Urban Housing

Lecture 8

Housing Layout Factors

Let us start with the housing layout factors to be considered there are several different factors that have to be considered while designing in the pre-planning and post planning and the implementation stage of housing. The first important factor to be boundaries this set of line is a very miner line that decides what could be the border and your neighbour. This is not the demarcation of your plot rather than the demarcation more than that it ensures the security. So, the boundaries plays a very important role as we were looking at the subdivision controlled on a larger scale definitions of boundaries will enable the estimation of projected population levels. You might have to ask how does it determined projected population levels imagine a large scale housing layout to be decided and you subdivided the plots in to several different factors. So, the amount of plots multiply by the average family size gives you out the projected population levels so directly or indirectly this is the related to the projected population and moreover the image shows your space and your neighbour space the minor demarcation of this purple line well ensure this security of tenure is being translated in to a plan divides the red line which divides each of a plot ensures proper circulation around your site and ensures a that this one is the proper property. So boundaries plays a important role and this has to be primary factor consideration on of housing layouts may be a smaller scale and allow

As the image shows you could see abbey lane the blue and the black line which divides a plot from the street which means that boundaries of each neighbourhood should be set in coordination with what we call it as footpath or the walking layouts. So, in order to ensure proper walkways proper footpath and segregation the vascular along with the pedestrians you need to ensure proper to mention for the walkways and the footpaths. The redline which is being demarcated with here along with the proper site sets with the back and also the black line which is at the border ensures a plot boundary to be clearly demarcated from the utility or the service line which it is a drain and the vascular roads the general site condition that has be determined the buildings requiring specific locations. We considered first religious buildings may be a higher ground which means that there are certain landmarks buildings that will be the major proximately or the major landmark that you are creating or the

noodle point you are creating on the housing layout should be considered as a primary point and that can be located on a higher side depending of the on the scale of development and commercial activity should be also be placed in more accessible parts. So, all these religious, commercial and the residential part go hand in hand together as we were already looking in the previous chapters. Next important consideration should be blocks.

Blocks: So, blocks are simply defined as the square or rectangle plots. The white line which you could see that have been divided by certain organic or formal way of streets. So, the street has being segregated and the plots are left behind as the square boundaries that are been enclosed by streets. So, in other words boundaries of streets that defined an enclosed by atmosphere could be defined as block within each neighbourhood there are various blocks that are related to main streets and the main road layout also ensures proper neighbourhood facilities through this organic ways. More important thing is clusters.

Clusters: This is being a drain from the previous chapter that clusters are enclosing spaces. So these could be enclosed at various scales we were looking at different proximity of clusters or different scales of clusters. So looking at this image. There are two different clusters that have been formed the major difference is the first cluster that have been denoted here as a square open yard which is been directly entered through a walk way and six different blocks surrounding which means that this open space and as in social interactive atmosphere for all the six blocks. So, this can be self-contained, this can be more private and this can be enclosed. But now moving on to the next image where could you see the green yard where you could see narrow allies that move in and out of the clusters this ensure the continuity of the clusters between different spaces which means that every spaces arranged around the court yard also place a smaller interactive place and this continue of the interactive space is leads to the next clusters. So, clusters can be interconnected various scales in a same neighbourhood or it could be also as a self-contained entity. So it should be a design space not an open are surrounded by a plots. So this has be a major consideration by architects planners and policy makers that this open space clusters should not be a residual unit. In other interesting image looking at this web shaped open spaces or web shaped organic formation of housing layout if possible, these access of clusters could be given from a main road which means that white line which is see you are the main roads and you could see different

organic clusters that are formed inside access through the smaller interior are second hierarchical roads. So all these self-include entities form continuity between different open spaces through the internal roads as well as it depends the scale of the development the white border lines the y shaped and the plants of blocks organization which enclose these. So always the scale of open space should be related with the scale of space that has been designed.

Utilities

The most important part any architect utility policy maker should keep in mind the provisions of services we have already seen in a second chapter about sites and services on how it placed a very important role in a provision of housing in to the low income and the equity economical section groups. So, this is a much border and higher scale provision of utility services could be classified in to transportation utility services sewage or sewerage or sewage disposal units and sealants' or water disposal or water collection points and along with the electricity plays an important role. So, these are the primary factors that are considered in a housing layout even before the approval has been got. So the detailed design of each component in situ means close coordination between the design of utilities circulation and housing layout. So all these three put together form what we call it as an important part of a situ development. The design criteria construction materials and the development service for each utility has to be established even prior to the implementation stage. So all these come under the preplanning stage housing layout before to the consideration of foundation. More over utility network

