スレート」葺
note	KCSK191908news: foundation year=1919; 震害及火害之研究_p.82: finished in T11; KCSK: (editor:)附属施設は、元計画により全体鉄筋コンクリートであるが、物価暴騰により木造変わる; existing building as "皇宮警察本部"



code: 1535 **三井銀行日本橋支店**

city: Tokyo duplication: ZSSKGH 1st published: 1921

use: bank financial cnstrctn period: 1920 — 1921

info type: detailed strctr system: RCframe

wall: RC-Br floor: RC beam: RC column:RC

treatment: not found

strctr source: KCZS192111_p.677

façade pattern: 3 nested symmetry;porch;simple(rf) tripartition
wall element: 7 column;pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;quoin;foliage
window element: 1 foliage;trim / quoin
door element: 3 column;arch;keystone;canopy;foliage

original info about strctr	KCZS: 壁体 外壁石造、石材は伊豆国船原産月出石。 床柱 各階の床、屋内主要なる柱、屋根、階段は鉄筋コンクリート造にして屋根はアスファルト防水葺。 震害及火害之研究_p.137: 軸部一鉄筋「コンクリート」造、壁体一帳壁煉瓦積外部石張、床及屋根一各階ノ床及階段並ニ屋根は鉄筋「コンクリート」造
note	



code: 1538 **東京府商工奨励館**

city: Tokyo duplication: ZSSKGH 1st published: 1921

use: assembly assembly cnstrctn period: 1919 — 1921

info type: detailed strctr system: RCframe

wall: RC-Br floor: RC beam: RC column:RC

treatment: Br=cv

strctr source: KCZS192112_p.739-740

façade pattern: 5 nested symmetry;vertical wndw array;dome;tower;pitched rf;even wndw array;portal
wall element: 5 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;pediment / gable
window element: 1 arch
door element: 2 arch;keystone;canopy

original info about strctr	KCZS: 陳列館は外部化粧煉瓦張、腰月出石積… 本館は大要陳列室、談話室、事務室、大食堂に分つ。 陳列室基礎はマッシュルーム式フラットスラブ鉄筋コンクリート造とし、柱床を鉄筋コンクリート造カーテンウォール構造とし、外壁は煉瓦一枚半厚に充填したり。陳列室は一、二、三階を以て充て、… 事務室は基礎ビーム式鉄筋コンクリート造こし、其他構造は陳列室に準じ、… 談話室は事務室と同様の構造にして… pediment built with RC shown in the drawing of details in KCZS192112
note	curtain wall, flat slab system for foundation; as to beam structure, see the plate of section; KCSK192112news: no structure info; see also Earthquake report_p.579-580



code: 1567 **帝国ホテル**

city: Tokyo duplication: ZSSKGH 1st published: 1917

use: hotel accommodatio cnstrctn period: 1919 — 1922

info type: detailed strctr system: RCframe

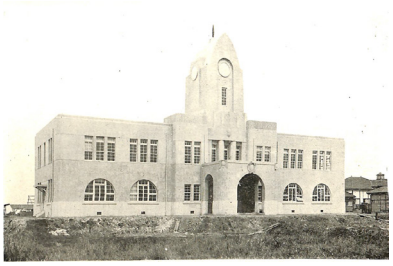
wall: RC-Br floor: RC beam: RC column:RC

treatment: Br=cv

strctr source: KCZS192304_p.198; Earthquake report_p.580

façade pattern: 2 nested symmetry;vertical wndw array;portico
wall element: 2 quoin;cornice / moulding
window element: 0
door element: 0 canopy

original info about strctr	KCZS: 鉄筋コンクリート及煉瓦「コンクリート」構造 壁体は表積はスダレ煉瓦、裏積は防湿、防熱、 防寒用穴アキ煉瓦積として一切枠を用ゐず中に「コンクリート」をつめる。 使用煉瓦は装飾煉瓦共総て帝國ホテル煉瓦製作場製品 Earthquake report_p.580: …構造 外部の壁体は表積を簾煉瓦とし裏積には中空煉瓦を用ひ普通の鉄筋混凝土造に於けるが如く 木の假枠を用ひずしてこれを假枠に代用しその中間の部分に鉄筋及び混凝土を打ち込みたるものにしてその厚2尺乃至3尺にしてその壁体には法を附し上部に於ける程壁厚薄し, 内部には又壁体多くその構造は外壁と略々同様なり, 内部柱及び床は何れも鉄筋混凝土造にして…
note	Joseph M. Siry. The Architecture of Earthquake Resistance Julius Kahn's Truscon Company and Frank Lloyd Wright's Imperial Hotel_p.90: Wright preferred flat slab, but compromised to RC beams and girders



code: 1572 **燃料研究所**

city: Kawaguchi duplication: KCSK 1st published: 1922

use: research academic cnstrctn period: — 1921

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: not found

strctr source: KCSK192201_plate

façade pattern:	4	portico;simple symmetry;tower;simple(rf) tripartition
wall element:	2	column
window element:	1	arch
door element:	1	arch;foliage

original info about strctr	structural components shown in the drawing details of KCSK192201, bricks shown as interior wainscoting
note	MTS8_p.217: finished in T10



code: 1601 **大川田中事務所**

city: Tokyo duplication: ZSSKGH 1st published: 1922

use: office bldg office bldg cnstrctn period: 1920 — 1922

info type: detailed strctr system: RCframe

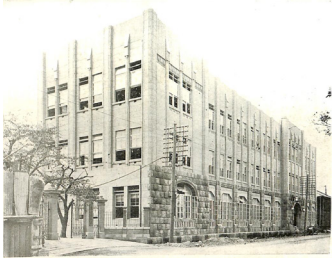
wall: RC floor: RC beam: RC column: RC

treatment: Br&St=cv;aSt=ct

strctr source: KCZS192212_p.517

façade pattern:	4	simple symmetry;compound tripartition;vertical wndw array;porch;arcade;even wndw array
wall element:	4	pilaster;cornice / moulding;ashlar / rustication
window element:	2	arch;trim / quoin
door element:	4	pilaster;cornice / moulding;frieze / architrave;foliage;pediment / gable

original info about strctr	KCZS: 壁体 鉄筋混凝土造トシ、道路側仕上ハ花崗石、白丁場石、貼付化粧瓦、人造石塗等ヲ以テシ、背面ハ前記に準ズル仕上ゲトス… 屋根 全部鉄筋混凝土造屋根トシ… 床組 地階ハ混凝土叩キ床 一階ハ木造床、混凝土叩キ床、鉄筋混凝土床ヲ並用自二階至五階ハ全部鉄筋混凝土床 柱 鉄筋混凝土造トス
note	see also 清水組彩色設計図集vol.3_p.194: T9.4-T11.3, g=RC; Earthquake report_p.578: Kahn System



code: 1621 **特許局庁舎**

city: Tokyo duplication: SKGH 1st published: 1922

use: administrative government cnstrctn period: — 1923

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: aSt=ct;St=cv

strctr source: KCSK192204news_p.58

façade pattern:	3	cmpnd symmetry;compound(rf) tripartition;vertical wndw array;portal
wall element:	3	buttress;ashlar / rustication;pilaster
window element:	1	arch
door element:	2	arch;pillars

original info about strctr	KCSK: 鉄筋コンクリート四階建 震害及火害之研究_p.71: 軸部一鉄筋「コンクリート」造、壁体一鉄筋「コンクリート」造(間壁ニハ木造部分アリ)外壁一階部堅石張、其他人造石塗、床一鉄筋「コンクリート」造、屋根一鉄筋「コンクリート」造陸屋根 「アスファルトルーフィング」
note	completion year speculated according to the context of KCSK192204news; 震害及火害之研究_p.71: finished in 1923



code: 1624 **報知新聞社**

city: Tokyo duplication: SKGH 1st published: 1922

use: office bldg office bldg cnstrctn period: 1921 — 1922

info type: detailed strctr system: RCframe

wall: RC-Br floor: RC beam: RC column: RC

treatment: mortar=ct

strctr source: Earthquake report_p.580; 震害及火害之研究_p.63

façade pattern: 0 even wndw array
wall element: 1 cornice / moulding
window element: 1 balustrade
door element: 1 trim / quoin;canopy

original info about strctr	Earthquake report_p.580: 帳壁式鉄筋混凝土造帳壁煉瓦1.5枚… 震害及火害之研究_p.63: 軸部一鉄筋「コンクリート」造、壁体一鉄筋「コンクリート」造、床一鉄筋「コンクリート」造、屋根一鉄筋「コンクリート」造陸屋根 Earthquake report_p.580: …モルタル剥落す。…
note	no structure info in KCGH plate; https://www.hochi.co.jp/gaiyo/history/taisho.html: finished in 1922 (202310 accessed); Earthquake report_p.580: g=RC, w= Br, 帳壁式; 震害及火害之研究_p.63: T10.7-T11.9



code: 1625 **青山電話分局**

city: Tokyo duplication: SKGH 1st published: 1922

use: telecom post&telecom cnstrctn period: — 1922

info type: detailed strctr system: RCframe

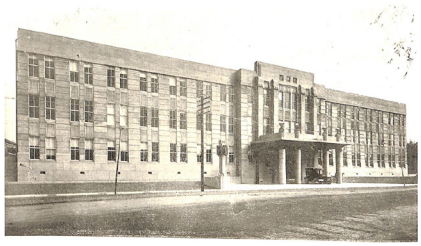
wall: RC-Br floor: RC beam: RC column: RC

treatment: mortar=ct

strctr source: 震害及火害之研究_p.179

façade pattern: 1 quasi-symmetry;even wndw array
wall element: 3 column;cornice / moulding;pediment / gable
window element: 1 arch
door element: 1 arch

original info about strctr	震害及火害之研究_p.179: 軸部一鉄筋「コンクリート」造、壁体一鉄筋「コンクリート」造、外壁全部煉瓦帳壁、内部間壁ハ階段室及中央通抜大廊下ノ両側ヲ除キ木造、床一鉄筋「コンクリート」造、屋根一鉄筋「コンクリート」造陸屋根… 外壁ノ所々梁又ハ柱ト煉瓦壁トノ取合部ニ於テ仕上「モルタル」剥落セルノミ…
note	no structure info in KCGH plate; see also 分離派建築会一日本モダニズム建築誕生_p.386: finished in 1922



code: 1634 **社会局(元国勢院)**

city: Tokyo duplication: KCSK 1st published: 1923

use: administrative government cnstrctn period: — 1923

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: not found

strctr source: KCSK192101news_p.69

façade pattern: 2 simple symmetry;even wndw array;vertical wndw array;portico
wall element: 2 balustrade / parapet;pilaster
window element: 0
door element: 3 cornice / moulding;column;balustrade / parapet

original info about strctr	KCSK: 鉄筋混凝土三階建 Earthquake report_p.581: 帳壁式鉄筋混凝土造、床鉄筋混凝土、外壁及び内部主要間仕切壁鉄筋混凝土造、基礎杭打繋梁を有する鉄筋混凝土造。 震害及火害之研究_p.80: 軸部及壁体一鉄筋「コンクリート」造、床一鉄筋「コンクリート」造、屋根一鉄筋「コンクリート」造陸屋根 see also the drawing of details in KCSK192303
note	震害及火害之研究_p.80: finished in T12; similar with 1519横浜社会館



code: 1635 **池田文房堂**

city: Tokyo duplication: KCSK 1st published: 1923

use: shop small-scale cnstrctn period: — 1922

info type: detailed strctr system: RCframe

wall: floor: RC beam: RC column: RC

treatment: Br=cv

strctr source: KCSK192302_plate

façade pattern:	3	quasi-symmetry;tower;vertical wndw array;simple tripartition
wall element:	0	
window element:	1	arch
door element:	0	

original info about strctr	structural components shown in the drawing of details in KCSK192302, structure of walls uncertain existing bldg at 東京都千代田区神田神保町1-21-1
note	http://www.bumpodo.co.jp/company/history.html(202310 accessed): finished in T11; similar with 六合館?



code: 1636 **東京中央電話局牛込分局**

city: Tokyo duplication: SKGH 1st published: 1922

use: telecom post&telecom cnstrctn period: — 1922

info type: detailed strctr system: RCframe

wall: RC-Br floor: RC beam: RC column: RC

treatment: Br=cv

strctr source: Earthquake report_p.593

façade pattern:	1	even wndw array;vertical wndw array;tower
wall element:	0	
window element:	0	
door element:	0	

original info about strctr	Earthquake report_p.593: 帳壁式鉄筋混凝土造、外壁煉瓦造、床鉄筋混凝土造、外壁の柱の外側には装飾の為煉瓦にて包め り、内部の壁体は階段傍の一部鉄筋混凝土造なる外その他は木造なり。
note	no structure info in KCGH plate; 分離派建築会―日本モダニズム建築誕生_p.384: finished in 1922



code: 1647 **山口銀行**

city: Tokyo duplication: ZSSKGH 1st published: 1923

use: bank financial cnstrctn period: 1921 — 1922

info type: detailed strctr system: RCframe

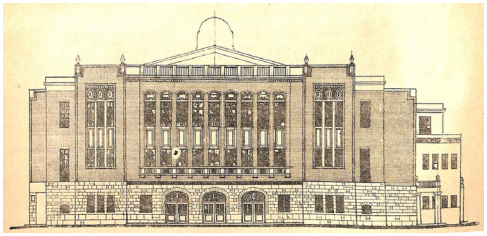
wall: RC-Br floor: RC beam: RC column: RC

treatment: St&tile=cv

strctr source: KCZS192307_p.334

façade pattern:	1	vertical wndw array;simple symmetry
wall element:	2	ashlar / rustication;arch
window element:	0	
door element:	2	trim / quoin;arch;canopy

original info about strctr	KCZS: 鉄筋コンクリート地形とす柱及床鉄筋コンクリート造階段同上壁体カーテンウォール(耐水耐震構造)… 外部仕上 正面及北面、三階以上花崗石仕上、其上部及南側並に裏側全部貼付化粧タイル仕上とす Earthquake report_p.583-584: 帳壁式鉄筋混凝土造、外壁煉瓦造、床鉄筋混凝土造…
note	curtain wall; see also Earthquake report_p.583-584



code: 1650 **御国座新築**

city: Tokyo duplication: KCSK 1st published: 1923

use: theatre cultural cnstrctn period: — 1922

info type: detailed strctr system: Sframe

wall: S-Br floor: beam: S column: S

treatment: not found

strctr source: 震害及火害之研究_p.156-158

façade pattern: 4 nested symmetry;vertical wndw array;simple tripartition;pitched rf;dome
wall element: 3 cornice / moulding;balustrade / parapet;ashlar / rustication
window element: 1 arch
door element: 1 arch

original info about strctr	震害及火害之研究_p.156-158: 軸部一鉄骨構造、柱ニ工形鋼鉄ヲ用ヒ徑間十尺五寸ニ配置、壁体一煉瓦造、壁厚ハ三階ヲ通ジテ一枚(備考、附属家ハ鉄筋「コンクリート」 造)、屋根一小屋組鉄骨構造、母屋桁及裏板等ハ木材、 「フェルト」敷亜鉛鍍鉄板葺 (editor: only one floor)
note	震害及火害之研究_p.156-158: 軸部=S, w=Br



code: 1652 **福井県庁舎**

city: Fukui duplication: KCSK 1st published: 1923

use: administrative government cnstrctn period: 1921 — 1923

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: aSt&mortar=ct

strctr source: KCZS192306_p.268

façade pattern: 6 nested symmetry;vertical wndw array;portico;arcade;pitched rf;cupola;simple tripartition
wall element: 3 pilaster;ashlar / rustication;cornice / moulding
window element: 2 lintel;arch
door element: 5 column;pilaster;balustrade / parapet;pediment / gable;cornice / moulding

original info about strctr	KCZS: 柱梁鉄筋混凝土とす 壁 外壁及主要間壁は鉄筋混凝土小間壁は木製とす 床 一階は木造二階三階及屋根一部は鉄筋混凝土とす 階段本舘車寄前は北木産花崗石水磨とし室内中央大階段及左右小階段は鉄筋混凝土造とす 屋根木造銅板葺とす… 腰廻り蛇腹等外観を呈する部分は擬石塗とす平壁はモルタル塗とす
note	KCSK192307appndx: identical specs with KCZS



code: 1662 **日本興業銀行**

city: Tokyo duplication: ZSSKGH 1st published: 1923

use: bank financial cnstrctn period: 1921 — 1923

info type: detailed strctr system: SRCframe

wall: S-Br floor: RC beam: SRC column: SRC

treatment: St&TC=cv

strctr source: KCZS192303_p.79-80; KCZS192308_p.395

façade pattern: 3 simple symmetry;compound tripartition;colonnade;even wndw array
wall element: 6 column;pilaster;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 4 column;arch;keystone;foliage;balustrade
door element: 3 arch;keystone;column

original info about strctr	KCZS: 本建物は鉄骨鉄筋「コンクリート」造にして(omitted)柱の距離約四十尺上階の荷重は三階の架構梁にて支持す其他柱の間隔は凡て東西を十八尺七寸南北を十九尺三寸として鉄骨柱を建設す 壁体 「カーテンウォール」式として外壁は普通煉瓦積外観は二階以下を花崗石三階以上を米国製「テラカッタ」張りとす… 床及屋根 各階床及屋根は鉄筋「コンクリート」を以て構成し… 営業室の四隅には剛強なる鉄筋「コンクリート」耐震壁を作りて…
note	see the list in KCZS192303 (Tachu Naito), p.84, also the relevant plates, RC anti-seismic wall settled; KCSK192306news: no structure info; see also Earthquake report_p.557



code: 1671 **株式会社百五銀行松坂支店**

city: Matsusaka duplication: KCZS 1st published: 1921

use: bank financial cnstrctn period: 1919 — 1919

info type: detailed strctr system: Wframe

wall: W-tile floor: W beam: W column: W

treatment: aSt&mortar=ct;Br=cv

strctr source: KCZS192103_p.154

façade pattern: 1 simple symmetry
wall element: 6 column;pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 0
door element: 1 canopy;corbel

original info about strctr	KCZS: 壁体 本館土台以下煉瓦積とし土台以上は木骨竪瓦張り下地とし表面 「モルタル」擬石洗出し塗及化粉(粧?)煉瓦張りとす金庫室は煉瓦積とし表面モルタル塗りとす 床 公衆溝(滞?)及金庫室混凝土打人造石研出し四半目地切其他全部木骨造板割張り(リノューム敷き)
note	see also 清水組彩色設計図集vol2._p.203: T8.4-T8.9, g=W



code: 1672 **株式会社百五銀行名古屋支店**

city: Nagoya duplication: KCZS 1st published: 1921

use: bank financial cnstrctn period: 1920 — 1920

info type: detailed strctr system: Wframe

wall: W-tile floor: W beam: W column: W

treatment: Br=cv

strctr source: KCZS192103_p.154

façade pattern: 1 simple symmetry
wall element: 3 frieze / architrave;pilaster;cornice / moulding
window element: 0
door element: 0 canopy

original info about strctr	KCZS: 壁体 本館土台以下煉瓦積とし土台以上は木骨竪瓦張り下地とし表面 化粧煉瓦張とす… 床 公衆溜及金庫室コンクリート打人造石研出し四半目地切其他全部木骨造板割張り(リノューム敷き)
note	



code: 1673 **山崎商店**

city: Tokyo duplication: ZSSKGH 1st published: 1921

use: shop small-scale cnstrctn period: 1919 — 1920

info type: detailed strctr system: Sframe

wall: SRC floor: LC beam: S column: S

treatment: St=cv;aSt=ct

strctr source: KCZS192103_p.155

façade pattern: 2 simple symmetry;compound tripartition;vertical wndw array
wall element: 5 pilaster;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 1 keystone
door element: 2 pediment / gable;pilaster

original info about strctr	KCZS: 鉄骨、鉄筋コンクリート造四階建… 壁体 周壁、鉄筋混凝土とし、正面仕上げ稲田産花崗石、其他花崗石粉入、擬石塗とす 梁及柱 鉄梁及鉄柱とす 床 鈴木式鋼鉄ラス張コンクリート打 屋根 陸屋根、全部鈴木式鋼鉄ラス張、コンクリート打防水帯敷き…
note	



code: 1678 **大阪市庁舎**

city: Osaka duplication: KCZS 1st published: 1921

use: administrative government cnstrctn period: 1918 — 1921

info type: detailed strctr system: RCframe

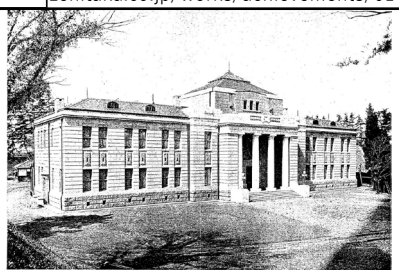
wall: RC&SRC floor: RC&S beam: RC&S column:RC&S

treatment: St=cv;aSt=ct

strctr source: KCZS192108_p.464; KCSK192011news

façade pattern:	6	nested symmetry;compound tripartition;vertical wndw array;even wndw array;colonnade;porch;tower;cupola
wall element:	7	column;pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element:	7	arch;keystone;column;pediment;cornice / moulding;frieze / architrave;round window;foliage
door element:	2	balustrade / parapet;pediment / gable

original info about strctr	KCZS: 壁体、床、柱 鉄骨及鉄筋「コンクリート」造にして側壁外部は其の主要部に石材を用ひ其の他は擬石塗を施す… 鉄筋「コンクリート」 基礎、壁体、床片、柱、楣類… 鉄筋「コンクリート」工事 大阪銭高組… 鉄骨工事 大阪松尾和助 KCSK192011news: …大阪市最大の鉄筋混凝土西洋建築と云ふ…
note	KCSK191604news: curtain wall system; see also KCGH191906news_p.6; see also construction photo on https://www.zenitaka.co.jp/works/achievements/01-43.html (202310 accessed), it seems only the tower was built in steel frame



code: 1679 **群馬県会議事堂**

city: Maebashi duplication: KCZS 1st published: 1921

use: administrative government cnstrctn period: 1917 — 1920

info type: detailed strctr system: Rmasonry

wall: RBr&RSt floor: W beam: column:

treatment: St=cv;aSt=ct

strctr source: KCZS192108_p.467

façade pattern:	4	nested symmetry;colonnade;portico;vertical wndw array;even wndw array;pitched rf
wall element:	5	column;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	1	lintel
door element:	4	column;balustrade / parapet;cornice / moulding;frieze / architrave

original info about strctr	KCZS: 壁体 本館、煉瓦及石造(補強鉄鋼積込) 外装正面及両側面澤入產花崗石及里見石、背面人造石塗洗出し 床 木造板割張「コルク」敷及寄木張、玄関、 下足室、 便所、小室、湯沸所等コンクリート打人造石塗研 出し及モルタル塗
note	



code: 1681 **三越呉服店東京本店西館**

city: Tokyo duplication: ZSSK 1st published: 1921

use: department large-scale cnstrctn period: 1919 — 1921

info type: detailed strctr system: Sframe

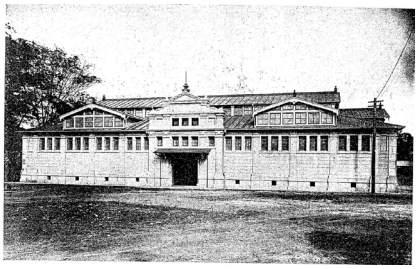
wall: S-Br&SRC floor: RC beam: S column:S

treatment: Br=cv

strctr source: KCZS192109_p.526

façade pattern:	3	simple symmetry;even wndw array;arcade;compound tripartition
wall element:	3	balustrade / parapet;cornice / moulding;frieze / architrave
window element:	3	arch;keystone;pilaster
door element:	0	canopy

original info about strctr	KCZS: 構造は耐震耐火を主としてカーテンウォール式鉄骨に鉄筋コンクリート、煉瓦、石材を混用し白色化粧煉瓦貼付けたり… 床、外壁、間仕切 床は鉄筋コンクリート版の上に木造床を張り、外壁は張壁式煉瓦、間仕切は補強半枚積煉瓦若くは木造にして屋上六階七階の外壁は凡て鉄筋コンクリート構造とし更に空筒煉瓦を張付けて防湿の用に充てたり
note	curtain wall; adjacent to (almost mirrored) original Mitsukoshi; RC walls for f6 & f7; entrance canopy shown in the drawing of façade



code: 1683 **日本美術協会会館改築**

city: Tokyo duplication: KCZS 1st published: 1921

use: assembly assembly cnstrctn period: 1920 — 1921

info type: detailed strctr system: Rmasonry

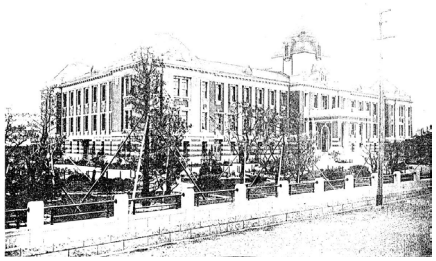
wall: RBr floor: beam: column: S

treatment: aSt=ct

strctr source: KCZS192111_p.677

façade pattern: 2 nested symmetry;pitched rf
wall element: 3 pilaster;cornice / moulding;pediment / gable
window element: 1 trim / quoin
door element: 0 canopy

original info about strctr	KCZS: 列品館は壁鉄筋入煉瓦造にして外部は人造石洗出し塗仕上げ、内部は白漆喰塗仕上の事、内部柱は鉄骨構造にして屋根も同様なり、上は裏板張亜鉛引鉄板瓦棟式 葺仕上錆色ペンキ塗の事… (editor: only one floor)
note	



