

ESSAYS

Behind the veils of modern tropical architecture

BY PEDRO GUEDES

While orthodoxy was consolidating its hold on modern architecture in the 1930s, fresh new ideas from the periphery began to widen and question its limiting vocabulary. This study looks at projects emerging before the end of that decade that paralleled the much publicized work of Le Corbusier and Brazilian innovators in developing ideas for taming the sun in warm climates. The story focuses on a forgotten speech given in Rangoon which enthused about a soon to be forgotten but effective method of solar control and triggered a yearning for architecture widening its scope to engage with attributes of national identity.

At the Rangoon Rotary Club – January 1930

In early January 1930 Basil Ward (1902-1976) addressed the Rotary Club of Rangoon on the subject of “Architecture in Burma”. A New Zealander, recently appointed Managing Partner with Thomas Oliphant Foster (1881-1942), the Burmese Government’s Consulting Architect, he was new to this Asian boom town.¹

His journey had been circuitous; the young architect worked his passage to England as a stoker in 1924 with Amyas Connell (1901-1980) in search of wider horizons. From London they visited Paris in 1925, where Le Corbusier’s *Pavillon de l’Esprit Nouveau* fired their enthusiasm for the freshness of the Modern Movement.

Inspired, they set their sights on the highest prizes available in Britain to young architects embarking on their careers. They were both successful, with Amyas Connell taking the Rome Scholarship and Basil Ward the Jarvis traveling studentship.

The Rotary club speech, reported in extenso in *The New Burma*, was an exhortation for a new architecture with quotations from Bruno Taut (1880-1938) and Le Corbusier (1887-1965).² Basil Ward made a plea for modern materials, better planning at various scales and an abandonment of “the amazing encrustations of Architectural motifs of a dozen dead styles.” The only part of the talk referring to an actual building was one being built under his direction, the New Port Trust Office: **(Fig. 01)**.

There is a difficult problem in this city, when a facade faces the monsoon weather verandahs take up most valuable space, they must be eliminated where possible, the life of venetians or louvres is not long. The New Port Trust Office has a feature which appears to solve the problem admirably. A screen of terra cotta jalis of certain thickness forms a honey-comb pattern as a protection against the sun and monsoon. This was designed to obviate the wasteful verandah space.

The Rangoon audience included the Burmese elite, British expatriates, colonial officials and members of immigrant communities. His lecture had an immediate effect:

U Ba Pe, a leading political figure in colonial Burma, gave a rousing speech in the Burma Legislative Council proposing a design for the new City Hall by a Burmese architect that combined Art Deco minimalism with classical Burmese ornamentation. Along with examples from elsewhere, U Ba Pe drew on Ward’s lecture, (...) to highlight Burmese architecture’s compatibility with modern, civic architecture, and won the argument.³

The City Hall project to which he referred, had been designed by Arthur G. Bray (year-year) in classically inspired, typically colonial style. It was interrupted by WWI, revived in 1925 and was well on its way to completion by 1930:⁴

All the offices, with the exception of those facing north, have verandahs on both sides (...) No concessions whatsoever appear to have been made to the native style of architecture, for this is the Classical style (...) The columnar style (...) has proved itself on this occasion to be quite capable of being adapted for the architecture of a tropical climate.⁵

However U Tin (1890-1972), designer of the much-admired Burmese pavilion at the 1924 *Empire Exhibition* in London, proceeded to replace Arthur C. Bray’s workaday classical façades with a treatment inspired by the ancient buildings of Pagan. In particular, he adapted traditional tiered *pythat* roof forms to crown the prominent towers of his composition and dispensed with verandahs and colonnades. When completed in 1935, U Tin’s

building was acclaimed as a “striking success (...) inaugurating a new era in secular Burmese architecture.”⁶ **(Fig. 02)**

Basil Ward’s Port Trust Office building, also mentioned in his lecture, was considered important enough to be featured in *Country Life* under the title “An Architectural Innovation in the Tropics.”

*The innovation [...] (is) [...] of the greatest importance to Europeans in the tropics. Owing to the necessity of using the maximum floor space for offices, the space that is usually sacrificed for verandah on the western front was not available (...) the window surface has been brought almost flush with the columns. It was here that invention was called into play. The solution of this problem – of preventing the direct rays from penetrating to the interior while still assuring the maximum of light – was found in the use of honeycomb porcelain jalis manufactured by the Royal Doulton Potteries, Lambeth. A simple jali is made by setting a number of convex tiles one above the other. These Doulton jalis are of stone terra-cotta, with a jade green glaze, and are nine inches deep. The first experiment was made with the tiles only eight inches deep, but this was found insufficient to exclude all direct rays and the depth was therefore increased. By this simple yet extremely effective expedient, the building receives the maximum of ventilation and lighting, but is kept cool.*⁷

While Basil Ward was still in London in 1926, T. O. Foster and E. W. Armstrong (year-year) exhibited a perspective of his design at the Royal Academy.⁸ By February 1929, after details of the Port Trust building appeared in *The Builder*, use of terracotta *jali* screens had been accepted.⁹

Back in Rangoon, in the same street as the Port Offices, the National Bank of India, probably built to Basil Ward’s design, used the same terracotta *jalis*: “a (...) building that compels one’s attention, by virtue of the vigor of its composition (...) The columns, being fluted cylinders without capitals or bases, are in the ‘modernist’ style.”¹⁰

The Bank, a confident art deco composition, makes a clean break with classical and gothic precedents. Basil Ward characterized in his Rotary Club lecture as “the amazing encrustations of Architectural motifs of a dozen dead styles.”¹¹

The terracotta screens at Rangoon’s Port Authority and Bank buildings never entered the vocabulary of tropical building, Basil Ward described them as *jalis*, honouring Indian precedent. Similar terracotta forms were illustrated in numerous 19th century architectural manuals to be employed, as previously in Europe and China, for parapets and garden wall screens.¹² In textile drying sheds and other industries such ceramic elements were often used to facilitate cross ventilation while excluding rain.

