

KENZŌ TANGE

ARCHITECTURE FOR THE WORLD



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**Edited by Seng Kuan and Yukio Lippit**

**Harvard University Graduate School of Design**

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- 7 FOREWORD  
Mohsen Mostafavi
- 9 INTRODUCTION  
**TANGE KENZŌ AND POSTWAR JAPANESE ARCHITECTURE: AN EXPANDED VIEW**
- 15 THE CORE SYSTEM AND SOCIAL SCALE:  
DESIGN METHODOLOGY AT THE TANGE LABORATORY  
Toyokawa Saikaku
- 29 HIROSHIMA PEACE MEMORIAL COMPLEX  
HIROSHIMA CHILDREN'S LIBRARY
- 47 THE SOCIAL AMBITION OF THE ARCHITECT  
AND THE RISING NATION  
Yatsuka Hajime
- 61 BOSTON HARBOR PROJECT  
TOKYO BAY PLAN
- 81 CONSTRUCTING A METHODICAL SYSTEM:  
THE CASE OF THE KAGAWA PREFECTURAL GOVERNMENT BUILDING  
Fujioka Hiroyasu
- 89 KAGAWA PREFECTURAL GOVERNMENT BUILDING
- 103 THE TANGE-TSUBOI COLLABORATIVE MODEL  
IN STRUCTURAL DESIGN: THE CASE  
OF YOYOGI NATIONAL INDOOR STADIUMS  
Kawaguchi Mamoru
- 114 YOYOGI NATIONAL INDOOR STADIUMS
- 125 UNITY OF THE ARTS AT SÔGESTU KAIKAN  
Seng Kuan
- 143 TANGE KENZŌ'S EARLY PHOTOGRAPHS  
AND THE TRADITION DEBATE  
Yasufumi Nakamori
- 157 TANGE KENZŌ AND INDUSTRIAL DESIGN  
IN POSTWAR JAPAN  
Sarah Teasley
- 177 REREADING URBAN SPACE IN JAPAN  
AT THE CROSSROADS OF WORLD DESIGN  
Ken Tadashi Oshima
- 189 APPENDIX



## FOREWORD

The Graduate School of Design has a long and proud history of association with the Japanese architect Kenzō Tange. The School recently celebrated the twenty-fifth anniversary of the Kenzō Tange Visiting Professorship, which has brought an impressive roster of internationally recognized architects and urbanists to teach at the GSD. This occasion was marked by a major exhibition of Tange's work and a series of events, including a conference from which the chapters for this publication have been drawn.

In many respects Tange, like Le Corbusier before him, defined the idea of the postwar global architect. He was involved with many projects around the world, some designed in response to the devastations of war. The extraordinary Hiroshima Peace Memorial in his own country brought him international recognition. His project, as was true for many of his Metabolist colleagues and followers, was large scale, urban, and more often than not concerned with the rebuilding of cities. His was not an architecture for the fainthearted. Tange's planning and urban design projects, such as the famous Tokyo Bay Plan, were always both absolutely pragmatic and strikingly visionary. They were the result of academic research and investigation, yet were equally mindful of the practical and administrative realities of Japanese society. It is worth noting that both Tange and later, Fumihiko Maki (a graduate of the GSD), continued aspects of this research at Harvard.

Tange's architectural projects, often megastructures, were also urban—not just in the sense of being placed in an urban context but of incorporating and ingesting the city, creating a city within a building. They are high-rise structures that invariably contain many differing functions: hotels, administrative buildings, and commercial facilities. You can literally wander around one of them for days—sleeping, eating, being entertained—without having to set foot outside. They are exemplars of what the historian Reyner Banham called the well-tempered environment. They form an urbanism of pure interiority.

One of my personal favorites of his projects is the Yoyogi National Indoor Stadiums. This mega form, as a building of great beauty but also of technical and structural mastery, demonstrates Tange's capacity to deal with sophisticated structures prior to the use of computers as generators of spatial complexity.

Through both his urban design and architectural projects, Tange was able to influence generations of architects whose work has left an indelible mark on not only Japanese but world architectural culture.

I am grateful to Seng Kuan and Yukio Lippit for their scholarship and guidance in helping to bring this volume together. My sincere thanks extend also to the Tange family for their ongoing support of this project. At a time when there is renewed interest in the activities of the Metabolist group, this careful study of the work of Kenzō Tange that includes his urban, architectural, interior, and collaborative work should have a significant impact on the next generation of design leaders.

Mohsen Mostafavi

Dean and Alexander and Victoria Wiley Professor of Design  
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# TANGE KENZŌ AND POSTWAR JAPANESE ARCHITECTURE: AN EXPANDED VIEW

Seng Kuan and Yukio Lippit

Sixty years ago, the opening of the Hiroshima Peace Memorial Park announced the arrival of Tange Kenzō (1913–2005) as a defining figure of postwar architecture. Centered on an axis connecting the Atomic Bomb Dome at one end and the Corbusian Exhibition Hall at the other, elevated majestically on *pilotis*, the Peace Park defined a previously unseen kind of monumental public space for an aspiring democracy, demonstrating Tange's mastery of complex projects that were simultaneously human and social in scale, based on multiple architectural idioms—but with a clear allegiance to international modernism—and strikingly expressed structures.

A steady stream of iconic buildings, urban designs, and publications followed in the 1950s and 1960s, showcasing Tange's unique architectural and urbanist intelligence, including: the Tokyo Metropolitan Government Building (1958), the Kagawa Prefectural Government Building (1958), the Tokyo Bay Plan (1960), the Yoyogi National Indoor Stadiums (1964), St. Mary's Cathedral (1964), the Yamanashi Press and Broadcasting Center (1966), and the Festival Plaza of Osaka Expo (1970). Not only did these works manifest striking designs and innovative solutions, but many signaled key moments in the evolving cultural psyche of postwar Japan. Just as the Hiroshima Peace Park marked the end of American Occupation and the beginning of Japan's commemoration of World War II, his Yoyogi Stadiums for the 1964 Tokyo Olympic Games symbolized the nation's successful reentry into the international order, while the 1970 Expo Plaza embodied Japan's aspiration to serve as an influential actor in imagining the world to come. A timeline of Japan's postwar trajectory could be tellingly plotted with the achievements of this single figure.

Tange's legacy during these decades is not limited to the architecture that has survived him. The Tange Lab, established with his appointment to the faculty of Tokyo University in 1948, represented a new kind of space for the merging of design and research, generating interdisciplinary study of society as the basis of architectural practice. Students and collaborators involved with the Lab would go on to develop highly influential architectural and discursive practices, including Maki Fumihiko, Isozaki Arata, and Kurokawa Kishō. Tange's influence and mentorship extended well beyond the confines of the Lab or his practice, URTEC, and included most notably the figures associated with Metabolism, as well as other young architects such as Taniguchi Yoshio. Among his close collaborators were the leading struc-

tural engineers, designers, painters, sculptors, writers, and filmmakers of the period, a *dramatis personae* including names such as Isamu Noguchi, Tsuboi Yoshikatsu, Kenmochi Isamu, Okamoto Tarō, Teshigahara Sōfū, and Ishimoto Yasuhiro. Already in the early postwar period Tange had established his reputation internationally, through his participation in CIAM; his central role in the Tokyo World Design Conference of 1960; teaching at MIT (1959); friendship with Walter Gropius and other leading architects; and widely circulated photo books on the Katsura Villa (1960) and Ise Shrines (1965), both published first in English and intended primarily for a foreign audience. These would lead to numerous international awards and major projects of architecture and urban planning in twenty-nine countries and five continents.

Given Tange's status as the most influential and well-known Japanese architect of the twentieth century, it is no surprise that a prodigious amount of commentary has accrued concerning his life and work over the past four decades, culminating in a definitive "official" biography by the architectural historian Fujimori Terunobu (2002).<sup>1</sup> Numerous recent doctoral dissertations in the English-language sphere and special issues of international design journals suggest Tange's continued and perhaps increasing relevance to a new generation of architectural practitioners, critics, and historians.<sup>2</sup>

To propose then, as the present volume does, that Tange's work and legacy is in need of reassessment may well generate surprise and skepticism. Why add an anthology of essays to an already prodigious literature on a canonized figure? And why do so at this time? There are multiple ways of responding to these questions, beginning with the specificity of the present moment. Tange died in 2005, after a remarkably long and productive career, the final years of which included attention to the curation of his own legacy. The passage of time has enabled a much more precise and rigorous assessment of his circumstances and activities—an understanding of Tange as a historical phenomenon. The cataloguing and study of the Tange Archive, housed at the Harvard University Graduate School of Design, will continue to play a major role in this undertaking.

A second factor in the timeliness of a volume of critical essays on Tange relates to the recent resurgence of interest in the Metabolist movement of the 1960s. A major exhibition at the

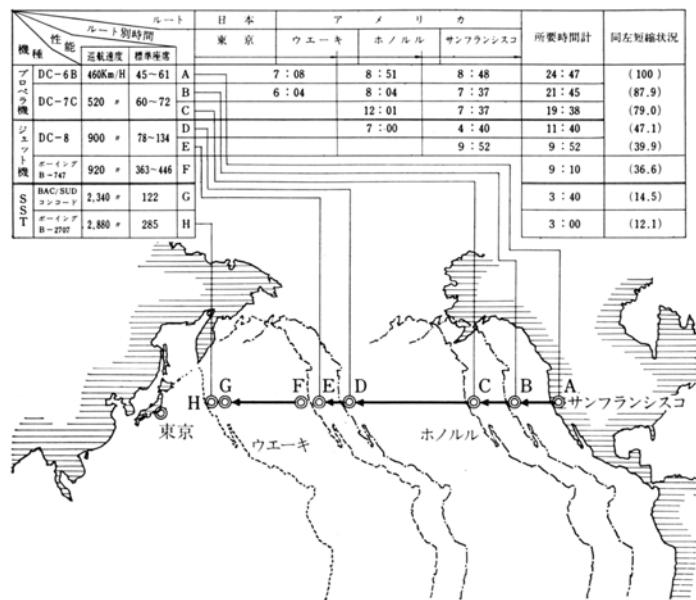


Tur magnatus. Verion  
comnimusam solorat.  
Alignam quatio.



Tange Kenzō with students at the University of Tokyo in the 1960s.

*Tur magnatus. Verion  
commimusam solorat.  
Alignam quatio.*



Mori Art Museum in Tokyo and a series of interviews with surviving members of the Metabolist group edited by Rem Koolhaas and Hans Ulrich Obrist introduced a much broader audience—a younger and increasingly global one—to historical events and ideas now more than a half-century old.<sup>3</sup> Beyond Japan, a new generation of scholarship on the postwar architectural avant-garde (Team 10 and Archigram, for example) has hastened the need to reexamine Tange and modern architecture in Japan in terms of the global confluence and dissemination of ideas. Although Tange was a generation older than the Metabolists and did not participate in their activities, his presence and modes of thought were undeniably the major point of reference for this loose consortium of architects and critics that coalesced at the 1960 World Design Conference. Key concepts in his design work and research agendas of the 1950s, including the concentration of populations in urban cores, expandability, the idea of architecture as a synecdoche of the city, and the conceptualization of cities according stratigraphies of time, movement, and scale, were all developed by Ōtaka Masato, Kikutake Kiyonori, Kawazoe Noboru, Maki, Ekuan Kenji, Awazu Kiyoshi, and Kurokawa, and others in the decade that followed. Yet the reexamination of the Metabolist legacy has in turn raised questions concerning the etiology of their key principles in early postwar Japan and their incubation in Tange's own thinking during the first quarter-century after the war.

A third reason for the urgency of a volume devoted to Tange is the least presentist but perhaps the most powerful. Over the past decade, a happy and remarkable convergence of new research on postwar Japanese architecture from markedly different perspectives has made it possible to pose new questions about Tange and the preconditions of his design. This convergence manifests both the inevitable accumulation of historical recovery and new empirical research, as well as a more textured way of conceiving of architecture as deeply imbricated in the adjacent disciplines of engineering, urban planning, interior and garden design, literature, the visual arts, the social sciences, and popular culture. The newly discovered relevance of many of these dispositions for Tange has made it possible to bring together commentators of different formations to articulate the many ways in which his practice intersected with other spheres of activity in postwar Japan. It has opened up the possibility of a more textured monography for a figure who was defined as much by his Lab, collaborations, and research

agendas as he was by surviving buildings, urban plans, and discursive forays.

The essays collected here manifest the merits of assessing Tange within the expanded purview of this new sensibility, and their dividends can be ordered according to the following rubrics:

*Tange as architect.* The first concerns a reframing of Tange's architectural legacy through a rereading his major works, most notably those put forward before 1970. These works come across as more transitive when assessed against the long-term evolution of Tange's concepts, as done collectively by the authors here. Thus the Monument to the Greater East Asia Co-Prosperity Sphere (1942), the Hiroshima Memorial Peace complex (1949–55), the 1960 Tokyo Bay Plan, and Tōkaidō Megalopolis (1964–70) reflect Tange's long-standing interest in reimagining Japanese urbanism in axial terms, thereby merging processional space with social spectacle, even if the pretext of monumentality in these projects shifted from imperial-colonial ideology to mass commemoration and the championing of the open-ended, linear city. Likewise, a sequence of works from the 1960s encompassing the Dentsū Headquarters, the Tsukiji Plan, and Yamanashi Press and Broadcasting Center all demonstrate Tange's commitment to realizing some of the signature urbanist ideas of Metabolism—namely the core-and-plug-in and city-in-the-sky concepts—in the actual built environment. So too could Sōgetsu Kaikan, the Olympic stadiums at Yoyogi, and the 1970 Osaka Expo Plaza be understood in terms of the shifting focus of Tange's thinking from architecture as structure, material, and design to architecture as the site of events and social interactions.

*Tange as medium.* Tange serves as a subject of inquiry through which to understand larger patterns and concerns related to postwar architecture. By virtue of his centrality to the history of architecture in twentieth-century Japan, he proves to be an effective medium through which to understand other aspects of Japan's modern culture of building, including architectural process, urban planning, structural engineering, the relationship between architecture and the visual arts, and the social networks that subtended architectural design at mid-century. Although Tange remains a fascinating monographic subject with a remarkable record of achievement, it is equally important to understand his value as a platform for addressing larger frames of reference in the historical consideration of architecture.

*Tange as process.* Tange's design process epitomizes the increasing complexity and interdisciplinarity of architectural practice in the postwar world. More important, as all of the chapters in this volume describe, Tange masterfully exploited a dialectic between research and practice. Not one building can be simply understood as a definitive design statement, embodying an iconic form that reflects the personal style of a star architect. Rather, Tange's buildings appear more as episodic crystallizations of longer-term pursuits that were constantly reinforced and reexamined by research. Each of the case studies in this volume implicates a larger project—questions of civic space, structural rationality, spatial economy, unity of the arts, and urban form—that are worked out over a sequence of buildings, culminating at different moments that endow a few select works with timelessness and intellectual clarity. Yet Tange's canonical works should not be viewed as isolated monuments. The diversity of these buildings in form, scale, and type presents a unique challenge to the understanding of Tange's design thinking. Research in Tange's laboratory at Tokyo University, most notably the more quantitatively driven studies of population migration and the economic benefits of urban centralization, was measured by actual design exercises such the series of office buildings in the 1950s and 1960s, including several that manifested the formal characteristics of Metabolism. This type of voluntary work, both within and beyond the academic setting, is a central feature of Tange's design career. This dialogic relationship between design and research also led Tange to engage other disciplines more dynamically, not simply in terms of outsourcing but as related practices whose own integral modes of thinking were taken seriously.

*Tange as network.* Tange was a key part of a wide array of human networks that were crucial to his own architectural activity. The communities that were brought together to enable his design practice were in many ways new to Japanese architecture. They consisted not only of intensive collaborations between architect and engineer, critic, artist, photographer, or designer, but also of classroom-based, professor-led cohorts on the model of the "lab" or "think-tank." Tange was part of avant-garde-style collectives committed to both the pragmatic and provocative pursuit of large-scale urban design problems, as well as overseas matrices of like-minded peers who appreciated the inspiration of far-flung associates in their own and adjacent spheres of activity. These horizontal and vertical associations reflected both the deep structures of Japanese sociality and the newly

global systems of connections that helped direct the evolution of midcentury modernism.

*Tange as modernist.* Tange was the first non-Western architect to have produced works inducted into the canon of modern architecture as being of universal value, not merely regional interest. Contrary to the mainstream commentary, Tange was not really interested in traditionalism, despite his apparently robust participation in the Japanese tradition debates of the 1950s. In fact, a careful parsing of Tange's commentary on traditional Japanese architecture, as well as his own projects, shows how thoroughly he had internalized the conditions of his own time and especially the potential of technology. Japan's geopolitical situation in the early postwar period, emerging from the devastation of World War II and six years of American occupation, led to the cultivation of a cultural and aesthetic discourse that relied on a simplistic notion of tradition.<sup>4</sup> Within the architectural community, this trend was reinforced from overseas by powerful figures such as Arthur Drexler and Walter Gropius who largely inherited a reductive view of historical Japanese architecture and design as proto-modern. As many of the chapters in this volume evince, Tange adopted a nuanced and opportunistic attitude to the issue of tradition in the middle of the 1950s, at the height of the so-called tradition debate. He looked for ways to incorporate aspects of historical Japanese architecture most sympathetic to modernism, sometimes rhetorically and often in collaboration with artists, and at the same time maintained his research on the scale of the modern city, allowing him to be extricated from regionalist marginalia, to be recast as an architect with global aspirations and relevance by the end of the decade.

*Tange as internationalist.* Tange's deep engagement in local networks and domestic debates was conditioned from the outside by his position as a world architect. This volume's subtitle, "Architecture for the World," alludes to the Japanese epithet "sekai no Tange," which can be translated as either "world's Tange" or "Tange for the world" and is often invoked to describe his immense global stature. He came of age at a time when world architecture began to be ensconced in the university curriculum and became a precondition for the imagining of modern Japanese architecture. Precluded from an education abroad by the war, his mentors—Kishida Hideto, Maekawa Kunio, Sakakura Junzō, and Takayama Eika—imposed a resolutely cosmopolitan outlook on design during Tange's formative years. Throughout his

career Tange's most important reference points would remain Rome, Michelangelo, and Le Corbusier; he made his debut as a rising star with the treatise "An Ode to Michelangelo: As Prologue to the Study of Le Corbusier" (1939),<sup>5</sup> while his discursive formation was owed in equal measure to his participation in CIAM, teaching at MIT, and long-standing correspondences with overseas interlocutors as it was to Japanese networks of architects, artists, and critics. Tange submitted an entry to the 1958 international competition for Toronto's new city hall, followed by a proposal for the World Health Organization's headquarters in Geneva a year later, and received his first major victory abroad in 1965 in the form of the opportunity to rebuild the city of Skopje, the capital of modern-day Macedonia. Clearly convinced of the universality of his strategy for Tokyo Bay, Tange applied many of the same design devices in his visions for Skopje and Bologna, two cities with very different historical and geographic contingencies.

The country of Michelangelo in turn embraced Tange, whose interventions can be found in Milan, Bologna, Rome, Naples, and Catania in Sicily. After the oil crisis of 1973, Tange shifted his attention to the Middle East, where he designed the royal palaces of Saudi Arabia, the royal palaces of Jordan, and Syria's presidential palace. In Africa, Tange was responsible for the Nigeria's new federal capital in Abuja. In terms of religious institutions, Tange is best remembered for St. Mary's Cathedral in Tokyo, but he also drew the master plan for the Islamic pilgrimage site of Muna, just outside of Mecca, and Lumbini, a vast ecclesiastic city to mark the Buddha's birthplace. Operating one of the first true global architectural practices, Tange captured his image of the world in the age of jet travel and advanced telecommunications in the diagram "The Shrinking Pacific." Here the distance between Tokyo and San Francisco, a route he knew well, is mapped in terms of time (shrinking) and volume (expanding) enabled by advances in airplane travel. Although it reflects a chronotope widely shared in his time, it also suggests the inadequacy of defining Tange and his work even loosely in regional terms. It is important to recognize Tange's profile as, and aspiration to be, a world architect, primarily because of the potential it holds to further conceptualize the multinodal origins and expressions of architectural modernism.

<sup>1</sup> Tange Kenzō and Fujimori Terunobu, *Tange Kenzō* (Tokyo: Shinkenchikusha, 2002).

<sup>2</sup> The most recent generation of doctoral theses on Tange completed in European languages include Zhongjie Lin, "City as Process: Tange Kenzō and the Japanese Urban Utopias, 1959–70," PhD diss., University of Pennsylvania (2007); Benoît Jacquet, "Places of Immanence: A Reinterpretation of the Origins of Japanese Architecture in Tange Kenzō's Monumental Architecture," PhD diss., Université de Paris 8 (2007); Hyunjung Cho, "Competing Futures: War Narratives in Postwar Japanese Architecture, 1945–70," PhD diss., University of Southern California (2011); Seng Kuan, "Tange Kenzō's Architecture in Three Keys: As Building, as Art, as the City," PhD diss., Harvard University (2011); Ines Tolic, "I Vestiti Nuovi di Una Capitale: La Ricostruzione di Skopje dopo il Terremoto del 26 Luglio 1963," PhD diss., Università IUAV di Venezia (2011).

<sup>3</sup> Rem Koolhaas and Hans Ulrich Obrist, *Project Japan: Metabolism Talks...*, Kayoko Ota with James Westcott, AMO, eds. (Cologne: Taschen, 2011). The catalogue for the fall 2011 exhibition at the Mori Art Museum is published as Maeda Naotake et al., eds., *Metaborizumu no mirai toshi ten: sengo Nihon ima yomegaeru fukkō no yume to bizon* (Tokyo: Mori bijutsukan and Shinkenchikusha, 2011).

<sup>4</sup> One of the most insightful analyses of the tradition debate, highlighting its origins in theoretical anxieties within Japan's artist community in the late 1940s, can be found in Kitazawa Noriaki, "Dentō ronsō: 60 nendai avangyarudo he no airo," in Bijutsu hihyōka renmei ed., *Bijutsu hihyō to sengo bijutsu* (Tokyo: Buryukke, 2007), 103–22. Within the architectural community, this discursive framework was largely instigated by Kawazoe Noboru, then editor of the journal *Shinkenchiku*, who would go on to become a member of the Metabolist group. Writing under the pen name of Iwata Kazuo, Kawazoe was author of the influential article "Tange Kenzō's Japanese Character," which is often seen as the starting point of the tradition debate in architecture: "Tange Kenzō no Nihon-teki seikaku: tokuni raamen kōzō no hatten wo toshite," *Shinkenchiku* (Jan. 1955), 62–9. Kawazoe would subsequently introduce ideological constructs such as the Jōmon/Yoyoi pairing, modeled upon Heinrich Wölfflin's Apollonian/Dionysian dualism, positing Tange against the architect-cum-philosopher Shirai Seiichi (1905–83), an architect of far less importance. See Kawazoe Noboru, "Dentō to minshū no hakken wo mezashite," *Shinkenchiku* (July 1956); and Shirai Seiichi, "Jōmon-teki naru mono: Edogawa shi kyū nirayama tei," *Shinkenchiku* (July 1956).

<sup>5</sup> Tange Kenzō, "Michelangelo no shō: Le Corbusier ron he no josetsu toshite," *Gendai Kenchiku*, no. 7 (Dec. 1939), 36–47.

# THE CORE SYSTEM AND SOCIAL SCALE: DESIGN METHODOLOGY AT THE TANGE LABORATORY

Toyokawa Saikaku

translated by Watanabe Hiroshi

Modern architecture in twentieth-century Japan has typically been portrayed as a confrontation between academism in seismic-technology research and architects who sought to introduce Western designs into the country.<sup>1</sup> Closely tied to Japan's building industry and bureaucracy, members of the former camp devoted themselves to the dissemination of their scholarship, successfully infiltrating every aspect of Japan's built environment. Meanwhile, influenced by the Viennese Secession and critical of the alleged academicism of their opponents, the latter camp imported architectural modernism into Japan. Tange Kenzō's research laboratory, based in the department of architecture at the University of Tokyo, occupied a unique place in this division between engineering-biased academism and design-oriented architects. Situated in the center of Japan's academe, the Tange Laboratory actively promoted urban analysis while organizing one of the top design groups in Japan, producing a large number of young architects such as Kamiya Kōji (b. 1928), Maki Fumihiko (b. 1928), and Isozaki Arata (b. 1931) who would rise to world prominence in their own right. The goals of this essay are to sketch how the Tange Lab contributed to reconciling design and research, art and engineering, and to reenergizing Japanese society after the devastation of war.

## THE ORIGIN OF THE CITY: AXES AND SYMBOLIC SPACES

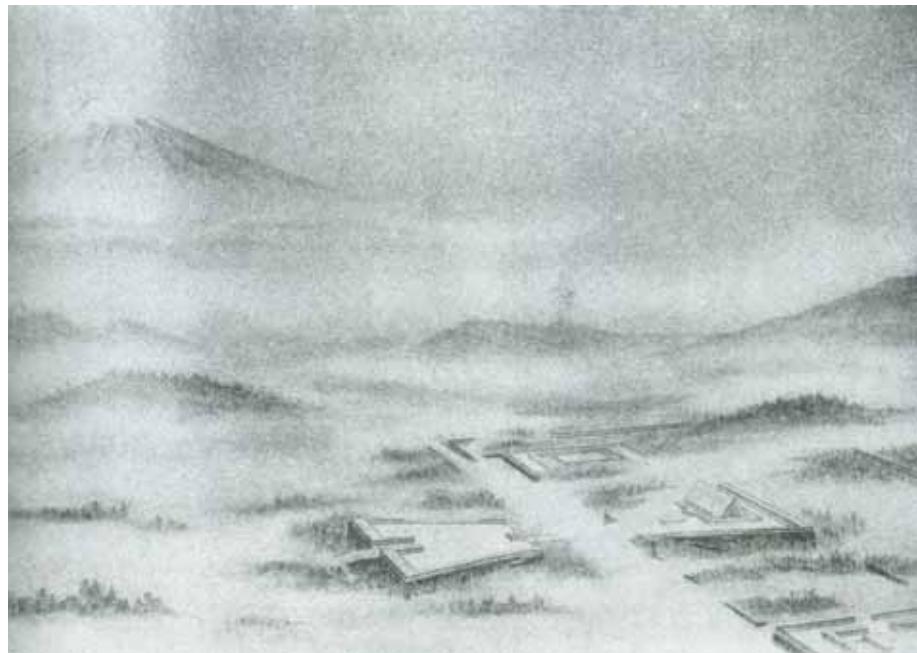
Tange became an assistant professor of architecture at the University of Tokyo in 1948 and was given his own research laboratory. He saw the origins of city planning in ancient Greece, in the building of "a public processional way up to the Acropolis" in the fifth century B.C.; his understanding of ancient city planning can be gleaned from his lecture transcripts. He placed great importance on the processional axis leading to the temples, contrasting with an otherwise confused network of streets where zoning had not yet been adopted. Quoting from an oration by Demosthenes, Tange wrote: "As public men, [our forefathers] gave us buildings and objects of such beauty and grandeur, in the temples which they built and the offerings which they dedicated in them, that no room has been left for any of those that come after to surpass them; while in private life they were so modest."<sup>2</sup>

During his first year in graduate school, in September 1942, Tange won a national design competition organized by the Architectural Institute of Japan entitled "A Building Project to

Commemorate the Establishment of the Greater East Asia Co-prosperity Sphere." His scheme was an expression of his idea that city planning starts with the development of not houses, but temples and axes. On a basic level, Tange's entry can be summarized as a project to build a Greater East Asia Highway linking the Imperial Palace in central Tokyo with Mount Fuji, located more than 100 kilometers to its west, and to construct a sacred precinct commemorating the Greater East Asia Co-prosperity Sphere at the base of Mount Fuji. The spirits enshrined at this facility were of those who lost their lives during the war against the United States, Tange's classmates among them. The plaza at the center of Tange's design was therefore not merely a monumental expression of state power but also a participatory space open to the broader citizenry.

In explaining the design, Tange examined monumental buildings of the West—the Pyramids, Gothic cathedrals, and skyscrapers—and criticized skyscrapers that with their volume and height overwhelm observers and serve as symbols of "plutocratic world domination." He stated that only the architecture of Japan, destined to take a leading part in world history, could defeat it, and that he would aim for a spirit of "integration of nature and construction," that is, the reconciliation of the environment and architecture.<sup>3</sup>

Three features distinguished Tange's scheme: 1) an expressway running east to west, linking the Imperial Palace and Mount Fuji; 2) a shrine and a plaza set at right angles to that expressway; and 3) the formal aspects of the building structures. The first feature can be considered a conflation of the Eastern idea of an ideal topography corresponding to the four cardinal directions of the Daoist gods and the Western idea of the Pan-Athenaic Procession. With respect to the second feature, the shrine and plaza are arranged on a north-south axis on both sides of the expressway and reference the relationship between the Basilica of St. Peter's and its oval piazza and Le Corbusier's scheme for the Palace of the Soviets. The buildings, however, are intended to enhance the Imperial Palace and Mount Fuji, which remain the integral elements of this project, and to harmonize them with the broader environmental context. In this way, Tange attempted to go beyond the objectives of Western monuments. With respect to the third feature, Tange enlarged the Ise Shrine, seen as a prototype for traditional Japanese houses, to the extraordinary height of 60 meters, confounding the sense of architectural

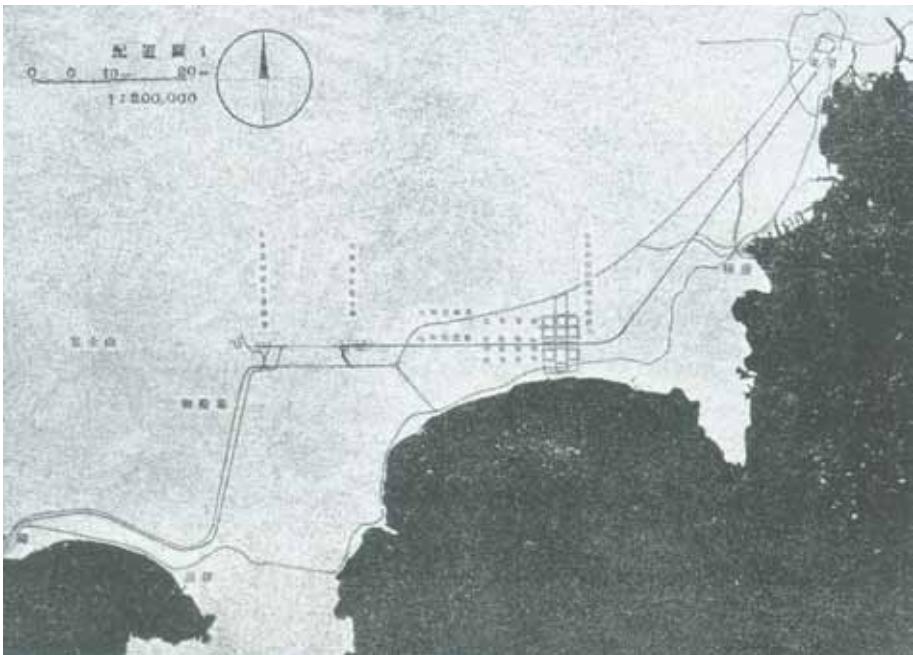


Tange Kenzō, competition scheme for Monument to the Greater East Asia Co-Prosperity Sphere, 1942.

scale. His idea echoes architectural historian Wilhelm Worringer's contention that a Gothic cathedral and the small tabernacle installed inside the cathedral that contains the reserved sacrament are equally sacred and thus result in a loss of scale,<sup>4</sup> and the argument of John Summerson, who saw in a small house shape depicted in a mural a church-like solemnity.<sup>5</sup> In these three features we find evidence of Tange's familiarity with architectural and urban histories of the West and his intent to engage various aspects of them through an Eastern approach.

In the aftermath of the atomic bombing of Hiroshima in August 1945, Tange, accompanied by two of the earliest members of the Tange Lab, Asada Takashi and Ōtani Sachio, embarked on a plan to rebuild the city. A design competition for a peace park and a memorial hall was announced, and a budget allocated. Taking advantage of the city-planning perspective that he had developed in formulating the reconstruction plan, Tange established an axis pointing toward the Atomic Bomb Dome, a neoclassical building made of reinforced concrete and located at ground zero that had miraculously survived. Placed as a counterpoint to the dome is an ensemble of modern buildings arranged in a straight line, perpendicular to the primary axis of the monumental space.

The scheme submitted by Tange and his collaborators won the competition. In several important ways this scheme closely resembles the prewar competition scheme for the Greater East Asia Co-prosperity Sphere Monument. In both cases, the program was to create a memorial space by establishing an axis leading to a symbol—Mount Fuji in one case and the Atomic Bomb Dome in the other—and juxtaposing two different formal arrangements. In the postwar scheme for Hiroshima, however, Tange's group changed the focal point of the architectural design from a large roof to Corbusian *pilotis* and endowed it with a grand scale—"social scale" in Tange's parlance, 10.514 meters wide and 6.498 meters high—befitting the gateway to a memorial facility anticipating as many as 20,000 visitors at a time.



Tange touched on the major difference between his sense of scale and that of Walter Gropius. He was invited to CIAM 8, held in the town of Hoddesdon outside of London in 1951, with "The Heart of the City" as its theme, to present the proposal for the Hiroshima Peace Memorial Park. He stopped in Rome before going to London and was deeply impressed by the "divine scale"

he saw in the ruins of ancient Rome. When he mentioned this to Gropius, the latter replied that “modern architecture must be built according to a human scale.” Tange had already interpreted the “divine scale” in ancient Rome as the scale for contemporary mass society and sought to achieve continuity with the “human scale” described by Gropius through the application of Le Corbusier’s modulor.<sup>6</sup> On his return to Japan, Tange visited the construction site in Hiroshima, which appeared to validate of his own premonitions in terms of scale.

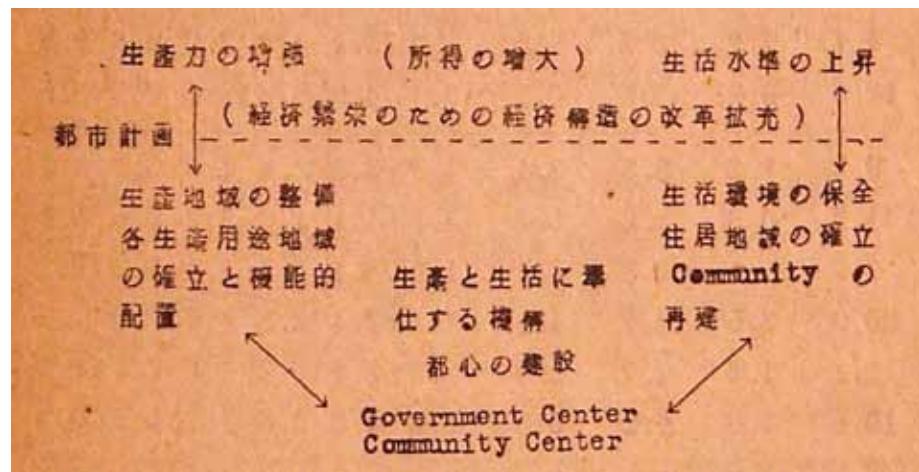
#### CITY PLANNING: POSTWAR RECONSTRUCTION AND THE ANALYSIS OF PRODUCTIVITY, POPULATION MOVEMENTS, AND THE URBAN CORE

In the period encompassing the war years, Tange, together with Asada Takashi, spearheaded the study of population movements and the effect they had on regional structure and economic activity. This interest originated in the division of labor between Tange and his superior, Takayama Eika (1910–99), who was first Tange’s graduate advisor and then his senior colleague. In the 1930s, Takayama contributed to planning efforts in Japan’s colonial territories in continental Asia, such as the master plan of Datong (1938), already pushing the limits of idealized city arrangements in terms of spatial relations between metropolitan centers and satellite towns. These experiments led Takayama to pursue three key themes of urban planning in the age of total war: density, land use, and movement.<sup>7</sup> He assigned the first two themes to himself, and to Tange the third.

Tange sought to base his analysis of population movements in the research results of the National Planning Board, administered then under the National Mobilization Law. At the time, members of the Planning Board were well aware of the theory of migration proposed by the German-British geographer Ernst Georg Ravenstein (1834–1913). Ravenstein is known for his analysis of migration from Ireland to London based on places of birth and residence recorded in the national census; from this he derived a “gravity model”—a function of the inverse of the square of the distance between two locations. According to Ravenstein’s model, migration plays a critical role in economic development and the pursuit of affluence. The Planning Board based its public works investment decisions in terms of the population distribution necessary for winning the war.

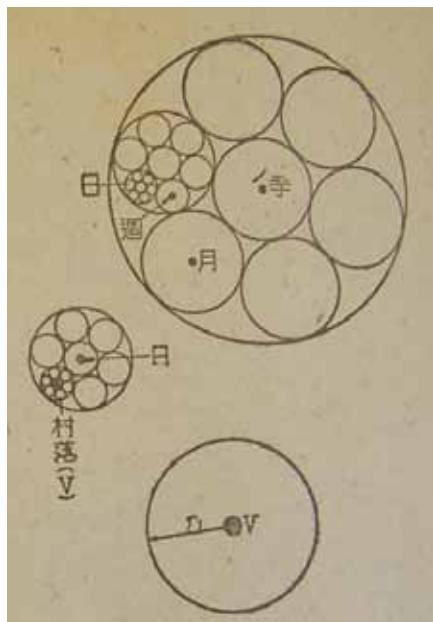


Hiroshima Peace  
Memorial, Exhibition Hall,  
photo taken on inaugura-  
tion day on August 6,  
1955. Crop lines marked  
in red by Tange Kenzō.



Ōtani Sachio, diagram of Tange Lab's Wakkanai's master plan illustrating relationship of the civic center to regional economy and quality of life.

Ishikawa Hideaki, diagram of "Sphere of Life," a regional urban structure rationalized as a hierarchy of season, month, week, and day.



Simultaneous to the Planning Board's reliance on Ravenstein's migration theory was Tange's own attraction to the work of Colin Clark, a British-Australian economist who emphasized the necessary transition from primary to tertiary industries in fostering economic development. Changes to the structure of economic productivity are indeed a key indicator of population movement. This view is also fundamental to Tange's development of a comprehensive system of urban planning techniques. Together with Asada Takashi, Tange employed complex algebra, such as the Cobb-Douglas function, to measure the efficiency of capital and labor investment in increasing economic productivity. These findings were subsequently spatialized in terms of Japan's geography.

The technique of urban analysis employed by the Tange Lab was out of the mainstream in Japan at the time. Active in both the wartime and early postwar periods, the dominant figure in Japanese urban planning was Ishikawa Hideaki (1893–1955) of the Tokyo Metropolitan Urban Planning Bureau, championing the strain of Ebenezer Howard's Garden City movement that sought to counter the high concentration of population in large cities. Ishikawa's argument came down to a "sphere of life" concept of maintaining a balance between cities and rural communities. An early member of the Tange Lab studying national planning, Ōbayashi Junichirō called into doubt Ishikawa's concept of the sphere of life: "It remains an open question as to what extent the structure of the sphere of life can actually improve the living standard of our citizens."<sup>18</sup>

In 1951, the Tange Lab conducted an urban planning study of Wakkanai, a small fishing town located at the northern tip of Hokkaido. Echoing Ōbayashi's criticism, the Tange Lab produced a study report that advocated the building of an urban center and the increasing of income as a dialectic between productivity and housing in metropolitan areas. In the diagrams included in the report, we find the analysis based on the Cobb-Douglas function, suggesting the development of production areas aimed at "augmenting productivity" and the establishment and functional arrangement of various production zones.

Contemporaneous to its study of population movements and economic activities, the Tange Lab embarked on the analysis of commuting patterns and their statistical modeling in an attempt to derive an alternative structure of the core and the

metropolitan region. According to Tange, “Urban centers absorbed fixed population groups of commuting workers and students and fluid population groups, which gather to enjoy its amenities,” and that “outward expansion of residential areas” and “growth of the urban centers” are concomitant.<sup>9</sup> Tange’s analysis consisted of four stages. First was the measurement of the degree of separation between place of work and dwelling—represented visually by drawing a circle defined by a radius of travel distance that accounted for at least 90 percent of the commuters based in the metropolitan center. This stage of the study found that the commuting radius in Tokyo, Osaka, and Yokohama, three of the largest cities in Japan, was 10–15 kilometers, where in smaller urban centers the radius was less than 5 kilometers.<sup>10</sup> The second stage concerned the distribution of land-use patterns among Tokyo’s twenty-three wards. The third stage was comprised of an analysis of Tokyo’s transportation networks, particularly the trams, Japan’s National Railway, and various private railways radiating into the suburbs. The fourth stage focused on the relationship between vehicular and pedestrian traffic, including parking facilities. At the end of this exercise, Tange came to the conclusion that “the problem of traffic [congestion] is closely related to problems of the regional distribution of population and cannot be considered separately from the regional distribution of building density and land use.”<sup>11</sup>

These four stages follow the sequence of analytical studies undertaken by the Tange Lab in each successive year, closely mirroring the organization of Tange’s doctoral thesis. In other words, we see a progressive development beginning in the mid-1940s, when trams were the dominant mode of transportation for Tokyo’s commuters, expanding commensurately with the extension of Tokyo’s regional railway network and its residential suburbs, and culminating in a growth of automobiles in the latter half of the 1950s that paralyzed Tokyo’s traffic system. The research conducted by the Tange Lab was not content with one principle to explain all phenomena but instead reflected the trial-and-error process followed at each juncture.

Tange synthesized the findings of his laboratory into “Regional Structure of Population Migration” and “Structure of the Core and the Metropolitan Area,” linking the city and architecture dynamically by means of “Urban Redevelopment and Architectural Form”—the three parts of his doctoral thesis, completed in 1959. Specifically, he tried to arrive at a computation model

based on building density, traffic volume, and parking capacity. The findings were identical in content to Asada Takashi’s report to the Commission on High-Rise Buildings of the Architectural Institute of Japan.<sup>12</sup> What Tange and Asada had found was:

*With parking at street level or underground, service areas at street level or on the second and third floors, high-quality work space on the upper floors, and a plaza to connect all the above—the 31-meter height limit will probably need to be lifted in order to make these add up to a desirable floor-area ratio (FAR) of 400 percent, or at a maximum 600 percent. As suggested by recent urban renewal projects in the United States and Europe, we may have to move in the direction of superblocks. As I will present in my master plan for the new Tokyo Metropolitan Government Building, the design was based on these considerations and serves as an example, with a FAR of 400 percent.<sup>13</sup>*

This argument suggests a cross-section of the urban core: parking on underground levels, public open space at ground level made possible by *pilotis*, and office floors stacked upward. If this were viewed from above, in satellite views such as Google Earth, population density would be highest in the middle of the city, but seen in cross-section, the only thing visible at ground level would be the movement of crowds in *pilotis* areas. This scheme became the blueprint for the redevelopment of the west side of Shinjuku Station and the area around Tokyo Station, but did not see any subsequent theoretical elaboration. Similarly, in the diagram titled “Density Distribution of New Building Construction in Tokyo’s 23 Wards, 1951–55,” prepared by the Tange Lab, one clearly sees the data spiking in Chiyoda and Minato Wards, the two most centrally located wards in the metropolitan area, a pattern of overconcentration that was entirely at odds with Ishikawa Hideaki’s vision of Tokyo as a garden city.<sup>14</sup> According to the study by the Tange Lab, however, this was merely the reward of robust economic growth. The only way to achieve population concentration and economic growth while constructing an urban core that enables people to meet is to reorganize strategic sites in the city center into superblocks, increase the heights of buildings, and create open spaces accessible to the public at ground level.

## ARCHITECTURAL PLANNING: MODERNITY AND TRADITION WITH RESPECT TO THE URBAN CORE

How can we resolve the ill effects and contradictions caused by an overconcentration of population in urban centers? Members of the Tange Lab looked for a solution by studying the origins of American skyscrapers and the way fees for leases were set for them. Such sustained efforts bore fruit with the garnering of first place in the 1952 design competition for the Tokyo Metropolitan Government Building. They reduced offices such as those found in American skyscrapers to a relationship between “primary elements” (work spaces) and “secondary elements” (transportation and services), and declared that they would “concentrate secondary elements into a compact volume, treat them as a service core, remove them from, and make them responsive to, primary elements, and secure unobstructed, uniform work spaces.”<sup>15</sup> Furthermore, they concluded that the bigger the buildings, the more efficient it became to have cores in the center than off to one side. That is, by concentrating elevators and stairs in the middle of the plan and eliminating columns as much as possible from work spaces, they formulated Japan’s basic office design.

The lab had to overcome two difficult problems to achieve this in Japan at that time: the realization of large earthquake-resistant spans and the construction of an effective air-conditioning system. With respect to the former, a building height limit of 31 meters was then in force in Japan, and to control lateral oscillations caused by earthquakes, buildings were generally wrapped in outer walls of reinforced concrete, with windows made as small as possible. With the cooperation of the structural engineer Mutō Kiyoshi, the Tange Lab made the Tokyo Metropolitan Government Building a steel-reinforced concrete structure.<sup>16</sup> They concentrated shear walls in the core, made the dimensions of the outside columns as slender as possible, and wrapped the building in glass. Thus they achieved transparent, open, unobstructed spaces.

With respect to mechanical systems, the Tange Lab analyzed the daylighting of glass-wrapped offices and studied the dimensions of louvers and balconies. Though they used a central-station air-conditioning system at first, they considered the air-conditioning of perimeter zones and eventually changed to a zone system based on ventilation fan-coil units. The pipes and ducts for these passed from the basement mechanical room

through the core wrapped in shear walls and serviced each zone on each floor. However, they inevitably penetrated the shear walls and lowered the ceiling heights of corridors.

Having experienced these difficulties, the Tange Lab pursued a further rationalization of the core in the high-rise block of the Kagawa Prefectural Government Building, namely the integration of the structural and mechanical systems. In that endeavor, the Tange module became the common vocabulary of design, and strict adherence to it was demanded in all drawings. Kamiya Kōji, a senior member of the Tange Lab, published in a magazine a schematization of the philosophy behind the module and the principle that created a seamless continuity in everything from furniture to city planning.

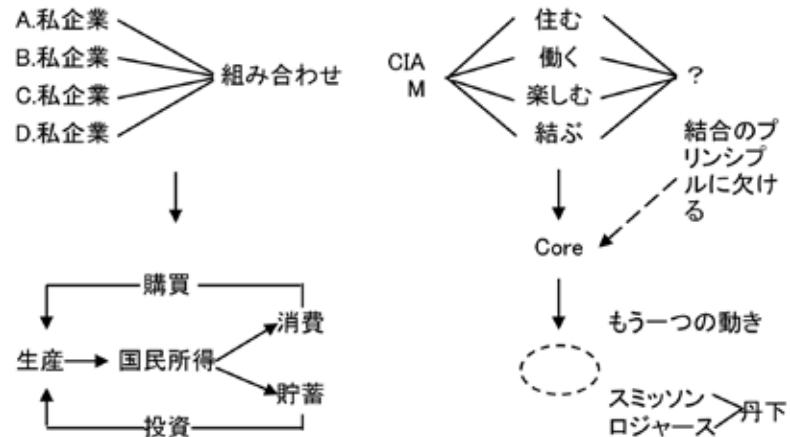
Tange Kenzō commissioned the painter Okamoto Tarō to create two murals in the *pilotis* space of the Tokyo Metropolitan Government Building, followed by a set of four murals by Inokuma Genichirō in the *pilotis* of the Kagawa Prefectural Government Building. These two works can be thought of as clear manifestations of Tange’s understanding of modernity and tradition. In his view of architectural history, modern architecture was born in Europe and transmitted to other regions—North America, Latin America, Asia, and Africa—where the distinct cultural traditions of each locale resulted in a variety of interpretations. Furthermore, as standards of industrial production vary from region to region, Tange saw the conflict between craft and industry as an important theme in the realization of a “réunion of architecture, painting and sculpture.”<sup>17</sup>

In the mid-1950s, art critic Aileen Saarinen declared that compared with the integration of architecture and painting in American architecture, the murals of Diego Rivera and Rufino Tamayo were completely wrong in their relationship to architecture. Tange dismissed such criticism: “Architecture in America is merely built upon functionalist principles, where [mural] paintings are completely subsumed in the wall surfaces and become nothing more than texture.”<sup>18</sup> In other words, the abstract paintings found in the entrance lobbies of America skyscrapers were merely wallpaper to entertain the eyes of businessmen, without taking on the responsibility of endowing architecture with the temporal dimension of tradition and history. Tange lavished praise on the synthesis of architecture and painting found Mexico:

*In Mexico, the will for historical change has blended mysteriously with nostalgia for the Inca Empire and symbolizes the hope of the people. Where such power emanating from the people is the force integrating the arts, architecture, painting, and sculpture achieve a demonic integration even as each asserts itself. Here, the visual language of functionality and abstraction is used to the full but does not ever appear in its raw state. The way the arts have become established and integrated in Mexico is noteworthy as a solution to a unique problem.<sup>19</sup>*

Modern architecture received and realized by a people with a civilization and history different from those of Western countries will as a matter of course express itself differently from modern architecture in the West, and seeing “the hope of the people” in the example of Mexico, Tange strongly sympathized with it.

On the other hand, Tange often cited the collaboration between Le Corbusier and Charlotte Perriand as a good example of “demonic integration.”<sup>20</sup> Tange praised the fact that, unlike Charles and Ray Eames, Perriand in her furniture emphasized “the reconciliation and integration of industrial products and craftsmanship,” and that her work was magnificently joined to Corbusier’s architecture.<sup>21</sup> He sensed traces of ancient Japan in the furniture made by Japanese craftsmen under her instruction before and after the war. These circumstances led Tange to use Charlotte Perriand’s furniture in the governor’s office in the Tokyo Metropolitan Government Building, and Kamiya designed furniture for the Kagawa Prefectural Government Building that was inspired by hers. For Tange, the urban core was a place for the integration of all the arts and the presence of both craftsmanship and industry—a place where the conflict between modernity and tradition was openly and honestly expressed. Similarly, Kamiya designed a Japanese garden at the foot of the Kagawa Prefectural Government Building, where the composition of earthen mounds and rockery ingeniously created a space accessible to the public that differed from the plazas in front of typical American skyscrapers.



Notes from Tange  
Kenzō's lectures,  
University of Tokyo, 1959.

Central Library of  
National Autonomous  
University of Mexico,  
mural by Juan O'Gorman,  
1952.





Distribution of increases in urban density (floor-area ratios) in Tokyo based on new constructions between 1951 and 1955.

## CITY IN THE AIR: JOINT CORES AND THE INFORMATION SOCIETY

In a lecture he delivered at the University of Tokyo in 1959, Tange Kenzō compared economic systems and the four urban functions. Though it was once believed that the combined effect of commercial activities by separate private enterprises allowed to act in their own self-interest produces a self-regulating marketplace (Adam Smith's "invisible hand") in a capitalist economy, in the future emphasis would be on a Keynesian understanding of the macro flow of capital and the significance of economic "integration" (i.e., the theory of public investment that sees national income directly tied to output classified into income and savings, which respectively become purchases and investment stimulation). Drawing a parallel to the shift from Smith to Keynes, Tange asserted that although the Athens Charter divided the city into four functions, modernist planning lacked a unifying principle, hence CIAM 8's search for an urban core. At the end of the 1950s, a split in Western modernism became notable between Alison and Peter Smithson, who gave priority to development, and Ernesto Rogers, who had medievalist tendencies, and Tange concluded by stating that a structural concept to integrate the elements of the city was indispensable. That is, even the concept of a core was not fully capable of integrating the functions of the city, and he anticipated the emergence of a new idea ("the empty oval"). The series of stepped-back urban-scale proposals, such as Tokyo Plan 1960, was what he reasoned would fill that void.

In fall of 1959, Tange was invited to teach at MIT as a visiting professor and gave his fifth-year students the problem of designing "a new community on the bay." During that time, the staff at the Tange Lab continued to engage in design projects and research surveys in Tokyo. The best-known works of this period include Kurashiki City Hall, the Dentsū Corporation's Osaka Branch, the Atami Garden Hotel, the Rikkyō University Library, and the competition proposal for the World Health Organization Headquarters building.

In terms of research-based studies, the lab further developed the theme of "structure of the core and metropolitan area" mentioned earlier, complemented by the redevelopment proposal of Shizuoka City. Tange had asked a member of his laboratory, Watanabe Sadao, to examine the total building volume in the

metropolitan area, the current state of housing construction, the mapping of traffic volume, the organization of land by use, the composition of the population and income by profession, the effective demand for housing, and the population movement between districts.<sup>22</sup> These kind of research projects were continued because predictions made by the Tange Lab in the early 1950s—that population and office floors would accumulate concentrically around Tokyo Station, and that land prices would take on a fixed, conic profile—had begun to falter toward the end of the 1950s. Each station on Tokyo's Yamanote railway line, which loops around central Tokyo, connecting a series of important urban nodes, had begun to accumulate office buildings as if it were an urban center, and land prices inside the Yamanote line formed a broad plateau instead of rising to a single, centrally located peak. An article about the Tokyo Metropolitan Government Building published at the time of its completion in 1958 stated that the building was intended “to endow order to urban energy, to suggest a method for finding the road to development, and to present specific ways of solving deficiencies and confusion.”<sup>23</sup> However, a scheme for an addition (with nineteen floors and a height of approximately 100 meters) that would far exceed the just-completed building was published in the same magazine.<sup>24</sup> In other words, actual changes taking place in Tokyo were far exceeding predictions made by the Tange Lab.

If this concentration of population were allowed to continue, zoning would become meaningless from the perspective of city planning; in particular, developers would likely encroach on reclaimed bayside land that was without clear ownership. Afraid to take the first step themselves for fear of being criticized, the authorities were unable to draw up even a timetable for coastal development and thus exposed their own inability to coordinate matters. Convinced of the need to plan the development of the bay as a way of enabling further concentration of population in central Tokyo, Tange assigned his MIT students a bayside development design problem while continuing to study Tokyo's center.

Meanwhile, charged with Shizuoka's redevelopment plan, Isozaki Arata suggested the following principles to promote the revitalization of the city's business district: 1) control of urban scale and expansion of the framework to consider the architecture of the city as a whole; 2) insertion of architectural spaces

with diverse spatial qualities; 3) staged, incremental development that allows two- and three-dimensional extensions, with each stage appearing as a complete architectural expression. Isozaki's point was that convincing all landowners and leaseholders simultaneously and buying every small site at once was impossible in the redevelopment of an urban area; lots could be purchased only here and there as they became available through, for example, the relocation of temples and factories or small-scale land readjustment projects. Isozaki argued that erecting enormous columns (with built-in elevators, stairs, and mechanical service shafts) on such scattered lots at 20- to 25-meter intervals and spanning them with space frames as necessary would generate a vertical, three-dimensional city. Isozaki called this “artificial land” and declared that “this can adapt to the fragmented scale and configuration of ownership and business management in the contemporary city, and existing parcels of land can be consolidated through this method for replotting land vertically.”<sup>25</sup> Whereas the Tokyo Metropolitan Government Building was an expression of “the taste of the 1950s,” a crystallization of the urban core and the architectural core in which shear walls were wrapped in a delicate façade, this “artificial land” approach, under the influence of Brutalism and subsequently referred to as “joint core,” exposed all pipes, ducts, wires, and screws and arranged offices in the air in random yet orderly fashion.<sup>26</sup>

At the World Design Conference in spring 1960, Tange presented the work from the MIT studio, which had subsequently been refined by the Tange Lab, as a Boston Harbor city-planning project and explained it as a series of enormous frames for major and minor structures.<sup>27</sup> Nine months later, a proposal was published for a ladder-shaped axis (major structures) stretching over Tokyo Bay and linking the Imperial Palace and Kisarazu, to which were appended housing clusters and office districts (minor structures). A statistical survey led by Watanabe Sadao provided the theoretical underpinning concerning population movement in Tokyo. Kamiya Kōji arranged the housing clusters, and the joint cores for which Isozaki was primarily responsible were used for the business district proposal. It goes without saying that the Tange Lab module was used to connect major structures to minor structures, organically and seamlessly.

Completed in 1958, the scheme of the Tokyo Metropolitan Government Building had to be revised during the construction

phase to accommodate many more people than had been anticipated, making it markedly less user-friendly than Tange's original design from the 1952 competition. In light of this, in June 1963 the Tange Lab undertook an analysis of the connections between the more than 100 departments and bureaus of the government and the movement of 10,000 workers inside the building. The results were organized and schematized in the master's thesis of Yamada Manabu, also a member of the Lab.<sup>28</sup> This shows the transition in Tange's laboratory, beginning in the 1960s, to a growing emphasis on how the activities of users may be controlled and made manifest.

In designing the Yamanashi Press and Broadcasting Center (1961–66), located in a provincial city west of Tokyo, the Tange Lab initially located the offices on the east side of the site, facing the main access road, the service areas in the middle, and the newspaper printing facilities in the rear. This scheme was quite orthodox in plan and failed to impress the client, who is said to have remarked despondently, "Who would have expected such an ordinary building from Mr. Tange?"<sup>29</sup> This prodding from the client led to a new proposal in which sixteen cylindrical shafts, or cores, were scattered across the site, with floor slabs freely inserted between them. As a result, the theme became a comprehension of structure based on "flow" and the visual expression of growth and change, and of structure. Okamura Kōichirō, leader of the project team, used the expressive possibilities of reinforced concrete and emphasized the novel order and intrinsic freedom of the joint-core system.<sup>30</sup>

Tange pointed out with respect to this project that though "a number of vertical roads" had been erected, forming "voids where roads exist but a building does not yet stand," those voids provided "leeway necessary for growth and development."<sup>31</sup> After the completion of the Yamanashi project, however, Okamura doubted the validity and general applicability of this approach, or the dispersal and organic interpretation of cores, and continued to analyze his work at Kumamoto University after leaving the Tange Lab.<sup>32</sup> In other words, though the Tange Lab had, on the basis of urban analysis, positioned appropriate earthquake-resistant cores and wrapped unobstructed floors around them in the 1950s, the joint-core system, which was supposed to be a deconstruction of that earlier schema, was never provided with a theoretical foundation or validated. It was literally and figuratively left up in the air.

At the end of 1964, after the completion of the Yoyogi National Indoor Stadiums, Tange published his Tōkaidō Megalopolis concept, which was intended to give order to the pending structural transformations of land in Japan while resolving the lingering problems of Tokyo Plan 1960.<sup>33</sup> Tange's concept of the Tōkaidō Megalopolis takes the main axis of Tokyo Bay, extending from the Imperial Palace to the city of Kisarazu in Chiba prefecture, and pivots it 90 degrees, so that a new axis on the scale of national territory now linked Tokyo and Osaka. Tange developed with consummate clarity a scheme that integrated his intellectual endeavors in economics, information systems, and population density and movement. The following year, as the search for a theme to the Osaka Exposition began in earnest, Tange asked that the city be incorporated into the unifying theme inasmuch as "human beings are animals that create cities."<sup>34</sup> However, the city was made a sub-theme out of fear that putting it at the forefront might emphasize the gap between developed and developing countries.

The treatment of the city became an extremely difficult issue even on the sub-theme committee. Even well-known Kansai intellectuals such as Kuwahara Takeo and Umesao Tadao had no theory that could persuade Tange. Tange's intention was to complement urban and architectural activity in an aggressive manner from the standpoint of both "production" and "environment," and this was clearly reflected in the process of preparation for the plaza project.

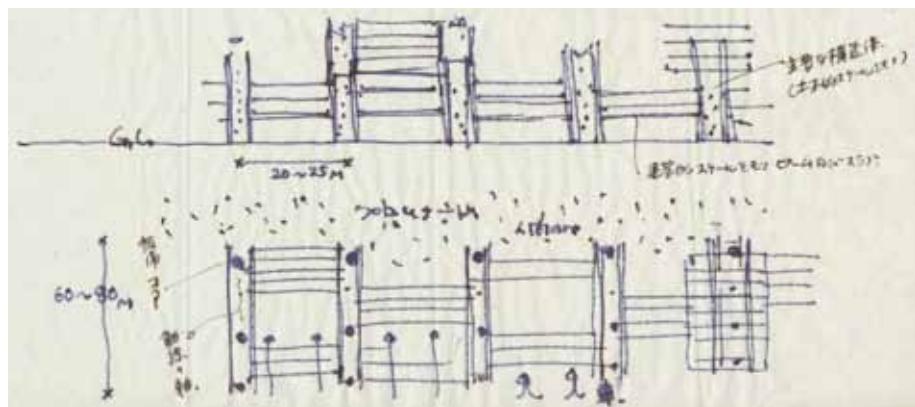
From the end of 1965, Tange consolidated the basic plan for the plaza with Nishiyama Uzō of Kyoto University. He adopted not the stance of an artist drawing on a clean slate but an urbane—one might say megalopolitan—position, studying everything in a cool manner in committee meetings. As a result, though he was respectful of Nishiyama's scheme for the plaza, Tange succeeded in making it more rationally and tightly designed and thus reduced the total construction cost by 30 percent. In determining Osaka Expo's plan, Tange and his team labored exhaustively over the control of the extremely large crowds that were expected. Railway stations at the fairgrounds, high-speed rail, and parking lots were carefully studied. The projected number of visitors on September 6, 1966, for instance, was 420,000, growing to 600,000 should there be good weather.

After being named the producer of the core facilities at the start of 1967, Tange applied himself to the development of both hard

and soft aspects of the Festival Hall and aimed at shifting the emphasis of the exposition away from monuments and production, the preoccupations of past such exhibitions, to events and the environment—that is, at making this exposition “an invisible monument.” By June, he had had Kamiya study the possibility of a large transparent roof and mechanical walkways, and Isozaki undertake a multifaceted study of devices for comprehensively producing an environment in Festival Plaza. In particular, the latter study reflected the fruits of research into *Nihon no toshi kukan* (Urban Spaces of Japan) engaged in by the Tange Lab under the influence of Kevin Lynch.<sup>36</sup> Patterns of crowd movement in traditional Japanese events such as the Gion Festival and fireworks displays were analyzed and traced on Festival Plaza, with the aim of creating a new event space. Isozaki called this a cybernetic environment, and it was a process of integrating tradition and technology on the basis of the information theory of the 1960s.<sup>37</sup>

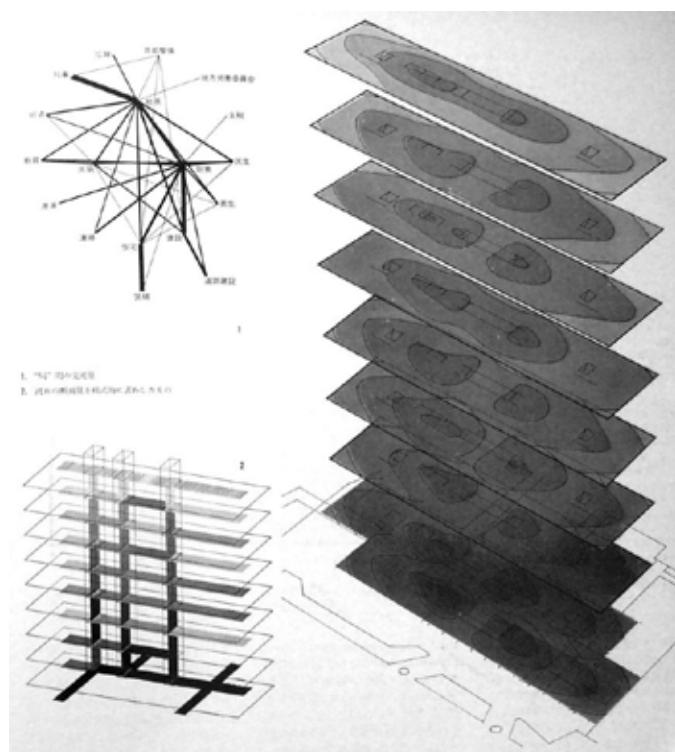
In September, the exposition project office and Tange asked Okamoto Tarō to serve as pavilion producer. Okamoto’s Tower of the Sun was to rise in the invisible monument that was Festival Plaza and unify the theme pavilion three-dimensionally. This was clearly an expression of “demonic integration” of modernity and tradition, and of industry and craftsmanship. The plaza was subsequently completed on schedule, though rising costs had to be overcome. The actual numbers of visitors far exceeded expectations, validating the detailed studies of crowd movement that the Tange Lab had undertaken. The Osaka Expo was a national celebration of Japan’s high-speed growth and postwar recovery, encapsulated by the Tange Lab in the form of the fair-ground design. The large roof was dismantled after the exposition, but the future urban image that had been suggested there exerted a major influence on architects both in Japan and overseas, and traces of Festival Plaza can be discerned in the Pompidou Center.

