Human Settlements Planning
Lecture 4

Central Business District

The main component CBD - **the Central Business District**, this is the commercial centre of the city. It includes shops, offices, transport route centres, leisure and entertainment facilities i.e cinemas, theatres, restaurants, cafes, etc. This is an area of high land value with much competition for space. Tall and high density buildings to make the most of space, it is cheaper to build rather than outside i.e vertically it is cheaper to build rather than horizontally because land value is so high. Few people actually live in the Central Business District. It is mostly a commercial area.

The Transition Zone: immediately adjacent to the CBD, this zone is in a state of constant change. Constant redevelopment and renewal of the area of expand zone 1 the CBD. It is a zone of mixed land uses, ranging from car parks and derelict buildings to slums, cafes, and older houses, often converted to offices or industrial use. This is a range of decaying buildings. This is an area of old housing and light manufacturing industry. This area dates back to the Industrial revolution when it was filled with coal-fired factories and tenement housing blocks. High density housing built when industry thrived in urban areas.

Then we have the, Inner City. The Inner city is the third zone, commonly consisting of terraced housing built in the 19th Century built originally to accommodate factory workers. Housing is often linear and back to back. This area tends to be run down unless housing has been redeveloped and gentrified. This area usually experiences social and economic problems. Some have now been replaced with high rise flats in order to maximise use of space. Facilities such as corner shops exist in the inner city. Inner city problems of decline have been difficult to solve.

Typical Inner city with row houses or row tenements. One family would live lower and one above. So, it is not actually a very luxurious way of living, it is lower middle class. Inner suburbs, commonly 1920s - 1950s housing usually large in size and with garden and it is usually semi detached i.e it is not completely like a

bungalow, but it is not even a tenement house. Some facilities such as parks and rows of shops may exist as more new houses and amenities are built to accommodate the growing population. The land gets cheaper away from the CBD, so planning for new houses is quite common. Home to the more affluent. Council estates are often located in this zone as well. Typical Inner Suburbs, usually but this is an inner family unit.

Outer suburbs - Modern housing large in size, often detached with a cluster pattern i.e housing estates. Ideal areas for families with young children, houses with gardens and garages and safe roads close by. The outer suburbs contain a mixture of land uses. This includes residential areas, recreational facilities such as golf courses and farming. Access to parks and open spaces are common. Modern facilities such as shopping malls often are built in the outer suburbs. Called the '**commuter zon**e' as it is expected that the more affluent members of the community would live in this zone. Typical Outer suburb, your neighbours are not very close by but they are relatively close by to have a safe neighbourhood.

This is a side view transit. You have the CBD with the high rise, then you have the transit zone with the light industries, then you have the increasing distance. As you go away from the CBD, you have a nice big house with a garden, then you have the individual shared units, then you have the tenements over here. So, as you move away from the CBD, as the distance increases, the level of affluence also increases. These are the typical transept that you will see here. This is the outer suburb, the roads the waves going, importance more to pedestrian because you won't find any automobile except cars over here. You will not see trucks or anything larger. Pedestrian access is given more importance.

Sector Model

Next model is the **Sector Model;** a second theory of urban structure was proposed in 1939 by an economist named Homer Hoyt. His model, the sector model, proposed that the city develops in sectors instead of rings, certain areas of a city are more attractive for various activities, whether by chance of geographic and environmental reasons. As the city grows these activities flourish and expand outward, they do so in a wedge and become a sector of the city. If a district is setup for high income housing, for example, any new development in that district will

