

BEYOND MODERNISM

The quest to find a 'new real' in architecture gave Japanese architect Toyo Ito a greater appreciation for the materiality of steel. The modern master's much-awaited recent Australian visit was punctuated by very few media opportunities, but one of those was with *Steel Profile's* **Rachael Bernstone** with whom Ito elucidated his landmark projects.

Toyo Ito experienced an epiphany during the course of his Sendai Mediatheque project in Sendai City, Japan. Completed in 2001, this set him on a new direction in design. Prior to winning the design competition in 1995 for a complex to house a library, art gallery and audio visual centre, Ito had sought to incorporate technology explicitly in his buildings, creating structures that "nobody could touch", that were "impossible to grasp and hold". His Tower of Winds (1986) in Yokohama and Tokyo's Egg of Winds (1991) were described by Tokyo-based architect Andrew Barrie as "interactive landmarks, whose design seeks to represent the invisible electronic world as a parallel to our physical environment".

Following Ito's experiments with materiality during the Sendai project, he now aims for "an architecture that you can touch and feel". The ground-breaking Sendai project marked the start of Ito's search for the new 'real' in architecture, in which he hoped to overcome some of the perceived limitations of Modernism.

Speaking about The New 'Real' in Architecture exhibition in Tokyo in 2006, Ito explained his shift: "Twentieth-century cities sought economic performance, so the same kind of buildings were constructed everywhere all over the world," he said. "More and more, however, such architecture strikes me as no environment for vibrant human life, so I've turned my attention to other possibilities in architecture. I feel there's a need to reassess the relationship between materials and people in order to reclaim a more fully human sense experience." ➔



In his competition entry for the Sendai Mediatheque, Ito described the steel structures as seaweed floating in a tank of water

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ABOVE LEFT AND RIGHT: Tokyo's Tama Art University Library owes the fine appearance of its variously-sized arches to steel

LEFT: Tama Art University under construction

BOTTOM LEFT: Tod's Japanese flagship store exemplifies Ito's desire to create surface using structure

BELOW CENTRE: Sendai Mediatheque in construction

BELOW RIGHT: The Meiso no Mori Municipal Funeral Hall in Gifu's steel formwork was Ito's favourite part of the building

BOTTOM RIGHT: Meiso no Mori Municipal Funeral Hall's finished form



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MEISO NO MORI MUNICIPAL FUNERAL HALL

Ito imbues his buildings with a sense of being in nature. In the Sendai Mediatheque, the natural world is evoked by the 13 steel 'tubes' that punctuate and support the seven steel-and-concrete slab floors.

"The strong contrast between organic shaped 'tubes' and thin, highly abstract 'plates' almost seems to plant a grove of trees across an otherwise man-made expanse," Ito says. "Or rather, it suddenly brings pure geometries into nature and sets them up in striking counterpoint."

The steel 'tubes' are vertical circulation routes that convey natural light to the ground floor (thanks to mirrors that line several of the shafts), fresh and conditioned air, and people moving on stairs or elevators between floors. The precision welding that connects columns to floor gives the impression that 'tubes' pass through 'plates' without touching, resulting in very flexible spaces that enable users to choose how they use them.

The seamlessness of the result may give an impression of ease, but the project's realisation was far from simple. In fact, the act of watching the site workers connect steel plates to steel tubes changed his "way of talking about architecture".

"At the time when I was doing the design, there was regular commentary on the project from local newspapers about the architectural ideas," he says. "I felt like a voodoo doll with lots of needles in me. Initially I had designed a gentle lightweight structure, but because of the negative comments, I decided to create an architecture that would

manufactured in sections before being welded together on-site. These were installed about 20cm apart before concrete was poured between them to support the nine-storey building.

Mikimoto may appear as a gleaming, pristine beacon for retail therapy, but in reality, the process of constructing it and its forerunners was complicated and messy. "The site is filled with steel – countless slabs and pipes are suddenly introduced into the middle of the urban space," Ito says. "Gradually they are being assembled to become one massive steel sculpture. The sound of dozens of welders echoes from morning until night as sparks fly from their torches, and the steel dust dyes the air like smoke belched from a chimney. This work seems too primitive for a construction site in the computer age; bringing things into evidence seems like a violent act.