Tange placed the western terminus of the Tōkaidō Megalopolis at the Osaka suburb of Senri, the site of the Osaka Expo. The Festival Plaza, as the keystone facility, can be seen as Tange’s vision of the urban core of our future cities. Consistent with this pursuit of urban cores, Tange succeeded in realizing his initial design intentions and continued to advocate for a “structural approach” aimed at searching for an architecture appropriate to the shift from production to the environment, and the



Sketch of joint-core system in letter from Isozaki Arata to Tange Kenzō.

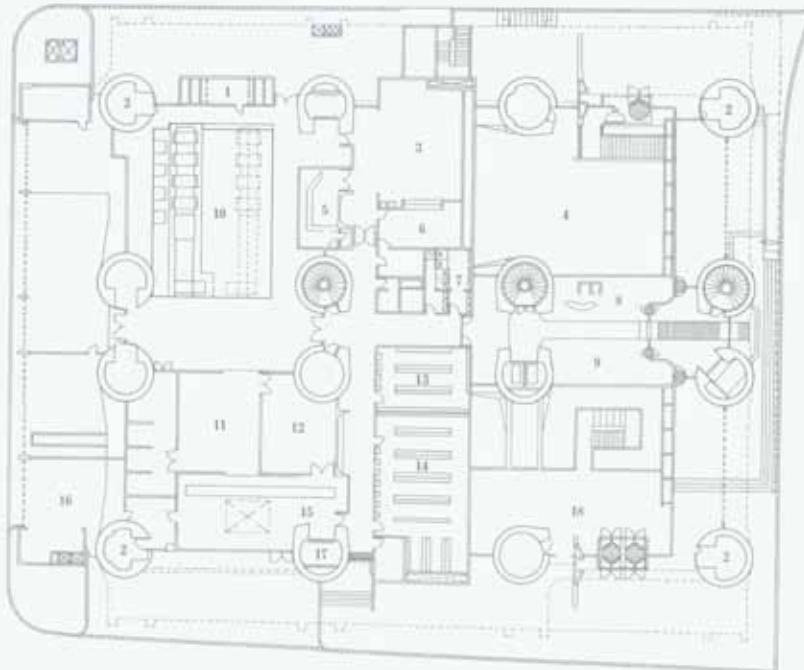
Yamada Manabu, diagram of circulation flow in Tokyo Metropolitan Government Building.



coordination of the parts and the whole.<sup>38</sup> Tange was able to analyze his own designs dispassionately and declared that, although he had tried to erase architecture by, for example, making the roof transparent, he had not yet achieved his objective of creating an invisible monument. He also did not fail to point out, however, that using an abundance of curved surfaces and creating mazes did not produce an organic architecture either.

## CONCLUSION

This essay has plotted the main results of the designs and statistical analyses undertaken by the Tange Laboratory. Amid a sterile conflict between an engineering-biased academism and design-oriented architects, the Tange Lab completed a number of outstanding works of architectural design, starting with the Hiroshima Peace Memorial Park, while continuing to carry out urban analyses in the very home of academism. In this process, the Tange Lab focused on promoting affluence through an increase in productivity, and achieving seamless continuity from architecture to the city through the adoption of a module. In the 1960s, the Tange Lab saw the limits of its methodology and embarked on analyses of the city such as the publication *Nihon no toshi kukan*. This dual engagement in both design and research produced Festival Plaza for the Osaka Exposition, and modern Japanese architecture ultimately seized the imagination of architects around the world. Beginning with the memorial for the war dead designed both during and after the war, culminating with national projects such as the Olympics and the Osaka Expo facilities, Tange realized a series of important works during his career. Although these projects evolved with changing social and functional needs of their time, they were all tied to the fate of the Japanese nation, as Tange and his disciples labored to unify and build postwar Japanese society.



Tange Kenzō, ground-floor plan of Yamanashi Press and Broadcasting Center, Kōfu, 1966.

- 1 Inagaki Eizō, *Nihon no kindai kenchiku* (Tokyo: Kajima shuppankai, 1979).
- 2 Tange Kenzō, "Daiishō kodai, dairokusetsu girisha toshi keikaku," in "Toshi keikaku kōgi nōto," 1951 (shorthand notes by Okura Mikio). "The Third Olynthiac" (The Olynthiac Orations, OR. I-III; *The Public Orations of Demosthenes*, vol. 1, Project Gutenberg).
- 3 Tange Kenzō, "Daitōka kyōeiken kensetsu kinen zōeikeikaku," *Kenchiku Zasshi* (Oct. 1942), 963.
- 4 Wilhelm Worringer, *Toi to hanmon: geijutsu ronshū*, trans. Dohi Yoshio (Tokyo: Hösei daigaku shuppankyoku, 1971), 65.
- 5 John Summerson, *Tenjō no yakata* [Heavenly Mansions], trans. Suzuki Hiroyuki (Tokyo: Kajima shuppankai, 1972), 10.
- 6 Tange Kenzō, "Hiroshima keikaku," *Shinkenchiku* (Jan. 1954), 11.
- 7 Takayama Eika, "Toshi keikaku no hōhō ni tsuite," *Toshi Keikaku* (March 1952), 29; Takayama Eika, *Watakushi no toshikogaku* (Tokyo: Tokyo daigaku shuppankai, 1987), 42, 43.
- 8 Ōbayashi Junichirō, "Kokudo keikaku no hōhōron ni kansuru kōsatsu" (June 5, 1950), reprinted in ed. Sōgō kenkyū kaishatsu kikō, *Sengo keizai seisaku shiryō* kenkyūkai, *Keizai anteい honbu sengo keizai seisaku shiryō: Kensetsu*, no. 36 (1995), 219.
- 9 Tange Kenzō, "Dainihen: Gendai daitoshi no chiiki kōzō: kaku to keniki no kōzō," in "Daitoshi no chiiki kōzō to kenchiku keitai," D. Eng. diss., University of Tokyo (1959), 4.
- 10 Ibid., 11.
- 11 Ibid., 150.
- 12 Nihon kenchiku gakkai kōsōka kenkyū iinkai, "Toshinbu ni okeru kenchikubutsu no kōsōka ni kansuru kenkyū hōkoku," unpublished report (March 31, 1955).
- 13 Tange Kenzō, "Daisanhen: Toshi saikaihatsu to kenchiku keitai," in "Daitoshi no chiiki kōzō to kenchiku keitai," 10.
- 14 Ibid., 11.
- 15 Oki Taneo, Tashima Yoshiaki, Kamiya Kōji, Nagashima Masamitsu, Isozaki Arata, and Mögi Keichirō, "Kindai kenchiku wo ikani hatten saseruka, kōa shisutemu: kūkan no mugenteisei," *Shinkenchiku* (Jan. 1955), 52.
- 16 Mutō Kiyoshi, "Tōkyō tochō taishinheki no baai," *Kōzōbutsu no kyōdo to henkei, Taishin sekkei*, no. 3 (Tokyo: Maruzen, 1970), 309.
- 17 Tange Kenzō, "Kenchiku, kaiga, chōkokku no reunion," *Atorie* (July 1952), 54, 55.
- 18 Tange Kenzō, "Modan aato no tenkai, geijutsu no baai," *Geijutsu Shinchō* (May 1955), 51–5.
- 19 Tange Kenzō, "Kindai kenchiku no mondai," *Geijutsu Shinchō* (May 1955), 73.
- 20 Ibid.
- 21 Tange Kenzō, "Geijutsu no teichaku to tōgō ni tsuite, sanninten wo kikai ni," *Bijutsu Techō* (May 1955), 51–60.
- 22 Letter addressed to Tange Kenzō in Boston by a member of the Tange Lab, dated September 23, 1959.
- 23 Tange Kenzō kenkyūshitsu, «Tōkyō tochō keikaku no oboegaki," *Shinkenchiku* (June 1958), 24.
- 24 Tange Kenzō kenkyūshitsu, "Tochōsha sōgō keikaku," *Shinkenchiku* (June 1958), 35.
- 25 Letter addressed to Tange Kenzō in Boston by a member of the Tange Lab, dated December 11, 1959.
- 26 Isozaki Arata, "Gendai toshi ni okeru kenchiku no gainen," *Kenchiku Bunka* (Sept. 1960), 18.
- 27 Tange Kenzō, "Mobility and Stability," *Kenchiku Bunka* (Sept. 1960), 46.
- 28 Yamada Manabu, "Kankei, bunpu, nagare," *Kenchiku Bunka* (April 1967), 80.
- 29 Tange Kenzō, Kamiya Kōji, "Yamanashi bunka kaikan ni tsuite," *SD* (April 1967), 75.
- 30 Okamura Kōichiro, "Yamanashi bunka kaikan ni okeru aaban dezain no hōhō," *Kenchiku Bunka* (April 1967), 68. Yamamoto Kōzō, "New Control Device for Urban Space," *Shinkenchiku* (April 1967), 165.
- 31 Tange Kenzō, "Kenchiku kara aaban dezain e," *Shinkenchiku* (April 1967), 110.
- 32 Okamura Kōichiro and Hase Hideaki, "Ofisubiru ni okeru furekishibirīti no keisan hōhō," *Nihon kenchiku gakkai daikai gakujitsu kōen kōgaishū, Hokkaidō* (1978), 1185.
- 33 Tange Kenzō, "Nihon retto no shōraizō," *Chūō Kōron* (Jan. 1965), 50.
- 34 Statement by Tange Kenzō, "Second Theme Committee Meeting (October 5, 1965)," Japan World Exposition Association, *Nihon bankoku hakurankai kōshiki kiroku: shiryōshū bessatsu*, Records of the Committee of Experts 1, Records of the Theme Committee D-1, 29, 30.
- 35 Statement by Tange Kenzō, "Seventh Theme Committee Meeting (May 17, 1966)," D-1, 175.
- 36 Toshi dezain kenkyūtai, *Nihon no toshi kūkan* (Tokyo: Shōkokusha, 1968).
- 37 Japan Science Foundation, Japan World Exposition Event Survey Committee, Scenic Survey Report, Ōmatsuri hiroba wo chūshin to shita gaibu kūkan ni okeru mizu, oto, hikari nado wo riyō shita sōgōteki enshutsu kikō no kenkyū, 46.
- 38 Tange Kenzō, "Bankokuhaku kaijō keikaku," *Kenchiku Zasshi* (March 1970), 204.

**HIROSHIMA  
PEACE MEMORIAL COMPLEX  
1949–1955**

**HIROSHIMA  
CHILDREN'S LIBRARY  
1951–1953**

Tange attended high school in Hiroshima and in the immediate postwar period conducted field research and produced a redevelopment master plan for the city. Well before the 1949 competition to design the Memorial complex, he had determined a basic structure for Hiroshima's reconstruction and the urban context for any kind of architectural intervention on the ground-zero site. The memorial's program consisted of an exhibition hall, public plaza, memorial cenotaph, library, and conference center. It is also situated in the southern end of a large urban space system, the Peace Park. Tange's winning proposal places the main architectural components centered along a line parallel to Peace Boulevard, the city's main east-west thoroughfare. The exhibition hall, located in the middle, is raised above the ground on *pilotis* and reveals the memorial plaza just beyond. As the memorial center site plan suggests, the design of the overall ensemble was driven by the desire to privilege the sightline from Peace Boulevard toward the Atomic Dome, which had miraculously survived despite its proximity to the detonation. As for the design of the cenotaph, Tange's early proposal called for a large parabolic arch, but after a controversial involvement by Isamu Noguchi, Tange eventually installed a modest sculptural piece modeled after Japan's prehistoric *haniwa* terra-cotta vessels.

Hiroshima Children's Library was situated at the northern end of the Hiroshima Peace Park axis, within a zone designated for children's activities. The original plan also called for a science center and art gallery, a pool, and a boathouse, but only the library was realized. The location of this building offers a sense of the full intended scale and character of the Peace Park complex as an urban intervention. The library project marks the beginning of a long series of fruitful collaborations between Tange and the structural engineer Tsuboi Yoshikatsu. While the Hiroshima Children's Library is structured as an inverted shell—Tange's metaphor for a tree—the contemporaneous Ehime Prefectural Hall used a more conventional spherical shell.

30–31 Hiroshima  
Peace Memorial  
Exhibition Hall,  
elevations, 1950

33 Hiroshima Peace  
Memorial, site plan,  
1950

34–35 Exhibition Hall,  
sections, 1950

37 Exhibition Hall,  
frontal view toward  
Atomic Dome

38 Staircase and  
*pilotis* space under  
Exhibition Hall.

39 Aerial view  
of memorial event  
marking the tenth  
anniversary of  
Hiroshima's atomic  
bombing, August 6,  
1955

40–41 Hiroshima  
Children's Library,  
elevations and plan,  
1952

42 Hiroshima  
Children's Library,  
sections and rebar  
grid, 1952

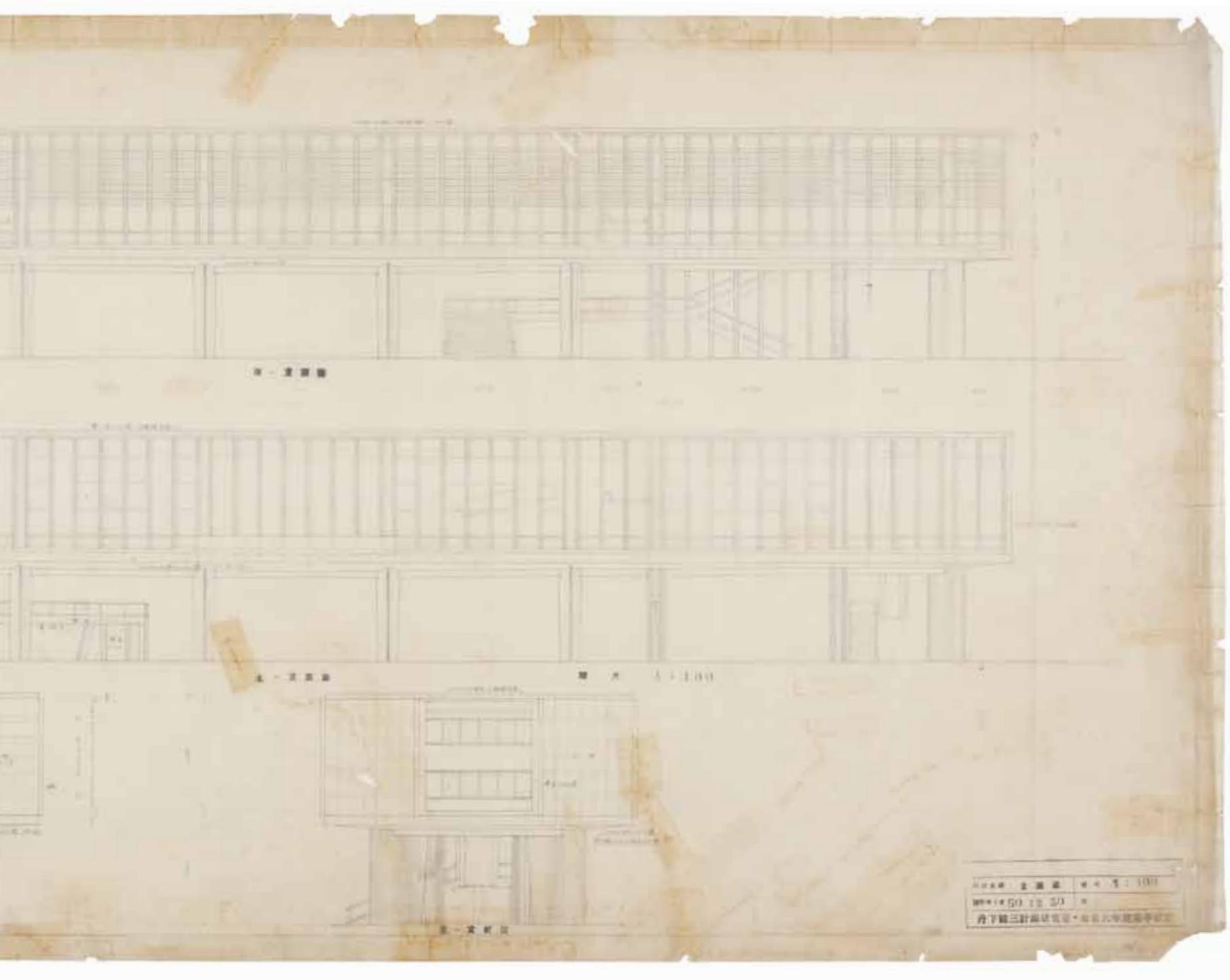
43 Hiroshima  
Children's Library,  
rebar grid, 1952

44 Hiroshima  
Children's Library,  
interior view

45 Hiroshima  
Children's Library,  
exterior view

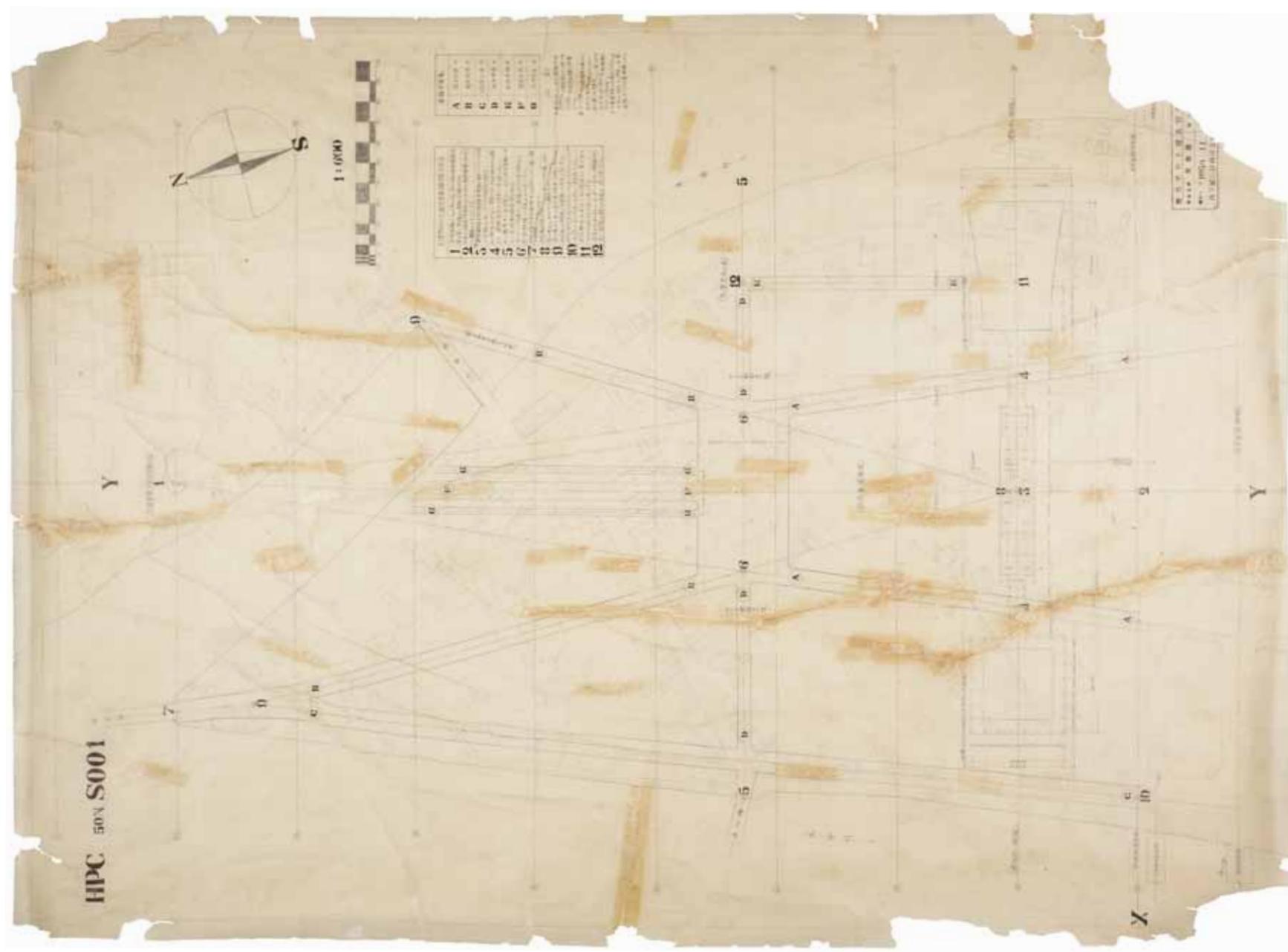
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A - 断面圖

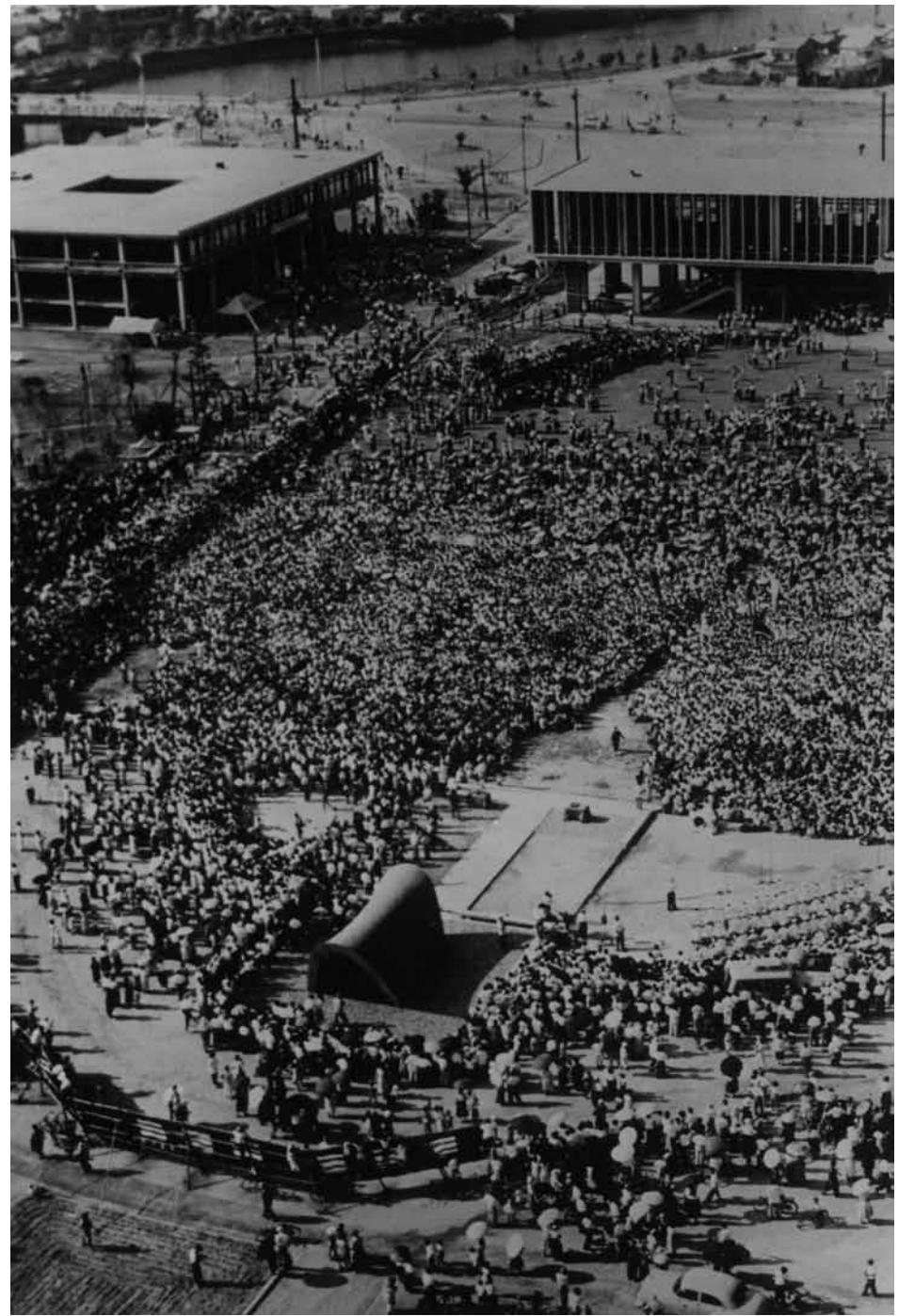
B - 斷面圖

貢金	學費	生活費	書本費	計算
六百六十	一百一十	一百一十	三十	一千四百二十
五百四十	一百一十一	一百一十一	三十	一千三百四十二
六百六十	一百一十一	一百一十一	三十	一千四百四十二









HCCL B001

南立面圖 線尺

北立面圖 線尺

立面圖 線尺 1:100

下层

1:100

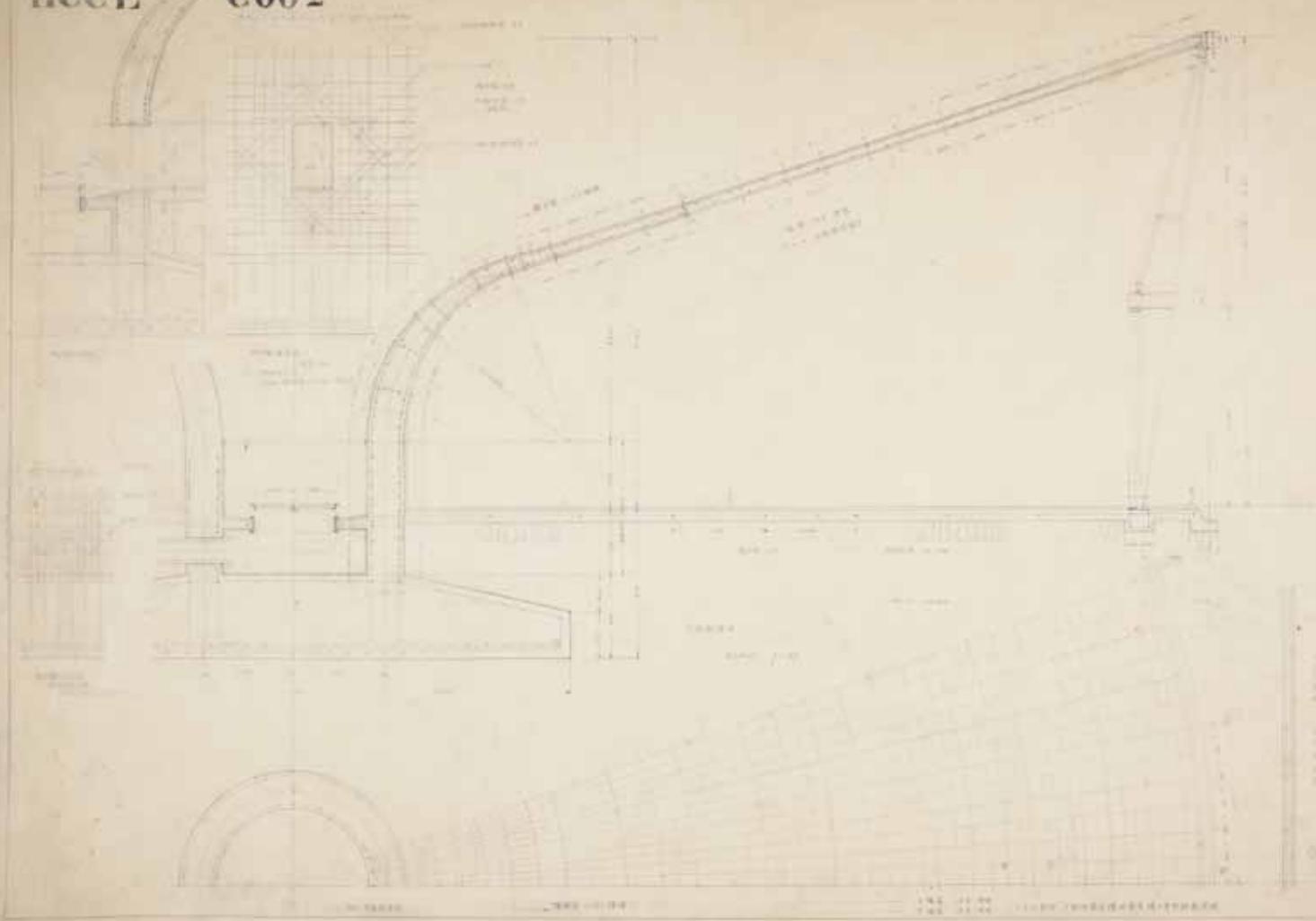
1:100

立面圖 縱尺 1:100

配置。平面圖 比尺 1:100

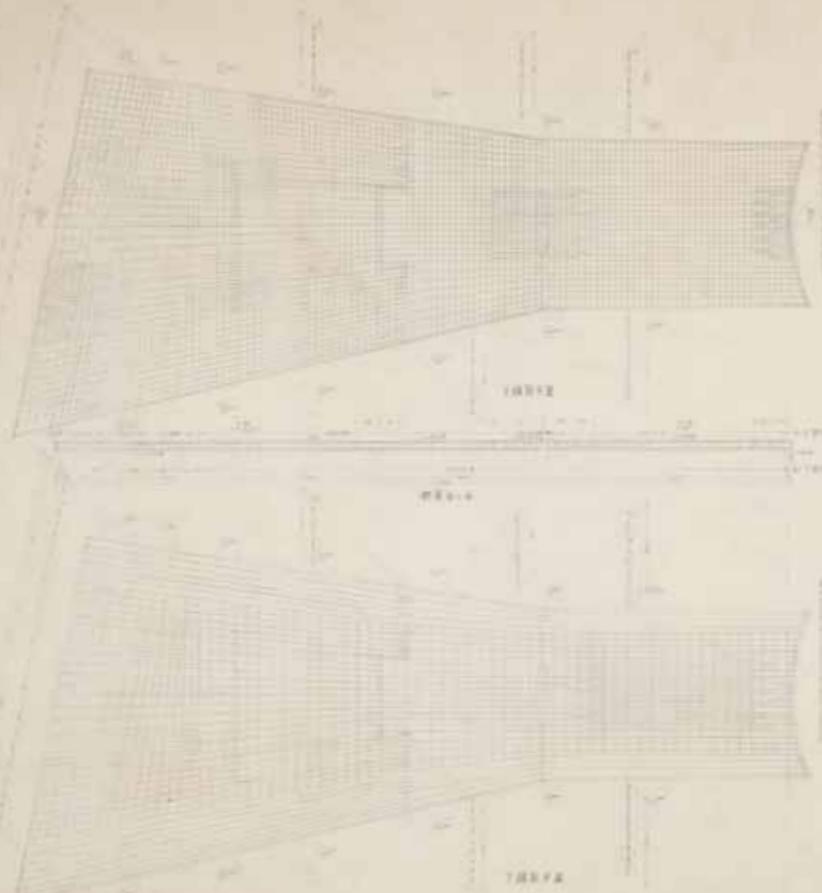
第三回寶玉見面	
畫家名號	子山
題材款式	三才圖會
尺寸	8 x 21 cm

HCCL C002



SECTION	1:10
SECTION	1:10
SECTION	1:10

HCCL C003



圖面內容說明	
圖面比例	1:50
編號	52-4-22
測量日期	西曆九十九年四月廿二日

1	2







# THE SOCIAL AMBITION OF THE ARCHITECT AND THE RISING NATION

Yatsuka Hajime

translated by Nathan Elchert

## THE GENESIS OF MEGASTRUCTURE

After Tange Kenzō won the Hiroshima Peace Memorial Park design competition, the project was hobbled by underfunding and fell behind schedule.<sup>1</sup> Consequently Tange himself designed just two of the three buildings depicted in the original plan, and another architect designed the third, an auditorium. Though this third building was ostensibly based on Tange's plan, its design and program deviated greatly from it. It is not my aim in this essay, however, to recount this famous scandal of modern Japanese architectural history. Instead I would like to discuss a photograph of the Hiroshima Peace Memorial's Exhibiton Hall that was taken after the construction delay, as the building finally neared completion. The photograph, commissioned by a local newspaper, vividly captures the conditions that prevailed on the site, and in this sense differs from a more famous photograph of the building taken slightly later by Ishimoto Yasuhiro. In the photograph in question, an illegal encampment of shanties built by atomic bomb victims occupies the area in front of the Exhibition Hall—the site that would become the Peace Memorial Park. Juxtaposed with these shanties, Tange's Exhibition Hall resembles a spaceship from another planet. Its apparent dissociation from the ground, which was contaminated by the atomic bomb, enhances its air of unearthliness. It is it unlikely, however, that Tange intentionally designed the building to achieve this effect.

Instead it was apparently Shōsō-in, the Imperial family's treasure storehouse (erected in the eighth century), and the Ise Shrine, the private shrine of the imperial family, that Tange sought to evoke with his design. Both Shōsō-in and Ise are raised-floor structures, which confirm the southern origins of Japanese architecture. Tange's Peace Memorial building, which functions as a gateway for crowds entering the park, is a Corbusian spin on this traditional raised-floor structural type. In this essay, I will dwell neither on the war of aggression that the Japanese government waged in response to a perceived threat of colonization, nor on the *dentō ronsō* (the "tradition debate") that was occasioned by the identity crisis that the Japanese experienced after their war defeat (incidentally, Ise, along with the Katsura Detached Palace, figured prominently in this debate). Instead I will focus on the fact that Tange's Peace Memorial building, a gallery—in this case, a type of storehouse—appears to be lifted up into the air (and to some, resembles a coffin).

The Peace Memorial was not the first design that Tange based on the Ise Shrine. Tange made his dramatic debut on the Japanese architectural scene with his entry to the Monument to Greater East Asia Co-prosperity Sphere, design competition, hosted by the Japan Institute of Architects the same year that war broke out between Japan and the United States. The main building in Tange's winning proposal was a 60-meter-high shrine, formed by two inclined concrete planes meeting at the top. The wall planes resemble a steeply inclined roof and clearly allude to the form of the Ise Shrine. The main building, however, is not a raised-floor structure like Ise; rather, it appears to be partially sunken, though the precise floor height is uncertain since no section drawing accompanied the proposal. Regarding the provenance of different traditional structural types, the raised-floor (*takayuka*) architecture of Ise descends from southern farming culture, and pit dwelling (*tateana*) architecture descends from northern hunting culture; using the paradigms employed later during the tradition debate, the first is representative of the Yayoi period and the second, of the earlier Jōmon. As a work of Japanese shrine architecture with the proportions of a pit dwelling, Tange's design resembles Friedrich Gilly's Monument to Friedrich the Great, which is essentially a work of Greek temple architecture with modified proportions. The two designs have similar programs. It is unclear whether Tange knew of Gilly's work when designing his monument, but Tachihara Michizō, the poet with whom Tange was most familiar, admired Gilly's work, so it is not difficult to imagine that Tange was.

When Tange designed the Exhibition Hall, a monument for Japan's postwar democracy, he could hardly recycle his design from the Monument to Greater East Asia Co-prosperity Sphere—it would have been inappropriate to propose a fascist architectural form originally devised to commemorate soldiers fighting a war of aggression. Thus Tange designed his Exhibition Hall with a flat, modern roof instead of a pitched roof. Further, he lifted the building high up off the ground, reinforcing its association with Ise. While these rhetorical design moves were skillful, their implications were not merely formal or superficial. Though there has been ample discourse criticizing Tange's supposedly opportunistic transformation from a prewar fascist to a postwar democrat, such criticisms treat his architecture superficially, overlooking its primordial power, which was Tange's *raison d'être*. Though Tange designed his Monument to Greater East Asia Co-prosperity Sphere under the aegis of an imperial

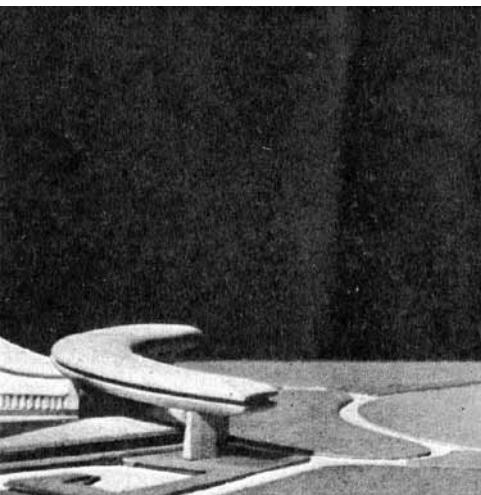


Tange Kenzō, Hiroshima  
Peace Memorial,  
Exhibition Hall, ca. 1954.



Kamiya Kōji and Isozaki Arata, competition scheme for the Administration Building in Léopoldville, 1958.

Maekawa Kunio (Ōtani Masato as project architect), Harumi Apartment Building, Tokyo, 1958.



regime, he did not mention Ise before he designed the Exhibition Hall, which he completed under a postwar democratic regime. This strongly suggests that Tange's interest in Ise transcended mere political opportunism.

Around this time, a young student named Isozaki Arata traveled to Hiroshima, uncertain of his future. There he encountered the Exhibition Hall, which looked more like ruins than an institution under construction. Isozaki later remarked that the experience liberated him from the obsession that architecture should be splendid, beautiful, or precise. Deeply moved by a scene in which "death and life, beginning and end were coexisting," Isozaki decided to become Tange's disciple.<sup>2</sup> I won't discuss the contrast between the somber aftermath of the atomic bombing and the celebration of the beginnings of postwar democracy that Isozaki witnessed. Nevertheless, please note that Isozaki subconsciously internalized the floating (coffin-like) cuboid motif when he encountered Tange's Exhibition Hall.

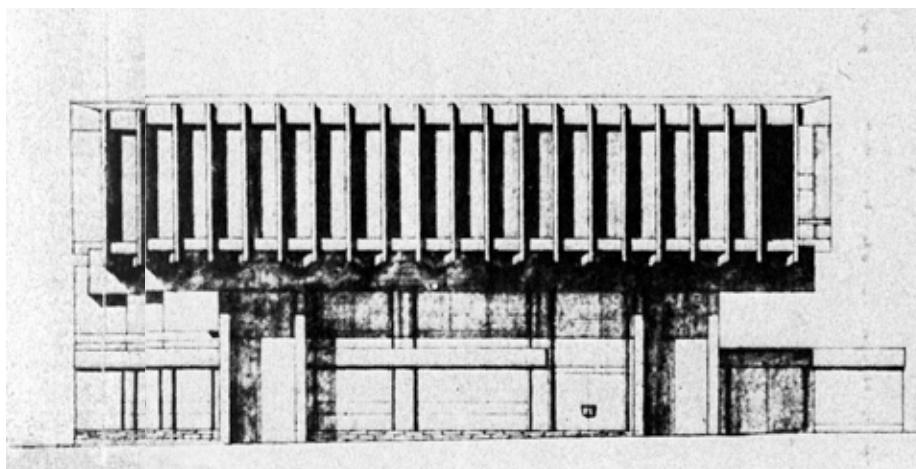
Less than ten years later, as a member of Tange's laboratory at the University of Tokyo, Isozaki helped design Tange's epoch-making "Tokyo Plan, 1960." In this project, Isozaki oversaw the design office districts situated in the "central spine of the city," which was in turn overseen by Kurokawa Kishō. Isozaki's contribution, known as "City in the Air," is a network of bridge-like structures spanning vertical cores spaced at 200-meter intervals. Though it is unusual to compare an enormous project like this to Tange's Hiroshima Exhibition Hall, which is less than 100 meters in length, I will do so to explain the lead-up to the birth of megastructures.

Generally people think of megastructures as fragments of techno-utopias—as fantasy, not reality. While there have been real breakthroughs in megastructural architecture, these have been facilitated by various practical and technological investigations. The first megastructure realized in Japan, albeit of modest scale, was Harumi Apartment Building (completed in 1958), designed by Maekawa Kunio and Ōtaka Masato, Maekawa's chief architect. Though only ten stories high—in compliance with the Japanese building code—Harumi can be considered the first high-rise residential project in Japan. It was apparently inspired by Le Corbusier's Unité d'Habitation. The structural engineer in charge, Kimura Toshihiko, drew on the notion of "major structure" and "minor structure," conceiving the building as layers of artificial

ground rather than simply a high-rise building.<sup>3</sup> The “major construction” unit extended three stories in section and two units in plan, within which floors and walls could be removed to accommodate future development. Although this approach was, foremost, a cost-reduction strategy, conceived to reduce the number of joints in the building’s steel frame, the designers also predicted that the standard individual living units at that time would eventually become too small and would be combined in the future; thus the strategy anticipated the forthcoming theory of Metabolism.

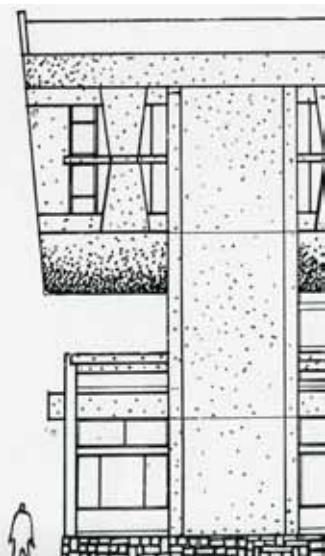
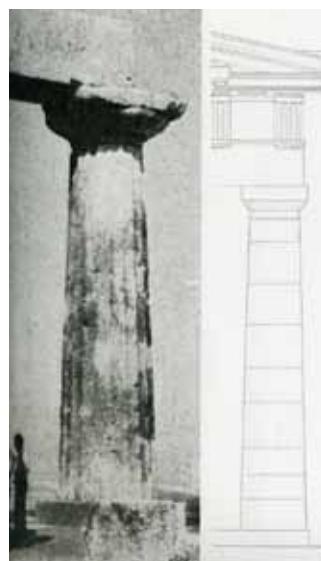
This idea was further developed by Tange in his MIT project the following year. Tange’s megastructure for Boston Harbor was designed as vertical layers of artificial ground with four to seven major construction segments in section, plus three stories for public transportation and public facilities below. Simply put, the dimensions are amplified, introducing boulevards in place of the inner corridors seen at the Harumi Apartment House. Harumi remained a piece of architecture, but Tange’s megastructure was a conceptual extrapolation—a piece of the city.

It is worth noting that both of these buildings were planned in or on bays. Tokyo’s terrestrial regions were all subdivided according to a complicated system of private land ownership, which made large-scale redevelopment projects nearly impossible. It was Kanō Hisa’akira, first president of the Japan Housing Corporation (founded 1955), who first recognized Tokyo Bay’s potential for providing territory necessary for Japan’s national development. Kanō, who also commissioned Maekawa’s Harumi project, was originally a banker with an international career, and after resigning from JHC, he became governor of Chiba prefecture in 1962 (although he died shortly after his election). In the late 1950s, Kanō launched a series of proposals to landfill, or “reclaim,” 60 percent of the bay. His visions played a critical role in inspiring and encouraging Tange and the Metabolists in their own plans for the future of the capital city. Kanō’s suggestions were drafted by members of the Sangyō Keikaku Kaigi (Industrial Planning Board), a private council of leading industrialists that worked to promote Japan’s resurgence. It advised the national government on important projects such as privatizing the national railway, establishing a national highway system, constructing the Trans-Tokyo Bay Bank, and establishing a new international airport, most of which were later realized.



Isozaki Arata,  
earlier scheme of Ōita  
Medical Hall, ca. 1960.

Isozaki, conceptual  
drawing of Ōita Medical  
Hall, Ōita City, 1961.





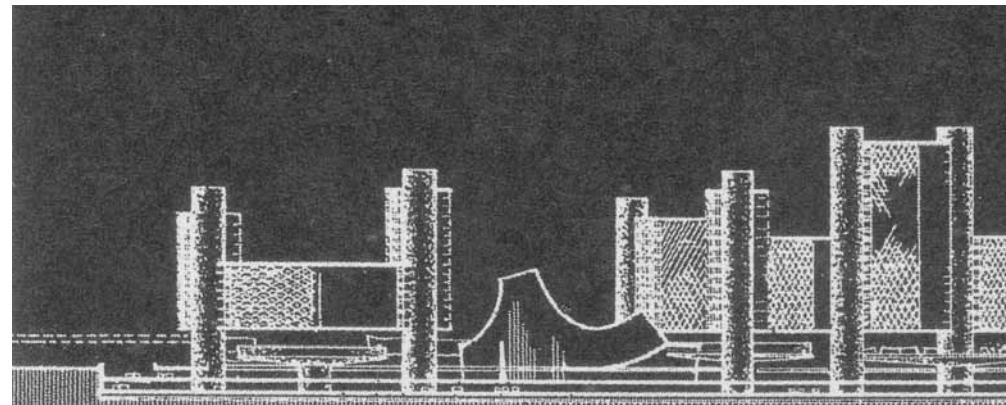
The residential megastructures of “Tokyo Plan, 1960” lacked the three-layer composition of the Harumi Apartment House, but did incorporate (albeit on a grander scale) Harumi’s stepped structure. When designing the Boston Harbor project, Tange discussed the coexistence of a human scale and an automobile (i.e., urban) scale. He had already experimented with designing at two scales in his Hiroshima proposal, though automobiles did not mediate that design. The design of the housing towers in “Tokyo Plan, 1960” was overseen by Kamiya Kōji, who would later become president of URTEC, Tange’s design practice.

Tange’s designs for Boston Harbor, Tokyo Bay, and the World Health Organization Headquarters Building (designed concurrently with “Tokyo Plan, 1960”) all feature megastructures with massive, inclined structural members. Thus they can be considered revisitations of the motif Tange established in his winning entry to the Monument to Greater East Asia Co-prosperity Sphere competition. In all of these designs, the roof and walls are indistinguishable and seem to grow directly up from the ground (or sea). By adapting the traditional Japanese roof form idiom to serve as the structural system in these megastructures, instead of merely reusing it as is, Tange quashed any suspicions that his designs were reactionary and succeeded in realizing projects that seem transmodern.

In 1958, Isozaki and Kamiya, Tange’s assistants who would be in charge of designing the two megastructural types in “Tokyo Plan, 1960”—the “City in the Air” type and the housing tower type—collaborated on Tange’s submission to the competition for the administration building in Léopoldville (now Kinshasa) in Congo. This design features tubes, with shallow lens-like sections, placed on top of *pilotis*—I will refer to this as Tange’s “flying tube” motif. Isozaki never stated definitively that he conceived of Tange’s Exhibition Hall in Hiroshima as a flying tube, but the flying tube motif does appear in Isozaki’s maiden work, the Ōita Medical Hall (completed 1961). This entire building is irrefutably a flying tube and can be understood as a refinement of the Léopoldville design. The tubes in both Léopoldville and the final design for Ōita lie directly on top of structural piers and function as girders. This, however, was not true of the design that Isozaki initially proposed for Ōita. Though the design does feature a volume lifted up on top of piers, its outer walls do not function as girders, its roof and floors are conventional beam structures, and its front façade is louvered. These details reveal the clear

influence of Tange's Exhibition Hall in Hiroshima. Although the Ōita building is smaller than the Exhibition Hall, and there is no need for its outer walls to function as a girder, Isozaki modified his final design so that they would. As a result, the building is a megastructure, if one of minimum scale. (These design decisions suggest the influence of Konrad Wachsmann, who visited Japan in 1955 and led a workshop that Isozaki attended.) When Isozaki published his final design of the Ōita Medical Hall, he included a drawing depicting his building standing alongside a Greek temple. In contrast with Tange, who invoked Ise in his designs—a building with *munamochi bashira* (pillars rising from the ground that directly support the projecting ends of the ridge beam), Isozaki invoked Doric columns in the piers supporting the flying tube in his design. This image, dredged up from the deep psyche of the cultural heritage of architecture, might serve as an interesting subject for architectural psychoanalysis.

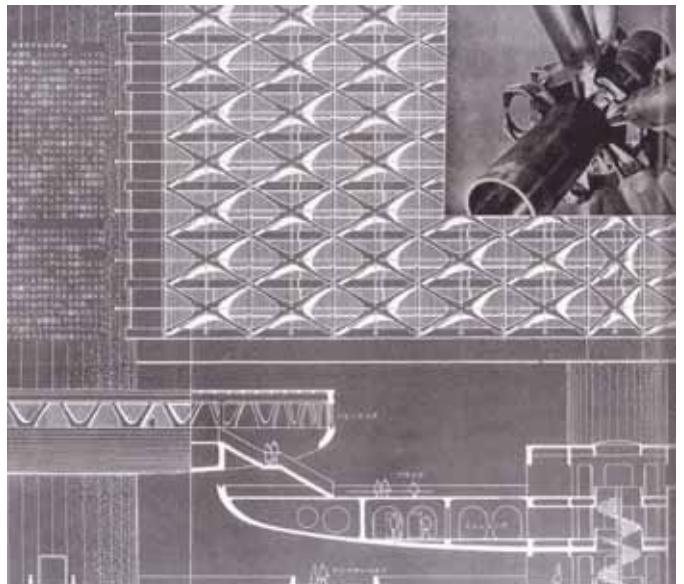
The flying tube structural type is also manifested in the “City in the Air” project for the redevelopment of the waterworks site in Nishi-Shinjuku (Tokyo), which Isozaki completed around the same time.<sup>4</sup> The project predates “Tokyo Plan, 1960,” completed in autumn of the same year, and features outer walls with mesh-like girders that resemble those in the Prada store, Tokyo, by Herzog and de Meuron (completed 2003). Isozaki designed Ōita Medical Hall as a single fragment of his “City in the Air” project. He applied this design in “Tokyo Plan, 1960” and in a revised Nishi-Shinjuku proposal, which he published in 1962. The structures spanning vertical cores in the 1960 “City in the Air” project are thick and slab-like, and lack the light bridge-like quality of those seen in “Tokyo Plan, 1960.” The qualities of “Tokyo Plan, 1960” were fed back into Isozaki’s revised Nishi-Shinjuku project of 1962, which replaced his previous proposal. The spanning structures in this revised proposal are wrapped in a delicate brace structure that, by itself, is an unconvincing means for spanning such extraordinary distances. The conceptual image of cores and bridge structures thus took precedence over structural feasibility in Isozaki’s proposal.

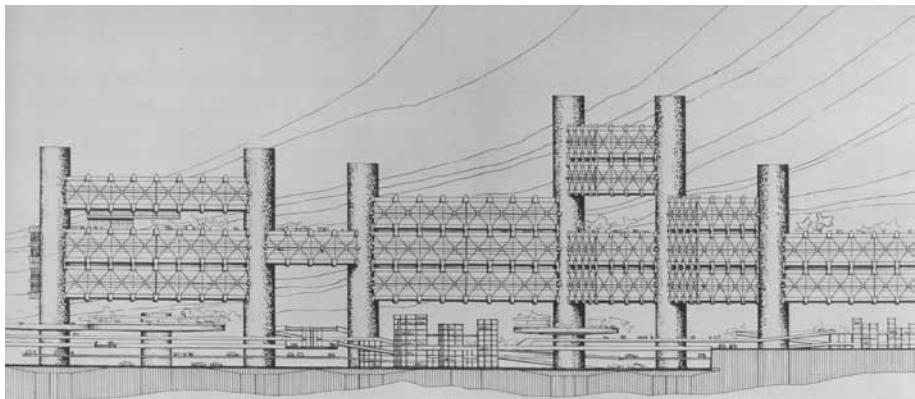
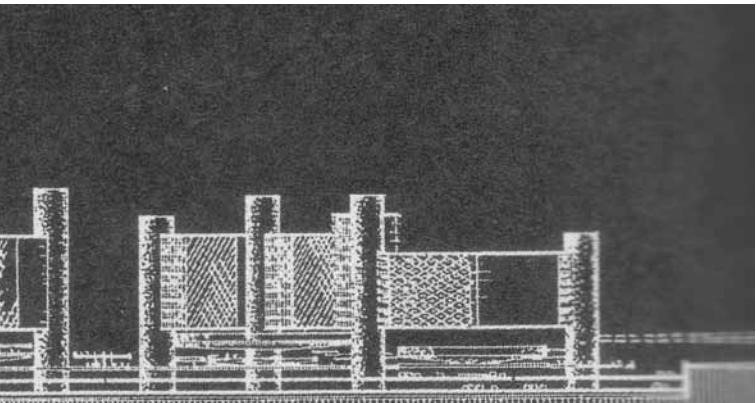


Isozaki Arata, initial scheme for City in the Air in Nishi-Shinjuku, Tokyo, 1961.

Isozaki, detail of the initial scheme for City in the Air in Nishi-Shinjuku.

Isozaki, second scheme for City in the Air in Nishi-Shinjuku, 1962.





## THE CITY OF THE ORGANIZATION MAN

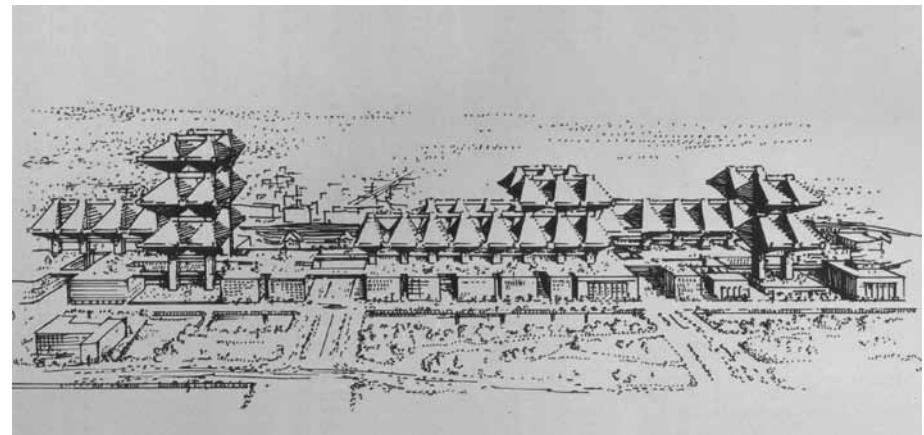
"Tokyo Plan, 1960" by Tange was initially published in the March 1961 issue of *Shinkenchiku* (known in the West as *Japan Architect*) and then as an independent booklet with some additional data two months later. In the introductory text, Tange cited the notion of the Organization Man put forward by American sociologist William Whyte. Tange described Tokyo as a global city whose economic structure was quickly shifting to tertiary industry as classified by British and Australian economist Colin Clark: politics, administration, finance, management, research and development, and communication. Tange referred to the Organization Man as undertaking these activities. A monograph on Tange by Udo Kultermann published most of this text, but references to Whyte were, regrettably, missing.<sup>5</sup> In the original Japanese text, the organization for this Organization Man was described as an open one, connected to communication networks and supported by the latest technological innovation. This new type of comprehensive organization would drive all activities in the city of 10 million, Tange claimed. He expected some criticism that the Organization Man would lead to the masses experiencing loneliness and isolation, but he argued that a detachment from these networks would make people even more isolated. On the contrary, he continued, the development of a communication apparatus would generate an enormous city with maximum fluidity.

In her illuminating book on Louis Kahn, Sarah Williams Goldhagen summarized how the American architectural community, including Kahn, reacted to Whyte's book or to the book *The Lonely Crowd* by David Riesman.<sup>6</sup> Tange's reaction to these propositions was the opposite; his was an almost Nietzschean affirmation of the new situation. Unlike other leftist intellectuals in both the United States and Japan, he welcomed the megalopolis as a collective alter ego of this Organization. Tange's Organization Man, who belonged to the new social elite of the dawning era, was actually unlike Whyte's, who was listless, lived in the suburbs, and lacked social aspirations. To continue the Nietzschean metaphor, Tange's Organization Man was a "superman" of the information society. "Tokyo Plan, 1960" is a city for this superman. For Tange, the megalopolis was a city transcending the modern metropolis, and the megastructure was its architectural form.

At the same time as the release of his “Tokyo Plan, 1960,” Tange was commissioned by Yoshida Hideo, the president of Dentsū, Japan’s largest advertising agency (and later the world’s largest), to build their headquarters. Tange had already built their Osaka branch in 1960 and designed the Totsuka Country Club for Yoshida. Yoshida shared the architect’s ambitions for a rising nation and must have been greatly impressed by an hour-long television program by the National Broadcasting Company on the “Tokyo Plan, 1960.” Yoshida insisted that Dentsū should build a monumental building that would symbolize the company. The result, completed in 1967, was rather mediocre, however, when considered beside Tange’s other buildings from the 1960s, and it has failed to draw much attention. The initial intention was far more ambitious, in response to the client’s own ambitions.

This awkward outcome is related to a dispute over revision of the building codes, which prohibited building anything above 31 meters. The revision, studied by the Architectural Institute of Japan, yielded a 1955 report by a committee led by Asada Takashi, who had been Tange’s senior partner and would organize the Metabolist group. In 1963, the building codes were revised in a limited way, permitting building an extra 30 percent floor area ratio, although only in exceptional cases, such as redevelopments larger than one urban block. Tange’s first proposal for the Dentsū Headquarters Building adhered to the height limit and featured an office block, divided into upper and lower levels, spanning two vertical cores. Due to the height limit, however, the proposal failed to convey the impression of a city in the air composed of bridge-like clusters.

In February of the same year, *Weekly Asahi* published an article on the development of the Marunouchi area, Tokyo’s most prestigious business center.<sup>7</sup> The article featured Itō Teiji, a prominent historian who criticized the strategy of the Mitsubishi-jisho (Mitsubishi Estate), Japan’s largest developer and a major land-owner in the Marunouchi district. Itō criticized Mitsubishi for not trying to take on the challenge of new possibilities following height limit revisions. For the purposes of comparison, Itō introduced another “City in the Air” project by his close friend Isozaki Arata, one that had never been published before its inclusion in this article. Itō later stated that in those days, Isozaki repeatedly said that he was not interested in building anything below 31 meters; his new project for Marunouchi was designed only for provocation. Isozaki argued that this project could be built with

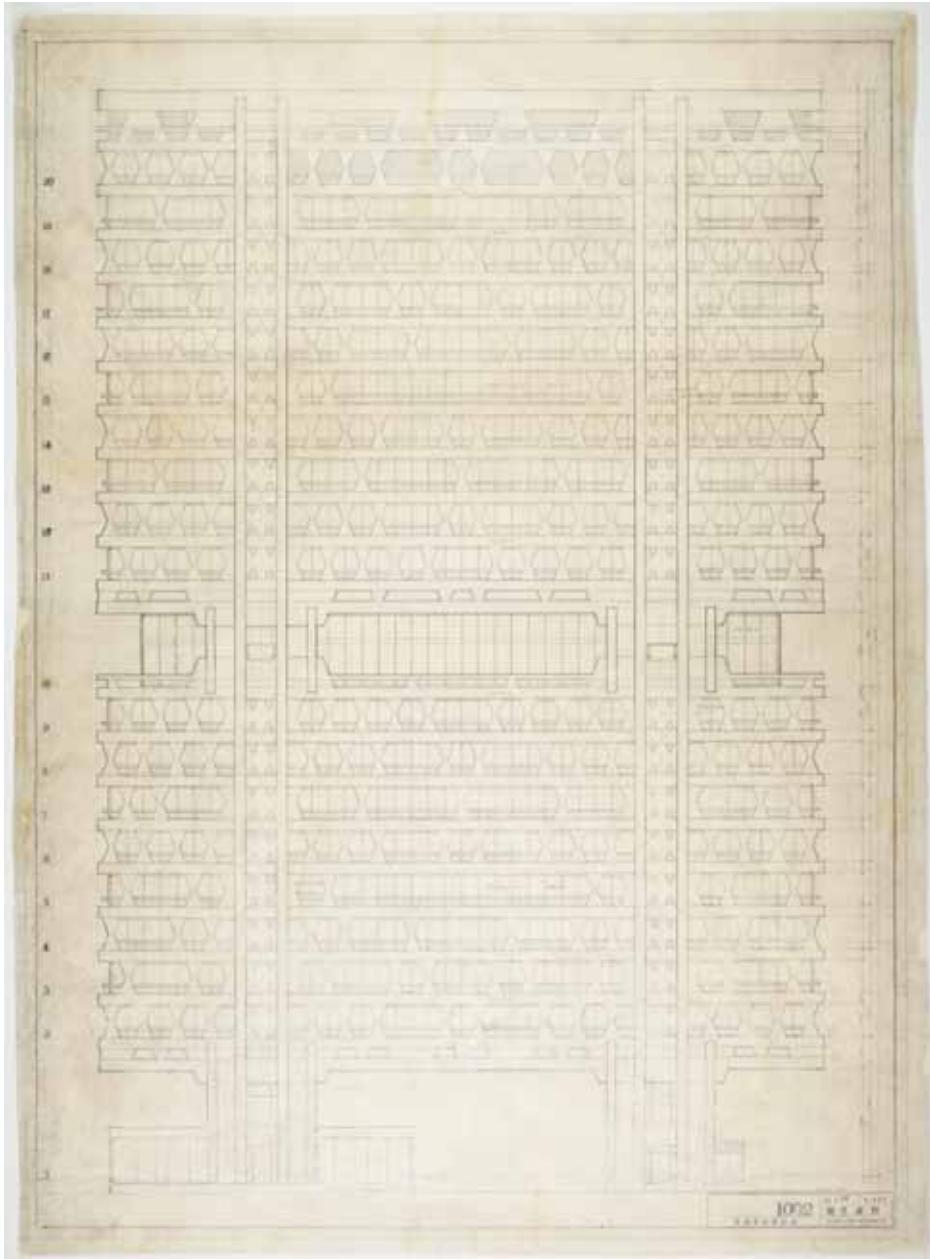


Isozaki Arata,  
City in the Air in  
Marunouchi, Tokyo,  
1961.

Tange, second scheme  
for Dentsū Headquarters,  
ca. 1961.

new image  
Tange, final scheme  
for Dentsū Headquarters,  
1963.





minimum destruction of existing structures. Isozaki's "City in the Air" was dramatically juxtaposed to Mitsubishi's city on the ground, expressing a striking contrast between the architect's visions for the future and the vulgar capitalist reality of the time.

