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Housing Policy & Planning

Lec – 21
Housing Infrastructure and Services
Social Infrastructure and Facilities

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Hello last day we discussed about few infrastructures required for housing development today we will discuss social infrastructure part or the community facilities which is also required for the housing development so our objective or the focus in toady's discussion will be social infrastructure facilities.

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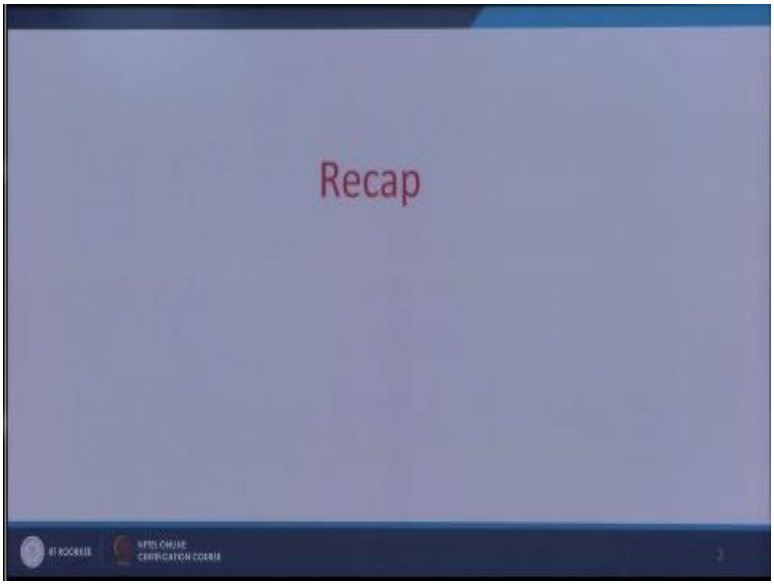

So before that let us have quick recap we discussed about the roads sewage sanitation drainage waste management and power supply briefly just to have an over view from the loads we

discussed that there are 4 categories of road arterial road sub arterial road collector road and local roads this roads makes a skeleton and the structure of the CT or a residential development then we discuss the drainage the in the drainage as planning basic important is the out fall of the drainage.

And the network drainage network is done is along the road similarly for the electricity the basic electricity network is done alone the road it could be below the road or it could be over the road and a part from the network that could be there are the substations for that substantial then need to are marked I will show the example that how it works in NFCT and a part and also the sewerage and sanitation we need to treat our human excrete and the waste for that there could be natural process we took an example that is Kolkata wet lands and the west cycling region.

There could be mechanized or the scientific process using sewerage treatment plane and also there could be individualized personalized approach like septic tanks and respective apart from that we after that we after that we discuss the spoiled waste management or the waste management in the waste management there are few more concept like say the collection collections are done at 3 levels.

The primary level and the house hold level the secondary level at the your locality or the never you enter shade level at the bigger scale and the city level after that we go for disposer and the treatment the main objective this waste management is to segregate the waste at the force and complete the whole process of the waste management into the disposal and the recycle of the waste that we can recover the investment in the waste management and after that we concluded that the all the infrastructure are required and it takes substantial amount of space and investment both.

For example for nay town shape or residential development the space required for the transportation water supply sewerage sanitation and waste management takes almost 10 to 15 % of the overall area so it is very important how we can meticulously plane a town ship or residential development incorporating all the physical infrastructure but apart from the physical

infrastructure there are facilities commutative facilities which is required as a essential part of the housing development.

So this commutative faculties are sometimes called as a special infrastructure sometimes we can call it commutative but those also need substantial land space and the substantial investment to make it livable to make it more better quantity for the housing development so we discuss the objective of the infrastructure is to creating basic infrastructure providing facilities and amentias

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And delivering accountable services.

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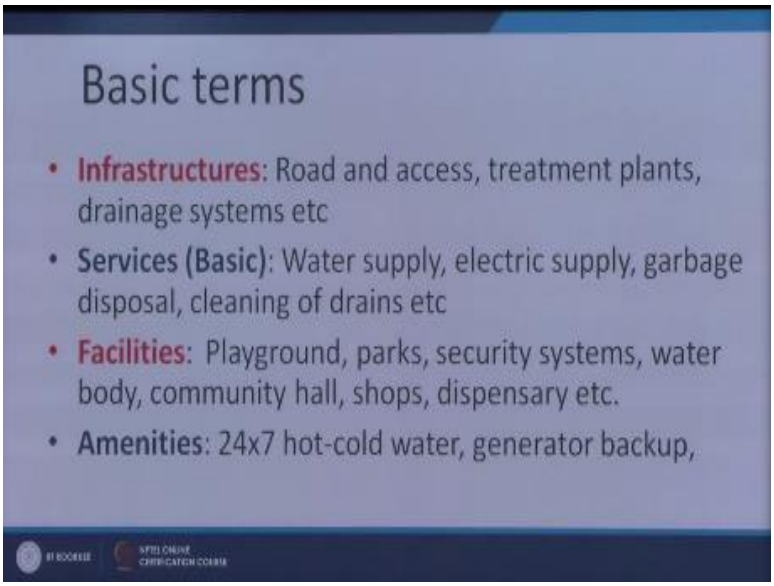

These are the basic terms we mentioned we are not going into much details to the.

