



I Architecture at Tōdai-ji

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BUILT to the east of the Nara capital and set apart from the city's daily life by heavy masonry walls, Tōdai-ji was first of all a monastery. It was also a setting for public ceremonies, and those two different functions are reflected in the structural character of the temple's buildings and in their placement as well.

The lay public, composed primarily of court nobles and government officials, approached the monastery from the south—usually on foot but also in ox-drawn carriages. After passing through the towering Great South Gate, they would proceed down the long pathway to the more modest Inner Gate, and then enter a vast open courtyard. There they confronted the Hall of the Great Buddha (J: Daibutsu-den) (fig. 13), at the time the largest man-made structure in the world—its soaring gray tile roofs and cinnabar-red pillars and beams emanating an aura of enormous power and serene confidence. Inside the hall was the statue of Vairocana, symbolic core of the monastery, towering high in the darkened, incense-laden space. The colossal gilt-bronze image, framed by the geometry of great timber pillars and beams, glistened in the flickering light of candles (see fig. 4).

The community of monks lived and worked in much more modest circumstances in Tōdai-ji's northern and eastern sectors. Their austere lives were governed by the tolling of the giant bronze bell that rang out the watches of the day from its building halfway up the eastern hillside. They shared a large communal bathhouse and dining

hall, worked in vegetable gardens, performed daily rituals in votive halls, and gathered for sermons and instruction in the Lecture Hall (J: Kōdō). Their dormitories, barracks-like buildings with tiny individual cells, were linked to the Lecture Hall by covered corridors. To the west of the Daibutsu-den lay a building of utmost importance in their lives, the Ordination Hall (J: Kaidan-in). There, after years of arduous training, they were given formal rites of initiation into the priesthood.

At Tōdai-ji the two ways of life, monastic and secular, were joined together on ceremonial occasions, as when the lay public attended the reading of holy texts like the *Lotus Sutra* in the Sangatsu-dō, or commissioned vegetarian feasts in honor of the monks, or observed memorial services held in founder's halls before portraits of notable monks such as Rōben or Chōgen. On those occasions monks and laymen alike experienced at Todai-ji the unity of art and architecture and faith that is manifest in other great religious monuments—such as Chartres, or St. Peter's in Rome.

Tōdai-ji's sculptors, painters, and artisans produced works of art intended for ritual use. Tōdai-ji's builders planned its votive halls as settings for those rituals, and all were inspired by powerful currents of religious conviction. The works of art in this exhibition convey that spiritual content, but inevitably they have been divorced from the architectural settings that were so important to their function. This essay will introduce the architecture of Tōdai-ji in the hope of enabling the

