

18 Objects and 10 Prototypes

These pieces of Japanese modern architecture lined up here show the undercurrent of design that is now hard to see. In other words, it is the 10 prototypes of "architecture made by technology and design language in fields other than architecture" that are created by the way technology and materials are used.

The only ancient case supports the slender but long lineage.



Replicas of forged nails used for the Pagoda in Horyuji (Horyu Temple)

crafted by Junya KAWANO, 2020

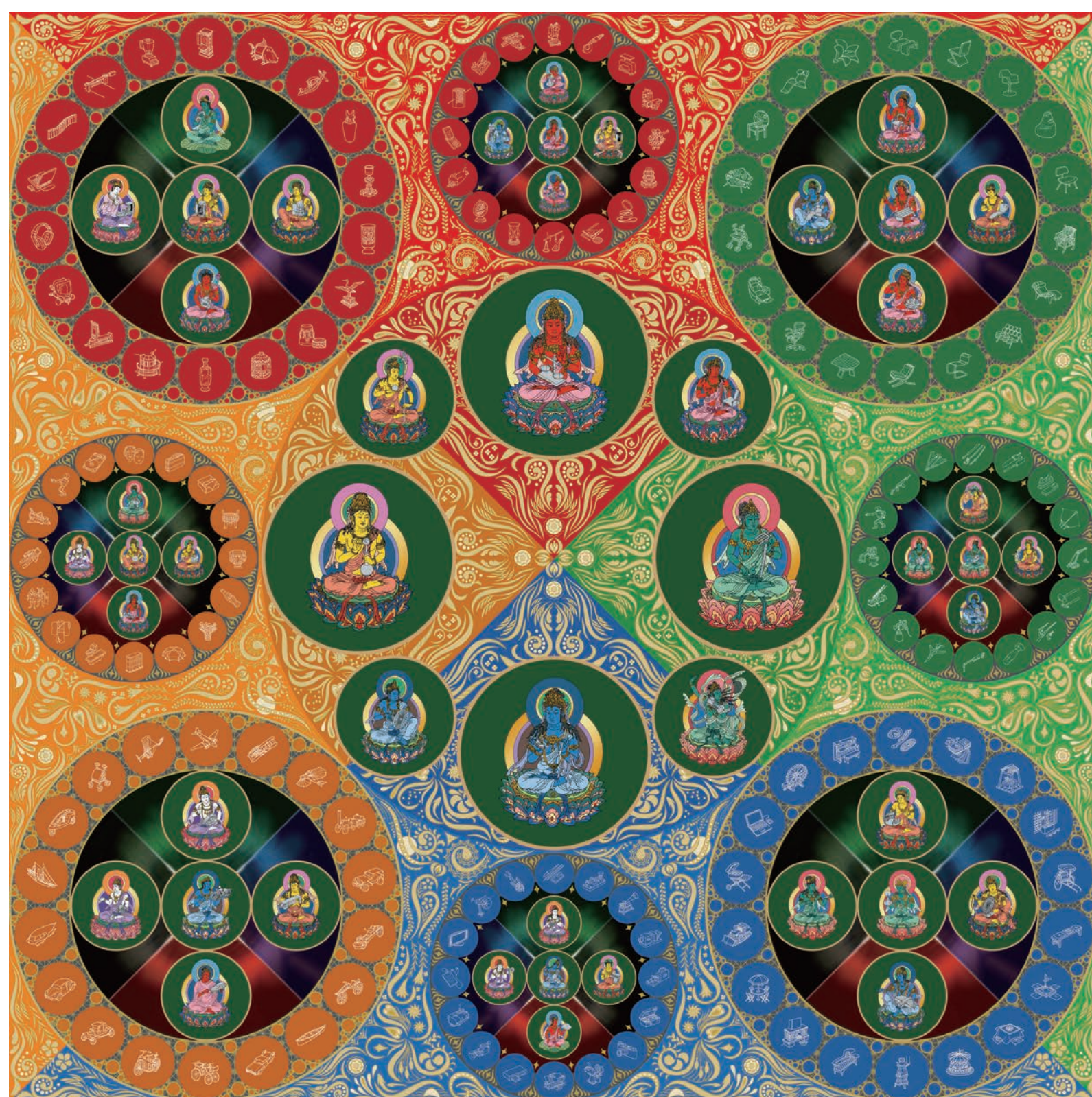
a



The section of the five-storied pagoda in Horyuji

photo©Atsushi SATAKE,
X-ray photo of forged nails by Taishi WATANABE Lab.

