



The Changing Pattern of Housing in India with Special Reference to Chandigarh

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ABSTRACT The housing scenario in the world over and more particularly in the developing countries like India is undergoing a major change. India's urban population is currently around 30% of its total population. Experience across the world has been that as the economies grow; rapid urbanization takes this proportion to over 60% before it begins to stabilize. As such, it is projected that India's urban population would grow to about 473 million in 2021 and 820 million by 2051, as against only 285 million in 2001. This paper presents the housing scenario with special reference to Chandigarh which is called the Mecca of Architects. It has witnessed an enormous change in the pattern of housing due to various reasons well understood and a part of normal phenomenon. Due to scarcity of land and population explosion, there is a steep rise in the height of buildings and the design of houses has also changed.

*'Long did I cherish a desire, neither for wealth or fortune,
but my house tucked away in a corner of the earth, where I could be with my thoughts'*

Rabindranath Tagore

1.0. Introduction

It could be stated with a fair degree of certainty that the world of the 21st century would be an urban world. Between 1950 and 2000, the cities have grown twice as fast as the villages. The current decade, 2001-2010, saw an increase of about 88 per cent in the world urban population, and the cities have added on an average about 82 million people annually. In 1950, the developing countries had about 39 per cent of the world's urban population. As such, it is projected that India's urban population would grow to about 473 million in 2021 and 820 million by 2051, as against only 285 million in 2001. In

these countries, a large number of mega-cities, without basic services is rising.

Due to the changed urban scenario, the foremost thing which is undergoing an enormous change is the Housing Pattern. 'Housing need' is upper-most for every individual as it arises out of the basic human requirement of having a "shelter" for protecting himself and his kith and kin from the fury of nature and for leading a safe and dignified life. Adequate housing facility becomes an essential pre-requisite in every human settlement for facilitating integrated social and economic development of individuals

and communities in the larger interest of national development.

In the recent times, there has been an unending influx of rural population into the towns in search of better opportunities, lifestyle, infrastructural development and facilities available in the towns. Scarcity of developed land/house sites, rising cost of construction materials, high wage rates, shortage of services and amenities of drinking water and sanitation etc. have pushed the housing costs beyond the reach of common man. The result is that a large number of people, especially those in the economically weaker sections and lower income groups, are simply unable to afford a suitable shelter. Due to the economic boom, the housing for the other sections of the society is coming up very fast. With the financial independence, each individual

desires to own his independent house. The family system is changing. Thereby, the housing pattern has undergone an enormous change all over the country.

2.0. Changing Pattern of Housing In India

The forces that revolutionize the architecture of public buildings are usually slower to express themselves in individual house design. That is the reason why in a fast-changing world, dwellings of ancient or pre-historic origin are still in use. Budgetary constraints is the major determining factor when planning to build a house India was at the threshold of modern architecture and planning when it got Independence in 1947. Millions of people got dislocated due to the partition struggles and thus housing was the foremost need of the Indians.

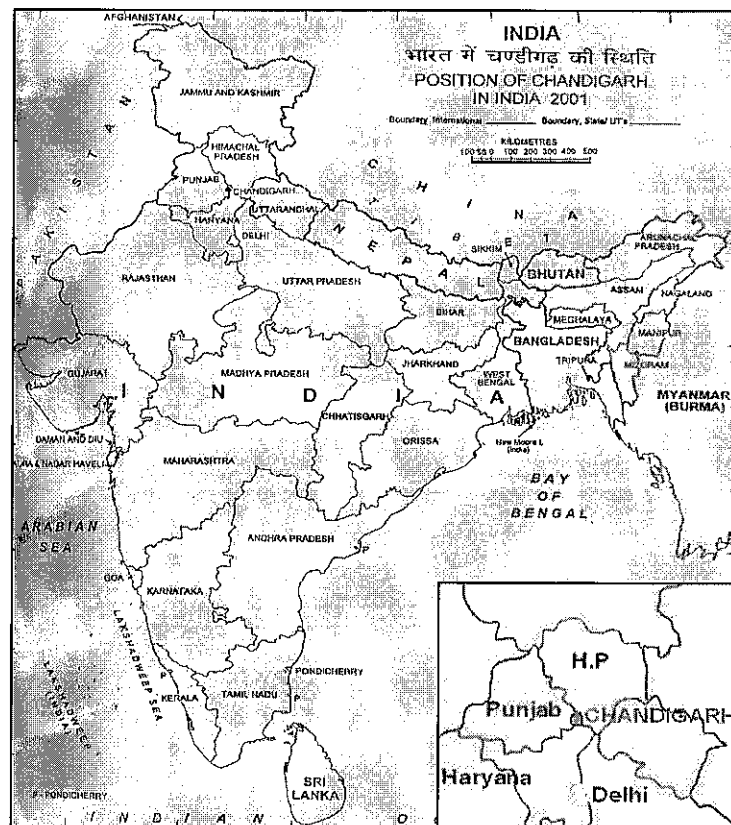


Figure 1: Map showing the location of Chandigarh
Source: Souvenir of Census of India, 2001

It was difficult to shrug out of the old traditional norms and thus, the process of the adoption for changing pattern of housing in India had been relatively slower even late till the end of the last century. The Indian people who were used to a certain kind of lifestyle were finding it difficult to maintain the same. The demographic profiles of the country have grown enormously. Due to acute scarcity of land, change in the lifestyles, population explosion and changes in the family setup, the housing pattern has undergone an enormous change. There is a steep rise in the height of the buildings and the design of houses has also changed.

