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MODERN ARCHITECTURE IN POST INDEPENDENCE INDIA

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ABSTRACT

In the pre-independence era of India, during 1930s & 1940s, the architecture of the country was oscillating between the revivalist and rationalist extremes of architectural style. So much so that the architectural firms run by British architects were favouring modified classicism, which could be seen in the form of international modernism as architectural style in their work. At the same point in time, the propagators of nationalist movement had thrown their weight behind revivalism and their wish was fulfilled by Sris Chandra Chatterjee by defining it as 'The Modern Indian architectural movement' in the form of Lakshami Narayan (Birla) Temple (1938), which was full of revivalist ideas. After independence, it was the wish of political masters to project the nation as a progressive one in front of the world. Hence, they chose architecture as a tool. It was difficult to do so with existing architectural firms in the country, as their architecture was amalgamation of their conservative outlook of the 1930s and images of modern buildings. Though some departure from conservative outlook was attained by foreign trained Indian architects like A.P. Kanvinde, Habib Rahman, Gautam & Gira Sarabhai, impetus to it was given by political patronage to the rationalist theory in architecture by the then Prime Minister, Pt. Jawahar Lal Nehru. Hence, foreign masters of modern architecture were invited to create edifices of modern architecture on Indian soil, for the world to see a progressive nation in the making. This study describes the architectural work of one of the pioneer masters of modern architecture, Le-Corbusier.

Key words: *Foreign architects, Modern architecture, Bauhaus, Revivalist, Rationalist*

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INTRODUCTION

The Indian architecture transitioned from revivalist mode to rationalist mode starting in the pre-independence period with the isolated works of some of the foreign architects like Eckhart Muthesius, Willem Marinus Dudok, Antonin Raymond and Otto Königsberger. Though it could not form a movement, the wave kept smouldering. The tussle between the political patrons for revivalist ideology and rationalist thoughts continued till the foreign trained Indian architects came home. From this juncture of time, the modernist ideas and Bauhaus thinking started taking firm hold. The pioneer among them were Habib Rahman (experience of working with Walter Gropius), Achyut P. Kanvinde (Harvard educated), Piloo Mody, Durga Bajpai, Gautam Sarabhai and Gira Sarabhai. This transition of Indian architecture from revivalism to rationalism got further boost from Nehru, when he diverted his patronage to rationalist ideas by appointing Le Corbusier, a Swiss born French architect, as an architect for designing Chandigarh, the new capital city of Punjab.

This research paper is focussed on the works of Corbusier in India, which was created with the background theme of creating architecture, symbolic of a Progressive independent nation.

FOREIGN ARCHITECTS IN INDIA

Le Corbusier was not only one of the leaders of European modern movement since the 1920s but was also one of the founders of the international style **(Bahga *et al*., 1993)**. His ideas and architecture had drawn inspiration from French rationalist and utopian thinking along with architectural vocabulary derived from his own works **(Brooks, 1997)**. When he came to India, his work had alienated from the geometric simplicity, when the buildings, he designed were of the rationalist thoughts of the Bauhaus, to a phase in which he used sculptural forms with brutalist expressionism **(Lang, 2002)**.

In India, Corbusier's task was to somehow acknowledge India's beautiful spiritual and built tradition and transform it into modern symbolic forms. During his Indian mission, Corbusier designed Chandigarh city's master plan, Capitol complex, the City Centre and the Museum complex. Pierre Jeanneret, Maxwell Fry and Jane B Drew designed residential and educational buildings. According to Krustrup, Local conditions in India forced him to carry out 'a radiant city' in a highly modified version, which was certainly why he left the execution of the town plan to his colleagues and concentrated on the Capitol, where the very special historic situation permitted him to work on monumental scale, which expressed the nation's ambitions rather than the state's needs. **(Bahga *et al*., 2000)**

Architect couple Maxwell Fry and Jane B Drew, who had collaborated with the master architect in 1951 to help him design and execute capital project, concentrated on detailed designing of the housing sections and amenity areas. The architectural expression of the new capital was largely influenced by Maxwell Fry, who was interested not only in designing elegant buildings, but also in the people who would use them.