In the same issue, Tange's second scheme for Dentsū, taller than the first, was also published, along with his own argument regarding the possibilities presented by changes to building codes, which Mitsubishi deliberately ignored to avoid the foreseeable troublesome procedures. An initial Dentsū plan within the height limit regulation had been a temporary solution; Tange's team, staying aware of the situation, waited for implementation of new regulations, which were still under review. After it became clear that the height limit was indeed to be changed, the Dentsū project was again revised to a height of 21 stories, fully 100 meters high.<sup>8</sup> To realize this additional height, Tange proposed that Yoshida appeal to landowners in the neighborhood; his proposal was accepted enthusiastically.

This was a battle as well among leading Japanese corporations, related to the new possibilities presented by increased building height. While Mitsubishi lacked any ambition—Isozaki's project was simply intended as provocation—Tange's ambition was to build the city's first skyscraper. He was competing against the Kasumigaseki Building, which was in fact built as Tokyo's first skyscraper in 1967. The structural engineer in charge of the Kasumigaseki Building was Mutō Kiyoshi, a former professor at Tokyo University who was a mentor to Tsuboi Yoshikatsu, a structural designer and another of Tange's longtime partners, here in charge of the Dentsū project. The Kasumigaseki Building was a project developed by Mitsui Real Estate, Mitsubishi-jisho's rival. The Dentsū project had ambitions for society, providing a new architectural typology, but was not ambitious in architectural design. Tange's ambitions for the Dentsū project, however, were to integrate these two.

To achieve flexible workspaces, Tange decided to concentrate horizontal structural components in the façade, with orthogonal structural elements made up of whole exterior walls that also acted as huge girders—what Tsuboi called an eccentric truss system. The eccentric pattern was derived from uneven stress distribution, allowing variety in the façade—symbolizing the indeterminacy of contemporary urban environments. This structural idea was directly derived from the design for the office quarter

in the “Tokyo Plan, 1960.” As mentioned above, these designs might in turn have been derived from a small archetype offered in concrete by Isozaki’s Ōita Medical Hall and by his first “City in the Air” project for Nishi-Shinjuku.

Tange’s ambitious scheme for this project eventually exceeded the budget by more than 60 percent. Unfortunately, Yoshida died of cancer in early 1963. It is said that Yoshida, three months before his death, gave a heartbreak speech to his staff, declaring the completion of this new palace for advertising activity to be his final task, for which he would give up his own life. The new president, however, who didn’t share his predecessor’s aims, asked the architect to keep to the original budget; they eventually had to abandon the more ambitious scheme. The staffs in charge of the project, when later interviewed, said that Yoshida might have saved the design had he not died.<sup>9</sup> They also witnessed tears in Tange’s eyes as he lost the opportunity to build the ambitious skyscraper.

Even before this tragic resignation, however, Tange’s team had decided to develop a plan for a much larger area in Tsukiji. The project was published in the January 1, 1965, issue of the *Asahi* newspaper, declaring it as the city of the new age ahead. In Tange’s new plan, most of the whole Tsukiji district was covered by a densely built, three-dimensional network of office space.

Vertical shafts (“cores”) rose from the ground, office spaces bridging them, subdivided into clusters of different heights (layers) by means of the Fibonacci system. The 1934 Tsukiji Honganji Temple, designed by a famous architectural historian from Tokyo University, occupied the center of the district, office clusters on both sides. Running east-west was a long, low structure enclosing shopping above grade and metro stations and parking structures underground, a district gate for those arriving from outside the district. Cultural and religious structures maintained low profiles, compensating for the hyper-density around them.<sup>10</sup>

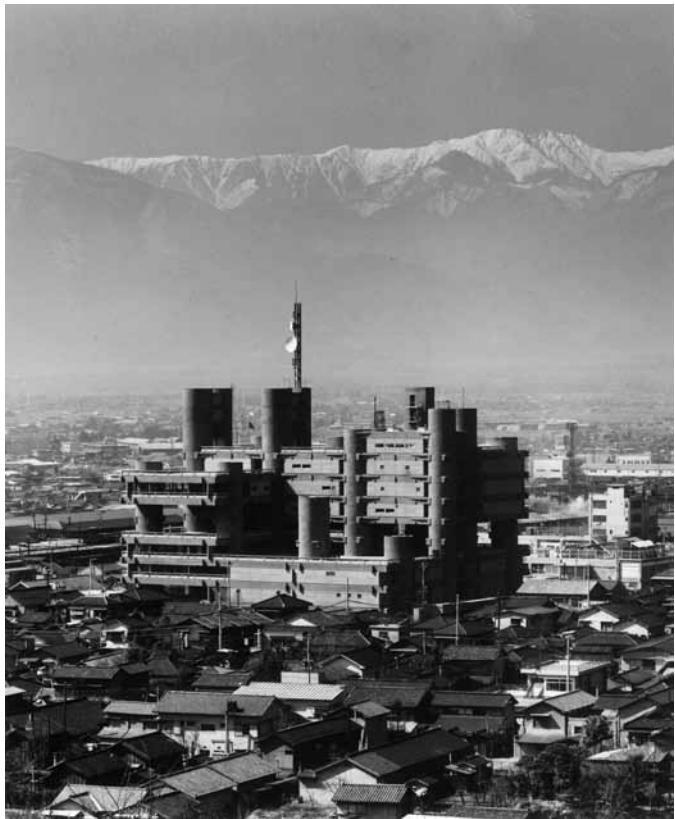
Earlier, I noted that Isozaki’s “City in the Air” was wishful; it did not take into account practical issues such as economics, structural requirements, and the like. By comparison, Tange’s Tsukiji project was intended as a potentially realistic proposal: structural spans were shorter (approximately 30 meters), and there was more useful floor area. Developed with the Dentsū building



Tange Kenzō, Tsukiji District Redevelopment Plan, Tokyo, 1963.

Tange, Tsukiji District Redevelopment Plan, Tokyo, 1963, reconstruction by computer graphics.





Tange, Yamanashi  
Press and Broadcasting  
Center, Kōfu, 1966.

at its heart, the project was intended as a proposition: a city to harbor Tange's version of the "Organization Man." The size (and location) of the Tsukiji district covers one superblock in the central spine of "Tokyo Plan, 1960." Thus the Tsukiji project can be understood as a sincere attempt to realize a portion of that project, which has generally been dismissed as utopian and unrealistic.

From 1961, the year the Dentsu project was commissioned, another ambitious project for private enterprise related to public relations was also initiated: the project for the Yamanashi Press and Broadcasting Center, eventually completed in 1966. As Yoshida had also established a system of private broadcast companies and was associated with many, including the Yamanashi Press and Broadcasting Company, this commission might have been through his arrangement. Another notable project was the Tokyo branch of the Shizuoka Press and Broadcasting Company. These two projects were particularly typical showpieces, corresponding to Tange's emphasis on informational and service industries, as in "Tokyo Plan, 1960." These were designed as three-dimensional blocks of different functional units, open to future extension. If we conceive of the Tsukiji project as one superblock from "Tokyo Plan, 1960," then the buildings featured within, along with the unrealized Dentsū Headquarters building, correspond to architectural "cells." These were projects, for Tange, with programs most relevant in symbolizing the flux of men, things, and information.

Tange wrote of the Yamanashi Press and Broadcasting Center, "This is a proposal for the spatial composition for a specific building, but is also a proposal for urban design," claiming that this was "one of the actual examples of realization of a three-dimensional network of human activities in one building."<sup>11</sup> The Tsukiji project had suggested the large-scale organization of essentially unprogrammed office areas. Yamanashi Press and Broadcasting Center consisted of three distinct sections defined at a smaller scale: offices, broadcasting and printing facilities, and retail. For Tange, these blocks needed articulation; access through the vertical cores also required separation. In this sense, Tange revisited themes from Tsukiji in the Yamanashi project, taking them to the next level.

Around this time, Tange began to use the term "communication core," referring to more than the vertical traffic of stairways

and elevators originally anticipated in his towers. He now saw architecture as a communication conduit, carrying humans and information. Tange's conceptual structure was scientific; more than naively functional, it was intersubjective, its clarity allowing the framework to be understood and exploited by others despite its complexity. The logical linking of functional clusters at Yamanashi Press and Broadcasting Center, like the Metabolists' use of cores and clusters, was based on communication theory. It was structuralist. "Structuralism" was sometimes treated as merely morphological, but Tange's idea of communication, its often passionate presentation notwithstanding, was based on cold logic.

#### MEGALO(-POLIS) MANIA

In the early 1960s, even as Tange worked on his architectural masterpieces, he also developed as a planner, concentrating on Tokyo and its ties to the region and the nation. Tange's regional economy and land-use planning activities escalated around 1963. His architectural projects—from "Tokyo Plan, 1960" to the Tsukiji project, to Yamanashi Press and Broadcasting Center, and finally, to the single-core Shizuoka Press and Broadcasting Building—exhibited a progressive diminution in scale, as if by centripetal forces. The opposite was true, however, of his planning projects: during the same period, these increased in scale from the urban to the national, as if by centrifugal forces.

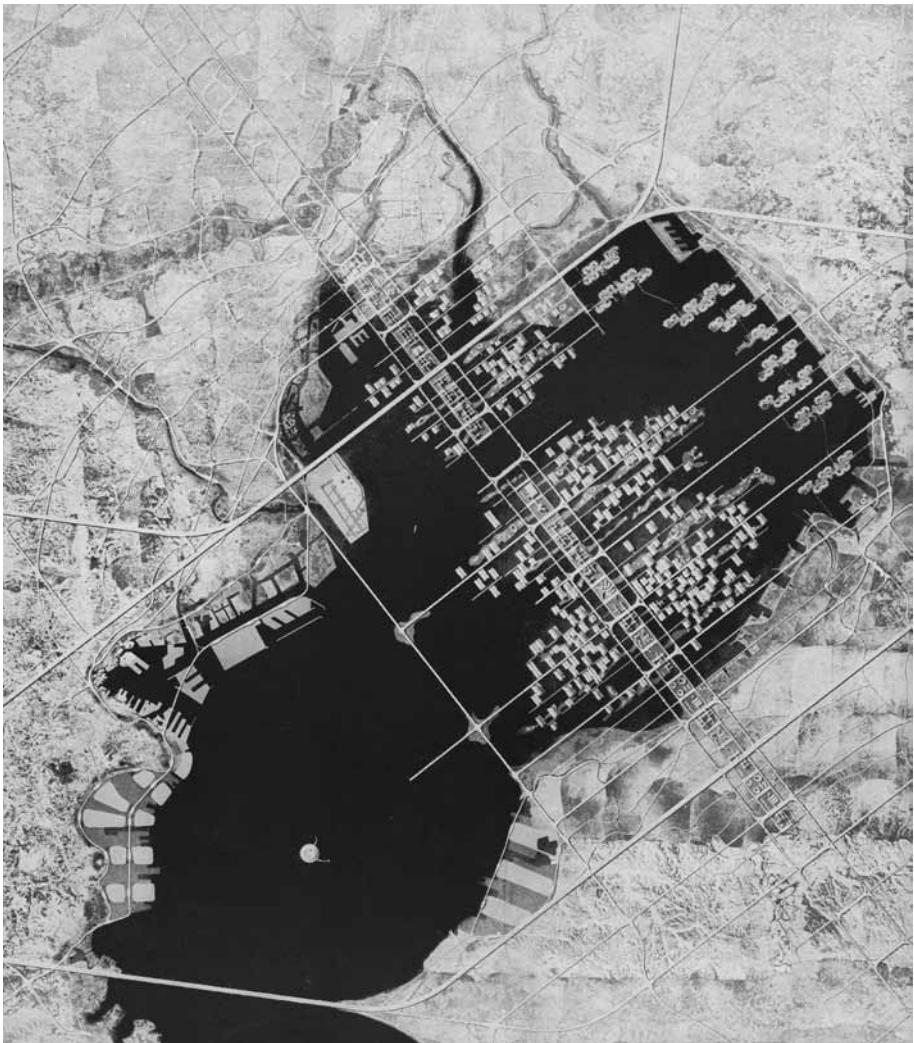
Tange's "Tokyo Plan, 1960," based on the theory of urban centralization, was the first proposal to counter the Japanese government's national planning policy, which recommended the decentralization of metropolitan functions. Tange expanded on this proposal in his "Tōkaidō Megalopolis" plan, which was in essence an extension of the linear city structure he advanced in "Tokyo Plan, 1960."<sup>12</sup> The concept of the megalopolis, as conceived by French geographer Jean Gottmann, referred to a conurbation, such as the one extending from Boston to Washington, D.C. Although Gottmann and most others were skeptical of such extreme urban concentration, Tange affirmed it and felt that it could be managed. Thus we might conclude that Tange had "megalopolis mania." His proposals for the Tōkaidō Megalopolis were repeatedly published, underscoring his enthusiasm for the work. These studies were pursued through his University of Tokyo research lab, his private practice (URTEC),

and the newly established Japan Center for Area Development Research (Nihon chi'iki kaihatsu senta or JCDRA).

The JCDRA was established in 1964 with sponsorship from the Ministry of Construction. It was a collaborative, interdisciplinary research center involving Isomura Ei'ichi, sociologist and another advocate of the idea of megalopolis, Takayama Eika, city planner and Tange's previous mentor, and Kikawada Kazutaka, president of Tokyo Electric Power Company and a member of the Industrial Planning Board. URTEC, like many Japanese companies, was explicitly organized in divisions and included an urban design "section" staffed by graduates from Tokyo University's urban engineering department. Some of the staff had earlier been members of a working group in Tange's university lab that had contributed to a December 1963 special issue on "Japanese Urban Spaces" (*Nihon no toshi kukan*) in *Kenchiku Bunka*. The JCDRA was one of the earliest institutions of its kind; in its objectives—promoting government policy through research, convening industrial and academic leaders—it resembled the earlier Industrial Planning Board.

In 1964, Tange gave a public lecture to the JCDRA on the Tōkaidō Megalopolis, subsequently published in their periodical, *Regional Development (Chi'iki kaihatsu)*, in a special issue, "Regional Development under Industrial and Academic Cooperation" (*Sangaku kyōdō ni yoru chi'iki kaihatsu*). On New Year's Day, 1965, Japan's national broadcast corporation (NHK) followed up on the topic by airing a special program on grand designs for the twenty-first century, featuring Tange and economist Ōkita Saburō, who later became Minister for Foreign Affairs. A 1966 book, *Atlas of the Japanese Archipelago's Future (Nihon rettō no shōraizō)*, was also published in two parts, one covering the Tōkaidō Megalopolis between Tokyo and Osaka (a 500-kilometer-long coastal zone), and a second section with a generalized description oriented toward urban structure and philosophy closely related to Tange's "Tokyo Plan, 1960."

Tange proposed an open-ended, linear city; he emphasized intensive investment and development in the Tōkaidō belt, which boasted greater productivity than the rest of the nation. In this respect, his work throughout the 1960s was an expansion of "Tokyo Plan, 1960." His ambition, to design Japan's social infrastructure, was far beyond the scope of work for a single architect. Given the scale of the proposed conurbation, 500 kilometers



Tange Kenzō,  
expanded and updated  
version of "Tokyo Plan,  
1960," 1970.

in length, the plan could describe only a conceptual framework and a transportation infrastructure, covering too large a territory for him to suggest architectural design. Tange proposed that the "Tokyo Plan, 1960" axial structure be extended to form a rapid-transit network, already partially realized in the bullet train; his linear conurbation would be unified by a dense transportation and communications network.

When the national government, commemorating the hundredth anniversary of the Meiji Restoration in 1968, held a contest for "Design of Japan's National Land and of Citizens' Way of Life in the Twenty-first Century", the report of Tange's team, "Japan in the Twenty-first Century, Illustrations of National Land and Citizens' Way of Life in the Future" was among three finalists. Tange's team produced by far the most impressive of the three proposals, in terms of both quality and quantity. In this report, "Tokyo Plan, 1960" was further developed, looking fifty years into the future and following the trajectory of an urban axis projected into the countryside; floating residential cities were scattered in Chiba's coastal area facing Tokyo Bay, an area left vacant in the earlier version of the 1960 plan.

These represented the social ambitions not only of the architects, but also of the ascendant enterprises and bureaucracy that anticipated dominating Japanese industrial society in the years to come. However, these ambitions that characterized the period of Metabolism did not last long.

When the fragments of "Tokyo Plan, 1960" or of Tōkaidō Megalopolis were in the final stages of completion, Tange was also engaged in the design of Japan's first World Exposition, for Osaka. He regarded this national event as an occasion to present an image of the future city to the public. What was called the "Big Roof" was a model of the "City in the Air" with Tange's Festival Plaza below, the whole envisaged as a model of the public realm's future. The architect's serious ambitions were not received as he intended, however; the event was a great success, but was not successful as a serious experiment. To the architect's disappointment, people enthusiastically took part in the event, but treated it only as a form of mass entertainment. The notion of a public now gave way to the rising popular masses. After this event, it was not architects but, quite ironically, Dentsu that took the initiative regarding such events. Advertising, devoid of social ambition, had taken command, marking

the arrival of an era of mass consumption and the beginning of Japan's postmodern stage. You might call it the information society. Was this, however, what Tange had in mind when he welcomed the megalopolis for the Organization Man a decade before?

#### POSTSCRIPT

On March 11, 2011, a massive earthquake and tsunami devastated northern Japan and caused serious problems at a nuclear power plant (at the time of writing this essay, these problems remain unresolved). Mountains of rubble left by the tsunami evoke the landscape, described above, that once surrounded the Exhibition Hall in Hiroshima. Though workers at the damaged nuclear facilities have served heroically, executives at Tokyo Electric Power Company (TEPCO), owner of the facilities, have lain low, which has provoked public exasperation. In contrast with these executives, those active in the 1950s and 1960s exhibited remarkable leadership and vision. Matsunaga Yasuzaemon, for example, was president of TEPCO and in charge of the Industrial Planning Board, the organization that lent influence to Tange's "Tokyo Plan, 1960." He advanced numerous proposals concerning Japan's postwar reconstruction. Also noteworthy is Kigawata Kazutaka, who succeeded Matsunaga as the president of TEPCO and was head of JCDRA, which provided Tange space to work on his national planning proposals; Kigawata backed many of Tange's visions and made various proposals, concerning economics and other fields, for Japanese society. Yoshida, who commissioned the Dentsū Headquarters design and thereby instigated Tange's Tsukiji plan, the two presidents of TEPCO, and Tange himself each set forth clear, detailed visions of a rising Japan. As post-quake recovery efforts commence in postmodern Japan, does anyone have such a vision?

1 This essay is an extract from my book (in Japanese) *Metabolism Nexus* (Tokyo: Ohm-sha, 2011).

2 Isozaki Arata, "Watashi no rirekisho," *Nihon Keizai Shinbun* (May 8, 2010), 24.

3 Kimura Toshihiko, "Tokyo Harumi-chō no kōsō apaato–sono kōzō," *Kokusai Kenchiku* (March 1959), 53–4.

4 This earlier scheme was published in the June 1960 issue of *Kindai Kenchiku*.

5 Udo Kultermann, *Kenzo Tange* (London: Pall Mall Press, 1970).

6 Sarah Williams Goldhagen, *Louis Kahn's Situated Modernism* (New Haven: Yale University Press, 2001).

7 Itō Teiji, "Mitsubishi-jisho ni mono-mōsu," *Shūkan Asahi* (February 1, 1963), 13–19.

8 There are other versions of this project with minor differences.

9 Interview with Yoshijima Tadao and Tōki Arata, June 24, 2009.

10 Tange's staff made two models for this project. They published the first one, presenting only half of the site, in the *Asahi* newspaper. First shown is the photo of the second model by my student Yoshida Rintarō, who happens to be a grandson of Tange's client.

11 Tange Kenzō, "Kenchiku kara aaban dezain," *Shinkenchiku* (April 1967), 110.

12 Tōkaidō, originally the name of the road from Tokyo to Kyoko, now indicates the area between Tokyo and Osaka.

13 The book was published by Kōdansha (Tokyo) in 1966.

# BOSTON HARBOR PROJECT 1959–1960

# TOKYO BAY PLAN 1960–1961

In the fall semester of 1959, Tange taught a design studio at MIT on the topic of “New Community on the Sea: 25,000 Inhabitants on the Boston Bay.” The project site was the Dorchester Bay area of Boston Harbor, surrounded by South Boston, Columbia Point, and Thompson Island. The scheme proposed by Team 2 distinguishes between a major and a minor structure, the former consisting of “long-life, super-scale elements of the city,” and the latter “short-life, small-scale” components. Connected by a highway and monorail loops, the major structures are A-frame in section, and plugged into them are specific programs, or minor structures, such as dwelling units and schools. In the studio brief, Tange described the goal of creating “the ideal habitat for this particular place at this particular moment, uncompromised by existing arbitrary laws and regulations—state, federal, or FHA [Federal Housing Authority]—in an attempt to reach a moment of truth and to find a key to human value.”

Tange’s proposal for the transformation of Tokyo, “A Plan for Tokyo, 1960,” reinvented the city on a scale that seems as unimaginable today as it did fifty years ago. The proposal imposes a linear infrastructure that would straddle Tokyo Bay—a distance of nearly 30 kilometers—as the Civic Axis of the new metropolis. Giving primacy to the issues of transportation and communication, the most salient feature of the Civic Axis is an elevated highway infrastructure, lifted to 40 meters above land and 50 meters above water, suspended from piers spaced at 1-kilometer intervals. Starting at Harumi, the furthest of central Tokyo’s major man-made islands, the axis would be divided into eight so-called cycles, each with a discrete identify and function and forming a link in the overall axis. In a fishbone-like structure, a series of residential sub-spines run perpendicular to the Civic Axis. Appended to them can be any number of residential islands, incorporating the Boston Harbor project’s A-frame structure. The axis is also conceived in terms of a broader national transportation infrastructure, accounting for airports and intercity rail, and anticipating Tange’s later studies at even larger scales. Tange was among the first to question prewar notions of suburbanization and dispersion, which he described as a closed system. As he pointed out, a radial transportation structure actually exacerbates the problem by routing everyone through the city and creating more traffic volume.

63 Boston Harbor Project,  
transverse section A-A,  
collage drawing

64–65 Views of sectional  
model of Boston Harbor  
project

66 Boston Harbor project,  
plan of minor structure  
on upper levels

67 Boston Harbor project,  
plan of major structure  
on lower levels

68–69 Views of Boston  
Harbor project model

70 A Plan for Tokyo, 1960,  
study of potential axial  
development in Tokyo

71 Tange in front of the  
model of A Plan for Tokyo,  
1960

72–73 Above: A Plan for  
Tokyo, 1960, diagram of the  
new Civic Axis straddling  
Tokyo Bay

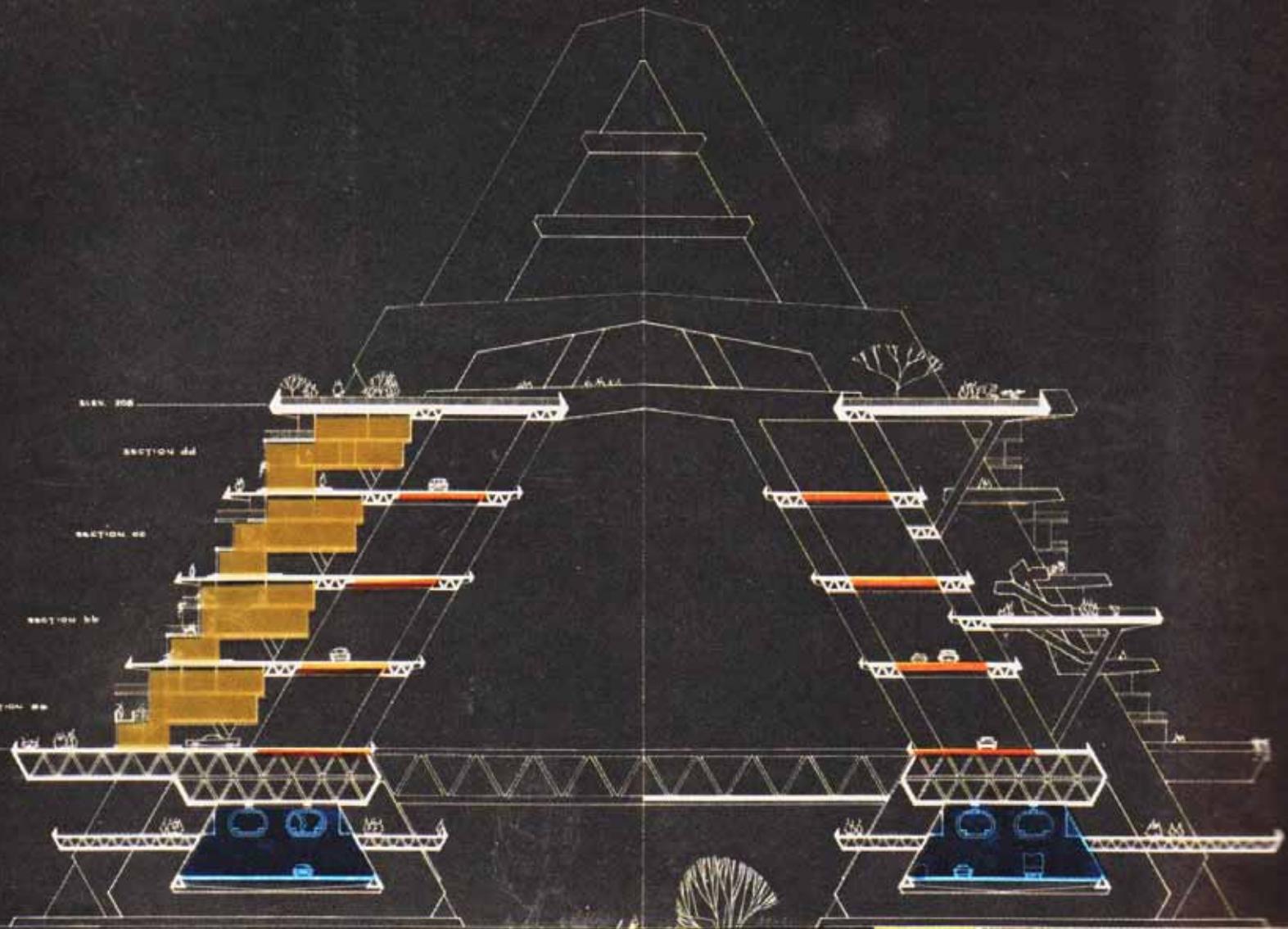
Below: Diagram of  
multi-tiered transportation  
infrastructure of the  
Civic Axis

74 Above: Growth process  
of biological organisms  
as metaphor for urban  
development

Below: The radial/ring model  
as a closed urban system  
versus the “fishbone” linear  
city model as an open urban  
system

75 Model of A Plan  
for Tokyo, 1960

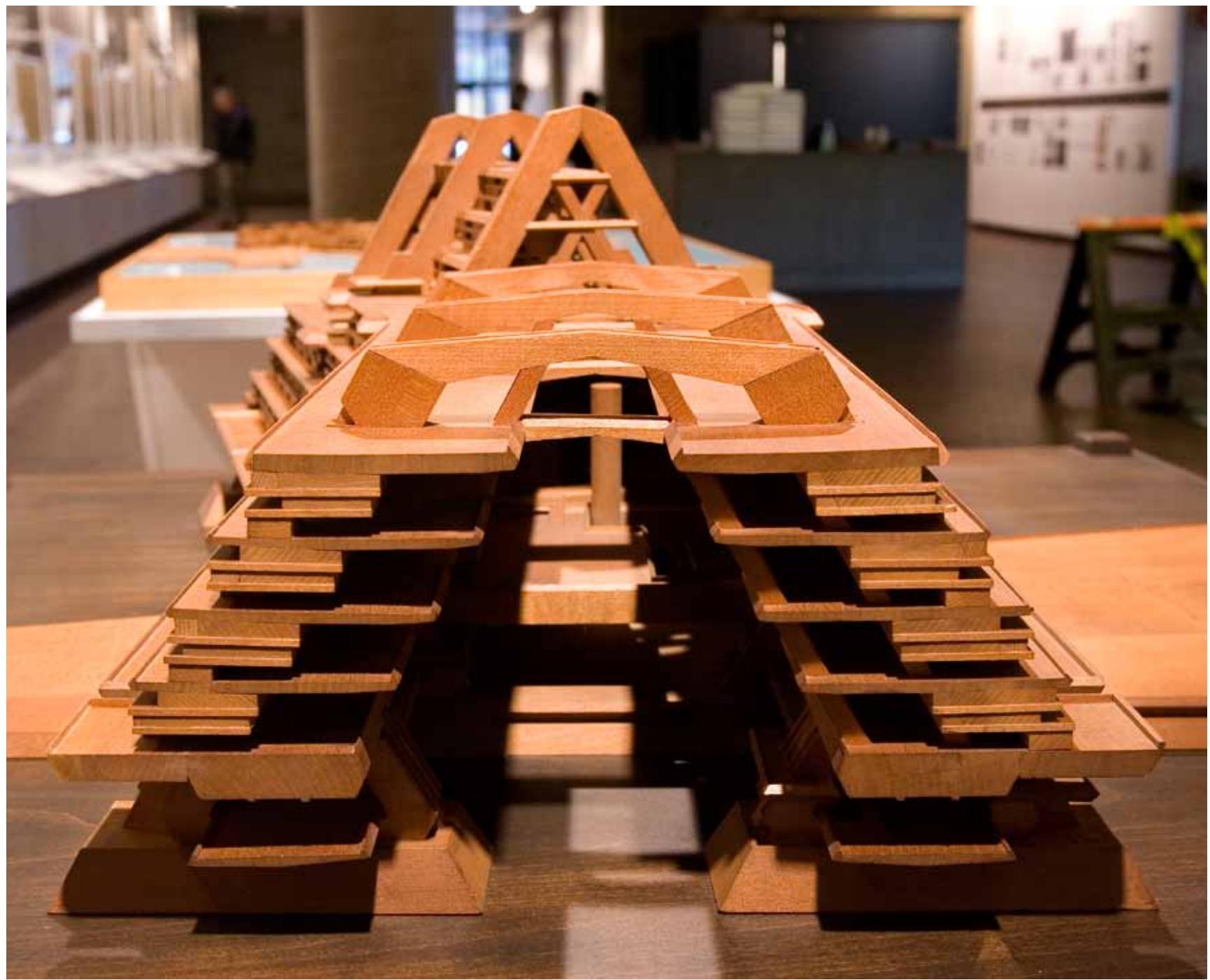
76–79 Views of A Plan  
for Tokyo, 1960 model



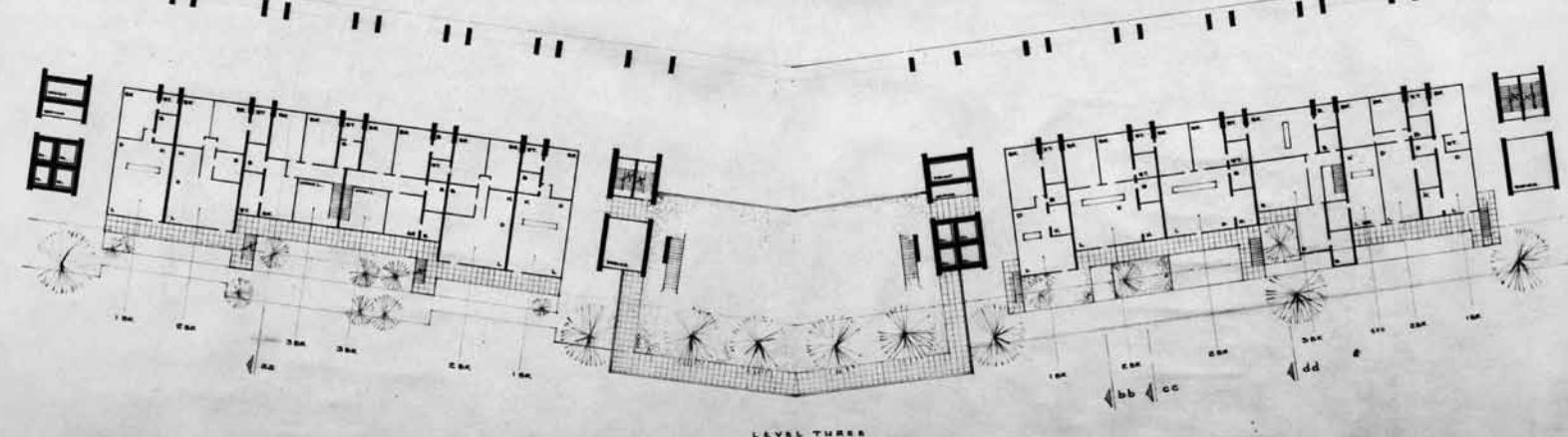
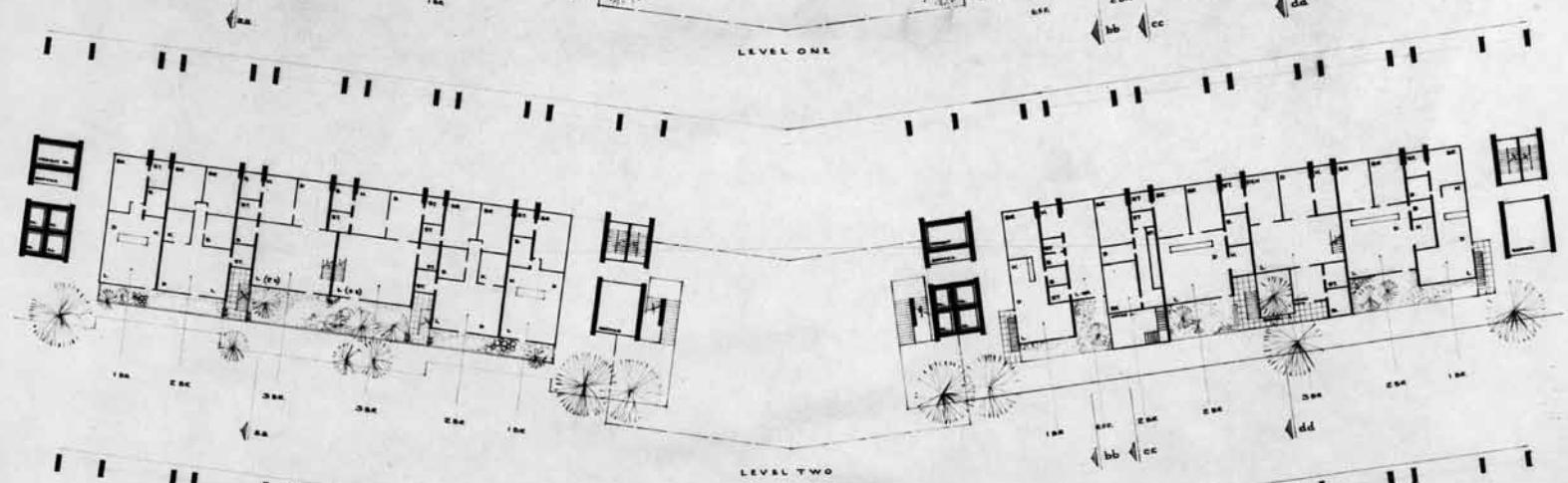
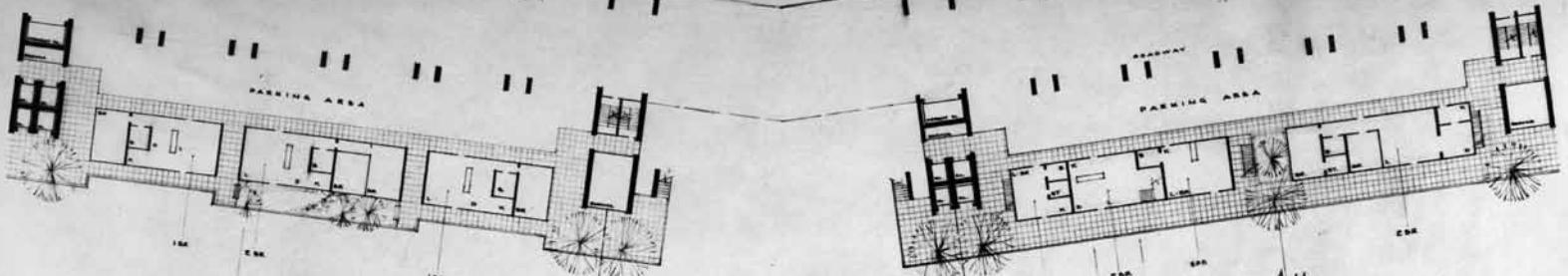
TRANSVERSE SECTION A-A

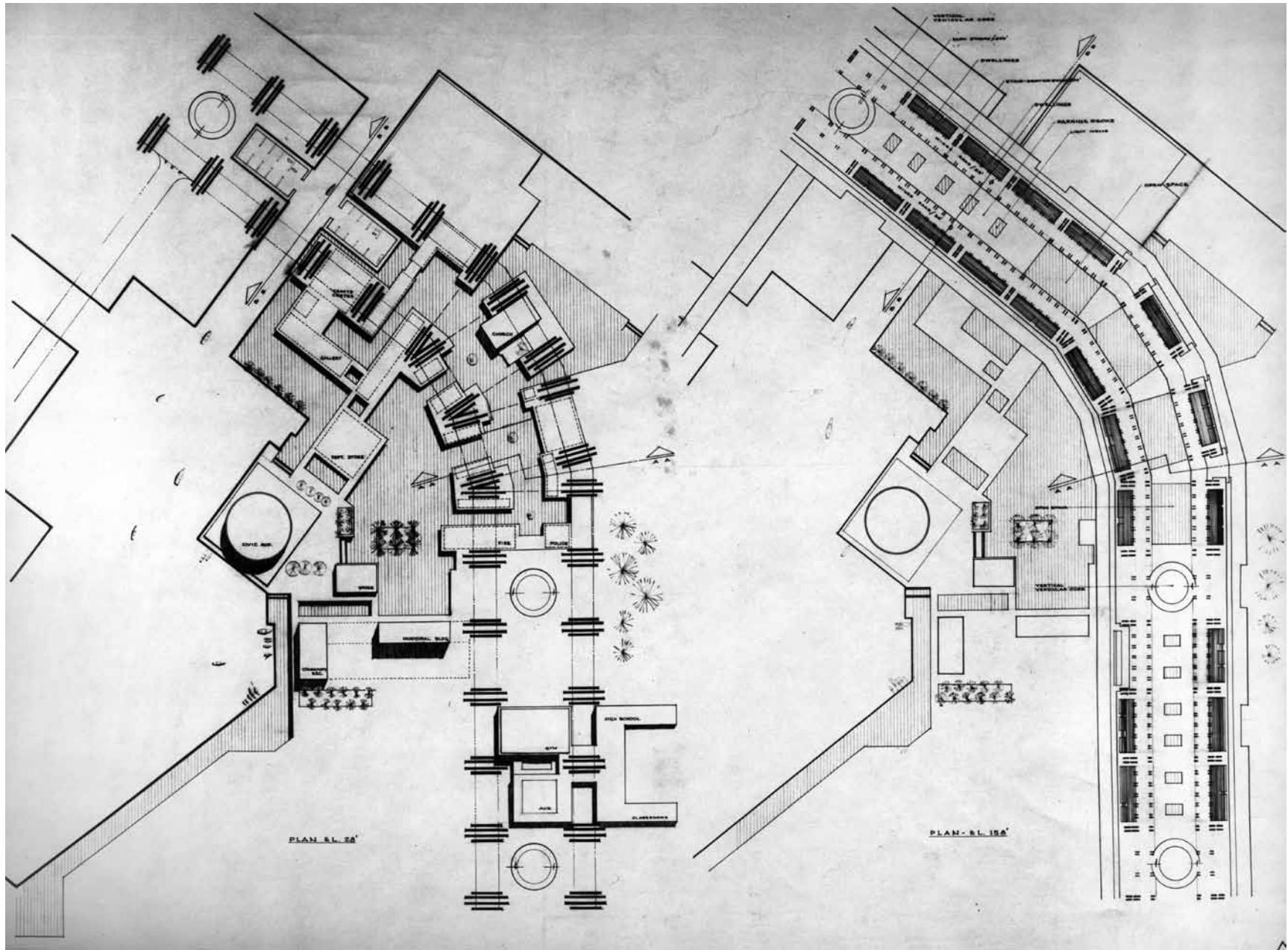
X-Y-Z'

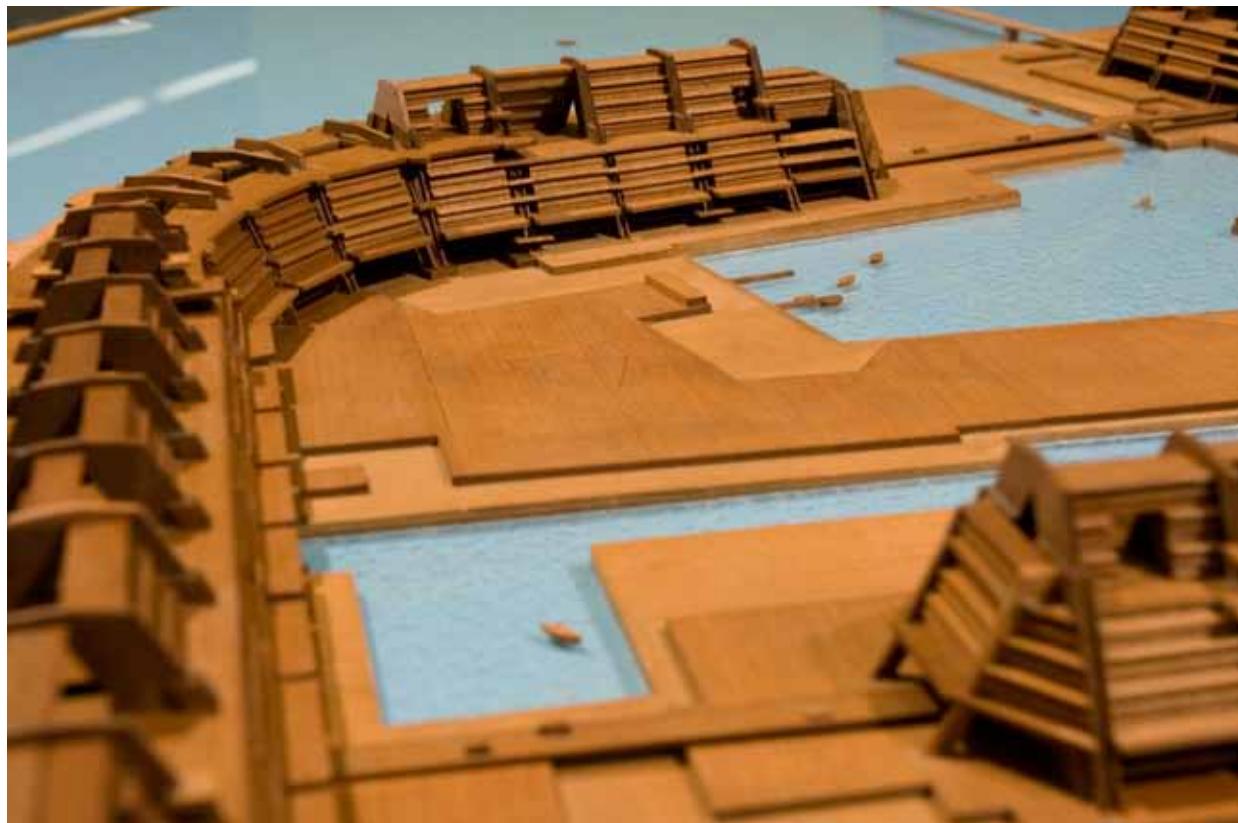
MALADAY MINEGRANITE PILLAGE SOLOMONS

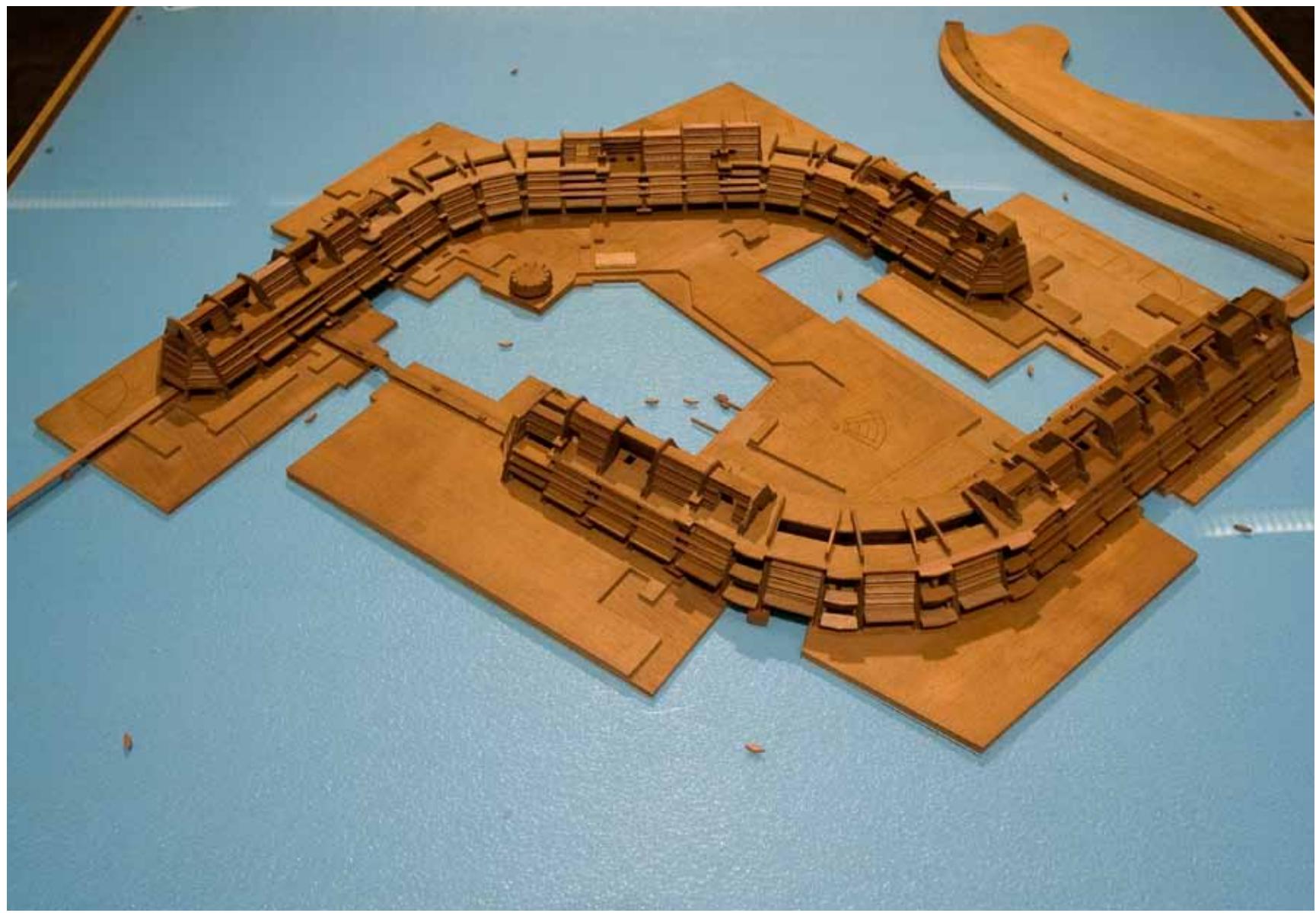


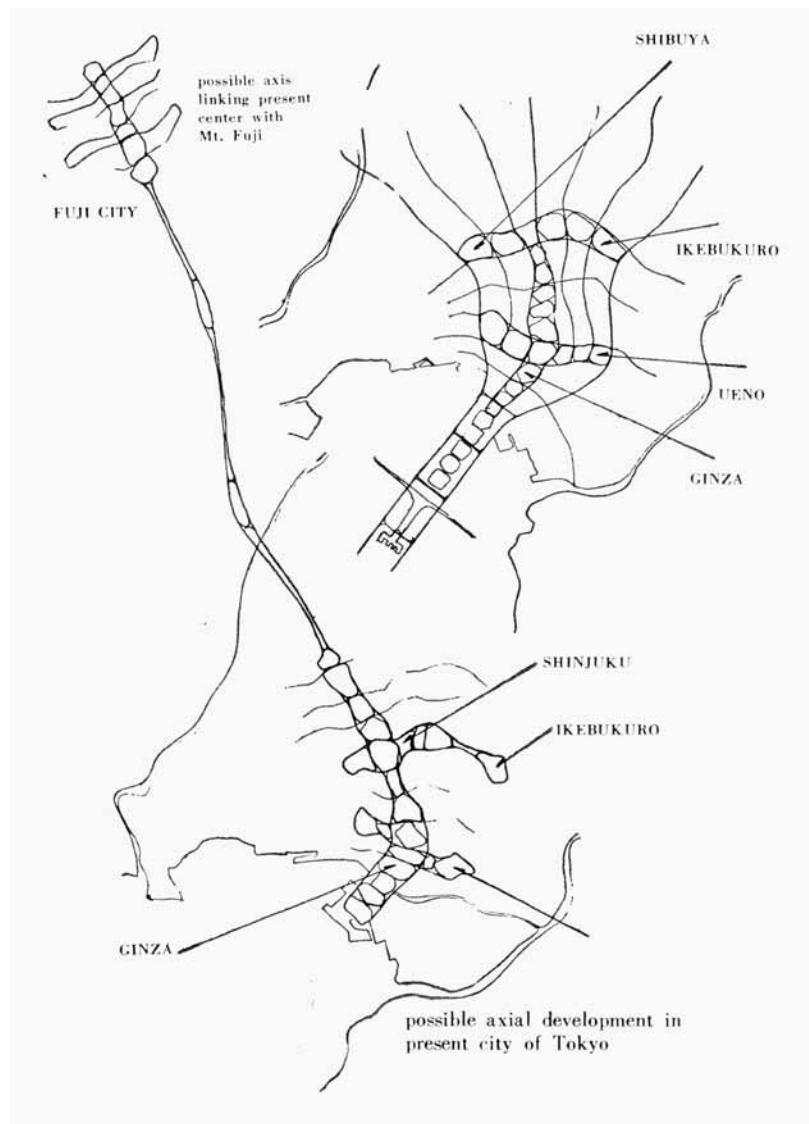














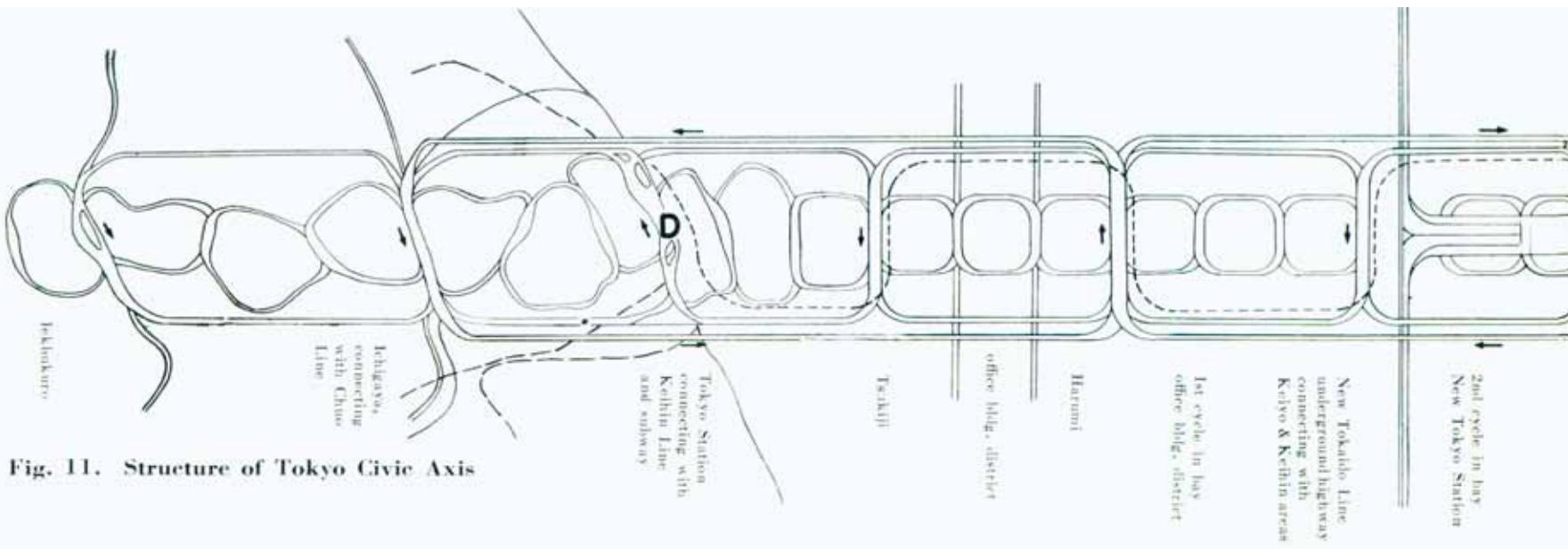
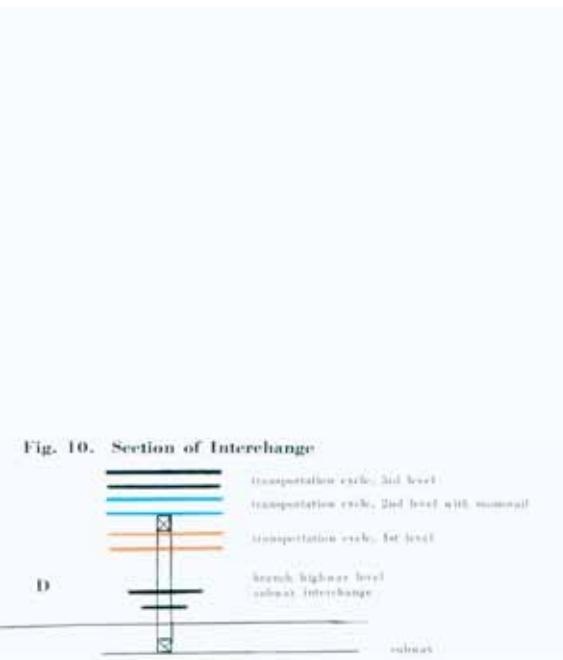
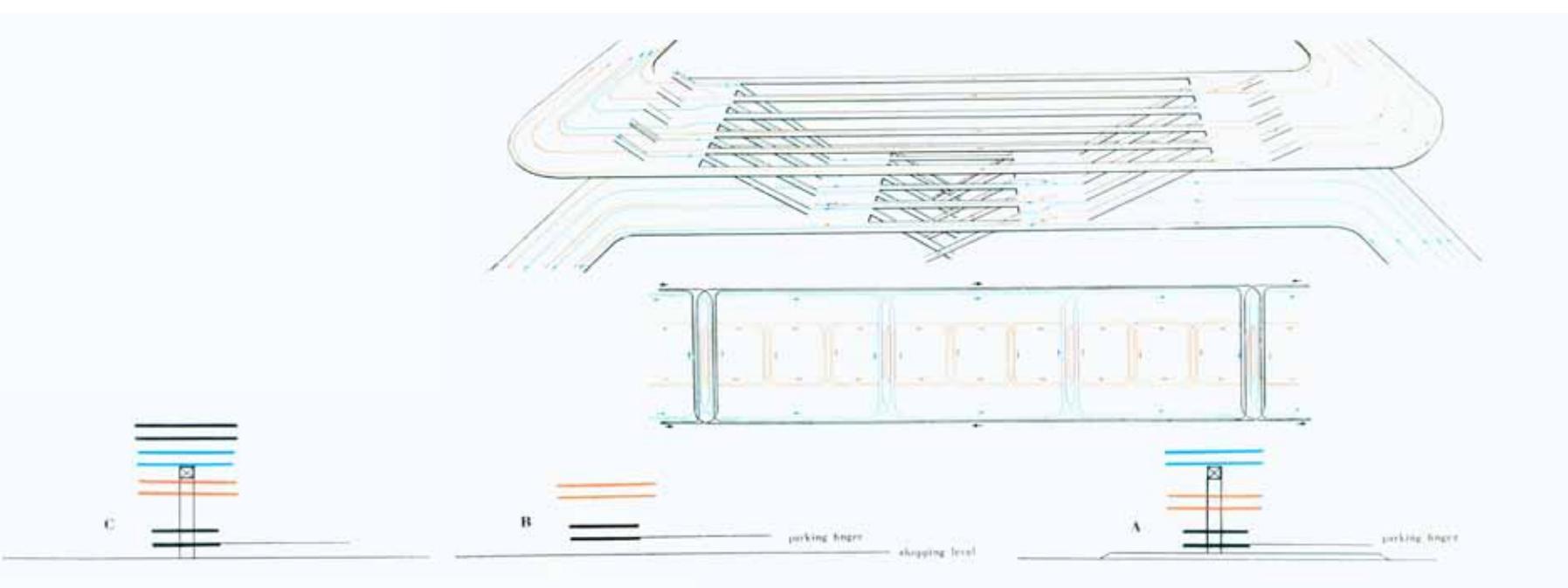
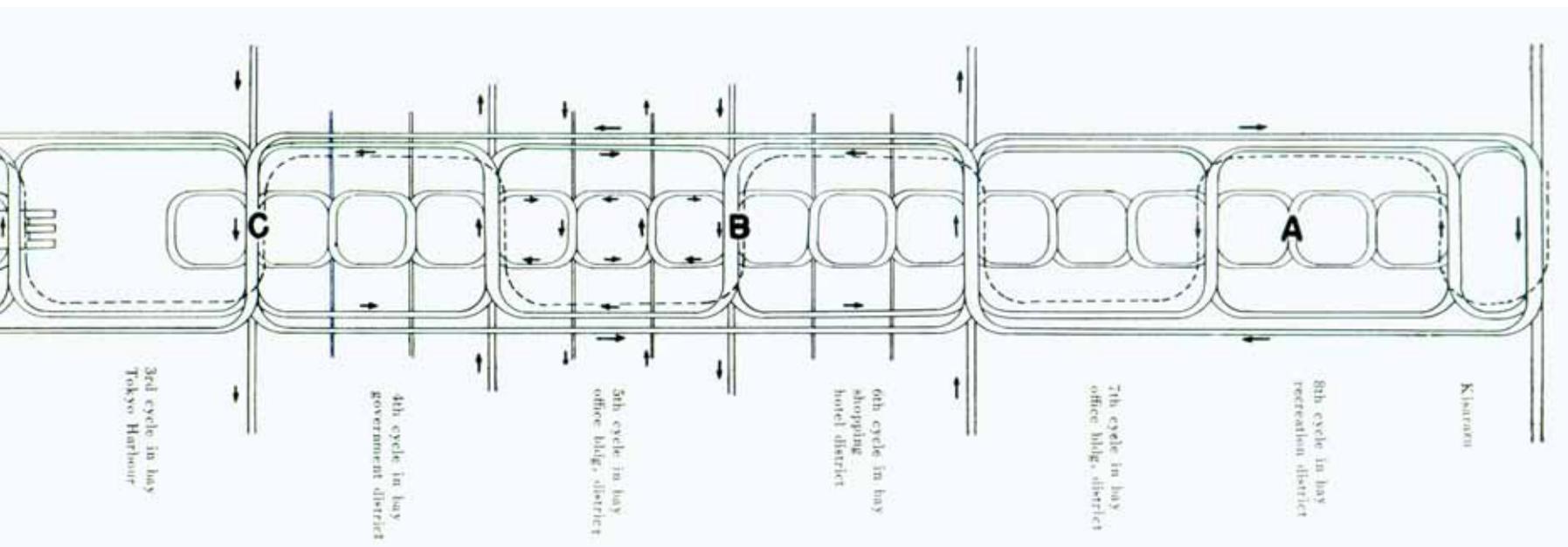
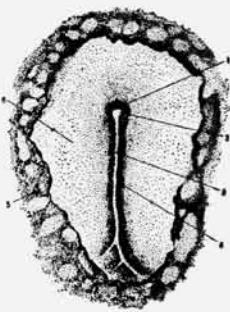


Fig. 11. Structure of Tokyo Civic Axis

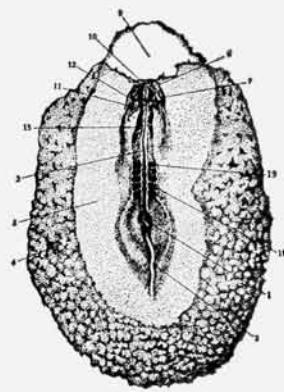




spine in primitive stage



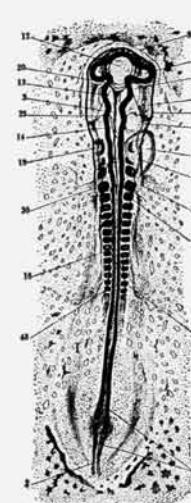
fourth somitic stage



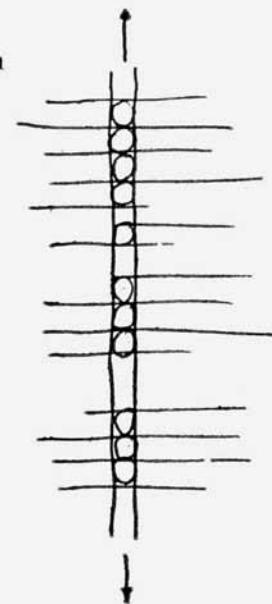
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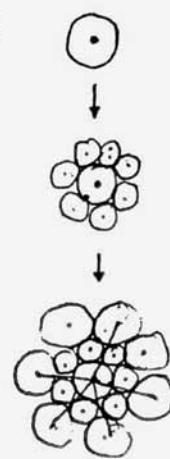
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open system