Figure 13 Facade of Daibutsu-den, Tōdai-ji. Edo period, completed 1707

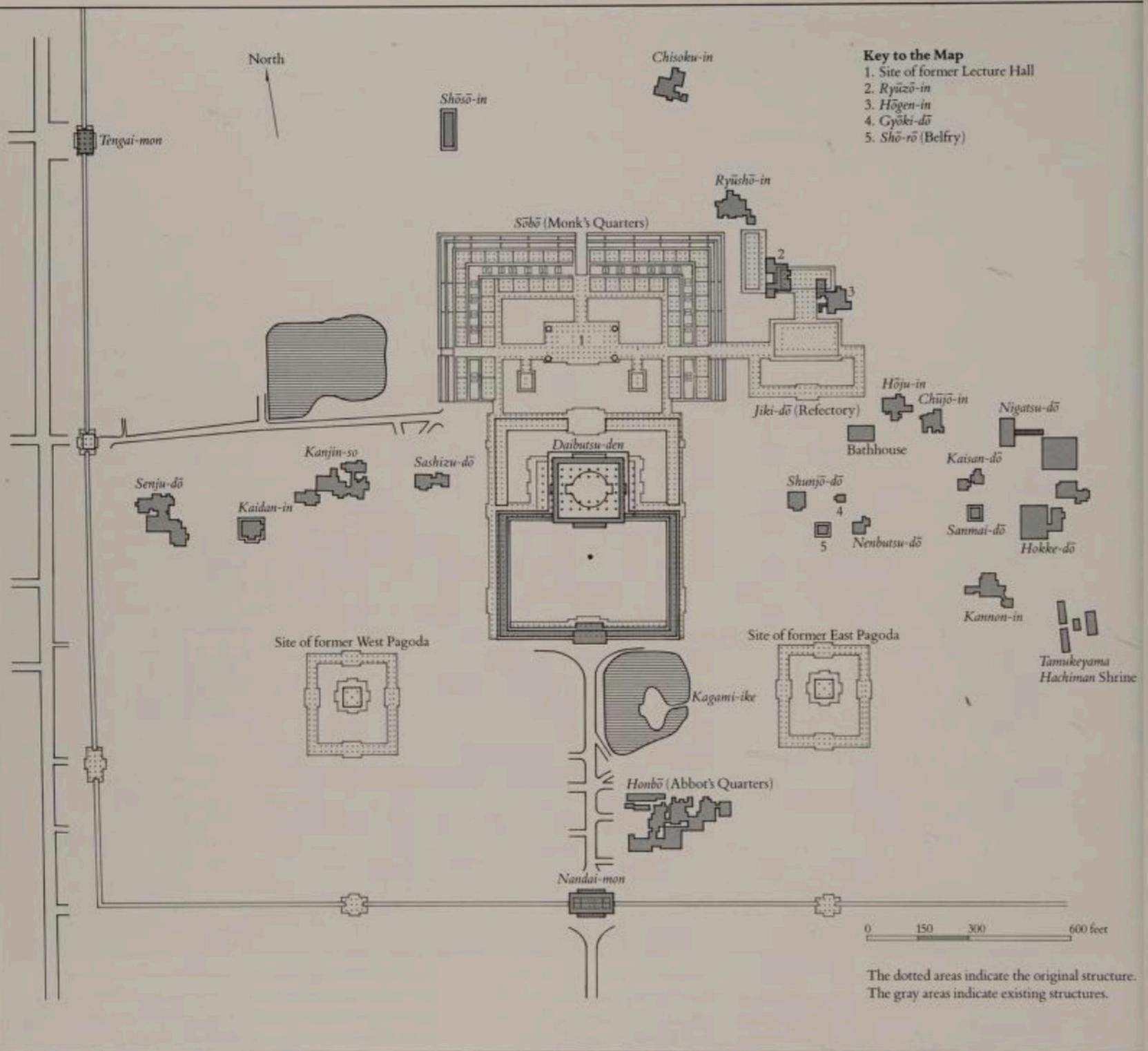


Figure 14 Map of Tōdai-ji complex, showing original and existing structures

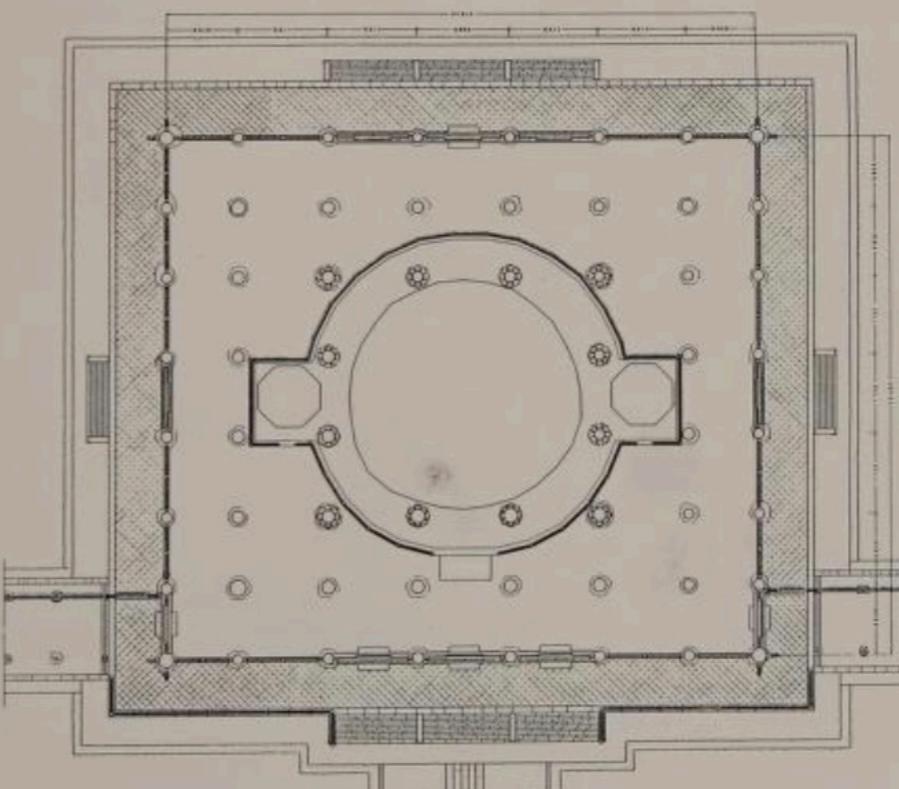
Western viewer to construct a mental setting for the works on display and to understand the myriad ways in which the arts of Tōdai-ji were united by powerful faith.

Organization of the temple site today

Tōdai-ji today still follows the basic plan established at the time of its foundation. Its popular name, literally "Great East Temple," derives from its location on the northeastern side of the city of Nara. The generously scaled site, some 900 meters east-west and approximately 800 meters north-south, is level on the western side but on the east rises 50 meters in a series of terraces up the side of Mt. Wakakusa (fig. 14).

The temple is oriented approximately north-south, its central axis delineated by the main approach avenue running from the Great South Gate (J: Nandai-mon) toward the main precinct 230 meters away. Enclosing the main precinct and separating it from the rest of the temple complex is a covered cloister 110 meters north-south and 170 meters east-west. Entry is via the Inner Gate (J:

Figure 15 Plan of Daibutsu-den after 1973–80 restoration



Chū-mon). The enclosed area is dominated by the Great Buddha Hall (J: Daibutsu-den) set back across an expansive grassed courtyard where, in the fourth month of 752, over ten thousand monks and four thousand performers of court dance and music assembled for the official ceremonies to mark the completion of the primary phase of construction.

As its name implies, the Daibutsu-den houses the principal religious image of Tōdai-ji, the cast-bronze Vairocana Buddha that is called the *Daibutsu*, or Great Buddha. The building is an impressive, almost overwhelming structure, befitting its importance (figs. 1, 3). Reputed to be the largest timber-frame building in the world, the Daibutsu-den is 57 meters wide, 50.5 meters deep, and 49.1 meters in height to the roof ridge. Its form demonstrates general principles of East Asian Buddhist architecture as practiced in Japan. The plan is square, and the structure consists of a timber frame of towering pillars, some nearly 33 meters high, braced by horizontal tie beams (figs. 15–17). This structure of post-and-lintel units creates seven bays on each of the four sides of the building. The frame is set upon a stone-faced podium, much in the manner of the typical Chinese building. From the outside the Daibutsu-den is dominated visually by the upper hip roof, with a second, lower, hip roof over the outer bays of the structure at the first-story level (fig. 16). The interior, however, is a single unified space that rises up to the ceiling suspended from the main roof truss. Both roofs are covered with terra-cotta tiles—gently curved pantiles laid in long rows down the roof surfaces, and semicircular cover tiles that close the gaps between the rows of pantiles. A typical pantile weighs 15.5 kilograms, creating a load on the roofs in excess of 2,000 tons. The weight of the roof tiles and the supporting truss stabilizes the building by anchoring the timber frame to the podium, and by locking together the mortise-and-tenon joints that connect the pillars and beams.

A special feature of East Asian temple architecture is the use of bracket sets that project from the main pillars to support the eaves. It is these bracket arms that allow the bold sweep of the eaves beyond the line of the walls, which gives the buildings their characteristic appearance. The bracket set works on the mechanical principle of the cantilever: the