code: 1685 **名古屋控訴院・地方裁判所・区裁判所庁舎**

city: Nagoya duplication: KCZS 1st published: 1922

use: court government cnstrctn period: — 1922

info type: detailed strctr system: Rmasonry

wall: Br&RC floor: RC beam: column:

treatment: St&aSt&tile=cv

strctr source: KCZS192211_p.472

façade pattern: 5 nested symmetry;simple tripartition;portico;dome;pitched rf
wall element: 6 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 5 lintel;arch;keystone;round window;trim / quoin
door element: 7 column;pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;arch;keystone;foliage

original info about strctr	KCZS: 庁舎側廻り及間仕切共主に煉瓦積又は「鉄筋コンクリート」打ちとし外部化粧廻りは長野県三留野産花崗石及人造石仕上げ並に化粧「タイル」を貼付したり。… 各階段下地は総て「鉄筋コンクリート」打ちとし… 床 全部「鉄筋コンクリート」打ち斑直し塗りは「セメントモルタル」…
note	construction period not recorded in KCZS192211; 文化遺産オンライン: finished in 1922 (202309 accessed), existing bldg



code: 1687 **横浜正金銀行東京支店（麹町）**

city: Tokyo duplication: KCZS 1st published: 1922

use: bank financial cnstrctn period: 1921 — 1922

info type: detailed strctr system: RCframe

wall: RC-Br floor: RC beam: RC column: RC

treatment: Br&St=cv;aSt=ct

strctr source: KCZS192212_p.518

façade pattern: 1 quasi-symmetry;even wndw array
wall element: 1 cornice / moulding
window element: 0
door element: 0 canopy

original info about strctr	KCZS: 外壁 鉄筋コンクリート構造、煉瓦一枚半積帳壁… 床 鉄筋コンクリート構造 屋根 陸屋根鉄筋コンクリート造 外部仕上ゲ 北西二面腰石貼付、其他化粧煉瓦貼付及人造石洗出シ又條堀り仕上ゲ 震害及火害之研究_p.69-70: 軸部一鉄筋「コンクリート」造、壁体一帳壁煉瓦積、外部「タイル」張、間壁空胴煉瓦積、床一鉄筋「コンクリート」造、屋根一鉄筋「コンクリート」造陸屋根…
note	see also Earthquake report_p.577-578: g= RC, w=Br



code: 1688 **八幡製鉄所事務所**

city: Kitakyushu duplication: KCZS 1st published: 1923

use: office bldg office bldg cnstrctn period: — 1922

info type: detailed strctr system: masonry

wall: Br floor: RC&W beam: column:

treatment: St=pile

strctr source: KCZS192301_p.34

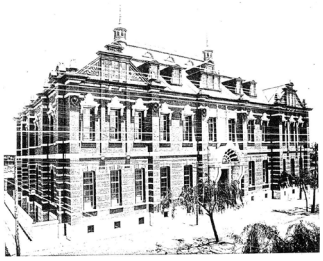
façade pattern: 4 nested symmetry;simple tripartition;portico;pitched rf

wall element: 5 pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication;pediment / gable

window element: 4 arch;keystone;pediment;cornice / moulding

door element: 7 column;pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;trim / quoin;arch;canopy

original info about strctr	KCZS: 煉瓦造三階建… 壁体 階下本所製鉱滓「ブロック」積階上本所製鉱滓煉瓦造外部同上特製洗出積車寄柱根石窓台石等熊本縣三角產花崗石內部漆喰塗一部アラバスチン仕上 階段 大階段槻製「ラック」及「ワニス」塗小階段塩地製「ワニス」塗 床 会議室、寄木張他は拭ヒ板張露台、便所、料理室、鉄筋混凝土打夫れ々人造石塗、「タイル」張、「モルタル」塗仕上
note	construction period not recorded in KCZS192301; きみつアーカイブ (http://archives.kimitsu.jp/browse.aspx?CNo=14019): finished in 1922, demolished in 1991 (202309 accessed)



code: 1694 **日本銀行名古屋支店**

city: Nagoya duplication: KCZS 1st published: 1906

use: bank financial cnstrctn period: 1903 — 1906

info type: detailed strctr system: masonry

wall: Br&St floor: C&W beam: S column:

treatment: Br&St=cv

strctr source: KCZS190608_p.542

façade pattern: 5 nested symmetry;simple(rf) tripartition;porch;pitched rf;cupola

wall element: 4 pilaster;pediment / gable;cornice / moulding;foliage

window element: 5 arch;keystone;pediment;cornice / moulding;corbel

door element: 3 arch;corbel;cornice / moulding

original info about strctr	KCZS: 煉瓦造二階建…外壁は備中國北木島産の花崗石と大阪窯業株式会社機械製化粧煉瓦を用ゐ裏積は三州刈谷就産所製並燒煉瓦を使用す壁厚土中室三尺二寸階下二尺八寸階上二尺四寸 階下は英國ドルマンロンク会社製造の工字形鋼鉄梁を架し其間厚五厘の波形亜鉛鍍鉄板を架列し然して石炭殻セメントコンクリートを填充す床張は亜米利加松板を使用す階上は総て木造となし…
note	



code: 1704 **海軍参考館**

city: Tokyo duplication: KCZS 1st published: 1908

use: museum cultural cnstrctn period: 1906 — 1908

info type: detailed strctr system: Sframe

wall: S-Br floor: C beam: S column: S

treatment: St=brim;Br=cv

strctr source: KCZS190809_p.381

façade pattern: 4 nested symmetry;portico;pitched rf;cupola

wall element: 6 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;quoin;foliage

window element: 9 column;pilaster;arch;keystone;pediment;cornice / moulding;frieze / architrave;round window;trim / quoin

door element: 7 pilaster;arch;keystone;balustrade / parapet;pediment / gable;cornice / moulding;frieze / architrave;foliage

original info about strctr	KCZS: 本館の構造は基礎を杭打ち「コンクリート」地形とし中央部を鉄骨煉瓦造爲し其他腰廻り、軒及胴蛇腹、円柱等の主要部には花崗石及横根澤石を用ひ外部は化粧煉瓦積みとし構成したる二階建煉瓦造にして…兵器の陳列所とす床かは「コンクリート」打ちの上花崗石及石盤石を以て四半石敷と為し…階上の廻廊には周囲に書籍棚を配置して参考書類を陳列する処とす故に床かには鋼鉄工字梁を配し波形鉄板を架し「コンクリート」を填充し上部を板張りとし…
note	Earthquake report_p.524: finished in M41, g=Br,b=S,c=S



code: 1705 **前田侯爵邸**

city: Tokyo duplication: ZSGH 1st published: 1908

use: house residential cnstrctn period: 1902 — 1907

info type: detailed strctr system: masonry

wall: Br floor: C&W beam: Br column:

treatment: Br&St=cv

strctr source: KCZS190811_p.465; KCGH191211_plate

façade pattern:	7	nested symmetry;portico;arcade;dome;pitched rf;cupola;simple(rf) tripartition
wall element:	7	arch;column;pediment / gable;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element:	6	frieze / architrave;pediment;cornice / moulding;arch;keystone;column
door element:	6	arch;balustrade / parapet;cornice / moulding;frieze / architrave;keystone;pilaster

original info about strctr	KCZS: 壁の厚さは地階に在て最厚を煉瓦三枚半とし一階二階を通じ最も薄き処も尚ほ一枚半を下らず建物側壁の外部は相州産白丁場石及茨城産花崗石を又内部及隔壁は東京煉瓦製造会社製の煉瓦を用ひ地階床は轉球室、取次人控所、喫煙室、庖丁詰所及皿置場は床板張りこし他は混凝土を以て四半石形に成一階及二階床は全部檜板張りと爲し(omitted)尚ほ一階に在っては南側廻廊及便所の床は煉瓦を以て弧円形に迫り合せ混凝土を填充し其上部に平瓦を敷詰めたり二階に在っては浴室及便所は一階と同一に構成せしも南側廻廊及塔家の床には鉄梁を横架し弧円形鉄板を架床し混凝土を填充し平瓦を以て其上部に敷詰めたり…
note	KCGH191211_plate: g=St



code: 1706 **表慶館**

city: Tokyo duplication: KCZS 1st published: 1909

use: museum cultural cnstrctn period: — 1909

info type: detailed strctr system: Rmasonry

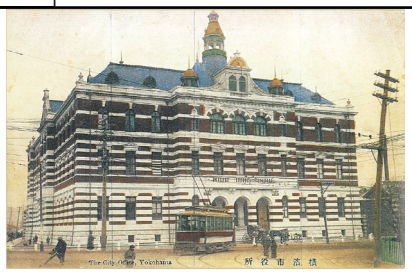
wall: RBr&RSt floor: C beam: S&W column: S

treatment: St=pile

strctr source: KCZS190901_p.65

façade pattern:	4	dome;nested symmetry;colonnade;portico
wall element:	7	column;pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	5	cornice / moulding;keystone;column;foliage;pediment;trim / quoin
door element:	4	balustrade / parapet;cornice / moulding;frieze / architrave;pilaster

original info about strctr	KCZS: 壁厚は薄き處巾二尺七寸厚き處は六尺二寸なり外部には悉く稻田產花崗石を用ひ四十七層より五十五層に達す各石毎に四個の丁字形錬鉄を以て煉瓦と密着せしめ突出柱に於ては別製の引鉄物を用ひ窓、入口、及び石柱等の上部にありては各其力に応し繋き鉄物 工形又は][形等の軟鋼鉄梁を架せり中央広堂内廻廊を支持せしむる為め大理石柱の真とを兼て錬鉄径八吋の鉄管を用ゐて基礎コンクリート上より建設し二階廻廊床及同三階床鉄梁と相締結しむ…外部石壁の要所に絵様彫刻を施し…階下にありては煉瓦迫持上に石炭殻セメントコンクリートを敷(omitted)煉瓦総て二階床三階床構造にはカーネギー会社製の軟鋼鉄梁と米松梁を以てす正面突出部縁濡と階段室には独逸国カメリッヒ会社製の波状形発板を用ひコンクリート及アスファルトを布き…
note	see also Tokyo100_p17



code: 1708 **横浜市役所**

city: Yokohama duplication: ZSGH 1st published: 1909

use: administrative government cnstrctn period: 1908 — 1911

info type: detailed strctr system: Rmasonry

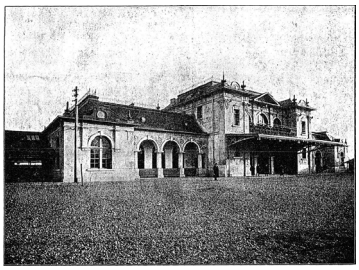
wall: RBr floor: C beam: S column:

treatment: Br&St=pile

strctr source: KCZS190905_p.218-219

façade pattern:	6	portico;arcade;simple symmetry;simple tripartition;pitched rf;cupola
wall element:	5	corbel;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication
window element:	7	arch;keystone;lintel;pediment;cornice / moulding;frieze / architrave;balustrade
door element:	3	arch;balustrade / parapet;corbel

original info about strctr	KCZS: 壁 (鉄筋入煉瓦壁とす) 側壁一階の部分厚さ二尺七寸外部表積白丁塲石裏積燒過煉瓦石積一階側石及胴蛇腹は茨城花崗石繰形彫刻二階及三階の部分厚さ二尺三寸一分外部洗出磨煉瓦化粧白丁石積込み窓額縁及蛇腹長押繰形彫刻凡て白丁場石造りとす。 側壁厚さ南側及西側と同断外部洗出し磨き煉瓦造りとす 各壁中真に径二吋半「ボールト」を挿入し(omitted)帯鉄を貫通横架せしめ壁体を堅牢に緊約せしむる事。 床 各階共(omitted)工字形鋼鉄梁を配置し波形鉄板を架渡して「コンクリート」厚平均約一尺に打ち均らし廊下「コンクリート」敲き人造石の敷石、各室床は「コンクリート」面に板張りとす。
note	Yokohama Kanagawa 100yrs ago_p.81_finished in M44



code: 1710 **九州博多停車場**

city: Fukuoka duplication: KCZS 1st published: 1909

use: railway station transportation cnstrctn period: 1906 — 1909

info type: detailed strctr system: masonry

wall: Br floor: W beam: W column: S

treatment: mortar=ct

strctr source: KCZS109012_p.610

façade pattern: 3 nested symmetry;arcade;pitched rf

wall element: 7 pilaster;column;corbel;pediment / gable;cornice / moulding;frieze / architrave;foliage

window element: 4 arch;keystone;pediment;frieze / architrave

door element: 0 canopy

original info about strctr	KCZS: 周壁…本館は煉瓦石積モルタル塗、乗客上家は鋳鉄柱、附属家は木骨外部下見張、内部羽目又は漆喰塗。床…階下の内、車寄及前溜は、コンクリートの上に、花崗石を敷詰め、其他は人造石又はコンクリート叩きなり、…階上は木造にて表面寄木張とす。…
note	



code: 1713 **日比谷図書館**

city: Tokyo duplication: SKGH 1st published: 1907

use: library academic cnstrctn period: — 1908

info type: detailed strctr system: Wframe

wall: W-tile floor: W beam: W column: W

treatment: plaster=ct

strctr source: Tokyo100_p39; KCS190705, 190805_plate

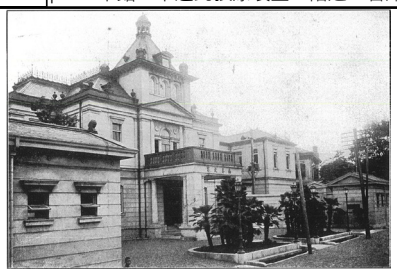
façade pattern: 6 nested symmetry;dome;tower;cupola;simple(rf) tripartition;portal

wall element: 8 column;pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage

window element: 6 column;pilaster;arch;keystone;trim / quoin;foliage;balustrade

door element: 1 arch

original info about strctr	Tokyo100_p39: 木造漆喰塗 structural components distinguished in the drawings of details in KCSK190805 no grid of columns shown in the floor plan in KCSK190705
note	library archive built with SBr; see also 明治の建築伊東黒田; 東京市立日比谷図書館一覧. 東京市立日比谷図書館. 明42-大3. p.12: 本館ハ木造瓦張漆喰塗二階建…書庫ハ鉄骨煉瓦四階建…(page number in part 2, not the part of rules)



code: 1716 **南葵文庫**

city: Tokyo duplication: SKGH 1st published: 1908

use: library academic cnstrctn period: 1906 — 1908

info type: detailed strctr system: Wframe

wall: W-tile floor: W beam: W column: W

treatment: aSt=ct

strctr source: KCSK190812_p.51-55

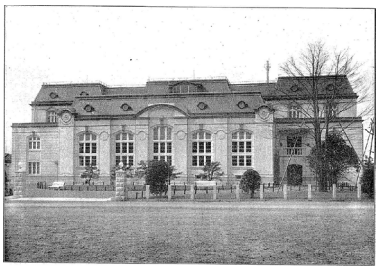
façade pattern: 4 cmpnd symmetry;portico;pitched rf;cupola

wall element: 6 pilaster;pediment / gable;cornice / moulding;frieze / architrave;balustrade / parapet;ashlar / rustication

window element: 6 cornice / moulding;frieze / architrave;arch;keystone;pilaster;trim / quoin

door element: 4 column;balustrade / parapet;cornice / moulding;frieze / architrave

original info about strctr	KCSK: 本文庫の構造は五部分に分る書庫二棟旧館二棟新館一棟事務所是なり… 一『書庫』 第一書庫は明治三十二年十二月竣成す黒色焼過ぎ煉瓦造二階建にして…第二書庫は明治三十八年五月竣成す赤色特製焼過煉瓦造三階建にして… 二『旧館』 旧館は明治三十一年十一月起工翌三十二年十二月竣工す木骨瓦張漆喰塗の西洋式にして… 三『事務所』 事務所は新旧両館の間に介在せる木骨瓦張外部洗出し人造石塗三階建にして… 四『新館』 新館は事務所及第二書庫と共に工学士山口孝吉設計監督の下になる総て木骨瓦張外部洗出人造石塗のRenaissance 式建物にして(omitted)明治三十九年四月(omitted)安礎式を行ふ(omitted)工事は無事茲に工を竣れり… 「目録室及新聞雑誌閲覧室」 階下閲覧室…床は寄木張にして…「食堂」 食堂は階上婦人室に隣れる…寄木張の床…
note	see also 明治の建築伊東黒田; see also Tokyo100_p40



code: 1720 **京都府立図書館**

city: Kyoto duplication: KCSK 1st published: 1909

use: library academic cnstrctn period: 1906 — 1909

info type: detailed strctr system: Rmasonry

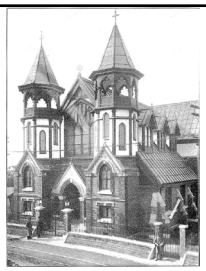
wall: RSt floor: C&W beam: column:

treatment: aSt&plaster=ct;S=cornice

strctr source: KCSK190907appndx_p.2

façade pattern:	2	pitched rf;partial symmetry;vertical wndw array
wall element:	4	pilaster;pediment / gable;cornice / moulding;foliage
window element:	4	arch;keystone;cornice / moulding;pediment
door element:	2	arch;balustrade / parapet

original info about strctr	KCSK: 壁の厚さは厚き部分に於て二尺二寸余薄き部分と雖も一尺五寸を下らず迫持には繋鉄物積込み外部腰石及窓臺は北木島花崗石を用ひ胴蛇腹及三階以下の軒蛇腹軒下長押、窓「キストン」三階窓方立は尾州久田焼陶器絵様付を用ひ三階軒蛇腹は鉄骨になしに亜鉛板を以てし要部に繋鉄物を使用して之れを骨子となし築立たり 壁は内外共漆喰塗にして外部は色壁石造模擬塗り内部は白漆喰仕上とす大閲覧室及来賓室内部四壁は仏国製模様付壁紙張りとす 床 階下大閲覧室は板張り他は都て煉石屑セメントコンクリートを打均し其上部を人造石及板張床の二種になし来賓昇降口廊下は波状鉄板を用ひコンクリート打均し人造石磨出し四半石敷き他の二階三階床は響留籾殻填充の上板張り…
note	existing bldg



code: 1724 **京都市日本聖公堂教会堂**

city: Kyoto duplication: KCSK 1st published: 1909

use: church religious cnstrctn period: — 1907

info type: detailed strctr system: masonry&Wframe

wall: Br&W floor: W beam: W column: W

treatment: plaster=ct

strctr source: KCSK190911appndx_p.2-3

façade pattern:	5	nested symmetry;tower;pinnacle;porch;pitched rf
wall element:	4	pilaster;pediment / gable;buttress;cornice / moulding
window element:	5	pointed arch;trim / quoin;lintel;keystone;trefoil arch
door element:	4	pointed arch;pitched rf;pilaster;keystone

original info about strctr	KCSK: 煉瓦造 二階家… 外部煉瓦洗ひ出し同妻木造漆喰間内総て漆喰木部「ワニス」及「トノコ」仕上屋根裏簾張り階下梁表し天井外部木部ペンキ塗形状総て図面の通り 両隅塔は一階方形煉瓦積二階三階及屋根八角形木造にて軒高地上より桁天迄四十二尺五寸… 階下荷受柱杉仕上七寸角の上下枘付敷居鴨居其他の仕口致し建堅め… 側敷桁松六寸角… 床板は階下の玄関及各廊下並後部牧師室階段の間及階上の床の全体は松上小節板…
note	construction period not recorded in KCSK190911appndx; Finished in 1907 (https://www.meijimura.com/sight/%E8%81%96%E3%83%A8%E3%83%8F%E3%83%8D%E6%95%99%E4%BC%9A%E5%A0%82/) (202309 accessed)



code: 1733 **相撲常設館（両国国技館旧）**

city: Tokyo duplication: ZSSK 1st published: 1909

use: arena cultural cnstrctn period: — 1909

info type: detailed strctr system: Sframe

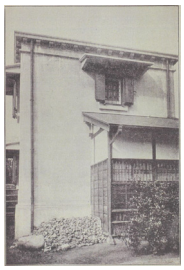
wall: W floor: W beam: S column: S

treatment: not found

strctr source: KCZS190907_p.299-303

façade pattern:	4	nested symmetry;tower;dome;portal
wall element:	2	cornice / moulding;balustrade / parapet
window element:	2	round window;arch
door element:	2	dome;tower

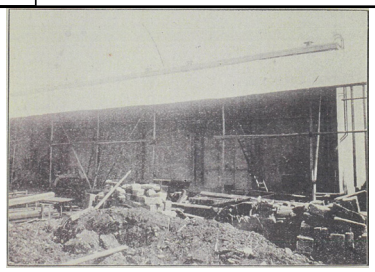
original info about strctr	steel frame shown in the drawings of details in KCZS190907; structures of wall and floor seemingly avoided in the article in KCZS190907_p.299-303 KCSK191801_p.19: 国技館 (editor: the old one burned) は主体の構造は鋼鉄製二鉸構成アーチの半球形ドーム(omitted)其の他の部分は大抵木材から成って居るのである。
note	MTS3_p.175: finished in 1909; see also Tokyo100_p48



code: 3034 **八十嶋氏邸内倉庫**
city: Tokyo duplication: KCGH 1st published: 1911
use: private residential cnstrctn period: 1909 — 1909
info type: detailed strctr system: RCframe
wall: RC floor: beam: column:
treatment: not found
strctr source: KCGH191103_p.30,plate

façade pattern: 0
wall element: 1 cornice / moulding
window element: 0
door element: 0

original info about strctr	KCGH191103_plate: 鉄筋コンクリート造 KCGH191103_p.28-31: 四壁も屋根も悉く鉄筋コンクリート:
note	see also 清水組彩色設計図集vol.4_p.210: M41.11-M42.9, g=RC



code: 3040 **渋沢倉庫**
city: Tokyo duplication: KCGH 1st published: 1911
use: warehouse industrial&stor cnstrctn period: 1908 — 1909
info type: detailed strctr system: RCframe
wall: RC floor: RC beam: RC column: RC
treatment: not found
strctr source: KCSK190912_p.28-30; KCGH191104_plate, p.22-24

façade pattern: 1 simple symmetry
wall element: 1 pilaster
window element: 0
door element: 0 canopy

