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Concrete Imitations: The Reinstitution of Architectural Culture in the Post-Colonial World

Yusuf Civelek*

Abstract

This study aims to underline the importance of reinforced concrete techniques for appropriating Western architectural theories and practices in the post-colonial world. It argues that a firmly based notion in Western architectural thought, imitation, infiltrated step by step into the discourses and practices of the post-colonial world with the help of this plastic material.

This article tries to show with examples that the post-colonial architects mainly adopted Auguste Perret's understanding of imitation as tectonic expression, allowing them to substitute both their pre-colonial and colonial architectural patrimony for a classical tradition that Perret intended to modernize and continue with concrete. To demonstrate the point of this study, a few selected examples were discussed from the works of prominent architects in Turkey, Malaysia, India, Sri Lanka, and Singapore.

It is argued that the samples chosen from different countries to represent the architecture of the post-colonial world prove that the reinforced concrete structure was inst-

* Assoc. Prof. Dr., Fatih Sultan Mehmet Vakif University School of Architecture and Design Department of Architecture, Istanbul/Turkey, ycivelek@fsm.edu.tr, orcid.org/0000-0003-4754-4737

rumental for architects to appropriate Western architectural theories and practices. At the same time, it also allowed them to reinterpret the relevant tectonic culture in their home countries, with which they reinstituted the architectural culture after many decades that passed passively under the hegemony of Western powers. Finally, it is claimed that the architectural culture "resurrected" as such, which facilitated Postmodernism's global basis, has given up getting strength from its roots and therefore weakened considerably today.

Keywords: Post-colonial architecture, reinforced concrete, Southeast Asia, S. H. Eldem, Geoffrey Bawa, Minette De Silva, Balkrishna Doshi.

Betondan Sûretler: Postkolonyal Dünyanın Mimariyi Yeniden Keşfedişi Üzerine

Öz

Bu çalışma postkolonyal dünyanın Batılı mimarlık kuram ve uygulamalarını benimsemesi sürecinde betonarme tekniğinin önemini vurgulamayı amaçlamaktadır. Bu doğrultuda, Batılı mimarlık düşüncesinde çok önemli bir yere sahip olan "bir fikri biçimde taklit etme" (*imitation*) kavramının bu plastik yapı malzemesi sayesinde adım adım postkolonyal söylem ve uygulamalarına nasıl sirayet etmiş olduğu gösterilmeye çalışılmıştır.

Yazıda, bazı örnekler üzerinden postkolonyal dünyanın mimarlarının en çok Auguste Perret'nin taklit anlayışını benimsemiş oldukları gösterilmeye çalışılmıştır. Perret'nin geleneği betonarme vasıtasıyla çağdaşlaştırarak sürdürme amacıyla tercih ettiği tektonik ifadeyi taklit etme anlayışı, bu dünyanın mimarlarına kolonyal çağın hem öncesinde hem de kendisinde meydana getirilmiş olan mimari kültürü, kendilerine has bir Klasizm yerine koymayı mümkün kılmış olduğu açıklanmaya çalışılmıştır. Bu noktayı anlatabilmek amacıyla, Türkiye, Malezya, Hindistan, Sri Lanka ve Singapor gibi ülkelerden seçilmiş bazı önde gelen mimarların eserleri üzerinde bazı mülahazalarda bulunulmuştur.

Postkolonyal dünyanın mimarisini temsil etmeleri açısından farklı ülkelerden seçilmiş bu örnekler her milletin kendine has kabul edilen tektonik kültürün yorumlanması esnasında Batılı mimarlık düşüncesinin uyarlanmasında betonarme tekniğinin ne kadar işlevsel olduğunu göstermiş olduğu gibi, Batılı güçlerin hâkimiyeti altında pasiflik içerisinde geçen on yıllardan sonra, bu dünyada aktif bir mimari kültürünün yeniden oluşmaya başladığını da ortaya koymuştur. Sonuç olarak, Postmodernizm'in dünya çapında bir tabanı olmasını mümkün kılmış olan bu "yeniden canlanmış" mimari kültürün günümüz itibarıyla köklerinden güç devşirmeyi bir kenara bıraktığı ve zayıfladığı iddia edilmiştir.

Anahtar Kelimeler: Postkolonyal mimari, betonarme, Güneydoğu Asya, S. H. Eldem, Geoffrey Bawa, Minette De Silva, Balkrishna Doshi.

Introduction[1]

It is well known that reinforced concrete was the leading construction material of Modern Architecture. However, it has not been discussed enough how this material played a crucial role in making Modern Architecture an internationally accessible style. Moreover, concrete's role in shaping the reactions against exclusionary internationalism must also be discussed. The strength of this material in disseminating diverse trends of internationalism and regionalism came from its plastic character that allowed various forms of imitation, which was relatively difficult to realize with the assembly logic of steel structures.

The qualities of reinforced concrete that made it a leading material in applications of Modern Architecture were also valid for the critical positions against it. These qualities can be categorised roughly from two points of view: material and societal. In the first group, there is the easy applicability, relatively low-cost, adaptability for local craftsmanship, good performance in structurally complex buildings and adjustability in different local contexts. The second group consists of social and cultural reactions toward modern culture in general and to the problem of formal anonymity of international architecture. The flexibility of reinforced concrete became a lifesaver for architects who were sensible to all those issues, for it facilitated the combination of traditional and modern elements. In the second part of the twentieth century, reinforced concrete emerged and took a crucial role in dealing with the cultural anxieties in the West, its former colonies, and the countries under Western influence. The debates on architecture bound with regionalism, historical continuity, or cultural signification of architecture became unthinkable in architectural practice without this material.

The 1950s saw the spread of commercial blocks designed rapidly by big architectural firms, which Tafuri and Dal Co called the "architecture of bureaucracy".[2] At around the same time when concrete became the prevailing modern material in the post-colonial world, architects like Sedad Hakkı Eldem, Turgut Cansever and Geoffrey Bawa started casting it in specific forms which did not conform to the International Style. Although Le Corbusier's latest achievements must have encouraged these architects to discover the possibilities of plastic form, their works did not have his abstract and a-tectonic purity. However, they somewhat resembled Auguste Perret's manner of tectonic expression. It is argued

1 I want to express my gratitude to the late Professor Brian B. Taylor, without whose guidance this study would not have been possible.

2 Manfredo Tafuri,- Francisco Dal Co, *Modern Architecture 2*, New York, H. N. Abrams, 1976.

here that the demand for culturally significant architecture in the post-colonial world required not only the application of concrete structures for a tectonic language, but also the appropriation of the theoretical discourse about the structural rationalism in Western architecture that came with it.

The idea of imitation in architecture, which has always been a significant issue in Western architecture since the Renaissance, was challenged in the nineteenth century by a new conception of architectural history, which diverged from classicism based on the variety of architectural styles that belonged to different epochs and cultures. The question of style, which co-occurred at the same time and was associated with the problem of cultural identity, did not remain confined to the West, and spread to the rest of the world during the twentieth century. This question was especially tackled as an acute problem in the architecture of the post-colonial world, given that the local architectural cultures there had been either left to oblivion or imitated by colonial architects as part of the euphoria in the West for oriental exoticism.

Western concepts and techniques of imitation in architecture were carried to the non-Western world through colonialism and entrepreneurship, given that reviving and inventing the architectural styles were once the monopoly of European architects, who had the appropriate theory, technology, and capital to realise them. The Western architects who built abroad in the nineteenth and twentieth centuries created a mixed picture of the "West" and the "Orient". Examples can be given from the eclecticist works of Major C. Mant (1839-1881), Henry Irwin (1841 –1922) and Edwin Lutyens (1869 –1944) in India, Robert Fellowes Chisholm (1840 –1915) and Arthur Benison Hubback (1871 – 1948) in Malaysia, Henri Maclaine Pont (1884-1971) and Bernard J. Cramer (1890 - 1978) in Indonesia, Ernest Hebrard (1875-1933) in Vietnam, Alexandre Vallaury (1850-1921) and Raimondo d'Aranco (1857-1932) in Turkey, Henri Petit (1830-1930), Jules Voinot (1851-1913) and Denis Marius Toudoire (1852-1922) in Algeria, Giacomo Alessandro Loria (1878 - 1937) in Egypt and many others in some other parts of the colonial world. These architects introduced the Western architectural profession as one of the structures of social, economic, and artistic life inherited and imitated by the newly independent states. When the new nation-states had to build for their people, the local architects had to cope and compete with the techniques of stylistic imitation set by their Western precedents.

