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Revitalizing environmental features of Japanese architecture. The experience of Raymond, Schindler and Neutra through their collaboration with Wright

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ABSTRACT

Within the framework of Wright's Imperial Hotel in Tokyo, significant modern architects dialogued with Japanese Culture. Such is the case of the Czech-American architect Antonin Raymond who developed an extensive work in Japan pursuing a quest of synthesis between the West and Japan. Soon, followed Rudolf Schindler and his comrade Richard Neutra, previously qualified as architects in Vienna, whence Japonism represented a sensation to the cultural circles of the epoch. This article discusses the proposals of the trio, stressing the consistency in relationship to Japanese culture and its inherent link with Nature, pillar of Daoist philosophy. The authors intend to demonstrate that theirs was a deliberate search for the uncertain direction of modern architecture, once it was unleashed from dusk clichés of historicism, especially for distant and promising lands. We conducted this between Japan, Europe and the USA and consulted original documents in the archives of Columbia, UCLA, the Toyô Bunko in Tokyo, Arquivo Ultramarino (Lisbon) and the Getty Research Institute. The results reveal unheard of connections between key aspects of the work of those influential architects and environmental features of Japonism. The authors consider such nexus, as instrumental for a novel scientific approach to global architecture.

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Introduction

With the Meiji Restoration in 1868, Japan itself was again opened to the world after a long self-imposed period of isolation named *Sakoku* (the chained country). The West rediscovered what we call today 'the forgotten Japan', a unitary set of facts resulting from the ebb of a unique culture submitted to secular isolation. Richard Neutra expresses in that regard: 'I learned on my first visit on the islands of Nippon, a generation ago, that my ideal of total and balanced design of human habitat was indeed possible and had been a fact in an insular situation' (J. Neutra papers, box 01: folder 126. Japan and total composition of environment. 1959, labeled A-85). In fact, Japan was a complex and refined civilization, which had not only remained intact in isolation, but also challenged and still, defies sundry postulates of globalization.

Japanese prints, ceramics, and fabrics quickly became popular in America and Europe after the re-enacting of maritime trade with Japan since the end of *Sakoku*. Consequently, Japonism seduced Western artistic avant-gardes, as is profusely explained by Irvine (2013) among others. The extraordinary influence of Japanese culture began with the collection of Japanese products and mainly artworks. Vincent Van Gogh and other relevant European vanguard artists such as T. Lautrec were keen collectors of Japanese prints known as Ukiyo-e. Van Gogh points out regarding his interest in Japanese Arts that 'is something like the primitives, like the Greeks, like our old Dutch painters, Rembrandt,

Potter, Hals, Vermeer, Van Ostade, Ruysdael. It doesn't end' (Van Tilborgh 2017, 1).

In the field of architecture, Japanese traditional homes featured surprisingly modern elements for a Eurocentric perspective (Reynolds 2001). Accordingly, Neutra states:

The rich and the poor, the urban wealthy and the peasant, all had the same standard of dimensions, from tatami floor mats, sliding door panels, to tansu . . . I had been striving for all that, and I was no longer alone (Hines 2006, 114).

Edward S. Morse in the paramount book 'Japanese Homes and their surroundings' (1886) described extensively all kind of building practices that could be found in the archipelago, and Bruno Taut devoted himself to a similar task during his Japanese sojourn (1933–1936) especially in his celebrated book '*Das Japanische Haus und sein Leben*' (Houses and People of Japan).

In addition, authors such as Nute (1993) have highlighted the relationship of Wright's effort with Japanese architecture. In fact, his spatial fluidity and close relationship with nature, which resembles traditional Japanese architecture (Figure 1), had nothing in common with the typical American houses of that time; described by Wright as 'boxes beside or inside boxes, called rooms. All boxes inside a complicated outside boxing. Each domestic function was properly box to box' (Nute 1993, 119).



Figure 1. The temple of Kinkaku (Golden Pavilion) in Kyoto. Reflection in the water from gilded panels.

In his celebrated lecture 'The destruction of the Box', addressed to the AIA in 1954, Wright expresses his admiration with a vision of LaoZi contained in 'The Book of Tea' (Okakura 1905, 59–60):

He claimed that only in the vacuum lay the truly essential.

The reality of a room, for instance, was not to be found in the vacant space enclosed by the roof and the walls, not in the roof and walls themselves.

Based on oriental ideas first uttered in English by a Japanese artist displaced to Chicago (1905), he arrives fifty years after, to the somewhat biased conclusion that the vacuum is more important than the solid, a total revolution for art and design since Aristotle had postulated that the void was irrelevant compared with the matter.¹

Such groundbreaking idea was to become the leitmotiv of architects as distant in time and space as Carlo Scarpa (Pierconti 2007) or Juhani Pallasmaa, however colligated by the Japanese paradigm.

Regarding the relationship between Wright's designs and the environment, Schindler justly added that 'Wright not only has a sense of gardens but his houses are always a piece of developed and refined environmental space – not imaginable without plants, sky and earth' (Los Angeles, Mar 12; 1921. Quoted in McCoy 1979, 131).

Wright who upheld an enduring partnership with the Czech-American architect Antonin Raymond was also an avid collector of Ukiyo-e prints for more than sixty years (Meech 2001). Due to his interest in Ukiyo-e, Wright encountered Frederick W. Gookin, a fellow collector of Japanese art who recommended him to Hayashi Aisaku for the construction of the Imperial Hotel at Tōkyō. He was involved in the design and construction of the Imperial Hotel for more than a decade in which he was wont

to reside in Japan. Following a custom instituted after the Meiji Restoration, Japanese architects, were regularly delivered to the United States to learn under Wright. This is the case of Endo Arata and Kameki and Nobu Tsuchiura, who on their return to Japan developed an influential modern architectural school.