Pierre Jeanneret, who joined Corbusier to help him create a capital for Punjab, had got himself aware about Indian architecture, its construction methods, availability of various types of materials, the people's lifestyle and the climatic variations. He designed buildings which were contemporary in expression and functional in habitation, besides working out solutions for the control of sun, wind and heat. He developed the characteristic architectural features such as sun breakers, fins and perforated screen walls. Pierre designed Punjab University Campus, housing for officials, hostels and apartments for members of the legislature assembly, schools, the Town hall, the Central library and the shop cum-flats in Chandigarh.

Le Corbusier also designed buildings in Ahmedabad. The division of the state of Bombay in 1960 into Maharashtra and Gujarat with Bombay city being retained by former as the capital city, Gujarat filled the void with Ahmedabad as the capital city. Hence, the local architectural development of the early 1960s was an attempt to create the regional identity where the local entrepreneurs tried to make Ahmedabad a regional centre in competition with the city of Bombay **(Scriver *et al.*, 2015)**. The business savvy elite of Ahmedabad became the enlightened patrons of modern architecture in the city by engaging Le Corbusier in a variety of commissions to make it comparable with Chandigarh. In this effort by Ahmedabad to raise its status as a regional centre of national importance, Gautam Sarabhai, an architecturally trained member of the influential

family of builders, persuaded the Ford foundation sponsor Eames report proposal for an Institute of Design to be established in Ahmedabad, with himself as its inaugural director. The presence of architecture graduates in the faculty led to taking up of architectural commissions in collaboration with foreign consultants. This N.I.D. initiated collaborations led to the arrival of American architect Louis I. Kahn to design the campus for the Indian Institute of Management (IIM) in 1962. So, these developments led to place Ahmedabad in prominent position on the map of modern architecture in India **(Scriver *et al*., 2015)**.

Kahn came to India almost a decade after Corbusier's arrival in India. He is best known for his concern for the nature of materials and how surfaces can be formed to frame light. His honesty of expression of material and working within constraints of locally available workmanship opened new vistas for Indian architects.

THE ARCHITECTURE OF LE CORBUSIER IN INDIA

The architecture of Corbusier's Indian buildings and his contemporary European projects have family similitude. There is similarity in the use of materials like brick and bare concrete, which were used in a brutalist fashion. The new elements like the deep-cut *brise-soleil*, the *ondulatoire* and *the aerateur* were employed. It is worth mentioning here that Corbusier was not simply reproducing global ideas but modifying the solutions to the demands of climate and limitations of the local technology. He realised that he was dealing with an old civilisation which was in the phase of transition towards modern democracy, yet trying to rediscover its identity after the colonial experience. His thought when he came to India was that in the process of emergence of modern civilisation, India has a promising future. Our job is to define the architecture for it, which is immersed in the sieve of this powerful and profound civilisation and the endowment of favourable modern tools to find it a place in present time (Parsad, 1987).

Corbusier explained that the architecture he wanted to create in India was to be Indian and for Indians **(Corbusier, 1951)**. Le Corbusier's conviction was that the new Indian architecture would have universal qualities of international style, yet it would address the problems of the climate and accept the constraints of modern building construction in a poor economy.

a) Capitol Complex, Chandigarh (1951-62)

The design of Capitol Complex in Chandigarh offered Le Corbusier an opportunity to give an expression to his philosophy of architecture. More importantly, the Chandigarh Capitol complex was to be the depiction of New progressive India to the world **(Kalia, 1999)**. The leitmotiv of the Capitol was established as the parasol- a protective overhanging roof, supported on arches and piers or pilotis. This devise would protect the buildings from sun and rain, but at the same time catch the cool breezes and a variety of views.

b) Assembly Hall, Chandigarh (1951-62)

The exterior of assembly consists of three main elements: a square block, a portico and a superstructure. The plan extended on an old Corbusian pattern: a free plan, grid of supports with the main functional organs set down into it as curves **(Plate 1)**. The curious relationship between upper and lower houses has been beautifully expressed in Corbusier's Assembly Hall at Chandigarh. The first is a small, four-sided pyramidal prism; the second is a huge hyperbolic-paraboloid form, similar in shape to the thin shell concrete cooling towers as a metaphor suitable to Nehru's ethos of progress, electrification and industrialisation (**Fig. 1)**.