b



Dougou World Mandala

©GK Design Group, 2006

c



The Master Plan for Dougou Temple & Dougou Village

©GK Design Group, 2006

d

Hidden Steel in the Man-made Tree (a-b)

Many old buildings in Japan look like intricately assembled pure wooden structures, but in fact, other materials are used. Horyuji (Horyu Temple), one of the oldest existing wooden buildings in Japan, is an example. The five-storied pagoda built in 607 was a skyscraper of the time. In constructing the Pagoda, with a height of 31.5 m, countless craftsmen forged nails that holding some of the structure together are found inside. The nails were made into slightly different shapes. They are hidden in the structures such as the rafter (which passes from the ridge to the girder), Mokoshi-Itagake (literally “skirt story” or “cuff story” , is a decorative pent roof surrounding a building below the true roof), and the crown molding (joint edge of wall and ceiling). Therefore none of the nails could be seen from outside. You can find examples on the X-ray photo of forged nails. The horizontal and vertical components of the roof are fastened with forged nails. A crosspiece is fastened on a rafter with a forged nail to fix the roof tile. Even though in a country famous for frequent earthquakes like Japan, such forged nails, which shall be called iron sculptures, have made it possible to create an earthquake- resistant high-rise architecture.

World of Tools (c-d)

Our daily lives are supported by countless tools. “The Master plan for Dougou Temple and Dougou Village” was designed by Kenji EKUAN (1929-2015), an international industrial designer in Japan. Manufacturing has a long history as a foundation that supports human culture and civilization. However, the material wealth like today made a lot of problems in return such as the crisis of the global environment, the decline of spiritual culture, and the collapse of community society. Kenji EKUAN created the concept, thinking that now is the time to need for designer to reconsider about the Manufacturing culture and civilization. Ekuan, who is also a monk himself, thought that even in a world of mass production and mass consumption, there was also a "transmigration". Then, he established the occupation that gives beauty to tools made with industrial power and aimed at "democratized beauty". The aim was to create beautiful tools that could be used not only by some privileged classes but also by ordinary people. At the same time, it was also "human development through manufacturing."

"Dougou World Mandala" is a matrix that structurally expresses the world constructed by the relationship between human and tools. In the center circle is a Statue of Thousand-Armed Dougou Kannon as a symbol of people's hearts, and various tools surrounding our life are typified by the circle surrounding center.

"The Master plan for Dougou Temple and Dougou Village" is a village developmant concept as an ideal home for design, with a variety of facilities around Dougou temple including a Dougou university, Dougou workshop, Dougou recycling center, Dougou graveyard, Dougou theater, Dougou museum, etc.



Shoji and Stained Glass in A House

designed by Toru KITAZONO,
photo© Mamoru ISHIGURO

e



Carrying Rope for Yamakasa floats

f



A building scene of Yamakasa floats

photo©Hakata Gion Yamakasa Promotion Association

g



A parade scene of Hakata Gion Yamakasa

photo©Hakata Gion Yamakasa Promotion Association

h



The wooden structure of Yamakasa floats

photo©Shozaburo TAKAKI

i



Tile tapestry of the lounge in Cotton Industry Hall

in Osaka, designed by Setsu WATANABE, built in 1931,
photo©TOKYO WATANABE ARCHITECTS & ASSOCIATES

j

Paper Glass Screen (e)

The photo capturing shoji and stained glass within one view was taken in a room within a Japanese wooden house called “A House” . “A House” was completed in 2019 on a 530 square meter site, facing a street where a stream runs beside. The designer was Toru KITAZONO (1965–). Shoji is a spatial device, along with folding screens, which has long been used in Japan. It can separate or connect spaces. The Shoji, a thin wooden lattice, pasted with thin translucent paper (called Washi or Japanese paper), can move freely without being fixed to a specific place. On the other hand, the trend of stained glass in Japan has mainly spread through churches and western-style buildings since the modern age. The stained glass of “A House” is composed of two types of frosted glass with different transmittance and one kind of colored flat glass. Under the faint light through the shoji screen, the imaginary garden on the stained glass along with the real garden behind it gives depth to the plane experienced in the picture below.