3.0. Inception of Chandigarh

In India, which was an under-developed country in the nineteen fifties, architecture made a major breakthrough by providing mass low-cost housing with modern facilities. The first such kind of experiment was made in Chandigarh (Figure 1) which became the mecca of all the Architects world over.

At the time of partition, Chandigarh was chosen to be built as a

new capital of the undivided Punjab state. It was a nascent land where the planners could draw anything at length with wild imagination. Albert Mayer, a planner of American firm was initially invited to design the new capital. They prepared the first plan in 1949 (Figure 2). Unfortunately, his partner, Mathew, Nowicki died in a plane crash soon and Mayer did not continue. Later, Le Corbusier was chosen and he drew the plan of Chandigarh with a controlled periphery around it so that it can act as a buffer between the new city and the development around it (Figure 3). But this idea which was envisaged 60 years ago has proved to be fatal now. The city which was planned for 500,000 population has already blown up to cater to a population of 1.1million and perhaps, much more to take. As per the planning of Chandigarh, the city was divided into three phases. The phase I consists of 30 sectors (an independent residential neighbourhood) (Figure 4). Phase II and Phase III consists of 17 sectors and 13 sectors respectively (Figure 5).

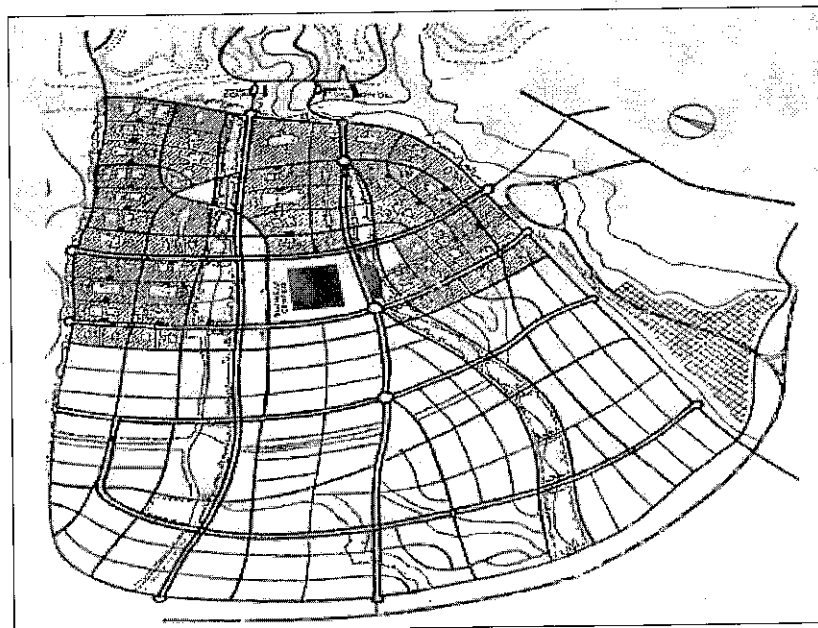


Figure 2: Albert Mayer's Plan for Chandigarh

Source: Bahga et al (2000), 'Le Corbusier and Pierre Jeanneret- Footprints on the Sands of Indian Architecture'.

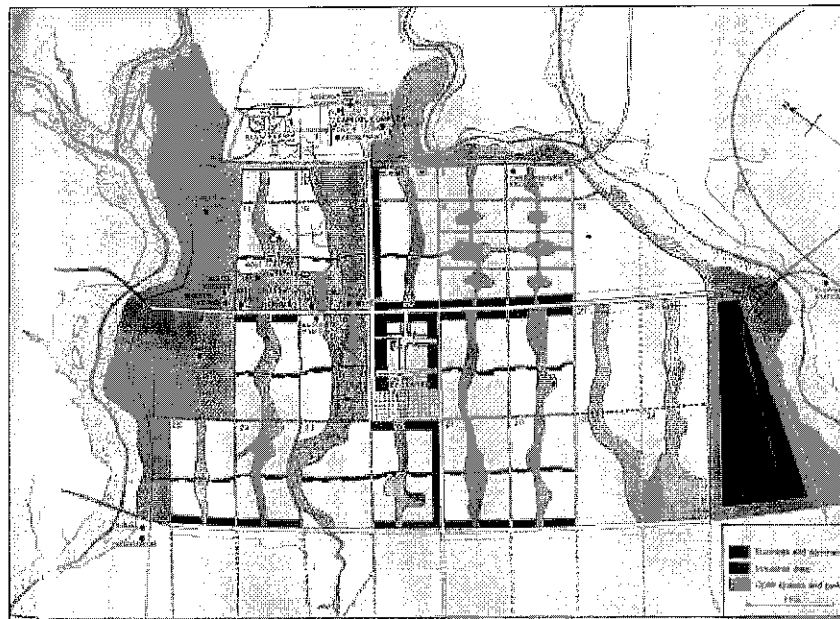


Figure 3: Master Plan of Chandigarh by Le Corbusier
 Source: Bahga et al (2000), 'Le Corbusier and Pierre Jeanneret- Footprints on the Sands of Indian Architecture'