Moreover, young Western architects who became great masters of modernism collaborated at some point with Wright during the time he was occupied on the Imperial Hotel and other commissions in Japan. Such is the case of Antonin Raymond who developed a massive oeuvre seeking a difficult synthesis between the West and Japan (unthinkable to Kipling), as well as Rudolf Schindler and Richard Neutra, both previously qualified as architects in Vienna. Their recognition in Japan of the signs that led to the future of modern architecture witnesses to their ingenuity as creators.

Antonin Raymond published several books about his work in Japan (Raymond 1937, 1973). More recently, Helfrich and Whitaker (2006) have written an exhaustive treatise on Raymond and his undeniable attempt to 'craft a modern world'. Nevertheless, these publications have not focussed on analyzing the environmental aspects of Raymond's proposals. Although significant publications appeared on different aspects of the architectural postulates of Neutra (Neutra 1969; Hines 2006) and Schindler (Sheine 2001), their relationship with Japan has been scarcely analyzed (Lamprecht 2010). More specifically, there is a lack of studies that relate their work with environmental features of Japanese architecture.

Thus, the fundamental aim of our research is to clarify the avocation towards environment of the trio of modern architects fascinated with Japan. Under the prism of Nipponese architecture, the projects and documents that we have studied cast a new multicolour light on this relationship, which we will prove not a happenstance, as some authors have believed for years.



Figure 2. An example of traditionally thatched building at Hiraizumi, Japan.

One of the most important and visible outcomes of the former is the brise-soleil perfected by Raymond in Pondicherry (India).

To undertake this article, the authors have researched in original documents in the archives of Columbia University, Toyo Bunko, UCLA, and the Getty Research Institute, among others sources of information.

Pivotal features of Japanese architecture. What makes it so surprising to westerners?

Ruth Benedict, in her seminal introduction to Japanese culture, 'The Chrysanthemum and the Sword' (1946), defined a tendency to see Japan in terms of 'but also's' – pacific but also warlike, conservative but also given to innovation.

She might have referred to its Architecture as well, for the Nipponese seem to have developed an acquired taste for opposites and contradictions. In this country, we find the largest wooden structure on earth, the Todaiji of Nara and the diminutive Kasuga shrine based mainly in frames measuring two metres wide by less than three metres deep.

Gardens are infinitely variable, from tiny enclosed courtyards called *tsubo-niwa* (literally, *garden in a jar*) to gracious parks at Hiraizumi or Katsura.

It is important to remark this latter fact because the authors argue that the principle feature of Japanese culture and therefore architecture is 'reverence for Nature'. Such fact not merely explains most features of Japanese constructions but also we presently believe that Western Architects implicitly discovered or 'sensed' it in a way.

Take for instance the traditional timber framed house. It always consists of natural and locally abundant materials, namely, elements of vegetal origin, adroitly completed with

stones, sand and pebbles (Figure 2). As matter of fact, the beams and posts would be carved of hardwoods like *sugi* (Japanese cryptomeria) or cedar (*hinoki*), but the floors and sliding walls could employ softer and richer lumbers like zelkova (*keyaki*) and pawlonia (*kiri*).

The remaining parts used either oiled rice paper (*washi*) for *shoji* (sliding doors) or delicate bamboo lattices to frame curtains and railings (Figure 3). The effect completes by introducing earthen floors in kitchens and other ancillary rooms; varnished mud plaster, as a sort of render for walls. Many roofs are covered with rush (*myscanthus*) of the *kaya* species.

Moreover, Japanese traditional architecture is never manufactured. In fact, an adroit manner to distinguish the original from imitations that exist for example in the West Coast of America is the lack of iron nails and bolts in the former, these being replaced by surprisingly clever and intricate assemblages of extreme delicacy. The French writer Pierre Loti remarked in 'Madame Chrysanthème' (1887) that God only could perceive such minute details.

We could find an ancient yet accurate description of such buildings in the Chinese poem *Climbing Mount Incense Burner* by Bai Juyi (772–846):

My new hut has three bays, and five columns, with stone steps and wooden pillars made of Katsura tree. I put a door on the north side to let in cool breezes and to fend off oppressive heat, made the southern rafters high to admit the sunlight in case there should be severe cold. The beams were trimmed but left unpainted, the walls plastered but not given a final coat of white. I have used slabs of stone for paving and stairs, sheets of paper to cover the windows; and the bamboo blinds and hemp curtains are of a similar makeshift nature. Added four wooden benches and two blank screen partitions. A serene brook traverses my piece of land but it seldom splashes out. Next spring I will thatch the side room to the east, fit it with paper panels and reed blinds for my poems of Meng Guang.



Figure 3. The reconstructed Karuizawa Raymond studio after Le Corbusier's idea.



Figure 4. The reconstructed facade of the Imperial Hotel. Inuyama in Nagoya.

To the authors' judgment such exquisite poem is a prelude of sustainable architecture, but it also explains the intriguing affirmation of Hölderlin commented by Heidegger (1951) in the verse: 'full of merits yet poetically dwells a man on this earth' (*voll verdienst doch dichterisch wohnt der Mensch auf dieser Erde*).

Imperial Hotel in Tōkyō. Wright's circle of collaborators and their seduction for Japan

Antonin Raymond met Frank Lloyd Wright in the United States and partnered with him at Taliesin from early 1916. During the

Great War he served as Intelligence Officer in Switzerland for the U.S. Army due to his knowledge of Central Europe. At the end of the conflict, Antonin Raymond and his wife Noémi Pernessin, a Franco-American artist who contributed positively to his oeuvre, returned to New York. In October 1919, Wright asked Raymond to travel to Japan to assist him in the construction of the Imperial Hotel. Before travelling to Japan, Raymond returned to Chicago where he met Rudolf Schindler and his wife Pauline Gibling at Wright's Oak Park studio. When they returned to Taliesin, Raymond worked with Schindler on the drawings for Aline Barnsdall's Olive Hill complex in Los Angeles. In 1919, Raymond

finally came to Japan on the famous steamboat Suwa Maru to assist Frank Lloyd Wright in the construction of the Imperial Hotel (Figures 4 and 5). His association with Wright was tangled. Raymond felt that ‘the design had nothing in common with Japan, its climate, its traditions, its people and its culture’ (Raymond 1973, 76), and therefore ‘The hotel finally turned out to be a cenotaph to Himself’ (76).

