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MECANOO ARCHITECTEN

“A cultural building of enormous scope and prestige, Weiwuying is based on the local banyan tree, and made by the local shipbuilding industry.” Francine Houben

Since our earliest projects in the 1980s, Mecanoo has evolved a set of principles that inform all our work. The National Kaohsiung Center for the Arts, one of our most ambitious buildings, embodies all the key elements of our philosophy:

- We are concerned with the relationship between a public building and the public space around it.
- We give much attention to balancing the formal against the informal, both within a building and in its interface with the surrounding space.
- During the design process, we draw on all kinds of local clues – the history of a place; its climate, topology, and vegetation; its light and colour; and the customs, skills and way of life of the people who live there.
- As the name Mecanoo suggests, our aim is to fit together disparate parts and create coherence. This is especially important where a project consists of many elements. To find a synthesis takes both formal research and intuition.

OVERVIEW OF THE PROJECT
At 225 metres wide and 160 metres deep, Taiwan’s National Kaohsiung Center for the Arts ‘Weiwuying’ (after the park in which it sits) is an international performing arts building on a grand scale. It houses four state-of-the-art stages – a concert hall, an opera house, a playhouse theatre and a recital hall. Above the auditoria are facilities including rehearsal and event spaces, restaurants and a gallery. All the spaces are sheltered under a single wave of a roof. The building has wide windows and sweeping foyers. Closely connected to the park, it draws people in, whether they are attending an event or not.

The roof flows and undulates and, where it dips and touches the earth, it forms a fifth venue – a generous outdoor amphitheatre, with the park providing its informal stage. Including the outdoor theatre, the venues together seat over 7,000 people.

A great covered plaza, open at all sides, winds its way right through the ground floor of the building, around the auditoria. The building’s unifying feature, it links all the venues and facilities together. Moreover, with its dramatic height, curves and
light, it celebrates culture and the music-loving people of Taiwan, and invites the world to visit.

Located in the coastal city of Kaohsiung, one of Taiwan's three largest metropolitan centres, Weiwuying is emblematic of Kaohsiung's evolution into a modern, cultural city. However, while it is a building rooted in its regional location, it is firmly national in status. Our commission came from Taiwan's national government. The aim was to deliver a flagship cultural destination for Taiwan, outside the capital, Taipei. We were expected to deliver a world-class arts building that might achieve iconic status – a beacon to attract performers and audiences from around the world. Above all, it had to give something really special to the Taiwanese people, who are well educated culturally, and love music so much that is, really, their life.

THE CITY OF KAOHSIUNG
Mecanoo embarked on the project around 11 years ago, in 2007, when our office won the international competition launched by Taiwan’s Council for Cultural Affairs. Since my first visit at that time, I have seen Kaohsiung change enormously. The largest port city in Taiwan, it was until the millennium also a major centre for shipbuilding and heavy industry.

The economy of the region shifted, and while Kaohsiung’s port remains extremely active, the city itself has been transformed into a sustainable, green and technologically advanced metropolitan centre.

With beautiful new open spaces, cleaned-up waterways and harbour-side cultural facilities, as well as high-speed transport connections, it has become a very pleasant place to live and visit.

THE SITE
The National Kaohsiung Center for the Arts (Weiwuying) is set in a newly landscaped park, on land that was formerly a military camp. When we began to build, the park had already been open for a few years, and was a popular destination for local people. This meant there was a feeling of interest and ownership among the public right from the start.

Also, because the park was already there, we were able to see how well our very large building would harmonise with the surrounding landscape.

CLIMATE
Taiwan (once known as ‘Formosa’, meaning ‘beautiful’) is a country subject to earthquakes and typhoons. Kaohsiung’s tropical climate is much warmer and wetter than that of Taipei, which lies some 360 kilometres to the north. In the south of Taiwan, in particular, there are sudden bursts of extremely heavy rainfall, especially during the summer months.
Because of the heat and humidity, Kaohsiung has a delightful air of informality. All year round, night falls at about 6pm. As darkness comes early and quickly, artificial light is very important. People enjoy life on the streets, eating outside, gathering in the evening when it is cooler – playing, picnicking, chatting, and mounting small outdoor performances. It is a very safe city, and I always enjoy my time there.