Light from Roped Woods (i)

It is light from the sunshade that uses the wood frame of the base of Yamakasa and knot of the rope that supports it. It was designed in a hall planed on the site next to the north gate of Kushida Shrine in Fukuoka City. Hakata Gion Yamakasa is a dedication event of Kushida Shrine. The designer is Shozaburo TAKAKI (1969–). Because the site is a part of the Kushida Shrine’ s territory, the design of the base of Yamakasa was specially arranged. The hemp rope at Yamakasa base is designed to prevent its base stand from breaking, and also work as a cushioning to catch and release the entire torsion of the base.

The mechanical principle is working like that a bundle of rope, which absorbs water to be enhanced contractility, is tied diagonally to the feet of the table and woven at the intersection. Takaki creates variations in the design by unravelling this principle in reverse, such as dividing the bundle of ropes and increasing the number of braids. This ingenuity is the wisdom that Hakata people have inherited since 700 years ago.

Mobile Wooden Float (f-g-h)

The technology of Japanese timber frame was completed in ancient times, and then it has been inherited throughout Japan. “Hakata Gion Yamakasa” is one of them. Yamakasa is a kind of wooden frame float decorated with dolls. Once a year, around July, this kind of tower-shaped float is carried by citizens and runs around the town. At Horyuji, which is the oldest existing wooden building in Japan, the wooden frame pagoda is supported with hidden nails. However, no nails are used at the base part of the 10-15m high Yamakasa. Here the woods are annually by citizens who have their own careers. No special skills are needed to handle the rope, and anyone who can remember the way of tying can make the same Yamakasa. The rope sometimes is used as a ritual tool to purify the woods of Yamakasa, but during the festival, it is an important item to connect the Yamakasa to the bearers. It is a lifeline that avoids falling down when the bearer’ s legs are tangled.

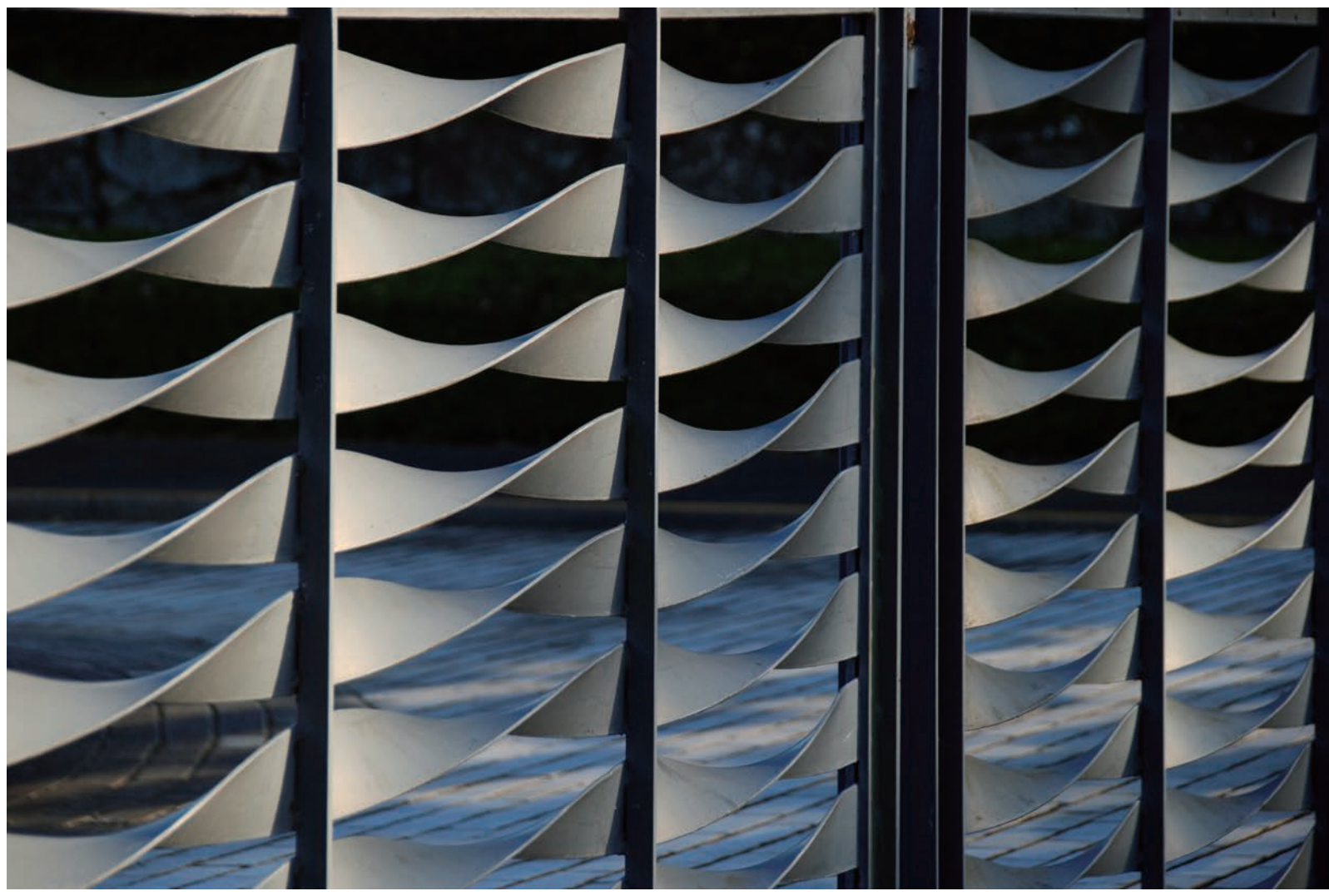
Ceramic Tapestry (j)

