

The Preservation of Traditional Craftsmanships and Skills in Japan in Relation to Architectural Restoration

Like *Denkmäler* in Germany, we have been kept historic buildings within a category of "Important Cultural Property", which are designated by the Government as in Tab. 1, including the oldest wooden structure in the world, Horyu-ji Temple, constructed from the end of 7th Century to the early 8th Century.

The material of Japanese architecture is mostly wood. As they are so precious from the point of the time alone, all the structures before the medieval times have been already designated. Though the number of the designation seems to be rather small compared with foreign countries like Germany, those are, so to speak, the essential part of the heritage and many buildings after 16th century are still out of list (fig. 1, 2).

These structures have been repaired and conserved by the great effort of scholars, administrators, engineers, and by anonymous people namely carpenters and craftsmen even from the ancient time.

Legal Framework and 'Intangible' Property

The framework of the protection of cultural properties is regulated in the Japanese Law for protection of Cultural Properties (enacted in 1950). Cultural properties are classified in buildings, fine and applied arts, historic sites, place of scenic beauty, and natural monuments, etc. Except for such physical properties, respecting the importance of 'intangible' art in tradition, it originally had a category for "Important Intangible Cultural Property", and newly included an article for "Traditional Techniques for Conservation of Cultural Properties".

It is sometimes mentioned and characteristically evaluated that Japanese Protection Law has a seat for such *intangible cultural properties* from its origin, which are categorised into performing arts and crafts techniques. In essence they are the artistry and skills, which possess a high historical or artistic value, of particularly trained people who are embodied in the individual or group of individuals. In this context it could be emphasised that artistry and technical skills are considered and dealt on the same basis, and the objects of designation are men. So, practically we give colloquial title as "Human National Treasures"

to them, and it is very effective to gain popularity. Some famous Kabuki actors are designated in this system.

The national government confers a special grant of 2 million yen a year on each person who has received individual recognition. The government also subsidises some of the costs that groups and local governments have conducted public performances or exhibitions, and for training of others to carry on the traditions. At the National Theater, apprentice programs in traditional performance like Noh, Bunraku, Kabuki are carried out regularly.

As a supplementary policy, the government selects other intangible properties "for which documentation should be done" and makes recording of them by itself, while providing grants for local governments to make it and display them to the public. However, architectural skills or techniques had not been designated as intangible cultural property.

Cultural Properties Conservation Techniques

Revision of the Law in 1975 established a complementary system of designation of traditional skills and techniques especially for the conservation of cultural structures and items. It was also the time in the field of architectural properties to introduce the concept of "Preservation Districts for Group of Historic Buildings" in the Law. It was not necessarily out of consideration so far, but a lot of traditional townscapes had been already destructed through the rapid economic expansion of '60s and '70s. Nevertheless, such an aspect was reflecting a concept in policy to put more importance on human resources and circumstances in restoration and conservation.

The government gives 'recognitions' to the individual practitioners or groups which hold and preserve them, and carries out programs to document them and to train others to carry on the traditions. It also supports the programs conducted by practitioners themselves in order to refine their skills as well as to train successors.

In the field of architectural conservation, certain number of traditional skills and techniques such as roof-tile producing,

Tab. 1. The number of Important Cultural Properties (Buildings) 1995, Agency of Cultural Affairs.

category of structure	ancient -1191 A. D.	medieval 1192-158	premodern 1586-1867	modern time 1868-
religious	67	869	1149	13
castle	0	1	232	0
residential	0	9	687	139
others	14	175	62	118
sum	81	1054	2130	270
				Total: 3535

metal ornament producing, bamboo nail producing, tile roofing, grass or timberboard roofing, painting, plastering, modelling, and other carpentry technique called *kiku-jutsu* are identified. A characteristic might be recognized that producing techniques and even theoretical methods are included in one category.

Kiku-jutsu, or a method for scale and compass, is one of traditional carpentry techniques, which is mainly applied to the arrangement of the rafters at the corner of a roof. By this techniques they make marking on the members in order how to cut them for setting up the structure. A compass is never used practically, but just one *sashigane*, a rectangular shaped metal scale which has two different divisions (one is $1/\sqrt{2}$ of the other) up and down, is very essential to draw solid geometric line on the member in a traditional way.

On the whole, it should be stressed again that the object of recognition is not the skills or techniques themselves but the expert person. In Japan, apprentice system in craftsmanship is, though diminishing, still surviving in small society. But this aspect might symbolize the scarcity of masters, and the recognition by the government could have a character of a title or a decoration to praise them.

However, still the quantity of recognition is not enough, and as we have no official institution exclusively for the training, such efforts are generally dependent on private enterprises at present.

Restoration in practice and the concept of dismantling

A masterplan of architectural restoration, i. e. partial repair, half dismantling (mainly for roof), or total dismantling, is determined according to the deteriorated state of the structure. Therefore, scientific surveys prior to and during a restoration work hold a very important role. They include surveys on damage, dimension, forms and techniques, intervening renovation and modification.