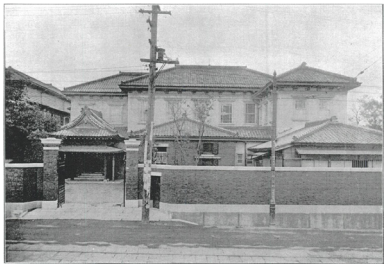
original info about strctr	KCSK: 地形から柱、壁、屋根に至る迄、全部鉄筋コンクリートで…丸善の工形梁を用ゐたが、是は鉄筋コンクリートの梁を用ゐた、即ち第三図直線の如し、先づ梁間に二十八尺余の大梁をわたし、両端は柱によりて支へられ、其太さ中央に於て柱は稍大にして…丸善の床の如く八分の三吋丸鉄針四寸五間に並べ、屋根厚さ四寸、下ばより一寸の所に鉄針あり、大梁、小梁、屋根共にコンクリートにて連続しておるから、単一体となってをる。
note	see also Hori's dissertation, p.63; see also pending清水組彩色設計図集vol.4_p.210: M40.5-M42, g=RC; Earthquake report_photo358: Hennebique system



code: 3102 **鉄網コンクリート構造模範建築**
city: Tokyo duplication: KCGH 1st published: 1911
use: plant industrial&stor cnstrctn period: 1911 — 1911
info type: detailed strctr system: Wframe
wall: W-LC floor: beam: W column: W
treatment: not found
strctr source: KCGH191110_plate

façade pattern: 1 simple symmetry
wall element: 2 balustrade / parapet;cornice / moulding
window element: 0
door element: 0

original info about strctr	KCGH: 鉄網コンクリート wooden frame shown in the photos of construction, in KCGH191110
note	facility of Kawasaki factory in Shiba-cho Tokyo



code: 3133 **金杉英五郎氏住宅**

city: Tokyo duplication: KCGH 1st published: 1912

use: house residential cnstrctn period: 1910 — 1911

info type: detailed strctr system: Wframe

wall: W-LC floor: beam: W column: W

treatment: copper=cornice

strctr source: KCGH191201_plate

façade pattern:	2	portico;pitched rf
wall element:	0	
window element:	2	cornice / moulding;trim / quoin
door element:	2	column;pitched rf

original info about strctr	KCGH: 全部木骨にして外壁は最新式鉄網コンクリート工法なり。軒蛇腹廻りは凡て銅板とし、…屋根下地は鉄筋コンクリートにして全部耐火構造なり。
note	roof base=RC; 川崎画報2 (22), p. 4: 木骨鉄網混凝土 (火災後の耐火性を説明)



code: 3158 **改築せる本郷座**

city: Tokyo duplication: KCGH 1st published: 1912

use: theatre cultural cnstrctn period: — 1911

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: plaster=ct

strctr source: Tokyo100_p55

façade pattern:	1	nested symmetry;vertical wndw array
wall element:	6	pilaster;corbel;pediment / gable;balustrade / parapet;cornice / moulding;foliage
window element:	5	cornice / moulding;keystone;pilaster;round window;trim / quoin
door element:	0	canopy

original info about strctr	Tokyo100_p55: 煉瓦造漆喰塗 Earthquake report_p.530: 二階建、壁厚3B、床及び屋根木造
note	



code: 3251 **東京倶楽部**

city: Tokyo duplication: KCGH 1st published: 1913

use: assembly assembly cnstrctn period: — 1912

info type: detailed strctr system: masonry

wall: Br floor: W beam: column:

treatment: not found

strctr source: 震害及火害之研究_p.93

façade pattern:	4	arcade;portico;pitched rf;simple(rf) tripartition
wall element:	3	arch;pilaster;cornice / moulding
window element:	2	trim / quoin;pediment
door element:	4	arch;pilaster;cornice / moulding;balustrade / parapet

original info about strctr	Tokyo100_p44: 煉瓦石混合造 震害及火害之研究_p.93: 軸部及壁体一煉瓦造、床一木造、屋根一木造「スレート」葺及鉄板瓦棒葺
note	MTsssr167: finished in T1; see also 明治の建築伊東黒田



code: 3329 **岩崎氏別邸**

city: Hakone duplication: KCGH 1st published: 1913

use: villa residential cnstrctn period: 1910 — 1911

info type: detailed strctr system: Wframe

wall: floor: W beam: W column: W

treatment: plaster=ct

strctr source: KCGH191307_plate

façade pattern:	1	pitched rf
wall element:	0	
window element:	0	
door element:	0	

original info about strctr	KCGH: 柱土台総て出節ある丸太材を巧みに使用し壁総てラフカスト塗、化粧柱ベランダ天井亦七寸位の丸太…
note	burned out in 1912



code: 3335 **神門貸事務所**

city: Tokyo duplication: KCGH 1st published: 1913

use: rental office office bldg cnstrctn period: 1911 — 1913

info type: detailed strctr system: masonry&Wframe

wall: Br floor: W beam: S&W column:

treatment: not found

strctr source: Tokyo100_p87; Earthquake report_p.523

façade pattern:	4	nested symmetry;simple tripartition;dome;pitched rf
wall element:	6	pilaster;balustrade / parapet;cornice / moulding;pediment / gable;ashlar / rustication;foliage
window element:	4	arch;lintel;keystone;pilaster
door element:	2	keystone;arch

original info about strctr	Tokyo100_p87: 煉瓦造、一部木造 Earthquake report_p.523 (芝浦製作所銀座販売店): 壁厚第一階及び第二階2B、第三階1.5B…床木造東南道路の隅円形の部分及び建物入隅の部分鉄梁を使用す。屋根木梁に鉄網混凝土平版を載せたるもの。…
note	structure info not recorded in KCGH191307_plate; see also Earthquake report_p.523: "芝浦製作所銀座販売店"



code: 3360 **麹町銀行四谷支店**

city: Tokyo duplication: KCGH 1st published: 1913

use: bank financial cnstrctn period: — 1913

info type: detailed strctr system: masonry

wall: Br floor: W beam: S column:

treatment: Br=cv

strctr source: Earthquake report_p.532

façade pattern:	4	porch;tower;partial symmetry;simple(rf) tripartition
wall element:	4	balustrade / parapet;cornice / moulding;arch
window element:	4	trim / quoin;arch;keystone;pilaster
door element:	4	arch;keystone;pediment / gable;pilaster;foliage

original info about strctr	Tokyo100_p69: 煉瓦造、外部装飾煉瓦張付 Earthquake report_p.532: (classified as 煉瓦造) 壁厚階下道路側2.5B、裏側2B、階上1.5B、高32尺、開口少、床鉄梁木造、屋根鉄骨混凝土厚4寸打。
note	Earthquake report_p.532: finished in T2; no structure info in KCGH plate



code: 3521 **株式会社四谷銀行**

city: Tokyo duplication: KCGH 1st published: 1914

use: bank financial cnstrctn period: — 1913

info type: detailed strctr system: masonry

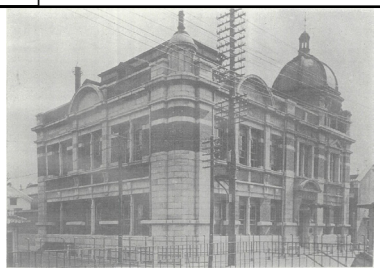
wall: Br floor: W beam: S column:

treatment: not found

strctr source: Earthquake report_p.532

façade pattern:	3	simple symmetry;simple tripartition;porch
wall element:	3	pilaster;cornice / moulding;balustrade / parapet
window element:	5	trim / quoin;keystone;cornice / moulding;arch;balustrade
door element:	4	arch;keystone;pilaster;cornice / moulding

original info about strctr	Earthquake report_p.532: 二階建,建坪 37坪,大正二年建築,壁厚階下道路側2.5B,裏側2B,階上 1.5 B,高32尺,開口少,床鉄梁木造,屋根鉄骨混凝土厚4寸打。
note	similar with code 3563; 川崎画報3 (29) (191507), p. 184: 木骨鉄網混凝土タイル張, 山本喜一郎



code: 3591 **合同紡績株式会社**

city: Osaka duplication: KCGH 1st published: 1915

use: office bldg office bldg cnstrctn period: 1907 — 1909

info type: detailed strctr system: masonry

wall: Br&St floor: W beam: S column:

treatment: Br=cv

strctr source: KCGH191508_plate

façade pattern:	4	tower;dome;cupola;cmpnd symmetry
wall element:	6	pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;corbel
window element:	5	pilaster;pediment;cornice / moulding;frieze / architrave;trim / quoin
door element:	3	pediment / gable;frieze / architrave;corbel

original info about strctr	KCGH: 煉瓦石混合造、赤色煉瓦張付、大梁は鉄材床木造。…
note	



code: 3592 **北浜銀行堂島支店**

city: Osaka duplication: KCGH 1st published: 1915

use: bank financial cnstrctn period: 1910 — 1912

info type: detailed strctr system: masonry

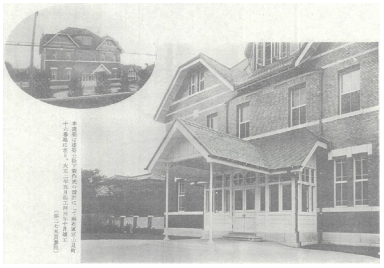
wall: Br floor: RC beam: column:

treatment: not found

strctr source: KCGH191508_plate

façade pattern:	5	cmpnd symmetry;simple tripartition;tower;dome;pitched rf
wall element:	4	pediment / gable;balustrade / parapet;cornice / moulding;ashlar / rustication
window element:	6	trim / quoin;arch;keystone;cornice / moulding;pediment;frieze / architrave
door element:	5	corbel;arch;keystone;frieze / architrave;cornice / moulding

original info about strctr	KCGH: 煉瓦造、一階地下室は花崗岩使用床鉄筋混凝土造、…
note	



code: 3609 **岩垂邦彦氏邸正面**

city: Tokyo duplication: KCGH 1st published: 1915

use: house residential cnstrctn period: 1913 — 1914

info type: detailed strctr system: masonry

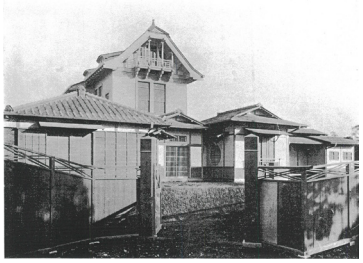
wall: Br&St floor: C&RC beam: column:

treatment: Br=cv

strctr source: KCGH191509_p.285

façade pattern: 3 quasi-symmetry;portico;pitched rf
wall element: 0
window element: 1 lintel
door element: 1 pitched rf

original info about strctr	KCGH: 石、煉瓦及木造にして… 周壁は煉瓦石造、床は各階共コンクリート又は鉄筋コンクリートとす。但し主要間仕切も煉瓦壁とす。… …外部には大阪窯業会社製黒化粧煉瓦を貼付け間仕切壁は漆喰塗とし一部紙貼仕上とす。
note	structure info not recorded in KCGH191509_plate



code: 3631 **諏訪方季氏邸**

city: Tokyo duplication: KCGH 1st published: 1916

use: house residential cnstrctn period: 1914 — 1915

info type: detailed strctr system: Wframe

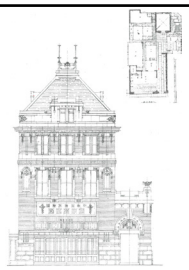
wall: W floor: beam: W column: W

treatment: plaster=ct

strctr source: KCGH191602_p.28

façade pattern: 2 partial symmetry;pitched rf
wall element: 0
window element: 1 trim / quoin
door element: 0

original info about strctr	KCGH: 土台は桧、赤松を使用し、柱は杉蝦夷松、栂、桧を各室用途及荷重量に応じて適所に使用し、梁、小屋組、胴差等の軸部構材は松を主要材とし、多少の杉を使用したり… 洋館内外部共木摺漆喰塗、日本家外部腰及長押上漆喰塗…
note	structure info not recorded in KCGH191601_plate; 諏訪方季 as the owner of KCGH, living in Tokyo



code: 3649 **田中花王堂**

city: Tokyo duplication: KCGH 1st published: 1916

use: shop small-scale cnstrctn period: — 1915

info type: detailed strctr system: Wframe

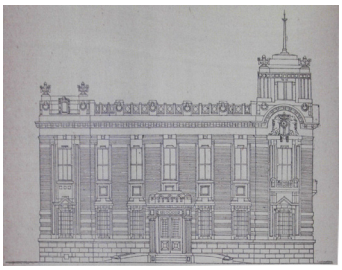
wall: floor: beam: W column: W

treatment: not found

strctr source: KCGH191603_plate

façade pattern: 3 pitched rf;simple symmetry;simple(rf) tripartition
wall element: 6 pilaster;foliage;balustrade / parapet;cornice / moulding;ashlar / rustication;frieze / architrave
window element: 1 keystone;foliage
door element: 3 canopy;pediment / gable;arch;keystone

original info about strctr	wooden structure shown in the drawing of details in KCGH191603
note	図面で見る都市建築の大正p.96: finished in T4; 川崎画報3 (33) (191511), p. 295: 木骨鉄網混凝土装飾煉瓦張



code: 3687 **新潟商業銀行**

city: Niigata duplication: KCGH 1st published: 1916

use: bank financial cnstrctn period: — 1914

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: S column:

treatment: Br&St=cv;aSt=ct

strctr source: KCGH191611_p.24-27

façade pattern:	5	tower;pinnacle;portico;vertical wndw array;cmpnd symmetry;simple(rf) tripartition
wall element:	5	balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element:	5	keystone;cornice / moulding;pediment;trim / quoin;balustrade
door element:	4	column;balustrade / parapet;cornice / moulding;frieze / architrave

original info about strctr	KCGH: 周壁及間仕切壁共鉄筋「コンクリート」構造とし 西側及北側腰長押以下花崗石張り腰上は張煉瓦及人造石塗り　東側及南側の内角家は前仝断其他はモルタル塗屋上眺望室及階段室共外部「モルタル」塗及人造石塗… 屋根 凡て鉄筋コンクリート」構造とし大屋根。屋上階段室屋根玄関屋根は「マルソイド」「アスフアルト」張り屋上眺望室屋根は銅板張りとす。　床 階下床は木造及び「コンクリート」構造とし二階及三階は鉄筋コンクリート」構造とす。… 第三条 営業室内鉄梁受の片蓋柱縦鉄筋は径一吋丸鉄四本挿入し… structural columns not found in floor plans, only two round columns in lobby of 1st floor
note	MTS7: complete=191405; KCGH191611: roof=steel beams with concrete slabs; Despite questions on the steel beams of business hall, the floors are RC, this bldg is still defined as RCframe, considering the grid of walls shown in the plans.



code: 3719 **不動貯金銀行前橋代理店**

city: Maebashi duplication: KCGH 1st published: 1916

use: bank financial cnstrctn period: 1916 — 1916

info type: detailed strctr system: Wframe

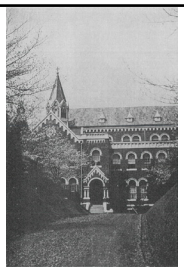
wall: floor: beam: W column: W

treatment: St=pile;Br=cv;aSt=ct;copper=deco

strctr source: KCGH191611_p.15-16

façade pattern:	5	nested symmetry;vertical wndw array;portico;tower;pitched rf;cupola
wall element:	4	pilaster;pediment / gable;cornice / moulding;foliage
window element:	5	trim / quoin;corbel;keystone;pilaster;cornice / moulding
door element:	3	balustrade / parapet;cornice / moulding;frieze / architrave

original info about strctr	KCGH: 構材は木骨化粧煉瓦貼り… 腰石と入口両脇の石柱は、(omitted)花崗石を使用し。他は総て人造石塗である。…角の入口の庇しは装飾も総て銅板で包まれてゐる、… 構材へあと所りをするが、木材の骨には「ペドラースエキスパンデットメタルラス」波形を掩ひ、其上を人造石或はモルタル塗、及びタイル貼りとして仕上げたのである。 内部は白漆喰壁で、公衆室即客溜木部はワニス塗り、他は白色に色を帯びたペンキ塗りである。
note	



code: 3829 **聖心学院聖堂**

city: Tokyo duplication: KCGH 1st published: 1918

use: church religious cnstrctn period: — 1918

info type: detailed strctr system: masonry

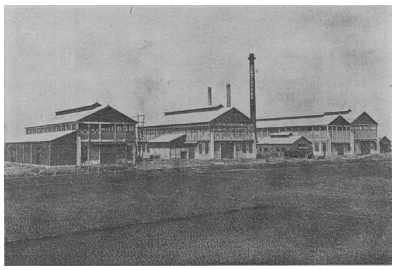
wall: Br floor: W beam: column:

treatment: not found

strctr source: KCGH191807_plate

façade pattern:	6	partial symmetry;arcade;porch;pinnacle;tower;pitched rf
wall element:	1	balustrade / parapet
window element:	2	arch;round window
door element:	5	pediment / gable;arch;column;cornice / moulding;frieze / architrave

original info about strctr	KCGH: 石材、煉瓦造 Earthquake report_p.536: 年齢新、…壁厚2B、高40尺、柱形なし、開口多、床及び小屋木造、礼拝堂には鉄骨補強あり…屋上突出の塔体木造タイル張には何等異状なし
note	Earthquake report_p.536: newly built, exact construction period unknown; 聖心女子学院創立50年史.1958_p.48: finished in 1918, ceremony on 1918.3.30



code: 3849 **富士製鋼株式会社工場**

city: Kawasaki duplication: KCGH 1st published: 1918

use: plant industrial&stor cnstrctn period: 1917 — 1918

info type: detailed strctr system: RCframe

wall: RC&S floor: RC beam: RC column: RC

treatment: not found

strctr source: KCGH191809news_p.1-2

façade pattern: 1 horizontal wndw array;pitched rf
wall element: 0
window element: 0
door element: 0 canopy

original info about strctr	KCGH: 仝上第二号屋 鉄筋混凝土造小屋組鉄製屋根木造「コンパウンド」葺き床土間基礎打鉄筋混凝土床… 「クレーン」受梁ハ鉄製「ガーダー」ニ代フルニ鉄筋混凝土造「アーチ」ヲ採用シ… structure of walls shown in the drawing of details in KCGH191810
note	roof=S; KCGH191808_plate: g=SRC; see also Earthquake report_p.560



code: 3892 **番町交換局**

city: Tokyo duplication: KCGH 1st published: 1919

use: telecom post&telecom cnstrctn period: — 1919

info type: detailed strctr system: masonry

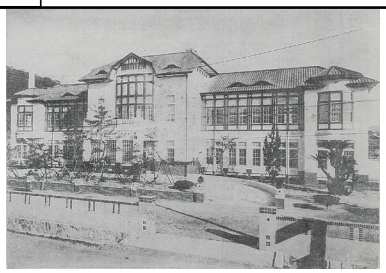
wall: Br floor: W beam: column:

treatment: aSt=trim

strctr source: Earthquake report_p.519-520

façade pattern: 1 partial symmetry;vertical wndw array
wall element: 3 buttress;pilaster;cornice / moulding
window element: 1 trim / quoin
door element: 0

original info about strctr	Earthquake report_p.519-520: (=中央電話局九段分局) 壁厚2.5B, 高32尺,控壁3B×1B, 1.5間毎に配置,開口少き方,床及び小屋木造,建物隅に稍々大石柱形あり,蛇腹及び窓は人造石,間仕切乏。
note	明治大正期の逓信建築_p.195: transfer of office started in T8.3.09



code: 3894 **日本赤十字社愛媛縣支部**

city: Matsuyama duplication: KCGH 1st published: 1919

use: office bldg office bldg cnstrctn period: 1916 — 1918

info type: detailed strctr system: Wframe

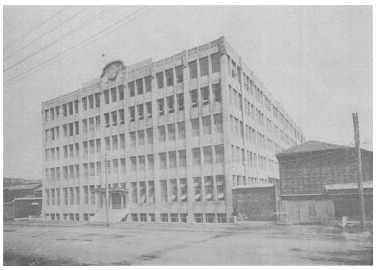
wall: W floor: W beam: W column: W

treatment: plaster=ct

strctr source: KCZS191901_p.45

façade pattern: 4 nested symmetry;portico;pitched rf;simple(rf) tripartition
wall element: 1 half-timber
window element: 1 trim / quoin
door element: 2 balustrade / parapet;cornice / moulding

original info about strctr	KCZS: 腰積焼過煉瓦積となし、地下室に深さ約八尺余にして薬庫に煉瓦積、汽罐室は鉄筋コンクリート打、防水装置としてアスファルト及エキセレントを使用す 壁体及床小屋組共全部木材、床は米松と本邦松とを使用し、小屋組は和洋共に用ひ、壁内外天井共漆喰塗、…
note	KCZS191901_p.45: 1916.11-1918.12 (客臘=last December)



code: 3939 **三越吳服店別館**

city: Tokyo duplication: KCGH 1st published: 1919

use: department large-scale cnstrctn period: 1918 — 1919

info type: detailed strctr system: RCframe

wall: RC floor: RC beam: RC column: RC

treatment: not found

strctr source: KCGH191910_Ads; Earthquake report_p.579

façade pattern:	1	simple symmetry;even wndw array
wall element:	3	pilaster;balustrade / parapet;pediment / gable
window element:	0	
door element:	1	canopy;column

original info about strctr	KCGH191910_Ads: Kahn System Earthquake report_p.579: 帳壁式鉄筋混凝土造外壁及び床鉄筋内部に於て強固なる間仕切壁を考へらるるものは建築物も中央南北に亘るもののみなり…
note	丸之內別館の竣工. 三越9(9). 三越, p.18: from 1918.2 to 1919.7; Kahn System



code: 4056 **エンパイヤビルディング**

city: Tokyo duplication: KCGH 1st published: 1922

use: office bldg office bldg cnstrctn period: — 1921

info type: detailed strctr system: RCframe

wall: RC-RCBlk floor: RC beam: RC column: RC

treatment: not found

strctr source: Earthquake report_p.586

façade pattern:	0	even wndw array;vertical wndw array
wall element:	1	ashlar / rustication
window element:	1	trim / quoin
door element:	0	canopy

original info about strctr	Earthquake report_p.586: 帳壁式鉄筋混凝土造、帳壁厚一尺の鉄筋混凝土塊造、床鉄筋混凝土造なり、杭打地形、外壁下連続中柱下単独鉄筋混凝土造基礎。
note	pending自動車及交通運輸 4(11). 帝国自動車保護協会, 1921.11



code: 61 **改築白木屋呉服店**

city: Tokyo duplication: SKGH 1st published: 1911

use: department large-scale cnstrctn period: — 1911

info type: simple strctr system: Wframe&Sframe

wall: S&W floor: beam: column:

treatment: plaster=ct

strctr source: KCSK191110news_p.81

façade pattern: 5 tower;dome;pitched rf;nstd quasi-symmetry;simple tripartition
wall element: 3 pilaster;balustrade / parapet;cornice / moulding
window element: 1 trim / quoin
door element: 0 canopy

original info about strctr	KCSK: 外部は総て三階作り鉄木混成にて軸部をセメント漆喰塗 Tokyo100_p85: 木造漆喰塗
note	dome newly built with steel frame; see also 明治の建築伊東黒田



code: 69 **宮城病院婦人科手術室**

city: Sendai duplication: KCSK 1st published: 1911

use: hospital hospital cnstrctn period: — 1911

info type: simple strctr system: Wframe

wall: floor: beam: W column: W

treatment:

strctr source: KCSK191111_plate

façade pattern: 3 pitched rf;cupola;nested symmetry;vertical wndw array
wall element: 2 pilaster;cornice / moulding
window element: 1 trim / quoin
door element: 0

original info about strctr	KCSK: 木造…内部は腰通及床共『コンクリート』人造蝋石塗にして…
note	pending明治大正図誌 6　東北_p.72: finished in M44



code: 75 **新築日比谷貸事務所**

city: Tokyo duplication: KCSK 1st published: 1911

use: rental office office bldg cnstrctn period: — 1911

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCSK191112_p.77

façade pattern: 2 simple symmetry;simple tripartition
wall element: 5 pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication;foliage
window element: 3 lintel;keystone;balustrade
door element: 5 column;arch;keystone;corbel;balustrade / parapet

original info about strctr	KCSK: 木造貸事務所
note	



code: 104 **新築本所区役所**

city: Tokyo duplication: KCSK 1st published: 1912

use: administrative government cnstrctn period: — 1911

info type: simple strctr system: Wframe

wall: floor: beam: column:W

treatment: plaster=ct

strctr source: KCSK191108news_p.66

façade pattern:	6	nested symmetry;dome;cupola;pinnacle;pitched rf;portal
wall element:	4	pilaster;balustrade / parapet;cornice / moulding;pediment / gable
window element:	0	
door element:	3	arch;keystone;cornice / moulding

original info about strctr	KCSK: 木造漆喰塗瓦葺
note	no construction period recorded in KCSK191108news, claimed as close to completion



code: 139 **伴伝兵衛商店新築**

city: Tokyo duplication: KCSK 1st published: 1912

use: shop small-scale cnstrctn period: — 1912

info type: simple strctr system: Wframe

wall: floor: beam: W column:W

treatment: plaster=ct

strctr source: Tokyo100_p92

façade pattern:	2	simple symmetry;simple tripartition
wall element:	5	pilaster;arch;balustrade / parapet;cornice / moulding
window element:	3	pediment;arch;keystone;foliage
door element:	0	

original info about strctr	Tokyo100_p92: 木造漆喰塗 wooden beam distinguished in the drawing of section in KCSK191210 structure of column speculated
note	



code: 143 **改築松屋呉服店**

city: Tokyo duplication: KCSK 1st published: 1912

use: department large-scale cnstrctn period: — 1913

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: Br=cv;aSt=ct

strctr source: Tokyo100_p86

façade pattern:	6	simple tripartition;pitched rf;tower;pinnacle;dome;vertical wndw array;cmpnd symmetry
wall element:	5	pilaster;balustrade / parapet;cornice / moulding;foliage;pediment / gable
window element:	4	arch;foliage;column;trim / quoin;balustrade
door element:	2	arch;foliage;keystone;canopy

original info about strctr	Tokyo100_p86: 木造、装飾煉瓦張及擬石塗
note	see also 松屋呉服店 (神田今川橋) 田邊淳吉 KCSSRS_4_19vol2barrack_p55; Tokyo100_p86: reformed in T2



code: 214 **私立明治大学新築校舎**
city: Tokyo duplication: SKGH 1st published: 1913
use: schoolhouse academic cnstrctn period: — 1913
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment:
strctr source: Tokyo100_p33

façade pattern: 7 nested symmetry;portico;tower;dome;cupola;pitched rf;simple(rf) tripartition
wall element: 4 pilaster;pediment / gable;cornice / moulding
window element: 6 arch;keystone;frieze / architrave;cornice / moulding;corbel;column;foliage
door element: 7 pilaster;column;cornice / moulding;frieze / architrave;balustrade / parapet;arch;keystone;foliage

original info about strctr	Tokyo100_p33: 木骨煉瓦造
note	KCSK191109: no structure info



code: 220 **大橋新太郎氏邸**
city: duplication: SKGH 1st published: 1912
use: house residential cnstrctn period: 1911 — 1912
info type: simple strctr system: masonry&Wframe
wall: floor: beam: column:
treatment: tile=cv
strctr source: KCGH191401_plate

façade pattern: 4 partial symmetry;pitched rf;cupola;portico
wall element: 2 half-timber;pediment / gable
window element: 3 arch;trim / quoin;balustrade
door element: 1 pitched rf

original info about strctr	KCGH: 外面石造、階下煉瓦、二階木造白煉瓦形陶器貼付
note	清水組彩色設計図集vol.1_p.184: 1f=Br, 2f=W



code: 241 **日之出生命保険株式会社**
city: Tokyo duplication: ZSSKGH 1st published: 1914
use: insurance financial cnstrctn period: — 1913
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment: Br=cv;aSt=ct
strctr source: Tokyo100_p76

façade pattern: 2 cmpnd symmetry;simple tripartition;vertical wndw array
wall element: 3 pilaster;balustrade / parapet;cornice / moulding
window element: 1 arch
door element: 2 pilaster;keystone

original info about strctr	Tokyo100_p76: 木骨鉄網コンクリート造、装飾煉瓦及擬石塗
note	no structure info in KCZS191601_p.31-35; 川崎画報2 (12): 木骨鉄網混凝土, ?2 (11) following 1 (10)?, constructin period not recorded



code: 247 **新築富山房書肆**

city: Tokyo duplication: SKGH 1st published: 1914

use: shop small-scale cnstrctn period: — 1914

info type: simple strctr system: Wframe

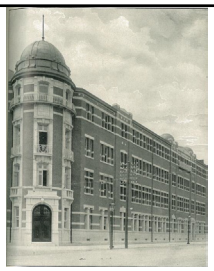
wall: floor: beam: column:

treatment: Br=cv

strctr source: Tokyo100_93

façade pattern:	2	simple tripartition;nstd quasi-symmetry
wall element:	5	pilaster;pediment / gable;balustrade / parapet;cornice / moulding;foliage
window element:	4	lintel;keystone;pediment;cornice / moulding
door element:	0	canopy