Figure 16 Elevation of facade of Daibutsu-den after 1973–80 restoration

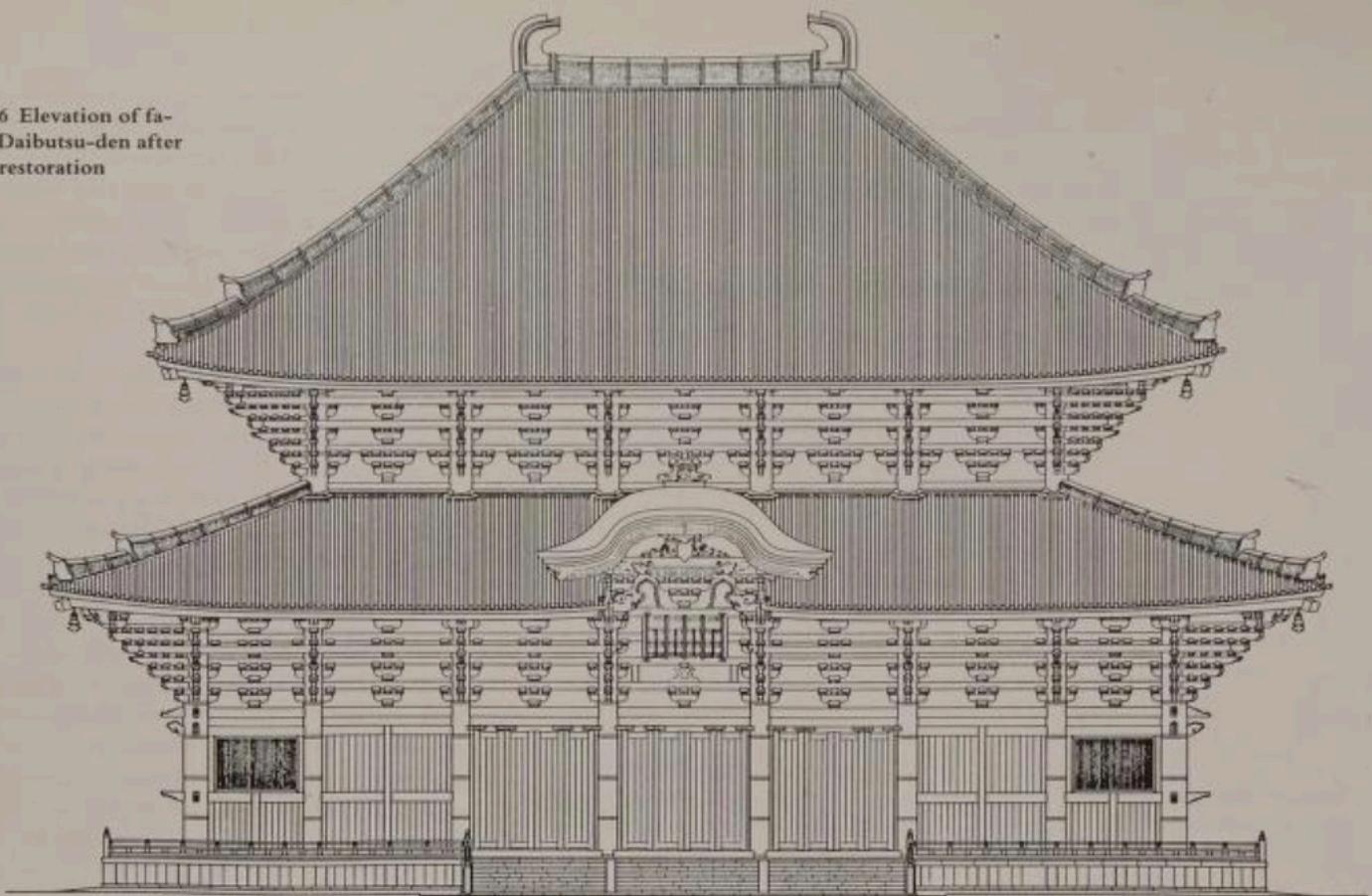


Figure 17 Cross-section of Daibutsu-den after 1973–80 restoration

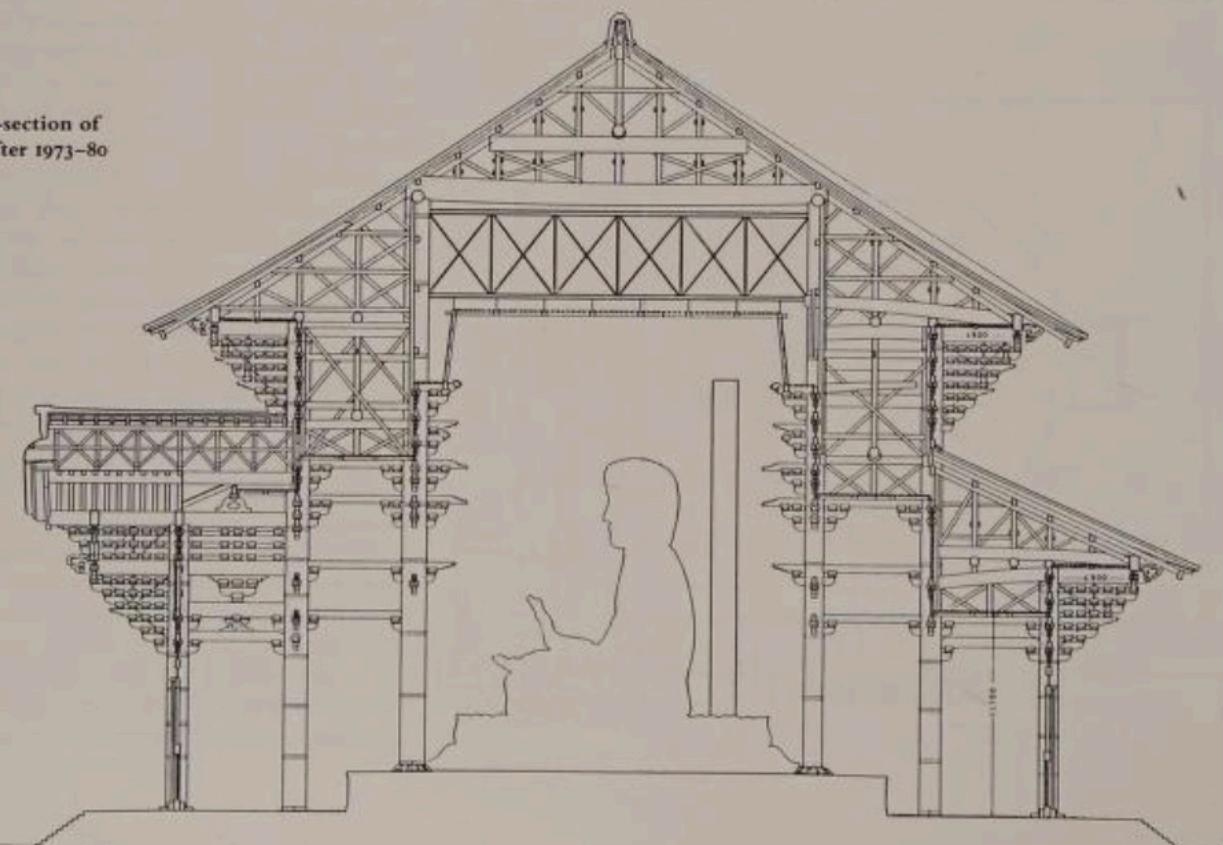


Figure 18 Model of East Pagoda, Tōdai-ji. Built late 8th century, destroyed 1180



inner end of the main bracket arm is secured into position by the load of the roof, which converts across the fulcrum of the pillar into an upward thrust to support the eaves.

