

Buddhist Buildings in the Horyu-ji Area: Monuments on the World Heritage List

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History

Buddhism was introduced to Japan in the mid-sixth century from China by way of the Korean Peninsula. In the seventh century in the area around Horyu-ji, the Emperor's son and regent Prince Shotoku founded Horyu-ji and Chugu-ji temple. The Imperial Family later founded Horin-ji, dedicated to the recovery of the Prince from illness. After his death, Hokki-ji was founded on the site where the Prince's palace had formerly been located.

Horyu-ji, which Prince Shotoku founded at the beginning of the seventh century, is presumed to have been destroyed by fire in 670. The temple was rebuilt in the new location from the latter half of the seventh century to the beginning of the eighth century. The rebuilt temple is known today as the Horyu-ji *Sai-in*, the west temple.

The other major sub-temple at Horyu-ji is the *Toh-in* the east temple, which was built in the first half of the eighth century at the site of Prince Shotoku's Ikaruga Palace in dedication to the Prince. Besides *Sai-in* and *Toh-in*, there are several monasteries at Horyu-ji.

In ancient times, Horyu-ji received the protection of the Imperial Family because it was revered as the temple which guarded the empire. Moreover, from about the twelfth century people's respect for and belief in Prince Shotoku became very strong, drawing believers to the temple in great numbers, and Horyu-ji began to prosper due to its fame as the temple which had been established by the Prince.

Imperial authorities and successive governments have always offered generous patronage for the maintenance and repair of the temple.

During the Meiji Restoration, which marked the birth of Japan as a modern nation, Shintoism began to rise in influence as a state religion. On the other hand, movements rejecting Buddhism became prevalent as it was regarded as dominating religion of the old political order, and Horyu-ji began to decline as a result of this trend. But the new government, acknowledging the need to protect cultural properties, enacted the Law for the Preservation of Ancient Shrines and Temples in 1897. With this law, the way was opened for the support of scientific investigations and the protection of cultural properties.

Buddhist Buildings in the Horyu-ji Area

For the Buddhist buildings of the Horyu-ji area, the arrangement or composition of buildings in itself has significant historical meaning, and each of the individual buildings displays outstanding architectural style.

In Japan there are twenty-eight historic wooden buildings which were constructed before or during the eighth century. Eleven of these are found in the Horyu-ji area. Of these eleven, the *Kondo* (main hall), *Gojunoto* (five-story pagoda), *Chumon* (inner gate) and *Kairo* (roofed, semi-enclosed corridor) of the Horyu-ji *Sai-in* (west temple) and the *Sanjunoto* (three-story pagoda) of Hokki-ji, which were built from the seventh to the beginning of the eighth centuries, are the world's oldest wooden structures remaining today in their original form.

Sai-in (west temple) : The *Kondo* (main hall) was completed by 680, followed by the *Gojunoto* (five-story pagoda), *Chumon* (inner gate) and *Kairo* (roofed, semi-enclosed corridor). The entire temple was completed by around 710. The pillars of these buildings are characterized by entasis and the bracketing systems are in the shape of a cloud; these details indicate that these buildings belong to a period older than and different from many of the buildings built after the eighth century in terms of both structure and design. The structure and design found in these buildings were developed under the influence of the Chinese culture of the Bai-wei period (sixth century). Among the principal buildings in this precinct, the *Kohdo* (lecture hall) was destroyed by fire in 925 but was rebuilt in 990.

Toh-in (East Temple): The *Toh-in* was built in the first half of the eighth century.

Its main hall, the *Yumedono*, is an octagonal building surrounded by a corridor. Behind the *Yumedono* is the *Denpodo*, a lecture hall, and the priests' living quarters. Buildings other than the *Yumedono* and the *Denpodo* were rebuilt in the thirteenth century during a time when belief in Prince Shotoku was at its height.