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Fig. 1: The Assembly Hall, Chandigarh: Daring contrast of the portico, the main block and the superstructure

Fig. 2: The imprint of man's hands in the rough form work

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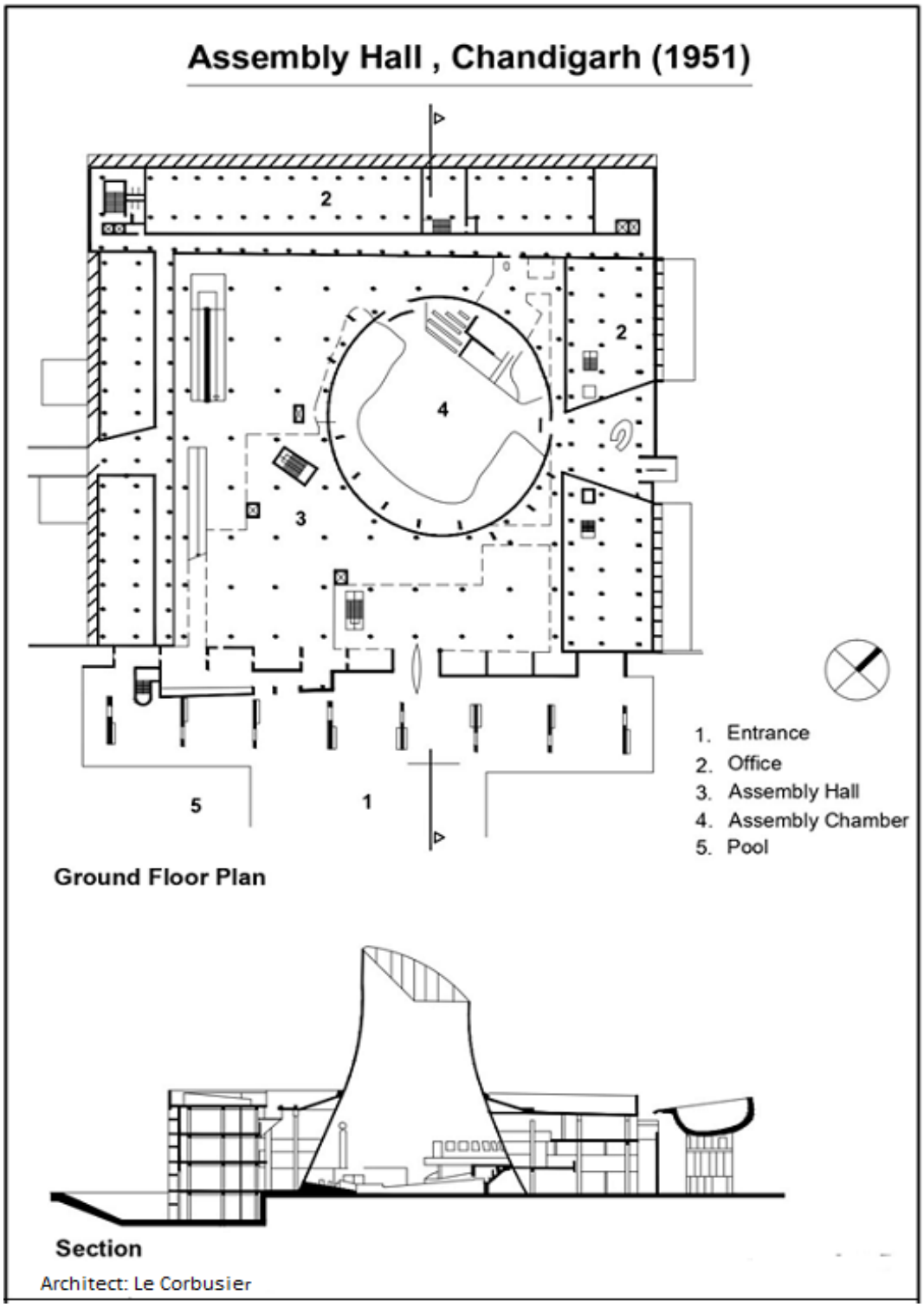

