

# **KENGO KUMA**

**Inspiration and Process in Architecture**

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*Inspiration and Process in Architecture* is a series of monographs on key figures in modern and contemporary architecture. It offers a reading of the practice of design which emphasises the value of freehand drawing as part of the creative process. Each volume provides a different perspective, revealing secrets and insights and showing the various observation techniques languages, characters, forms and means of communication.

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Writings

## Sketching, drawing, modelling: phenomenology of the project in the work of Kengo Kuma

Marco Muscogiuri

Along the route of the project the architect leaves countless traces: drawings, notes, sketches, models. The sketches contain the genetic code of the final work, as the keeper of the infinite potential, of all that might have been. They are the footprints of the design process, which is a non-linear procedure, dominated by elements that are often unconscious and difficult to objectify, and the crossroads of *techne* and *inventio*, restrictions imposed by the functional programme and by the references sedimented in the knowledge, culture and memory of the designer.

All this is particularly evident in the drawings of Kengo Kuma presented in this book, in which evanescent sketches in pencil alternate with CAD technical drawings. Although the combination of these two languages at first appears discordant, it is consistent with the architect's design methodology and philosophy.

The sketches, characterised by a rare, orderly graphic style featuring recurring strokes of different lengths, sizes and thicknesses, meticulously traced, compose backgrounds of varying gradation. The architecture never appears delineated by an outline, but its form, which is almost always in front elevation drawing, appears as an ethereal background that dissolves into the surrounding landscape. This landscape, which usually has a far greater impact than the building itself, is designed with wide, warm-coloured expanses tracing the land and vibrant textures defining the sky or vegetation.

The technical drawings, precise, meticulous and highly detailed, are inextricably bound to the sketches, since it is thanks to the precision of his working detail, technical expertise and masterful use of materials, based on the best Japanese building tradition, that Kuma succeeds in bringing to the reality of the finished structure the same rare incorporeity represented on paper.

No intermediate designs are presented between the sketches and the working drawings, and much of the design process remains outside the framework. The words of the architect himself give us an idea of how much is omitted, as he speaks of the importance of knowing the project site and its environment, its morphology and topography, the local history and culture and meetings with the local carpenters and craftsmen (a key aspect in his work). And then there are the physical models, which he regards as more crucial than the drawings in verifying the project, up to the full-scale mock-ups, which allow him to calculate the size of the 'particles' that make up the facades, to see how the light passes through, and to weigh the visual heaviness or lightness of the overall result.

With regard to the working drawings published in this book, Kuma has personally modified each one by hand, crossing out certain parts with thick, bold lines in order to better emphasise other respects: in some the 'weight' of the ground, the rock or the surrounding vegetation has been accentuated, while in others the empty space has been filled in around the building, which seems thus to be permeated by it. In this way, Kuma seems to want to contaminate the objectivity of the technical drawing, causing it to go from being allographic to autographic, almost as if to emphasise the phenomenological aspects of perception as a founding principle of his architecture.

### From drawing to materials: experiencing architecture

The tools and methods of representation can heavily condition the development of the project and influence the architectural language. In Europe, Renaissance architecture is related to the systematization of the scientific foundations of perspective, just as the orthogonal projections of Mongian descriptive geometry underlie a large part of the results of the modern movement. Likewise, the use of axonometry in the neoplastic experience becomes method, design principle and architectural poetics. Today the techniques of digital representation de-

termine the evolution of many architectural languages, to the extent of being at times consubstantial with the architectural poetics of those who use them (we refer, for example, to parametric modelling, from Greg Lynn to Peter Eisenman and as far as the Parametricism of Patrik Schumacher and Zaha Hadid).