original info about strctr	Tokyo100_93: 木骨装飾煉瓦張付
note	



code: 275 **三菱合資会社貸事務所（21号館）**

city: Tokyo duplication: SKGH 1st published: 1914

use: rental office office bldg cnstrctn period: 1912 — 1914

info type: simple strctr system: SRCframe

wall: SRC floor: RC beam: S column: SRC

treatment: Br=cv;mortar=ct

strctr source: KCZS191407_p.388-389

façade pattern:	4	cmpnd symmetry;dome;tower;simple tripartition
wall element:	2	pilaster;pediment / gable
window element:	5	arch;keystone;lintel;trim / quoin;corbel
door element:	5	trim / quoin;corbel;cornice / moulding;arch;keystone

original info about strctr	KCZS: 全部鉄骨鉄筋コンクリート造で外壁は主として化粧煉瓦張とし石材とモルタル塗との部分がある。 *KCZS193610_p.155-157: Original designer Akira Fujimura藤村朗, who designed the structure as RC, joined army in the middle of design. (Fujimura:)Shikakichi Yokoyama横山鹿吉 took over the work and changed to structure to steel frame with RC walls and floors. (Sakurai:) Columns wrapped with RC, RC also functions.
note	tiny picture in KCZS; Mistsubishi Estate history: from T1.8 to T3.6; KCSK: RC; Tokyo100_p81: 鉄骨鉄筋混凝土造、外部装飾煉瓦張付



code: 281 **新築東京工科学校**

city: Tokyo duplication: SKGH 1st published: 1914

use: schoolhouse academic cnstrctn period: — 1913

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment: aSt=cv

strctr source: KCSK191407_plate; Tokyo100_p36

façade pattern:	3	quasi-symmetry;simple tripartition;pitched rf
wall element:	2	buttress;pediment / gable
window element:	1	trim / quoin
door element:	3	pointed arch;balustrade / parapet;corbel

original info about strctr	KCSK: 煉瓦及石造 Tokyo100_p36: 煉瓦造模擬石装飾張付
note	construction period: https://www.nit.ac.jp/campus/history (202309 accessed); 美術建築図譜上_plate: 木骨煉瓦



code: 286 **新築佐野病院**

city: duplication: SKGH 1st published: 1914

use: hospital hospital cnstrctn period: 1913 — 1914

info type: simple strctr system: Wframe

wall: floor: beam: W column: W

treatment: plaster=ct

strctr source: KCSK191408_plate

façade pattern:	5	simple tripartition;tower;cupola;pitched rf;portico
wall element:	1	cornice / moulding
window element:	3	trim / quoin;pilaster;keystone
door element:	3	pilaster;cornice / moulding;balustrade / parapet

original info about strctr	KCSK: 木造、漆喰塗
note	construction period in MTS7_p.181; 美術建築図譜上_plate: 木骨



code: 298 **新築安藤組**

city: Tokyo duplication: SKGH 1st published: 1914

use: office bldg office bldg cnstrctn period: 1912 — 1914

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCSK191410_plate

façade pattern:	4	pitched rf;tower;pinnacle;simple(rf) tripartition
wall element:	2	balustrade / parapet;buttress
window element:	5	triangular arch;round window;arch;pilaster;corbel
door element:	3	arch;trim / quoin;pitched rf

original info about strctr	KCSK: 煉瓦石、混合 Tokyo100_p96: 煉瓦造
note	



code: 308 **新築豊国銀行京橋支店**

city: Tokyo duplication: SKGH 1st published: 1914

use: bank financial cnstrctn period: 1914 — 1914

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: TC&Br=cv;aSt=ct

strctr source: KCSK191412_plate

façade pattern:	3	cmpnd symmetry;dome;simple(rf) tripartition
wall element:	7	pilaster;quoin;pediment / gable;balustrade / parapet;cornice / moulding;foliage;frieze / architrave
window element:	4	cornice / moulding;arch;keystone;trim / quoin;foliage
door element:	3	frieze / architrave;cornice / moulding;pilaster

original info about strctr	KCSK: 鉄筋コンクリート、テラコッタ張 Tokyo100_p70: 鉄筋コンクリート造、外部装飾煉瓦及擬石塗
note	



code: 313 **新築新橋停車場**

city: Tokyo duplication: SKGH 1st published: 1915

use: railway station transportation cnstrctn period: — 1914

info type: simple strctr system: Sframe

wall: floor: beam: column:

treatment:

strctr source: KCSK191501_plate

façade pattern:	6	nested symmetry;dome;cupola;pitched rf;simple(rf) tripartition;portal
wall element:	5	pilaster;balustrade / parapet;cornice / moulding;arch;pediment / gable
window element:	6	arch;keystone;pediment;lintel;column;trim / quoin
door element:	3	arch;keystone;canopy;pilaster

original info about strctr	KCSK: 鉄骨、石煉瓦混用 Tokyo100_p51: 鉄骨煉瓦造
note	wikipedia: finished in 19140330,『週刊 JR全駅・全車両基地』 1号 東京駅・新橋駅・海芝浦駅ほか72駅、朝日新聞出版〈週刊朝日百科〉、2012年8月5日、19頁



code: 322 **新築奥田油店**

city: Tokyo duplication: SKGH 1st published: 1914

use: shop small-scale cnstrctn period: — 1914

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191502_plate

façade pattern:	3	cmpnd symmetry;pitched rf;cupola
wall element:	2	cornice / moulding;buttress
window element:	4	arch;lintel;trim / quoin;balustrade
door element:	2	lintel;keystone

original info about strctr	KCSK: 木骨煉瓦造に化粧煉瓦の張付なり Tokyo100_99: 木造 表煉瓦張付
note	



code: 344 **豊国火災保険株式会社**

city: duplication: KCSK 1st published: 1915

use: insurance financial cnstrctn period: 1914 — 1915

info type: simple strctr system: Wframe

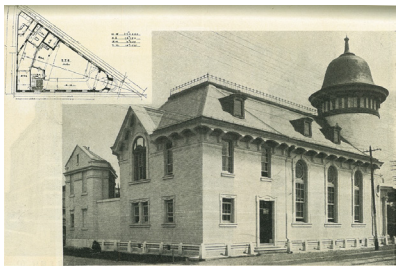
wall: floor: beam: W column: W

treatment: Br=cv

strctr source: KCSK191511_plate; KDKCGH_p.192

façade pattern:	3	cmpnd symmetry;vertical wndw array;porch;pitched rf
wall element:	4	pilaster;balustrade / parapet;cornice / moulding;frieze / architrave
window element:	4	lintel;trim / quoin;frieze / architrave;arch
door element:	3	pediment / gable;column;frieze / architrave

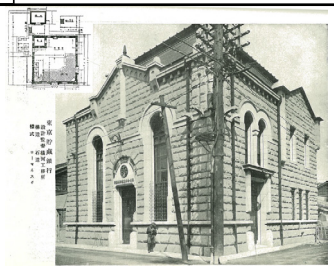
original info about strctr	KCSK: 鉄網混凝土化粧煉瓦張付
note	KCSK191504plate: g=RC (design); 大橋好光. 洋風軸組・木骨造の導入過程と在来軸組工法に与えた影響について.住総研研究年報No.29 2002(also AIJ 2003): finished in 1914, 木骨コンクリート造; see also KDKCGH_p.192



code: 347 **東陽銀行**
city: Yokohama duplication: SKGH 1st published: 1914
use: bank financial cnstrctn period: — 1913
info type: simple strctr system: RCframe
wall: floor: beam: column:
treatment: Br=cv
strctr source: KCSK191504_plate

façade pattern: 5 tower;dome;pitched rf;vertical wndw array;nested symmetry;porch
wall element: 2 cornice / moulding
window element: 4 trim / quoin;arch;keystone;foliage;round window
door element: 3 column;pediment / gable;frieze / architrave

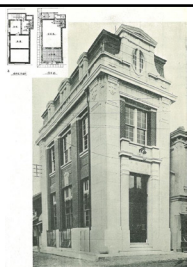
original info about strctr	KCSK: カーン式鉄筋混凝土、化粧煉瓦張付
note	Kahn System; https://yokohamapostcardclub.blogspot.com/2014/04/blog-post_4628.html: finished in 1913



code: 349 **東京貯蔵銀行**
city: Tokyo duplication: ZSSK 1st published: 1908
use: bank financial cnstrctn period: — 1907
info type: simple strctr system: masonry
wall: floor: beam: column:
treatment:
strctr source: KCSK191504_plate

façade pattern: 2 simple symmetry;vertical wndw array;pitched rf
wall element: 3 pilaster;pediment / gable;cornice / moulding
window element: 3 trim / quoin;arch;column
door element: 5 arch;keystone;corbel;cornice / moulding;pilaster

original info about strctr	KCSK: 石造 Tokyo100_p67: 石造一部二階建
note	MTS7_p.181: finished in 1907



code: 351 **東海銀行牛込支店**
city: Tokyo duplication: KCSK 1st published: 1915
use: bank financial cnstrctn period: 1914 — 1914
info type: simple strctr system: masonry
wall: floor: beam: column:
treatment:
strctr source: KCSK191504_plate

façade pattern: 3 simple symmetry;pitched rf;simple(rf) tripartition
wall element: 6 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 5 pediment;frieze / architrave;cornice / moulding;round window;pilaster;foliage
door element: 4 balustrade / parapet;cornice / moulding;frieze / architrave;pilaster

original info about strctr	KCSK: 煉瓦、石混用
note	清水組彩色設計図集vol.2_p.201: M3.7-T3.10, g=W



code: 353 **千代田生命保険相互会社大阪支部**

city: Osaka duplication: KCSK 1st published: 1915

use: insurance financial cnstrctn period: 1913 — 1915

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191504_plate; KCSK191509news_p.99

façade pattern: 4 cmpnd symmetry;tower;porch;simple tripartition
wall element: 6 pilaster;ashlar / rustication;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 3 lintel;keystone;trim / quoin
door element: 4 balustrade / parapet;cornice / moulding;frieze / architrave;column

original info about strctr	KCSK191504_plate: 鉄筋混凝土化粧煉瓦張 KCSK191509news_p.99: 鉄筋コンクリート
note	



code: 354 **若尾銀行東京支店**

city: Tokyo duplication: SKGH 1st published: 1913

use: bank financial cnstrctn period: — 1913

info type: simple strctr system: masonry

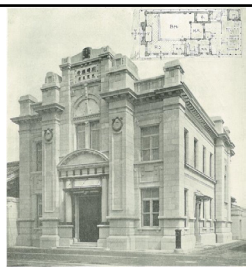
wall: floor: beam: column:

treatment:

strctr source: KCSK191504_plate

façade pattern: 4 simple(rf) tripartition;pitched rf;porch;partial symmetry
wall element: 6 pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication;frieze / architrave
window element: 4 corbel;keystone;cornice / moulding;arch;foliage
door element: 3 column;cornice / moulding;pediment / gable;foliage

original info about strctr	KCSK: 石煉瓦 Tokyo100_p72: 煉瓦石混合造
note	



code: 355 **東京川崎銀行大阪支店**

city: Osaka duplication: KCSK 1st published: 1915

use: bank financial cnstrctn period: — 1914

info type: simple strctr system: masonry

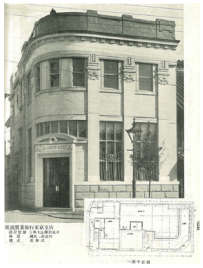
wall: floor: beam: column:

treatment:

strctr source: KCSK191504_plate

façade pattern: 2 simple symmetry;simple(rf) tripartition
wall element: 7 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;pediment / gable;arch;foliage
window element: 4 pilaster;frieze / architrave;arch;keystone
door element: 4 column;pediment / gable;cornice / moulding;frieze / architrave;canopy

original info about strctr	KCSK: 石造
note	MTS8_204: finished in 1914



code: 358 **横浜実業銀行東京支店**

city: Tokyo duplication: SKGH 1st published: 1914

use: bank financial cnstrctn period: — 1914

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCSK191504_plate

façade pattern: 2 partial symmetry;simple(rf) tripartition
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;foliage
window element: 1 trim / quoin
door element: 3 trim / quoin;frieze / architrave;pediment / gable

original info about strctr	KCSK: 煉瓦、石混用
note	MTS10_p.183: finished in 1914.10



code: 363 **第一銀行新大阪町支店**

city: duplication: ZSSK 1st published: 1911

use: bank financial cnstrctn period: 1909 — 1911

info type: simple strctr system: masonry

wall: Br&St floor: beam: column:

treatment:

strctr source: KCSK191504_plate

façade pattern: 4 cmpnd symmetry;pitched rf;cupola;simple(rf) tripartition
wall element: 2 pediment / gable;cornice / moulding
window element: 8 trim / quoin;pediment;arch;cornice / moulding;keystone;frieze / architrave;balustrade;corbel
door element: 2 canopy;arch;keystone

original info about strctr	KCSK: 石、煉瓦混用
note	清水組彩色設計図集vol.1_p.199: M42.11-M44.6, g=W; no structure info in KCZS191110_p.537



code: 370 **共同火災保険会社神戸支店**

city: duplication: KCSK 1st published: 1915

use: insurance financial cnstrctn period: — 1913

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCSK191504_plate

façade pattern: 4 simple tripartition;tower;pitched rf;partial symmetry
wall element: 6 arch;pediment / gable;balustrade / parapet;cornice / moulding;ashlar / rustication;pilaster
window element: 7 pilaster;pediment;cornice / moulding;keystone;frieze / architrave;arch;corbel
door element: 5 pilaster;trim / quoin;balustrade / parapet;cornice / moulding;keystone

original info about strctr	KCSK: 煉瓦、石混用
note	MTS8_204: finished in 1913



code: 371 **共同火災保険名古屋支店**

city: duplication: KCSK 1st published: 1915

use: insurance financial cnstrctn period: — 1913

info type: simple strctr system: masonry

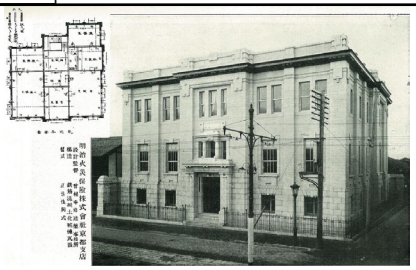
wall: floor: beam: column:

treatment:

strctr source: KCSK191504_plate

façade pattern:	6	pitched rf;cupola;simple tripartition;arcade;tower;partial symmetry
wall element:	4	pilaster;pediment / gable;cornice / moulding;foliage
window element:	7	column;arch;trefoil arch;cornice / moulding;frieze / architrave;trim / quoin;balustrade;foliage
door element:	4	corbel;frieze / architrave;cornice / moulding;balustrade / parapet

original info about strctr	KCSK: 煉瓦、石混用
note	MTS8_204: finished in 1913



code: 373 **明治火災保険株式会社京都支店**

city: duplication: KCSK 1st published: 1915

use: insurance financial cnstrctn period: — 1914

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191504_plate

façade pattern:	3	simple symmetry;simple tripartition;porch
wall element:	4	pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication
window element:	4	trim / quoin;keystone;column;cornice / moulding
door element:	4	balustrade / parapet;cornice / moulding;frieze / architrave;pilaster

original info about strctr	KCSK: 鉄筋混凝土化粧煉瓦張付
note	MTS7_p.183: finished in 1914.7



code: 375 **三井銀行京都支店**

city: duplication: KCSK 1st published: 1915

use: bank financial cnstrctn period: 1912 — 1914

info type: simple strctr system: masonry

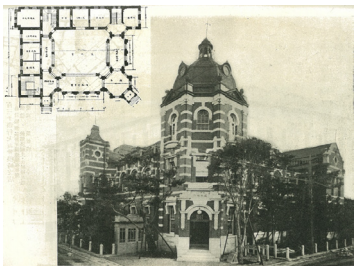
wall: floor: beam: column:

treatment:

strctr source: KCSK191504_plate

façade pattern:	3	cmpnd symmetry;simple(rf) tripartition;portal
wall element:	7	pilaster;column;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element:	3	arch;keystone;frieze / architrave;foliage
door element:	2	arch;keystone;canopy

original info about strctr	KCSK: 石造
note	see also KDKCGH_p.100



code: 377 **株式会社盛岡銀行**

city: duplication: ZSSK 1st published: 1915

use: bank financial cnstrctn period: 1908 — 1911

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCSK191504_plate

façade pattern: 5 cmpnd symmetry;tower;dome;pitched rf;simple tripartition
wall element: 6 pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage;pilaster
window element: 9 arch;keystone;corbel;frieze / architrave;cornice / moulding;pediment;round window;trim / quoin;balustrade
door element: 5 arch;keystone;corbel;cornice / moulding;frieze / architrave

original info about strctr	KCSK: 煉瓦、石混用
note	construction period in MTS3_p.181



code: 378 **周防銀行**

city: duplication: KCSK 1st published: 1915

use: bank financial cnstrctn period: — 1907

info type: simple strctr system: Wframe

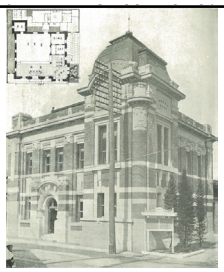
wall: floor: beam: column:

treatment: plaster=ct

strctr source: KCSK191504_plate

façade pattern: 5 quasi-symmetry;cupola;pitched rf;portico;simple(rf) tripartition
wall element: 5 pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;foliage
window element: 7 arch;keystone;trim / quoin;column;frieze / architrave;cornice / moulding;foliage;balustrade
door element: 5 arch;keystone;pilaster;cornice / moulding;pitched rf;foliage

original info about strctr	KCSK: 木造漆喰塗
note	existing building, URL: https://www.dojo.love/entry/2022/03/22/%E5%B1%B1%E5%8F%A3%E7%9C%8C%E6%9F%B3%E4%BA%95%E5%B8%82%E3%81%AE%E6%97%A7%E5%91%A8%E9%98%B2%E9%8A%80%E8%A1%8C%E6%9C%AC%E5%



code: 388 **名古屋銀行堀川支店**

city: duplication: KCSK 1st published: 1915

use: bank financial cnstrctn period: — 1914

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCSK191505_plate

façade pattern: 5 vertical wndw array;tower;pitched rf;partial symmetry;simple(rf) tripartition;porch
wall element: 5 pilaster;balustrade / parapet;pediment / gable;cornice / moulding;frieze / architrave
window element: 5 trim / quoin;frieze / architrave;cornice / moulding;arch;keystone
door element: 3 pilaster;keystone;arch

original info about strctr	KCSK: 煉瓦、石造
note	INAX report no.180_p.16: finished in T3



code: 415 **東京米穀取引所**

city: duplication: KCSK 1st published: 1915

use: exchange financial cnstrctn period: — 1913

info type: simple strctr system: Wframe

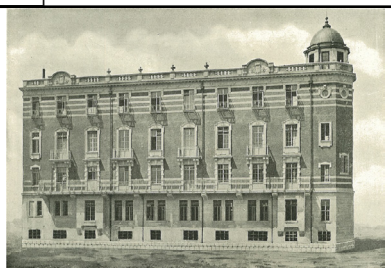
wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191507_plate

façade pattern:	5	cmpnd symmetry;simple tripartition;tower;dome;pitched rf
wall element:	7	pilaster;arch;balustrade / parapet;cornice / moulding;ashlar / rustication;frieze / architrave
window element:	8	round window;trim / quoin;arch;keystone;cornice / moulding;frieze / architrave;pediment;balustrade;foliage
door element:	0	canopy;foliage

original info about strctr	KCSK: 木造化粧煉瓦張
note	MTS3_p.175: finished in 1913



code: 417 **帝国製麻株式会社**

city: Tokyo duplication: ZSSKGH 1st published: 1915

use: office bldg office bldg cnstrctn period: — 1915

info type: simple strctr system: SRCframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191507_plate

façade pattern:	4	simple tripartition;tower;dome;partial symmetry
wall element:	6	balustrade / parapet;cornice / moulding;frieze / architrave;corbel;ashlar / rustication;foliage
window element:	8	trim / quoin;lintel;pilaster;keystone;round window;cornice / moulding;frieze / architrave;balustrade
door element:	0	

original info about strctr	KCSK: 鉄骨鉄筋混凝土煉瓦張付
note	MTS3_p.176: finished in 1915; photo showing the entrance on the back side not found



code: 418 **レストラント中央亭**

city: duplication: SKGH 1st published: 1915

use: restaurant small-scale cnstrctn period: 1914 — 1915

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment:

strctr source: KCSK191507_plate

façade pattern:	1	quasi-symmetry;even wndw array
wall element:	1	cornice / moulding
window element:	1	arch
door element:	0	canopy

original info about strctr	KCSK: 鉄筋混凝土
note	Mitsubishi Estate history_p.200



code: 441 **新築横浜停車場**

city: duplication: SKGH 1st published: 1915

use: railway station transportation cnstrctn period: — 1915

info type: simple strctr system: Sframe

wall: floor: beam: column:

treatment:

strctr source: KCSK191509_plate

façade pattern: 4 nested symmetry;pitched rf;cupola;dome
wall element: 5 column;pilaster;pediment / gable;balustrade / parapet;cornice / moulding
window element: 8 round window;keystone;lintel;frieze / architrave;cornice / moulding;trim / quoin;corbel;balustrade
door element: 1 arch;canopy

original info about strctr	KCSK: 鉄骨、石及煉瓦造
note	Shimizu Group 180yr history_p.58: finished in 1915



code: 451 **パプチスト教会**

city: duplication: SKGH 1st published: 1915

use: church religious cnstrctn period: — 1915

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: St=cv

strctr source: KCSK191510_plate; KCGH191511_plate

façade pattern: 3 simple tripartition;tower;arcade
wall element: 4 buttress;balustrade / parapet;cornice / moulding;pilaster
window element: 1 arch
door element: 2 arch;cornice / moulding

original info about strctr	KCSK: 鉄筋混凝土及石造
note	construction period not recorded in KCGH191511_plate; speculated to be [https://ja.wikipedia.org/wiki/%E6%97%A5%E6%9C%AC%E5%9F%BA%E7%9D%A3%E6%95%99%E5%9B%A3%E4%B8%89%E5%B4%8E%E7%94%BA%E6%95%99%E4%



code: 457- **神田電話分局**

city: Tokyo duplication: SKGH 1st published: 1915

use: telecom post&telecom cnstrctn period: 1914 — 1915

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191511_plate

façade pattern: 4 nested symmetry;pitched rf;cupola;simple(rf) tripartition
wall element: 6 pilaster;cornice / moulding;arch;ashlar / rustication;corbel;foliage
window element: 5 keystone;arch;corbel;pediment;round window
door element: 3 corbel;pediment / gable;cornice / moulding

original info about strctr	KCSK: 鉄筋混凝土、石、煉瓦張付
note	明治大正期の逓信建築_p.194: T3.10-T4.8, g=Br



code: 458 **丸見屋商店化学試験研究所**

city: duplication: SKGH 1st published: 1915

use: research academic cnstrctn period: — 1915

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: TC=cv

strctr source: KCSK191511_plate

façade pattern:	4	portico;nested symmetry;pitched rf;pinnacle
wall element:	4	buttress;pilaster;pediment / gable
window element:	2	lintel;arch;foliage
door element:	3	cornice / moulding;balustrade / parapet;buttress

original info about strctr	KCSK: 木造テラコッタ張付
note	finished in 1915, see also 日本科学技術史大系 第3巻, p.180; 川崎画報3 (33) (191511), p. 300: 鉄網混凝土塗に化粧煉瓦を施せる木造二階建なり



code: 460 **田島屋商会**

city: duplication: KCSK 1st published: 1915

use: shop small-scale cnstrctn period: — 1915

info type: simple strctr system: Wframe

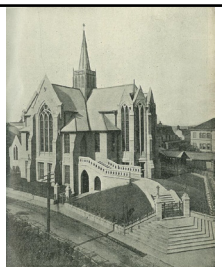
wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191511_plate

façade pattern:	2	simple symmetry;pitched rf
wall element:	4	pilaster;balustrade / parapet;cornice / moulding;foliage
window element:	2	pilaster;pediment
door element:	2	arch;keystone;canopy

original info about strctr	KCSK: 木骨化粧煉瓦張付
note	INAX report_vol.175_p.14: finished in 1915; 日本橋区横山町三丁目、玩具売り



code: 466 **ユニオン教会(横浜)**

city: Yokohama duplication: SKGH 1st published: 1913

use: church religious cnstrctn period: — 1910

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: cement&plaster=ct

strctr source: KCSK191512_plate

façade pattern:	4	cmpnd symmetry;pinnacle;tower;pitched rf;vertical wndw array
wall element:	3	buttress;cornice / moulding;balustrade / parapet
window element:	3	rose window;pointed arch;trim / quoin
door element:	1	pointed arch

original info about strctr	KCSK:木骨・煉瓦・セメント漆喰塗
note	finished in M43, (https://yokohamapostcardclub.blogspot.com/2014/05/blog-post_570.html) (202309 accessed)



code: 502 **新築東京栄銀行**

city: Tokyo duplication: SKGH 1st published: 1916

use: bank financial cnstrctn period: 1915 — 1916

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191604_plate

façade pattern: 1 simple symmetry
wall element: 5 column;pilaster;pediment / gable;cornice / moulding;frieze / architrave
window element: 3 pilaster;frieze / architrave;arch
door element: 1 trim / quoin;canopy

original info about strctr	KCSK: 木骨張付煉瓦
note	清水組彩色設計図集vol.2_p.202: T4.2-T5.1, g=W, treasury in RC; 川崎画報4 (36) (191602), p. 18: 木骨正面鉄網混凝土造張付煉瓦三階建 (仕様書付)