Other important parts of the Tōdai-ji complex today include the Ordination Hall (J: Kaidan-in) to the west of the main precinct, and the Nigatsu-dō and Sangatsu-dō (fig. 19), halls for reading sutras in the second and third months of the year, all set into the rising ground of Mt. Wakakusa to the east of the main buildings. To the north is the Shōsō-in, the storehouse holding the household treasures of Emperor Shōmu (fig. 20), and to the south across a mirror-shaped lake are the main administrative offices of the temple, recently constructed in ferroconcrete imitation of timber-frame temple architecture.

The Tōdai-ji site follows general principles of East Asian site planning that were introduced to Japan along with Buddhism and Chinese civilization from the sixth century onward. These principles are also exemplified in the Hōryū-ji temple complex, established in the early seventh century, and in planned capital cities of the age, especially Nara,

on whose eastern edge the new temple took shape. The central concept was a direct correlation between the essential order of the cosmos and visible order in the physical world. This equation was expressed in axiality, hierarchy, and geomancy. Chief among geomantic principles was the notion that good and evil influences operated on places and on the people and activities in them. Good emanated from the south and evil from the north, therefore any building or complex, irrespective of its size or function, should face the felicitous south and be protected on its northern side.

More than a millennium later, evidence of these concepts is still apparent at Tōdai-ji. The gateways establish a hierarchy of spatial values along the main south-north axis of the temple site, with the most important building located on axis but set apart from the rest of the temple complex by an enclosed corridor. The high ground of Mt. Wakakusa to the northeast provides geomantic protection to the entire institution.

Tōdai-ji at the time of Emperor Shōmu

Tōdai-ji has lost most of its original buildings to natural disasters and to the civil wars of the twelfth and sixteenth centuries, but archaeological investigation and early descriptions and maps have established that the present layout of buildings reflects the original eighth-century plan (fig. 14).¹ The site was originally enclosed on the south and west sides by walls, each with three gateways. This was in conformity with Chinese tenets of site planning, but today the walls and all but one of the original Nara-period gateways, the Tegai-mon in the northwest corner, have disappeared.

In the eighth century there were two smaller compounds immediately south of the Daibutsuden precinct. These enclosed a pair of matching seven-story pagodas. The symmetrical east-west placement of a pair of pagodas across the primary south-north axis of the temple was based on customary Chinese temple planning practice at the height of the Tang dynasty in the eighth century.

Each pagoda exceeded 100 meters in height, equivalent to a thirty-story office block today (fig. 18). This places them amongst the tallest wooden structures erected before the invention of steel-frame construction, and demonstrates the sophis-



Figure 19 Exterior of Sangatsu-dō, Tōdai-ji. Mid-8th century

tication of the techniques of timber-frame joinery and flexible frame construction used in Japan in the eighth century. Both pagodas were destroyed, by civil war and fire caused by lightning, but the impressive earth mounds upon which each stood are still clearly visible approximately 100 meters to the southeast and southwest of the main compound.

Tōdai-ji also maintained buildings dedicated to the practical as well as the spiritual life of the temple. Immediately north of the Daibutsu-den were two large dormitories for the monks. The buildings were L-shaped in plan and faced inward to enclose a large courtyard containing the Lecture Hall, where sutras were read and expounded to the monks on special occasions, a bell tower, and a sutra repository. Refectories, bathhouses, and latrines were placed conveniently close to the dormitories on the east.

The eighth-century Daibutsu-den does not survive, but its original form was reconstructed at the turn of this century by the architectural historian Amanuma Shun'ichi, using eighth-century records and archaeological evidence. A model of the original hall, built under Amanuma's supervision, will be included in the Chicago exhibition. Measuring 400 centimeters square, the model is one-fiftieth of the original precinct's size and comprises

not only the Daibutsu-den itself but also the cloister that enclosed it, the covered walkways that linked the hall with the cloister, and the gateways in the cloister walls. It also includes the East and West Pagodas and their own surrounding cloisters.

Amanuma's reconstruction of the eighth-century Daibutsu-den differs from the present-day building in several major ways. Amanuma established that the original Daibutsu-den was over thirty percent wider than today's building; it measured 86.1 meters instead of today's 57.1 meters, and the first-story facade was divided into eleven bays instead of today's seven. The lower roof of the original building was stepped up over the central seven bays of the facade both for visual emphasis and for relief from the sense of massive weight generated by the heavy gray roof tiles.² Amanuma's reconstructed Daibutsu-den is imbued with a much stronger sense of harmonic proportion than is the current building, whose ungainly upper story is but five bays wide in contrast to nine bays in the original.

The most important eighth-century building to survive at Tōdai-ji is the Sangatsu-dō (Third-Month Hall, also known as the Hokke-dō, or Lotus Hall) (fig. 19). As the names imply, it is used for ceremonial readings of the *Lotus Sutra* in the third month of each year. Set some 300 meters east of the main compound on the second terrace up the side of Mt. Wakakusa, the Sangatsu-dō is a much larger building than photographs suggest. It comprises two main parts, an inner hall (J: *hondō*) and an outer hall (J: *raido*) connected directly to it on the south side. The inner hall is five bays square with a pyramid-shaped tiled roof. Its interior space is approximately 25 by 19 meters and is dominated by a podium holding some of the finest sculpture to survive from the Nara period, including the *Fukikenjaku Kannon*. The outer hall, three by five bays, has a gabled roof with hip eaves. This roof abuts awkwardly the pyramidal roof of the inner hall, distorting the symmetrical clarity of its shape. Recent restoration has confirmed that the outer hall was added to the building in 1199,³ possibly to house the congregation for *Lotus Sutra* readings.

There is some controversy about the date of the inner hall. Official temple records state that the Sangatsu-dō was constructed as the main building of a small temple complex, the Konshō-ji, in 733, more than a decade before work began on Tōdai-ji

Figure 20 Exterior of Shōsō-in, Tōdai-ji. Late Nara period, 8th century



(see Introduction, "The founding of Tōdai-ji"). Other records suggest it was built in 746.⁴ Physical evidence, such as the style of some of the roof tiles and some architectural details, hints at a slightly later date. It may be safely assumed that the Sangatsu-dō was built no later than the major part of Tōdai-ji, in the middle decades of the eighth century.