This could not be further from the design methods of Kuma, who, nevertheless, demonstrates a great critical awareness of how the tools of representation are related to the languages and construction methods of architecture. In his writings, in fact, he goes as far as hypothesising a direct consequentiality between computer graphics, by which the textures of the materials are pasted onto the various surfaces of a 3D virtual model, and the most widely used construction techniques, which Kuma detests and refers to as the "method called concrete", characterized by a reinforced concrete structure with walls covered by a thin top layer (in plaster, stone, metal, etc.).<sup>1</sup>

According to Kuma, construction technique and technique of representation are two faces of the same coin, resulting from a gradual excessive abstraction and conceptualisation of the design and manufacturing process. He believes, moreover, that with concrete-related building systems, which are based on the economy of times and construction means on the basis of contracts and subcontracts for the various finishing systems, the architect ends up having a marginal role, often disconnected from the actual building itself.<sup>2</sup>

Kuma's aversion to concrete is clear and absolute. According to one of his well-known anecdotes it originates from the sense of suffocation and physical discomfort that he experienced when he visited, while still a student, the Azuma House of Tadao Ando<sup>3</sup>. This discomfort, which he expresses in physical and sensory terms, contrasts with the pleasure he associates with the memory of his birthplace, a pre-war Japanese wood frame house, "simple, with plenty of ventilation". It is these two memories that have led him to use concrete as little as possible and to take a distance from the divi-

sion between structure (concrete) and material (finish), choosing rather to pursue a new/rediscovered use of the materials in their whole state.<sup>4</sup>

All the materials (steel, wood, stone and glass, but also bamboo, straw, adobe, plastics, ceramics, fabrics and paper) are therefore used on the basis of their structural value, made rigid, where necessary, with steel elements, in their naked naturalness<sup>5</sup>. Kuma's interest in the materials and the construction details is central to his work, and makes his minimalism very distant from that of other Japanese architects, through the creation of architecture that is tactile, emotional and multisensory. "I want to produce architecture freely without feeling constrained by specific techniques or methods. (...) Starting out from human sensations, I want to arrive at an architecture that utilises everything, from traditional techniques to the most advanced technology."<sup>6</sup>

### Towards an Architecture of Relationships: rediscovering the roots

Another point of contrast between Kuma and most contemporary architects is his refusal to follow the trend of producing architecture that is 'objectual', sculptural, seductive, realised as hypertextual contrivances of media-oriented spectacularity. In 2008 Kuma published the book *Anti-Object*<sup>7</sup>, in which he denounces the contradictions of architecture in relation to the failures of today's globalised society. The criticism appears much more pungent for the fact that it was amplified by the subsequent explosion of the international economic crisis.

Following this he developed his thoughts further. "What I am most interested in now", he wrote in 2012, "is inverting the structure of a culture that is centred around the city. The 20<sup>th</sup> Century was an age of industry, and an age in which everything from material goods, information and culture flowed from the cities to local towns and villages. Following the same vector, architecture too flowed out from the centre to the periphery. Concrete, steel and glass produced in the cities were transported to the country, and

<sup>4</sup>"The "method called concrete" is basically a style that goes all the way in disregarding the material or, to be more accurate, the substance itself, it is only a skin with a thickness of about 20 mm, a finish attached onto the concrete surface. (...) Material is not a finish. (...) Therefore, I think that the term 'Material Structure', which I coined, is well chosen". *Id.*, p. 9

<sup>5</sup>Often the materials are subjected to high-tech treatments which, while altering their chemical and physical qualities (e.g. fireproofing), leave their perceived qualities unaltered.

<sup>6</sup>Luigi Alini, *Kengo Kuma. Opere e progetti*, Milan, Electa, 2005, p. 28

<sup>7</sup>Kengo Kuma, *Anti-Object*, Architectural Association, London, 2008

<sup>1</sup>Cf. Kengo Kuma, *Materials, Structures, Details*, Basel, Birkhäuser, 2004, p. 60

<sup>2</sup>We believe that the diffusion of the new BIM (Building Information Modeling) software is a confirmation of this idea, and that the role of the architect, depending on his command of this software, may be further diminished or, contrarily, enlarged.