code: 512 **求道会館**

city: Tokyo duplication: SKGH 1st published: 1916

use: assembly assembly cnstrctn period: — 1916

info type: simple strctr system: Wframe

wall: floor: beam: W column: W

treatment: Br=cv;cement&plaster=ct

strctr source: KCSK191601news_p.97

façade pattern: 4 simple symmetry;portico;arcade;colonnade
wall element: 2 pilaster;cornice / moulding
window element: 3 arch;lintel;trim / quoin
door element: 3 column;pilaster;cornice / moulding

original info about strctr	KCSK: 木造化粧煉瓦張付セメント漆喰塗 existing bldg, in front of University of Tokyo
note	KCSK191605_plate: g=W; see also KCGH191601_p.31; see also 求道会館修理工事報告書_p.6, 87-102: RC was added after Kanto Earthquake, originally wooden frame



code: 520 **東海生命保険相互会社**

city: duplication: SKGH 1st published: 1916

use: insurance financial cnstrctn period: 1915 — 1916

info type: simple strctr system: Wframe

wall: floor: beam: W column: W

treatment: Br=cv

strctr source: KCSK191606_plate; KCGH191608_p.27

façade pattern: 4 even wndw array;tower;pitched rf;nstd quasi-symmetry;simple tripartition
wall element: 4 pilaster;pediment / gable;cornice / moulding;foliage
window element: 3 frieze / architrave;lintel;pilaster;foliage
door element: 4 arch;column;cornice / moulding;frieze / architrave

original info about strctr	KCSK: 木骨化粧煉瓦張 KCGH: 木骨煉瓦張り
note	KCSK191606_plate: g=W;



code: 543 **東京建物株式会社**

city: Tokyo duplication: SKGH 1st published: 1916

use: office bldg office bldg cnstrctn period: — 1917

info type: simple strctr system: Sframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191609_plate

façade pattern:	2	cmpnd symmetry;simple tripartition
wall element:	6	pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication;foliage;frieze / architrave
window element:	4	trim / quoin;keystone;arch;pediment
door element:	4	pediment / gable;cornice / moulding;frieze / architrave;column;foliage

original info about strctr	KCSK: 鉄骨化粧煉瓦張付 drawings of details in KCSK191610 not detailed enough, floor possibly built with RC
note	KCGH191608_plate: g=SBr&SSt; see also 東京建物株式会社『信頼を未来へ : 東京建物百年史』



code: 544 **資生堂(京橋区銀座通)**

city: Tokyo duplication: ZSSK 1st published: 1916

use: shop small-scale cnstrctn period: — 1918

info type: simple strctr system: masonry&RCframe

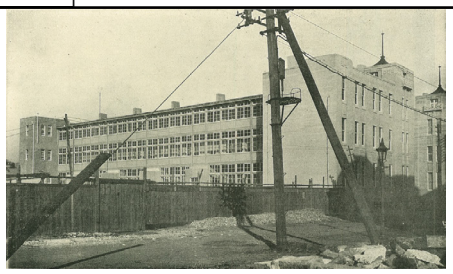
wall: floor: beam: column:

treatment:

strctr source: KCSK191609_plate; KCZS191907_p.256

façade pattern:	1	simple tripartition
wall element:	4	balustrade / parapet;cornice / moulding;ashlar / rustication;frieze / architrave
window element:	4	trim / quoin;lintel;keystone;cornice / moulding
door element:	3	pilaster;arch;keystone;canopy

original info about strctr	KCSK: 鉄筋混凝土 KCZS: 煉瓦造三階建一部鉄筋「コンクリート」
note	MTS3_p.176: finished in 1918



code: 581 **三菱廿四号館**

city: Tokyo duplication: ZSSK 1st published: 1917

use: rental office office bldg cnstrctn period: — 1917

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191703_plate

façade pattern:	3	pinnacle;cmpnd symmetry;horizontal wndw array;vertical wndw array;even wndw array;tower
wall element:	1	cornice / moulding
window element:	2	lintel;frieze / architrave
door element:	3	arch;keystone;cornice / moulding

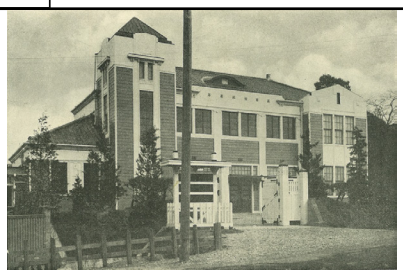
original info about strctr	KCSK: 鉄筋混凝土化粧煉瓦張付
note	Mitsubishi Estate history_p.200: finished in T6.1; use of building shown in KCSK191704news_p.98



code: 582 **丸ノ内中央郵便局**
city: Tokyo duplication: KCSK 1st published: 1917
use: post office post&telecom cnstrctn period: — 1917
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment: Br=cv
strctr source: KCSK191703_plate

façade pattern: 6 simple(rf) tripartition;tower;cupola;pitched rf;cmpnd symmetry;portal
wall element: 5 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 6 arch;keystone;pediment;corbel;cornice / moulding;lintel
door element: 4 arch;foliage;canopy;cornice / moulding;frieze / architrave;pilaster

original info about strctr	KCSK: 木骨化粧煉瓦張付
note	finish year in 井上卓朗. 東京中央郵便局沿革史. 逓信総合博物館研究紀要第 4 号(2013年 3 月)



code: 583 **水道橋税務署**
city: Tokyo duplication: KCSK 1st published: 1917
use: administrative government cnstrctn period: — 1917
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment: plaster=ct
strctr source: KCSK191703_plate

façade pattern: 3 cmpnd symmetry;tower;pitched rf
wall element: 3 pilaster;cornice / moulding;pediment / gable
window element: 1 cornice / moulding
door element: 0 canopy

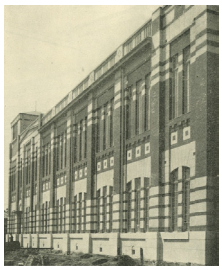
original info about strctr	KCSK: 木造漆喰塗
note	官報 1917年02月20日_p.433: moved to 本郷真砂町Hongo Masago-cho, in T6.2.25



code: 594 **株式会社日州銀行都城支店**
city: Miyakonojo duplication: KCSK 1st published: 1917
use: bank financial cnstrctn period: — 1917
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment: Br=cv
strctr source: KCSK191704_plate

façade pattern: 3 cmpnd symmetry;vertical wndw array;dome;pitched rf
wall element: 5 column;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 6 arch;cornice / moulding;trim / quoin;keystone;round window;pilaster
door element: 4 trim / quoin;keystone;cornice / moulding;frieze / architrave;foliage

original info about strctr	KCSK: 木造化粧煉瓦張付
note	官報 1917年02月28日_appndx_p.1: moved in T6.1.25



code: 599 **小石川電話分局**

city: Tokyo duplication: KCSK 1st published: 1917

use: telecom post&telecom cnstrctn period: 1916 — 1917

info type: simple strctr system: SRCframe

wall: floor: beam: column:

treatment: aSt&Br=cv

strctr source: KCZS191707_p.578-579

façade pattern:	3	partial symmetry;simple(rf) tripartition;tower
wall element:	4	pilaster;balustrade / parapet;cornice / moulding;pediment / gable
window element:	2	arch;keystone
door element:	2	arch;keystone;canopy

original info about strctr	KCZS: 本館は鉄骨鉄筋コンクリート造外部化粧煉瓦及人造石貼付にて…
note	KCSK191704news, KCSK191705plate: g=RC



code: 602 **興業貯蓄銀行芝支店**

city: Tokyo duplication: KCSK 1st published: 1917

use: bank financial cnstrctn period: — 1917

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: tile=cv

strctr source: KCZS191704_p.322

façade pattern:	4	cmpnd symmetry;vertical wndw array;tower;pitched rf;cupola
wall element:	4	pilaster;cornice / moulding;frieze / architrave;foliage
window element:	3	frieze / architrave;foliage;pilaster;trim / quoin
door element:	2	frieze / architrave;cornice / moulding

original info about strctr	KCZS: 木造タイル張の二階建てにて…
note	KCSK191705: g=W; KCSK: 木骨化粧煉瓦張付; 清水組彩色設計図集vol.2_p.202: T5.5-T5.12, g=W



code: 615 **野村合名会社貸事務所**

city: duplication: KCSK 1st published: 1917

use: rental office office bldg cnstrctn period: — 1917

info type: simple strctr system: Wframe

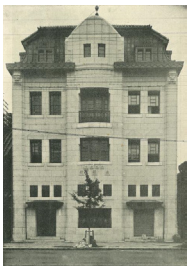
wall: floor: beam: column:

treatment: aSt&tile=cv

strctr source: KCSK191707_plate; KCZS191707_p.579

façade pattern:	4	tower;vertical wndw array;cmpnd symmetry;simple tripartition;pinnacle
wall element:	5	pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	8	trim / quoin;pilaster;keystone;cornice / moulding;frieze / architrave;arch;pediment;round window;foliage
door element:	4	pilaster;corbel;foliage;cornice / moulding;frieze / architrave

original info about strctr	KCSK: 木骨人造石タイル張 KCZS: 木造三階建化粧煉瓦及人造石貼付、腰石花崗石を使用す、屋根陸屋根、…
note	"東邦火災保険株式会社"、"大坂海上火災保険株式会社" in KCSK191707



code: 619 **株式会社森銀行**

city: duplication: KCSK 1st published: 1917

use: bank financial cnstrctn period: 1916 — 1917

info type: simple strctr system: SRCframe

wall: floor: beam: column:

treatment: St=cv

strctr source: KCZS191707_p.580-581

façade pattern: 3 simple symmetry;pitched rf;simple tripartition
wall element: 3 pilaster;cornice / moulding;foliage
window element: 1 lintel
door element: 0 canopy

original info about strctr	KCZS: 構造 鉄骨鉄筋コンクリート造外部正面花崗石張付
note	see also pending清水組彩色設計図集vol.2_p.203: T5.4-T6.3, g=Br



code: 627 **瀬川小児科病院**

city: duplication: KCSK 1st published: 1917

use: hospital hospital cnstrctn period: 1916 — 1917

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCZS191709_p.698

façade pattern: 5 tower;cupola;pitched rf;portico;partial symmetry
wall element: 5 pilaster;arch;pediment / gable;cornice / moulding;corbel
window element: 8 pilaster;trim / quoin;Moorish arch;triangular arch;arch;keystone;balustrade;corbel
door element: 4 cornice / moulding;frieze / architrave;balustrade / parapet;column

original info about strctr	KCZS: 一切の構造[?unknown mark]煉瓦を以てし…如何にも東洋風に軒蛇腹の上に瓦を置き、…手摺は亦鉄筋コンクリート造にて…
note	



code: 629 **朝鮮銀行大阪支店**

city: Osaka duplication: ZSSK 1st published: 1917

use: bank financial cnstrctn period: — 1915

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCSK191709_plate; KCZS191512_p.844

façade pattern: 2 simple symmetry;simple tripartition
wall element: 6 column;balustrade / parapet;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element: 4 trim / quoin;lintel;keystone;cornice / moulding
door element: 0

original info about strctr	KCSK: 石造 KCZS: 煉瓦造
note	



code: 630 **大日本人造肥料株式会社大阪支店**

city: Osaka duplication: KCSK 1st published: 1917

use: office bldg office bldg cnstrctn period: — 1915

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCSK191709_plate

façade pattern:	5	cmpnd symmetry;simple(rf) tripartition;cupola;pitched rf;tower
wall element:	4	balustrade / parapet;pilaster;cornice / moulding;ashlar / rustication
window element:	7	trim / quoin;pediment;lintel;arch;keystone;corbel;cornice / moulding
door element:	4	arch;keystone;cornice / moulding;pilaster

original info about strctr	KCSK: 木造
note	



code: 636 **日本基督青年会同盟本部**

city: duplication: SKGH 1st published: 1917

use: office bldg office bldg cnstrctn period: — 1917

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: aSt=cv

strctr source: KCSK191710_plate; KCGH191712_plate

façade pattern:	2	nested symmetry;portico;even wndw array
wall element:	2	buttress;balustrade / parapet
window element:	0	
door element:	2	buttress;pointed arch

original info about strctr	KCSK: 鉄筋コンクリート人造石張
note	pending開拓者 12(10).日本基督教青年会同盟_p.?: finished in 1917



code: 648 **松坂屋呉服店**

city: Tokyo duplication: KCSK 1st published: 1917

use: department large-scale cnstrctn period: — 1917

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: Br&aSt=cv

strctr source: KCSK191712_plate; KCSK191710news_p.80

façade pattern:	4	cmpnd symmetry;arcade;tower;compound tripartition
wall element:	6	column;arch;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	2	arch;column
door element:	3	cornice / moulding;frieze / architrave;column

original info about strctr	KCSK191712_plate: 木骨人造石煉瓦張付 KCSK191710news_p.80: 木造鉄網煉瓦張
note	see also 松坂屋いとう呉服店 鈴木禎次 KCSSRS_4_11vol1barrack_p8; KCSK191712_plate: g=W; finished in 1917 (https://www.matsuzakaya.co.jp/nagoya/museum/img/pdf/vol-09.pdf) (202309 accessed, 平成24年展示会 松坂屋大正100年・



code: 672 **新装白木屋呉服店**
city: Tokyo duplication: SKGH 1st published: 1918
use: department large-scale cnstrctn period: 1917 — 1918
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment: Br=cv
strctr source: KCZS191804_p.235; KCGH191805_plate

façade pattern: 3 even wndw array;tower;dome;nstd quasi-symmetry
wall element: 6 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;column;foliage
window element: 0
door element: 0 canopy

original info about strctr	KCZS: 木造四階建 KCGH: 木造、石材並に白色化粧煉瓦貼り
note	see also 白木屋特売店 清水組 in KCSSRS_4_11vol1barrack_p11



code: 673 **東京瓦斯電気工業株式会社**
city: Tokyo duplication: SKGH 1st published: 1918
use: office bldg office bldg cnstrctn period: 1917 — 1918
info type: simple strctr system: Wframe
wall: floor: beam: W column: W
treatment: Br=cv
strctr source: KCZS191804_p.234; KCGH191804_plate

façade pattern: 3 pinnacle;porch;nstd quasi-symmetry
wall element: 3 pilaster;balustrade / parapet;cornice / moulding
window element: 1 frieze / architrave
door element: 4 column;frieze / architrave;cornice / moulding;balustrade / parapet

original info about strctr	KCZS: 木骨化粧煉瓦貼付の三階建…外装は赤褐色煉瓦貼、パネルニビサンチン風平面模様化粧煉瓦貼 KCGH191804_plate: 木造タイル貼り
note	



code: 684 **株式会社織田商会**
city: Tokyo duplication: ZSSK 1st published: 1918
use: office bldg office bldg cnstrctn period: 1917 — 1918
info type: simple strctr system: masonry
wall: floor: beam: column:
treatment:
strctr source: KCZS191812_p.647

façade pattern: 3 cmpnd symmetry;simple tripartition;tower
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;foliage
window element: 3 arch;keystone;balustrade
door element: 2 arch;canopy;keystone

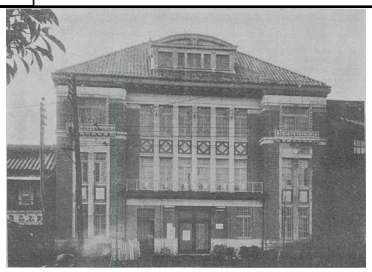
original info about strctr	KCZS: 本館煉瓦造屋根木骨スレート
note	see also 清水組彩色設計図集vol.3_p.193: T6.3-T7.12, g=Br



code: 705 **国分商店2（倉庫）**
city: Tokyo duplication: ZSSKGH 1st published: 1918
use: shop small-scale cnstrctn period: 1917 — 1918
info type: simple strctr system: SRCframe
wall: floor: beam: column:
treatment: aSt=ct
strctr source: KCZS191812_p.646

façade pattern: 3 partial symmetry;arcade;compound tripartition
wall element: 5 pilaster;quoin;cornice / moulding;balustrade / parapet;frieze / architrave
window element: 4 arch;keystone;pilaster;frieze / architrave
door element: 2 column;frieze / architrave;canopy

original info about strctr	KCZS: 鉄骨鉄筋コンクリート五階建…外部黒色貼付擬石塗、…
note	see also 清水組彩色設計図集vol.4_p.211: -T5, g=SBr



code: 743 **山城屋旅館**
city: Tokyo duplication: ZSSKGH 1st published: 1918
use: hotel accommodatio cnstrctn period: 1918 — 1918
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment: tile=cv
strctr source: KCZS191812_p.647; KCGH191812_plate

façade pattern: 2 vertical wndw array;pitched rf;nstd quasi-symmetry
wall element: 2 cornice / moulding;frieze / architrave
window element: 3 trim / quoin;pilaster;frieze / architrave
door element: 1 pilaster

original info about strctr	KCZS: 木造三階建 KCGH: 木造タイル貼
note	see also 清水組彩色設計図集vol.4_p.209: T7.6-T7.12, g=W



code: 800 **勝田汽船株式会社**
city: Kobe duplication: SKGH 1st published: 1918
use: office bldg office bldg cnstrctn period: — 1919
info type: simple strctr system: masonry
wall: floor: beam: column:
treatment:
strctr source: KCGH191803_plate

façade pattern: 1 simple symmetry;vertical wndw array
wall element: 5 pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;foliage
window element: 0
door element: 0

original info about strctr	KCGH: 石材煉瓦
note	大日本銀行会社沿革史_part2_p.154: possibly built after 1918; KCZS191805_p.257: in Kobe not Tokyo



code: 821 **大阪毎日新聞社新築**
city: Osaka duplication: KCSK 1st published: 1920
use: office bldg office bldg cnstrctn period: 1919 — 1922
info type: simple strctr system: Sframe
wall: floor: beam: column:
treatment:
strctr source: KCSK192204news_p.59; KCZS192303_p.85

façade pattern: 3 cmpnd symmetry;compound tripartition;even wndw array;vertical wndw array;porch
wall element: 4 pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication
window element: 2 keystone;arch
door element: 5 arch;keystone;corbel;balustrade / parapet;cornice / moulding

original info about strctr	KCSK: 鉄筋コンクリート KCZS192303_p.85: "(鉄骨造に分類) コンクリート一立坪に対する鉄筋(t): [空欄]　摘要: 鉄材の数量非常に少くコンクリート非常に多きは構造に特種の点あるやも知れず"checked
note	



code: 894 **馬政局**
city: Tokyo duplication: KCSK 1st published: 1920
use: administrative government cnstrctn period: — 1919
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment: aSt=cv
strctr source: KCSK191909news_p.67

façade pattern: 4 portico;tower;pitched rf;vertical wndw array;nested symmetry
wall element: 1 cornice / moulding
window element: 1 lintel
door element: 5 balustrade / parapet;cornice / moulding;frieze / architrave;column;pilaster

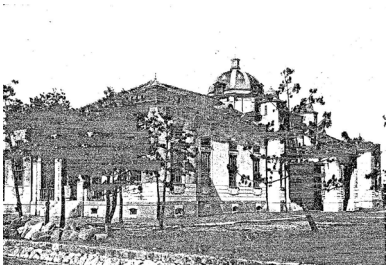
original info about strctr	KCSK: 用材は木で其の上を人造石で被覆を施してある
note	



code: 1009 **妹尾商業銀行**
city: Tokyo Pref. duplication: KCZS 1st published: 1914
use: bank financial cnstrctn period: — 1913
info type: simple strctr system: masonry
wall: Br floor: beam: column:
treatment: Br=cv
strctr source: KCZS191403_p.189

façade pattern: 4 partial symmetry;tower;cupola;pitched rf
wall element: 3 pilaster;cornice / moulding;balustrade / parapet
window element: 4 lintel;cornice / moulding;keystone;arch
door element: 4 pilaster;pediment / gable;cornice / moulding;frieze / architrave

original info about strctr	KCZS: 洋館煉瓦造装飾煉瓦張スレート葺
note	construction period not recorded in KCZS191403_p.189; 官報 1913年02月25日_p.2_moved to the new address in 1913.2.12



code: 1143 **富山市図書館**

city: Toyama duplication: KCZS 1st published: 1915

use: library academic cnstrctn period: 1911 — 1912

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p.838

façade pattern: 6 nested symmetry;dome;tower;pinnacle;portico;pitched rf
wall element: 2 balustrade / parapet;cornice / moulding
window element: 4 trim / quoin;keystone;arch;pediment
door element: 5 pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;column

original info about strctr	KCZS: 木造
note	富山県編、『富山県政史 第七巻』、1939年（昭和14年）1月、富山県



code: 1144 **名古屋国技館**

city: Nagoya duplication: KCZS 1st published: 1915

use: arena cultural cnstrctn period: — 1913

info type: simple strctr system: Sframe

wall: floor: beam: column:

treatment:

strctr source: KCSK191305news_p.95

façade pattern: 3 nested symmetry;even wndw array;portico;dome
wall element: 5 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 0
door element: 5 pilaster;cornice / moulding;frieze / architrave;cupola;pitched rf

original info about strctr	KCSK: 鉄骨四階建
note	KCSK191305news, completion expected in 1914; MTS3_p.175: finished in 1913



code: 1148 **日本生命保険株式会社九州支店**

city: Fukuoka duplication: ZSGH 1st published: 1914

use: insurance financial cnstrctn period: 1907 — 1909

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p842

façade pattern: 5 cmpnd symmetry;simple(rf) tripartition;pitched rf;dome;tower
wall element: 5 pilaster;ashlar / rustication;balustrade / parapet;cornice / moulding;corbel
window element: 4 arch;keystone;pilaster;lintel
door element: 3 arch;keystone;pitched rf

original info about strctr	KCZS: 煉瓦造
note	



code: 1151 **帝国生命保険株式会社大阪支店**

city: Osaka duplication: ZSSK 1st published: 1906

use: insurance financial cnstrctn period: 1906 — 1907

info type: simple strctr system: masonry

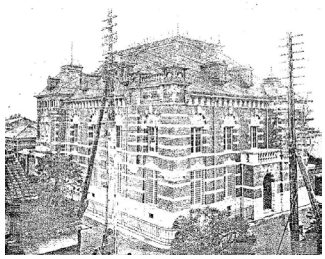
wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p.842

façade pattern: 5 nested symmetry;simple tripartition;tower;cupola;porch
wall element: 7 arch;balustrade / parapet;cornice / moulding;frieze / architrave;corbel;pilaster
window element: 6 pediment;cornice / moulding;frieze / architrave;pilaster;corbel;keystone
door element: 3 corbel;arch;cornice / moulding;foliage

original info about strctr	KCZS: 煉瓦造
note	



code: 1154 **第一銀行京都支店**

city: Kyoto duplication: KCZS 1st published: 1908

use: bank financial cnstrctn period: — 1906

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p.836

façade pattern: 5 cmpnd symmetry;simple(rf) tripartition;porch;cupola;pitched rf
wall element: 5 pilaster;quoin;balustrade / parapet;cornice / moulding
window element: 3 arch;keystone;pediment;foliage
door element: 7 pediment / gable;cornice / moulding;frieze / architrave;column;arch;keystone;balustrade / parapet

original info about strctr	KCZS: 煉瓦造
note	existing bldg



code: 1155 **浪速銀行本店**

city: Osaka duplication: KCZS 1st published: 1915

use: bank financial cnstrctn period: 1905 — 1907

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p. 843

façade pattern: 6 partial symmetry;tower;cupola;pitched rf;simple(rf) tripartition;porch
wall element: 7 frieze / architrave;cornice / moulding;balustrade / parapet;pilaster;arch;ashlar / rustication;foliage
window element: 7 pediment;frieze / architrave;cornice / moulding;column;trim / quoin;arch;keystone;foliage
door element: 3 pilaster;balustrade / parapet;cornice / moulding

original info about strctr	KCZS: 煉瓦造
note	



code: 1156 **大阪帝国座**

city: Osaka duplication: ZSGH 1st published: 1915

use: theatre cultural cnstrctn period: — 1909

info type: simple strctr system: masonry

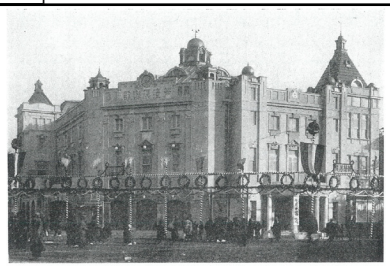
wall: floor: beam: column:

treatment:

strctr source: KCGH191501_plate

façade pattern:	3	nested symmetry;simple tripartition;pitched rf
wall element:	6	pilaster;corbel;cornice / moulding;frieze / architrave;ashlar / rustication;foliage
window element:	6	arch;round window;corbel;pediment;cornice / moulding;frieze / architrave
door element:	2	arch;keystone

original info about strctr	KCGH: 煉瓦、石、混合造
note	KCSK191004news: mainly about the structure of stage



code: 1158 **蘆部倶楽部**

city: Osaka duplication: KCZS 1st published: 1915

use: assembly assembly cnstrctn period: — 1912

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p.845

façade pattern:	7	cmpnd symmetry;simple tripartition;tower;pitched rf;cupola;portico;arcade
wall element:	4	pilaster;balustrade / parapet;cornice / moulding;frieze / architrave
window element:	6	trim / quoin;keystone;pediment;pilaster;frieze / architrave;cornice / moulding
door element:	6	column;cornice / moulding;frieze / architrave;balustrade / parapet;pilaster;arch