This study aims to show that in their efforts to take the matter of architectural identity into their hands after the dissolution of active colonialism, post-colonial

architects learned the notion of imitation as the method of appropriation of both the local tectonic cultures and modern constructions and through that, they got acquainted with the critical reasoning in architecture together with all the questions concerning cultural relevance of the art of building. They learned how to adapt past and modern forms, motifs, compositions, techniques, and discourses, which became possible by the application of reinforced concrete. This study also aims to bring attention to the fact that their efforts - which can be seen as the reversal of orientalism – inevitably and paradoxically relied on Western historicism as a tool for fighting the inferiority complex before the West. Because of that, it is somewhat provocatively claimed here that the predilection for regionalist interpretations of Modern architecture in the post-colonial world kept historicism alive and therefore sustained a firm basis for Postmodernism in the world, if not paved the way for it.

Reinforced concrete gave a hand to those who could not build for themselves for some time to restart their architectural production. However, this new beginning was no longer a genuine revival because it was essentially Western. Therefore, this study suggests reading the contextualist or regionalist productions in the post-colonial world as the appropriation of Western ideas of imitation in architecture. The architectural production discussed below should be regarded as selected samples to explain briefly an almost global phenomenon which can also be exemplified by many other built works of many nations that came under direct or indirect influence of the West.

The nineteenth century saw significant variations of imitation in Western architecture due to the growing power of historicism to the detriment of the Vitruvian orders, although classicism continued to be a substantial source of imitation. The theoretical basis of imitation from a historicist perspective, laid by names like Laugier, Bötticher, Semper, Viollet-le-Duc, and Perret, is shortly explained below to show its relations with architectural discourses based on imitation in the developing world. Because the journal *Mimar: Architecture in Development* published selected works from post-colonial countries in Asia, it is one of this paper's primary sources, focusing primarily on East and Southeast Asia. Therefore, this study tries to show the bridges between the architectural productions of the West and its former colonies using the interpretations of texts and built works. Although this is a tentative study, it is also necessary because of the general misconception that the so-called "regionalist", "conceptualist", or "nationalist" architectures in the post-colonial world are purely reactionary to the West.

The Two Modes of Imitation: Auguste Perret and Le Corbusier

Although following the precepts and principles of a specific cannon has always been the basic tenet of architecture in the world, imitation as an architectural and artistic notion has become a part of architects' discourse since Quatremère De Quincy's book, *Essai sur la Nature, le But et les Moyens de l'Imitation dans les Beaux-Arts* (1823). De Quincy differentiated between two manners of imitation of the Ancients, one concerning the reproduction of mere appearances (copy) and the other the (eternal) principals.[3] Imitation, which had become a conscious effort to appropriate historical ideas since the Renaissance, would become, in the nineteenth century, a tool to bridge historicism and progressivism in the relentless attempts to find the proper architectural style. Modernism rejected all manners of historicist imitation, but *mimesis* as the philosophical context of imitation survived in the concretisation of an idea in form, such as functionalism or elementarism, which Robert Venturi criticised in *Complexity and Contradiction in Architecture* (1966).

Generally speaking, architects of the twentieth century hesitated between the two modes of architectural imitation issued from the application of reinforced concrete by Auguste Perret and Le Corbusier. The difference is about the privilege of either the framework or the formwork, which mattered for both architects in different ways. For Perret, the framework was the essential part of imitation. For Le Corbusier, however, the formwork was more critical to create the overall plastic form as "modern art", for the white-washed surfaces helped to create the illusion of an a-tectonic architecture by veiling the joints. Later, Corbusier replaced the white-washed plaster with rough concrete surfaces (Figures 1 and 2**)**. The picture of the post-colonial architect is to be seen between these two modes of imitation, which were the latest phase of an old tradition in Western architecture.

3 Léon Krier - Demetri Porphyrios, *Quatrèmere de Quincy – De l'Imitation (1823)*, Brüksel, Archives d'Architecture Moderne, 1980, s. L-LVII.

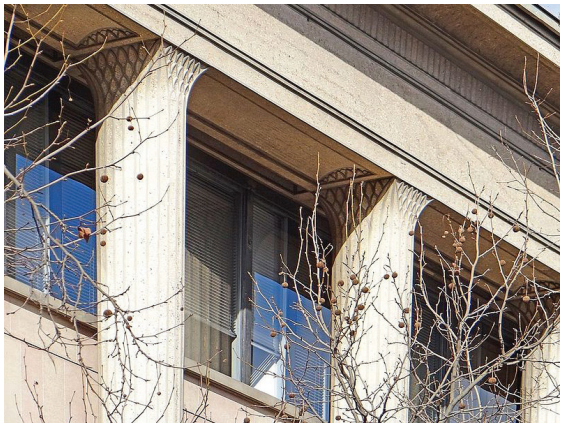

Figure 1. Musée des Travaux Publics, Auguste Perret. Paris, France, 1936-1946. Detail from the façade. Photo : Jean-Pierre Dalbéra. https://commons.wikimedia.org/wiki/Category:Palais_d%27Iéna#/media/File:Colonnes_de_la_façade_sud-est_du_palais_d'Iéna,_Paris_2014.jpg

Figure 2. Villa Savoye, Le Corbusier. Poissy-sur-Seine, France, 1929-1931. Main façade. Photo : Valueyou (talk). https://en.wikipedia.org/wiki/File:VillaSavoye.jpg

The problem of historical reference re-appeared in Western architecture in various episodes after it emerged in the Renaissance as a matter of adopting ideas from Roman ruins. Before modern architecture's defiance as a progressive attitude represented by a-historical forms and modern materials, architecture had been immersed in the problem of representation due to the conflict between modernity and the classical tradition. The debate on architectural style during the first half of the nineteenth century in Europe, and especially Carl Bötticher's remarks, testify to the growing conviction among architects about the difficulty of a historical

breakthrough with conventional building systems.[4] This conviction was mainly due to the historicism blended with positivistic insights, which described historical styles as natural results of constructional know-how of epochs, epitomised by the writings of Viollet-le-Duc and Auguste Choisy. However, the problem of representation continued even during the heydays of the Modern Movement, testifying that architectural style was only partially dependent on building technology. With the worldwide dissemination of reinforced concrete structures, the question of style finally appeared in the discourse of architects from non-Western countries, who could now build with this material in modern and historicist forms.[5]

When Claude Perrault imagined a giant order for the Louvre Colonnade (1665-1680), he had to use iron bars within the masonry structure to create an entablature made of horizontally aligned voussoirs. The Sainte-Geneviève Cathedral (1744-1789), designed by J. G. Soufflot, was a mixed imitation of Greco-Roman, Byzantine, and Gothic structures. To attain this so-called "Graeco-Gothic ideal"[6], Soufflot forced the superimposition of arcuated and trabeated masonry elements, which also depended on the support of iron bars, thanks to the know-how of the engineer Jean-Baptiste Rondelet.[7] Reinforced concrete made possible all such imitations by its inherent composite nature. In the Musée des Travaux Publics (1939-1956), Perret did not need to solve complicated structural problems resulting from formal choices, thanks to the Hennebique method. Although this method concerned the structural framework, reinforced concrete quickly became associated with the formwork and the framework because it allowed the imitation of both

4 Bötticher claimed that the masonry constructions used all possibilities of architectural style and that iron could be the new material for stylistic renewal. Carl Bötticher, "The Principles of the Hellenic and Germanic Ways of Building about Their Application to Our Present Way of Building (1846)", *In What Style Should We Build? The German Debate on Architectural Style*, ed. W. Herrmann, Santa Monica, the Getty Center for the History of Art, and the Humanities, 1992, p. 147-168.