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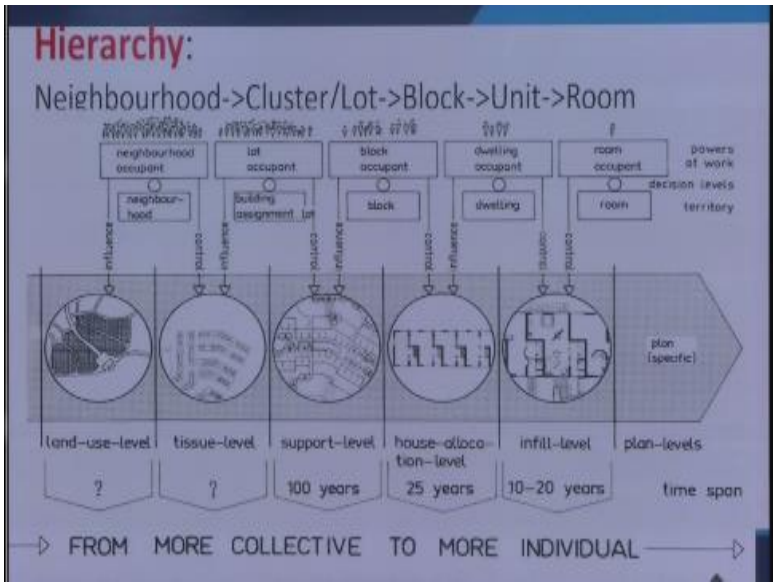

We mentioned that infrastructure and services are plane at various level starting from the city level to the local level.

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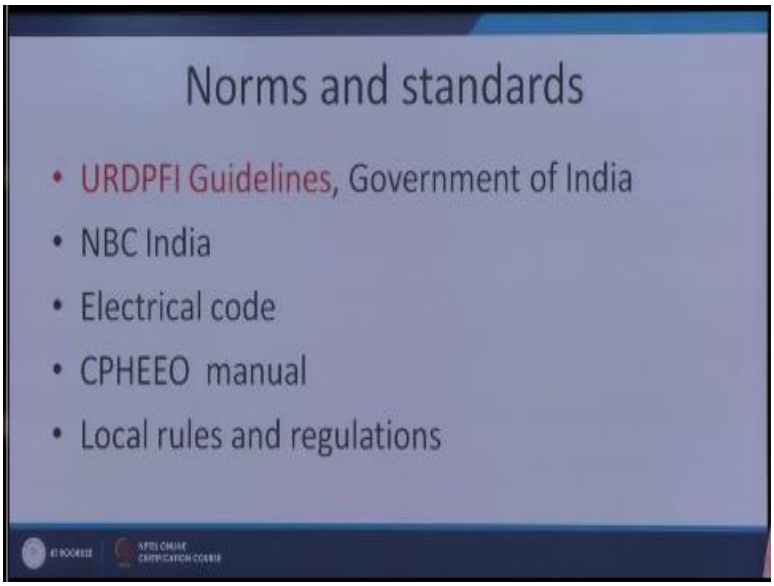

These are the norms we mentioned URDPFI Guidelines and NBC national building code electrical code CPHEEO manual which basically manual for the public health manual dealing with sewerage sanitation and diverse management and a part from there could be local rules and regulation frame by the municipal authorities and development authorities time to time.

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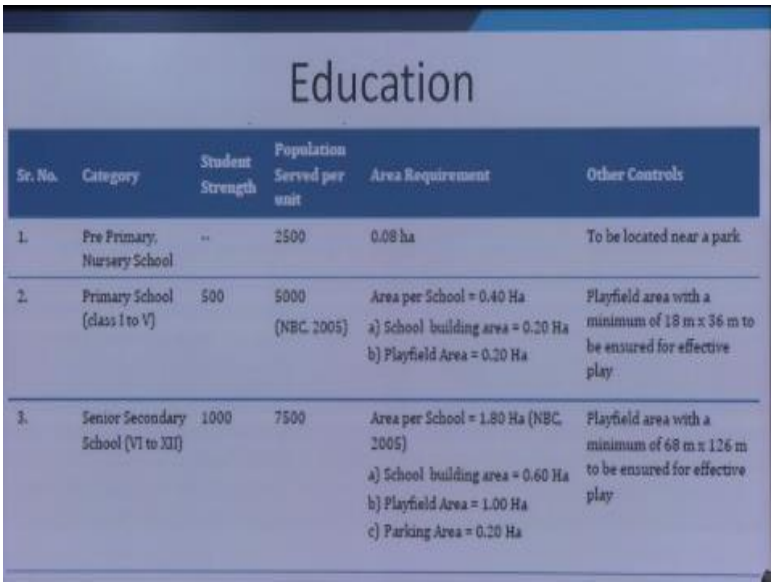

So after that let us see some of the norms.