Plate 1: Assembly Hall, Chandigarh (1951-62)

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These two symbolic forms are placed inside a large 'forum', which in turn is surrounded on its three sides by galleries containing offices and meeting rooms, protected behind by angled *brise-soleil* in a perfectly square plan. The two symbolic forms permitted to penetrate the roof and thus to reach for the sky, allowed light to penetrate in these chambers. The design of the top of the funnel with its tilted plaque, its up-turned crescent and its downward-turning curves suggest that he might have been inspired from the abstract constructions at the Jantar Mantar in Delhi.

The entire building is left in raw concrete finish which was Corbusier's attempt to leave the imprint of man on architecture of machine age-the imprint of man's hands in the rough form work. However, this surface treatment in this building as well as his other concrete buildings in India, show a greater affinity to the country's folk architecture, inspired from mound like huts constructed of mud brick in villages around Chandigarh, which he often used to visit. These found their way into his handling of rough concrete **(Serenyi, 1985)(Fig. 2)**. The entrance to the building is through monumental portico with dominating feature of upward swooping curvilinear canopy which functions both as umbrella and a gutter supported on eight thin piers (i.e. *pilotis* in Corbusier's vocabulary) **(Fig. 3)**.

In fact, one of the most remarkable qualities of the assembly is the daring contrasts created by the architect among the building's three major parts: the portico, the main block and the superstructure.

Fig. 3: The Assembly Hall, Chandigarh: Monumental portico supported on eight thin pieces (*pilotis* of Corbusier's vocabulary)

c) *High Court, Chandigarh (1952-55)*

A concrete structure defined by a large rectangular frame and conceived as a huge open-sided box under a giant roof standing on a 'grand order' of concrete piers recalling the heroic supports under the Marseille's unite d'habitation. This huge, concrete roof umbrella shelters a four storey, wall-less entrance lobby with concrete ramps and topped by arches **(Plate 2, Fig. 4)**.

The courtrooms on both sides of this lobby are protected from sun with irregular concrete *brise-soleil* patterned like staggered bonding in masonry **(Fig. 5)**. Here, the concrete, in all its unfinished roughness, has emerged looking as coarse as a rock formation moulded by thousands of years of wind and rain. Below the parasol roof, there are terraces and penthouses overlooking the plaza below and the city beyond - all the way to the foothills of the Himalayas, allowing the free movement of air to cool the interiors considerably. This considerably highlights Corbusier's concern for the use of terrace as a functional space **(Fig. 6)**.

A new language of monumentality was thus invented that overcame the limitations of the International

style and without regressing into ersatz historicism. The architect himself admitted that this monumentality signifies "The power of the law, the majesty of the law and the shelter of the law" **(Curtis, 1985)**.

