CHAPTER 6: GENESIS OF A NEW CAPITAL – HISTORIOGRAPHY, DEVELOPMENT AND PRESENT DAY STATUS

This chapter will: a) Trace the phases of development of Chandigarh from an objective standpoint. A city, akin to an organism, continues to evolve and absorb pressures of growth and change and therefore undergoes transformation. Yet, Chandigarh has managed to keep its Authenticity\(^{272}\) and Integrity intact. Its plan form (system of seven Vs and the character of the sector) maintain the original character and design principles developed by Le Corbusier and his team, while fulfilling the aspirations of its citizenry. b) Endeavour to quantify the characteristics of a modern city like Chandigarh, which are additive to its authenticity and integrity criteria, and strengthen its position as an example of modern heritage. These characteristics have contributed towards keeping the form and urban character of Chandigarh largely conserved. Following this, the Core Zone and Buffer area would be identified vis a vis the modern heritage value, iconic status, integrity and authenticity of the significant properties in Chandigarh attributed to Le Corbusier and his team.

The Setting- Geomorphic determinants for siting Chandigarh

The site for the city, which was chosen through an aerial reconnaissance, is a gently sloping plain of about 1:100 towards the south. Bound on the north by the Shivaliks, the lower Himalayas, the Sukhna Choe and Patiali ki Rao; two sandy rivulets five miles apart delineate its eastern and western borders respectively. The land was about 8500 acres of fertile alluvium studded with mango groves,

\(^{272}\) Authenticity and Integrity are two important parameters set by the UNESCO Operational Guidelines for placing Cultural Properties on the World Heritage List. Properties must fulfill the conditions of authenticity and Integrity. Authenticity refers to the values attributed to the cultural property and the original sources for providing the values to the property. The attributes of authenticity include form, character, material, substance, setting and so on. Both tangible and intangible values are attributes which aid the justification of a cultural property for world heritage status. Integrity is the measure of the wholeness/completeness of a natural and/or cultural heritage in its entirety and its attributes.

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patriarchal and deeply marked by passages of history spread over seventeen villages, with abundant underground water supply, and proximity to building material. The new town lay along 76 degrees and 48 minutes East longitude, and 30 degrees and 50 minutes North latitude, the altitude ranging from 304.8 to 365.76m above sea level. Infact, it is these geomorphic determinants that make Chandigarh special. A gridiron street plan that Corbusier designed for Chandigarh could have been located anywhere, yet it is the setting, which distinguishes the character of Chandigarh, the most daring experiment of modern town planning.

The Ideological Basis of the Experiment
Appropriated on a tilting plain, nestled in a picturesque setting and irrigated by seasonal rivulets, Chandigarh symbolises India’s tryst with destiny, ushering in modernity, into a country colonised for over 300 years. In the wake of partition, with Lahore ceded to Pakistan, designating Chandigarh as the new capital of Punjab was a challenge to turn limitations into opportunity and become the cynosure of world view. Among its tall claims was a zeitgeist ideal— to fulfill a socialist agenda of providing the best of amenities for living to all classes of people, at a time when India’s partition had rendered thousands homeless. Exemplifying the largest realisation of Le Corbusier’s principles of Urbanism, Chandigarh’s matrix comprises the generic neighbourhood unit -a sector 800 x 1200 m. Its low-rise cubic forms set within an urban landscape embody the symbiotic relationship a city can dare to share with its hinterland.

The Inspiration behind the New City
It has happened before: disaster has been converted by vigorous and determined people into a national advantage. However, only a few could have foreseen that the terrible partition of India and Pakistan

which forced millions of refugees to trek the roads with every kind of hardship and disaster, would result in the creation of the world’s most modern capital city. This had been the idea and the inspiring force behind Chandigarh.

The decision to build Chandigarh and selection for the site for this project took place in late March 1948. The decision was historic as it had the enthusiastic support of Jawaharlal Nehru, the then Prime Minister, who said on his first visit to the city; ‘the site chosen is free from existing encumbrances of old towns and old traditions. Let it be the first large expression of our creative genius, flowering from our newly earned freedom’. This was followed with a notification on March 23, 1948, placing the entire area included in the Kharar tehsil under prohibition for building and sale of land, as this had to be utilised for establishing the new capital. To check land speculation following development, the entire land was to be acquired in one single operation under the Land Acquisition Act of 1894. The site offered six potentials—stability of site area, exceptionally favourable ground water supply, appropriate ground slope, close proximity of limestone deposits for setting up a cement factory and occurrence of abundant building stone in the vicinity. In 1949, it was also decided to send one of the chief engineers from East Punjab to England for consultation there, and to bring an expert architect back to assist in the preparation and execution of a master plan for the new capital. In 1952, four years after this decision, the Hindustan Times reported Nehru’s speech, which removed all doubts about the site of the capital, ‘the decision to build a new capital of Punjab at Chandigarh is final and irrevocable and anyone who has any doubts is sadly mistaken’.

276 However, the people inhabiting the area were allowed to remain in possession of their land, and cultivate it, as tenants of the government, till it was required for building purposes
277 Premier of East Punjab. letter to Nehru. Dec 5. 1949

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City Building Mandate

The making of Chandigarh was historic from the following reasons:

• An budgeted and time bound enterprise to rehabilitate the displaced population in the wake of partition of the erstwhile state of Punjab and Lahore ceded to Pakistan.
• A socialist Utopia it was to accommodate all classes of people.
• A role model and pace setter for future developments in India
• The last thing in Beauty and Simplicity— the most beautiful and modern capital.
• An east west dialogue—Utilising modern modes of thought and indigenous methods of construction.

Of the series of new post independence towns proposed, Chandigarh was realised as the first and to serve as a role model for future developments in the country.
From the outset it was clear that Chandigarh would be no mere local venture. Pandit Nehru and the Central Government felt the Punjab disaster acutely and realised the importance of cementing new institutions and housing in place. The Central Government agreed to cover one-third of the initial cost of the capital city.

The centralised control in the building of Chandigarh was inherent from the inception of the city. The earliest act i.e. the Capital of Punjab (Development & Regulation) Act was passed by the Indian Parliament in 1952, followed by the Punjab Legislature passing it in 1953 and the flowing acts; Punjab New Capital (Periphery Control) Act 1952. Under the Development and Regulation Act, Building Rules and Chandigarh (Sale and Site) Rules were made in the same year and the Chandigarh (Tree preservation) Order issued. The legislation for the modern city was well in place before the actual realisation of the city.

The Government envisaged a modern and efficient city with up to date services, sewerage and transport. Nehru spoke of clean open spaces liberating Indians from the tyranny of the overcrowded and filthy cities as well as the confines of the agricultural, village life. Chandigarh, then, was to be a visible and persuasive instrument of national economic and social development, consonant with Nehru’s belief that the country must industrialise or choose to perish. It was to be a showpiece of liberal and enlightened patronage, and would later be eulogized as a ‘temple of new India’278. Even though the Indian leaders lacked unanimity in the location of the new capital, yet they shared the same visionary attitude towards it. Nehru best articulated this common vision by remarking; ‘let this be a new town, symbolic of the freedom of India, unfettered by the traditions of the past....an expression of a nation’s faith in the future’. Raj Kumari Amrit Kaur, minister of health and the most vocal in her opposition to the Chandigarh site also said;

'As a Punjabi, I want the new capital of Punjab to be the last word in beauty, in simplicity, and in standards of such comfort as it is our duty to provide to every human being.' Gopi Chand Bhargava, the Chief Minister of East Punjab hoped that Chandigarh would be 'the world’s most charming capital.'