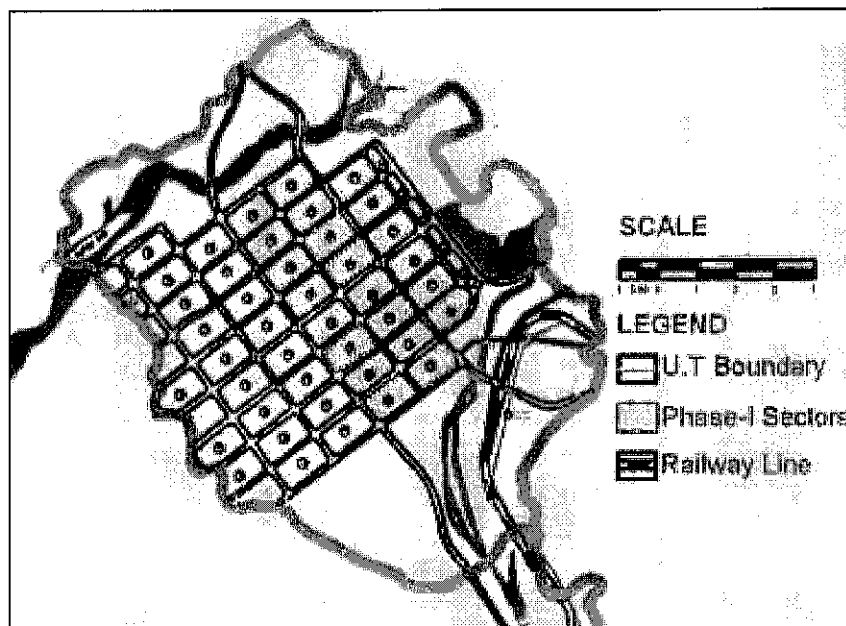


Figure 4: Plan showing the phase I of Chandigarh
 Source: 'Chandigarh Atlas' by Gopal Krishan (2003)

4.0. Housing in Chandigarh

The city of Chandigarh is indebted to Le Corbusier for the planning and designing of large scale government buildings which give it a character of sculptural monumentality. But in spite of his

gigantic contribution, the city was able to acquire its present character mainly because of the modest architecture of government housing. The sheer volume as well as the quality of housing was instrumental in deciding the exclusive profile of the city and delineating their

impact on the lifestyles of the people. The credit for this goes to Pierre Jeanneret along with his colleagues Maxwell Fry and Jane Drew. Jeanneret, by virtue of his long tenure in Chandigarh, played a more significant role in designing various categories of housing. Chandigarh has an integrated development of Government as well as private housing.

4.1. Government Housing

At the very inception of the city, the planners felt that as a seat of provincial Administration, Chandigarh would need a large number of houses for government employees. It was a Herculean task to decide the pattern of housing to be developed in Chandigarh. The architecture of the Mughals as well as that of the British Raj expressed the identity of their respective times, so a new architecture was needed to translate the dreams and aspirations of a new nation. Pierre Jeanneret, thus had no well-designed model of architecture for homes to guide him. India was not only a cradle of one of the oldest culture but also a nascent modern society. It was an

overwhelming reality, difficult to confront and hard to live. The decision makers were of the view that housing should be modern in aspect, functional in purpose, acceptable to inhabitants, and within budgetary provisions. The administrators connected with the Capital Project, thus, decided to study housing at Oxford and finalize the blueprint for the project. The initial programme for government housing covered a range of thirteen types, with the largest House Type 1, designated for the Chief Minister of the State and the smallest house Type 13 for peons. Subsequently, a yet lower category of the Type 14 or the "Cheap House" was devised for sweepers, washer men and other such low-paid workers unaccounted for earlier.

Starting from an empty site, the house building programme was given top priority by the administration and was thus completed in three years-over 20,000 people moving into permanent buildings. Given the parallel need to establish volume and colonise the new city, the necessarily large tracts of government housing were distributed all over its territory.

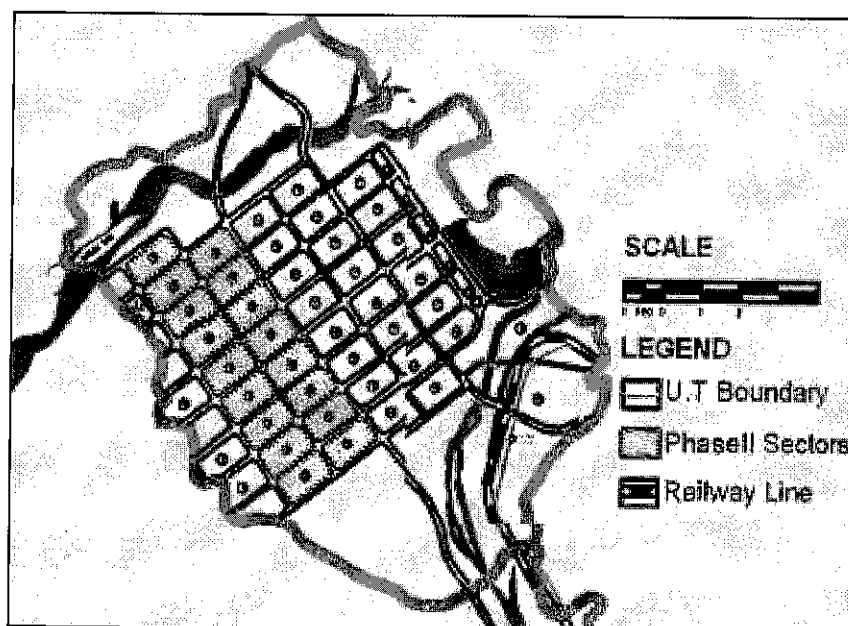


Figure 5: Plan showing the phase II of Chandigarh
Source: 'Chandigarh Atlas' by Gopal Krishan (2003)

These became the predominant element of the city's built-mass and influencing the much slower private constructions, the major source of the "Chandigarh Style", out of a total of 23,000 residential sites earmarked in the First Phase of Chandigarh, 30% were intended to contain government houses. As compared to 8310 available government houses around 1964, only about 4000 private houses had been built.