As is common among architects, tensions increase to a point where continuity becomes almost impossible. Raymond did not find in Wright’s positions the creative environment he was seeking and could not meet the drawing requirements of over-decorated perspectives. Wright sends Rudolf Schindler several letters discussing his opinion about Raymond. Additionally, Wright comments in a letter to Schindler: ‘Poor Antonin is a fool – He said he couldn’t resist the opportunity “to say something of his own.” He couldn’t wait four months – to finish the work he was brought here to do’ (Inventory FLLW, box 2 – f.2, 31,146,

undated (1921?)). Schindler tried to justify the attitude of Raymond whom he had previously met in the United States just before Raymond’s trip to Japan: ‘I think what’s missing in Raymond is self-control – and people of that kind are harder to deal with than the ones whose intentions are frankly bad’ (Inventory FLLW, box 2. f-4, 31148a, 2 February 1921).

Finally, on 5 January 1921, Wright sends Raymond a letter of dismissal in which stated:

To me you are an amateur with a half-baked knowledge of the work he would like to do – and thinks he can do. I have no objection whatever to your trying to do it, but I object to having anything resembling my own individual work planted ad-nauseam, ad-libitum in Japan at this time by you or anybody else (Inventory FLLW, box 2. f-3, 31147, 5 January 1921).

Despite the disagreements between Raymond and Wright, the American master continued to have a great presence in Raymond’s career and was vividly remembered as a warm friend and



Figure 5. Interior of the Imperial Hotel.

exigent mentor. In some occasions, Raymond all but defended Wright from attacks by other architects despite their complicated relationship. In this regard, Raymond (1973, 82) writes, 'I did not realize to what extent the strong personality of Wright had dominated my thinking in spite of my revolt. No matter how hard I tried I could not get rid of Wright's mannerisms.' On the contrary, not even a single mention of Raymond's name can be found in the biography of Frank Lloyd Wright.

After dismissing Raymond, Wright comments to Schindler in several letters the need for a replacement. Regarding Raymond, Wright said that 'I shall not really miss him much – although I surely need a good draughtsman at this stage of the work – to throw up my furniture and interior decorative schemes in detail' (Inventory FLLW, box 2 – f.2, 31,146, undated (1921?). In another letter Wright points out that 'Raymond's characteristic treachery has left me short-handed – I must find someone capable of rendering and throwing up quick outlines of my sketches – and making proper details' (Inventory FLLW, box 2 – f.4, 31,150, 15 February 1921?).

Schindler and his colleague Neutra, acquainted from the time they were students at the Vienna University of Technology, were considered as substitutes for Raymond. In fact, both architects planned to travel to Japan. In this regard, Wright told Schindler that 'a new work has finally come in – the new St. Luke's Hospital in Tsu Kije, a fine water-front site . . . If you want to come to Tokyo with your other half – next year it can be arranged' (Inventory FLLW, box 2 – f.2, 31,146, undated (1921?). Subsequently, Schindler said to Neutra: 'Wright is in Japan – works on the hotel and will soon design a hospital. A short while ago I wrote to ask him to invite you to Japan to work with him there' (12 March 1921. Quoted in McCoy 1979, 132). To which Neutra replied on April 25: 'I would certainly accept any proposal' (133). Finally, in June of this year the travel of both architects to Japan seemed to be ready and therefore, Schindler came to Neutra stating that:

I myself shall go to Japan, according to Wright, and take over the work there. I won't mind doing it for a year – and it would be fine if the two of us could do it together. The only question is if you would dare to risk the money to go and return – without any other security except that Wright will hire you. Would you be alarmed at the prospect of spending half a dozen years in Japan? (12 June 1921. Quoted in McCoy 1979, 133).

To which Neutra answered: 'Without hesitation I would be willing to come to Tōkyō, and I don't consider it to be of greater risk that what life has offered me in the last seven years' (135). However, Wright's efforts in Japan abruptly concluded, and therefore the trip never materialized. In this regard Schindler explained to Neutra:

Well, our trip to Japan fell through. Just received a letter from Wright, which says he is not willing to start much other work in Japan after the hotel. The climate makes him sick and conditions are not particularly favorable . . . I personally am still his official representative but I have little to do and therefore would like to use the time in between to build a studio for myself and maybe try to get some commissions (138).

Accordingly, one year later Schindler built his studio and own house in Los Angeles, the innovative and iconic Kings Road House. However, at that time he told Neutra on several occasions that he longed to go back to Austria: 'I will try as soon as possible to stand on my own feet – circumstances are favourable,

beside my complete alienation here. I should prefer to go back to Vienna' (133), 14 April 1920. And in relation to Austria: 'How is it over there – with work? I still can't accept the idea of spending all my life here' (134), 12 June 1921. Nevertheless, Schindler lived in Kings Road House until his death in 1953. Neutra also moved to Kings Road House in 1925 and lived in the Schindler house during five years. In 1930, Neutra was finally able to travel to Japan after leaving Kings Road House.

Schindler house. Serious attempt to revitalize climatic elements of Japanese architecture

Schindler left Vienna for Chicago in 1914 and laboured under Wright from 1918 to 1921. Although Schindler never visited Japan he achieved a deep knowledge on Japanese architecture in the framework of his collaboration with Frank Lloyd Wright and his Japanese assistants on the Imperial Hotel. Through Wright, Schindler met Japanese architects who were invited to Taliesin East, including Endo Arata and Fujikura Goichi.

After his collaboration with Wright at the Imperial Hotel, Schindler built in 1922 his first house in Los Angeles, the already mentioned Kings Road House. Schindler bases the house design on L-shaped structures that limit the outdoor living spaces functioning as a prolongation of the interior spaces. By using foliage barriers and integrating sunken gardens, he not only limits access from the exterior, but also consolidates the privacy of these spaces. Consequently, a spatial fluidity is created between the inside and the patios or gardens in a similar fashion to Nipponese architecture.

