
Matter in the Floating World

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Conversations with Leading Japanese Architects and Designers

Hitoshi Abe · Tadao Ando · Jun Aoki · Masayo Awe ·
Shigeru Ban · Shuhei Endo · Terunobu Fujimori ·
Kenya Hara · Eriko Horiki · Sachiko Kodama · Kengo Kuma ·
Toyo Ito · Oki Sato · Kazuyo Sejima · Reiko Sudo ·
Takaharu Tezuka · Akira Wakita · Makoto Sei Watanabe ·
Yasuhiro Yamashita · Tokujin Yoshioka

Blaine Brownell

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*In memory of Tomio Abe, John Hancock, and Allan Walker—
who each shared his own special Japan with me*

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When the World Floats: Material Buoyancy in Contemporary Design

The authenticity of materials is no longer guaranteed. The constructed world was once dominated by wood, stone, brick, iron, and bioderived fibers. However, we have now entered an age in which countless new materials are added to the patent database every day, and these materials are being harnessed by research laboratories, product manufacturers, and design firms to create new applications within the built environment. The fibers of our clothes, the tips of the ballpoint pens we use to write, and even the ingredients in the food we eat are constantly subject to change. To discount these alterations is to underestimate the significance of the massive material transformation currently underway.

In 1986 sustainable design expert Ezio Manzini clearly articulated this trajectory in his book *The Material of Invention*. Using the term “light recognition,” Manzini addressed the loss of meaning in contemporary materials and instead emphasized materials’ “performance-related identities.”¹ His prediction came to pass, and we are now surrounded by objects like biodegradable plastic, transparent concrete, and sensory touch screens—products we don’t understand in terms of material origins, but rather in terms of functional attributes. In 1995 architecture and design curator Paola Antonelli contributed to the critical assessment of contemporary materiality in her influential *Mutant Materials* exhibition at the Museum of Modern Art. Stating that “the mutant character of materials, as expressive as it is functional and structural, generates new forms and a more experimental approach toward design,” Antonelli exposed the newfound freedoms in material production, proposing that the emphasis has shifted from material capabilities to the potentials of the human imagination.² In her assessment, Antonelli established the extent to which contemporary materiality is testing us, alluring us, and entralling us.

Blaine Brownell’s work here highlights this significant change in material culture from the perspective of Japanese contemporary design. In Japan, material is called *sozai*, which means “pure” or “white” matter. Traditionally, materials are consecrated when they are handled or altered, and are regarded as a rich source of inspiration. Craftsmen, carpenters, and even sushi chefs listen to the “internal voice” of materials, seeking to extract their intrinsic logic in order to fashion new objects. As clearly introduced in this book, this idea is alive and well in the work of contemporary Japanese architects and designers, who derive the syntax of designed objects and spaces from the hidden physics of materials. A major purpose of this book is therefore to communicate an awareness of physical transcendentalism in Japanese culture, which may certainly influence the international design sphere.

In his direct conversations with interviewees, Brownell successfully reveals the transient and ephemeral nature of the projects at the forefront of contemporary Japanese design. For example, in Tokujin Yoshioka’s Venus chair—which incorporates the phenomenon of crystallization within the aesthetic of the object—there is no longer a distinct division between material and form, or *hyle* and *eidos*. It is much more indicative of Heraclitus’s philosophy of *panta rei*, or “everything flows,” reminding us that design is just a moment within a

continual state of material flow. Materials like plastics, concrete, or liquid crystal displays are all employed for their characteristic state of liquidity, thus revealing the inherent inconstancy of matter in its various physical states. Moreover, the dynamic changes in today's society demand that materials become more changeable, reactive, and elastic. As a result, terms like dematerialization, ephemerality, and instability are frequently employed in the contemporary design process. This is an irreversible tendency seen not only in Japan, but also throughout the globalized world. Design must therefore uncover new possibilities within a constantly shifting context.