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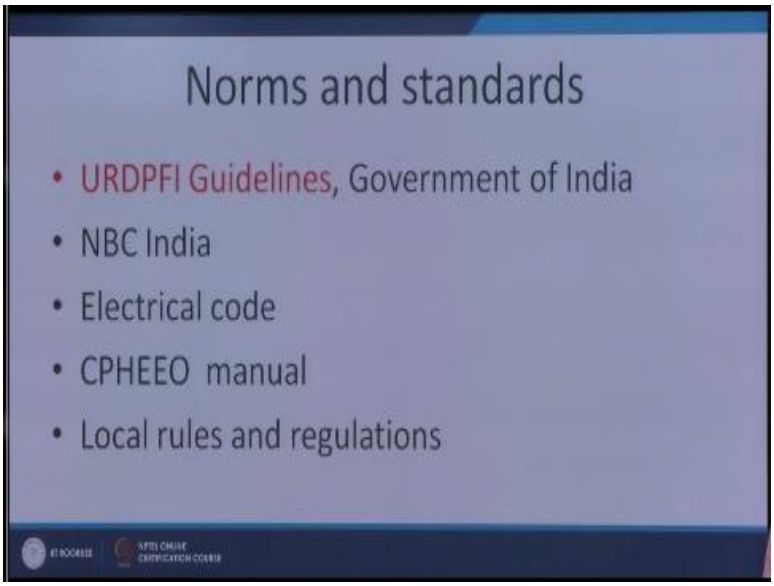

Of the social infrastructure so when we say the social infrastructure there are education infrastructure staring from the very elementary school to the technical college or the university and the college system and the health system starting from the neighborhood clinic to the district hospital or the sub district hospital level and also they are commutative facilities so we are going to show you that some of the norms for the social infrastructure which is given at the URDPFI godliness government of India so basically these norms are provided at various level.

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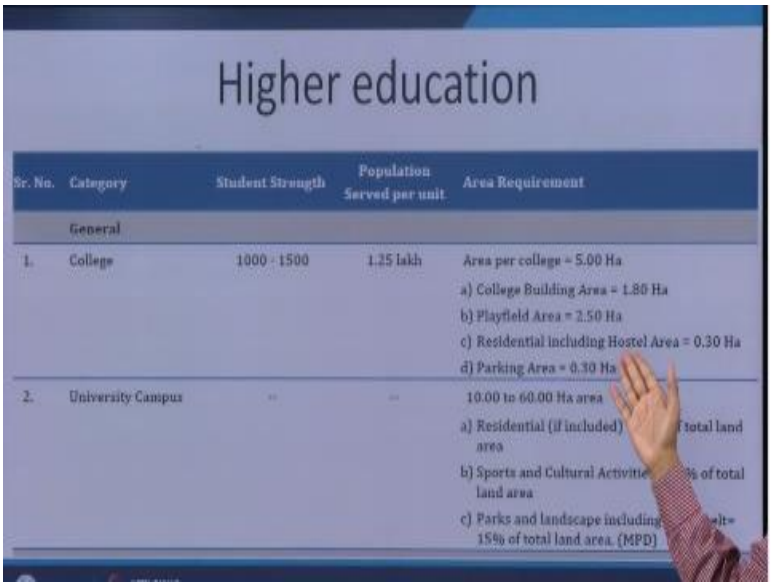

I told you that pre primary nursery school is provide for the population of only 2500 where as the a primary school is provided for the population of only 2500 where as a primary school is provide for 5000 and population and a secondary school is provided for a 7500 which is little beyond then your locality and it is little beyond the neighborhood and you can see the area requirement for the pre primary to the secondary school is very different this is from small to bigger.

And there are other requirements like playfield the amount of playfield required for every level of school so this the provision for the school as per the population standard is concern as per the area is concern and as per the physical the requirement of the playfield and other requirements are concerned similarly for the school or the education facility at the higher level like indicated school without the hostel facility integrated school with hostel facility school for physically challenged school for manually mentally challenged.

So the student strength the populations served and the areas are given so if you see the areas there will be there categories of areas one is the school building area which is given playfield area and the parking area so this is indicative area requirement based on actual area availability

at the side probably you can work out your exact design and planning of the physical of the social infrastructure and these are the controls required for this school or college development now see the requirement for the college you can see the population served for each college is 1.2 lakh that mean the college is affordable one college cannot be affordable for locality or the neighborhood area or the cluster area it can be given at the city level city means one more than lakh similarly university campus is for bigger facility so for the college you do not to only need the college building area or field area or parking area you also need the residential area including hostel building area similarly for the university campus you need lot of areas residential areas sport facility parks landscaping area parking etc.

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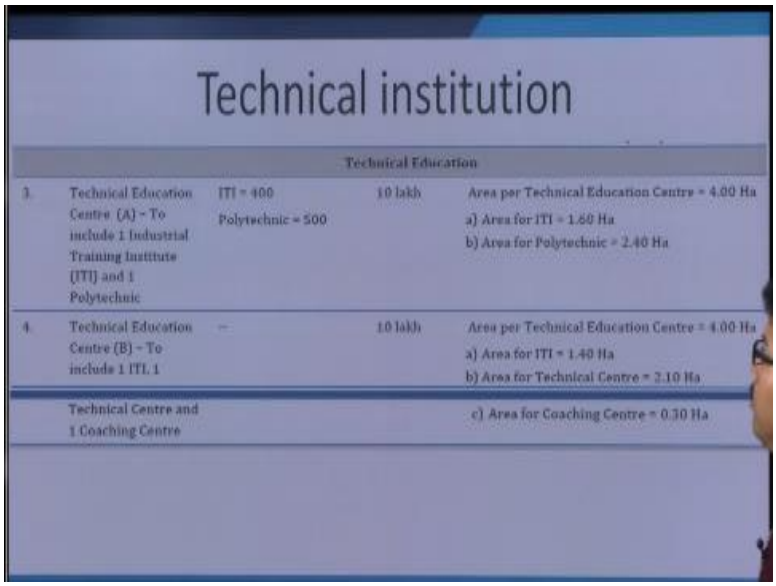

