



**THF Japan Visit  
March 2006**



*The THF core team, consisting of Pimpim de Azevedo (co-director), André Alexander (co-director) and Yutaka Hirako (treasurer and China Program manager) at last fulfilled a special dream to visit Japan together. Sight-seeing highlights included Nikko, Tokyo, Kyoto and Nara. The visit was professional in nature, as we sought to research Japanese conservation technology, in particular regarding the conservation of Buddhist temples. It can be safely said that we found the work done in Japan to be of extremely high standard, perhaps the most sophisticated in the world. It is very fortunate that the Japanese government generously funds conservation projects, and allows for the operation of institutions of experts such as the National Research Institute for Cultural properties, whose many conferences and activities had been well-known to us.*

*We thank Dr. Nobuko INABA for having helped facilitate the visit, as well the parents of Yutaka HIRAKO for having hosted us so well.*

March 7

Visit to National Research Institute for Cultural Properties, Tokyo (hereafter referred to as Tobunken), meeting with director Shigeo AOKI, and attending a special presentation by Dr. Nobuko INABA about the history of Japanese architecture and of architectural conservation in Japan. We also met German intern Ms Sandra Leythaeuser, who helped to coordinate the Japan visit, and conservation specialists Ms Yoko TANIGUCHI (who also helped to coordinate our visit) and Mr. Shin'ichi NISHIYAMA.

Dr. INABA informed us about the origins of Japanese religious architecture, explaining how an indigenous tradition existed side-by-side with foreign (mostly Chinese and Korean) influences. These different traditions were also blended and refined to meet the Japanese taste. There also has been a long tradition of conservation and restoration in Japan, with temples often taken apart and then re-assembled every few hundred years. During the Meiji-era (1868-1912), many temples were modernized during restoration, i.e. traditional materials seen as inferior were replaced with modern materials. Historic buildings were also often extended or otherwise modified. Over the last 30 years however, the general understanding of conservation has changed. It is now the ideal to preserve as much of the authentic fabric as possible, and in some cases during current restoration projects one tries to undo some of the changes to the buildings that resulted from Meiji-era intervention to regain the original condition.

After the lecture, there was a lively discussion and exchange of views and experiences.

March 9

Meeting with Prof. Maeno, head of Japanese ICOMOS, and a group of his students from Tokyo Geidai University for Fine Arts and Music. This was a pleasant evening in an old traditional wooden house near Ueno park which is rented by the university as parts of Prof. Maeno's efforts to preserve the last remaining clusters of traditional Tokyo houses.



*Meeting with Prof. Maeno and some of his students in one of the beautiful old wooden houses Prof. Maeno's initiative saved from demolition.*



*From top left to bottom right:  
Todai-ji Buddha hall;  
the great Buddha image;  
hungry deer eating Yutaka's map of Nara;  
Yutaka, Pimpim and André crawl through a hole in the bottom of one of Todai-ji's large pillars - this is a local custom (mainly practised by children) supposed to bring good luck.*



March 10

Shinkansen to Kyoto, stay in a traditional Ryokan (Japanese Style inn), Kyo-no-machi. In Kyoto we were joined by Sandra who accompanied us for the Kyoto and Nara tour.

Afternoon: visit to Kyoto University, Research Institute for Sustainable Humanosphere, meeting with Prof. Takao ITOH and Dr. Mechthild Mertz. Visit of the Xylarium of the Institute which comprises a complete dendrochronological set of data of East Asian Wood species.

March 11

Move to Nara into a beautiful traditional Ryo-kan with a pleasant garden. We spent the day exploring the temple district of Nara, but almost got lost when a hungry deer ate Yutaka's map of Nara.

In the evening we visited the omizutori fire purification ceremony at Todai-ji in Nara. The great Buddha hall of Todai-ji was built in 751, but twice re-built after burning down, in 1180 and 1709. The 12th century rebuilding introduced a significant new architectural style, the daibutsu-yuu or Big Buddha style. Japanese building historians have identified the original design of the hall, and inside are wooden models showing the original and present designs.



March 12

Visit Kyoto Nightwalk, and Gion quarter and Kiyomizudera temple. The Nightwalk is a festival that takes place every year and has been arranged by the government and local groups. Shops and temples along a designated walking path are open much of the night, and the walk, the parks and temples are beautifully lit for the occasion. There are displays of modern art and traditional crafts. The Nightwalk seemed to be very well received by locals and Japanese and foreign tourists, as we encountered large numbers of people until past midnight.

