Timeless but of Its Time: Le Corbusier's Architecture in India

Le Corbusier, Shodhan House, Ahmedabad, 1951–56.

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For Le Corbusier the resolution of opposites was a deeply felt need, which elicited some of his most heroic architectural responses. He was certainly not alone among twentieth century architects in this respect, for some of his greatest contemporaries, Frank Lloyd Wright and Mies van der Rohe, were equally obsessed by it. To create a resolution of opposites, Wright fused, whereas Mies neutralized, a building's constituent parts. This resulted in a state of interdependent individuality in the work of Wright, and a state of anonymity in the work of Mies. Le Corbusier, on the other hand, used juxtaposition as a means of attaining a resolution of opposites. In so doing, he succeeded in preserving the identity and at times even the separateness of a building's constituent parts.

For Le Corbusier the juxtaposition of diverse and often seemingly contradictory architectural elements was not merely a formal exercise, but rather a manifestation of a new kind of synthesis that brought together images of diverse cultural, historical, environmental, sociopolitical, and psychological forces, while permitting each to maintain its identity. He interpreted these forces in terms of a series of polarities that include: history and modernity, Mediterranean and Northern, mechanistic and folkloristic, utopian and pragmatic, puritanical and hedonistic, male and female. Although the resolution of these polar and often contradictory forces obsessed Le Corbusier since his formative period, most notably since the creation of the Villa Schwob in 1916, this complex process found its richest and most subtle realizations in his late work, of which India received the largest share.

As is well known, Le Corbusier's name is linked with two cities in India: Chandigarh, the newly built capital of the state of Punjab, and Ahmedabad, the textile capital of India located in the state of Gujarat. Both cities are intimately tied to two of modern India's greatest statesmen: Mahatma Gandhi and Jawaharlal Nehru. Gandhi, a native son of Gujarat, had spent fifteen years in Ahmedabad laying the groundwork for India's independence. It was from here that he led the famous Salt March in 1930, which initiated the second phase of national nonviolent resistance. Prime Minister Nehru who supported Chandigarh both morally and financially viewed the city as "symbolic of the freedom of India, unfettered by the traditions of the past. . . . an expression of the nation's faith in the future."[1]

The price India had to pay for its independence, gained from the British in July, 1947, was the loss of what is now Pakistan and Bangladesh. The people most affected by the partition of India were the Hindus of West Punjab and East Bengal who elected not to remain under Moslem rule but to resettle in India. In addition, Punjab lost not only its western part to Pakistan but its old capital, Lahore, as well, whose population was fifty-six percent Hindu. What set the stage for the creation of Chandigarh was independence and partition, exhilaration and tragedy. Naming the city in honor of Chandi, the Hindu goddess of power, must be seen in this context.

Once the decision was made to build a new capital for East Punjab, Prime Minister Nehru seized the opportunity to make it the city of *his* India, liberated from the traditions of the past. As an initial act of commitment, Nehru recommended to the Punjab government that the American planner, Albert Mayer, whom he had known personally, be asked to draw up a master plan for the city. Although Mayer's plan was not carried out, Le Corbusier adopted many of its features when he had prepared his own plan in Simla in February, 1951. This plan was created only three months after P. N. Thapar and P. L. Varma, representatives of the Punjab government, had approached Le Corbusier in Paris to become the architectural advisor of Chandigarh.[2] Le Corbusier's biannual trips to India resulting from his contractual agreement made with Thapar and Varma started on February 18, 1951. He left a permanent record of his thoughts and observations about India in his sketchbooks, which he carried with him during his many trips. These sketchbooks also contain visual imprints of his creative process, giving us a rare glimpse of his buildings in their formative stages.[3]

The two sketchbooks in which Le Corbusier recorded his first stay in India, extending from February to April, 1951, give us the best indication of what he found most compelling and timely in the country's built environment.[4] It is revealing that the very first observation he made about India refers to Sir Edwin Lutyens and the Jantar Mantar, the Astronomical Observatory in Delhi built by Maharajah Jai Singh in 1719. He consid-

1
Quoted by B. P. Bagchi, *Chandigarh* (Chandigarh: New Horizons Press, 1965), p. 1.

2
For an account of the birth of Chandigarh, see Norma Evenson, *Chandigarh* (Berkeley: University of California Press, 1966). For an interpretation of the city's symbolic significance, see Stanislaus von Moos, "The Politics of the Open Hand: Notes on Le Corbusier and Nehru at Chandigarh," in *The Open Hand: Essays on Le Corbusier*, ed. Russell Walden (Cambridge, Mass.: The MIT Press, 1977). pp. 412–57.

3
There are seventy-three sketchbooks covering the period from 1914 to 1964 in the Archives of the Foundation Le Corbusier in Paris. These have been published by the Architectural History Foundation, New York as *Le Corbusier Sketchbooks Volume 1, 1914–1948* (1981); *Le Corbusier Sketchbooks Volume 2, 1950–1954* (1981); *Le Corbusier Sketchbooks Volume 3, 1954–1957* (1982); *Le Corbusier Sketchbooks Volume 4, 1957–1964* (1982).

4
These are Sketchbooks E 18 and E 19. See *Le Corbusier Sketchbooks Volume 2, 1950–1954*, No. 309–414.

ered the Observatory as "leading the way: linking mankind with the cosmos." In contrast, he found even the "best qualities" of Lutyens' work in New Delhi as less successful.[5] Yet both touched a familiar chord in his heart: the Observatory being an example of what he described in *Towards a New Architecture* as "pure creation of the mind," and Lutyens' New Delhi, with its axes and broad boulevards, being an evocation of Paris. It is not surprising that both reappear in Chandigarh.

Beyond this initial observation, these two sketchbooks encompass a wide yet predictable range of images of the Indian environment: the seventeenth century Pinjore gardens near Chandigarh, Hindu and Jain temples in Ahmedabad, the Mogul style Viceroy's garden by Lutyens in New Delhi, Bombay's Gateway of India of 1911, aerial views of Rajasthani villages near Jaipur, old courtyards in Ahmedabad, a water tower near Ambala, and a factory in Ahmedabad. These and similar examples included in Sketchbooks E 18 and E 19 suggest that Le Corbusier's approach to absorbing a new culture had remained unaltered since his early travels spanning the years 1907–11, when he classified his observations into three categories: culture, folklore, and industry.[6]

The first two Indian sketchbooks also shed light on Le Corbusier's itinerary, which in turn sets the stage for initiating contact with all but one of his future Indian clients.[7] After his arrival in New Delhi on February 19th, his first destination was Chandigarh and Simla. Already on March 19th, he left for Delhi to fly from there to Ahmedabad. After a brief stay in Ahmedabad on the 22nd and 23rd he flew to Bombay to meet Bhabha Tata, the steel magnate and major owner of Air India.[8] On his way back to Chandigarh, he stopped in New Delhi on the 25th to be entertained in the presidential palace. Six days later he left Chandigarh to fly from Delhi to Bombay, whence he returned to Paris on the 2nd of April.

During these first six weeks in India, Le Corbusier gained a deeper understanding of the country's cultural, vernacular, and industrial tradition, met most of his future clients from Pandit Nehru to the Sarabhais, and initiated ambitious projects ranging from the master plan of Chandigarh to a cultural center for Ahmedabad. But why Ahmedabad? Such a question happily no longer needs to be raised about Chandigarh,[9] but still requires an answer with regard to the commissions he received in India's textile center. There are few cities in the world that can claim more than three buildings by Le Corbusier, and Ahmedabad is one of them, (after Paris, Chandigarh and La Chaux-de-Fonds), with the Museum, the Millowners Association Building, and the Sarabhai and Shodhan houses to its credit. Such major commissions, all initiated during Le Corbusier's first visit to the city, attests to Ahmedabad's intellectual climate and economic prosperity unrivalled in India for a city of its size. The events that contributed to these favorable circumstances have a long history whose highlights are worth mentioning here.[10]

Since its founding by Sultan Ahmed Shah of Gujarat in 1411 A.D., Ahmedabad had been a city of commerce and industry centered around textiles. After a period of great prosperity during the first hundred years of its existence, the city declined, but recovered again when Akbar annexed it to the Mogul Empire in 1572. Its recovery prepared the way for Sir Thomas Roe's visit in 1618, which initiated the first commercial ties between Ahmedabad and England. The disintegration of the Mogul Empire during the eighteenth century brought in the Maratha from the south, who ruled it until 1817. During that year, and almost two hundred years after Sir Thomas's visit, Ahmedabad's ties with Britain were forcibly reestablished by the East India Company.

Yet the British presence in Ahmedabad during the next hundred and thirty years was never too pervasive, largely because the economic base of the city's highly developed culture had always been trade and industry rather than agriculture. Hence, long before the advent of the modern era, the leading citizens of Ahmedabad were businessmen rather than landowners, or men in the service of a court. This enabled the Ahmedabadis to take up the British on their own terms by offering them stiff competition through mechanizing the city's textile industry.

With the help of the city's Jain financiers, the modern textile industry of Ahmedabad was founded in 1861. One of the key factors behind the success of this industry is that since its founding it has been largely run by a closely knit group of Jain families who valued cooperation rather than competition among

9
L. R. Nair, *Why Chandigarh?* (Simla: Publicity Department, Punjab Government, 1950).

5
Le Corbusier Sketchbooks Volume 2, E. 18, no. 329–330. It must be kept in mind, however, that Le Corbusier's reservation about Lutyens' work is made here in the context of an exceptional example of earlier Indian architecture. Elsewhere he was unequivocal in his praise of this British architect/planner. "New Delhi (in Tuscan inspired style), the capital of imperial India, was built by Lutyens over 30 years ago, with extreme care, great talent, and with true success. The critics may rant as they like, but the accomplishment of such an undertaking earns respect." (Le Corbusier, *Oeuvre complète 1952–1957*, p. 51). For Lutyens' influence on Chandigarh, see Allan Greenberg, "Lutyens' Architecture Restudied," *Perspecta 12* (1969), pp. 129–52.

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For the best study of Ahmedabad in English see, Kenneth L. Gillion, *Ahmedabad, A Study in Indian Urban History* (Berkeley: University of California Press, 1968).

6
Le Corbusier, *Le Voyage d'Orient* (Paris: Les Éditions Forces Vives, 1966). For an earlier published account of Le Corbusier's trip to the East, see "*Confession*," in his *L'Art Décoratif d'Aujourd'hui* (Paris: Édition G. Crés, 1925), pp. 197–247, esp. p. 246.

7
The client whom he was to meet only in the fall of 1951 was Shyamubhai Shodhan.

8
During the next few years Le Corbusier repeatedly tried to convince Bhabha Tata to let him build the headquarters of the Air India Company, but without success. I am indebted to Charles Correa for this information.

themselves. Thus, as Kenneth Gillion has pointed out, "the caste system and joint family system found new avenues of expression in a modern context."[11] In addition to the social cohesion of the Jains, it was also their work ethic, puritanical and frugal character, not to mention their entrepreneurial spirit, that contributed greatly to the success of Ahmedabad's modern textile industry. No wonder that by the turn of the century the city became known as the "Manchester of India."

The economic growth Ahmedabad enjoyed since the 1860's was given a further boost by World War I when the termination of British imports allowed the city's textile mills to supply India's needs more fully. After the war the city utilized its unprecedented economic power by becoming, in Gillion's words, "a financial and political base for the Indian National Congress and a leader and prototype of New India."[12] While it was the mills that supplied the financial base for this new political movement, it was Mahatma Gandhi who provided the leadership.

The fact that Ahmedabad became Gandhi's home between 1915 and 1930 had a powerful consequence on the city's political development, both in terms of its own affairs as well as in terms of its influence on the nation as a whole. Enjoying the respect of both industry and labor, Gandhi proved to be an effective arbitrator between the wealthy millowners and their workers during the city's labor unrests in the late teens and twenties. Moreover, through his teachings, Gandhi disseminated those very ideals which made Ahmedabad such a success: puritanism, frugality, and the ethic of hard work.

When India's independence was won in 1947, Ahmedabad could rightly claim an important share in its realization. More importantly, however, it could claim that its unique blend of traditional values and modern technology could serve as an appropriate model for independent India. Conscious of this potential, the leaders of the city pursued a two-pronged approach to shaping its future: by strengthening the achievements of the past and by moving into new directions. In pursuit of the former, they diversified the city's industry, and helped make it, even if only temporarily, the state capital of Gujarat. In pursuit of the latter, they established it as one of the foremost cultural centers of India. In so doing, they revived an aspect of the city's past that had been lost since the seventeenth century.

Among the key leaders of the new Ahmedabad four Jain textile millowners stand out: Kasturbhai Lalbhai, Chinubhai Chimanbhai, Surottam Hutheesing, and Guatam Sarabhai. Mr. Lalbhai, the wealthiest of the Ahmedabad industrialists, spent a considerable part of his fortune on establishing and supporting the city's new cultural and educational institutions through such organizations as the Ahmedabad Education Society and the Ahmedabad Textile Industry's Research Association. Chinubhai Chimanbhai, a nephew of Mr. Lalbhai, was the city's energetic mayor, who, during his tenure between 1950 and 1962, was instrumental in building such major undertakings as libraries, playgrounds, a stadium, an auditorium and a cultural center. It was the mayor in fact who was largely responsible for inviting Le Corbusier to the city. Surottam Hutheesing, another nephew of Mr. Lalbhai, was the president of the Millowners Association, the textile industry's powerful organization founded in 1891, and it was he who was responsible for commissioning Le Corbusier to build the Association's new headquarters. Gautam Sarabhai, a leading member of a family that distinguished itself in the arts and sciences, was the founder, designer and first director of the National Institute of Design in Ahmedabad, which under his leadership became one of the foremost art schools of India. And it was Gautam Sarabhai's sister-in-law, Manorama – a niece of Mr. Lalbhai – who entrusted Le Corbusier with her house.