The need for total dismantling derives mainly from the structural condition. But even if the bottom of some pillars are wrecked, traditional techniques without radical dismantling could be applied to repair them. So total dismantling itself is not a single option, but once it used to be a general method and, in a sense, it was inevitable from the point not only of security but of integrity of the timber structure.

At the same time, they learned much from the moment of dismantling, for example, the trace of traditional techniques, deterioration invisible from the surface, re-use and diversion of a member, existence of the site of former structure by the accompanied excavation, etc. Often they discovered new characters drawn by the carpenter. Some had the identification number for the position of the member, which showed a different place in original and it became a evidence of the alteration in the structure. Sometimes the letter showed the date of construction and broke an established theory of dating by the style.

Above all, we could gain the empirical method to represent the original or at least earlier state of the building, by observing every trace marked on members. This would be impossible if it had not been dismantled to every single piece. And needless to say, all the members are utilised as much as possible to assemble the structure again.

We have been recognizing that the restoration of a historic structure is not only for its own's sake but indeed a very precious chance to make the history of an architecture clear. Although not

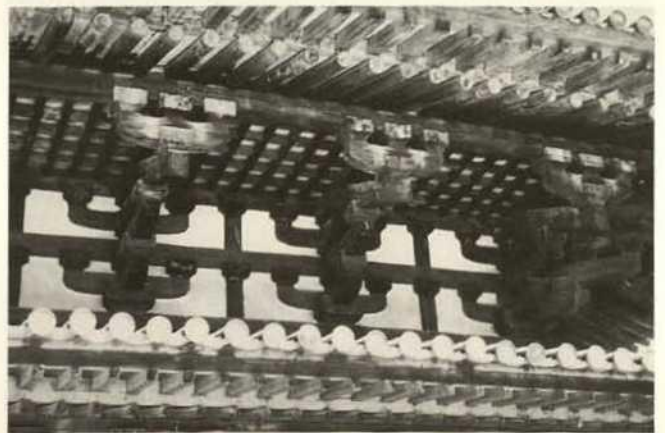


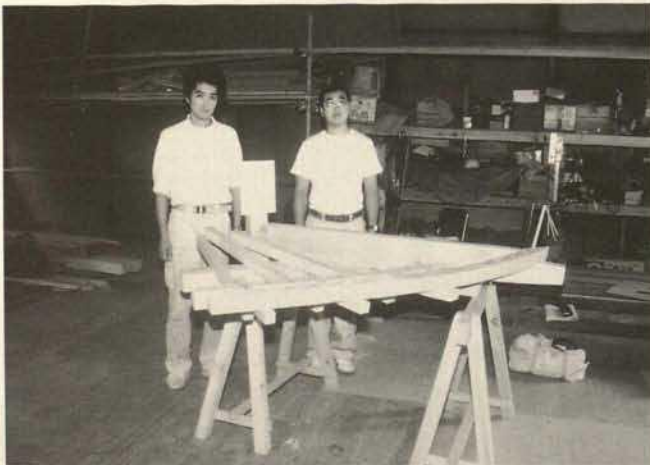
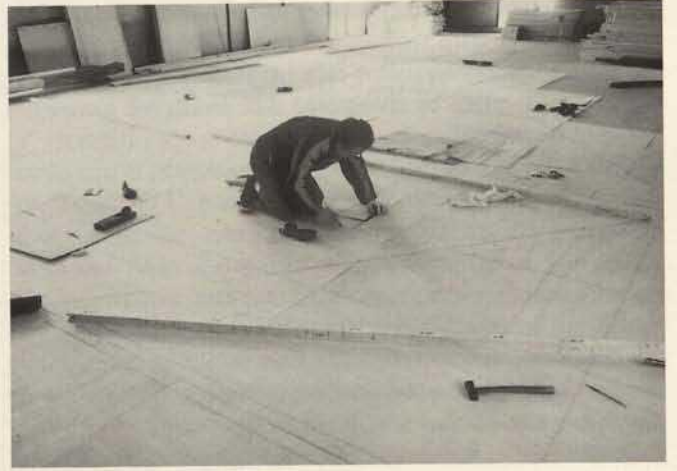
Fig. 1. Three-storeyed Pagoda, Yakushi-ji Temple, Nara (730 A. D.)

necessarily realized in physical form, such an effort of searching its origin is one of the most important process of the restoration. In this context, we should admire that we still keep a faith in the original style and shape of a building, because only the building itself is able to show the will of composer. But practically, it is not necessarily possible to find out complete *originality* in all the structures in restoration. Sometimes we should make compromise in respect of this point, so the question could be: to what extent the reliability in conservation and restoration was accomplished?

It is undoubtedly an honorable character in Japanese way of restoration process that such a precise, integrated report fully illustrated with accurate drawings and a lot of document photographs is published immediately after the completion of every restoration work. The cost of printing is included in the estimate of budget and the results of the survey are thoroughly described

Fig. 2. Three-storeyed Pagoda, Yakushi-ji Temple. Detail





in the report. It is also the place to record replaced parts as well as even unrealised plans of reconstruction. The report can be the essence of the project, and reflects the reliability of the work. Now the number of published reports in almost same form is over 3000.

