

**War: Hurdle In traditional architectural continuum**  
**Case Study – Japan post Hiroshima**  
**Architect in focus - Kenzo Tange (September 4, 1913 – March 22, 2005)**

**Hypothesis** – War leaves behind no traces of Traditional Architecture.

**Objective** –

- To trace international and traditional styles in Tanges work.
- To analyze whether the results were a fusion or just international.

**Focus of study** -

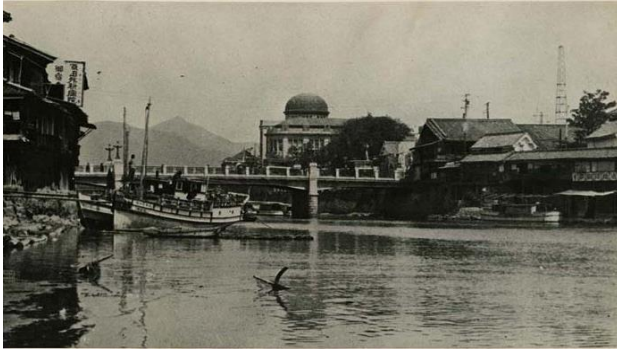
- Hiroshima peace Memorial Museum – 1954
- Yoyogi National Stadium in Tokyo- 1961- 1964
- St Marys Cathedral - 1964

**Synopsis** – War consumes everything. Hiroshima after war was nothing like before. Young Japanese architects had the challenge to rebuild it traditionally and make an international statement at the same time. Having lived in Hiroshima during high school years Kenzo Tange had immense affinity for the region. It was here that he encountered the works of Swiss modernist, Le Corbusier and was convinced that he wanted to become an architect. Tange was internationally recognized in 1949 when he won the competition for the design of Hiroshima Peace Memorial Park. Tange's interest in urban studies put him in a good position to handle post war reconstruction. He struggled with changing 'the human scale', familiar to Japanese masses, to 'social human scale' and finding the right balance between international and Japanese standards. He became an architect of the world largely because his work is so intensely Japanese. He eventually demonstrated that a unique regionalism could be developed, and recognized, within the circumstance of the international style. I believe his work is one of the best examples of how an architect's experiences, affinity and bend of mind can shape his work. He joined the group of architects known as Team X in the late 1950s and steered the group towards the movement that came to be known as Metabolism. Tange also became an influential protagonist of the structuralism movement which was against the lifeless expression of urban planning that ignored the identity of the inhabitants and urban forms.

**Conclusion** – After the research on this paper I've started to believe that architecture continuum is too large a concept to be tied down by or guided by just one factor like tradition. Architecture continuum occurs when people like Kenzo Tange set out to imagine, explore and translate and no war could possibly a hurdle.

## War: Its reflection on Hiroshima

War not only consumes lives, economy and industries but also lifestyles and architecture. Apart from political, economical and territorial changes it makes severe psychological and sociological impacts. Walking through Hiroshima after bombing one would actually doubt about the continuity of civilization.



**You can no more win a war than you can win an earthquake-  
Jeannette Rankin<sup>1</sup>**

Until August 6<sup>th</sup> 1945, Hiroshima, Japan was home to approximately 250,000 people and had the appearance of a pre-modern time with Machiya's; traditional wooden low rise structures that respected human scale. The city depicted the depth and ramification of the old Japanese culture that had not been disturbed by the world outside for over a thousand years. After the U.S B-29 Super fortress bomber "Enola Gay" dropped 4,000 kgs of uranium bomb code named "Little Boy", an explosive energy seared everything within a few miles, flattened the city below to a barren land with a massive shockwave, set off a raging firestorm and bathed every living thing in deadly radiation. Nearly 70,000 people are believed to have been killed immediately, with possibly another 70,000 survivors dying of injuries and radiation exposure by 1950.

**This is a human being?  
Look how the atom bomb changed it.  
Flesh swells fearfully.  
All men and women take one shape.  
The voice that trickles from swollen lips on the festering, charred-black  
face whispers the thin words, "Please help me."  
This, this is a human being.  
This is the face of a human being**

**NATSU NO HANA <sup>2</sup>**

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<sup>1</sup> First woman in the US Congress, elected in 1916 who voted against the entry of the United States in both World War I and World War II.