During Le Corbusier's first visit to Ahmedabad in March 1951 Mayor Chinubhai Chimanbhai had given him two commissions, the building of a cultural center overlooking the Sabarmati river, and a house for himself.[13] Although the Chimanbhai house was never built by Le Corbusier, and the cultural center was only partially realized according to his plans,[14] he was at least given the opportunity to build the center's museum according to ideas he had developed since 1929 (figure 1).[15] In the museum of Ahmedabad Le Corbusier combined two concepts at once: the notion of an environment that is both interdisciplinary and unlimited. Even if neither of these concepts was realized in the building literally, both are inherent in its design. The

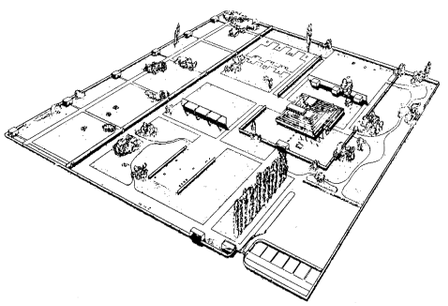
11
Gillion, p. 94.

12
Gillion, p. 153.

13
Except during the monsoon season, this river is reduced to a trickle, leaving the large riverbed exposed. For the project of the Chimanbhai house, see Le Corbusier, *Oeuvre complète 1946–1952* (Zurich: Les Éditions Girsberger, 1960), p. 163.

14
The unexecuted buildings include the Spontaneous Theatre, The Magic Box, the Library and the Art Studios. See Le Corbusier, *Oeuvre complète 1946–1952*, pp. 160–61. Balkrishna Doshi's Tagore Theatre and Gautam Sarabhai's National Institute of Design were subsequent additions to the still incomplete cultural center.

15
The Museum of Ahmedabad was first adumbrated in Le Corbusier's World Museum planned for his Mundaneum of 1929. However, the most direct prototypes for this museum are the projects for the Museum of Contemporary Art, Paris, 1931; the Pavilion for the Paris International Exhibition of 1937, and the Museum of Unlimited Extension planned for Philippeville, Algeria in 1939.



2
Le Corbusier, Project for Museum of Contemporary Art, Paris, 1931.

1
Le Corbusier, Museum of Ahmedabad, 1951-56.

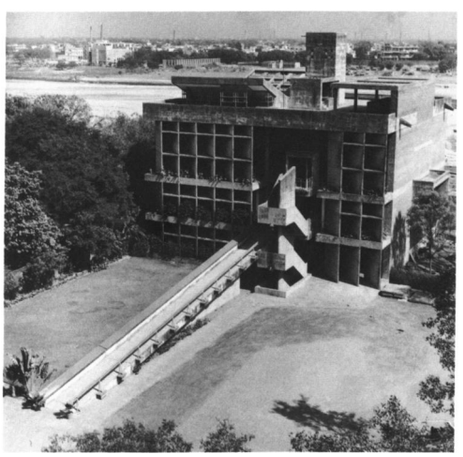
best explanation of these concepts can be given by citing their first visualizations.

The concept of an interdisciplinary cultural environment was first proposed by Le Corbusier in the project for the Mundaneum's World Museum of 1929. In this ziggurat shaped building the visitor could have surveyed the physical manifestation of man's diverse achievements in a historical and geographical context.[16] The museum of unlimited growth was first developed by him in 1931, when he envisaged such a building as a flattened out ziggurat spiralling outward in squares with the potential of being extended *ad infinitum* (figure 2). Both of these prototypes find a partial realization in Ahmedabad, where the museum's exhibition space is treated as a continuous volume revolving around a central courtyard. This makes it possible to present works representing the broadest range of human activity in a contextual setting and in a continuous manner.

For the roof of the museum, Le Corbusier had planned a Mogul garden which he intended to fill with flowers, shrubbery, and forty-five shallow reflecting pools arranged in straight lines. Had it been realized, this garden would have combined Le Corbusier's longstanding fascination with roof gardens with his admiration of India's own cultural tradition. Regrettably, however, only the concrete frames of the pools give the visitor a hint of the architect's original vision.

Although the cultural center was not completed as originally planned and the museum is still underutilized, Le Corbusier's original proposal–the creation of a stage where the arts could not only interact among themselves but could also relate to a broader contextual setting–is still a provocative concept. It is not surprising that it had such an appeal for Ahmedabad's energetic mayor, who was determined to make the city a symbol of the new India, not unfettered by the past as Nehru proposed but rather continuing its past through its cultural institutions.

The second public building Le Corbusier designed for Ahmedabad is the headquarters of the Millowners Association commissioned by its president, Surottam Hutheesing, in March, 1951 (figure 3).



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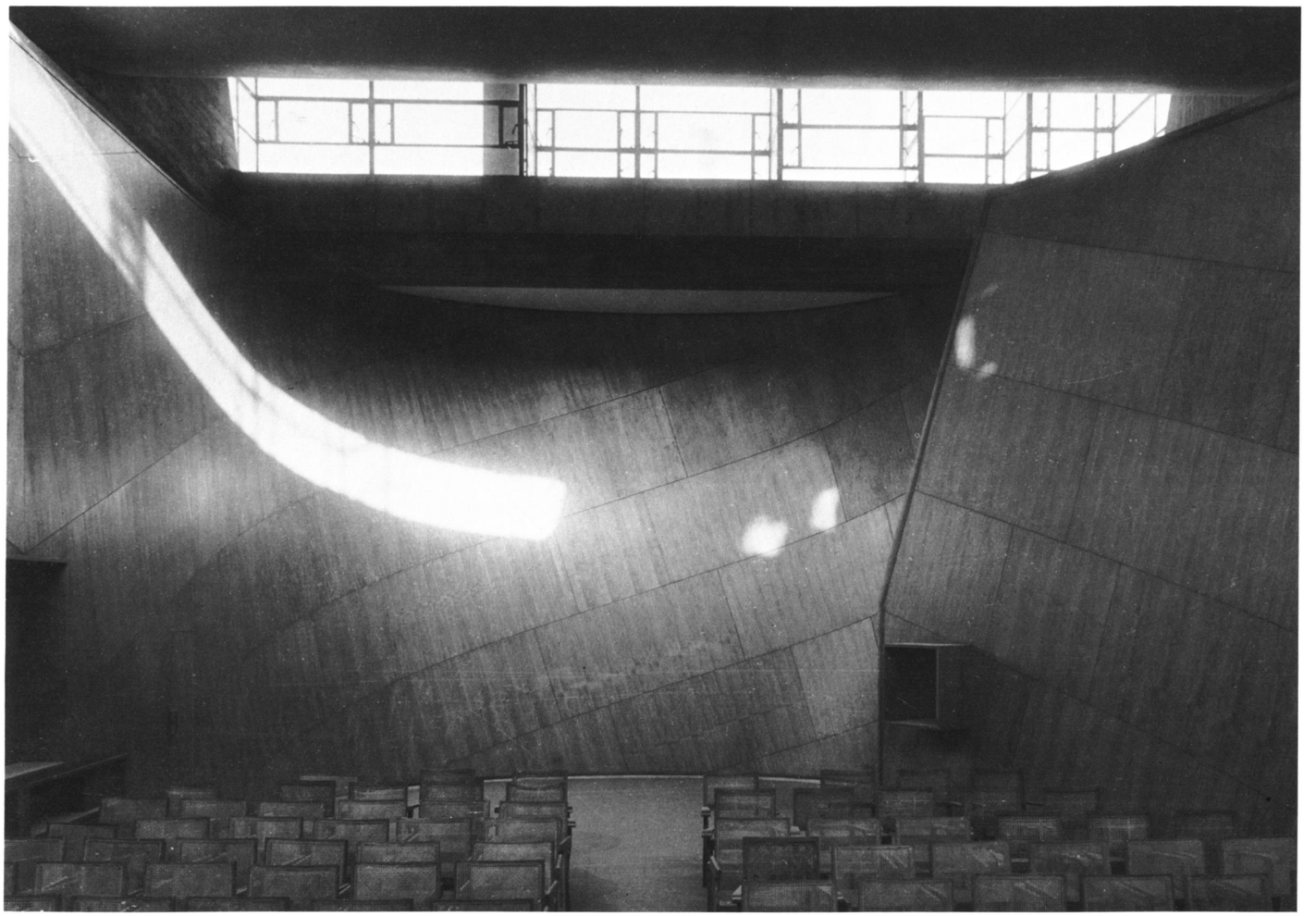
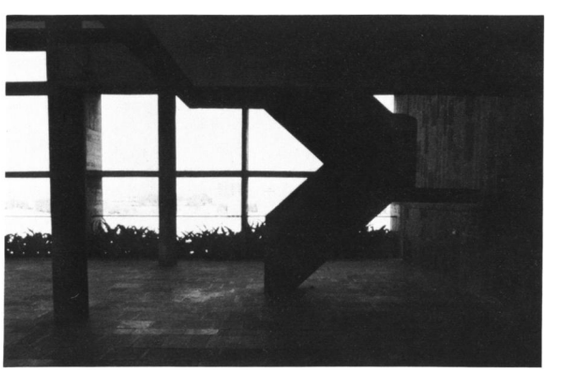
16
Le Corbusier, *Oeuvre complète 1910–1929* (Zurich: Les Éditions Girsberger, 1960), pp. 190–97, and Paul Otlet and Le Corbusier, *Mundaneum* (Brussels: J. Lebégue & Co., 1928).

3
Le Corbusier, Millowners Association Building, Ahmedabad, 1951-56.



7
Millowners Association
Building, Auditorium.

6
Millowners Association
Building, The Great Lobby.



Planned for a site overlooking the Sabarmati river, the building was to serve a unique organization whose essence Le Corbusier seems to have understood very well. Since its founding in 1891, the Millowners Association provided an institutional framework for the close family ties that existed among the city's largely Jain textile millowners. Here Le Corbusier encountered a public institution whose very existence depended on personal relationships that resulted from caste and family ties. His response to this unique commission was to express the institution's dual character–the private and the public–through his concept of the house as a palace which was 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."[17] 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 (figures 4, 5).[18]

The Millowners Association Building, like the Villa Cook, is defined by a richly symbolic front and back placed between two blind end walls. Within this exterior shell the Millowners Building contains a partly open ground floor for service and circulation, as did its antecedent. The second floor in both is intended for more private functions: the bedrooms in the Villa Cook, and the board rooms and offices in the Millowners Association. The third and fourth floors in both buildings are treated as double floors and intended for public functions: living rooms, dining rooms and kitchen in the Villa Cook and lobby and auditorium in the Millowners Building.[19]

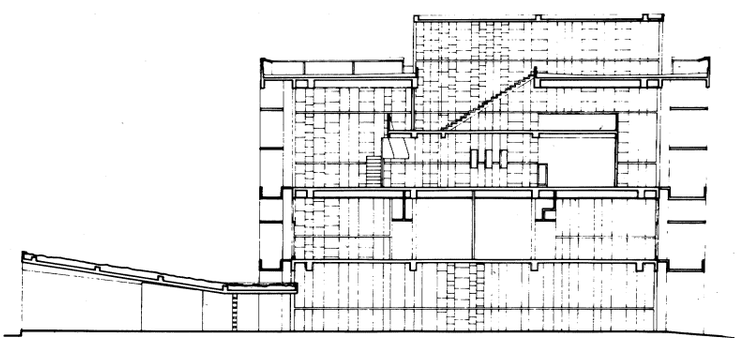
The lobby and the auditorium are the climactic points of the interior of the Millowners Building. It is here that Le Corbusier created the greatest dramatic tension by treating the lobby as an open space defined by harsh, angular forms, and the auditorium as an enclosed space delineated by soft, curvilinear forms (figures 6, 7). "This prodigious spectacle has been produced by the interplay of two elements, one male, one female: sun and water. Two contradictory elements that both need the other in order to exist."[20] No better words than these, written by Le Corbusier many years before this building was ever conceived, best sum up the essence of these antithetical spaces. Here, as in most of his buildings, Le Corbusier achieved a resolution of opposites by juxtaposing rather than fusing diverse architectural elements so that each part retains its identity and separateness. With the male/female correlation being the central theme here, Le Corbusier imbued these spaces with a meaning that is analogous to the Indian attitude toward the sexes. Viewed in this light, the relationship between the lobby (male) and the auditorium (female) based on the notion of a strong sense of identity and separateness acquires a special significance.

19
In the Villa Cook Le Corbusier reversed the traditional organization of the interior of a house by placing the public over the private floors. This concept was first realized in his Ozenfant house built in Paris in 1922, where the double-storied studio occupies the top two floors.

20
Le Corbusier, *The Radiant City* (New York: The Orion Press, 1967), p. 78, (originally published as *La Ville Radieuse* in 1933).

17
Le Corbusier, *Une Maison–Un Palais* (Paris: Les Editions Crès, 1928), p. 52.

18
Before the Millowners Building acquired its present form, it had undergone major changes during its lengthy design process, which included an earlier project with stone facing and only a few sun breakers. See, Le Corbusier, *Oeuvre complète 1946–1952*, p. 162.



