

Introduction

In more than five centuries the Cloud Dwelling Monastery (Yunjusi 雲居寺) at Fangshan produced about fifteen thousand stones on which texts from the Buddhist canon were engraved. To commemorate special events a number of historical inscriptions were written. Twenty-eight of these, dating from 616 to 1999, have been analyzed, transcribed, and translated by Professor Ledderose and Ts'ai Suey-ling in Heidelberg.¹ In addition to the printed edition of the historical inscriptions a CD-ROM will be published. This paper will present the current state of CD-ROM development and discuss some related problems.

The Interface of the CD-ROM

The interface of the CD-ROM is still experimental. It uses different hues of light red and blue. A darker blue was chosen for the background. The content navigation additionally uses white lines and transparency to contrast with background and content.

The main navigation will be placed in the upper left corner. It will provide access to two main sections, namely "The Historical Inscriptions" and "Background Information". In addition, an item "Configuration" will be available for setting up user preferences.

Background Information

The first of the two main parts will provide the user of the CD-ROM with general information on the project of sutra-carving. The target group for this feature is the interested but non-expert user. The background information may contain introductions on various subjects, e.g. on the tradition of stele carving in China, or how rubbings are produced. Also, topics like the research history, a complete glossary of personalities related to the sutra-carving project, or even an introduction on the Buddhist canon(s) can be included here at a later date.

The Historical Inscriptions

The second part of the CD-ROM and the focus of this paper is the section on "The Historical Inscriptions". The information included here is directly connected to the texts and the main screen of the section offers three ways of accessing the data: „Objects“, „Ground Plan“, and „Search“.

1. Selection by Objects

This is the first of the two visual approaches to the data the CD-ROM provides. Every object with a historical inscription is individually depicted on a horizontal scrolling bar. The items are displayed in chronological order and the date and a short description are given.

¹ This Project has been generously supported by the Chiang Ching-kuo Foundation for Scholarly Exchange.