You can see the technical notification which is required at the higher level for 10 lakh population which can be a pile technique or can be centrally funded technical application so these are the requirements for the technical education now based on your area if area is small to medium to large you can provide the social infrastructure as per the requirement similarly the engineering college medical college professional college nursing parameter institute veterinary institute all the institutes have their own respective provisions and the population standards which you can follow during the plane during your planning

So you can understand that for providing this kind of facility at various levels from city level to the local level you need substantial area reserved or located along the your residential area or across the residential area so that you can achieve the better quality of the beatify and better benefit to the people now we come to the health care you can see the health care services given.

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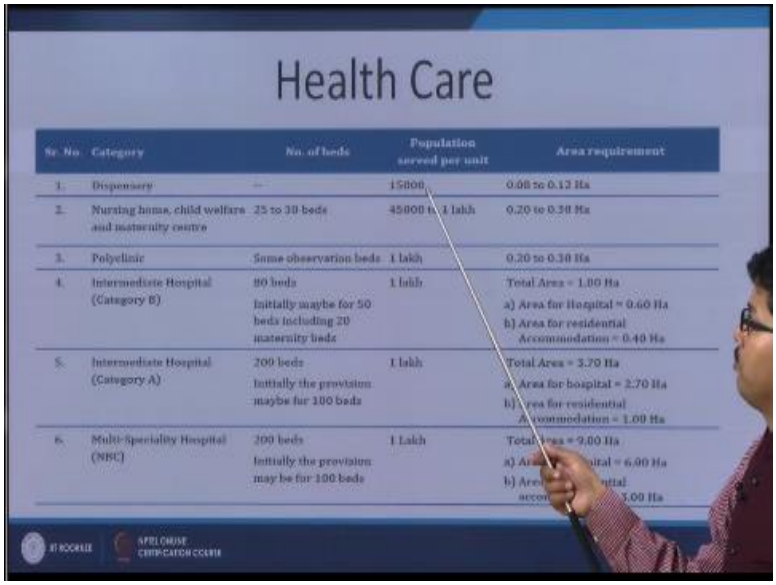

From the lowest health care facility like a dispensary which is given minimum for 1500 population but definitely in housing area or in a locality small clinics or small doctors chamber could be there in isolated building or stand on building it is permitted as for the lone and it can part of like mix land use.

So it cam part form the dispensary and the nursing home it can serve the local people in a better waste and then the nursing home or the child care center or the maternity center which is 4500 to 1 lakh you can see the area requirement so dispensary nursing home policlinic intermediate hospital different category multi specialty hospital which is required at the CT level that is 1 lakh population you can see that for all this kind of facility you need hospital area as well as you

need the residential accommodation so that the people over there they can stay there I mean as they can provide the facility to in patient facility to the people.

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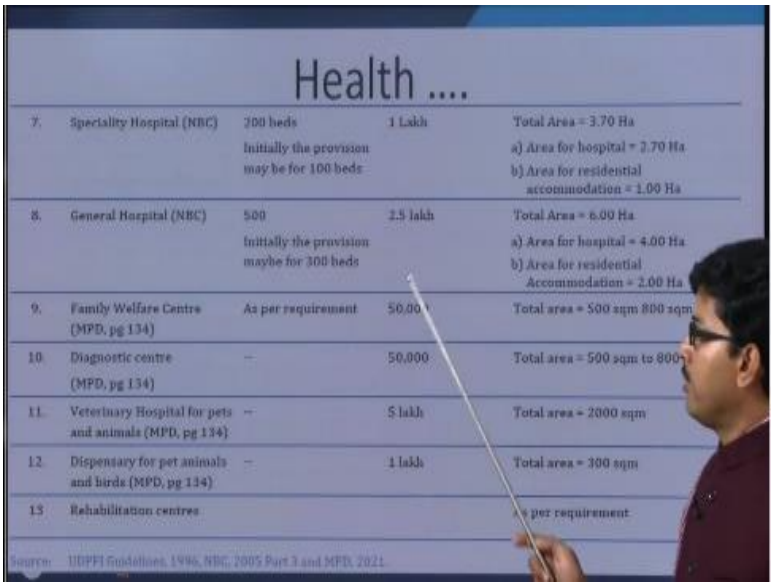

So specialty hospital it can come 1 lakh or more general hospital 2.5 lakh usually the general hospital comes for a CT mid size ct2 to 5 like population family well fare center can come 5000 0 population diagnostic center apart from all these facility say for a diagnostic face center could be there private or the public authority can develop such center then veterinary hospital for bets and animal disciplinary center.

These are different kinds of health facility required for different housing development or town ship development now let us go for the cultural part apart from the educational and the health facility we need specific cultural element in the overall planning and development like hosing area community room community hall Barth hall or library kind of facility.