5 The emergence of the identity problem in architecture is relatively earlier in Turkey. See Renata Holod – Ahmet Evin (eds.), *Modern Turkish Architecture*, Philadelphia, University of Pennsylvania Press, 1984. Reinforced concrete was applied in significant buildings in the National Style, like Kemalettin Bey's Harikzedegan Apartments in Istanbul.

6 The term "Graeco-gothic ideal" was introduced by the architectural historian Robin Middleton to point out the efforts to fuse Gothic structural rationalism with the beauty of classicist columnar structures in French architecture in the eighteenth century. Robin D. Middleton, "The Abbé De Cordemoy and the Graeco-Gothic Ideal: A Prelude to Romantic Classicism", *Journal of the Warburg and Courtauld Institutes*, vol. 3/4, 1962, p. 278–320.

7 See Antoine Picon, *Architectes et ingénieurs au siècle des Lumières*, Marseille, Parenthèses, 1988.

tectonic and stereotomic aspects of historic structures.[8] With unprecedented ease, concrete began to imitate all types of masonry constructions such as walls, all the arcuated forms such as arches and vaults, and all the trabeated structures made of wood, stone, or metal. It can be argued that if this modern material was not composed of the age-old materials of sand, cement (binder) and metal (clamp or bar), not only could Modern architecture not flourish, but also the developing world could hardly imitate Western modes of imitation in architecture.

Perret's manner can be summarised as a compromise between traditional (primarily classical) and contemporary forms. Although he knew that concrete could be cast in any form, he adhered to what remained from the nineteenth century's half-hearted belief in the historical development of classicism through material, technical and cultural changes.[9] Thus, for Perret, reinforced concrete was not the material for creating an entirely new architecture but for realising historical continuity. On the other hand, the earlier Le Corbusier envisaged a thoroughly modern architecture with a somewhat hidden reinforced concrete skeleton. Le Corbusier saw the technical aspects of reinforced concrete as its most significant potential, which enabled him to realise his "liberating" principles in architecture, advocated initially by the Dom-Ino model.[10] Eventually, Le Corbusier's Modernism dominated the world's architectural scene. However, Perret's consciousness of the imitative potential of the material never ceased to be a strong undercurrent, surfacing now and then to stir up the world of architecture. Even Le Corbusier turned to using concrete not only as structural but also as plastic material in the second phase of his career, although he never compromised for historicism.

Two villas built in Garches, a suburb of Paris, show how reinforced concrete was treated in two different ways by these two architects: Villa Nubar Bey, built-in 1932 by Perret, and Villa De Monzie/Stein (Villa Garches), built in 1927 by Le Corbusier. According to Peter Collins, in Villa Nubar Bey, where "the structural frame not only delineated the configuration of the interior volumes but constituted the main rhythmic elements of the facades," the result was a "compromise between eighteenth-century classicism and nineteenth-century functionalism."

8 The dichotomy of tectonics (structures with framework) and stereotomy (structures without framework) owes to Kenneth Frampton, *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture*, Cambridge, MIT Press, 1995.

9 From Julien-David Leroy to Marc-Antoine Laugier in the eighteenth century and from Quatremère de Quincy to Henri Labrouste and Gottfried Semper in the nineteenth, the idea of the continuity of classical forms in different materials and cultures kept the belief in classicism alive.

10 The well-known five points are the free facade, free plan, strip window, pillar-pilotis, and the roof terrace.

However, in Villa Garches, the structural rhythm was not exposed. The facades were organised by aesthetic principles independent of the structural grid.[11] Although Collin Rowe was yet to show that Le Corbusier was also interested in the classical ideas of rhythm, order, and proportion[12], Collins' comparison underlined that there were two different ways of building in concrete at the beginning of the twentieth century.

The classical idea of imitation allowed Perret to see the reinforced concrete structure as the next step after the masonry structures that had imitated earlier timber structures. In Musée des Travaux Publics, the exposed structural elements like fluted columns with capitals and entablatures with optical correction techniques constituted the framework of an architecture that announced its devotion to the beauty of structural and visual principles in historical continuity. On the other hand, Sigfried Giedion, the leading promoter of Modernism in architecture, claimed that Le Corbusier "has principally mastered two things: the ability to simplify things to an often almost dangerous terseness, and an unswerving consistency in development".[13]

Modern Architecture promoted by Le Corbusier and others had diverse connotations in its home countries: In Italy, it announced the Fascist ideology hand in hand with various neo-classicist trends,[14] In Germany, the cosmopolitanism it invoked led to its rejection by the Nazis. Such was also the situation in the Soviet Union, where the revolutionary political symbolism of Modernism changed after Lenin and Stalin criticised it and then condemned it like in Germany. As a result, "socialist classicism" became the architectural language of communism in the USSR.[15] During the interwar years, similar treatments of the same sort of modern

11 According to Collins, Perret was looking for the principles advocated at the Ecole des Beaux-Arts by Julian Guadet: "structural integrity and constructional expression." Peter Collins, *Concrete: The Vision of a New Architecture; A Study of Auguste Perret and His Precursors*, New York, Horizon Press, 1959, p. 232-233. See also Frampton, *op. cit*., p. 123.

12 Collin Rowe, "The Mathematics of the Ideal Villa (1947)", *The Mathematics of the Ideal Villa and Other Essays*, in. C. Rowe, Cambridge, MIT Press, 1976, p. 1-27.

13 Sigfried Giedion, *Building in France –Building in Iron – Building in Ferroconcrete*, Santa Monica, The Getty Center for the History of Art, and the Humanities, 1995, p. 167-168.

14 Diane Yvonne Ghirardo, "Italian Architects and Fascist Politics: An Evaluation of the Rationalist's Role in Regime Building", *Journal of the Society of Architectural Historians*, vol. 39, 1980, p. 109-126; and Dennis P. Doordan, "Revising Modernist 1930s", *Art Journal*, vol. 43, 1983, p. 121-131. Ghirardo found the persistence of Italianism (*mediterraneità*) in the works of Italian architects who promoted either Classicism or Modernism, such as Pagano, Piacentini and Terragni, all conforming in different ways to the inclusive ideology of Italian Fascism.

15 Despite the similar architectural and urban imagery produced by Modern pioneers like Le Cor-

classicism were applied in many countries as diverse as the United States, Japan, and Turkey. However, in the non-Western countries of the developing world, modern classicism – which was reinterpreted in concrete by architects like Perret, Asplund, Piacentini, Holzmeister and so forth - was simply a contemporary, modern style that came from the West.[16]

When the ideological motivations that supported classicising attitudes weakened after World War II and Modernism became an international phenomenon, global criticism of Modern architecture re-emerged simultaneously. Everything after the war helped reinforce concrete to become the leading international building material: not only was it a means for rapid building and allowed the imitation of both internationalist and regionalist trends. It even worked for self-criticism within Modernism using rough concrete surfaces, facilitating the creation of the impression of the "spirit of the place". Le Corbusier started using concrete in a new manner as early as 1934 when he applied the *béton brut* in the Weekend House in La Celle-Saint-Cloud. After the war, he made more potent allusions to the material's expressive potential but avoided Perret's historicist structural rationalism. As a result, the white, sleek boxes transformed into an architecture that expressed both a disillusioned reality and a blurry, dreamy representation of universal myths and symbols, as in La Tourette Monastery (1953-1957), Chapel of Notre Dame du Haut (1950-1955), Millowners' Association Building (1952-1954), Villa Jaoul (1955), and the buildings of Chandigarh (1955-1968).[17] This new use of reinforced concrete did not mean the refusal of the precepts of Modern Architecture, but it revised its mode of representation. Throughout the 1920s and 1930s, Le Corbusier's sources of imitation had nourished from pure, precise, mass-produced objects and Modern Art. His new convictions about the form-material relationship came from the reinterpretation of the models of imi-

busier, Walter Gropius, Hennes Meyer, Ludwig Hilbersheimer, Konstantin Melnikov, etc., the meaning of the avant-garde for these architects was different. See Michael Hays, "Reproduction and Negation", *Architectureproduction*, ed. Joan Ockman, New York, Princeton Architectural Press, 1988, p.153-178; Jean-Louis Cohen, *Le Corbusier, and the Mystique of the USSR: Theories and Projects for Moscow 1928-1936*, Princeton, Princeton University Press, 1992.