Basil Ward returned to London sometime before 1932, joining his friend and brother-in-law Amyas Connell in a practice that added Colin Lucas (1906-1984) in 1934 to form Amyas Connell, Basil Ward and Colin Lucas. Their practice was acknowledged as a pioneer of England’s Modern Movement. During the period until 1939 the firm flourished, its work focused almost exclusively on domestic buildings for enlightened clients. The outbreak of WWII saw its abrupt dissolution.¹³

Taming the sun in the 1930s

Le Corbusier’s claims in the development of the *brise-soleil* are well known as is Brazil’s contribution to a modern response to building in the tropics.¹⁴ **(Fig. 03)** There, an inventive range of practical moveable or static, horizontal or vertical *quebra-sol* [Portuguese for *brise-soleil*] shading devices as well as smaller scale cellular *cobogo*, *claustra* and other elements in precast concrete, ceramics or other materials augmented modern architecture’s austere façades with flexible armaments to temper the sun.¹⁵ Combining these with imaginative planning, openness and an expanded formal vocabulary, a small group of immensely talented architects supported by politicians such as the Minister of Education and Health, Gustavo Capanema (1900-1985), matured a distinctive Brazilian architecture in a remarkably short time. First appearing outside Brazil at the 1939 New York World’s Fair in the country’s pavilion by Lúcio Costa (1902-1998) and Oscar Niemeyer (1907-2012), the solar control grille on its southern facade was misinterpreted by critics as an enigmatic decorative conceit.¹⁶ Four years later, when the Museum of Modern Art’s exhibition *Brazil Builds* brought Brazilian architecture to worldwide attention, its catalog stated explicitly that a major focus demonstrated how Brazilian architects dealt with the sun.¹⁷ After great success in New York, parts of the exhibition went to London while Britain was still at war and a special celebratory issue of the *Architectural Review* was published with extensive coverage, featuring many of Kidder Smith’s (1913-1997) evocative photographs taken from the MoMA show.¹⁸ Brazil’s Ministry of Education and Health building with its first use of a *brise-soleil* on a monumental scale was highlighted.¹⁹ Le Corbusier’s role as consultant there probably helped him condense his ideas about sun control from the early 1930s.²⁰

An architect developing similar thoughts on sun control as Le Corbusier in his Barcelona and Algerian projects was Paul Nelson (1895-1979), an American trained in France, who had established a reputation in hospital design.²¹ In 1933, based upon that work, he was commissioned by the Suez Canal Company to design a surgery pavilion for Ismailia.²² The sealed and air conditioned accommodation was contained in a glazed

volume surrounded by an “Enveloppe Parasolaire Mobile.” Here, independent of the accommodation, an insulated roof acted as a large umbrella: **(Fig. 04)**

Vertically, (the accommodation is protected) by louvre blades, spaced away from the façade. The louvres, held between vertical guides are mobile so that they can be retracted to roof level to allow entry of sunlight during the temperate months.

The metal louvre blades are inclined and shaped not only to impede reflection of solar rays on the facade, but to encourage upward convectional air movement. They are smooth and white facing out to reflect heat and darker on the building side to cut glare.²³

And perhaps the most unique characteristic was the result caused by this rising movement of warm air free of the façade which would then draw (...) cooler air over the façade, as would the phenomenon of an exterior chimney.

Whereas on the west side there are three screens per floor only 1 meter wide, on the Canal side to the east the screen would be large (...) 3 meters 40 cm (...)

(...) allowing all patients to have an unimpeded view of the Canal where majestic ships slide through the Arabian desert.²⁴

Paul Nelson's intricate descriptions of all parts of his building demonstrate a masterful understanding of intelligently crafted climate control for a hostile environment. He orchestrated his design to suit a particular place and complex medical functions. In the first publication of the proposal in *Cahiers d'Art* (1935), a seductive diagram encapsulated the essence of the idea which Nelson later explained had been triggered by ancient Egyptian houses:

The painting illustrated in the book showed an outside columnar structure going without interruption from the ground to the roof of the 2nd floor terrace; behind these columns was the wall structure supporting the two floors and roof. The upper terrace supported on a series of small columns was open on all sides so as to act as a protection from the sun's zenithal heat. But in between the columns standing free in front of the facade walls could be seen a screen partially lowered between the columns which then acted as guides. Yet nobody seems to have thought that this might constitute a parasolar envelope leaving the house itself on the inside sheltered by this protective screen around the outside. This experience proved to me that by such an approach of studying the basic climatic conditions of an environment, one can relate architectural design to genuine tradition.²⁵

Perhaps his inductive reverie enabled Paul Nelson to translate his interpretations of ancient Egyptian climatic response and combine them with the most advanced technologies of his time, unencumbered by formal preconceptions.

In contrast, the orthodoxy that had taken hold by the early 1930s was best characterised by Alfred H. Barr Jr's (1902-1981) guiding principles for modern architects extracted from MoMA's *Modern Architecture International Exhibition* of 1932: “He thinks in terms of volume – of space enclosed by planes or surfaces – as opposed to mass and solidity. This principle of volume leads him to make his walls seem thin flat surfaces by eliminating mouldings and by making his windows and doors flush with the surface.”²⁶

Such ideas held sway in metropolitan journals excluding many devices developed in the equally modern art-deco style.²⁷ Art-deco buildings from warmer climates made it into journals such as *Les Chantiers Nord-Africains*, published in Algiers in the 1930s with a more inclusive policy, never losing sight of more radical developments in Europe.²⁸ Later, in their 1943 special issue on “Le Soleil,” *Techniques et Architecture* provided illustrations of a maternity hospital in Beirut by L. Cavro, deploying blinkers, hoods and other elements, breaking with the planar strictures of more orthodox Modernism.²⁹

Where their European colleagues might have deployed planes or curves of glass bricks, these adepts of art-deco tamed the sun by casting shade with an extensive vocabulary of forms such as hoods, blinkers, broad overhangs and balconies combined with smaller windows, deep reveals, retractable blinds and “stores.” They would also use pre-cast *claustra* to filter light and encourage air movement.³⁰ In Bombay (Mumbai), Tel-Aviv, Singapore, Asmara and many South American capitals eager to convey their engagement with “progress,” facile art-deco compositions emphasizing verticals, horizontals and streamlined curves were sometimes used to great advantage.³¹

In 1936, *Chantiers Nord-Africains* published a design for a large tuberculosis sanatorium in Rivet near Algiers, by the Algiers based architect François Bienvenu (1897-19...). The model clearly shows horizontal *brise-soleils* on its three-level high elevations, the idea was described thus: “To avoid excessive insolation, the architect developed a system of permanent screens that automatically come into play depending on the season and the height of the sun.”³²

A photograph of the completed building, with the screens or louvers clearly shown, was published in *L'Architecture d'Aujourd'hui* in 1945 with little more than a laconic caption.³³

Certainly ahead of its time, it was being built while the Ministry of Education in Rio was being planned. François Bienvenu, a prominent architect in Algiers before the war, designed, schools, speculative housing and commercial projects as well as low-rise social housing for native Algerians respecting courtyard forms.³⁴