<sup>3</sup>K. Kuma, *op. cit.* p. 6

buildings throughout the world came to be constructed of the same materials with the same details."<sup>8</sup>

The preface to the book edited by Kenneth Frampton is almost a new manifesto, as *Anti-Object* was. Kuma, who draws his inspiration precisely from Frampton's Critical Regionalism, laments the waste of the many handicraft skills that were once common in the rural areas of his country, and deplores the homogeneity produced by globalisation. Kuma regards the tsunami that in 2011 devastated the region of Tōhoku, a place that was very dear to him and where he had built some of his major works after the Japanese *Bubble Burst* of 1991, as a warning against the corrupt, arrogant globalised society that has turned its back on the values on it was founded.<sup>9</sup>

The answer, according to Kuma, is to work towards creating a society and architecture that is less individualistic and self-centred - sustainable architecture, rooted in the context, that is able to build and consolidate relationships, for a society based on cultivating human relations, and on the growth (to use the words of Putnam) of the "social capital".<sup>10</sup>

Japanese architecture is traditionally an architecture of relationship (with the landscape, between interior and exterior, between people, etc.), rather than of form.<sup>11</sup> It is architecture that is attentive to nature and the cycle of the seasons, which has its roots in *Shikinen Sengu*, the ceremony of the periodic rebuilding of the Ise Shrine, which has taken place every twenty years for the last 1300 years. The land is permanent; architecture can only be transient. These aspects were hailed by Bruno Taut and, earlier still, by Frank Lloyd Wright, both heavily influenced by Japanese culture. Taut, who lived in Japan from 1933 to 1936, was impressed by the Katsura Detached Palace in Kyoto (17th Century), in which he found the principles of the modern movement applied in their purest form, beyond any formalism, so much so that he praised the work as "a perfect example of that, with a modern formula, we might define as 'functionalism', not only in a practical and utilitarian sense. Except that here the term 'function' takes on

<sup>8</sup>Kengo Kuma, *Preface*, in Kenneth Frampton, *Kengo Kuma, Complete Works*, Thames & Hudson, 2012, p.7

<sup>9</sup>"The Tohoku we saw destroyed (...) was not the Tohoku that had been a paradise for craftsmen. (...) When I saw the tsunami washing away those American-style houses and cars, Noah's flood came to mind. God had sent the biblical flood to punish an arrogant, corrupt society." *Ibidem*

<sup>10</sup>Cf. Robert Putnam, *Bowling Alone: the Collapse and Revival of American Community*, New York: Simon & Schuster, 2000 e Robert Putnam e Lewis Feldstein, *Better together: Restoring the American Community*, New York: Simon & Schuster, 2003

<sup>11</sup>See, in particular, what Kuma wrote in *Towards a Japanese-Style Architecture of Relationships, in Kyokai: A Japanese Technique for Articulating Space*, edited by Kengo Kuma, Tokyo, Tankosha, 2010

a spiritual, philosophical meaning".<sup>12</sup>

Through Taut, Kuma rediscovered traditional Japanese architecture. When he received the assignment that was to become one of his most famous works, the Water/Glass House in Atami, Kuma went to visit the nearby Villa Hyuga, which was built by the German architect in 1936. Here he was struck not only by the finesse with which Taut had used certain traditional elements, such as *tatami*, *shōji* (sliding paper doors) and *fusuma* (sliding screens), but also how he had understood the deep relationship between the house and nature, which is typical of Japanese architecture.

The Guesthouse in Atami, a tribute to Taut's Hyuga Residence, marked a turning-point for Kuma, who achieved his goal of 'erasing the architecture' from the environment. The Water/Glass House, built on top of a hill overlooking the ocean, is defined only by the horizontal planes of the floor (the water/terrace) and the ceiling (the glass/steel slats), as was characteristic in Japanese architecture after the 15<sup>th</sup> Century and in Taut's villa. The spaces are divided by *shōji* and *fusuma* in glass, enabling continuity between interior and exterior and causing the architecture to disappear while retaining the perception and the experience we have of it, thereby creating between the surfaces a fluid and transparent *space-time* ('*ma*' in Japanese).