The problem of house design was presented to the architects with the accommodation, specifications, site area and cost of each category already fixed by the government. Juxtaposed with these constraints, were the constraints of Chandigarh's tropical climate, budget, social need and lifestyle and the need to create a cognizable urban picture.

In the early years of Chandigarh, that is to say, in the fifties and early sixties, there was no scarcity of land and it was thus decided to develop low-density housing areas. Consequently, the houses built during this period were mostly single-storeyed or double-storeyed (Figure 6). These low-height homes were easily acceptable to the

residents who were mostly immigrants from rural areas. These houses also afforded much-needed natural light, ventilation and green open spaces. The Chandigarh's housing, thus, highlighted Le Corbusier's concept of sun, space and verdure. Jeanneret's sensitivity to the Indian people's needs for outdoor living for most of the day is duly reflected in the hierarchal order of open spaces provided in individual houses, in clusters of houses and in the entire neighbourhood. Within the house, there is a provision for private courts mostly at the front and the rear of the house. Outside, there is a community park around which the houses are grouped. At the neighbourhood level vast spaces are reserved for large gatherings.

In an effort to provide sufficient courtyard space for the people's habits of "Outdoor Living", early houses in the lower categories were spread out as single-storeyed construction on large plots. However, the need to economise on land and infrastructure, and simultaneously accord an urban scale, the city's housing areas gave way to two-storeyed flats on narrow sites.

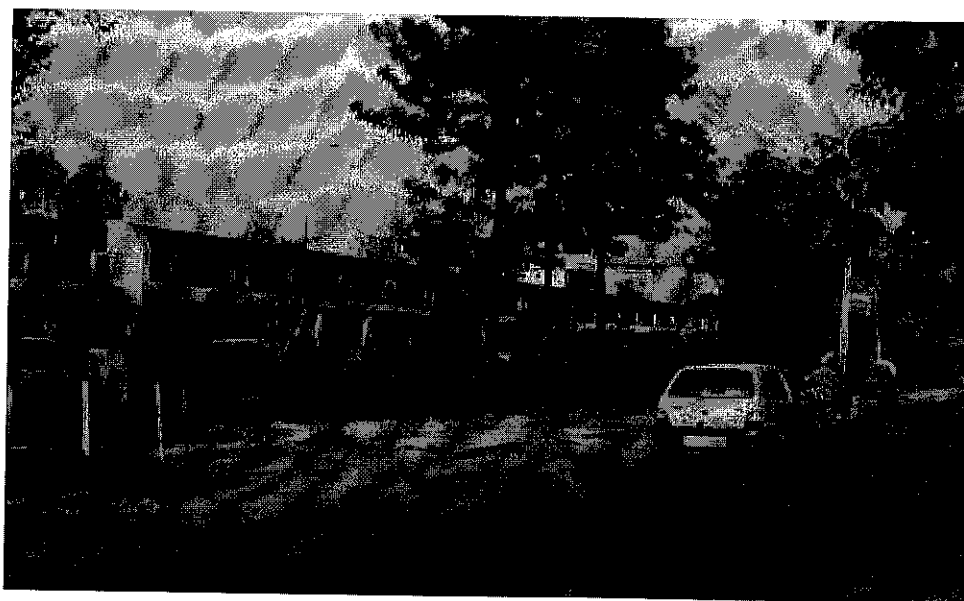


Figure 6: Single storeyed govt. houses in phase I, Chandigarh

Pierre Jeanneret has done pioneering work in the evolution of designs which were not only down-to-earth and minimal in character but also innovative in aspect and able to merge, aesthetically into the modern architecture of Chandigarh as envisaged by Le Corbusier. One of the most vital decisions that Pierre Jeanneret and his colleagues took, as far as budgetary restraints were concerned, was the use of locally available red brick for government housing and other small buildings.

The basic idiom for Government housing was thus established as one or two-storeyed, simply detailed brick constructions, the repetitive use of basic units necessitating façade designs capable of harmonious extension into a continuous street picture (Figure 7). Each street was treated as a single entity, with specially designed end-houses used as terminal points. Rows of houses, however, within the same cluster, or on opposite sides of the street, were often varied in design and to suit their orientation or to add variety.

Commenting on the housing in Chandigarh, Le Corbusier expressed,

'Besides the administrative and financial regulations there was the law of the sun in India: a calendar of sensational temperatures, extraordinary heat, dry or humid according to the season or the location. The architectural problem consists; first to make shade, second to make a current of air (to ventilate), third to control hydraulics (to evacuate rain water). This necessitated a real apprenticeship and an unprecedented adaptation of modern methods'.¹

'In general, the houses at Chandigarh offered a character derived directly from the new urban way of life in India, from the climate, and from the economies of a particular situation. These three considerations are the basis of all new housing, the layouts derive from the same consideration; they gave a sense of enclosure and identity without adding to the cost', said E. Maxwell Fry about Chandigarh's Housing.²

The government housing was by and large confined to Phase I of the city. Apart from the government housing, the by-laws and the planning norms set for private housing in the late fifties and the early sixties were largely restricted to low-height buildings.



Figure 7: Double storeyed govt. houses in brick and white plastered surfaces

4.2. Private Housing

Apart from the Government housing, the city was divided into private plotted development. In the early years of Chandigarh's inception, government built buildings and public buildings following a rigid system of architectural controls established the character of the city. From the very beginning, all the commercial buildings of the city were covered under architectural controls but the designs of private housing has been left to individuals who designed them in conformity to normal building by-law and zoning regulations. However, due to lack of professional knowledge and awareness, quite a few privately owned buildings created a very haphazard street picture in the city. Realizing the dominance and bulk of such private buildings to be built in future (approximately 70%), various forms of controls were introduced.