**Realising the City’s Urban Form**

The master plan of Chandigarh is based on the principles of CIAM and the principles of Urbanisme as formulated by Le Corbusier. The plan is based on the '7V Rule', determining an essential function: the Sector, the container of family life representing the 24 solar hours’ cycle which must be fulfilled in perfect harmony. Its dimensions are the outcome of studies, which were made in 1929, then 1936, 1939 and in 1949 at Buenos Aires, Montevideo, Sao Paulo, and Bogota. These plans had to determine a valid regulation of traffic of automobiles in towns of Spanish colonisation which were products of Roman towns. The chequerboard of the streets covering the area of these towns was a mesh of 100 to 110 metres (the 'Cuadra'), crossing at every 110 metres and therefore paralysing the automobile circulation and posing danger for the pedestrians and a tragic life for the inhabitants inside the 'cuadras'. A useful reclassification of them led to a ratio of harmonious dimensions and productive combinations: seven to eight cuadras on one side and ten to twelve on the other side, that is to say 800m x 1200 metres. This was the Sector issued from a valid and ancestral geometry established in the past on the stride of a man, an ox or a horse, but henceforth adopted for mechanical speeds. The mesh was rectangular, the car traffic being only regulated by the four-branch crossing (i.e. two straight lines intersected at right angles or approximately). The entrance of the cars into the sectors (measuring 800mx1200m) which are exclusively reserved for family life would take

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279 Kaur Rai Kumari Amrit Letter to Sardar Garbhan Singh April 27 1944
280 Time Magazine June 19, 1950

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place at four points only in the middle of 1200m and only in the middle of 800m. All stoppage of circulation was to be prohibited at the four circuses. The bus stops were proposed regularly at 200m from the roundabouts so as to serve the four entrances for the pedestrian into the sector. The transit traffic was to move at the sector periphery; the sectors thus being surrounded by four wall bound car roads without openings. And this novelty in town planning was applied at Chandigarh: no house (or building) door opens on the thoroughfare of rapid traffic281.

Political independence, besides permitting the planning of a national future, was also a chance to reassess the past at Chandigarh. Le Corbusier appreciated that though India was waking up after three hundred years of colonial domination, yet everything about it was intact and that it was hardly a new nation; it had the highest and most ancient civilisation, an intelligent, moral philosophy and conscience of its own.

**Aesthetic Legislation - A Regulator of Urban Form** Le Corbusier’s contribution to regulating the built mass of the new city can be perceived as early as and parallel to, the conception of the master plan for the city. It includes an extensive range of architectural controls covering volumes, façades and textures — especially for the major commercial and civic hubs such as the V2s. Recognising the crucial role of trees as elements of urban design, he also devised a comprehensive plantation scheme, specifying the shape of trees for each category of avenues, also keeping in view their potential for cutting off the harsh summer sun. A protected green belt, the ‘Periphery’, which was given a legal backing through a legislative act, was introduced to set limits to the built-mass of the city and as a measure against unsolicited sprawl outside the plan area.

Le Corbusier’s Vision of Chandigarh

In his Establishment of an Immediate Statute of the Land, addressed to a high level committee on Chandigarh, Le Corbusier described his vision of life for the city and the process by which its detailed physical fabric had evolved:

Definition of the Use of Chandigarh

i) Chandigarh is a city offering all amenities to the poorest of the poor of its citizens to lead a dignified life.

ii) Chandigarh is a Government city with a precise function and, consequently, a precise quality of inhabitants.

On this assumption the city is not to be a big city (metropolis) - it must not lose its definition. Some people say that life must come in the city from other sources of activity, especially industry- but an industrial city is not the same as an administrative city. One must not mix the two. It seems that the original definition should be complemented by the possibility of introducing elements, which can reinforce the functions of the city, rather than create a conflict of rivalry. We must take care that any temptations do not kill the goal which was foreseen at the time the city was founded. Therefore, naturally, old doors must be opened to unknown initiatives. The future of Chandigarh will be open to all cultural factors in different manifestations: including teaching as a new science in schools, university, and audiovisual training etc. The means to express and disperse thoughts would be provided through print and publications such as books, magazines etc. The next cultural component included the modes of expression and dispersal of the arts in time and space- history and geography. All kinds of reproduction of art such as visual means, photographs, diagrams etc. to different scales and their depiction through diverse kinds of exhibitions, shows,

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theatres and festivals to showcase creations of the highest modernity. For the culture of the body, an organism has to be created, having at its disposition, opportunities of meeting for competitions and tournaments. All this will afford the creation of a ‘Chandigarh Label’, which will be the guarantee of quality and will be worth emulation.

**Urbanism - The System of 7Vs**

The 7V Rule was studied by Le Corbusier in 1950 at the UNESCO’s request and constitutes a system like the circulatory and respiratory system of the human body. The 7Vs bring together a hierarchical order, capable of governing modern circulation that has been applied in Chandigarh completely:

- **V1**: Intercontinental national or provincial routes crossing the country or the continents.
- **V2**: Municipal creation, type of artery essential to an agglomeration.
- **V3**: Reserved exclusively for mechanical circulation, they have no footpaths: no door from a house or other building will open on to them. Coloured traffic lights must be set up every 400 metres thus permitting to vehicles a considerable speed. The V3 has a consequence, a modern creation of town planning: ‘the sector’.
- **V4**: Shopping Street of the sector.
- **V5**: Penetrating into the sectors, it will take vehicles and pedestrians to the doors of the houses with the help of V6.
- **V7**: Roads feeding the length of the green belts where schools and sports are situated.
- **V8**: Has since come into being for canalizing bicycles (because the car has four wheels and the bicycles two wheels and in practice they cannot be together).

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283 Sarin, Madhu. *Urban Planning in the Third World*. Oxford University Press; Berkeley, USA. p. 52
A total application of the rule of the 7Vs (which are 8) has been carried out at Chandigarh, in the new capital of Punjab, under construction, since 1971\textsuperscript{284}.

As stated earlier the attributes of the site and its setting is what sets Chandigarh apart from any other urban project thus giving the city its ultimate civic form\textsuperscript{285}. Connecting the various accents of the city –such as the Capitol, the city centre, the university, the industrial area, etc. and scaling its matrix were the city’s V2s, of which the Jan Marg (People’s Avenue), was designed as the ceremonial approach to the Capitol with the Leisure Valley reinforcing its directionality. The second V2, Madhya Marg, (Middle Avenue), cutting across the city, connects the railway station and the Industrial Area to the University. The third V2, Dakshin Marg (South Avenue) defines the first phase of development of Chandigarh. Of the two development phases of the city, phase one extends from Sectors 1-30, occupying an area of 43 sq.km. It was designed for a population of 150,000 persons with a population density of 40 persons per acre. Phase two, though for 350,000 persons, occupies only 27sq.km, and has a density of 144 persons per acre (more than thrice that of phase one), compared to the earlier development and covers sector 31-47. Phase three of the city includes sectors 48-56.

