

CHARACTERISTICS OF MEDIEVAL BUDDHIST ARCHITECTURE AND CONTEMPORARY CASE STUDY BASED ON MEDIEVAL ARCHITECTURAL PRINCIPLES

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The purpose of this paper is to examine the characteristics of Buddhist temples of the medieval period so called “Kamakura Period 1185-1332”, which represent one of the most prominent styles of Japanese Buddhist temples, with particular emphasis on analysis from perspective of floor plan configuration, elevation and section. In addition, the paper introduces the technical aspects of contemporary Buddhist Temple “Housen-ji Temple” built in 2009, in Tokyo, constructed in imitation of medieval Buddhist temple styles “Chokyu-ji Temple”. This paper seeks to clarify the relationship between medieval and contemporary Buddhist Temple and to elucidate their respective characteristics. The method is to review some papers on the medieval temples and to analyze concrete example of contemporary Temple from the standpoint of design and construction methods. The positioning of medieval wooden Buddhist temples is clarified and analysis of design and construction methods of Contemporary Buddhist Temple inspired by the medieval Buddhist Temple is examined.

Keywords: Religious structures, Historic preservation, Spatial programming, Seismic adaptation, Timber framing.

1 PURPOSE OF THE STUDY

Buddhist architecture represents the principal form of religious architecture in Japan. The architectural prototypes established during the medieval period, particularly the Kamakura period (1185–1332), are regarded as the foundation of Japanese Buddhist architectural style. This study aims to clarify the characteristics of medieval Buddhist architecture and to analyze a contemporary temple constructed based on medieval design principles.

The paper first examines the spatial composition and construction features of representative medieval Buddhist main halls. It then analyzes the architectural planning and construction techniques of Hōsen-ji Temple, a contemporary Buddhist temple modeled after a medieval prototype. By comparing medieval and contemporary examples, this study identifies key issues

related to planning theory, construction methods, and the selective adoption of historical models when designing traditional religious architecture in the present day.

2 RESEARCH METHODOLOGY

To clarify the characteristics of medieval Buddhist architecture, this study conducts a literature review focusing on main halls from the medieval period. The contemporary case study is analyzed based on architectural drawings and interviews with the designer and master carpenter. Similarities and differences between the medieval prototype and the contemporary temple are examined to extract challenges and considerations, from the viewpoints of planning, elevation, construction methods and materials.

3 INTRODUCTION OF BUDDHISM AND OVERVIEW OF BUDDHIST TEMPLES

Buddhism was introduced to Japan from China in 538 CE, accompanied by the construction of temples influenced by Chinese architectural styles. In 607 CE, Hōryū-ji Temple in Nara Prefecture was constructed and remains the world's oldest surviving wooden building, now designated as a World Heritage Site. The basic composition of a Buddhist temple complex consists of the main hall, a pagoda symbolizing the Buddha's relics, and auxiliary structures such as bell towers. Unlike the symmetrical layouts commonly found in Chinese temples, the asymmetrical layout of Hōryū-ji represents a distinctly Japanese spatial form (Fig. 1) (Ohta 2009).



Fig. 1. Hōryū-ji Temple, view and layout.

Among temple buildings, the main hall serves as the central architectural and religious space. In this study, the term “Buddhist architecture” refers specifically to the main hall.

As Buddhism spread throughout Japan, temple construction expanded beyond political centers such as Nara and Kyoto into regional areas. During the Heian period (794–1184), diplomatic relations with China were suspended, leading to the development of a distinctly Japanese architectural style. A notable difference between Japanese and Chinese temples is roof curvature; Japanese roofs exhibit gentler curvature compared to the pronounced curvature of Chinese examples. The roof curvature ratio, defined as the difference between the central roof height and eave height relative to roof length is 5.7% (Fig. 2) (Ohta 2009, Nakagawa 1990).



Fig. 2. Engaku-ji Temple, Chinese style.

4 CHARACTERISTICS OF MEDIEVAL BUDDHIST ARCHITECTURE

During the Kamakura period, the number of Buddhist main halls increased significantly, particularly in regional areas. These buildings were constructed using established traditional techniques and have demonstrated remarkable durability.

A total of seventy-seven Buddhist halls were constructed nationwide during the Kamakura period, including nineteen in Nara Prefecture (Table 1).

Table 1. Number of halls constructed in each period, Source: Fujii 2004.