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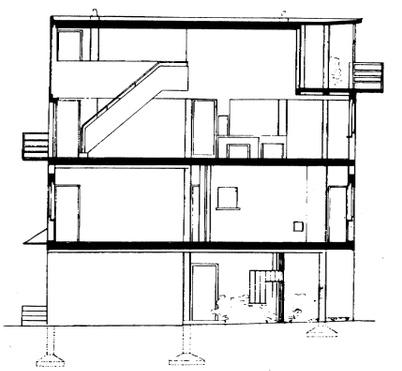
Millowners Association Building, east-west section.



5
Le Corbusier, Villa Cook, Boulogne-sur-Seine, 1926, section.

Besides the Millowners Building, Surottam Hutheesing also commissioned Le Corbusier to build him a house in the spring of 1951 (figure 8).[21] The architect's task was to respond to the life style of a wealthy bachelor, about to marry, who needed a variety of spaces to allow entertaining on a grand scale. After the plans were completed, however, Mr. Hutheesing decided to sell these to his fellow millowner, Shyamubhai Shodhan. Notwithstanding the change in the site and the dissimilarity in his life style, the new client wanted Le Corbusier to build him the very same house he had designed for the former client.[22] Hence in assessing it, the original functions intended for the house must be kept in mind.

For Le Corbusier the Shodhan house represented the culmination of his efforts in the field of domestic architecture, which evolved in a period spanning more than forty years. In order to understand its nature and meaning, we must examine the house in a dual context: how it grew out of the architect's own works, and how it is related to the traditional architecture of Ahmedabad.

The house is a cubical concrete frame structure whose exterior surface unfolds from a severe and forbidding entrance façade to an open and welcoming garden façade (figures 8, 11). By treating each side of this classical cube differently, Le Corbusier juxtaposed the formality of the Mediterranean with the flexibility of the Northern approach to architectural design. The classical aspects of the house find their antecedents in Le Corbusier's earlier houses going back to the one he designed for his parents in La Chaux-de-Fonds in 1911 (figure 9). Apart from its sharp and clear cubical mass, certain important details of the first design for the Jeanneret house find their way into the Shodhan house, as for example its flat roof defined by strong projecting cornices and the continuous band of windows beneath it. These are reinterpreted as the parasol roof and the continuous openings of the terrace in the Shodhan house.

Le Corbusier's most important house built in La Chaux-de-Fonds, the Villa Schwob of 1916, serves as a point of departure for the structure and personality of the Shodhan house (figure 10). As one of the first concrete framed houses in Europe,[23] the Villa Schwob marks the beginning of Le Corbusier's use of this structural system, which reached a high degree of complexity in Ahmedabad. More interesting, however, is the way in which these houses reveal Le Corbusier's own personality. He was known to have had an "impressive demeanor seemingly built for defense, behind which he appeared to withdraw."[24] On the other hand, he was considered by his friends as "uncommonly generous and unselfish."[25] Both houses convey these personal characteristics by the stark and almost forbidding demeanor of their street façades and the generous and accessible quality of their garden façades (figures 8, 10, 11, 12). As a result, they effectively ward off strangers, while at the same time, they welcome those who have been allowed to enter.

Although the Schwob and Jeanneret houses are important precedents for the Shodhan house, they play a far less significant role in this capacity than his houses designed after 1919. In fact, in 1919 Le Corbusier initiated a new direction in architecture which he never abandoned afterward. In the realm of domestic architecture the Maison Citrohan of 1920–22 and the Maison Monol of 1919 mark the beginning of this new direction (figures 13, 32).[26] The former, angular and firm, stands erect on the ground, dominating the setting; while the latter, undulating and soft, rests on the ground, absorbing the setting. Le Corbusier's description of what for him represented the masculine and feminine characteristics in architecture succinctly sum up the essence of these two projects.

> In the one, strong objectivity of forms, under the intense light of a Mediterranean sun: *male* architecture. In the other, limitless subjectivity rising against a clouded sky: *female* architecture.[27]

Having thus set the stage for a dual approach to domestic architecture, Le Corbusier used these two projects as the basis of all his later houses. When in 1951 he was called upon to design a house for Surottam Hutheesing, a bachelor wanting to entertain extensively, he understandably followed the Citrohan model.

Among the many sources of the Maison Citrohan two provide the best clues to an understanding of its nature and meaning. The inspiration for its exterior came from such Parisian artists' studios as those built by François Le Coeur in the rue Cassini in 1906, which Le Corbusier admired

21
Le Corbusier Sketchbooks Volume 2, 1950–1954, E. 18, no. 359.

24
Maurice Jardot, "Sketch for a Portrait," in Le Corbusier, *Creation is a Patient Search* (New York: Praeger Publishers, 1960), p. 9.

25
Jardot in Le Corbusier, *Creation is a Patient Search*, p. 11.

22
Le Corbusier, *Oeuvre complète 1952–1957* (Zurich: Les Éditions Girsberger, 1958), p. 134; and Balkrishna V. Doshi, *Le Corbusier, Sarabhai House and Shodhan House, Ahmedabad, India* (Tokyo: A.D.A. Edita, 1974), n.p.

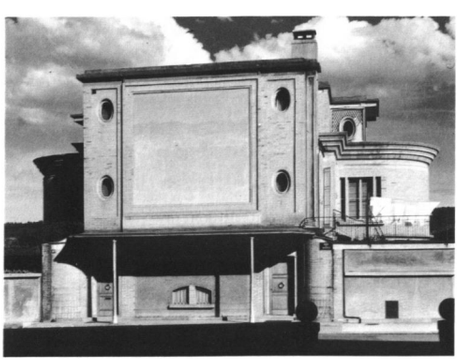
26
For the importance of these two projects, see my article, "Le Corbusier's Changing Attitude Toward Form," *Journal of the Society of Architectural Historians*, XXIV (March, 1965), pp. 15–23, and reprinted in my *Le Corbusier in Perspective* (Englewood Cliffs: Prentice-Hall, 1975), pp. 68–73.

27
Le Corbusier, *The Modulor* (Cambridge: Harvard University Press, 1958), p. 224.

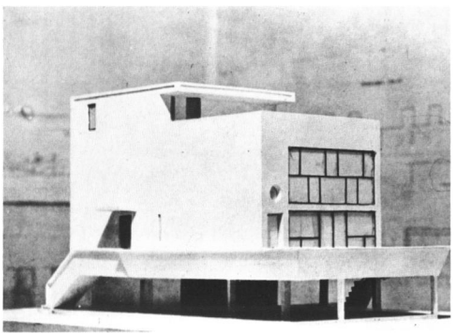
23
Reyner Banham, *Theory and Design in the First Machine Age* (New York: Praeger Publishers, 1960), p. 221.

8
Le Corbusier, Shodhan House, Ahmedabad, 1951-56.

9
Le Corbusier, First Scheme for the Jeanneret House, La Chaux-de-Fonds, 1911.



10
Le Corbusier, Villa Schwob, La Chaux-de-Fonds, 1916, street façade.



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11
Shodhan House, garden façade.

12
Villa Schwob, garden façade.

13
Le Corbusier, Project for Maison Citrohan, 1920-22.

14
Francois Le Coeur, Artists' Studios, Rue Cassini, Paris, 1906

15
Le Corbusier, First scheme for Villa Baizeau, Carthage, Tunisia, 1928.

16
Shodhan House, perspective.

17
Le Corbusier, Project for Lannemezan House, 1940.

18
Le Corbusier, Project for Errazuris House, 1930.

greatly (figure 14).[28] Its double storied interior, on the other hand, was based on the spatial organization of the Café Legendre in Paris, which Le Corbusier frequented with his cousin, Pierre Jeanneret (figure 26).[29] The fusion of the artist's studio with the restaurant resulted in a new kind of house which so appropriately expresses the lifestyle of a growing segment of the urban population in the industrialized world: uprootedness and transience. The former is embodied in the artist's studio, the latter in the restaurant, and Le Corbusier understood both these states of mind from personal experience, for when he conceived the Maison Citrohan he was an uprooted artist whose family table became the restaurant table.

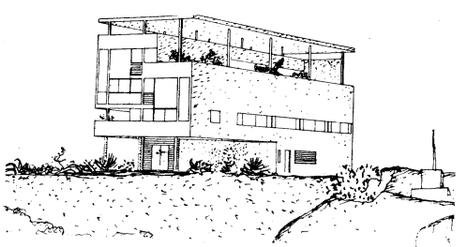
The most important link between the Maison Citrohan and the Shodhan house is the first project for the Villa Baizeau in Carthage, Tunisia, designed by Le Corbusier in 1928 (figure 15).[30] The significance of this design lies in two areas: a new approach to climate control and a fuller use of de Stijl vocabulary. The former is exemplified by the parasol roof and the interlocking interior spaces providing shade and ventilation; the latter is expressed by the façade where the studio and ribbon windows–hallmarks of Le Corbusier's style of fenestration–are fused with the help of de Stijl vocabulary. As in Mondrian's paintings, or especially as in Rietveld's Schröder house of 1924, the composition of the façade is based on compensation rather than symmetry achieved by a strong interplay between lines and planes, between verticals and horizontals, and between different colors.[31] All of these elements were given a more complete realization in the Shodhan house (figure 16). The design that provides the key connection between the Villa at Carthage and the Shodhan house is Le Corbusier's Lannemezan house of 1940 (figure 17). This project was conceived as a cubical structure to be built of exposed stone and wood. Here, as in his houses designed during the 1930s, Le Corbusier abandoned his favored structural device, the steel or concrete skeletal frame, in favor of load bearing walls to be constructed of natural materials. Moreover, instead of putting the house on stilts, he anchored it to the ground, thus imbuing it with a sense of rootedness which was so clearly lacking in his houses of the 1920s.

28
Le Corbusier, *Oeuvre complète 1910–1929*, pp. 13–14.

29
Le Corbusier, *Oeuvre complète 1910–1929*, p. 31. Located at 32 rue Godot-de-Mauroy, off the Boulevard des Italiens, the Café Legendre is now called the Café Le Mauroy.

31
For the most thorough discussion of the Schröder house in Utrecht, see Theodore M. Brown, *The Work of G. Rietveld Architect* (Utrecht: A. W. Bruna & Zoon, 1958), pp. 35–74, where he writes that, according to Mrs. Schröder, "Le Corbusier visited the house within a few years of its completion." p. 74.

30
For the first critical discussion of this project, see my article mentioned in note 26. Le Corbusier makes reference to this project in Sketchbook E 18, no. 360 by saying, "brother's villa roofing in manner of Baizeau Tunis." Here he refers to the unexecuted house designed for Chinubhai Chimanbhai, which was almost identical with the early design for the Hutheesing/Shodhan house. See, Le Corbusier, *Oeuvre complète 1946–1952*, pp. 163–64.



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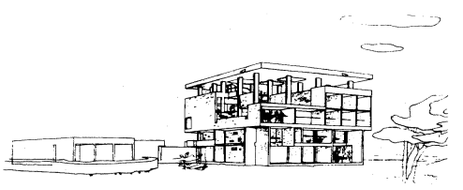

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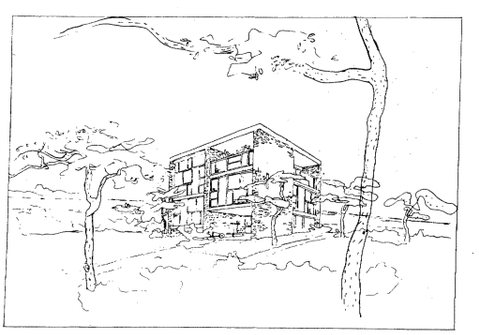

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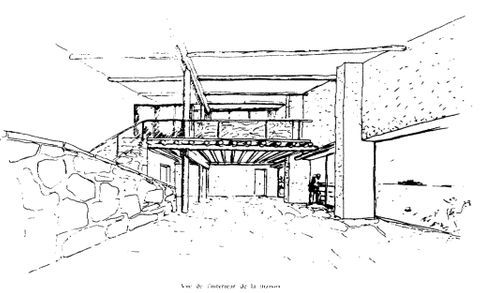

18

The decade of the 1930s and 40s represents a turning point in Le Corbusier's architecture for reasons that are too numerous to list, but mention must be made of the economic depression of the period, his questioning of the supremacy of technology, and his marriage to Yvonne Gallis in 1930. The direction he began to pursue in 1930 found its clearest architectural expression in his designs for houses ranging from the project of the Errazuris house (figure 18) to the Lannemezan house. In them Le Corbusier reestablished a closer relationship with nature, the site, and the vernacular tradition in a manner that recalls his first three houses in La Chaux-de-Fonds.[32] These changes in fact paved the way for the formal and structural innovations made in his later buildings such as the Shodhan house.

As viewed from the point of view of Le Corbusier's later buildings, the decade of the 1930s stands out for an entirely different reason as well: the invention of the sunbreaker, or *brise-soleil*. This device makes its first appearance in 1933 with the project for an apartment house intended for a site in Algiers.[33] But it is only in his design for an office building conceived for Algiers between 1938 and 1942 that Le Corbusier gave it his first imaginative interpretation (figure 49). From this project forward, sunbreakers began to fulfill a number of complex functions in his design, ranging from the utilitarian to the symbolic: they provide protection from the sun, they help give scale and proportion to the building, and they serve as major conveyors of the building's symbolic significance.

In the Shodhan house the sunbreakers act in all of these roles. Dominating the south-west or garden façade of the house and forming an irregular concrete grille, they provide an effective screen against the summer sun without blocking out the winter sun on the most open side of the house (figures 11, 19). They also serve as visual connections between the observer and the house, between inside and outside, between the various parts of the house ranging from the very large to the very small. Most important, however, is the fact that they embody a major part of the personal and cultural significance of the house.