original info about strctr	KCZS: 木骨造
note	



code: 1215 **高輪電話分局**

city: Tokyo duplication: ZSGH 1st published: 1918

use: telecom post&telecom cnstrctn period: 1917 — 1918

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCZS191805_p.292

façade pattern:	4	vertical wndw array;tower;dome;pitched rf;nstd quasi-symmetry
wall element:	6	pediment / gable;pilaster;frieze / architrave;cornice / moulding;balustrade / parapet
window element:	1	trim / quoin
door element:	3	pilaster;frieze / architrave;pediment / gable;foliage

original info about strctr	KCZS: 鉄筋「コンクリート」二階建、赤褐色化粧煉瓦張付、小屋組木造…
note	KCSK191804news: g=RC; 明治大正期の逓信建築_p.197: g=SRC, wall & roof = RC



code: 1231 **若尾銀行浅草支店**

city: Tokyo duplication: ZSGH 1st published: 1918

use: bank financial cnstrctn period: 1918 — 1918

info type: simple strctr system: masonry

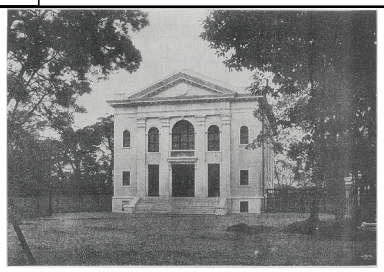
wall: floor: beam: column:

treatment: St=cv;aSt=ct

strctr source: KCZS191812_p.646

façade pattern: 1 simple symmetry;vertical wndw array
wall element: 5 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element: 4 arch;keystone;pediment;pilaster
door element: 2 cornice / moulding;lintel

original info about strctr	KCZS: 煉瓦造平家建…腰石花崗石、以上人造石塗、… KCGH: 石造
note	



code: 1232 **徳川邸音楽堂（南葵文庫）**

city: Tokyo duplication: ZSGH 1st published: 1918

use: theatre cultural cnstrctn period: 1917 — 1918

info type: simple strctr system: RCframe

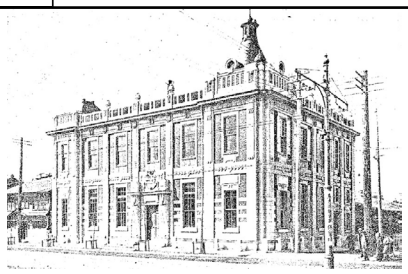
wall: floor: beam: column:

treatment:

strctr source: KCZS191812_p.646

façade pattern: 2 simple symmetry;simple(rf) tripartition
wall element: 5 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave
window element: 4 arch;pilaster;keystone;trim / quoin
door element: 2 corbel;cornice / moulding

original info about strctr	KCZS: 鉄筋コンクリート造 KCGH191912_Ads: Kahn System
note	KCSK191706news: mainly about arrangement; construction period not recorded in KCGH191812_plate; Kahn System



code: 1240 **山口銀行京都支店**

city: Kyoto duplication: KCZS 1st published: 1919

use: bank financial cnstrctn period: — 1916

info type: simple strctr system: RCframe

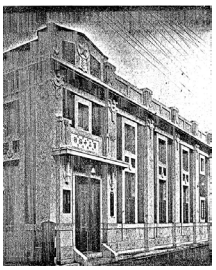
wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p.844

façade pattern: 4 cupola;pitched rf;cmpnd symmetry;simple(rf) tripartition
wall element: 5 pilaster;balustrade / parapet;cornice / moulding;ashlar / rustication
window element: 1 trim / quoin
door element: 3 corbel;cornice / moulding;frieze / architrave;foliage

original info about strctr	KCZS: 鉄筋コンクリート造
note	existing building



code: 1242 **百三十銀行八幡支店**

city: Kitakyushu duplication: KCZS 1st published: 1919

use: bank financial cnstrctn period: — 1915

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p.844

façade pattern:	1	quasi-symmetry;vertical wndw array
wall element:	3	pilaster;balustrade / parapet;cornice / moulding
window element:	1	trim / quoin
door element:	3	cornice / moulding;balustrade / parapet;pilaster

original info about strctr	KCZS: 鉄筋コンクリート造
note	existing building



code: 1243 **神戸川崎銀行大阪支店**

city: Osaka duplication: KCZS 1st published: 1919

use: bank financial cnstrctn period: 1917 — 1918

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCZS191905_p.258

façade pattern:	4	simple symmetry;simple(rf) tripartition;cupola;pitched rf
wall element:	5	pilaster;cornice / moulding;balustrade / parapet;ashlar / rustication;foliage
window element:	4	trim / quoin;arch;keystone;balustrade
door element:	0	canopy

original info about strctr	KCZS: 煉瓦造
note	



code: 1244 **山下汽船株式会社**

city: Kobe duplication: KCZS 1st published: 1919

use: office bldg office bldg cnstrctn period: — 1917

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCZS191905_p.257

façade pattern:	3	simple symmetry;simple tripartition;pitched rf
wall element:	7	pilaster;frieze / architrave;cornice / moulding;balustrade / parapet;pediment / gable;foliage;ashlar / rustication
window element:	5	trim / quoin;frieze / architrave;pilaster;keystone;foliage;lintel
door element:	2	arch;keystone;canopy

original info about strctr	KCZS: 煉瓦造
note	



code: 1248 **浪花銀行九条支店**

city: Osaka duplication: KCZS 1st published: 1919

use: bank financial cnstrctn period: 1914 — 1915

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p.844

façade pattern:	3	simple(rf) tripartition;vertical wndw array;pitched rf;simple symmetry
wall element:	4	pilaster;balustrade / parapet;cornice / moulding;frieze / architrave
window element:	2	arch;keystone
door element:	2	arch;keystone;canopy

original info about strctr	KCZS: 木骨造
note	



code: 1249 **岡山市二十二銀行**

city: Okayama duplication: KCZS 1st published: 1919

use: bank financial cnstrctn period: 1917 — 1918

info type: simple strctr system: masonry

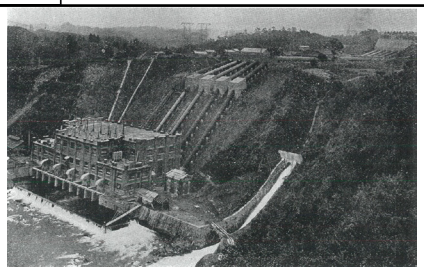
wall: floor: beam: column:

treatment:

strctr source: KCZS191905_p.258

façade pattern:	4	simple symmetry;portico;pitched rf;simple(rf) tripartition
wall element:	5	pilaster;cornice / moulding;frieze / architrave;balustrade / parapet
window element:	8	round window;trim / quoin;pediment;keystone;arch;pilaster;cornice / moulding;frieze / architrave;foliage
door element:	6	pilaster;cornice / moulding;frieze / architrave;pediment / gable;balustrade / parapet;keystone

original info about strctr	KCZS: 煉瓦造
note	



code: 1250 **猪苗代水力電気株式会社第二発電所**

city: Wakamatsu duplication: KCZS 1st published: 1919

use: plant industrial&stor cnstrctn period: — 1918

info type: simple strctr system: Sframe

wall: floor: beam: column:

treatment:

strctr source: KCZS191512_p.839

façade pattern:	2	quasi-symmetry;even wndw array;pinnacle
wall element:	1	pilaster
window element:	1	lintel
door element:	0	

original info about strctr	KCZS: 鉄骨煉瓦造
note	existing building, https://www.aizukanko.com/spot/911 (202311 accessed)



code: 1251 **近江銀行神戸支店**

city: Kobe duplication: KCZS 1st published: 1919

use: bank financial cnstrctn period: 1916 — 1917

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCZS191905_p.257

façade pattern:	4	quasi-symmetry;portico;simple(rf) tripartition;pitched rf
wall element:	3	pilaster;cornice / moulding;balustrade / parapet
window element:	4	trim / quoin;lintel;keystone;corbel
door element:	2	cornice / moulding;column;canopy

original info about strctr	KCZS: 木骨造
note	



code: 1253 **大阪農工銀行**

city: Osaka duplication: KCZS 1st published: 1919

use: bank financial cnstrctn period: 1916 — 1918

info type: simple strctr system: RCframe

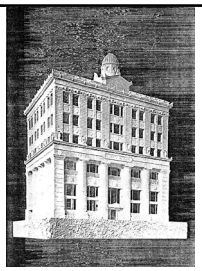
wall: floor: beam: column:

treatment:

strctr source: KCZS191905_p.258

façade pattern:	4	cmpnd symmetry;simple(rf) tripartition;porch;tower
wall element:	3	pilaster;balustrade / parapet;cornice / moulding
window element:	4	corbel;frieze / architrave;trim / quoin;keystone
door element:	2	pilaster;keystone;canopy

original info about strctr	KCZS: 鉄筋「コンクリート」造
note	



code: 1279 **株式会社明治銀行本店**

city: Nagoya duplication: KCZS 1st published: 1920

use: bank financial cnstrctn period: 1920 — 1922

info type: simple strctr system: RCframe

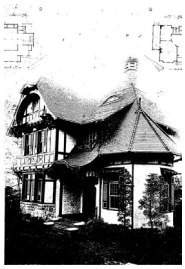
wall: floor: beam: column:

treatment:

strctr source: KCZS192010_p.485

façade pattern:	5	simple symmetry;compound tripartition;vertical wndw array;dome;pitched rf;colonnade
wall element:	5	column;pilaster;foliage;cornice / moulding;frieze / architrave
window element:	1	arch
door element:	1	pitched rf

original info about strctr	KCZS: 鉄筋コンクリート建、防火構造、外面石造、屋根アスファルト葺
note	construction period expected to be 2yrs; MTS3_p.178: finished in 1923 (upper half actually not built); SSSR_p219: finished in T11



code: 1411 **妻木頼黄氏邸宅**

city: duplication: KCZS 1st published: 1910

use: house residential cnstrctn period: — 1909

info type: simple strctr system: Wframe

wall: floor: W beam: W column: W

treatment:

strctr source: KCZS191001_p.65

façade pattern:	3	partial symmetry;pitched rf;cupola
wall element:	1	half-timber
window element:	1	trefoil arch
door element:	0	canopy

original info about strctr	KCZS: 木造二階建
note	MTS4_p.186: finished in 1909



code: 1420 **逓信省庁舎**

city: Tokyo duplication: ZSGH 1st published: 1910

use: administrative government cnstrctn period: — 1909

info type: simple strctr system: masonry

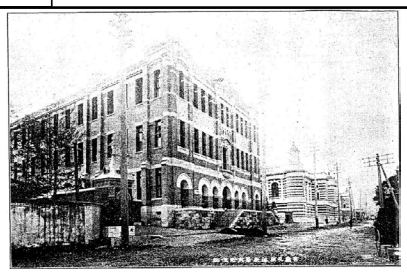
wall: floor: beam: column:

treatment:

strctr source: KCZS191011_p.593

façade pattern:	6	cmpnd symmetry;cupola;dome;portico;simple(rf) tripartition;tower
wall element:	6	column;balustrade / parapet;cornice / moulding;frieze / architrave;foliage;pediment / gable
window element:	5	arch;lintel;keystone;column;round window
door element:	4	arch;keystone;pitched rf;pilaster

original info about strctr	KCZS:煉瓦造三階建
note	adjacent to 郵便貯金局; see also Tokyo100_p7; see also 明治の建築伊東黒田; see also 明治大正期の逓信建築_p.151-152



code: 1421 **郵便貯金局**

city: Tokyo duplication: KCZS 1st published: 1910

use: bank financial cnstrctn period: 1907 — 1910

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCZS191011_p.593

façade pattern:	4	simple symmetry;arcade;simple tripartition;pitched rf
wall element:	6	cornice / moulding;buttress;corbel;pilaster;pediment / gable;arch
window element:	4	column;pediment;arch;lintel
door element:	1	arch

original info about strctr	KCZS: 郵便貯金局建物構造には特に新意(indicating that the general structure is the same with the building of Teishinsho)を加へたる所あり(omitted)三階に三百余坪の広間ある其天井は穹窿状をなし鉄骨ヅック張にして支柱を設けず。
note	"Post Office Savings Banks"; adjacent to 逓信省; see also https://bunka.nii.ac.jp/heritages/detail/279580 (202311 accessed)



code: 1516 **改修内務省**

city: Tokyo duplication: KCSK 1st published: 1921

use: administrative government cnstrctn period: 1919 — 1921

info type: simple strctr system: RCframe

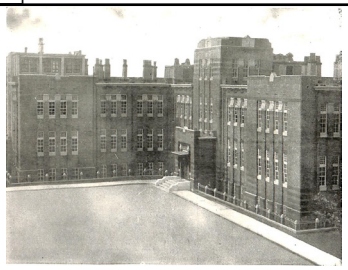
wall: floor: beam: column:

treatment: Br=cv

strctr source: KCSK191908news_p.63

façade pattern:	3	simple symmetry;colonnade;pitched rf;vertical wndw array
wall element:	4	cornice / moulding;column;frieze / architrave;pediment / gable
window element:	0	
door element:	4	pediment / gable;cornice / moulding;frieze / architrave;column

original info about strctr	KCSK: 鉄筋コンクリートの四階建とし、表面を装飾煉瓦で張る心算である…
note	



code: 1562 **理化学研究所化学部本館**

city: Tokyo duplication: KCSK 1st published: 1922

use: research academic cnstrctn period: — 1921

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment: Br&St=cv

strctr source: KCSK192109news_p.64

façade pattern:	2	cmpnd symmetry;vertical wndw array;even wndw array;portico
wall element:	2	pilaster;cornice / moulding
window element:	0	
door element:	2	canopy;pilaster;balustrade / parapet

original info about strctr	KCSK: 形をなし主体煉瓦造り、地中階共三階建…外部は壁面黒煉瓦帯形化粧煉瓦張り石材混用にし
note	roof & staircase built with RC, bldg for physics built with RC



code: 1653 **久松警察署**

city: Tokyo duplication: KCSK 1st published: 1923

use: administrative government cnstrctn period: — 1923

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCSK192110news_p.62

façade pattern:	2	nested symmetry;vertical wndw array;portico
wall element:	3	pilaster;cornice / moulding;foliage
window element:	0	
door element:	3	arch;pilaster;cornice / moulding

original info about strctr	KCSK: 鉄筋コンクリート叩き煉瓦造とし
note	KCSK192110news: completion expected in 1921; completion year recorded in KCSK192305news



code: 1695 **三菱合資会社門司支店**

city: Kitakyushu duplication: KCZS 1st published: 1906

use: office bldg office bldg cnstrctn period: 1905 — 1906

info type: simple strctr system: masonry

wall: Br floor: beam: column:

treatment:

strctr source: KCZS190701_p.62

façade pattern: 4 simple symmetry;simple(rf) tripartition;cupola;pitched rf
wall element: 2 pilaster;cornice / moulding
window element: 6 arch;lintel;keystone;cornice / moulding;corbel;frieze / architrave
door element: 3 trim / quoin;pediment / gable;cornice / moulding

original info about strctr	KCZS: 煉瓦造二階建
note	



code: 1696 **東京競馬会池上馬見所**

city: Tokyo duplication: KCZS 1st published: 1907

use: arena cultural cnstrctn period: 1906 — 1906

info type: simple strctr system: Wframe

wall: W floor: W beam: W column: W

treatment:

strctr source: KCZS190701_p.60

façade pattern: 4 nested symmetry;pitched rf;pinnacle;arcade
wall element: 2 column;half-timber
window element: 0
door element: 0

original info about strctr	KCZS: (第一号館)…三階木造建築…前部観覧席兼用の階段及腰廻りに煉瓦石材を混用し他は悉く木造、屋根は全部マルソイドにて葺けり。 (第二号館)…二階建木造家屋…
note	



code: 1700 **三越呉服仮営業場**

city: Tokyo duplication: ZSGH 1st published: 1908

use: department large-scale cnstrctn period: 1907 — 1908

info type: simple strctr system: Wframe

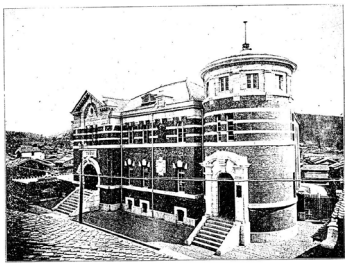
wall: W floor: W beam: W column: W

treatment: tile=cv;plaster=ct

strctr source: KCZS190805_p.230

façade pattern: 2 nested symmetry;pinnacle
wall element: 6 pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;pediment / gable;ashlar / rustication
window element: 3 pilaster;arch;keystone
door element: 0

original info about strctr	KCZS: 木造塗家建… 南側は直に路次を隔てて隣地の家屋に接するを以て総て張瓦漆喰塗の上波形板を以て張り包めり…
note	



code: 1701 **長崎税務監督局並税務署**

city: Nagasaki duplication: KCZS 1st published: 1908

use: administrative government cnstrctn period: 1907 — 1908

info type: simple strctr system: masonry

wall: Br floor: beam: column:

treatment:

strctr source: KCZS190806_p.274

façade pattern:	7	cmpnd symmetry;porch;tower;simple tripartition;pitched rf;pinnacle;portal
wall element:	6	pilaster;pediment / gable;cornice / moulding;balustrade / parapet;frieze / architrave;corbel
window element:	5	arch;keystone;lintel;pilaster;trim / quoin
door element:	5	arch;keystone;column;pediment / gable;cornice / moulding

original info about strctr	KCZS: 煉瓦造二階建
note	



code: 1723 **旧東京日々新聞社**

city: Tokyo duplication: KCSK 1st published: 1909

use: office bldg office bldg cnstrctn period: 1908 — 1909

info type: simple strctr system: Wframe

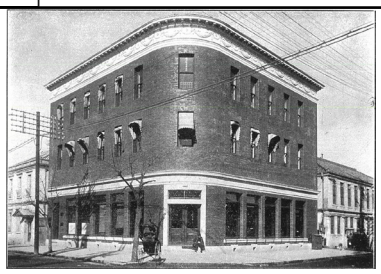
wall: floor: beam: column:

treatment: tile=cv;plaster=ct

strctr source: KCSK190909appndx_p.6

façade pattern:	7	cmpnd symmetry;simple(rf) tripartition;tower;dome;cupola;pitched rf;arcade
wall element:	3	column;cornice / moulding;corbel
window element:	4	pediment;arch;keystone;cornice / moulding
door element:	2	pilaster;keystone

original info about strctr	KCSK: 木造二階建…平壁の厚は、(omitted)張付瓦七分、漆喰塗五分…
note	



code: 3017 **エフ、ダブリュー、ホーン**

city: Tokyo duplication: KCGH 1st published: 1911

use: office bldg office bldg cnstrctn period: — 1908

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: Tokyo100_p95

façade pattern:	0	even wndw array
wall element:	3	cornice / moulding;frieze / architrave;foliage
window element:	0	
door element:	2	trim / quoin;keystone

original info about strctr	Tokyo100_p95: 煉瓦造
note	



code: 3024 **東海銀行**

city: Tokyo duplication: KCGH 1st published: 1911

use: bank financial cnstrctn period: 1908 — 1909

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment: Br&St=cv

strctr source: Tokyo100_p68

façade pattern: 6 nested symmetry;simple(rf) tripartition;colonnade;tower;dome;pitched rf
wall element: 6 column;balustrade / parapet;cornice / moulding;frieze / architrave;pilaster;foliage
window element: 5 pilaster;pediment;cornice / moulding;frieze / architrave;keystone
door element: 5 keystone;column;balustrade / parapet;cornice / moulding;frieze / architrave

original info about strctr	Tokyo100_p68: 煉瓦造外部石材及装飾煉瓦
note	清水組彩色設計図集vol.2_p.198: from M41.6 to M42.5, g=Br; Tokyo100_p68: finished in M39



code: 3036 **精養軒**

city: Tokyo duplication: KCGH 1st published: 1911

use: restaurant small-scale cnstrctn period: — 1911

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: St=cv

strctr source: Tokyo100_p59

façade pattern: 2 nested symmetry;even wndw array;pitched rf
wall element: 5 pilaster;pediment / gable;cornice / moulding;ashlar / rustication;foliage
window element: 3 trim / quoin;keystone;arch
door element: 0 canopy

original info about strctr	Tokyo100_p59: 木造、外部石材張付
note	



code: 3039 **押野鉱業本部**

city: Tokyo duplication: KCGH 1st published: 1911

use: office bldg office bldg cnstrctn period: 1908 — 1909

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCGH191104_plate

façade pattern: 2 simple(rf) tripartition;pitched rf
wall element: 1 cornice / moulding
window element: 3 trim / quoin;cornice / moulding;pediment
door element: 1 pitched rf

original info about strctr	KCGH: 全部木造である。左側煉瓦蔵…
note	



code: 3045 **高田商会（旧）**

city: Tokyo duplication: KCGH 1st published: 1911

use: office bldg office bldg cnstrctn period: 1908 — 1909

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCGH191105_plate

façade pattern:	2	quasi-symmetry;vertical wndw array;simple(rf) tripartition
wall element:	6	pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;corbel;foliage
window element:	2	arch;keystone;foliage
door element:	1	trim / quoin

original info about strctr	KCGH: 煉瓦造
note	



code: 3046 **税務監督局**

city: Tokyo duplication: KCGH 1st published: 1911

use: administrative government cnstrctn period: 1910 — 1911

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCGH191105_plate

façade pattern:	6	porch;tower;cupola;pitched rf;simple(rf) tripartition;nstd quasi-symmetry
wall element:	3	pilaster;balustrade / parapet;cornice / moulding
window element:	5	trim / quoin;arch;keystone;pediment;cornice / moulding
door element:	4	balustrade / parapet;cornice / moulding;frieze / architrave;pilaster

original info about strctr	KCGH: 木造
note	



code: 3048 **村松合資会社**

city: Tokyo duplication: KCGH 1st published: 1911

use: office bldg office bldg cnstrctn period: — 1909

info type: simple strctr system: masonry

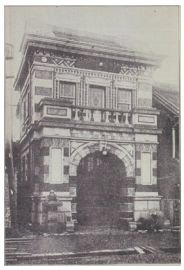
wall: floor: beam: column:

treatment:

strctr source: KCGH191105_plate

façade pattern:	5	partial symmetry;tower;cupola;pitched rf;simple tripartition
wall element:	6	pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave
window element:	5	pilaster;frieze / architrave;cornice / moulding;pediment;foliage;balustrade
door element:	3	pilaster;cornice / moulding;frieze / architrave

original info about strctr	KCGH: 煉瓦造
note	



code: 3052 **新田帯革陳列場**

city: Tokyo duplication: KCGH 1st published: 1911

use: commercial large-scale cnstrctn period: 1908 — 1910

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment: St=cv

strctr source: KCGH191105_plate

façade pattern: 3 simple symmetry;pitched rf;portal
wall element: 4 pilaster;cornice / moulding;frieze / architrave;balustrade / parapet
window element: 1 pediment
door element: 3 pilaster;arch;keystone

original info about strctr	KCGH: 二階欄干より其他の外面装飾に至る迄悉く石造建築にして…
note	



code: 3054 **西洋料理店三龍亭**

city: Tokyo duplication: KCGH 1st published: 1911

use: restaurant small-scale cnstrctn period: 1910 — 1911

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: mud=ct

strctr source: KCGH191105_plate

façade pattern: 4 cmpnd symmetry;tower;pitched rf;portico
wall element: 3 pilaster;cornice / moulding;foliage
window element: 2 arch;keystone
door element: 3 column;cornice / moulding;arch

original info about strctr	KCGH: 木骨土塗
note	



code: 3066 **青山郵便局**

city: Tokyo duplication: KCGH 1st published: 1911

use: post office post&telecom cnstrctn period: 1909 — 1910

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCGH191106_plate

façade pattern: 4 simple symmetry;simple(rf) tripartition;pitched rf;arcade
wall element: 5 arch;buttress;pediment / gable;cornice / moulding;pilaster
window element: 4 arch;pointed arch;keystone;trim / quoin
door element: 2 arch;pilaster

original info about strctr	KCGH: 石造平家建
note	



code: 3073 **吾楽殿**

city: Tokyo duplication: KCGH 1st published: 1911

use: museum cultural cnstrctn period: — 1911

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: Tokyo100_p50

façade pattern:	4	quasi-symmetry;simple(rf) tripartition;arcade;pitched rf
wall element:	4	corbel;pilaster;pediment / gable
window element:	1	arch;foliage
door element:	0	canopy

original info about strctr	Tokyo100_p50: 木造、装飾煉瓦張付
note	画堂 (画廊); structure info not recorded in KCGH191107_plate; see also 明治の建築伊東黒田



code: 3089 **三木洋布店**

city: Tokyo duplication: KCGH 1st published: 1911

use: shop small-scale cnstrctn period: 1907 — 1909

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: plaster=ct

strctr source: KCGH191109_plate

façade pattern:	0	even wndw array
wall element:	1	cornice / moulding
window element:	0	
door element:	0	

original info about strctr	KCGH: 木骨建築にして、外壁は漆喰塗なり。…
note	



code: 3090 **チャータード銀行**

city: Yokohama duplication: KCGH 1st published: 1911

use: bank financial cnstrctn period: — 1910

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCGH191109_plate

façade pattern:	6	colonnade;tower;dome;portico;nstd quasi-symmetry;simple(rf) tripartition
wall element:	6	column;balustrade / parapet;cornice / moulding;frieze / architrave;pilaster;foliage
window element:	3	column;frieze / architrave;trim / quoin;foliage
door element:	3	column;cornice / moulding;frieze / architrave

original info about strctr	KCGH: 石造
note	construction period not recorded in KCGH191109_plate; https://yokohamapostcardclub.blogspot.com/2014/05/chartered-bank.html: finished in 1910 (202309 accessed)



