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Under the Shaded Space: Le Corbusier and the Mill Owners' Association Building

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Abstract

“And on this earth alone//which is ours//The sun master of our lives//far off indifferent//He is the visitor – an overlord//he enters our house.” Le Corbusier, *Le poème de l'angle droit*, 1955.

In the first minute of 15 August 1947, India affirmed its independence from the British Raj. Jawaharlal Nehru was to be the prime minister of a sovereign India – a country that believed in the future but was marked by political and religious tensions. In affirming the country as a nation geared towards progress, Nehru also sought the support of Western architects. It was in very particular circumstances, the birth of the new capital of the Indian state of Punjab, Chandigarh, that Le Corbusier, travelled to India for the first time in 1951. Under India's scorching sun, Le Corbusier left an exemplary architectural legacy. This sense of exemplariness is primarily associated with Chandigarh, overshadowing his four works in Ahmedabad – a city in the state of Gujarat, and a bastion of the country's textile industry. Also in 1951, Le Corbusier was invited to visit Ahmedabad. On this trip, Surrottam Hutheesing, Secretary of the Mill Owners' Association, an association of Indian cotton mill owners, commissioned Le Corbusier to design the headquarters of the association in that city. The Mill Owners' Association building from 1954 is a paradigmatic work, tailor-made for a specific climate and presenting experimental solutions in terms of typology – solutions that are relevant to the debate on contemporary architecture. Le Corbusier operated from a three-dimensional grid. The building is characterised by a volume that serves as a *brise-soleil* and which, detached from the main volume by a small gap, determines a principle that is activated throughout the building: that of the in-between. The purpose of this chapter is to “dissect” Le Corbusier's Mill Owners' Association building, as if it were a body, penetrating the shade that this “body-house” provides.

Keywords: Mill Owners' Association building; Le Corbusier; *Brise-soleil*; Post-colonial India.

Session: Under Golden Suns: Revisiting Late Modernist Typology Experiments

And on this earth alone
which is ours
The sun master of our lives
far off indifferent
He is the visitor – an overlord he enters our house.

– Le Corbusier, *Le poème de l'angle droit*, 1955

Piranesi uncovered and retrieved the decaying body of the ancient and modern city.
Wielding the etcher's needle like a scalpel, he applied surgical procedures taken, I believe,
from medical illustrations, to turn the still-living fabric of architecture inside out.

– Barbara Maria Stafford, *Body Criticism: Imagining the Unseen in Enlightenment Art
and Medicine*, 1991

The India of Nehru and Le Corbusier

The Indian city of Ahmedabad in Gujarat state lies on the banks of the River Sabarmati. The waters of the river and the region's soil type combined to make the city a textile industry centre in the country. The industry flourished in the 19th century under the control of the British Raj. In the first minute of 15 August 1947, India declared independence. Jawaharlal Nehru (1889-1964), the country's first prime minister, was to be a kind of pioneer for independent India – a country that believed in the future but had to contend with serious political and religious tensions. To demonstrate India's status as a nation guided by progress, Nehru was to seek the support of Western architects. It was in very specific circumstances, the birth of Chandigarh, the new capital of the Indian state of Punjab, that Le Corbusier (1887-1965) left for India on 18 February 1951 on his first trip to the new country¹.

¹ Le Corbusier arrived in New Delhi on 19 February 1951. From there he travelled to Chandigarh and Simla. He returned to Delhi on 19 March 1951, from where he flew to Ahmedabad. After a short stay in Ahmedabad on 22 and 23 March, he then flew to Mumbai (then known as Bombay). In Mumbai he met with Jehangir Ratanji Dadabhoy Tata (1904-1993), a steel manufacture magnate and owner of the Air India airline. On his way back to Chandigarh, Le Corbusier stopped in New Delhi on 25 March and was received at the Presidential Palace. After

In January 1950 the urbanist Albert Mayer (1897-1981), together with his collaborator, the architect Matthew Nowicki (1910-1950), was chosen to head the team of designers for the new state capital. The former capital, Lahore, had been annexed by the British Raj in the mid-19th century and had played a central role in the political decisions that led to the Partition of India and the resulting independence of Pakistan; it then became the capital of Pakistani Punjab. However, the partnership between the two USA-based designers was to be short-lived. Nowicki tragically died in a plane crash in Egypt in the summer of that year and Mayer opted to terminate his involvement in the project. In December of the same year, Le Corbusier assumed responsibility for designing Chandigarh, leading a team made up of several architects².

Under India's scorching sun, he was to leave an exemplary architectural legacy. The exemplariness is generally associated with Chandigarh, its urban plan and, above all, the Capitol complex. Le Corbusier's four works in Ahmedabad were overshadowed by that exemplariness. In March 1951 Mayor Chinubhai Chimanbhai (1901-1993) invited Le Corbusier to visit Ahmedabad. The works he designed for Ahmedabad were part of the city's social fabric, as they were closely connected with a network of families who held the economic and political power in the city, and perhaps still do. Chinubhai Chimanbhai belonged to the Lalbhai family, which had close relations with the Hutheesing and Sarabhai families, all of which were involved in the textile mill business.