Period	Asuka ~700	Nara 701~793	Heian 794~1184	Kamamura 1185~1332	Muromachi 1333~1572
Japan	1	8	20	77	190
(Nara Prefect)	(1)	(8)	(3)	(19)	(7)

Compared to earlier periods, medieval Japanese style architecture became the fundamental model for Buddhist temple design (Fujii 2024).

The main characteristics of Japanese style include slender columns, relatively low ceilings, and calm interior spaces influenced by residential architecture. Typical features include wooden doors, horizontal plank walls, elevated floors with surrounding verandas, extensive use of *nageshi* beams for column reinforcement, decorative *kaerumata* brackets (relief brackets carved in a frog-like shape) (Fig. 3 Left), exposed flooring, and *kamebara* earthen platforms finished with white plaster to protect against moisture (Fig. 3 Right) (Sekiguchi 2010).



Fig. 3. *Kaerumata*, frog-like decoration (Left) & *kamebara* (Right).

5 ARCHITECTURAL FEATURES OF CHOKYU-JI TEMPLE MAIN HALL

Chokyu-ji Temple, located in Nara Prefecture, was constructed in 1279. The main hall has a plan measuring five bays by six bays, with a total floor area of 222.53 m² (Figs. 4 and 5). The interior consists of an outer sanctuary and an inner sanctuary, each three bays deep. Architecturally, the building represents an early example of a refined New Japanese style, characterized by exceptional proportions and graceful roof curvature resembling a bird in flight. Roof curvature ratio is 4.3%.

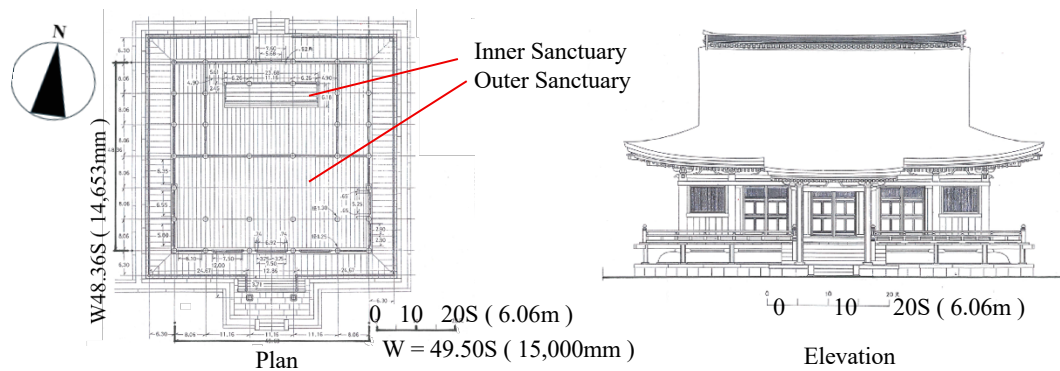


Fig. 4. Chokyu-ji Temple, Plan, Elevation.

Structural features include corner column extension, simplified bracket systems complemented by decorative “*kaerumata*”, and exposed beams and rafters that emphasize structural expression.

The hall served as a prototype for subsequent Buddhist temples, with standardized bay dimensions and the extensive use of Japanese cypress (Shinokura 2018, Suzuki 1988).

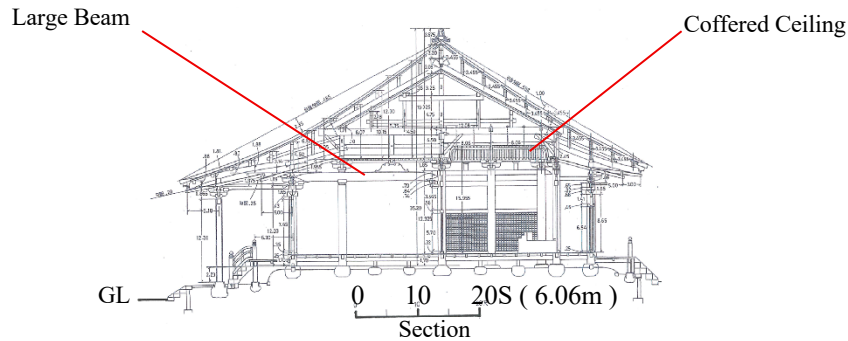


Fig. 5. Chokyu-ji Temple, Section.

6 ARCHITECTURAL FEATURES OF HŌSEN-JI TEMPLE (CONTEMPORARY INTERPRETATION OF MEDIEVAL JAPANESE STYLE)

Hōsen-ji Temple, completed in 2009 in rural agricultural environment in Kanagawa Prefecture, was designed and constructed by Yoshi-sho Architects Co. Ltd. The design explicitly references Chokyu-ji Temple as its architectural model (Figs. 6 and 7).