The city which had the first complete waterborne sanitation system (in India), electricity and water supply was to be financed partly by State funds, a not large contribution from the central government, and the bulk of the working capital provided by the sale of land to the public\textsuperscript{286}. Development costs were envisaged to be recovered from rents paid for government buildings.

\textsuperscript{284} Le Corbusier. \textit{The Three Human Establishments}. Translated by T.E Chowdhry.

Disposition of Functions: The master plan of Chandigarh is embodied in the principles of CIAM – especially the Athens Charter, which defined the functions of a city as Living, working, Circulation and Care of Body and Spirit. The Work component, had as its commanding head, the Capitol or the Government Centre; the heart is represented by the City Centre and occupies the geographical centre of the town; the limbs are represented by the University and the Industrial area and; its intellectual Centre is represented by the linear parkland –the Leisure Valley 287 with the museums. The rest of the city was to be composed of uniform residential sectors, thirty in number and measuring 800mx1200m each. Besides determining the city’s urban form, Le Corbusier, as the “Spiritual Director” of the entire Chandigarh Capitol Project, was also responsible for designing the key ‘Special Areas’ of the city, each containing several individual buildings. The most significant of these is the ‘Capitol Parc’ — the ‘head’. A parallel undertaking – one of almost equal significance as the Capitol, was Le Corbusier’s design of the city’s ‘heart’, the City Centre. In time, the design of the ‘Cultural Complex’ along the ‘Leisure Valley’, including the Government Museum and Art Gallery and the College of Art (Le Corbusier’s Centre for Audio-visual Training), as well as some other smaller works (such as the Boat Club and parts of the Sukhna Lake, which essentially were seen as integral parts of the Capitol Parc) were also undertaken by him.

Role Model for Future Development The significance of Chandigarh is manifold. Besides being a new town for rehabilitating a displaced population, which had gone through the physical and psychological trauma of partition, and to provide an administrative seat for the newly formed government of redefined Punjab, Chandigarh was also the vehicle to carry the country into the future. As emancipation from the

287 The name given to the natural gorge, the line of a streambed cutting across the length of the city, and conserved as a city park.
colonial past, it was to serve as a role model and pacesetter for future developments in India as well as Asia to emulate. One of the key reasons for appointing Le Corbusier was to train the Indian architects in modern town planning and Chandigarh was to serve as the testing ground and the living laboratory where these young professionals were to be trained by Le Corbusier and his team of Fry, Drew, and Jeanneret.288

Unlike the 14 other contemporaneous new Indian towns, Chandigarh was regarded as a unique symbol of the progressive aspirations of the new republic and the ideology of its struggle for independence. It was accordingly modeled as a city of prestige, as an aesthetic ideal, and, above all, as a social utopia. In the process, it became the first post-colonial city in India to provide a generous cultural and social infrastructure and equitable opportunities for a dignified, healthy living even to the poorest of the poor.

**Representative of Twentieth Century Urbanism**

Representing the architect’s sole realised urban scheme, as also his last and largest architectural ensemble, Le Corbusier’s urban and architectural work in Chandigarh forms a significant link for establishing his incomparable, global contribution to the development of urban planning, architecture and building technology in the twentieth century. An exceptional example of a well-preserved, large-scale, and comprehensive civic design and pioneering architecture in exposed concrete, the work illustrates an ingenious amalgamation of the social, aesthetic and technological ideology of European Modernism, the architect’s personal design philosophy within the progressive agenda and the techno-cultural constraints of a new Asian republic.

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288 The young Hindus whom you will gather together from various universities of the old and the new continent need a doctrinal point of view from the outset. in a way they need a friendly shenend they are young consequently they have to grow to be...
Though the contribution of Le Corbusier to the city is ineluctable, yet it must be emphasized that the contribution of his team was no less significant in the realisation of the large, pioneering stock of people’s architecture and public architecture. The development of an architectural design vocabulary for the city - low rise cubic compositions (which constitute the bulk of the city) in local brick and stone as well as concrete, interspersed with brise soliel, sunbrakers for trans-aeration, parasols and white plastered surfaces fashioned by the dictums of economy, climate and material, is credited to the team of Pierre Jeanneret, Maxwell Fry and Jane Beverly Drew. The trio is responsible for the development of the city’s grain and texture and what has popularly fetched it the name - ‘Chandigarh Style’.

**Le Corbusier’s contribution to the development of an appropriate vocabulary for Contemporary Indian Architecture**

Le Corbusier’s architectural work in India added a whole new dimension to the Indian experience. By the 1950s, Le Corbusier had long moved away from the work of his purist period, similar to that of Gropius, to a more rugged architecture. It had come to focus on the juxtaposition of pure forms - the cube, the cylinder and the cone—in a manner that owed much to Cubism in Art. Many young architects everywhere were highly influenced by this newer manifestation of Corbusier’s art. To some architects, Corbusier was simply a provider of a new architectural vocabulary - a set of patterns that they could simply adopt and adapt. Thus a style of architecture ‘the Chandigarh Style,’ emerged in India. To the other architects he was a progenitor of a whole new line of thinking. There is still work being executed in the former mode of thought but it is those architects whose cognitive

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processes—analytical and synthetic thinking—were shaped by Le Corbusier, who seemed to have made a continuing impression on India. Three sets of his work are particularly important in India: the Chandigarh experiment, the buildings at Ahmedabad and the training of Indian architects in his office. Le Corbusier's very presence in India radically transformed the status of the architectural profession and the aesthetic content of the formal training of architects in the schools of architecture, many of which were established in the exuberant ambience of his stay in the country.

Le Corbusier made efforts to create a fundamental organic architecture, unquestionable, which was neither English, nor French, nor American, but Indian belonging to the second half of the twentieth century. He also felt that he had a free hand to give India the architecture of the modern times. Le Corbusier succeeded in creating a monumentality that, unlike New Delhi, drew not from European Classicism but from European Rationalism. A clear break from the colonial past, the generic modern architecture of Chandigarh is probably best displayed in the City Centre. The characteristic way in which the space between buildings is handled, the use of the concrete slab and column structures, the way the walls are set back allowing for balconies and the broken symmetry reflects the modernist approach to the treatment of spaces which are large and inviting enough for people to walk into and yet not overwhelming.

History and Development of Chandigarh—the First Team The Governor of East Punjab authorised establishment of the city and the response from the people\(^{290}\) wrote in his letter to the Governor General of India in late December, 1949, that the site of the city had been finalised at Chandigarh and that its planning be entrusted to

\(^{290}\) In order to work out the reassignment of sites in the city, to hold a registration of the demand, applications were invited from displaced persons who wished to settle in the new capital at Chandigarh. By April 1949, the government of East Punjab had sold
Albert Mayer, an American planner, working in India. Mayer and his associates provided the basic master plan and the detailed scheme for one superblock. The new capital was to accommodate 150,000 persons covering an area of 8,000 acres at a cost of ten crores.