Le Palais des Filateurs

On this trip to Ahmedabad, Le Corbusier was commissioned by Surrottam Hutheesing (1901-1974), Secretary of the Mill Owners, a prominent association of Indian cotton mill owners, to design the new headquarters of the association. In addition to the association's headquarters, Le Corbusier was also commissioned to design a museum – this commission came from Chimanbhai as the mayor – and the Hutheesing, Chimanbhai and Manorama Sarabhai houses, the latter commission being made on Le Corbusier's second coming to India, in November

staying in Chandigarh for six days, he flew back to Delhi and then on to Mumbai again. He returned to Paris on 2 April 1951 (Serenyi, 1983: 93).

² The team included Pierre Jeanneret (1896-1967), Maxwell Fry (1899-1987) and Jane Drew (1911-1996). These were joined by nine Indian architects: Manmohan Nath Sharma (1923-2016), A. R. Prabhawalkar (1923-1974), Bhanu Pratap Mathur (1926-1976), Piloo Mody (1926-1983), Urmila Eulie Chowdhury (1923-1995), Narinder S. Lamba (1922-1978), Jeet Lal Malhotra (b.1929), J. S. Dethe and Aditya Prakash (1924-2008).

1951. Four of the five projects were built: the Mill Owners' Association building (1951-1954) (fig. 1); The Museum of the City (1951-1956), currently known as the Sanskar Kendra Museum; Villa Shodhan (1951-1956); and Villa Sarabhai (1951-1955). Villa Shodhan was originally designed for the Hutheesing family. However, Hutheesing was to abandon it, and sold the final designs to Shyamubhai Shodhan, also a member of the association.



Figure 1. Le Corbusier, Mill Owners' Association Building, Ahmedabad, India, 1951-1954.
© Maria João Moreira Soares (2015).

The Filateurs

The relationships between the various members of these *filateurs* families in Ahmedabad, who were of the Jainist faith, are important for understanding the origins of the initial commission made to Le Corbusier. Manorama Sarabhai (1913-1993) was Chinubhai Chimanbhai's sister; he, in turn, was a cousin of Surrottam Hutheesing. Manorama, Chinubhai and Surrottam were all nephews/nieces of Kasturbhai Lalbhai (1894-1980), Ahmedabad's richest industrialist, who was the great driver of the cultural and educational progress of a city that, thanks to its wealth, was able to avoid the British yoke in the colonial period and thus affirm its own pre-independence. Lalbhai co-founded the Ahmedabad Education Society, which was to lead to Ahmedabad University and the Indian Institute of Management Ahmedabad (IIMA), the premises for which were designed by Louis Kahn (1901-1974) from 1962 to 1974.

The importance of Ahmedabad is revelatory of the importance of these families in the Indian political and cultural scene. Taking the Sarabhai family as an example, one finds a whole world

of political activists, philanthropists, scientists, artists and patrons of the arts of international importance. Anasuya Sarabhai (1885-1972) – known as Anusyabehn, “the friend of the poor” (Shukla, 1977: 1) – left for England in 1912, of her own accord, to get an education. She became involved with women’s rights activists and figures such as George Bernard Shaw (1856-1950) and Sidney Webb (1859-1947), who inspired her to return to India and work with underprivileged communities. Anasuya became a central figure in the women’s labour movement in India. In 1917 she was behind the foundation of the Ahmedabad Textile Labour Association (Majoor Mahajan Sangh)³, India’s oldest association of textile workers, and was later made lifelong president of the association by Mahatma Gandhi (1869-1948). Ambalal Sarabhai (1890-1967), Anasuya’s brother, was chairman of Calico Mills and founder of the Sarabhai Group of Companies. He was involved in the Indian independence movement and was a very early supporter of Gandhi. He was president of the Mill Owners’ Association in the 1920s. Ambalal Sarabhai and his wife, Saraladevi Sarabhai (1896-1975), a women’s rights activist, had five daughters and three sons. Of the children, Gautam Sarabhai (1917-1995) and his sister Gira Sarabhai (1923-2021) were to play pivotal roles in the foundation of the National Institute of Design (NID) in Ahmedabad in 1961. The NID was an institution inspired by the Bauhaus principles and is still active today. Mridula Sarabhai (1911-1974), following in the footsteps of her aunt Anasuya, became a political activist. Like her father, she was involved in the Indian independence movement under the mentorship of Nehru. Vikram Ambalal Sarabhai (1919-1971) was a physicist and astronomer and is indicated as one of the figures responsible for the Indian space programme. He was chairman of the Indian National Committee for Space Research and the Indian Space Research Organisation. Together with Kasturbhai Lalbhai, Vikram was also co-founder of the above-mentioned Indian Institute of Management (IIMA). Gira Sarabhai (1923-2021) was an architect, having studied under and worked with Frank Lloyd Wright (1867-1959). She was a member of the team that developed Wright’s Guggenheim Museum in New York (Bhagat, 2021). Gira and Gautam were instrumental in sending invitations to Frei Otto (1883-1944), Buckminster Fuller (1895-1983), Charles Eames (1907-1978) and Ray Eames (1912-1988), and Louis Kahn (1901-1974), between the late 1950s and early 1960s, to visit Ahmedabad, thus helping to evolve the city’s cultural scene. Gira and Gautam founded the Calico Museum of Textiles in 1949, which is