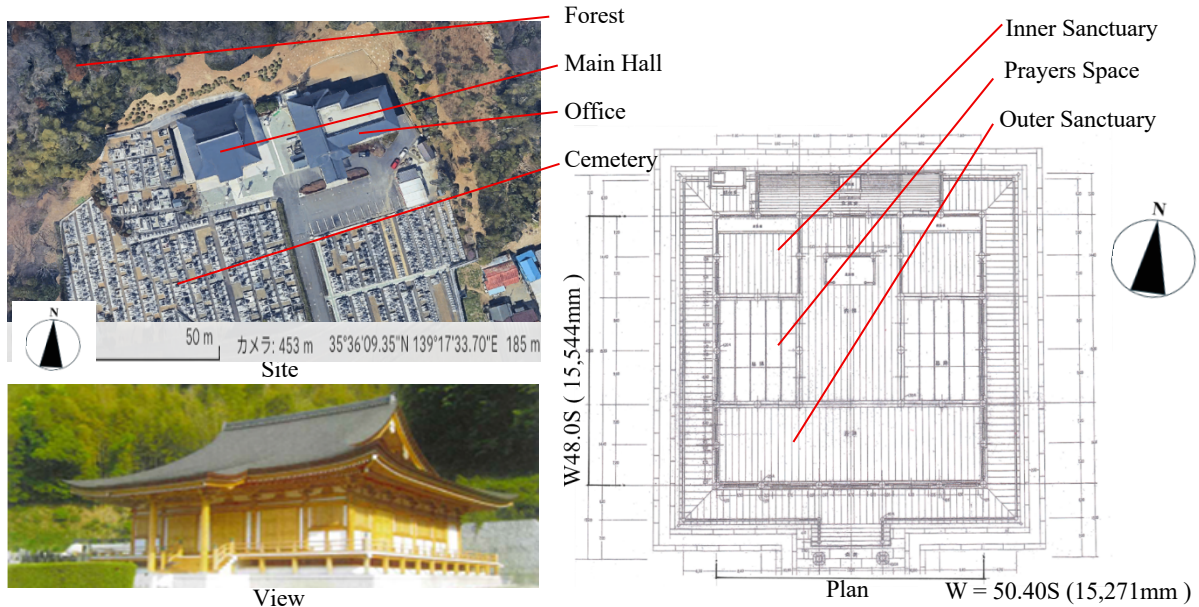


Fig. 6. Hōsen-ji Temple, Site (Satellite image of the study area from Google Earth. Image data: © 2026 Google, Maxar Technologies), View, Plan.

The plan dimensions match those of the medieval prototype, measuring five bays by six bays, with a total floor area of 222.1 m². Differences appear in the internal spatial composition: the inner sanctuary is reduced to accommodate contemporary funeral ceremonies, while the outer sanctuary is expanded for modern use.

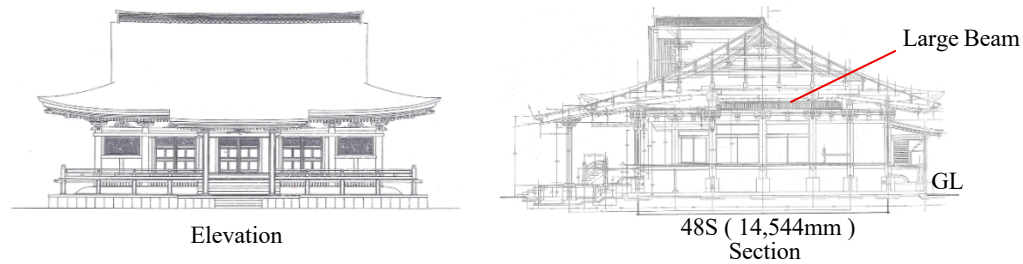


Fig. 7. Hōsen-ji Temple, Elevation, Section.

The elevation follows Japanese style, with a roof curvature ratio of 4.2%, closely matching that of Chokyu-ji Temple. Column diameters, bay spacing, and proportional systems are also comparable. Construction methods differ in that modern roof framing techniques and large laminated beams are employed, while traditional joinery principles are maintained. Structural performance is enhanced through the extensive use of horizontal tie members for seismic resistance.