Utility network: One of the most important items of the design process is the optimization of the utility network. Optimization means we can provided a lot of services. Lot of services could be combined in a housing layout of say acres of site or acres of plot. Now, channelizing it getting it one point control like a meter board in which controls one or three phases is what optimization. So when you start what optimizing its optimizing land or optimizing resources optimizing utilities always become a primary role of factor cutting down different cause of housing planning layout factors. Effort should be made to ensure access to safe drinking water as well as sanitary collection, disposal of sewage. Just to give a small framework. Imagine there is a corridor which is say a 5 feet wide and a length of say 100 foot providing a surf a circulation core at one corner imagine you have steps on one side. So, providing a surf circulation at one corner. Imagine you have apartment units considered at the till end of

wide corridor. This circulation core will not be accessible by the last part of any apartment entity on a smaller scale channelizing a core would be more efficient in terms of providing a central core and providing a access from four sides on a much larger scale. Imagine your designing on a neighbourhood or a sector of 1200 meters by 800 meters and you organically divide the plots organic layout of roads can you given subdivision of plots where you start you start organizing different plots at different parts of the side. Now, when you start providing services at one part at this is going to be water collection point. Now what will be the access of water collection point access from the endmost point of the side so the walking distances and everything increases which means efficiency decreases. Now, rather we could say proposing a two layer multiple layer of water collections points at different parts of the side which gives access to different housing neighbourhoods with in the sector will serve much balanced and a more efficient way of utility in results. Now another example the seen arrangement of rectangular sector this considered 1200 meters by 800meters you have formal way of organization site you have rectangle subdivisions of plot through the entire primary roads you have arrangements of different housing plots and different housing scales. Now, all these in turn have to connected to what is called as sewage line. Now imagine all this sewage lines run across the roads get disturbed through the other services that have been connected. So when there is a canotic arrangement of utilearaion services like when all this sewage lines move on to the one disposal point it becomes other canotic point rather probably you could give certain sewage collection points regular intervals and all these could be connected at the back point of the side and all these could be further channelized in to one hole in to this inspection chamber or the entire sewage collection point and from this could be let to the outlet. So, now the more important factor here is to channelize all the resources may be the smaller scale or on a larger scale to optimize it and get to an one focal point and then move it on to the other side. So all these planning and implementation strategy display a very important role especially the factors that has to be considered while planning the site and planning the housing especially planning a neighbourhood.

Now moving on to the water supply options. Water supply options: There are several different water supply options especially the first one would be the community well. I would rather say community well yes a source of interactive point. So as you could in the image move people from the community are pull down to one single point where you get or there is a source of water. So many

people with in a neighbourhood gathered at a particular place and this also improves a scope of interaction. So many neighbourhoods you could see this at the lots of traditional areas and in urban areas. The housing factor considerations are very much less in terms less in terms of community. The second system is the pipe system which is been usually used in modern day housing layouts where you have a water main line the single central line which comes in the inlets from the municipal sewage line so this being the water main line that's being response that by the community or the municipal corporation which is being spread down in to different communication lines that move in to your planning or the plots then which get further divided in to these yellow lines nothing but these supply line which is being that responsible by the private owner. So they give the piping systems that get connected to the municipal sewage line. Otherwise the other operation is cad option the blue line which could see over here is share between two plots. So this could also be economically viable for different sets of users. So these are the major parts four lines which have been used either an individual or community way of getting sources of water the third system is public stand pipes which have not being used which is no more in modern days but probably in traditional or rural areas. You could see this kind of piping systems where underground sources of water being a very important role in getting. And the fourth is storage tank in modern days the low income housing units and several areas where water sources are being in accessible this is a primary sources of water it is a set of tank which carries a fuel liters of water where certain community gets benefit through this existing water source which is being duplicated now a days in a developing countries but existing source of water plays an important role providing a water source to the housing layout factors and last being the individual well which is no more again in modern days but this was a primary source of unit and now a days people moved on to bore wells and different other kinds of water storage systems. Next will be the sewage disposal options starting with this is already mentioned that where there are common disposal points. So around the boundaries of every plot you get sewage disposal or sewage collections lines that interns get connected to what we call it as municipal sewage lines where there is an inlet and the outlets connect to the chambers that moves to the out of the side. So, communal system where you could efficiently use piping lines and sewage lines in order to maximize the use and minimize the economic viability of it. Composting latrine and night soil collection night soil collection has an important history beyond on it where in 1920's there were been lot of slum

formation in London and there were use in open defecation. Open defecation leads to lot of health and health related issues. So night soil collection is the one collection where there is harse and there is a mobility network which moves around the entire side collecting the waste which means that people disposed or people openly defecated in close papers they rapid up and it is like a garbage disposal but here instead of garbage there is a grey matter which is a been collected other systems are pit latrine where this was another traditional or the rural way of composing posting were you create apt and underground pit where you its 5 feet and Indian water glosses system works on this same principle where the pit might have the a lot of enzymes biodegradable enzymes from which decomposed the entire thing in to a bio gas or it can be channelized another efficient ways of planning and last would be the aqua privy where you have a system of sedimentation process would be the major core of the ventilation over here and there is a wind pipe it leads the waste air or the waste order out of the chamber