*Counterclockwise from bottom left:  
Kyoto Nightwalk;  
Fire purification ceremony at Todai-ji - monks run  
across the wooden gallery carrying a burning pine  
tree;  
signs outside a Geisha house at Gion.*





Left (2): architect Mr. Ninomiya and the local project team give THF a tour of the Higashi Hongan-ji project.

Right: on-site project documentation.

March 13

Morning: visit Higashi Hongan-ji restoration project with Mr. Komiya ATSUSHI of the Kyoto Prefectural Board of Education Cultural properties Division.

Higashi Honganji was built in 1895. The restoration is privately-financed by the Hongan-ji temple. The principal architect and supervisor of the project, Akira NINOMIYA (Nikken Sekkei Ltd architectural firm) gave us a detailed tour of the project site and specifically explained the methodology of restoration on site.

We were very impressed by the scope and technical advancement of the project. A large temporal superstructure based on metal scaffolding was erected around the entire building as first step. This structure collects rainwater for use on site and generates solar energy, making the entire project environmentally-friendly. Japanese temples generally consist of an extensive timber frame with very light, non-load-bearing walls. Despite the use of burnt roof tiles, the wet climate makes regular replacement of defect timber elements necessary. This must happen at least every 300 years, in many cases more often than that. In the case of Hongan-ji, substantial rot was discovered underneath the roof tiles, making a partial reconstruction of the timber frame necessary. This was

made possible by placing huge hydraulic supports underneath the main timber frame, making it possible to extract faulty beams and eaves.



Methodology of Japanese temple restoration:

- 1 extensive study of site and of previous restoration reports;
- 2 protection of site by erecting an exterior hull around it - in this case the extra structure is also designed to harvest rain water and conserve energy (right);
- 3 hydraulic lifting machines are used to lift the massive interior timber structure so that individual elements can be replaced (bottom left).

Bottom centre: architect Ninomiya and THF team in the centre of the timber structure supporting the tiled roof structure.



In the past, ceramic roof tiles were made by hand (see documentation above). Because of this, their individual exact weight and size often varied. Since modern times, tiles are produced by machine, so that compression and baking of each tile is optimised. As a result the weight has increased, which can create problems in the timber frame. The site architect balances the extra weight by removing soil that is traditionally placed between timber roof and tiles.



Afternoon: visit to the Gyokurin-ji temple, a branch of Daitoku-ji. Founded in c. 1626, it is a registered cultural property and was presently undergoing restoration. At a total budget of 670 million yen, it was funded 75% by the government. We were guided by Mr. Takuro MORITA from the Kyoto municipal government. In this project, the roof has been dismantled. An earlier restoration project a hundred years ago replaced the original wooden shingles with roof tiles. Now the original condition is to be restored. Here also was a superstructure erected around the temple to shelter it from the elements, but on a more modest scale than at Hongan-ji. The original Gyokurin-ji structure, particularly the roof timber frame, appeared to be a much less sophisticated structure than Hongan-ji, with timber elements placed and replaced somewhat haphazardly over the past 380 years. It was now a challenge for the architect to stabilize and strengthen this structure.

Also visited was an adjacent 17th century teahouse that is now linked with the temple. This teahouse has a very interior decoration, as the smooth interior walls display the forms of plants and leaves embedded in the fine mud-plaster. The teahouse perfectly embodies the Japanese concept of achieving a harmony of man-made structure and nature, which is designed for full appreciation of the beauty of nature.