Schindler aptly uses a combination of innovative technology and new materials such as canvas panels and reinforced concrete, also employed by Gill in the construction of the nearby Dodge House. The interior divisions are of cardboard and sequoia wood. All of these materials are left exposed in their natural state, reapplying the Japanese-architectural ideal that Schindler shared with Wright: 'the ornament should be of the surface not on the surface' (Inventory FLLW, box 1-f.1, 31,057, undated (1921?). To a certain extent, we could say that Schindler attempts to reproduce the Japanese aesthetic concept of *wabi* (absence of decoration in a quest for the essence) and *sabi* (related to the passing of time or 'rust') through modern techniques. Consequently, all superfluous ornaments were eliminated to find the 'void' (see above), and thus 'leave to the eye of the beholder to apprehend what it has enshrouded' (Taut 1937, 89). In this regard, Raymond (1973, 152) comments that in Japanese space

it could seem that the desire to eliminate the superfluous, to clarify the space, to look for the essence in all, eventually brings that in the silence created, one hears the voice of the form, the substance and the space. (Adumbrations of Nothingness, in the words of Henry Miller in his book *Reflections on the death of Mishima*).

In addition, the house partitions align to the structure in such a way that the interior spaces remain conditioned by the same intrinsic configuration as in Japanese homes. According to Judith Sheine, this characteristic differs from Richard Neutra's treatment of spaces and from Le Corbusier's open-floor plan system, which conforms more to the International Style (Sheine 2001). This aspect is accentuated by the use of canvas panels, which are translucent screens not unlike the Japanese *shōji*.



Figure 6. Clerestory window over a deep overhanging eave placed along the façade, Schindler House, Los Angeles.

The use of translucent panels, along with the design of a protruding eave, contributes to darken the interior spaces as results in Nipponese architecture. However, Schindler introduces a clever innovation to achieve illumination levels that are more acceptable to western standards. He designs clerestory windows throughout the house in a similar mood to Bruno Taut in his Okura Villa of Tokyo (1936). As a result, 'the shape of the rooms, their relation to the patios and the alternating roof levels, create an entirely new spatial entwinement between the interior and the garden' (Schindler 1932, 20). The authors wish to underline that the clerestory window is not a traditional element of Japanese architecture. It is an intelligent innovation introduced by Schindler to increase illumination levels and to adapt traditional Japanese space to Western requirements (Figure 6). As previously mentioned, Bruno Taut employed a similar device in 1936 following his own Japanese stint (Figure 7).

The overhang detail receives a white sand coating, as indicated in the original drawings. Theretofore, it could work as a light-shelf to reflect solar radiation (Cabeza-Lainez 2008). Wright was aware of the significant effect produced by eaves on indoor illumination. Regarding the solution designed for the Imperial Hotel, Wright states:

overhangs had a double value: shelter and preservation for the walls of the house, as well as diffusion of reflected light for the upper story through the 'light screens' that took the place of the walls and were now often the windows in long series (James 1968 , 27).

Neutra's concept of bio-realism and the role of nature in Japanese architecture

Neutra was born in Vienna and studied at the City University of Technology, like Schindler. Nevertheless, the great war began before Neutra's graduation and he was sent to the Balkans where