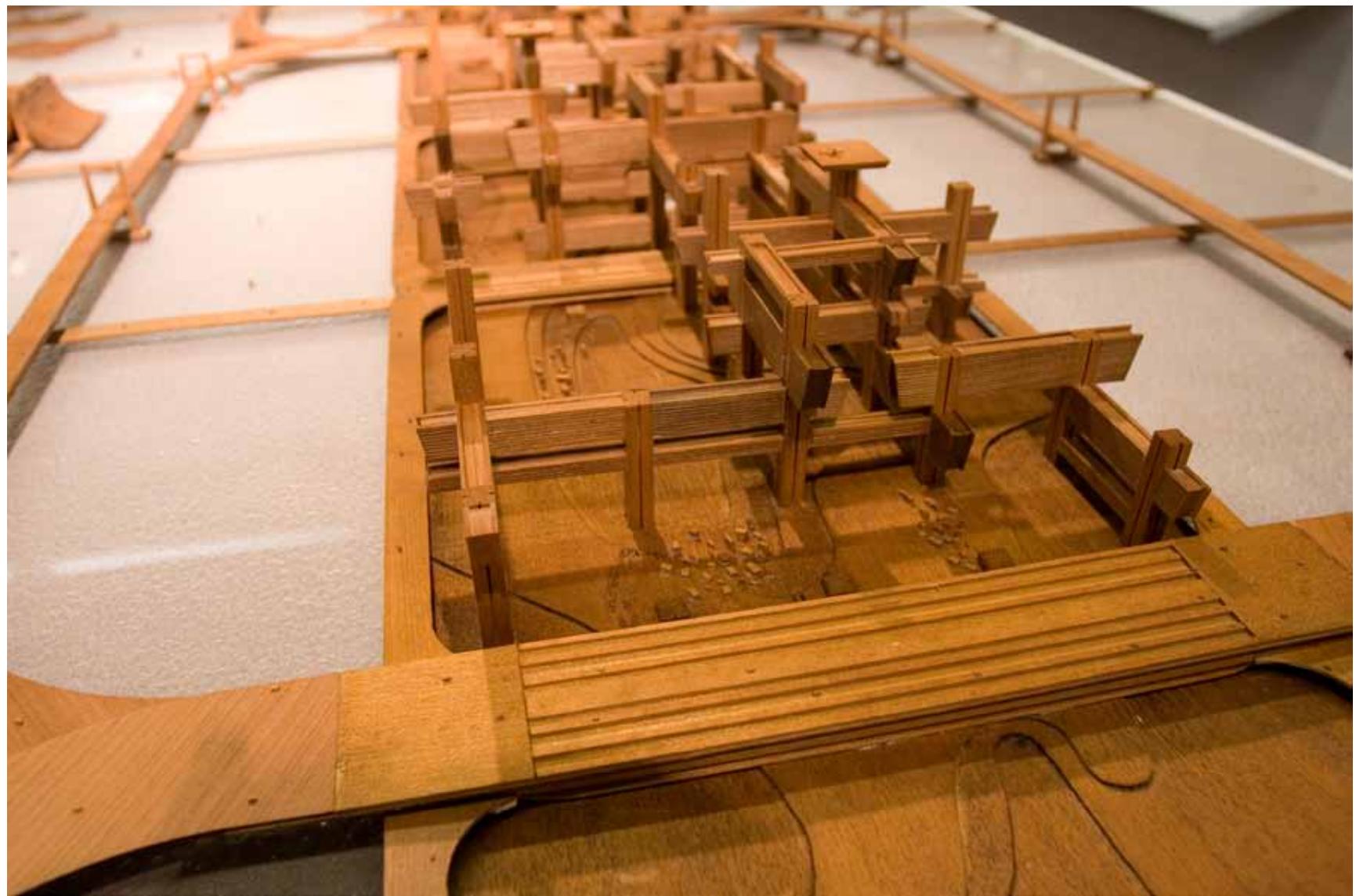


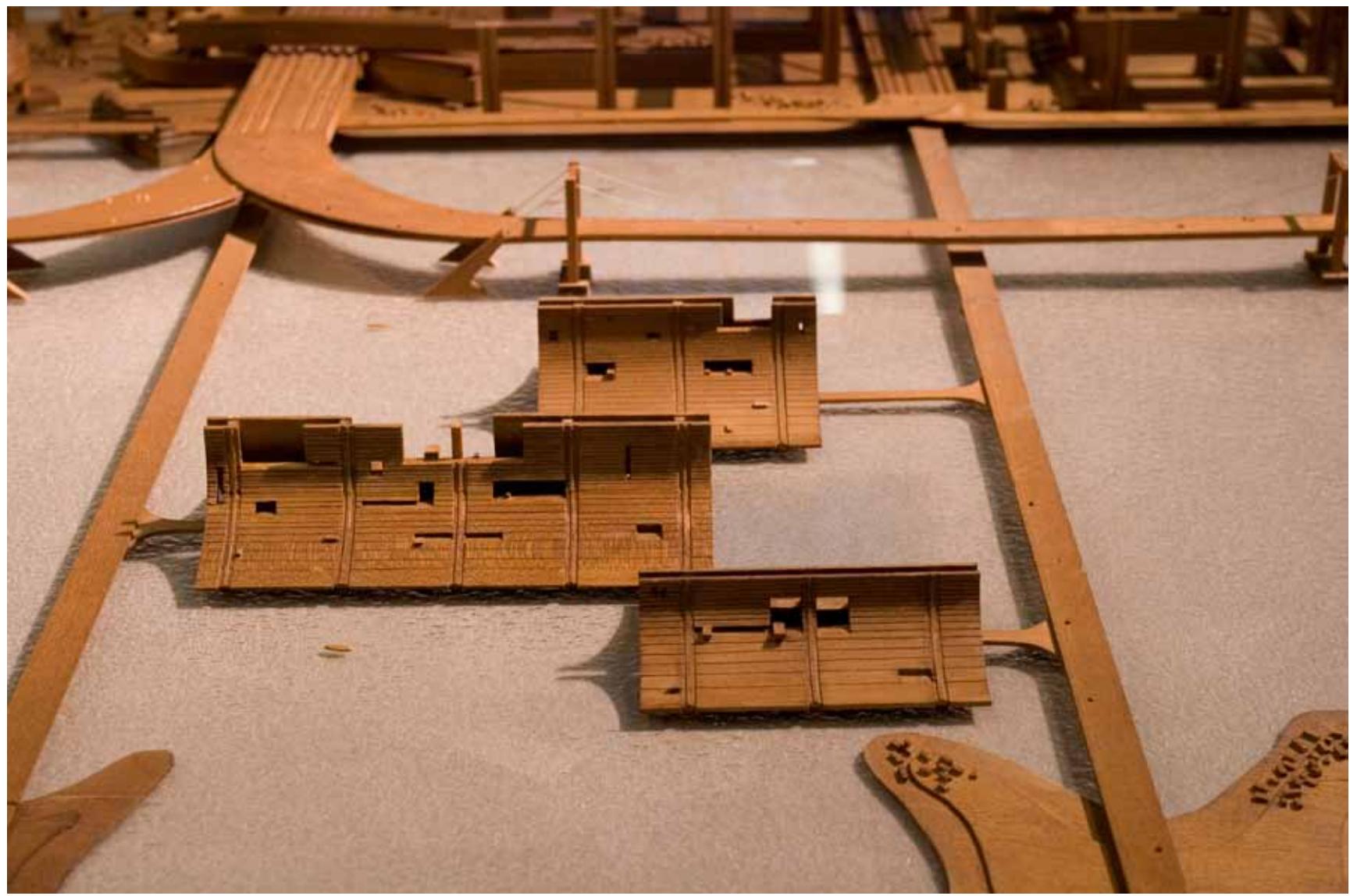
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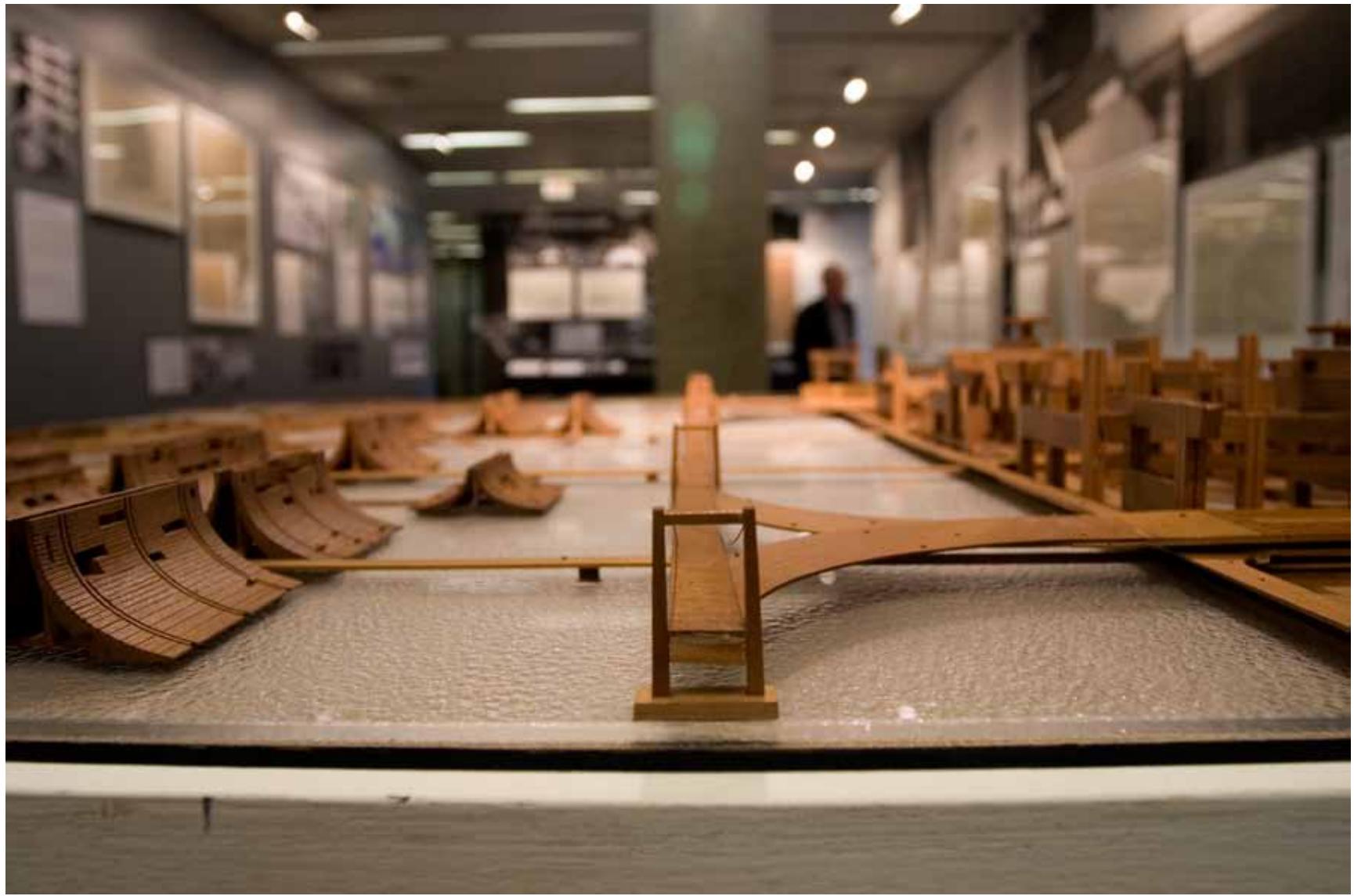














# CONSTRUCTING A METHODICAL SYSTEM: THE CASE OF THE KAGAWA PREFECTURAL GOVERNMENT BUILDING

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## THE JAPANESE ARCHITECTURAL WORLD OF THE 1950S: FUNCTION, THE PEOPLE, TRADITION, AND TECHNOLOGY

The Kagawa Prefectural Government Building, completed in 1958, stands out even among the many distinguished works by Tange Kenzō. Though it was not honored with awards such as the Architectural Institute of Japan Prize, for some reason, it was acclaimed from the time it was completed. According to one commentator, “With the Kagawa Prefectural Government Building, modern architecture in Japan has at last succeeded in producing a design for which the public is able to feel affection.”<sup>1</sup> The current of architectural thought in postwar Japan and the stance of Tange’s group with respect to that current must be considered if we are to understand why this building won such acclaim and its place in both the series of works produced by Tange during the period and the trend of postwar Japanese architecture in general.

The Japanese architectural world in the immediate postwar period had high expectations of the new era that was dawning and of the new architecture (that is, modernist architecture). For young architects who saw democratization in a positive light, even though it had been imposed on the country, the history of the introduction of modernist architecture in Japan probably could be summarized more or less as follows (though reality was no doubt far more complex). The modern architecture movement that began with the *Bunri-ha* (Secession) was distorted by fascism and leaned toward “Japanese taste” and a monumental architecture intended to validate the state. Even among architects who had supposedly embraced modernism, there were those who were sympathetic to such trends. That regime vanished with defeat in war, however, and though the land was devastated, an opportunity at last arrived for modern architecture to become rooted in Japan.

*Hyumanizumu no kenchiku—Nihon kindai kenchiku no hansei to tenbō* (“The Architecture of Humanism: Reconsideration of and Prospects for a Japanese Modern Architecture”) by architectural critic and historian Hamaguchi Ryūichi, a classmate of Tange’s at the University of Tokyo, communicates that sense of exaltation. The book was enthusiastically received by architecture students. The spirit of the times led Hamaguchi to propose four principles with respect to the path that architecture in Japan should strive to take:

1. To be for the people.
2. To adhere to functionalism.
3. To set high technological standards—steel, concrete, glass, etc.
4. To be beautiful works—inevitably, such works will be in a style that is international.<sup>2</sup>

Hamaguchi outlined the history of architecture within the context of human history since the time of primitive clan societies, and in the process asserted that the emergence of modernist architecture was a response to the demands of contemporary society—that is, the acceptance of modernist architecture was historically inevitable. According to him, modernist architecture was characterized by “a functionalist attitude” and “an increased focus on low-class buildings.” “Low-class buildings” were buildings with which architects had not before concerned themselves, specifically structures such as factories, apartment buildings, and schools. Functionally complex and diverse, unlike “high-class buildings” such as palaces and temples, they required new responses of architects. “If architects continue to pursue function, beautiful works of architecture will result so long as conditions are favorable.” “Beauty” was only incidental; the “objective” for the architect was always “function.”

Though Hamaguchi himself may have been unaware of it, a similar argument had been presented more than thirty years earlier in “Architecture Is Not Art” by Noda Toshihiko.<sup>3</sup> In that essay, Noda had argued that architects ought to consider not art but only the satisfaction of functional needs. This was the same point made in *Hyumanizumu no kenchiku* in that Noda regarded “form” as the result of functional analysis. Such a point of view can in fact be found frequently in statements by modernists of the early Shōwa period. Perhaps because he regarded the modern architecture movement before the war in too negative a light, Hamaguchi was unwilling to admit to any critical continuity with it. Thus his advocacy of functionalism was confronted by the same difficulty as that faced by “Architecture Is Not Art,” namely, the absence in that methodology of any idea of how function ought to be analyzed, and assuming that it could be analyzed, how that was to be translated into form.

Simple criticism of functionalism was eventually voiced even by architects who accorded importance to function. The following statement by Ikebe Kiyoshi is representative of such criticism: “The methodological shortcoming of functionalism is not a

question of inhuman or inartistic character. The flaw is inherent in the method. The method of scientific analysis that plays a major role in helping us understand complex buildings is, as a method for creating buildings, incapable of synthesis.”<sup>4</sup>

*Hyumanizumu no kenchiku* states that architecture (especially modernist architecture) should be for *jinmin*—a term not defined in the book, but from the context it seems to mean “citizens” or “members of the non-ruling class.” Amid acceptance of democracy and heightened expectations for socialism, the term was eventually replaced by *minshū* (often translated as “the people” or “the masses”), and that became one of the major themes of the architectural world in Japan in the 1950s. That architecture was to be for “the people” was naturally the premise of a “democratic society,” and the question was how architecture could express that fact. Researchers at the Nishiyama Laboratory at Kyoto University were among those who undertook intensive studies to understand how workers and farmers actually lived, as a way of dealing with that question. Pointing out that buildings such as housing “exhibit previously obscure, forgotten, or newly developed ‘functions’ of a certain type,” Nishiyama Uzō made it his aim to “establish principles of housing planning that conformed to reality.”<sup>5</sup> Yet even Nishiyama, regarded as the architect most sympathetic to “the people,” was unable to suggest a method for creating an architecture for “the people” that was persuasive to other architects.

An issue related to “the people” that became the main theme of the architectural world in Japan around this time was “tradition.” The immediate cause for interest is said to have been an article by József Révai entitled “Kenchiku no dentō to kindaishugi” (“Architectural Tradition and Modernism”) in the October 1953 issue of *Bijutsu Hihyō*, and the article entitled “Mosukuwa e no taikyaku” (“Retreat from Moscow”) by H.A. Meek that was published by the same magazine in its February 1954 issue as a counterargument. Révai, at the time a member of the Central Committee of the Hungarian Working People’s Party, criticized modernist architecture from the standpoint of social realism and praised the postwar neoclassicist architecture of the Soviet Union, such as Moscow State University (1952). “It has tried to serve new socialist human beings and satisfy their physical needs and need for comfort as well as spiritual and aesthetic needs... At the same time, it gives expression to a society in which human beings are for the first time their own rulers and to

the greatness of and pride in that social order.”<sup>6</sup> The movement to reject modernist architecture and return to tradition in the Soviet Union and Eastern Europe, where social realism originated, greatly undermined the belief among Japanese architects of the time in the idea that modernist architecture was synonymous with an architecture for “the people.”

There was a tendency in Japan in the immediate postwar period to regard the blind introduction of traditional elements by architects as taboo, evidenced for example in the call by Hamaguchi Miho in *Nihon jūtaku no hōkensei* (The Feudal Character of Japanese Houses) to banish “feudal” elements such as the ornamental *tokonoma* alcove and the formal entrance called the *genkan*.<sup>7</sup> It was in this atmosphere that Horiguchi Sutemi designed Hasshōkan Gokōnama (1950) and the Japan Pavilion for the São Paulo Exposition (1954), and Seike Kiyoshi designed the Mori House (1951) and the Saitō House (1952). Although exhibiting elements traditional to Japanese houses, these buildings achieved a high degree of perfection and were acclaimed even by architects overseas. Foreign architects discovered in these works and in traditional Japanese architecture something approaching the principles of modernist architecture and recognized their human scale and their use of natural materials as offering valuable suggestions for contemporary architecture. The Grand Prix awarded to Kurosawa Akira’s *Rashōmon* at the Venice Film Festival in 1951 also made the Japanese realize that works dealing with traditional subjects or themes could be international in character.

This was the third time that tradition had been an issue in the Japanese architectural world, earlier disputes having taken place in the 1910s and 1930s. The themes of the postwar “tradition debate” were what to consider the architectural tradition of Japan and how to express that tradition. The modernist understanding of tradition in the 1930s was carried over into the 1950s. The Japanese architectural tradition was seen to reside not in Buddhist temples but in houses, teahouses, and Shinto shrines. Simplicity and clarity of plan and structure and continuity with the immediate environment were among the distinctive qualities considered worthy of preservation in Japanese architecture. As in the 1930s, Katsura Detached Palace and Ise Shrine were praised as symbols of what was Japanese.

The realization of modernist architecture in Japan was premised on due consideration of not only “function,” “the people,” and “tradition” but also “technology.” Architects of the time could not have failed to recognize the backward state of building technology in Japan and the need for technological progress if an architecture capable of international acceptance was to be created.

#### THE STRATEGY OF TANGE’S GROUP: THE CONSTRUCTION OF A METHODOLOGICAL SYSTEM UTILIZING A CONCEPT CALLED SPACE

How did Tange Kenzō and the group around him (the Tange Laboratory) respond to these themes? To members of Tange’s group, functionalism and social realism were obstacles to be overcome. They obviously did not deny the importance of function. Instead they criticized Hamaguchi’s notion that “function comes first,” stating that “it takes a static view of something that is simply one facet of the problem; furthermore, it does not offer an organic analysis of interrelationships between functions and relationships between the parts and the whole.” That is, “functionalism is nothing but the direct expression of the reality that happens to be manifest at the moment, because it overlooks those relationships.”<sup>8</sup>

Tange’s group believed that “a one-to-one correspondence between function and space does not exist,” and that “the pursuit of universal ways of connecting space made determinate through functional differentiation leads ultimately to a determinacy = indeterminacy of space that becomes an ingenious circle containing life.”<sup>9</sup> The group rejected social realism as well, declaring that it “formulates a thesis that is socialist in content and nationalist in form and attempts the expedient alliance of function and expression, which has lapsed into an excessively ornamented formalism.”<sup>10</sup> For the group, neither the facile rejection of modernism found in socialist realism nor its extreme opposite, “the unbridled expression of the individuality of architects,”<sup>11</sup> was an effective means.

Believing “it necessary to be always fully conscious of the fact that the process of integration of this thing full of contradiction—function and expression—is the process of architectural creation itself,” Tange’s group attempted to deal successfully with it through “the rendering of space into type.”<sup>12</sup> This was

"a method of reflecting reality in a typical way"—"a technique of rendering function into type and organizing the spaces that correctly correspond to those types in a unified way."<sup>13</sup>

*What then does rendering function into type mean? A function that is shown to us directly for a time is in one sense or another singular. That may at times be determined by an entirely fortuitous circumstance.*

*However, that singularity and fortuitousness are in fact regulated by the essential development of that function and by a certain structure corresponding to each period in that development...*

To render into type is in fact to identify the developmental essence from these singular, unique phenomena and differs from the dissolution of functions in universality or generality... To put it another way, to render into type is to attempt to penetrate beneath the actual aspects of individual functions and to grasp the objective, determining attribute or quality that is the essence; it involves a kind of abstraction of reality. Moreover, the return once more to a specific reality of that which has been abstracted here must be anticipated. However, rendering function into type is merely a beginning. That function can be said to have truly been made typical when it is then linked to a specific organization of architectural space.<sup>14</sup>

For example, flexibility is demanded of a workspace in an office. That gives rise to core planning in which structural elements and circulation-related elements are concentrated in a core and an open workspace is arranged around that core. There are in addition spaces related to health and welfare and meeting spaces. If each is rendered into type, then a collection of those types will result in a structure called an office building.

"The spaces that are obtained in this way are laid on a grid based on a certain module."<sup>15</sup> Tange's group had applied modules to design since the Hiroshima project. A module was adopted out of a conviction that "architecture should be built on a human scale" and in recognition of the merits of such a measure with respect to building production, namely "the avoidance of waste and confusion in the consumption of materials." It was adopted "in short, in the pursuit of a system of scale that implies universality of content."<sup>16</sup> Starting with the modulor of Le Corbusier,

the group eventually adopted 300 millimeters as its standard and used a sequence based on the golden section.

The "rendering of space into type" and the development of a module clearly show that the group placed importance on universality and was seeking a method capable of logical development. They also imply the aggressive introduction of advanced technology. To use Tange's words, the group's intention was to construct a "methodical system." Such a stance can be sensed in the following statement, in which Tange criticized the architecture of the time: "First, the experimental devices—that is, individual buildings—presented to the people by architects are quite arbitrary and lack any consistent methodical system; the opportunity for improving to a universally accepted standard the verification of responses to those devices is therefore lost."<sup>17</sup>

I will not repeat Hamaguchi's criticism that the use here of the term "experimental devices" shows contempt for "the people."<sup>18</sup> The term ought to be understood in a different context. For Tange and those around him, architecture was not something to be designed in a capricious manner. It was to be analyzed rationally and assembled on the basis of a "methodical system." That would not, however, immediately yield the best possible result. The work of getting feedback on problems newly confirmed after completion and then designing something better was needed. The term "experimental devices" was a sign of the importance that the group placed on universality.

Tange's group did not seek to be at one with "the people." According to them, "architects ought not to be swept up by the currents of history; instead, they can participate in the people's process of historical creation through their power of imagination." They saw this "power of imagination" as something "also demonstrable by superior teams of collaborative design."<sup>19</sup>

In its faith in universality, its zeal for reform, and its whole-hearted belief in the possibility of environmental formation by architects, the set of ideas espoused by Tange's group is a perfect instance of rationalism or modernism. Tange's group can be said to have established modern architecture in Japan. Horiguchi Sutemi and Maekawa Kunio had actually been active before Tange. Horiguchi was certainly a rationalist, and from the earliest period his writings suggest a man of broad vision and profound ideas. Instead of going with the international currents

of the time, however, he chose to delve into the world of traditional Japanese architecture and to achieve universal beauty through the assimilation of tradition. Moreover, he showed no interest in the city.

Maekawa was a disciple of Le Corbusier and is often regarded as the first architect to practice an “orthodox” modernism in Japan. A careful examination of Maekawa’s statements, however, shows no interest in “method” comparable to that of Tange—that is, he does not seem to have had any actual strategy for developing modernist architecture in Japan. His well-known “technical approach” is a proposal concerning building technology and did not dictate his architecture as a whole. Furthermore, he was not actively engaged in city planning, despite having studied under Le Corbusier. This was in all likelihood because he was a pragmatist and in his work always conscious of the harsh reality prevailing in Japan. He no doubt felt that it was unrealistic to attempt city planning in the Corbusian style in his own country.

Maekawa possessed an indomitable spirit and attempted to express his own view of architecture even in wartime, when freedom of speech was curtailed. That courageous stance is best revealed in “Memorandum: Concerning Tradition and Creation in Architecture,” published in the December 1942 issue of *Kenchiku Zasshi*. I have enormous respect for the man who in that text went as far as restrictions on free speech then permitted. However, what is emphasized there is the importance of “form”; his argument concerns how a desirable “form” might be obtained. Maekawa was influenced by medievalism; instead of pursuing the logic behind the creation of form, he had a tendency to romanticize and extol the creative act itself.

Tange’s group was far more strategic in its thinking than Horiguchi or Maekawa. Its objective seems to have been a Western-style modernist architecture. It was no doubt fully aware of Japan’s backwardness at the time, but instead of using such a disadvantage as an excuse, the group sought to overcome those obstacles and propose concepts and methods capable of winning international acceptance. In aspiring to universality, the group made use of a certain concept, namely that of “space.” An examination of architectural treatises published by its members around this time shows that the concept of “space” is used to explain everything, for example, “determinacy = indeterminacy of space” and “the rendering of space into type.”

As is well known, the concept of “space” came to be used to discuss architecture in the German-speaking world toward the end of the nineteenth century. In my opinion, that influence eventually extended to Japan’s architectural world.<sup>20</sup> At first, the Japanese term *kūkan* (now translated as “space”) appeared from time to time in translations of foreign documents, to mean little more than “the interval between things.” In the 1940s, it began to be used by scholars of architectural planning such as Nishiyama Uzō to denote a place serving a certain function (as in *shūshin-kūkan* or “space to retire for the night”). The term *kūkan* came to be used frequently after World War II, and I believe that the group around Tange introduced to the Japanese architectural world the perception that this abstraction, assumed to exist below the surface of things, is an effective means of discussing architecture.

The concept of *kūkan* is used in all of the group’s treatises on architecture and the city. It can be said, conversely, that the introduction of the concept of *kūkan* was precisely what made a unified discussion of architecture and the city possible. This concept also made possible a new way to frame architecture and the city. For example, expressions such as “social space” and “private space” are to be found in texts written by Tange’s group at the time.

We cannot avoid using terms such as interior functions and exterior functions when thinking architecturally... Thus, on the assumption that interior functions include private matters or functions seen from a private economic standpoint, and on the assumption that exterior functions are matters seen from a social standpoint... we have used terms such as private space and social space, or private scale and social scale.<sup>21</sup>

The *pilotis* often used around this time is understood to be an example of “social space.” No other architect made such free use of the concept of “space” in the Japanese architectural world of the time as did the members of Tange’s group. I am convinced that “space” was the concept that made it possible for them to engage in the universalist thinking that distinguished them from the rest of the architectural world in Japan at the time. They had a weapon no other architect then possessed.

Tange’s group also used this concept to understand the Japanese architectural tradition. At the time, Ikebe Kiyoshi wrote,

"Tange Kenzō defines Japanese tradition as the indeterminacy of space. Terms such as openness and freedom have often been used up to now to describe Japanese architecture, but Tange captures its character perfectly with the term 'indeterminacy.'<sup>22</sup> We must be mindful, however, of one thing: Tange's group developed a discourse concerning tradition, but nowhere did it state that it had introduced anything "Japanese-like" into its designs. Its texts show that it was especially on guard against too quick a reliance on tradition. To Tange's group, things that had a long history of existence or been praised by foreign architects were not necessarily to be preserved. In "The Creation of Contemporary Architecture and the Tradition of Japanese Architecture," Tange stated:

*Take for example the space achieved by Gothic architecture. If one were to call space based on new technology that confronts nature space taken by humans from nature, then space in Japanese architecture can be described as space given by nature... It is not a thing achieved by humans taking an independent stance but rather a thing resulting from reliance on and immersion in nature... The nature that is in contraposition to Japanese architecture is a nature viewed with such a stance, not a nature understood through influence exerted on reality... Unless we are fully aware of the fact that the openness achieved by Japanese architecture has such limits, we will not be able to carry on our tradition of openness in a way that allows for its further development.<sup>23</sup>*

Here he warns against the facile re-creation of the openness of Japanese houses (one of the characteristics praised by foreign architects). He is also as scathing in his criticism of *sukiya*, which had also been highly praised overseas. According to Tange, the tea ceremony and *sōan*-style teahouse of Rikyū were the embodiment of "a negative attitude, one that affirms poverty as poverty and idealizes it in a sentimentalized way." Such strains of thought are to be found in Katsura Detached Palace as well, and "they have not been creatively integrated. Instead, something is missing that might have unified the work as a whole."<sup>24</sup> For Tange's group, "overcoming tradition is not only overcoming what is external to oneself but more importantly first being aware of and overcoming oneself."<sup>25</sup>

Tange points out that "rendering of space into type" is found in traditional Japanese architecture as well. He asserts:

*Rendering into type is only possible today if one adopts a constructive stance and is resolved to overcome actual poverty in Japan, that is, if one rejects Japan's traditional stance and, instead of submitting to technological stagnation, is boldly determined to make further advances in technology. Traditional methods for rendering into type can be developed into constructive methods for overcoming reality.<sup>26</sup>*

Though it takes the guise of a discussion of tradition, this is actually an elaboration of Tange's view of architecture. He is splendidly consistent in his thinking. This is in marked contrast to the way in which Hamaguchi Ryūichi, who took a position rejecting tradition in the immediate postwar period, became more inclined toward *sukiya* architecture in the 1950s. Iwata Kazuo (also known as Kawazoe Noboru) wrote in connection with the main building of the Hiroshima Peace Center that "it was certainly in the *shinden* style" and stated that in his second-place entry for the National Diet Library competition, Tange tried to introduce the image of a forest of columns drawn from Kiyomizu-dera, a work of "traditional Japanese architecture of which he was enamored at the time."<sup>27</sup> There are other remarks of this kind, but they have all been made by architects and critics outside of Tange's group; they have not been made by Tange or his disciples. Of course, some ancient works of architecture probably appealed to their formal sensibility, no matter what they said at the time, and the possibility of their having been influenced indirectly by such works cannot be dismissed. Nevertheless, they translated and expressed that on a universal level. We can see in this a refusal to rely on Japan's special circumstances, including both negative factors such as poverty and positive factors such as "openness" and "*sukiya*." Tange's group insisted on competing on the same terms as Western architects.

#### KAGAWA PREFECTURAL GOVERNMENT BUILDING: A COMPILATION OF THE 1950S

The Kagawa Prefectural Government Building was designed around the time when the ideas of Tange's group that have been discussed were in the process of taking shape (that is, around 1954). It was actually a project for an addition. There was an existing building of 71,280 square meters in total floor area, standing on a site with an area of 18,800 square meters, of which 4,950 square meters of land could actually be used. There,

Tange's group was to design the prefectural government building, prefectural assembly, and prefectural hall (which had a combined floor area of 11,880 square meters). These conditions were by no means favorable.

According to an article written on the structural planning and design of the Kagawa Prefectural Government Building by the structural engineers Tsuboi Yoshikatsu and Akino Kinji, in the early stages of the project, there were four schemes—A, B, C, and D—each with a core in the center of a rectangular plan, similar to the plans of the Tokyo Metropolitan Government Building and the second-place entry in the National Diet Library competition.<sup>28</sup> Eventually scheme E, which had a core in the center of a square plan, emerged and was developed into the final design.

The final scheme consists of a high-rise office block and a low-rise block accommodating the assembly and prefectural hall. The office block had nine levels, including a mezzanine, and was of reinforced concrete construction, contrary to the convention of the time, which was to build in either steel-frame construction or steel-reinforced concrete construction. This conceivably reflected a wish on the part of the architect to simultaneously reduce the construction cost and make the structural members slender.

Beginning with the Hiroshima project, Tange's group had consistently pursued as a structural theme the elimination of walls between columns. Shear walls were necessary in conventional structural design, and a building exterior with completely glazed areas between columns or between columns and beams was considered impossible in Japan. Nevertheless, Tange's group made it possible by first arranging scattered shear walls inside the building and then making the core partly responsible for bearing lateral forces. If that had led to a thickening of the columns, however, the visual effect would have been seriously compromised. Seeking a rational solution, Tange's group commissioned the Tsuboi Laboratory to produce a structural design. The analysis of a nine-floor reinforced concrete construction building is not difficult today, but designing something that met the wishes of Tange's group while conforming to structural standards then in force was impossible. The Tsuboi Laboratory introduced the method known as "limit design" and made possible the slender proportions sought by Tange's group. The solution was the very model of modernism in its utilization of the

latest technology. One also senses in this a commitment to the creation of a work that met an international standard.

The core was a way of adapting to the "rendering of [office] space into type." To provide maximum flexibility, the workspace was designed to be "indeterminate," and the circulation and toilets were "determinate," that is, limited to the core. Virtually all dimensions were selected from a sequence based on 300 millimeters. This suggests the importance that Tange's group placed on unification between parts and between parts and the whole. Compatibility of the "rendering of space into type" and structure is dealt with more clearly in the Kagawa building than in the Tokyo Metropolitan Government Building. Tange's group surely found the strategy adopted to arrive at the solution satisfying.

This project is also characterized by the active introduction of public spaces. The low-rise block is lifted up on pilotis, and a courtyard open to the public is created on the south side. The roofs of the high-rise block and the low-rise block are also designed to be accessible to the public. The aim appears to be to introduce public squares and draw "the people" into the building, though the degree to which this is done seems almost excessive. This shows both an urban viewpoint and an idealistic stance. The fact that the assembly and the hall share a lobby seems a symbolic expression of that idealistic position. Such a layout could conceivably be inconvenient in reality, but there was likely an intent to have the assembly representatives, government employees, and "the people" all gather in the same place.

"The people" are apt to be regarded *en masse* in large-scale projects such as the Hiroshima project and the Yoyogi National Indoor Stadiums. In the case of the Kagawa Prefectural Government Building, however, one senses an intent to respond to "the people" individually. It would be easy to question the extent to which this has truly been made a building for "the people," and it could also be said that the design is simply the architectural expression of a democracy that had been imposed on the Japanese from without. Still, one must consider that this was a theme that had never been adopted in prewar public buildings, and that there was great hope that it would provide an opportunity for architects of the time to explore new ways of designing buildings. There is no question that it was at least a theme worth examining.

Upon the completion of the Kagawa Prefectural Government Building, Tange wrote:

*It is the energy of a people engaged in production and leading impoverished lives who are about to wrest power for themselves... Although it may not yet be sufficient, this energy is starting to be unleashed. This is the first time it has happened in Japanese history. This unleashing may be awakening confusion and anarchy at present. However, we have no doubt that this unleashed energy will be a major force for converting Japanese tradition to new creation.*

It was with those thoughts that we designed the Kagawa Prefectural Government Building.<sup>29</sup>

Compared with other texts by him at the time, this is lacking in specificity and seems overly romanticized, but his point seems to be that he wanted to propose a way to take “the people” into consideration in the design of a public building. In fact, this text too is written as a discussion of tradition, but what Tange discusses as “tradition” is future potential and his view that that potential is based on the energy of “the people.” Discussions of the Kagawa Prefectural Government Building have usually consisted of explanations such as the claim that the building elevations express the traditional Japanese system for determining proportions and sizes of members in architecture, known as *kiwari*. The architect himself may indeed have had such intentions. Nevertheless, the texts written by Tange’s group clearly reject such an understanding of tradition. The members of the group insisted that “modern architecture is the issue.”<sup>29</sup>

The Kagawa Prefectural Government Building can be said to have been the group’s most advanced address of the themes of the 1950s: “function,” “the people,” “tradition,” and “technology.” There is room for discussion of course about whether it was the best possible solution. Yet there is no doubt that it was superior by far to the solutions of other architects of the time with respect to the validity of the approach taken in addressing the issues and the organic coherence of the strategy adopted. This was due in no small measure to Tange’s exceptional talents, but instead of relying solely on inspiration, the group made a determined effort to achieve universality through the adoption of a “methodical system.”

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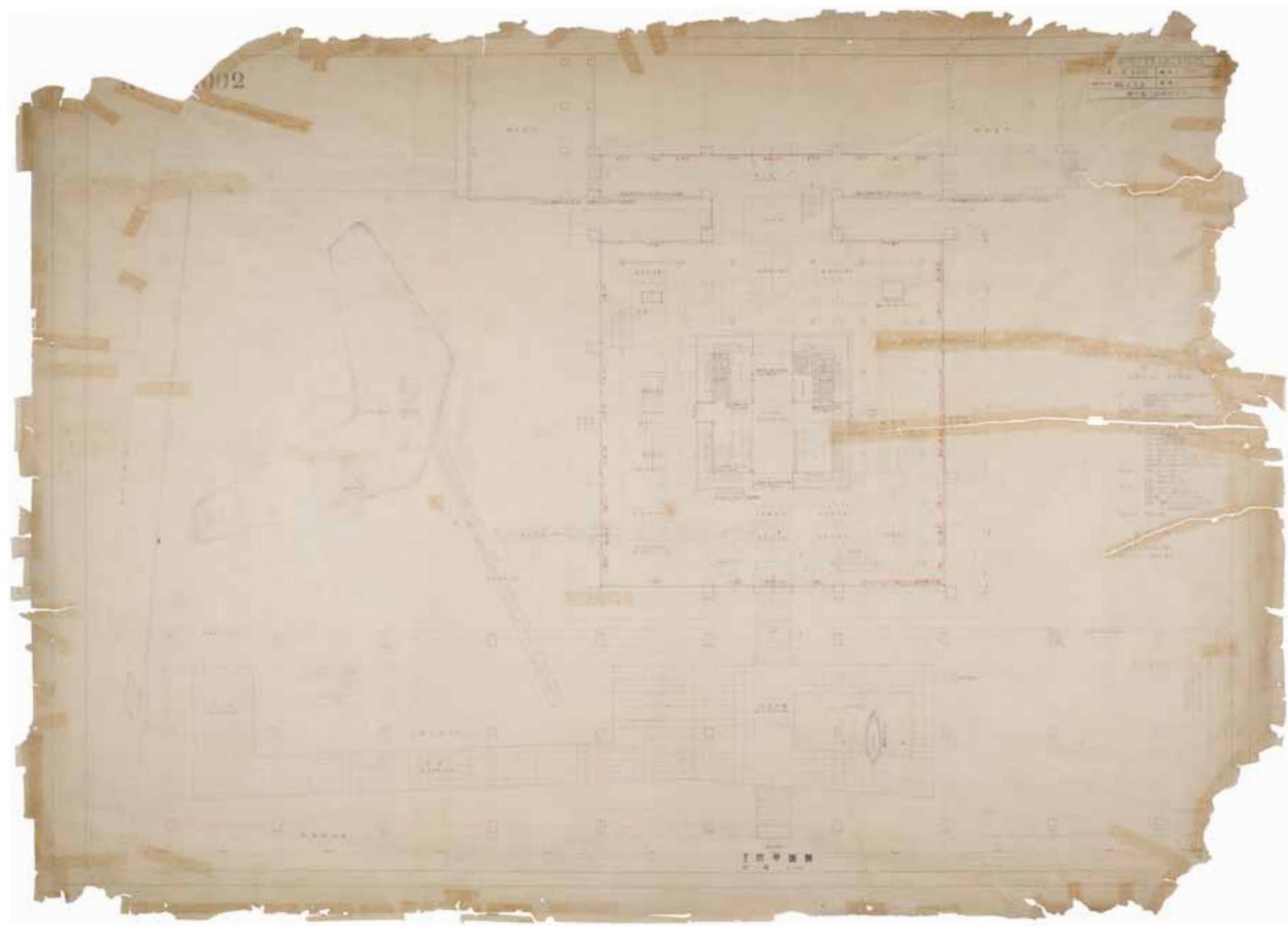
Originally published in Japanese as “Kagawa kenchōsha: ‘hōhōteki taikei’ no köchika,” *Kenchiku Bunka* (July 1993).

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- 2 Hamaguchi Ryūichi, *Hyumanizumu no kenchiku—Nihon kindai kenchiku no hansei to tenbō* (Tokyo: Ondorisha, 1947), 131.
- 3 Noda Toshihiko, “Kenchiku higeijutsu ron,” *Kenchiku Zasshi* (Oct. 1915), 714–27.
- 4 Ikebe Kiyoshi, “Sōgō-teki na hōhōron no kiban to shite,” *Kenchiku Bunka* (Oct. 1956), 17.
- 5 Nishiyama Uzō, “Jūtaku keikaku no okeru minzoku-teki dentō to kokumin-teki kadai” *Shinkenchiku* (Nov. 1953).
- 6 Bijutsu Hiyō (Oct. 1953), 37.
- 7 Hamaguchi Miho, *Nihon jūtaku no hōkensei* (Tokyo: Sagami shobō, 1949).
- 8 Tange Kenzō kenkyūshitsu, “Sōsaku hōhōron teichaku e no kokoromi,” *Shinkenchiku* (June 1956), 79.
- 9 Tange Kenzō, “Gendai Nihon ni oite kindai kenchiku wo ikani rikai suruka,” *Shinkenchiku* (Jan. 1955), 16.
- 10 Tange Kenzō, “Gendai kenchiku no sōzō to Nihon kenchiku no dentō,” *Shinkenchiku* (June 1956), 29.
- 11 Ibid., 36.
- 12 Ibid., 29.
- 13 Tange, “Sōsaku hōhōron teichaku e no kokoromi,” 79.
- 14 Ibid., 79, 80.
- 15 Ibid., 80.
- 16 Ōtani Sachio, “Kenchiku no hatten ni taio shita mojuroru,” *Kokusai Kenchiku* (Nov. 1955).
- 17 Tange Kenzō, “Oboegaki,” *Kenchiku Bunka* (Nov. 1956), 22.
- 18 Hamaguchi Ryūichi, “Gendai kenchikuka wa minshū wo toraete iruka,” *Kenchiku Bunka* (Nov. 1956).
- 19 Tange Kenzō, “Nihon no kenchikuka,” *Shinkenchiku* (Oct. 1956), 8.
- 20 For a detailed discussion, see Fujioka Hiroyasu and Satō Yumi, “Kenchiku Zasshi no shimesareta Nihon no kenchikukai e no ‘kūkan’ to iu gainen no donyu to teichaku,” *Nihon kenchiku gakkai keikakukei ronbun hōkokushū* (May 1993), 109–18.
- 21 Tange, “Gendai Nihon ni oite kindai kenchiku wo ika ni rikai suruka,” 16.
- 22 Ikebe Kiyoshi, “Wafū kenchiku to gendai no dezain,” *Shinkenchiku* (June 1955), 69.
- 23 Tange, “Gendai kenchiku no sōzō to Nihon kenchiku no dentō,” 31, 32.
- 24 Ibid., 33.
- 25 Ibid., 34.
- 26 Ibid., 37.
- 27 Iwata Kazuo, “Tange Kenzō no Nihonteki seikaku,” *Shinkenchiku* (Jan. 1955), 64, 67.
- 28 Tange Kenzō, *Shinkenchiku* (Jan. 1959), 85.
- 29 Title given to the views of the Tange Laboratory on p. 44 of “Nihon-teki dezain o meguru tōron” [Debate Concerning Japanese-like Design], *Shinkenchiku* (Feb. 1955).

# KAGAWA PREFECTURAL GOVERNMENT BUILDING

## 1955–1958

Widely cited as one of Tange's most successful attempts at synthesizing tradition and modernity, the Kagawa Prefectural Government Building consists of three parts: an office tower, square in plan; the oblong assembly wing at the lower part of the ground-floor plan; and a garden. The site plan in turn is comprised of three types of public space, progressing from the open garden to semi-enclosed space among the *pilotis* of the assembly wing, and eventuating at the fully glazed lobby of the office tower. At the center of the office tower lobby and surrounding its core is an eight-piece ceramic mural by Inokuma Genichirō, a native of Kagawa Prefecture. Four diptychs in a rotating sequence—reversing the introverted placement of traditional *byōbu* screens—are titled “wa,” “kei,” “sei,” and “jyaku,” an old adage of tea culture attributed to Sen no Rikyū. As an urban design gesture, the assembly wing and its *pilotis* offer an extended and porous edge to the city block and form a successful mediating space toward the garden.



KPG 1010





90 Site plan, 1955

91 Elevation, 1955

92 View of east elevation

93 Detail of office  
tower's corner

94 View of garden  
and *pilotis* space under  
assembly wing

95 View from street  
through *pilotis* space  
under assembly  
wing toward garden

96 View from garden  
into office tower's lobby,  
with Inokuma Genichirō's  
mural piece "wa-kei-  
sei-jyaku" in view

97 Interior view of  
office tower's lobby

98 View of garden  
from above

99 View of garden  
showing *araiso* rockery  
in pond

100 View of office  
tower's south elevation  
and garden

101 View of garden  
from office tower's lobby

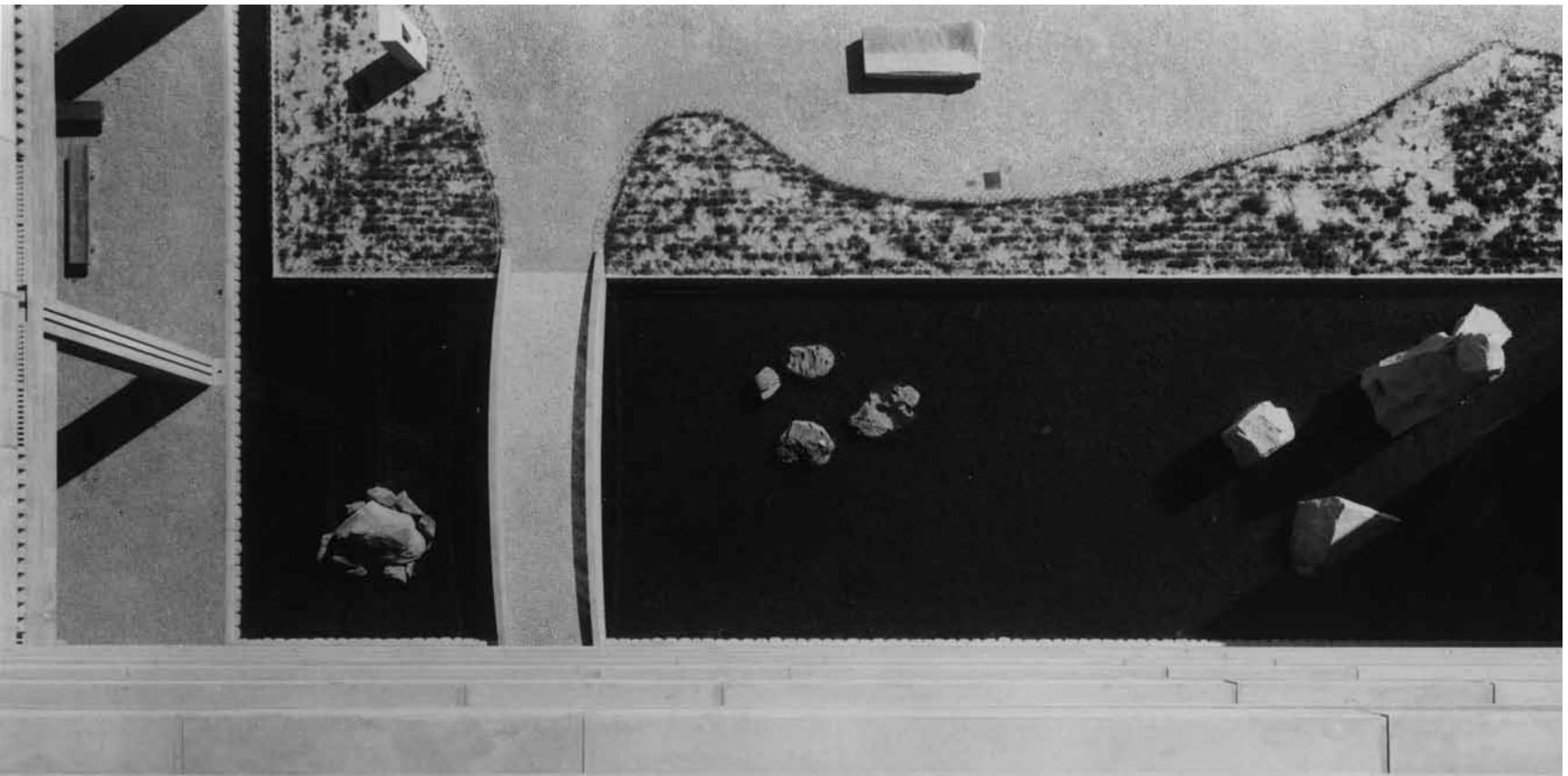




















# THE TANGE-TSUBOI COLLABORATIVE MODEL IN STRUCTURAL DESIGN: THE CASE OF YOYOGI NATIONAL INDOOR STADIUMS

Kawaguchi Mamoru

## WHO WAS TSUBOI?

Tsuboi Yoshikatsu was born on May 27, 1907 (six years before Tange), the eldest son among ten children of a high-ranking military officer.<sup>1</sup> From boyhood, he was blessed with a talent in mathematics, which probably led him to the field of applied mechanics and eventually structural engineering. In 1932, Tsuboi graduated from the department of architecture at the University of Tokyo and advanced to graduate school under the guidance of Mutō Kiyoshi (1903–89), the leading researcher in the field of structural engineering in Japan. In 1937 Tsuboi was appointed lecturer at Kyūshū University, where he became an associate professor in 1940. Tsuboi was one of the few researchers in structural engineering who were capable of dealing with two- and three-dimensional structures such as plates and shells, since almost all structural engineers at that time could analyze only one-dimensional structural components—beams, columns, arches, and rigid frames.

Tsuboi became a professor at Tokyo University in 1942, and later he served concurrently as a professor at Kyūshū University and Tōhoku University. He won several awards from the Architectural Institute of Japan for his papers and structural designs, including those for the Yoyogi National Indoor Stadiums and the space frame for the Festival Plaza of Expo '70, both outcomes of his collaboration with Tange Kenzō. Besides Tange, Tsuboi worked with other talented architects to produce remarkable structures. Among those were the Tokyo International Trade Center (1959) with architect Murata Masachika, and Shiga Sacred Garden (1983) with Minoru Yamasaki.

In 1967 and 1968, Tsuboi served as President of the Architectural Institute of Japan. In 1976 the International Association for Shells and Spatial Structures (IASS) conferred upon him the Eduardo Torroja Medal for his contributions to the field. He was subsequently elected President of IASS and in 1989 was awarded the Japan Academy Prize for his research into structures of curved surfaces and their application to large-span spatial structures. He passed away on December 6, 1990.

## TANGE-TSUBOI COLLABORATIONS ON CONCRETE SHELL ROOFS

The Hiroshima Children's Library provided the first opportunity for the Tange-Tsuboi collaborative model, a partnership between an architect and a structural engineer that would endure for two decades and produce several successful examples of concrete shell structures. When Tange Kenzō started working on the Hiroshima Children's Library in 1951, he envisioned it as shell structures built with reinforced concrete. There were only a few realized examples of this structural type in the world: Leipzig Market Hall (1929), designed by Hubert Ritter; Algeciras Market (1934) and Zarzuela Horserace Grandstand (1935), both by Eduardo Torroja; Cement Hall in Zurich (1939) by Robert Maillart; and most recently, Exposition Halls in Turin (1947–50) by Pier Luigi Nervi. Eero Saarinen's Kresge Auditorium at MIT was still in its design phase. Knowing that no other structural engineers in Japan could help him with a shell design, Tange was eager to seek Tsuboi's assistance. Tsuboi would often speak of the encounter: "One day, early in the morning, Tange visited me at my house and asked me in enthusiastically to collaborate with him on the structural design of Hiroshima Children's Library. He even offered half of the design fee."

With a diameter of only 20 meters, the shell roof of the Hiroshima Children's Library was not too big, and the scale was ideal for their first attempt at working together. The shape of the building resembles a basic funnel (or a morning glory, as it is often described in Japanese), which was simple and familiar to everyone. To the structural designer, however, these basic shapes were never straightforward. Tsuboi conceived of the shape as composed of three distinct geometries: a cone on top, a toroid support in the middle, and a cylinder at the bottom. He analyzed the structure by means of membrane theory, taking into account the continuation conditions of the three constituent shells. Well aware that the results of calculations never represented the actual behaviors of the real structure, he tested his analysis on a 1/30 model of mortar shell, more effectively grasping the elasto-plastic behaviors and the ultimate loading capacity of the structure.

The Hiroshima Children's Library was the first example of a reinforced concrete shell structure built in Japan after the war. Tange wrote about their first collaboration after the realization of the Children's Library:

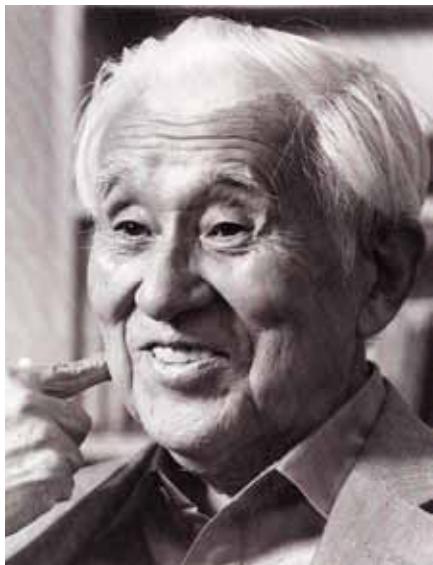
Murata Masachika (architect) + Tsuboi Yoshikatsu (structural engineer), Tokyo International Trade Center, 1959.

Minoru Yamasaki (architect) + Tsuboi Yoshikatsu (structural engineer), Shiga Sacred Garden, Shiga Prefecture, 1983.

Tsuboi Yoshikatsu (1907–90).

Tange Kenzō (architect) + Tsuboi Yoshikatsu (structural engineer), section diagram of main structure of Hiroshima Children's Museum, 1953.

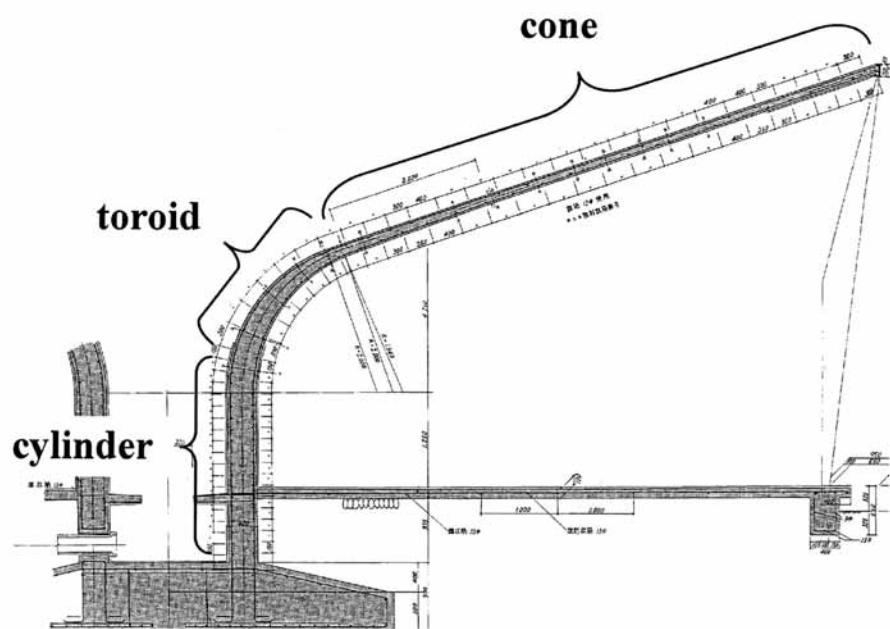




*It is said that the collaboration between an architect and a structural engineer is not easy. But I think I was lucky to be able to collaborate with Professor Tsuboi Yoshikatsu in this project. I understand that there are two types of structures for buildings. One of them is a structural system that, like a human body, consists of a skeleton supporting the surrounding muscle and skin, which in turn protects the inner skeleton. The other is a system that, like a prawn or a crab, is constituted by a hard outside shell including and protecting the soft body and life inside. Our structures in Hiroshima [Children's Library] and Matsuyama [Ehime Prefectural Hall] belong to the latter. In such a system the shell and the life in it—structure and architecture—should be fused and integrated into unity, which calls for very close collaboration between the architect and the structural engineer.<sup>2</sup>*

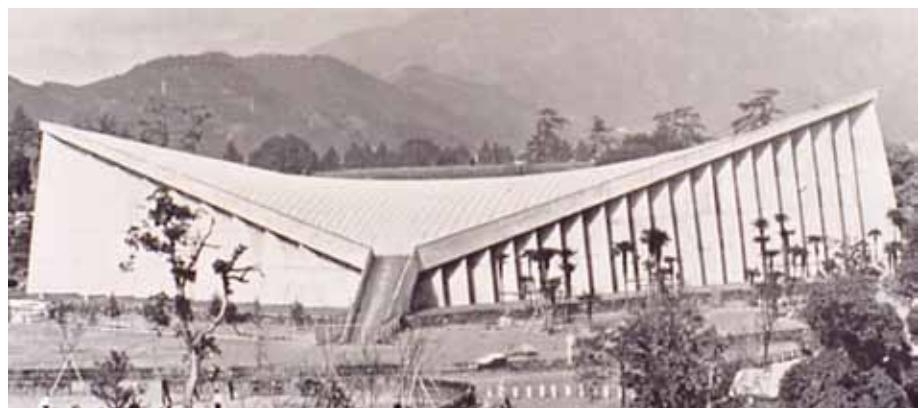
*It is often said that structural engineers act either as tyrants or servants to architects. It rather seems to me that the more academic the engineers, the more tyrannically they behave in their relentless pursuit of structural rationality. I do not think that such rationality exists *a priori*. It is meaningless to discuss whether prawn shell or crab shell is more rational. Either is rational *per se* in the living whole of their functioning as a lobster or a crab. No shells are meaningful apart from their holistic existences. Structural rationality is meaningful to discuss only through its possibility of becoming an integrated part of the building as a whole, and thus the structure cannot be a tyrant over the architectural design. There may also be structural engineers who are happy to be the servants to architects. They are those who manage to insert their tortured skeletons into the forms already designed and provided by the architects. In such cases the given forms are illusions of vanity, and the inserted bones are dead, and no building of architectural vitality can be brought forth from them.*

*In the present collaboration I do not think we have been tyrants or servants to each other. Nonetheless, I have always felt some friction during our collaborations. This might have been due to our unfamiliarity with the novel space to which we tried to give a form. Since we did not have sufficient vocabulary, we must have tried to find something to define the space, resorting excessively to the results of structural analyses, which might give us something to determine the fine details of the building. What we felt as friction may have been the limitation in structural analyses.*



The second example of Tange-Tsuboi collaboration was the design of the Ehime Prefectural Hall, located in the city of Matsuyama, where they produced a roof in an inclined shallow spherical cap made of reinforced concrete. Much larger than that of the Hiroshima Children's Library, the shell roof has a circular plan of 50 meters in diameter and was one of the largest concrete shell roofs in the world at the time. The thickness of the roof averages 120 millimeters for most of the surface area, but the profile tapers down toward the top. Tsuboi analyzed the roof as a shallow spherical shell of varying thickness resting on roller supports. This was the first case in the world where a structural engineer was able analyze a shell of non-uniform thickness. He also conducted a test on a scaled mortar model of 1/20. I recall that in spite of its shallowness, the model was much stronger than the design required, and it was impossible to bring it to collapse by the loading system designed for the test. Around this time, Tsuboi began to employ numerical methods based on finite difference techniques for the calculation of shallow shells for his practical designs.

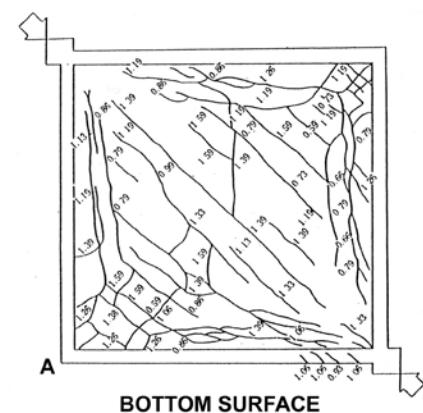
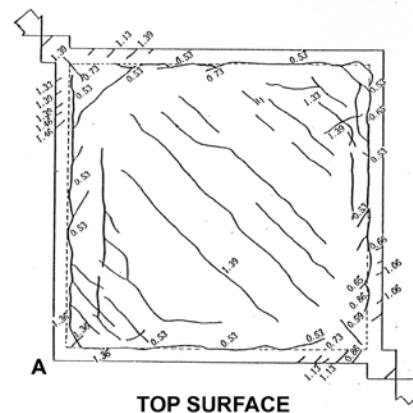
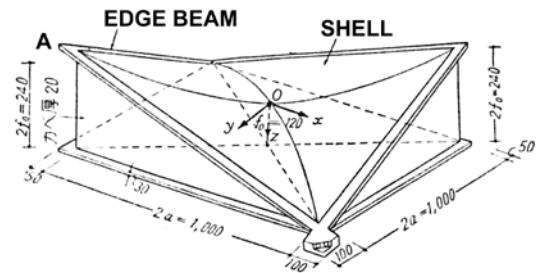
With the opportunity of designing a shell roof for Tange's Sunpu Kaikan, also a gymnasium *cum* assembly hall located in Shizuoka City, Tsuboi studied the behaviors of reinforced concrete hyperbolic-paraboloidal (HP) shells for various boundary conditions. The elegant HP shells for the Sunpu Kaikan had a square plan of about  $50 \times 50$  meters, supported along the peripheries by folded walls and at the two lowest corners by means of footings rigidly connected to each other by a diagonal underground tie beam to cancel the thrusts from the roof legs. As usual, Tsuboi performed a series of tests on a scaled mortar model. Crack patterns on the top and bottom surfaces of the shell speak eloquently of the general nature of the HP shell tested. The most prevalent type of cracks are parallel ones running in the direction of C-D, penetrating the shell thickness, clearly showing that the force flow in the shell is in tension in the funicular direction (A-B) and compression in the arching direction (C-D). Other crack patterns that are different for the top and bottom surfaces of the shell are due to local bending moments near the peripheries, which also agreed with the results of analyses. Tsuboi scrutinized the structural behaviors of the HP shell for Sunpu Kaikan to its maximum, enabling him to design the structure with sufficient confidence despite the fact that the shape and the scale of the structure were unprecedented in the world.



Tange Kenzō (architect)  
+ Tsuboi Yoshikatsu  
(structural engineer),  
Sunpu Kaikan,  
Shizuoka City, 1957.

Test model of Sunpu Kaikan's roof structure.

Crack patterns of Sunpu Kaikan's roof structure after loading test.





When Tsuboi was asked by Tange to collaborate on the design of St. Mary Cathedral in Tokyo, which was to be constituted by several sheets of concrete HP surfaces, he had already acquired ample knowledge and experience with HP shells. He did not hesitate to apply this type of shell surface not only for roofs but also for shear walls that had to take into account major seismic events. The design and construction of the cathedral was an unequivocal success. The satisfaction of the client, the Tokyo Archdiocese, was proved by the adoption of the central part of this design in the St. Mary's Cathedral in San Francisco (1971), designed by Pietro Belluschi and Pier Luigi Nervi, among others.

In addition to the projects described above, Tange Kenzō and Tsuboi Yoshikazu collaborated on two other shell designs: the Imabari Municipal Auditorium, located in Tange's hometown in Ehime Prefecture, and the Totsuka Country Club, in Kanagawa Prefecture. The roof structure of the Imabari Municipal Auditorium is a simple system of folded plates, but here Tange and Tsuboi extended the principle and applied it to the walls as well. The roof and the walls on both sides are rigidly connected at their intersections, so that the whole structure constitutes a portal frame in the transverse direction. The roof of the Totsuka Country Club has the shape of an inverted cylindrical shell, like a gutter, supported by six columns. An inverted shell was applied to roof design for the first time in the world, and one of the important tasks in structural design was how to control the tensile stresses.