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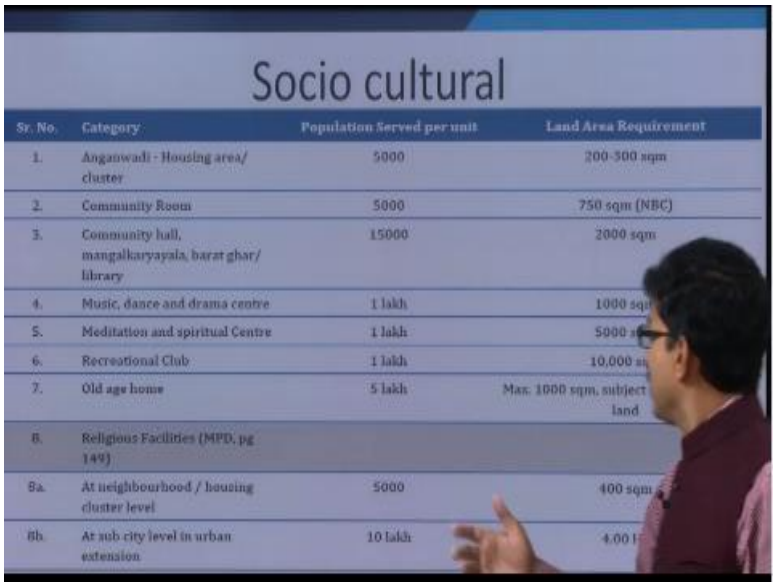

Music, dance and drama center meditation comes spiritual center, recreational club, old age home over the period of time old age home though we write at the as a part of social and cultural facility but old age home has become a very important solving typology in the later part of our this lecture series we will discuss with old age home in a greater details.

But let us take a note that earlier we used to treat this as a cultural facility but now we treat this a very important housing typology because over that we would have time this typology is going to be increase and there are more requirement of the old age home then the religious facility at various level also can be there and this is the population for this is the area so this areas are indicated but based on these and the actual area.

Have a level in your area you can basically metalize plan your land basically so apart from the commutative center and the cultural facility there could be facilities like say children center the centre for physically and mentally handicapped, working women or men hostel, adult education center, night shelter then exhibition come fare ground sign center, international convention, now please take a look at the working humans hostel at the night shelter.

Though it is shown as a part of facilities it is also like in old age home we told that it is a very important housing typology because now it is the amount of the working human and men hostel are going to be increase in your future because more and more the number of people are coming from one city to another city one city to the village area there going their either by single or which is small family.

So for this kind of purpose the working humans and men hostel is very important for in a housing development similarly for night shelter the people who are staying there in the roads verse payment willets they need night shelter for their they cannot afford they food how is that cannot afford an hostel even so night shelter are given as a social facility as a social benefit to the people by the government.

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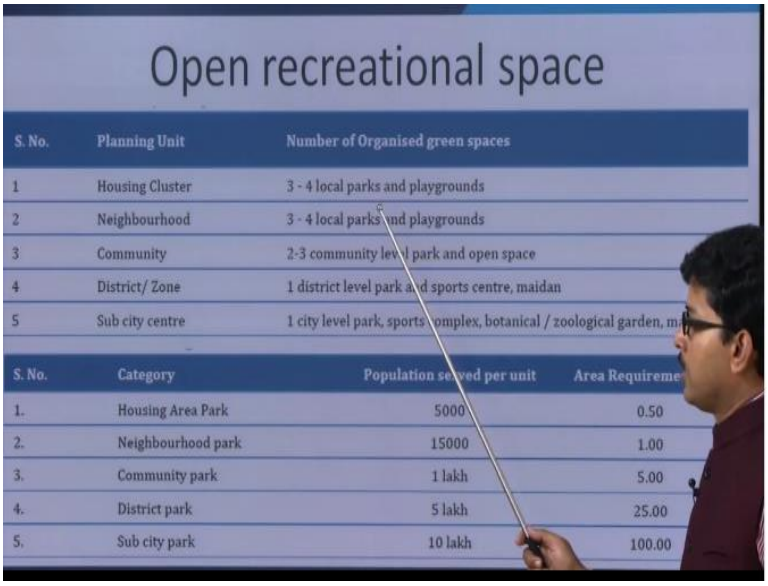

So apart from these we provide the open recreational green areas in every level like in housing cluster three to four local parts and play ground you can see the size of the local parts and it will serve the 500 population at the cluster level at the never the level it will solve the 15000 population and the area will be one hector at the community level sometimes we call it as a sector or block the name can be different.

But the concepts should be clear at the community level the community level part should be serving about 1 lakhs or it can be little less than that also based on the your planning of the city and it will be having 5 hector of area similarly we have district our zone of or the sub city level or sub city level parks which is much bigger than the lower level you can see 25 hector and 100 hector.

So in a city or in a housing area the overall area required for the green areas is ranging from 10 to 15 percent so it is not very less amount of area so out of 1005 of the total area 50 to 60% areas go to net plot of the residential use network for the housing another 10 to 15% goes to the traffic and transportation another 10 to 15% goes to open decoration area and left areas are meant for the other community facilities including health, education and community facilities including commercial areas.