## Dilemma in front of Tange and his contemporaries

Architects like Kenzo Tange, Asada Takashi, Otani Sachio and Kunio Maekawa took up the challenge to rebuild not just Hiroshima but Japan in a new way. Their struggle was emotional – they had just lost their home, their struggle was professional – to find just the right balance between what was their very own and what was safe; modern. Their struggle was to find a new identity. Their struggle was to find that lost architectural voice. Their struggle was to build from ground ZERO. They decided to take the Japanese architecture forward with vigor and without sentimentality.



Clockwise – Katsura Imperial Villa built in 1600's, Ise Shrine built in 600's, Aerial view of Hiroshima before the bombing

### What Gropius had to say

Gropius after his visit to Japan in 1955 said, "Growth however needs elements from the past as well as inspiration from the present for new independent expression"<sup>3</sup>. Gropius believed that Japanese approach was of persuading and stimulating nature and all it needed was advanced equipment and fire proof construction. Also that Japanese architecture already had the modern day requirements such as Simplicity, outdoor indoor relationship, modular co-ordination, variety of expression resulting in a common form, a language uniting all individual efforts in it.



Interiors of Katsura imperial villa

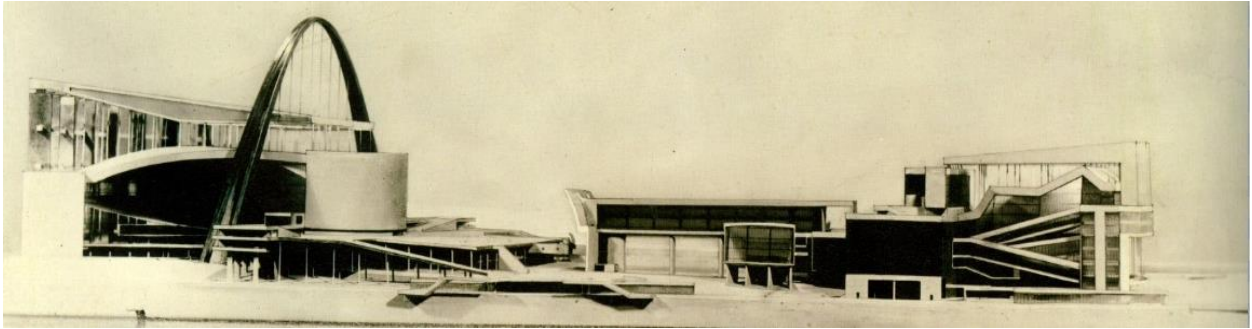


Original stone pavement leading to the villa

<sup>2</sup>The verse is from "Flower of Summer" (Natsu no Hana), a collection of short stories by Tamiki Hara (1905-1951), writer and A-bomb survivor.

<sup>3</sup>Architecture In Japan- Walter Gropius, Perspecta volume – 3, 1955

## Le Corbusier: Tange's Inspiration



Proposal for Soviet Palace

Tange's first public statement was a ten-page article published in the journal of *Gendai Kenchiku* (Modern Architecture) in 1939, entitled *Ode to Michelangelo: As an introduction to the study of Le Corbusier*. It was a manifestation of Le Corbusier's influence on Tange, an influence that persisted throughout his career. Tange went to Hiroshima high school to study literature in 1930, where he happened to see Le Corbusier's competition entry for the Soviet Palace in a foreign art journal. This incidental encounter set the young Tange on the road to becoming an architect.

For Tange, Le Corbusier was the only modern western architect taking a revolutionary approach towards architecture, one full of poetic inspiration. Tange was fascinated not only by the master architect's capacity as a sculptural form-giver in architecture but also his grand visions for the modern city. What Tange saw in the scheme of the Soviet Palace was a powerful architectural image that combined technological progress and urban continuity and represented a harmonious balance between social order and democracy.<sup>4</sup>

Maekawa and Sakakura were disciples of Le Corbusier and Tange's association with them further deepened his faith in Corbusier's vision.