16 In the United States, many public institutions and buildings of the State were built in this manner throughout the 1930s and 1940s. In Turkey, most of the monumental buildings of the new State in Ankara were constructed during the 1930s and 1940s by an Austrian, Clemens Holzmeister.

17 An exciting reading of the garden roof of the Millowners' Association Building (1954) in Ahmedabad suggests that it is more prosperous for "its iconography (paradise garden, bull's horn, river section) than for its thermal properties and effects". Mohsen Mostafavi – David Leatherbarrow, *On Weathering: The Life of Buildings in Time*, Cambridge, MIT Press, 1997, p. 98.

tation and invention in the context of distinct localities, as seen in the case of the *brise-soleil*. In this case, imitation was sought in the reinterpretation of traditional responses to the elements, and the invention followed that reinterpretation.[18]

Le Corbusier's new approach, simplified as a stylistic trend by the word "Brutalism", was adopted by developed societies as a stylish finish for high-tech constructions between the 1950s and 1970s. The architects of the so-called underdeveloped world rarely found it relevant to the problem of identity in modernity.[19] Forms without traces of cultural aspects were too anonymous to express cultural specificity, which was to be sought in the images that fit the collective memory. From India, Sri Lanka, Malaysia, and Indonesia to Iraq, Turkey, Egypt and so forth, architects adopted reinforced concrete almost as a magical material, for it was able to imitate all those images associated with cultural identity and realise the aspirations for development. Their efforts can be likened to the European architects in the first half of the century, who tried to modernise classical architecture with concrete. Architects of post-colonial societies were also obliged to reinvent their classicism from their architectural roots. In their involvement in the problem of self-identity, they initially followed Perret's tectonic interpretations. The application of Le Corbusier's abstract and a-tectonic manner was either rare or a relatively later phenomenon related to Postmodernism.

Two Forerunners of "Concrete Imitations" in Western Asia: S. H. Eldem and T. Cansever

The difficulty of imitating the latest trends is a long-standing problem in the developing world. In an article published in the Turkish *Mimar* magazine in 1931, architect Burhan Arif complained of the lack of materials for building the new (Modern) architecture, such as those needed for constructing flat roofs. For Arif, because of this "material" problem, Turkish architecture was doomed to remain local.[20] This statement is significant for the fact that the recently overthrown "National Style", which was distilled from the Orientalist works of European architects like Raimondo d'Aranco, Alexandre Vallaury and August Jachmund at the

18 A good explanation of the invention of the *brise-soleil* can be found in Mostafavi – Leatherbarrow, *ibid*., p. 28-31 and 93-96.

19 This does not mean that *béton-brut* was never applied in those countries. The Indian architect Balkrishna Doshi partially used this technique. From the 1950s to 1960s, Behruz Çinici in Turkey created a whole university campus (METU) with exposed concrete construction. However, as Çinici (1999) remarked, he needed technical assistance from abroad to cast exposed concrete. See Behruz Çinici, *Mimarlıkta Doğaçlama ve Behruz Çinici*, İstanbul, Boyut Yayın, 1999.

20 Burhan Arif, "Türk Mimarisi ve Beynelminel Mimarlık Vasıfları", *Mimar*, no. 2, 1931, p. 365.

turn of the twentieth century by A. Kemalettin, Vedat Tek and others, had prioritised the localness (although as a reductionist idealisation) for which the pitched roof with extended eaves was a characteristic element. Although the buildings in the National Style usually had reinforced concrete structure, it was completely hidden from the eye, especially in the exteriors. However, during the second phase of the search for a national architectural idiom during the 1940s, the reinforced concrete structure's exposition became ordinary to emphasise the modernity of the new ("Second") National Style, like Perret's works. Sedad Hakkı Eldem (1908-1988) and Emin Onat (1910-1961) created the Second National Style in Turkey in that manner. However, Eldem kept experimenting with blending the traditional and the modern in reinforced concrete structures.

As a prominent Turkish architect, Sedad Hakkı Eldem had structural rationality in his mind and the traditional "Turkish House" in his heart. Seeing that housing was the primordial element of modern and traditional architecture, he treated the vernacular elements of the Ottoman dwellings as the depository of unwritten rules of local classicism to be imitated progressively. Eldem designed a few Modern "cubic" buildings in the 1930s and a mixture of Ottoman-Turkish forms with modern European classicism in the 1940s (the "Second National Style"). Towards the end of the 1940s, he began to superimpose in his buildings a pseudo-structural rhythm of traditional timber structures cast in reinforced concrete.[21] An elaborate example is the Social Security Complex (SSK), which finished in 1964 in Istanbul and received the Aga Khan award in 1986. In this complex which looks like a cluster of mansions lined up along a hillside, the extended slabs recall the eaves of the traditional pitched roofs. At the same time, the vertical elements, such as windows and the intermediary *brise-soleil*s, refer to timber construction. The cantilevers complete the series of structural references to the "Turkish House", all helping to unite climatic and aesthetic prerequisites at once. Aesthetic conditions imposed themselves right behind the building, where once the remnant of the old hillside Zeyrek neighbourhood stood with its wooden houses, to which Eldem's blocks showed respect (Figure 3).

21 Atilla Yücel briefly explains Eldem's style: "The basic historical reference in Eldem's work has been the old Turkish House; the light timber frame structure of the main floor (or floors) projecting in the solid mass of the ground floor and covered by large edges of the pitched roof […] his structures are reinforced concrete frames; however, they look lighter, due to the small spans and also due to the differentiation of supporting and infill materials. Thus, the reinforced concrete is treated as timber, and this metaphoric aesthetic use recalls some Japanese experiences." Atilla Yücel, "Contemporary Turkish Architecture", *Mimar: Architecture in Development*, no. 10, 1983, p. 59.

Figure 3. Social Security Complex, Sedad Hakkı Eldem. Istanbul, Turkey,1962-1964. View from the South-East. Photo: Marc Eginard. https://archives.saltresearch.org/handle/123456789/7998

While the reinforced concrete structure and plastered brick walls helped Eldem to reduce the construction details to the minimum, like in the experiments of Perret (with whom Eldem was acquainted in Paris[22]), the rhythm of the reinforced concrete elements helped him invoke an abstract image of the collective memory, the "Turkish House". Eventually, with the help of concrete, Eldem could achieve the dream of the post-colonial architect: a critical, regional, popular, and yet Modern architecture.