³ See the brochure commemorating the association’s sixty years of existence, *Six Decades of Ahmedabad Textile Labour Association* (1917-1977), published by Manaharlal T. Shukla in 1977.

recognised as the museum that is home to the best and most varied collection of Indian textiles in the world (Bhagat, 2021); Gira was to be associated with the museum until her death. “All of us in the design space in contemporary India owe Gira Sarabhai a huge debt of gratitude for her selfless, perfectionist, single-minded work.” (Tyabji, 2021)

The importance of these institutions was confirmed by Laila Tyabji (2021):

[t]here are two iconic gateways in modern Ahmedabad, the National Institute of Design (NID) gate and the Calico Museum of Textiles one, and Giraben [Gira Sarabhai] was instrumental in creating both—institutions that became entry points to knowledge, inspiration, and instruction for generations of young designers, researchers, craftspeople far ahead of their time.

Gira Sarabhai also played a pivotal role in the choice of Le Corbusier to design the new house of Manorama Sarabhai, the widow of her brother, Suhrid Sarabhai (1913-1942), and their two children. Manorama welcomed international artists at her villa, from whom she requested works; these included: Le Corbusier, Alexander Calder (1898-1976), Isamu Noguchi (1904-1988) and David Tudor (1926-1996). She struck up a friendship with Tudor (Keefe, 2013). In a letter to David Tudor, dated from 1 March 1969, Manorama Sarabhai wrote: “Dear David, I have heard from Gira that you may be coming to the Design Institute sometime this year. May I ask you to be my guest for the duration of the time that you will be in India. It would be such a wonderful thing. At least write some lines and let me know when you will be coming.” (Keefe, 2013) Gita Sarabhai (1922-2011) was a musician who promoted interexchange between Indian traditional music and Western music. As part of this interexchange, she worked in New York with figures such as John Cage (1912-1992), striking up a friendship with Cage and Merce Cunningham (1919-2009). Cage (1961: 127) would later write⁴:

And then in the nick of time, Gita Sarabhai came from India. She was concerned about the influence Western music was having on the traditional Indian music, and she'd decided to study Western music for six months with several teachers and then return to India to do what she could

⁴ John Cage's recollection of Gita Sarabhai is featured as part of “Story 79” in the record *Indeterminacy: New Aspect of Form in Instrumental and Electronic Music. Ninety Stories by John Cage, with Music*, edited by Folkways in 1959. John Cage reading was accompanied by David Tudor's music.

to preserve the Indian traditions. She studied contemporary music and counterpoint with me. She said, 'How much do you charge?' I said, 'It'll be free if you'll also teach me about Indian music.' We were almost every day together. At the end of six months, just before she flew away, she gave me the *Gospel of Sri Ramakrishna*. It took me a year to finish reading it.

Cage, Cunningham, Tudor and Robert Rauschenberg (1925-2008) were in Ahmedabad in 1964, accompanying the Merce Cunningham Dance Company (Keefe, 2013).

The Sarabhais were an extraordinary family—between them, Gira and her siblings covered the arts and sciences, culture, management, technology, design, social work, education, politics, and, most importantly, institution building. Equally at ease in tradition and cutting-edge modernity, never shy to bring in experts, artists and advisors from all over the world, they transformed Ahmedabad into a thoroughly modern Indian city and thought centre, yet firmly and comfortably rooted in its past. (Tyabji, 2021)

In his book of 1986, *Le Corbusier: Ideas and Forms*, William Curtis opportunely describes the Sarabhais as “Modern Medicis”:

In the Ahmedabad context, the Jain patronage of architecture allowed a nice balance between personal displays of prestige and the edification of the city. Modern Medicis, the merchants of Ahmedabad wished to convert their money into the more elevated currency of art. They may even have nurtured the ambition of reviving something of the city's past architectural glory. Visual quality was a daily concern in their textile businesses, and they were entirely open to technological and conceptual inventions. They wished to turn the “Manchester of India” into a centre of culture, and knew that Le Corbusier could give their enterprise immense prestige. For his part, it must have been flattering to have all this attention after years of neglect in Europe. (Curtis, 1986: 202)

This extraordinary weave of familial and social relations, here represented by one of the *filateur* families, reveals a political resilience that helped bring about the already mentioned pre-independence of Ahmedabad in relation to the British Raj, a pre-independence that was also the

result of the huge cultural and educational investment carried out in the city. This whole scenario contributed to the interest of these families in Le Corbusier. However, one must point out the importance of another figure in defining this interest: that of Krishna Nehru Hutheesing (1907-1967), Jawaharlal Nehru's younger sister. By marriage, Krishna was a member of Surrottam Hutheesing's family, who was responsible for commissioning Le Corbusier to design the association's building. It would seem evident that Nehru's new India came to Ahmedabad also through his sister, in addition to through the progressive *filateurs*. Along with the design projects for Chandigarh, those for Ahmedabad were an expression of a post-colonial India that desired to be modern.