One other important building at Tōdai-ji dates to the eighth century. This is the Shōsō-in, the storehouse constructed to preserve the sumptuous household possessions and art treasures of Emperor Shōmu after his death (fig. 20). The Shōsō-in stands approximately 300 meters north (and slightly west) of the Daibutsu-den. It is built in the style of the ancient log storehouses of Japan's pre-Buddhist age, with a floor raised high above the ground and walls of roughly hewn cypress logs laid horizontally and intersecting at the corners like a log cabin (fig. 21). This building technique, known as *azekura*, was devised to store grain, and even at the height of continental influence it was still considered to produce the most effective environment in which to preserve objects. The natural seasonal expansion and contraction of the cypress timbers made the Shōsō-in airtight during the destructive dampness of summer and permitted ventilation in the dry winter months. Originally

the Shōsō-in comprised two separate square storehouses linked by a common roof, but the space between them was later walled in to increase storage space.

The construction of Tōdai-ji under Emperor Shōmu

The construction of Tōdai-ji was a government project on a scale unparalleled in Japan to that time. It was a tangible affirmation of religious belief as well as a demonstration of the physical resources of the state under Emperor Shōmu. Like the great cathedrals of Europe, however, it was not the exclusive enterprise of a small elite but involved the collective attention, energy, and dedication of an entire community. Begun in 745, the Daibutsu and its hall, though still unfinished, were dedicated in 752. Other buildings, such as the twin pagodas, Lecture Hall, and Ordination Hall, were not finished for several more years. Much of the financing came from the state, but significant public support was also generated by the ardent nationwide fund-raising efforts of the monk Gyōki, who had been appointed chief solicitor for Tōdai-ji. Temple tradition holds that Gyōki elicited contributions of timber for construction from fifty thousand people, received donations of gold coins,



Figure 21 Detail of log-cabin construction technique (J: azekura) used in Shōsō-in

copper goods, and other valuable objects from as many as three hundred and seventy thousand others, and mobilized as many as 1.6 million volunteer laborers over the course of the project.

A vast army of administrators, site supervisors, skilled craftsmen, and laborers thus participated in the construction process, under the superintendence of the Office for the Construction of Tōdai-ji (J: Zō Tōdai-ji Shi), a government department directed by the monk Rōben and high-ranking aristocrats of Shōmu's court. The Office was divided into nine separate departments, each responsible for a different aspect of the project. One department prepared models for the *Daibutsu*, another actually cast and gilded the image. Other departments manufactured the prodigious quantity of tiles necessary to roof the many buildings, or prepared the sacred paintings for the various devotional halls, or copied sutras for the libraries. The Timber-Collection Department dispatched lumbermen west to Arima (near Kobe) for the forty-eight principal pillars of the Daibutsu-den, each 30 meters long and 1.5 meters in diameter. The mountains around Lake Biwa, north of Nara,

provided the subsidiary pillars and other hardwood timber. The Transportation Department floated the timber from mountain forests to collection points along local rivers—particularly the Uji, Iga, and Kizu.⁵ The Building Department prepared and erected the timbers, employing 227 site supervisors, 917 master builders, and 1,483 laborers. At peak periods of construction over a thousand cooks prepared meals for the laborers on site.⁶

Possibly the most arduous aspect of the project is the least obvious to the observer today. The entire site for the temple was hollowed out of the side of Mt. Wakakusa. Starting in 745, half the side of the mountain, over a distance of 700 meters, was excavated to a depth of 10 to 30 meters, transforming the slope into four terraces. The most westerly terrace held the Ordination Hall and West Pagoda. On the second terrace, some ten meters higher and immediately to the east, was the main precinct, containing the Daibutsu-den. Fifteen meters farther up the site, on the third terrace, was the East Pagoda, while on the highest and easternmost level stood the Sangatsu-dō and a number of other buildings. Casual observation of the temple site today gives little indication of how radically the site was remodeled in the eighth century. The original ground level was higher than the first-story roof of the present Daibutsu-den.

The form of the Daibutsu-den was closely determined by its function as a setting for the *Daibutsu*. Neither the Great Buddha nor its Great Hall survives today as initially executed in the eighth century, but it is clear that the sculpture was designed and mostly completed before the building that was to house it. The Daibutsu-den was thus the architectural servant of the sculpture. Its interior was planned around the central bronze figure and even today is dominated by the dais on which it sits. The surrounding bays of the building permit worshippers to view the sculpture from all four sides. Originally the plan was rectangular, with an additional two bays on each side of the main figure for attendant bodhisattva sculptures. In both the original plan and the present-day version, therefore, the interior of the Daibutsu-den was designed to create a centrifugal focus on a sculptural core (fig. 15). This instance of a building designed around a monumental Buddhist figure stands in marked contrast to the classical Mediterranean practice of conceiving the sculptural pro-



Figure 22 Facade of Nandai-mon, Todai-ji. Kamakura period, completed 1195

gram only after the basic design of the temple had been decided upon.

The first reconstruction: Chōgen's rebuilding

Although a typhoon demolished the Great South Gate in 962, Shōmu's temple survived virtually intact until 1180, when much of the southern part of the city of Nara was ravaged by Taira forces fighting the Minamoto clan (see Introduction and no. 28). Most of Tōdai-ji, including the Daibutsuden and its covered cloisters, was razed. Of the Nara-period buildings only the Sangatsu-dō,

Shōsō-in, and some dozen lesser structures, mainly gateways, remained standing.⁷

The following year an imperial proclamation ordered Tōdai-ji rebuilt. But the court's resources were depleted by the rebuilding of Kōfuku-ji, family temple of the all-powerful Fujiwara clan, which had also been destroyed by Taira troops. The rebuilding of Tōdai-ji was financed instead by popular contributions and, after 1185, by the newly victorious Minamoto clan. The public donations were solicited throughout the country by the monk Chōgen, who also directed the reconstruction. Minamoto patronage was motivated by politics as well as piety: their support for Tōdai-ji helped validate the new shogunal government which they founded.

Recasting of the *Daibutsu* began in 1181, and the "eye-opening ceremony" was held in 1185. Reconstruction of the Daibutsu-den was delayed several years by insufficient building materials and money. Strenuous searching by Chōgen finally located trees suitable for the principal pillars in the distant province of Suo (present-day Yamaguchi Prefecture), at the western end of Honshū. In the tenth month of 1187 the lumber, including a beam approximately 39 meters long to be used for the ridgepole, was transported by ship along the inland Sea and local rivers to Nara.⁸ Actual building did not get underway until 1189, when Minamoto sponsorship had been secured, and it drew to completion in 1203.⁹

Reconstruction focused, of course, on rebuilding the Daibutsu-den. Chōgen's plan followed the basic dimensions of the eighth-century building, whose ruined podium was still visible after the fire, but the architectural style was new, based upon forms popular in contemporary southeastern China and much admired by Chōgen. In the later sixteenth century civil war again claimed the Daibutsu-den, but three buildings from Chōgen's reconstruction survive today: the Founder's Hall (J: *Kaisan-dō*), dedicated to the monk Rōben; the outer hall of the Sangatsu-dō; and the Great South Gate (J: *Nandai-mon*). The *Nandai-mon*, at the southern perimeter of the temple complex, was constructed in the same style as the Daibutsu-den (fig. 22).¹⁰ Completed in 1195, it is a massive two-story building five bays wide and two deep. It stands 25.7 meters high and has a frontage 29.7