Surface water drainage options: Starting from the French drain in an underground channel system that moves out water efficiently from your site there are open channels natural water cores catch bases and rain water harvesting. All of these are common terminologies that you used come across these and these have been efficient waste completely used by a transistors channelizing in a water bodies. Rain water harvesting is another main source which is being practiced. Nowadays and this could have been especially in felt in terms of over flooding or improper management of water systems.

Electricity Supply Options

The major system of electricity the idea behind the electricity is that there is a power plant which in enrich power through private companies or say government own companies or stakeholders with generate power or within is a substation in which takes control of entire things of transmitting. So these are the transmitting lines carry those high voltage power options to the substations and from the substations in which this is being diverted in to different neighbour hoods based on the requirements and the transmission lines carry that so it could carry the electricity high voltage over the long distances. So when it reaches with the community there are certain distribution lines are say there are several meters board are smaller transforms that are kept inside the neighbourhood to cut down the voltage so which means that the electricity is being regulated from a volt around 12,000 or 120 or100 volts. These are different hierarchy of

smaller levels which could see the breakdown the high transmission voltage to smaller that could be use day to day life. So based on commercial requirements or could say the residential requirements this could be slit electricity from the transmission lines in the voltages or could be reduced through the substations at distribution companies delivered power to the homes or other offices.

Common Facilities Education

Any neighbourhood that is being planned on higher scale. So one point six miles radius neighbourhoods need to have to common facilities neighbourhood. So, the primary importance that is given to the education. So provision of schools could you imagine a house in hazel bezel of streets when you have entire row of the houses on the main road or the street front page and you could see a lot of our vehicles that cross over and you have entire residential or said school district places than the other sides. It is very unsafe across this. So, probably neighbourhoods need not be planned inside rather neighbourhoods could be planned very efficient way this image could be the clear picture of part in vision neighbourhood in the 1920's and 1930's it could be you could probably have a central open sewage which could accommodate a primary school most important term. So as we already discussed. A site development has the provision of school sites school should be located as near the possible to the centre which means that this place of very important role especially in terms of expansion of schools also are the most important factor is provision of primary schools and provision of primary middle and secondary schools depends on the amount of population are the density that is being in an neighbourhood that is density that is being projected in the neighbourhood so when all the residential units come across this and when all these are walkable at a safest place which does not across a vehicular unit which means that you can probably ensure safety of the pedestrians and also a safety of kids looking to the schools so which means that most of the neighbourhoods have to be planned as a safe walkable environments and more importantly there should not be crossover between we call it as vehicular network and what we call it as pedestrians or cycle network.it is a graphical image illustrates what is the distance needed for walking especially for the kids from the school providing school is been planned as a center of attraction or centre of space magnetic field like that so 400meters would be a probably walkable distance and along that radius you could see list of facilities that the neighbourhood people could use that could vary from recreation parks and gardens restaurants service streets vending

shops atms stores and other important network of things are needed in a day to day bases.

Common facilities recreation: Imagine this to be another radius of neighbourhood which is being that plant and you have all these are residential units that have been planned. So you eateries community school you have different Wi-Fi spots. Imagine a neighbourhood without any open spaces. So open spaces other ways say sources of recreation otherwise it would be called it as breathing places any neighbourhood without breathing places could be probable failure so this diagram illustrates a neighbourhood which is mean probably panned as an organizational network which subdivides the plot in to different blocks and each blocks contained different clusters of apartment units so, you could see lot of apartment units which have been organized around a central courtyard. So, you could see all the residential area which have been found the community structure that have been arrange.so, which means that the community structure varies from much a smaller scale as you could see here and much to a large-scale as you could see here they could be a different scales and sources of recreation that could be planned in an neighbourhood. It need not be a single source of recreation and other single source which is being repeated otherwise it leads to monotony of recreation of spaces. When planning this has to be kept in mind and different sources and different scales of a community space that has to be disposed around the side and the neighbourhood ensures a probable walkable entity and as well as different sources of recreation is being spread over options for recreational space should include a range of formal and informal use. It could vary from a gardens playgrounds open spaces hotspot zones and cycle networks or it could be an exhibition canters so depending about the population levels or the density neighbourhood this could be the worked out.so this should always work out with a proper balance between the formal and informal use is recreation spaces. Extent formal recreation space will largely depend on space available and official standards, limited by the target population at the end of the day we were targeting the users we need people to use all this so every space that is been designed even a smaller entity to an open space like this should an have to keep in a mind what could the uses are what do to they want to do and why do they need it. And other illustrated image a composition of a neighbourhood which says accessibility as an important source. As we looked at the previous chapters, while designing neighbourhood we need to take it an considerations the climatic factors that topographical factors is geological entities physical factors social economically cultural