In our reading of *Matter in the Floating World*, we witness the ways in which matter also causes the world to "float." The many imaginative projects presented here defy our preconceptions toward expected material behavior in design, and project ephemerality through substance. This book is a record of the ways in which Japanese designers, researchers, craftspeople, and manufacturers are currently pursuing this preternatural buoyancy. It reveals a confidence in design intelligence, a passion for material sensitivity, and a "pure" and "white" attitude directed toward our common future. For this reason, I believe this book will make a distinct mark in its appraisal of humanity as well as materiality.

With respect to the contributors and author.

—Hiroshi Ota, Architect and Associate Professor, Institute of Industrial Science, the University of Tokyo

¹ Ezio Manzini, *The Material of Invention* (Cambridge: MIT Press, 1989), 34. Manzini states: "In this case the new identities of image and/or performance, springing from various materials and various combinations of materials, would become the new words in a language of objects. They would lose, however, the 'weight' of meaning that words such as 'marble,' 'wood,' and 'steel' once had. The new recognizability of materials is destined to be a 'light recognition.'"

² Paola Antonelli, *Mutant Materials in Contemporary Design* (New York: Museum of Modern Art, 1995), 17.



Kengo Kuma & Associates' Oribe Teahouse

Substance and Transience in Japanese Architecture and Design

Many new buildings in Japan remind us of the poignancy of things on the verge of disappearing or, conversely, on the point of emerging. Experiencing them is a process of suspending architecture in a perpetually evanescent and temporary state of “in-between” where becoming and fading away, growth and decay, presence and absence, reality and fiction, silence and speech take place simultaneously—or perhaps are one and the same thing. It is in this sense that many of these designs evoke the images of elusive phenomena, of twilight, shadows, clouds, or mirage, and gain a certain ephemeral or fictive quality.

—Botond Bogнар, *The New Japanese Architecture*

Japanese architecture and design have long fascinated a global audience. The masterful combination of aesthetic elegance, functional pragmatism, technological sophistication, and precision in craft that characterizes exemplary works from Japan has exerted a strong influence abroad, especially during the last two centuries. The stylized organic forms of art nouveau, for example, were inspired by the inundation of Japanese wood-block prints and other artworks in Europe during the mid-nineteenth century.¹ Frank Lloyd Wright was profoundly influenced by Japan, and his celebrated Prairie Style works exhibited qualities reminiscent of the structures and spatial logic found in Japanese architecture.² Bruno Taut was also taken with the art of building in Japan, and his publicized acclaim for the Katsura Detached Palace, Ise Shrine, and other revered monuments established a new framework for understanding Japanese architecture from a Western perspective.³

In these and other examples, the enduring significance of Japanese architecture and design for foreign audiences has revealed a fascination with something deeper than mere visual or organizational qualities. The product of a homogeneous culture that developed in relative isolation over millennia, the Japanese creative process is connected to deeply embedded traditions and philosophies that define space and time as particularly precious commodities. As a result, Japanese design embodies a heightened awareness about the ephemerality of existence and the significance of the present moment. Japanese artists and craftspeople therefore approach their work with an acute interest in perception, seeking to enhance the viewer’s multisensory experience. It is not enough for a creative work to be attractive or functional; it must also readjust expectations about reality. This elevated state of consciousness is possible when one is simultaneously aware of the physicality and ephemerality conveyed by a work, resulting in a vacillating condition of permanence and impermanence, emergence and dissolution, reality and illusion.

Artists and architects have long appreciated the value of uniting the concrete and the abstract. Creative endeavors are born somewhere within the inscrutable realm of consciousness and eventually assume physical form with the investment of labor and material. The process through which this exchange occurs remains a singular mystery, and eminent minds have attempted to give it definition. Louis Kahn wrestled with what he called the “measurable and the unmeasurable,”