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<sup>4</sup> Extract from Kenzo Tange and the Metabolist Movement: Urban Utopias of modern Japan

## Hiroshima Peace Memorial: An end to Tange's dilemma

Tange gained international recognition in 1949 when he won the competition for the design of Hiroshima Peace Memorial Park. The structure became a masterpiece of modern architecture in Japan. It would be fair to say that the post WWII Japanese architecture started with this building. Asada Takasashi and Otani Sachio along with Kenzo Tange worked on the project. The building functions as a museum. It was completed in 1955 and has a total floor area of 1615 sqm. The structure was built in RC. The building is divided into three parts; the central structure displays belongings left by the victims. The east wing is the newest addition and explains the history of Hiroshima City before the bomb and after. The West Wing, which was part of the old museum, concentrates on the damage of the bomb.

Tange had the following to say about his project-

*The authority requested me to give counsel for war damage reconstruction immediately after the war. I didn't waste any minute to volunteer for Hiroshima's rehabilitation. Rumor in those days said even a single weed would not grow in Hiroshima, but I didn't care and was ready to sacrifice myself. Hiroshima was where I spent my joyous high school days and the city was plunged into catastrophe when I lost both my parents almost simultaneously. I felt I was deeply connected to the city.<sup>5</sup>*

Gropius preached the significance of human scale, while Tange slashed it as pre-modern. When he stood at the construction site in Hiroshima again, he was reassured that he was right. He was a pioneer leading the Japanese architecture beyond human scale. Many opposed the large scale construction as still majority of the population did not have a place to live. Tange admitted that he was frustrated by the chasm between ideal and reality. After WWII, housing shortage was very severe and shacks were standing even on the planned construction site for the Peace Park in addition to atomic bomb slums in the Motomachi area. They were the very embodiment of human scale.



**Hiroshima Peace Memorial – A stepping stone between human scale to social human scale**

<sup>5</sup> From Kenzo TANGE Associates official web site; original text in Japanese



**Hiroshima Peace Memorial**

**Unite d'Habitation**

Tange on Human Scale and Social Human Scale -

*“When I was engaged in the design of the Hiroshima peace facilities, I had an ambition of coordinating the two scales, human scale and social human scale, in one building. I started with the Peace Memorial Museum. Its main structure was built in social human scale, while stairs with a landing and birdcage-like louvers were in human scale. These two scales were meant to interact with each other”<sup>6</sup>*

He designed the structure with extreme passion, emotion and determination; he wanted it to be recognized internationally. Before WWII, Hiroshima had structures built in human scale. The huge museum was far beyond human scale; hence gave an incredible impact. TANGE loved what Le Corbusier represented and was convinced that the Japanese architecture would become enormous in scale. He passionately said that large architecture built in social human scale was in demand instead of those in human scale. He visited the Unite d'Habitation during the construction of the peace memorial and was inspired.

<sup>6</sup> From a magazine *SHINKENCHIKU* Jan. 1954; original text in Japanese

While designing Tange's idea was to insist on an eternal peace principle of no more wars, hence adopt internationalism and sister and brotherhood so that no nation, race, or religion would be significant. Tange didn't incorporate any direct element that would be associated with Japan. He was criticized for the above.

*“At that moment, opinions were more inclined to constructing a monument like a peace memorial tower centering a memorial hall. An architect of the UK forces, an advisor of Hiroshima City, constantly insisted on constructing something like a five-storied pagoda. When he came to see me in Tokyo, I took him to the Peace Memorial Tower for the Earthquake Victims in Tokyo. Outraged, I barked at him and said that this was what he and others wanted.”-Tange<sup>7</sup>*



Earthquake Memorial, Tokyo – Built in 1930. It was  
Designed by Chuta Ito



Hiroshima Peace Memorial, Hiroshima – Built in 1955. It was  
designed by Tange

Difference in the design characteristics of the Earthquake Memorial and the Hiroshima Peace Center illustrates the leap Tange made.