A disciple of Eldem, Turgut Cansever (1920-2009) based his regionalist Modernism on the metaphysical interpretations of modern and traditional aesthetics. Although Cansever was not as attached to reinforced concrete as Eldem, he be-

22 In an interview, Eldem recounted that he visited the offices of Le Corbusier and Perret when he was in Paris. He was attracted more by Perret's manner in reinforced concrete, for which Perret was glad. He explained his predilection as such: "For me, [the quality of] modern architecture is to be measured by the beauty of the structure. In those years, the church in Raincy was under construction. I fell in love with it, and the similar one in Mondracy [*sic*]. There could be Turkish proportions and infill walls within those skeletons […] The beauty of the skeleton should have to be seen, not hidden. I imagined the infill walls with colours like those found in Ankara, Kastamonu and Amasya. Perret's reinforced concrete was without colours. It was straight out of the formwork, but not like *brute* as we call it today. On the contrary, I would say it was very gentle and elegant". Sedad Hakkı Eldem, "İç Mekân Düzenleme Disiplini Üzerine Bir Söyleşi (22 Mart 1977)", *Mimar Sinan Üniversitesi 100. Yıldönümü Armağanı, S. H. Eldem: 50 Yıllık Meslek Jübilesi,* İstanbul, Mimar Sinan Üniversitesi Yayını, 1983, p. 33.

nefited in his major works from the tectonic qualities of the material. Although he was not in favour of explicit historicism until his late age, Cansever always praised - and even idealised - the social and cultural structure of the Ottoman society, whose architecture and urbanism disappeared first by modern planning and then by the uncontrolled immigration that shaped contemporary Turkish cities. In Atilla Yücel's words, Cansever questioned "the ontological and semantic links between the functional purpose of his building, its urban relations, the technological implications of its "tectonics" […] with relation to an implicit omnipresence of history." Yücel also stated that, in Cansever's philosophy, the issues of "existence" and "continuity" were tied to a tectonic culture that consisted of construction techniques and ornamentation.[23]

Cansever's works reveal a peculiar appropriation of Modernism's ethical and rationalist discourse concerning the function and assembly of architecture's essential and superficial elements (like structure and ornament), which was elaborated during the 150 years between Marc-Antoine Laugier and Auguste Perret. They also reveal his reinterpretation of that discourse in opposition to the International Style and his intention to reinterpret the encounter between modernity and tradition. He built the Karatepe Open Air Museum in 1957, a group of modest reinforced concrete structures erected in the countryside to shelter an archaeological site and accommodate the archaeologists (Figure 4). Being once a Hittite settlement, Karatepe was a pre-Turkish location with nothing to provide the context of Ottoman-Turkish architecture. Therefore, Cansever applied a timeless language of a post-and-lintel structure in concrete. Despite their seeming heaviness, the somewhat "primitive" plainness of these structures helped the shelters to become unobtrusive for ancient remains by giving the impression of "being there" since time immemorial and "being modern" at the same time. Although the overall form of the structure is far from suggesting historicist allusions, the eaves of these "primitive huts" nevertheless recall traditional roofs of Ottoman houses, which Cansever occasionally applied in his other works with such references.

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23 "(Cansever) calls the communicative content of this existence and continuity "ornamentality" and tries to materialise this semantic interpretation either by expressing the functional parts, or constructive elements of his buildings, or by emphasising his formal–historical references. Thus, his buildings present an intellectual discourse full of connotations that are not very far from recalling the functionality of architectonic parts as it was intended in new brutalist ethics of Kahn's hierarchical concept of parts and wholes and space." *Ibid*. (note 20), p. 62.

Figure 4. Karatepe Open Air Museum, Turgut Cansever. Osmaniye, Turkey, 1957-1961. Shelters. Photo: Burçin Yıldırım. https://www.flickr.com/photos/burciny/5055150924

In the Turkish Historical Society building in Ankara (1951 – 1967), an Aga Kahn prize-winner building, the formal elements of Ottoman architecture are present in fragments but always subdued to the concrete structure in a modern syntax. In the Karatepe Museum, where there was nothing but form, Cansever veiled the heavy construction using concrete in gentile brutalism. In the Historical Society building, however, where there was the dilemma of integrating apparent historical elements into a Modernist language, Cansever and his partner, Ertur Yener, picked the most moderate aspects from both vocabularies and exhibited them widely in the context of co-habitation of ornament and structure. In the Ataç House he built with his daughter, Feyza Cansever, in one of the Prince Islands (Burgazada) in 1986 (Figure 5), the imitation of the traditional wooden structure of the Turkish-Ottoman house in reinforced concrete is more subtle than that of Eldem's treatments because of the existence of wood in the composition, which recalls a similar treatment in a distant location, that of Geoffrey Bawa in Sri Lanka.

Figure 5. Ayşin and Rafet Ataç House, Turgut and Feyza Cansever. Burgazada, Turkey, 1986-1989. Photo: Gökhan Tan. H. Kuruyazıcı. (2011). *Adalar Binalar Mimarlar - Islands Buildings Architects*. İstanbul: Adalı Yayınları.

Asian Rediscovery of the "Primitive Hut" in Concrete: Sri Lanka and Beyond

Essentially a historicist perspective, the "structural rationalism", which was developed by theorists like Laugier, Viollet-le-Duc and Semper, focuses on the continuous development of a core idea about the construction through the innovation in materials and structures. Therefore, in the Western architectural theory since the 18th century, regardless of the preference for the classical or the gothic, the core idea was always linked to a primitive hut - a prehistoric wooden construction. Although Viollet-le-Duc thought that iron would be the new material to stimulate the development of medieval structural rationality, reinforced concrete quickly took the leading role due to its practicality. Following the same line of thought in his reinforced concrete structures, Perret emphasised the form as the a priori and tried to imitate its essence with the new construction technique. Similarly, the traditional wooden dwellings of East and Southeast Asia provided the local architects in post-colonial times with the primaeval tectonic idea to be imitated in modern reinforced concrete constructions. The vernacular building traditions of the region had already provided examples in the colonial period for new typologies like the "colonial bungalow", the "compound house", or the "*indische woonhuis*" in today's India, Sri Lanka, Malaysia, Indonesia, and Singapore.[24] Post-colonial architects of these countries used the same vernacular examples to create their proper syntheses while also benefiting from those of colonial times.

Geoffrey Bawa led a significant effort to appropriate the local tectonic culture in the post-colonial world in Sri Lanka starting from the 1960s. Like most post-colonial architects, the functional and aesthetic mixtures during the colonial times constituted an excellent example for Bawa, whose manner was indeed likened to "neo-colonialism." His increasing concern with Sri Lanka's vernacular traditions became visible first in the Yahapath Endera Farm School (1965), where he applied wooden trellises and some concrete elements in bungalow style. According to Taylor[25], "the bungalow signifies more than a search for ultimate origins, the primitive hut so to speak; it is space, a room(s), encompassing nature". In Bawa's architecture, the imitation of wooden tectonic culture with concrete matured in the 1970s, as seen, for example, in the Agrarian Research and Training Institute built in Colombo between 1974 -1976 (with Ismeth Raheem), where the abstracted elements of the bungalow owed their modernness to "noble simplicity" of white-washed concrete:

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24 Imran Bin Tajudeen, "Colonial-Vernacular Houses of Java, Malaya, and Singapore in the Nineteenth and Early Twentieth Centuries", *ABE Journal*, no. 11, 2017, p. 1-30.

25 Brian Brace Taylor, *Geoffrey Bawa*, New York, Thames And Hudson, 1995, p. 12.

> "Bawa used his now familiar palette of materials with great assurance: a crisp concrete frame with neatly articulated concrete purlins and rafters supports a roof of tiles on corrugated sheeting; broad overhanging eaves cast deep shadows on the white plastered walls; access balconies are protected by chunky coconut balustrades and surfaced with polished clay tiles".[26]

In the Arts and Sciences Faculties of the University of Ruhuna (1980-1988) in Matara, the imitation of timber elements in concrete resulted in a finer expression thanks to the demonstration of the structural principle of timber construction (Figure 6). Not only are the exposed reinforced concrete columns and beams in harmony with the large-eaved roofs, but also the columns that support the roof are slenderer than the ones below, as preparation for transforming the concrete framework into timber framework. In some pavilions, timber columns that support the roof are located on cantilevers supported by timber brackets. The same aspects of this construction can be seen at the New Parliamentary Complex (1979-1982) in Kotte, where the material change is the most evident and perfectly arranged. In the Parliament Pavilion, the first three floors are supported by a reinforced concrete structure (Figure 7). On the last two floors, timber columns and beams replace the concrete ones, while the span is reduced to half due to the difference between the physical aspects of the two different materials. At the top floor, the timber framework disappears behind the dense fabric of wooden trellises that culminate in the roof. The reinforced concrete only facilitates placing the traditional on top of the modern while binding the whole structure with the "tree metaphor", which is also in the foundation of the Western imitation theory that was born from Vitruvius' story of the "primitive hut". The evocative manner of juxtaposing the past and current form of structural order is also a reference to the theory of the development of the classical orders in the nineteenth century in Europe, which Gottfried Semper also theorized by the term *Stoffwechsel*, who saw the beginning of a tectonic culture in a similar "primitive hut" which always remained loyal to its tectonic origin despite the changes in its material aspects.[27] Perret, too, found such justification for using concrete in the classicising orders of his Musée des Travaux Publics.[28]

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26 David Robson, *Geoffrey Bawa: The Complete Works*, London, Thames and Hudson, 2002, p. 132-133.