Shokin-tei tea pavilion, Katsura Imperial Villa, Kyoto



Eriko Horiki & Associates' Mino Washi no Sato Kaikan



Ise Jingu

declaring that “the measurable is only a servant to the unmeasurable.”⁴ Japanese architect Kiyonori Kikutake incorporated physicist Mitsuo Taketani’s theory of three elements—the phenomenal, the substantial, and the essential—as *ka*, *kata*, and *katachi*, proposing a parallel for the design process.⁵ Inherent in these perspectives is the notion of a conduit that links consciousness to substance. Craft, procedure, and technique are tools used to bridge mind and matter, projecting ideas onto material. Although this marriage of concept and corporeality is an inherent part of the design process, it is a much more difficult prospect to create work that preserves a connection to the realm of ideas. As Kahn declared, “A great building, in my opinion, must begin with the unmeasurable, must go through measurable means when it is being designed and in the end must be unmeasurable.”⁶

The Japanese creative psyche exhibited this approach long before Kahn’s pronouncement, and the Japanese creative arts have captivated a global audience with their adroit embodiment of ephemerality within substance. This sensibility is evident in early works of Japanese architecture constructed for the worship of Shinto, Japan’s native polytheistic religion. Ise Jingu, the Grand Shrine devoted to the goddess Amaterasu and originally constructed in the mid-eighth century, is the most-heralded example of Shintoism. As architect Kenzo Tange writes, “Ise came into being through the sublimation of symbols into a basic form”—a manifestation that “partakes of the primordial essence of the Japanese people.”⁷ A persistent program of rebuilding sustains this embodiment of religious symbolism. With the exception of a few historical lapses, Ise Jingu has been relocated and rebuilt every twenty years, alternating between two adjacent and identical sites. This cyclical reenactment of origins preserves the presence of the “unmeasurable” in a state of permanent suspension—a concept similar to what Martin Heidegger calls the “temporality of falling.”⁸ According to architect Arata Isozaki, “We are forever being lured toward whatever may be lurking in a beginning endlessly repeated.”⁹

The spirit of Ise Shrine’s frequent renewal resonates throughout Japanese art and architecture. In the eighteenth century, influential literary scholar Motoori Norinaga coined the phrase *mono no aware*, which has been translated as “sensitivity to things” as well as “awareness of the transient beauty of nature.” In this simple expression, Norinaga captured the essence of Japanese attentiveness to the present moment, and the concept became a critical aesthetic principle in Japanese art and culture until modern times.¹⁰ The celebration of transience was fundamental to the development of the *cha-no-yu* (tea ceremony) as well as Japanese garden design, in which seasonal changes were accentuated and embraced. Reveling in ephemerality was also a central theme in *ukiyo-e*, or “pictures of the floating world,” which were produced in the latter seventeenth century to depict an evanescent, dreamlike realm of entertainment and beauty—in contrast to the banal experience of daily life. These developments relied upon articulating distinctions between corporeality and spirit, as well as reality and illusion.

Historians and critics have underscored the contrast between substance and permanence in Japanese art and architecture as a way of clarifying different physical, cultural, and conceptual attitudes. One dichotomy surfaced in the 1950s Jomon/Yayoi dispute, which juxtaposed the differing styles of the Japanese

Jomon (10,500–300 BCE) and Yayoi (300 BCE – 200 CE) archaeological periods. Painter Taro Okamoto, who sought to label the distinction between the abstract and concrete as “oppositionalism,” characterized the earthy, rugged beauty of Jomon earthenware as populist and the clean, sophisticated terra-cotta works of Yayoi as elitist.¹¹ Okamoto’s interpretation influenced architects like Kenzo Tange, who distinguished a raw, earth-bound architecture from one defined by lightness, refinement, and elevation.¹² Another schism developed between the different approaches for temple and teahouse construction. *Miya daiku*, or temple builders, were concerned with the structural resolution of large buildings that emanated a particular gravitas; meanwhile the *sukiya daiku*, or teahouse artisans, focused on crafting small-scale, delicate structures that seemed to float or disappear within their context.¹³ More recently architect and historian Terunobu Fujimori has promulgated another dichotomy between what he calls the “red school” and the “white school.”¹⁴ According to Fujimori the red school is defined by mass, rawness, and realism, whereas the white school is characterized by lightness, elegance, and abstraction. Intended to illuminate the dissimilarities between contemporary architects like Arata Isozaki (red) and Fumihiko Maki (white), Fujimori proposes that red signifies earth, nature, and the body, while white symbolizes sky, artifice, and the mind.