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<sup>7</sup> From a magazine *SHINKENCHIKU* Jan. 1954; original text in Japanese

## The Yoyogi National Stadium: A marriage of traditional form and latest technology

The Yoyogi National Stadium has a form similar to a **xieshan style** or **irimoya** roof in Japanese architecture. Together with a number of other important projects which Kenzo Tange carried out after 1959, the Olympic stadia in Tokyo can be regarded as the culmination of his career, designed in 1960 and built in 1964, on a par with the highest achievements of the Japanese tradition.

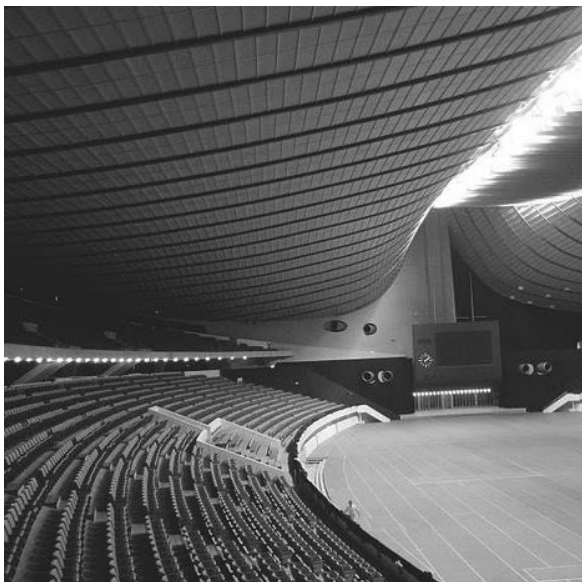


Ancient Japanese temple

Yoyogi National Stadium



The entrances are located in the concave sides. The roof is supported on two reinforced concrete pillars, and is made up of a system of steel cables onto which enameled steel plates are then soldered. The curving form of the roof serves to make it more resistant to wind, which can reach hurricane force in this region. The irimoya is not just a redundant form trying to imitate tradition but a form that helps in wind resistance. The structure of the building reflects the simplicity and delicacy of Japanese architecture but the methodology and materials are totally modern.





### The St Mary's Cathedral: religion not a hurdle to a visionary

The St Marys Cathedral was one of Tange's recognized and appreciated projects. The original cathedral was completely devastated during the bombing of the Second World War in 1945. In 1960 a competition was organized to design a new cathedral, which was won by Kenzo Tange.

He was a devout Buddhist who had the task to design a catholic cathedral. Prior to preparing the design, he visited many medieval European cathedrals. After visiting those he said- *"After experiencing their grandeur, trying to reach the sky, and their ineffably mystical spaces, I began to imagine new spaces, and I wanted to create them using modern technology."*

"The plan of the building is in the form of a cross, from which the walls, eight hyperbolic parabolas, rise up at an angle. These open upwards to form a cross of light which continues vertically the length of the four facades. To this rhomboid volume other secondary constructions are added, their rectangular volumes contrasting with the symbolic character of the cathedral with which they communicate by way of pathways and platforms. The exterior surfaces are clad in stainless steel, which gives them a special radiance in keeping with the religious character of the building."<sup>8</sup>



