Conference Paper

A Sense of Japanese Aesthetics: The Role of Materiality in the Work of SANAA

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Abstract

While the globalization of the styles and ideas has smoothed geographical and cultural borders, the contemporary Japanese architecture has retained a very distinctive style. SANAA is an internationally significant and prize-winning firm of architects whose works seem to exemplify this kind of architecture. Some of the distinctive features of their work are simplicity, transparency and formal austerity, as well as a peculiar ambiguity in the expression of materiality. What role does the materiality play in creating something uniquely Japanese out of modern architecture?

Through a case-study of Louvre-Lens Museum, the paper investigates the role that materiality plays in realising the Japanese aesthetics, focusing primarily on two key material features that have been identified in SANAA's work: transparency and whiteness. Some concepts of Japanese aesthetics are investigated in order to have a better understanding of the idea of ambiguity and weakness embedded in Japanese culture, including the concepts of *mono no aware*, superflat and philosophy of Rikyu Grey. By analysing the materiality and luminance conditions of interior space of the Louvre-Lens Museum and impact of the environment and time on exterior materiality, the paper suggests that materiality turns out to be a vital tool in the creation of a more tactile and ambiguous experience of vision, which transformed the focus of architecture from form to sensibility and perception. The Japanese aesthetic of simplicity, ambiguity and ephemerality is subtly applied through the seemingly neutral expression of materiality in SANAA's architecture.

Keywords: Japanese aesthetics, SANAA, materiality, ambiguity, whiteness, transparency

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1. Introduction

While the globalization of the styles and ideas has smoothed geographical and cultural borders, the contemporary Japanese architecture has retained a very distinctive style. The Japanese architects seem to find their own direction, seeking vitality not from abroad but from their own history and culture. A typical representative is a new strand of Japanese architects who are pushing the limits of the dematerialisation of architecture. Unlike the first two generations of Japanese architects whose work appears rational, and tends to be more monumental and expressive, the new generation of architects pursues an ultimate lightness, thinness and transparency in architecture, achieving a

special spatial quality with the new material and technology. Critics have reiterated over the years that the most distinctive features of their works are simplicity, transparency, and formal austerity, as well as a peculiar ambiguity in the expression of materiality.

In this paper I raise the following question: What role does the materiality play in creating something uniquely Japanese? SANAA is an internationally significant and prize-winning firm of architects whose works seem to exemplify this kind of architecture. Their work seem popular outside Japan and identifiable without obvious formal or material reference to traditional Japanese buildings. They are not just reviving the traditional, rather, they create something new Japanese style. By analyzing the materiality and luminance conditions of the interior space of the Louvre-Lens Museum, and the exterior of the building which involves nature and time in the expression of materiality, I suggest that the visual perception within the building is profoundly ambiguous. This ambiguity reflects the ideas of Japanese aesthetic of *mono no aware* (the pathos of things), superflat and Rikyu Grey. It could be argued that there are some underlying links between the expression of materiality and these Japanese aesthetics ideas. This seemingly neutral expression of materiality is in fact embedded with a sense of Japanese aesthetics in SANAA's work.

2. Some Ideas of Japanese Aesthetics

As Juhani Pallasmaa claims, the Western architecture seeks a powerful image and impact, which is influenced by the power and domination characteristics of the Western culture. In contrast, the Eastern culture tends toward ambiguity and weakness in its philosophy. The Japanese developed a distinct sense of aesthetics based on such ambiguity and weakness embedded in Japanese culture.

2.1. Mono no aware

Mono no aware is an aesthetic that focuses on the unavoidable transience of the material world that exists. Literally the pathos of things, it represents a deep sensitivity to things, an ability to grasp the movements, the possibilities, the limitations of life in the context of a single incident, sometimes of a trifling nature [1]. There are two aspects of this concept need to be highlighted. The first is the ephemeral beauty of external reality, which is symbolised by the briefly blooming cherry tree [2]. *Mono no aware* conveys fleeting beauty in an experience that cannot be pinned down by a single moment or image. This fragility of *mono no aware* actually strengthens the power of its beauty.

The second point is that the beauty lies not in object itself, but in the whole experience, transformation, and span of time in which the object is present and changing. Fully grasping the meaning of *mono no aware* requires a close view of the characters and surrounding context.