The character and heritage of Kaohsiung, its people and its activities, its climate, and its night-time light and atmosphere are all qualities that profoundly influenced our early thoughts about the design of Weiwuying, and are visible in the finished building.

THE BANYAN TREE
Our most important clue lay in the city’s trees. When I first arrived in Kaohsiung, the first things I noticed were barking dogs, the empty barracks on the site where our building would sit, and the banyan trees.

The banyan is a very large and striking tropical tree. Each mature specimen can become like three or more connecting trees, as the spreading roots thicken and reach up, either to join the primary trunk or form new trunks. Meanwhile the crown of the banyan is thick and very horizontal, a dense canopy that offers protection from rain and sun. In Kaohsiung, everyday events, encounters and gatherings take place literally beneath the banyan trees. As I spent time in Kaohsiung, and studied the shape of these magnificent trees, they revealed a formal language that gave us the overall theme for our design.

The way the people of Kaohsiung use the park, and its banyan trees, showed us how to connect the formal (in this case the formal performing arts) with the informal (people getting together to talk, picnic, perform, practise Tai Chi, meditate or just relax).

THE BANYAN PLAZA
We positioned Weiwuying within the park in such a way that we could blur the boundaries between the outside and the inside, and run a superb public space right through the building’s ground floor. The Banyan Plaza, as we have called this space, reflects the informality of Kaohsiung, and indeed its safety – a well-lit city, where people spend their evenings outside, its atmosphere is friendly and festive. Covered against the sun and the rain, yet completely open and accessible, 24 hours a day, the Banyan Plaza merges fluidly with the surrounding landscape.

The plaza works like a banyan tree, gathering and sheltering people while allowing easy movement in and out. With its walkways and informal spaces, it allows people to do all the things they do beneath a banyan tree – even create impromptu performances. The atmosphere there feels exactly right. To me, it seems to echo the tradition of Chinese Opera (which will sometimes feature at Weiwuying) and its origin in street theatre.
CONSTRUCTION AND MATERIALS
The roof of Weiwuying is made of aluminium, minimally detailed, with organically shaped skylights cut into it at intervals. Meanwhile the walls of the building and the Banyan Plaza, also with openings cut into them, are constructed from steel. Identifying the right materials and construction method was a challenge, and took considerable research.

Because it is open, with no artificial climate control, the Banyan Plaza is subject to almost 100 percent humidity. Moreover, an important part of its drama and character is its curves. We tested various options and found, for example, that neither tiles nor stucco were suitable in such a humid climate.

Eventually we had the idea of asking the local shipyards to help us. Eager to leave behind a contemporary legacy for his disappearing industry and its workers, the shipyard owner readily agreed. Together with Dutch engineers, Kaohsiung’s shipbuilders came up with the solution – to construct the building, inside and out, using prefabricated steel plates, like a ship. Of course, steel is an excellent material for use in earthquake zones, and the plates allow the building to move when there are tremors.

Weiwuying really does look and feel like a big ship, but one in which the waves are not outside on the sea but are part of the vessel. It is the size of a large ocean liner, but we were clear that it should have the character of a cargo ship rather than a luxury liner. We did not want the facets to look too smooth, and we specified that the curves on the building should flow while still showing the joins between the plates. In fact, on the interior of the building, the joins provide opportunities for fitting lights, and hanging flags and banners.

CONNECTING THE BUILDING AND THE PARK
The inside and the outside of Weiwuying are fluidly connected and never feel far apart. We designed the area of the park around the building so that it would merge naturally with the building itself. Gentle slopes and valleys, paths and fountains (water feature), create intimate public spaces of different sizes and proportions.

Beneath the building there is car parking. However, cars are not the vehicle of choice in Kaohsiung – most people favour motor scooters or the excellent public transport system, including the metro that stops at the doorstep of Weiwuying. Visitors will also, of course, arrive on foot through the park, and the design of pedestrian routes was especially important given the number of people who, at any one time, may be arriving for events.