At this time the *Raido* (worship hall) was built where the original inner gate stood, and a building to hold the Buddha's ashes (originally in the possession of Prince Shotoku) was built behind the *Yumedono*. This revised arrangement remains today.

The Buddhist buildings in the Horyu-ji area were witness to the close cultural interchange between China and Japan and in East Asia at the time. Moreover, there is no other example in which outstanding wooden structures of different ages beginning with the seventh century and extending to the nineteenth century are concentrated in one area and preserved. It may be said that cultural properties that express the long and rich history of the wooden Buddhist temples of East Asia, as well as the history of the Buddhist religion itself, are gathered here.

Prince Regent Shotoku, who founded the original Horyu-ji, was highly instrumental in the introduction and spread of Buddhism in Japan at that time. Horyu-ji, with its collection of temple buildings which date back to the age when Buddhism was just beginning to flourish in Japan, holds a very important position in the history of Japanese Buddhism.

As examples of the oldest Buddhist structures in Japan, the groups of Buddhist structures in the Horyu-ji area have influenced the development of temples at different ages throughout 1300 years of tradition. They are very important cultural properties in promoting the understanding of the culture of Japan.

The Protection of the Environment

Not only the buildings but also the temple site has been designated by the national government; a total of 48 buildings have been designated as National Treasures or Important Cultural Properties, and the temple site has been designated as a Special Historic Site (14.6 ha) by the national government in accordance with the Law for the Protection of Cultural Properties. Any action which may alter the existing state of the designated place is to be controlled and the permission of the government must be obtained.

The buffer zone surrounding the temple site was designated as a "Conservation District of Historic Natural Features of Ikaruga Town" in accordance with the Law Concerning Special Measures for Preservation of Historic Natural Features in Ancient Cities. It was also designated as an "Ikaruga Scenic Landscape District" by Nara prefecture in the same year, in accordance with the Ordinance of Nara Prefecture Scenic Landscape Preservation, thereby providing for the conservation of the historic natural features and the natural environment of the entire district.

History and Results of Conservation Work on Architectural Monuments in Japan: Horyu-ji Kondo

The Process of Repair Work on Kondo

The conservation work on the buildings in the Horyu-ji temple precinct, which had begun in 1934, was an epoch-making experience in the field of architectural conservation in Japan. The initial focus of the work was the conservation of the mural paintings in the interior of the first story. As a result of this project, in part due to the types of repairs involved, especially repair with dismantling, a major undertaking which could have significant effects on the conservation of the buildings--a comprehensive program of systems and methods of conservation work was established for Japan.

But in 1945, during World War II, with the work on the first story still under way, the upper story and the ceiling of the first story were dismantled as a precaution against possible air attacks on conspicuously tall buildings in this vicinity. After the war, in 1949, the interior, including the mural paintings, suffered damage in an accidental fire; it was decided then to carry out a program of repair which included complete dismantlement, and this repair was completed in 1954. Thus the repair work on the *Kondo*, which had started out as interior work on the mural paintings, in the end turned out to be a major project including repair with complete dismantlement due to the special circumstances of the war and the accidental fire.

***Kaitai Shuri* : Dismantling Repair**

Dismantling repair is one of the common repair methods of architectural monuments in Japan. This method has been used since the beginning of modern scientific conservation work in Japan, which started near the end of the 19th century after the enactment of the first national law. Other types of repair include partial repair in situ, re-roofing, re-painting, etc. Dismantling repair may be undertaken in cases in which there is serious deterioration or distortion of the main structural frame, where the consolidation of joints or replacement of main structural members is required on a large scale.

Because of the principal structural characteristics of Japanese architecture -- (1) the post-and-beam structure without structural walls or bracing, (2) the joint system of mortise and tenon connections without metal fasteners, and (3) the exposed structural frame which is expressed on both the exterior and the interior as the main element of the finished wall composition -- dismantlement is made possible by the nature of the structure itself and is a practical and logical solution to the problem of repair, allowing disassembly and reassembly without any damage to the members. Where the structural frame is seriously distorted, this method is required in order to release the internal torsional forces in the joints and to re-align the structure.