2.2. Superflat

'Superflat' is a term that the Japanese painter Takashi Murakami coined to describe the artworks of his studio, in which the lack of depth found in traditional Japanese painting is brought together with a similar lack of depth in early manga, forming a visual product which is characterised by a lack of perspective, an extreme planarity, and an interest in particular kinds of movement, expressed graphically. Architectural critic Taro Igarashi borrows the term 'superflat' from Murakami, and describes the work of architects such as Toyo Ito, Kazuyo Sejima, Jun Aoki and Kengo Kuma as 'superflat'. One of the defining characteristics of superflat architecture is seeking to eliminate the three-dimensional depth [3]. According to Dave Beynon, the idea of superflat architecture implies a way of perceiving space and dimensionality that is distinctive to contemporary Japanese architects. In the superflat architecture, shadows fall away into flatness, and outlines lose definition, blending more than defining. The sense of two-dimensionality is embedded in Japanese aesthetics. Japanese architect Kisho Kurokawa explains that at the very basis of Japanese aesthetic consciousness – be it painting, music, drama, or even in buildings and cities – lies this two-dimensionality or frontality [4].

2.3. Ambiguity: Rikyu Grey

The concept of "Rikyu Grey", or the "philosophy of grey", represents an aesthetic of an ambivalent meaning or multiple meanings. This aesthetic is linked to the art of tea. The Tea-Master Sen no Rikyu gave instructions to practitioners to wear cotton kimono dyed with ash to a neutral hue. With the master's advocation of simplicity and restraint achieving a widespread support, the colour grey grew very popular among the people. In contrast to grey in the West, which is a combination of white and black, Rikyu Grey was a combination of four opposing colours: red, blue, yellow and white. The combination of different percentages of each colour will result in slightly different greys. It could be said that Rikyu Grey is a manner of becoming. Seeing in Rikyu Grey a colourless colour of numerous hues that collide, neutralise and hence cancel each other out, Kurokawa

uses it as a purely symbolic term expressing the multiple meanings or ambiguities of Japan's open spaces [4].

The following sections analyze the materiality of Louvre-Lens Museum to investigate its relationship with the Japanese aesthetics.

3. Materiality of Louvre-Lens Museum

The Louvre-Lens project is the result of a call for the design of a satellite building of the Louvre Museum outside Paris. The chosen location of the project was Pas de Calais, in northern France, on the terrains of an old mining site in the city of Lens. To adapt to the gently undulating slopes of the site, the building is segregated in long, narrow and slightly warped volumes that are connected to one another. Two thirds of the facades are clad with aluminium sandwich panels, including the Grande Galerie to the east of the Central Hall and the Galerie Exposition Temporaire and Scene to the west of the Central Hall. The rest one third is covered with glazing, including the Central Hall in the middle and the Glass Pavilion at the end of the Grande Galerie. (Figure 1).

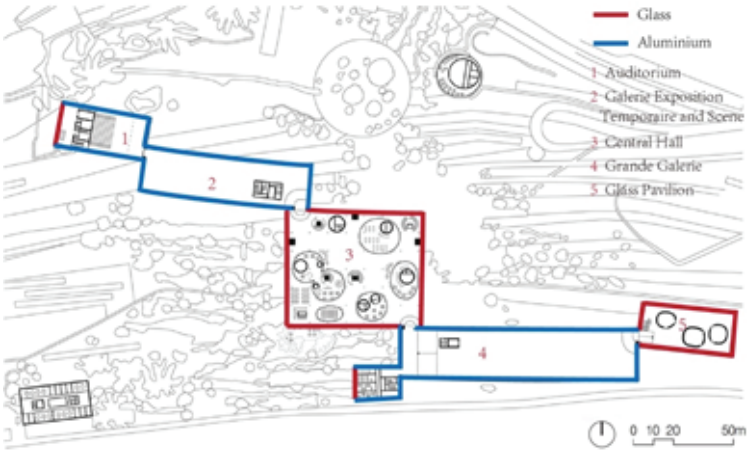

Figure 1: Plan of Louvre-Lens Museum.