code: 3103 **林小兵衛商店**

city: Tokyo duplication: KCGH 1st published: 1911

use: shop small-scale cnstrctn period: 1910 — 1911

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: plaster=ct

strctr source: Tokyo100_p91

façade pattern: 4 partial symmetry;simple tripartition;pitched rf;cupola
wall element: 5 pilaster;cornice / moulding;balustrade / parapet;ashlar / rustication;foliage
window element: 4 arch;keystone;frieze / architrave;cornice / moulding
door element: 5 arch;keystone;cornice / moulding;corbel;balustrade / parapet

original info about strctr	Tokyo100_p91: 木造漆喰塗
note	



code: 3110 **日米商店**

city: Tokyo duplication: KCGH 1st published: 1911

use: shop small-scale cnstrctn period: 1909 — 1910

info type: simple strctr system: masonry&Wframe

wall: floor: beam: column:

treatment: aSt=ct

strctr source: KCGH191111_plate

façade pattern: 5 simple symmetry;compound(rf) tripartition;cupola;pitched rf;portal
wall element: 6 pilaster;pediment / gable;balustrade / parapet;cornice / moulding;corbel;foliage
window element: 4 pilaster;round window;frieze / architrave;keystone
door element: 5 column;pilaster;arch;keystone;cornice / moulding

original info about strctr	KCGH: 一階は煉瓦造にして、三階は木骨組織なり。凡て上端は人造石にて塗らる。
note	1f=Br, 3f=W



code: 3161 **小野友次郎氏邸**

city: Tokyo duplication: KCGH 1st published: 1912

use: house residential cnstrctn period: — 1912

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCGH191205_plate

façade pattern: 2 portico;pitched rf
wall element: 0
window element: 1 trim / quoin
door element: 2 balustrade / parapet;cornice / moulding

original info about strctr	KCGH: 二階建木造
note	constrution period not recorded in KCGH191205_plate, KCGH191112_p.24-26; 内田青藏. 戦前のツーバイフォー建築が日本の住宅に与えた影響とは. 一般社団法人日本ツーバイフォー建築協会: finished in M45



code: 3167 **泰明小学校**

city: Tokyo duplication: KCGH 1st published: 1912

use: schoolhouse academic cnstrctn period: — 1911

info type: simple strctr system: Wframe

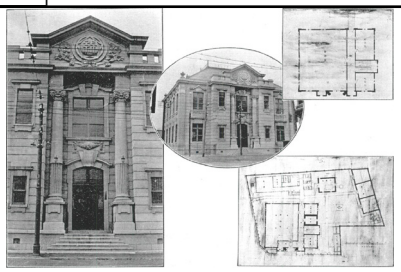
wall: floor: beam: column:

treatment:

strctr source: Tokyo100_p37

façade pattern:	3	cmpnd symmetry;even wndw array;tower;pitched rf
wall element:	3	buttress;cornice / moulding;pediment / gable
window element:	0	
door element:	1	pitched rf

original info about strctr	Tokyo100_p37: 木造、外部鉄網混凝土造
note	川崎画報2 (12): 木骨鉄網混凝土, construction period not recorded



code: 3169 **内外綿株式会社**

city: Osaka duplication: KCGH 1st published: 1912

use: office bldg office bldg cnstrctn period: 1909 — 1910

info type: simple strctr system: Wframe

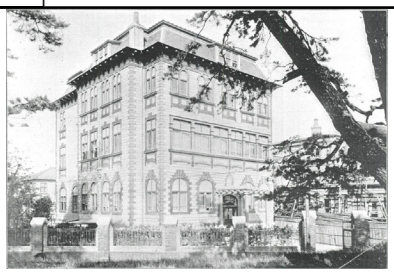
wall: floor: beam: column:

treatment: plaster=ct

strctr source: KCGH191206_plate

façade pattern:	5	nested symmetry;simple(rf) tripartition;pitched rf;cupola;porch
wall element:	7	column;pilaster;pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	4	trim / quoin;cornice / moulding;keystone;pediment
door element:	3	arch;keystone;column;foliage

original info about strctr	KCGH: 木骨スレート真(葺?)漆喰張
note	



code: 3179 **双葉高等女学校**

city: Tokyo duplication: KCGH 1st published: 1912

use: schoolhouse academic cnstrctn period: — 1910

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCGH191207_plate

façade pattern:	4	simple symmetry;simple tripartition;portico;pitched rf
wall element:	4	quoin;cornice / moulding;corbel;ashlar / rustication
window element:	5	arch;keystone;pilaster;trim / quoin;frieze / architrave
door element:	2	arch;column;canopy

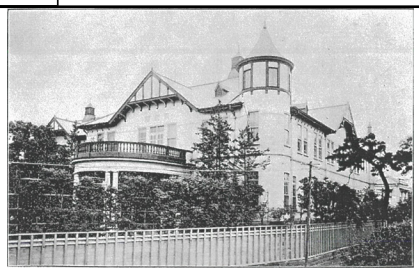
original info about strctr	KCGH: 木造
note	construction period not recorded in KCGH191207_plate; see also 美術建築図譜上_plate; 官報 1910年02月28日_p.544: move to Koujimachi-ku permitted



code: 3196 **西川甚五郎氏商店**
city: Tokyo duplication: KCGH 1st published: 1912
use: shop small-scale cnstrctn period: 1911 — 1912
info type: simple strctr system: masonry&Wframe&Sfram
wall: floor: beam: column:
treatment: Br=cv
strctr source: KCGH191209_plate

façade pattern: 5 simple tripartition;quasi-symmetry;porch;cupola;pitched rf
wall element: 7 pediment / gable;pilaster;cornice / moulding;balustrade / parapet;corbel;ashlar / rustication;foliage
window element: 6 pilaster;pediment;cornice / moulding;frieze / architrave;arch;keystone
door element: 5 arch;keystone;corbel;frieze / architrave;cornice / moulding

original info about strctr	KCGH: 四階建地下室附石造、煉瓦、鉄、木骨混淆、外面化粧煉瓦張。
note	図面は青図であり、構造情報を読み取れない。



code: 3225 **朝倉病院**
city: Tokyo duplication: KCGH 1st published: 1912
use: hospital hospital cnstrctn period: 1907 — 1908
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment: plaster=ct
strctr source: KCGH191211_plate

façade pattern: 5 cmpnd symmetry;portico;pitched rf;tower;cupola
wall element: 2 cornice / moulding;half-timber
window element: 1 trim / quoin
door element: 4 column;frieze / architrave;cornice / moulding;balustrade / parapet

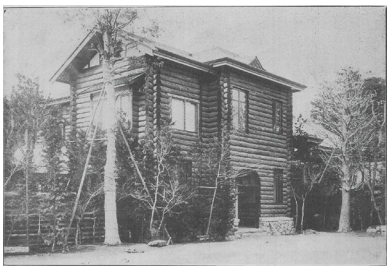
original info about strctr	KCGH: 木造漆喰塗
note	pending清水組彩色設計図集vol.4_p.206: M40.9-M41.12, g=W



code: 3281 **浜田氏貸長屋**
city: Osaka duplication: KCGH 1st published: 1913
use: rental house residential cnstrctn period: 1912 — 1912
info type: simple strctr system: Wframe
wall: floor: beam: column:
treatment: plaster=ct
strctr source: KCGH191303_plate

façade pattern: 5 partial symmetry;dome;tower;pitched rf;simple(rf) tripartition
wall element: 6 pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;pediment / gable;foliage
window element: 0
door element: 4 pilaster;cornice / moulding;keystone;balustrade / parapet;foliage

original info about strctr	KCGH: 木造漆喰塗
note	



code: 3296 **福沢桃介氏邸演舞場**

city: Tokyo duplication: KCGH 1st published: 1913

use: theatre cultural cnstrctn period: 1912 — 1913

info type: simple strctr system: Wframe

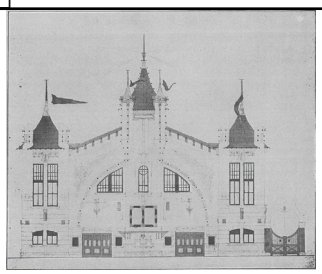
wall: floor: beam: column:

treatment:

strctr source: KCGH191304_plate; Tokyo100_p57

façade pattern: 1 pitched rf
wall element: 0
window element: 1 lintel
door element: 0

original info about strctr	KCGH: 露西亜式井楼組建築にして井楼用材は北海道トド松を使用せり。 Tokyo100_p57: 木造
note	



code: 3310 **溜池活動写真常設館（葵館）**

city: Tokyo duplication: KCGH 1st published: 1913

use: cinema cultural cnstrctn period: — 1913

info type: simple strctr system: Wframe

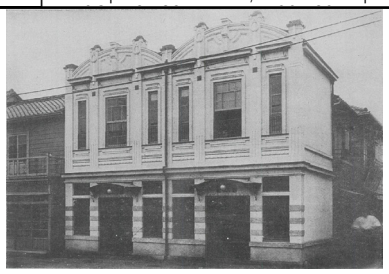
wall: floor: beam: column:

treatment:

strctr source: KCGH191305_plate

façade pattern: 4 nested symmetry;pitched rf;dome;pinnacle;vertical wndw array
wall element: 5 arch;foliage;ashlar / rustication;cornice / moulding;pilaster
window element: 2 arch;keystone
door element: 0

original info about strctr	KCGH: 木造二階建
note	construction period not recorded in KCGH191305_plate; 『江戸東京年表』、大浜徹也・吉原健一郎、小学館、, p.186, 2002: opened in 1913.7; see also https://ja.wikipedia.org/wiki/%E8%91%B5%E9%A4%A8#cite_note-%E5%A4%A7%E6%



code: 3361 **貸商店**

city: Tokyo duplication: KCGH 1st published: 1913

use: shop small-scale cnstrctn period: 1913 — 1913

info type: simple strctr system: Wframe

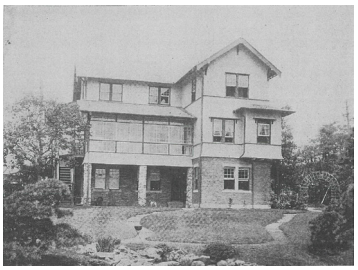
wall: floor: beam: column:

treatment: ?=ct

strctr source: KCGH191309_plate

façade pattern: 2 nested symmetry;simple(rf) tripartition
wall element: 5 pilaster;pediment / gable;cornice / moulding;ashlar / rustication;foliage
window element: 3 frieze / architrave;cornice / moulding;trim / quoin
door element: 0 canopy

original info about strctr	KCGH: 木造塗家
note	



code: 3372 **高山氏住宅背景及正面**

city: Tokyo duplication: KCGH 1st published: 1913

use: house residential cnstrctn period: 1912 — 1912

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: plaster=ct;Br=cv

strctr source: KCGH191310_plate

façade pattern: 1 pitched rf
wall element: 1 ashlar / rustication
window element: 2 trim / quoin;lintel
door element: 0

original info about strctr	KCGH: 木造セメント漆喰叩付け仕上げ階下煉瓦張
note	



code: 3374 **朝鮮総督府事務所**

city: Tokyo duplication: KCGH 1st published: 1913

use: administrative government cnstrctn period: 1912 — 1913

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: plaster=ct

strctr source: KCGH191310_plate

façade pattern: 4 portico;simple symmetry;simple(rf) tripartition;pitched rf
wall element: 6 pilaster;pediment / gable;cornice / moulding;frieze / architrave;foliage;corbel
window element: 5 cornice / moulding;frieze / architrave;trim / quoin;arch;keystone
door element: 5 column;arch;frieze / architrave;cornice / moulding;balustrade / parapet

original info about strctr	KCGH: 木骨漆喰塗
note	



code: 3388 **柳澤伯爵本邸**

city: Tokyo duplication: KCGH 1st published: 1913

use: house residential cnstrctn period: 1912 — 1913

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: plaster=ct

strctr source: KCGH191311_plate

façade pattern: 3 partial symmetry;pitched rf;porch
wall element: 0
window element: 0
door element: 4 arch;corbel;cornice / moulding;pitched rf

original info about strctr	□KCGH: 木骨漆喰塗
note	construction period not recorded in KCGH191311_plate; 清水組彩色設計図集vol.1_p. 184: from M45.5 to T2; 川崎画報1(7): 木骨鉄網混凝土, construction period not recorded



code: 3445 **東京堂書店**

city: Tokyo duplication: KCGH 1st published: 1914

use: shop small-scale cnstrctn period: — 1914

info type: simple strctr system: Wframe

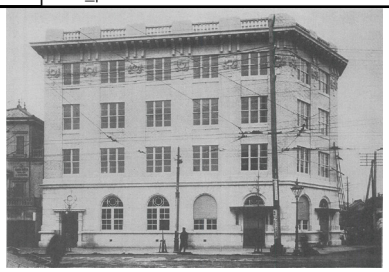
wall: LC floor: beam: column:

treatment:

strctr source: KCGH191405_plate; Tokyo100_p94

façade pattern:	1	simple tripartition;vertical wndw array
wall element:	6	pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;ashlar / rustication;foliage
window element:	2	foliage;trim / quoin;balustrade
door element:	0	

original info about strctr	KCGH: 木造外部鉄筋コンクリート漆 Tokyo100_p94: 木骨外部鉄網混凝土造
note	construction period not recorded in KCGH191405_plate; Tokyo100_p94: finished in 1914; see also 清水組彩色設計図集 vol.3_p.191



code: 3446 **株式会社不動銀行**

city: duplication: KCGH 1st published: 1914

use: bank financial cnstrctn period: — 1914

info type: simple strctr system: Sframe

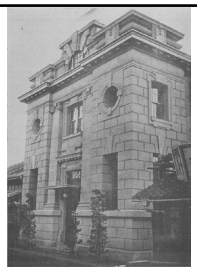
wall: floor: beam: column:

treatment: Br=cv

strctr source: KCGH191405_plate

façade pattern:	2	quasi-symmetry;compound(rf) tripartition;even wndw array
wall element:	5	pilaster;cornice / moulding;frieze / architrave;balustrade / parapet;foliage
window element:	2	arch;keystone
door element:	3	arch;canopy;cornice / moulding;pilaster

original info about strctr	KCGH: 鉄骨コンクリート造、外部化粧煉瓦張
note	



code: 3462 **第百四十七銀行小林支店**

city: Fukuoka duplication: KCGH 1st published: 1914

use: bank financial cnstrctn period: — 1913

info type: simple strctr system: Wframe

wall: floor: beam: W column: W

treatment: aSt=ct

strctr source: KCGH191406_plate

façade pattern:	2	simple symmetry;simple(rf) tripartition
wall element:	5	pilaster;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	4	arch;keystone;round window;trim / quoin
door element:	2	canopy;trim / quoin;cornice / moulding

original info about strctr	KCGH: 木骨構造、人造石洗出し仕上、〔腰〕堅石積…
note	



code: 3463 **石井勝三郎氏事務所**

city: Tokyo duplication: KCGH 1st published: 1914

use: office bldg office bldg cnstrctn period: 1912 — 1912

info type: simple strctr system: Wframe

wall: C floor: beam: W column: W

treatment: plaster=ct

strctr source: KCGH191406_plate

façade pattern: 2 partial symmetry;pitched rf
wall element: 2 half-timber;cornice / moulding
window element: 5 frieze / architrave;cornice / moulding;lintel;keystone;balustrade
door element: 1 arch;canopy

original info about strctr	KCGH: 木骨セメント漆喰叩け付げ…
note	



code: 3468 **渋沢貸事務所**

city: Tokyo duplication: KCGH 1st published: 1914

use: rental office office bldg cnstrctn period: 1913 — 1914

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: Tokyo100_p83

façade pattern: 3 pitched rf;quasi-symmetry;even wndw array;compound(rf) tripartition
wall element: 1 cornice / moulding
window element: 2 trim / quoin;balustrade
door element: 1 arch

original info about strctr	Tokyo100_p83: 鉄筋混凝土外部張付煉瓦造
note	



code: 3484 **六合館商店**

city: Tokyo duplication: KCGH 1st published: 1914

use: shop small-scale cnstrctn period: 1913 — 1914

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCGH191408_plate

façade pattern: 3 simple symmetry;simple tripartition;arcade
wall element: 5 pilaster;cornice / moulding;balustrade / parapet;pediment / gable;frieze / architrave
window element: 2 arch;lintel
door element: 1 arch

original info about strctr	KCGH: 煉瓦、石混合造
note	book store; construction period not recorded in KCGH191408_plate; 清水組彩色設計図集vol.3_p.192: from T2.11 to T3.4, 木造



code: 3487 **蠶絲会**

city: Tokyo duplication: KCGH 1st published: 1914

use: office bldg office bldg cnstrctn period: — 1913

info type: simple strctr system: Wframe

wall: floor: beam: W column: W

treatment: Br=cv

strctr source: KCGH191408_plate; Tokyo100_p46

façade pattern:	3	nested symmetry;simple(rf) tripartition;pitched rf
wall element:	4	pilaster;cornice / moulding;frieze / architrave
window element:	5	arch;keystone;lintel;pilaster;trim / quoin
door element:	3	pilaster;foliage;keystone;frieze / architrave

original info about strctr	KCGH: 木骨擬石煉瓦張 Tokyo100_p46: 木骨擬石装飾煉瓦張付
note	construction period not recorded in KCGH191408_plate; Tokyo100_p46: finished in T2.12



code: 3499 **仏英和女学校**

city: Tokyo duplication: KCGH 1st published: 1914

use: schoolhouse academic cnstrctn period: — 1913

info type: simple strctr system: masonry

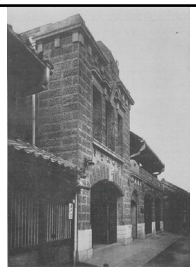
wall: floor: beam: column:

treatment:

strctr source: Tokyo100_p35

façade pattern:	5	nested symmetry;compound(rf) tripartition;portico;pitched rf;cupola
wall element:	2	quoin;cornice / moulding
window element:	6	arch;keystone;pilaster;pediment;cornice / moulding;lintel
door element:	4	column;frieze / architrave;cornice / moulding;trim / quoin

original info about strctr	Tokyo100_p35: 煉瓦造
note	美術建築図譜上_plate: g=Br



code: 3500 **原島自働車商会**

city: Tokyo duplication: KCGH 1st published: 1914

use: office bldg office bldg cnstrctn period: 1913 — 1914

info type: simple strctr system: masonry

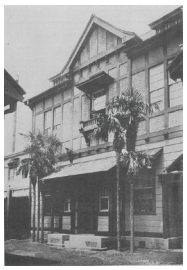
wall: floor: beam: column:

treatment: St=cv

strctr source: KCGH191409_plate; Tokyo100_p100

façade pattern:	2	partial symmetry;arcade
wall element:	2	balustrade / parapet;cornice / moulding
window element:	5	corbel;pediment;keystone;cornice / moulding;frieze / architrave
door element:	2	arch;keystone

original info about strctr	Tokyo100_p100: 煉瓦造、外部大谷石張
note	



code: 3512 **伊東胡蝶園事務所**

city: duplication: KCGH 1st published: 1914

use: office bldg office bldg cnstrctn period: 1913 — 1913

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment:

strctr source: KCGH191410_plate

façade pattern: 2 pitched rf;partial symmetry
wall element: 2 cornice / moulding;half-timber
window element: 1 trim / quoin
door element: 1 pitched rf

original info about strctr	KCGH: 木造ハーフティンバー構造にして…
note	as makeup company; "half timber"



code: 3538 **庄司理髪店理髪室**

city: Tokyo duplication: KCGH 1st published: 1914

use: barber small-scale cnstrctn period: 1913 — 1914

info type: simple strctr system: Wframe

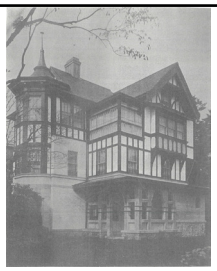
wall: floor: beam: column:

treatment: tile=cv

strctr source: KCGH191412_plate

façade pattern: 3 partial symmetry;vertical wndw array;tower;cupola
wall element: 3 pilaster;cornice / moulding;balustrade / parapet
window element: 0
door element: 0

original info about strctr	KCGH: 鉄網コンクリート表タイル張
note	see also MTS10_p. 102; 川崎画報2 (19), p. 32: 木骨鉄網混凝土



code: 3561 **白井遠平氏邸**

city: duplication: KCGH 1st published: 1915

use: house residential cnstrctn period: — 1914

info type: simple strctr system: masonry&Wframe

wall: floor: beam: column:

treatment:

strctr source: KCGH191503_plate

façade pattern: 3 cmpnd symmetry;pitched rf;pinnacle
wall element: 4 cornice / moulding;half-timber;pilaster;ashlar / rustication
window element: 1 trim / quoin
door element: 1 pitched rf

original info about strctr	KCGH: 階下煉瓦造、階上ハーフチンバー
note	



code: 3563 **共栄貯金銀行**

city: Tokyo duplication: KCGH 1st published: 1915

use: bank financial cnstrctn period: — 1913

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment: Br=cv

strctr source: Tokyo100_p73

façade pattern:	2	simple symmetry;simple tripartition
wall element:	4	balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	3	lintel;keystone;pilaster
door element:	3	frieze / architrave;cornice / moulding;pediment / gable

original info about strctr	Tokyo100_p73: 煉瓦造、外部装飾煉瓦張付
note	similar with code 3521



code: 3572 **葛西博士邸**

city: duplication: KCGH 1st published: 1915

use: house residential cnstrctn period: — 1913

info type: simple strctr system: Wframe

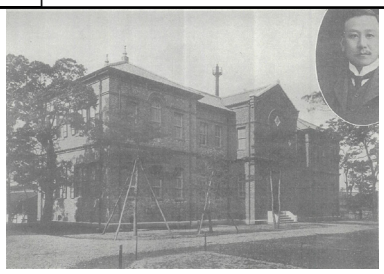
wall: floor: beam: column:

treatment: mortar=ct

strctr source: KCGH191504_plate

façade pattern:	1	pitched rf
wall element:	1	cornice / moulding
window element:	1	trim / quoin
door element:	1	trim / quoin

original info about strctr	KCGH: 大体木造にて外部丸太柱にモルタル塗…
note	



code: 3573 **東京美術学校図案科教室**

city: Tokyo duplication: KCGH 1st published: 1915

use: schoolhouse academic cnstrctn period: — 1914

info type: simple strctr system: masonry

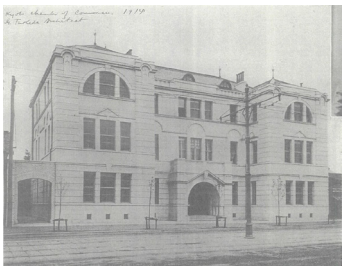
wall: floor: beam: column:

treatment:

strctr source: Tokyo100_p30

façade pattern:	3	nested symmetry;simple(rf) tripartition;pitched rf
wall element:	2	cornice / moulding;arch
window element:	2	trim / quoin;arch
door element:	0	

original info about strctr	Tokyo100_p30: 煉瓦造
note	



code: 3574 **京都商業会議所**

city: Kyoto duplication: KCGH 1st published: 1915

use: assembly assembly cnstrctn period: 1912 — 1914

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment: Br=cv

strctr source: KCGH191506_plate

façade pattern: 4 nested symmetry;porch;simple tripartition;pitched rf
wall element: 3 pilaster;balustrade / parapet;cornice / moulding
window element: 4 arch;keystone;pediment;pilaster
door element: 6 arch;keystone;pediment / gable;column;balustrade / parapet;cornice / moulding

original info about strctr	KCGH: 煉瓦白張付瓦、階段及廊下鉄筋コンクリート、…
note	



code: 3590 **三井家接待所**

city: Tokyo duplication: KCGH 1st published: 1915

use: house residential cnstrctn period: — 1914

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment: Br&St=cv

strctr source: KCGH191508_plate

façade pattern: 3 nested symmetry;simple(rf) tripartition;portico
wall element: 6 pilaster;foliage;pediment / gable;cornice / moulding;frieze / architrave;corbel
window element: 4 frieze / architrave;cornice / moulding;keystone;arch
door element: 4 balustrade / parapet;cornice / moulding;frieze / architrave;pilaster

original info about strctr	KCGH: 煉瓦造。石及化粧煉瓦張付。
note	



code: 3593 **麹町銀行飯倉支店**

city: Tokyo duplication: KCGH 1st published: 1915

use: bank financial cnstrctn period: — 1914

info type: simple strctr system: Wframe

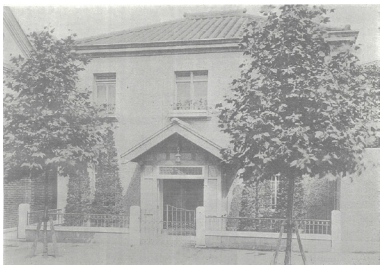
wall: floor: beam: column:

treatment: Br=cv

strctr source: KCGH191508_plate

façade pattern: 2 simple symmetry;simple(rf) tripartition
wall element: 6 corbel;pilaster;frieze / architrave;cornice / moulding;balustrade / parapet;foliage
window element: 3 trim / quoin;keystone;lintel
door element: 4 corbel;cornice / moulding;canopy;frieze / architrave;balustrade / parapet;foliage

original info about strctr	KCGH: 木造化粧煉瓦張付
note	



code: 3595 **福原氏別邸**

city: duplication: KCGH 1st published: 1915

use: house residential cnstrctn period: — 1913

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment: cement&mortar=ct

strctr source: KCGH191508_plate

façade pattern:	3	portico;simple symmetry;pitched rf
wall element:	1	cornice / moulding
window element:	1	trim / quoin
door element:	2	pitched rf;half-timber