Fig. 4: The High Court, Chandigarh: A huge open-sided box with parasol roof

Fig. 5: *Brise-soleil:* Respect for climate

Fig. 6: Grand order of concrete piers: A new language of monumentality

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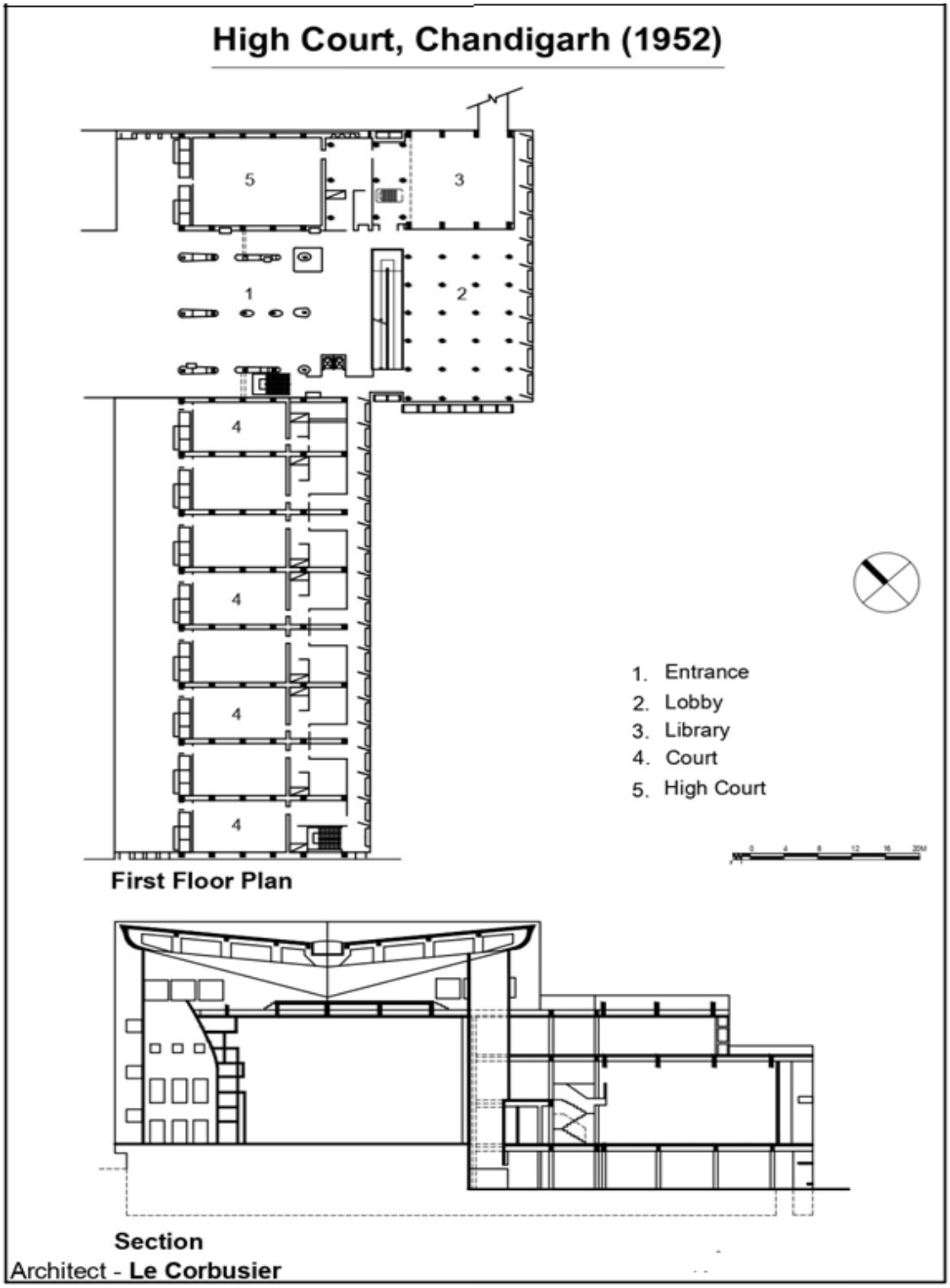

Plate 2: High Court, Chandigarh (1952-55)

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d) ***The Secretariat, Chandigarh (1951-54)***

It is a reinforced concrete-frame structure with six distinct large rectangular blocks. The planning of each of the eight floors is simply arranged as central corridor with offices on either sides leading to flexibility of space in its usage **(Plate 3, Fig. 7)**. The 800 feet long facade of the building is broken at half a dozen places with projections, recesses, stair towers and changes in pattern. The fourth sub-block was varied in its facade treatment and amplified in its apertures to express the presence of ministerial office. These contrasting elements and patterns signify the independence of facade from structure to be expressed freely **(Fig. 8)**.