The brise-soleil

In an interview from 1986 (Kagal, 1986)⁵, Balkrishna V. Doshi (1927-2023) reflects on the culture clash that followed Le Corbusier's arrival in India, pointing out that, as a westerner, Le Corbusier had a different attitude to the challenges facing India: "What do you do in a country where there's no technology but lots of skilled people, people with ideas; a country far behind in time but also very vital — full of energy!" (Kagal, 1986) The notion that the country was "behind in time" was countered by the idea that India, at least the India that was resetting its outlook by means of independence, was "vital and full of energy". This counter-stance seems to fit in fully with Le Corbusier's profile as an architect – as if, there and then, he was absolutely living an *esprit de la vérité*.

That spirit was immediately challenged by the climate conditions of a country in such a specific geographic region with the coordinates it had: "Ahmedabad sits just below the Tropic of Cancer, south of the Great Thar Desert, and the difficulties of its summer have been well recorded through history." (Ubbelohde, 2003: 67) On this matter, Le Corbusier points out:

The country is tropical. The monsoon rages for two months of the year and is an alternating combination of downpours and sunshine. A western architect has spent his life learning his profession; to be sure he must apply his profession in India, but he must adapt it to antagonistic

⁵ The interview with Balkrishna V. Doshi by Carmen Kagal "Le Corbusier: Acrobat of Architecture – B. V. Doshi interviewed by Carmen Kagal", was originally published in *Vistāra – The Architecture of India, Catalogue of the Exhibition* (Kagal, 1986: 204-214), a catalogue for an exhibition of the same name at the Festival of India, 1986.

requirements: comfort is coolness, it is the current of air, it is the shade. And yet the sun must penetrate at the proper time, in the favorable seasons. [...]. Whether it concerns housing, offices, or a palace, the conditions of the problem are dictated by a constant merciless sun with conditions of temperature, humidity and dryness varying from one month to another – all contradictory factors. To play the role of a modern architect under these conditions is not easy. (Boesiger, 2013a: 114)

As early as 1951, in his hotel room in Mumbai, Le Corbusier sketched alternative solutions to the colonialist architecture he experienced at the Taj Mahal Hotel. His solutions – which were purely speculative – featured what Le Corbusier called the “[i]nvention of constitutive elements for a modern Indian architecture: columns, awnings, brise-soleil, etc.” (Boesiger, 2013b: 104)



Figure 2. Le Corbusier, Mill Owners' Association Building, East façade viewed from inside, Ahmedabad, India, 1951-1954. © Maria João Moreira Soares (2015).

While the city of Ahmedabad depended on the River Sabarmati for its industry, it seemed almost allegorical that the new Mill Owners' Association headquarters would be located next

to the river, on its western bank. However, the impact of the river went beyond the merely allegorical and became something more concrete: the new headquarters were to “live” from the comfort offered by the cooling winds coming from the Sabarmati. The east-west axis thus became a pivotal element in the design project – to the east and west, planes that open up, gain in volume, as *brise-soleils*; on the north and south sides, planes that are closed. As a climate control mechanism, the eastern *brise-soleil* functions very openly: perpendicular planes to let the eye roam over the river and its pleasant breezes (fig. 2). The *brise-soleil* on the west is more complex: planes rotated 45 degrees to the south to block the frantic and chaotic vistas from Ashram Road and filter the dry and polluted atmosphere (fig. 3).



Figure 3. Le Corbusier, Mill Owners' Association Building, West façade, Ahmedabad, India, 1951-1954. © Maria João Moreira Soares (2015).