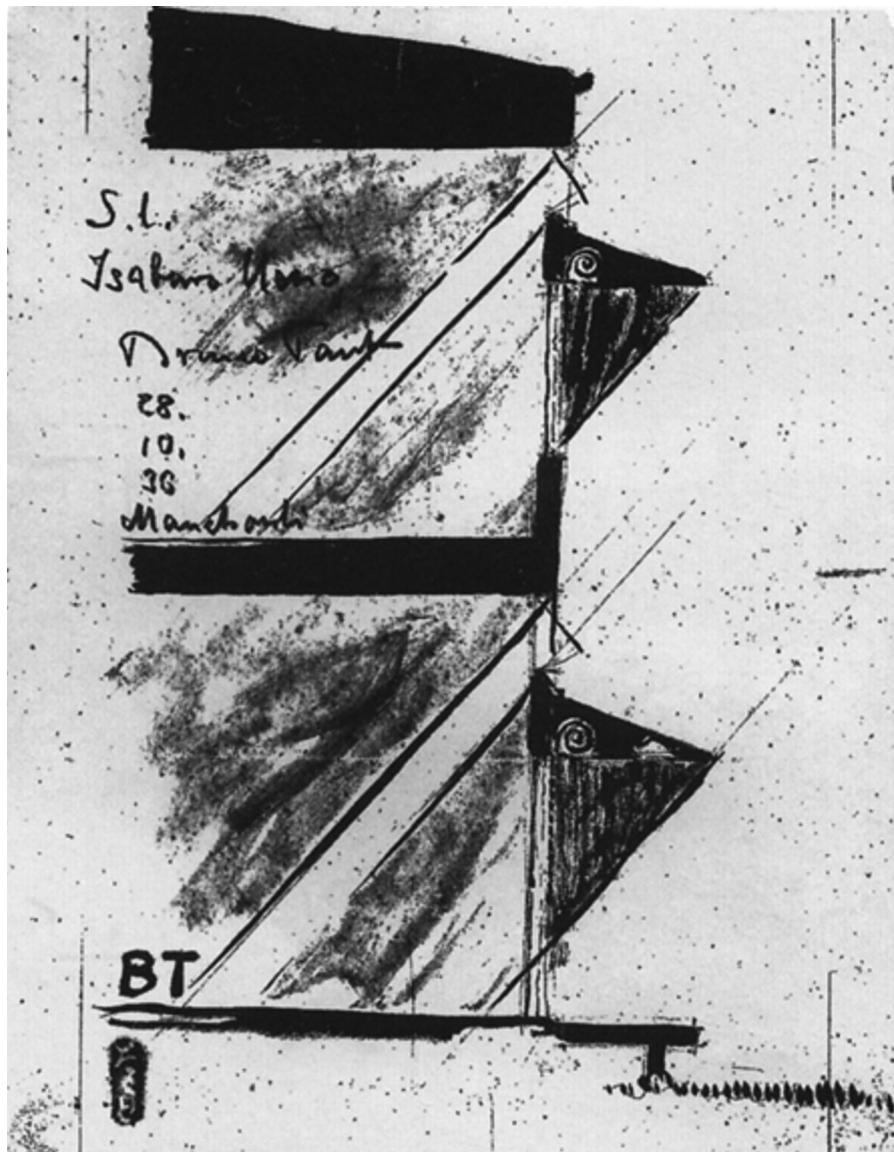


Figure 7. The system of awnings devised by Bruno Taut for the Okura Villa in Tokyo, 1936.

he fell ill with malaria and tuberculosis. He completed his architectural degree in 1918 and moved to Switzerland in 1919 where he learned under Karl Moser.

As we have previously discussed, Neutra tried to work with Wright in Japan through Schindler. However, these attempts were unsuccessful. Finally, Neutra traveled to New York in 1923 when the peace treaty between Austria and the United States was enforced. In January of the same year Wright returned to the United States bringing the Japanese architects Kameki and Nobuko Tsuchiura, who worked with him in Los Angeles and Taliesin East for two years. Neutra met Wright at the funeral of Louis Sullivan, and was hired by Wright to work at Taliesin East while he was in Japan, from July 1924 to January 1925. At that time, Neutra welcomed the Tsuchiuras and formed part of Schindler's circle of friends, attending celebrations at Kings Road House. Tsuchiura Kameki also visited Antonin Raymond when he returned to Japan. Kameki spent some time at the Raymond Studio in Tōkyō, and wrote the introduction for the first major

publication of Raymond's work in Japan appearing in 1931 in volume 19 of the series *Kenchiku Jidai* (the Era of Architecture).

In 1925 Richard Neutra moved to Los Angeles after being invited by Rudolf Schindler to live in Kings Road House. Neutra could finally travel to Japan in 1930. He performed a 3-week trip to Japan, which was made possible by his friendship with the Tsuchiuras and Kokusai Kenchiku's (International Architecture) sponsorship. In Japan Neutra gave lectures and frequented Tōkyō, Ōsaka, Kyōto (including the Katsura Imperial Villa), and Nara. Neutra's activities in Japan had an impact in the specialized press and he received significant modern Japanese architects, such as Maekawa Kunio who had worked in Paris with Le Corbusier and Yamaguchi Bunzō a former student of Walter Gropius. Recalling his stay in Kyōto Neutra reports: 'The Japanese home with its acoustic and other specific properties is the nucleus of a broad culture, with modes of living intricately dependent on architecture and its many sensory realities' (Neutra 1969, 143).

Neutra coined the term bio-realism as the inherent and inseparable relationship between humans and nature. When he first traveled to Japan in 1930, he found these ideas were inextricably attached to Japanese culture. Accordingly, he points out:

When a generation ago I followed a first invitation from Nippon – in those days less reformed – to express my ideas on a biological, a naturalist's, approach to design, I suddenly felt upon arrival, as if I were coming home . . . My conviction becomes stronger and livelier, that nature has been the great precedent to all our satisfactions (R. & D. Neutra papers, box 1959, folder 4. Japanese Garden Preface February 1959).

Neutra considered that man and nature were deeply entwined and in perpetual transformation, and therefore: 'Living is vital interplay between a reacting organism and its ever influential surroundings'. (J. Neutra papers, undated, box 01: folder 43. Outlook on the environment of tomorrow). He found an answer to these ideas in the Japanese space and its subservient connection to the garden, where the course of nature and the passage of time is continuously manifest. In this regard, Neutra discusses:

I have always felt the Japanese garden to be a design in time as well as in space. Eternity of shape keeps before our soul by inconspicuous maintenance of many laborious hours. (R. & D. Neutra papers, box 1959, folder 4. Japanese Garden Preface February 1959).

Note the emphasis on the lively character of Japanese 'monuments' and their unsuspected use of lush greenery. The same fact was outlined a decade after by the sinologist Joseph Needham when contemplating the gardens of Versailles. He pointed out that the famous French gardens were almost 'dead' in comparison as in Asia there is nothing of the sort of: 'Still Life'.

The apparent compositional freedom of the garden is opposed to the rigid standardization of the architectural elements so valued in modern architecture. Neutra (1969, 58) describes this duality as follows:

Across the Pacific, on the islands of Japan, an entire nation has been living in minutely standardized dwellings for a thousand years. It is a kind of mass standardization of housing far beyond anything ever attempted or conceived in the industrialized age . . . All activities are subtly and organically integrated with the shell in which they are housed and the stage on which they play.

As a result,

The gardens are spontaneously free of the shackles of dry "geometry". The houses on the contrary, could well serve American prefabricators (for instance, Eichler) as prototypes of well solved modular construction and a most humanized standardization accepted by a hundred million people. (R. & D. Neutra papers, box 1959, folder 4. Japanese Garden Preface February 1959).

Although there is an apparent contrast between the Japanese house and garden, one cannot be understood without the other. Accordingly, the traditional Japanese concept of *katei* (literally, house-garden) is equivalent to home.

Neutra's postulates that bio-realism and the consequent organic character of his architecture led him to confront his own architectural language with what was starting to be called at that time 'International Style.' In this regard, he said that 'Regionalism appears to me best supported by the safe observation that we have and need an organic base and cannot thrive in a vacuum' (J. Neutra papers, box 01: folder 103 The South and the challenge of regionalism 'Ideas from Survival through Design', undated).