original info about strctr	KCGH: 煉瓦造。セメントモルタル塗。
note	



code: 3620 **大阪中央電話局北分局**

city: Osaka duplication: KCGH 1st published: 1915

use: telecom post&telecom cnstrctn period: 1914 — 1915

info type: simple strctr system: masonry

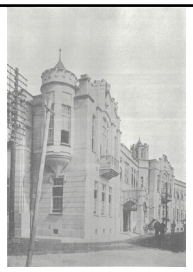
wall: floor: beam: column:

treatment:

strctr source: KCGH191511_plate

façade pattern:	5	partial symmetry;pitched rf;tower;cupola;simple tripartition
wall element:	5	pilaster;frieze / architrave;cornice / moulding;pediment / gable;foliage
window element:	3	arch;keystone;pediment
door element:	4	arch;keystone;pediment / gable;pilaster

original info about strctr	KCGH: 煉瓦造り赤色煉瓦と鼻黒煉瓦とを混用し…
note	see also 明治大正期の逓信建築_p.195



code: 3622 **大阪回生病院**

city: Osaka duplication: KCGH 1st published: 1915

use: hospital hospital cnstrctn period: 1914 — 1915

info type: simple strctr system: Wframe

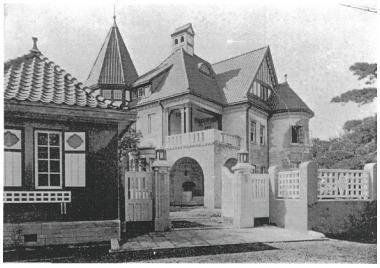
wall: floor: beam: column:

treatment:

strctr source: KCGH191511_plate

façade pattern:	4	cmpnd symmetry;tower;cupola;portico
wall element:	5	pilaster;cornice / moulding;balustrade / parapet;buttress;ashlar / rustication
window element:	3	arch;cornice / moulding;balustrade
door element:	3	pointed arch;pillars;pilaster

original info about strctr	KCGH: 木骨鉄網混凝土(川崎式使用)
note	川崎画報 (43), p. 222: 木骨鉄網混凝土造, finished in T4.6



code: 3630 **川崎肇氏邸**

city: Tokyo duplication: KCGH 1st published: 1916

use: house residential cnstrctn period: — 1911

info type: simple strctr system: Wframe

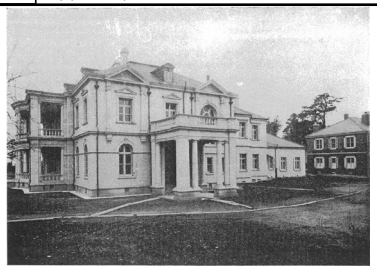
wall: floor: beam: column:

treatment:

strctr source: KCGH191601_plate

façade pattern: 3 pitched rf;pinnacle;portico
wall element: 2 cornice / moulding;half-timber
window element: 1 trim / quoin
door element: 3 arch;cornice / moulding;balustrade / parapet

original info about strctr	KCGH: 木骨鉄網コンクリート塗
note	construction period not recorded in KCGH191601_plate; see also Lalande新発見作品集_p.405; 官報 1911年05月20日_appndx_p.2: moved to the new house in Akasaka on M44.5.9



code: 3641 **島津公爵邸**

city: Tokyo duplication: KCGH 1st published: 1916

use: house residential cnstrctn period: — 1915

info type: simple strctr system: masonry

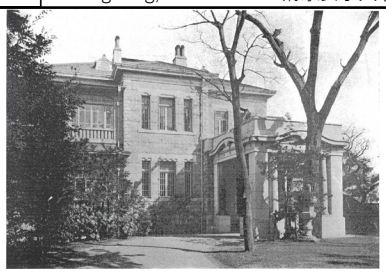
wall: floor: beam: column:

treatment:

strctr source: KCGH191602_plate

façade pattern: 5 quasi-symmetry;simple(rf) tripartition;colonnade;portico;pitched rf
wall element: 4 corbel;pilaster;pediment / gable;cornice / moulding
window element: 6 trim / quoin;pediment;arch;keystone;frieze / architrave;cornice / moulding
door element: 5 column;pilaster;cornice / moulding;frieze / architrave;balustrade / parapet

original info about strctr	KCGH: 煉瓦石混合
note	construction period not recorded in KCGH191602_plate; https://www.seisen-u.ac.jp/shimadzu/: finished in 1915, existing bldg, now used as 清泉女子大学本館 (202309 accessed)



code: 3655 **浅野総一郎氏邸(迎賓館)**

city: Tokyo duplication: KCGH 1st published: 1916

use: house residential cnstrctn period: 1912 — 1914

info type: simple strctr system: Rmasonry&Wframe

wall: floor: beam: column:

treatment:

strctr source: KCGH191604_plate

façade pattern: 3 portico;pitched rf;simple(rf) tripartition
wall element: 3 quoin;cornice / moulding;frieze / architrave
window element: 2 trim / quoin;balustrade
door element: 5 pitched rf;balustrade / parapet;frieze / architrave;column;pilaster

original info about strctr	KCGH: 木骨鉄筋石材
note	see also KCnoTaisho_p.190 (source info not correct)



code: 3677 **興業貯蓄銀行下谷支店**

city: Tokyo duplication: KCGH 1st published: 1916

use: bank financial cnstrctn period: 1914 — 1915

info type: simple strctr system: Wframe

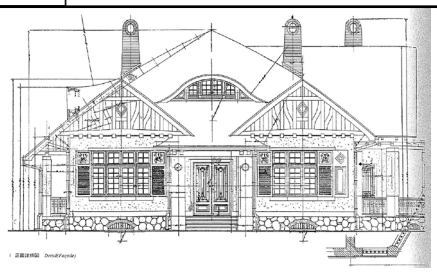
wall: floor: beam: W column: W

treatment: tile=cv

strctr source: KCGH191607_plate

façade pattern:	6	cmpnd symmetry;porch;tower;dome;pitched rf;simple(rf) tripartition
wall element:	5	pediment / gable;balustrade / parapet;cornice / moulding;frieze / architrave;foliage
window element:	2	trim / quoin;cornice / moulding
door element:	4	column;frieze / architrave;cornice / moulding;balustrade / parapet

original info about strctr	KCGH: 木骨タイル張り
note	construction period not recorded in KCGH191607_plate; 清水組彩色設計図集vol.2_p.202: from T3.10 to T4.7



code: 3678 **ブライアン氏邸**

city: Tokyo duplication: KCGH 1st published: 1916

use: house residential cnstrctn period: — 1916

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: KCGH191607_plate

façade pattern:	3	nested symmetry;portico;pitched rf
wall element:	1	half-timber
window element:	1	lintel
door element:	2	pitched rf;canopy;column

original info about strctr	KCGH: (=KCnoTaisho_p204) 煉瓦造
note	see also KCnoTaisho_p204



code: 3686 **東京帝大基督教青年会**

city: Tokyo duplication: KCGH 1st published: 1916

use: office bldg office bldg cnstrctn period: — 1916

info type: simple strctr system: masonry

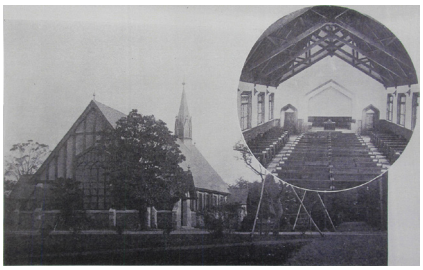
wall: floor: beam: column:

treatment:

strctr source: KCGH191608_plate

façade pattern:	3	simple symmetry;portico;pitched rf;even wndw array
wall element:	2	pilaster;cornice / moulding
window element:	2	trim / quoin;pointed arch
door element:	4	pitched rf;cornice / moulding;column;pediment / gable

original info about strctr	KCGH: 本屋煉瓦造
note	construction period not recorded in KCGH191608_plate; https://todaiymca.or.jp/about-us/: finished in 1916, Arata Endo as supervisor (202309 accessed)



code: 3702 **明治学院礼拝堂**

city: Tokyo duplication: KCGH 1st published: 1916

use: church religious cnstrctn period: 1915 — 1916

info type: simple strctr system: masonry

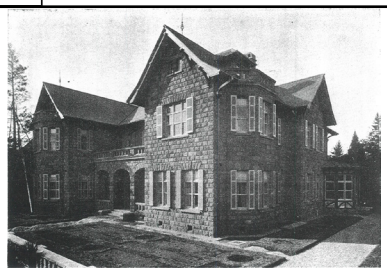
wall: floor: beam: column:

treatment: mortar=ct

strctr source: KCGH191610_plate; KCGH192003_plate

façade pattern:	4	simple symmetry;tower;pinnacle;pitched rf
wall element:	2	half-timber;buttress
window element:	1	pointed arch
door element:	0	

original info about strctr	KCGH: 腰石材、上部煉瓦造り、切妻はモルタル塗り、小屋組は鉄材に替ふるに木材を以てす
note	



code: 3746 **男爵古川虎之助氏邸**

city: Tokyo duplication: KCGH 1st published: 1917

use: house residential cnstrctn period: — 1917

info type: simple strctr system: masonry

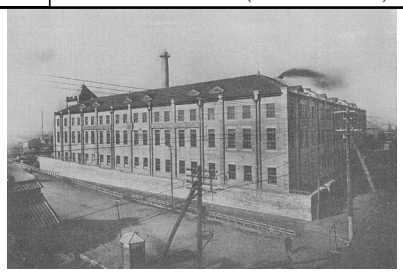
wall: floor: beam: column:

treatment:

strctr source: KCGH191710_plate

façade pattern:	3	cmpnd symmetry;arcade;pitched rf
wall element:	3	balustrade / parapet;arch;column
window element:	2	lintel;keystone
door element:	3	arch;keystone;balustrade / parapet

original info about strctr	KCGh: 石造
note	construction period not recorded in KCGH191710_plate; http://www.otanimuseum.or.jp/kyufurukawatei/about_summary.html: finished in T6.5 (2023 accessed)



code: 3784 **三田土ゴム会社工場**

city: Tokyo duplication: KCGH 1st published: 1918

use: plant industrial&stor cnstrctn period: 1917 — 1917

info type: simple strctr system: RCframe

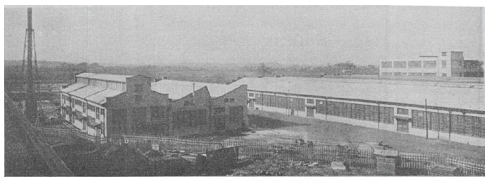
wall: floor: beam: column:

treatment:

strctr source: KCGH191802_plate

façade pattern:	2	simple symmetry;even wndw array;pitched rf
wall element:	1	pilaster
window element:	1	lintel
door element:	0	

original info about strctr	KCGH: 鉄筋コンクリート
note	construction period not recorded in KCGH191802_plate; 大成建設社史. 大成建設㈱. p. 217,1963: from T6 spring to T6. about9



code: 3785 **東京電気株式会社工場**

city: Kawasaki duplication: KCGH 1st published: 1918

use: plant industrial&stor cnstrctn period: — 1915

info type: simple strctr system: RCframe

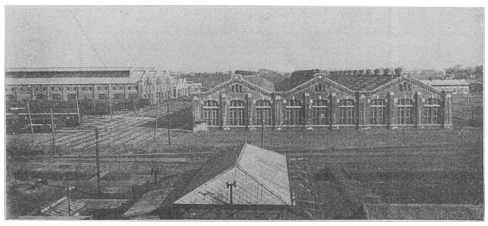
wall: floor: beam: column:

treatment:

strctr source: KCGH191802_plate

façade pattern: 2 pitched rf;partial symmetry;horizontal wndw array
wall element: 0
window element: 0
door element: 0

original info about strctr	KCGH: カーン式鉄筋コンクリート
note	Kahn System; construction period not recorded in KCGH191802_plate; see also KCGH192003_Ads; 清水建設180年_p.58: finished in T4



code: 3786 **鐵道院大井工場**

city: Tokyo duplication: KCGH 1st published: 1918

use: plant industrial&stor cnstrctn period: — 1915

info type: simple strctr system: masonry

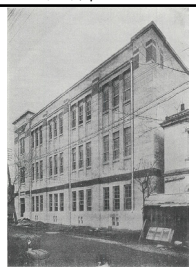
wall: floor: beam: column:

treatment:

strctr source: KCGH191802_plate

façade pattern: 2 nested symmetry;vertical wndw array;pitched rf
wall element: 2 pilaster;cornice / moulding
window element: 2 arch;keystone
door element: 0

original info about strctr	KCGH: 煉瓦造
note	construction period not recorded in KCGH191802_plate; 品川区史通史編下巻_p.168: moved from Shinbashi to Ooi in T4; 川崎画報4 (39), p. 133: 鉄骨鉄網混凝土造 (builing at the right corner in the photo of KCGH)



code: 3873 **增築せる新橋電話交換局**

city: Tokyo duplication: KCGH 1st published: 1918

use: telecom post&telecom cnstrctn period: 1918 — 1918

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment:

strctr source: KCGH191812_plate; KCGH191801news_p.1

façade pattern: 0 even wndw array;vertical wndw array
wall element: 2 pilaster;cornice / moulding
window element: 0
door element: 0

original info about strctr	KCGH191812_plate: 鉄骨コンクリート KCGH191801news_p.1: 鉄筋コンクリート三階建
note	construction period not recorded in KCGH191812_plate; see also 明治大正期の逓信建築の研究_p.184: g=RC



code: 3560 **英国大使館第五号館**

city: Tokyo duplication: KCGH 1st published: 1915

use: administrative government cnstrctn period: — 1908

info type: simple strctr system: masonry&Wframe

wall: floor: beam: column:

treatment:

strctr source: KCGH191502_plate

façade pattern: 1 pitched rf
wall element: 3 half-timber;cornice / moulding;ashlar / rustication
window element: 2 trim / quoin;arch
door element: 1 arch

original info about strctr	KCGH: 階下煉瓦、階上木造。
note	1f=Br,2f=W;



code: 4201 **赤坂離宮**

city: Tokyo duplication: KCGH 1st published: 1915

use: palace palace cnstrctn period: — 1910

info type: simple strctr system: Sframe

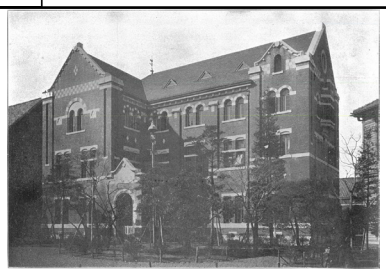
wall: floor: beam: column:

treatment:

strctr source: Tokyo100_p2

façade pattern: 5 nested symmetry;simple(rf) tripartition;colonnade;tower;pitched rf
wall element: 8 column;pilaster;foliage;balustrade / parapet;cornice / moulding;frieze / architrave;pediment / gable;ashlar / rustication
window element: 6 foliage;arch;keystone;pilaster;cornice / moulding;frieze / architrave;pediment
door element: 4 pilaster;balustrade / parapet;cornice / moulding;frieze / architrave

original info about strctr	Tokyo100_p2: 鉄骨煉瓦造、外壁石造
note	existing bldg



code: 4202 **早稲田大学恩賜記念館**

city: Tokyo duplication: KCGH 1st published: 1915

use: schoolhouse academic cnstrctn period: — 1912

info type: simple strctr system: masonry

wall: floor: beam: column:

treatment:

strctr source: Tokyo100_p28

façade pattern: 4 partial symmetry;simple tripartition;portico;pitched rf
wall element: 4 pilaster;pediment / gable;cornice / moulding;buttress
window element: 3 arch;lintel;keystone
door element: 2 arch;pediment / gable

original info about strctr	Tokyo100_p28: 煉瓦造
note	Addtional construction on the right side in 1918 made the building nested symmetrical.



code: 4203 **有楽座**

city: Tokyo duplication: KCGH 1st published: 1915

use: theatre cultural cnstrctn period: — 1907

info type: simple strctr system: Wframe

wall: floor: beam: column:

treatment: plaster=ct

strctr source: Tokyo100_p56

façade pattern:	4	nested symmetry;tower;dome;simple(rf) tripartition
wall element:	7	pilaster;foliage;balustrade / parapet;cornice / moulding;frieze / architrave;pediment / gable;arch
window element:	6	round window;foliage;corbel;pediment;cornice / moulding;frieze / architrave;pilaster
door element:	1	pilaster;canopy

original info about strctr	Tokyo100_p56: 木造漆喰塗
note	



code: 4204 **内国通運株式会社日本橋集荷所**

city: Tokyo duplication: KCGH 1st published: 1915

use: warehouse industrial&stor cnstrctn period: — 1913

info type: simple strctr system: masonry

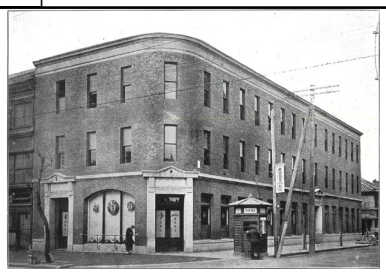
wall: floor: beam: column:

treatment:

strctr source: Tokyo100_p80

façade pattern:	3	tower;dome;cmpnd symmetry
wall element:	3	balustrade / parapet;cornice / moulding;frieze / architrave
window element:	3	arch;keystone;lintel
door element:	2	arch;keystone

original info about strctr	Tokyo100_p80: 煉瓦造
note	



code: 4205 **黒澤タイプライター商店**

city: Tokyo duplication: KCGH 1st published: 1915

use: shop small-scale cnstrctn period: — 1911

info type: simple strctr system: RCframe

wall: floor: beam: column:

treatment: Br=cv

strctr source: Tokyo100_p97

façade pattern:	0	even wndw array
wall element:	2	cornice / moulding;frieze / architrave
window element:	1	arch
door element:	5	keystone;frieze / architrave;pediment / gable;pilaster;lintel

original info about strctr	Tokyo100_p97: 鉄筋混凝土造外部煉瓦張付
note	

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VITA

Jianshuo Shu
舒 健碩

2010-2014 Bachelor, Tongji University

2016-2017 Research Student, Graduate School of Engineering, Kyoto University

2017-2019 Master of Engineering, Graduate School of Engineering, Kyoto University

2019-2025 Doctorate Program of Engineering, Graduate School of Engineering, Kyoto University

Reviewed papers

SHU, Jianshuo, and Takahiro Taji. "Study on the Development of Reinforced Concrete in the Department of Architecture of Japan from the Ending of Russo-Japanese War to Great Kanto Earthquake (1906-1923)." *Journal of Architecture and Planning* (Transactions of AIJ) 87, no. 796 (June 2022): 1050-1061. (DOI: https://doi.org/10.3130/aija.87.1050)

SHU, Jianshuo, and Takahiro Taji. "Conceptions of Reinforced Concrete Seen in the Graduation Theses on "Reinforced Concrete and New Style" from Imperial University of Tokyo." *Journal of Architecture and Planning* (Transactions of AIJ) 88, no. 806 (April 2023): 1410-1421. (DOI: https://doi.org/10.3130/aija.88.1410)

SHU, Jianshuo, and Takahiro Taji. "Trends of Design Conceptions of Reinforced Concrete Buildings in Japan from the End of Russo-Japanese War To Great Kanto Earthquake." *Journal of Architecture and Planning* (Transactions of AIJ) 89, no. 817 (March 2024): 545-556. (DOI: https://doi.org/10.3130/aija.89.545)

SHU, Jianshuo, Sayuri Hayakawa, and Takahiro Taji. "Relation Between Reinforced Concrete and Exterior Architectural Appearance from the End of Russo-Japanese War to Great Kanto Earthquake in Japan." *Journal of Architecture and Planning* (Transactions of AIJ) 90, no. 827 (January 2025), 96-107. (DOI https://doi.org/10.3130/aija.90.96)

1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923

RUSSO-JAPANESE WAR (1904. 2-1905.9)

WORLD WAR I (1914. 7-1918. 11)

GREAT KANTO EARTHQUAKE (1923.9)

E c l e c t i c i s m i n A m e r i c a

A r t N o u v e a u

S e c e s s i o n

N e w T r e n d s f r o m E u r o p e

F u t u r i s m (until Sant´Elia)

HISTORICAL EVENTS

International Congress of Architects, London (1906)

As a single entity — Louis Cloquet

Nationalism

International Congress of Architects, Rome (1911)

As a single entity — Louis Cloquet

K. W. Schaechterle 1912 "Elastichen Bogen"

Back from the US / Europe

Nationalism

1 year study in the US

survey

1 year in Europe

ARCHITECTURAL THEORIES

Chuuta Ito 1908 "Evolutionism"

Discussions of parliamentary house (1910)

Toshihiko Noda 1916 "Architecture as Non-art"

"Sham Structure" 1915-1916

Kenchikusekai preface 1916.1

Architecture in the Future (1917)

Kikuji Ishimoto 1923 *Kenchiku-fu*

Bunriha Kenchikukai

DESIGN THEORIES

Seiichiro Chuujo 1908 Translation

Toshikata Sano 1912 Translation

Toshikata Sano Return (1914)

Kitaro Matsui Return (1914)

UNDER-GRADUATE THESES (1915-1916)

Toshikata Sano 1916 "Hanron"

Oto Endo 1918 "Post-war Architecture"

Mamoru Nakamura 1920 "Southport War Memorial"

Yoshizo Bando 1921 "Economy & Concrete block"

Keiji Goto 1914 "Motivation"

Reinforced Concrete (1913)

Kitaro Matsui 1914 "Kajibashi & Gofukubashi"

MAGAZINE ARTICLES PEAK in 1915

Keiji Goto 1916 Shop Façade

Keiji Goto 1917 "Taiwa"

" R e i n f o r c e d C o n c r e t e a n d N e w S t y l e "

Asynchrony

TECHNICAL THEORIES

Textbooks of reinforced concrete
Shuji Inoue 1906 - Fukuichiro Inoue 1912

Mikishi Abe Return (1914)

Toshikata Sano 1914 "Anti-seismic"

Keikichi Ishii 1913 "Flat Slab"

Abe's textbook 1916

Tadahiko Hibi's textbook 1916

Tachu Naito's textbook 1918

Tachu Naito 1923 "Anti-seismic structure"

B a s i c t h e o r i e s

A d v a n c e d t h e o r i e s

Shigaichi Kenchikubutsu Ho (Law for urban buildings)

PRACTICES

Kotaro Sakurai enrollment 1914

Imperial Railway Institute 1916

Taiwan Bank Tokyo Branch 1916

Mitsubishi bldg. #24 1917

Tokyo Vocational School of Commerce 1916

Library, Tokyo Vocational School of Commerce 1917

Attached Building of Mitsukoshi 1919

Osaka Takashimaya 1922

Meijijingu Gaien Stadium 1924

Naigai Building 1923

Tokyo Ward Court 1920 (*RC wall-floor)

Okawa Tanaka Office 1922

Nihon Kougyou Bank 1923 (*SRC)

Tokyo Central Telephone Office (design) 1921

Tokyo Central Telephone Office 1925

Hijiribashi 1927

Kurosawa Typewirter Shop 1911

Mitsui Products Yokohama Branch 1911

Warehouse of Fukaya Bank 1914

House of Wada 1915

Itochu Headquarter 1916

R E I N F O R C E D C O N C R E T E F R A M E

Truscan Company in Japan (until Great Kanto Earthquake)

Miki Western Clothing Shop 1909

Villa Hiromi Kawasaki 1911

Warehouse of Hakubunkan NLT 1914

Garage, Prime Minister's Residential Quarters 1915

Medical Office of Ichigaya Prison 1914

Oufuukai Apartment 1921

Barrack buildings after earthquake 1924

W O O D E N F R A M E / W - F R A M E + W I R E M E S H R C

Maruzen HQ 1910

Mitsui Rental Business Office 1912

Mitsukoshi Department Store 1914

Mitsubishi Temporary HQ 1918

Mitsubishi Bank HQ 1922

Marunouchi Bldg. 1923

Osaka Shosen HQ 1925

S T E E L F R A M E

F. W. Horn 1908

Office (gate) of Ichigaya Prison 1915

M A S O N R Y

1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923

Legend

Text	Continuous event	L	
Text	One-time event	L	
	Influence (causal)	L	
	Linked	L	
	Time positioning	L	
	Contradictory	L/R	
	Design theories reflected in practices	R	
	Technical theories related to practices	R	
	Theories closely related to under-graduate theses	L	
	Similar with wooden frame	L	
	Related to wooden frame	L	
	Rigid outer & flexible inner (Similar with steel frame)	L	
	Estimated as Rigid outer & flexible inner	L	
	Design surpassing reinforced concrete buildings	L	
	Relation in sphere	btwn	
	Cross-sphere relation	btwn	

(Polylines only join at nodes.)

Rational structure — Truth of structure

IMAGE	FREEDOM	STRUCTURAL FORM	ARCHITECTURAL TREATMENT	PROTOTYPE
<simple>	<free shape> (eclectic)	<frame structure>		<Japanese style / taste>
<light /thin>		<flat slab>	<covering>	<US>
	<free plan>	<as a single entity / monolithic>	internal contradiction	internal contradiction
<large space>		<elastic arch>	<coating>	<Europe>
		<rigid frame> mechanical		
		internal contradiction		
		parabola pictorial		

planar

subconscious contradiction

technical contradiction

CURTAIN WALL

simply supported beam

limited rigid joint

rigid outer & flexible inner

FLAT SLAB

linear

- RC not sufficient for simplification
- projects in earlier structural forms surpassing RC
- persisting eclecticism
- simple aggregation levels & visual elements (similar with wooden frame)
- even & vertical window array (similar with steel frame)
- return of historical manners
- homogeneity of architectural treatment