Emmanuel de Thubert (1878-1947), a regular contributor to *La Construction Moderne* and former editor of *L'Art de France*, had been impressed by François Bienvenu's work displayed at *La Cité Moderne* exhibition in Algiers in 1936 and paraphrased an ambition voiced in François Bienvenu's speech about the architecture that would emerge in North Africa: "... 'Modern', based upon rational ideas that seek to adapt to the African sun – an architecture gaining inspiration from France, but taking on a regional character."³⁵

Also in 1936, Antonin Raymond (1888-1976) began developing the design for Golconda dormitory at the Sri Aurobindo Ashram in Pondicherry on the East Coast of India. Antonin Raymond, a Czech, had moved to the United States in 1910 where he had worked for Cass Gilbert (1859-1934) before joining Frank Lloyd Wright (1867-1959) at Taliesin. In 1919, he went with Frank Lloyd Wright to work on the Imperial Hotel in Tokyo and stayed on until 1937 having sent his collaborator Nakashima (1905-1990) ahead to begin work on site. Pondicherry, a French enclave in India was relatively isolated and building skills and materials difficult to procure, particularly during the War, so building was slow with the dormitory only being finished in 1948. A remarkable building in its unassuming austerity, it abandons Western notions of closed rooms entirely. A thin building on three floors and a semi-basement, its long elevations face North and South. There are no windows in the rooms and corridor, with both elevations entirely composed of operable louvres, specially made for the project in asbestos cement. Sliding doors to each room are carefully designed to facilitate ventilation across the building. Above the concrete slab of the third floor, a ventilated void is provided under curved concrete "tiles" spanning 1.5 meters. Great care was taken to reduce everything to essentials in an extremely measured response to the hot-humid climate.³⁶

Post 1945: Decolonization and Tropical Architecture

Modern architecture, hatched in Europe in the 1920s and 1930s, was spread worldwide by talented individuals, often refugees fleeing Europe's fascist regimes or the social and economic disasters following WWI as well as those in the wake of Russia's revolutionary convulsions. France was seen as a creative center with Paris as the avant-garde melting-pot where exhibitions and publications communicated new ideas. The city, in 1925, opened hosted Le Corbusier's *Esprit Nouveau* at the Exposition des Arts Décoratifs. It was the major eye-opener for Basil Ward and Amyas Connell's visit, kindling their enthusiasm for the Modern Movement: "It stood out in all its purity and strength of expression in a post-war rag-bag of resurrected 'movements' and styles."³⁷

In 1930 Andre Bloc's (1896-1966) *L'Architecture d'Aujourd'hui* started with a print run of 1,600. By 1940, just before it interrupted publication because of the German occupation, it was printing over 10,000 copies, with 1,600 in Latin America – "more than all the Argentinian and Brazilian journals combined."³⁸ *Aujourd'hui* really caught up with English language publications when it produced a comprehensive review of Brazilian architecture in 1948.³⁹

Before 1945, neither English nor French journals had much coverage of architecture in warm climates apart from the catalog of MoMA's *Brazil Builds* exhibition of 1943. A rare exception was *L'Architecture d'Aujourd'hui's* 1936 special on "L'Outremer" in which French colonial buildings in North Africa and the Caribbean were featured together with articles on aspects of design appropriate for hot climates.⁴⁰ Only in 1945, when a major Paris exhibition opened on *La France d'Outre-Mer dans la Guerre* did *L'Architecture d'Aujourd'hui* produce another special issue, this time with wider coverage to include Sub-Saharan Africa, Madagascar and Indochina. In addition to articles on climatology and indigenous architectures, the major focus was on planning, but the issue did include a feature on the *brise-soleil*.⁴¹ In a similar vein, in 1952, *Techniques et Architecture* published over 80 pages on "Architecture Intertropicale" in the Francophone sphere, covering technical issues related to building in the tropics together with articles on important projects.⁴² After the war, in 1948, *Aujourd'hui* published a major issue on Tunisia. There, retreating Germans and Italians had destroyed what they could on their way out and shortage of materials stimulated architects and engineers to fall back on traditional Maghrebian building techniques, resulting in inventive and photogenic buildings taking full advantage of age-old vernacular devices such as courtyards, *claustra* screens and more open planning arrangements to aid ventilation and subdue the sun.⁴³

For architectural solutions to life in warm climates most European journals, up to and beyond 1950, continued looking to Brazil for articles on new developments.⁴⁴ After 1955 their focus widened to include a smattering of buildings in other Latin American countries prompted by the MoMA exhibition *Latin American Architecture since 1945*.⁴⁵ These publications communicated directly to architects working in metropolitan practices or in relevant countries needing inspiration for designs in tropical settings. They provided models for emulation. Needless to say articles about the *brise-soleil* and other solar control devices were much sought after.⁴⁶ In parallel, communiques and official publications from training programs and establishing Schools of Architecture in tropical, soon to be independent countries, gathered pace.⁴⁷ The utility of these endeavors was attached to longer timescales and wider political agendas and probably had less impact than the journals on current building.⁴⁸

However, by the 1950s, the *Architectural Review* began to publish British architectural efforts in West Africa with Maxwell Fry (1899-1987) and Jane Drew's (1911-1996) work in the Gold Coast (Ghana) and Togo.⁴⁹

Several of the buildings have *jali*-like screens as verandah balustrades and only Prempeh College at Kumasi inaugurates the use of a gridded “brise-soleil.”⁵⁰ In style the architecture followed a reticent embodiment of “the new empiricism” with little Brazilian verve and made only very minor concessions to local culture.⁵¹ Then, in 1960, the *Architectural Review* published a special issue on buildings across the “Tropical Commonwealth” in which selected authors wrote articles on each territory or region covering technical issues relating to warm climates.⁵² The Editorial was frank about the designers of the buildings featured: “Most of the buildings illustrated here were either designed in England by English architects (as in the case of many of those in West Africa) or designed by architects of English origin, largely trained in England or America, who practice locally.”⁵³

Inevitably, the results were more in tune with the expectations of colleagues at “home” than with the contexts in which they struggled. Descriptions and solutions in this publication concerned material problems at the expense of engagement with subtler local demands. Maxwell Fry and Jane Drew produced two handbooks in 1956 and 1964, for designers working in similar contexts to their West African experience.⁵⁴ By the mid-1950s shading façades had entered the architectural mainstream not only for buildings in the tropics but elsewhere when architects were keen to deploy large areas of glass.⁵⁵