2. Selection by Ground Plans

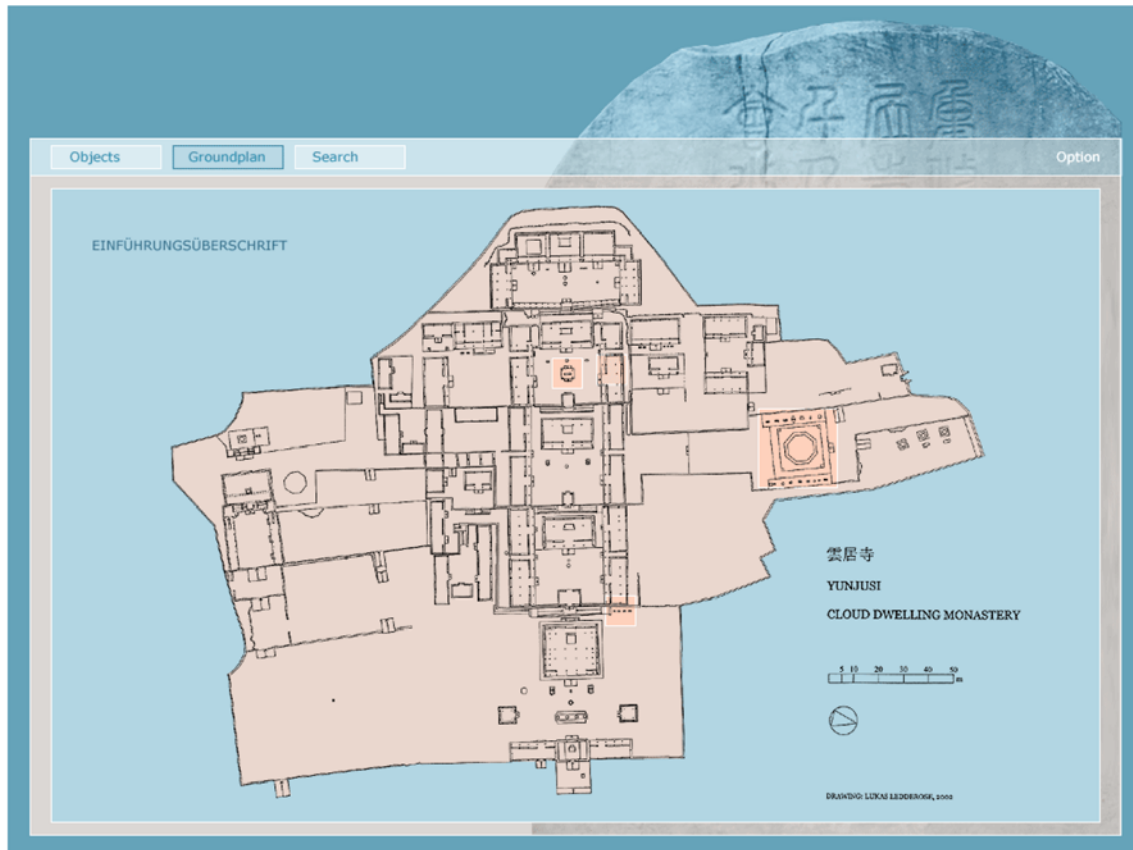


Figure 1: Ground Plan – The Yunjusi Monastery

This section is the second visual approach and allows access to the inscriptions by selecting them on maps according to their present location. There are three main areas where the historical texts can be found: The first is the modern Cloud Dwelling Monastery (cf. Figure 1), the second is Stone Sutra Mountain (Shijingshan 石經山) with Thunder Sound Cave (Leiyindong 雷音洞), and the third is an area of a ruined structure halfway between the two. All three areas form a subgroup of “Ground Plan” and each will have its own detailed map. Additionally, an overall plan with the three regions indicated, will be available.

On the area plans each inscription is marked with red squares. When the user points to it with the mouse the date of the text and a short description will be displayed. A click on the marked item will open a page with detailed information on that inscription.

At some places the inscriptions are so close to each other that a precise selection of a single text is not possible. This is especially true for the inscriptions at the Museum and around the Northern Pagoda, both within the precincts of Yunjusi Monastery, as well as for those around the Leiyindong cave. In these cases, the marker on the map will open an enlarged section of the map where each individual inscription can be easily selected (cf. Figure 2).

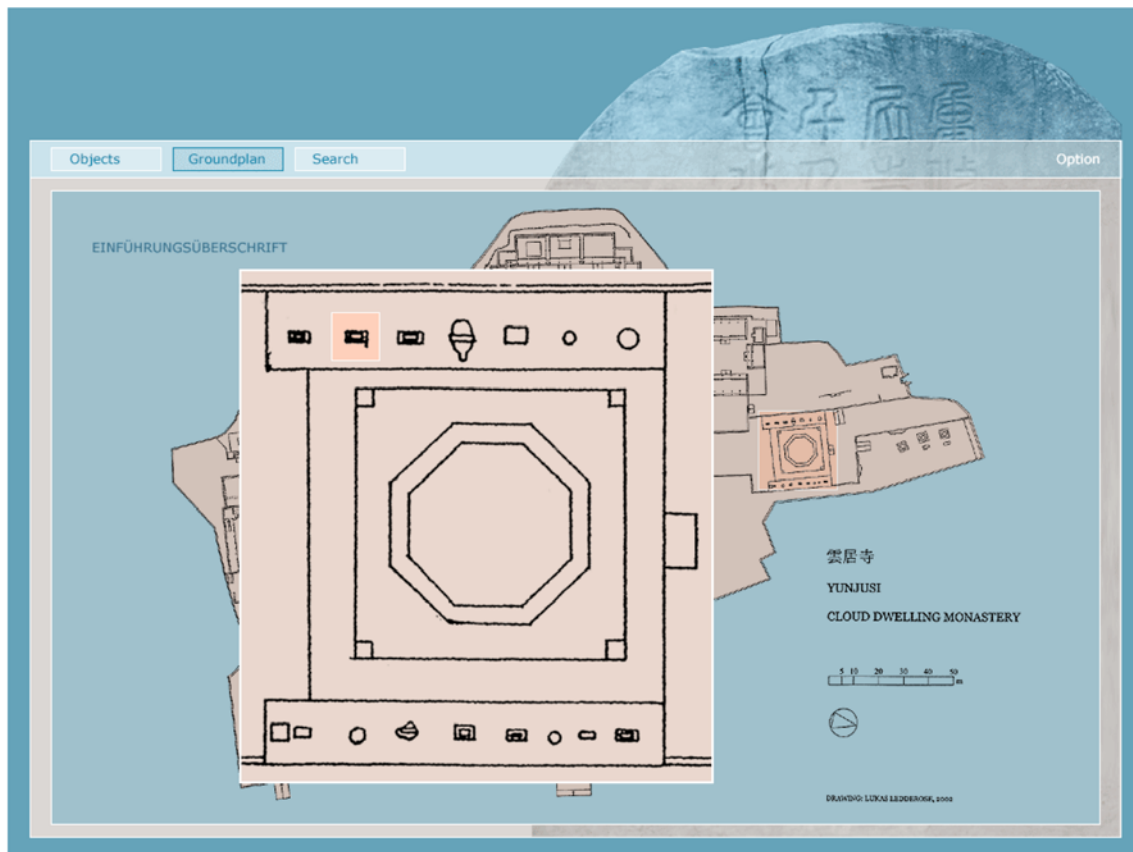


Figure 2: Enlarged detail of the map showing the inscriptions around the Northern Pagoda.

For each individual stone its date, title and a short description are given when the cursor is over the highlighted item. Clicking on it opens the introductory page in the Text section (see below).