The profuse vegetation on the volumes created by the *brise-soleils* – which is part of the original idea for the mechanism – helps to cool and humidify the winds by providing a desirable, controlled current of air. In summer, the sunlight does not penetrate directly into the interior space of the *filateurs'* headquarters; in winter, light is free to enter. This is the undeniable importance of the *brise-soleil*. As Le Corbusier himself put it: “It was in my private atelier on

the Rue Nungesser et Coli where I would suffer in silence (for a cause!) that I cast my eyes upon the brise-soleil, which I have conceived, which I have named and the term has become universal today: brise-soleil (sun-breaker).” (Boesiger, 2013a: 114)

The verandah and the reference

The *esprit de la vérité* also demands attention, perhaps not always consciously, to another reality. As Doshi says: “He [Le Corbusier] looked at the skyline of Indian temples, he saw arches and domes, verandahs and balconies. In general I have the impression that in India he felt the impact of another culture that has joy and grace and compassion.” (Kagal, 1986) While climate-related matters were crucial for the development of the design project, no less important were issues related to a culture that was impactful on various levels, namely that of traditional architecture. On his first journeys to India, Le Corbusier’s sketchbooks filled up with drawings that revealed his interest in diverse examples of Indian architectural culture. These examples include, first and foremost, the Jantar Mantar astronomical observatory in Delhi; the Pinjore gardens near Chandigarh; Hindu and Jain temples in Ahmedabad; Mumbai’s Gateway of India; aerial views of Rajasthani near Jaipur; old courtyards near Ambala; a factory in Ahmedabad⁶. As is well known, travelling and registering his experiences in new places were things that were part of Charles-Édouard Jeanneret/Le Corbusier’s persona.

Le Corbusier’s interest in the relationship between exterior and interior spaces became part of his architectural lexicon early on. There are many examples of this, such as the designs for the Pavillon de l’Esprit Nouveau (1925) in Paris and the Villa Savoye (1928-1931) in Poissy, France. However, in India, Le Corbusier was to find a context that was extraordinarily favourable to experimentation, almost lab-like experimentation, with that relationship. The *verandah*, a space that links the exterior and the interior, and where the extension of domestic life, for example, is maximised, and an architectural element inherent in Indian culture, was to become, as Doshi indeed asserts, a theme of interest to Le Corbusier. Le Corbusier gave these hybrid spaces in India new meaning, allowing them to establish themselves as spaces to be experienced in all their plenitude. In contrast to western experiences, where sunlight is avidly

⁶ These drawings are featured in Le Corbusier’s sketchbooks E18 and E19 (Serenyi, 1983: 93).

sought after, most of these spaces are protected by *toits-parasol*. Direct sunlight gave way to shade – as the climate dictated.

In Le Corbusier's work, this inversion in the use of hybrid spaces has one particular antecedent: Villa Baizeau (1928-1929) in Carthage, Tunisia. In Tunisia, which was then a French protectorate, Le Corbusier was to experiment with an architectural model that sought to respond in part to the Mediterranean climate: a house whose interior spaces are closed in on themselves, recalling the compactness of the kasbahs, but which are then freed, like a series of terraces protected by *toits-parasol*. Parallelepipedal in form, the whole was enclosed by pilotis. More than twenty years later, Villa Baizeau became a reference for the Mill Owners' Association building and for Villa Shodhan.

The design for the *filateurs* was the result of an extraordinary design consistency that had been explored for decades. However, it is above all, a particular response that results from a demanding culture and geographic region and from the type of clients – a number of industrialists all connected by close familial ties, Jainism and, of course, common cultural and business interests. For them, Le Corbusier was building a “palace” – a palace like a house.

[H]is concept of the house as a palace which he developed during the 1920s and given clearest expression in his book, *Une Maison – Un Palais*, published in 1928. There he defined the palace as “a house endowed with dignity,” which for him meant monumentally achieved by “pure forms composed according to a harmonious law.” One of the houses Le Corbusier singled out in his book to exemplify his concept of the house-palace was his Villa Cook of 1926, which offers important clues for understanding the internal organization of the Millowners Association Building. (Serenyi, 1983: 97)

This “palace”, to house the association, took the form of a parallelepipedal volume (fig. 4). Beside it, but separate from it, another volume was erected with a trapezoidal plan and an inclined roof. This volume is home to a restaurant. On the ground floor of the “palace” there are support spaces for the functioning of the building. Here, the *promenade architecturale* begins: the ceremonial ramp goes up on the building's exterior towards the first floor, defining an axis on the west elevation, the shift of which to the right gives it a slight but characteristic asymmetry. This ramp is accompanied by an open-air staircase, also to the right, connecting the

ground floor to the *bel étage* on the second floor. The ramp invades the space of the *brise-soleil* on the west, giving rise to a vertical gap over three storeys in height. The first floor is made up of an entrance with a reception and a double-height ceiling, several administrative offices and restrooms. The space generated by the horizontal access axis is only intersected by another access block, in the form of a volume housing the two lifts. In this space, the winds run free. Continuing the *promenade*, one now climbs the stairs on one side of the ramp. On the final landing, a red pivoting door, in a free-standing portico, marks the entry point to the *bel étage* (fig. 5).