Figure 23 Cross-section of Nandai-mon

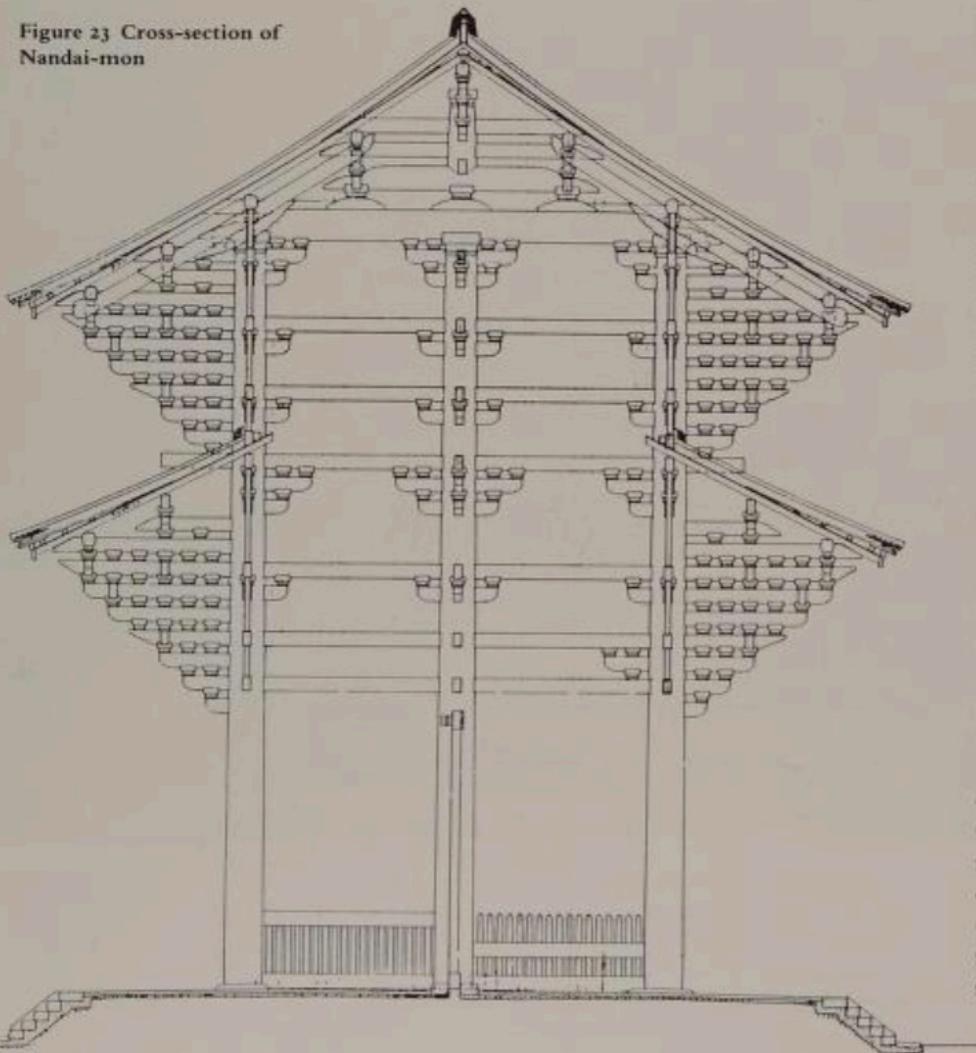


Figure 24 View of Nandai-mon showing bracket sets



meters wide. From the outer bays a pair of guardian deities carved in wood, each over 8 meters tall, glower fiercely over the approach avenue (fig. 32).

Structurally the Great South Gate is radically different from the typical two-story gateways of the Nara period, in which the pillars of the lower and upper floors were separate members. In the Great South Gate three rows of six pillars rise 21 meters through both levels of the structure to support the roof truss (fig. 23). A grid of tie beams penetrates these pillars horizontally for lateral support, the outer ends of the ties forming part of the bracket sets that support the eaves. These are the largest bracket sets on any extant East Asian building. Each set rises through nine tiers of horizontal arms to carry the eaves over five meters beyond the wall plane (fig. 24). Single horizontal ties that run parallel to the walls of the building brace these projecting bracket arms.

The Great South Gate is the best-preserved example of this style, known in Japan as either *Tenjiku-yō* or *Daibutsu-yō*.¹¹ Little evidence of its Chinese antecedents survives in the coastal regions of southern China where Chōgen is said to have visited. In Japan this austere pragmatic form did not endure much beyond Chōgen's lifetime,¹² but it permitted the efficient production of large-scale, sturdy structures at the Tōdai-ji rebuilding.¹³

The Tokugawa reconstruction

In 1567 the Daibutsu-den was again destroyed, this time during civil wars that lasted from the late fifteenth to the early seventeenth century. After the middle of the seventeenth century, when the Tokugawa family had gained control of the country and established itself as the effective government of Japan, state-sponsored construction went mostly to expanding the Tokugawa headquarters city of Edo (present-day Tokyo). Since Tōdai-ji was located neither in the new shogunal capital of Edo nor in the old imperial capital of Kyoto, reconstruction of the Daibutsu-den was not to the immediate political advantage of any of the major forces to emerge from the struggle for supremacy.