expand from the outer edge. To some degree this theory is just a refinement on the concentric ring model, except that instead of having concentric rings, this would be in wedges or sectors. Both Hoyt as well as, Burgess claimed Chicago supported their model. Burgess claimed that Chicago's central business district was surrounded by a series of rings, but now that has been broken by Lake Michigan and now it is more sectorized. Hoyt argued that the best housing developed north from the CBD, along Lake Michigan, while the industry located along major rail lines and roads to the south, southwest, and northwest. So to suit Hoyt's sector model, you have Calgary, Alberta, which are most perfectly suited. The assumptions of this 'sector model' are; first assumption is land is flat; again if it is a hilly terrain, that is not going to be possible; cities developed in sectors not in rings along major attractive areas whether by change or geographic and environmental reasons.; Building age as one moves into the city centre.; There exists well defined separation either ethnically or economically along transport networks; Concentration of heavy industries in certain areas. What are the limitations of the 'sector mode'? This theory is based on early 20th Rail transportation and does not make allowances for private cars that enable commuting from cheaper land outside city boundaries; Physical features - physical features may restrict or direct growth along certain wedges. The growth of a sector can be limited by leapfrog land use. This is the sector model. Again, this is where you will have your Central Business district, then you have your transportation and industry - the lavender wing you see. Then the third sector is the Low income residential which is close to the transportation sector. Then, four you have; Middle income housing and finally the small edge which is the least densely populated is the higher end residential. So, you can see there is even a decrease in the height of the buildings. CBDs you have the skyscrapers. Low income also you have some tenement kind of blocks, transportation as well as industry you have a mixed level but in the higher end as well as in the middle class residential, you have Flat single units.

The case study of Chicago. Chicago is a city in the U.S state of Illinois, it is the third most popular city in the United States and it extends into Indiana and Wisconsin, it is the third-largest in the United States after New York and Los Angeles. You have an estimated population of 10 million people over here. This is today's Chicago, again you can see following the sector theory that it is divided into sectors. Here, you have the central zone, here you have the far northern side,

this is the far southEast side. So, you can clearly see it can be divided into sectors and each sector has its own purpose. This is the transportation role, how the transportation also moves along the sector to help the development of this. You have the main spine over here and each sector gets divided with the secondary railway line or a road line.

In India you have Shivajinagar, which is an area in the heart of Pune. This is the most important area of the city because it has the District court, the Municipal Corporation, the College of Engineering, Agricultural College, Shivaji preparatory military school, etc, all of this is located in Shivaji Nagar. The bus stand in Shivaji Nagar connects the city to destinations in the state of Maharashtra. Shivajinagar Railway station is an important station for the suburban railway traffic of Pune. This area also has roads like Ambedkar road or University road which links Pune railway station to Pune University. So, this actually proves to be a very important node because you can reach other areas; Khadki, Pimpri, Chinchwad and Nigdi from this particular area. Even within a neighbourhood unit, the sector theory applies. You can see the Central Business District and each sector having it's own purpose. One is the Institutional building, here you have the Railway junction, here Camp you have the commercial junction and Guruwar Peth is where you have a residential area. Narayan Peth is where you have the temple and related activities. Here you have the residential area again, which is little more upper middle class (Sadashiv Peth), because of the river over here (Sangamvadi) you have a railway line, which is suburban and then you have a very important residential area but not in the middle class range but lower middle class. So, you can see, even within a city, how the sector model can apply. Another city, this can be applied to is Gandhinagar; the first phase of development, you have the amenities were constructed; in the second phase - the constructions of a capital complex, sports complex, town halls, research institutes, cinemas, cultural centers and residential bungalows. So, even these are sectors but the sectors in this are obviously different, it is a little more gridiron sector and completely sector.

Multi Nuclei Model

Now, the third important model is the multiple **Nuclei Model;** Geographers C.D.Harris and E.L Ullman developed the multiple nuclei model in 1945. According to this model, a city contains more than one centre around which