Le Corbusier likened the sunbreaker to a portico as well as to the aperture of a camera.[34] As a portico it acts as a container and definer of human action, and as an opening it links the outside with the inside in a defined and sequential way. As a photographer focuses the camera on a given target, Le Corbusier zeroes in on a specific view by giving a desired aperture and orientation to each concrete frame. Furthermore, if taken together, sunbreakers serve as conveyors of the life pattern that unfolds within the building.

In their role as porticoes, the sunbreakers of the Shodhan house provide a more intimately scaled architectural environment within the framework of a palatial house; they act as houses within a house. As cameras, they focus on the sensuous shape of the swimming pool and the soft, grass-filled mound surrounding it; as such, they act as apertures between the angular interior and the soft exterior. Taken together, they convey a playful, spontaneous, almost doll-house like quality, thus effectively counteracting the formal setting. In all three roles, they help express the function Le Corbusier intended for the house: to be like a "Château of the Loire . . . for an intelligent prince."[35]

On a cultural level, the sunbreakers link the Shodhan house with the architectural tradition of Northern Europe whose asymmetrical, irregular and flexible design elements they incorporate. In a sketch of primitive huts of Ireland published in 1928, Le Corbusier captured these elements by highlighting their structural frame, which in turn foreshadows the sunbreakers of his later buildings (figure 20).[36] More important, however, is the connection between the sunbreakers of the Shodhan house and a more recent manifestation of Northern architecture: de Stijl. As a comparison between Theo van Doesburg's project for an Artist's House of 1923 and the sunbreakers reveals, Le Corbusier incorporated in his design such de Stijl elements as asymmetry, flexibility, and plasticity (figure 21). In the Shodhan house, however, these Northern elements are held in check by the restraining power of the classical cube, whereas in van Doesburg's project they are expressed more freely. Having always remained a classicist at heart, it is not surprising that in this house, as well as in most of his other buildings, Le Corbusier allowed the Mediterranean rather than the Northern tradition to dominate the design.

Le Corbusier's Mediterranean formalism and Northern flexibility served him well in

32
These are, the Villa Fallet, 1906; the Villas Jaquemet and Stotzer, both of 1908. See Charles Jencks, *Le Corbusier and the Tragic View of Architecture* (Cambridge: Harvard University Press, 1973), pp. 21–23.

35
Le Corbusier Sketchbooks Volume 3, 1954–1957, J 39, no. 451.

33
See, Le Corbusier, Oeuvre complète 1929–1934 (Zurich: Les Éditions Girsberger, 1957), pp. 170–173.

36
For this and other drawings of primitive architecture, see Le Corbusier, *Une Maison–Un Palais*, p. 39.

34
See, Le Corbusier, *Oeuvre complète 1946–1952*, p. 109. For the camera analogy, see Christopher Rand, "City on a Tilting Plain," *New Yorker*, XXXI (April 30, 1955), p. 56.

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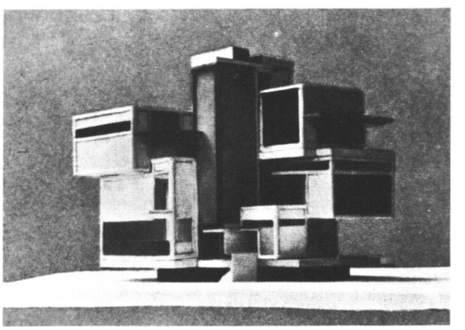

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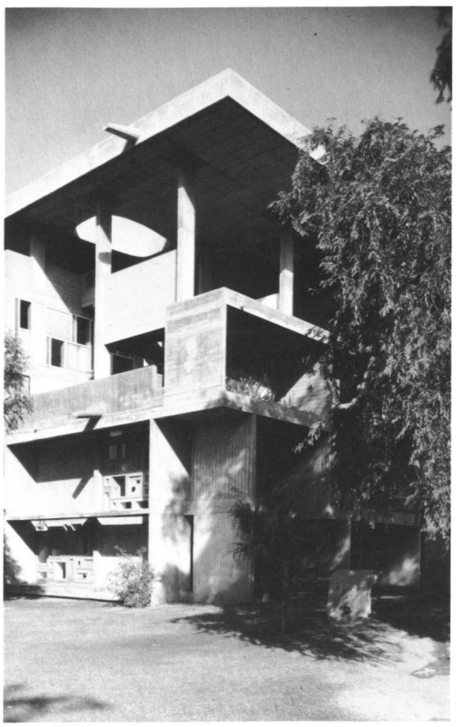


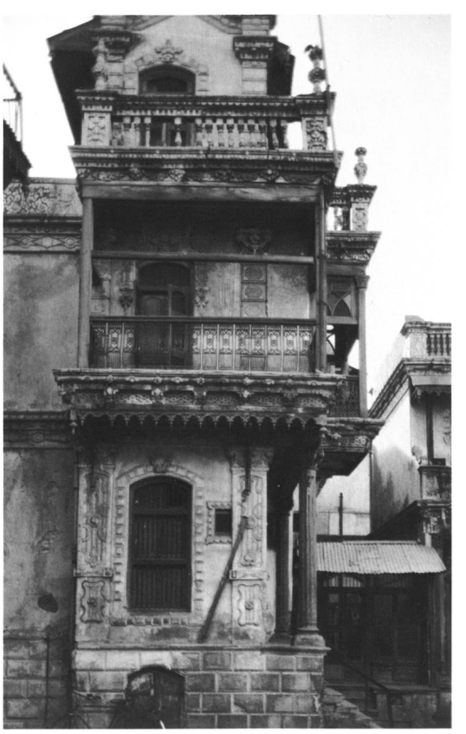
19

20
Le Corbusier, "Primitive Huts, Ireland", drawing.

21
Theo van Doesburg, Project for an Artist's House, 1923.

19
Shodhan House.

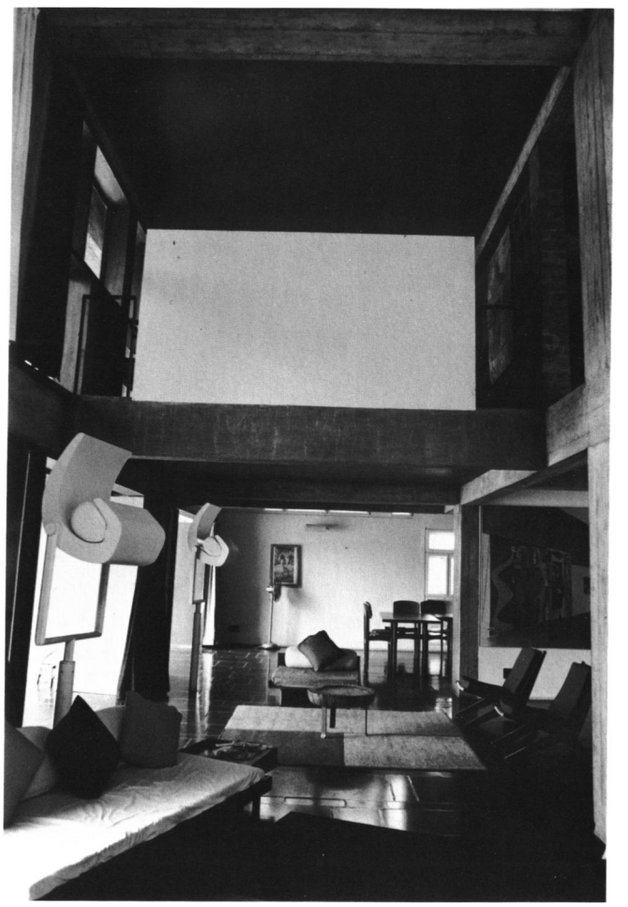
23
Old Shodhan House, Ahmedabad, nineteenth century.

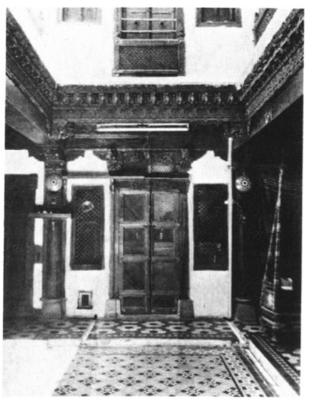


22
Hutheesing Jain Temple, Ahmedabad, 1850.

24
Shodhan House,
Living Room.

25
Mohanlal Chunilal House,
Ahmedabad, eighteenth
century.

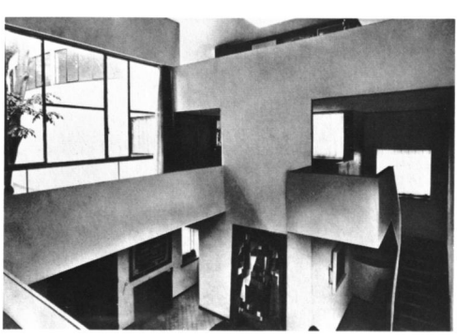




26
Café Legendre (now Café
Mauroy), Paris.

27
Le Corbusier, Pavilion of
L'Esprit Nouveau, Paris, 1925.

28
Le Corbusier, Villa La Roche,
Paris, 1923, Entrance.



India, where both of these cultural traits are manifested in the country's indigenous architecture. In the context of the exterior of the Shodhan house two examples of traditional architecture in Ahmedabad stand out: the Hutheesing Jain temple and the old town house of the Shodhan family (figures 22, 23). The temple was commissioned by the wealthy Jain merchant Sheth Hutheesing, in 1850, and Le Corbusier made reference to it in one of his sketchbooks during his first visit to Ahmedabad.[37] The temple is distinguished by its openness and flexibility, largely achieved by its numerous porches that are grouped around the main hall of worship. Like the sunbreakers and terraces of the Shodhan house of a hundred years later, the porches of the temple offer shade in the summer, sun in the winter, and breezes in every season.

37
Le Corbusier Sketchbooks Volume 2, 1950–1954, E 18, no. 357.

The old town house of the Shodhan family located in the heart of the city provides an interesting clue to an understanding of the client's willingness to accept Le Corbusier's design exactly as it was intended for Surottam Hutheesing. Having been raised in a house which had pilotis, terraces, roof gardens, and open façades, Shyamubhai Shodhan must not have found the designs for the house he was to buy too unusual. Coming from such an architectural environment, he was in fact better prepared to accept Le Corbusier's ideas than a Parisian client. 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. Hence, in evaluating Le Corbusier's success with his Indian clients, the Northern element in his architecture is just as important to bear in mind than its more obvious Mediterranean element.

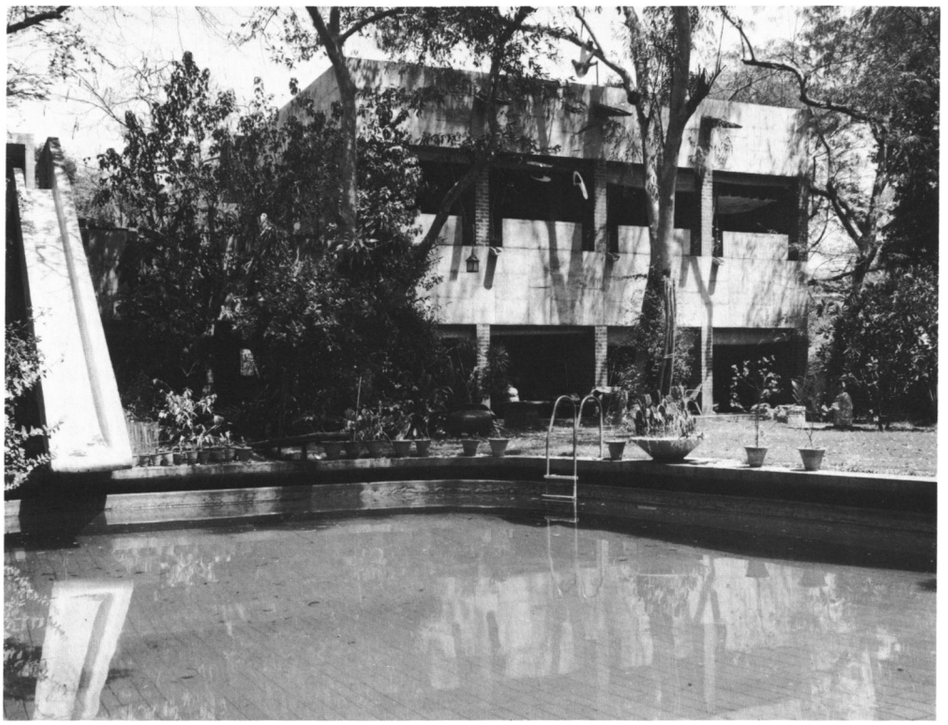
The focal point of the interior of the Shodhan house consisting of the great double storied living room is also in keeping with Ahmedabad's own architectural tradition (figure 24). The large houses of old Ahmedabad were usually built around a double storied entry hall, or "chowk," which signifies their symbolic and ceremonial center. As seen in the eighteenth-century Chunilal house, this space was given the greatest artistic attention in terms of spatial organization and decorative treatment (figure 25). When Shyamubhai Shodhan first saw the designs for the double storied interiors of his future house, he must have recognized in them a modern reinterpretation of a familiar symbol of status and wealth.

Apart from the coincidental connection between the Shodhan house's living room and the entry halls of Ahmedabad's old houses, the roots of Le Corbusier's double storied space go back to his earlier architecture. As mentioned before, the inspiration for this space, according to the architect, originally came from the Café Legendre, where a balcony provided additional seating space (figure 26). His first literal interpretation of this spatial arrangement occurred in the Maison Citrohan of 1920, whose interior can best be visualized through the Pavilion of L'Esprit Nouveau of five years later (figure 27). As with the Café Legendre, the balcony does not merely connect two parts of the house as in the Villa Schwob, but instead functions as an actual room.