Although these dichotomies establish stark contrasts, reality is decidedly less clear. Despite the fact that Fujimori feels that the white school is ascendant in contemporary Japanese design, he adds, “Nevertheless, we cannot clearly divide all architects into red and white. There are red elements in Maki’s work and white is mixed into Isozaki’s work.”¹⁵ Thus, the truth lies somewhere in the assimilated combination of the two tendencies. Moreover, differing sides are not actually engaged in cutthroat competition, but rather in a respectful dialogue about divergent viewpoints. After all, assimilation is a fundamental theme throughout Japanese history, and contrasting sides have often found common ground in a society that values social harmony and mutual respect. Architect Kisho Kurokawa’s philosophy of symbiosis, for example, advocates a balanced coexistence of contrasting elements that are able to maintain their individual viewpoints without compromise.¹⁶ This inherent predisposition toward assimilation helps explain Japan’s remarkable ability to weather significant changes since the mid-nineteenth century, including Westernization, industrialization, modernization, post-World War II reconstruction, and the wholesale transformation of building construction from wood to steel and concrete. In the wake of such massive disruptions, the fact that Japanese architects and designers continue to address fundamental Japanese concepts today—despite the fact that their projects bear little or no resemblance to past works—is profoundly impressive.

Matter in the Floating World addresses the connection between materiality and transience in the work of twenty renowned contemporary Japanese architects and designers. The conversations presented here relate firsthand knowledge about the design methods, strategies, and ambitions they apply to create groundbreaking work. The dialogues also reveal personal insights about these remarkable human beings, exposing their struggles, surprises, aspirations, and successes—stories that dispel cultural barriers and transcend geophysical boundaries. All of these discussions bring to light a collection of common



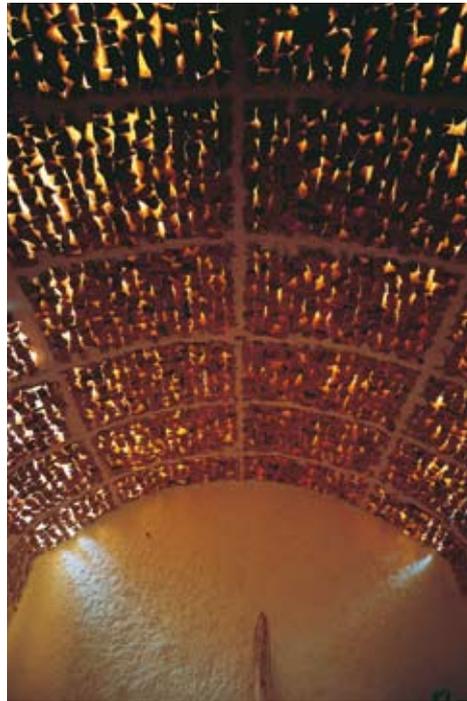
Great Buddha Hall, Todai-ji, Nara



Genka-sen well, Kinkakuji, Kyoto



Dior Omotesando, SANA A—indicative of the white school



Shin-ken (Firewood Tearoom), Terunobu Fujimori—indicative of the red school

interests, including material expertise and the precision of craft; a consideration for resources and the optimization of fabrication processes; a reduction of elements and simplification in approach; a connection to tradition with a focus on the future; an appreciation for multidisciplinary and a respect for diverse backgrounds; and an open-mindedness and fearless enthusiasm for experimentation.