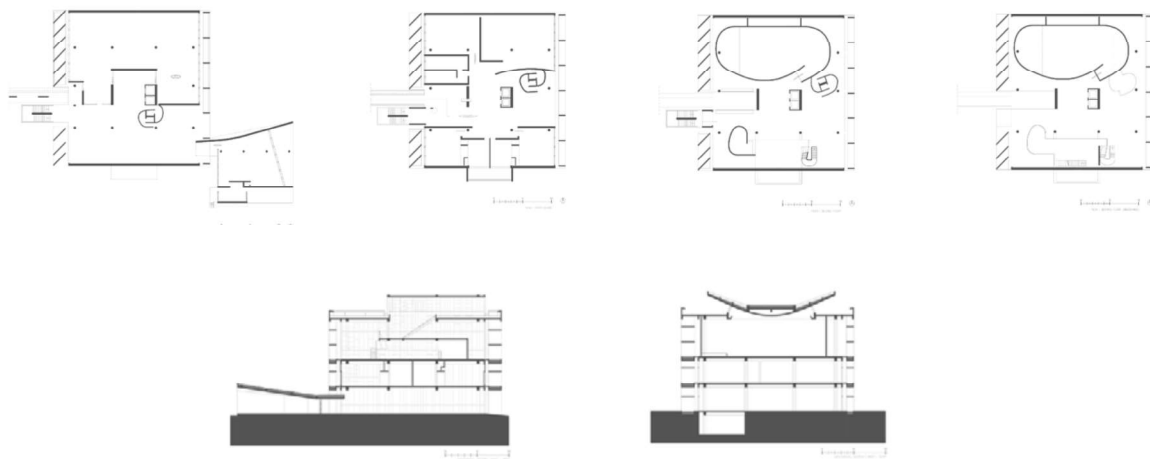


Figure 4. Le Corbusier, Mill Owners' Association Building's floor plans and sections, Ahmedabad, India, 1951-1954 (drawings adapted from *Le Corbusier, Oeuvre complète, volume 6 – 1952-57*).

On this floor, the spaces that unfold function at a more private level: the assembly hall; a bar; and restrooms. The promenade takes one through all the floor's spaces, including a small mezzanine set into the wall, on the southern side. From the mezzanine there is access to the upper terrace. The *promenade* on the *bel étage* is open and non-directional – this openness is made clear by the very high ceiling and by the forthrightness of the positioning of the *brise-soleils* on the opposite sides. The *bel étage* is an exterior room, which one enters through a door that is enclosed between grilles. This informal great hall of the “palace”, where the winds are controlled, is a more private space than the *promenade* on the lower floor. One can just imagine the conversations between the *filateurs* there.



Figure 5. Le Corbusier, Mill Owners' Association Building, free-standing portico, Ahmedabad, India, 1951-1954. © Maria João Moreira Soares (2015).

Le Corbusier's design results in a building that works the relationship between public and private, meaning that a public association can enjoy an environment that is close to domesticity, thus contributing to the idea of "a house endowed with dignity", to the idea of a palace. The relations between the *filateurs*, based on personal connections that resulted from the caste system, family ties, activism and religious faith were very well understood by Le Corbusier, finding expression in an open, complex building that also engaged with *filateurs* in a conversation. "One of the reasons why Le Corbusier's architecture was welcomed by his Indian clients was because they were accustomed to seeing classical buildings that, in addition to being open, are often characterized by irregularity and flexibility." (Serenyi, 1983: 105)

Chiaroscuro and écorchés: the Palais des Filateurs reviewed

Not only traditional Indian architecture had captivated Le Corbusier, but also Indian miniatures. Indian miniatures are small, extremely detailed paintings that have existed since at least the 9th century. His sketchbooks feature small drawings that reproduce situations associated with that type of Indian painting highlighting spatial environments taken from everyday scenes. Le Corbusier's drawings also come with some notes that reveal his admiration for how spatial depth and the relationship between light and shade are represented in Indian miniatures (Candela Suárez, 2017: 281). As Doshi puts it:

[h]e [Le Corbusier] spent a lot of time looking at Indian miniatures and he once showed me a painting of Krishna and Radha dancing. "You see," he said, "how front and back are both shown, how you can twist the plane to get a complete image." The problem that was intriguing him was how to get another dimension within the same plane. And this is what he did in Ahmedabad – he made the formwork go against the nature of the concrete, i.e., normally the formwork is designed vertically, but here he placed the shuttering planks diagonally, so that the shadows cast are diagonal, while the basic level remains horizontal. This was done with the idea that the plane must get another dimension through shadow.

In Indian miniature paintings you notice that something will suddenly go out of the frame. Or out of all those cows, one cow will turn its head. We allow those exceptions. Le Corbusier was like that – exceptions were important to prove the rule. And this came out of the realisation that rigid structures are not the answer if you want them to survive. (Kagal, 1986)

This interest by Le Corbusier in achieving another dimension on one and the same plane opened up a path for new readings of his design choices for this "palace". While the *brise-soleil* was nothing new in his architecture, the mechanism was to gain new importance in his Indian works – a new depth, in several meanings of the word. The design for the Mill Owners' Association building was no exception here. On the contrary, the building is a reference for the use of these shade-producing elements. The quest for a new dimension was to focus on the use of concrete and its formwork: "the east and west façades are of raw, unfinished concrete; the *brise-soleil* are clad in wood, and the walls in sheet metal." (Boesiger, 2013a: 114) The vertical planes of the *brise-soleil* on the building's west, rotated by 45 degrees, gained texture through the

placement of the wooden formwork alternating in opposite directions to accentuate the shade effect provided by the horizontal planes. The effect facilitated a response to that which Le Corbusier had observed in Indian miniatures – something goes “out of the frame”, as Doshi puts it. The plane takes on a new dimension through the shade.