27 Semper interpreted the function of ornament in the history of architecture through his perspective of tectonic culture as the continuous inheritance of motifs previously made in different materials, such as the representation of wooden structures in stone. Gottfried Semper, *The Four Elements of Architecture and Other Writings*, New York, Cambridge Univ. Press, 1989.

28 Frampton claimed that Perret followed Auguste Choisy in assuming that the Greek temple

Figure 6. Arts and Sciences Faculties of the University of Ruhuna, Geoffrey Bawa. Matara, Sri Lanka, 1980-1988. Photo: Christian Richters. https://archnet.org/media_contents/29452.

Figure 7. New Parliamentary Complex, Geoffrey Bawa. Kotte, Sri Lanka, 1979-1982. Photo: David Robson. https://archnet.org/media_contents/29731

In Kandyan Art Association Centenary Cultural Centre, built in 1984 in Kandy, Sri Lanka, which was designed as workshops and exhibition spaces for local crafts, the architect Minette De Silva combined traditional and modern ma-

was a later transformation of the original timber structure. This significant point explains his obsession with the expression of the "*charpante*" of his buildings. Frampton, *op. cit*., p. 125.

terials interchangeably. The architect stated that a "modern indigenous" approach had to consider "the careful use of the site, and the maximum use of indigenous materials which would also suit the image of the local crafts, which the KAACC wants and is expected to preserve and promote".[29] The structural necessities dictated the use of reinforced-concrete columns and steel trusses in the theatre and foyer. Sri Lankan traditional timber construction was applied in other units, almost like anonymous vernacular constructions. Whether made of reinforced concrete or wood, all the pillars imitate the traditional tectonic culture to different degrees. The result is pitched-roofed, flat-tiled, interpenetrating vernacular sheds and *mandapa*s supported or pierced by tall and slender pillars (Figure 8).

Figure 8. Kandyan Art Association Centenary Cultural Centre (KAACC), Minette de Silva. Kandy, Sri Lanka, 1982-1984. View towards the stage of the theatre, or *nrutiya mandapa*. De Dilva, M. (1987, p. 34).

The reinforced concrete elements of Hermann-Gmeiner School (1985), designed by Chelvadurai Anjalendran in Piliyandala, Sri Lanka, also imitated the structure of traditional wooden construction using the application of flat-tiled roofs and exposed structural frames. Here, concrete replaced wood in vertical supports, lintels, and rafters (Figure 9). According to the architect, the "reinforced concrete rafters instead of low-grade timber ones which often sagged, prompted the diagonally-aligned axis of the classroom block and made a feature of the painted reinforced concrete rafters that formed a ribbed canopy, with radial detailing at the hips, and has become the dominating character of the whole complex".[30]

29 Minette De Silva, "Kandyan Art Association Centenary Cultural Centre", *Mimar: Architecture in Development*, no. 23, 1987, p. 32.

30 Chelvadurai Anjalendran, "The Hermann-Gmeiner School, Piliyandala", *Mimar: Architecture in Development*, no. 20, 1986, p. 29.

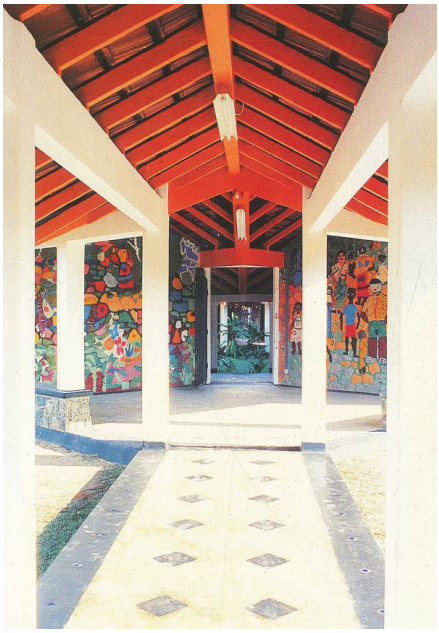

Figure 9. Hermann-Gmeiner School (SOS Youth Village), C. Anjalendran. Piliyandala, Sri Lanka, 1983-1985. General view (Anjalendran, 1986, p. 31).

In the KAACC and Hermann-Gmeiner School, practicality was given as the reason for reinforced concrete elements. Beyond usefulness, it is evident that these elements, which run the whole extent of these buildings, from the edge of gables to arcaded courtyards, help to locate these institutions in a context that binds cultural form to modernity and gives them a "local character." Architects worldwide talk about the "character" of buildings in the general sense of the word. However, before the architectural avant-garde, "character" was the primary norm for judging any building in the classical tradition. Architectural theorists like Jacques-François Blondel gave it particular importance until the eclipse of the classicist discourse after Julien Gaudet.[31] In a time when cultural associations of architecture were being remembered, representing a traditional tectonic culture as a local character in a modern context can be construed as the appropriation of Western discourse. However, this attitude was about to succumb to the more liberal or arbitrary treatments of Postmodernism both in the post-colonial world and the West.

31 Jacques-François Blondel described different aspects of "character" in his *Cours d'architecture civile* (1771-1777). Julien Guadet's *Eléments et Théories de l'Achitecture* (1894) was the last important publication of the Academic tradition.

The Postmodern Phase of the Reinforced Concrete Structures in the East and South-East Asia

The tendency to conciliate past and present appeared in the West first in the alternative configurations of modern architecture at the beginning of the twentieth century and later as the Postmodern reaction to rationalism. The same tendency can be seen in the issues of the journal *Mimar: Architecture in Development*, which covered contemporary architecture mostly in Islamic countries between 1981 and 1992. Although Postmodernism is generally accepted to be a phenomenon developed in Western countries in their so-called "late-capitalist" phase, the architectural culture of the world after WW II seems to have arrived at this point simultaneously, which the architecture in the post-colonial world can testify. The search for both modern and authentic identity for the built environment in these parts of the world coincided with the disaffection with avant-gardism in the West, where the new interest was in the historical and semantic dimension of the environment. The imitations with concrete by the architects of post-colonial countries naturally represented an "*arrière-garde*" attitude, to borrow the term from Kenneth Frampton, who considered it a prerequisite of "critical regionalism" in 1983.[32]

The architectural practices of this period introduced in *Mimar* also show that their architects blended the two central attitudes towards the use of reinforced concrete in Modern Architecture – tectonic and a-tectonic – the one represented by Perret and the other by Le Corbusier. Reuter's House, built in Singapore in 1990 by William Lim Associates, comprised two seemingly different groups of building elements without compromising coherence. The first group was made of tall round timber columns carrying the beams and rafters of the roof. These are the historicist-regionalist (colonial bungalow) elements of the design. This exterior structure partly hides and demonstrates a white structure comprising mainly walls and slabs within its enclosure. This second group, made of concrete elements, creates the modern face of the design. In short, functional interiors are sheltered by a bungalow-type wooden construction that was "'lifted off' its supporting timber columns".[33]

Reuter's House exhibits a genius concept of combining tradition and modernity not by mixing diverse formal elements but using an architectonic symbiosis, which is justified by the logic of both sides, such as climatologic conditions, cultural continuity, modern aesthetics, and practicality. However, like the pre-

32 Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance", *Postmodern Culture*, ed. H. Foster, London, Pluto Press, 1983, p.1-27.