The conversations are organized according to four general themes that illustrate various approaches for embodying materiality and evanescence in architecture and design. Each theme has specific origins within Japanese culture as well as broad relevance for creative practices in other geographic regions. “Lightness” describes resource-sensitive approaches to achieving technologically sophisticated constructions via minimal material means. “Atmosphere” considers the formation of spaces that employ light and materials to stimulate curiosity and imagination. “Flow” examines spatial sequences that facilitate connectivity as well as multivalent surfaces that embody instability and transience. “Emergence” concerns the realization of complex structures and assemblies from the study of natural phenomena and ecological systems. Together, these themes convey the breadth of approaches employed by today’s Japanese avant-garde to create exceptional works of architecture and design.

As the world continues to address seemingly intractable challenges, and proponents of design struggle to communicate its value, it is my desire that this collection of provocative discussions will provide wisdom and inspiration to a broad audience. I also hope that readers from all parts of the globe may find meaningful applicability of these visionary approaches to assimilating the measurable and immeasurable within their own work.

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- 1** Debora L. Silverman, *Art Nouveau in Fin-de-Siecle France: Politics, Psychology, and Style* (Berkeley: University of California Press, 1992), 114.
- 2** Kevin Nute, *Frank Lloyd Wright and Japan: The Role of Traditional Japanese Art and Architecture in the Work of Frank Lloyd Wright* (London: Spon Press, 2000), 68.
- 3** Bruno Taut, *Houses and People of Japan* (Tokyo: Sansendo, 1958).
- 4** Louis I. Kahn, lecture to the students at the School of Architecture, ETH, Zurich, Feb. 12, 1969, reprinted as "Silence and Light—Louis I. Kahn at ETH 1969," in Heinz Ronner and Sharad Jhaveri, *Louis I. Kahn: Complete Works 1935–1974*, 2nd ed. (Basel, Switzerland: Birkhäuser, 1987), 6.
- 5** Kiyonori Kikutake, *Taisha Kenchiku Ron—Ka, Kata, Katachi (The Metabolic Theory of Architecture—Hypothesis, Form, Shape)* (Tokyo: Shokokusha, 1969).
- 6** "Voice of America—Louis I. Kahn. Recorded November 19, 1960" folder, Box LK 53, Louis I. Kahn collection, University of Pennsylvania and Pennsylvania Historical and Museum Commission.
- 7** Kenzo Tange and Noboru Kawazoe, *Ise, Prototype of Japanese Architecture* (Cambridge: MIT Press, 1965), 18–19.
- 8** Martin Heidegger, *Being and Time*, trans. John Macquarrie and Edward Robinson (San Francisco: Harper, 1962), 396. Arata Isozaki makes note of Heidegger in his essay on Ise (see next endnote).
- 9** Arata Isozaki, *Japan-ness in Architecture*, trans. Sabu Kohso (Cambridge: MIT Press, 2006), 146.
- 10** Robert E. Carter and Eliot Deutsch (foreword), *The Japanese Arts and Self-Cultivation* (Albany: State University of New York Press, 2007), 149. Carter and Deutsch explain that *mono no aware* emphasizes the fact that "the transiency of all things should only make them more precious in our eyes. The term refers to aesthetic sensitivity as an awareness of the richness and diversity of life where beauty and sadness as the awareness of the fleeting quality of all things meet."
- 11** Isozaki, *Japan-ness in Architecture*, 38–39.
- 12** *Ibid.*, 39.
- 13** Thomas Daniell, *After the Crash: Architecture in Post-Bubble Japan* (New York: Princeton Architectural Press, 2008), 97.
- 14** Terunobu Fujimori, *Y'Avant-Garde Architecture* (Tokyo: Toto Shuppan, 1998), 16–17. Fujimori's model is intended to highlight contrasts in contemporary Japanese architecture, yet one can easily see its applicability to premodern examples. See also the conversation I had with Fujimori that appears in this book, pages 132–43.
- 15** *Ibid.*, 17.
- 16** Kisho Kurokawa, *Intercultural Architecture: The Philosophy of Symbiosis* (Washington, DC: American Institute of Architects Press, 1991).