7 DISCUSSIONS

According to Fujii (2025), Chokyu-ji Temple can be regarded as a prototype of medieval Buddhist architecture. That means an original building influencing constructions of other temples in later period. The Plan and structural system are centered on the inner sanctuary and the outer sanctuary, each consisting of three spans. A surrounding pent-roof aisle encircles the entire core, forming a characteristics spatial and structural configuration. The elevation is highly evaluated as a representative example of the traditional *Wayo* (Japanese style) architectural expression. Hōsen-ji Temple was constructed based on the columns' arrangement and elevation form of Chokyu-ji Temple that is considered a prototype of medieval Buddhist structure.

However, internal spatial planning of Hōsen-ji Temple differs from that of Chokyu-ji Temple. According to the interview with the Master Carpenter, the outer sanctuary was designed with two bays, while the inner sanctuary was expanded to four bays to accommodate contemporary religious functions such as funeral ceremonies. Two of the bays in the inner sanctuary were covered with tatami mats (traditional rice straw-based floor materials, unit size: 1800x900mm). This spatial configuration has been highly appreciated by temple parishioners.

The similarities and differences between Chokyu-ji Temple and Hōsen-ji Temple are summarized in Table 2.

The main similarities include the floor area, bay spacing, elevation (particularly the eave curvature, with both buildings following the *Wayo* (Japanese Style) and column diameter.

In contrast, the principal differences are as follows:

1. Interior spatial composition: In Chokyu-ji, the *naijin* (inner sanctuary) and *gejin* (outer sanctuary) are each separated into three bays. In Hōsen-ji, the *naijin* consists of four bays and the *gejin* of two bays, and a tatami-floored prayers space is arranged within *naijin*. This modification reflects adaptations to contemporary funeral practices.
2. Primary materials: Chokyu-ji primarily uses *hinoki* (Japanese cypress), while Hōsen-ji uses yellow cedar. This change is due to increasing difficulty of sourcing *hinoki* in Japan.
3. Structural system: Chokyu-ji employs a system with beam placed in the attic space. In contrast, Hōsen-ji was structurally designed in line with the current Japanese Building Standard Law, with deep main beams spanning between interior columns and numerous horizontal members installed within walls and attic space to enhance seismic performance.

Table 2. Comparison, Chokyu-ji Temple & Hōsen-ji Temple.

Name	Chokyu-ji Temple Prototype, Medieval Buddhist Temple	Hōsen-ji Temple Revival Modern Temple	Comments
Area	222.53 m ²	222.10 m ²	Same
Plan	5spans(Front) x 6spans(Side) Inner Sanctuary 3spans Outer Sanctuary 3spans Floor: Wood	5spans(Front) x 6spans(Side) Inner Sanctuary 4spans (Including Prayers Space) Outer Sanctuary 2spans Floor: Wood, Tatami mats	The interior layout was modified to accommodate to contemporary funeral practices
Column Spacing	Front 8.4s, 10.8s, 12.0s, 10.8s, 8.4s Side 7.2s, 7.2s, 9.6s, 9.6s, 7.2s, 7.2s S: Shaku (Traditional Japanese unit 1S = 303mm)	Same	Same
Column Diameter	Outer Column 1.3s (394)mm Inner Column 1.25s (379)mm	Outer Column 1.2s (364mm) Inner Column 1.25s (379mm)	Hōsen-ji Temple Outer Column Diameter: 1/10 of Center Span
Timber Member	Hinoki Cypress	Alaska yellow cedar for columns Douglas fir for beams	Limited availability of Hinoki timber
Roof Curvature Index	4.3%	4.2%	Same
Beam System	Main beam spanning above ceiling	Internal main beam height 2.7s (818 mm)	Different framing
Seismic Technologies	No data available	Horizontal members inserted within exterior wall (<i>Nageshi, Koshinuki</i>) Ceiling: Traditional coffered ceiling (<i>Gōtenjō</i>) Roof Space: Continuous <i>nuki</i> (through-ties) and diagonal braces in roof space	Based on seismic design calculations under the current Japanese Building Standards Act

8 CONCLUSIONS

When constructing traditional-style temples today, selecting an appropriate historical model is critical. Key architectural elements such as plan composition, bay spacing, elevations, joinery, and ornamentation should be referenced from historical precedents. At the same time, interior planning and structural systems should respond to contemporary functional requirements and technological standards. This study demonstrates that a balanced integration of historical principles and modern techniques can result in an architecture that respects tradition while meeting present-day needs.

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