When Neutra arrived in Japan, many of the outstanding environmental features of its buildings were prone to change in a modernizing frenzy. However, he reflected on the globalizing encounter between Nippon and the West, stating that 'Japan has a potential of ingenuity, so that she will ultimately find her way toward a disciplined solution, even where others may fail' (J. Neutra papers, box 01: folder 126. Japan and total composition of environment. 1959, labeled A-85). Therefore, the Japanese 'will again yield culture only if they can be harnessed by design



Figure 8. Interior view of a pavilion of Katsura Rykyū. Notice the use of shoji and the close connection between inside and outside.

into a team, to harmoniously serve the organic entity of man' (box 01: folder 126).

The work of Antonin Raymond. Environmental devices for tropical lands

After collaborating with Wright at the Imperial Hotel, Raymond undertook a long and intense work in Japan. Architects such as Yoshimura, Maekawa and Tange Kenzō, who are currently seen as essential to understanding the emergence of Japanese modern architecture, were involved at some point in Raymond's learning and mastery.

Raymond found in Japan a civilization with a unique sensibility towards nature that had conditioned not only their architectural models, but also many aspects of their culture. In this regard, Raymond states:

The people, their dress, their utensils, their pottery, paintings, gardens, all expressed a marvelous unity of purpose clearly developed

through ages by a natural process like anything else in nature. It clearly showed to me an unparalleled love of nature with capital "N" and a Divine guidance (Helfrich and Whitaker 2006, 308).

In accordance with the former, traditional architecture has always devised smart features to treat the light and the sun. One of these features is the *shōji*, a translucent wooden lattice, covered with panes of oiled paper. The *shōji* screens work as a kind of sliding door that make possible a great spatial fluidity between the interior spaces and the garden (Figure 8). In this regard the poet and playwright Paul Claudel states:

Nothing sadder than our rectangular window, which seems made less for the taking in of air and light than for driving them out with its multiple shields of stingy glass and curtains. The Japanese House to the contrary, by the shelter of its eaves . . . opens up the entire breadth of its wall to the outside (Raymond 1973, 102).

In 1937, forced by the rise of militarism, Raymond left Tōkyō temporarily, though he managed to build a relevant compound in Pondicherry (India), the Ashram for the guru Sri Aurobindo



Figure 9. North facade of the Sri Aurobindo Ashram, Pondicherry, India.

Goose. The project was first designed in Japan with the collaboration of Maekawa Kunio, a former disciple of Le Corbusier.

In an attempt to open the interior spaces fully to the outside, the facade was exclusively composed of a seemingly unglazed curtain wall protected by large horizontal louvers that

we consider as one of the first modern brise-soleil (Figures 9 and 10). In the authors' opinion, the brise-soleil as an experimental system proposed by Le Corbusier is a necessary evolution of one of his most widespread postulates for architecture, namely the *'fenêtre en longueur'*, or longitudinally extended window. When

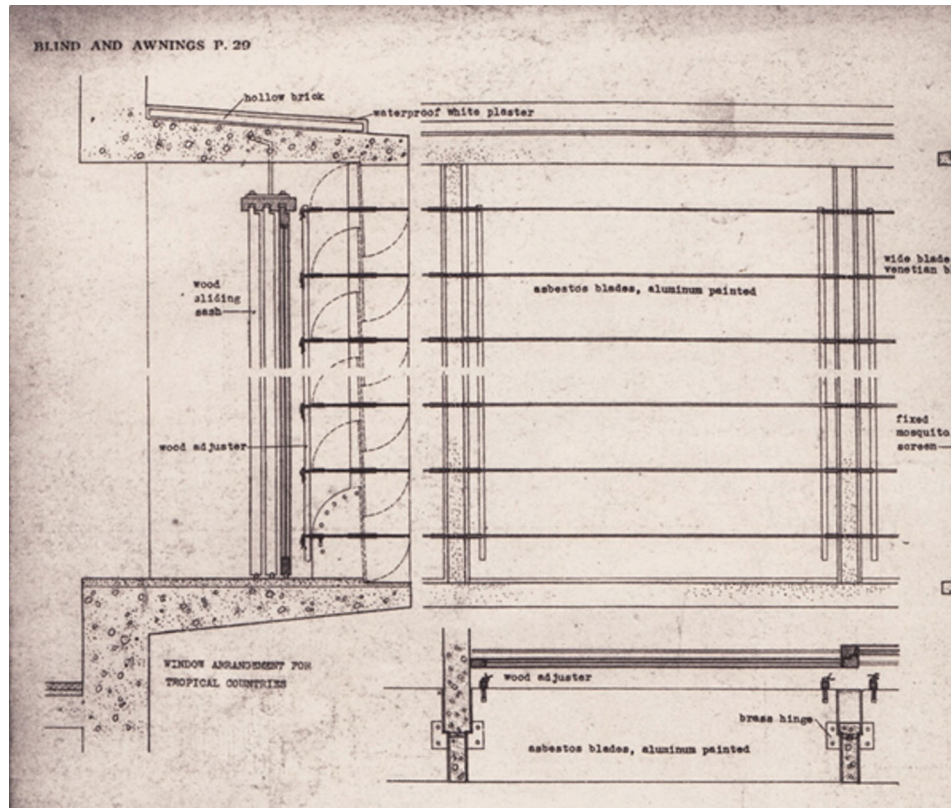


Figure 10. Window Arrangement for Tropical Countries (Raymond 1937).



Figure 11. Brise-soleil of the Ministry of Education in Rio de Janeiro, Brazil.

adapted to hot climates, though, the excess of glazed apertures proved inefficient and prejudicial; its comfort failures needed correction with auxiliary systems to generate shade. They contribute to reduce the high temperatures while conferring depth to the indoor spaces. In this regard, the control of the shadow paradoxically constitutes the beauty of light in Japan. According

to Tanizaki, 'the beauty of a Japanese room depends on a variation of heavy shadows against light shadows – it has nothing else' (Tanizaki 2001, 29).