Figure 6. Nicholas Hill, *Ecorché* figure, c.1545. © Royal Academy.

The space was also to gain new dimensions and new volumes – visible volumes that were almost palpable. The building’s entrance axis became a huge mouth, gaping and dark, that accentuated the monumentality and provided cavernous depth. In that depth, a very particular effect gains life: the chiaroscuro. While the building for the *filateurs* is a “palace”, the *Palais de l’Association des Filateurs d’Ahmedabad*, and uses architectural references that go back as far as the Renaissance, it is also in this period that the chiaroscuro effect was first used in painting. The value provided by this effect resonates in the spaces of the non-directional promenade designed by Le Corbusier. The shade gains in volume, taking on different densities

depending on the time of day and season of the year, and assuming the protagonism normally conferred upon sunlight. The use of chiaroscuro in this “palace” functions in the space – an exterior interior – in between the spatial organisation of the two main floors, including the mezzanine on the *bel étage*. On the east and west facades, with the *brise-soleils*, the purity of a reading of the chiaroscuro provided by the gradual elimination of the outline is compromised by the intentional reading of the lines defining the respective grilles. However, that compromise, particularly on the west, is also an announcement of a provocation that has to do with the volumes generated by the shade. By gaining in volume, the exterior grille loses the meaning of “skin” frequently given to an elevation, making the design an *écorché* (fig. 6).

The Mill Owners' Association building does not have a skin; it has a skeleton, muscles and organs. The *brise-soleil* volumes are now muscles that gain autonomy and protect the organs, the most important of which is the assembly hall. The organs, free from the structure, “hang” on the skeleton. They free themselves from the structure because the structure guarantees them that freedom. Doshi states:

Structure for him [Le Corbusier] was only related to the function it must perform – it was not a rigid element. So he did not follow one system, but used many systems to achieve his goal. Because many systems together really add up to another system, don't they? He was never rigid, always varied, forever playing with dualities and multiplicity. (Kagal, 1986)

The assembly hall, clad in diagonally placed wooden panels, is the most dissonant element in this body, as it unequivocally defines a game of dualities. The curvilinear surface, which gently curves like an egg, is detached from the bones that house it. Light enters through the top by way of a roof, which arches towards the sun, asserting itself beyond the plane that forms the terrace. In the hybrid, chiaroscuro and void space, this element, like an organ, is not alone. Other elements become autonomous, giving expression to the open space that is formed as a generous in-between. The theme of autonomisation is a recurrent one in this “palace”. The stand-alone elements – from the doorway to the accesses, and to the various spatial volumes with different functions – operate as character traits. The Villa Savoye (1928-1931) also has such features: the ramp, and also the staircase, the washroom on the ground floor, the fireplace in the living

room, the vertical plane of the single-span terrace at the end of the “promenade” through the house.

This character is reinforced by the autonomisation of the volumes – or muscles – that function as *brise-soleils*. The volumes are separated from the main body of the building by a small gap (fig. 7). Everything is detached. Everything is interspersed. Everything is open. Everything is a body stripped of skin, an *écorché*.



Figure 7. Le Corbusier, Mill Owners' Association Building, gap between the East *brise-soleil* and the building. Ahmedabad, India, 1951-1954. © Maria João Moreira Soares (2015).

Le Corbusier was not indifferent to *écorchés*. In the 1925 *L'art décorative d'aujourd'hui* [The Decorative Art of Today], there are skinless human figures that show the blood circulation system and the supporting bone structure. Further on, the same book features drawings of the digestive system and drawings of the functional organs of plants, and photographs of large machines, such as the ocean liners. This is a theme that he will return to again and again throughout his work. The figure of the Modulor comes close to an *écorché*, revealing, as it does,

the “machine” working in his belly. Even architecture as an *écorché* had been sketched out previously. At the 1939 *Daily Mail Ideal Home* exhibition in London, Le Corbusier presented a manifesto dedicated to the 1930 Ville Radieuse, in which he proposed the design of a pavilion. The pavilion consisted of a vertical orthogonal frame, developed heightwise like a skeleton, whose interior is accessed by a ramp, an interior populated by floating organs, bathed in sunlight and flanked by vegetation (fig. 8).