The process of dismantling repair is as follows; (1) number plates are attached to identify the location and orientation of each individual member, and detailed record drawings are made; (2) the sequence of dismantlement is determined and the structural frame is disassembled; (3) the damaged or deteriorated parts are repaired or replaced as required; and (4) the structure is reassembled in reverse sequence. This approach to a historic building could be regarded as one application of the method of *anastylosis*.

Partial Restoration

The Horyu-ji *Kondo* was originally constructed at the end of the 7th century and underwent repairs in the 10th, 12th, 13th, 14th and 17th centuries, could have been proofed through detailed research on traces left on members and archives during the conservation work. There were no major alterations done during these periods of repair, but a number of minor changes had been made. As part of the conservation work it was decided to restore those altered portions to their original condition, i.e. those alterations which had damaged the historic value of the building as a 7th century building. These alterations to the then-existing state were made with the approval of the Council.

The restored portions of the *Kondo* include the following; (1) the styles of the roof tiles and ridge tiles; (2) the roof framing sub-structure; (3) the perimeter of the eave framing; (4) the gable ornament; (5) the eave bracketing system at the corners; (6) the removal of eave-reinforcement supports (with the exception of the decorated corner struts); (7) the design of the balustrade on the upper story; (8) the design of the ornamental metal covers on the rafter ends; (9) the removal of the reinforcement tie beams and braces and the installation of new steel reinforcement members concealed in the roof structure; and (10) the design of the roofing material on the projected shed roofs surrounding the lower portion of the building.

In general, the portions of the building that were restored to their original state were those that had been altered during the 17th century repairs. The restoration design was done after careful research which was dependent on the results of investigations of the remaining traces on all of the wooden members. In the case of the Horyu-ji *Kondo*, the policy of the restoration, to return it to its original state, was decided under the following conditions; (1) the later alterations were limited to minor ornamental design features and had not changed the basic fabric of the building; (2) overall, the original design and materials were in a good state of preservation; (3) there was adequate evidence of most features of the original design to enable accurate restoration without conjecture; and (4) Horyu-ji has outstanding value as a unique example of the Asuka period architecture.

On the other hand, there are portions which were not restored because of a lack of sufficient evidence of the original condition. It is known that the buildings of the Asuka period in general had bird-tail-shaped ornaments on top of the gable ridge ends, and through archaeological excavations parts of such an ornament were found under the ground -- but there was no clear proof that particular ornament had

come from the roof of the *Kondo*, and not enough fragments remained to reconstruct the entire design of the ornament. The restoration of those parts was therefore not carried out, pending future investigation.

Preservation of Material

The original materials were preserved as much as possible, but materials which were the cause of structural problems because of serious deterioration or other damage were replaced. Also, any materials which had been added in previous repairs or alterations were not re-used in the portions of the building which were restored to the original condition.

In the case of the Horyu-ji *Kondo*, the percentage of original members remaining after the conservation work was 50 to 55% on the first story, with approximately 70% on the upper story. Counting the fire-damaged members which were replaced and then put into storage, the percentage of first-story members remaining is approximately 70%. Most of the replaced parts were portions of the eave structure system, particularly bracketing or rafters which had been damaged by the overload stresses resulting from inadequate capacity to support the deep roof overhang -- a structural deficiency inherent in the original building design which had to be corrected later by the addition of corner reinforcement struts. In Horyu-ji, almost all of the members which were not re-used are preserved in a permanent storage facility on site, including the fire-damaged mural paintings and wooden-framing members which are on display.

In general, in conservation work on Japanese architectural monuments involving replacement of original members, most of the replaced parts are those around the exposed perimeter of the roof or near the ground surface where moisture damage is most common; it is not common to replace the structural framework members or other fundamental parts of the building, with the result that most of the important building parts remain as original materials.