There are clusters of quadrilateral ceramics that cover a height of about 6m. They are in the lounge of the Cotton Industry Hall in Osaka Prefecture. The Cotton Industry Hall was built in 1931 as a facility for the communication of the cotton industry. The designer was Setsu WATANABE (1884-1967). Watanabe is also known as the teacher of Togo MURANO, who designed Memorial Cathedral for World Peace in Hiroshima. Five types of embossed ceramics are used here. Although produced in the same manufacturing method, each ceramic looks different depending on how the three colors of the lead glaze of green, white, and brown are applied. Watanabe considered the combination of different ceramics one by one on the site and finished the whole composition by himself. This ceramic configuration is called the Taizan tile, and it was made at a pottery factory in Kyoto, founded in 1917 by a craftsman named Taizan IKEDA. The pottery factory performed operations from base soil adjustments to the development of kiln firing methods, according to the request of clients. At that time, mass production by machine was already possible and many industrial tiles were on the market, but Ikeda manufactured tiles as artwork, not just as finishing materials for architecture.



Brick Tapestry of the Bell Tower in Memorial Cathedral for World Peace
in Hiroshima, built in 1954, designed by Togo MURANO,
photo©Catholic Hiroshima Bishop' s Museum

k



Steel Bar Gate, Tokorozawa Seichi Cemetery
in Tokorozawa City, Saitama pref., Japan, designed by
Yoshiro IKEHARA in 1973, photo©Kotofumi KATO

l



Paper Knife & Paper Weight
designed by Yoshiro IKEHARA
photo© Kotofumi KATO

m



“Man Catching Star & Stargazer” (replica)
designed by Yoshiro IKEHARA, crafted by Kotofumi KATO,
photo©Kotofumi KATO

n



Steel Plate Canopy, Batik Gallery
designed by Kotofumi KATO,
photo © Kotofumi KATO

o

Stacked Hiroshima-clay (k)

The Flemish bond mortar bricks here are made of bombed earth from Hiroshima, and the “Hiroshima-clay” bricks built up the 45m tower of the “Memorial Cathedral for World Peace” . Suffering from two painful experiences, the ban on Christianity, and the atomic bombing by the end of World War II, the Cathedral was rebuilt in 1954. Instead of outsourcing the production of 300,000 bricks for the construction of the cathedral, designer Togo MURANO (1891-1984) asked the workers to make the intentionally rough bricks by hand on the site. Each brick is hollowed out to reduce weight. Suggested by Murano, Hiroshima-clay, with a protrusion of about 25 mm, emphasizes its artificiality the passage when the earth was strongly eroded. The protrusions were produced by design, instead of by accident, and reached a size of 2m and 60cm long and 82cm wide.