Some architects went beyond looking at Brazilian solutions filtered through journals or handbooks. Barrie Bierman (1924-1991) practicing in South Africa’s sub-tropical region, in Durban, won a scholarship in 1950 to study sun-shading in Brazil at first hand. In his report, it is clear that personal observation gave him unique perspectives on screening and shading devices, many of which he applied in his own buildings and shared with colleagues.⁵⁶ A similar impulse motivated Stephen Trotter (1931-2015) practicing in Brisbane, a sub-tropical Australian city on the same latitude as Durban. He too, on a scholarship, traveled across four continents to record diverse architectural solutions to life in warm climates.⁵⁷

From 1955 several numbers of the *Review* featured the Engineering College of Rangoon University designed by Raglan Squires (1912-2004), a British architect and entrepreneur with offices in London and Singapore. The building broke from any expected mold to engage with color and adventurous form. It had an open assembly hall covered in a teak timber dome and a library with colorful *jali* – like elevations: “This grille consists of 3,000 precast hexagonal concrete units, each weighing 3 hundredweight (152 kg), fabricated on the site. The interstices are filled in with coloured glass ply based on traditional folk patterns of the Shan States of Northern Burma. Permanent cross-ventilation is provided by smaller unglazed openings.”⁵⁸

This project was clearly beyond the expectations of officially endorsed tropical architecture based on a sanitized modernism. Its fate was to be excluded from the Commonwealth roundup in the *Review*’s issue of July 1960.⁵⁹ The editors probably faulted Squires’ engagement with monumentally scaled “decorative” elements and his attempts to incorporate ethnic ornament.⁶⁰

The momentum for acceptance of this style of building probably began when U Ba Pe (1883-????), stimulated by Basil Ward’s 1925 Rotary Club lecture, placed a motion before the Burmese Legislative Council, demanding: “That this council recommends that the policy of Government should be to incorporate features of Burmese architecture in all important public buildings in future.”⁶¹

He circulated a proposal for the Rangoon City Hall among the legislators, a design by U Tin, employing elements of Burmese architecture. The resulting discussion predictably centered on expense, including the likely extravagance of *pythat* roofs. When questioned, he quoted from the letter of “a leading architect and Member of the Royal Institute of British Architects,” presumably Basil Ward:

*(...) to my question whether it would be possible to incorporate features of Burmese architecture in modern buildings, and whether they could be incorporated to meet the scientific requirements of modern times. The answer is very encouraging. This is what he wrote to me: ‘My opinion is that it is possible to incorporate features of Burmese architecture: It may interest you to have my reasons for saying this. The assertion that Burmese architecture exists only in temples, kyaungs, palaces, and the like; has, no bearing on the matter. To qualify my statement, we have examples of modern architecture with the Greek Doric order applied. This Greek Doric order existed only in temples (...) There is undoubted beauty in good examples of Burmese architecture; the Bawdipaya and Thappayinnya, Pagan; are, buildings, of extreme beauty and character.’*⁶²

Following Burmese independence from Britain, Myanmar’s new decision makers would have been proud of a prominent City Hall, celebrating their national identity. Even Squires did his best to make his university building honour those sentiments. But in the same city “neutral” modern architectural solutions persisted, as demonstrated in James Cubitt and Partners’ design for a pharmaceutical company.⁶³

During construction of Rangoon University’s buildings, Basil Ward’s former partner and brother-in-law Amyas Connell was designing important Government buildings in Nairobi, Kenya.⁶⁴ That country was still a British colony struggling, in the throes of Mau-Mau rebellion, towards independence. His work was divided into two phases, the first, built between 1951-1955 were Kenya’s Legislative Council Building and its Crown Law Office.⁶⁵ At a later stage, before independence in 1963, these were transformed with substantial additions into Kenya’s Parliament. **(Fig. 05)**

In much the same way as Basil Ward's buildings in Rangoon, the five-storied Crown Law Office had its upper four floors shaded on both sides by intricately designed *jali* screens composed of delicate precast elements. The design honors the Mughal *jalis* of the Tomb of I'timād-ud-Daulah near Agra.⁶⁶ Exactly why Amyas Connell chose to base his design on the high architecture of a different civilization has been debated, but it seems likely that, in the absence of an indigenous tradition of permanent monumental building and the fact that these government buildings were constructed during a period of internal conflict, opting for a solution from an architecture that had perfected sun control to a high art may have seemed reasonable.⁶⁷

Amyas Connell's ability to engage with such sensitive interpretations of precedent had been honed during his early training and talent recognized by his Rome Scholarship award.⁶⁸ Having skillfully deployed the abbreviated language of modern architecture in his celebrated domestic buildings of the 1930s, he found it unsuitable for monumental representative buildings, a problem taxing contemporaries since the mid-1940s.⁶⁹ In the 1930s Amyas Connell, in articulate debates, engaged established authorities like Sir Reginald Blomfield (1856-1942) in well-publicized skirmishes as a vociferous defender of modern architecture.⁷⁰ However, when entering competitions for civic buildings in Hereford and Newport, he could produce designs in the decorous modes of Public Architecture as testament to his classical training.⁷¹ This facility, irritating to hard-line, doctrinaire fellow members of the MARS Group, caused them to look suspiciously on Amyas Connell, Basil Ward and Colin Lucas.⁷²

In India the creation of Chandigarh, the new capital of a divided Punjab, brought similar issues of style and representation into question.⁷³ As a new nation emerging from a colonial past, India had a multifaceted architectural agenda needing deft navigation. Fortunately, Jawaharlal Nehru (1889-1964), the country's astute first Prime Minister, understood architecture's symbolic potential. He intended the city to embody a break with a colonial past, represent a commitment to a secular and democratic future and embrace the promise of modernity. Creation of a complex architecture to exemplify all these ideas was given to Le Corbusier.

In sharp contrast to the imagery portrayed in Lutyens and Baker's Imperial Delhi, his Capitol grouping in Chandigarh gives eloquent form to these ideas. None of the formulae for building in warm climates that had become ingrained in India's colonial Public Works Department were followed. Something more uplifting was expected, something capable of holding identity. Eight years into the building program, Jawaharlal Nehru reflected:

Now I have welcomed very greatly one great experiment in India, (...) Chandigarh (...) I do not like every building in Chandigarh. I like a few very much, (...) but what I like above all is this creative approach (...) but thinking out in new terms (...) not in terms of rules and regulations laid down by our ancestors. Therefore, Chandigarh is of enormous importance regardless of whether something in it succeeds or something in it does not succeed (...) There is no doubt that Le Corbusier is a man with a powerful creative type of mind (...) He can produce extravaganza occasionally, but it is better to have that than to have a swelled head with no mind at all.⁷⁴

Basil Ward's Rotary Club speech suggested that there were alternatives to colonial verandahs when designing tropical architecture. One could learn from the architectures of local people who had lived comfortably for centuries in the sun's heat. Solutions such as the *jali* screen demonstrated a reinterpretation that expanded the vocabulary of modern architecture.⁷⁵