Fig. 7: The Secretariat, Chandigarh: An image of architect's theories

Fig. 8: Contrasting elements and patterns: Expression of façade's independence from structure

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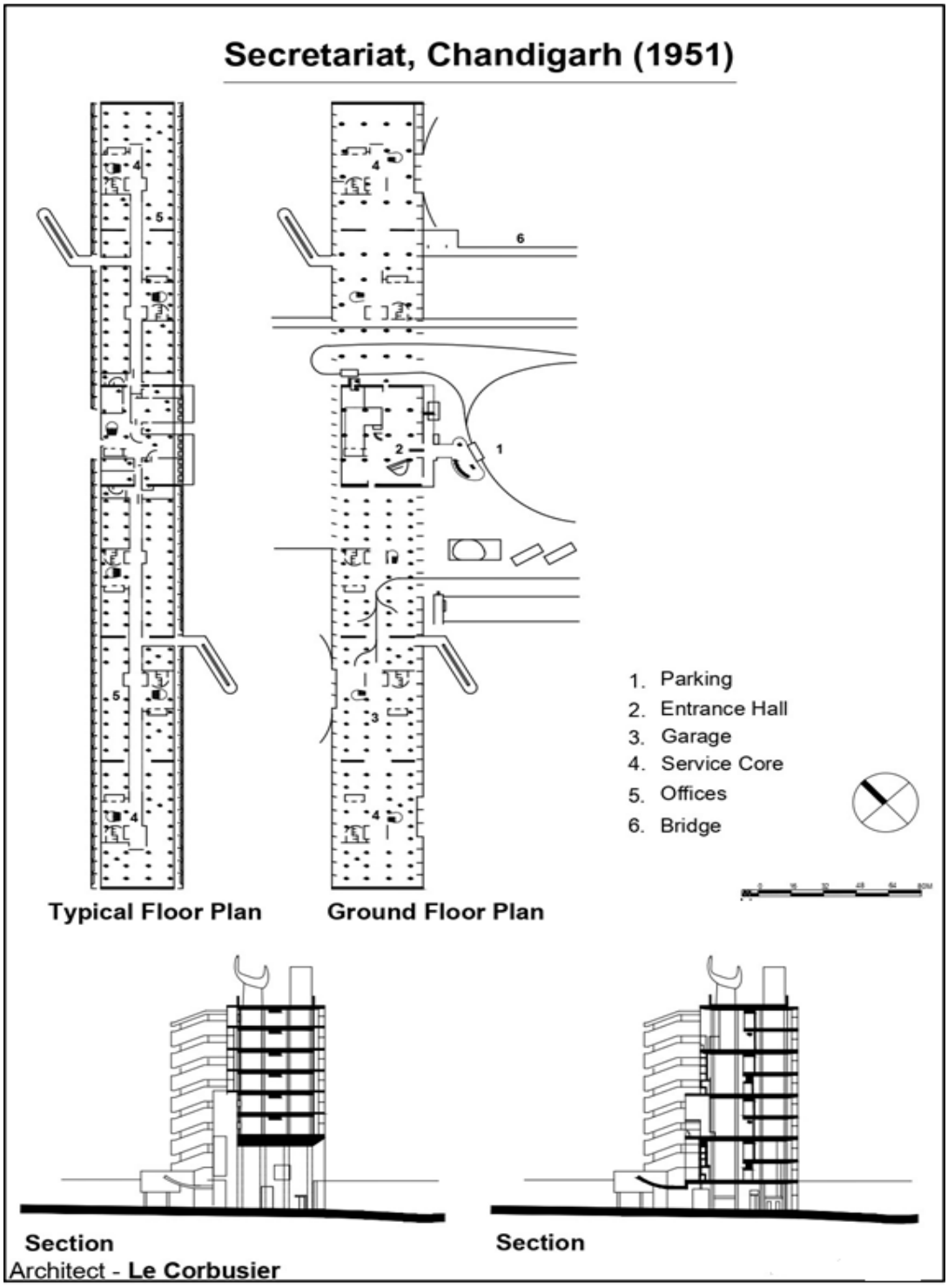