During the 1920s, Le Corbusier gave the double-storied interior space a wide range of interpretations, but the one that stands out in relationship to the Shodhan house is the great entry hall of the Villa La Roche of 1923 (figure 28). Here, as in his later house, Le Corbusier organized the interior volume in terms of polarities that include public and private, formal and informal, and impersonal and personal, allowing each to preserve its discreet identity. In the living room of the Shodhan house the strong contrast between the public level of the main space and the private level of the balcony best exemplifies the architect's polarization of spaces. The balcony, as in the Villa La Roche, functions as the study and den and provides an ideal setting for intimate gatherings enlivened by a striking view of the space below.

The most dramatic part of the house is the triple-storied terrace where Le Corbusier's definition of architecture as "the masterly, correct, and magnificent play of forms in light" was fully realized (figure 19). Created largely in response to Ahmedabad's intense sun, the terrace functions as a major part of the house's natural climate control system by cooling the bedroom units during the day and serving as bedrooms during hot summer nights. Beyond this, it provides a stage where man, architecture, and nature meet as active partners. Following a precedent established in the recessed terraces of the Immeubles-Villas project of 1922, and first realized in the Villa Stein-Monzie of

29
Le Corbusier, Sarabhai House, Ahmedabad, 1951-55.



1927,[38] Le Corbusier created a setting here where nature is invited to penetrate the body of the house through light, air, and water while being compelled to respond to the power of architectural form to shape nature. In the midst of this orchestrated interaction between architecture and nature, Le Corbusier engages the observer as an active participant so that he/she can develop a heightened awareness of the experience of living.

As Le Corbusier's most ambitious example of domestic architecture, the Shodhan house represents a highly complex synthesis of forms and spaces that resulted from a long process of selection, absorption, and transformation. Although the constituent elements of his architecture have undergone major changes to suit new functions and express new meanings, they have retained their original identity. As the Shodhan house's double-storied living room illustrates, the key formal solutions that Le Corbusier developed during the 1920s have remained an essential part of his late work. Yet notwithstanding the continuity of such forms and spaces, their characteristics and qualities have changed dramatically over the years. As a comparison between his houses of the 1920s and the 1950s indicates, the frail, transient and uprooted qualities of the former were reshaped by Le Corbusier into the strong, durable and rooted qualities of the latter. This process was in no small measure reinforced by his encounter with India, where he found the right cultural and climatic setting for strengthening the direction he had initiated in the 1930s.

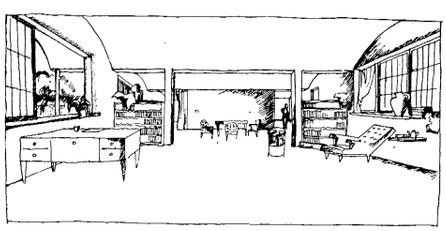
The second house Le Corbusier built in Ahmedabad was commissioned by Mrs. Manorama Sarabhai in March 1951, who, after the death of her husband, wanted a secluded place for herself and her sons aged ten and thirteen.[39] The site chosen for the house was a tree-filled area on the large Sarabhai estate located in the Shahibag district of the city. In response to the site and his client's needs and personality, Le Corbusier designed an open and flexible house whose spatial organization was determined by its dual function: to provide maximum comfort for adults and children alike. To this end, he planned a double-storied block for Mrs. Sarabhai and a single-storied block for her children; these blocks, although adjoining, are divided by a built-in carport and a slide (figure 29). The exterior of these blocks are defined by load-bearing concrete walls, while their interior is organized in terms of parallel bays crowned by low concrete barrel vaults (figures 30, 31). This structural solution ingeniously combines both of Le Corbusier's

38
For the Immeubles-Villas project, see Le Corbusier, *Oeuvre complète 1910–1929*, pp. 40–43, and for the Villa Stein-Monzie, pp. 140–49.

39
Le Corbusier Sketchbooks Volume 2, 1950–1954, E 18, no. 361 and E 23, no. 689.

approaches to domestic architecture by utilizing the angularity of the Maison Citrohan for the exterior and the undulating quality of the Maison Monol for the interior (figures 13, 32).

By giving the Sarabhai house a hard, angular exterior and a soft, undulating interior, Le Corbusier juxtaposed what for him represented the masculine and feminine characteristics in architecture, without allowing each to lose its identity. To this end, he visually separated the exterior shell from the interior so that when seen from the outside the "feminine" interior seems incomprehensible, and when seen from within the "masculine" exterior becomes unintelligible. The separation between the two is reinforced by the materials and colors: mostly grey concrete on the outside and mostly red brick and multicolored on the inside. For a house intended for a widow with two sons, the architectural imagery embodying the male/female correlation seems most appropriate, especially the way in which it was handled by Le Corbusier. Unlike the Shodhan house, whose masculine exterior is as important as its equally masculine interior, in this house everything emanates from within making the feminine interior the *raison d'être* of the house. No wonder that its masculine exterior is reduced to a quasi-autonomous shield which, to be sure, offers some physical and psychological protection to the interior without, however, interfering with it.



32
Le Corbusier, Project for Maison Monol, 1919.

The focal point of the interior is the open multipurpose public space which occupies most of the first floor of the main part of the house (figures 30, 31). Serving as a living/dining room and hall, this space is defined by low tile vaults resting on exposed concrete beams, which in turn are supported by brick walls that are either exposed or covered by plaster or plywood. To add to this rich orchestration of materials, Le Corbusier used the three primary colors, plus black and white, for the walls covered by plaster. Hence each major part of the interior stands out as a visually, if not necessarily structurally, independent element. But to counteract this, he forged a spatial connection among the bays and between the inside and outside so as to achieve a greater sense of openness. To gain a clearer understanding of this spatial and formal organization, we must examine, however briefly, some of its sources.

As we have seen, the interior of the

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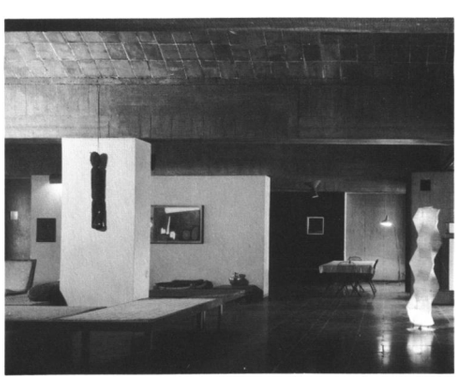
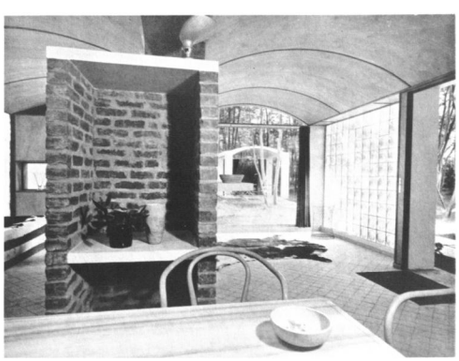
Sarabhai House, Entrance Hall.

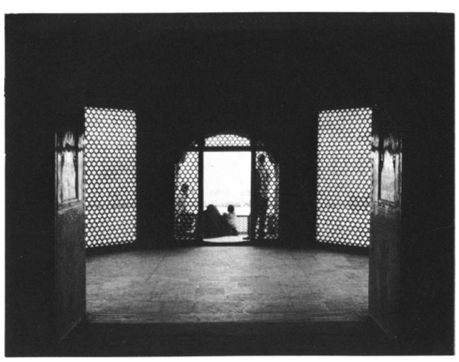
31
Sarabhai House, Living Room.



33
Le Corbusier, Weekend House, Celle-St. Cloud, near Paris, 1935.



34
The Red Fort, Royal Apartments, Delhi, 1639-48.



Sarabhai house grew out of the project for the Maison Monol, which was planned as an earth-hugging structure with an undulating concrete roof held up by concrete columns (figure 32). The first built version of this project was designed by Le Corbusier in 1935 for a suburban site in Celle-St. Cloud, near Paris (figure 33).[40] This weekend house represents the most important link between the Maison Monol and the Sarabhai house largely because of the way in which the architect handled its form, space and materials. As in the Monol house, the space is anchored to the ground by low barrel vaults, yet the interaction between inside and outside is far greater here than in its prototype. These spatial characteristics were further developed in the Sarabhai house where they acquired a sense of sheltered openness. In terms of form, the weekend house offers striking juxtapositions between the angular and curvilinear and between the smooth and the rough, yet the greatest amount of contrast is to be found in the handling of materials. Such diverse materials as concrete, stone, brick, glass, and plywood are placed side by side so as to give each constituent part of the house a high degree of independence. This brings us only a short step away from the Sarabhai house where space, form, and materials are juxtaposed in an even more uncompromising manner.

The role fulfilled by the weekend house in preparing the way for the Sarabhai house is comparable to that played by the Lannemezan house in relationship to the Shodhan house. The spatial and formal innovations made in both of these "transitional" houses greatly facilitated Le Corbusier's encounter with India where he was compelled, more than before, to respond to conditions set by nature. It is not surprising therefore that the weekend house's low, earth-hugging form, channelled space and roof garden reappear in the Sarabhai house where they were eminently suited to the prevailing climate.[41] This leads to the question of whether the Sarabhai house was at all inspired by India's traditional architecture.

A comparison between the Sarabhai house and the royal apartments of Delhi's Red Fort shows that both are low, dark and sheltered architectural environments which shut out the summer sun yet let in the cooling breezes. Moreover, both spaces are primarily intended for the sitting position (figures 30, 34). Yet the close kinship that exists between these two interiors is not necessarily the result of a direct influence coming from India's own architectural tradition, instead, it is largely the outcome of a long creative process that was decisively shaped by the natural and built environment of the Mediterranean world.[42] What India did offer to Le Corbusier was the right climatic and cultural setting for bringing his Mediterranean style to a full fruition.

If the formal and spatial qualities of the Sarabhai house are Indian only by coincidence, is there anything about the house that can be called uniquely Indian? It is its naturalness. And this is precisely the quality that is so greatly valued by the followers of the Jain religion. The belief in the overriding importance of nature constitutes in fact a central tenet in Jainism. This is most eloquently manifested in the avowed commitment not to harm any living being and to interfere with nature as little as possible. In the Sarabhai house, Le Corbusier paid a profound tribute to Jain beliefs by making it his most natural house.

In the concluding lines of *Le Poème de l'angle droit* (1955), Le Corbusier writes:

> With a full hand I have received
> With a full hand I give[43]

No better words than these can sum up what Le Corbusier and Ahmedabad owe to each other, for what he created there is just as much the result of his clients' vision as it is of his genius. Whether the intention was to enrich the cultural life of the city or the personal life of a client, it took courage and insight to engage Le Corbusier in the process of restoring Ahmedabad's eminence in the cultural life of India. The most immediate effect of the reciprocal relationship between Le Corbusier and his Ahmedabadi clients was that it made the city aware that modern architecture can be used as a means to express its aspirations. Those who benefited from this were India's own younger architects, most notably Achyut Kanvinde of New Delhi, Balkrishna Doshi of Ahmedabad, and Charles Correa of Bombay, who later became the country's foremost architects. Thanks to the patronage they received in Ahmedabad from the mid-1950s on, they built some of their finest buildings there, making the city the birthplace of India's indigenous modern architecture.

40
See Le Corbusier, *Oeuvre complète 1934–1938* (Zurich: Les Éditions Girsberger, 1958), pp. 124–30.

42
In the context of the Sarabhai house the folk element of the Mediterranean tradition stands out. For earlier manifestations of this element in Le Corbusier's architecture, see his project for the Peyrissac house, near Cherchel, Algeria, 1942 (*Oeuvre complète 1938–1946*, pp. 116–123), which is an important link between the weekend house and the Sarabhai house; and the projects for La Sainte-Baume, near Marseilles, 1948, and Roq and Rob, Cap Martin, 1949 (*Oeuvre complète 1946–1952*, pp. 24–36 and pp. 54–61, respectively).

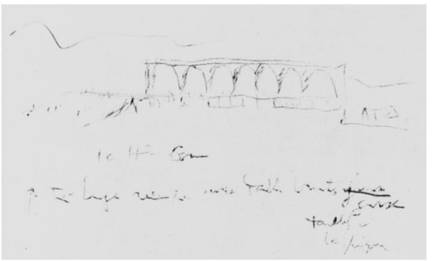
43
Translation by Mary Patricia May Sekler, in "Ruskin, the Tree and the Open Hand," *The Open Hand: Essays on Le Corbusier*, ed. Russell Walden, p. 73.

41
Although a discussion of the roof-garden of the weekend house lies outside the scope of this paper, it should be noted that it is there that Le Corbusier began to treat the roof-garden as a more freely landscaped space. This new direction was given its fullest manifestation in the roof-garden of the Sarabhai house.