In the wake of a proposal for Badjara, Algeria, Le Corbusier inspired a project in Rio de Janeiro that bears important similarities to the Raymond's proposal: the Ministry of Education and



Figure 12. View of vertical louvers at VDL2 House, Richard Neutra. Located in Silver Lake, Los Angeles.



Figure 13. The rock-garden of Zen Buddhism of Ryoanji, Kyoto.

Health (Figure 11). Le Corbusier joined a team of Brazilian architects, including Lucio Costa and Oscar Niemeyer for this building that was to become a paradigmatic example of modern tropical architecture. Accordingly, Neutra states that 'No other single feature introduced in and by South American architecture has found as much attention as the conspicuous blinds and integrated architectural means of shading on the exterior of window fronts' (J. Neutra papers, box 01: folder 178 Anti-solar devices labeled A-50, 1946). Neutra was also interested in the environmental and aesthetic properties of the Brise-soleil. However, he considered that horizontal protections are not effective, 'especially late afternoon exposures due to the lowness of the sun

at these later hours of the day' (J. Neutra papers, box 01: folder 95 Sun protective devices labeled AAL-143, 'Re: Courthouse, Orange County – "Sun Protective Devices"', undated).

According to his concept of bio-realism, Neutra considered that louvers should be adapted to the movement of the sun. Since 'architecture in our age is, for the first time, empowered to answer the natural dynamism, for instance, of the sun, always on the move, with man-made dynamism, so as to react to changed circumstances' (J. Neutra papers, box 01: folder 95 Sun protective devices labeled AAL-143, 'Re: Courthouse, Orange County – "Sun Protective Devices"', undated). According to the former ideas, Neutra designed vertical brise-soleil in many projects,

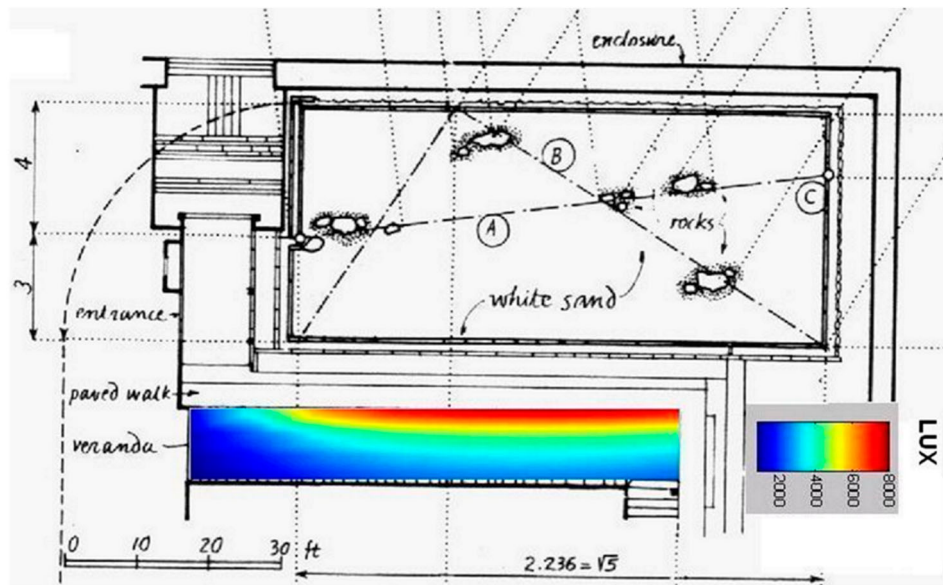


Figure 14. Simulation of reflected radiation under the eaves of Ryoanji temple in Kyoto (Japan) on June 21st. Values reach 10,000 lux as monitored by J. M. Cabeza-Lainez.



Figure 15. Saint Michael's Church in Sapporo (Japan). Raymond and Pernessin 1960. Patterned shoji embedded in glass.

including his own house in Los Angeles, the VDL2 House (Figure 12).

Le Corbusier's proposals that had contributed to the spread of brise-soleil in hot and humid climates could have been mutually influenced by the conception of Raymond's project, as well as the Ministry of Education. Raymond's brise-soleil has performed better in time and does not show the inconveniences that affected the appreciation and maintenance of the louvre system of Rio de Janeiro.

However, it seems clear that Schindler and Raymond and perhaps even Taut, based on their Japanese experiences and sojourn, shared the notion of reflective surfaces to illuminate the interior under the combined conditions of a potent tropical and protruding overhangs. We can find well-known examples of this in the gardens of white sand and pebbles of many Buddhist temples (Figures 13 and 14).

Conclusion

After extensive revision of most relevant examples and literature, we are able to conclude that the link of modern Euro-American architects such as Neutra, Schindler and Raymond with Japanese architecture was far from a happenstance. There existed a thorough and deliberate intent to advance in the notions that they had acquired and cherished in the land of the rising sun as a paradigm for future modern architecture.

The anvil of such procedure was the Imperial Hotel, not merely a significant project in the context of Wright's architectural oeuvre, but also a fruitful meeting point for young Japanese and Western architects who were involved in the task of creating a modern universal idiom for Architecture.

Such is the case of the Czech-American architect Antonin Raymond and the Austrian born architects Schindler and Neutra,

who found in Nipponese architecture surprising modern features from the western perspective, as well as answers to both functional and spiritual questions. Thus, Japanese architects who traveled to the United States and formed part of Wright and his collaborators' circle, subsequently played a relevant role in the emergence of modern architecture in Japan, including Endo Arata and Nobuko and Kameki Tsuchiura.

In addition, the Japanese have paid a special reverence for nature since ancient eras. That fact influenced multiple facets of its culture and transferred in a 'natural' way to architecture. Raymond, Schindler, and Neutra understood the importance of Nature as a timeless source of expression of the Japanese mind; Rudofsky (1982) also acknowledged that fact in his book, 'The kimono mind'.

Consequently, there exist clear relationships between key aspects of their architectural postulates and environmental features of Japanese architecture. Some of this have been described through the text, *wabi, sabi, katei, shakkei, satori*. Also building components from Nipponese tradition are abundant in their realizations, *shoji, sudare, noki, engawa* and so forth (Figures 15 and 16).