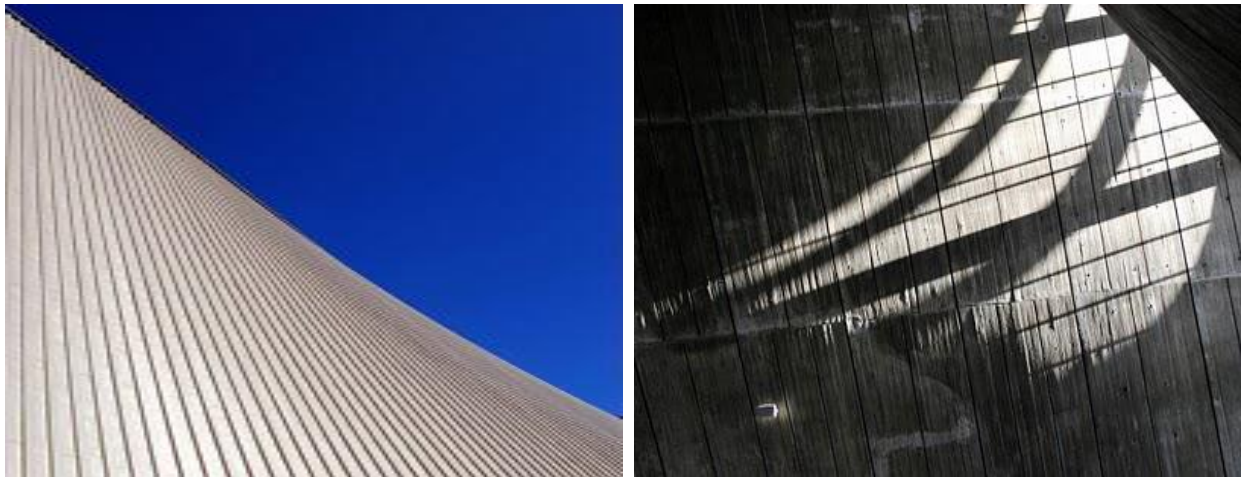
It is an interesting structure as it fuses a western subject with the oriental culture and sensibility, and the result of which is brilliant architecture. The church replaces the old wooden gothic cathedrals that were burnt down in the war. Tange conceived the new church as a concrete structure, simple in concept and complex in shape, which recalls the lightness of a bird and its wings. The eight walls – the elements which hold the whole structure – are at the same time roof and walls, enclosing the space and opening to the outside through vertical gaps.

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<sup>8</sup> — Udo Kultermann. Kenzo Tange: Works and Projects. p175.

The walls are curved hyperbolically to express the tension to the sky, and turning the rhomboidal ground floor into a cross at the roof top. The different heights of the wings, asymmetrical, make it a dynamic shape on the sky background. The highest wing is 39,41 m.

This project was recognized as the midpoint between Modernism and Metabolism, between the abstract and the symbolic, between the bright and polished exterior and the dark and rough interior... in sum, between the East and the West. The exterior facade catches the eye due to its metal tones, especially glaring on a sunny day, the interior captivates with its grim tones and unfinished texture, just like the Japanese concept of Wabi Sabi, that is the aesthetic pleasure of unfinished things.



Tange said –

"Architectural creation is a special form of comprehending reality. It works upon and transforms reality through the construction of a substantial object of use. The artistic form of this object, on the other hand, has the two-fold quality of both mirroring and enriching reality. This understanding of reality which takes place through architectural creation requires that the anatomy of reality, its substantial and spiritual structure, be grasped as a whole..."<sup>9</sup>

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<sup>9</sup> Kenzo Tange. from Robin Boyd. Kenzo Tange. p113.

## Tange and his contemporaries

Tange joined the group of architects known as Team X in the late 1950s. Team 10 gave a new direction to the architecture of the world. These young architects were dissatisfied with the one-sided rational and functional approach within the CIAM and manifested itself as an organization that propagated the International Style after the Second World War. Team 10 believed that the ideas propagated by CIAM resulted in human's alienation from their everyday habitat.

Architecture is problem solving and different architects approach it in different ways. While Tange struggled in finding a balance between what was his and what was of the world, what was past and what was to come; his counterparts from Team X were fighting different issues. Architects represented various schools of thought post war including - scientific approach to architecture without aesthetic premises (Rationalists), members who regarded architecture as an art form (Le Corbusier), members who were proponents of high- or low-rise building (Ernst May), members supporting a course of reform after World War II (Team 10), members of the old guard and so on.

Members of Team 10 laid the foundations for Structuralism. As a group, Team 10 was active from 1953 onwards, and two different movements emerged from it: the New Brutalism of the English members (Alison and Peter Smithson) and the Structuralism of the Dutch members (Aldo van Eyck and Jacob Bakema).