3.1. Materiality of Louvre-Lens Museum's interior space

In the book Vision and Art: The Biology of Seeing, psychologist Margaret Livingstone explains the biological basis for the fact that colour and luminance can play distinct roles in the perception of art or real life is that colour and luminance are analysed by different parts of the visual system. According to Livingstone, the evolutionarily older large-cell subdivision is responsible for our perception of motion, space, position, depth, figure/ground segregation, and the overall organisation of the visual scene, to which

she refers as the “Where” system. The newer small-cell subdivision is responsible for our ability to recognise objects, including faces, in colour and in complex detail, to which she refers as the “What” system. The Where and What systems differ not only in the kind of information they extract about the environment, but also in four fundamental ways in how they process the light signals they receive.

Colour selectivity: the Where system is colour-blind; the What system uses and carries information about colour, and can use colour differences to detect borders. Contrast sensitivity: the Where system has a very high sensitivity to small differences in brightness; the What system requires larger differences in brightness. Speed: the Where system is faster and more transient – its responses are of a shorter duration – than the What system. Acuity: the Where system has a slightly lower acuity than the What system [5].

The first two are most relevant to my discussion of materiality of the museum. The following sections investigate the manifestation of the two aspects of features that affect the two visual systems: colour/details and luminance conditions of the building.

3.1.1. Cloudiness: whiteness and lack of details

Mark Wigley talked about the cloudiness in SANAA’s work. Wigley comments, “this sense of being in a cloud is very much the point with SANAA, who so deeply share Le Corbusier’s early affection for the thin coat of white paint and disinterest in revealing structure” [6]. However, the purpose and effect of whiteness in SANAA’s work is different from early modern architecture. For the latter, whiteness is the celebration of pure form and volumes, which is for visuality. As Le Corbusier comments, it is only the whitewash can make architecture “the magnificent play of forms under light”, and “contains sufficient geometry to establish a mathematical relationship” [7]. For SANAA, instead of celebration of the form, they use whiteness to blur the depth and volumes.

In the exhibition hall of the Louvre-Lens Museum, whiteness extends everywhere (Figure 2). The architects employ extreme precision in crafting empty containers devoid of unnecessary elements, which creates this atmosphere or emptiness, as if being in a cloud. The cloudiness is more blurring than just whiteness because of the fuzzy reflection on the polished aluminium surfaces, and the distorted reflections due to the slightly curved surfaces. The anodised aluminium interior walls dissolve the boundaries of the gallery space and bring nuances of reflected colour, creating a ghostly backdrop of reflections. The reflective aluminium also expands the space, giving you an illusion that you are in a veil of white and ambiguous mist; however you can always focus on the

art in front of you, which is the clearest one within the mist that stimulates one's What system. The boundary between reality and virtuality becomes diffuse. Figure 3 shows how the exhibition gallery looks before hanging the aluminium panels, which offers a totally different visual perception compared to the reflective surfaces.

Figure 2: Cloudiness of Louvre-Lens Museum.

Figure 3: Exhibition gallery of the Louvre-Lens Museum under construction.

3.1.2. Flatness: even luminance condition

Although What system is less effective in this space, how about Where system? Where system responds only to luminance differences and is insensitive to colour. It is a colour-blind system; therefore whiteness does not affect it. Is there enough luminance contrast to provide adequate information for Where system?

Luminance mapping was undertaken in the building in order to achieve a better understanding of its luminous environment. The luminance values were recorded by using Photolux, a luminance mapping software which measures in cd/m^2. In this space, light is relatively evenly distributed, which leads to a flat visual appearance. To have an idea of how flat the visual appearance of the space is, as indicated by the mapping, we can first have a look at the luminance mapping of the interior of Walt Disney Concert Hall (Figure 5), designed by Frank O. Gehry, whose work is famous for its exaggerated form and volumes. The mapping shows that the luminance ratio between the brightest part of the white wall and the darkest part of the column is about 15:1. This indicates a high brightness contrast, which is due to the exaggerated volumes and forms in the Concert Hall. In contrast, SANAA produces an even and diffused light in the interior of the Louvre-Lens Museum through the manipulation of surface, including its form and colour. Even if there are slight luminance differences in these almost evenly lit areas, it is hard to stimulate the visual system because our visual system is selectively sensitive to discontinuities, and not to gradation in luminance and colour. Therefore, this space with almost equal luminance may seem flat because it is poorly seen by the Where system. In addition, the whiteness of the surface further exaggerates the homogenous lighting condition, resulting in insufficient visual perception of depth. Nothing in this building dominates, so that all the elements have the same visibility.