factors and along with it we come to a focus down on to particular neighbourhood and along with a particular neighbourhood. We need to think about what access it important that can be located behind commercial, industrial or public area. This could be zoomed in to different sources or different access of recreation spaces that have been properly planned in an around a neighbourhood. And that is been properly connected through these arrow marks. So which means that these could be an network of an open spaces that vary in scale but that work in hand in hand to ensure efficient balance that is recreated in the neighbourhood the advantages of locating a large number of small open spaces and related to small housing cluster or local access will prove to be the most economical and socially viable entity meaning is provides spaces for children to play under the supervision from their houses, close neighbourhoods just a smaller clusters could have different smaller network of open spaces as we saw in the first image open spaces could be connected further in terms of other open spaces. So connectivity and access plays a very important role in organizing these open spaces around a central hole taking the consideration city of Chandigarh there are certain hierarchy of green areas that has be considered while designing especially on much scale. So when you planning a city that is composition of different neighbourhood you need to think of different hierarchies that so the first level of hierarchies is that city level public green space with artificial water body. As you could see here that is plan in Chandigarh. Next is the free flowing space, that is the green space that extend as a spine connecting different sectors and neighbourhoods throughout the third level is the semi-private gardens which could see share entity between two or three neighbourhood and last level is nothing but the private gardens of the residential area. All now till these chapters looking at only the smaller scale but a housing could be a successful when it is been implemented on a much larger scale when the compositions of city are also taken for of. So,always planning a housing layout factor deals with different scales and all these different scales has to be mitigated on who are the users of using it and what is the exact needed of that .

Common facilities circulation & transportation:

So planning a neighbourhood whether it is a formal organization or in an informal organization. You need the certain lines which have been dictated on a primary hierarchy secondary and territory hierarchies which means that networks of road that can connect the entire neighbourhood and that also works

in different space. The primary scale of road network could accommodate trucks of heavy load vehicles and that could be dispersed in to smaller cars and smaller network of roads which could accommodate vehicles of an pedestrians. So layout of streets should provide adequate and safe vehicular and pedestrians circulation. Finally it involves basically three things one is circulation transportation and parking which means that upgrading projects objective is to rationalize the pattern of the streets to obtain the most efficient land use and in new settlements. We need to probably consider a wide range of options, which means that it creates a link in to the existing streets. It also provides an efficient ways of vehicular transportation a properly planted tree and proper walkway a proper setback between the buildings that the efficient land uses mentioned and there also a existence continuity between existing the block patterns VRTS and other examples where properly bus rapid transits system is being integrated in to the existing road networks segregating the vehicle over here with the bus means that also making it efficient for the bus move in a single lane promotes a safer environment on a much larger scale making it much more poorer. So these red dotted lines dictate how poorer as a urban membrane it could be. So, these urban layouts or housing factors could be mitigated in a way that they are much more poorer to ensure more walkable neighbourhoods and gets access so breaking down of these urban blocks creates access into the remaining districts of the city. To close with it in order to assess the layout efficiency there certain percentage there are certain numbers which dictate that. So, in a housing layout factors say you consider a development of around because much more housing transportation so you need to consider these factors education, recreation, circulation, transportation and these a layout factor where you could see list of layouts that separates different blocks there are certain community and are creation open spaces schools. All these have been implemented at different stages and different scales and you assess it. If the private entities that is the housing layout or the housing units could compose 55% to 60% semi-public places that is access by much of the residential neighbourhoods and some people from outside could be 15% to 18% and the public land for the public use could be 20% to 25%. So, this could be this works could be the much more efficient part terms of planning a house the neighbourhood. So the close method other than getting a disbursed neighbourhood like this instead properly efficient method or rather we could say instead of getting tower based neighbourhood like this a much more safer neighbourhood which ensures or keeps into main people in consideration different scales of vehicles different scales of open

space units or different typology of housing entities planned in a single efficient layout. So that segregating the vehicular unit that moves out into the highway network and pulling in people and pulling in cars into much safer district and a central open district and makes it more viable in different neighbourhoods.