"Although the skin is built with 12mm steel plate, when you weld it everything tends to bend," Ito continues. "Furthermore, if you don't do it perfectly, at the end you see the weld joints. To achieve a perfectly flat surface we had to work a lot. We, the engineers, the workers, we all had to experiment with a lot of different solutions.

"Working with the Taisei Corporation was fundamental. There is the typical attitude of the Japanese craftsman – they like to do difficult things and they love an impossible task. If the duty is impossible, then the craftsman generates incredible strength and energy. He thinks: 'I am the only one who can do it.'"

During his recent visit to Australia, Toyo Ito met with Glenn Murcutt, whose work he particularly admires, and who is well known for his experiments with steel. So do the two architects have much in common? "I enjoy the way he works and his attitude," Ito says. "He works only with himself, which means that he has to convince even himself that a design will work.

"I feel in Murcutt's work there is a strong connection between our two countries," Ito adds. "Glenn's wife's mother lived in Japan for 10 years – and he was also educated in Finland, and there are strong links between Finland and Japan. There are some very similar aspects in terms of culture and language. While it is very far from Japan or Finland to Australia, I think there is a close connection between Glenn and Helsinki."

Ito's most recent projects feature impossibly thin and light concrete structures that owe their delicacy to the steel within

become much stronger, so I decided to give much more prominence to the steel during construction. I found myself attracted to the strength of steel and its sense of substance.

"It sounds easy but it was difficult," he concedes. "The site welding of steel plates was delicate because if we had too many joins, the steel would bridge and bend. There were constant arguments between the structural engineer and the site workers. That was a very difficult aspect of the job, but I really enjoyed the construction process."

Ito's recent projects have been similarly challenging, and steel has again played a central role. The Serpentine Pavilion in London's Kensington Gardens (2002), for example, boasts a steel frame and white aluminium panels that blur the distinction between inside and outside, and floor, roof and walls. Back in Japan, the flagship store for Tod's in Tokyo's Omotesando (2004) exemplifies Ito's desire to create surface using structure. It uses steel-formed reinforced concrete and glass to produce a facade that mimics the Zelkava trees of the picturesque avenue.

For the nearby Mikimoto Ginza building (2005), Ito employed a similar method but eschewed concrete in favour of steel skins. All four facades comprise two 56-metre-tall steel sheets that were

That same dedication is evident in two of Ito's most recent projects which feature impossibly thin and light concrete structures that owe their delicacy to the steel within. At the Meiso no Mori Municipal Funeral Hall in Gifu (2006), the 20cm-thick white concrete roof floats upon freely dispersed columns, which rise up to 11.5m above a travertine platform, beside a small lake. Presenting a photo of the concrete being poured during construction, Ito said that the steel formwork was his favourite part of the building, adding that it was a terrible shame to cover it over with concrete.

At the Tama Art University Library (Hachioji campus) west of Tokyo (2007), the variously-sized arches also owe their fine appearance to steel. Ito wanted the new library, occupying a gateway position at the edge of the campus, to be easily accessible to the campus population, and to blend with its environment.

"To let the flows and views of these people freely penetrate the building, we began to think of a structure of randomly placed arches which would create the sensation as if the sloping floor and the front garden's scenery were continuing within the building," he says.

"The characteristic arches are made out of steel plates covered with concrete. In the plan, these

arches are arranged along curved lines which cross at several points. With these intersections, we were able to keep the arches extremely slender at the bottom and still support the heavy live loads of the floor above. The spans of the arches vary from 1.8m to 16m, but the width is kept uniformly at 200mm."

It is clear that connection is at the crux of this softly spoken man's work and life. In order to determine whether his ambition to create a new 'real' in architecture – to produce buildings that both attract and engage with their public – is realised in his projects, it's instructional to seek the views of others. According to architect Andrew Barrie, the Sendai Mediatheque is a hub of unexpected activity.

"When I visited the Mediatheque it was packed with people: families in the children's library; teenagers in the video booths; students cramming in the library; old men sitting, shoes off, checking betting forms in the quieter corners; black-clad, digicam-wielding architecture students charging up and down the stairs and lifts," Barrie said.

"The structure of the Mediatheque generates chance encounters, unpredictable connections and gatherings. This moves the building beyond being just a metaphor for architecture's connection to the city and the virtual world; it becomes an active agent in that exchange." **SP**