### Space, Time and Architecture: particizing inspiration and process

The concept of *ma* (間) is essential in understanding Kuma's architecture. In Japan the concepts of space and time are inter-mixed, and both are expressed in the term *ma*, which may be defined as "the natural interval between two or more things existing in a continuity" or "the gap between two things, an opening, the space encompassed by columns or folding screens", or "the natural pause or interval in which phenomena arise through time".<sup>13</sup> Originally it consisted of the ideogram for 'moon' (月) — not the present-day 'sun' (日) — under the sign of the 'door' (門). This ideogram, depicting the delicate moment in which

<sup>12</sup>Bruno Taut, *Architecture nouvelle au Japon*, in "L'Architecture d'aujourd'hui" 4, 1935, p. 46-83

<sup>13</sup>*Iwanami Kokugo Jiten (Iwanami's Japanese Dictionary)*, Tokyo, Iwanami Shoten, 2000

moonlight appears in a doorway, expresses the phenomenonic nature and relativised perception of space within time (and vice versa).

Another fundamental concept is that of *oku* (奥), referring to the idea of 'inner space' and perceived depth. According to Fumihiko Maki, "*oku* is a sense of penetrating the layer of an onion; it implies something abstract, profound, innermost, extending far back, least accessible and deep".<sup>14</sup> Maki's image refers especially to how Japanese cities are built up, growing/developing "like the layers of an onion" around a nucleus, which is often empty.

"Figuratively speaking", explains Arata Isozaki, "it is said in the West that space is three-dimensional and a four-dimensional world results from the additional element of time. In Japan, however, space is thought to be a planar two-dimensional compound. Depth is created by a combination of planes. (...) In Japan four-dimensional space is visualised as the result of combining planes and axis of time".<sup>15</sup>

The concepts of *ma* and *oku* are related to that of Kuma's spatial layering. His designs, in fact, are based on overlapping two-dimensional layers, reinterpreting the lesson of ukiyo-e artist Ando Hiroshige (1797-1858). The ukiyo-e woodblock prints were created by the printing and overlapping of multiple blocks, each inked with a different colour. Since the drawing lacked perspective, depth of field depended not only on the different sizes of the elements in the design but also on the effect created by overlapping the various layers.<sup>16</sup>

Similarly, in Kuma's architecture depth is given by the stratification of physical layers, creating between them the element of space-time which is perceived by the subject in motion, thanks to the modulation of the light. Moreover, just as Hiroshige illustrates rain, fog and mist through dense, dotted textures, Kuma breaks up the material of which the various layers of his buildings are made into tiny fragments: vertical or horizontal louvers, or stone or ceramic elements of different shapes and sizes alternating with empty spaces.

By "particlizing" (a Kuma neologism) the material of which the facades and surfaces are composed, Kuma manages to allow light, air and sound to pass through them. He does not seek to achieve the transparency of modern architecture but, rather, the seeming dissolution of architecture itself into its surrounding environment. Gregg Lynn called Kuma's dense surface texturing a form of 'pointillism'<sup>17</sup>, while Boton Bognar points out, in a more contemporary key, the similarities with the digital representation and the pixelation of images.<sup>18</sup>

To Kuma, therefore, the most important aspect of a building is not the plan or the prospect but the 'particles' of which it is composed, because it is on their shapes, materials and especially sizes that the relationship between architecture and the surrounding environment depends. This relationship is of a phenomenonic nature, linked to the perception of the observer, the distance from which he observes, the visual angle, his movements and the atmospheric conditions. This phenomenological dimension makes Kuma's architecture impossible to fully represent, since, depending on the observer and the conditions, it may appear iridescent, ephemeral, opaque or transparent, heavy or extremely light.

For this reason, the size of the particles is the fundamental parameter and, consequently, it is essential to test the result using full-scale mock-up models. In the design process constant reference is made from the scale of the individual particles to the scale of the overall work and all its intermediate scales. For Kuma there is no linear path from the masterplan to the plans, the prospects and the construction details. Frequently, in fact, it is the construction details that come first, as in the case of the Stone Museum, in which the entire project originates from the modular element in stone.