However important Le Corbusier's work is in Ahmedabad, it was Chandigarh that brought him to India, and it was there that he created his most profound architectural statements. Thanks to the pioneering work of a number of scholars, it is possible today to offer a brief evaluation of Le Corbusier's achievement there without doing injustice to the subject.[44]

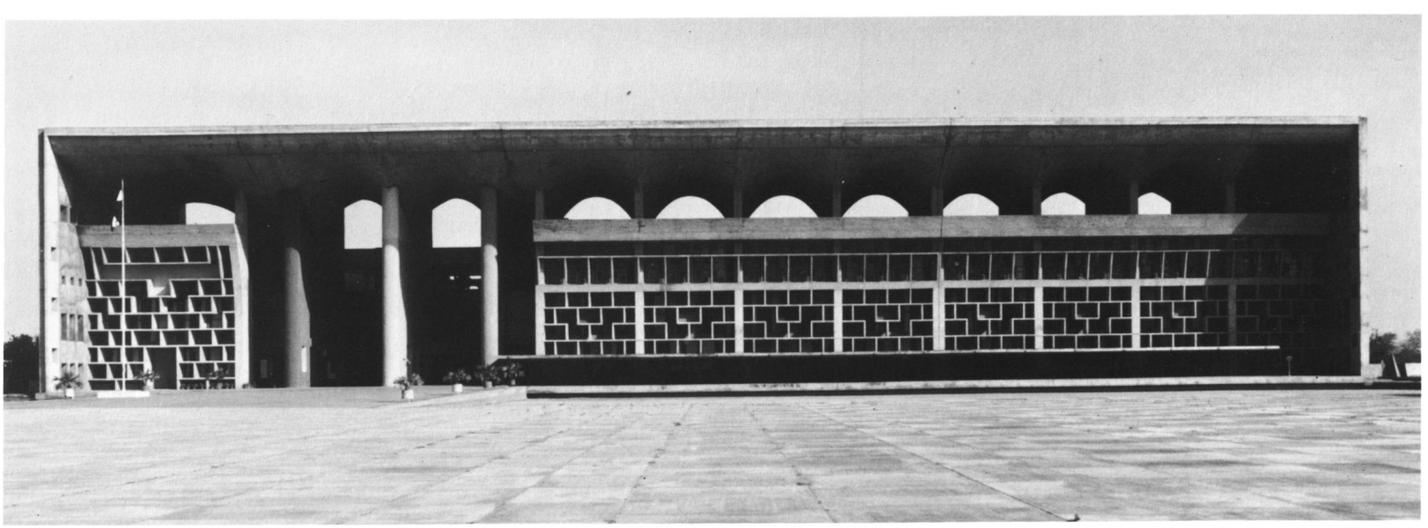
As indicated earlier, Le Corbusier was invited by the representatives of the Punjab government to become the architectural advisor of Chandigarh. In this capacity he was primarily responsible for the master plan of the city and the capitol complex. Later he undertook to design a major portion of the business center and a few additional buildings for the city.[45] My discussion will only focus on a few salient characteristics of the executed buildings of the capitol complex: the Secretariat, the Assembly Building, and the High Court serving the executive, legislative and judiciary branches of government.[46]

The first of these to be erected was the High Court which is a concrete structure defined by a large rectangular frame within which the different functions of the building are inserted from the highest court on the left to the lowest on the right (figure 35). The significance of the Supreme Court is underscored by its separation from the rest by a giant portico whose massive pillars are painted green, yellow, and red. Clues to an understanding of the nature and meaning of this building can be found in its sources and the development of its design.



36
High Court, 1951 sketch.

The first sketch of the High Court that appears in Le Corbusier's sketchbooks shows that he envisaged the building as a monumental vaulted structure set against the backdrop of the Himalayas (figure 36).[47] The spatial and formal configuration



35
Le Corbusier, High Court, Chandigarh, 1951-55.

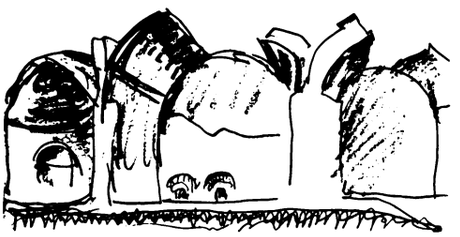
44
The most important scholars include: Norma Evenson, Stanislaus von Moos, Mary Patricia May Sekler and Alexander C. Gorlin. For Evenson and von Moos, see note no. 2; for Sekler, see note no. 43; and for Gorlin, "An Analysis of the Governor's Palace of Chandigarh," *Oppositions 19/20* (Winter/Spring, 1980), pp. 161–183.

45
These are: The Museum and Art Gallery with the adjacent Lecture Hall (1964–68); School of Art (1964–69); School of Architecture (1964–69); Boat Club on Sukhna Lake (1963–65). For the best illustrations of these and the Business Center, see *Le Corbusier: Last Works*, ed. Willy Boesiger (New York: Praeger Publishers, 1970).

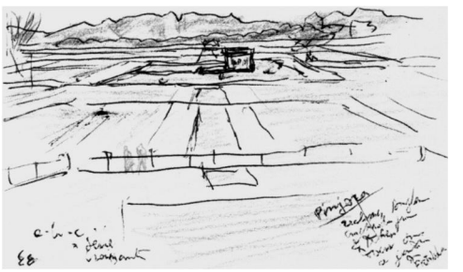
46
The original plan of the capitol complex also included the Governor's Palace, which was abandoned and replaced by the Museum of Knowledge in 1960. The museum has not yet been built. In addition to the buildings, Le Corbusier also planned certain monuments for the capitol complex, which are: The Monument of the Open Hand, The Tower of Shadows with the Trench of Consideration and the Monument to the Martyrs of the Indian Partition. Only the last one has been built so far. See *Le Corbusier: Last Works*, pp. 64–75, and Gorlin and Sekler, *op. cit.*

47
Le Corbusier Sketchbooks Volume 2, 1950–1954, E. 19, no. 391.

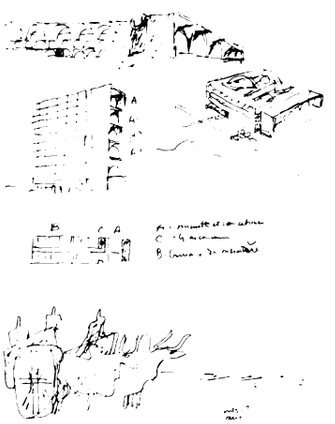
37
Le Corbusier, sketch of the Basilica of Constantine, Rome, fourth century A.D.



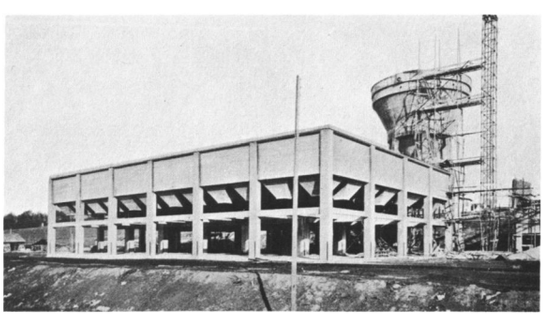
38
Le Corbusier, sketch of the Pinjore Gardens, near Chandigarh, seventeenth century.



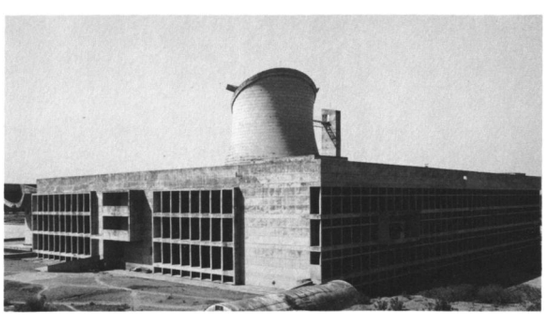
41
Le Corbusier, sketch of Assembly Building and Secretariat, 1951.



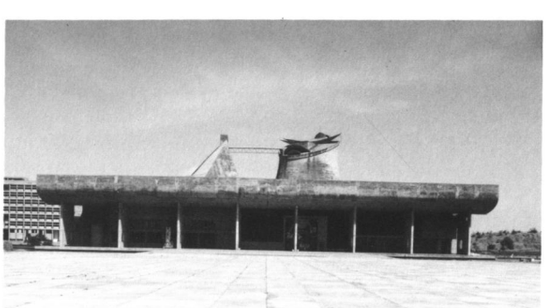
44
Coal washer under construction, Sté. des Mines de Carmaux, France, by Züblin, 1928-29.



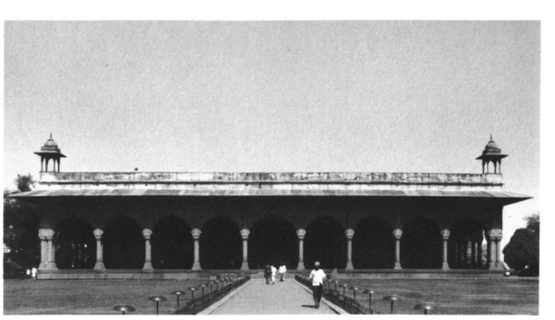
40
Assembly Building, rear view.



39
Le Corbusier, Assembly Building, Chandigarh, façade.



42
The Red Fort, Diwan-i-Am, (Hall of Public Audiences), Delhi, built by Emperor Shah Jahan between 1639 and 1648.



proposed here recalls two buildings the architect sketched fifty years apart; the first representing the Basilica of Constantine and the second the pavilion of the Pinjore gardens (figures 37, 38). Appearing next to the High Court in his sketchbook, the sketch of the pavilion and its surroundings sets the stage for the siting of the capitol complex and the spatial relationships established in it.[48] As the pavilion, the High Court is placed in a wide open space linking the mountains with the observer. Although the position intended here for the High Court was soon given over to the Governor's Palace, Le Corbusier retained in the completed building the sense of isolation inherent in the sketch. In fact, a comparison between the High Court and the pavilion of the Pinjore gardens shows that the isolation of Le Corbusier's building is far greater than that of the pavilion. As in most Mogul palace gardens, the individual buildings at Pinjore are interconnected by landscaped processional spaces unmarred by overscaling. Le Corbusier, on the other hand, not only overscaled his processional spaces but he also replaced landscaping with paving, thus forcing the High Court into an even greater sense of isolation (figure 35). The High Court, more than the Assembly and the Secretariat, became in fact the victim of Le Corbusier's heroic attempt to fuse Parisian scale with Mogul processional spaces. But mating the two without the mitigating power of Mogul landscaping resulted in failure.[49]

If the Pinjore gardens gave the impetus for the initial siting of the High Court, it was the Basilica of Constantine as sketched by Le Corbusier during his first visit to Rome in 1911 that provided the point of departure for the design of the building (figures 36, 37). As can be seen from his early sketches, Le Corbusier used the great barrel vaults of the Basilica as the most dominant element in his preliminary designs.[50] However, as the building evolved in his mind, the importance of Constantine's law court gradually diminished to give way to influences emanating from the North. Hence in the final design the lower parts of the massive Roman vaults were largely replaced by sunbreakers whose irregular concrete grille was inspired by de Stijl architecture (figures 35, 21).

The façade of the High Court, consisting of a flexible framework of sunbreakers placed within a single monumental frame, sheds an important light on the symbolic significance of the building. As a classicist at heart and as a citizen of a country whose law still reflects the basic principles of Roman law, Le Corbusier first turned to a great example of judicial Roman architecture whose most essential elements he retained even in the final design. He did so by joining the Basilica's arcuated and trabeated system in the building's exterior frame. By placing all the law courts within this all-embracing Roman frame, Le Corbusier reaffirmed the fundamental role that Roman architecture and Roman law have played in Western culture. Moreover, by imbuing the building in general and its great frame in particular with clarity, constancy, and logic, he gave the High Court a sense of majestic unity. And it is precisely such a unity that constitutes the essence of Roman architecture and Roman law.

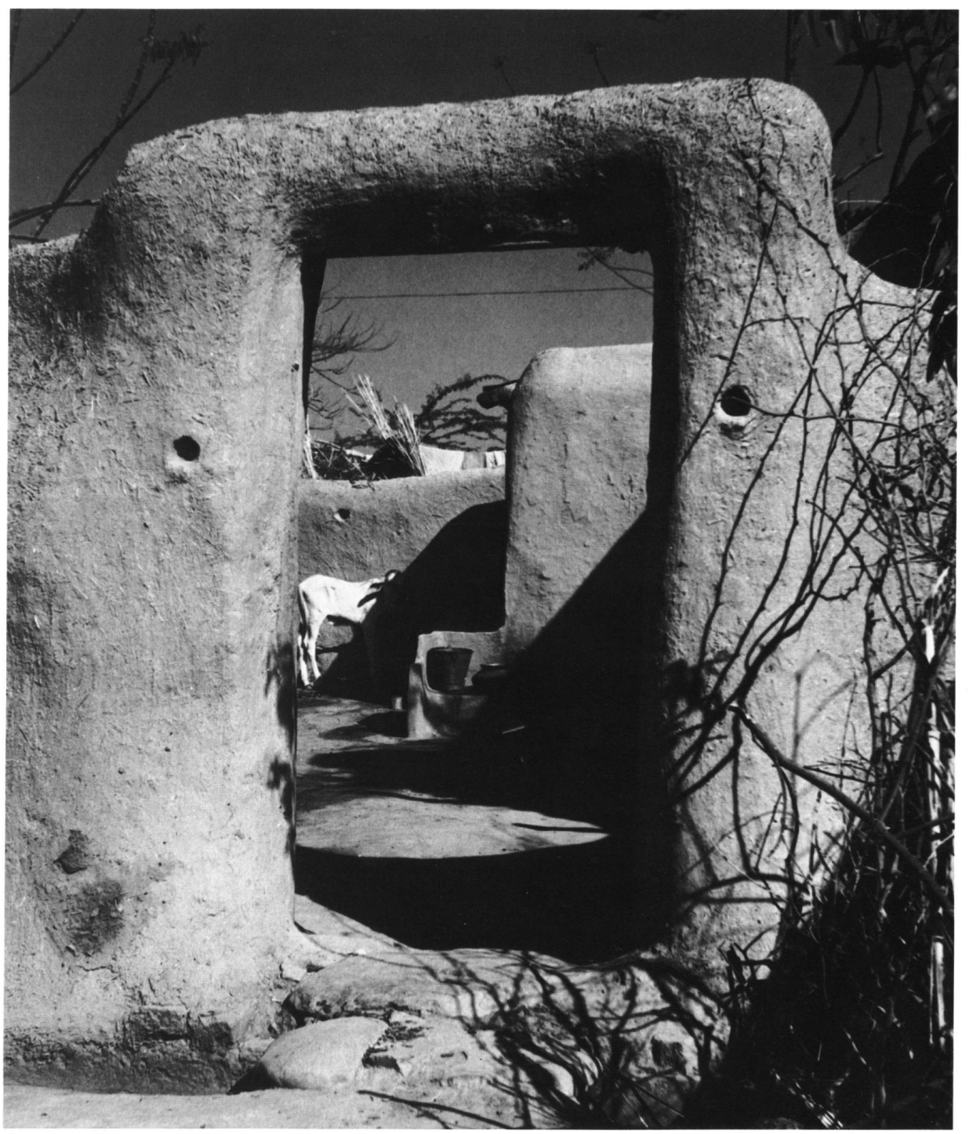
Yet within the High Court's formal, classical frame Le Corbusier allowed the sunbreakers to act more freely and flexibly in keeping with the architectural tradition of the North. He did so not only to provide better protection from the sun and give scale to the building but also to convey a major part of the building's symbolic significance. Although Roman law remained the primary basis of Western law, it was English common law that was brought into India by the British. As opposed to the codified law of Rome, common law was developed in England gradually and organically since the early Middle Ages. Based on custom and precedent, this law is known not for constancy and logic but rather for variety and flexibility. And these are precisely the qualities that characterize the sunbreakers of the High Court's façade.