'Frame control' was introduced specially for smaller plots upto 250 sq yds where the houses had to be built in the terrace formation. This was done to have a consistent street picture. This was strictly followed in the sectors of Phase I (Figure 8). This was well in contrast to

the detached houses on bigger plots where good or bad designs do not influence the street picture so much. The bulk of the housing in Chandigarh was provided in a terraced formation.

'Frame control' comprises fixing the extent and heights of the party walls and a top course connecting these, thus, forming a frame. The building portion which can be of any design stays behind this frame. But with the changing needs and aspirations, the changes in the façade control and projections etc are being done by the Chandigarh Administration itself. The height of the residence under private housing is restricted upto three floors. The standard framework was worked out for marla houses within specified zoning setbacks. The kind of architecture that evolved is termed as 'Box-Type Architecture' (Figure 9).

In its present state, notably in the less disciplined newer parts of the city, this control still imposes some element of order which (remembering other Indian cities) still seems desirable: without which the violations would lead to lose their individualistic significance (Figure 10).



Figure 8: Frame control in Marla housing in phase I, Chandigarh



Figure 9: Frame control in Marla housing in phase II, Chandigarh



Figure 10: Violation in the frame control in Marla (upto 250 sq yds) housing in phase I, Chandigarh

5.0 Changing Pattern of Housing in Chandigarh

Looking at the cross-section of the city, the housing has experienced an upward trend. The low-height buildings in Phase I have been changed to four-storeyed group housing in Phase III. The Phase III was developed after 1990 (Figure 11). It has only Group Housing Societies with basic infrastructure of the neighbourhood. Since Planning and Architecture must, in the final analysis,

be attributed to the needs and dreams of the people, Chandigarh for that matter was bound to change. Chandigarh is a growing city and is the hub of the region. It has grown rapidly in the changing scenario of the rapidly changing urban Indian skyline both at the micro and macro level. The city is changing because of the inner momentum as well as due to the winds of change sweeping across the country and the world. Though it is very well understood that due to financial independence, every

individual goes for an independent house, Chandigarh is not lagging behind. It has also undergone changes during the recent past due to the housing needs of the millions of people in the country. But one should not go to indiscriminate urbanization as Chandigarh has its own identity. The urban development has to be balanced keeping in view the interests of the residents.

5.1 Changes in the Periphery of Chandigarh

The city of Chandigarh was originally envisaged as an administrative town to accommodate the functions related to the capital of a state. To avoid any change in the character of the city, Le Corbusier restricted the size to accommodate approximately 500,000 inhabitants. In the eighties, authorities began talking in terms of providing amenities for a population of 700,000. Corbusier was aware of the normal growth phenomenon and development of urbanization. He had a firm belief that instead of allowing such a thing, new towns should be established with well-defined functions

so that unmanageable metropolises do not emerge in this agro-rich region, and rural-urban migration resulting in large-scale urban poverty could be checked.

The formulation of the Punjab New Capital(Periphery) Control Act, 1952© 75 by the Union Government was an earnest step to safeguard the sanctity of the capital city. The statement of Objects and Reasons cited herein reads thus,

“The Punjab Government is constructing a new capital named ‘Chandigarh’. The master plan providing for the future extension of the capital will extend over a much greater area than the area acquired so far for the construction of the first phase of the capital. To ensure a healthy and planned development of the new city it is necessary to prevent growth of slums and ramshackle construction on the land lying in the periphery of the new city.”³ As per this Act, ‘no person shall erect or re-erect any building or make or extend any excavation, or layout any means of access to a road, in the controlled area except such building as is required for purposes subservient to agriculture which includes horticulture, planting and upkeep of orchards, poultry, dairy, etc.’⁴

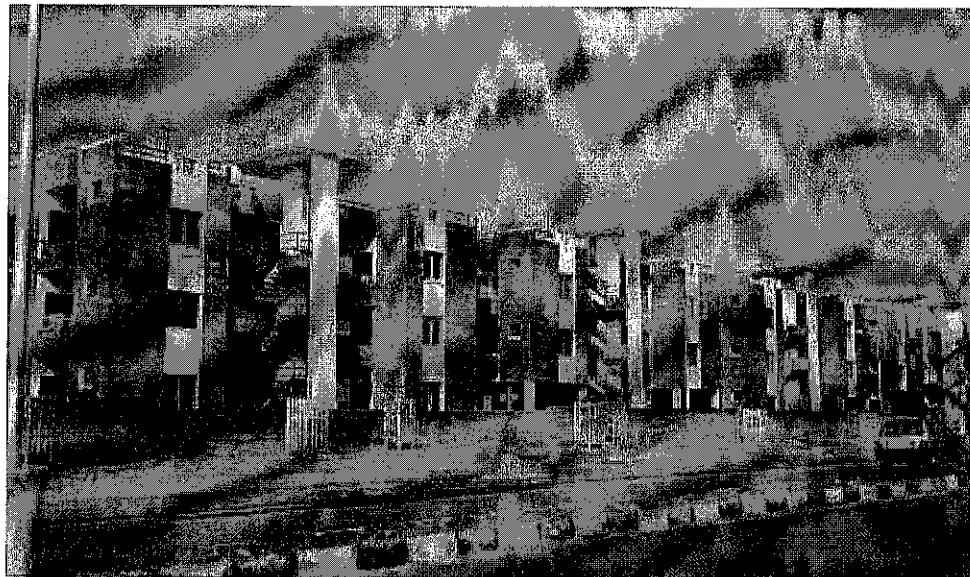


Figure 11: Group housing in phase III, Chandigarh

But unfortunately, the things never happened as envisaged. Due to socio-political reasons, a number of planned settlements emerged in the vicinity of Chandigarh which are in dire violation of the Periphery Control Act.