After WWII, as European powers retreated from their tropical colonies, architects in these emerging nations searching for new forms to reflect a proud cultural identity, have used genuine, imaginative interpretations from their pre-colonial past along with inventive responses to material circumstances and aspirations. Geoffrey Bawa (1919-2003) in Sri Lanka and Vann Mollvann (1926-2017) in Cambodia come to mind.⁷⁶ During that post-war period when new countries saw great prospects in Non-Aligned Movement and were galvanized by the spirit of the Bandung Conference and the Organisation of African Unity, the Indonesian artist Basoeki Abdullah (1915-1993) was inspired to paint a monumental work, *Building the New World*, a vision for the future of Asia. In gigantic renderings of Asia's architecture of the future, he depicted a hub of industrial activity involved in the most advanced technologies of the time. This huge painting was given to Singapore's Foreign Minister by his Indonesian counterpart in 1965, soon after Singapore gained independence.⁷⁷

By the 1960's Brazil had established its architectural identity through a bold expansion of modern architecture, adapting and extending its existing vocabularies to tame the Southern sun and enhance lifestyles made possible in a more benign climate. In doing so they freed buildings from the limitations of closed, contained spaces that characterized European precedents. Taking similar yet subtly different approaches for building in Africa and Asia's warm climates, the architects Paul Nelson, Francois Biennvenu and Antonin Raymond were contemporaries of the Brazilians Lúcio Costa, Oscar Niemeyer, Affonso Eduardo Reidy, and the brothers Roberto. But, unlike their Brazilian colleagues who built for the future of their own country, these were wandering expatriates or colonials. Often capable of finding brilliant solutions to technical problems and sometimes also dreaming of regionally relevant architecture, they were not the ones to create an architecture that holds meaning for a particular culture. That task is most likely only possible for those who work from within.⁷⁸ (Fig. 06)

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Figures Captions

Notes

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- 21 Nelson, Paul, *La Cité Hospitalière de Lille*, Paris, Editions Cahiers d'Art, 1933; "La Cité Hospitalière de Lille: Étude d'un projet publié en 1933", *L'Architecture Française*, 1945.
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- 26 Hitchcock, Henry Russell and Johnson, Philip, *Modern Architecture: International Exhibition*, New York, MoMA, February-March 1932, Catalog.
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- 29 *Techniques et Architecture*, Vol. 07-08 (1943), 207.
- 30 *Claustra*, a Latin term, are common in North African vernacular building. They are normally formed in walls to create gaps for ventilation. August Perret used the term to describe the precast concrete elements that are a striking feature at his church at Notre-Dame du Raincy. He had first used them when, as a contractor, he had built the Cathedral at Oran in 1910. In both cases the *claustra* are filled with glass. Perret later used open *claustra* at the Musée des Travaux Publics. Lúcio Costa insisted that his honeycomb walls of ceramic elements in the Guiné housing scheme were *claustra* and not in any way *cobogós*. Segawa, Hugo, "Lúcio Costa: a

vanguarda permeada com a tradição – entrevista a Hugo Segawa”, *Projeto*, São Paulo, No. 104, 1987, 150; *Le Genie Civil*, Vol. 83, 1923, 1-4.

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37 Esau, Robert Jonathan, “Connell, Ward and Lucas and the emergence of the British Modern Movement in Architecture”, *Bryn Mawr College: PhD Thesis*, 1994, 27.

38 *Revue de l’Art*, No. 89 (1990), 77-81.

39 *Architecture d’Aujourd’hui*, Vol. 13-14 (1947), 1-97.

40 Vago, Perre (ed.), “France d’Outremer”, *L’Architecture d’Aujourd’hui*, 1936, No. 3. Vago had been associated with the journal from its inception in 1930. For this issue he drew upon the latest expertise available. Most of the buildings and projects featured were in North Africa (Algeria and Morocco). Also featured were buildings from Lebanon and Syria as well as Guadeloupe. There were general articles on climate, indigenous architectures in Sub-Saharan Africa. Tunisia, Indochina and Madagascar were not covered.

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47 Chang, Jiat-Hwee, *A Genealogy of Tropical Architecture: Colonial networks, nature and technoscience*, Abingdon, Routledge, 2016.

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- 73 The site at the foothills of the Himalayas was selected in 1948 and the foundation stone laid in 1952.
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- ⁷⁵ Much inspiration for capturing an architecture honoring cultural identity draws upon vernacular forms untainted by interference from conventional "erudite" and academic styles. Lúcio Costa, when building a case for modern architecture in Brazil, sought inspiration from pre-19th century vernacular and Brazilian baroque buildings: *Revista do Serviço do Patrimônio Histórico e Artístico Nacional*, Vol.1 (1937), 30-39; *Ekistics*, Vol. 8 (1959), 391-394; *Architecture Plus Design*, Vol. 14 (September 1997), 104-106; *Journal of the Society of Architectural Historians*, Vol. 74 (2015), 443-463; Sanders, Paul, "Beyond Barrie's House: the emergence of a regional domestic architecture in Natal during the 1960s", in Andrew Leach, and Gill Matthewson (eds.), *Proceedings SAHANZ 2005*, Napier, New Zealand, 315-321; *Architectural Research Quarterly*, Vol. 4 (2000), 67-80; *Architectural Review*, Vol. 90 (1941), 73-76; Vol. 116 (1954), 34-40; Vol. 139 (1966), 143-144; Vol. 130 (1961), 280-283 and Vol. 187 (1987), 72-75; *ABE Journal*, Vol. 11, 2017.
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- 77 The painting was exhibited in the National Gallery of Singapore, the former City Hall where it had hung. It has since been moved to the Ministry of Foreign Affairs. At the time, the caption to the painting read: Basoeki Abdullah *Labour*, 1955-1959. Oil on canvas. In this painting, sometime referred to a *Building of the New World*, Indonesian artist, Basoeki Abdullah depicted his aspiration for the Third World at a time when much of Southeast Asia was contemplating a post-colonial era driven by the labors of the common people. Basoeki was a role model to members of the Equator Art Society, who believed that art could serve a political purpose in the building of a young Singapore. This artwork was presented as a gift (c. 1965) by former Indonesian Foreign Minister Adam Malik to his Singaporean counterpart S Rajaratnam. It is an emblem of the strong diplomatic and cultural relations between Indonesia and Singapore, and was for many years displayed prominently at the main stairway of the City Hall building where the Ministry of Foreign Affairs, together with many key government departments such as the Prime Minister's Office and Ministry Culture, were housed. Today, this display is made possible by the kind support of the Ministry of Foreign Affairs.
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Fig. 01. Rangoon Jalis. Top right: T. O. Foster, Port Trust Offices, Rangoon, Burma, 1926-30 – described in Basil Ward’s Rotary Club speech. First use in 1930 of innovative glazed terracotta sun-screening. Left and bottom right: Basil Ward for T. O. Foster, National Bank of India, Rangoon, Burma, 1929-1932, probably designed and completed by Ward. Photographs © Pedro Guedes.

