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Norihiko Dan | Norihiko Dan and Associates | Tokyo, Japan

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Norihiko Dan: Harmonizing Earth and Architecture



Norihiko Dan

A well-known architect and urban designer, Norihiko Dan is also a passionate environmental activist. From 2003-2006, he served under Nagano Prefectural Mayor Yasuo Tanaka as Master Architect, tasked with preserving the environment of Karuizawa, Japan. Dan also made great strides in this movement with his environmentally progressive masterplan for EXPO 2005 in Aichi, Japan. He strongly opposed conventional Japanese development methods and paved the way to protecting the Kaisho Forest. Dan's own Universal Form Theory is an homage to this belief, tightly integrating architecture with the surrounding landscape. With his innovative green townhouse designs, he is also an ambassador for rejuvenating city planning.

Born in 1956 in Kanagawa Prefecture, Japan, Dan studied architecture at Tokyo University and won the Graduation Design Prize in 1979. For his postgraduate work at the same university, he studied under the notable Fumihiko Maki. Dan then went on to complete his Master's degree at the Yale School of Architecture in 1984. He founded his own firm, Norihiko Dan and Associates, in Tokyo in 1986. Presently, the firm employs about 15 people, and they concentrate on public and private architecture and interior design, as well as landscape design, civil engineering, urban design, and art and furniture design.

In 2008, Dan received the ARCASIA Award Gold Medal for his unique and progressive work on the Utoco Limited Muroto Factory. Previous winners of this award include Vectorworks user Atsushi Kitagawara in Japan and Wong Mun Summ and Richard Hassell of WOHA in Singapore. Dan was also featured in the ambitious project "Stock Exchange of Visions," which included videos of visionaries across disciplines speaking about their aspirations for the planet's future in a traveling installation.

NISHIKYOGOKU SWIMMING POOL COMPLEX: THE UNIVERSAL FORM AT WORK

Dan's visions are guided by what's best for the planet, and this is evident in his design of the Nishikyogoku Swimming Pool Complex in Kyoto Prefecture. "My favorite part about this particular project is that it is half architecture and half landform, which creates a beautiful and uninterrupted whole," explains Dan. He had to invent a creative solution for this highly restrictive site. The building required approximately 3.0 hectares (30,000 square meters) gross floor space, yet it inhabited a site of just 3.6 hectares. "If we made the building flat, almost all of the area would be covered," Dan notes. The space also required dual functionality—it needed to accommodate a swimming pool in the summertime and a skating rink in the winter months.

To manage these two facilities, the building needed a large-scaled underground mechanical room. This necessitated the removal of about 90,000 cubic meters of dirt, the equivalent of filling 3,000 dump trucks—highly inefficient and highly inconvenient to the surrounding area. Since the site was bounded by a busy and congested residential area in Kyoto Prefecture, Dan and his team thought hard about the implications of transporting this enormous volume of dirt.

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Norihiko Dan received first prize in the "Landform Series" of the New Taiwan by Design International Competition for The Sun Moon Lake Administration office of the Tourism Bureau in Taiwan.

To solve the problem, Dan spent a lot of time considering the actual site. He reasoned that at six meters per story, the building's volume would equal 180,000 cubic meters. "The design approach for modern architecture lies in breaking down this 180,000 cubic meter architectural mass into parts, or to compose them, to create the building," he begins. Then inspiration struck. "If we compare this project to curry, the 90,000 cubic meters of dirt would be the 'sauce' and the 180,000 cubic meters of architecture would be the 'rice, meat, and vegetables'. So we would actually make 270,000 cubic meters of curry in total. I decided to use this idea as my starting point."

He reasoned that if they did not actually remove the dirt from the site, but rather used it again within the same site, they could avoid damaging the environment, even on this small scale. If the "curry" mix were comprised of half-architecture, half-landscape ingredients, the team could create a

green hill to balance and recover the surface area that the building had eaten up. If they started with the "sauce," they could modify their design to fit any site formation, just as curry or stew can fit in any pot, no matter what form.

"Form follows function," Dan continues, quoting acclaimed architect Louis H. Sullivan. "But, if we follow his theory in today's populous cities, inconsistencies and conflicts may happen in many areas. I named this curry-like architecture and land mixture a 'universal form' to lead this conceptual solution to a more solidified state. We needed to build the bridge between internal and external logic, meaning 'internal' functional requirements, and the 'external' influencers like the surrounding sites or even the mountains framing the site from a distance." In the Nishikyogoku Swimming Pool Complex project, great care was taken to bridge these internal and external logics.

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The result was a seamless mix of earth and architecture. Part of the structure is built into the hillside, with a green roof cover that helps to regulate internal temperatures. A wide concrete staircase leading down into the main entrance cuts a zigzag towards the center of the site. A kidney shaped fluid form pushes up from the land, reflecting the large swimming pool/ice rink inside. The interior light is incredible, filtered through steel

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The Nishikyogoku Swimming Pool Complex is a seamless mix of earth and architecture.



Image courtesy of FUJITSUKA Mitsumasa.

The interior light of the swimming pool complex is filtered through steel beams and voluminous glass windows.

beams and voluminous glass windows. It lends an open airy feel to the large space, which contains 3,000 bright yellow seats that complement the bright blue water or shining ice below. The facility also holds a health and fitness center, as well as an archery practice range. Dan designed many sharp angles and included many flowing freeform curves, lending a great deal of movement to the space.

Dan and his team use Vectorworks® Architect software to create all of their designs from conception to completion. For the Nishikyogoku Swimming Pool Complex, they made use of the powerful 3D modeling tool set, specifically using NURBS curves to draw the incredible number of freeform shapes, and surfaces. They found that the ease of use and efficiency offered by the programs design-focused tools helped increase their productivity dramatically, and that the renderings helped to sell the project to the city.

Dan collaborated with Mitsuru Senda, founder of the Environmental Design Institute, on the design. Completed in 2002, Nishikyogoku Swimming Pool Complex was awarded the Silver Award from IOC/IAKS (International Olympic Committee/ International Association for Sports and Leisure Facilities) in 2005.

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WORKING JOYFULLY

Norihiko Dan has created many notable works that have garnered praise from the New Taiwan by Design International Competition, such as the Floating Tea House and the Sun Moon Lake Administration office of the Tourism Bureau, which each received first prize honors in recent years in the competition's "Landform Series." The redevelopment of the Taiwan Taoyuan International Airport Terminal 1 won first prize in the "Gateway Series" category of the competition.

His philosophy is simple. "We try to work earnestly and joyfully on every field of architecture design. We're inspired by every formative natural art—by

their very existence and especially their interesting and complicated histories." Dan continues to produce work according to his Universal Form Theory, garnering great recognition—and bettering the world around him—along the way.

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