LIGHTNESS

Lightness has often been associated with modernity, in literal as well as figurative senses. In the book *All That Is Solid Melts into Air*, Marshall Berman captured the sweeping social changes caused by modernization, marking the dissolution of stable institutions and environments from advances in technology and industrialization.¹ Milan Kundera drew connections between a modernizing political sphere and personal freedoms in his novel *The Unbearable Lightness of Being*.² Architects like Buckminster Fuller embraced the enhanced strength-to-weight ratios made possible by modern engineering and sought to encapsulate maximum volume with minimal material in new constructions.

Japan's affinity with lightness extends much farther back in time, as exemplified in elevated Yayoi-era structures or sukiya-style teahouse architecture. Even weighty, monumental buildings like the eighth-century Great Buddha Hall at Todaiji were articulated with nimble bracketing and graceful eave details, conveying an otherworldly presence. The delicacy and refinement exhibited by the seventeenth-century Katsura Detached Palace so impressed German architect Bruno Taut in 1933 that he celebrated its qualities in relationship to the emerging International Style, calling it "a masterpiece according to the measure of modern architecture."³

The aesthetic predisposition toward lightness in Japan is connected to the nation's scarcity of natural resources—a limitation that influenced artisans and builders to develop consummate skill in working with materials. Lightness

assumed enhanced meaning during Japan's post-World War II reconstruction, when a high level of resource productivity enabled the swift drive toward unprecedented industrial growth. The habitual transformation of drawbacks into opportunities in Japan has resulted in an association between frugality and prosperity—a relationship that resonates throughout contemporary Japanese architecture and design.

One strategy to achieve lightness is to reduce structure to minimal dimensions. The exaggerated, column-free spans of Tezuka Architects' buildings, for example, evoke surprise in their insubstantiality. The perforation of building envelopes with proportionately large, unobstructed apertures enhances this minimal approach by dissolving the boundary between inside and outside. Architect Kengo Kuma delights in this dissolution, intentionally blurring the edges between a building and its context. By investing considerable time in construction details, Kuma achieves lightness via a kind of material sleight of hand—making a glass-clad room appear to float on water, or a stone facade seem suspended in midair—in an effort to evoke a sense of unreality.

Another approach to lightness involves the fulfillment of multiple requirements with a minimal number of materials. This practical technique is seen in traditional Japanese devices such as the *hakokaidan*, or box staircase, which integrates a chest of drawers under a stair, or in *koshi*, or latticework, which supplies domestic privacy while affording light penetration. Atelier Tekuto's Cell Brick house exemplifies this multifunctional approach, with a series of thin boxes comprising structure, facade, and interior furniture. Design office Nendo endeavors to create uncommon functional pairings, such as a house enveloped by a communal library,

or a bench that records the passage of time. These unexpected alignments of diverse uses inspire a small moment of surprise in the user—a kind of inner lightness that emerges during a moment of revelation. Also surprising is Shigeru Ban's realization of strong structures made with weak materials. His creation of complex, long-span vaults out of paper tubes—which are certainly among the lightest and most disposable of objects—astonished the architecture community in their apparent defiance of gravity. Ban also achieves lightness via low-impact approaches to material resources. His Nomadic Museum, for example, may be easily constructed in any major port, due to its utilization of plentiful, local shipping containers for structure and envelope. This heightened sensitivity to materials not only facilitates the realization of thoughtful and concise design approaches, but also the minimization of environmental impact.

¹ Marshall Berman, *All That Is Solid Melts into Air: The Experience of Modernity* (New York: Penguin, 1988).

² Milan Kundera, *The Unbearable Lightness of Being* (London: Faber and Faber, 1984).

³ Arata Isozaki, *Japan-ness in Architecture*, trans. Sabu Kohso (Cambridge: MIT Press, 2006), 12.



Expanding Boundaries

A conversation with Takaharu Tezuka, Tezuka Architects

Takaharu Tezuka is convinced that buildings must push technological boundaries in order to be meaningful to society. This pursuit originates from a desire to integrate architecture more closely with its site through deeper connections between interior and exterior environments. In partnership with his wife, Yui, Tezuka bases building designs around these connections, with projects like House to Catch the Sea, Temple to Catch the Forest, and House to Catch the Sky. The result is a collection of extraordinary approaches toward envelope, structure, and aperture that achieve a closer association with nature.