*Top: the timber structure of Gyokurin-ji has been largely dismantled and is now in the process of re-assembly.*

*Bottom: the path to the teahouse leads through a beautiful and well-preserved traditional Japanese garden.*

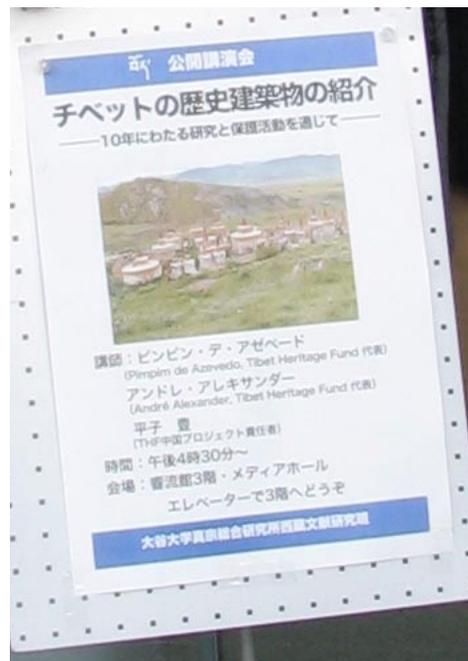
March 14

Morning: visit to Sanjusangen-do Rengeo-in temple, a registered National Treasure. It was established in 1164 and reconstructed after a fire in 1266, but then remained mainly unchanged until the present day despite four important restorations. The building represents traditional Japanese architectural design, and it harbours 1001 wooden images of Kannon, the Buddhist deity of compassion.

Afternoon: THF presentation at Otani University, jointly organized by the Eastern Buddhist Society and the Tibetan Studies Department. Almost 40 people attended, and there was a lively party hosted afterwards for us. We also met professor Kunitaro ONISHI from Kyoto Sangyo University, who has been researching Chinese historic cities with cooperation of Tsinghua University.

March 15

Visit to National Research Institute for Cultural Properties Nara (Nabunken for short), meeting with Prof. Takumi MITSUTANI, expert in dendrochronology. His dating of the central pillar (the so-called life shaft) of the Horyu-ji Goju No To (Five-Story Pagoda) has helped to secure Horyu-ji's reputation as the oldest wooden building in the world, founded in 607. Prof. Mitsutani showed us the very advanced technology for scanning and analysing wood samples at Nabunken, which make it no longer necessary to damage objects to obtain samples for analysis.



Top: Horyu-ji in Nara has been proven to be the world's oldest timber building by Prof. Mitsutani's dendrochronological research. He arrived at a date of the late 6th century for the central pole of the five-storey pagoda. Lhasa's Jokhang temple, according to THF's research, also preserves original timber elements but was only built in 639.

Left: invitation for THF lecture at Otani University.



Afternoon: visit to the Toshodai-ji restoration project, Dr. INABA of Tobunken and Mr. Yoshihiko HAYASHI, Conservation Architect and Head of Construction Site (Member of JACAM, The Japanese Association for Conservation of Architectural Monuments) guided us. Toshodai-ji was originally founded in 759 by the Chinese Buddhist adept Ganjin. This was again an incredibly sophisticated undertaking. The roof timber frame had been completely taken down and was now in the process of re-assembly after faulty elements had been replaced. Elements on which fragments of paintings had been found were treated for cleaning and conservation in a special painting conservation workshop on site. It appears that temples such as Toshodai-ji had originally been completely decorated with paintings on the timber elements, perhaps according to Chinese and Central Asian fashions. Today, only a minority of Japanese temples have retained these colour schemes. The colourless wooden interiors one finds today in historic Japanese temples seem to reflect much more the image of austerity and Spartan disciplined beauty associated with the Japanese ideal of beauty. We also had the opportunity to visit the government-funded restoration of a nearby Shinto shrine, Hikawa Jinjya. This consisted of three modest-scale buildings with traditional tree-skin roofing. We were shown how tree-skin roofing was made, and we even could try ourselves to fix tree-skin shingles with bamboo pins.

March 17 THF presentation at Tobunken, attended by 30 Japanese conservation experts, including Mr Noguchi from UNESCO.

March 19 THF private presentation at Yuisho-ji temple and dinner with old and new friends afterwards. This presentation has been kindly arranged by Mr. Hidekatsu ASADA.

*Clockwise from top left: the Toshodai-ji temple has been completely dismantled and is currently being re-assembled; old and new roof tiles are being used to re-deck the roof - here they are being assembled in the workshop to see how well they fit together; Dr. Inaba and site architect Hayashi explain project details to THF; painting fragments on timber elements are conserved on site.*



*Yutaka HIRAKO's parents invited the THF team for a special visit to Nikko.*



*Yutaka is trying out how to fix tree-skin shingles with bamboo pins at the Hikawa Jinjya Shinto shrine.*