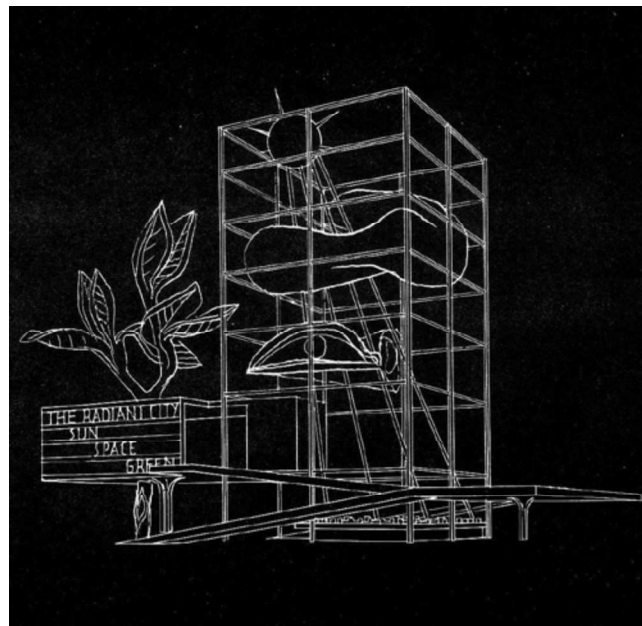


Figure 8. Le Corbusier, *Daily Mail Ideal Home Exhibition*, London, 1939. © Le Courbusier / FLC / ADAGP, Paris / SPA, Lisboa, 2025.

This is the typological genesis of the Mill Owners' Association building. That genesis was founded on strong principles that consistently accompany a line of thought and can be added as a value that runs through Le Corbusier's architecture over decades. Those principles gave rise to a meta-circumstantial architecture, where the circumstances are important, but the work exceeds them in importance, becoming part of a time period that is ulterior to the circumstances. The Dom-Ino House system, developed in 1914, was to gradually take on that condition of meta-circumstantiality. It is, for example, at the root of the genesis of the Villa Baizeau and re-emerges as a system in the design of 1939's “pavilion”; the latter was later reused in for the *filateurs*' association, Le Corbusier's *écorché* palace.

Regardless of the reasons, practical in varying degrees, that gave rise to its conception⁷, the Dom-Ino House system featured repeatedly in Le Corbusier's work as a design principle. The "pavilion" of 1939, which was much less impactful in terms of affirmation of his oeuvre, was the result of a constant revision of design principles, such as those of the 1914 system. The Mill Owners' Association building is the legitimate heir of this constant revision. It inherits the skeleton and the exterior ramp; it inherits the organs floating in between the bones; it inherits the unashamed lack of a skin. Nature, in turn, takes on a new role, now functioning in close agreement with the architecture⁸.

The *filateurs*' palace is a "body-house".

For the age of encyclopedism, the human body represented the ultimate visual compendium, the comprehensive method of methods, the organizing structure of structures. As a visible natural whole made up of invisible dissimilar parts, it was the organic paradigm or architectonic standard for all complex unions. Whether ideal or caricatured, perfect or monstrous, it formed the model for proper or improper man-made assemblies and artificial compositions. (Stafford, 1997: 12)

Le Corbusier wrote in 1925:

The further back we go, the more satisfaction we obtain. We learn that everything is arranged according to principles consistent with the whole: that every organism is a kind of link in the chain of variations around the axis between two poles, variants which, responding to a single factor, establish a series: a coherent system varies in accordance with the countless possible sets of combination. (Le Corbusier, 1987: 181)

L'Esprit de vérité

Balkrishna Doshi states:

I was once in his office with P. L. Verma, then the Chief Engineer of Chandigarh. And Le Corbusier asked, "What is the truth really?" Then he drew two parallel lines, with a wavy line

⁷ The Dom-Ino House system is presented in Le Corbusier's *Oeuvre complète* as a solution that anticipated the devastating effects of World War I (Boesiger, Storonov, 2013: 23).

⁸ Doshi states: "[In India] [h]e saw many things for the first time – the bright blue sky, the relentless sun, the hot winds, the cool moon, the beauty of tropical nights, the fury of the monsoon. And he said to me once that while his work thus far had been a counterpoint to nature, he now realised that he had to have a pact with nature." (Kagal, 1986)

in between. "Truth is like a river," he said, "it flows continuously, changing course, modifying itself, without ever touching either bank." Truth for him was always in the process of evolution. (Kagal, 1986)

To the typology presented in London, a kind of *écorché* without muscle, are now added *brise-soleils* and *toits-parasol* that provide a chiaroscuro effect; the reference of the Villa Baizeau is then added. To Western culture and Indian culture is added an understanding of a moment in contemporary history. To architecture's *raison d'être* is added the indomitable will of a man in search of the truth. The *Palais des Filateurs* lives on in time. It has become timeless.

"The mystery is not negligible, is not to be rejected, is not futile. It is the minute of silence in our toil. It awaits the initiate. The initiate is the man of great strength who will explain... one day." (Le Corbusier, 1987: 181)

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