THE AUDITORIA
Dealing with performing arts centres is very much about logistics – getting productions in and out, and organising the flow of people to and from the venues. While the main public areas of Weiwuying are above ground, the technical areas –
the parts of the building that serve the performing arts venues – lie beneath. In Europe, just one of those venues would already be a tall order, but we had to make provision for four, not counting the open-air theatre.

Each venue is a world-class performance space. To achieve this required the best in product and expertise from around the world. The double organ in the concert hall is from Germany, the seat fabric from the Netherlands, the stage equipment from Europe. Everything was at the service of the absolute best acoustic, and the best conditions for performing, listening and viewing.

All the auditoria have their own identity, layout, acoustic and ambience. For example, the layout of the concert hall is very organic in a vineyard style. The recital hall is intimate in character; the opera house grand.

Every detail counts in a performance space. For example, the fabric of the seats in all the venues was important both aesthetically and acoustically. The colour of the seats in both the concert hall and the recital hall, which is lined with oak, resembles champagne – it has a warm golden glow. For the theatre we chose seats of Mecanoo blue, while the opera house, of course, had to have red seats.

The foyers are the interface between the informal and the formal – the progression from the Banyan Plaza to the auditoria. Their fluid lines and sculptural forms have drama, setting up the atmosphere for a great theatrical or musical experience.

NATURAL COOLING
The overall feeling in the building is very comfortable, however hot and humid the weather. Because of the position of the Banyan Plaza, and the way we created it, we were able to catch the wind from the ocean.

The auditoria provide air conditioning, essential for all modern performing arts spaces. However, as you come out into the foyers, the temperature rises a little and then, when you emerge fully into the Banyan Plaza, you are greeted by the soft, warm air from the sea that wafts through the space. It is an extraordinarily pleasant way of re-adjusting gently to the tropical heat of the park outside.

LIGHT
Daylight comes into the building through openings in the roof and walls. But Kaohsiung is a city that dresses up for the evening and as soon as the sun disappears at 6pm, the lights come on, with a wonderful array of colour and pattern. In the Banyan Plaza, we have installed an artificial lighting system that allows many different ways of playing with colour and light; and the most exciting element of our lighting system is a succession of spectacular chandeliers, whose lighting states are completely flexible. They run all the way through the plaza.
CONCLUSION
A cultural building of enormous scope and prestige, Weiwuying is based on the local banyan tree, and made by the local shipbuilding industry. I am very proud of it, and of our in-house team and our partners who delivered it.

BUILDING DETAILS AND CREDITS
Theatre complex of 141,000 m² in the Wei-Wu-Ying Metropolitan Park with a total capacity of 6,000 seats: Concert Hall 2,000 seats, Opera House 2,260 seats, Playhouse 1,254 seats, Recital Hall 470 seats, gallery space of 800 m², 1,000 m² of rehearsal/education halls for music and dance, 2 conference halls with 100 and 200 seats and stage building workshops
Design: 2007-2009
Execution: 2010-2018
Client: Preparatory Office of The Wei-Wu-Ying Center for the Arts of the Ministry of Culture, Taiwan
Architect: Mecanoo architecten, Delft, The Netherlands
Local architect: Archasia Design Group, Taipei / TW
Structural engineer: Supertech, Taipei / TW
Mechanical engineer: Yuan Tai, Taipei / TW
Electrical engineer: Heng Kai, Taipei / TW
Acoustic consultant: Xu-Acoustique, Paris / FR
Theatre system: Waagner-Biro, Vienna, Austria
Theatre consultant: Theateradvies, Amsterdam / NL; Yi Tai, Taipei / TW
Lighting consultant: CMA lighting, Taipei / TW
Fire safety consultant: Ju Jiang, Taipei / TW
Organ consultant: Olivier Latry, Paris / FR
Roof and facade consultant: CWI, Taipei / TW
3D consultant: Lead Dao, Taipei / TW
Traffic consultant: Su International, Taipei / TW
Contractor: Chien Kuo Construction Co., Taipei / TW
Steel skin: Centraal Staal, Groningen/NL; Ching Fu, Kaohsiung /TW
Organ builder: Klais, Bonn, Germany
Awards: Chicago Athenaeum International Architecture Award 2009, International Design Award 2008, Cityscape Architectural Award 2008, the new award we won in Shenzhen