

Evolution of Human Settlements

Lecture 13

Planning of Chandigarh 1

Now, as one of the three main disciplines of the plan of the city, Le Corbusier thought of climate being the most important and the material as the second most because both of these were very crucial for a livable city and both of these were obviously the driving force of a very stringent economy at that point of time since this was soon after independence and the country was just beginning to build itself. As, the most economical and readily available material for building in Chandigarh was obviously the locally made brick but at the same time, Nehru and Corbusier had envisioned Chandigarh to be a futuristic city and to show Chandigarh as the first city of Independent India, as a powerful building or a powerful city which would reflect to show that India is obviously still there and it has not lost its backbone. The flat roof was another important element which was used but all of these elements even though they were climatically responsive elements, certain buildings of the capital complex and the commercial district were built on a monumental scale. So, with respect to the residential area and the other areas, a different thought process was used but for the capital complex and the commercial district, a different thought process was used. So, the flat roof was employed throughout the Chandigarh housing because of its usefulness as a sleeping area. When it is very hot, Chandigarh's climate gets cooler as the sun sets. So, as it gets cooler, they would be a lot of people who would use that space as a sleeping quarters. 70% of the building would be private in all the sectors. Residential plots were ranging in dimensions from 75 square yards to 5000 square yards. Le Corbusier was responsible for the general outlines of the masterplan and the creation of the monumental buildings while Pierre Jeanneret and Maxwell Fry and Jane Drew were charged with the task of developing the neighbourhood sectors, with their schools, shopping bazaars and the tracks of government housing. In the program presented to the architects, 13 categories of houses were specified each, corresponding to a level of government employment. Small window openings have been consistently employed. The city of Chandigarh was the culmination of Le Corbusier's life. The city is pretty much like a man, it is gentle, it is hard and assertive, it is not practical, it is riddled with mistakes, made not in error but in arrogance. It is disliked by the small minds but not by the big ones, it is unforgettable. The man The main concept behind Corbusier's plan, he liked to compare the city he planned to a biological entity. The head was the capital, the city center was the heart and the work area of the institutional area and the university was limbs. Aside from the Leisure Valley traversing almost the entire city, parks extended lengthwise through each sector to enable every resident to life their eyes to the changing panorama of hills and sky. The city of Chandigarh was planned to a human scale, like we just discussed, the head is the Capital, Heart - the city centre, Stomach - the commercial area, Arms - the university and industrial zone, Lungs - leisure valley, open spaces

and Arteries are nothing but the network of roads. He considered four basic functions of any city; Living, Working, Circulation and care of the body and spirit which is nothing but your entertainment and greenery zones. Each sector was provided with its own shopping and community facilities, schools and places of worship. 'Circulation' was of great importance to Corbusier and he determined this with three basic functions by creating a hierarchy of roads, Le Corbusier sought to make every place in the city swiftly and easily accessible and at the same time, ensure tranquility and safety of living spaces.

So, the Periphery Control Act. The Periphery Control act of 1952, created a wide green belt around the Union territory. It regulated all development within the 16 kilometers of the city limit, prohibited the establishment of any other town or village and forbade commercial or industrial development. This idea was mainly to guarantee that Chandigarh will always be surrounded by countryside. So, what he basically knew was, Corbusier obviously by the end of his career had seen many of these cities where it would be designed and then as population grew, they would just haphazardly, the city would grow on all four sides. He did not want this to happen to Chandigarh. So, the Peripheral control act of 1952 was passed such that there is an actual clear buffer zone but now a lot of unwanted development has occurred but only around the green zone or the zone that has been left, despite his bias against the industry, Le Corbusier was persuaded to set aside 235 hectares for non polluting, light industry on the extreme southeastern side near the railway line, as far from the educational sector and Capitol as possible. Of this, 136 hectares were to be developed during the first phase. In the event of the city expanding southward, Le Corbusier suggested the creation of an additional industrial area in the southern part of the city where a second railway station could be established. Again here, you can see the visionary in Corbusier, he knew in which direction the city would develop and he wanted clearly, he was very particular that the industry should not be near the school zones or the residential areas or the main capitol complex. Number one, it would cause an air and noise pollution and it would lead to an unsightly skyline. With respect to commercial buildings, all of them were located in the City Centre and institutional buildings located along the V-2 roads which were subjected to controls. The system of the City center was based on a grid of columns, fixed 5.26 meters shuttering pattern of concrete and a system of glazing or screen walls behind the line of columns. The interior planning was basically left to the owners and in the exterior, certain variations are permitted to give variety to the architectural composition. You can see the involvement of Corbusier right to the extent of giving elevation details to every house. So, this is the commercial district that you can see. There is a sense of monotony, columns, shops, retail spaces and office buildings on top. Similarly now, with new kinds of brands coming into being, the only change that you can see are the boards and the hoardings, but otherwise, nothing has changed. Now, the description of a sector, instead of a superblock a sector came into being which is a geometric matrix of generic neighbourhood units. The new