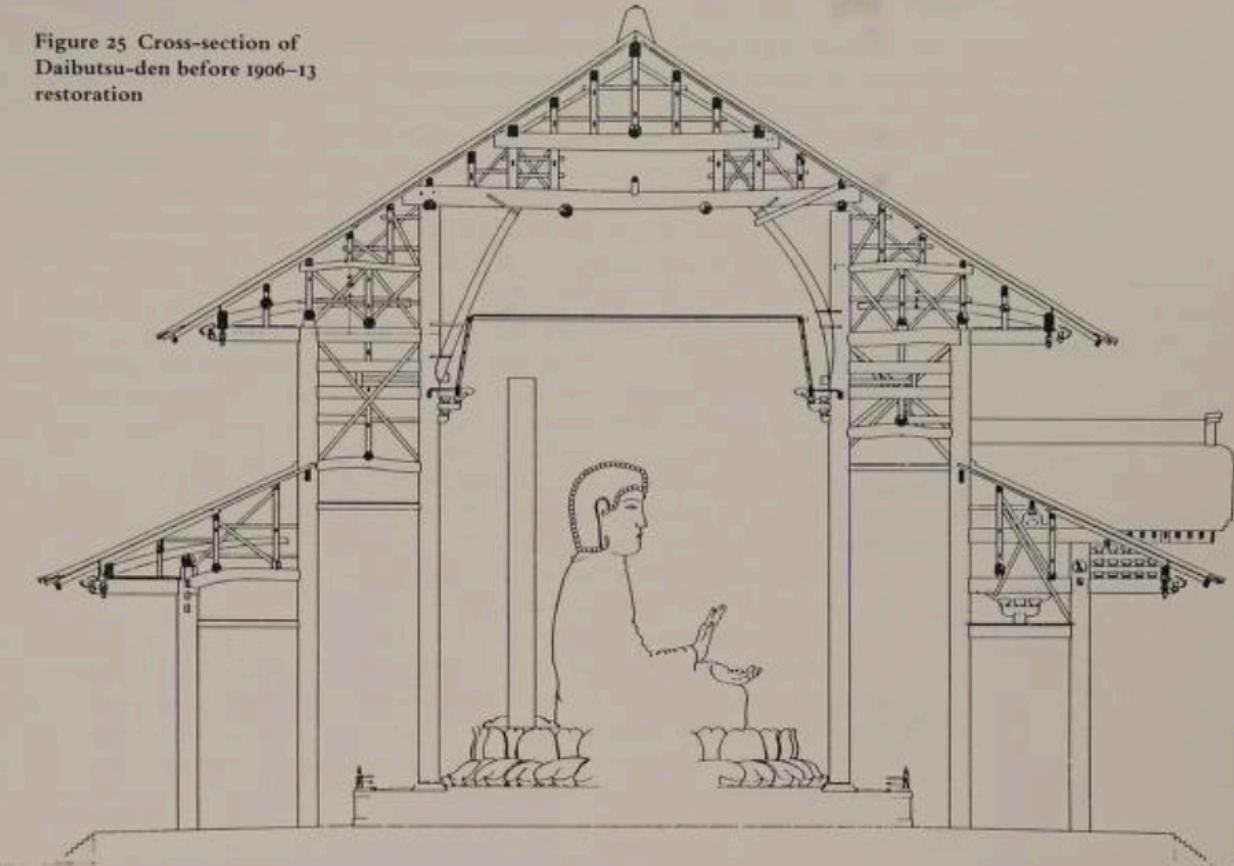
In the decades surrounding the beginning of the eighteenth century, the Daibutsu-den was finally reconstructed as the building that stands on the site

to the present day. Like its two earlier incarnations, this one was brought about by a pious individual who elicited both government and private support. Takamatsuin Kōkei was a monk profoundly moved by the sight of the *Daibutsu* in ruins. He secured the shogunate's support for recasting the statue and rebuilding its hall. Like Gyōki and Chōgen, Kōkei also solicited donations throughout the land (see no. 29). The process of recasting the *Great Buddha* began in 1685 and was completed in 1692. In 1688 plans for the new Daibutsu-den were drawn by master builders of the Nakai family from Kyoto, who had charge of shogunate construction projects in the Kyoto-Osaka area. Their plans maintained the generous size and eleven-by-seven-bay dimensions of the earlier Great Buddha halls. But insufficient funds compelled a reduction of nineteen meters and four bays in the width of the facade despite the shogun's personal donation of one thousand pieces of silver.¹⁴ The building completed in 1707 is as deep as its predecessors and stands 2.8 meters higher than the eighth-century Daibutsu-den, but it is square rather than rectangular, with only seven bays on each side.

Suitable timber for the pillars was hard to come by in a nation seriously depleted of hardwoods after more than a century of energetic castle, palace, and temple building. Timber for the Tokugawa-period Daibutsu-den had to be brought by sea from as far away as the mountains of Hyūga Province (present-day Miyazaki Prefecture) in Kyushu.¹⁵ Even these timbers were too narrow to provide adequate structural support, and the principal pillars had to be girded with thick slats held in place by iron bands.

Although the present building retains something of the flavor of the Chōgen structure, with such features as multiple-tier bracket sets, it also reflects stylistic innovations of the later sixteenth and early seventeenth centuries, particularly in the incorporation of a large cusped gable (J: *karahafu*) into the center of the front facade. This boldly ornamental form had become an almost ubiquitous symbol of authority in the preceding century and was considered an essential addition to the original design of the building. Its use at Tōdai-ji may also have been prompted by its presence on the Great Buddha Hall built in Kyoto by the Toyotomi clan, whose extermination consummated Tokugawa supremacy.

Figure 25 Cross-section of Daibutsu-den before 1906–13 restoration



Recent restorations of the Daibutsu-den

Twice since the end of the nineteenth century the Daibutsu-den has needed repairs, because age and rainwater damage had weakened structural members. Both times, the engineering and other technical problems caused by the scale of the structure challenged modern technology.

Before the restoration of 1906–13 the crucial bracket sets supporting the corners of the roofs had buckled as much as twenty degrees, and the main truss supporting the roof ridge was in danger of collapse. The Daibutsu-den was dismantled completely, structurally weakened members were replaced with new timbers, and steel braces were inserted to strengthen the roof truss. (Compare fig. 17, showing the Daibutsu-den today with its steel bracing, with fig. 25, which shows the structure immediately prior to the 1906–13 restoration.) This bald summary belies the magnitude of the project, which was a remarkable demonstration of newly

acquired Japanese mastery of advanced Western engineering techniques employed to rescue a traditional building. The box trusses that helped support the original roof truss were made of Shelton steel imported from England.

In 1969–70 a detailed investigation revealed that the basic structure of the Daibutsu-den was still sound but that partial repair of the roofs was once again essential. Rain driven by high winds had leaked into the roofs, had washed away most of the mortar that affixed the tiles, and was rotting the supports beneath. Ironically, the problem was caused in part by the decision seventy years earlier to space the rows of roof tiles more widely, in order to promote structural longevity by reducing the weight of the roofs.