The skyline of Chandigarh's periphery is changing rapidly. The boom in the IT sector, education sector, etc.,

has spurred the growth of housing and institutional area, changing the socio-economic scenario in the periphery of Chandigarh (Figure 12 & 13). The satellite towns of Chandigarh, i.e. Panchkula in the Haryana State and S.A.S Nagar in the Punjab State are also contributing to accommodate the population influx in the city (Figure 14).



Figure 12: Institutional housing in phase II, Chandigarh

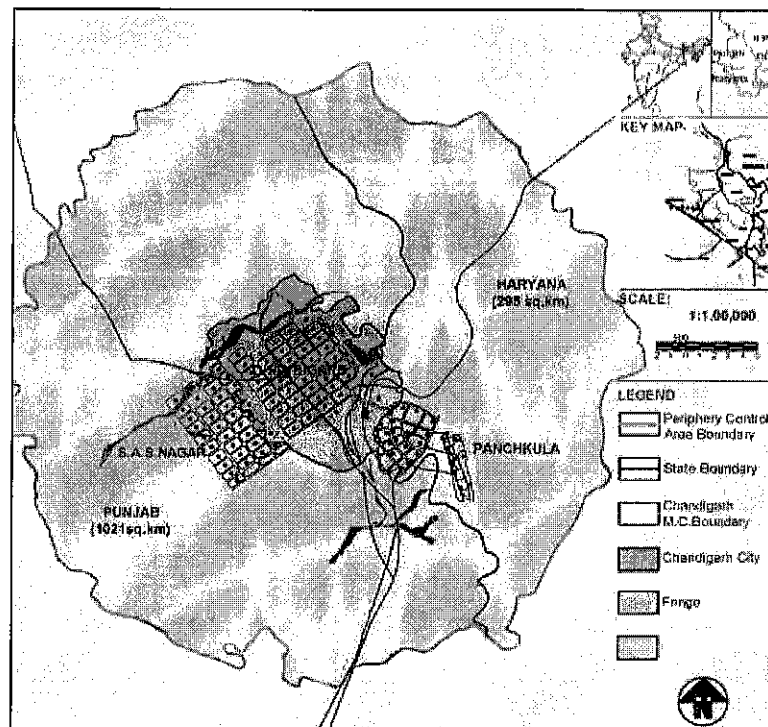


Figure 13: Chandigarh city with its periphery
Source: 'Chandigarh Atlas' by Gopal Krishan (2003)

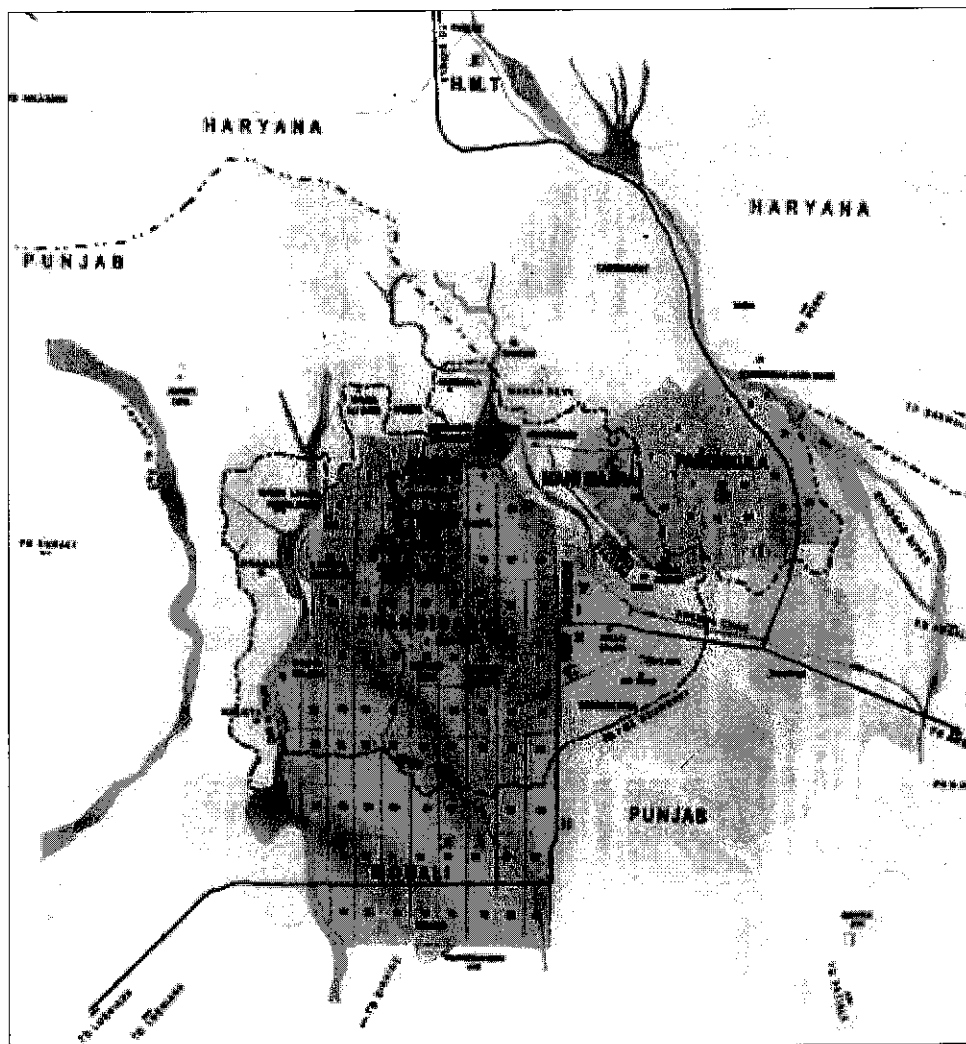


Figure 14: Plan of Chandigarh with its satellite towns, Mohali and Panchkula.
Source: 'Chandigarh Atlas', by Gopal Krishan (2003)