This is asymmetrical architecture *par excellence* - multi-sensory, anti-objectual and anti-objective, anti-perspective and anti-static, far removed from the Western categories that rely on the relationship between subject and object and on the perspective of the Renaissance. There

<sup>14</sup>"The expression *oku* is part of our everyday experience of space; it indicates a notion of position in space - a sense of place - which only the Japanese possess. It is interesting to note that the word *oku* (...) invariably implies the concept of *okuyuki* (depth), which refers to a relative distance or impression of distance in a given space. Compared to other peoples, the Japanese have lived in communities of relatively high density since ancient times and, therefore, they have developed a sense of finite and intimate space." Maki, Fumihiko, *Japanese City Spaces and the Concept of oku*, in 'The Japan Architect', May 1979

<sup>15</sup>Arata Isozaki, *Ma - Space/Time in Japan*, in *Arata Isozaki*, edited by Ken Tadashi Oshima, London, Phaidon, 2009, p. 158

<sup>16</sup>Cf. Agostino De Rosa, *Orienti e occidenti della rappresentazione*, Padua, Il poligrafo, 2005

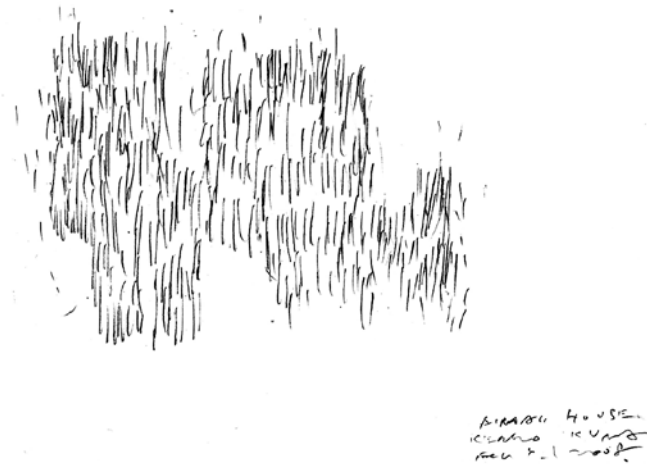
<sup>17</sup>Gregg Lynn, *Glass/Shadow*, 'Space Design' 11, 1997

<sup>18</sup>Boton Bognar, *Kengo Kuma. Selected Works*, New York, Princeton Architectural Press, 2005; Boton Bognar, *Material Immaterial. The new work of Kengo Kuma*, Princeton Architectural Press, 2009

is never a vantage point, and the photographic image, though suggestive, never fully conveys the quality of the spaces and their characteristics.

Even Kuma's drawings are anti-perspective and almost always projected orthogonally. It is no coincidence, perhaps, that in this book also the rare perspective sketches almost exclusively refer to buildings to be built in the West, or are very similar in layout to ukiyo-e prints (see the sketch of the Ginzan Bath House at page 35).

The drawings seem to have been conceived and realised in overlapping layers, two-dimensional but with great depth, suggesting in a few strokes the infinite richness of emotional experience that this architecture has to offer those who visit it, revealing itself in its textures, in its weaves, in its materials and in the light of its spaces.



## Interview with Kengo Kuma

“ How would you briefly describe your design process, from the initial studies and investigations to the actual design phases?

Every time, I start with walking around the site again and again. It's crucial I visit the site first of all. Photos or videos are not useful to know the place. I go there, feel the air, tread the ground, talk and eat with the locals. Our design begins from communication. Then we always make models after that, not only of the building but also of the landscape around it, to study how the architecture would fit the flow of the place. We won't go further without these two steps.

“ You have frequently stated that your objective is to erase the architecture, and to find a harmonious relationship with the environment and the context: which translation does this goal find in the design research from the point of view of the study of the context?

As I explained in the above, we use big, full-fledged models to design buildings that suit the geographical features of the sites. Being harmonious does not necessarily mean that the building is buried under the ground or planted on its roof top. The model-making process shows us that there are various possibilities to connect architecture with its environment.

“ Your freehand drawing is concentrated mainly in the definition of an architectural idea, a conceptualization of the project with regard to its “evanescent” form, the strength of the materials, the relationship with the landscape. From this point of view it seems that the development of the project is a sequence of revisions of the initial intuition. What role does freehand drawing have for you? Does the initial sketch have an important significance with respect to the final determination of the project?

I draw sketches for my own standing of the relationship between architecture and nature. By doing so, I can develop my image for the project.