Twisted Ready-made Steel (l)

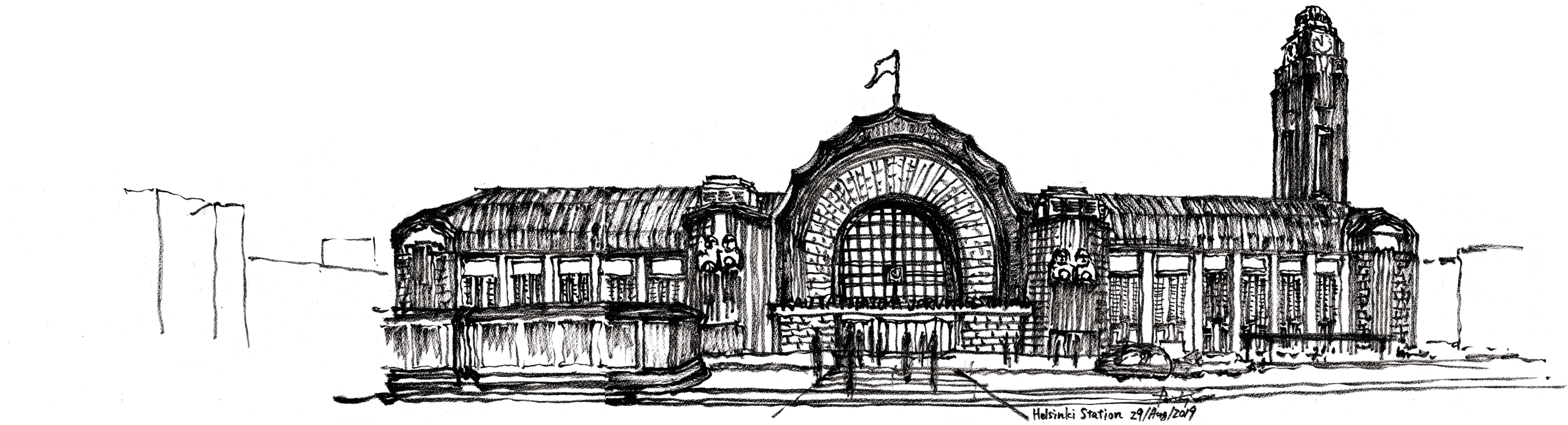
The beautiful objects created by the series of twisted iron bars extremely clearly show the potential for unique designs to emerge from standardized industrial products. The iron object locates at the entrance of Tokorozawa Seichi Cemetery. The designer is Yoshiro IKEHARA (1928-2017). Ikehara was a rare architect in Japan who was able to design both architecture and non-architecture without distinguishing them. This iron sculpture is actually the gate of cemetery’ s main entrance, with a steel plate (120mm wide and 4.5mm thick) twisted once at about 1m intervals, extending about 25m. The Tokorozawa Seichi Cemetery was completed in the 1970s when factory-built prefabricated buildings which are the combination of industrialized building components came out. Looking at the design of the gate by Ikehara, Yoshichika UCHIDA, a leading person of Japanese building construction methods, recorded in the architectural magazine at that time that he realized the richness of architectural design using industrialized building components and noticed the importance of architects’ design skills still exists during the prefab era.

Hand-made Metal (m-n)

Yoshiro IKEHARA was able to design different scales with the same sensitivity and density. “Man Catching Star & Stargazer ” is a sculpture that stands on an arch along the path of an amusement park designed by Ikehara himself. This is a tribute to Carl MILLES and a man trying to take a star in the sky is stared by a deep-sea fish named Stargazer at his feet. Ikehara also designed a 120 mm long paper knife, a paper weight with a diameter of about 80 mm, and a commemorative medal at Waseda University, where he taught, in the way he handles architecture. Or, may the architecture is designed like the way he handles these designs. Ikehara’ s designs were rare in Japan, not restricted by scale or field.