Conclusion

Like many other countries in the world, the number of skilled craftsmen in Japan is also decreasing due to the modernization of industry and the change of materials. Furthermore, traditional, organic materials necessary for the restoration such as big timber of same species, clay, pigments, thatching grass, etc. are now difficult to obtain. Some techniques are already deserted, but people are eager to represent these techniques for restoration.

It is our great task to pass down such traditional techniques and craftsmanship to the next generation. As for the human resources, the staff of a worksite is consisted of a master architect, assistant(s), and craftsmen. The architect supervises all the work, and the assistants learn his way by making survey together, measurements and drawing. Probably this could be a very good chance for assistants to be the next master, for they do not only learn the method of documentation and recording, but also faithfulness and preciseness from the architect in his work.

Deutsch-japanische Zusammenarbeit auf dem Gebiet der Denkmalpflege

Mit Hilfe eines Forschungsprogramms des Bundesministeriums für Bildung, Forschung, Wissenschaft und Technologie haben sich in den Jahren 1996–98 Denkmalpfleger aus der BRD ausführlich vor Ort über die Arbeitsweise der japanischen Denkmalpflege informiert und im Austausch eine Anzahl japanischer Denkmalpfleger über die Arbeitsweise ihrer deutschen Kollegen. Auf japanischer Seite wurde das Projekt vom Japan Centre for International Cooperation in Conservation am Tokyo National Research Institute of Cultural Properties betreut. Die Ergebnisse dieser Arbeit sind publiziert in:

Siegfried RCT Enders, Niels Gutschow (Hrsg.), HOZON, Architectural und Urban Conservation in Japan. Erhaltung von Bauten und Städten in Japan. Stuttgart, Edition Axel Menges, 1998 (englisch, deutsch, japanisch).

Um die Ergebnisse des Forschungsprojekts in einem größeren Rahmen bekannt zu machen, hatte Siegfried RCT Enders, Landesamt für Denkmalpflege Hessen, für die Messe „denkmal '98“ eine Vortragsveranstaltung zusammengestellt. Vertieft wurde der in diesen Vorträgen vermittelte Eindruck durch einen

The word *tsukuro-i*, a noun form of a generic verb *tsukuro-u* is a good example to show the faithfulness of the traditional carpenters. The word *tsukuro-u* is usually used to mean 'mend', but in the world of traditional carpentry it is used for 'repair'. This word has a connotation of a warm, nostalgic feeling since it often refers to a mother mending her boy's hole in his sock. Although the word has recently become archaic, conservation carpenters still prefer to use the word for the repair of wrecked members. When a building is dismantled for conservation, they examine all the members and carefully 'mend' wrecked ones as much as possible. This sense of repair has been unchanged in history. Thus preservation of traditional craftsmanship in Japan has been basically carried out at actual worksites and workshops.

In practice, conservation of cultural objects is a matter-of-fact indeed, although the term 'culture' often gives a romantic illusion to the people. At the same time, however, it is also true that conservation practice depends simply upon conscience and solemnity of the people.

We are very aware that general situation of the restoration society in Japan is not so optimistic. However, as we have owed much in the faithfulness of craftsmen and carpenters in order to hold the high quality of restoration so far, we should make effort such as training, funding, etc. to support and improve their circumstances. It would also contribute to the reliability of restoration work which should be common in the world.

Messestand mit Bildern und Modellen, der von Christoph Henrichsen aus Andernach, Schreinermeister und Japanologe, aufgebaut worden war. Im Mittelpunkt stand hier die Restaurierung der Tempelhalle Fudō-dō aus dem frühen 14. Jahrhundert, einem Baudenkmal von nationaler Bedeutung. Diese Halle, an deren Restaurierung C. Henrichsen 1995 und 1998 teilgenommen hatte, ist der Verehrung des buddhistischen Gottheit Fudō geweiht. Sie steht auf dem Berg Kōya, einer etwa 80 km südlich von Osaka gelegenen Tempelstadt auf etwa 900 m Höhe. Einen Eindruck von der hohen Qualität japanischen Handwerkstechnik vermittelten die ausgestellten Modelle von Rinden- und Holzschindeldächern und verschiedene Beispiele der berühmten Holzverbindungen zur Reparatur traditioneller Bauten. Der Stand wurde von der Messeleitung wegen der informativen Darstellung eines wenig bekannten Themas prämiert.

Das Forschungsprojekt wurde für die Jahre 1999–2002 verlängert. Die Forschungsthemen sind konstruktive und statische Nachbesserungen an historischen Holzkonstruktionen in Japan und die Nutzungsproblematik bei Kulturdenkmälern in Deutschland. Das Projekt wird von Siegfried RCT Enders, Landesamt für Denkmalpflege Hessen, und Prof. Dr. Hidetoshi Saito, Japan Centre for International Cooperation in Conservation, geleitet.

Fig. 3. Traditional roofing technique *Kokera-buki* (Timberboard Roofing)

Fig. 5. Dismantling in traditional scaffoldings

Fig. 7. Training of craftsmen to make a model of the corner of the roof

Fig. 4. Full-scale drawing at the site

Fig. 6. Dismantled and classified members

Fig. 8. *Tsukuroi* of a beam-end