Figure 4 is also the evidence of why people are always the focus of the space. Distinct from the surface of the space in both colour and luminance, they can be seen by both subdivisions of the visual system and perceived most accurately in the space. They become thus the clearest objects in the ambiguous cloud.

In most buildings, we are used to playing with strong luminance contrast to choreograph a route to organise someone's view. However, in this case, with the even luminance condition, there are few clues of scale and orientation. What is present is an all-pervasive atmosphere, with no sense of depth or volume. The light becomes space itself. It is the light that establishes the flat space, not the physicality of the column and its shadow. The evenly distributed light shapes one's senses in a special way; it changes the way one perceives objects and space. SANAA seems to favour even, diffuse light in their interiors. The interior of the Louvre-Lens Museum could be seen as a superflat space. As one moves through the space, one's attention is not pulled in different directions, which evokes a sense of calmness. At the same time, the evenness and flatness of the space also suggest a slightly unreal and peculiar perception, which someone may find discomforting, because in such white and flat space both the Where

system and the What system are disturbed in their response, or less stimulated by the material and lighting of the interior space.

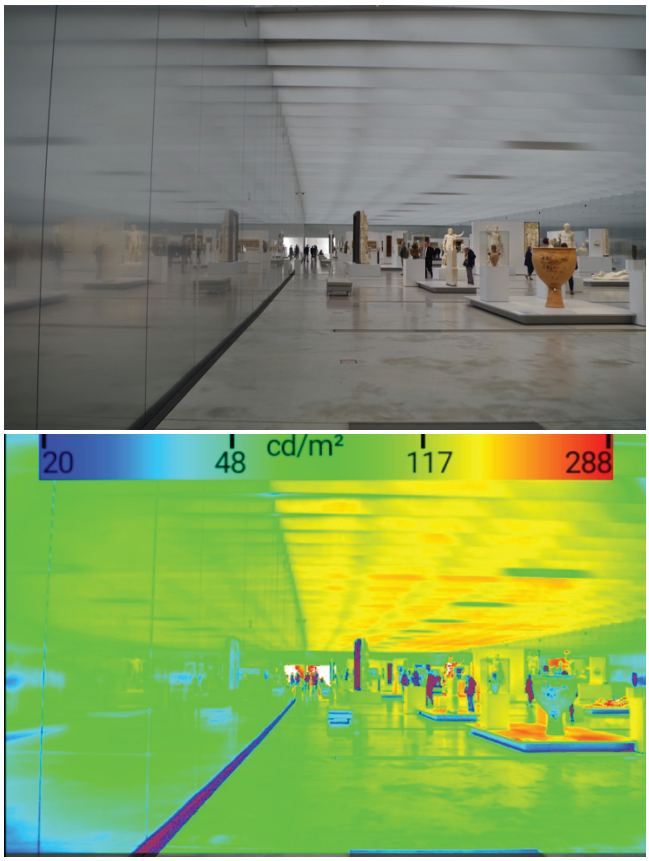

Figure 4: Luminance pattern and mapping data of the exhibition hall of Louvre-Lens Museum.

3.2. Materiality of Louvre-Lens Museum's exterior

Comparing to the materiality of interior space, the perception of the exterior material is more complicated. When the architects visited the site, they were taken by not only the landscape of Lens but also the quality of the diffused, soft natural light that this northern French region received. The light is diffused, which makes them want to create something that could emphasise the light and blend into this environment. Materiality plays a major role in realising the architects' intention. The following section takes a close look at the various expressions that the building performs according to the rapidly changing weather in one day. The museum reflects itself with the crossing volumes, appearing to be caught in the act of vanishing into a state where substance and shape are half atomised. The scene of the corner changes dramatically as the weather changes. Moreover, the slight change of position of the spectator brings the