In the High Court Le Corbusier juxtaposed the Mediterranean and Northern traditions of architecture by making the former the anchoring point and primary frame of reference of the building without, however, minimizing the prominence of the latter. He embodied the Mediterranean tradition primarily in the clarity and constancy of the building's monumental frame, while he expressed that of the North in the variety and flexibility of the sunbreakers. In so doing, he created architectural forms that possess the very same qualities that characterize Roman law and English common law: majestic unity and organic quality, respectively. Hence in the High Court the two great systems of Western law, Roman civil law and English common law find, unwit-

48
Le Corbusier Sketchbooks Volume 2, E. 19, no. 392. The Pinjore gardens date from the 17th century and are located ten miles from Chandigarh at the foothills of the Himalayas. The Patiala gardens to which Le Corbusier makes reference here are the Baradari gardens in Patiala, which he visted on February 25, 1951.

49
However, Le Corbusier applied the principles of Mogul landscaping in general and that of Pinjore in particular to the project for the garden of the *Governor's Palace*. See Le Corbusier, *Oeuvre complète 1946–1952*, p. 143.

50
For additional early sketches of the High Court, see Le Corbusier, *Oeuvre complète 1946–1952*, p. 126.



43
House in Punjabi village, near Chandigarh.

tingly perhaps, a most eloquent visual interpretation.

Facing the High Court across the 400 meter wide capitol square is the Assembly whose exterior consists of three main elements: a square block, a portico and a superstructure, each of which has a distinct identity of its own (figures 39, 40). As early sketches of the Assembly indicate, Le Corbusier first envisaged it as a great arcuated building evoking the memory of such Roman structures as the Basilica of Constantine and the Pont du Gard (figures 41, 37).[51] But as the building evolved in his mind, the arcuated system was replaced by a trabeated system exemplified largely by a regular grille of sunbreakers.

The sources of the three main constituent elements of the Assembly's exterior provide important clues to an understanding of the nature and meaning of the building. Enfronting the building is the monumental portico whose most dominant feature is the upward swooping curvilinear canopy that functions both as an umbrella and gutter. This canopy rests on eight tautly stretched walls that cut the portico into clearly defined cubical bays whose distinctness is reinforced by the compositional organization of the back wall. The climactic point of this wall is the large enameled ceremonial door twenty-five feet square, which depicts a complex set of images dominated by the sun.

The Assembly's monumental portico incorporates the spatial and formal qualities of two distinctly different strains of India's architectural past: the palatial and the folk. As a comparison with the Red Fort's Hall of Public Audiences shows, the repetitive rhythm, the sheltered openness and the ceremonial dignity of this Mogul palatial building reappear in Le Corbusier's portico (figures 39, 42). However, the surface treatment of his forms, whether in the Assembly's portico or in his other concrete buildings in India, shows a greater affinity to the country's folk architecture. He was fond of visiting the villages around Chandigarh to study their low, moundlike huts constructed of mud brick; visits that found their way into his handling of rough concrete, or *bêton brut* (figure 43). Even before his contact with India, Le Corbusier was fascinated by the possibility of making concrete look more like a natural material, and his work there greatly enhanced this process.

Le Corbusier reinforced the meaning of the portico by the enameled doorway that links the outside with the columnar lobby. The primary function of this door is to provide a ceremonial entryway for the governor when he opens the assembly once a year. Both sides of the door are decorated with a rich range of images that convey multiple meanings. The door's pictorial composition facing the portico is divided into two halves: the upper, representing the paths of the sun, and the lower, representing rivers, vegetation, and animals; and both are interpreted in a spontaneous, almost childlike, manner. Hence, the function and scale of the ceremonial doorway convey a formal and ritualistic order, while the imagery on its surface evokes the world of fantasy and folklore.[52] And both of these meanings are inherent in the portico.

Treating the great portico as a gateway to the building that houses the two legislative bodies of the Punjab government–the assembly and the governor's council–it is fitting that Le Corbusier incorporated in it a broad range of India's architectural tradition: from the stately and ritualistic to the informal and rustic. In so doing, he expressed in it, unintentionally perhaps, some of the most salient characteristics of Indian society.

The main body of the Assembly Building is defined on three sides by large grilles of sunbreakers arranged in repetitive rows. This organization reveals the nature of the spaces that lie behind them: scores of offices and committee rooms serving the members of parliament and their staff (figure 40). On top of the Assembly's classical block is a superstructure which consists of three separate yet interrelated parts: a tower in the shape of a hyperbolic-paraboloid, a tilted pyramid and a service tower (figure 39). The basic function of the first is to provide light for the assembly hall and that of the second to help illuminate the council chamber. The relationship between the hyperbolic tower and the main body of the building evokes the memory of French industrial architecture as exemplified by Züblin's coal-washer in Sté. des Mines de Carmaux of 1928–29 (figure 44). The Assembly's tower, like the funnel-shaped receptor of the coal-washer, is dramatically juxtaposed with the main part of the building producing a strong sense of tension between the two. Juxtaposing

51
Le Corbusier referred to the Pont du Gard as "among the very great works of architecture, and going far beyond mere mathematical formulae." Le Corbusier, *The City of Tomorrow* (Cambridge: The M.I.T. Press, 1971), p. 57.

52
For a discussion of other aspects of the door's symbolic significance, see Richard A. Moore, "Alchemical and Mythical Themes in the Poem of the Right Angle 1946–1965," *Oppositions 19/20* (Winter/Spring, 1980), pp. 111–39, esp. pp. 129–32.

a building's constituent parts in such a manner is not uncommon in industrial architecture but is quite exceptional in an honorific building. In fact, one of the most remarkable qualities of the Assembly is the daring contrasts created by Le Corbusier among the building's three major parts: the portico, the main block, and the superstructure. Without his deep admiration for the compositional solutions established in industrial architecture, this could hardly have been accomplished.[53]

The striking contrast between the Assembly's main block and the hyperbolic tower tends to suggest that the two are not functionally interrelated. Yet a closer examination reveals that the building's crowning feature is in fact a continuation of the large hyperbolic shell that serves as a container for the assembly hall (figure 45). As Le Corbusier's sketch of June, 1953 shows, the inspiration for this shell came directly from the cooling towers of the Sabarmati Power Plant in Ahmedabad (figure 46).[54] By using the form of the cooling towers for both the interior shell and the protruding part of the assembly hall, Le Corbusier not only preserved the building's consistency but also reinforced a key aspect of the building's symbolic significance.

In the Assembly's interior the building's underlying theme of juxtaposing quasi-autonomous architectural elements is best exemplified in the way in which the hyperbolic shell of the assembly hall is related to its setting. Instead of treating this shell as a continuous part of the interior, Le Corbusier handled it as a building within a building (figure 47). He did so by placing it inside a large hypostyle hall known as the forum, which in turn is surrounded by offices facing the outside. As a result, the assembly hall is just as clearly separated from the rest of the interior as the assembly's tower is from the rest of the exterior, thus ensuring consistency in the building's formal organization.

On a symbolic level, the isolation of the hyperbolic shell highlights the importance of the legislative assembly. Following the parliamentary system inherited from the British, the assembly, as the Lower House in Britain, enjoys a prime decision making power in the government. Le Corbusier gave this political reality a powerful architectural interpretation by making the hyperbolic shell the focal point of the interior and the crowning point of the exterior. In so doing, he not only expressed the nature of the legislative assembly's power in Chandigarh, but also proclaimed the role that the Lower House fulfills within a parliamentary system. In fact, never before has the role of the Lower House been given such a forceful and eloquent architectural interpretation as in Le Corbusier's Assembly Building.

However, the inspiration emanating from the cooling towers of the Sabarmati Power Plant served Le Corbusier in other ways as well. With its obvious references to technology, the image of the cooling towers offered him an opportunity to pay tribute to one of Prime Minister Nehru's most fundamental beliefs summed up in one of his lectures: "the essential and most revolutionary factor in modern life is not a particular ideology, but technological advance."[55] Nehru put these general principles into practice by establishing a five year plan whose primary aim was to develop industry and produce electricity on a large scale. Thus, the cooling towers of an electric power plant must have seemed to Le Corbusier a particularly appropriate symbol for expressing the social and political aspirations of his friend and patron. As a Ruskinian at heart, he may even have believed that by placing the legislators in an architectural environment that strongly resembles the cooling towers of a power plant, he could influence them to follow Nehru's commitment to technology.

The Assembly's conspicuously visible symbol of technology should not give the impression that Le Corbusier paid tribute to only one of India's great modern leaders, for in addition to Nehru, Gandhi's presence can also be found in the building. Gandhi's philosophy of rejecting technology and focusing on the importance of agriculture, handicraft and cottage industry finds many direct and indirect references in the Assembly. The hand made quality of the *bêton brut*, the folk imagery on the ceremonial gateway, the wall decorations based on imprints made by the workmen, and the juxtaposition of the oxcart with the building in one of his sketches (figure 41) all attest to a world view that shared a great deal with Gandhi's own. For Le Corbusier, Gandhi's philosophy of rural rejuvenation offered a felicitous balance to Nehru's technological bias, and how he agreed with both can be seen in two statements he made in his

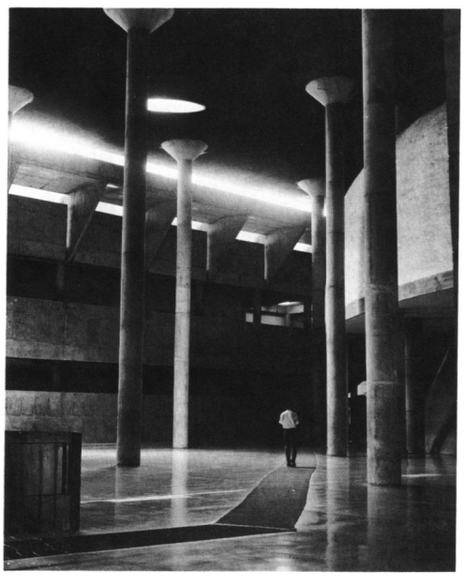
53
Le Corbusier's reliance on the compositional solutions found in industrial architecture was preceded by the work of many architects, most notably by the Russian Constructivists.

55
Stanislaus von Moos, p. 418.

54
For the sketch, see Le Corbusier, *Oeuvre complète 1957–1965*, p. 80.

46
Cooling Towers of the Sabarmati Power Plant, Ahmedabad.

47
Assembly building



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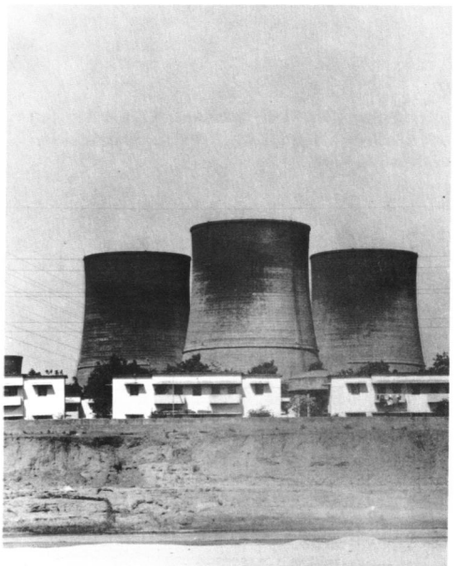

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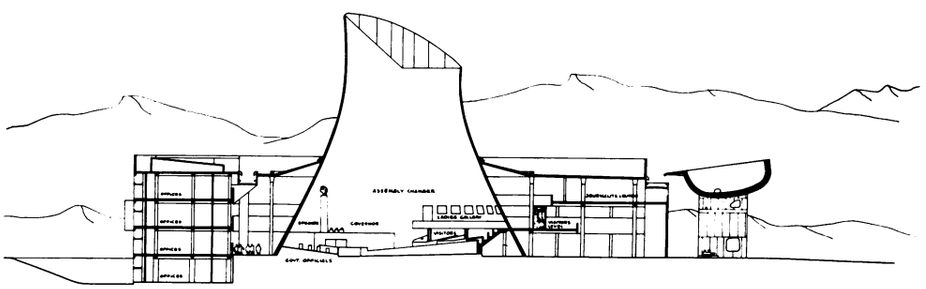
45
Assembly building, section.



early Indian sketchbooks: "Atomic energy is now a fact. Put it in the countries and in the homes." But elsewhere he wrote: "how the earth remains a primary, primeval, primitive in spite of the works of Men."[56] And one of Gandhi's aims was to keep it that way.