The Mayer team to design the new capital included the Polish architect Matthew Nowiscki. The ‘leaf plan’ as it was called was based on the superblock concept. Fan shaped in outline, with the handle end to the north and to contain the Capitol buildings and the University, the plan was constrained to the space between the eastern and western seasonal rivers. A large business district occupied the central area, while the eastern end of the city was earmarked for the industry due to its ease of connectivity to the Kalka - Ambala railway line. The neighbourhood superblock, with its elementary schools, shopping centres, playgrounds, parks supporting a thousand families were to be one element in the three-block unity called the ‘District’ or an urban village. Each superblock was to cover a rectangle about 3000 feet x 1500 feet. The three-block district, containing about 3,500 families was to provide local public buildings, boys and girls high schools, a health centre, and a town square. The district could only be crossed through cycle tracks or footpaths, and all motorised / vehicular traffic was to go around. For direct traffic into the city two highways called greenways were to run from end to end of the city. A rivulet running through the valley was to be dammed at one end to form a lake, in which would be reflected the Capitol buildings. The entire town was to be built up from the three block districts. But Providence had thought otherwise; this plan could not be executed, following the death of Nowiscki in an air crash. Albert Mayer did not wish to continue any

nearly 2500 plots for a total amount of 120 lacs with an even larger number of applications waiting to be processed, a modest yet definite endorsement for the development of the new capital.

291 Governor of East Punjab, note to Governor General of India, January 3, 1950.
292 This was revised against the earlier envisaged population of 500,000 and a budget of 50 crores.

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further on the capital project singularly, necessitating a two-member commission\textsuperscript{293} to tour Europe in search of a suitable designer\textsuperscript{294}.

A second team headed by the Swiss architect; Charles Edouard Jeanneret; Le Corbusier, his cousin Pierre Jeanneret, and the English couple Maxwell Fry and Jane Beverly Drew superseded the Mayer Team.

\textbf{History of Development- The Second Team}

On December 30, 1950, P N Thapar communicated to the then Chief Minister in a telegraphic message, the confirmation of Le Corbusier as the chief architect, and his team--Pierre Jeanneret, Maxwell Fry and Jane Drew, the latter on a three-year residency to Chandigarh, as the planners of the modern city. Le Corbusier was to make two visits of at least one-month duration each, every year, and design the buildings of the Capitol\textsuperscript{295}. All the four architects were members of the CIAM, the ideology of which was to play a key role in the design of the new city. Altruism was the sure motive for this team who had left behind lucrative practices and prestigious projects to give their time, energy and knowledge to the ‘Capital Project’ as Chandigarh was called. The focus on urban planning in India was still undefined when Chandigarh was first contemplated\textsuperscript{296}. Nevertheless a few vital decisions, taken by the city’s administrators much before its designers appeared, were to shape its ultimate form.

\textsuperscript{293} A team comprising the Chief Engineer PN Thapar and PL Verma (of the Indian Civil Service), administrative head of the capital project was commissioned to tour Europe for this purpose

\textsuperscript{294} A four-week trip was undertaken by PN Thapar and PL Verma to visit UK, Holland, France, Italy, Belgium, Germany and Switzerland. They were to hire the most suitable architect who would be willing to move to India for three years and accept an annual salary not exceeding 3,000 pounds. The former condition was inspired by the reasoning that the period of residency would get the city underway as well as suitably train the Indians who would carry the project further.


\textsuperscript{296} The Government of India between 1947 and 1951 had undertaken the construction of 14 new towns, accommodating nearly 470,000 refugees from east and west Pakistan. These towns were developed around hurriedly drawn up guidelines, without the pretensions of ‘grandness’ or ‘style’.

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Conceived as a new conception, devoid of architectural cliches, governed by its own exigencies of climate, geography, economic and technological constraints—Chandigarh symbolises an east–west dialogue reflecting its modernist ideals.

Le Corbusier’s Plan

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Its Physical Realisation

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The architectural work at Chandigarh was neatly divided between Le Corbusier and his associates. Le Corbusier, besides being the spiritual director of the project, was also responsible for the master plan, the layout and design of the Capitol Complex and establishing the architectural control. Fry, Drew and Jeanneret were assigned the task of the actual construction of the city; State owned housing for Government Employees, schools, shopping centres, hospitals, and other civic structures of the city. The design brief presented to the team was essentially a reflection of what a modern capital of modern India should be, ... the first Indian city where water, drainage, and electricity would be available to even the ‘poorest of the poor’. The vision was of a capital that would serve as a model in city planning for the nation, if not the world, in city planning297.

**The Urban Form**

The urban form of Chandigarh derives itself from the well-ordered matrix of the generic neighbourhood unit—the Sector— and the hierarchical circulation pattern resulting from Le Corbusier’s concept of the 7Vs(les sept voies)298 with a rectangular grid of the fast traffic V3 roads defining each Sector. The Sector itself was a self sufficient, introverted unit, making contact with the surrounding fast traffic roads at four specified points. The Master Plan is based on the 7Vs Rule, determining the essential function; the creation of the Sectors. The Sector measuring 800m x 1200m is the container of family life, to fulfill daily needs and serves as a self-sufficient introvert neighbourhood. Bound by fast traffic arteries on four sides, it can be traversed through the slightly curving market street V4, which also was the means to connect to the adjoining sectors. Day to day facilities, local shopping, healthcare and recreation were arrayed along

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297 Joshi Kiran, Documenting Chandigarh: Vol 1, Mapin, India, Vol.1 p.27.

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the shaded side of the V4. The vertical green belts with the pedestrian V7 running n-s contained sites for schools, and sports activities. Another tool devised to regulate the city’s urban form was its Aesthetic legislation— a system of ‘visual controls’, covering volumes, materials, textures, fenestration, boundary walls and gates as well as a scheme for plantation, since trees perform a potential role in Urban Design.

Le Corbusier’s Capitol group of buildings were starkly different from the contribution of his team, who were involved in designing the everyday architecture of the city, in terms of scale, grouping of buildings, architectural style and use of materials. However, even though three architects were working on the bulk of the city, yet a common thread unconsciously prevailed to create the hallmark of Chandigarh—‘The Chandigarh Style’. Utilising the three disciplines of economy, climate and material the emerging urbanity soon came to be recognised, deploying exposed brick, plastered and painted surfaces, overhangs and brise soliel, as its key elements.

**Legislation:** There were two specific Acts designed to protect and guarantee the planned development of Chandigarh. The first of these, the Capital of Punjab Act. 1952. controlled the Development and Regulation, and was signed by the governor of Punjab on December 17. 1952. The act empowered the Chief Administrator of the city to issue directions for the erection of buildings, to prevent any construction which was in violation of the building rules, to enforce the provisions of the Punjab Municipal Act of 1911, to levy fees or taxes for amenities to impose penalties and modes of recovery of arrears, to promote the preservation and planting of trees, and to control and regulate the display of advertisements in Chandigarh. To ensure that all further development took place in accordance with the master plan, only architects and engineers registered and licensed with the Chief

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A hierarchical system to distribute, collect and distribute traffic to 7 streets in the sector greens.
Administrator could be permitted to certify and complete building and plumbing works. The other legal instrument to protect the sanctity of the plan was the Punjab New Capital (Periphery Control) Act of 1952, which came into force on January 12, 1953, after being approved by the President of India.