city plan represented a general city that would, like a roman military settlement, be placed on any flat piece of land. So, there was nothing identity creating for Chandigarh. Le Corbusier claimed that the first phase of existence is to occupy space and the new plan allowed for such an expansion. However, the city was planned to house a number of 1,50,000 inhabitants in its first phase and again another 500,000 in the second. The neighbourhood itself is surrounded by the fast-traffic road called V3 intersecting at the junctions of the neighbourhood unit called sector with a dimension of 800 meters by 1200 meters. The entrance of cars into the sectors of 800 meters by 1200 m i.e the sector which are exclusively reserved to family life, can take place on four points only; in the middle and in the middle of every rectangular sector. All stoppage of circulation shall be prohibited at these four circuses at the angles of the sectors. The bus stops are provided each time at 200 meters from the circus so as to serve the four pedestrian entrances into a sector. Thus, the transit traffic takes place outside of all the sectors and the sectors are surrounded by car roads i.e car bound roads without any openings which are the V3s. This is a novelty in any town planning and very decisive which was applied at Chandigarh, no house or door opens through the thoroughfare of rapid traffic which is actually a very good which doesn't happen in many cities. It is privacy inclusive, it is very important such that pollution does not enter the house, it is a safety and security measure as well.

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Taking Chandigarh as an example, we may see at once the democratic idea which allows us to devote an equal care to housing all classes of society such that new social groupings are not formed. It is very important to make sure an equal amount of space and time and resources are spent on all equal social groups. Each sector is designated by number, the capital complex being number one with the remaining sectors numbered consecutively beginning at the north corner of the city. You have a total of 30 sectors in Chandigarh, of which 24 are completely residential. The sectors at the upper edge of the city are of abbreviated size i.e as you get closer to the capital complex, its of smaller size. Some 800 acres of green space are spread over approximately 114 square kilometers of the Capital Project area. Major open areas include the Leisure valley, the Sukhna Lake, the Rock Garden and many other special gardens. In addition, the sectors are vertically integrated by green space, oriented in the direction of the mountains. If you look at landscaping, landscaping proceeded side by side with the construction of the city from the very inception. Three spaces were identified for special plantation; the roadsides, spaces around important buildings, parks and special features such as Sukhna Lake. Le Corbusier's contribution to landscaping was of categorising the tree forms. He made a very simple analysis of the functional needs and aesthetic suitability for the various areas, devoting special attention to specific roads.

So, even landscaping not being completely aesthetic had a particular purpose as well. So you have proper flowering trees which are Gulmohar (*Delonix regia*), amaltas (*Cassia Fistula*), Kachnar (*Bauhinia Variegata*), pink Cassia (*Cassia Javanica*) along the main car bearing roads, among the conspicuous non-flowering trees along the main highways. These trees are noted for their vast spreading canopies, makes sure, it gives shelter from the sun. In more than 100 different varieties of species, have been planted all across Chandigarh. Now, you come to housing which is the most important component of any city, the lower category residential buildings are governed by a mechanism known as 'frame control' to control their facades. This fixes the line and height and use of building materials as well. Certain standards sizes of doors and windows are specified and all gates and boundary walls must conform to the standard design. This particularly applies to the houses built on small plots of 250 sqm or less. If you actually look at the kind of residential buildings that are there, this was mainly done to maintain uniformity, in a way to promote socialism, this was the main reason. Obviously, it was a capitalist place, India being a just developed country at that point of time after Independence, we wanted to ensure that we would have industries and that our economy would grow. But at the same time, they did not want, the main element of any distinguished or any demarcation between the different classes of people. This is a typical housing block unit if you see. Very uniform, has a basic amount of green space. Again, facade is very clearly demarcated in terms of fenestrations or doorways or windows. This is again a series of houses, no changes have occurred since any time Corbusier has designed them and gone. You cannot apply a lot of color. It is only Earthly shades like; white, brown, black are permitted or exposed concrete or exposed brick.