The Assembly Building represents a culmination of Le Corbusier's heroic efforts to give the most meaningful architectural interpretation to political institutions. This effort has a long history in his own career going back to his projects for the League of Nations Building of 1927 and the Palace of the Soviets of 1931. In the former he combined Beaux-Arts composition with a technologically perfected structural system, while in the latter he allowed technology to triumph throughout the entire design. Intended for an international political body of the modern world, it is fitting that Le Corbusier imbued his project for the League with a sense of history and modernity. And by giving technology such a prominent presence in the Palace of the Soviets, he highlighted one of Soviet Russia's most deeply felt ambitions: to achieve technological superiority in the world. But to express the social, political and economic aspirations of newly independent India, Le Corbusier not only had to invent new forms but he also had to develop a new formal organization that could convey architecturally the complexity of the issues at hand. He did so by turning to India's rich past and evolving present while fertilizing these with his own creative memory. No wonder that the Assembly became one of the most probing and compelling architectural manifestations of the human spirit.

Looming behind the Assembly, the Secretariat is an eight-hundred feet long concrete slab consisting of six, eight story blocks interconnected by a massive grille

56
***Le Corbusier Sketchbooks Volume 2, 1950–1954*, E 23, No. 662 and E 18, No. 361.**

of sunbreakers (figure 48). Originally, Le Corbusier had envisaged it as a highrise building, but when this was rejected he proposed the present solution. As an early sketch of the building shows, the architect first visualized it as a tall concrete slab defined by arches on its narrow ends (figure 41). In a more developed design, he presented it as an even taller slab resting on pilotis and sheathed by a repetitive grille of sunbreakers.[57] The project that links this design with the final version is his Admiralty Building planned for Algiers between 1938 and 1942 (figure 49).

Intended as an office building and hotel for Algiers' marine district, the Admiralty represents a major point of departure in Le Corbusier's approach to skyscraper design. Here he abandoned his earlier skin and bone technique in favor of achieving firmness, scale and functional clarity. This dramatic change is directly attributable to his encounter with the skyscrapers of New York in 1936. In his account of his American journey he wrote:

> In New York, then, I learn to appreciate the Italian Renaissance. It is so well done that you could believe it to be genuine. It even has a strange, new firmness which is not Italian but American! The maritime atmosphere and the potential of the American adventure have lifted Tuscan graces to a new tone. The oldest skyscrapers of Wall Street add the superimposed orders of Bramante all the way up to the top with a clearness in molding and proportion which delights me.[58]

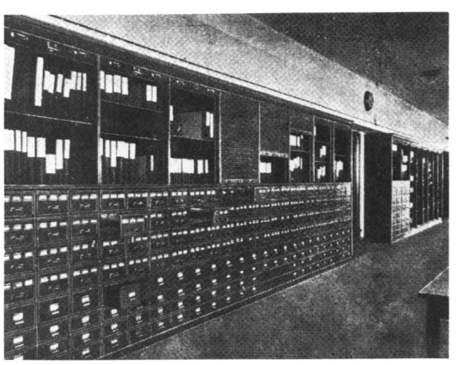
The praise that Le Corbusier lavished on New York's skyscrapers may seem surprising after the diatribes he had made against them in his earlier books, most notably in *Urbanisme*. But even during the 1920s he singled out a few American skyscrapers as worthy of emulation, as for example, Albert Kahn's First National Bank Building in Detroit of 1922 (figure 50). Illustrated in his book, *L'Art Décoratif d'Aujourd'hui*, he used the building as a frontispiece for a chapter devoted to utilitarian design.[59] But he had to come to America to fully appreciate its qualities.

The qualities that Le Corbusier ascribed to New York's Beaux-Arts Renaissance skyscrapers in the passage quoted above–clarity, firmness and proportion–can also be found in Kahn's building. Hence, it can be used as a frame of reference for discussing the "Americanization" of Le Corbusier's approach to skyscraper design. Following the principles of the Beaux-Arts Renaissance style popularized by Daniel Burnham, Kahn divided his building into three major zones: the public for the lobby, the semi-private for the offices, and the private for the top executives. These three functional zones are clearly revealed in the building's exterior design with the help of columns,

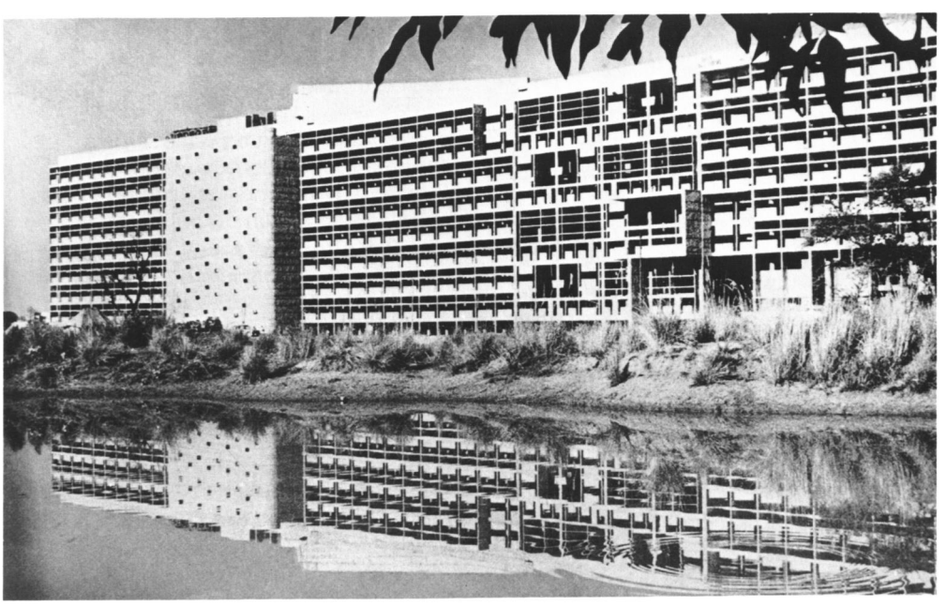
58
Le Corbusier, *When the Cathedrals Were White* (New York: McGraw-Hill Book Co., 1964), p. 60 (originally published in 1947).

57
See Le Corbusier, *Oeuvre complète 1946–1952*, p. 118.

59
Le Corbusier, *L'Art Décoratif d'Aujourd'hui* (Paris: Éditions Vincent, Fréal, 1959), p. 83, (originally published in 1925).



51
Ronéo Office Cabinet Systems, from Le Corbusier, *L'Art Décoratif d'Aujourd'hui*.



48
Le Corbusier, Secretariat, Chandigarh, 1951-58.

cornices and windows. Moreover, the building's firmness and proportion are expressed in its mass and articulation of parts, respectively.

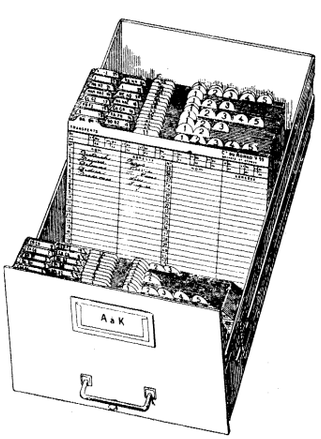
In the Admiralty, Le Corbusier incorporated some of the key principles of the American Beaux-Arts Renaissance skyscraper style, most notably its emphasis on mass, proportion and hierarchical organization. As a comparison between the Admiralty and the First National Bank Building in Detroit shows, he interpreted these principles with the help of large frames and sunbreakers to be built of concrete. In fact, from this project forward, sunbreakers became the key conveyors of his design principles based on the American Beaux-Arts skyscraper. They gave his projects and buildings clarity by externalizing the spatial and hierarchical organization of the interior; they imbued his works with firmness by the sheer weight of their mass; and they helped achieve proportion by the articulation of their forms. And all of these principles were fully realized in Chandigarh.

When it became clear to Le Corbusier that he could not build the Secretariat as a tall slab, he offered a horizontal version of it without, however, abandoning the principles he had developed in the Admiralty Building. The Secretariat, like its precursor, is divided into large rectangular blocks which are shielded by a massive grille of sunbreakers whose shape ranges from the simple to the complex. The simple, repetitive sunbreakers covering most of the building enfront the endless rows of bureaucratic offices, while the complex ones concentrated in the central block largely define the ministerial offices. The unprecedented complexity and monumentality of the ministerial block show that Le Corbusier wanted the sunbreakers to serve there as powerful witnesses to the functional and symbolic role fulfilled by the spaces that lie behind them.

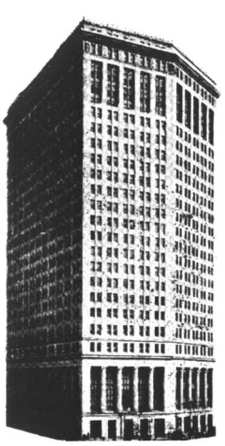
If the Secretariat's firmness, proportion and functional clarity must be seen in part as a continuation of American Beaux-Arts skyscraper design principles, the form and composition of its sunbreakers should not. To find precedents for these one must turn to Le Corbusier's books where illustrations of file cabinets will provide the clues. The two that stand out appear in his *L'Art Décoratif d'Aujourd'hui*, the first of which represents a Ronéo file cabinet system (figure 51) and the second a file cabinet drawer (figure 52).[60] Discussing these and other examples of office furniture, Le Corbusier singled out their efficiency, suitability and flexibility, qualities that he also expected of buildings. No wonder that he incorporated these when he designed an office building such as the Secretariat whose overall composition shares a great deal with the built-in file cabinets (figures 48, 51), while the sunbreakers enfronting the bureaucratic offices reveal a striking similarity to the file cabinet drawer (figure 52). As a result, the building looks like a huge file

60
Le Corbusier, *L'Art Décoratif d'Aujourd'hui*, pp. 70, 74.

49
Le Corbusier, Project for the Admiralty, Algiers, 1938-42.



52
Ronéo File Cabinet Drawer, from Le Corbusier, *L' Art Décoratif d'Aujourd'hui*.



50
Albert Kahn, First National Bank Building, Detroit, 1922, from Le Corbusier, *L'Art Décoratif d'Aujourd'hui*.

cabinet system, with most of its "drawers" lined up in an orderly fashion, while allowing its "shelves" (porticoes) to be left open in a random fashion.

By juxtaposing the firmness, proportion and functional clarity of the American Beaux-Arts office building with the efficiency and flexibility of the office cabinet system, Le Corbusier developed a new approach to the design of office buildings. The experience that had a decisive role in making this possible was his first visit to New York in 1936, when he saw the city's skyscrapers at first hand. Notwithstanding his oft-quoted statement that the skyscrapers of New York are too small, he learned to value them once he saw them. His most consequential immediate response to New York was embodied in the project for the Admiralty in which he launched a new direction of skyscraper design. But the only country that benefited from this was India by giving him the opportunity to put his ideas into concrete form, and thus enabling him to realize his most eloquent architectural interpretation of modern bureaucracy. In his first Indian sketchbook Le Corbusier wrote:

> Calm, dignity, contempt for envy: perhaps India is capable of standing by them, and establishing herself at the head of civilization.[61]

These words clearly sum up what for Le Corbusier represented India's most lasting values: her moral force and potential for moral leadership. In the buildings of Chandigarh's capitol complex, Le Corbusier offered a powerful architectural interpretation of the moral force inherent in India's executive, legislative and judicial branches of government. He also expressed in them India's aspiration to become the foremost moral leader in the world as envisioned by Gandhi and Nehru. No wonder that in his outline of the city's program he noted that "responsibilities of aesthetics and ethics equally dominate the work."[62]

Le Corbusier believed that he was in an exceptional position to interpret India's needs and aspirations, for he was not bound by the issues of the day in which political leaders – including Gandhi and Nehru – are often enmeshed. In his third Indian sketchbook he wrote:

> Life has placed me in the position of an observer, giving me incomparable – and exceptional – means of judgment. I believe that this order of thought is not available to political leaders and that they live in the problem and hence do not see it.[63]

Viewing his role in this light, he spared no effort in giving the three great buildings of the capitol complex the most memorable form and the richest possible meaning. In so doing, he offered the newly independent India an architecture intended to outlast the contribution made even by the country's two greatest modern political leaders. Hence Le Corbusier's architecture there can justly be called timeless but of its time.

63
Le Corbusier Sketchbooks Volume 2, 1950–1954, **E 23, Nos. 662 and 663 (Translation by Agnes Serenyi).**

61
Le Corbusier Sketchbooks Volume 2, 1950–1954, **E 18, No. 362.**

62
Le Corbusier, *Oeuvre complète 1946–1952* (Zurich: Éditions Girsberger, 1961), p. 115.

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