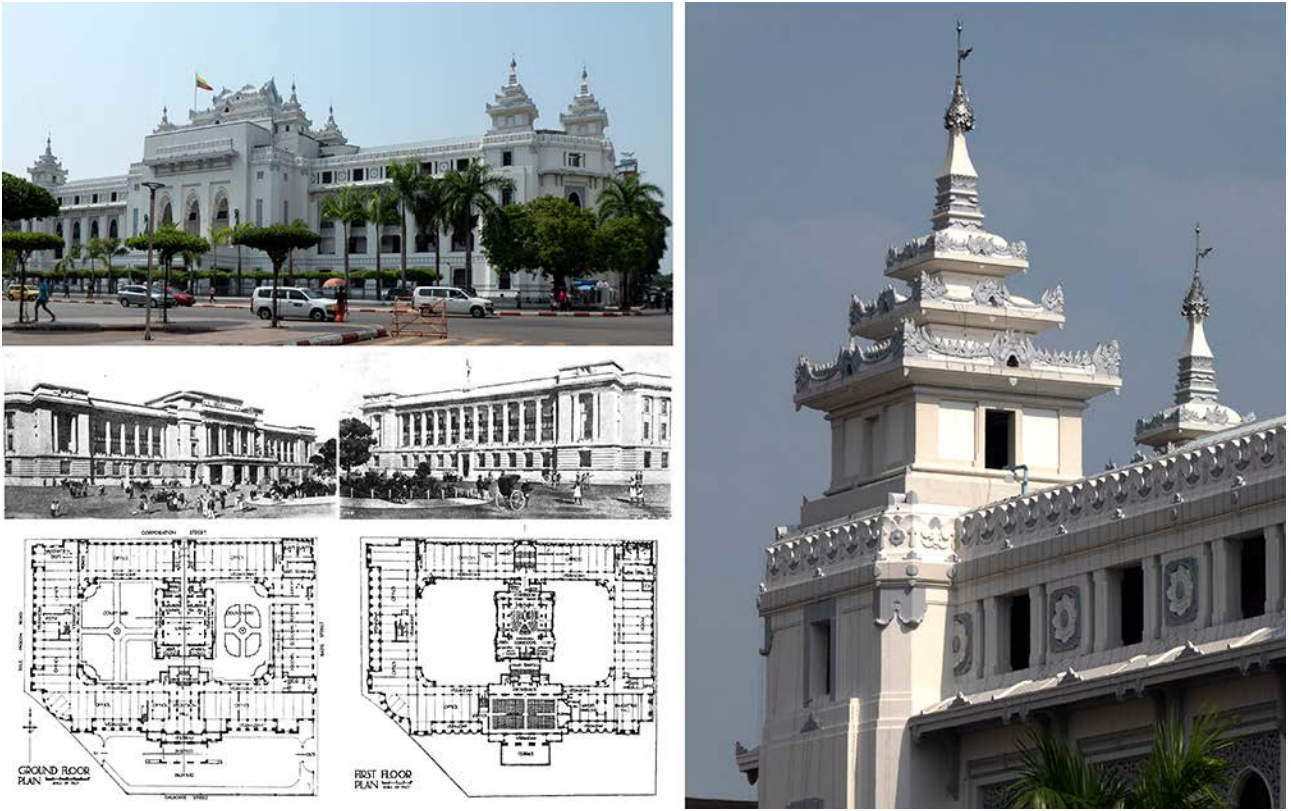


Fig. 02. Rangoon City Hall. Bottom left: A. G. Bray's design for Municipal offices, Rangoon, Burma, 1928. Plans and perspectives show the unbuilt classical scheme, published in the *Architects' Journal*. Top left and right: U Tin, Rangoon City Hall, 1930-1935, incorporating features of a Modern Burmese architecture with distinctive *pyathat* roof forms. Photographs © Pedro Guedes. Plans & perspectives – public domain: *Architects' Journal*, 68, 1928, p. 919.