#### TANGE-TSUBOI COLLABORATION AT YOYOGI STADIUMS

Tange Kenzō (architect)  
+ Tsuboi Yoshikatsu  
(structural engineer),  
Ehime Prefectural Hall,  
Matsuyama, 1953.

Tange Kenzō (architect)  
+ Tsuboi Yoshikatsu  
(structural engineer),  
St. Mary's Cathedral,  
Tokyo, 1964.



At the beginning of the 1960s, the world experienced an economic change that included an increase in labor costs, which made the construction of concrete shell structures increasingly difficult, since they required significant manpower in bar arrangement, formwork manufacturing, and concrete pouring on inclined surfaces. Since the beautiful design of the suspension roof for Dorton Arena (1952) in Raleigh by Matthew Nowicki attracted architects and engineers, progressive architects of the world pursued the possibilities of suspension structures for their designs.

When Tange started his design of Yoyogi National Indoor Stadiums, one of the main venues for the Tokyo Olympics in 1964, he strongly felt the limitation of concrete shell structures, and

his intuition suggested a shift from concrete to steel, or from compression to tension. He asked Tsuboi about the possibility of applying suspension structural systems to the stadium consisting of Gymnasium I, used for swimming (seating 15,000), and Gymnasium II, for basketball games (seating 4,000). Reflecting on the early stage of his stadiums' design, Tange remarked:

*Steel is the most important material that supports modern building technology. The tensile strength of steel has been developed to gain higher and higher values. We had a kind of confidence that the active use of tension of this material in a rational way would show the direction in which modern architecture should go. Another thing was our feeling that with increases in the scale of structures—mirroring the field of bridge engineering—suitable structural systems should shift from simple beams toward vaults and domes and then to suspension structures. Our adoption of suspension structures in this project proved to be economical when they were completed.<sup>3</sup>*

*There was still another reason for the adoption of suspension structures in our stadium: we could save the volume of inside spaces of our gyms. The concave roof surfaces would make the interior spaces minimal in comparison with the convex surface, as in conventional domes. They reduce the heating loads and ease the acoustic treatments as well. However, the decisive reason that made me step forward to adopt suspension principles for our design was that this structural system would make it possible for us to obtain “open spaces.” We had been thinking from the beginning of design that our spaces should have openings such that great numbers of people who are coming in and going out never feel obstacles, not only in the physical sense but also as to psychological meaning. In other words, we wanted to avoid closeness, which we commonly feel in a closed grandstand covered by a closed roof. We were also thinking that this kind of opening would be necessary for the relative location of the two gyms and something more that may join later.*

Tsuboi thought that the structural design of the Olympic Stadiums using a suspension system would be more difficult than any of his previous designs with rigid concrete shells, since shell theory was no longer sufficient to grasp the behaviors of this flexible structural system, and more sophisticated means to understand the nature of structures of changing geometry

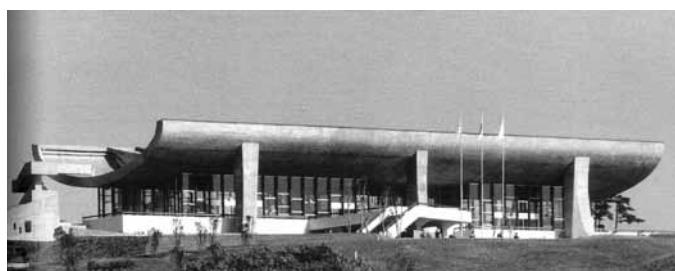
Tange Kenzō (architect)  
+ Tsuboi Yoshikatsu  
(structural engineer),  
Imabari Municipal  
Auditorium, 1958.

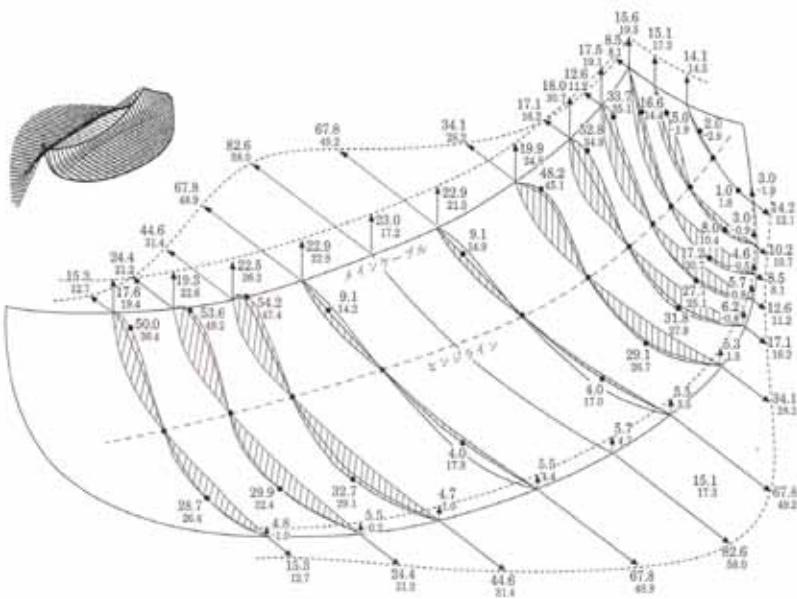
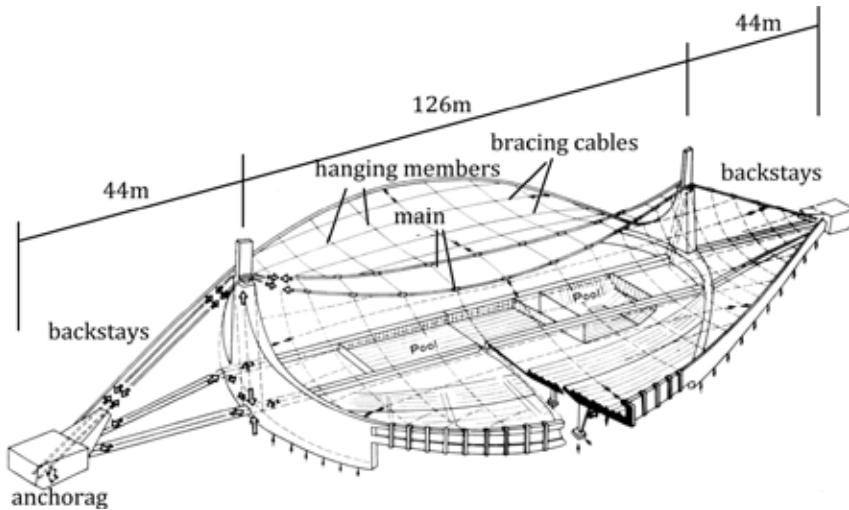
Tange Kenzō (architect)  
+ Tsuboi Yoshikatsu  
(structural engineer),  
Totsuka Country Club,  
Yokohama, 1961.

Tange Kenzō (architect)  
+ Tsuboi Yoshikatsu  
(structural engineer),  
Yoyogi National Indoor  
Stadiums, Gymnasium I,  
1964.

Schematic structural  
system of Gymnasium I.

Tensions and bending  
moments in Gymnasium I.





would be necessary. I was happy to be asked by Tsuboi to get involved in the design of the Gymnasium I as the chief engineer, a role he considered very challenging.

### YOYOGI GYMNASIUM I

The structural system of Gymnasium I consists of the following three subsystems:

1. two hanging roof systems between the main cables and the periphery of the gymnasium;
2. the central structure comprised of the main cables, main columns, and the underground struts that treat the load from the roof systems in a manner similar to that of a suspension bridge;
3. the peripheral structure in which the forces from the roof and the weight of the grandstand are in balance.

In an earlier stage of design study, we found that the roof surface (a) in the above could not be constituted by a simple cable network to have rational and smooth force flow in it, because of the complicated shapes of the boundaries (main cable, back-stay, and concrete periphery). So we developed a suspension roof surface consisting of hanging members with some bending rigidities (referred to as the “semi-rigid hanging system”). Then we had to establish the fundamental equations for the semi-rigid hanging system, which was not available anywhere in the world. Those equations had to be solved by means of finite difference techniques, using a hand-held calculator. The distribution of the tensile forces and bending moments of the hanging members as a result of these calculations is shown. The results of computer calculations conducted a few years ago are also shown. We were glad to confirm that the two results agreed in a practical sense.

Structural design study revealed that the present structural system was very flexible compared with other structural systems of normal stiffness. The structure was flexible especially during the construction processes. This nature called for the special design of important details. One such detail was the connection between the main cable and the hanging members. To accommodate the big three-dimensional changes in the relative angles of those members, a connection named “Saturn Ring Joint” was developed. By means of this joint, the relative locations of the hanging members and the main cable at their intersections are

rigidly secured, while their relative directions are changed without resistance. The Saturn Ring Joints for the central main cables are visible inside the building and for the backstays outside.

Another structural feature of Gymnasium I is that the roof structure is equipped with a damping system against violent winds. Because the scale of the roof structure was huge, and the weight of the roof was light (less than 100 kilograms per square meter), the structure had to be designed carefully against wind effects. A series of wind-tunnel tests and a study on the dynamic effects of wind on the roof structure were carried out, and we found no reason for concern.

We thought, however, that because the building was a national property, it might need to function as a shelter for refugees in case of disaster. This idea drove us to design a damping system for the roof that might control the movements of the roof due to unexpectedly violent gales. Six oil dampers were fixed to the column top of each end of the central span, as three units in double layers. Tange told us that the device was important to the structure, and he wanted to express the oil dampers (thus painted in red) so that they would be visible from outside.

## YOYOGI GYMNASIUM II

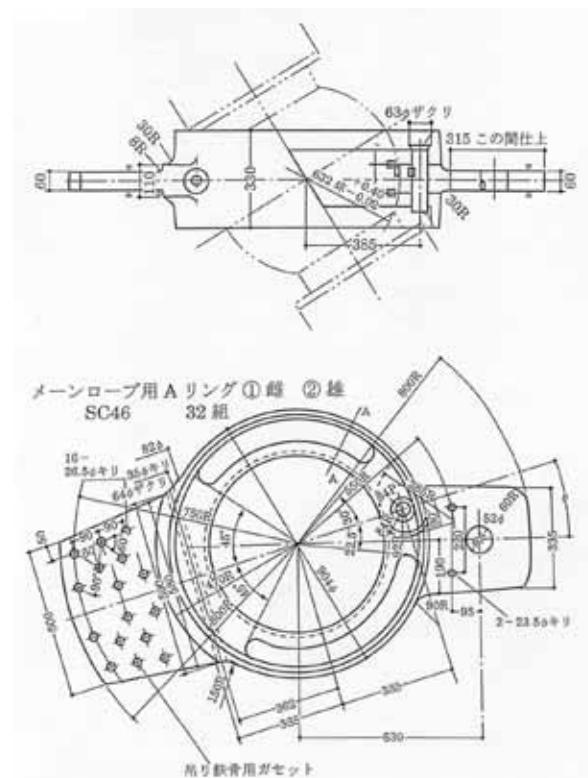
Gymnasium II has a diameter of 65 meters in plan. The basic structural principle of this gymnasium is similar to that of Gymnasium I. The central structure of this building is the “main pipe” running from the top of the single column toward the anchorage, inscribing a helical curve. From the main pipe, a series of hanging trusses go down toward the peripheral concrete to form the curved roof. The space between the main pipe and the column is framed by a group of lattice tubes to produce a sculptural configuration with an excellent aesthetic effect. Thanks to the sufficient curvature of the roof and great depths of the roof trusses, the roof of the Gymnasium II is more rigid than that of Gymnasium I, and no bracing cables are needed in the roof structure.

Unlike Gymnasium I, Gymnasium II has no backstay, and so large bending moments occur in the column and the ground beam connecting the column base and the anchorage. The column and

Saturn Ring Joint.

Saturn Ring Joints as seen from inside Gymnasium I.

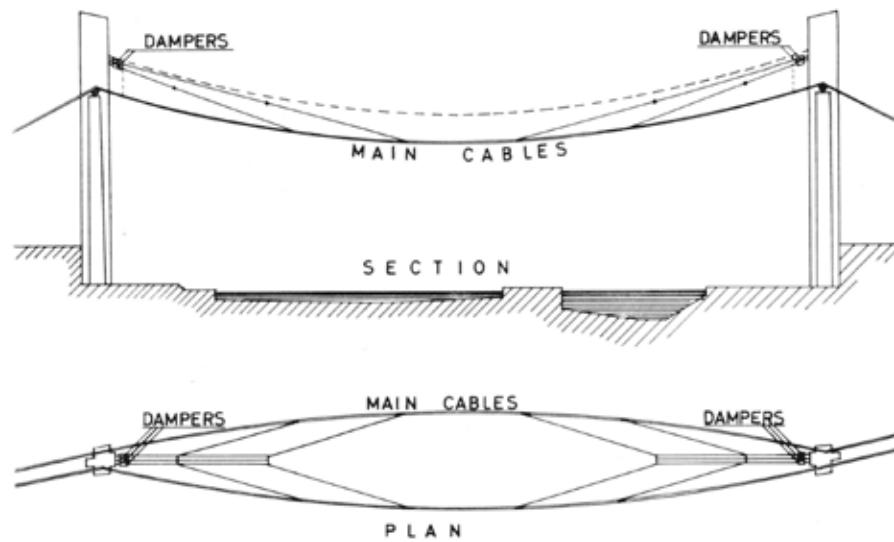
Saturn Ring Joints as seen from outside Gymnasium I.





Damping system  
of Gymnasium I's roof  
structure.

Oil dampers (painted  
in red) on one end  
of Gymnasium I's roof  
structure.



the ground beam are pre-stressed by means of post-tension system to avoid possible cracking in them due to the large moments, and to preserve the stiffness and durability of the structural members.

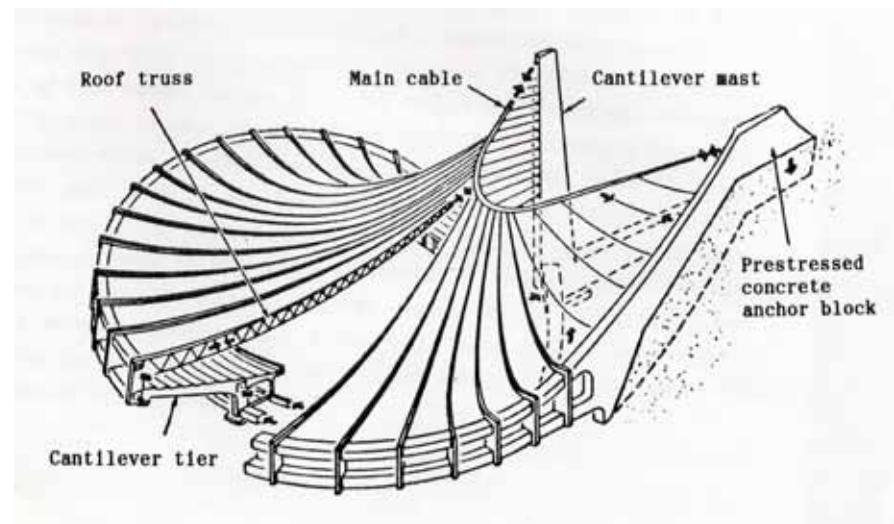
#### EPILOG: TANGE AS A JAPANESE ARCHITECT

Although Tange explained why and how he applied the suspension roof system to his Yoyogi Stadiums, he never talked explicitly about what sort of architectural forms he pursued in his design. Many of those who visit the stadium complex, however, say that they sense something Japanese in its appearance. In his writings, we are told of his design criteria only in rationalist terms, but the outcome of his design produces a strong atmosphere of local tradition. Perhaps a similar situation may be observed in the design of Kagawa Prefectural Government Building.

I would guess that the reason for this Japanese feeling or atmosphere may be just that Tange Kenzō was a Japanese architect. A simple comparison might help us understand the situation. Eight years after Tange built the Yoyogi National Indoor Stadiums for the Tokyo Olympics in 1964, Frei Otto and his colleagues constructed a stadium for the 1972 Munich Olympics. Both Tange's and Otto's stadiums were designed using the principle of suspension systems, and both design teams no doubt tried to make the most of tension principles for their stadiums, albeit with different results. In Munich, the structural mechanisms of the cable networks are directly expressed. The possibility of tension principles took form in an innocent way, giving a strong impression of technology. This may be regarded as an international design, or a global design, since the same design principle can be applied to stadiums built at any locality in the world. On the other hand, Tange's design of Yoyogi Stadiums is quite local, and it gives a strong impression of something Japanese, or more specifically, it provides the atmosphere of the grand roofs in traditional Japanese architecture. We may say that Yoyogi's design was possible only by Tange, who was Japanese, whether or not he wilfully intended it as any sort of national expression. I think that these are at least some of the reasons why the design of the Yoyogi National Indoor Stadiums has not aged in the half-century since its completion, but still stands as a timeless monument that is well appreciated by architects all over the world.

Interior view,  
Gymnasium I.

Schematic structural  
system of Gymnasium II,  
Yoyogi National Indoor  
Stadiums.





Frei Otto, Munich  
Olympic Stadium, 1972.



- 1 Kawaguchi Mamoru, "Yoshikatsu Tsuboi, Distinguished Researcher, Warmhearted Teacher, and Talented Structural Engineer," *International Journal of Space Structures*, vol. 21, no.1 (2006), 31–41.
- 2 Tange Kenzō, "Dezain to kōzō ni tsuite," *Shinkenchiku* (July 1954), 31.
- 3 Tange Kenzō, "Kokuritsu okunai sōgō kyōjijō no sekkei wo kaerimite," *Shinkenchiku* (Oct. 1964).

# YOYOGI NATIONAL INDOOR STADIUMS

## 1961–1964

Built for the Tokyo Summer Games in 1964, the complex consists of two indoor arenas connected by a central spine housing ancillary and office functions. Structural design was handled by Tsuboi Yoshikatsu and his associate Kawaguchi Mamoru, but Tange's team participated extensively in a joint design process. The basic structure for both buildings relied on cable suspension technology developed for bridges, but as an architectural project the challenge was to create interior enclosures under the span. The urban aspects of Yoyogi Stadiums deserve as much notice as the project's obvious formal virtuosity. One of the last large undeveloped tracts in central Tokyo, the stadium area was conceived as part of a ring of major open spaces in the city's dense center. The site plan extends beyond the stadium site's boundary in the upper-right corner to include a traffic intersection, a significant urban intervention to bring together the dense fabric of upper Shibuya and new large-scale institutional facilities such as the local ward office, the headquarters of the Japan Broadcasting Corporation (NHK), and the stadiums themselves. The two spiraling tails of the stadium site provide further linkage from the upper Shibuya area to Harajuku and Meiji Shrine.

115 Site plan, 1962

116 Gymnasium I,  
longitudinal section, 1962

117 Gymnasium II,  
Elevation, 1962

118 Gymnasium II,  
roof detail, 1962

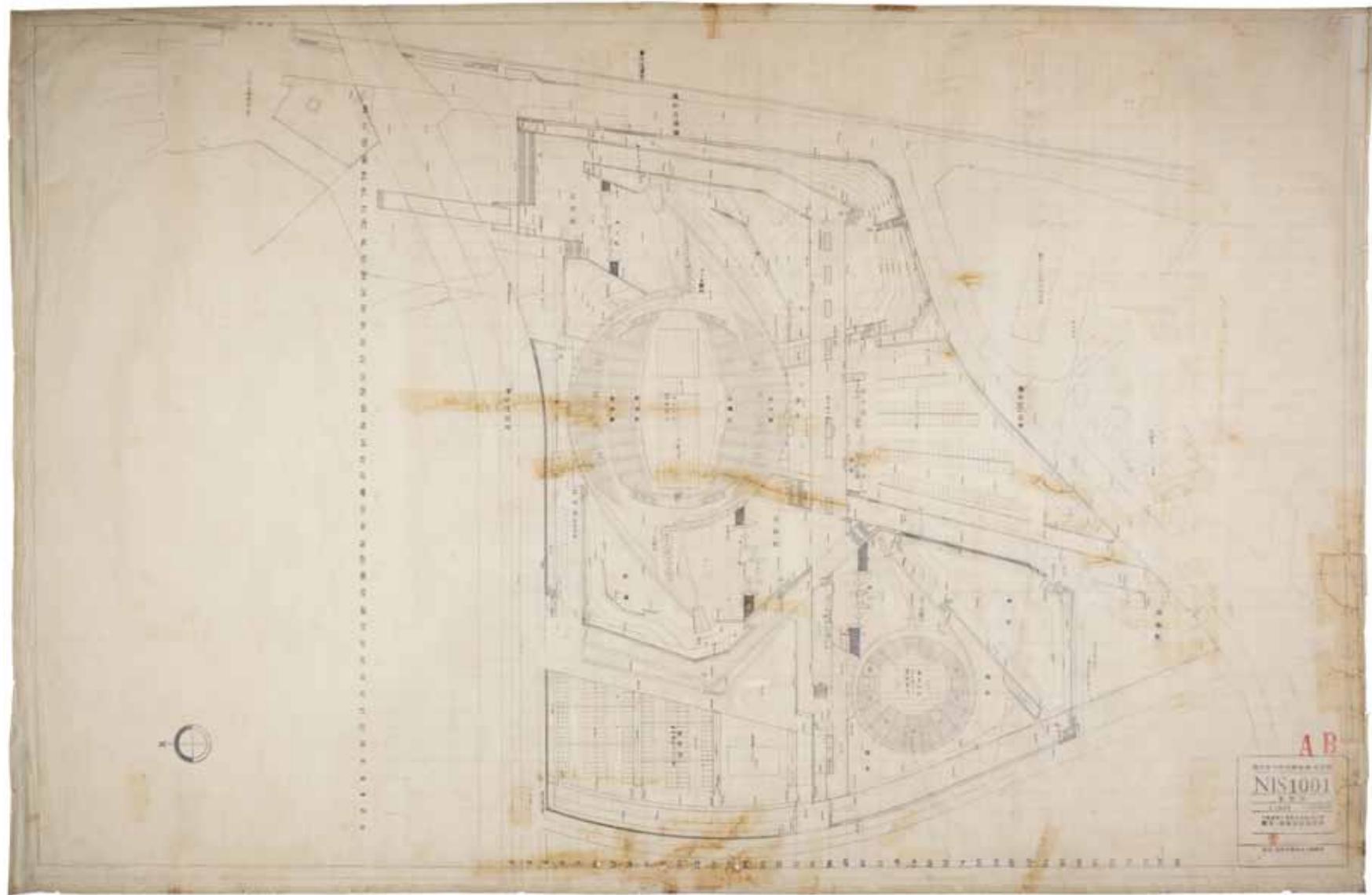
119 Gymnasium II,  
view of ceiling detail

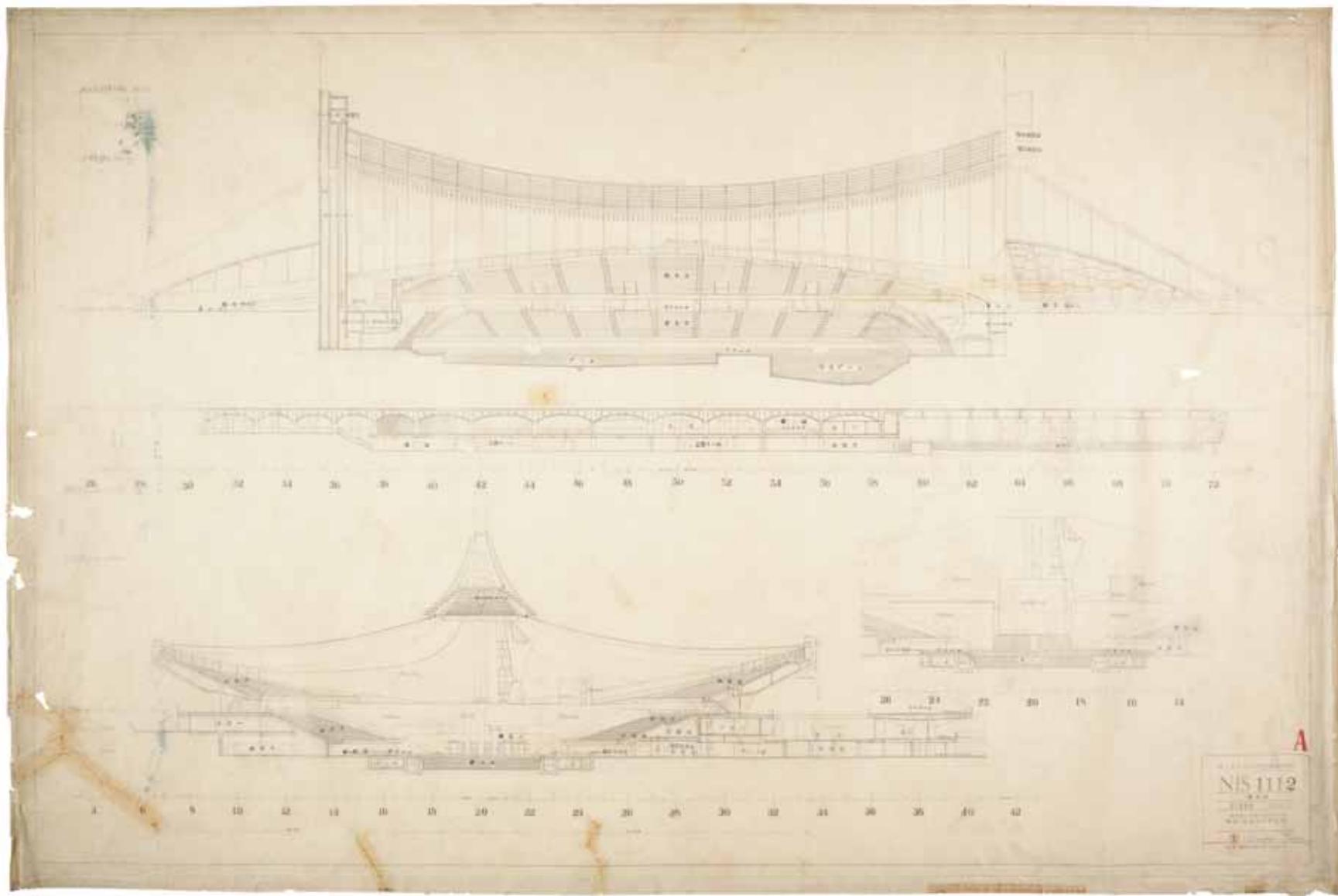
120 Aerial view of  
stadium complex

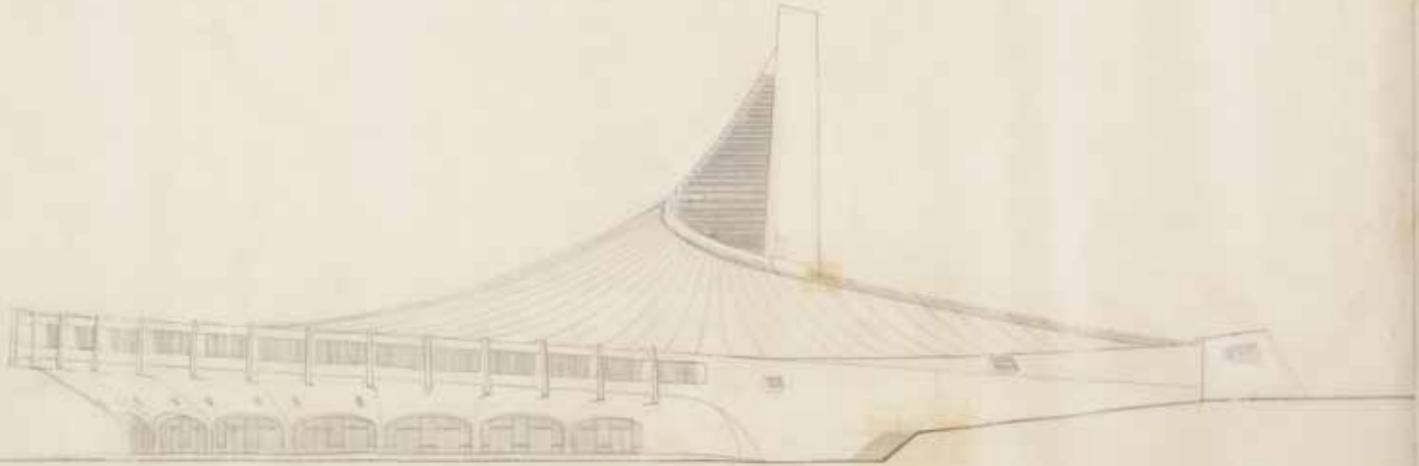
121 View of courtyard  
space between two  
gymnasiums

122 Interior view of  
Gymnasium I.

123 View of Gymnasium  
II's tower (foreground)  
and Gymnasium I's tower  
(background)

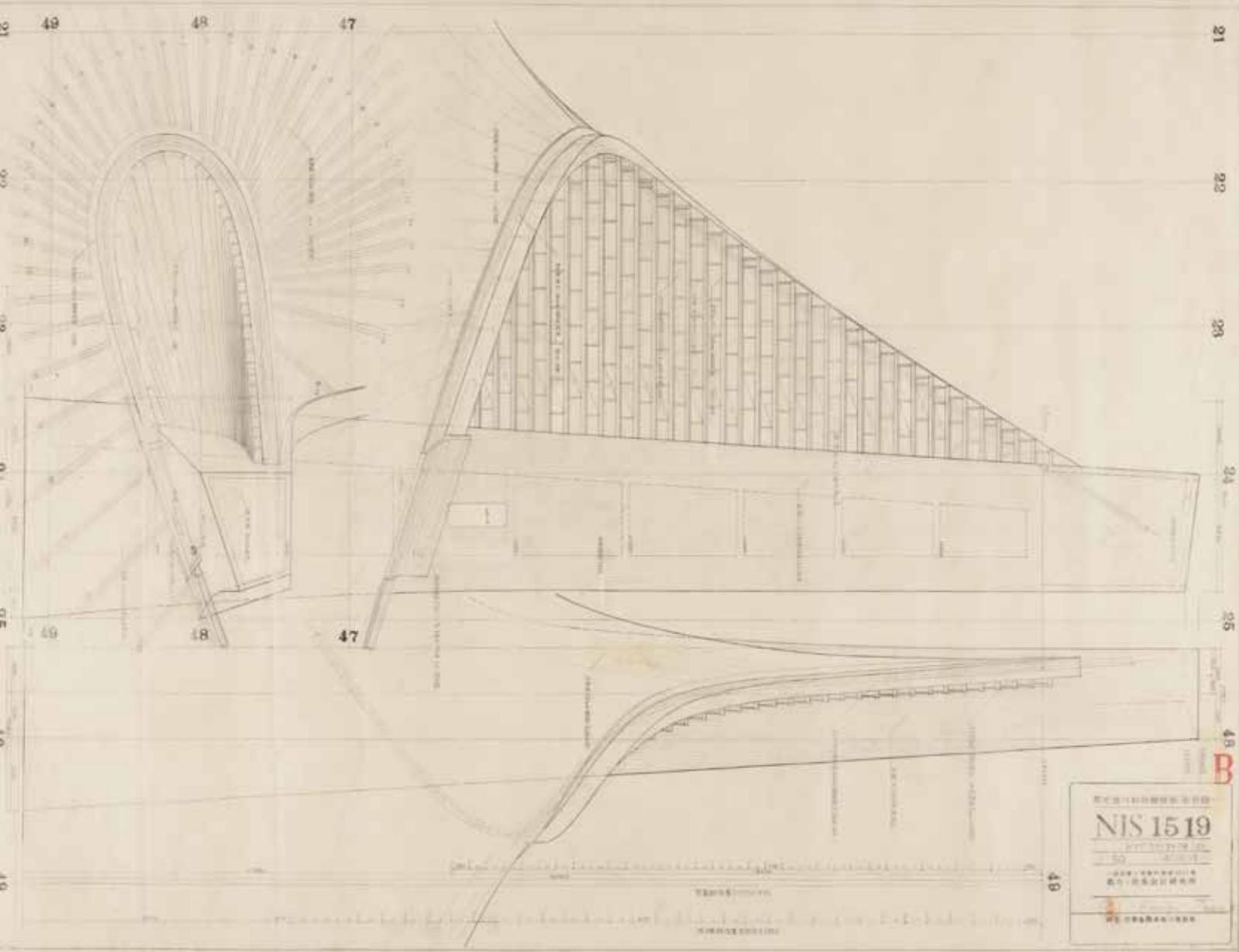






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# UNITY OF THE ARTS AT SŌGESTU KAIKAN

Seng Kuan

## EDITORS' NOTE

The author of the following chapter, Kawaguchi Mamoru, is uniquely positioned to comment on the collaborative relationship between Tange Kenzō and structural engineers, which reached its apotheosis at the Yoyogi National Indoor Stadiums, completed in 1964 for the Tokyo Summer Olympics. Kawaguchi was then an associate in the research laboratory of Tsuboi Yoshikatsu, one of the most important figures in the field of structural engineering and design in early postwar Japan. As he started to work on the Olympic stadiums, Tange turned to Tsuboi, with whom he had been collaborating on a series of highly significant projects since the early 1950s, and Tsuboi, in turn, charged Kawaguchi as the project leader of Gymnasium II, one of the two main facilities in the complex. Kawaguchi rose to the challenge. When he established an independent practice in 1965, Kawaguchi Mamoru Structural Design, Tange was one of his first clients, beginning with the Yukari Cultural Kindergarten project in 1966–67 and most famously with the Osaka Expo in 1970.<sup>1</sup>

Several chapters in this volume, most notably those of Toyokawa Saikaku, Fujioka Hiroyasu, and Seng Kuan, refer to the schism between a fine-arts-based approach to design and an engineering-based, rationalist approach within Japan's architectural academe. This divergence can be traced to 1903, when Sano Toshikata was appointed to the architectural faculty at Tokyo Imperial University. Sano would spend the next decade pioneering the emerging technology of earthquake resistance and reinforced-concrete construction. His seminal research, "Treatise on Building Earthquake Resistance," was presented in 1915.<sup>2</sup> While Sano's research focused on the technical aspects of structural engineering, his view on the aesthetic aspects of architectural design echoed closely the structural rationalist tradition as propounded by the nineteenth-century French architectural theorist Eugène Emmanuel Viollet-le-Duc. At the symposium "What Should Be the Architectural Style of Our Country's Future?", a gathering of some of the most eminent figures in Japan's architectural establishment, Sano declared "the fundamental meaning of architectural beauty is no more than support of weight and clear expression of kinetic forces."<sup>3</sup> Sano's statement provided the ideological foundation of the so-called structural rationalist school in Japan, eventuating in a formal division within the architectural curriculum at Tokyo Imperial University in 1915, when the school began to ask entering

students to choose between an engineering track and a design (*ishō*) track in their studies.<sup>4</sup> Ironically, Sano's statement on structural rationality also laid the basis for the collaboration between architects and engineers despite this schism in architectural pedagogy.

From his lectern at Tokyo Imperial University, Sano Toshikata cultivated a talented group of followers, most prominently Uchida Yoshizō, Kasahara Toshirō, Mutō Kiyoshi, and Ono Kaoru. During the same period, as architectural historian Inagaki Eizō has pointed out, Japan's building industry experienced an unprecedented degree of institutionalization, consolidation of construction companies along modern organizational models, increasing sophistication in the deployment of capital, and a socially systematic approach to dealing with new building materials, technologies, and professions.<sup>5</sup> While Sano's first two protégés, Uchida and Kasahara, expanded the scale of rationalist design by spearheading an urban planning policy in Japan beginning in the late 1910s, Mutō Kiyoshi (1903–89) and Ono Kaoru (1903–57) inherited Sano's mantle in structural engineering. Both figures played critical roles in the development of modernist architecture in the transwar and postwar periods, often in collaboration with architects. In 1929, Mutō Kiyoshi succeeded Sano as holder of the chair in architectural structures at Tokyo Imperial University, a position he would retain until 1963.<sup>6</sup> Mutō remained the stalwart of Japan's structural engineering profession long after his retirement from teaching, building Japan's first true skyscraper, the Kasumigaseki Building (1965–67). Tsuboi Yoshikatsu, the protagonist of the essay below by Kawaguchi, was one of Mutō's first students.

Another key figure in Sano Toshikata's coterie of disciples was Ono Kaoru, born in the same year as Mutō and the unsung hero of Maekawa Kunio's design breakthroughs of the 1940s and 1950s. His relative obscurity today is likely the result of his premature passing in 1957, just as Japan's postwar construction boom began. Ono collaborated with Maekawa on the 1937 competition scheme for Fujitsū Industries in Kawasaki, an important precursor to the urban-scale, hyper-rationalist visions of the Metabolist group and the postwar generation.<sup>7</sup> Ono's involvement in the famous PREMOS housing prototype is encapsulated in this acronym: "PRE for prefabrication, M for Maekawa, O for Ono, and S for Sanin Industries that produced it."<sup>8</sup> Ono was asked by his mentor Sano Toshikata to found the faculty of engi-

neering at Nihon University in 1929. In 1942, Ono Kaoru joined Tsuboi Yoshikatsu on the faculty of architecture at the newly founded Chiba campus of Tokyo Imperial University, which evolved into the Institute for Industrial Science in the postwar period.

Ono Kaoru's relatively short career prevented him from leaving a large body of built work, but his legacy is realized vicariously through his protégé, Kimura Toshihiko (1926–2009), one of the most important structural designers of the postwar generation. Kimura was fond of saying "I became a structural designer by being tricked by Ono [Kaoru] sensei and spurred on by Maekawa [Kunio] sensei."<sup>9</sup> Kimura was responsible for the structural design of virtually all of Maekawa's major buildings in the 1950s. The next generation in this branch of Japan's structural engineers includes Araya Masato (b. 1943) and Sasaki Mutsurō (b. 1946), two indispensable collaborators of Taniguchi Yoshiro, Toyo Ito, and SANAA.

This genealogy of Japan's early structural engineers is delineated to convey the general culture of interdisciplinary work among this small, intimate circle of elite modernists in twentieth-century Japan. Kawaguchi Mamoru has written elsewhere that Tange Kenzō and Tsuboi Yoshikatsu had no contact with each other before the Hiroshima Children's Library project. The record shows that Tange's structural consultant on the Ueno Aquarium project (1950–51) was Ogura Kōichirō, another young protégé under Mutō Kiyoshi. Whether or not Tange and Tsuboi had any personal interaction prior to 1951, Tsuboi's teaching appointment at the Chiba campus in the 1940s brought him into the circle of young progressive architects who would transform architectural design in the postwar era. In June 1949, Tsuboi published a short essay on the aesthetic implications of construction types, encompassing timber, brick, reinforced concrete, and even shell constructions, extolling the necessity of working with the specific characteristics of a material; the smallest construction detail should manifest the unique qualities of each material.<sup>10</sup> This article was published in *NAUM: Society, Architecture, and Architect*, the official journal of the elite, left-leaning New Architect's Union (*Shin Nihon kenchikuka shūdan*, "NAU"), a organization that included Tange, Tange's chief deputy Asada Takashi, Hamaguchi Ryūichi, Ikebe Kiyoshi, Ichikawa Kiyoshi, and Take Motoo.<sup>11</sup> To his design-oriented colleagues, Tsuboi offered this advice: "The most appropriate use of material. The expression

of a building's rationality. It is whether these ideals have become instinctive to us that determines how well developed our sense of modernism is. A modern Japanese architecture cannot be found by emulating Gropius and chasing after Le Corbusier.”<sup>12</sup>

Tokyo University’s structural rationalists had been advocating these ideas at least since Sano’s 1910 declaration that “the fundamental meaning of architectural beauty is no more than support of weight and clear expression of kinetic forces.” It seems fitting that in his commentary on the Hiroshima Children’s Library, Tange reintroduces the ideas of “structural rationalism” and “will to form” that led the charge of modernism in Japan in the 1910s and 1920s against historicist styles.<sup>13</sup> As Kawaguchi discusses in his essay here, Tange proposed two archetypal relationships between structure and architecture, using biomimetic metaphors in both cases. The first is like the skeleton in the human body, alluding to the so-called *raamen* orthogonal system of construction, and the second is like the shells on crustaceans, as in the case of Hiroshima Children’s Library and Ehime Prefectural Hall. Echoing Tsuboi’s sentiments, Tange stated, “Structural systems on its own carry infinite possibilities, but in terms of choosing a structural system for a building, it must be consistent with a total picture of the architectural work. It is only at this point can we speak concretely on the rationality of structure.”<sup>14</sup> It is evident that Tsuboi and Tange shared the belief in the fluid concomitance between structure and form as a creative process that enriches the potential of spatial and structural innovations.

1 Kawaguchi Mamoru, *Kōzō to kansei: kōzōka Kawaguchi Mamoru, Tange Kenzō to no sakuhin wo kataru* (Tokyo: Hösei daigaku kenchiku gakuka dōsōkai, 2007).

2 Sano Toshikata’s “Kaoku taishin kōzōron” was presented in 1915 and published in installments as “Shinsai yobō chōsakai hōhoku” in *Kenchiku Zasshi* in 1916–17.

3 “Waga kuni shōrai no kenchiku yōshiki o ikaga ni subeki ka,” *Kenchiku Zasshi*, no. 282 (June 1910) and no. 284 (Aug. 1910).

4 Tōkyō daigaku hyakunenshi hensyū iinkai, *Tōkyō daigaku hyakunenshi*, vol. 3, *Kōgakubu* (Tokyo: Tōkyō daigaku shuppankai, 1987), 115.

5 Inagaki Eizō, *Nihon no kindai kenchiku*, vol. 2 (Tokyo: Kajima shuppankai, 1979), especially chapter 9, “Atarashii mokuhyō toshite no toshi to jūtaku,” 197–218.

6 *Tōkyō daigaku hyakunenshi*, 144–5. Umemura Isamu joined the faculty as an assistant professor in 1943 and assumed Mutō’s chair after his retirement in 1963.

7 Closely resembling the *neue Sachlichkeit* urban schemes of Ludwig Hilberseimer, the proposal fits six rows of linear factory buildings into a compact site, joined into pairs and traversed by three perpendicular corridors. See Seitan 100 nen Maekawa Kunio kenchiku ten jikō iinkai ed., *Seitan 100 nen Maekawa Kunio kenchiku ten zuroku* (Tokyo: Seitan 100 nen Maekawa Kunio kenchiku ten jikō iinkai, 2006), 85.

8 Uchida Yoshio, “Puremosu no chōsen,” in *Seitan 100 nen Maekawa Kunio*, 102.

9 See Watanabe Kunio, ed., *Kimura Toshihiko’s sekkei rinen* (Tokyo: Kajima shuppankai, 2000) and Kimura Toshihiko, “Gendai kenchiku to gjijutsu wo kaerimite: Maekawa Kunio sensei no kenchiku,” *Kenchiku Gijutsu* (Oct. 1986), 153–60.

10 Tsuboi Yoshikatsu, “Kōzō keikaku, zakkan,” *NAUM: shakai to kenchiku to kenchikuka*, no. 1 (June 1949), 27–33.

11 For a summary of the four-year history of NAU, from its founding in 1947 to its dissolution in 1951, see Honda Shōichi, *Kindai Nihon kenchiku undōshi* (Tokyo: Demesu shuppan, 2003), especially chapters 6–8.

12 Tsuboi, “Kōzō keikaku,” 33.

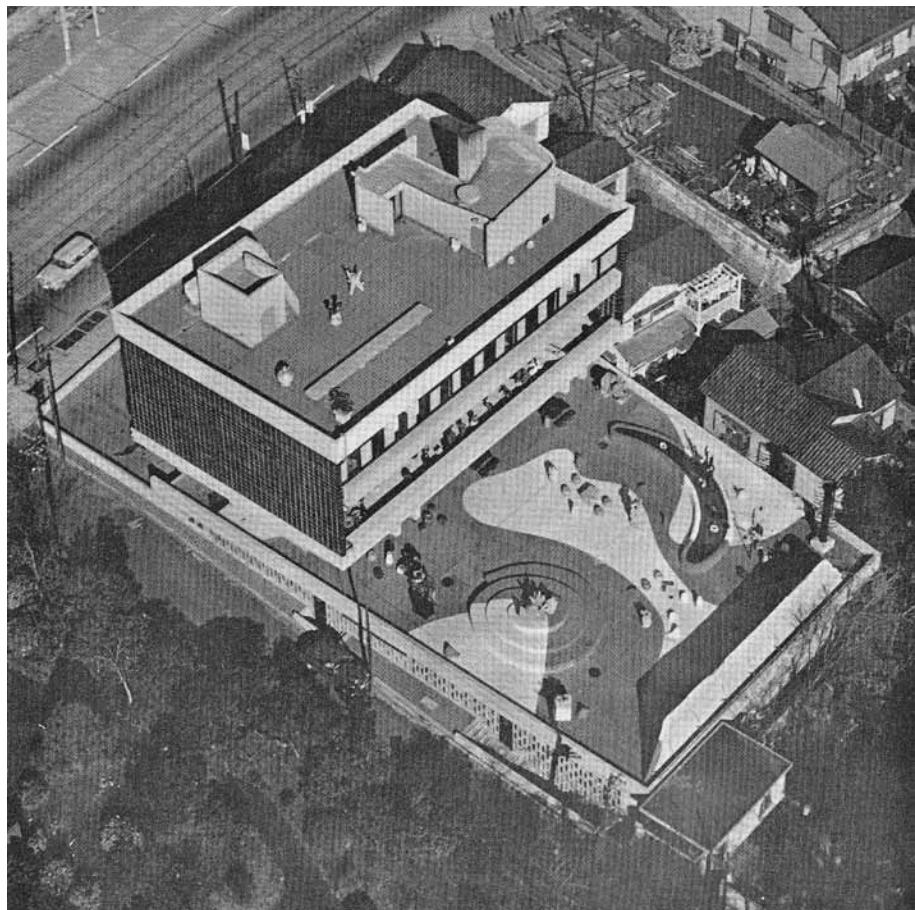
13 Tange Kenzō, “Desain to kōzō ni tsuite,” *Shinkenchiku* (July 1954), 31.

14 Ibid.

Tange Kenzō's meteoric rise during the early postwar period into Japan's leading architect can be understood in terms of his successful mediation of crucial tensions in Japan's architectural culture. The first tension concerned the institutionalization of architecture in Japan, with one view positioning it along the lines of a Western humanistic (*viz.* "fine arts") discipline, the other seeing it as a field of applied structural engineering in the form of rationalist planning. This tension was internalized at Tokyo Imperial University in the first decades of the twentieth century, where Tange himself was trained. The second locus of tension was equally fundamental, pitting the perceived need among Japanese architects in early to midcentury to have a critical engagement with Japan's national identity against the renewed ideal of the *Gesamtkunstwerk*, or the total, synthesized artistic environment.<sup>1</sup> Tange's proactive engagement with artists in multiple disciplines was instrumental in his attempt at overcoming these tensions.

Unlike the previous generation of Japan's modernist architects, Tange and his cohort largely shied away from direct reference to the traditional culture of tea and its corollary visual and design culture, as epitomized by the works Horiguchi Sutemi (1895–1984), especially from the 1930s onward. Tange preferred working with other self-proclaimed avant-garde interpreters of the traditional arts and pursued new directions of artistic creation and collaboration that were inherently modern and unnostalgic. In 1949, Tange was among the first architects to be inducted into the Shinseisaku Art Society, an association of Japan's leading modern painters and sculptors. In the same year he designed the exhibition space for the group's prestigious annual show and described his design in a catalog essay titled "On the Unity of Architecture, Sculpture, and Painting." Taking a cue from Le Corbusier's call *vers l'unité*, first sounded in 1944, and the theme on aesthetics discussed at the seventh meeting of the Congrès Internationaux d'Architecture Moderne (CIAM), Tange initiated a series of fruitful collaborations with Japan's cultural arts in his architecture, most notably with calligraphy, mural art, *ikebana* flower arrangement, and gardens.<sup>2</sup> His designs of a significant number of exhibitions also reveal Tange's critical engagement with the allied arts.

On the eve of the CIAM 7 conference, in June 1949, Tange wrote a short article in which he presented his own theoretical position on the role of art in modern architecture. The timing of this piece





Tange Kenzō,  
Sōgetsu Kaikan,  
bird's-eye view,  
Tokyo, 1958.

Teshigahara Sōfū,  
“Locomotive,” 1951.

coincided with the design of the Hiroshima Peace Memorial complex (1949–55), where cultural and artistic facilities are prominently featured in the Central Park area. Titled “Architecture, Painting, and Sculpture: From Technologism to Mankind’s Architecture,” the article describes two trajectories in the progress of modern architecture, that of technological progress, which is universal and objective, and of the unevenness and disparities marked by localism and tradition.<sup>3</sup> On the first trajectory, Tange writes, “architecture must declare its secession from everything of the past, and return decisively to problems of aesthetics along with painting and sculpture. The issue of construction is not about works of personality, but comes from the social and economic activities of large groups.”<sup>4</sup> In the meantime, architecture enters a period of reflection and self-examination (*hansei*): “The world is not flat. There is diversity to mankind.... Given this reality, the pursuit of truth comes from the interpretation of humanity as found in the local (*fudoteki*) and traditional (*dentoteki*).”<sup>5</sup> To illustrate this new sense of artistic unity, Tange displayed an image of the new Ministry of Education and Public Health Building in Rio de Janeiro (1937–43), designed by Lúcio Costa, Oscar Niemeyer, and others under the guidance of Le Corbusier, with a rooftop garden designed by Roberto Burle Marx.

Tange designed a series of buildings for Teshigahara Sōfū and the Sōgetsu school of *ikebana*, including the second and current Sōgetsu Kaikan, completed in 1977 as one of Japan’s first glass curtain-wall structures. Tange’s office was located in this building for twenty-five years, from its completion to Tange’s retirement in the early 2000s. The first Sōgetsu Kaikan, opening its doors in 1958, was a monument to the collaboration between Tange and Sōfū, where spaces of display and its architectural vessel became fully integrated into a *Gesamtkunstwerk* of visual unity and sculptural tableau. One of Tange’s most enigmatic and least understood buildings, the first Sōgetsu Kaikan encapsulates the key aesthetic problems of Japan’s postwar architectural culture, including the display of works of art, evolving media of fine art, approaches to presentation, the spatial arrangement of viewing space, and the consideration of gardens and buildings in and of landscape.

Teshigahara Sōfū (1900–79) came from a long line of prominent *ikebana* flower arrangement artists. He started teaching on his own at the age of thirteen and rebelled against his father at

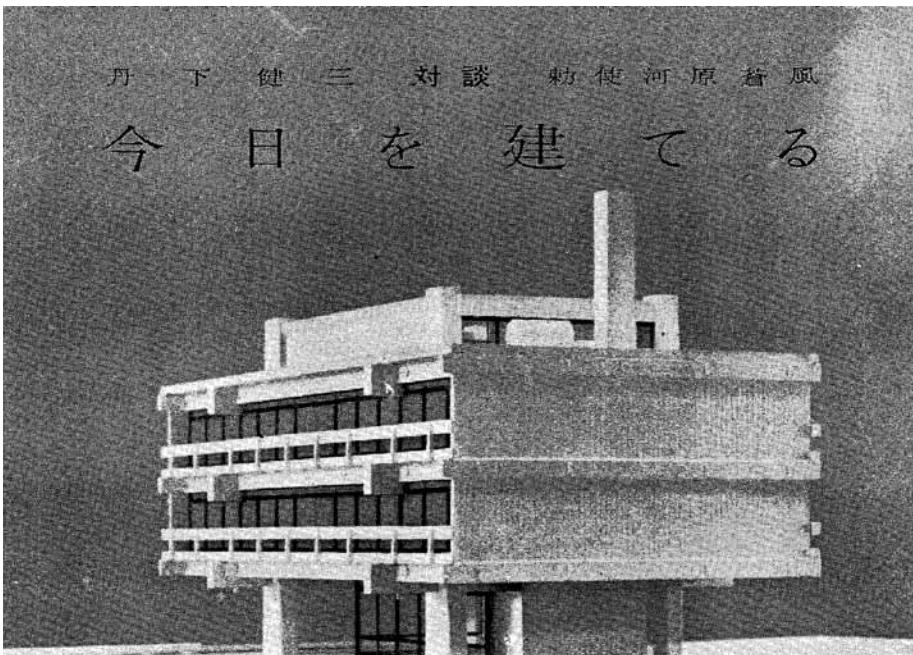
twenty-five, forming his own school, *sōgetsu-ryū*, a year later in 1927. Through personal genius, money from his profitable school, and vast network of social contacts, Sōfū thrust flower arrangement into the center of Japan's art scene.<sup>6</sup> Deeply influenced by avant-garde currents in the plastic arts—cubism, Russian constructivism, and above all surrealism—Sōfū steadily moved away from mere arrangement of flowers toward the production of three-dimensional objects composed of steel, glass, wires, and wood, a transition that gradually evolved between the 1930s and 1950s. In 1933 he founded the New Ikebana Society (*shinkō ikebana kai*), along with Shigemori Mirei and several others who were part of this rebellion. The central tenets of their “New Ikebana Declaration” were 1) rejection of nostalgia (*kaikoteki kanjō*); 2) rejection of fixed forms (*keishikiteki kotei*); 3) rejection of botanical constraints; and 4) free manipulation of flower vessels.<sup>7</sup>

The agglomeration of reformist *ikebana* artists in the 1930s was coupled with the importation of the surrealist term “*objet*” into Japan to describe works of art that cannot easily be categorized as sculpture. The art critic Takiguchi Shūzō (1903–79), who would wield almost peerless influence among the artistic and architectural avant-garde in the postwar period, translated André Breton’s *Surrealism and Painting* (1926) into Japanese in 1930. As art historian Omuka Toshiharu has pointed out, the reforming efforts of Shigemori and Teshigahara to *ikebana* was a crucial move to establish *ikebana*, or *kadō*, as a discipline of fine art (*geidō* or literally, way of art) in the 1930s as the boundaries between fine art and craft were being drawn in Japan’s cultural reconstruction.<sup>8</sup> As early as 1934, Sōfū had already started to embrace the surrealist potential in modern *ikebana* through his friendship with Fukuzawa Ichirō (1898–1992), who along with Takiguchi championed the surrealist cause in Japan.<sup>9</sup> Takiguchi first articulated the potential for *objet*-discourse in *ikebana* in the 1938 essay “Freak Flowers and *Objet*,” and in 1940 Sōfū started submitting to the annual autumn show of the Bijutsu Bunka Art Society, organized by Fukuzawa.<sup>10</sup> In the postwar period, Takiguchi revisited the genre of *ikebana* with a review of Sōfū’s 1952 solo show. According to Takiguchi, one of the foremost themes in modern Japanese aesthetics was the tension between the rationalism of modern plastic arts and the irrationality of flowers:

Interior of Tange Kenzō’s Seijō House, calligraphy on *fusuma* wall panel by Shinoda Tōkō, terra-cotta vessel on floor and ceiling lamp by Isamu Noguchi, ca. 1954.

Tange Kenzō, initial scheme for Sōgetsu Kaikan, ca. 1957.





*People in the West call ikebana “flower arrangement,” which means the ordering of natural flowers in an artistic way. This is no longer adequate for today’s designs. Flowers of course have their naturalistic appeal, but this is left out of the rationalist approach to the plastic arts. In other words flower arrangement is surely placed outside the boundaries of fine art.<sup>11</sup>*

Modern *ikebana* was to elevate the sensual beauty of flowers by rejecting its looming tradition. Many of the pieces created by Sōfū in the early 1950s incorporated the surrealist idea of *objets trouvés*, and vases are often dispensed with. Favoring material such as steel, stone, and dead root, Sōfū enthusiastically pursued what he called “waterless *ikebana* (*musui ikebana*),” which is actually an oxymoron that specifically denies its “living (*ikeru*)” aspect. In 1951–52, he created the Locomotive series, amalgamating pieces of automobile and bicycles with floral arrangements, and in 1953–54 he participated in six issues of the “Asahi Pic-ture News” series by *Asahi Graph*, centered upon the Jikken Kōbō group of Takiguchi Shūzō, Kitadai Shōzō, and Yamaguchi Katsuhiro.<sup>12</sup>

Sōfū’s *ikebana* and sculptural work necessitated a new display approach. As the architectural critic Kōjiro Yūichirō pointed out in his review of Sōfū’s 1953 solo show at the Takashimaya Department Store, Sōfū had begun to decouple *ikebana* from its traditional setting in the *tokonoma* (alcove).<sup>13</sup> Kōjiro writes,

*In the modern age as the tokonoma has been exiled from our homes, Teshigahara has liberated ikebana from the tokonoma. Whereas previously ikebana could only be seen in one direction in the tokonoma, it has now been transformed into a “floral object (hana no obuje)” that can be seen from any angle. This is not the obstruction of space, rather the color scheme of space through which our fields of vision traverse.... “Floral objects” do not require frames or walls, stands, nor tokonoma or vases. It is ideally suited for modern architecture, which need only consist of ceiling, floor, and panoramic windows (gurasu hekiga).<sup>14</sup>*

This decoupling is analogous to the changes represented in Shinoda Tōkō’s calligraphy and Tange’s reinvented *tokonoma* in his Seijō House, also praised by Kōjiro in a separate review. It is missing, however, the interactive dynamic that the Seijō House and Nichinan Culture Center experienced in inducing new forms of calligraphy and space-making. This would occur in perfect

pitch at the Sōgetsu Kaikan, the new headquarters building for Sōfū's *ikebana* empire commissioned to Tange in the mid-1950s.

In the prewar period, long before Tange appeared on the architectural scene, Sōfū started his embrace of modern architecture at the first Sōgetsu Hall (*sōgetsu-ryū kōdō*), which opened in 1933, with an International Style building by Satō Takeo (1899–1972).<sup>15</sup> The Satō-designed building was destroyed in May 1945 by an air raid. Two years later, in 1947, the Sōgetsu School reopened a modest studio (*dōjō*) in Tokyo's Mita area.<sup>16</sup> There is no evidence of Tange and Sōfū crossing paths prior to 1954, when Tange designed the Japanese section at São Paulo's 400th Anniversary Festival, which also featured Sōfū. This encounter would quickly lead to design projects. A new building for the studio in Mita and a new residence for the Teshigahara family were completed in 1955, both of Tange Kenzō's design.<sup>17</sup>

#### SŌGETSU KAIKAN (OLD)

Construction on the Sōgetsu Kaikan began in May 1957 and was completed in June 1958. Located on Aoyama Avenue, the high-profile location that overlooked Akasaka Detached Palace immediately became one of the most important salons to Japan's postwar art world.<sup>18</sup> The primary structure, comprised of two main floors housed in a rectangular box, sits on top of four piers lifted off the ground. A large auditorium can be found in the basement. As in Tange's other public buildings of the time, the ground floor is entirely open. This *pilotis* space allows continuous flow from the street in front, through the building and toward the sculpture courtyard in the rear. The north façade of the building, fronting Aoyama Avenue and the Akasaka Detached Palace, has limited perforations for windows. A vast expanse of the elevation is covered with terra-cotta blocks in dark-blue glaze (*nōkon*). The south façade is open, taking advantage of the southern exposure and panoramic view from its hilltop site.

Sōgetsu Kaikan functions in a variety of ways. It is a school, with studio and auditorium space, which also serves as a venue for large events for Tokyo's modern art community, especially music and film. It is also the headquarters building of what has become a highly profitable business. There is little doubt that in both the architect's and client's minds, the building is above

Second-floor veranda,  
Sōgetsu Kaikan,  
installation of  
Teshigahara Sōfū's  
solo exhibition on the  
occasion of Sōgetsu  
Kaikan's inauguration,  
1958.

Second-floor great  
room (*hiroma*),  
Sōgetsu Kaikan.

Foyer to auditorium,  
basement level,  
Sōgetsu Kaikan.

Sculptural courtyard,  
Sōgetsu Kaikan.

Front elevation, from  
across Aoyama Avenue,  
Sōgetsu Kaikan.





all a place of display, a gallery that showcases the artistic ideas of the Sōgetsu School.<sup>19</sup> Sōgetsu Kaikan features four main spaces for the display of art. First is the forecourt, which fronts Aoyama Avenue. The rear courtyard is a sculpture garden, with changing exhibits for large-scale pieces. The third main display area is the great room (*hiroma*) on the second floor. Running the width the second floor's southern edge is a veranda that provides a functional extension to the great room, allowing for more robust objects to be placed outside. Taking up roughly one quarter of the great room's floor space is a slightly raised *tatami* platform that can be used for demonstrations. The fourth space is below ground, in the double-height lobby space and auditorium. This space is largely devoted to artists from the West: Fernand Léger, Sam Francis, and Georges Mathieu all had large canvases commissioned for this site. In addition, furniture designs by Kenmochi Isamu, Charlotte Perriand, and Tange Kenzō can be found throughout the building. The new school opened in October 1958 with a solo show of Sōfū's work. The entire building is filled with his creations, encompassing a wide variety of media, forms, and scales.<sup>20</sup> Tange succeeded in sculpting this building into a multifaceted vessel of display.

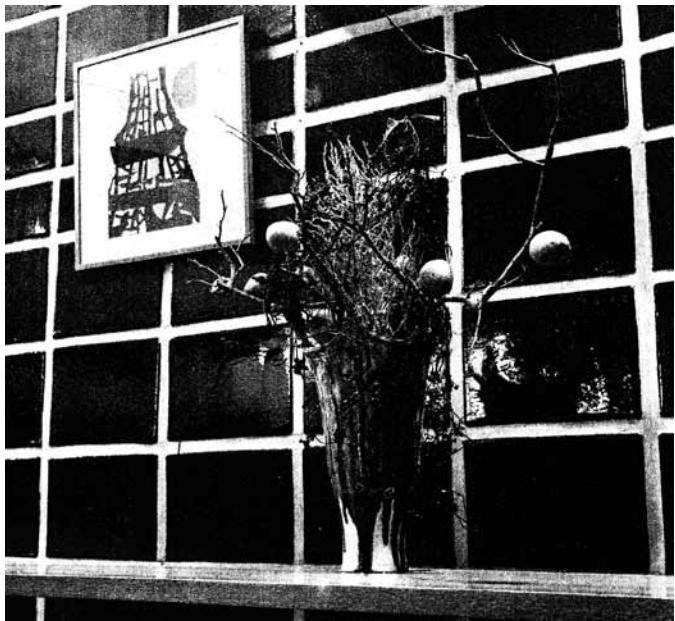
Sōgetsu Kaikan's front façade stands out from Tange's oeuvre in its sheer blankness. About 80 percent of the surface is covered in the dark-blue glazed terra-cotta blocks. This introvert north façade can be rationalized in functionalist terms, to shield the sculpture garden and studio spaces from the bustle of Aoyama Avenue, which still had a streetcar line when the building opened. Another reason perhaps is to echo the layers of a forbidding hedge of trees that line the grounds of Akasaka Detached Palace across the street. Neither of these explanations, however, is sufficient to justify such drastic shunning of the street—a relationship that is always nuanced in Tange's work. More plausibly, Sōgetsu Kaikan's blankness is probably to provide the setting for an *ikebana* tableau that is monumental in scale, one that encompasses the entire façade and forecourt of the building. According to project architect Nagashima Masa-mitsu, Tange chose the glazed terra-cotta blocks for the interiors to enhance the studio spaces, to act as backdrop for the sculptural arrangements.<sup>21</sup> The same intension can be deduced for the terra-cotta block's role on the front façade. Sōfū was dissatisfied by the initial installation of artwork when the building opened in 1958, finding the two horizontal rock formations that flank the entrance too timid. He wanted "a monument to the

Installation of *Biki*, 1959.