33 William Lim, "Singapore: Reuter's House", *Mimar: Architecture in Development*, no. 39, 1991, p. 38.

vious examples above, this building suggests that concrete can veil its material substance, has a potential for dematerialisation, and can become subservient in heterogeneous contexts. With the giant order of independent pilotis behind which the white slabs advance and recede, this residential complex seems to invert Le Corbusier's "free plan" (Figure 10). Therefore, imagined as a "three-dimensional collage", this building demonstrates a unique interpretation of regionalism in concrete by prohibiting this modern material in traditional expressions, which is to be imitated only by traditional materials. This situation, which is a paradox in terms of the rationale of Modernism, is justified as a "juxtaposed contradiction" of the Postmodern discourse.[34]

Figure 10. Reuter's House, William Lim Associates. Singapore, 1990 (Lim, 1991, p. 40).

In the Mahaveli Museum and Royal Asiatic Society building (1989) in Colombo, Sri Lanka, Anura Ratnavibhushana's imitation of traditional structural elements is based on dramatising the cantilevers of the upper floors (Figure 11). Here, concrete is again an overall material forming conventional and modern patterns, but it is far from expressing its materiality, veiled with white plaster. Contrary to the expression of modesty and balance in the combination of trans-historical vocabulary achieved in the previous examples, in this building, every element shaped in concrete is daring: Corbusian free-façade openings, masonry light-holes, high-pitched roofs with large eaves and diagonal props, and so on. It is somewhat of a studied eclectic building in which every element strives to create its niche. However, it is the reinforced concrete with which the architect dared to combine all these formal choices within the abstract composition of the plan and tried to create the image

34 Robert Venturi, *Complexity and Contradiction in Architecture*, New York, The Museum of Modern Art, 1966.

of an architecture that adopted the tradition in a modernist discourse, a "pre-colonial Sri Lankan architecture (such as peasant houses and religious edifices)" in a contemporary function like the museum.[35] Indeed, this building demonstrates the "both-and" complexity promoted by Robert Venturi as Postmodern eclecticism, which the post-colonial architect seems to have achieved naturally.

Figure 11. Mahaveli Museum and Royal Asiatic Society building, Anura Ratnavibhushana. Colombo, Sri Lanka,1981-1985 (Ratnavibhushana, 1989, p. 54).

The mosque is one of the most relevant typologies for the problem of the representation of culture in modern society. In the Mosque of Sarawak in Malaysia (1990), Sami Mousawi used reinforced concrete in structural and ornamental elements, all of which followed the same geometric pattern reminiscent of Islamic art (Figure 12). While praising modern techniques, the Iraqi architect Mousawi explained his concern in traditional forms as the legitimisation of architecture in terms of its relation to its place and the rejection of what is temporal (fashion).[36] In this particular example, the hypostyle type was adopted as the "authentic" mosque type, in which the interrupted perception of the main space appears antithetical to the spatial paradigm of Modern Architecture.[37] A similar approach can be seen in another religious complex that Mousawi had designed in 1983 in collaboration

35 Anura Ratnavibhushana, "The Mahaveli Museum and Royal Asiatic Society Building, Colombo", *Mimar: Architecture in Development*, no. 32, 1989, p. 54.

36 Fatiha Haddar, "Synthesis: Towards a Tradition-Based Architecture", *Mimar: Architecture in Development*, no. 40, 1991, p. 32.

37 According to Khan, the H-shaped complex next to the prayer hall that shelters the library and cultural centre "creates continuously moving perspectives reminiscent of Michelangelo's Campidoglio in Rome and the inflected surfaces of Borromini's architecture. Hasan-Uddin Khan, "Expressing an Islamic Identity: Mosques built in Western Societies", *The Aga Khan Award for Architecture: Building for Tomorrow*, ed. A. A. Nanji, London, Academy Editions, 1994, p. 69.

with the firm of Paolo Portoghesi in Rome, the Centro Islamico Culturale d'Italia, completed in 1995 (Figure 13). Here, references to the earlier hypostyle mosques and the later central-spaced mosques expand the conception of "Islamic architecture", which never had a single line of stylistic development. Most importantly, ornamentation, an essential element for cultural signification, was not superposed on the structure but made an integral part of it, adding to the effect of lightness and dematerialisation created by the white-washed embroidery-like elements.[38]

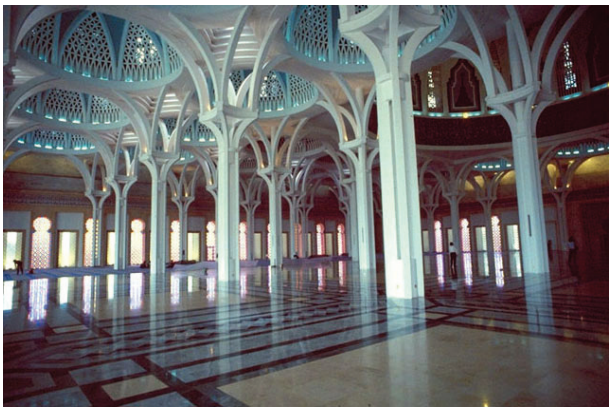

Fig. 12. Sarawak State Mosque, Sami Mousawi. Sarawak, Malaysia,1990. View from the interior. https://archnet.org/media_contents/13469

Figure 13. Centro Islamico Culturale d'Italia (CICI), Mousawi and Paolo Portoghesi. Rome, Italy, 1983-1995. View from the prayer hall. https://archnet.org/media_contents/10714

38 Steele saw an attempt to underline the Italian historical context in the second mosque, saying that "the arches are made of prefabricated white concrete, and the roof is finished in encaustic plaster, which was typical of ancient Roman architecture". James Steele, "The New Mosque and Islamic Cultural Center in Rome", *Mimar: Architecture in Development*, no. 41, 1991, p. 19.

The blending of structural and ornamental elements puts the form in the centre of the design to compensate for the material change in the given tectonic culture, where concrete appears to be very useful. However, the ornamental aspects of the apparent reinforced concrete structural elements in these cases are by no means superficial treatments. They seem to follow Perret's dictum that "one must never allow into a building any element destined solely for ornament, but rather turn to ornament all the parts necessary for its support".[39] Nevertheless, although the reinforced concrete structures of these two mosques result from sophisticated planning, they still point to the humble manner of those who build in societies with less technology and capital.

Balkrishna Doshi from India also liked the expressive potential of concrete but refrained from direct imitation of a tectonic culture. Doshi applied the "tree metaphor" to explain the vitality inherent in the "building philosophy" that belongs to India and his works. He described the underlying idea of his architecture as "incorporating the dialogues that must have taken place over centuries between the user as well as between cosmic forces. The character and form of such buildings, streets and clusters are like old trees with their weathered roots, trunks and branches expressing vitality, vigour, and a will to survive".[40] Doshi found in "rootedness" essentially the spiritual motivations with which a place was usually created out of nature. Thus, while building for new functions, Doshi impregnated the spaces with the spirit that he believed stemmed from Indian religious building tradition and from "the conscious and unconscious pull towards past and present, towards East and West".[41] Like the later Le Corbusier, Doshi wanted to create unique places using pure and intertwined structures, as if to create in the site the image of ancient enclosures that have preserved their spaces for centuries. Therefore, it can be said that Doshi's impressions of Indian building tradition were composed of spatial richness created by the interaction between the dominant massive enclosures and post-and-lintel structures. Although William Curtis discussed Doshi's search for a new grammar of wooden architecture in concrete,[42]

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39 Collins, *op. Cit*., p. 203.

40 Balkrishna V. Doshi, "Between Notion and Reality", *Architecture + Design*, Jan – Feb 1989, p. 20.

41 *Ibid*. (note 39), p. 20.

42 Curtis claimed that in the Institute of Indology designed by Doshi in Ahmedabad, "beams, stanchions, slabs, mullions and trellises are handled in a way that recalls traditional timber architecture and are regulated according to Le Corbusier's proportional system, the Modular." Curtis also stated that Doshi went to Japan to see some architectural works in which traditional wooden trabeation was translated into a new grammar for concrete, such as Kenzo Tange's

his preference for imitation in his own office complex in Ahmedabad ("Sangath", 1981) inclined equally towards the trabeated *mandapa* and barrel-vaulted *chaitya*, where the historical replacement of wood by stone proves the existence of a deeply rooted culture of imitation continued by Doshi with the new material (Figure 14).