3. Search

The third way of accessing the information on this CD-ROM is the content oriented "Search". It will not only feature a basic and advanced full text search, but also allow special searches, e.g. for Buddha-names, names of persons, official titles, dates, book titles, etc. Combinations of different searches shall as well be available as a browse function.

The search is not yet implemented as it is directly related to and heavily dependent on the database system that is going to manage the data. (See "Next Steps" below.)

The Text Section: The Stele of 965/1005

In this example I use the "Ground Plan" to access the inscription. It belongs to the group next to the Northern Pagoda, where we find it on the enlarged map. A single click opens the "Text" section.

The "Introduction" page

On the first page an introduction to the inscription is given (cf. Figure 3). It lists the dimensions of the stone, describes its shape, and analyses the structure of the text itself. Additionally, certain particularities that only occur on this stone or inscription are mentioned.

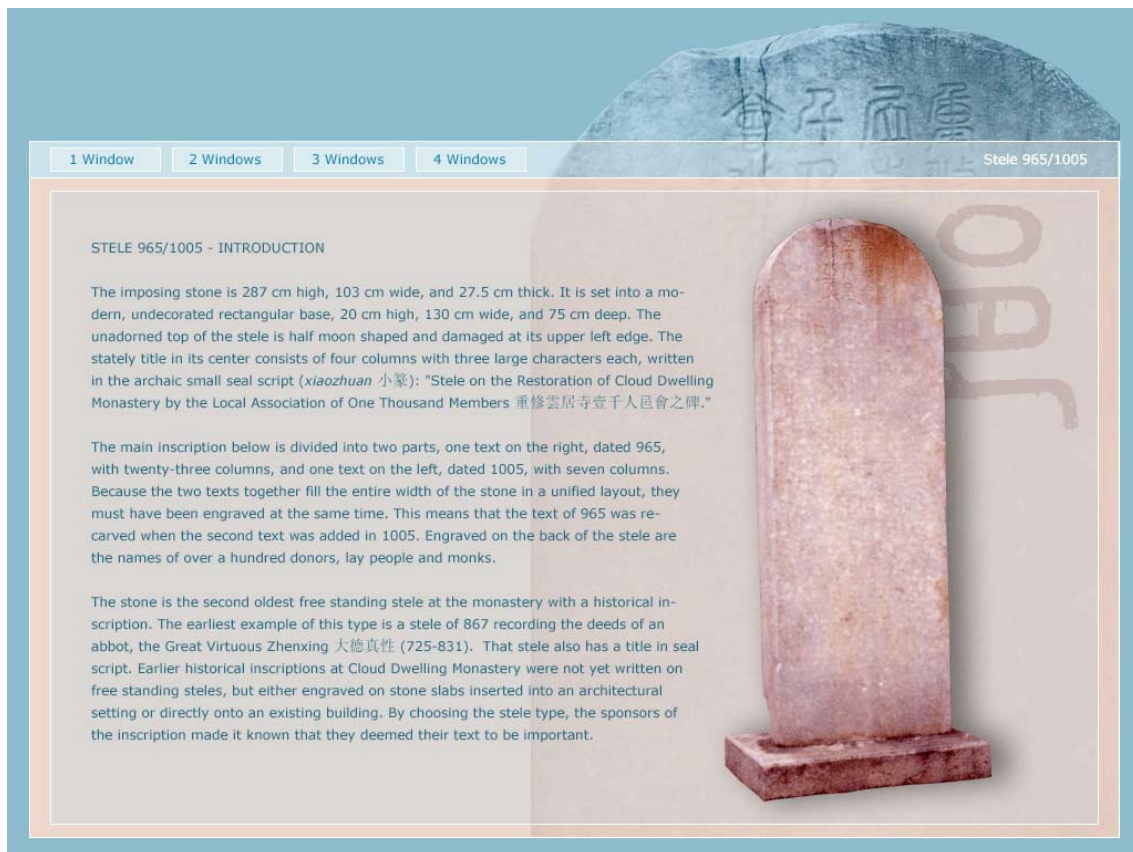


Figure 3: Stele 965/1006 - Introduction page

In this example, the fact that there are two inscriptions on one stele is a very distinct feature. Other, less prominent features might be its being the second oldest free standing stele in the monastery with a historical inscription, or its being one out of two stones with a historical inscription where author, calligrapher and carver of the text are mentioned.

Probably, the introduction will be developed and extended into a "Stele Background" section later on in the project. It might include information on the research history, describe in more detail the personnel related to the inscription, extensively analyze the content of the text and the occasion for writing it, or provide in-depth discussions of new readings or interpretations in the transcription and translation of the text.