Besides these planned developments, a number of unplanned and haphazard settlements mushroomed in the vacant areas, without proper sanitation, sewerage, drainage, water, roads etc (Figure 15). All these put pressure on Chandigarh's infrastructure and creates traffic congestion and environmental pollution. The problem has aggravated to such an extent that there seems almost no solution possible except to regularize and improve these settlements. Whatsoever the reasons, it is clear that Le Corbusier's decision to restrict the size and character of the city has not proved to be a success.

5.2 Implementation of Chandigarh Apartment Rules, 2001

Open spaces, areas reserved for greens, houses built under strict zoning restrictions and Le Corbusier's vision in a planned city of Chandigarh shall fade into oblivion in the near future. Flats or apartments in residential houses being developed at an expeditious commercial pace to be sold as money spinners for exorbitant sums by builders and property dealers are the order of the day (Figure 16). An alarming development, which is gradually taking over the residential houses in the city, is their

conversion into apartments under the guise of floor-wise sale of such houses. Both Chandigarh (Sale of Sites and Building) Rules, 1960 and the Chandigarh Lease Hold of Sites and Building Rules, 1973, explicitly prohibited fragmentation, sub-division or amalgamation of any site or building by a statutory bar. When in 1991, the Punjab and Haryana High Court struck down this prohibition; the Chandigarh Administration appealed to the Supreme Court and successfully got the validity of the rules upheld.

By the innocuous, silent and unknown Chandigarh Apartment Rules, 2001, the death knell was sounded by permitting the sub-division of residential houses. This was in sheer contradiction to the Capital of Punjab (Development and Regulation) Act, 1952 which strictly prohibited the fragmentation or sub division of sites or buildings. The Chandigarh Apartment Rules, 2001 has

further contributed in changing the pattern of housing in Chandigarh. This called for an amendment in the zoning plans also, which allowed the full coverage of the second floors in all sectors in the city. This has aided and allotted the creation of apartments in the residential houses. The aura and charm of residential houses in the city landscape is lost and wiped out. What is the effect of such a change? A builder or a property dealer buys an old property, demolishes it and constructs apartments and advertises the sale of houses floor wise. Whereas the public amenities like the supply of water, electricity, back-up facilities like drainage, sewerage, roads, parking, and traffic congestion remain the same. The result of such unplanned colonization is more power cuts, more water shortages, chaos on roads and collapse of existing public facilities. Such volatile changes are not necessary in the name of need-based developments.



Figure 15: Slums coming up in the periphery of Chandigarh



Figure 16: High rise housing around Chandigarh

6.0. Conclusion

Chandigarh is struggling to strike a balance between its unique architectural heritage and the needs of an ever-expanding city. Originally, planned for 500,000 people, the city has now grown to around 11,00,000. This has coupled with the exponential growth in the periphery (Which was originally supposed to be a green buffer area) has put tremendous strain on its fragile balance. One of the ways to maintain this balance is the gradual revision and modification in the building by-laws applicable to the city. The Chandigarh Administration has proposed that reversal of new and horizontal growth can help Chandigarh tackle its housing needs. The vertical growth in the city will not encroach upon the Le Corbusier's conception of allowing open spaces inside the dwelling units. Also, this would go a long way in maintaining the sanctity of the master plan. Chandigarh is now struggling to maintain its identity vis-a-vis the changing needs of the people. With the

coming of information technology, immigration of people, the population of the city has grown manifolds in the past few decades. To combat the ever growing needs, the only option was nothing but to go vertical. Due to scarcity of land, group housing schemes is the only option to cater to the increasing demand of housing. The formulation of Punjab New Capital (Periphery) Control Act, 1952 was an earnest step to safeguard the sanctity of the city. But the Periphery Control Act has been violated. Most of the constructions in the periphery area of Chandigarh have been carried out to suit the vested interests. With the regularization of unauthorized structures in the periphery, a haphazard situation has emerged around the city and it is developing in a very different manner.

After 50 years of the inception of Chandigarh, the consequences like the violations of Periphery Control Act and the unprecedented growth of slums have jolted planners and environmentalists to take certain concrete steps to correct the planning. Keeping in view the ever

increasing burden on the infrastructure of Chandigarh as well as its environs, Architect Jeet Malhotra, Retired Chief Architect of Punjab state in India and a close associate of Le Corbusier and Pierre Jeanneret, has proposed that a new town should be established with well defined functions. He has proposed an E.P.U. concept for solving such problems of the bigger cities. An E.P.U. is a 50km x 50km unit placed at an angle of 45 degrees to the N-S axis (Figure 17 & 18) keeping in view the sunlight, wind direction, monsoon, and drainage and irrigation pattern of agricultural land. Each unit shall have agricultural, industrial, non-industrial urban, urban-rural and forestry zones. Each such zone shall have facilities like residences,

shops, schools, hospitals, colleges, play areas and cultural & spiritual centres. All new non-industrial areas are placed parallel to the wind direction.