In this regard, Schindler was involved to some extent in creating a modern idiom for climatic elements of Japanese architecture. Neutra's architectural concepts such as bio-realism closely relate to the inherent relationship between Japanese rooms and environment expressed through the garden. Finally, Raymond incarnated with his life and work the fusion of horizons between the West and Japan, but always expressed a consistent interest for nature.

The following graph symbolizes the tortuous bridge, material and spiritual, that they were compelled to build with relative and unassuming success (Figure 17).

Unlike Wright who only considered Japan as 'a means to an end', the three architects under study, celebrated the Japanese



Figure 16. Interior of Saint Michael's Church. See details of woodcraft of untreated and exposed beams.

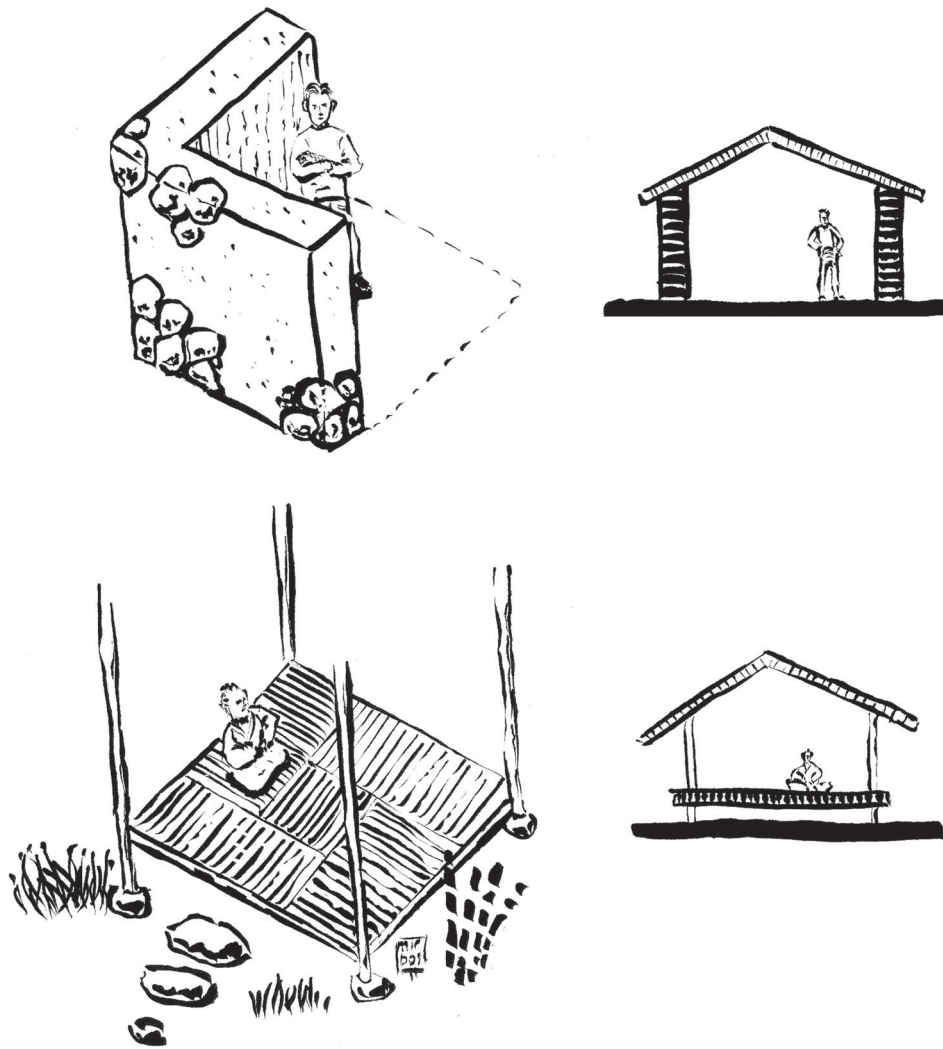


Figure 17. Comparison between western (above) and eastern (below) homes.

milieu as a liberation from classicism, the oppression of historical styles -so to say- and other conventions. However, we can speculate if such liberation was triggered by the unprejudiced attitude of F. L. Wright.

Thus, they adroitly realized the potential of Japanese environmental features in the contemporary scene and made a coherent effort towards its revitalization for the modern world.

In this regard, Raymond (1973, 151) pointed out that nature is for the Japanese man 'the very key to the secret of existence. His concern not to betray her has been his safe-guard throughout the ages and at all times he turns to her as the infallible guide.'

Epilogue

Years later, a homage to the ideas of such genuine pioneers of cross-cultural architecture was paid by Walter Gropius in an intriguing postcard sent in 1954 to Le Corbusier, where he writes:

all what we have been fighting for (in modern architecture) has its parallel in old Japanese culture . . . The Japanese house is the best and most modern I know of and truly prefabricated.

Le Corbusier and Gropius' friend the archaeologist Sigfried Giedion once wrote that, 'the task of the Historian is not merely

to elucidate the past but also to recognize the signs that lead us into the future' (Giedion 1964, 495).

This has been our purview for the present research since it is the authors' profound belief and wish that the Nipponese pristine experience of Nature will continue to guide us towards a more sustainable and delectable architecture.

Notes

1. The real verses of Laozi in archaic Chinese run,

埏埴以為器，當其無，有器之用。
鑿戶牖以為室，當其無，有室之用。
也故有之以為利，無之以為用。

Whose accurate translation is,

Pottery need to be hollowed so that it is useful, (otherwise it is just an irregular brick) a House needs to have some holes (e.g. door and windows) to be useful, (otherwise air and people cannot enter or exist). Thus, a certain level of nothingness is necessary to make an object useful.

It does not suggest that nothingness be superior to matter, but we have to admit that this is hardly the fault of Wright, as it seems only a rather passionate interpretation of Okakura's text.

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