Plate 3: The Secretariat, Chandigarh (1951-54)

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The curved ramps stick out from the slab like ears of handles **(Fig. 9)**. The building lacks monumental elements such as grand entrance to the high court or the great loggia and hyperbolic shell of the assembly hall. There was roof garden on the top of the building, which acts as insulation for the building against the direct rays of the sun and provides an excellent recreational space. It highlights Corbusier's principle of using roof as an extension of building space. Corbusier devised *ondulatoires*, which were to become an essential part of his subsequent architectural vocabulary and were the result of a rethinking of a window in a controllable way to admit light, air and to frame views. It was achieved by three independent elements: fixed floor- to-ceiling glass panes and 20 cm wide vertically pivoting metal panels, also extending from floor-to-ceiling, the two together constituting *ondulatoires*; the *brise-soleil*, which mediates between the viewer and the view, while keeping out the sun in summers and letting it in during winters.

Fig. 9: The Secretariat, Chandigarh: Curved ramp stick out like ears of handles

Corbusier truly built this building as an image of his theories: a tall, slim structure carrying a surface *brise-soleil,* with the mass raised on *pilotis* along with roof garden. While designing buildings of Capitol complex, Corbusier was trying to establish a modern Indian grammar, which was based on clues from traditional buildings, whether vernacular or monumental, thus dealing with rigours of climate. His abstraction of these lessons was the principle of *parasol* - horizontal roof excluding sun and monsoons and being lifted up on *pilotis.* This was open at the sides to permit the flow of air. The interiors were shaded and cooled in this way, thus, further being protected from heat and glare by his customary sun-braking device i.e. the *brise-soleil*.

CONCLUDING THOUGHTS

The efforts of Corbusier were to break away from the past and develop the architectural vocabulary for the future course of architecture in the country, which was suitable and to fit well with the requirement of society today. It gave direction to the Indian architecture and majority of Indian architects who were directly associated with Le Corbusier and other international masters or indirectly influenced by their work, till the 1980's, after which these ideas started fading away. It started when Indian architects started realising that universalism approach of rationalism couldn't be the solution for a country like India with such a vast social and cultural diversity. So, the Indian architecture started drifting more towards regionalism in an attempt to make rationalist approach of modernism to be more contextual and sustainable for the place instead of implanting universal vocabulary without giving any heed to regional diversity in terms of climate, culture and societal needs.

REFERENCES

1. Bahga, S. and Bahga, S. (2000). *Le Corbusier and Pierre Jeanneret: Footprints on the sands of Indian Architecture*. Galgotia Publishing Company, New Delhi.
2. Bahga, S., Bahga, S. and Bahga, Y. (1993). *Modern Architecture in India: Post-Independence Perspective*. Galgotia Publishing Company, New Delhi.
3. Brooks, H. A. (1997). *Le Corbusier's Formative Years. Charles Edouard Jeanneret at La Chaux-de-Fonds*. University of Chicago Press, Chicago.
4. Corbusier, L. (1951). *Letter of 12 December, 1951 to Fry, Drew and Jeanneret*. quoted in Sarin (Unpublished Thesis).
5. Curtis, W.J.R. (1985). *Le Corbusier: Ideas and Forms*. Phaidon Press, London.
6. Kalia, R. (1999). *Chandigarh –The Making of an Indian City*. Oxford University Press, Delhi.
7. Lang, J. (2002). *A Concise History of Modern Architecture in India*. Permanent Black, Delhi.
8. Scriver, P. and Srivastava, A. (2015). *India: Modern Architectures in History*. Reaktion Books Ltd., London.
9. Serenyi, P. (1985). From Lutyens to Young Indian Architecture: Sixty Years of Housing in New Delhi. *Techniques and Architecture* 5(56).