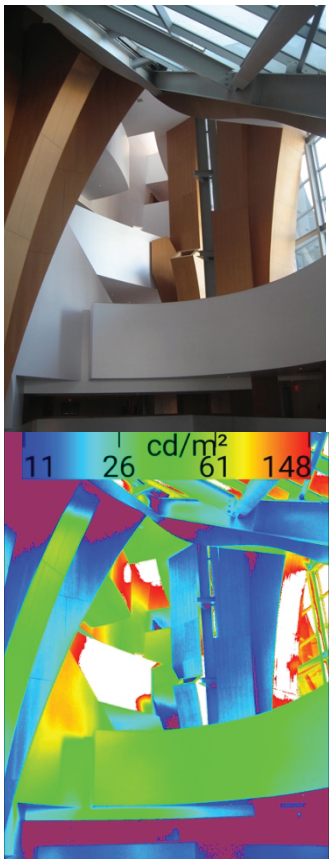

Figure 5: Luminance pattern and mapping data of the Walt Disney Concert Hall.

different state of reflection. Figures 6~9 recorded the different appearances of the same corner in different weather situations, and also with slight different viewing angles.

Type 1: Corner with two aluminium intersect faces

In Figure 6, the dark clouds were gathering in the sky; however the part of sky reflected on the wall was clear, making the wall much brighter than the background. The direct sunlight cast the shadow of the left wall sharply on the right wall, the reflections of each wall into each other are quite blurring as the colour of both walls were pretty close. Figure 7 shows an opposite scene, the walls were dull but the sky behind them is blue. No clear shadow cast on the wall, which blurred the distinctions between the two faces. Figure 8 was taken at almost the same time as Figure 6, except the observation point was closer to the left wall. One feature about the reflection of aluminium walls is that the smaller the angle of sight with the surface, the clearer mirroring image you will get. Therefore, the reflection of the right face on the left one is much clearer than the other way around. Meanwhile, the shadow of the left wall also reflects on itself. The intersection line of the two faces, the real edges of the two walls, the reflection of the

two edges, and the shadow outline and its reflection, altogether seven lines cross at one point. At a certain moment, one can hardly distinguish which one is real and which one is virtual (Figure 10). Figure 9 recorded a grizzled moment: the polished aluminium exterior reflects and blurs into the clouds.

Figure 6: Louvre-Lens Museum: Grey sky and reflection of clear sky on the aluminium walls.

Figure 7: Louvre-Lens Museum: Clear sky and reflection of cloudy sky on the aluminium walls.

Type 2: Corner with one glass wall and one aluminium wall

The performance of the corners becomes more complicated when the two intersection walls are different materials: glass and aluminium. The corner in Figures 11 shows how the geometry of the plan and the material simultaneously affect the reading of the space. The transparent box and the aluminium box only touch on the corner; therefore the visitor can see through the transparent reception hall, perceiving the space on the other side of the building. The reflection of the glass façade on the aluminium wall is

Figure 8: Louvre-Lens Museum: Grey sky and reflection of clear sky on the aluminium walls, the observation point was closer to the left wall.

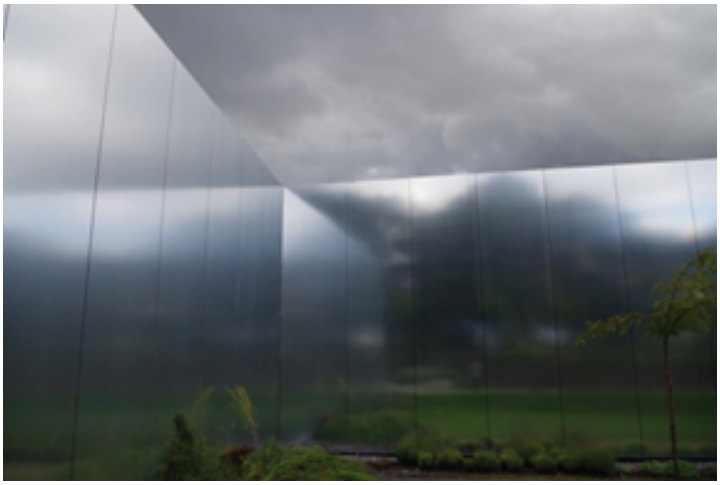

Figure 9: Louvre-Lens Museum: Aluminium exterior reflects and blurs into the clouds.

blurred, while the glazing wall is like a mirror, reflecting the aluminium wall as if it is a continuous wall cut into the glass volume. However, one can immediately realise that it is only a virtual wall because its image is cut off by the real view behind the glass wall on the other side. Reflection and transparency, twin techniques of disappearance, are the dominant means used here, enabling the interventions to dissolve optically into their surroundings.