Figure 14. Architect's Office (Sangath), Balkrishna Doshi. Ahmedabad, India, 1979-1981. View from the pools and the pavilions. Photo: Joseph N. St. Anne. Source: Aga Khan Award for Architecture. https://archnet.org/media_contents/10578

While the barrel vault in Sangath seems to invoke the historic shrines carved in rocks (*chaitya*) fronted by a portico of a post-and-lintel structure in stone, it is also a familiar figure that had long before become common for both Modernist and regionalist applications. According to Curtis, Doshi was "impressed by domical forms in the village of Harania [in Egypt] as well as by the vaults of the Crafts Center by Wissa Wassef".[43] Knowing that Doshi worked in Le Corbusier's office between 1951-1954, it can also be claimed that this figure referred to what Le Corbusier realised in a series of houses throughout his career, such as Sarabhai House (1955), Villa Jaoul (1951), and Maisons Monol (1920).[44] However, these houses themselves recall Perret's docks in Casablanca (1919), which appear to have imitated the traditional repetitive mud-brick barrel vaults of North Africa. Whatever the source of imitation may be, it fits very well in Doshi's primary in-

Kurashihi Town Hall. William J.R. Curtis, *Balkrishna Doshi: An Architecture for India*, New York, Rizzoli, 1988, p. 17.

43 *Ibid*., p. 36.

44 Doshi had already applied the barrel vault (made of bricks) on his return from France in the Atira and PRL Low-Cost Housing built in Ahmedabad, India, in 1957.

tention of multi-referencing, suitable to his efforts of creating a dialogue between the traditional and the modern, as well as between the local and the universal. In Sangath, Doshi seems to have appropriated Le Corbusier's brutalist mysticism in a local context. However, he also appears to have taken a step into Postmodernism by uniting the "timeless" artistic expressions of the later Le Corbusier's mannerism with a "deeply rooted" tectonic and spatial culture.

Many more examples can be given to this new "historically leading" status of post-colonial architectural works. To cite just a few, one can mention the National Insurance Company (R. Chadirji, Iraq, 1966), Jondi-Shapour University (K. Diba, Iran, 1980), Vidhan Bhavan State Assembly (C. Correa, India, 1983), Extension to Kuching Syariah Courthouse (H. bin Kasturi, Malaysia, 1986), Institute of Nautical Archaeology (T. Cansever, Turkey, 1988), Palace of Culture (M. Kamar Ya'akub, Malaysia, 1995), and many other such buildings that testify to the liveliness of the architectural profession in the post-colonial world at the end of the twentieth-century and the confidence of their architects to search for new and unique ways to express cultural identity through architectural form.

Conclusion

The history of architecture is also the history of imitation, appropriation, and invention. Imitation is the initial phase before invention, to be mediated by appropriating what is to be imitated. The moments of the invention are achieved rarely and after a long process of assimilation of appropriated concepts. The beginning of the twentieth century was an exceptional moment in architectural history because of the rejection of the role of historical imitation for invention, and reinforced concrete played a significant role in it. However, this material proved to be as good for imitation as for invention, or that was at least its implication in a substantial part of the world in the second half of the twentieth century, where imitation of the shapes of modernity and tradition was needed at the same time.

Looking back from today to the contextualist and regionalist discourses in the architecture of the post-colonial world roughly between the 1940s and the 1990s, the appreciation of tectonic and formal elements of traditional architecture seems somewhat outdated. However, these efforts were necessary to catch up with Western architectural theories and practices that have shaped the Western architecture since the Renaissance. This became evident in the discourse of certain architects of the post-colonial world in the second half of the twentieth century, which echoed the stratification of theoretical fragments in the language and practice of their Western counterparts. The masters of Modern Architecture created a specific discourse that meticulously disowned the academic jargon of classicism. Howe-

ver, the concepts such as order, proportion, character, appropriateness, etc., survived under new pretexts, although they became increasingly ambivalent with the advent of the Postmodern situation. The efforts to re-appropriate such concepts in the West reintroduced fragments of an architectural theory overridden by Modernism, for which uniformity was no longer demanded in Postmodernism. The architectural discourse of non-Western architects, which primarily focused on the rationalistic appropriation of local tectonic cultures using the reinforced concrete structure, nevertheless contributed to the formation of this global tendency because of their inherent ambivalence between modernity and tradition. Post-colonial architects were already obliged to find ways to conciliate different times to reconstitute the built environment's cultural identity, which perpetually represented the transition from tradition to modernity. This effect was also appropriate for the modesty in technical matters, which helped them to cope with the technological and economic gap with their Western colleagues.[45]

Anything that does not require the application of high technology is more imitable, such as the plastic form, as long as it can be shaped by concrete. Therefore, reinforced concrete allowed the non-Western or post-colonial architect to build in modern terms without running the risk of pretentious imitation of the cultural production of post-industrial societies. In their reinterpretation of cultural-historical forms in concrete, post-colonial architects followed Auguste Perret's footsteps for representing the transition, which prioritised a structural foreground as the imitation of a local tectonic culture that aimed to create an inflected modernism. However, occasionally, the Modernist "a-tectonic" form-giving also appeared. The Corbusian manner of obscuring structural elements helped post-colonial architects cover up the imperfections resulting from the material change of a traditional tectonic system. Because the white-washed plastic form resulted from the trademark of Modernism as opposed to the tectonic language of historicist styles, its treatment within the regionalist interpretations in the post-colonial world was scarce. Therefore, the co-existence of tectonic and a-tectonic forms was usually a sign of Postmodernism.

45 Jayewardene claimed that the architects of the underdeveloped countries adhered too much to the Western mode of artistic design - a situation which contributed to underdevelopment. Jayewardene observed that some extravagant architectural trends, such as the one represented by Ricardo Bofill in Europe, were incompatible with poor economies, requiring a sophisticated industry. He claimed that in the poor economies of the underdeveloped world, design should once again depend on construction, like in pre-colonial times. Shanti Jayewardene, "Reflections on Design in the Context of Development", *Mimar: Architecture in Development*, no. 27, 1988, p. 70-75.

The "dialogue" between the opposites in the post-colonial world can even be regarded as the appropriation of the Western justification of political liberalism, which created eclectic and Orientalist trends with the help of the more liberal conditions in the non-Western lands in general and in the colonies in particular. For post-colonial architects, if eclectic historicism was the first step in learning Western architectural theories and practices, the concentration on local tectonic cultures and their appropriation in modern structural rationalism in concrete was the second step. The third step was simultaneously taken towards Postmodernism by all architects, Western and post-colonial alike. This last step gave post-colonial architects the authority of their Western counterparts to justify their designs through disappearing values, insights, complimentary quotations, restrained mysticism and all the interdisciplinary sources that help to create a personal theory of architecture. As the Postmodern discourse spread worldwide, it is possible that many architects from post-colonial countries felt at home with the new, liberal mode of imitation, in which formal and spatial elements were allowed to recompose the past and contemporary shapes of time even more freely than before. However, as Postmodernism evolved into an ever-updating global culture of architectural trends in the new millennium, the expression of locality through the reinterpretation of the tectonic culture lost momentum and almost disappeared. In this new world, the conventional roles played by the "centre" and the "periphery" are also changing or disappearing. However, attributing post-colonial nations to a pioneering role in cultural affairs still needs to be more accessible. It may be time to question if globalism is a sort of colonialism without even a centre that imposes a global culture on all nations to which the post-colonial world may be more vulnerable. Now all too competent in their profession, the architects of the post-colonial world can be very instrumental in developing challenging ideas for the future of local and global cultures at the same time if they can build on the foundation laid during the second half of the last century.

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Araştırmacıların Katkı Oranı

Araştırmanın her aşamasından yazar sorumludur.

Çatışma Beyanı

Araştırmada herhangi bir çıkar çatışması bulunmamaktadır.