activities revolve. Some activities are attracted to particular nodes while others try to avoid them. For example; a university node may attack well-educated residents, pizzerias, and bookstores, whereas an airport may attract hotels and warehouses. So, every purpose and important building will decide the typology of buildings that emerge. Other businesses may also form clusters, sometimes known locally as Iron Triangles for automobile repair or not so relevant or not so liked areas = red light districts for prostitution, or the arts districts. All of this will emerge because of a particular purpose of a particular building. Incompatible activities will avoid clustering in the same area, explaining why heavy industry and high-income housing rarely exists in the same neighbourhood. This model describes the layout of a city. It says that, even though a city may have begun with a central business district, or CBD, other smaller CBDs develop on the outskirts of the city near the more valuable housing areas to allow shorter commutes from the outskirts of the city. So, as the urban sprawl increases, as the commute time increases to reduce the time of travel there will emerge multiple central business districts on the outskirts near the higher income groups or middle income groups such that the main central business district will get decongested. This creates nodes or nuclei in other parts of the city besides the CBD, thus the name multiple nuclei model. Their aim was to produce a more realistic, if more complicated model. Their main goal in this were to; move away from the concentric zone model; to better reflect the complex nature of urban areas, especially those of larger size. This is a **multiple Nuclei model**, we will discuss this in detail. The features, the model which we are just going to see is, the Multiple Nuclei Model has more than one center for a specific type of area. **(1)** where trade and business are taking place are not necessarily going to be CBD, there are also other places where they are doing this kind of thing, such as outlying business district. So, you have a Central Business District and an Outlying business district. **(2)** for the place where people are making a product, it separated into three regions, which are wholesale light manufacturing region, heavy manufacturing region and the industrial suburb. **(3)** For the place where people lived in, you have four types; low-income residents, middle-income residential, high-income residential and residential suburb. Most of these happened are again, because of the invention of cars. **(4)** So, when people who are working in the office, they don't have to live very close to the CBD because the car actually allows them the freedom to travel and also have a better standard of living in the outskirts of the city. The major regions in this model are the ones we just spoke about. The central

business district, wholesale, light manufacturing region, low-income residential, middle-income residential, high-income residential, heavy manufacturing, outlying business district, residential suburb, and industrial suburb. Central Business district (CBD) is the business center of a city and the center point for transportation networks. Also, this is where most of the office work is located at. In this region, there are many tall buildings, because land value is higher, as well as population is denser. Now, this is your Central Business district of the typical **Poly Multi-nuclei.** Wholesale light manufacturing region is the region that has light industries that is smaller products that are manufactured here, that are usually required by the heavy manufacturing region. Also, because it is close to low income residents. People who usually work in this region are lowly paid. Low-income residents units are the people who usually work in these areas for lower wages. This is the light manufacturing unit you have, close to the CBD, as well as the poor houses that you find there. The people in there usually don't have enough money to buy big houses or large lands, so their house is usually sticking together or has little space between them and it is usually not owned by them but completely rented out. So, there are residential tenements.Bad public security, so you have more illegal activities happening there. The other thing to mention here is, if we see the map of this model, we can see that this region is actually closer to the factories, this is because these people usually don't have enough money to buy an automobile, so they need to live close to the factories so that they can walk to work. This is the low-income residential unit, one part of it.

This is an example of a house in a middle income unit, you will not find very large lawns or anything like that, but it is a little more better and it is clustered together.

High Income Residential has the people with high wages or sometimes people who actually own a company live there. This region has a better standard of living, obviously compared to the middle class residents and the low-income residents. They have more things like swimming pools, larger parks. Heavy manufacturing is a region that produces heavy or large products, mostly products that have steel, such as cars. Many people from low-income residents come here to work and get low wages or standard of living. This is an outline business district, this is the industry that is going to support the low income groups and because you have both an industrial area and a residential area, you have certain commercial activities

surrounding this as well, to support both the Outlying business district. This region is far from the CBD and the rest of the residential area because it produces a huge amount of pollution which a lot of people don't want to live or work with, unless they have no choice like the poor people.

Outlying business district is nothing but a second CBD. The business that didn't take place in CBD will take place in here. Residential suburb is residential area that spate away from the other areas. In many times, it's mix use, which means it has multiple functions. Industrial suburb is a mixed type of industrial area that also spread away from the central city.

Assumptions of a Multi-nuclei model; Certain industrial activities require transportation facilities, ports, railway stations,etc to lower transportation and costs. Various combinations of activities tend to be kept apart. Example : Residential areas and airports, factories and parks etc. Other activities are found together to their mutual advantage. Example : universities, bookstores and coffee shops,etc. Some facilities need to be said in specific areas of a city, for example; the CBD requires convenient traffic systems and many factories need an abundant source of water. Certain events benefit from the adjacent distance like the positions of factories and residence. In some cases, some constructions are located in less-than-ideal locations, often due to outside factors such as rent. Now, the limitations. As Multi nuclei developed, transportation hubs such as airports were constructed which allow industries to be established with reduced transportation costs. These transportation hubs have negative externalities such as; noise pollution and lower land values, making land around the hub cheaper. Hotels constructed near airports because people tend to travel near the source of travel. Housing develops in wedges and gets more expensive the farther you move away from the CBD.