Front elevation of Sōgetsu Kaikan with *Biki* installed, 1959.

*Nōkon* glazed terra-cotta wall tiles, second-floor great room (*hiroma*), Sōgetsu Kaikan, installation of Teshigahara Sōfū's solo exhibition on the occasion of Sōgetsu Kaikan's inauguration, 1958.





building,” something that is “thin and tall, to balance the horizontality of Sōgetsu Kaikan with something that acts vertically.”<sup>22</sup> Sōfū eventually settled on something inspired by totem poles he saw on his trip to the Americas. *Biki* was installed a year after, in August 1959, replacing one of the horizontal rocks that was placed there initially and forming a counterpoint to which the façade forms the backdrop.

In the case of Sōgetsu Kaikan’s sculpture garden in the rear, because of the sloping site—with a grade difference of as much as 5 meters between the northern and southern ends—the garden actually sits on the roof of the basement auditorium. It would have been onerous, given construction technologies available at the time, to achieve a sufficiently waterproof seal and heavy load for a conventional garden on top, with natural plantings and water features, while maintaining a large clear span for the auditorium space underneath. There is already a lush park immediately adjacent to the site and easily “borrowed” as *shakei*. Most likely Tange and Sōfū would not have found a conventional garden desirable for this site. When Tange described his intention for the Sōgetsu sculptural garden to Teshigahara Sōfū, he said he wanted try a design that was “congruent with today’s lifestyle.”<sup>23</sup> “Gardens should not be thought about in a fixed way. There are things that are fixed, and others that are movable.”<sup>24</sup> The garden is a schematic landscape with neither trees nor water—an analogue of Sōfū’s “waterless *ikebana*.” The floor is paved in two colors in gravel cement, black and white, forming amoeba-shaped patterns. The only architectural embellishments are two mounds, one in a spiral formation and the other in that of a crescent moon, used usually for staging and display stands.<sup>25</sup>

## GARDENS

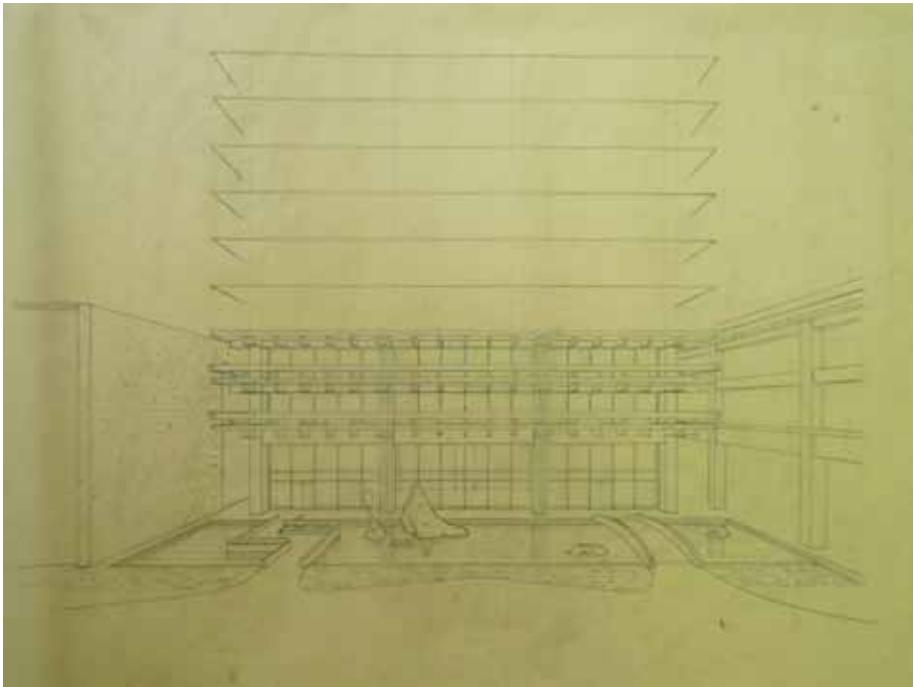
Before returning to the sculptural courtyard at Sōgetsu Kaikan, it is useful to consider the theme of gardens in Tange’s architectural work. Sōgetsu Kaikan is an appropriate launch point not only because of Teshigahara Sōfū’s revisionism of *ikebana*—reexamining the relationship between horticulture, water, and space—but the design program also presents the problems of topiary display and spatial experience in modern architecture and landscape. An important influence was Isamu Noguchi (1904–88), whose pioneering work in modern Japanese gardens

and sculptural display had a great impact on Tange and Sōfū. In the years 1956–58 were constructed three buildings by Tange in which gardens figure prominently in the overall architectural composition: Sōgetsu Kaikan, Sumi Kaikan, and Kagawa Prefectural Government Building. Most of Tange's projects until this point were either architectural or in urban in concept. Notwithstanding the publication of *Katsura: Tradition and Creation in Japanese Architecture* of 1960, he did not take personal relish in gardens or nature. In the late 1950s, Tange nonetheless assumed a particularly intense interest in garden making and took direct charge of these garden designs. In examining this series of gardens Tange that designed in the late 1950s, it emerges that Tange was less interested in the formal aspects of modern garden making—a task the architect can always subcontract—than in: 1) the mediation of architecture with the surrounding environment; 2) the spatial composition of objects in architectural scenography; and 3) the formal design of plazas as social space.

Designed concurrently with Sōgetsu Kaikan, Sumi Kaikan (1956–57) is in many ways analogous in its design. Located in Aichi Prefecture, Japan's industrial heartland, Sumi Kaikan is the corporate headquarters of a large manufacturing company. Sited in a dense district of factory plants, Sumi Kaikan shares Sōgetsu Kaikan's introvert character to foster a sense of reclusive serenity.<sup>26</sup> Triangular in plan, the compact site is circumscribed by a wall. In fact, the composition of Sumi Kaikan should be read as a variant of the courtyard house, with the garden sitting on the central axis and lined by the verandas of the two wings, office to the right and auditorium to the left.<sup>27</sup> The third edge is the entrance courtyard, separated by a screen of terra-cotta bricks—the same dimensions as those at Sōgetsu Kaikan, but glazed in beige slip here. The garden itself is a large, open lawn with a rippling pattern that evokes as much the raked gravel of *kare-sansui* gardens as the roofscape of the surrounding factory sheds. Two modest groups of rock formations are placed diagonally in two corners.

Also designed in the same period is the garden of Kagawa Prefectural Government Building (1955–58), the site of perhaps Tange's best-known garden.<sup>28</sup> Selected by the eminent garden historian Mori Osamu (1905–88) as one of two exemplary gardens in postwar Japan, Kagawa's appeal to Mori lies in the garden's successful mediation of robust orthogonal elements





Beige glazed bricks  
on entrance screen,  
Sumi Kaikan,  
Aichi Prefecture, 1957.

Sketch of garden and  
west elevation of office  
wing, Kagawa Prefectural  
Government Building,  
Takamatsu, 1958.

of the office tower's monumental façade.<sup>29</sup> A conventional rendering of trees and grass would not have been sufficient. As an earlier study drawing of the garden evinces, Tange was pursuing a space of display, a tableau, or a stage. The much-extolled façade is but one layer in a complex three-dimensional construct of space, framed to the left by a freestanding wall of corrugated concrete.<sup>30</sup> In front of the façade is a rectangular pool, traversed by a stone bridge and sprinkled with rock formations (*araiso*) that reinforce the depth of field. Just as important is the scene into the lobby of the main building, behind the double-height glass windows. Inokuma Genichirō's monumental ceramic mural, *wa*, appear in full view.

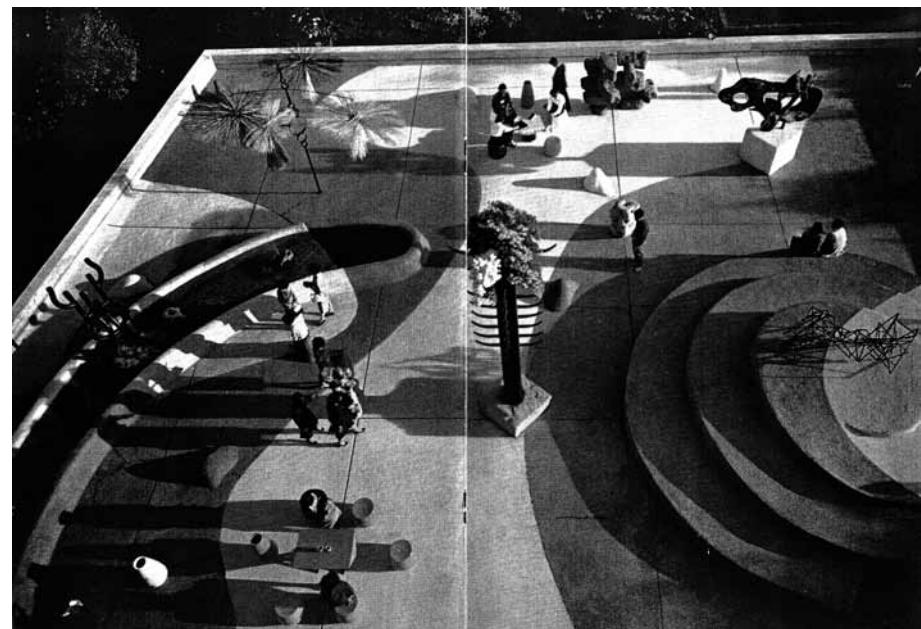
Carried out contemporaneously to Tange's gardens in the late 1950s was Isamu Noguchi's famous *Jardin Japonais* at the UNESCO Headquarters in Paris (1956–58).<sup>31</sup> Earlier drawings of the Kagawa Prefectural Government Building's site plan, such as one dated October 1955, displayed a more schematic design of the garden, closer to the topographical treatment of landscaping at either the Ministry of Foreign Affairs competition scheme or the Seijō House, both produced in 1952. Coincidentally, the Akuigawa quarry from which the rocks in the UNESCO garden were drawn was located in Tokushima Prefecture, just across the border from Kagawa Prefecture, helping to achieve the remarkable resemblance between the rockeries featured at the two gardens. The amoeba shape of Kagawa's garden plaza, absent from the earlier 1955 scheme, also suggests the influence of Noguchi's design.

Noguchi's first major garden was at Tokyo's Reader's Digest Building (1950–51), collaborating with the architect Antonin Raymond (1888–1976).<sup>32</sup> The highly acclaimed project was the first modern garden in Japan conceived as part of a larger architectural ensemble. Subsequently, Noguchi's work with Gordon Bunshaft at New York's Lever House in the early 1950s helped to develop an acute understanding of the topiary needs of modern institutional buildings.<sup>33</sup> In preparing for the UNESCO garden, Noguchi conferred with several close architect acquaintances in Japan, principally Sakakura Junzō, who had just designed the Rudolf Diesel Memorial Garden in Augsburg, Germany (1956–57).<sup>34</sup> Sakakura sent Noguchi to see Shigemori Mirei in Kyoto for advice—the same Shigemori who cofounded the New Ikebana Society with Teshigahara Sōfū in 1933. In contrast to Sōfū, who continued to dwell on *ikebana* as sculptural object,

Shigemori quickly moved on to expand the scale of *ikebana*'s three-dimensionality and spatiality toward garden design.<sup>35</sup>

While Noguchi's career, at least until this point, had been known primarily as that of a sculptor, the sculptural program at the UNESCO garden is not at all pronounced. There was tension between Noguchi and the tradition-bound garden designer Sano Tōemon (b. 1928), whom he had invited to help him execute the project.<sup>36</sup> The paradigm for modern sculptural gardens was at the Museum of Modern Art in New York, with which Tange and Noguchi had to have been familiar.<sup>37</sup> Long before Philip Johnson's iconic intervention in 1952–53, as the museum relocated to its present site on 54th Street in 1938, MoMA's architects and curators, in particular Alfred Barr Jr. and John McAndrew, had begun deliberating on the appropriate form of an outdoor garden for the display of modern sculptures. MoMA's first sculpture garden was conceptualized as outdoor gallery as opposed to a horticulture-based classical garden, blurring the interior/exterior boundary in the placement of art.<sup>38</sup> Indeed, it was argued that this inherently classical idea, of unifying art with landscape, ought to be applied to the distinction between sculpture and architecture as well. As Mirka Beneš has pointed out, Barr and McAndrew essentially translated new, Bauhaus-inspired curatorial techniques of museum interiors to outside space in their design of the first MoMA garden in 1939.<sup>39</sup> László Moholy-Nagy, El Lissitzky, and Herbert Bayer pioneered the use of curtains and other spatial devices to control the viewing procession and double as display background.<sup>40</sup> It is easy to see the resonance that modern *ikebana* finds in the conventional practice of displaying modern sculptures outside and in isolation.

Noguchi's dexterity at synthesizing the spatial qualities of sculpture and landscape was first displayed in summer 1950, when Noguchi returned to Japan for the first time since childhood. He dazzled Japan's art world with an exhibition at Tokyo's Mitsukoshi Department Store, introducing a fresh approach to displaying sculptural pieces.<sup>41</sup> This display clearly exerted significant impact on Tange and Teshigahara Sōfū.<sup>42</sup> Rather than elevating them individually on pedestals, the modestly scaled pieces are all placed at floor level as a sculptural tableau. Quickly assembled, the base is merely a dark rectangular board, to contrast against the concrete floor, and is inscribed by railings (*kōran*) no more than 15 centimeters high. Eight pieces of sculpture are scattered across the field, evoking of *kare-sansui*





Sculptural courtyard,  
Sōgetsu Kaikan.

Isamu Noguchi  
exhibition  
(Tokyo Mitsukoshi  
Department Store,  
1950).

Aerial view of Sumi  
Kaikan.

garden at Ryōan-ji that Noguchi had just visited.<sup>43</sup> In the sculpture garden of Sōgetsu Kaikan, restrictions of floor load severely limited the landscaping devices available to Tange. The origins of the two earthen mounds in the center are unclear. Tange was evidently familiar with the rooftop garden at the Ministry of Education and Public Health in Rio de Janeiro, with its lush plantings in sinuous contours designed by Burle Marx.<sup>44</sup> Noguchi's gardens at Reader's Digest and UNESCO both had substantial water features. Le Corbusier's Unité d'Habitations in Marseilles, with its iconic rooftop swimming pool, captivated countless Japanese architects in the postwar period.<sup>45</sup>

## CONCLUSION

The painter Abe Nobuya (1913–71) was among the first to write about the emergence of new methods of displaying art in post-war Japan, but he was largely dismayed by the often heavy-handed inventions by architectural designers.<sup>46</sup> It should be no surprise that the three rebels Abe cited to illustrate his case were Tange's 1949 Shinseisaku show, Isamu Noguchi's 1950 show at Mitsukoshi Department Store, and the 1950 autumn show of the Bijutsu Art Culture Association, unidentified but almost certainly the work of Teshigahara Sōfū. Sōfū's display of *ikebana* was set in a complex wooden frame strung with wire patterns, in the manner of Naum Gabo and Richard Lippold, overwhelming the floral pieces. Abe lamented that the short duration of temporary exhibitions often implied that the installations had to be treated as stage sets, and attention to the event as performance often superseded that of the individual pieces of art being displayed and the idea of permanence in artistic beauty.

In the Sōgetsu Kaikan's sculpture courtyard, we find the respective interest and expertise of Sōfū and Tange converging on the problem of three-dimensional space making. They pursued this, in collaboration as well as independently, through their exhibition and garden design work over the course of the 1950s. When Tange and Noguchi sat down for a conversation with the great garden designer Hisatune Hideji in 1956, just as their interest in Japanese gardens was reaching its peak, Tange voiced his utter disdain for a simplistic, "sentimental" adoration of Japan's iconic gardens, especially those attributed to the Muromachi and Momoyama periods (fourteenth to sixteenth centuries):

*I think Japanese gardens from the Meiji period forward have been very naturalistic. While this naturalism can be traced backward, such as in the case of the garden at Katsura [Detached Palace] that still embodies traces of naturalism. However, Katsura also has a dimension that is fairly symbolic (shōchōteki). In the cases of [Daitoku-ji's] Daisen-in and Ryōan-ji, this has been further essentialized (junzuika saretemasu). There you have everything from mono no aware (the pathos of things) to wabi, sabi, all reeking of sentimental naturalism (shinjōteki na shizenshugi no nioi ga shimasu).*<sup>47</sup>

Tange went on to chastise Japanese gardens that, however acclaimed internationally, were conceived based on the needs of private individuals, to be gazed upon by the lonely abbot from afar. Gardens in Japan were scarcely considered in terms of their role in public architecture, as plazas or parks. Instead, Tange expressed preference for the Heian period's large-scale gardens designed for social activities. In charge of the 1948 restoration of Kinkaku-ji, Hisatsune reminded Noguchi and Tange that Kinkaku-ji too was once defined by its Heian-period garden, centered on the large pond with music rising from the small island in the middle.<sup>48</sup> The Heian garden was the venue of elaborate social rituals and performances.

The logical culmination of Tange's pursuit of the architectural tableau, through exhibition design and gardens, is the dramatic stage itself. In 1958, Tange produced the stage set for the play *Hōryū-ji*, at the invitation of Okakura Shirō (1909–59), a dramatic artist associated with the theater company Gekidan Mingei.<sup>49</sup> During the year off between high school and university, Tange frequented cinemas and theaters, and fancied film directing as a career. In designing the stage set, Tange faced challenges entirely different from those of architectural design and exhibition installation. The success of the stage set relies on the performance of a multitude of individuals—not only the producer and director but also all of the performers. The functional aspect, *utilitas*, of the Vitruvian trinity is distilled to the duration of every performance. It entailed a more complex architecture-and-client relationship, where the role of the user in the architectural space—usually conceived abstractly and idealized—becomes central to the choreographed space. Whereas the stage set itself is often the abstract, idealized representation of space, its demands are in fact heightened and its success measured by intense episodes of use.

The sculptural garden at Sōgetsu Kaikan, the garden plaza at Kagawa, and the garden lawn at the Seijō House were conceived less as places of sensual pleasure than as locations of social participation and engagement. In the 1950s, Tange experimented with a series of collaborations with artists to create spatial and aesthetic milieux that would better foster progress in this direction. Tange rapidly expanded the scale of his design research in the final years of the 1950s, just as his interest in gardens and exhibition designs began to wane, and turned toward projects urban and regional in scale.

1 This movement was spearheaded by Horiguchi Sutemi (1895–1984), one of Japan's first modernist architects and a founding member of the Bunri-ha Architecture Association. Beginning in the late 1920s, Horiguchi became increasingly drawn to the culture of tea from Japan's Momoyama period, a comprehensive ideology of artistic appreciation and creation with its architecture expressed through the *sukiya*-style. See Fujioka Hiroyasu's monumental study of this subject in *Hyōgensen: Horiguchi Sutemi, sōgō geijutsu no tankyū* (Tōkyō: Chūō kōron bijutsu shuppan, 2009).

2 Le Corbusier, "Vers l'unité," originally published in *Volontés* (Dec. 13, 1944), reprinted in Le Corbusier, *Oeuvre complète*, vol. 4 (Zurich: Verlag für Architektur, 1953), 152–5. See Christopher Pearson, "Le Corbusier's 'Synthesis of the Major Arts' in the Context of French Reconstruction," in Karen Koehler, ed., *The Built Surface, vol. 2, Architecture and the Pictorial Arts from Romanticism to the Twenty-first Century* (Aldershot: Ashgate, 2002), 209–27.

3 Tange Kenzō, "Kenchiku, kaiga, chōgoku: geijutsu shuji kara ningen no kenchiku e" *Tōkyō Daigaku Gakusei Shinbun* (June 8, 1949).

4 Ibid.

5 Ibid.

6 Here the given name "Sōfū" is used to distinguish different generations of the same artistic school. For a sense of Teshigahara Sōfū and his son Hiroshi's importance in Japan's postwar avant-garde, see "The Sōgetsu Art Center: Avant-garde Refinement," in Thomas R. H. Havens, *Radicals and Realists in the Japanese Nonverbal Arts: The Avant-garde Rejection of Modernism* (Honolulu: University of Hawaii Press, 2006), 102–15.

7 Endō Nozomi and Sugiyama Nobuko, eds., *Sengo Nihon wo kakenuketa ishiki no zeni: Teshigahara Sōfū*, exhibition catalog, vol. 1 (Tōkyō: Setagaya bijutsukan, 2001), 42.

8 Omuka Toriharu, "Kadō to obuje: Teshigahara to Fukuzawa Ichirō no taidan (1938) wo gegutte," in Omuka Toshiharu and Kawada Akihisa, eds., *Kurashikkō modan: 1930 nendai Nihon no geijutsu* (Tokyo: Serika shobō, 2004), 225–9.

9 See dialogue between Fukuzawa and Teshigahara in "Kadō to obuje," *Atorie* (Aug. 1938).

10 The essay was published in *Atorie* (June 1938). See also Endo and Sugiyama, *Sengo Nihon wo kakenuketa ishiki no zeni*, 203.

11 Takeguchi Shūzō, "Obuje no hakken," reprinted in Endo and Sugiyama, *Sengo Nihon wo kakenuketa ishiki no zeni*, 204–5. Originally published in *Sōgetsu Bessatsu* (Feb. 1953).

12 Endo and Sugiyama, *Sengo Nihon wo kakenuketa ishiki no zeni*, 44–64; Yamaguchi Katsuhiko, "Jikken kōbō," in exhibition catalog 1953 nen raitoappu: *Atarashii sengo bijutsusō ga mietekita* (Tokyo: Meguro ku bijutsukan and Tama bijutsu daigaku, 1996), 189–96.

13 Kōjirō Yūchirō, "Kindai kenchiku, obuje, ningen: Teshigahara Sōfū ten, hyō," *Kokusai Kenchiku* (Jan. 1954), 70–1.

14 Ibid.

15 The project is featured in *Kokusai Kenchiku* (Feb. 1934), 70–5; and in *Shinkenchiku* (Feb. 1934), 19–23. It is also discussed in Takashima Noayuki, "Kenchiku to Sōfū: Sanbanchō Sōgetsu-ryū kondō to Akasaka kyu-Sōgetsu Kaikan: arata na kūkan to kankyō," in Endo and Sugiyama, eds., *Sengo Nihon wo kakenuketa ishiki no zeni*, 290–4.

16 The site is within a stone's throw from Shin-Banraisha, a collaboration between the sculptor Isamu Noguchi and architect Taniguchi Yoshiro that was completed in 1950.

17 The Teshigahara House, completed in 1955, is one of few private residences designed by Tange. Like the Tange House in Seijo, the Teshigahara House is also timber-built and exhibits qualities of traditional Japanese residential architecture. Unlike the Seijo House, which is frontal and lifted off the ground to achieve a *pilotis* effect with the lawn plaza, the Teshigahara House is set at ground level

and sited diagonally, in the flying-geese formation (*gankō kata*) similar to Katsura Detached Palace, which maximizes the building's frontage to the garden.

18 The October 1958 issue of the journal *Kenchiku Bunka* devotes most of its pages to the newly completed Sōgetsu Kaikan. In addition to photographs and drawings of the building, it includes an editorial on the unity of the arts by Kōjirō Yūchirō and an essay by Tange, Teshigahara Sōfū, Okamoto Tarō, and Shinoda Tōkō.

19 Between 1959 and 1972, Sōfū's son, Teshigahara Hiroshi, led the Sōgetsu Arts Center that was housed in the same building. See Havens, *Radicals and Realists*, 102–15.

20 The exhibition is documented in *Ikebana Sōgetsu* (Nov. 1958).

21 Nagashima Masamitu, "Sōgetsu kaikan nit suite," *Kenchiku Bunka* (Oct. 1958), 21–23. The choice of blue glaze on terra-cotta blocks, suggested by Tange, was inspired by *hibachi* clay stoves.

22 Teshigahara Sōfū, "Kaikan no tame no monumento," *Ikebana Sōgetsu* (Sept. 1959).

23 Tange Kenzō and Teshigahara Sōfū, "Kyō wo tateru," *Ikebana Sōgetsu* (Oct. 1957), 19–25.

24 Ibid.

26 A few years later, Sōfū extended the height of the end wall for enclosure and embellished it with a mosaic mural of his own design. This addition was most likely prompted by a new high-rise building immediately to its south, blocking the panoramic view from the terrace.

27 The project is featured in *Kenchiku Bunka* (Feb. 1958), 27–36.

28 It is reasonable to read the sparse garden as secondary to the interiorized elevations that surround it. Denied a proper façade by the surrounding walls, Sumi Kaikan's primary elevations are the ones that line the courtyard on the inside.

29 It is discussed in Marc Treib, "Converging Arcs on a Sphere: Renewing Japanese Landscape Design," in Marc Treib, ed., *The Architecture of Landscape, 1940–60* (Philadelphia: University of Pennsylvania Press, 2002), 270–99.

30 Mori Osamu, *Teien to sono tatemono*, no. 34, *Nihon no bijutsu* series (Tokyo: Shibundō, 1969), 112. The other anointed by Mori is the garden at Tōkōen Inn (1964), located in Yonego, Tottori Prefecture. The architecture of Tōkōen is by Kikutake Kiyonori, and the garden is by Nagare Masayuki (b. 1923).

31 This wall was demolished in the 1990s in the process of adding two new wings to the Prefectural Government complex, both designed by Tange's office.

32 Tange and Teshigahara, "Kyō wo tateru," 22.

33 The architectural aspects of the project are featured in *Kokusai Kenchiku* (Sept. 1951), 30–49. Also see Ken Tadashi Oshima, "Characters of Concrete," in Kurt G.F. Helfrich and William Whitaker, eds., *Crafting a Modern World: The Architecture and Design of Antoni and Noémie Raymond* (New York: Princeton Architectural Press, 2006), 65–77. The landscape aspects of the project are discussed in Treib, "Converging Arcs on a Sphere," 285–9; Ana Maria Torres, *Isamu Noguchi: A Study of Space* (New York: Monacelli, 2000), 62–7. Formerly occupied as the French Embassy, the privileged site is immediately north of the Imperial Palace compound and was surrounded by the palace's extensive moat system. During the Edo period and its life as the French Embassy, the site had gardens standing on it. Despite the war's tarnish, Noguchi still had a certain amount of landscape remnants to work with. The articulation of lawns and orthogonal pools and water channels complemented Raymond's architecture perfectly. Edges of the site are punctuated by sinuous earthen mounds, a feature that is echoed in Tange's landscape work of the early 1950s. The water features also functioned as a natural cooling system.

34 Torres, *Isamu Noguchi*, 80–8.

35 Noguchi Isamu, "Ishi: Pari no 'Nihon no niwa' wo tsukuru," *Geijutsu Shinchō* (July 1957), 145–57. Also see Marc Treib, *Noguchi in Paris: The UNESCO Gardens* (San Francisco: William Stout, 2003); Christopher E. M. Pearson, *Designing*

*UNESCO: Art, Architecture, and International Politics at Mid-century* (Aldershot: Ashgate, 2010); Torres, *Isamu Noguchi*, 96–109; Bert Winter-Tamaki, *Art in the Encounter of Nations*, 141–56. On Sakakura Junzō's garden in Augsburg, see Ikehara Kenichirō, “Niwa,” *Kokusai Kenchiku* (Feb. 1957), 70–1.

36 For an overview on Shigemori's gardens, see Shigemori Mirei, *Shigemori Mirei sakuhin shū: niwa, kami gami he no apuroochi* (Seibundō shinkōsha, 1976). An English-language study is in Christian A. Tschumi, *Mirei Shigemori, Rebel in the Garden: Modern Japanese Landscape Architecture* (Basel: Birkhäuser, 2007). His earliest major garden dates from 1938–9, at Kyoto's Tōfuku-ji's abbot's compound, and he went on to design more than 200 gardens in his career. Striving for a modern interpretation of the dry-rock garden (*kare sansui*), Shigemori's contemplative gardens are characterized by the use of monumental and robust rockery and abstract and often geometric lawns.

37 Dore Ashton, *Noguchi: East and West* (New York: Knopf, 1992), 146–7. Points of contention between Noguchi and Sano encompassed a wide range of issues, including the density and scale of plantings, the framing of views and placement of vantage points, and the course of procession. Marc Treib summarizes the rift between the two as “the differences between the sculptor and the gardener marked their respective attitudes toward object and view.” See Treib, *Noguchi in Paris*, 70.

38 Mirka Beneš, “A Modern Classic: The Abby Aldrich Rockefeller Sculpture Garden,” in John Elderfield, ed., *Philip Johnson and The Museum of Modern Art, Studies in Modern Art 6* (New York: Museum of Modern Art, 1998), 104–51. The Japanese translation of *Architectural Forum*'s July 1953 feature of this project appears in *Kokusai Kenchiku* (Nov. 1953), 20–1.

39 Quoted in Beneš, “A Modern Classic,” 109.

40 Beneš, “A Modern Classic,” 114–5.

41 Herbert Bayer (1900–85) studied at the Bauhaus and was later appointed its director of printing and advertising. He was responsible for the book design of *Katsura: Tradition and Creation in Japanese Architecture* (New Haven: Yale University Press, 1960), on which Tange collaborated with Walter Gropius and Ishimoto Yasuhiro. For Bayer's curatorial works, see Alexander Dorner, *The Way Beyond “Art”: The Work of Herbert Bayer* (New York: Wittenhorn, Scultz, 1947).

42 See special issue of *Kōgei News* on Noguchi: *Kōgei Nyūsu* (Oct. 1950); Hasegawa Saburō, “Isamu Noguchi ten,” *Bokubi* (Dec. 1952), 29–31.

43 See “Isamu Noguchi sakuhinten,” *Bigutsu Techō* (Oct. 1950), 201.

44 In the previous month, Noguchi was taken by the painter Hasegawa Saburō to tour the famous temples and gardens of Kyoto. See Hasegawa Saburō, “Noguchi no Nihon,” *Bigutsu Techō* (Aug. 1950), 7–9.

45 See Dorothee Imbert, “Parterre en l'aire: Roberto Burle Marx and the Modernist Roof Garden,” in Lauro Cavalcanti, Farès El-Dahdah, and Francis Rambert, eds., *Roberto Burle Marx: The Modernity of Landscape* (Paris: Cité de l'architecture & du patrimoine / Institut Français d'architecture; Barcelona: Actar, 2011), 223–9.

46 See Hamaguchi Ryūichi, “Okujō teien,” *Kokusai Kenchiku* (Nov. 1958), 42. The most prominent example of a large-scale rooftop garden is at the Seibu Department Store located in Tokyo's Ikebukuro district. The roof of the main structure at Sōgetsu Kaikan has its two protruding cores styled in Unité's manner and is originally programmed as possible display space.

47 Abe Tenya, “Saikin kaijō kōsei ni yosete,” *Mizue* (Nov. 1950), 28–9.

48 Isamu Noguchi, Tange Kenzō, and Hisatsune Hideji, “Niwa no zōkei,” *Geijutsu Shinchō* (June 1956), 165–84.

49 Noguchi, Tange, and Hisatsune, “Niwa no zōkei,” 178–9.

50 Tange Kenzō, “Budai sōchi shojō saku: Höryū-ji no budai sōchi wo oete,” *Geijutsu Shinchō* (June 1958), 161–3.

# TANGE KENZŌ'S EARLY PHOTOGRAPHS AND THE TRADITION DEBATE

Yasufumi Nakamori

Unknown photographer,  
Kenzō Tange at Katsura  
Villa, ca. 1955.



Tange Kenzō's interest in photography began while he was a child. His teenage interest in optics—as an aspiring astronomer, he had a telescope specially made for him—was followed by a passion for the camera and photography.<sup>1</sup> As an adult, beginning in the early 1950s, with a 35-millimeter Leica camera, he often photographed premodern architectures and gardens, and his daughter recalls posing for him frequently as a child.<sup>2</sup> Earlier, while a student at the Tokyo Imperial University's architecture program, Tange came to recognize the power of photography as an effective tool of representation and analysis in architecture, through his teacher Kishida Hideto. In 1929, Kishida had published an important book entitled *Structures of the Past* (*Kako no kōsei*), which consisted of textual passages accompanied by photographs of classical Japanese architecture taken by Kishida. They included the temples Höryū-ji, Yakushi-ji, and Tōdai-ji, as well as the Katsura Imperial Villa, focusing on the details of the structures and their ornaments, materials, and artifacts.<sup>3</sup> Later, Tange photographed many of these same structures. Given his experiences with photography, he was always extremely concerned about how his architecture looked in photographs.<sup>4</sup> The photographer Murai Osamu (b. 1928) recalls the architect's uncanny ability to pinpoint the most photogenic shooting locations for his structures, such as the complex shell structure of his Yoyogi National Indoor Stadiums (1961–64), conceding that Tange knew “where his architecture should be viewed from, and particularly about how it would look in the city.”<sup>5</sup>

This essay will examine selected photographs that Tange Kenzō created between 1952 and 1957. These images, found in his family photographic albums, were discovered recently. A majority of the images were previously unpublished. Examining his photography reveals the architect's special interest in premodern architecture (e.g., temples, shrines, and tearooms) and gardens that he visited in Kyoto, Hiroshima (and the adjacent island Miyajima), Kurashiki, Matsuyama, and other historic towns and sights in western Japan during the period. The taking of the images corresponds with the period when Tange was designing or constructing, at different stages, the Hiroshima Peace Memorial (1949–55), his house in Seijō (1952–53), the Tokyo Metropolitan Government Building (1952–58), and the Kagawa Prefectural Government Building (1955–58). By examining Tange's photographs of historical sites and structures, I will attempt to demonstrate that photography served Tange as a tool to explore the possibility of establishing a methodology for discovering

formal properties in architecture from premodern Japan that signify both a typified function and ideal beauty, transferable to his designs in the years immediately following World War II. I argue that photography enabled Tange to perform a visual analysis of the structures from the past, forming a fresh view on them, and to establish his position in the tradition debate (*dentō ronsō*) that occurred in the mid-1950s. In particular, by examining his photographs of the Tokyo Metropolitan Government Building (1952–58), I trace the architect's desire to apply forms and expressions from premodern Japan to his own designs. With photography, Tange examined, deconstructed, and revitalized the way architects felt about tradition and attempted to extract and renew its essence to make it relevant for his postwar designs.

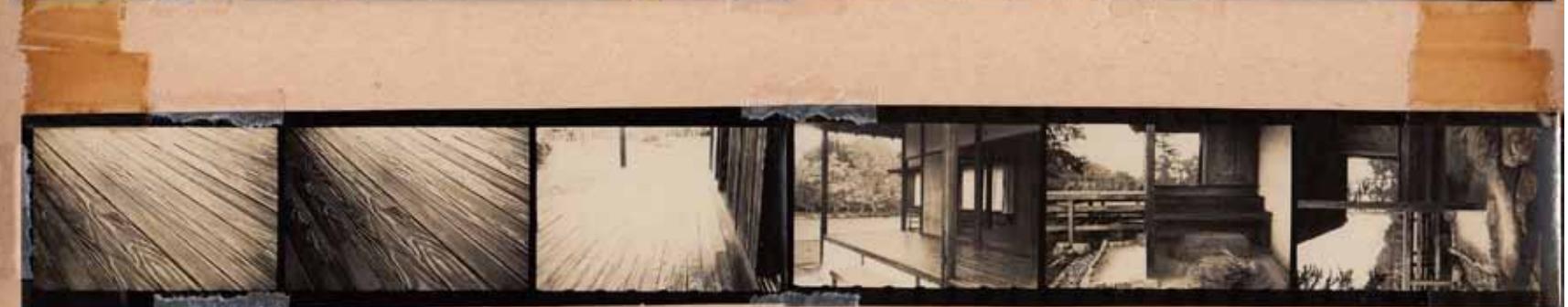
#### TANGE AND THE TRADITION DEBATE OF 1950S JAPAN

By 1952, when the Allied Forces' occupation of Japan had ended, nationalistic sentiments were resurfacing and the notion of tradition (*dentō*) gained renewed importance among the country's intellectual and cultural elite, who wanted to reconnect with the country's past and identity. The "tradition debate" (*dentō ronsō*) began in the early 1950s, continued throughout the decade, and preoccupied Japan's cultural sphere and many of its cultural and artistic elites. The debate was centered at architecture journals such as *Shinkenchiku*, *Kokusai Kenchiku*, and *Kenchiku bunka*. In particular, *Shinkenchiku*, under the editorship of Kawazoe Noboru (b. 1926), an architecture critic and Tange's close ally, served a critical role in shaping the discourse. Kawazoe was troubled by attempts at integration of Japanese tradition in design, as visualized in the Imperial Crown style (*teikan yōshiki*), which directly connects to the Japonica taste, a "distortion" that easily responds to "a foreign material." He searched for the true impact that tradition could have on modern architecture through critiquing the designs of Tange Kenzō. To Kawazoe, who compelled Tange to state that tradition exists in things with form, rather than in a spirit, the goal of the tradition debate was to break through, via realization of the new "tradition," the Japanese tragedy that resulted from the nation's incomplete *bunmei kaika* (civilization and enlightenment) at the end of the Edo period and the beginning of the Meiji period, when the culture of the West was simply copied without rigorously grasping the substance of an unfamiliar tradition.<sup>6</sup>

With an ambition to dominate architecture journalism in Japan, Kawazoe involved Tange in the journal and filled it with a wide range of critical and provocative contents, new and old architectures, interviews, dialogues, symposium reports (such as that of the December 1955 symposium at the International House of Japan, titled "Directions of Japanese Architecture: How to Overcome Tradition?" led by Asada Takashi, with Konrad Wachsmann and Tange as discussants and Kawazoe and Hamaguchi Ryūichi as moderators) and book reviews (such as one by Kawazoe on Norman Carver's *Form and Space in Japanese Architecture*). In particular, effective photographs of architectures by emerging photographers such as Ishimoto Yasuhiro (1926–2011) and Hirayama Chūji gave the journal a visual edge. Moreover, using the pen name of Iwata Kazuo, Kawazoe himself evaluated Tange's designs, and to create the tradition discourse, employed Tange, Shirai Seiichi, and young architects including Ikebe Kiyoishi to contribute to various issues of the journal.

Tradition was a loaded subject. Postwar cultural elites and intellectuals found it difficult to discuss the topic because of its perceived connection to imperial fascism and, in particular, to the wartime discourse of "overcoming modernity" (*kindai no chōkoku*) that was characterized by a critique of Japan's modernization, which had begun at the beginning of the Meiji era.<sup>7</sup> The tradition debate concerned the creative interpretation of tradition in the context of modern artistic and design practices, and it was both motivated and burdened by Japan's wartime past.<sup>8</sup> The postwar invention of and search for tradition unfolded mainly in the print media, in particular in architecture and design journals in the form of essays, group discussions, and photography essays. The debate also extended to the fields of fine art, art criticism, art history, and even art education. Tange contributed actively to the debate by writing essays, participating in roundtable discussions, and developing his designs. According to architectural historian Yatsuka Hajime, Tange was implicated in the tradition debate because of the continuity found between his wartime and postwar design theories and practices.<sup>9</sup> In this connection, his postwar work must be understood with reference to his earlier unbuilt designs for the Monument to the Greater East Asia Co-prosperity Sphere (1942) and the Japan-Thailand Friendship Hall (1943.) Tange's self-conscious anxiety about this continuity led him to revisit the subject of tradition and to experiment with a camera, reinterpreting tradition for his evolving design practice.

Tange Kenzō, Katsura,  
ca. 1952.



## TANGE'S PHOTOGRAPHIC ALBUMS

The earliest volume of Tange's photographic albums dates approximately from 1950, while the most recent volume covers the Osaka World Exposition in 1970. One of Tange's early photographic albums indicates that in 1952 he visited and photographed gardens and structures in Kyoto.<sup>10</sup> His subjects included the Katsura Imperial Villa and Kiyomizu-dera, as well as Zen temples with gardens in the *kare sansui* style, such as Ginkaku-ji, Daisen-in, and Ryōan-ji.<sup>11</sup> Generally what captured Tange's photographic eye at these sites was not their scenic or overall views but their particular details—including their texture and materiality, the geometry of their structure, the complex structure of various parts, and the interaction between man-made and natural elements. Such a tendency is demonstrated in his snapshots of the Katsura Imperial Villa,<sup>12</sup> in selected contact strips, for example, from 1952 that are taped to a single album page that is captioned "1952 Katsura, Kiyomizu-dera, with Isamu Noguchi." Tange arranged the contact strips to show the modern elements of Katsura's main architectural complex, its three *shoin* wings, starting, in the first row, with images of the façade of the New Palace that omit the palace's elegantly curved triangular roofs, accentuated by the geometric patterns of *shōji* screens. Then, in the second row, he shifted his focus to the Old Shoin and shot close and low to capture the texture of the cypress floor of the veranda adjacent to the Moon-viewing Platform, before he shot the platform's section view. The second to fourth (left to right) frames in the third row were shot from the lawn that surrounds the *shoin* complexes, to examine the border between the garden and the *shoin*. There he looked at the contrast between the geometric structure of the Old Shoin and an organic garden space with a horizontal line of stepping-stones. In creating this sequence, Tange assumed the role of an investigator, exploring the complex's forms, its material details, and its relationship to the garden.

In the same trip, Tange also visited Kiyomizu-dera, built in the early seventeenth century in Kyoto. There he focused his lens on the roof, made in a style known as *yosemune zukuri*, and the supporting structure for the temple's famous terrace. The structure, known as an example of the *kake zukuri* style, consists of 139 *keyaki* posts and was built without a single nail. The supporting structure, as seen in the second and third frames, is distinguished for its beauty, governed by geometrical forms, as well

as its function as a long-lasting support. Arguably, the experience of observing the structure with a lens provided Tange with inspiration for his contemporary designs, such as the façade of the ten-story block of the Kagawa Prefectural Government Building, a photograph of which was later used in Tange's published essay.

Tange Kenzō,  
Kiyomizu-dera,  
with Isamu Noguchi,  
1952.

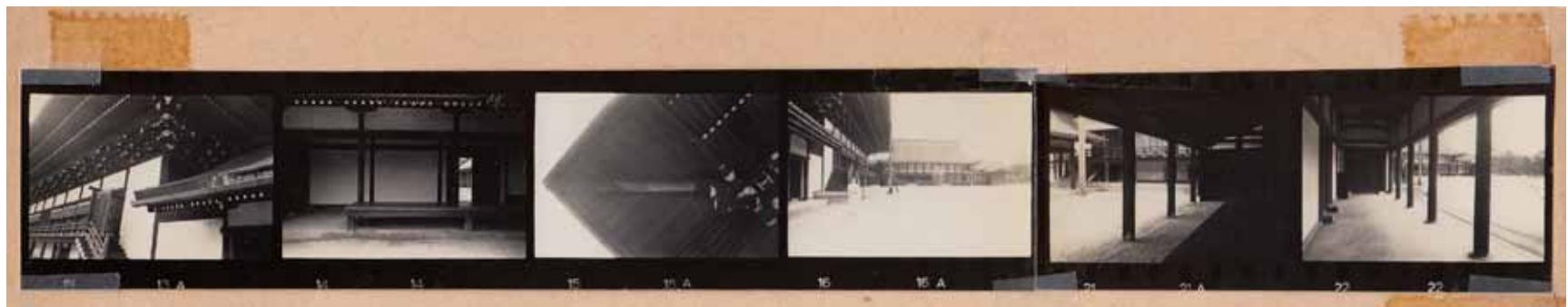
Tange Kenzō,  
Miyajima, July 10, 1954.

Tange Kenzō,  
Kyoto Imperial Palace,  
July 14, 1954.

## WALTER GROPIUS IN JAPAN

Tange's photographic album also captures Walter Gropius's 1954 visit to Japan, which affected Tange's contemplation on the relationship between tradition and modern architecture. A former director of the Bauhaus, Gropius was teaching at the Graduate School of Design at Harvard University. With his wife, Ise, he traveled to Japan on the invitation of the Japan Association of Architects and the International House of Japan during an exhibition of his designs at the National Museum of Modern Art in Tokyo. From May to August, Gropius toured the country, visiting historical and architectural sites, lecturing, and attending conferences, such as one at Hakone, where he met with receptive young Japanese architects. Gropius's lectures and discussions addressed a wide range of topics, including the interpretation of tradition in modern architecture, collectivism, housing issues, industrial design, and architectural education.<sup>13</sup> Tange and other young architects accompanied the couple to various temples and shrines in Japan's old cities. Their extensive itinerary included Kurashiki, Okayama, Hiroshima (Miyajima), Nara (where they visited Tōdai-ji), and Kyoto (where they visited Kyoto Imperial Palace, Ryōan-ji, and Katsura, among others).<sup>14</sup> During the trip, Tange continued to photograph the sites visited, often including Gropius and his wife.

For example, on July 7 the group visited Kurashiki, a well-preserved Edo-period industrial town where Tange would later design a city hall. They walked around in the city's old merchant quarter, paved with stones and filled with seventeenth-century wooden *kura* warehouses, painted white with edges decorated with black tiles. Tange, interested in picturing a form of unity created by specific structures, snapped a *kawara* roof of a building that intersects the façade and roof of another building, as seen in the first two frames (right to left) in the fourth row. Tange's interior photographs, taken at a merchant house, as seen in two frames in the first top row, indicate his interest in a wooden



window frame as a human scale finder (like a camera finder) to frame the relationship between the house's internal and external worlds. On July 10, the group moved to the islands of Miyajima, located at the southern edge of Hiroshima on the shore of the Seto Inland Sea. There Tange photographed from a distance the monumental *torii* of the shrine, built in water and known as the Itsukushima Shrine. The *torii*, a megastructure gate from the past, is portrayed standing solemnly against a sacred mountain. He also photographed details of the wooden and intersected columns and beams of the shrine structure. The shrine and its *torii* would influence Tange, who was seeking a way to integrate expressions from the past with modern technology and materials, as well as establish a scale for a modern building. In his photograph, Tange accentuated the scale of the *torii* by including human figures. The Gropius and Tange group stayed and relaxed overnight in Miyajima and were snapped in *yukata*. The following morning, they headed to Hiroshima, and visited the nearly completed Hiroshima Peace Memorial.

The contact strip dated July 14, 1954, shows five images from Kyoto Imperial Palace, a site that Tange's mentor Kishida Hideto had photographed and published as an album. The images include both its details, such as a roof and a hallway with pillars, and a distance shot of the main pavilion. Tange also visited Ryōan-ji, where he thoroughly photographed the temple's dry-rock garden from a terrace facing the garden. Further, Tange investigated the garden from multiple directions with his camera; clearly his greatest interest lay in portraying the relationship between the rock garden and the surrounding architecture.

Throughout the visit, Gropius had an outsider's freedom to speak with admiration about the relationship of Japanese tradition to modern architecture, the very topic that vexed Japanese architects.<sup>15</sup> Gropius's praise for Katsura and other premodern architectures provided a clue to many younger architects, including Tange, who had been struggling to locate and recontextualize tradition in their postwar architectural creations. Tange sensed that Gropius found modernity in the simplicity of the garden at Ryōan-ji, deriving not from material rationality but from the Zen spirit that transcends materiality.<sup>16</sup> Yet Gropius's enthusiasm regarding Katsura made Tange realize that its architectural features in reality did not move him at all. The real Katsura appeared darker and more overwrought than the vision he had of it in his mind and in his photographs.<sup>17</sup> Tange's own

photographs of Katsura and other premodern structures thus became effective tools for him not only to analyze what he saw but also to extract their essence and contemplate their relationship to his postwar designs. The images, in effect, became a catalyst for his architectural creation. Through his tour with Gropius, Tange came to realize that black-and-white photography could enable him to look at the structures symbolically and more clearly than seeing them in person.<sup>18</sup>

From this experience, Tange came to believe that an architect would not be able to create an "outer reality," or visible reality, without mediating tradition through an "internal reality."<sup>19</sup> Tange took the position that tradition exists as "an integral part of the self," and that tradition, as such, had to be questioned, denied, destroyed, or deconstructed to be transformed into a creative force.<sup>20</sup> To Tange, then, photography was a key means of clarifying this internal reality, and deconstructing and reinterpreting tradition with the goal of creating something new.

#### TANGE'S SUBSEQUENT VISITS TO KYOTO

Tange's album shows his subsequent visits to Kyoto, which took place in August 1955 and April 1957. On the former trip, he had visited and photographed Katsura, Kohō-an, Daisen-in, and Ginkaku-ji. At Kohō-an, with a Leica, he focused on the geometrical unit wall and screen composition found within its teahouse. Interested in picturing the shift in time, for example, he photographed its garden with and without the shadows of trees, as seen in the first three frames in the bottom row. Tange was also keen on revealing the garden through a geometric window unit, a *shōji*, through its glass lower half, to invite a view into the room. At the well-known sixteenth-century Zen temple Daitoku-ji's Daisen-in, he portrayed a dialectical image of the white geometrical wall and organically shaped stones of various sizes, framed in the logical and harmonious raked sand garden, as seen in the images in the first top two rows. He continued to attempt to portray a dialectical image, now in Ginkaku-ji, where he found a cone-shaped (that is to say, without a top) sand mound—an ephemeral sculpture, yet one that had held the same shape since the medieval period—as seen in several frames in the last and fourth row.

Tange Kenzō,  
Kohō-an, Daitoku-ji,  
Kyoto, August 1955.



Many of Tange's shots from this visit to Katsura, preserved in the album in the form of contact strips, are more refined than his earlier photos. Two images are particularly intriguing, as they show part of the New Palace lawn photographed from an identical angle but at two different times, as evinced by the presence and absence of shadows. The results point to his interest in temporal shifts as manifested in space.

#### SHINKENCHIKU AS A FORUM FOR THE TRADITION DEBATE

Under the editorship of Kawazoe Noboru, the journal *Shinkenchiku* exerted a growing and significant influence on the Japanese architectural community.<sup>21</sup> The journal's 1955 and 1956 issues explored the dialectics of tradition and modernity through photography, essays, and discussions of recently built architecture, featuring photographs of premodern structures in the section titled "Classics" (*koten*). Photography undeniably played a central role in the journal in stirring up further debate. For example, the August 1956 issue of the journal published a compelling photo essay titled "About Things Jōmonesque," by the renowned architect Shirai Seiichi (1905–83), who wrote about the architecture featured on the cover.<sup>22</sup> Shirai addressed the dichotomy of Japan's prehistoric Jōmon (c. 10,500–300 B.C.E.) and Yayoi (c. 4th century B.C.E.–3rd century C.E.) cultures in the context of the tradition debate. While the cultural manifestations of the Jōmon period, known for its cord-patterned, frame-formed earthenware vessels, were dynamic, vernacular, and populist (as seen in its pit dwellings), those of the Yayoi period were sophisticated, elite, and aristocratic (as seen in its platform-type housing). Specifically, Shirai argued in favor of Jōmon culture, whose cultural potential he believed to be vital to the creative development of modern Japan because it had silently sustained the Japanese ethnic spirit. In the decaying house of the Egawas, Shirai saw the spirit of Jōmon culture. The New Bauhaus-trained photographer Ishimoto Yasuhiro's photographs of the house dramatically enhanced the architect's words by emphasizing the textures and forms of this vernacular architecture, particularly the organic nature of its thatched roofs and pebbled floors. Of the numerous articles on the tradition debate, Shirai's essay was among the most visually arresting, and it held a powerful sway over Tange, who advocated for neither Jōmon nor Yayoi alone but a combination of the two.<sup>23</sup>

The text that is central to construction of the debate is Kawazoe Noboru's essay entitled "Japanese Characteristics of Tange Kenzō—Particularly through the Development of Rahmen Structure," that appeared in the January 1955 issue of *Shinkenchiku*.<sup>24</sup> Tange himself authored two important essays for the journal on the subject of tradition in relation to modern architectural creation. The first, also published in the journal's January 1955 issue, was titled "My Conception of Modern Architecture in Today's Japan: To Create Tradition." In it he put forth his famous declaration that "[only] beauty can be functional," and his emphatic belief that an architect can express tradition in contemporary architecture through the interaction of the modern and the traditional.<sup>25</sup> These points were visually supported by photographs of his recent designs included in the issue, including the Tange House in Seijo (1953), the Tsuda University Library (1953), and Shimizu City Hall (1953).

By repeatedly debating with Tange about the issue of tradition, Kawazoe realized that "once Tange, sensitive to the contradictions of postwar Japan, began sensing this air—based on the history that the postwar architecture movement gradually had adopted Japanese characteristics while it continuously struggled against *bunmei kaika*, since Japan's Secessionist movement—Tange became strongly conscious that he needed to move forward with his own methods."<sup>26</sup> Kawazoe positively evaluated Tange as having moved "toward its solution, by abolishing walls in architectural design, and re-realizing the tradition of Japanese wooden architecture distinguished for *kiwari* [method of timber measurements and modules]."<sup>27</sup> Kawazoe also acknowledged that Tange challenged fixed notions, held since *bunmei kaika*, and he praised Tange's efforts to overcome them.

Kawazoe, while problematizing the design of the Hiroshima Peace Memorial's main hall as an architecture that symbolizes "stagnated beauty" that expresses the traditional concepts of "*miyabi*" and "*yūga*," characterizes the design of the Hiroshima Peace Memoirl Exhibition Hall as a hybrid of "the Ise Shrine, the oldest and largest structure among the ethnic tradition, and the symbol of the Emperor System" and the raised floor of the Shōsō-in.<sup>28</sup> Kawazoe approved of the museum design as an architecture that reflects the intent of the masses and thus as a symbol of the democracy movement, then at its height.<sup>29</sup>

Tange Kenzō,  
Daisen-in and  
Ginkaku-ji, Kyoto,  
August 1955.



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In response to Kawazoe's evaluation, Tange argues that an architect creates tradition in today's architecture, in its expression rather than its spirit, by merging the traditional and the modern.<sup>30</sup> Tange used the camera as a methodology to focus his expressions of tradition, contemplating their relevance and transformative qualities in reference to his modern designs. In his later essay that appeared in the June 1956 issue of *Shinkenchiku*, entitled "Creation in Contemporary Architecture and Japan's Architectural Tradition," Tange argues that we need to acknowledge what we see, in the Japanese tradition, as typification of space and methodology in modern architecture. He argues that we need to overcome many things, such as certain attitudes continued from the past.<sup>31</sup> Further, Tange argues that we will be able creatively to pursue methods extrapolated from the Japanese tradition and to benefit from the results of those methods. Additionally, he maintains that we must boldly move forward with, and further enrich, technical methods such as overcoming a span by introducing a large span structure, and obtaining flexible space by introducing a utility core.<sup>32</sup>

In his June 1956 essay, Tange incorporated two of his own photographs: one of Daisen-in and the other of Katsura. In addition, in the essay, he inserted a photograph of the façade of the just-completed Kagawa Prefectural Government Building, as well as an image of the main building of the Ise Shrine, created in Japan's oldest architectural style, which had taken from a warehouse with a raised floor. With photography, Tange attempted to examine, and extract, the expressive essence from selected premodern architectures. In this essay, with its narrowly framed images of the structures, he argues for the importance of consciously recognizing the presence of tradition in contemporary life and, with that recognition, to positioning oneself in relation to tradition. Simultaneously, Tange hints that his photographs could lead a viewer to discover a form where typical function matches the idealism of beauty—which, to his mind, comprises the very essence of creation in architecture. Overall, his photographs allow a reader to comprehend his rather abstract theory about transforming tradition in Japanese architecture in the process of creating contemporary architecture.

## LOOKING INTO THE CITY, AND PICTURING THE TOKYO METROPOLITAN GOVERNMENT BUILDING

The last pages of Tange's photographic album include his aerial photographs of downtown Tokyo. On August 13, 1956, he captured several parts of the megalopolis's downtown from a helicopter, using a camera with a 13.5-millimeter lens (that prevents linear distortion). Among his photographic focuses was the newly developed Shibuya station complex plaza, which includes a large department store that serves as a connector for railroad stations, as well as shops, roads for cars and pedestrians, and various smaller commercial entities. Tange was interested in capturing, from a bird's-eye vantage point, not only the function of the complex in urban development but traffic and transportation flows (both on land and on water) in downtown Tokyo, which had become increasingly populated and chaotic. During the helicopter ride, Tange also paid attention to other megasize structures and their environments, such as the National Diet Building and the Akasaka Palace. His aerial photographs, also shot in 1956, investigated Tokyo Bay, as well as one of the city's suburbs—a meticulously planned new community of modern and evenly spaced apartment buildings and other housing complexes. On the helicopter excursion, the shining bay also caught Tange's eye: his photography treats it as a potential site for the city's further growth. (Within a few years, Tange would develop *A Plan for Tokyo, 1960: Towards a Structural Reorganization.*) Collectively, these photographic images anticipate Tange's future interest in investigating the city's structural problems, and his desire to invent a new system for the city's further growth.

Tange's undated photographs of the Tokyo Metropolitan Government Building (1952–58) were created near its completion in 1957, judging from its unoccupied status. In experimentally photographing the building, he employed the simple technique of tilting his camera at an angle of nearly 45 degrees to shoot up close to the building's entrance façade. The images that resulted from such a technique, as seen in the first two frames in the first row, emphasize the uniformity of geometrical form, achieved through his design of solid rectilinear concrete forms in juxtaposition with structural frames topped with metal ribs. The architecture's austere expressions in the images resonate with those in the selected Japanese premodern architectures he had shot earlier, like the supporting structure of Kiyomizu-dera, or the roof of a *kura* in Kurashiki. The tilted angle of the building, and its

Tange Kenzō,  
Tokyo Metropolitan  
Government Building,  
ca. 1957.



full occupancy of a picture frame, emphasize the building's large scale. Some of his photographs from the site reveal the resemblance of the pebbled ground outside the hall to a historical rock garden, such as the one at Ryōan-ji. Several sculptures on the ground, each of which contains a floodlight directed upward to the building, share their shape with the sand mounds found in the garden of Ginkaku-ji, or with a tentacle. Some of the photographs pay attention to the two-storied space created by *pilotis*. Two images by Tange compare and contrast the austere and controlled concrete structure with the dynamic-looking forecourt of the building. Overall, Tange's images of the Tokyo Metropolitan Government Building emphasize the dialectical force found between the tiled and organic ground area and the geometry-governed modern architecture, with its sense of order and repose, which can be traced to some expressions underscored in the premodern architecture that Tange had previously photographed. His photographs serve to reveal that the space created by *pilotis* connected the different worlds: the modern and the traditional, the masses and the government.

In April 1957, Tange took additional photographs on a return visit to Ryōan-ji in Kyoto. He continued to search for dialectical force in his images by photographing the organic but well-calculated placement of stones in a raked white-pebble garden, surrounded by the geometry-governed architecture. His objective is evident in the various angles he adopted in snapping those shots, as well as in his own pen markings, in blue, found on selected contact images for the purposes of further framing his vision. Tange's photographs in the albums trace his thoughts on, and experiments with, tradition during the 1950s. Through photography, he was able not only to destroy the notion of tradition previously conceived in an orthodox fashion but to extract the dialectical force in premodern architecture, transferable to his modern designs, and formulate and refine his position in the tradition debate.

1 Tange Kenzō, *Tange Kenzō: ippon no enpitsu kara* (Tokyo: Nihon tosho sentaa, 1997), 16–8.

2 Uchida Michiko, interview by author, Tokyo, January 20, 2008.

3 Kishida Hideto, *Kako no kösei* (Tokyo: Köseisha shobō, 1929). Kishida followed this photo book with another, *Gendai no kösei* (Tokyo: Köseisha shobō, 1930), in which he highlights the beauty and modernism of anonymous industrial structures. Kishida also created the photography book *Kyōto gosho* (1954), which includes sixty-six pages of his photographs of the Kyoto Imperial Palace.

4 Fujimori Terunobu, interview by author, Tokyo, November 5, 2007.

5 Murai Osamu, interview by Okatsuka Akiko, "Kenchiku shashin raireki," in *Kenchiku no kioku / Remembrance of Places Past*, exhibition catalog (Tokyo: Tōkyō toritsu teien bijutsukan, 2008), 331. Also, Murai Osamu, interview by author, Tokyo, February 18, 2008.

6 Kawazoe Noboru, "Kokumin chitsujō no keisei—iwayuru Nihon teki na mono ni kanrenshite," *Shisō* (Nov. 1961), 1383.

7 The overcoming modernity discourse originated in the roundtable discussions that appeared in the two monthly (September and October) issues of the literary journal *Bungakukai* in 1942, where a wide range of cultural elite members searched for methodologies to define Japan's own modernity. Isozaki Arata characterized the discourse: "The 'Overcoming Modernity' debate remained essentially sterile because participants simply either praised or rejected the modern vis-à-vis a Japanese aesthetic or ethos." Isozaki, *Japan-ness in Architecture*, trans. Sabu Kohso (Cambridge, MA: MIT Press, 2006), 21. Beginning in the early 1950s, after the U.S. occupation ended, the Korean War began, the Chinese Communist Party established its political power, and an anti-U.S. and nationalistic sentiment emerged in Japan. Such a sentiment was, for example, observed by literary critic Takeuchi Yoshimi in his 1951 essay, "Kuni no dokuritsu to risō" [Independence of Nation and Ideal], and his 1959 essay, "Kindai no chōkoku" [Overcoming Modernity], where he reflected on the true meaning of independence for Japan and investigated what the discourse might have meant and could mean, respectively, in postwar Japan. The overcoming modernity discourse generally encompasses the roundtable discussions, a book that resulted a year later from the discussions, and another roundtable discussion called "Sekaishi teki tachiba to Nihon" [An Aspect of World History, and Japan]. The latter discussions appeared in three issues of the journal *Chūō Kōron* from 1941 to 1942. These discussions featured four scholars in philosophy and history, students of Nishida Kitarō and Tanabe Gen, core of the Kyoto philosophy school. Takeuchi Yoshimi, "Kindai no chōkoku," originally appeared in 1959, in vol. 7 of *Kindai ka to dentō* in *Kindai Nihon shisō shi kōza* (Tokyo: Chikuma shobō, 1959); reprinted in *A Selection of Takeuchi Yoshimi's Writings* (Tokyo: Nihon keizai hyōronsha, 2007), 83.

8 For an overview of the tradition debate, see Kitazawa Noriaki, "Dentō ronsō: 60 nendai abangarudo e no airo," in *Bijutsu hihyō to Nihon no sengo bijutsu* ed. (Tokyo: Buryukke, 2007), 103–22.

9 Yatsuka Hajime, *Shisō to shite no Nihon kindai kenchiku* (Tokyo: Iwanami shoten, 2005), 546. Kawazoe Noboru, the theoretical instigator of the debate, later confirmed that Tange was made its "target," in "The Formation of National Order: On the So-Called Things Japanese," 48. There, Kawazoe points out that the tradition debate began with an essay by the Marxist architect Nishiyama Uzō and titled "Jūtaku setsuga ni okeru minzoku dentō to kokuminteki kadai" [Ethnic Tradition and National Agenda in Design of Residence].