**Realising Le Corbusier’s Chandigarh 1951-66**

After the land acquisition, demands for plots ascertained and the master plan were drawn up, implementation measures began with the laying of roads and services as the principal tasks. Temporary constructions such as an officer’s colony and a provisional Secretariat, as well as a thermal plan for generating electricity and boring of tube wells for water supply began. The first set of engineers and administrators concerned with the construction of Chandigarh had reached the site by 1949. By September 1950 the government had selected the area to locate the camp office for the construction staff and the store for the construction material. By 1952, when Nehru visited the city, its outlines were clearly visible. The earliest permanent constructions were the pockets of all categories of government housing for Government officials and their families. For the next five years, housing areas were rapidly constructed and the city began to develop.

The first sector to be built was Sector 22, representing the efforts of all three architects. In the absence of the city centre, it became the city’s commercial hub. Besides the sector, in this phase, Frv’s Government Press Sector 18, a health centre, schools for various age groups, a cinema and a swimming pool in the adjoining Sector 23 were also built. Chandigarh became identified, at least in the first three decades of its existence, with being a town with much visible construction activity. The pace of construction, or the absence thereof, came to be seen as an important indicator of a town’s success by the town planners.

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300 Memo No 300 of 25 September 1949 from the Executive engineer (Capital) to Additional Deputy Commissioner Ambala

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themselves. The early history of the town then got divided into two broad phases, the first five years when it was the Government that was doing most of the construction in town; the next decade and a half when private persons also began to build in the town. After the reorganisation of Punjab into Punjab, Haryana and Himachal Pradesh in 1966, the pace of construction quickened. Chandigarh gradually began to fill up and acquired a lived in look, even though large parts of the city were still vacant. But by then many more people were willing to take a chance to settle in the city and the pace of voluntary migration into Chandigarh, from neighbouring areas as well as from far off places, increased. Between 1951 and 1956 most of the construction in Chandigarh was Government owned. In the next decade the government began to support private construction through a variety of incentives. But still the rate of construction did not match the expectations of the town planners of the city.

The city was formally inaugurated by the then president Dr. Rajendra Prasad on October 7, 1953. By the end of 1954, the city was inhabited by about 20,000 persons who were mostly construction workers and Government Servants. By the year 1957, the population rose to 37,000 persons and by this time the traders had also moved into the city and construction of the public buildings was underway. In the first decade of its existence the population of the city grew almost five times from 24,000 (in 1951) to 120,000 (in 1961). Most of the construction activity focused on Sectors 22, 23 and 19. The first cinema house in Chandigarh, the Kiran was constructed in Sector 22, whose owner even built a second one - Jagat in the then uninhabited City Centre. The northern sectors, 3-11, saw the construction of government housing for ministers and members of
Working - the second principle of CIAM. The Capitol Complex, the developments along Jan Marg and Madhya Marg—the principal V2s constitute the Work Places in Chandigarh.
Legislative Assembly. Markets were constructed in Sector 22 and 9 as was the Hotel MountView in Sector 10, which was then leased out to the Oberoi chain of hotels\textsuperscript{303}.

Between 1955-60 housing areas were further developed, Government men and women colleges were created to enhance higher education. Teaching departments at the Punjab University were realised. Private construction in the city also began to pick up. Initially the development of Chandigarh was slow. Even though the Acts stipulated that residential plots would be resumed if not built within five years of allotment, yet in 1960 the Capital Project office reported over 5000 such owners who had failed to complete construction. The shortage of building materials, particularly cement and bricks, and shortage of time at the hands of owners who were abroad or outside Chandigarh were the causes behind the slow progress of private development. The Government decided to give one more year for completion. By the end of 1961 when the first census report was published, the major public buildings like the Secretariat, High Court and Assembly were constructed and the city had attained a population of more than one lac persons. The population rose to 2.2 lacs in 1971, 3.3 lacs in 1981, and 5.5 lacs in 1991.

By 1966, the first phase of Chandigarh’s historic development was considered to be over, as the key players in its development were no more. The death of Pandit Nehru left a vacuum in the political circles of India, which were followed by political upheavals in Punjab which lead to the reorganisation of Punjab into Punjab, Haryana and Himachal Pradesh in 1966. Subsequently, Chandigarh was assigned the status of a ‘Union Territory’, placing it under the direct control of the Central Government. As Chandigarh continued to be the capital of both Punjab and Haryana while functioning as a Union Territory, there was an

\textsuperscript{303} The Tribune, 15 August, 1956.
increase in the demand for housing, offices and other facilities which posed pressures of development upon this capital town.

**Chandigarh after Le Corbusier -1967 till 1999**

The Corbusian gridiron plan, well in place by 1966, was initially girdled by a green belt, 'the Periphery'\(^{304}\), created in order to restrict the size of Chandigarh by setting limits to its spread. This periphery was in time, lost, to overcome the increasing urbanisation pressure. The state of Punjab, in its bid to lay claim over its erstwhile capital, began to construct the satellite township of SAS Nagar (Mohali) within the southern periphery of Chandigarh, almost as its extension. Haryana reacted quickly by adding Panchkula to the east. Exploiting the resources of Chandigarh, these townships developed as industrial hubs and several other unauthorized constructions mushroomed along the entry routes to the capital increasing pressure on Chandigarh's infrastructure facilities. The 'plan' and its 'spirit' came to be challenged.

By 1967 the second phase of the city development had begun, when the Chief Commissioner MS Randhawa, laid the stress on development of infrastructure for the weaker sections of society. Transit colonies were set up in the villages of Karsan, Dadumaira, Khudda Jassu, Khuda Lahora and sector 26. These however have not developed effectively as the larger issues of income, jobs, land tenure, were not been addressed. Planned as transit colonies, these became permanent and continue to depend on Chandigarh creating pressure on the city's shrinking resources.

The city in its enlarged status of being the head of three states experienced severe development pressure, perceived in the increased density in the second phase sectors (31-47), where densities as high as 60 persons per acre replaced the 17 persons per acre norm in phase 1 (sector 1-30) sectors. The two storied terraced developments of

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\(^{304}\) The periphery was a green belt extending to a 16 km radius around Chandigarh. The Periphery Control Act regulated development within this area, which was primarily demarcated as an agricultural belt in the Master Plan 1951.
LIVING:
The Chandigarh Style: credited to Maxwell Fry, Jane Drew and Pierre Jeanneret. Utilising local brick, stone, plastered and painted surfaces, jalis and perforated sunscreens, to generate a climate responsive architecture under disciplines of money, technology and local labour.

LIVING:

The Chandigarh Style:

Aesthetic Legislation

Frame Control for houses up to 250 sq. yards. Full Architectural Control along V4 shopping street.

The resulting urbanity.
earlier years were replaced by compact groups of four storey apartments.

The fine-grained Chandigarh Style was replaced by balconies and staircases as repetitive elements of facades. The scenario in private residences witnessed similar changes as affluence in material and thought brought in liberal use of free forms, varied materials and textures.

As the city grew, it became a locus of education, healthcare, and cultural facilities, besides offering a quality of life unavailable in the stifling metropolises of India. Chandigarh became the destination for setting up head offices and headquarters for national and regional enterprises, spearheading an increase in land prices and rents in the capital. Such dynamics of growth and the relative prosperity of the Chandigarh dwellers have given the city the dual distinction of having the highest per capita vehicles in the country. 305 The population is 750,000 within the city limits and another 350,000 persons inhabiting various pockets in its periphery. The estimates for population trends are 2,000,000 by the year 2020 306.