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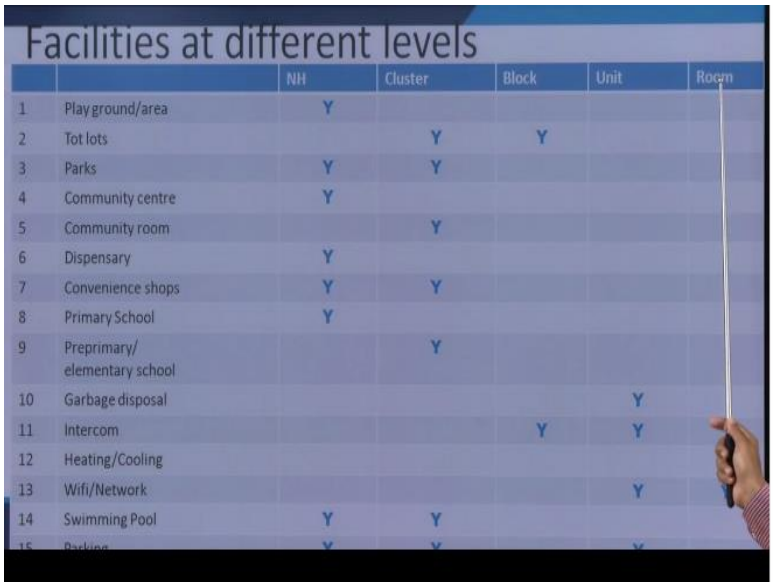

Now let us see the how the facilities come at the different level so this is an overall level, cluster level, block community or sector level whatever you do I mean we say and this is the unit level at the room so at the room this is the least level of unit least level of facility unit means the

housing unit block is the combination of the several units, cluster is consisting of several blocks and several one neighborhood is consisting of several cluster.

So we can see that most of the facility are given at the neighborhood level or the cluster level but few facility are there like say in garbage disposal which is coming at the block level or even sometimes unit level, intercom facility heating and cooling facility, Wi-Fi facility, swimming pool, parking all are particular and parcel of the individual room or the block level facility, similarly after the neighborhood level we can go to the sector level or block level or the community level or the city level.

Where the bigger size or the bigger level of facilities will come so we see the picture again we last lecture also we took this example the typical layout of a neighborhood cluster.

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So here we can see that four neighborhoods are there the plot layout plan 1, 2, 3, 4 and the blue colors you can see these are the educational facility these are the higher secondary school and these are the primary school within the neighborhood and this small blue areas these are the

elementary school similarly the red colors shows the commercial facility at the sector level or at the neighborhood level.

The convention shorts will be there and similarly the green and the blue shows the open areas at different level this are the centralized open area at the sector level whereas the this green areas are servicing the neighborhood and the cluster for example this green areas are servicing this cluster so that people from this side and that side can come and enjoy whereas this green areas and the water body can be enjoyed for all the people living in this neighborhood.

So this is an example by which you can understand that how the differential facility are placed and how the local roads are connected with the residential area, now last to last discussion they develop an control you can see that here we have used two colors two set of colors for residential area one dark yellow and one lighter yellow, so this two colors show the different height to correct height of the building by enlarge the concept is that if this is an neighborhood.

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Then your peripheral building could be higher high rise and your internal building could be little low rise and this could be road and the internal phase could be used as a green area, so this is

done to ensure the adequate light ventilation and visual continuity so that so please connect with our discussion related to the building controls and the urban design so based on that two different types of building typologies or the building envelop or considered and placed at the pheri- pheri and the centre of any neighborhood.

It could be different also it is just an example to understand you people that how it works not only that.

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In the internal layout of the neighborhood you can see that local roads are there local roads can be connected with other local road and also local road can be open ended like that close ended which we call it as call attacks which will service only the internal prods only so how this local roads the community facilities this phase for the community facilities green areas acts together that is very important thing to see.

One another very important part to be observed that major atria growth and the artery growth and the same artery road are also connected with a local road and the connector road but this will not open up in the men garage way this will open up only in the service road, please recall our

discussion in the last two lectures when we displayed the typical section of a road arterial road several road and the local road.

So this connection of the local road and the arterial road not directly there so this is not an intersection this is not an intersection this is only matching with the meeting with the surface rod so that is how we physically we try to figure out the any housing area metric closely plot by plot personal so that after this exercise we can take a percent of land and this person of land we can give it to develop our.

And tell them okay develop a housing project of this march of unit and this is the density prescribed this is ATL prescribe so without this exercise without the lens sub division without the allocation of the physical socio infrastructure and the network we cannot go to the next level of the process housing development so from the lands plan or the planning of a city to the housing develop and at the project. These are the necessary steps.

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Similarly this is another example you can see there also these are the areas for the schools or the health facilities this is the commercial facilities and this the commercial facilities and this is the

green space for green spaces are consider to be a continuous space as a example and these are the network of the local roads.

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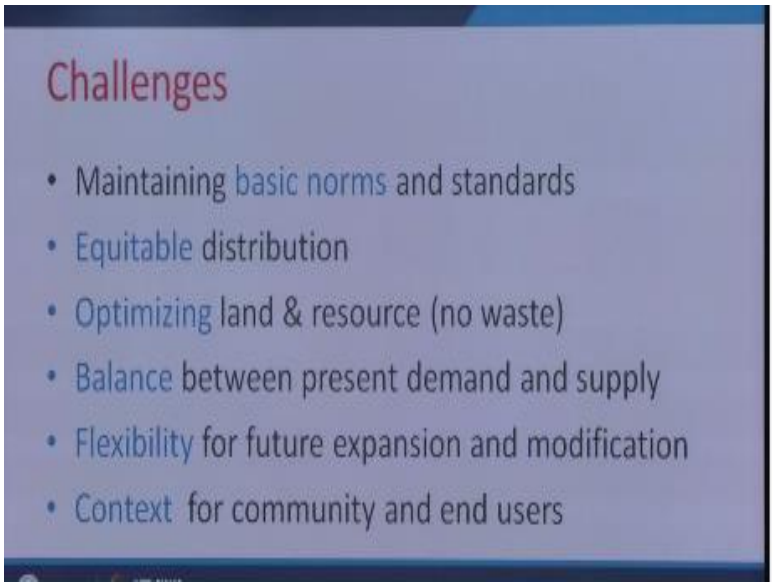