All industrial areas are placed perpendicular to the wind direction with a thick cover of agricultural and forest development. This EPU shall provide moderate and healthy living and working conditions to all the inhabitants. Each unit will have a personality of its own, very much in keeping with the diversity which is so typical of this vast country.

This way, each planner can contribute to make India more prosperous and balanced, via man made architecture in harmony with nature's architecture.

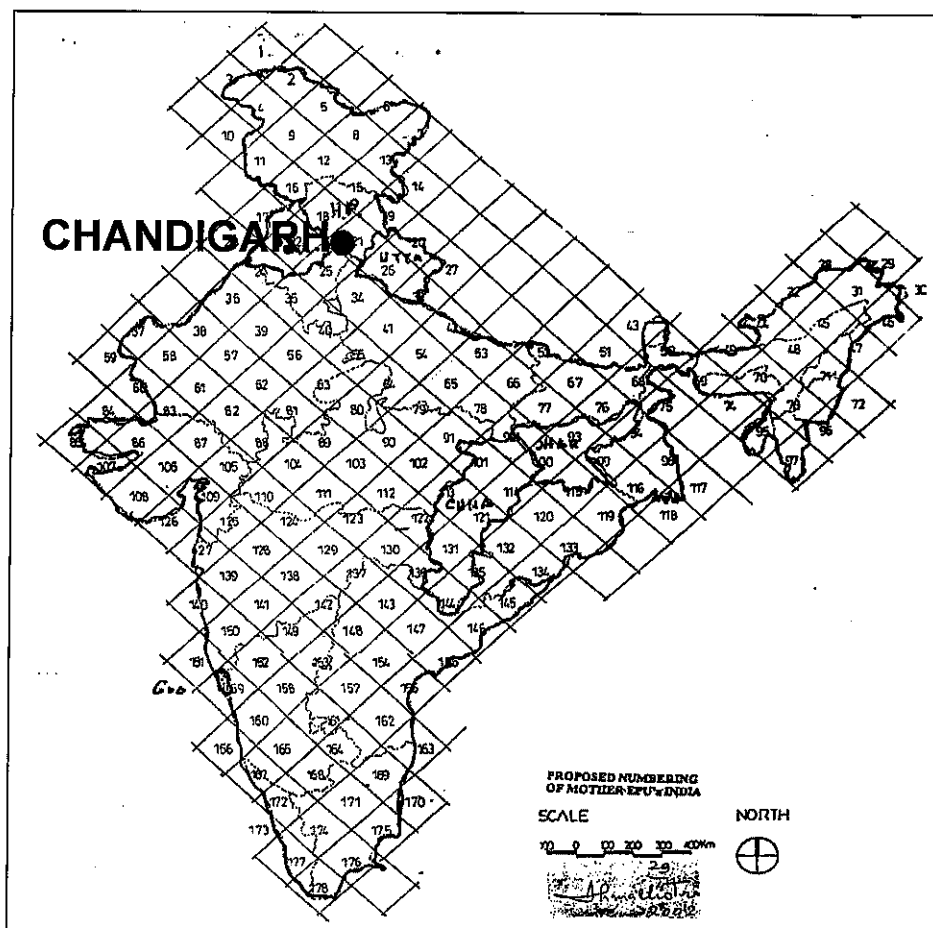


Figure 17: Layout of mother E.P.U. on the map of India.

Source: Ar Jeet Malhotra, New Delhi



Figure 18: Grid of E.P.U. overlaid on the map of India
Source: Ar Jeet Malhotra, New Delhi

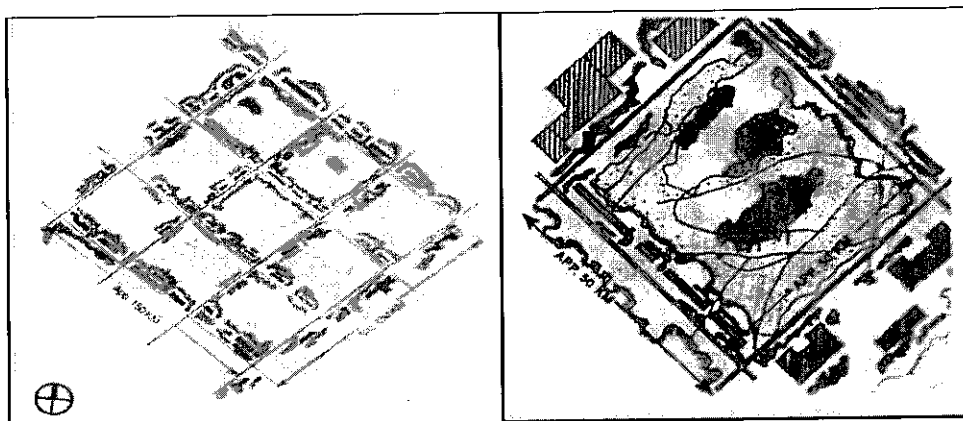


Figure 19: Mother E.P.U. and typical E.P.U.
Source: Ar Jeet Malhotra, New Delhi

Notes

1. Quoted in Evenson, Norma (1966) *Chandigarh*, University of California Press, Berkeley and Los Angeles, pp. 43
2. Quoted in 'Chandigarh Architecture', *Urban and Rural Planning Thought*, Vol. 12, NO. 1, January 1959, pp. 12
3. The Punjab New Capital (Periphery) Control Act, 1952, pp. 1, 2
4. Ibid.

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