Even though the capital project is still not completely realised, yet Chandigarh’s modern heritage begins to be endangered. Akin to an island, the city is surrounded by the states of Punjab and Haryana. This exerts pressure on the city’s limited infrastructure, leaving little or no space for further expansion. Thus there is an urgent need to safeguard the essential elements of the city.

**The City Grows - New Developments Phase III**

305 About 6,02,729 vehicles, including a large percentage of two wheelers are registered in the city (Source website of Chandigarh Transport Department. URL http://chdtransport.gov.in/RCL.asp 2005.

306 The 1000 acres of urban land for urban development were just enough to take care of immediate housing needs, notwithstanding the needs to rehabilitate the proliferating squatter settlements.
Phase three of the city includes sectors 48-52 and parts of 53-56\textsuperscript{307}. These are also residential sectors on the similar pattern as phase II, except that no individual plots have been sold. The outer Dakshin Marg or the Vikas Marg defines the northern edge of phase III. Originally a V3, it has been relegated to a V2 with special \textit{volumetric controls}\textsuperscript{308} visualized for the commercial development along this urban corridor. This will present a sharp contrast to the low rise, flatted, development in phase I and II of Chandigarh. The residential component will be realised through land parcels allotted to registered housing societies / developers who would build flats and supporting infrastructure according to predefined norms for further sale to individual owners. The Vikas Marg connects to Ropar and beyond towards the west and serves as a major transport corridor for interstate traffic transiting Chandigarh between Himachal Pradesh, Haryana and Punjab.

**New Developments**: In the wake of new developments, and at the turn of the century, various significant interventions, which would take care of the mounting pressures of urban development on the city, are underway. Within phase I two important changes are seen in the privately owned housing stock and the city’s Industrial Area. The Apartment Act has been implemented in response to the growing user needs for additional living space/ dwelling units within the city. Through this Act, large plots are being permitted additional dwelling units / apartments (within the same lot), leading to multiple ownership. In the case of small plots (Marla housing up to 250 square yards), individual floors can be bought or sold under separate ownerships, whereby a three storeyed house can have up to three owners.

\textsuperscript{307} The boundary of Chandigarh at present shows these sectors lying partially within Chandigarh and Mohali (SAS Nagar). The process of reorganisation is currently underway.

\textsuperscript{308} Volumetric controls define the outer envelope and maximum height of the building within which the architect can exercise his choice of façade, material, colour, texture etc.
CIRCULATION: the system of 7Vs - Les Sept Voies. A hierarchical system to distribute, collect and disburse traffic VI intercity to V7 streets.
A number of large industrial Houses within the industrial area (located to the eastern end of Chandigarh) are being permitted a change in land use under the Industrial Area Conversion Policy. Industrial plots having an area of one acre or more can now be converted to Shopping Malls and Multiplexes, (theatres and cinemas being declared as non polluting industry) under a single roof. Utilising glass and aluminum facades, new materials and techniques of construction, these buildings are poised to bring in a sea change to the existing cubic, concrete and steel, (modernist) streetscape of the industrial zone. This area designated as the industrial zone (with non polluting industry) is expected to offer competition to the existing City Centre sector 17 with its multifunctional character and activity diversity.

In November 2002, the area used for Chandigarh Information Technology (IT) Service Parks was notified. This has lead to the creation and establishment of Rajiv Gandhi Chandigarh Technology Park in the eastern periphery of the city. This is a hub for major multinational companies in the field of IT like Infosys, Quark city, Dell etc. Although it has created job opportunities for many white collared professionals but the resulting influx of population has strained the city’s housing and urban infrastructure.

**Changes in the City Centre (Sector 17):** Under ‘The Setting up of Multiplex Theatres and Conversion of Existing Cinemas into Multiplex Theatres Scheme, 2000’ Published in Chandigarh Administration Gazette, (Extra), dated November 17, 2000, the cinemas are being allowed to develop as multiplexes in the city centre. The objective is to promote Tourism and Entertainment Industry in the Union Territory of Chandigarh and increase avenues for entertainment of city residents. Under the provision for conversion, all cinema owners have the option for conversion subject to the total seating capacity not being more or less than 75% of existing sanctioned capacity. Besides allowing an additional FAR (Floor Area Ratio) of 50%, all additions & alterations
must conform to the Building Rules, and all modifications proposed in respect of the exteriors – need the prior approval of the Department of Urban Planning, Chandigarh Administration.

**Twenty-first Century Chandigarh: New Proposals**

The Chandigarh Administration has embarked upon a series of innovative projects for the overall development of the city. Its future is envisaged as a regional hub for northern India. The declaration of a SEZ (special economic zone) which includes the city periphery, has affected the overall development and physical form of the region. The new proposals for future growth of Chandigarh include the following thrust areas—Education, Medical Tourism, Information Technology and Biotechnology. A rapid mass transport system is envisaged, catering to the peak hour traffic into the city from the surrounding satellite townships of Mohali, Panchkula and as far as Pinjore, Ambala and Ropar.

On the education front the Chandigarh Administration proposes to set up the Information Technology Park, whose development has already begun in the city’s eastern periphery. Up gradation of healthcare facilities include a deemed university status for the Medical College cum Hospital in phase II of the city. The Second Interstate bus terminus also located in Phase II has begun functioning. It has relieved the ISBT Sector 17 (Inter State Bus Terminus) of the Punjab bound inter state buses. To boost tourism, the cultural buildings in the Leisure Valley, at the Sukhna Lake, and other prominent locations such as the City Centre are being augmented. Infrastructure for tourist accommodation has been created in the city like the second wing of the UT State guest house, the Beacons Hotel (which is being run by the Institute of Hotel Management, Chandigarh Administration) and other private ventures such as the Taj group of Hotels. For recreational needs a second lake is being planned for phase two sectors. A series of parks such as the IT, Non Conventional Energy Sources, Aquatic
Development of government owned and privately built housing in Chandigarh: accomplishing the stupendous task to house the increasing influx of migrants into the city.
Sports, Acting School and Film City, Amusement Park, Fashion Technology etc. are being proposed in view of augmenting the city’s social and physical infrastructure needs. A sports complex, Planetarium, Race Course, Golf Course and Equestrian sports are also being planned\(^\text{309}\).

To conclude the above, Chandigarh was no ‘casual’ venture and from its inception it meant a ‘radical’ departure from existing modes of thought and prevailing methods of development; a harbinger of change, signifying the east - west dialogue which a newly independent nation entered into, and an expression of its national identity. As a living city, it must continue to grow and evolve in order to meet the demands and aspirations of its people. But at the same time there can be no compromise on its modernist vocabulary, urbanism and characteristic principal elements, underlying its spirit.

**Delineating the boundaries of the Core and Buffer Zones:**

The fundamental urbanism and the town planning rationale of Chandigarh lie in its system of 7Vs and the self contained neighbourhood i.e. ‘The Sector.’ The boundaries of the Core of the city thus comprise:

i) The Capitol Complex along with the Rajindra Park, up to the Sukhna Lake in the North.

ii) The two V2s Jan Marg and Madhya Marg along with the Leisure Valley extending from Sector 3 to Sector 23 and the architectural Control along the two V2s.

iii) The City Centre

iv) The system of 7Vs which are best represented in the sector belt 3-4, 9-10, 16, 22-23.