So to plan for the social amenities and facilities basic challenges are that how to maintain the basic norms and standards the space standards given by the URD Wi-Fi guide lines is indicative but if you want to follow the all the space standards sometimes you might end up in space crunch you will find that so much space of the land space is not available in your oral area or may be that you do not need so much of area so how to make it balance without creating any dis-balance or distribution of the various kinds of social facility how you can achieve a balance and you can provide all categories of socialfacility how we can achieve a balance and you can provide all categories of social facilities that is the basic.

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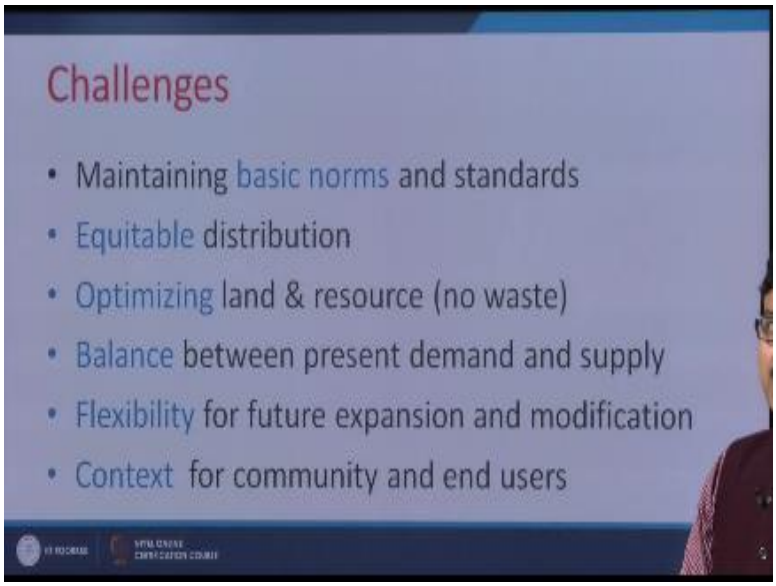

Challenge to how you can how much you can maintain the norms the limit the prescribe norm from the facility. Second part is equitable distribution the examples I showed that how the facilities are distributed in such a way so that wherever you were located wherever your plots or houses located you can come and you can away that facilities even if it is the green areas or any common to you facilities.

So physically physical distribution of these facilities, then optimizing land and resource land is very important and very curial resource we cannot waste land and just to minimize the waste of land and to maximize the utilization of the land we are taking so many lectures to discuss that how we make the policy how we make the reforms, how we make the planning in the city and the region then after the planning we make the develop and control we make the land subdivision we make the plottly out plan and finally we take each and every plot to develop a housing or develop any other thing.

So the objective is to optimize the land so that we do not misuse the land so one element in this optimization is the amount of land given for a particular plot for any facilities and second is these it is location like the examples I was showing that the school location, the school plots can be

given adjacent to the playground so that the school building or the school authority can utilize that playground simultaneously and this the playground or community as a hole also take the advantage of the school.

Those kind of integrative strategy could be taken in the physical planning as well to optimize the land then the balance between the present and demand and the supply, so present you might find that in the planning of the overall city your demand could be very high buy your supply of the land and the investment could be low, so how you can balance how we can maximize your benefit for the people that is very important so your priority between the various services is important that definitely the basic infrastructures like say water supply, electricity, access load, health and education is not comprisable without that know housing develop can be done.

Then flexibility for the future expansion and modification the flexibility is very challenging term because the plan or design we make for the people basically will may change due to it test of the people or the change of the population pattern in the future we have seen in various core city of the area various lab metropolitan city that because of the change of the population dynamics the populations people are migrated to different cities, different changes the transformation has are going there in happening.

So because of this transformation of the population dynamics there could be some kind of flexibility of the infrastructure and the facilities think about the cities like Kolkata and Delhi where the it was done so many long years ago and the infrastructure was designed only for few lacks of people but still now those infrastructures are taking load of at least 5 to 6 times of population so that is the essence of the in flexibility and the expansion possibility of the infrastructure and the facilitates.

And the context for the commodity and the end user, the infrastructure and the facilities we design should be contextual the road section or the standards we I drive when I showed you in the last lectures is a standard section, but you will find that in Indian roads, Indian common spaces and the terminals you will find lot of informal elements informal shops, informal vending

elements vending shops so how we can accommodate integrate those in the common place because we cannot eliminate 100% we need this after some extend.

Recently government of India through their street bending act they have given the authority for the street bending but in a specific demarcated zone so that is the challenge for the planner that in a housing area at various level never wood level, sector level, city level how we can place all those kind of informal facilities which we require. One example I will show that we can place those facility.