Takaharu Tezuka was born in Tokyo in 1964. He earned a B.Arch from Musashi Institute of Technology in 1987 and an M.Arch from the University of Pennsylvania in 1990. From 1990 to 1994, he worked at the Richard Rogers Partnership in London, then returned to Tokyo to establish Tezuka Architects with his wife, Yui, in 1994. His firm has received international awards for projects such as the Roof House, Echigo-Matsunoyama Natural Science Museum, and Fuji Kindergarten. Tezuka has taught at the Musashi Institute of Technology (1996–2003), the Salzburg Summer Academy (2005–6), the University of California, Berkeley (2006), and Tokyo City University (2009–present).

Machiya House (opposite)

The first projects you and your wife designed after founding Tezuka Architects reveal the influence of your former mentor, Richard Rogers. However, as your work progressed, you seem to have developed your own distinct sensibility.

There's no doubt that Rogers's influence is quite clear and very difficult to disregard, but I knew we would have to develop our own language. With Richard Rogers, every detail has to be articulated beautifully, but Yui and I had to forget this approach because we wanted to make everything plain—and clean. Also, the funny thing is that Richard never liked to be called a “high-tech-style” architect. He is a modernist to the core, however, and he has always sought perfection and precision in architecture. Richard treated all of his employees like students, and as a result he would achieve things beyond his expectations.

Is that how you run your office as well?

Yes. This intern is making many models on her own initiative, for example [gestures toward employee]. She will make forty or fifty models and then I will join her and discuss various ideas. I always try to work with young architects with fresh ideas. I also let these architects run projects from the beginning to the end. Even inexperienced interns will eventually build up experience this way. Thus, our office is always changing. Of course, I supervise each design, and I have my own taste—however, I try to focus on the ideas. An ideal example is Louis Kahn. He did not simply give each architect a drawing or detail—he provided a way of thinking. His goal was to develop the logic for each project. So I always try to focus on the logic of each project with my employees. That is the most important thing, and that is what I learned from Richard Rogers.

This clarity of thinking is evident in your work.

The Roof House, for example, doesn't require explanation—people immediately understand the way the roof is designed as a functioning, habitable space. The architectural diagram is incredibly clear. Your selection of materials

is also very clear—materials are not merely applied; they support the logic of the project.

Actually, that is what we are trying to do. We can't be so pure all the time, however. You know, there are some really difficult clients and some challenges that prevent this kind of clarity. However, my belief is that we shouldn't attempt too many things on one project. If we were designing a city, it would be a different matter—but in that case, design variations should come from a variety of architects. I don't believe in the kind of fictional variety one sees in master-planned projects designed by one architect, for example.

When do you begin to think about materials in your projects?

Well, it is difficult to say when, because it really depends on the project. In the case of the Echigo-Matsunoyama Natural Science Museum, we decided upon Cor-Ten steel from the beginning.¹ When the competition was announced, we did a site visit and I immediately said, “I want to cover this in Cor-Ten steel.” I wanted a material that would be durable and impart a monolithic feeling. Although concrete has these properties, it wouldn't have been as appropriate as steel for the long, thin shapes we wanted for the museum. The acrylic, however, was selected at the end of the competition.

The material for the windows? How did you determine that?

We couldn't find any other way to figure out the structure. We wanted one continuous, interrupted material for the window, but we wondered what could stand against the enormous pressure exerted by a heavy snowfall. My students and I were discussing this problem, and at the time we were drinking very strong Russian vodka [laughter]. I was really drunk and suggested many ideas. At one point, we discussed submarines, which have

¹ Cor-Ten is a weathering steel with increased resistance to corrosion due to a thin, protective layer on its surface. The first architectural application of Cor-Ten was in Eero Saarinen's Deere & Company World Headquarters, built in Moline, Illinois, in 1964.

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