10 Katō Toshiko, interview by author, Tokyo, January 20, 2008.

11 These albums are in the collection of Uchida Michiko in Tokyo.

12 Please see my publication *Katsura: Picturing Modernism in Japanese Architecture, Photographs by Ishimoto Yasuhiro* (Houston: Museum of Fine Arts, in association with Yale University Press, 2010) for further discussions of Tange's photographs of Katsura and of his editing of Yasuhiro Ishimoto's photographs for the making of the 1960 publication *Katsura: Tradition and Creation in Japanese Architecture*.

Tange Kenzō, Ryōan-ji, Kyoto, April 1957.



- 13 *Guropiusu to Nihon bunka* (Tokyo: Shōkokusha, 1956), 400.
- 14 Tange Kenzō, “Guropiusu no nokoshita yoin,” in *ibid.*, 377.
- 15 *Ibid.*, 376.
- 16 *Ibid.*, 160.
- 17 *Ibid.*, 378.
- 18 *Ibid.*
- 19 *Ibid.*, 381.
- 20 Tange Kenzō, “An Approach to Tradition,” *Japan Architect* (Jan.–Feb. 1959): 59–65, as quoted in Jonathan M. Reynolds, “Ise Shrine and a Modernist Construction of Japanese Tradition,” *The Art Bulletin*, vol. 83, no. 2 (June 2001), 324.
- 21 Kawazoe Noboru, interview by author, Tokyo, June 2, 2009.
- 22 Shirai Seiichi, “Jōmon teki narumono: Egawa-shi kyū Nirayamakan ni tsuite,” *Shinkenchiku* (August 1956): 4–8.
- 23 Fujimori Terunobu, interview by author, Tokyo, November 5, 2007.
- 24 Earlier essays, which were influential for the formation of the tradition debate, include “Tradition of Architecture and Modernism” by József Révai, translated to Japanese by Hariu Ichirō in the October 1953 issue of *Bijutsu Techō*, and “Jūtaku keikaku ni okeru minzoku teki dentō to kokumin teki kadai,” by Nishiyama Uzō, which appeared in the November 1953 issue of *Shinkenchiku*.
- 25 Tange Kenzō, “Genzai Nihon ni oite kindai kenchiku o ikani rikai suruka: dentō no sōzō no tame ni,” *Shinkenchiku* (Jan. 1955), 17.
- 26 Kawazoe Noboru, “Tange Kenzō no Nihon-teki seikaku–tokuni rāmen kōzō no hatten wo tōshite,” 63–4.
- 27 *Ibid.*
- 28 *Ibid.*, 64–5.
- 29 *Ibid.*, 66–7.
- 30 Tange, “Genzai Nihon ni oite kindai kenchiku o ikani rikai suruka,” 8.
- 31 Tange Kenzō, “Gendai kenchiku no sōzō to Nihon kenchiku no dentō,” *Shinkenchiku* (June 1956), 36–7.
- 32 *Ibid.*

# TANGE KENZŌ AND INDUSTRIAL DESIGN IN POSTWAR JAPAN

Sarah Teasley

In 1953, Tange Kenzō published an arresting commentary on industrial design in the Japanese fine art monthly *Mizue*. Writing in the magazine's first supplemental issue, an exploration of "The Form of Today" by prominent artists, designers, and critics, Tange compared industrial design to wayward daughters who choose to adorn themselves in cheap, stylish clothing to parade about town.

*The latter half of the twentieth century is the era of form—so it is said. Already, what arouses the purchasing desires of the masses is less the contents of products than their exterior form. These dangers have been predicted from the moment they were first whispered.*

*Today, industrial design is nothing more than packaging. There is no difference between automobiles, refrigerators, and the packaging for Peace and Lucky Strike cigarettes.*

*But the design-girls say, with a dazed expression: "It's the products of our clothes and adornment that are beautifying cities and everyday life." It's true that the cities are beautiful, and draw the eyes of the masses. The masses wear away their fortunes in monthly installments, as though they've been smitten by some minx. Yet the bodies of the design daughters have only the same life expectancy as that of their fashionable clothes.<sup>1</sup>*

According to Tange, these wayward girls were the naive daughters of modern art and architecture. While their parents had been concerned with creating forms that crystallized material, process, and use into a unity of form that manifested "the true essence of the thing" in the manner of handcrafts, the daughters had—in the way of young, innocent girls since time immemorial—been swayed by American-style commercial culture and chosen superficial styling and the seduction of men as their mode of operation. Tange offered the example of the craftsman who finds the true essence of an object in a moment of mindlessness as the opposite of design's superficiality, and concluded resignedly from his parental viewpoint in architecture that design would find its own path, regardless of its parents' laments and best intentions.

In its condemnation of styling design as superficial and its romantic, idealistic reverence for craft, Tange's polemic joins a much larger mid-twentieth-century critique of styling design for

mass-production. His lament may use more startling imagery than did many of his contemporaries, but the content is not unusual or original.<sup>2</sup> Indeed, in postwar Japan, an affinity with European and American modernist beliefs in pure form and concerns around the adoption of American-style superficial styling (as epitomized by the work of celebrity consultant designers such as Raymond Loewy) inflamed artists, designers, architects, and critics. The Museum of Modern Art's "Good Design" exhibitions in New York and Chicago, and the British Council on Industrial Design's promotional activities for good design were extensively covered in Japan's design press, and "good design" that stayed true to materials and displayed purity of form and function was a key phrase for domestically generated publications, exhibitions, and campaigns aimed at a general audience throughout the 1950s.<sup>3</sup>

Tange's article is useful for articulating this common concern, but it is also surprising, and for reasons besides its strong imagery (and paternalistic tone, though both are unremarkable from a contemporary perspective). Tange is often figured as the master of the large (the megastructure, the urban plan)—the visionary giant who is the godfather of Metabolism. Yet this short piece demonstrates a different face: that of someone deeply concerned with the design of everyday things.

Architecture and industrial design in early postwar Japan shared some theoretical interests, but also diverged deeply in the intellectual and economic bases and implications of their respective industries. For Tange and his colleagues, some designers' concerns would have seemed tangential, even unrelated, to architecture. This essay articulates and investigates the nature of these relationships, as a way, ultimately, of recontextualizing Tange's practice within a larger design and economic context. A key focus is the extent of convergence and divergence between architecture and industrial design in the period; another is the extent to which economic concerns trumped social ones, or vice versa, in shaping these processes.

The essay examines two types of intersection between Tange and designers. The first is a loose network of artists, architects, and designers linked by common interests from the late 1930s to the 1950s and manifest most publicly in the establishment of joint projects. A culture of cross-disciplinary curiosity and sense of open possibility and national responsibility before and after

the war allowed practitioners in varied areas to come together, even as different professional concerns and economic structural realities inflected their motivations for participation. Although public- and industry-facing design initiatives operated outside both the construction industry and academic architectural circles, Tange's active engagement with them continued through the 1950s, suggesting that personal interest and human networks compelled him to continue these activities despite their distance from architectural theory, practice, and economic return.

Tange's collaboration with Kenmochi Isamu, artist Inokuma Genichirō, and furniture manufacturer Tendō Mokkō on building projects is the second form of encounter between Tange and design explored here. Unlike many of his contemporaries in the 1950s, Tange did not retain a furniture or interior design specialist within his team, preferring to outsource work to a select number of designers, most commonly Kenmochi. Kenmochi then worked with Tendō Mokkō to produce striking furnishings and interiors whose audacity matched that of Tange's architectural design, complemented by bold murals from artists such as Inokuma, active in the same cross-disciplinary circles.

Tange, Kenmochi, and Tendō Mokkō's joint work was most intensive in the 1960s. This essay, however, focuses on one of their first large projects together, the Kagawa Prefectural Government Building (1955–58), for a few specific reasons.<sup>4</sup> The 1950s predicated postwar prosperity and was a time when the political, industrial, economic, and social infrastructure that would support Japan's dramatic economic growth in the 1960s and emergence as a world economic power in the 1980s was under formulation. In the early 1950s, the lack of capital allowed both architects and designers to generate propositions for creating ideal spaces and props for a humanist culture of daily life, and to organize publicity efforts to spread these ideals. With product manufacturing and distribution systems under reconstruction, designers could also offer ideas for their improvement, rather than feeling compelled to look only at their own narrow part of the process. The mid-1950s saw the appearance of public commissions for the physical reconstruction and symbolic reinvention of the postwar democratic state: local government buildings, gymnasiums, cultural facilities, and the like.

These early commissions—a type of patronage culminating arguably in the Tokyo Olympics of 1964 and the Osaka Expo of

1970—allowed a small number of well-connected architects, designers, and artists including Tange, Kenmochi, and Inokuma to test ideas and provided the capital for manufacturers such as Tendō Mokkō to grow. Whether as paid work or independently generated research, the outcomes of these increasingly substantial projects were prototypes—one-offs that pointed the way toward better practice, to be implemented once support systems for manufacturing and purchasing were in place. (This would come in the 1960s and 1970s, with the intensification of product mass-manufacturing, corporate capitalization, and the rise in household income.) And the projects' still-experimental nature made it possible for the interpersonal connections and intellectual affinities between architects, designers, and artists to become actual collaborations. It was extant connections from the 1930s, combined with the rawness, proximity, and growing availability of commissions in the 1950s, that allowed this group of architects and designers to converge around mutual interests despite fundamental differences in the economic structures of their industries and disciplines.

#### TANGE AS PARTICIPANT: THE NIPPON PLASTIC CULTURE ASSOCIATION AND THE NEW CREATION ASSOCIATION

Tange's connection to "design" is best known through his association with the 1960 World Design Conference (WoDeCo). Developed from conversations held between Kenmochi and Aspen Design Conference organizers in 1956 and organized by a group of young architects, designers, and critics under the supervision of Tange colleague Asada Takashi, WoDeCo was held for ten days in May 1960 in Tokyo, convening more than 200 architects, industrial designers, furniture designers, graphic designers, typographers, interior designers, critics, and other design professionals from twenty-seven countries. Tange did not participate in the conference itself, having gone to Harvard on research leave, but served as vice-chair of the organizing committee.<sup>5</sup>

As his 1953 critique suggests, however, Tange was involved in interdisciplinary design projects and had personal connections to industrial designers well before WoDeCo. In the late 1930s, after his graduation from the architecture department at the Tokyo Imperial University, Tange joined the Nippon Plastic Culture Association (Nippon kōsaku bunka renmei), a Deutscher Werkbund-inspired group established in 1936. Founding mem-

bers included the critic Koike Shinji as well as modernist architects Horiguchi Sutemi, Maekawa Kunio, Sakakura Junzō, Taniguchi Yoshiro, Tsuchiura Kameki, Kurata Chikatada, and Tange's mentor Kishida Hideto. Architect and regional crafts industry promoter Ueno Isaburo and researcher Suzuki Michitsugu from the Ministry of Commerce and Industry-affiliated Industrial Art Institute (Kōgei shidojō, IAI) represented Japan's burgeoning craft products promotion and design and manufacturing research community, and Kurata was active too in furniture design, design research, and education. As this list suggests, interdisciplinarity was a cornerstone: the group's stated intentions were to "rally architects and specialists in crafts, engineering, industry as well as general science, the arts, and other areas related to plastic culture."<sup>6</sup> Being of a younger generation, Tange joined later; his activities included contributing an essay on Michelangelo and Le Corbusier to its short-lived but influential journal *Gendai Kenchiku*.<sup>7</sup>

The association's interdisciplinary composition meant opportunities for architects, designers, and crafts promoters to interact. In addition to those newly generated by joint activities, professional connections existed among founding members; perhaps most important were ties built through time spent by both the architects and the IAI's Suzuki with Bruno Taut during his 1933–36 stay in Japan. There were also personal ties: Sakakura and Koike, important in the group's naming and drafting of concerns, had graduated in the same year from the Tokyo Imperial University.<sup>8</sup> But connections were intellectual as well as human: the group's stated unifying concerns of design for daily use—described as "from an architecture of style to an architecture of daily life, from industrial crafts for leisure to industrial crafts for purpose, and from poor products to products with value"—and the essence of "Japaneseness" in design were common to both architectural and crafts/design circles.<sup>9</sup> Common too was a concern with the originality and quality of Japanese-produced goods for the overseas market, whether architecture, exhibitions, or products. ("Japanese Association for Industrial Design" was another English translation used by the group's members in its journal).<sup>10</sup>

In 1949, now an assistant professor at the University of Tokyo with his own lab, Tange was a founding member of the Architecture Division of the Shinseisaku Art Society. The group had been founded in 1936 by modernist painters as an exhibition

opportunity in opposition to the more conservative Teiten, an annual salon sponsored by the Imperial Art Institute (Teikoku bijutsuin).<sup>11</sup> Limited initially to painters, the group added a sculpture division in 1941, and merged with a newer independent artists' group, Creative Art (Sōzō bijutsu, 1948– ) in 1951. Initial membership of the Architecture Division comprised seven members: Yamaguchi Bunzō (whose connection to Association member and painter Inokuma Genichirō had provoked the initial idea to include architects), Maekawa Kunio, Taniguchi Yoshiō, Tange Kenzō, Okada Tetsurō, Yoshimura Junzō, and Ikebe Kiyoshi. Tange, aged thirty-six at the time, was junior only to Ikebe; according to Yamaguchi's recollections, Tange was invited to join as the most prominent representative of the generation that followed the prewar modernists, with Ikebe as a member of the generation just emerging.<sup>12</sup>

Inokuma's frustration with the limits he perceived to what he termed "framed art and exhibition art" was central to the Architecture Division's creation.<sup>13</sup> Although a painter, Inokuma saw architecture as the fundamental medium through which art diffused into everyday life. He identified relevance to ordinary life as art's paramount characteristic, stating in a 1951 interview with art critic Sawa Hajime that "There is no point in anything if it is not connected to daily life," and argued that "where form in daily life is concerned, there is no painting or sculpture removed from architecture."<sup>14</sup> The Architecture Division's appearance can thus be understood as an attempt to reframe artistic practice—particularly in the strapped postwar years—as relevant to daily life, rather than as an elite or escapist practice.<sup>15</sup> But the dreamily confident abstract language of the Architecture Division's founding proclamation conveyed idealism as well:

*Our artistic activities create organic connections between people and art within social life. Thus we find a strong bond with architects to be essential.*

*Through this linkage with new comrades, we hope that the refinement of our artistic activities will deepen in actual daily life, and that we will make progress in the correct direction of culture.*<sup>16</sup>

With its rhetoric of artists working collectively for the greater social good and daily life aligned to collective goals, the statement echoed prewar nationalism's calls for individual devotion



Maekawa Kunio, writing desk and chair, Shinseisaku Art Society Annual Exhibition (Tokyo Metropolitan Art Museum, 1950).

Inokuma Genichirō, metal and vinyl lounge chair, Shinseisaku Art Society Annual Exhibition (Tokyo Metropolitan Art Museum, 1950).





Maekawa Kunio,  
writing desk and chair,  
Shinseisaku Art Society  
Annual Exhibition  
(Tokyo Metropolitan  
Art Museum, 1950).

to the collective cause of the nation. In this statement, however—as in those of many postwar artistic projects—“daily life” (*sei-katsu*) remained, but the nation had disappeared, to be replaced by a more general concept of “culture” (*bunka*) or “humanity” (*ningen*).

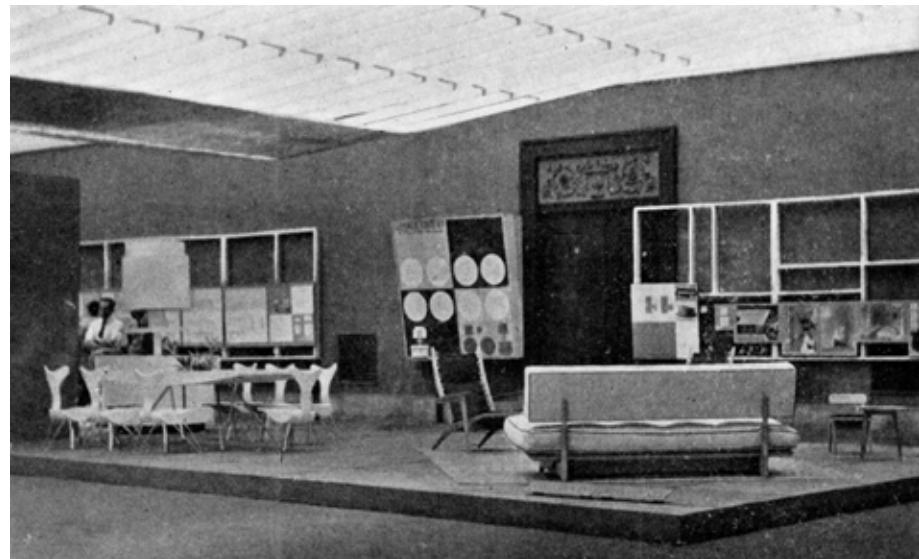
The Architecture Division’s work was first displayed to the public alongside its painting and sculpture counterparts in September 1949, at the Tokyo Prefectural Museum of Art in Ueno Park.<sup>17</sup> Tange took responsibility for the overall exhibition design, and drew attention for innovative staging such as the use of exterior turf on the floor of the sculpture section.<sup>18</sup> The brief for members’ submissions was purposely vague, and required “the development of free imagination, the establishment of correct relations between ordinary formal arts and architecture, the cultivation of new designers, and the banishment of established exhibition architecture and SHOW DRAWINGS in the real sense.”<sup>19</sup> In contrast to the Architecture Division’s founding statement, this brief emphasized architecture’s role as an art, and the importance therefore of allowing architecture to develop creatively while building new relations with its discipline.

For some Architecture Division members, this meant expanding into non-architectural media as a way of providing a more direct experience for visitors. Most members including Tange displayed photographs, drawings, and models of current projects; some, however, expanded their offerings to furniture. In 1950, for example, Maekawa showed a writing desk and chair set made of unvarnished birch and painted iron tubing. The painter Inokuma also displayed furniture—an easy chair with a woven green vinyl seat suspended by metal tubing, and a set of benches or tables in wood and metal tubing—based on his belief that art could be better realized in everyday life through furniture, interiors, and architecture than through “framed painting.”<sup>20</sup> Yamaguchi offered a cream-lacquered wooden dining table and chair set in wood with chrome tubing, and Yoshimura chairs, a sofa and coffee tables in Japanese ash (*shioji*) and birch (*nara*). Furnishings were grouped together in one area of the exhibition space and divided according to materials and morphology into two department-store furniture section-style vignettes, with Yamaguchi and Yoshimura’s bulkier furniture sets in one space, and Inokuma and Maekawa’s individual pieces in thinner materials in the other. Painting Division members’ work hung on the spatial dividers provided visual contrast and color.

The Architecture Division's brief allowed furniture and product designers to show work as well, either by joining the Division or through an open call for entries. In 1950, Kenmochi Isamu and Frederic Hoffer, an American industrial designer with an office in Tokyo, joined the Architecture Division and showed woven bamboo and wrought-iron chairs and a gas range, respectively. Furniture, product, and interior designers who successfully submitted furnishings for the public competition in subsequent years included established figures such as Watanabe Riki, emerging figures like Matsumoto Katsuo of Yoshimura Junzō's office, and new graduates such as Ekuan Kenji of GK Design, the latter to became an original member of the Metabolist group.<sup>21</sup>

Whether by artists, architects, or designers, Architecture Division members' furniture usefully situates its makers in the global networks of the period and represents through style their philosophical concerns. In their form, structure, and chosen materials—particularly the spindly metal legs supporting abstracted organic forms—most Architecture Division furniture displayed a marked resemblance to the furnishings of Charles and Ray Eames, Eero Saarinen, and Florence Knoll, known to the group's members from reviews of modern furniture shows at MoMA and other American museums and trade fairs such as 1948's Low-Cost Furniture Competition in the Japanese and international press.<sup>22</sup> The display strategies were similar too, in the asymmetrical arrangements and addition of abstract paintings. Common too was a philosophical and aesthetic affinity with Inokuma's interdisciplinary assertion of art as modern living and furniture as modern art. We have already seen Tange's statement to this effect; for their part, Kenmochi and other designers regularly voiced similar beliefs in "abstract art and gas dynamics: the unavoidable influence in the industrial design of today" in articles and in roundtables with architects, artists, and critics in *Kōgei Nyuusu* (*Industrial Art News*), fine art journals like *Mizue*, and the national newspapers.<sup>23</sup>

Participation reflected existing connections between designers, architects, and artists predicated on this common interest and on mutual economic advantage.<sup>24</sup> And it cemented personal friendships and professional collaborations such as that between Kenmochi and Tange, as had collaboration among the generation before them in the Nippon Plastic Culture Association. However, the context of production indicates fundamental differences between the architects and designers' practices

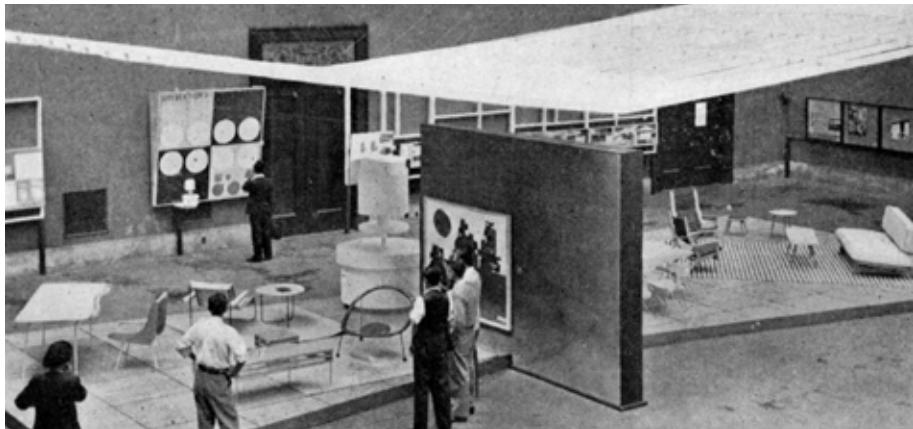


Yamaguchi Bunzō, dining table and chairs (left) and Yoshimura Junzō, living room set (right), Shinseisaku Art Society Annual Exhibition (Tokyo Metropolitan Art Museum, 1950).

Exhibition design for the Shinseisaku Art Society Annual Exhibition (Tokyo Metropolitan Art Museum, 1950). Maekawa, Inokuma, and Kenmochi's pieces are grouped together at left, Yoshimura and Yamaguchi's at right.



Kenmochi Isamu,  
bamboo and wrought-  
iron chair and table,  
Shinseisaku Art Society  
Annual Exhibition  
(Tokyo Metropolitan Art  
Museum, 1950).



as well. Kenmochi's work, for example, was produced within the rubric of his IAI research into prototypes for standardized mass-production and use in actual Japanese homes—a central issue for furniture designers from the 1920s—and conveyed these concerns in its proportions and construction.<sup>25</sup> As visible in the illustrations, his bamboo and metal tubing chairs, prominently displayed in the 1950 exhibition, showed a structural similarity to Inokuma's vinyl chair but referenced the research into woven bamboo—readily available and a potentially lucrative rural industry—as a structural textile, which he had conducted at the IAI in the late 1940s. The chair and accompanying table are not only low to the ground to accommodate users sitting on the floor as well as in low chairs (as were Yoshimura's sofa and Inokuma's tables) but also relatively small, and the metal tubing base would cause less damage to *tatami* mats. Many of the architects involved in the Architecture Division were also conducting research into standardization and mass-production, with the goal of increasing domestic access to "good design." Ikebe, for example, was experimenting with kitchen units and showing this work as his contribution to the Architecture Division exhibitions. But designers' contributions functioned also as direct and literal three-dimensional advertisements for their work; unlike the architects, for whom furniture was an additional area of work, for most designers involved it was a central product and income base.

Designers' responses to the Architecture Division exhibitions are telling in this regard. In the early 1950s, the abstract shapes of chairs, tables, lamps, and bookcases perched on spindly metal-frame legs were hailed by furniture, product, and interior designers as embracing a kind of transnational "modern living," and the style's citation in the space of the art exhibit as bringing a fresh direction to the exhibit format. Interior designer Nakai Ichirō, for example, reviewing the 1951 exhibition for monthly product and furniture design journal *Kōgei Nyūusu*, applauded the skill with which Inokuma and Kenmochi had interpreted "the direction of New York's Modern Art Museum that bloomed after the war with the lines of Eames and Saarinen."<sup>26</sup> By 1953, however, designers' appreciation was mixed with frustration that pieces shown had not evolved past this now-familiar formal language.<sup>27</sup>

In critiquing technical skill, quality, and functionality, the design reviewers were harsh from the start. Architecture Division

pieces were seen as impractically large for the cramped size of actual urban interiors, as shoddy, hasty design and construction that smacked of afterthought or whim, and as privileging dreams over prototypes for furniture that could be easily, reasonably realized in mass-production for Japanese homes. They were also critiqued for inadequate engagement with Japan's nascent system of mass-produced furniture and quality control. Nakai's 1951 review gives a sense of this perspective:

The joinery for the back for Yoshimura Junzō's chair, like two rabbit ears, is clumsy and the round seat boring; the other chair strung with rope is completely uninteresting when compared with the work of Florence Knoll. It is extremely dangerous when furniture design rushes to realize one particular fantasy. High-quality products are created through the mobilization of each engineering team based on one set system. It is unclear how the work displayed in this Shinseisaku Art Society Exhibition anticipates this system, but I think that they can be enjoyed sufficiently as prototypes.<sup>28</sup>

An anonymous IAI reviewer, commenting a year earlier on the 1950 exhibition, was even more prescriptive, suggesting that while the architects' and Inokuma's interest in daily life objects was welcome, in future they should collaborate with technical manufacturing specialists to ensure quality.<sup>29</sup>

Whether on style or quality, such comments may read as the slightly indignant concern that architects were simply ignoring (and thus disrespecting) IAI efforts to improve the quality and accessibility of Western-style furniture in Japan—efforts that had included technical experimentation since the 1930s and more recent collaborations with major manufacturers. We might read this concern as a defense of professional territory, too. A more generous and likely accurate reading, however, would point out that given their own investment in product quality improvement, critics had good reason to rate poorly the quality of work displayed.

Indeed, state-sponsored design improvement schemes and the personal interest of the men who enacted them were an important element in the architects' and designers' collaboration. In the 1930s, the Nippon Plastic Culture Association's concern with craft products stemmed from the IAI's work in export crafts industry development, and from Ueno and Suzuki's alignment

Cover, Jan. 1950 issue of *Kōgei Nyūsu*.  
The issue was a special number on "The Directions of 1951: Design, Plastics, Architecture, Modern Art," with essays by Kenmochi, Inokuma, materials specialist Fukuoka Kazuo, and architect Kawai Shōichi.



of personal interest with broader state interest.<sup>30</sup> In the 1950s, IAI-connected designers such as Kenmochi, then section chief of the design section at the IAI, and Watanabe—who while not an IAI researcher knew it intimately from having participated in institute projects during the war and through close personal ties to Kenmochi and others—were engaged in their own research into improved techniques and designs for export products as a way to increase Japanese manufacturers' foreign market share in direct competition with the United States, Britain, and European manufacturers.

Designers' participation in the Shinseisaku Art Society/Association also furthered efforts to professionalize industrial design in Japan. Despite the best efforts of the IAI, technical school educators, and sympathetic groups such as the Japan Plastic Culture Association in the prewar period, in 1950 industrial design was neither well recognized publicly as a profession nor well represented in manufacturers' corporate structures. This would change by the end of the decade, thanks to factors including the establishment of new industrial design programs and reclassification of extant ones as university-level courses equivalent to architecture or engineering degrees; government and corporate identification of exports as the key to economic recovery; publicity efforts introducing American consultant designers' ability to add substantial value to products; the introduction of design sections and employment of specialized designers at major manufacturers like Matsushita; and the formation of professional associations such as the Japan Industrial Designers Association in 1951. These efforts at professionalization were under way in the early 1950s, but only just so. For both emerging and older designers, showing work in prominent, well-regarded exhibitions alongside that of well-known names in the more institutionalized areas of art and architecture was useful publicity—individually and for the profession.<sup>31</sup>

For designers, then, both the intellectual foundations and practical benefits of participation in the Shinseisaku Art Society/Association's exhibitions were clear. For its architect members, too, participation led to commissions and maintained public prominence, but arguably equally if not more important were intellectual and social interests and the prewar tradition of interdisciplinary alliances constructed around them. Here, Tange reemerges. His contributions to the group's exhibitions attracted minimal attention in the design press, suggesting that his

interest and involvement were architectural (as a designer on the association's group design projects), personal (in his friendships with members including Inokuma and Kenmochi), and intellectual (in his shared pursuit of the association's questions about art in life).<sup>32</sup>

This reading is supported by an opinion piece that Tange published in the architecture journal *Shinkenchiku* in November 1949, following his participation in the first exhibition. Tange explained his position as an architect vis-à-vis the group's basis in modern painting and sculpture. He was not uninterested in art and design, nor did he see them as unrelated to architecture; rather, as he wrote, "art, sculpture, and architecture are one in the modern world; as commonplace things that meet the eye, they support the modern sensibility."<sup>33</sup> He insisted, however, that the three areas were separate, writing that architecture was fundamentally different from painting and sculpture. Tange was interested in working across and outside his discipline, but from his position as architect. He would soon take this further, into the world of mass-produced industrial goods: through his connections with architect Koike Shinji and Kenmochi in the Shinseisaku Art Society, he would represent architecture in the *Mizue* supplement on form, and even become an arbiter of good product design for Japanese manufacturers and the state.

#### TANGE AS ARBITER: THE INTERNATIONAL DESIGN COMMITTEE

In 1953, the year of his disillusioned critique of industrial design in *Mizue*, Tange Kenzō found himself the lone architect on a jury charged with selecting the best designs in six categories: mopeds, sewing machines, plastic goods, automated washing machines, tabletop electrical fans, and furniture.<sup>34</sup> The occasion was the New Japan Industrial Design Competition, an annual award begun the year before to promote public awareness of industrial design and to generate new, sellable products for Japan's manufacturers. The award was sponsored by Mainichi Shinbunsha, publishers of one of Japan's largest national newspapers, and run in collaboration with private manufacturers, each of whom created a brief for a new product.<sup>35</sup> Fuji Heavy Industries, for example, set a brief for a new scooter for their Rabbit line; Sekisui Chemicals asked entrants to design plastic household goods. Tange was one of eleven judges, alongside

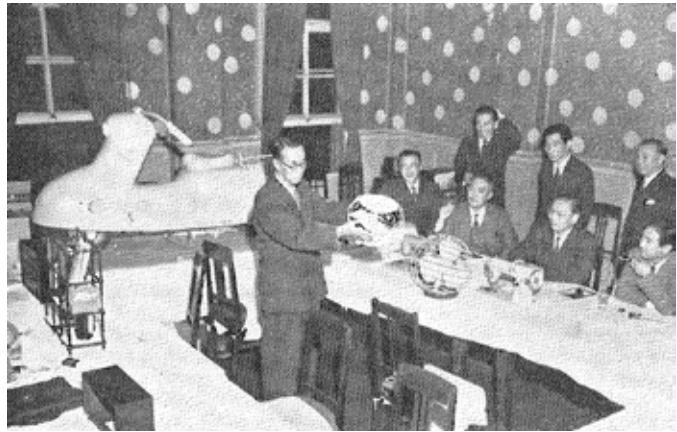
Kenmochi Isamu, the critic Katsumi Masaru, heads of relevant state-sponsored institutes such as the IARI and Board of Industrial Technology (Kōgyō gijutsu-in)—both affiliated with the Ministry of International Trade and Industry (MITI) and created to regulate standards, weights, and measures—and leaders of university courses in industrial design and marketing. Tellingly for the crossover in interests between artists and designers, Inokuma served as a juror as well.

As the presence of bureaucrats and marketing experts suggests, the Mainichi Industrial Design Award had two resolutely commercial goals: to increase Japan's share of overseas markets for mass-produced goods, and to stimulate domestic production and consumption. (The winning design that year, a sewing machine by seasoned industrial designer Kosugi Jirō, was test-launched by sponsor Janome in Los Angeles the following year.) Tange's participation seems then somewhat anomalous, particularly considering that unlike himself, other architects such as Ikebe Kiyoshi and Yamaguchi Bunzō were prototyping furniture. It's possible that his invitation to serve as a juror, like Inokuma's, came through his personal friendship with Kenmochi, but we should look also at the deep concern for good design expressed in his article in *Mizue* the previous year. Indeed, Tange was integrally involved in such commercially inflected design industry promotion activities throughout the 1950s.

In 1953, Tange also accepted membership in a new organization, the International Design Committee (IDC).<sup>36</sup> The IDC was first conceived as a selection committee for Japan's display at the 1954 Milan Triennale, the period's most prestigious trade fair for new product, furniture, and craft design (and predecessor of today's Salone).<sup>37</sup> After a contentious start involving disagreements between the Ministry of Education and MITI after the initial invitation arrived at the Ministry of Foreign Affairs, the committee was structured as a nongovernmental organization. This meant little funding, but gave its members freedom to develop an expanded remit of promoting industrial design in Japan and Japanese industrial design overseas more broadly, with an official brief that included exchange with overseas design organizations and associations, participation in international meetings, participation in overseas exhibitions, international exchange and promotion of good design, and the support of exhibitions, lectures, meetings, and publications necessary to promote good design domestically.<sup>38</sup>

To this end, IDC membership included prominent graphic, product, and industrial designers, but also representatives from art, architecture, and photography.<sup>39</sup> Of disciplines represented, graphic design and architecture had four members each, with three product/furniture designers and one or two representatives from other areas. Significantly, many members had experience with either international expositions or publications for an international readership. Hara, Kamekura, Kono, and Itō were former members of Nippon Kōbō, the graphic design firm responsible for the design of propaganda magazines *Nippon* and *Front* in the 1930s and 1940s. This was hardly coincidental. From 1945 to 1953, the IAI and its more senior members, particularly Kenmochi as design section chief, had been responsible for developing strategies and liaising with industry for export promotions and product improvement. However, with the signing of the San Francisco Peace Treaty in 1951 and the end of the Allied Occupation in 1952, with the consequent lifting of export controls, Japan was again able to export goods freely. With exports identified by both MITI and manufacturers as the most effective way to gain capital for reconstruction and development, participation in trade fairs was a key element of strategies for increasing Japan's share of overseas markets, particularly the lucrative American market. Thus enhancing the IAI and the Japan External Trade Relation Organization (JETRO)'s expertise with a more diversified and cosmopolitan group with experience in prewar international exposition pavilion design could be useful indeed—and in fact signaled both a return to the status quo, since architects and graphic designers designed Japan's world fair contributions in the 1930s, and change, given the greater importance of mass-manufactured goods exports since installation experts turned their attention to product trade fairs.<sup>40</sup>

Regardless, the IDC's first substantial activity focused on the domestic market, rather than on exports. In 1953, an IDC-curated selection of domestically produced industrial design and crafts objects for the home opened as the Good Design Selection in Tokyo's Matsuya Ginza department store. In 1955, the display was renamed the "Good Design Corner"; it would become only one of several prominent activities to promote "good design" that marked the late 1950s.<sup>41</sup> Exhibitions of "good design" for the home selected by experts for perusal by the general public, particularly women, had been a fixture of Japanese department stores in Tokyo and other major cities since



Jury deliberations at the Second Annual New Japan Industrial Design Awards. From left to right (front row): Uno Masao, Kumabe Kazuo, Komagata Sakujirō, Inokuma Genichirō; (back row) Kenmochi Isamu, Tange Kenzō, Kubota?. Mainichi Newspapers Advertising Section Deputy Head Saitō holds an electric fan.

the 1910s; these continued during the war with patriotic themes such as thrift and reappeared, revamped, to display American cultural values and the creature comforts available through their adoption, during the Occupation. The Good Design Selection also took inspiration from the heavily publicized “Good Design” exhibitions organized by MoMA at the Merchandise Mart in Chicago between 1950 and 1955 and viewed by Kenmochi in 1953, and as such must also be understood as part of the broad dissemination of this practice throughout the sphere of postwar American cultural and geopolitical influence—that is, alongside good design exhibitions held in regional American department stores and art museums in regional cities. In keeping with the parameters established by the MoMA exhibitions, objects were resolutely ordinary, yet corresponded to a modernist aesthetic desire for purity of form, lack of ornamentation, and foregrounding of material.<sup>42</sup> Glass cups, ceramic dishes and sake sets, and lacquerware bowls lined up next to metal buckets and kitchen utensils and woven baskets and stools in an exhibition display design again highly reminiscent of that used at MoMA, beginning with the “Machine Art” exhibition of 1934. These were products commonly used for daily life in Japanese homes, and represented Japan’s nonmechanized, semi-craft light manufacturing industries well, but the formal and ideological resemblance to MoMA design exhibitions was of course not coincidental; we need only recall Tange’s concerns over wayward “design daughters” to see this point.

The IDC’s next major activity specifically targeted export markets, though with application domestically as well. In 1957, an IDC-derived group, the Design Encouragement Jury Good Design Subcommittee, took on responsibility for selecting domestically made, mass-manufactured products to receive a new guarantee of product quality, the “G-Mark.” This new initiative responded to rising foreign complaints regarding copyright infringement by Japanese manufacturers of export goods, as well as the overall perception of Japanese products as low quality. Some semi-craft production objects such as ceramic and glass dishware received the G-Mark designation, but the system’s primary area was domestic electric appliances, cameras, and other high-volume industrially produced goods. Accordingly, subcommittee membership was based on IDC membership, with additional industrial design experts: seasoned industrial designers and IAI staff members Toyoguchi and Kosugi Jirō (first-place winner in the 1953 New Japan Industrial Design competition for

his sewing machine) and industrial design university course head Koike Iwatarō and architect Koike Shinji, an integral member of the Nippon Plastic Culture Foundation two decades earlier.

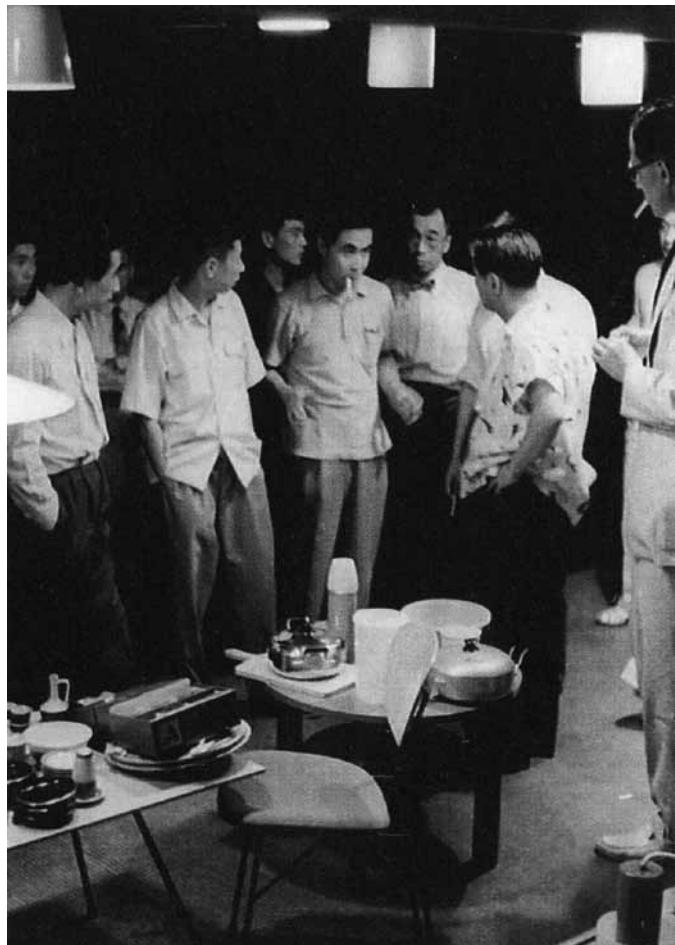
Tange, despite his research focus on urbanism and increasing number of architectural commissions as domestic economic conditions improved, was a member of the committees for both the Good Design Selection at Matsuya Ginza and the G-Mark appellation. He seems to have predicated his participation not on an interest in seeing, thinking, or working like an industrial designer but on a general concern for the quality of things, a reverence for craft, and dismay at mechanization that shaped much of 1950s design discourse outside Japan, too. Here again, it might be useful to return to his polemic in *Mizue*. Tange's tone is one of disappointment: of belief in design as a creative process and sadness at how industry has destroyed this in the pursuit of profit:

*The thing... transcends the creative intent of the maker and is born as one perfect unity, a unity of function, material, and process.*

*Design is an endeavor like this. It is the process through which all elements are unified into a thing. But industrial design has nothing to do with this kind of handcraft, or so people may think. Is this really so? Industrial design has replaced the gut reaction mastered physically by the craftsman with scientific operations. They replaced hands with machines. Undoubtedly, this was a revolution. But can we really just say this, and leave it at that? We don't think so. The ultimate mental image that pursues the true essence of a thing is a single strand connecting the world of handcrafts and that of industrial design.<sup>43</sup>*

Rather than engaging with what he saw as industrial design's current form, Tange was out to save things, which he loved, from its ravages. He saw his impact as an architect as ultimately limited, writing that "Industrial design will make its own path, regardless of these kinds of complaints from its mother and father," but this was beside the point.<sup>44</sup> Rather, as a responsible modernist and an architect, Tange felt duty-bound to proselytize to designers and manufacturers, and to educate consumers about what good design—real design—might be. As it did for MoMA curators Arthur Drexler and Edgar Kaufmann Jr. and other art and architecture curators organizing good design

International Design Committee members judge products for the Good Design Corner at Matsuya Ginza Department Store, ca. mid-1950s. Tange is visible at the far left; Kenmochi gestures in the center, with a cigarette in his mouth.



exhibitions in Japan and elsewhere, this meant spending time in the arena of industrial design, despite his own practice's location elsewhere. It was also an effective way of maintaining and building Tange's profile as a major architect and public figure, a shift indicating the rising importance of consumer goods manufacturing as an anchor of the Japanese economy.

The product and furniture designers and critics involved in Japan's good design movement shared Tange's idealism regarding the importance of good form for social progress, but had different interests as well—as did the manufacturers who employed them. The 1952 roundtable in *Kōgei Nyūusu* cited earlier brought together Tange, critic Katsumi Masaru, artist Satō Kei from the Shinseisaku Art Society, and Satō Takaya, a product designer at electrical appliance manufacturer Tokyo Shibaura Denki (now Toshiba). Tange's statements in the discussion were milder than those expressed in the *Mizue* piece, but expressed similar concerns that design privileged sale-enticing styling over substance. He wrote: "Industrial design is in the process of becoming design that no longer privileges use, but has abandoned use quite dramatically, and seeks to dedicate itself to catching the eye. Last year's style will no longer do—this year's style must be of this year. Industrial designers in today's America cannot be called artists."<sup>45</sup>

To the contrary, Tange insisted that industrial design should not be the practice of adding decoration but rather of identifying and then remaining true to form and function.<sup>46</sup> Artist Satō Kei agreed. But Satō Takashi, the designer at Tokyo Shibaura Denki, pointed out that new colors and other seemingly superficial elements of styling design were important for appealing to customer desires and maintaining market share, and that romantic idealism about form was insufficient in a consumer economy.<sup>47</sup> His role as an industrial designer, he pointed out, was to negotiate between marketers and users. For designers working for manufacturers, the economic imperative was unavoidable. Design concerned not only general ideals, national pride, and professional recognition but corporate and individual livelihood, and the viability of their profession depended on sales.

The IDC's varied activities thus marked a changing and heterogeneous ecology, in which more abstract aims for pure good form as a right for humanity fused with economic, personal, corporate, and national goals. Industrial design as part of manufac-

turing was rising in prominence; this required a recalibration of the relationship between design, art, and architecture while actually strengthening the preexisting argument for the importance of good form. Nonetheless, the system in place and conditions around it allowed not only for coexistence but for a range of actors to achieve multiple goals through participation.

#### TANGE AS DESIGNER: THE KAGAWA PREFECTURAL GOVERNMENT BUILDING

Collaborations between modernist architects, furniture designers, artists, and manufacturers for the major public building commissions that marked Japan's economic solidification from the mid-1950s onward were facilitated by connections made in the early 1950s design promotion and artistic exploration activities and by personal friendships, and similarly demonstrated intellectual convergence, industrial dependence, and industrial difference.

From the mid-1950s, Kenmochi Isamu provided furniture designs for a number of Tange Kenzō's architectural commissions. Furniture designed by Kenmochi Design Associates, the firm Kenmochi established in 1955 upon leaving the IAI, was manufactured by Tendō Mokkō, a furniture manufacturer known for the quick implementation of new technology, innovative plywood forms, and relationships with modernist furniture designers such as Kenmochi and Yanagi Sōri. Inokuma too worked with Shinseisaku Art Society-affiliated architects including Tange, creating murals for public and institutional spaces until his departure for New York in 1955. These collaborations enabled, among other things, the creation of a lineage of postwar modern design through the products that would furnish, embody, and visualize it. This lineage was sited within the postwar context of increased leisure, democratization, economic development, regional boost-erism, and connections between individuals in related industries.

The Kagawa Prefectural Government Building, a set of symbolic new government buildings located in the prefectural capital of Takamatsu, was one of several prefectural government building design projects given to Tange in the early 1950s.<sup>48</sup> Begun in 1954 and completed in 1958, it testifies to the demand that arose by the mid-1950s for new civic buildings, including local government buildings, sports arenas, and auditoriums, and for

corporate headquarters. The spate of new construction was made possible by nascent economic recovery, a decade after the close of the war; ideologically, the plethora of new civic buildings speaks to the importance of rhetoric around postwar democracy and civil society. With modernism now the visual language of progressive politics and growth-oriented economic policy, modernist architects such as Tange received these commissions. Interiors and furnishings were sometimes handled in-house, but seating—from office chairs to auditoria seats—was often subcontracted to designers, and artists were engaged to create artworks for the building's public spaces. Thanks to personal and professional relationships with architects like Tange, increasingly secure positions as leaders in their fields, and their command of the modernist vernacular—both visual and rhetorical—Kenmochi and Inokuma were frequent choices.

In the case of the Kagawa Prefectural Government Building, Kenmochi was commissioned to design and manufacture a desk and chairs for the governor's office and Tendō Mokkō to manufacture them, and Inokuma to create a large-scale mural in polychrome tiles for the massive ground-floor lobby.<sup>49</sup> The nature of the collaboration demonstrates the social and professional ties that existed between elite architects and designers: Inokuma, a Takamatsu native, recommended Tange to governor Kaneko Masanori, who knew Inokuma from junior high school and consulted him for a recommendation for an architect.<sup>50</sup> Tange and Inokuma's personal friendship with Kenmochi had developed through the Shinseisaku Art Society; in addition to commercial collaborations, Kenmochi is believed to have designed the low-slung tensile metal chairs that feature prominently in period photographs of Tange's new residence in 1953 as a bespoke favor for his friend.<sup>51</sup> There were logistical reasons for the collaboration, too: Tange and Kenmochi ran complementary practices in sectors that while different required the other's participation to complete their own work. Unlike colleagues such as Sakakura and Yoshimura, who often designed furniture in-house, Tange did not have an in-house furniture design specialist.<sup>52</sup> After leaving the IAI, Kenmochi was dependent on contracts such as the Kagawa project.<sup>53</sup> The friendships that he had developed with Tange and other architects since the late 1940s helped with both private and public commissions.

There was more to the collaboration than economic advantage and friendship. Shared intellectual concerns fueled their collab-

orations, as they did common participation in industrial design improvement activities. Kenmochi shared the concern to infuse social spaces with ideal aesthetic forms and saw the public building as an excellent medium. He was an active contributor to early 1950s discussions and publications on ideal form, including the 1953 *Mizue* special issue with which this essay began, and wrote in 1954, soon before joining the Kagawa project:

*In the past twenty-five years, our country's interior design, particularly that which has furniture at the center, has along with architecture become the object of modern formal ideals. It has pursued a clear, simple formal beauty that takes as its foundation the rationalism and functionalism in place since the Bauhaus formal movement, and [as such] has regularly been at the forefront of industrial design....*

*Recently, the interior planning for public and social facilities has shown speedy progress. This is part of a greater move toward the rationalization of living styles, and is welcome as one of its results.<sup>54</sup>*

In short, the very real demand for physical reconstruction and growing economic support for new building projects that appeared by the mid-1950s allowed Tange, Inokuma, and Kenmochi to realize ideals earlier prototyped in activities such as the Shinseisaku Art Society exhibitions into full spatiality, for experience as the everyday.

The building's design well illustrates the three men's concern with aesthetic experience in an everyday environment and their choice of a modernist visual language to actualize it. Their shared values are fully realized in the main lobby of the office wing, a double-height space again in unfinished concrete, with large windows connecting the interior to the water garden outside. In both style and execution, the lobby interior recalled the art-design merging and privileging of "form" according to postwar modernist aesthetic principles found in the Shinseisaku Art Society. The large red sun and moon of Inokuma's mural provided a visual focus in the space, and the complete array of large, familiar but abstracted shapes in blue, white, red, and black tiles, set on grounds of tiles in contrasting colors, contributed a liveliness and sense of motion or play to the airy but regulated space. Brightly colored round ceramic stools and massive wooden benches, designed by Tange's office for the space,

Kenmochi Isamu (design) and Tendō Mokkō (manufacture), desk, task chair, and guest chairs for the governor's office, Kagawa Prefectural Government Building, Takamatsu, 1958.



created visual correspondences in color and form, and further enlivened the lobby. Together the bright colors and bold, non-standard forms of mural and furnishings contrasted with the concrete walls, but matched them, too, in their clarity and emphasis on form, and as a way of providing visual stimulation through abstraction within the ordinary space of bureaucracy and consultations. In the governor's office, Kenmochi and Tendō Mokkō's broad wooden executive desk and bright, strongly shaped desk chair and meeting chairs continued the design language of clarity and bold abstract form.

Although overshadowed in this essay by the rhetoric and activities around "good design," the question of "Japaneseness"—of how to incorporate locality and tradition into modernist aesthetics and functions—was an intellectual and practical concern shared by all three men, explored through formal and material experimentation in their design work and in public statements and debates with peers. Kagawa fell midway in Tange's formal and theoretical experimentation with tradition within modernism in the 1950s and coincided with his involvement in the "tradition debates" (*dentō ronsō*) of 1955–56.<sup>55</sup> His façades for Kagawa are fundamentally hybrid, combining megastructural and Corbusian tendencies with visual elements from Japanese architecture.<sup>56</sup>

In the mid-1950s, Kenmochi too was concerned with what many termed "Japanese modern"—the appropriate role and form for traditional materials and aesthetics in objects and interiors designed for modern life—and explored this question in prototype and production-line furniture designs, sometimes controversial essays in *Kōgei Nyūusu* (*Industrial Art News*) and other journals, and the model rooms he designed in his capacity as IAI Design Section Chief for the JETRO exhibits of Japanese home furnishings at international trade fairs after 1953.<sup>57</sup> At Kagawa, the bold presence, luxuriously pared-down selection of metals and textiles, and sculptural unified seating bolted onto metal legs employed in the executive and meeting chairs were unremarkable within the language of mid-1950s modernism. The desk also employed the massive format of the American executive desk, but did something else as well. Its geometry of assembled planes, reliance on strong forms, and visual dominance of material—in this case richly grained, burnished wood veneer—echoed the sheer physical presence, basic forms, and references to Japanese vernacular carpentry dimensions

in Tange's architecture, while the slatted front panel made direct reference to the wooden slatted window screens of urban homes (*machiya*).<sup>58</sup>

For his part, Inokuma explored the integration of traditional or local aesthetics into modern space and life with a reference to their performance, rather than direct visual citation. Inokuma titled his mural *wa-kei-sei-jyaku* ("harmony respect purity resignation"), a conceptual grouping used in tea practice to convey the ideal spirit, sensibility, and aesthetic of the encounter between host, guest, and objects in the tea ceremony space. Each wall in the lobby represented an aspect of this four-part tea ideology. Inokuma's work, too, must be seen within the context of the fine-art world's own "tradition debate" also taking place in the mid-1950s.<sup>59</sup>

The Kagawa Prefectural Government Building's manifestation of Tange's and more generally period architectural thought concerning tradition and modernity is often discussed; indeed, given Tange's own framing of the building in *Shinkenchiku* within these terms, the prominence of the "tradition debate" in period writing, and the visually compelling, experientially exciting spaces and objects created as its prototypes, such foregrounding is understandable. However, what this focus omits is the connection between Tange, Kenmochi, and others' search for "modern Japanese design" and their concern for "good design," even though both share, fundamentally, the modernist desire to improve everyday experience through aesthetics. It also overshadows the less cerebral but equally important role that personal and professional/industrial relationships had in the building's design and completion. From this perspective, the concern with national identity—like the concern for good form in everyday life—can be equally discussed as one facet of the process of localizing an improvement within a Japanese context, a process that Tange, Kenmochi, and Inokuma shared as operators in transnational, even cosmopolitan circuits of their respective industries.

## CONCLUSION

The Kagawa Prefectural Government Building demonstrates how artists, architects, and designers could converge both intellectually and economically, given an acknowledged platform—the public commission—for their work. The International Design

Committee was slightly more complex. Different constituencies—architects, designers, and artists—collaborated based on a shared belief in the social power of modernist style and ideal forms, and on common self-consciously modernist practice (membership in international cohorts) despite often differing industrial structures and income sources. In the case of the Shinseisaku Art Society's Architecture Division, architectural historians Funabiki Etsuko and Umemiya Hiromitsu argue that for this group of architects, all seeking to reconstruct a new type of "modern architecture" practice in the postwar context, the invitation to join a comprehensive, integrated "arts" project in the "painting, sculpture, architecture" model might have been perceived as a way toward this end.<sup>60</sup> Seen in the rosy light of idealism, projects such as the Kagawa Prefectural Government Building were a chance to do this for real, too. But given that the International Design Committee did not lead directly to commissions, Tange and others' continued involvement in cross-disciplinary initiatives throughout the 1950s suggests that something else was at play.

As suggested by Tange Kenzō's impassioned frustration with the wayward daughters of industrial design, that "something else" was an ensnarement by the form of things: not buildings, spaces, or cities but the objects that furnished life within them, as a way of improving the experience of everyday life. It was a common concern in improving the culture of daily life in Japan through material improvement, but also by the provision of well-formed objects and art that simply could not be put aside. For Tange, this meant a link to the emerging world of professionalized industrial, furniture, and interior design research, promotion, and mass-production. Rather than conducting most furniture and interior design himself, as did many of his colleagues, he took advantage of shared projects to deepen links with designers and contribute to shaping public and industry perceptions of good industrial design through design-specific media and his own commissions. This meant engaging with their questions about exports, manufacture, product improvement, and market creation, as part of implementing his fundamental intellectual stance on making and form. It is precisely his presence in multiple connected yet discrete areas—a state we might rephrase as Tange's central role throughout postwar Japanese architecture, design, and culture—that makes him both so interesting and so useful for historians of postwar Japan, and of postwar architectures.

- 1 Tange Kenzō, "Industrial Design and Architecture: Free Daughters," *Bessatsu Mizue* (1953), 84–5, 84. All translations are by the author, unless otherwise indicated.
- 2 Whether in Japan, Europe, or the United States, the decades surrounding World War II rang with self-consciously modernist architects', designers', artists', and curators' critiques of American commodity culture as bewitching, but ultimately distancing from the true essence of things. We need think only of Theodor Adorno's bitter noises from California and New York Museum of Modern Art curator Edgar Kaufmann Jr.'s "Good Design" exhibitions. Kaufmann's colleague Arthur Drexler proposed that Japanese architecture embodied the attention to materials and form antithetical to American superficiality—a proposition tested in the form of the Japanese House and Garden that appeared in MoMA's garden in the summers of 1955 and 1956. More broadly, we might consider the international popularity of Yanagi Sōetsu's writings on anonymous craft, *Outrage!*, a 1955 issue of *The Architectural Review* on the horrors of visually cluttered British cities, coedited by architect and illustrator Gordon Cullen and critic Ian Nairn, or Siegfried Kracauer's meditations on German shopgirls' attraction to Hollywood film and other fruit of capitalist mass-production in *The Mass Ornament* (1927).
- 3 See, for example, the January 1954 issue of *Kōgei Nyūusu* on the 1953 MoMA "Good Design" exhibition, and the magazine *Living Design*, published 1955–8.
- The most substantial published documentation of the G-Mark system is *G maaku taizen: Guddo dezain-shō no 50-nen*, edited by the Japan Industrial Design Promotion Organization (Tokyo: Bijutsu shuppansha, 2007). A general overview of the good design movement in Japan more generally is the exhibition catalog *Minna no dezain: Guddo dezain towatashi-tachi no seikatsu* (Kawasaki: Kawasaki shimin hakubutsukan, 2007). Other recent secondary scholarship includes Tsunemi Mikiko, Kuwasawa Yōko to *modan dezain undō* (Tokyo: Hatsubai soshiete, 2007), and Ogawa Masaru, "Sengo-ki no Nihon ni okeru shōhizai dezain no modanizumu kenkyū: posutomodan to no kankei ni chūmoku shite" PhD diss., Hitotsubashi University (2011).
- 4 Other mid-1950s Tange commissions with furniture designed by Kenmochi and fabricated by Tendō Mokkō include the Sumi Kaikan (1957) and Sōgetsu Kaikan (1958); early 1960s projects involving the Tange Lab, Kenmochi Design Associates, and Tendō Mokkō included the Atami Garden Hotel (1961), the Totsuka Country Club (1961), and the Kagawa Prefectural Gymnasium (1965).
- 5 Rem Koolhaas and Hans Ulrich Obrist provide an excellent and accessible overview of the event, including the republication of key documents: Rem Koolhaas and Hans Ulrich Obrist, *Project Japan: Metabolism Talks...*, Kayoko Ota with James Westcott, AMO, eds. (Cologne: Taschen, 2011). See also Sekai dezain kaigi Nihon uneikai jumkyoku, ed., *Sekai dezain kaigi hōkoku* (Tokyo: Sekai dezain kaigi Nihon uneikai, 1960).
- 6 "Hōkoku: Nippon kōsaku bunka renmei ni tsuite," *Kenchiku Chishiki* (Dec. 1936), 31; quoted in Yashiro Masaki, "Dai-san Nippon to iu bohime: Nippon kōsaku bunka remai no shiza to shatei," 10+, no. 20 (2000), 130–42.
- 7 Tange Kenzō, "Michelangelo no shō: Le Corbusier ron he no josetsu toshite," *Gendai Kenchiku*, no. 7 (Dec. 1939), 36–47.
- 8 Yashiro.
- 9 "Hōkoku," cited in Yashiro. As Yashiro points out, both of these concerns dovetailed with those of the Ministry of Commerce and Industry, then engaged in its own attempts at improving craft and industrially made products; and both Kurata and Ueno were well known for their promotion of better design for furniture and regional crafts in addition to their work as architects. On Kurata's furniture research, see Anne Gossot, "Keiji Kōbō no hōhō-ron," Working paper—Série P: Production Grise de Recherche WP-P-IRMFJ-Standardisation09-07" published online at <http://www.mfj.gr.jp/web/wp/WP-P-01-IRMFJ-Standardisation09-07.pdf>. On Ueno's crafts industry promotional activities, see the exhibition catalogue *The Isaburo & Felice "Lizzi" Ueno-Rix Collection: From Vienna to Kyoto/From Architecture to Craft* (Kyoto: Kyōto kokuritu gendai bijutsukan, 2009). On Koike Shinji, see Sun Da Xian, Miyazaki Kiyoshi, and Higuchi Takayuki, "1920–30 nendai ni okeru Koike Shinji no katsudō: Shōwa zenki no dezain keimo katsudō o megutte," *Desain-gaku Kenkyū*, vol. 54, no. 6 (2008), 1–10.
- 10 Ken Tadashi Oshima, *Constructing Kokusai Kenchiku: International Architecture in Interwar Japan* (Seattle: University of Washington Press, 2010), 240.
- 11 The impetus to add an architecture division first arose before the war as well, in 1939, through a personal connection between artist and member Inokuma Genichirō and architect Yamaguchi Bunzō. After the war, Inokuma revisited the idea and consulted Yamaguchi on potential membership. Overviews of the group's composition and activities are Andō Terumi "Shinseisaku(-ha) kyōkai kenchikubu: Inokuma Genichirō no katsudo kara," in Mori Hitoshi ed., *Japaniizu modan: Kenmochi Isamu to sono sekai* (Tokyo: Kokusho Kankōkai, 205), 170–4, and Funabiki Etsuko and Umemiya Hiromitsu, "Shinseisaku kyōkai kenchiku-bu no shōchō to sengo kenchikushi no ue ni okeru ishi: Shinseisaku kyōkai kenchiku-bu ni kansuru kenkyū," *Nihon kenchiku gakkai daikai gakujitsu kōen kōgai shū*, *Hokuriku* (2002), 387–8, 387 (hereafter referred to as Funabiki and Umemiya 2002a).
- 12 Shinseisaku kyōkai henshu iinkai, eds., "Zadanbai: Shinseisaku no 40-nen," *Shinseisaku yonjunen kinen sobyo-shu* (Tokyo: Shinseisaku Kyōkai, 1976, cited in Funabiki and Umemiya 2002a), 387.
- 13 Sawa Hajime, "Inokuma Genichirō-shi to kataru," in *Kyōiku Bijutsu* (Jan. 1951), 12–19, cited in Andō, 171.
- 14 Ibid.
- 15 Shinseisaku Art Society members accepted commissions in the name of the group, including the site design of the 1950 Kobe Trade and Industry Exhibition, a large export promotions fair, and buildings for the Dai Nihon seitō (sugar refinery) Sakai plant. This may have meant additional income or connections at a time of low capital for building projects. Significantly, Koike Shinji was in charge of the execution of the exhibition design. See Funabiki Etsuko and Umemiya Hiromitsu, "Nihon bōeki sangyō hakurankai (Kōbe haku, 1950) no kaijō keikaku ishoku keii nit suite: Kōbe haku kaijō keikaku ni okeru Shinseisaku-ha kyōkai kenchiku-bu to Koike Shinji," *Nihon kenchiku gakkai Kinki shibu kenkyū hōkoku-shū: keikaku-kei* 42 (2002), 1033–6; and "Nihon bōeki sangyō hakurankai (Kōbe haku, 1950) ni okeru Koike Shinji no hakurankai shirario to Shinseisaku kyōkai kenchiku-bu no kaijō sekkei ni tsuite: Shinseisaku kyōkai kenchiku-bu ni kansuru kenkyū," *Nihon kenchiku gakkai gakujitsu kōgaishū, keikakukei* (2002), 389–90.
- 16 "Sa-e-ra," *Shinkenchiku* (Feb. 1949), 64, cited in Funabiki and Umemiya (2002a), 387.
- 17 "Shin Seisakuha-ten no kenchiku kogei," *Kōgei Nyūusu* (Nov. 1950), 4–9.
- 18 Andō, 170.
- 19 Upper-case English as in the original. "Shinseisaku kyōkai kenchiku-bu sakuhin boshi kitei," unpublished document, c. 1951, cited in Funakoshi and Umemiya (2002a), 378, n5.
- 20 "Shinseisakuha-ten no kenchiku kogei," 4–9. Ikebe showed furniture regularly from the 1950 exhibition onward too, starting with the set of model kitchen units that had occupied much of his research time. Both Yamaguchi and Ikebe also produced prefabricated housing prototypes in the early 1950s. Although this essay cannot address building prefabrication as a kind of industrial design, the links are clear.
- 21 Nakai, 11; Yoshitake, 44, "Katsu [Toyoguchi Katsuhei]," "Tenrankai: Shinseisaku kyōkai-ten," *Kōgei Nyūusu* (Oct. 1954), 35. See also Funabiki and Umemiya 2002a, 387.
- 22 Photographs of the Detroit model room installations and similar interiors had been provided to the IARI by Occupation authorities and published as "Modern Living," *Kōgei Nyūusu* (Feb. 1950), 19–23.
- 23 Hattori Shigeo, "Abusutorakuto ato to indasutoriaru dezain," *Kōgei Nyūusu* (Feb. 1950), 12–3, 12. Hattori has paraphrased this statement from an article in the January 1950 issue of *Design*, the journal of the Council of Industrial Design (UK). See also Kenmochi's analysis of the role of abstract form in his critical overview of contemporary design practice in the *Mizue* special issue. Kenmochi Isamu, "Gendai dezain no seiritsu," *Bessatsu Mizue* (1953), 6–10.