Floating Steel (o)

Designed for the 2006 “Batik Gallery” , the exhibition site of the Java Chintz, this iron object is made by folding a single iron plate with the concept of origami. The designer was Kotofumi KATO (1964-). Kato has been working with Yoshiro IKEHARA for over ten years. Reminding people of Ikehara’ s paper knife, this delicate iron object was made by pressing a 3.2mm thick steel plate to 2,220mm in width, 820mm in-depth, and 260mm in height. It is a sculpture, but also a canopy floating above the steps. Another awning made in the same way floats above the gallery entrance. These iron sculptures, to accurate their shapes, are intended to cast delicate shadows while being placed at a distance from the wall. The “beauty” emerges where the shadows of the branches and leaves fall from the casted shadow, overlapping with the shadow of the iron sculpture on the Shingles cedar siding.



Learning from Finlandia

Drawing byTaishi WATANABE

p



Object

collage by Taishi WATANABE Lab.

q



Light

collage by Taishi WATANABE Lab.

r

Learning from Finlandia (p-q-r)

This drawing was created as a collage of three-dimensional objects "Object (q)" (upper right), light "Light (r)" (upper left), and architecture "Helsinki Central Station (p)" (lower), which Taishi Watanabe actually walked around Finland to rediscover the spirit of national romanticism and collected by drawings. The subjects of two collages are as follows;

Collage “Object”

(A to Z) : Aalto House Exterior, Aalto Studio Brick for Kulttuuritalo, Aalto Studio Exterior, Aalto Studio Interior, Aalto Studio Stairs, Aalto’ s Tomb, Bird, Arktikum Boat Exhibit, Arktikum Exhibit, Arktikum Saami Goods Exhibit, Arktikum Saami People Dress Exhibit, Bear Statue in Finland National Museum, Brick Warehouse in Saaroinen, Elias Lönnrot Monument, Finlandia Hall Exterior, The First House in Espoo Bosmalm, Fiskars River Water, Gallen-Kallela House Exterior, Gallen-Kallela House Interior, Noormarkku Horse, Iittala Glass Factory, Kalevala Room in Ateneum Art Museum, Kallion Kirkko, Kiasma Stairs, Koetalo Courtyard, Koetalo Tiles, Kulttuuritalo, Landscape from Finlandia Hall, Lappia-talo Exterior, Lappia-talo Interior, Lappia-talo Lobby, Lappia-talo Stairs, Myyrmäki Church Exterior, National Museum of Finland, Noormarkku Kolin Sauna, Noormarkku Power Canal, Olari Church Exterior, Olari Church Interior, Pakila Church Ceiling, Pakila Church Interior, Petäjävesi Old Church Saint

Statue, Petajavesi Old Church Joint Details, Port of Helsinki, Porvoo Cathedral, Porvoo House, Romulus and Remus by Oiva Toikka, Rovaniemi City Library and Town Hall Exterior, Rovaniemi Library Interior, Saarinen’ s Building and Aalto’ s Akateeminen Kirjakauppa, Saunasaari, Sibelius Monument, Statue of Väinämöinen, Suomenlinna House, Suomenlinna Village, Suomenlinna Brick House, Tammerkoski, Tampere Water Gate, Tapiola Church, Tapiola Church Lady, Tapiola Forest, Tapiola Heikintori, Tapiola Library Child Chairs, Tapiola Cemetery, Tapiola Landscape, Turku Cathedral, Turku House, Uspenski Cathedral, Vainiola, Viking Line Helsinki to Tallinn, Vallila District, Villa Mairea Details, Villa Mairea Entrance, Villa Mairea Stairs.

Collage “Light”

(A to Z) : Aalto Hall, Aalto House, Aalto Museo, Aalto Studio Interior, Cafe Aalto, Finlandia Hall, Finlandia Hall Interior, Fiskars River Water, Forest , Helsinki Church, Helsinki Port, Kamppi Church, Kiasma, Koetalo, Lappia-talo, Olari Church, Pakila Church, Petäjävesi Old Church, Porvoo Cathedral, Rautatalo, Rovaniemi City Hall and Library, Rovaniemi Library, Säynätsalo, Sähkötalo, Tampere Cathedral, Tapiola, Tapiola Church, Tapiola Cemetery, Tapiola Hall, Tapiola Hall Top Light, Tapiola Heikintori, Turku Cathedral, Villa Mairea.