In the case of the Louvre-Lens Museum, the capacity of materials to receive, reflect, and modulate light is so significant that it determines the building's dimensions and geometries. The ambiguity between the real and the reflected, reality and illusion, generates a form of sensory deception, creating dynamic and complex images as opposed to a static and obvious transparency. The use of reflection or layering of glass is perceived as a solid mass and gives the impression of constantly changeable visual appearance, both the object and the surface of reflection. From the above case

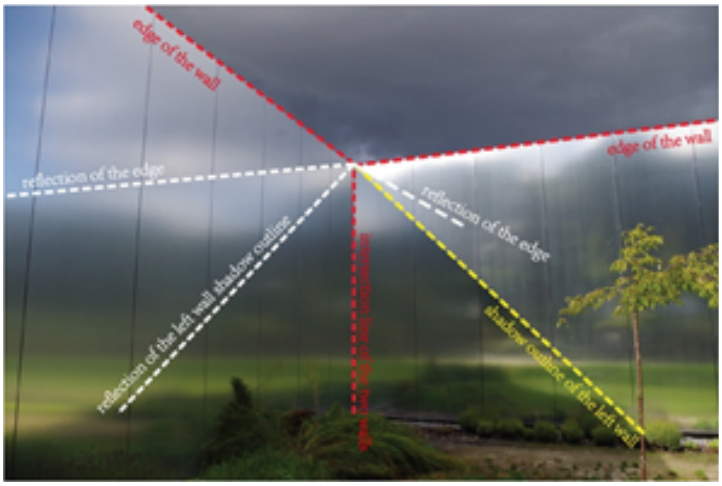

Figure 10: Analysis of the corner in Figure 8.

Figure 11: Analysis of the corner in Figure 8.

we can see that SANAA goes for the variation whose effects are more unclear. It is an architecture of deliberately unclear vision. Their projects appear to be more interested in blurring the view and softening the focus than on sustaining the transparency of early avant-garde architecture. Its objective is not for the viewer to discover the inner secret of the building, but to be suspended in the view itself. Physicality of material is perceived on its surface. It is interpreted as an effect to the environment or the environment itself. Nature, for SANAA, is not an object to be viewed but an element that can “structure” the building. Their aim is to have the building and the environment work together. The surface of the building draws from a source that is as abundant as it is non-architectural, which offers much more experience than the architects themselves could have designed and foreseen. Once the surfaces are constructed, the material invites behaviour and environmental influence, which recur over time. Thresholds between surface, context and visitors are intentionally blurred through a continuously emerging

visibility and interaction that gives the visitor an experience of being part of a process of architectural becoming. Therefore, the building's performances depend in part on conditions that cannot be rationalised. Human and environmental forces are registered onto the building's surfaces in the form of momentary traces constituting the memory of those events and sceneries. This materiality conveys the sense of *mono no aware*, a beauty in the sense of the feeling of the building within its surrounding environment rather than viewing beauty solely in the construction of the building itself, as well as a transitory nature of things with a sense of beauty and finiteness. Blurring as one of the manifestations of atmosphere's ephemerality becomes both the method and the final effect of their architectural appearance.

4. Conclusion

At first glance, it might seem as though SANAA's work has a neutral expression of materiality such as whiteness and transparency. However, contrary to this point of view, this paper suggests that a sense of Japanese aesthetics is embedded in its materiality. On the one hand, a sense of superflat and ambiguity is expressed within the Louvre-Lens Museum due to two reasons in this building: the predominant quality of whiteness, which results a lack of conventional perceptual clues such as colour and detail; and the unusually even luminance condition causing a blurring of the sense of depth. On the other hand, the perception of exterior materiality relies on the observers' keen sense of their surroundings and the understanding of time, which complies with the idea of *mono no aware*. The user's involvement with the building becomes a two-way interaction process, rather than a simple reaction.

Materiality turns out to be a vital tool in the creation of a more tactile and ambiguous experience of vision, which transformed the focus of architecture from form to sensibility and perception. The visual perception within the Louvre-Lens Museum is profoundly ambiguous. The Japanese aesthetic of simplicity, ambiguity and ephemerality is subtly applied through the seemingly neutral expression of materiality in SANAA's work, which helps their architecture across the cultural boundaries but still retains a sense of Japanese.

Conflict of Interest

The authors have no conflict of interest to declare.

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