So that you do not misuse the land at the same time you use the land for the better benefit of the society so that is very important that do you planning should be contextual for the community and the end user we cannot make your road, town ship which is looking good but which is not servicing our country man which may be servicing the any other country so based on the requirement of the other our country man and the people we have to design.

Now just now we talked about the informality that the informal shops and the vendors you will see that most of the vendors and the informality comes in the nodes in the intersection in our cities and the intersections are very much venerable the basic reason for the venerability is that most of the activities loading, unloading transfer from one vehicle to another vehicle takes goes on in the node area in the intersection, because intersection is the area where the large buses come the metro rails ends there terminates there and those intersections are not given priority not given much attention in terms of the informality.

So in this project we also consider that how we can bring that element in the planning and keep some area for the community facilities like this is a.

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Typical plan of a junction you can see that the typical junction is consisting of a major road and the minor road usually but we kept additional road both side of the four quadrant of the road junction and this junctions are acting as a space for you can say see the convinced or a transport terminal to accommodated the paratransits or the public conveniences to have some areas where some public function some informal street gathering so informal activities could be there this kind of areas could be act as it transform terminal and here there could be foot keys there could be small shops and the equipoise elements.

So these kind of element could be accommodated not only that the pedestrian pathways can be integrated with the bus stop age and the transport terminal and the community facilities given there and another part you can see that the service road is connected in such a way so that it is not hampering the journey or the movement of the major arterial road as well as it is giving the connection or the access to the paratransit and the culture at the foot key as in the other quadrant.

So this is the way how we can accommodate the informal facilities and the amenities in the common areas like nodes and the junction without wasting much, much area and without affecting the physical space because if we do not provide this space ultimately eventually this

kind of facilities will come here 20 numbers of auto rickshaws will stand there so we cannot bear that we cannot we no longer can allow that so for that so to face in those kind of situation cabanas the conjunction we have provided the areas and the four quadrant of the road.

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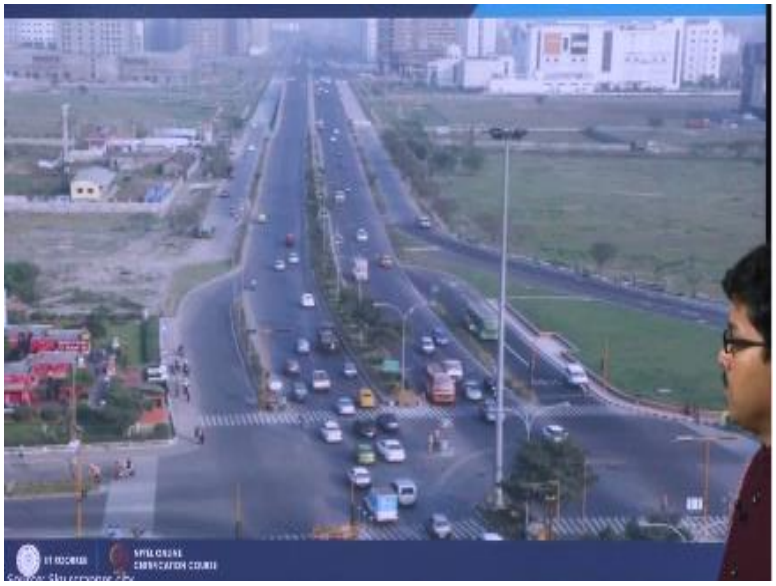

This is the current situation of that particular junction you can see that some shops has already come here and this is the area for the best bus lengths the bus will come and stop there they loading unloading can go there so that the main carriage becomes free the service road will go from different site like this and we will connect to other part this is the areas where kept for the quacks and the foot and the paratransits so this can be very important planning excel side you should take a very important learning notes from this cases.

So having said that the next lecture will discuss the housing strategy how we combine all these element in a strategic document for a city the infrastructure the develop and control the land dues it is prescription everything so before I finish the lecture let me quickly summarize what we discussed today we discussed the social infrastructure or the amenities we discuss that social the educational facility, health facility, community facilities at the different level like say our building level to the block level to the cluster level to the neighborhood level and the city level.

And the basic challenge of this designing and planning of the facilities is that the equitable distribution of the facility over the space the second is the to maintain this standards prescribed by the codes or the norms like you are deify because land is very scarce so how we can give the priority over the facilities and which are the norm I mean and after giving the priority we can keep a balance we can maintain a balance for all the facilities so that nobody is refight of any facility.

The facility should be equitably distributed over the area so that everybody irrespective of caste and gender and the economic status they get the equal benefit and also the optimize utilization of the land because land is a very commodity and the pricely commodity so optimum utilization of the land is very, very important for the designing of this commodity facilities. After that we ended the discussion with the essence of the informal facilities and amenities required at the housing development or at the city level for the people in our country like India.

So we can accommodate this kind of informal requirement or the people in terms of paratransit facility in terms of these street bending or the informal facilities in the junctions in the nodes or in the common areas meticulously so that with very minimal areas of profession we can achieve maximum benefit so that in future those areas do not get congested and do not get on sustainable and do not look ugly so that is your objective of the overall discussion of the infrastructure and facility.

So next day we will discuss the housing strategy at the city level, this discussion will talk about that after the planning excel size the element every element we talked that the develop and controls and the infrastructure element how we can combine these to come out as a comprehensive strategy document for housing in a city, so thank you for today.

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