Brutalist buildings usually are formed with striking repetitive angular geometries, and, use concrete, often revealing the texture of the wooden forms used for the in-situ casting. Although concrete is the material most widely associated with Brutalist architecture, not all Brutalist buildings are formed from concrete. Instead, a building may achieve its Brutalist quality through a rough, blocky appearance, and the expression of its structural materials, forms, and (in some cases) services on its exterior. The Economist Building and the Robin Hood Gardens housing complex by Alison and Peter Smithson (1928-1993 and 1923-2003) became landmarks in London.

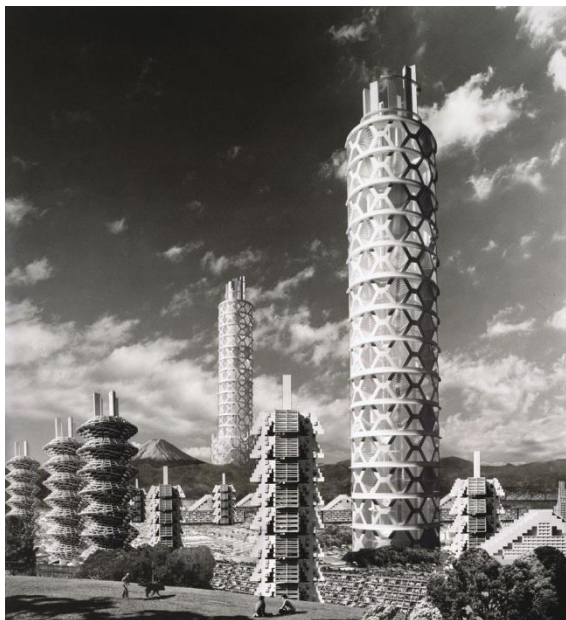


From the top – Closer view of Robin Hood Gardens housing complex, view of the same from across the street, View of the Economist Building from the street, a closer view of the same

Van Eyck and Jacob Bakema lectured throughout Europe and northern America propounding the need to reject Functionalism and attacking the lack of originality in most post-war Modernism. Van Eyck's position as co-editor of the Dutch magazine *Forum* helped publicize the "Team 10" call for a return to humanism within architectural design.

Tange steered the group towards the movement that came to be known as Metabolism. Metabolism advocated large scale, flexibility, and expandable structures that imitated the processes of organic growth also that the traditional laws of fixed form and function were obsolete. Tange also became an influential protagonist of the structuralism movement which was against the lifeless expression of urban planning that ignored the identity of the inhabitants and urban forms.

Tange argued that the normal urban pattern of radial transportation system was a solution for the Middle Ages and will fail under stress put by the world's mega cities, which according to him were cities with a population greater than 10 million. Rather than building up a city from a civic centre, Tange's proposal was based on civic axis, developing the city in a linear fashion. Three levels of traffic, graded according to speed, would facilitate the movement of up to 2.5 million people along the axis, which would be divided into vertebrae-like cyclical transportation elements.



## What made Tange win a Pritzker

Tange became an architect of the world largely because his work is so intensely Japanese. He eventually demonstrated that a unique regionalism could be developed, and recognized, within the circumstance of the international style. I believe his work is one of the best examples of how an architect's experiences, affinity and bend of mind can shape his work.

After looking at Tanges work I've started to believe that architectural continuum is too large a concept to be tied down by or guided only by tradition. Architectural continuum occurs when people like Kenzo Tange set out to imagine, explore and translate and no war could possibly be a hurdle.

The following quotation by Kenzo Tange sums up my research -

"I do not believe that regionalism is an expression of the visible idiom which has been applied in a specific region traditionally. Many regionalists proceed like this, but in my opinion it is a mistake to assume that the mere fact of regional differences could elicit creative energy. I believe that regionalism can lead to a result if each region with its own contradictions and difficulties fixes creative standard in order to overcome the local tradition. I believe that tradition can neither be preserved nor converted into a creative impulse. Creative work is expressed in our times in a union of technology and humanity. The role of tradition is that of a catalyst, which furthers a chemical reaction but is no longer detectable in the end result. Tradition can, to be sure, participate in a piece of creation, but it can no longer be creative itself."<sup>10</sup>

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<sup>10</sup> From Udo Kultermann, ed. Kenzo Tange: 1946-1969 Architecture and Urban Design. p9

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