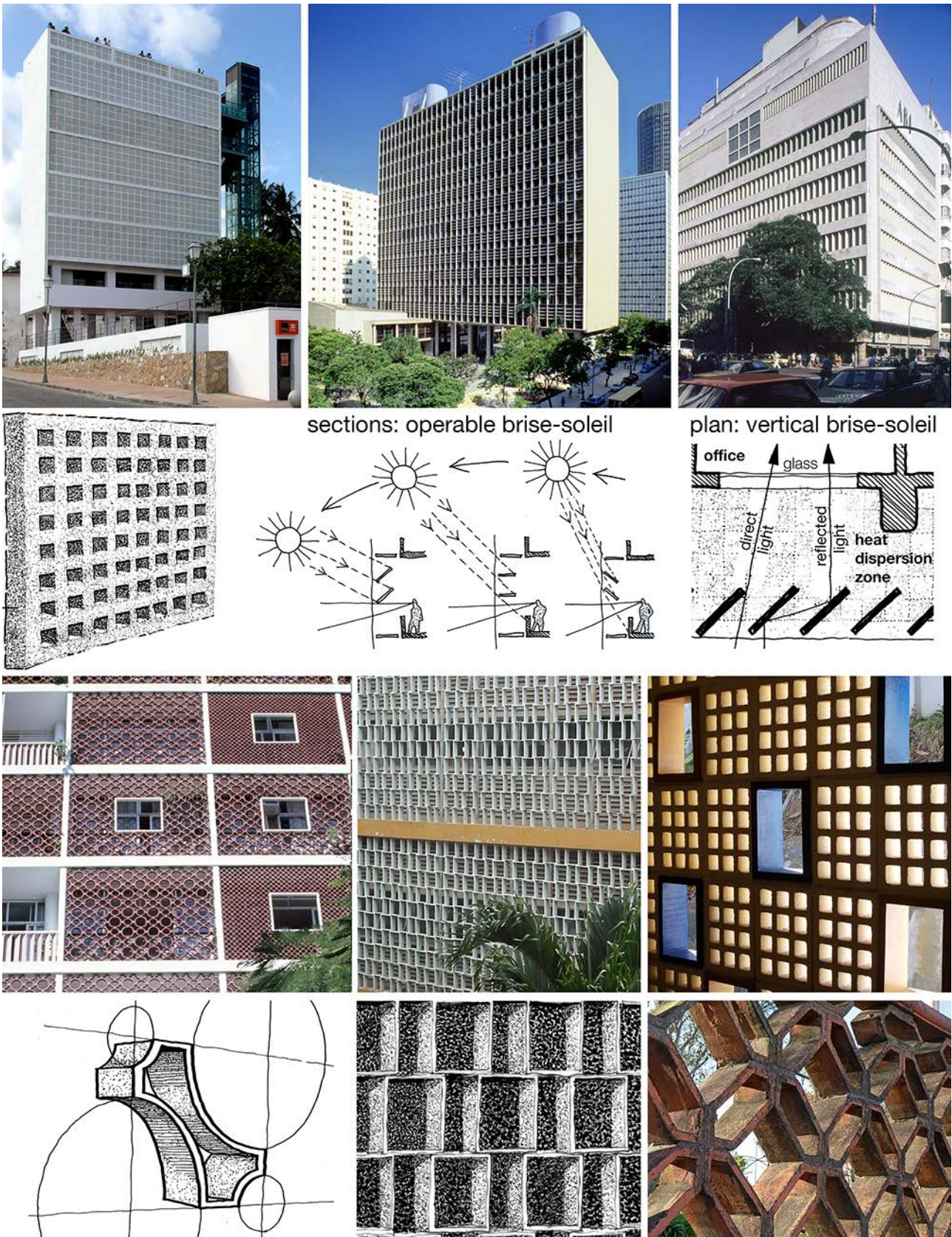
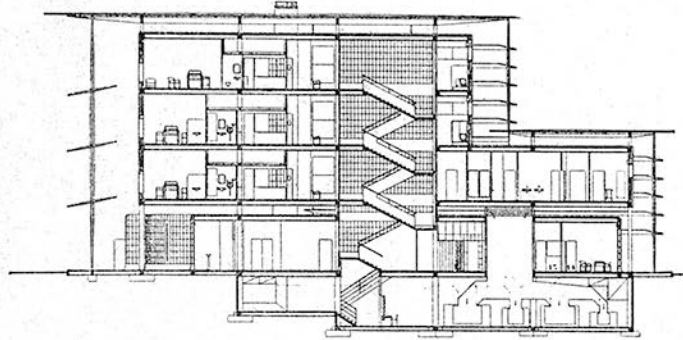
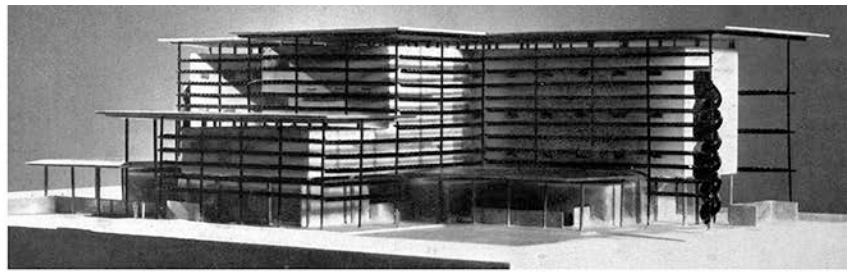
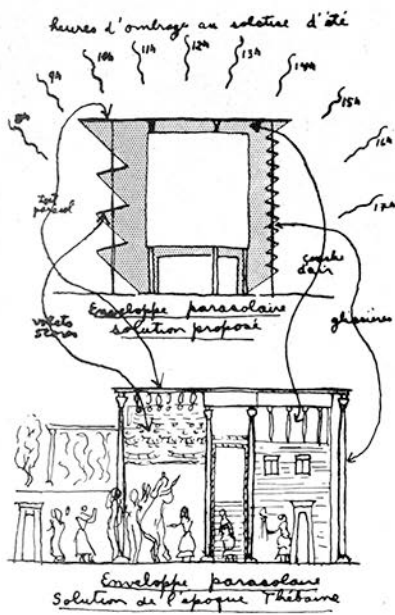


Fig. 03. Sun-control: Brazil's contribution to Modern Architecture. Top row and corresponding diagrams below – from Left: Luiz Nunes, Caixa de Água, Olinda, Pernambuco, Brazil, 1934: First use of cobogos in a public building. Middle: Lúcio Costa, Oscar Niemeyer et al., Ministry of Education and Health (MES), Rio de Janeiro, Brazil, 1936: Horizontal adjustable external quebra-sol elements (brise-soleil). Right: Brothers Roberto, Brazilian Press Association (ABI), Rio de Janeiro, Brazil, 1936: Vertical quebra-sol elements. Lower images with diagrams below, from Left to Right: Lúcio Costa, Parque Guinlé housing, Rio de Janeiro, 1948: Ceramic 'Claustra' elements as sun and privacy screening allowing free air movement. Middle: Diógenes Rebouças, Escola Politécnica – UFBA, Federação, Salvador da Bahia, 1953: honeycomb screens similar to those used in the 1939 Brazil Pavilion, New York World's Fair. Right, top and bottom, open concrete cobogogs and claustra used in popular building. Photographs: MES, ABI & Guinlé © Hugo Segawa. All other photographs and diagrams © Pedro Guedes.