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\(^{309}\) Chandigarh Administration Home Dept order dated 13/7/05

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While i and iv form the north and south boundaries, ii and iii are the eastern and western extents of the Core Zone. The map shows the boundaries of the Core and Buffer Zones.

**Justification of the Core – WHC Operational Guidelines**

According to the World Heritage Committee Operational Guidelines, *the delineation of boundaries* is an essential requirement in the establishment of effective protection of nominated properties. Boundaries are to be drawn to ensure the full expression of the outstanding universal value and the integrity and/or authenticity of the property. For properties nominated under criteria (i) - (vi), boundaries should be drawn to include all those areas and attributes which are a direct tangible expression of the outstanding universal value of the property, as well as those areas which in the light of future research possibilities offer potential to contribute to and enhance such understanding. The boundaries of the nominated property may coincide with one or more existing or proposed protected areas, such as national parks or nature reserves, biosphere reserves or protected historic districts. While such established areas for protection may contain several management zones, only some of those zones may satisfy criteria for inscription.\(^\text{310}\).

Core comprises the area which is *most representative* of the Outstanding Universal Value of the property under consideration, which is largely intact and well preserved in terms of authenticity and integrity of the criteria under which the property is being nominated. These areas of the first phase of Chandigarh contain the complete architectural and urban works of Le Corbusier, and also of his team (Jeanneret, Fry and Drew). The Core is a controlled and legislated area and under periodic monitoring. The Core is controlled under the following ACTS some of which are as early as 1952. The city has a


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protective designation by way of the following laws that are mechanisms to safeguard and regulate the growth and development of the city.


ii) Punjab Capital (Development and Regulation), 1952.


vi) Allotment, transfer of Built up Booths in any sector on lease, /Hire Purchase basis in Chandigarh, Rules, 1991.

vii) Chandigarh Conversion from Lease hold to freehold Land tenure Rules, 1996.


ix) Allotment of Sites in Chandigarh Information Services Park Rules, 2002.

The rest of Phase I which includes sectors 1-30 with the Union Territory boundary in the north, the riverbeds - Patiali ki Rao in the North West and the Sukhna Choe in the North East, and the Southern edge of Dakshin Marg in the South is proposed as the Buffer Zone. The Buffer Zone is the area immediately surrounding the Core Zone demarcated by the boundaries of the nominated property. It is also an area of regulated development, where change may be permitted in consultation with a heritage committee. Wherever necessary, for the proper conservation of the property, an adequate buffer zone should be provided. For the purposes of effective protection of the nominated property, a buffer zone acts as an area surrounding the nominated property having complementary legal and/or customary restrictions placed on its use and development. This gives an added layer of protection to the property. This should include the immediate setting of the nominated property, important views and other areas or attributes.
that are functionally important as a support to the property and its protection\textsuperscript{311}.

Chandigarh by and large is a well conserved city, whose urban fabric has remained unaltered due to its large scale ownership under a single umbrella - the City Administration. The properties under private ownership such as private houses etc. are also governed by a system of regulation mentioned above and under the purview of the Chandigarh Administration. Hence it becomes easy for city managers to put a management plan well into place in this particular situation.

**Devising a Management System**

Each nominated property should have an appropriate management plan or other documented management system, which should specify how the outstanding universal value of a property should be preserved, preferably through participatory means. The purpose of a management system is to ensure the effective protection of the nominated property for present and future generations. An effective management system depends on the type, characteristics and needs of the nominated property and its cultural and natural context. Management systems may vary according to different cultural perspectives, the resources available and other factors. They may incorporate traditional practices, existing urban or regional planning instruments, and planning control mechanisms, both formal and informal. In recognising the diversity mentioned above, common elements of an effective management system should include:

a) a thorough shared understanding of the property by all stakeholders;

b) a sequence of steps involving planning, implementation, monitoring, evaluation and feedback;

c) the involvement of partners and stakeholders;


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d) the allocation of necessary resources;
e) capacity-building; and
f) an accountable, transparent description of how the management system functions.

Effective management involves a cycle of long-term and day-to-day actions to protect, conserve and preserve the nominated property. Moreover, in the context of the implementation of the *Operational Guidelines for the Implementation of the World Heritage Convention*, the World Heritage Committee has established a process of Reactive Monitoring. Reactive Monitoring involves reporting by the Secretariat, other sectors of UNESCO and the Advisory Bodies to the Committee on the state of conservation of specific World Heritage properties that are under threat. To this end, the States Parties are required to submit by February 1 every year, to the Committee through the Secretariat, specific reports and impact studies each time exceptional circumstances occur or work is undertaken which may have an effect on the state of conservation of the property. According to the Article 4 of the World Heritage Convention, it is the duty of the State Party, primarily towards the convention, to safeguard the natural and cultural heritage situated on its territory and to ensure its identification, protection, conservation, presentation and transmission to the future generations. The objective of reactive monitoring is to assist the state party with all possible measures, including technical cooperation, in order to prevent the deletion of any property from the List of Inscriptions. The Committee recommends that States Parties should co-operate with the Advisory Bodies which carry out monitoring and reporting, on the behalf of the WHC, on the progress of work undertaken for the preservation of properties inscribed on the World Heritage List.

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313 Article 1 and 2 *World Heritage Convention 1972.*
Heritage List\textsuperscript{314}. The objective of inscription on the WHL does not deter development of a given property, yet state party must ensure that the outstanding universal value of the property is fully preserved as that represents the objective behind its nomination. The World Heritage Committee must be kept abreast of any proposals and development schemes the state party wishes to implement. It may assist in seeking appropriate solutions to such moves which bring about irreversible changes which could affect the outstanding universal value of a property. Once reactive monitoring reports are received and examined by the WHC,

i) a property may be kept on the list, if its OUV is intact, or

ii) a state party may be asked to reverse the changes, new interventions which have been made within a time bound frame. The WHC may also provide technical assistance to a state party for carrying out necessary remedial measures to restore the values and merits of the OUV of the property, or

iii) a property may be deleted from the list if the changes caused are irreversible and there is a substantial loss of the values and merits which have contributed to its OUV.

It is also possible that a property which is on the WHL to be inscribed on the List of World Heritage in ‘Danger’ by the Committee when it finds that the condition of the property corresponds to at least one of the criteria in either of the two cases described below. In the case of cultural properties (of which Chandigarh is an example), there are two principal categories i.e. ascertained danger and potential danger. The former is a quantifiable and documented danger, while the latter are indirect threats, which will ultimately affect the inherent characteristics of the property.


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a) **Ascertained Danger** - The property is faced with specific and proven imminent danger, such as deterioration of materials, surface and structural or ornamental features, deterioration of architectural town planning coherence, deterioration of natural environment or urban space and significant loss of historical authenticity and cultural significance\(^{315}\).

b) **Potential Danger** - The property is faced with threats which could have deleterious effects on its inherent characteristics. Such threats include modification of judicial status of the property which diminishes the degree of its protection; lack of conservation policy; threatening effects of regional planning projects, town planning, outbreak or threat of armed conflict and gradual changes due to geological, climatic or other environmental factors.