The ensuing restoration, which lasted from 1973 to 1980, concentrated on solving the roofing problems. It also took advantage of the partial dismantling to correct the angle of the upper roof, restoring it to the slightly lower pitch that had

been used in the reconstruction completed in 1707. The cost was nearly four billion yen, or close to twenty million dollars. Three billion yen was supplied by the national government, and Nara prefectural and city governments also contributed. Tōdai-ji itself raised 543,934,000 yen toward the cost of the project, much of it from public subscriptions. Approximately 20 percent of the total timber and 59 percent of the roof tiles had to be replaced, amounting to 528,000 cubic meters of wood and 63,595 tiles.¹⁶ The gently concave pantiles, approximately 55 by 47 by 3.5 centimeters, weighed 15.5 kilograms, twice the size and weight of tiles used for other temple buildings. It required much experimentation and meticulous attention to the composition of the clay, shape of each tile, and exact firing temperature to create the new tiles. Roof tiles from various stages of Todai-ji's history are exhibited here (no. 78). Even the great steel-frame canopy that protected the Daibutsu-den during restoration represented a technical triumph, because of the size of the structure it had to enclose. The logistical magnitude and technical complexity of these recent restorations help us to appreciate the accomplishment of the original builders of Tōdai-ji.

Conclusion

Despite numerous physical calamities over the twelve hundred years since its foundation, Tōdai-ji has endured. Like most abiding religious edifices, it stands now as an expression of the faith—and the political exigencies—of successive governments and individuals. The rebuildings shed light on the processes of Japanese history, and have increased rather than diminished the architectural significance of Tōdai-ji. Its present structures exemplify building styles of which almost no other examples survive, and range from the Shōsō-in, whose style antedates the introduction of Buddhism to Japan in the sixth century, to the latest restorations of the Daibutsu-den. Tōdai-ji has thus become a physical record of major styles in Japanese architecture over twelve centuries. In common with many of the great structures of the classical world and medieval Christendom, Tōdai-ji has acquired transcendental meaning and that "lasting presence"¹⁷ which distinguishes the monumental from the momentary.

NOTES

1. See *Nara Rokudai-ji Taikan*, vol. 9; *Tōdai-ji 1*, pp. 11–13. (*Nara Rokudai-ji Taikan*, a multivolume study of the "six great temples of Nara," devotes vols. 9–11 to Tōdai-ji. These volumes are titled *Tōdai-ji 1*, *Tōdai-ji 2*, and *Tōdai-ji 3*, and will be cited hereafter in this abbreviated form.)
2. Suzuki, "Daibutsu-den to Shōwa Daishūri," p. 163. *Tōdai-ji Daibutsu-den Shōwa Daishūri Shūri linkai*, ed., *Kokuhō Tōdai-ji Kondō [Daibutsu-den] Shūri Kōji Hōkokusho*, vol. 1, p. 29.
3. Nara-ken Kyōiku linkai, ed., *Kokuhō Tōdai-ji Hokke-dō Shūri Kōji Hōkokusho*, p. 4.
4. See *Kokuhō Tōdai-ji Hokke-dō Shūri Kōji Hōkokusho*, pp. 1–3.
5. See *Tōdai-ji 1*, app. 6, pp. 1–12.
6. These figures based on Kato, *Nara no Daibutsusama*, pp. 26–27.
7. *Tōdai-ji 1*, pp. 13–14.
8. *Tōdai-ji 1*, p. 14.
9. Tanaka, "Chūsei Shinyōshiki ni okeru Kōzō no Kaikaku ni Kansuru Shiteki Kōsatsu," p. 282.
10. The outer hall of the Sangatsu-dō reveals traces of Chōgen's influence along with attempts to make it harmonize with the form of the earlier inner hall. See Nara-ken Kyōiku linkai, ed., *Kokuhō Tōdai-ji Hokke-dō Shūri Kōji Hōkokusho*. The Founder's Hall had been spared from destruction during the Taira raid, but was rebuilt by Chōgen nevertheless, possibly because it was in disrepair. See Nara-ken Kyōiku linkai, ed., *Kokuhō Tōdai-ji Kaisan-dō Shūri Kōji Hōkokusho*, pp. 1–3.
11. Neither term is particularly germane. *Tenjiku-yō* means "Indian style" and is a term that came into general use in the late nineteenth century in the mistaken belief that the style had some association with India. *Daibutsu-yō*, or "Great Buddha style," has more general currency among present-day scholars, but its referent is a building that no longer exists.
12. In addition to reconstructing Tōdai-ji, Chōgen established seven regional monasteries affiliated with Tōdai-ji. Only one survives, the Jōdo-ji, at Ono in Hyōgo Prefecture, but all these buildings almost certainly echoed the new Tōdai-ji style. See further Tanaka, "Chūsei Shinyōshiki ni okeru Kōzō no Kaikaku ni Kansuru Shiteki Kōsatsu," pp. 282–83. The main hall of Jōdo-ji, the Jōdo-dō, displays a simpler version of the Nandai-mon style, with fewer bracket arms, no exterior lateral bracing, and less ornamentation. See *Tōdai-ji 1*, p. 23.
13. The style used under Chōgen's direction at Tōdai-ji may have been only loosely based on Song Chinese principles. There is no proof that Chōgen had the architectural training necessary to explain technical details of Chinese construction to the Japanese carpenters at Tōdai-ji. Although official Tōdai-ji records mention the presence of as many as seven Chinese artisans at the rebuilding, these were metallurgists employed on the recasting of the *Daibutsu* image, and stone masons who rebuilt its foundations. Tanaka Tan suggests that Chōgen probably first applied his experience with Chinese Buddhist architectural styles at Daigo-ji, near Kyoto, and on Mt. Kōya, several years prior to the Tōdai-ji project. This set the stage for the integration of existing Japanese technology with imported stylistic ideas at Tōdai-ji. See Tanaka, "Chūsei Shinyōshiki ni okeru Kōzō no Kaikaku ni Kansuru Shiteki Kōsatsu," p. 283.
14. Ōta Hirōtarō agrees with Tanaka that the new Tōdai-ji building style was adapted in the light of existing Japanese construction techniques. He also points out that the style was in many ways a logical solution to the problem of large-scale construction. Chōgen was no doubt also aware that the earlier Nandai-mon had been destroyed by a typhoon and was anxious to ensure that his structure did not meet a similar fate. This in itself would account for much of the attention to multiple-level lateral bracing in the present building. See *Tōdai-ji 1*, p. 25.
15. *Tōdai-ji 1*, app. 6, p. 2.
16. Data supplied at *Tōdai-ji Exhibition to Commemorate the Completion of the 1973–1980 Restoration*, Nara National Museum, Nara, September–October, 1980. See also Tokyo Kokuritsu Hakubutsukan, *Tōdai-ji Ten*, pp. 163–70.
17. William J. R. Curtis, "Modern Architecture, Monumentality, and the Meaning of Institutions: A Reflection on Authenticity," in *Monumentality and the City*, The Harvard Architectural Review IV (Cambridge, Mass.: MIT Press, 1984), p. 65.