24 These included Watanabe, who at one point located his small design studio in one corner of an architectural office and created furnishings for Seike's domestic interiors of the period, and Kenmochi's acquaintances with Tange and Yoshimura Junzō.

25 See Sarah Teasley, "Furnishing the Modern Metropolitan: Moriya Nobuo's Designs for Japanese Domestic Interiors, 1922–7," *Design Issues*, vol. 19 no. 4 (Oct. 2003), 57–71.

26 Nakai Taiichiro, "Shinseisaku-ten wo mite," *Kōgei Nyūusu* (April 1951), 11.

27 Reviewer Yoshitake Mōsuke in *Kōgei Nyūusu* was particularly impatient, writing: "The Furniture Division of the Shinseisaku Art Society's Exhibition, held September 27–October 5, is a prototype for interior design centering around furniture. Among the few art exhibitions to display furniture, it is an annual event of which we expect satisfactorily experimental results. However, with the exception of the work of one group of members, the preponderance of slight ideas stood out, and there were pieces that felt weak and unformed, like premature infants. Wouldn't Yamaguchi's chair and table attached to a screen wobble if actually used? If we consider the actual use of space, I think it's no more than a whim. The construction of Shiraishi's chaise longue is overly complex and no one will like it. I think that there is a limit to mechanization in furniture. I can't find any new research in Sasa's lighting fixtures, and Watanabe Sumiko's chair and Watanabe Yu's loveseat represent the wafer-thin magnificence of the group." "Mō" (Yoshitake Mōsuke), "Tenrankai: sōsaku kōgei ten, Shinseisaku ten kenchiku-bu (graph)," *Kōgei Nyūusu* (Dec. 1953), 43–6, 44.

28 Nakai, 11.

29 "Shinseisaku-ha ten no kenchiku kōgei," *Kōgei Nyūusu* (Nov. 1950), 4–9, 5.

30 The IAI was known as the Industrial Arts Research Institute (IARI) until 1949.

31 In midcentury Japan's culture of artist group exhibitions as counterparts to the larger and more established annual salons, the Shinseisaku Art Society's Architecture Division's exhibition was neither the only major public exhibition to show furniture alongside art and modern craft nor the sole opportunity for designers to publicly display their work. Designers could—and did—organize exhibitions of their own at department stores and submit projects to the Mainichi Industrial Design Prize, begun in 1951 and publicized nationally in the Mainichi newspaper. They could also, through manufacturers, show work at domestic trade fairs, designed to improve quality through comparison and promote product exports, or at displays of model home interiors in department stores, intended to educate the public and whet consumer interest. However, the Shinseisaku Art Society's prominence and the well-known artists and architects involved gave it cachet for designers and the press, and its early identification of furniture and architecture as a new, optimal form for artistic production distinguished it from other exhibitions. On the culture of exhibitions, see Omuka Toshiharu, *Kanshū no seiritsu: bijutsuten, bijutsu zasshi, bijutsushi* (Tokyo: Tōkyō daigaku shuppankai), 2008.

32 Tange concentrated on displaying architectural work such as models, drawings, and photographs for the Hiroshima plan (1949–52) and Tokyo Metropolitan Government Building (1952–8), in addition to undertaking exhibition design.

33 Tange Kenzō, "Kenchiku, chōkokku, kaiga no toitsu ni tuite: Shinseisaku kyōkai-ten ni kanren shite," *Shinkenchiku* (Nov. 1949), 32. Tange referred to this quality as "Modernism," perhaps following on Le Corbusier's similar assertions twenty-five years earlier and their subsequent adoption and reiteration by Henry Russell Hitchcock and Philip Johnson at MoMA.

34 "Kokunai nyūusu: dai 2-kai kōgyō dezain kensho boshū nyūshōsaku happyō," *Kōgei Nyūusu* (Dec. 1953), 40, 47.

35 Winning entries were displayed as part of the annual Mainichi Shinbunsha Industrial Design Exhibition. From 1955, the newspaper also sponsored its own awards for industrial and graphic design activity in the last calendar year; this award joined its award for the best newspaper advertisement, a competition created in 1931.

36 In Japanese, the IDC was first known as the "Kokusai dezain kyōkai" [International Design Association], and subsequently changed its name to the transliterated "Kokusai dezain komitii."

37 The invitation to participate in Milan originated in the Triennale secretariat's favorable impression of JETRO's display at the 1953 Canadian International Trade Fair—organized by the IAI and designed by Kenmochi—in Toronto. Kenmochi Isamu, "Dezain sentaa to shite no torienare ten," *Kōgei Nyūusu* (Jan. 1955), 30–3 and 49, 30.

38 Tsunemi, 164–5. It also, according to Katsumi, allowed the group to function as a mechanism for communication between architects, critics, designers, and artists pursuing similar questions in related fields (Katsumi 1956). This last function should seem little different from that of the private associations such as the New Creation Association, but both the degree of formality, which allowed larger-scale activities, and the direct expected contribution to state and private economic gain through sales of Japanese products overseas represented a shift that went far beyond the Nippon Plastic Culture Association's concern for craft design.

39 The first sixteen members were architects Tange Kenzō, Yoshimura Bunzō, Seike Kiyoshi, Yoshizaka Takamasa, and Hamaguchi Ryūichi; graphic designers Hara Hiromu, Kamekura Yusaku, Kono Takashi, and Itō Kenji; industrial designers Watanabe Riki, Kenmochi Isamu, Yanagi Sōri, and design critic Katsumi Masaru; artists Okamoto Tarō and Takiguchi Shūzō; and photographer Ishimoto Yasuhiro.

40 This also allowed the IAI to focus its attention on developing techniques for improving product quality and prototyping products that might do well in overseas markets.

41 Other good-design promotional activities included an exhibition of European and American modern design objects from the MoMA collection at the Tokyo National Museum of Modern Art in 1957 and publications including articles in the art and design press, newspapers and general magazines, the monthly lifestyle magazine *Living Design* (1955–8), and books such as the Japanese translation of Kaufmann's *What Is Modern Design?: Kindai dezain to wa nani ka*, trans. Ikuta Tsutomu (Tokyo: Bijutsu shuppansha, 1953).

42 On "Good Design" exhibitions at MoMA, see Terence Riley and Edward Eigen, "Between the Museum and the Marketplace: Selling Good Design," in *The Museum of Modern Art at Mid-century: At Home and Abroad* (New York: MoMA and Abrams, 1994), 150–79.

43 Tange 1953, 85.

44 Ibid.

45 "Zadanbai: modan ribingu to indasutoriaru dezain wo kataru," *Kōgei Nyūusu* (Jan. 1952), 37–42, 40.

46 Ibid., 40–1.

47 Ibid., 41.

48 The Kagawa Prefectural Government Building project followed the Tokyo Metropolitan Government Building (competition in 1952), Shimizu City Hall (1953), and Kurayoshi City Hall (1955) in Tange's large oeuvre of government office projects in the 1950s.

49 Isamu Noguchi, a mutual friend and colleague of all three men (Kenmochi first met Noguchi in Tange's office at the University of Tokyo in June 1950, in a meeting arranged by Inokuma), then working in a village just outside Takamatsu, contributed a sculpture. On Kenmochi's meeting with Noguchi, see Kenmochi Isamu, "Kōgei shidō ni okeru Isamu Noguchi," *Kōgei Nyūusu* (Oct. 1950), 19–23, 19; Matsumoto Tetsuo, "Deai kara Japanizu modan he," in Mori ed., 18–22; and Bonnie Rychlak, *Design: Isamu Noguchi and Isamu Kenmochi* (New York: Five Ties Publishing in association with the Isamu Noguchi Foundation and Garden Museum, 2007).

50 Ando, 171. Tange was one of two recommendations, alongside Maekawa, but Maekawa was already engaged in designing the Okayama Prefectural Building, so Tange was selected.

51 Many thanks to Seng Kuan for introducing me to the Kenmochi-attributed chairs for the Tange residence; worth pursuing further in terms of Tange's relation to furniture design are Tange's own later chair designs for his home, presumably created based on the Kenmochi-attributed originals.

52 Furniture designers employed in architecture offices in the early 1950s included Mizunoe Tadaomi (Maekawa), Chō Daisaku (Sakakura), and Matsumura Katsuo (Yoshimura). Watanabe Riki conducted joint research with Seike, but operated independently and was not a member of Seike's office. Tange's outsourcing of furniture design may have been required by the fact that his design team was run as a lab within the University of Tokyo rather than as a private office, disallowing the possibility of non-architects and urbanists joining the team.

53 See Matsumoto for the financial situation of Kenmochi Design Associates in its early years.

54 Kenmochi Isamu, "Interia dezain no ichi," *Kōgei Nyūusu* (May 1954), 1.

55 The "tradition debates" ran in *Shinkenchiku* in 1955–6; among the participants were Tange, Seike Kiyoshi, and Yoshimura Junzō. See Yoneyama Isamu, "Dentō ronsō: janarizumu to shite no 'Jōmon vs. Yayoi,'" in *20 seiki kenchiku kenkyū* (Tokyo: INAX shuppan, 1998); Hajime Yatsuka, *Shiso to shite no Nihon kindai kenchiku* (Tokyo: Iwanami shoten, 2005); and Kazuaki Miyata, Imakake Toshihiro, and Okagawa Mitsugu, "Dentō ronsō' ni okeru sanka kenchikuka no dentō hyōgen ni kansuru kenkyū," *Nihon kenchiku gakkai daikai gakujitsu kōen kōgaishū*, *Kyūshū* (2007), 635–6. An overview of Tange's position(s) on tradition is Taji Takahiro and Kadowaki Minoru, "Tange Kenzō no dentō-ron, sono 1" and "Tange Kenzō no dentō-ron, sono 2," *Nihon kenchiku gakkai daikai gakujitsu kōen kōgaishū*, *Chūgoku* (2008), 681–2 and 683–4. See also Jonathan M. Reynolds, "Ise Shrine and a Modernist Construction of Japanese Tradition," *Art Bulletin* 83 (June 2001), 316–41. Tange's own presentation of the Kagawa design in this context is Tange Kenzō, "Gendai kenchiku no sōzō to Nihon kenchiku no dentō," *Shinkenchiku* (June 1956), 36–7. For specific discussions of Tange's application of his theory of Yayoi and Jōmon architecture to Kagawa and other public commissions in the 1950s, see Tsuzuki Hajime, Imakake Toshihiro, and Okagawa Mitsugu, "Tange Kenzō no gensetu to kenchiku sakuhin ni okeru Nihon-teki kōsei ni kansuru kenkyū," *Nihon kenchiku gakkai daikai gakujitsu kōen kōgaishū*, *Hokkaidō* (2004), 819–20, and Yamamoto Tadashi, "Dentō ronsō no genba wo kaerimiru," *Kenchiku Zasshi* (April 1996), 30–1.

56 The coexistence of Corbusian and traditional elements was not necessarily a contradiction; indeed, as Fujimori Terunobu and others have pointed out, Tange likely arrived at his theoretical position on tradition and methods for its practical implementation in part through his study of Le Corbusier's work. See Fujimori Terunobu, "Ru Korubuyuje to Tange Kenzō," in Takashina Shūji, Suzuki Hiroyuki, Miyake Riichi, and Ōta Yasuto, eds., *Ru Korubuyuje to Nihon* (Tokyo: Kajima shuppankai, 1999); Tange Kenzō and Fujimori Terunobu, *Tange Kenzō* (Tokyo: Shinkenchikusha, 2002), and Benoît Jacquet, "Principles of Latent Monumentality in Tange Kenzō's Concepts of Tradition and Creation," *Journal of Architecture and Planning*, no. 601 (March 2006), 211–6.

57 See, for example, Kenmochi Isamu, "Japanizu modan ka, Japonika sutairu ka," *Kōgei Nyūusu* (Sept. 1954), 2–7, and his exhibition design for the JETRO exhibit at the 1953 Canadian International Trade Fair in Toronto, recorded in "1953-nen Kanada kokusai mihon-ichi no Japanese Show Room," *Kōgei Nyūusu* (June 1953), 43–6. Overviews of Kenmochi's writings and work in this period including discussion of the Japonica debates are Mori ed. and Rychlak.

58 Kenmochi's executive desk and chair were subsequently adapted for mass-production by Tendō Mokko and sold as "Tendō #7020."

59 On Inokuma's position toward Noguchi's work and a useful overview of positions within the fine-art world on the "tradition debate," see Adachi Gen, "Senkyūhyakugōjūnen-dai no zenei geijutsu ni okeru 'dentō ronsō': Isamu Noguchi no eikyo wo chūshin ni," *Tōkyō geijutsu daigaku bijutsu gakubu ronsho*, no. 1

(April 2005), 1–19. See also Bert Winther-Tamaki, *Art in the Encounter of Nations: Japanese and American Artists in the Early Postwar Years* (Honolulu: University of Hawaii Press, 2001).

60 Funabiki and Umemiya 2002a, 388.



# REREADING URBAN SPACE IN JAPAN AT THE CROSSROADS OF WORLD DESIGN

Ken Tadashi Oshima

The establishment of Tange Kenzō + URTEC, a term derived from “urbanist architect” that followed the model of Walter Gropius and The Architects’ Collaborative (TAC), attests to the architect’s lifelong commitment to architecture engaging the urban realm. From 1951, Tange brought the discourse on the Japanese city to the world stage, presenting the Hiroshima master plan at the 8th CIAM (Congrès Internationaux d’Architecture Moderne) conference on the “Heart of the City” at Hoddesdon, England, and his Tokyo Metropolitan Government Building and Kagawa Prefectural Government Building designs at the 1959 CIAM in Otterlo in the Netherlands. He then taught at the Massachusetts Institute of Technology from October 1959 to February 1960, where he discovered the close connection between Harvard and MIT through the newly established Joint Center for Urban Studies (1959) and the work of Kevin Lynch (1918–1984) and Gyorgy Kepes (1906–2001), among many other renowned urbanists, architects, and theorists. Tange’s time in Cambridge was soon followed by the 1960 World Design Conference in Tokyo (May 11–16), the unveiling of the 1960 Tokyo Plan (in 1961), and the publication of *Nihon no toshi kūkan* (Urban Space in Japan) in 1968 that presented the work of Tange and the City Design Research Group (*Toshi dezain kenkyūtai*) including Isozaki Arata (b. 1931) and Itō Teiji (1922–2010) during the 1960s.<sup>1</sup> Although *Nihon no toshi kūkan* has yet to be published in English despite its multiple printings, it has profoundly influenced the visual and conceptual reading of urban space in Japan and its continually evolving physical manifestation.

Origins of *Nihon no toshi kūkan* can be found emerging from Tange’s time in Cambridge and served as the basis for a broader discussion on urban thinking and design from the 1960s on, both inside and outside Japan, particularly with regard to the Harvard University Graduate School of Design, with the legacy of Josep Lluis Sert (1902–1983), Maki Fumihiko (b. 1928), and many others. One of the most important works to come out around the time of Tange’s stay in Cambridge was Kevin Lynch’s *The Image of the City* (1960), which marked the establishment of the Joint Center for Urban Studies and its mission to organize and encourage research on urban and regional problems. Lynch’s work sought to transcend bureaucratic planning to focus on the “urban landscape,” which he wrote is “something to be seen, to be remembered, and to delight in. Giving visual form to the city is a special kind of design problem, and a rather new one at that.”<sup>2</sup> By this time, the CIAM meetings had ended and the

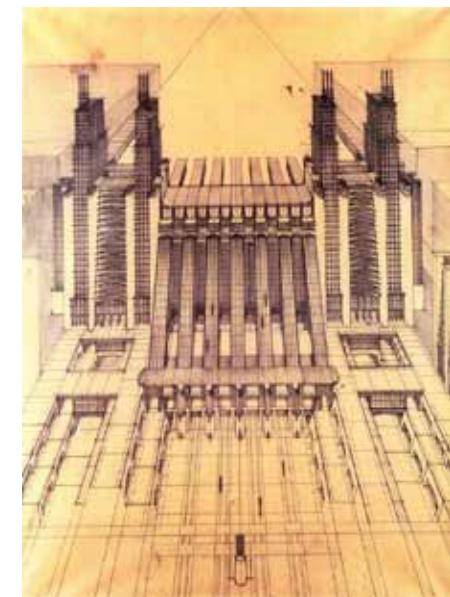
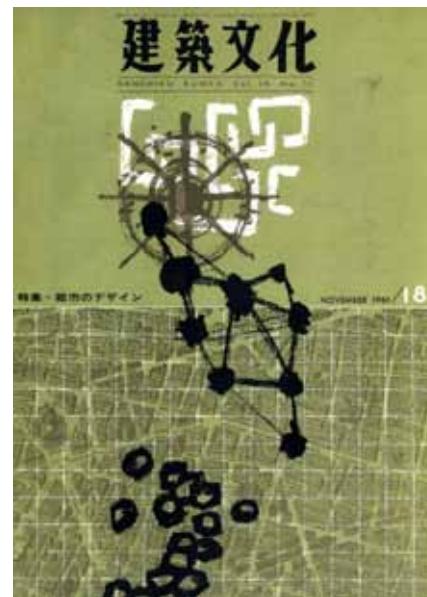
stronghold on functionalist architectural thought began to break down with growing concern for urban geography, urban topography, and urban artifacts. This period led to publications such as Aldo Rossi's *The Architecture of the City* and Robert Venturi's *Complexity and Contradiction in Architecture*, both from 1966, as well as *Nihon no toshi kukan*.

Common to these works was a concern for how we orient ourselves in the city. Lynch, in searching for "clarity or legibility in a beautiful city," ranging from Boston to Jersey City to Los Angeles, argued that "to understand this, we must consider not just the city as a thing in itself, but the city being perceived by its inhabitants."<sup>3</sup> Rather than seeing the city from afar as chaotic, Lynch looked from the ground to how it may be enjoyed or imagined. "Imageability" was a term he defined as "that quality in a physical object which gives it a high probability of evoking a strong image in any given observer. It is that shape, color, or arrangement which facilitates the making of vividly identified, powerfully structured, highly useful mental images of the environment. It might also be called legibility, or perhaps visibility in a heightened sense, where objects are not only able to be seen, but are presented sharply and intensely to the senses."<sup>4</sup>

Lynch argued that users understood their surroundings in consistent and predictable ways, forming mental maps with five elements:

- paths: the streets, sidewalks, trails, and other channels in which people travel;*
- edges: perceived boundaries such as walls, buildings, and shorelines;*
- districts: relatively large sections of the city distinguished by some identity or character;*
- nodes: focal points, intersections, or loci*
- landmarks: readily identifiable objects that serve as reference points*

This thinking to connect people and their perception of the built environment at multiple scales deeply influenced Tange during his time at MIT, where he led a studio on a dwelling environment for 25,000 people in Boston Harbor. Presenting this project at the 1960 Tokyo World Design Conference (which would lead to his 1960 Tokyo Plan), Tange explained:



Cover of Kenchiku Bunka's special issue, "City Design," (Nov. 1961).

Antonio Sant'Elia, La Città Nuova (1913).

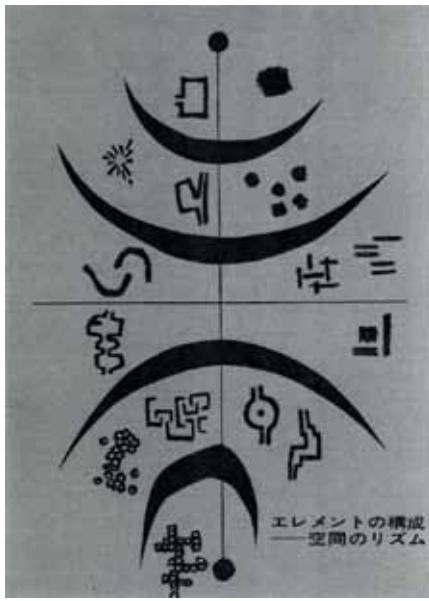
"Composition of Elements—Spatial Rhythm," from "Special Issue: City Design," Kenchiku Bunka (Nov. 1961).

Book page, Kevin Lynch, *The Image of the City* (1960).

New York aerial view.

Bruno Taut, *Alpine Architecture* (1917).





an irregular but approximately right-angled crossing is preferable to a precise trisection. Examples of such simple structures are parallel sets or specific forms, one, two-, or three-layered corners, strengthenings, or a few axes linked together.

Paths may also be crossed, not in a specific pattern of certain individual elements, but rather as a network which explains the spatial relations between all paths in the way without identifying any particular path. This confusion implies a grid which has some consistency, whence of division, topological interrelation, or interpenetration. A pure gridline excludes all others, but diagonal or topological assistance may be necessary to be quite efficient. The image sharpens if all paths running in one topological sense, or compass directions, are visually differentiated from the other paths. Thus the spatial distances between Masanobu's areas and areas are efficient. Color planning, or derived right sense equality with Number and matching, generates a space; topography, or levels, different conditions in the net may all give the grid a progression or even a scaled sense.

There is a least way of composing a path or a set of paths, which will become of increasing importance in a world of great distances and high speeds. It might be called "mobile," in analogy to music. The events and characteristics along the path—landmarks, space changes, dynamic sequences—might be organized as a mobile line, perceived and imaged as a form which is experienced over a substantial time interval. Since the image would be of a web already rather than a series of separate points, the image could presumably be more inclusive, and yet less demanding. The form might be the classical introduction-development-climax-conclusion sequence, or it might take more subtle steps, such as those which avoid final conclusions. The approach as has transpired across the key lines is a type of this mobile organization. The technique offers a rich field for design development and experiment.

*Design of Other Elements*

Right as well as paths call for a certain continuity of focus throughout their length. The edge of a business district, for example, may be an important concept, but be difficult to dis-



90

*It happened to be designed on the ocean at Boston, but its location is not of primary importance; as it bears within itself more fundamental problems... I would like to consider several orders according to which this super-human scale can be led into the level of human scale. I thought that it would be necessary to think in terms of a kind of space organization which would give a well-ordered order of space from the super-human scale which is expanded more and more by the new technology from the scale of nature itself, to what I call in my own words the mass human scale, and finally down to the level of the individual human scale where the individual life takes place.<sup>5</sup>*

Tange's discussion of dispersed "architectural elements (as) the basic structure of the city" beyond the megastructural "vertebrae" became the linear spine for the 1960 Tokyo Plan extending into Tokyo Bay, designed to address the burgeoning population problem.<sup>6</sup> Tange, however, faced a vocabulary of urban spaces in Tokyo, as the modern incarnation of the feudal capital of Edo, that were different from the ones that he and Lynch had addressed in Boston. As the Yale planner Christopher Tunnard noted at the World Design Conference, "American redevelopment architects could learn a great deal from some of the Asian and European postwar reconstruction schemes in which architects have tried hard and often successfully to fit their designs into the fabric and character of the older city."<sup>7</sup>

Subsequently the City Design Research Group including Isozaki and architectural historian Itō Teiji sought to find ways to realize "the restoration of spatial order in the city"<sup>8</sup> through design as well as research on Japan within a world context.<sup>9</sup> Tange further made structural pedagogical changes at this time by reorganizing the University of Tokyo's Department of Architecture into the Department of Urban Engineering.<sup>10</sup> For Isozaki, who had been working on a plan for Shinjuku rather than attending the World Design Conference, this task was not simply an empirical matter of zoning or mapping but rather a creative perceptual challenge to capture the life of the city through design analysis.

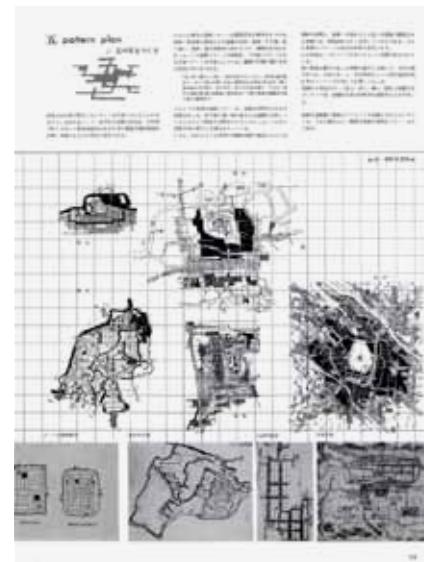
The group of architects and historians sought to create an updated urban design survey as the basis for conceptual methods of contemporary practice. Moreover, as historian Yatsuka Hajime has noted, the left-leaning group indirectly provided a critique of Japanese urban regulations and land readjustment policy.<sup>11</sup> As published initially in the November 1961 special issue



of *Kenchiku Bunka* entitled “city design” and subsequently as “*Nihon no toshi kūkan*” (December 1963), an extensive survey of urban visions through time—including Antonio Sant’Elia’s *Città Nuova*, Le Corbusier’s Plan Voisin de Paris, William Penn’s plan for Philadelphia, L’Enfant’s Washington, Daniel Burnham’s plan for Chicago, Camillo Sitte’s *The Art of Building Cities* (1889), and Tony Garnier’s *Cité Industrielle*—were provided by the City Industrielle Research Group. The city was presented here as physical, social, dynamic, symbolic, and visionary.<sup>12</sup>

The second half of this special issue analyzed “the pattern of the city-space-system.” In surveying the growth of form in urban patterns from around the world throughout time, the group identified several conceptual types: scattered, grid, thunder, five-pattern, focal, multifocal, linear, cluster, unit, eccentric, ring, finger, satellite, twin, and conservation plan. These types extended Kevin Lynch’s diagrams that had begun to develop an international graphic language. Although the group included Japanese examples within this framework, Isozaki concluded, “This study revealed that many of the characteristics of Japanese cities cannot be adequately explained on the basis of Western urban concepts” such as Vitruvian “focal plans.”<sup>13</sup> They thus identified alternate typologies, such as the way in which many Japanese castle plans could be seen to form the Chinese character for the number five.

The further development of this urban research resulted in the December 1963 issue of *Kenchiku Bunka*. In the summer of 1964, Isozaki undertook a worldwide investigation of cities from a small aircraft to highlight the differences among maps, aerial views, and street views—an exercise that can now be done with Google Maps). The final revised publication in 1968 of *Nihon no toshi kūkan* was the culmination of an intense decade of urban research. The first chapter (of six) on “methods of urban design” drew from multiple sources expanding from Lynch. After explaining the need for architects to embrace the city, as evidenced in programs at Harvard, Berkeley, and the University of Pennsylvania in the 1960s, and conventional methods of urban planning, the book outlines an approach for analyzing urban space in Japan that drew from varied sources including Marvin Manheim and Christopher Alexander’s “Graphic Technique for Highway Planning.” Alexander’s method evolved into his later Pattern Language in establishing a rational visual vocabulary to be used as a generating system in the built environment. It also drew

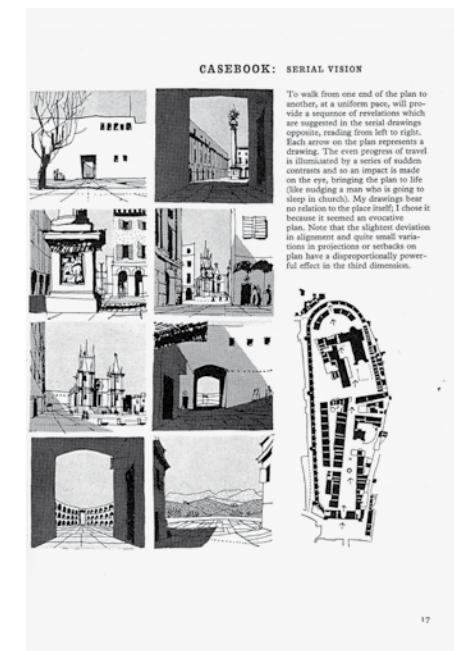


“五 pattern plan,” from “Special Issue: City Design,” from “Special Issue: City Design,” *Kenchiku Bunka* (Nov. 1961).

“Linear plan,” from “Special Issue: City Design,” *Kenchiku Bunka* (Nov. 1961).

Page 17, Cullen,  
*The Concise Townscape*,  
1961.

Gordon Cullen,  
*The Concise Townscape*,  
1961.



To walk from one end of the plan to another, at a uniform pace, will provide a sequence of revelations which are suggested in the serial drawings opposite. The arrows on the plan indicate the direction of travel. Each arrow on the plan represents a drawing. The even progress of travel is broken by changes in scale, contrast and so an impact is made on the eye, bringing the plan to life (as one does not normally sleep in church). My drawings bear no relation to the place itself; I chose it because it suited the needs of the plan. Note that the slight deviation in alignment and quite small variations in dimensions or setbacks on plan have a disproportionately powerful effect in the third dimension.

a dominant yet staggering task of deriving linguistic models from the complex and multi-layered urban scene. The designer's first task is to reduce the problem to language in order to make all of the requirements he wants to satisfy to working out his solution. In the example chosen, 26 separate requirements are constituted—a much briefer approach to the problem of housing design than a detailed engineering narrative such as the one above. Yet the same basic principles of graphic representation of relative desirability in music or a telephone overlay placed on the base map of the area. A simple scale of shading is used, from white for the least desirable locations to black for the most desirable. The result is a series of 26 modular maps shown on the opposite page, designated as *electronics*, *sorted by use*.

The next step seems almost magical, but it is based on “activity,” a well-established branch of advanced mathematics which has applications in logic and linguistics. This is his doctoral dissertation at the Harvard School of Design. According to Alexander, the key to the design problem is “a set of conflicts which interact—the possible ways in which the requirements can be met simultaneously.” If the designer can ascertain which of the requirements have common conflicts and which do not, then he can “sort” the requirements. This is what Alexander’s “*electronic decomposition of systems Which Have an Amalgamative Logic*” is all about: subgrouping of requirements which have the least conflict with each other. This produces the “tree” of related groups of requirements shown immediately at the top. If the designer can then “read” the tree as it is inverted, each of the requirements on the tree should be able to reduce the time into a single solution. The difficulty of combinations, of course, increases as one works his way up from the lowest level to the final solution at the top.

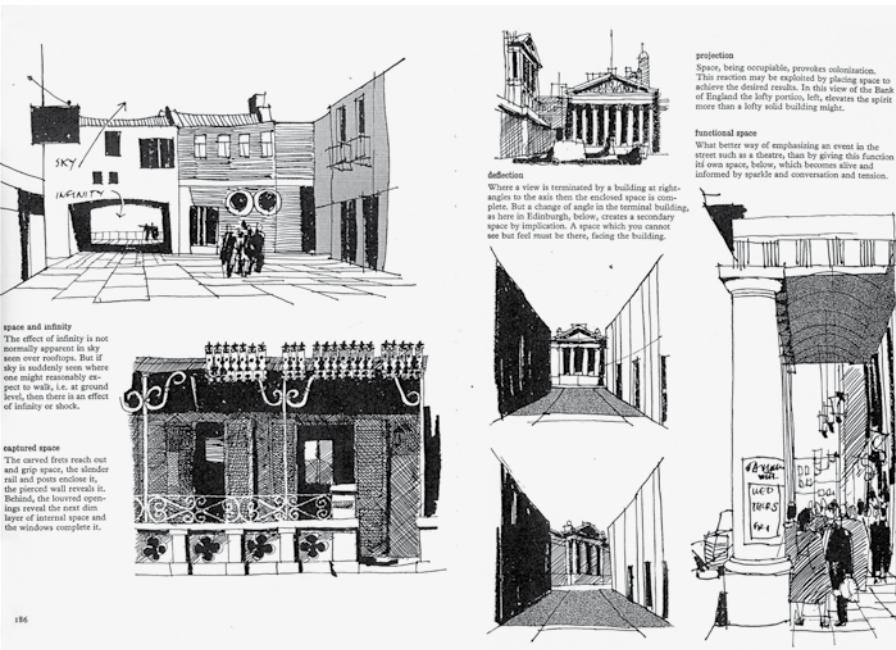
The resulting “electronic” diagram in this position (maps 100-101, bottom) is a combined graphic and text form. It is a composite photograph print of three four-exposure overlays (first revealed in diagram, right). By projecting these smaller constituents on a drawing board, the resultant pattern of desirability was resolved in a new drawing (“C”) as follows:

Marvin Manheim and Christopher Alexander found that it was remarkable how for the former one to detect the underlying common patterns in the composite print even though at first glance it might seem to be just a confusion of dots. According to the authors, the new diagram becomes in effect a “spatial-logical composite” actually more powerful than any electronic device (at least according to this tree), resulting in a new composite photograph.

Marvin Manheim and Christopher Alexander, “Graphic Technique for Highway Planning,” in *Architectural Forum* (October 1963).

from British author Gordon Cullen’s 1961 *The Concise Townscape*.<sup>14</sup> Cullen, in examining one’s “serial vision” in experiencing urban spaces, based his method on the notion that “the scenery of the town is often revealed in a series of jerks or revelations.”<sup>15</sup> Collectively, these principles formed the basis for analyzing the nebulous “city invisible” in Japan and explain theories behind projects such as the 1960 Tokyo Plan and Isozaki’s Cities in the Air.

[figure 8]



In addressing the specificities of Japan, *Nihon no toshi kukan* elucidated “principles of space order” rather than physical elements or emphasis on figure-ground urban plans such as those of Camillo Sitte. In contrast to historic cities in Europe, the book identifies fluid paradigms of spatial order in Japan as defined by “orientation,” “hierarchical accessibility,” “placement due to circumstances,” and the “esthetic triangle.”<sup>16</sup> This array highlighted dynamic principles based on asymmetry and development over time. Their qualities and characteristics are understood as formal-informal, process designing, imaginary space, and activity space.

This analysis formed both a verbal and a visual graphic dictionary of the spatial principles and types particular to Japan. Each two-page illustration of the key word or phrase was composed of a figure-ground diagram, explanatory text, maps, photographs, and drawings to collectively convey meaning. Words translated as “activity space” could not be simply mapped but rather relied on special notations of bars and restaurants or long-exposure photographs of areas such as Ginza or Shinjuku. The book’s urban grammar and vocabulary forms the basis for methods of spatial composition. These methods follow the processional movement of shrines and temples and thus prioritize the space between structures and the character of the underlying landscape. Techniques such as “symbolic eye stop” emphasize the experience of one’s movement through space rather than formal elements. One can trace the influence of Cullen’s analysis of “serial vision” applied to Japanese conditions in case studies such as the sequence of views recorded in experiencing the Nikkō Tōshōgū shrine, which is clearly not linear.

In highlighting dynamic urban space, *Nihon no toshi kukan* elucidates the spatial and perceptual effects of various elements in a particular place. The examination of how static elements dominate, divide, enclose, connect, support, cover, and surface

include examples ranging from Edo Castle, hovering over the capital, to temple and castle walls and corridors, arbors, umbrellas, and tile roofs. Phenomenal elements include snow, festivals, and lanterns glowing at night.

Following early chapters highlighting elements and principles of urban space, the book progresses to consider a range of case studies of historic temples, shrines, castles, and farmhouses beyond Tange's own complete book presentations of Katsura Villa (1960) and Ise Shrine (1965). Although the chapter expands the canon of Japanese architectural monuments, the presentation emphasizes formal compositional principles over typological classification. Farmhouses at Shirakawa are presented as examples of "village-type" composition, in contrast to "linear-type" towns, "ripple-type" coastal settlements, or "esoteric-type" shrine compounds such as Nikkō Tōshōgū.

The book concludes with a chapter on "Japanese Space Drawing," a polemic on the particularities of spatial depiction in Japan in comparison with Western examples. Author Isozaki highlighted how maps such as a precious illustrated one from 1844 are not proportionally accurate but rather expanded their coverage of areas of high interest and contracted others, much as do tourist maps today. He also pointed to conceptual differences in comparing an urban *Rakuchū rakugai* ("In and Around the Capital") screen painting with a sixteenth-century drawing of Bruges. While the Japanese depiction highlights the city dwellers' activities and obscures building details with fog, the European example shows no activities yet depicts minute details of each building form.

Extending the comparisons of methods of depiction, Isozaki compared the perspectival space of a baroque city with orthographic depiction of Japanese spaces. For him, these differences highlighted how urban spaces are not simply experienced but also perceived through a cognitive, culturally based lens. In this light, urban space was not solid form but rather a constantly changing image or illusion. For Isozaki this meant the demise of an overall image of a planned city and rise of a diversified, metabolic one. As he noted, "Our city is never fixed; it is always in a state of transition. City is process—no concept is more certain than that."<sup>17</sup>



Front cover, *Nihon no toshi kukan* (1968).



Inside cover, *Nihon no toshi kukan* (1968).

"Esthetic Triangle," *Nihon no toshi kukan* (1968).

Page 18, *Nihon no toshi kukan* (1968).

Page 12, *Nihon no toshi kukan* (1968).

"Principle of Space Order," *Nihon no toshi kukan* (1968).

Page 26, *Nihon no toshi kukan* (1968).

この手法をさらに展開したのがゲーリン・カレン<sup>18</sup>である。彼は数年間わたって古典的イギリスの都市の分譲と、それを構成する建物のレイアウトに注目し、その構成をまとめた。書名もそのまま「建築主義者による建物のレイアウト」で題している。またそこには空間の連續性である。またそれは、同時に幾何学的構成性を持ったものである。建物の構成内での流れであったり、二つ以上の都市要素を構成する建築家が連携することによって、建築群がその状況に建場を与えたりとする。さらにこれは、個別として、概念からなる連鎖で混沌化している折衷性をひとくちに説明するときの指標にまで高められていく。

かたごとに、街並を実体的に把握する方法は、「ゲーリングの都市計画からカントンの空間」と「黒魔術デザイン」による過程で重要な要素が見出されるであろう。パリの街並では建物の組合せ物理的に設計しようとされたのに対して、チャーチザニ昂は、すでに近代都市計画の存在を認めたりして、その機能的原則や機能をなうるうまいように分譲の意識が確立していったことである。収容とは違って、他の住民は既存と接觸する形態にまで仕組むことによって、プランナーの創いたルールの上の上の建築家がおなじうけ算用的取扱いを施したことを見てよいであろう。

ここにおいて都市計画と都市デザインが完全に合致したオーバージーから位置のものは、実際に実現してから黒魔術を学ぶといふ素朴なオカルト修行したのである。黒魔術デザインが秘密であり、現在は既知であると規定するならば、この分野はひとびとが理解のまゝにして歩んでおこう。隠れの七方に都市計画家、ときに建築家であればよい。この隠に因る新しい建築を導入する必要はない。事実、技術のデザインこそが収容にかかるとして隠すのかどう、そういう範囲は発生しなくてすむのである。





LEGACIES OF NIHON NO TOSHI KŪKAN

As a testament to *Nihon no toshi kūkan*'s lasting importance, it has recently been republished and made available to a new audience. The book can be read simultaneously as almost a pattern book of spaces that are the basis for architectural and urban design and a historic document featuring the theoretical principles of Tange's 1960 Tokyo Plan and Isozaki's Cities in the Sky. Tange and Isozaki realized these principles most vividly in their Festival Plaza design for the Osaka Expo '70, an activity space with movable seating, stages, dramatic computer-controlled sounds and lighting, and two dancing 40-foot-tall robots.

In the book's historic context and evolution one can see how its ideas continued through the individual careers of its contributors. Itō Teiji later expanded on the landscape notion of "borrowing space" in parallel to research for *Nihon no toshi kūkan*, publishing the book *Shakkei to tsuboniwa* in 1965, which would be published in English in 1973 as *Space in Illusion in the Japanese Garden*.<sup>18</sup> Itō, who was a visiting professor at the University of Washington, Seattle, from 1963 to 1965, became far more conscious of particularities of Japanese design through teaching the subject in English, ideas that he published in 1966 as *Nihon dezainron*. In common with *Nihon no toshi kūkan*, he elaborated on notions of "activity space" and "visualization of activities."<sup>19</sup>

Itō's writings, accompanied by images from architectural photographer Futagawa Yukio, would come to shape the understanding and image of Japanese architecture in English. These books include *The Roots of Japanese Architecture* (1963), *The Essential Japanese House* (1967), *The Elegant Japanese House* (1969), and *Imperial Gardens of Japan* (1970). One of Itō's unfinished projects is a Japanese-English architectural dictionary. Perhaps one of the most interesting entries is one for the word "ma," which was the title of Isozaki's exhibition 1978–81 in Paris and New York. Isozaki proposed the idea of "Ma: Space/Time in Japan" as a particular concept pervasive within life and culture in Japan that was displayed as an exhibition first held at the Festival d'Automne in Paris in 1978. Through a comparison of Euro-American and Japanese examples, Isozaki became conscious of varied linguistic and conceptual frameworks. As he later wrote:

*I began to look from a Western viewpoint at factors that had become through language and customs the flesh and blood of the Japanese. I began to decipher them using Western logic.*

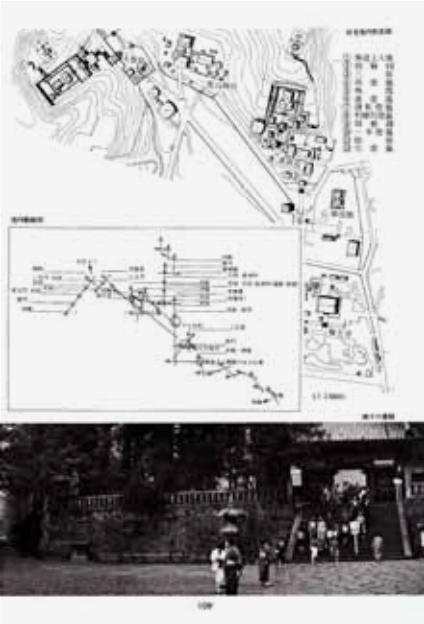


"Symbolical Eye-Stop,"  
"Marrying Detail," *Nihon no toshi kukan* (1968).

## Movement through Nikkō Shrine, Nihon no toshi kūkan (1968).

Rakuchū rakugai screen  
and sixteenth-century  
Bruges, *Nihon no toshi kukan* (1965).

“Baroque city” perspective  
and bird’s-eye view of  
Japanese domestic space,  
*Nihon no toshi kūkan*  
(1965).

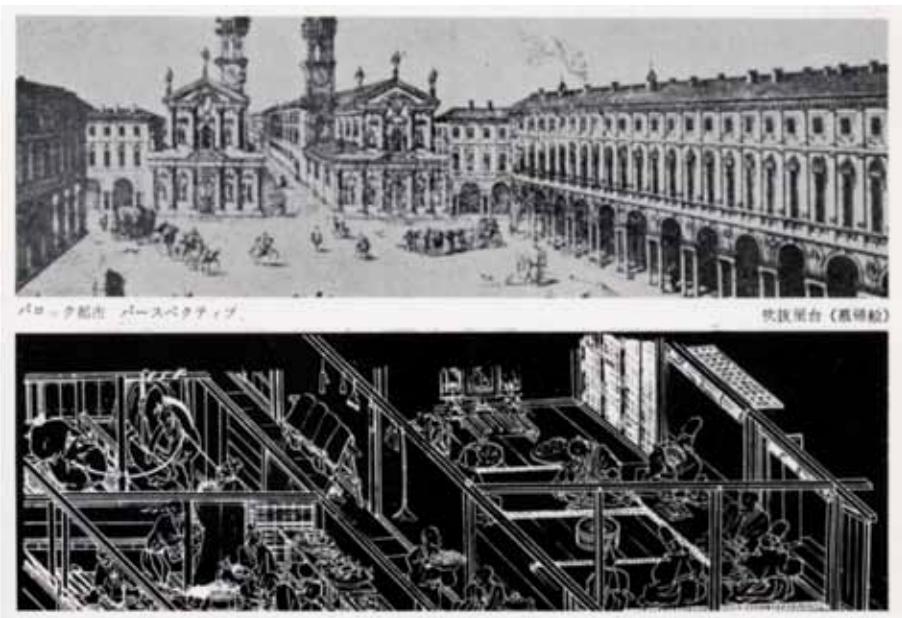


*For example, the Japanese understand “ma” perfectly, and it is a part of our sensibility. To expose that to the eyes of others is to reveal the contradictions that the Japanese have harbored for the last one hundred years of modernization. To ascertain through both Western and indigenous eyes the nature of the “Japan” in whose framework we are forced to live is to discover possibilities for dismantling and at the same time reconstructing “Japan.”<sup>20</sup>*

Although “Ma: Space/Time in Japan” was intended for an international audience outside of the country, he revisited the concept by presenting it to a Japanese audience twenty years later at Tokyo University of the Arts, using English terms such as “boogie-woogie” to describe aspects of “ma.”<sup>21</sup>

Also in 1978, Maki Fumihiko published his essay “Nihon no toshi kūkan to ‘oku,’” which appeared the following year in English as “Japanese City Spaces and the Concept of *Oku*.<sup>22</sup> Maki, part of the Tange group at Tokyo University until 1952, had been in the United States at Cranbrook, Harvard, and Washington University until returning to Tokyo in 1965. At this time, much of the original *Nihon no toshi kūkan* research had been completed, but he would be able to implement ideas on Japanese urban space as he had articulated in “Investigations in Collective Form” (1964) in his proposal for Shinjuku and the Hillside Terrace project (Tokyo, 1969–98). *Nihon no toshi kūkan* contributor Fukuzawa Kenji worked for Maki, and the influence of this research can be seen in the plaza designs of Maki’s Risshō University Kumagaya Campus project, which expresses the notion of alternating turns as seen in the stone steps of Nijō Castle.<sup>23</sup>

*Nihon no toshi kūkan*, in its reading of the signs and symbols of urban space in Japan, preceded Roland Barthes’s reading in *L’Empire des signes* (published in French in 1970 and English in 1982). The further evolution of the reading of urban space in Japan within an urban context can be seen in the 1986 exhibition “Tokyo: Form and Spirit” with its cover collage by Yokoo Tadanori.<sup>24</sup> The cover depicted Tokyo as a “collage city,” to borrow Colin Rowe’s phrase. Indeed, rather than fixed form, acrobats, waves, and a moving train animate the composition. More recently, Atelier Bow-Wow’s rereading of Tokyo following their time studying in Paris in the 2001 book *Made in Tokyo* continues the line of *Nihon no toshi kūkan* to develop a conceptual method of urban research in which Tokyo’s juxtapositions of disjointed



dynamic “pet architecture” becomes the antithesis of the unified boulevards of Haussmanian Paris.<sup>25</sup>

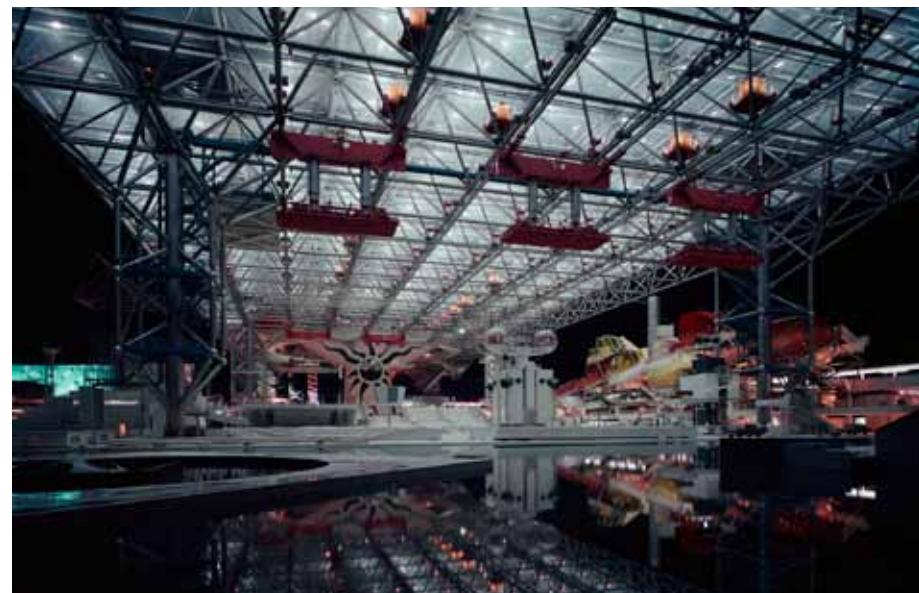
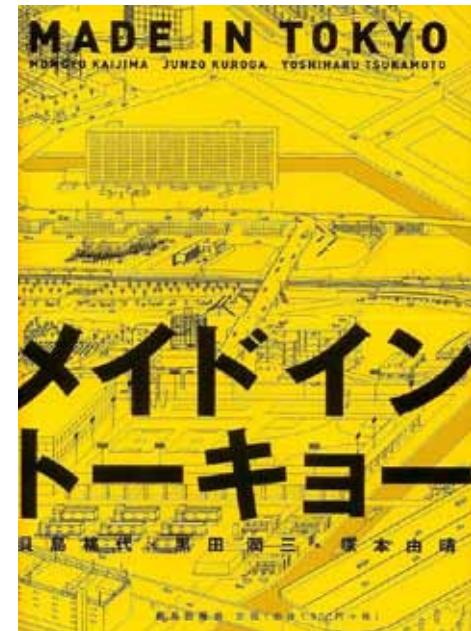
The Tange research group’s vision of the multiplicative and free-floating nature of urban signifying systems, as seen in “Tokyo: Form and Spirit” and *Made in Tokyo*, depicting the kaleidoscopic reality of contemporary urban Japan, remains powerful today. These many readings of urban space in Japan came about within an international context through direct comparison and translation, both verbally and visually, highlighting the complexity of ways we see, perceive, and experience cities. In the twenty-first century, *Nihon no toshi kukan* is not only situated in Japan but one can see Maki’s vision of architecture and the city being realized within the World Trade Center development or on the cover of his most recent book, *Nurturing Dreams*, which depicts the high-rises of Shinjuku framed by a window from Lina Bo Bardi’s Sesc Pompéia tower (1977–82) in São Paulo.<sup>26</sup> Within an increasingly global-local world context, these connections and contradictions of a multidimensional “imageability” continue to map out trajectories of urbanism today.

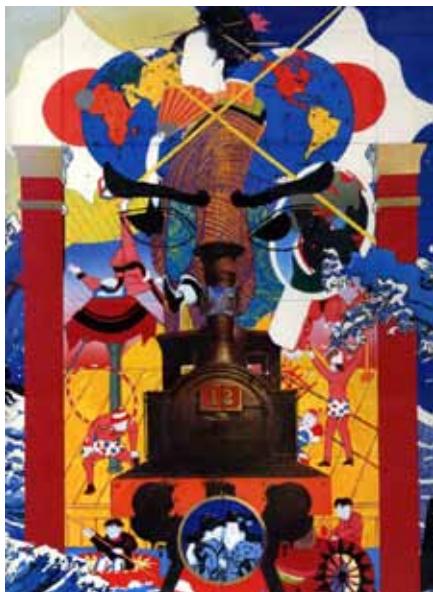
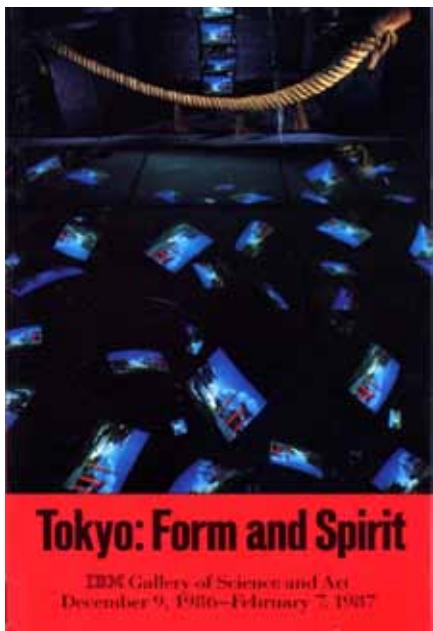
Cover, *Made in Tokyo* (2001).<sup>25</sup>

Poster, *Tokyo: Form and Spirit* (1986).

Tange Kenzō and Isozaki Arata, Osaka Expo’70 Festival Plaza.

Cover, Yokoo Tadanori, *Tokyo: Form and Spirit* (1986).





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- 2 Kevin Lynch, *The Image of the City* (Cambridge: MIT Press, 1960), preface, v. The Tange research group published Japanese translations of Lynch's writings including *The Image of the City in UR*, edited by Morimura Michiyoshi and Tsuchida Tsutomu (Tokyo: Tōkyō daigaku shuppansha, 1967), 43–62.
- 3 Lynch, *The Image of the City*, 3.
- 4 Ibid., 9–10.
- 5 World Design Conference Organization Editorial Committee/Kokusai Bunka Kaikan, *World Design Conference/Sekai Dezain Kaigi gijiroku* (Tokyo: Bijutsu shuppansha, 1961), 182.
- 6 Ibid., 222.
- 7 Ibid., 116.
- 8 Tange Kenzō Team, "A Plan for Tokyo, 1960—Toward a Structural Reorganization," *Japan Architect* (Apr. 1961), 32.
- 9 The original group consisted of Itō Teiji, Kawakami Hidemitsu, Isozaki Arata, Morimura Michiyoshi, Tsuchida Tsutomu, Koderā Takehisa, Kobayashi Atsuo, Tomita Reiko, and Hayashi Yasuyoshi. The group listed in the final published version of *Nihon no toshi kūkan* consisted of Itō Teiji, Isozaki Arata, Tsuchida Tsutomu, Hayashi Yasuyoshi, Tomita Reiko, Ōmura Kenichi, Watanabe Jirō, Torisū Nachio, Fukuzawa Kenji, Murai Kei, Yamagishi Kiyoshi, and Yamaoka Kiyonori.
- 10 Toyokawa Saikaku, "The Information Society Theories of the Tange Lab and URTEC: The National Development Map and the Activity of Architecture," Harvard University Graduate School of Design Tange Workshop paper, October 2009.
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- 15 Gordon Cullen, *The Concise Townscape* (New York: Van Nostrand Reinhold, 1961), 9.
- 16 Tange et al., *Nihon no toshi kūkan*, 29.
- 17 "City," in Ken Tadashi Oshima, *Arata Isozaki* (London: Phaidon, 2009), 203.
- 18 Itō Teiji, *Shakkei to tsuboniwa* (Kyoto: Tankōsha, 1965); *Space in Illusion in the Japanese Garden*, translated by Ralph Friedrich and Masajiro Shimamura (New York: Weatherhill, 1973).
- 19 Itō Teiji, *Nihon dezainron* (Tokyo: Kajima shuppankai, 1966).
- 20 Isozaki, *GA Architect 6 Arata Isozaki*, vol. 1, 1959–1978 (Tokyo: A.D.A. Edita, 1996), 248.
- 21 "MA—Twenty Years On," October 3–November 26, 2000, Tokyo University of the Arts.
- 22 Maki Fumihiro, "Japanese City Spaces and the Concept of *Oku*," *Japan Architect* (May 1979), 51–62. Also published as "The City and Inner Space," *Japan Echo*, vol. 6, no. 1 (1979), 91–103.
- 23 Toyokawa, "The Information Society Theories of the Tange Lab and URTEC," note 40.
- 24 Mildred Friedman, ed., *Tokyo: Form and Spirit* (New York: Harry N. Abrams, 1986).
- 25 Tsukamoto Yoshiharu, Kaijima Momoyo, and Kuroda Junzō, *Made in Tokyo* (Tokyo: Kajima shuppankai, 2001).
- 26 Maki Fumihiro, *Nurturing Dreams: Collected Essays on Architecture and the City*, ed. Mark Mulligan (Cambridge: MIT Press, 2008).



## KENZŌ TANGE

- 1913 Born in Osaka Prefecture
- 1935–38 Enrolled in architecture program at Tokyo Imperial University; came into contact with mentor Kishida Hideto
- 1938–41 Employed in the office of Maekawa Kunio; also came under influence of Sakakura Junzō after 1939, assisted Sakakura on design projects
- 1941–46 Enrolled in graduate school under guidance of Takayama Eika
- 1942 Won first prize in competition for Monument to Greater East Asia Co-Prosperity Sphere
- 1946 Appointed assistant professor of architecture at Tokyo Imperial University
- 1949 Won first prize in competition for Hiroshima Peace Memorial complex; elected member of Shinseisaku Art Society
- 1959 Submitted doctoral dissertation: "Regional Structure and Architectural Form of a Metropolis"; visiting professor in fall semester at MIT
- 1960 Served as program director of the World Design Conference in Tokyo
- 1961 Publication of *A Plan for Tokyo, 1960*
- 1963 Appointed professor of urban engineering at the University of Tokyo
- 1964 Completion of Yoyogi National Indoor Stadiums; awarded Diploma of Merit from International Olympics Committee
- 1965 Won first prize in competition for Skopje's reconstruction; awarded Gold Medal by Royal Institute of British Architects
- 1966 Awarded Gold Medal by American Institute of Architects
- 1970 World Expo in Osaka; served as producer of core facilities since 1967
- 1971 Awarded honorary doctorate degree by Harvard University
- 1980 Awarded the Order of Culture by the Japanese government
- 1983 Elected member of the Académie des Beaux Arts
- 1986 Awarded Grand Prize by the Architectural Institute of Japan for lifelong contribution to the "Solidification and Internationalization of Modern Architecture in Japan"
- 1987 Awarded the Pritzker Prize
- 1991 Completion of new Tokyo Metropolitan Government Building
- 2005 Died in Tokyo

## CONTRIBUTORS

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YASUFUMI NAKAMORI is an Associate Curator of Photography at the Museum of Fine Arts in Houston. He teaches a course on twentieth-century Japanese art and architecture at Rice University. The recipient of a PhD in art history from Cornell University, Nakamori is the author of *Katsura: Picturing Modernism in Japanese Architecture: Photographs by Ishimoto Yasuhiro* (2010). He is currently working on a book-length manuscript focusing on Isozaki Arata's collaborative projects with artists, photographers, and philosophers from 1960 to 1980.

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YATSUKA HAJIME is Professor of Architecture at Shibaura Institute of Technology. His recent books include *An Intellectual History of Modern Japanese Architecture* (*Shisō toshite no Nihon kindai kenchiku*, 2005), *Metabolism Nexus* (2011), and *Hyper den-City* (2011). He was chief consulting curator to the exhibition *Metabolism: The City of the Future* (Mori Art Museum, 2011).

PHOTO CREDITS

## THE GSD AND JAPAN

Mohsen Mostafavi

The long history of the Harvard Graduate School of Design's engagement with Japanese design culture has been extended through several recent initiatives, in addition to the suite of activities—exhibitions, symposium, publication—around the twenty-fifth anniversary of the Kenzo Tange Visiting Professorship in Fall 2009.

In Fall 2010, the Special Collections department of the Frances Loeb Library hosted an exhibition on a project led by Adjunct Associate Professor Mark Mulligan on "Digital Archaeology: Unearthing Frank Lloyd Wright's Imperial Hotel," which deployed advanced modeling and animation software to recreate this legendary building from Japan's past. The following spring, a popular lecture series entitled "A New Innocence: Emerging Trends in Japanese Architecture" brought Sou Fujimoto, Junya Ishigami, Kazuyo Sejima and Ryue Nishizawa, and Toyo Ito to the GSD to speak about their innovative practices.

In the GSD's second semester-abroad offering, twelve students traveled to Japan in Spring 2012. The focus of the studio, led by Toyo Ito, was on the Tohoku region, devastated by the tsunami and its aftereffects. Several other students had spent two months in northeastern Japan as GSD Community Service Fellows in the summer of 2011, addressing the needs of earthquake victims.

As this volume is released, the GSD is hosting a major exhibition guest curated by Ken Tadashi Oshima entitled "Tectonic Visions Between Land and Sea: The Works of Kiyonori Kikutake," which examines the visionary projects of this key Metabolist figure.

Other Japan-focused activities include recent courses on Japanese construction and the city of Osaka, and planning for an exhibition of traditional Japanese woodworking tools from the Takenaka Corporation collection. All of these investigations and presentations speak to the historical resonance and contemporary excitement that is present in the study of Japanese architecture and urbanism. At the GSD, we will continue to promote this enriching exploration into Japan's consistently influential design culture.

## ACKNOWLEDGMENTS

This volume owes its existence to many people, both in Japan and at Harvard. Graduate School of Design Dean Mohsen Mostafavi's strong belief in the significance of Tange Kenzō's work to current generations of students was reflected in his crucial support for the suite of related GSD activities: Tange exhibition, conference, and now, publication.

For their critical engagement with the GSD around these efforts and the bestowal of the Tange Kenzō archive to the Frances Loeb Library's Special Collections Department, sincere thanks go to Mrs. Tange Kenzō, Paul Noritaka Tange, and Denise Tange. We also acknowledge with gratitude the assistance of Hara Chiaki, Matsuda Kenichi, and Ichikawa Yumiko.

We are grateful as well to the GSD's Kenzō Tange Fund for sponsoring "Utopia Across Scales: Highlights from the Kenzō Tange Archive," the exhibition that coincided with twenty-fifth anniversary of the Kenzō Tange Professorship. The exhibition team included Dan Borelli, Shannon Stecher, Megan Panzano, Mary Daniels, Inés Zaldunido, Irina Gorstein, and Adam Kellie. We thank Toshihiro Katayama for his response to the exhibition design.

We thank the Rockefeller Fund for East Asian Art for sponsoring the workshop at which preliminary versions of several of the chapters were presented, and Jonathan M. Reynolds for delivering closing remarks and critical responses. To all of the authors represented in this volume, we offer our gratitude for their thoughtful contributions. Yatsuka Hajime should be singled out with a deep bow for being such a supportive colleague and interlocutor.

Several staff and faculty at the GSD played key roles in advancing this work; in particular, we would like to recognize Executive Dean Pat Roberts, Associate Dean Kate Cooke Ryan, and Loeb Librarian Ann Baird Whiteside. In the Dean's office, Suneeta Gill and Jane Acheson provided essential help with project scheduling and logistics. Faculty members Gerald McCue, Peter G. Rowe, and Eduard F. Sekler shared their personal recollections of Tange and offered intellectual guidance; Toshiko Mori and Mark Mulligan took part in the insightful panel discussion presented in association with the exhibition.

We are grateful to Yoshida Nobuyuki of Shinkenchiku-sha for supplying many of the key images and for his role in sustaining a critical discourse in the Japanese architectural profession.

To Lars Muller and his exemplary team at Lars Muller Publishers in Zurich (especially Esther Butterworth, Martina Mullis, and Nadine Unterharrer), we must express our deepest appreciation for the compelling book design and spirited collaboration. Finally, we thank Melissa Vaughn, the GSD's Director of Publications, for bringing to this project her remarkable experience, skill, and forbearance.

**Imprint**