A property which is on the List of World Heritage in Danger requires periodic reporting by its state party and also receives substantial financial assistance from the WHC to develop corrective measures to retrieve it from the WH list in danger. In case the property is continually losing the very characteristics which were reasons for its OUV, and therefore inscription, it may be permanently deleted from the WHL, in consultation with its advisory bodies and the state party.

Periodic Reporting is required for all properties inscribed on the WHL and each state party furnishes the periodic report every six years to the UNESCO General conference, through the WHC, on the administrative and legislative provisions adopted and other actions taken, including the state of conservation of the WH properties located on their territories\(^{316}\). The primary aim of this reporting is to make effective, a long-term conservation of the properties inscribed on the WHL, and to strengthen the credibility of the implementation of the

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\(^{315}\) Ibid. Operational Guidelines Para 178,179

\(^{316}\) Ibid. Operational Guidelines Para 199
convention. Besides this, periodic reporting is an exercise for state parties to report the state of conservation, assess the maintenance of the OUV, to record the changing circumstances which may affect the state of conservation of the property, and to provide a mechanism for regional cooperation involving exchange of information and experiences between state parties.

**Authenticity**

Properties nominated under criteria (i) to (vi) of the Operational Guidelines (already listed in chapter 5) must meet the conditions of Authenticity. Annex 4, of the Operational Guidelines which includes the Nara Document on authenticity, states ‘the ability to understand the value attributed to the heritage depends on the degree to which sources of information regarding its value may be understood as credible or truthful’. Besides this, judgments about the value attributed to cultural heritage, as well as the credibility of related information sources, may differ from culture to culture, and even within the same culture. Hence cultural heritage must be considered and judged, primarily within the cultural contexts to which it belongs. Depending on the type of cultural heritage and its cultural context, properties may be understood to meet the conditions of authenticity if their cultural value (as recognised in the nomination criteria proposed) are truthfully and credibly expressed through a variety of attributes which include:

i) Form and design;

ii) Materials and substance;

iii) Use and function;

iv) Traditions, techniques and management systems;

v) Location and setting;

vi) Language and other forms of intangible heritage;

vii) Spirit and feeling; and

viii) Other internal and external factors.
Attributes such as spirit and feeling do not lend themselves easily to practical applications of the conditions of authenticity. Nevertheless they are important indicators of character and sense of place, for example, in communities, maintaining tradition and cultural continuity. The use of all these sources permits elaboration of the specific artistic, historic, social, and scientific dimensions of the cultural heritage being examined. "Information sources" are defined as all physical, written, oral, and figurative sources, which make it possible to know the nature, specificities, meaning, and history of the cultural heritage. When the conditions of authenticity are considered in preparing a nomination for a property, the State Party should first identify all of the applicable significant attributes of authenticity. The Statement should assess the degree to which authenticity is present in, or expressed by, each of these significant attributes.

**Integrity**

All properties nominated for inscription on the World Heritage List shall satisfy the conditions of integrity. Integrity is a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes. Examining the conditions of integrity therefore requires assessing the property to ensure that it:

a) includes all elements necessary to express its outstanding universal value;

b) is of adequate size, enough to completely represent the features and processes which convey its significance; and

c) does not suffer from adverse effects of development and/or neglect.

These conditions should be presented in a statement of integrity. For properties nominated under criteria (i) to (vi) (Chapter 5), the physical fabric of the property and/or its significant features should be in good condition, and the impact of deterioration processes, if any, should be

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317 Ibid Operational Guidelines Para 199. Decision 20 COM IX. 13
controlled. Relationships and dynamic functions present in cultural landscapes, historic towns or other living properties essential to their distinctive character should also be maintained. Conditions of Integrity are used to represent the Outstanding Universal Value (OUV) of Chandigarh. The OUV may be repeated for the purpose of this discussion: Chandigarh is the first largest and most comprehensive expression of Le Corbusier's ideas and principles of modern town planning and urbanism. It is also the first and only fully realised example of modern heritage (at City/town design level) in post independence India. Its town plan and individual elements that help in creating its unique urban image are extremely well conserved. They continue to perform their original intended functions of providing the highest quality of life and infrastructure, making Chandigarh a chosen destination for all walks of life. For fulfilling the conditions of authenticity, the example of Chandigarh is analysed at the city scale. This scale is large enough in size and truly represents all the features which convey its OUV (viz. plan form, system of 7Vs, the sector itself including the grain and texture of the sector). The attributes which contribute to its authenticity are analysed in the following table.  

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<th>S.No</th>
<th>Attributes contributing to Authenticity</th>
<th>Analysis vis a vis Chandigarh</th>
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<tbody>
<tr>
<td>1.</td>
<td>Form &amp; Design</td>
<td>The system of 7Vs and the Sector (neighbourhood Unit) are the basis of the Chandigarh plan. The preservation of the 7V grid and the self contained neighbourhood are</td>
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318 The eight attributes of Integrity are listed under Para 89 of the Operational Guidelines for the Implementation of the World Heritage Convention, February 2005.
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<th>Material &amp; Substance</th>
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<td>3.</td>
<td>Use &amp; Function</td>
<td>The disposition of the principal functions of the city, (the four functions i.e. Living, Working, Circulation and Care of Body &amp; Spirit) follow the original design of Le Corbusier and no significant change has been permitted in the functional pattern of the city.</td>
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<tr>
<td>4.</td>
<td>Tradition &amp; Techniques</td>
<td>The city is under the direct control of the Chandigarh Administration, which is also the custodian of all public properties and areas within the city. It also has a protective designation for the privately owned structures such as private housing. Hence all areas in Chandigarh are well conserved, and all changes are regulated through Legislation. The techniques and materials of construction for public areas and buildings remain as per the original specifications, while the privately owned houses are undergoing facelifts and internal change due to rising affluence and changing lifestyles. However, it must be stated here that these do not in any way...</td>
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5. Location & Setting

The City’s intrinsic value lies in the context of its Location and Setting. The natural boundaries formed by the seasonal rivulets, and the mountain backdrop in the East, West and North, respectively, permitting southward growth, are recognised as the natural limits of this verdant enterprise. The Sukhna Choe forest reserve, Sukhna Wetlands, Lake Reserve Forest, and the Patiali Ki Rao forests are natural conservation areas reinforcing the boundaries of the city in its verdant location and picturesque setting.

6. Language & other forms of Intangible Heritage

Attributed to urbanism, system of 7Vs and the repetitive neighbourhood unit, the quality of life of Chandigarh is ordered. This symbolism has manifested itself in the functional disposition and urban form of the city.

7. Spirit & Feeling

The spirit and feeling with which the city was created is symbolic of freedom from the past and ushering in, of a new tomorrow. This spirit and feeling finds appropriation even today; the citizens feel a sense of
pride and belonging, when talking about their city. People from various age groups and walks of life are keen to see the city acquire a world heritage status.

8. Other External & Internal factors

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<td>Not consequential</td>
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The following chapter will compare the properties of modern heritage i.e. Le Havre, White City of Tel Aviv and Brasilia to Chandigarh with respect to the attributes of authenticity. Based on the comparative analysis, recommendations for heritage management of Chandigarh would be made.