Now, the main classification of roads which he was very proud of. He divided the system of roads as 7Vs. V1 you had the fast roads connecting Chandigarh to other cities. V2 - you have the Arterial roads or the important roads within Chandigarh. V3, this was the most number of roads in the city and most commonly used, fast vehicular roads. V4 - Free flowing shopping streets, this was prevalent only in the commercial district. V5 - sector circulation roads, V6 - Access roads to house. V7 - Footpaths and cycle tracks. You can see the network of roads over here. V3 are right on the periphery. Within the sector, you have V5 and V6 and V7 is right in the pedestrian action, in the green belt. So, you can clearly find out which is used for vehicular movement and which road is meant for pedestrian movement. This is a typical sector and you can see the vertical green spaces that Corbusier and even Mayer wanted for their plan of Chandigarh. The capital complex, the area of the greatest symbolic significance, this was the main reason Corbusier was hired. The most important group of buildings constituting the Capitol, the parliament on the right, you have the Capitol complex and on the background, you have the secretariat. In the foreground, you have the pool of the palace of Justice. The artificial hills in the front of the secretariat have not been created and laid out in accordance with

Corbusier's conceptions. That happened at a period of time after he completed the project, although the scene is harmonious effect, there are still missing buildings that belong here, such as the tower of Shadows which was there in Corbusier's plan. So you can, see here; the Open hand monument, the Governor's palace, the High court, the Assembly and Secretariat. This forms the Capitol complex. This is the Open hand monument, this is a sculpture which is also seen by Corbusier, the outline of a bird, the sign for peace. This is prominent as a part of a landscape and is part of a sunken court for public assembly, named 'the Pit of consideration', where people are supposed to contemplate before making any important decisions. Let it be with respect to the government or otherwise. Here you have the secretariat with a vast open space. Here you have again, the free facade, square windows, rough concrete finish which gave an impression that it were incomplete. Projected Porticos which made sure that the heat wouldn't get in. Small entrance and a large entrance. So, if it were for employees, it would be small and in terms of a function and any important VIP coming in, the large entrance would be used. This is the high court, with a major foreground or an open space in the front. Here again, you can see the double roof that is provided which again helps the heat factor. It can be approached through the roads, this is a rough concrete finished ramp. A ramp has also been provided and currently the ramp is not used as a ramp, but it is used as a storage mainly for extra desks, tables and chairs. This is the assembly hall, again you have a major empty foreground and court around this area, with a green space and no trees as such because he wanted the verticality to be provided only by the building. If you look at the positive highlights of the design of Chandigarh, each sector satisfies the necessities of human needs. Separate roads for pedestrians, bicycles and heavy vehicles. Shops on the ground floor, residence on the upper floor. Shops are protected from rain and sun as covered walkway for the customers. Negative highlights if you look at it; roads being similar to each creates a lot of confusion. It might be easy to demarcate on a map but when you are driving across, you won't be able to differentiate a V1 from a V2 or a V3. Brutal concrete gives a rough look or an incomplete look. It's like the city has not completely finished. The city has not been planned for lower income people and there is an existence of slums around the city. So, like we just described, Corbusier was very futuristic in a way, he imagined that the city would not have any poor groups of people and it was meant equally for one group which is basically currently the middle class and upper middle class. The lower income group along the periphery of the city, beyond the 16 km buffer zone. So, that's where the slums exist along the city. What are the problems currently, the city faces? With the development of the city, it also concerns problems like increased population, higher rate of migration into the cities and due to that water supply has obviously increased, sanitation problems are occurring and Slum is obviously increasing. So, you have 18 villages in Chandigarh city and 4 villages under the municipal boundary and you have 14 unauthorised slums that have a large population by themselves. This is a slum rehabilitation on the periphery. This is all beyond Corbusier's plan for Chandigarh but this is also a part of today's

Chandigarh. In terms of infrastructure, what were the visions? Safeguarding the health, integrated management of water resource, liquid and solid waste and protection of environment and safeguarding the health of the public, 100% coverage of the whole green area in gardens, parks and open spaces. With tertiary treated water in order to save the potable water of drinking purposes. To have good connectivity of city with other cities through roads and better solid waste collection centres.