SANATORIUM DE RIVET. BIENVENU, ARCHITECTE

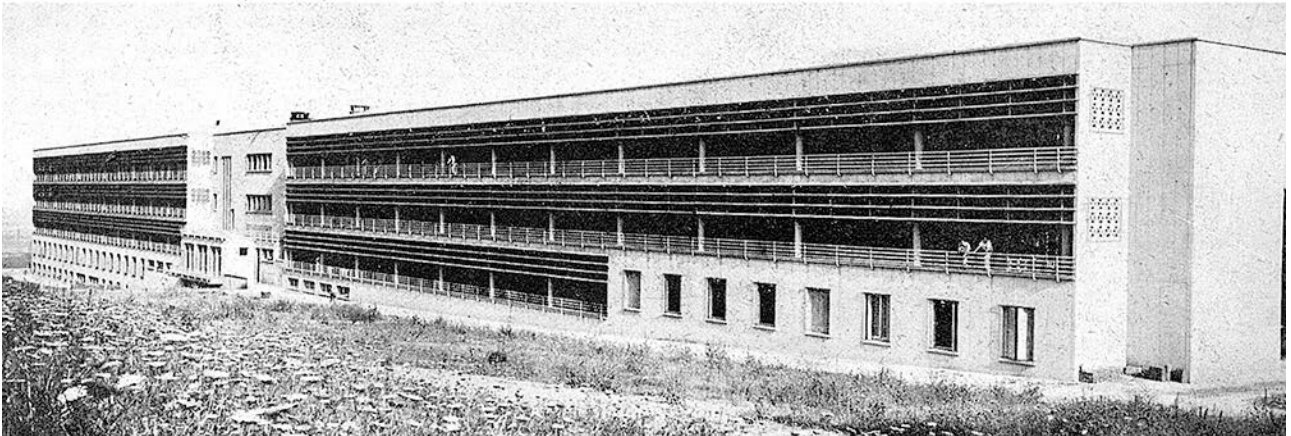


Fig.04. Paul Nelson and François Bienvenu. Top left: Paul Nelson, Ismailia surgery pavilion, Suez, Egypt, 1935. Diagram of 'parasolar' idea for the pavilion based upon his interpretation of an ancient Egyptian tomb painting. Top right: Model of the pavilion showing horizontal sun screening with section below. Source, gallica.bnf.fr / Bibliothèque nationale de France [*Cahiers d'Art*, 1935, pp. 262 & 272.] Section of hospital: Source, Bibliothèque d'architecture contemporaine / Cité de l'architecture et du patrimoine [*Architecture Française* 1943-36, p. 12] Bottom image: François Bienvenu, Sanatorium, Rivet, Algeria, 1936, published in 1945 clearly showing the system of horizontal 'brise soleil' screening. Source, Bibliothèque d'architecture contemporaine / Cité de l'architecture et du patrimoine: *L'Architecture d'Aujourd'hui*, (Sept-Oct) 1945, p. 37.

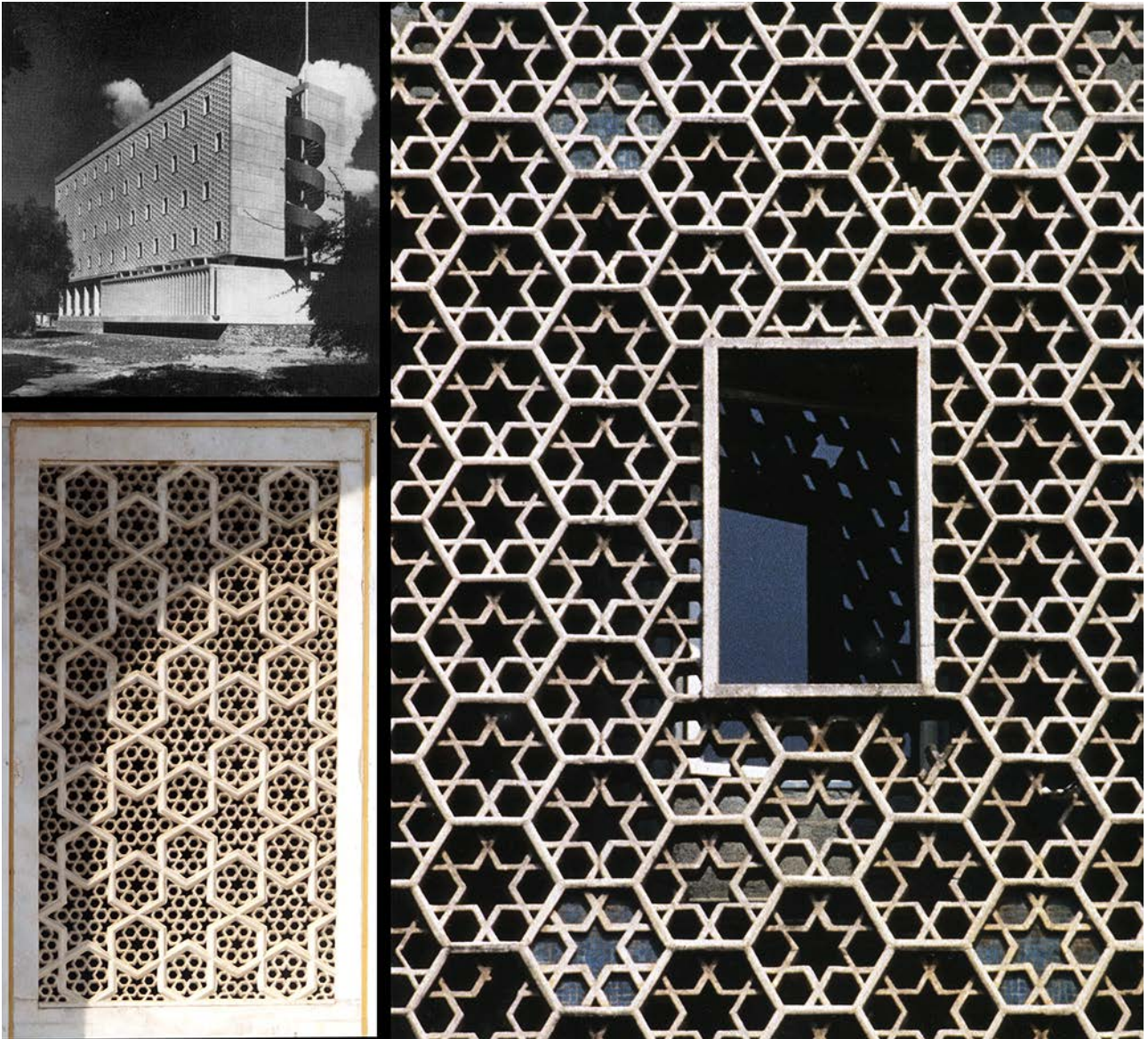


Fig. 05. Amyas Connell in Nairobi, Kenya. Top left: Amyas Connell, Crown Law Building (now State Law Office), Nairobi, Kenya, 1951-1955. Long view soon after completion. Right: detail of the building's delicate pre-cast concrete sun-screen. © Dennis Sharp. By kind permission of Yasmin Shariff, Dennis Sharp Architects. Bottom left: Tomb of I'timād-ud-Daulah, 1622-1628, near Agra, India. These jaali screens inspired the sun-screens on the long facade of the Crown Law Building.

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https://upload.wikimedia.org/wikipedia/commons/5/5d/Grills_of_the_masoleom_of_Itmad-ud-Daulah%27s_tomb_2.jpg



Fig. 06. Geoffrey Bawa, Parliament, Sri Jayawardenepura Kotte. (1979-82). The building's prominent Kandyan roof form pays homage to Sri Lankan architectural traditions, such as those of the open Royal Audience Hall (Magul Maduwa) in Kandy, the last capital of the ancient kings of Sri Lanka. By kind permission © Sebastian Posingis