The "Text Comparison Windows"

Background

The main feature of the "Texts" section - and also one of the main features of the whole CD-ROM - is the "Text Comparison Windows". The idea behind is based on the notion that working with an inscription means working with different levels of the same text. These levels differ in their "distance" from the "original inscription". One might say that translating a text means to transform information from "level 1" to "level 2". But it is, of course, not that simple.

The inscription on the stone still extant today may be called the "original text". In the CD-ROM it is called "Photograph". Even this is not as clear as it might seem, as the text was composed by one person, but written by another, and cut into the stone by yet another person. However, as these text versions are no longer available, the physical stone is the basis of our information.

As stones become weathered through the centuries and photographs are often not too clear, a rubbing of the inscription is made. Thus, the second level is called "Rubbing". Basically, the rubbings can be taken as identical copies of the carved characters. However, in some cases it can be very hard to discern the characters and then it is up to the skill of the craftsman who produces the rubbing, what it eventually will show. This especially applies for rock inscriptions.

No matter, how clear the characters are on the stone or the rubbing, the next step in working with the text is the production of a transcription in modern Chinese characters. This level is called "Chinese Text". It contains two sub-groups. The first one is the "Layout Text". It transcribes the text character by character, thereby following the layout of the original text, i.e. in vertical lines. The second sub-group is the "Modern Text". Here the transcribed characters are written left-to-right in horizontal lines. Additionally, this sub-group introduces punctuation, and in some cases the editing of the texts made it necessary to add notes and comments.

The last level is the "Translation" to English itself. It does not follow the inscription word-by-word, i.e. the text is not literally translated. As the Chinese "Modern Text" it uses punctuation, and also provides a full scientific apparatus of notes and comments.

To summarize, the main levels that have been defined while working with the texts are:

1. The original stone (Photograph)
2. The rubbing
3. The transcribed Chinese text
 - a. In the original layout
 - b. In modern text format (with punctuation and notes)
4. The English translation (with punctuation and notes)

The "Text Comparison Windows" is an attempt to visualize these levels on the computer screen. However, yet another issue complicates the matter: The question of how to fit the information on the screen. The main problems involved are text size and text direction.

The 965/1005 stele is almost three meters high. Displaying it in total on the computer screen makes the characters illegible, not to mention the heavily eroded parts to the left where characters are almost indecipherable even on the rubbing. To solve this problem a zoom function was added. However, zooming into an image might require enlarging it, which leads to the problem of text direction. While on the stele the inscription is written vertical, upper right to lower left, the modern transcription and western translation have to be written along horizontal rows, upper left to lower right. An optimal display of both text types is not easy to achieve. My proposal for the CD-ROM that I would like to discuss now therefore makes use of up to four independent windows that are either available embedded into the screen in a fixed arrangement or freely resizable within the screen borders (cf. Figure 4).



Figure 4: Stele 965/1005 - Text Comparison Windows.

Functionality

The individual windows all offer the same functionality, organized into two groups.

The first group changes the text level. It uses text buttons that are always placed below the content. The text levels are "Photo", "Rubbing", "Layout Text", "Modern Text", and "Translation".

The second group is for manipulating the content. It makes use of icons and except for the single window mode it is placed above the content. The available functions are "Zoom In", "Zoom Out", "Move/Scroll", "Highlight on/off", and "Commentary/Punctuation On/Off".

The "Highlight" function enables the user to mark passages in one window with the mouse. A double-click on the selection will force all other windows to "focus" on the marked passage without changing their current text level.

The function "Commentary/Punctuation On/Off" will only be available for the "Modern Text" and "Translation" levels. It does two things: First, it enables/disables the display of the modern punctuation, honorific spaces, line breaks and the highlighting of names, book titles, etc. Second, it enables/disables the critical notes and commentaries. If enabled, characters or phrases in the "Modern Text" where reading variants or explanations exist will be highlighted. If the user points with the mouse to the marked phrase, the notes or commentaries will be displayed in a small pop-up window. Similar, in the "Translation" the footnotes and explanations will also be highlighted.

Next Steps

By now, the basic features and functionality of the CD-ROM have been included into the conceptual structure. However, some special problems should also be paid attention to. One is the handling of the honorific spaces within the texts. As "searching for blanks" is not very common in standard databases this could result in a new –and very Chinese- feature to introduce. Another one is the synchronizing of the windows. This means, after the user has moved around within one window and selected a certain phrase (i.e. in the "Rubbing"), there should be a button available that tells the other windows to also focus on the new selection within their level (i.e. in the "Modern Text" and the "Translation"). Yet another problem still to be solved is the implementing of front- and backsides.

The most prominent upcoming task is the development of a database to handle all the information. The flexibility of this database system will be crucial for all features to be included in the CD-ROM. Websites and CD-ROM's using XML seem to be a solution and as there are a number of systems accessible, e.g. CBETA or the Sheffield Corpus, we hope that we can learn from or even cooperate with these projects.