So, this is the **Multi-Nuclei Model.** Here, '**A**' you have the first, Central Business District; '**B**' is the Zone of transition; '**C**' you have the Residential or the lower income group; '**D**' you have the middle class and '**E**' is the residential for the upper middle class. Now, E that emerges, that you see over here. They end up wanting to have factories as far away as possible. So, closed to the lower class, emerges the factories or the industries where these people can walk to in ease and then '**G**' is the emerging new Central Business District or the Mini CBD. '**H**' is the suburb, 'I' is

the Industrial park or the suburb because it close to both of these and it has even nodes to transport out and **'J'** ends up being the Commuter Belt because all these goods from the industrial belt have come to the Industrial park or the Suburban area based on this and it has to move out from J which is the commuter belt. This can expand such that, you will have another nucleus here and more people living around here. So, this can develop but the size of each sector will change and the position and shape will also change. You can see over here, this is the Central Business District and how the height and density and population of buildings would also change.

Factors affecting growth of settlements: There are many factors that influence where settlements can be located within a region. The site of a settlement is the actual land that the settlements are built upon. The situation is the location of a settlement in relation to the things around it. The physical factors that influence the location of the settlement, mainly is obviously water supply because settlements need water. They often locate on wet point sites for this. They are built away from rivers and water supplies to avoid flooding,they are located at drypoint sites. **Defence -** building on a higher ground, obviously.

Aspect and Shelter - because you want to make sure the sunlight is good sunlight and you protect yourself from the overly harmful rays. Most importantly, the economic factors include; Communication. Settlements often located next to rivers could easily be crossed. These are called Bridging points, like we have seen. Other things are; **Resources -** Early settlers relied upon wood for fuel and building. A site close to the woodland was there for an advantage. Now, resources such as an Iron Ore, coal and bauxite encouraged the growth of a settlement and you don't want such mine or factories near your settlement because it causes a lot of pollution and destroys the environment. Each center will supply particular types of goods forming levels of hierarchy. in The functional hierarchies, generalizations can be made regarding the spacing, size and function of settlements. The larger the settlements are in size, the fewer in number they will be i.e you will have many small villages but few large cities. The larger the settlements grow in size, the greater the distance between them i.e villages are usually found closer together while cities are spaced much farther apart. As a settlement increases in size, the range and number of its functions will also increase. As a settlement increases in

size, the number of higher order services will also increase, i.e greater degree of specialization will occur in the services. For instance; if the size of your settlement increases, a mere clinic will not be sufficient. You need to have a hospital or a multi speciality hospital. Now, if you move on to the next stage, now the settlements have grown. The next stage is obviously, '**What is it that causes the decay of such settlements?**'. It is a combination of environmental and social problems. One obvious result associated with economic development is; rapid urbanization. This is coupled with urban unemployment rate of 23% of the economically active population and with its rural-urban migration increasing at a rate of 5.5% per annum. So, you end up having too much disparity between the poor and the rich, this creates both social as well as political unrest, leading to the fall of the government and eventually decay of the urban fabric. Rapid Urbanization without support of good infrastructure will lead to overcrowding, congestion, creation of slums and other unwanted urban elements and as a by product of urbanization, there will be excessive construction and business developments which will lead to uneven distribution of services and create a greater divide between rich and poor. Many cases of gentrification will lead to the exclusion of certain population groups and reduce the character of the city. Gentrification actually means; as the population of the city increases, an entire low community group or a distraught area which has been under distress for a while, economic distress, a couple of businesses will get together, fund that area and they will end up having a good restaurant, they will build a very good commercial centre or a mall. So, once that happens, people will start moving to that area and that area from becoming an unwanted poor low income group area, it will become a wanted middle income to a high income commercial area. Once the commercial area is fixed, then the residential area around it will improve as well as the land cost will also increase in this case. Once the land cost increases, that area is considered Gentrified. Environmental degradation - like various types of pollution - water, air and noise. Depletion of natural resources and as a result causing escalation of prices or forcing communities to move elsewhere, that is also a form of Gentrification. Combination of social and environmental problems, they are usually mutually exclusive, they needn't depend on each other, are the main reasons for decay of human settlements.