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Alternative and integrated method to design of Gated communities

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Abstract
This research is intended to develop a set of parameters and guidelines for a development of a sector having multiple gated communities. So as to enhance the social interaction and community living between the people living in gated communities. The set parameters may differ with different sectors. Hence, the recommendations are exclusive only to sector Omega 1, Greater Noida. Albeit, the process intended in the following research could be followed in any sectoral development.

Keywords: Gated Communities, Social Interaction, Spatial Integration, Controlled Entrances, Sectoral Residential Development, Territoriality, Walk ability

Introduction
Greater Noida, Ghaziabad, Faridabad, Noida, Gurugram are the NCR envisaged developed areas. The NCR plan was envisaged controlled and restrictive growth of National Capital of Delhi and the towns adjoining Delhi metropolitan area in order to reduce immigration to Delhi from surrounding region. Hence metro centre and regional centre's, developed and become nodal settlements which absorb the migration to Delhi from the surrounding region. These are the centres for location of activities to counter the migration to Delhi. Greater Noida has come up as the Educational, Housing and Industrial hub. Due to inflow of huge migration from various parts of the country, there is a mixed socio- cultural and socio economic groups. Because of varied socio economic migration, the concept of gated societies was established, mainly on occupational pattern. The research intent is to understand the issues of gated communities with respect to livability and urban life. It emphasis on the spatial layouts and relationship between gated areas and public areas. The research would examine in detail the design process of consequences of public life.

Many researchers have been made with various perspectives, including social, political, economic, anthropological and geographical ones for the insert of gated developments. Due to demarcation of physical boundaries in the current trends, the gated societies have been leading to social exclusion and overall well-being of public spaces beyond gates, resulting to fortress like forms, spatial privatization within a neighborhood. However, urban design only cannot suffice the overall result of social exclusion within communities. It will focus only on the design issues related to social interaction and spatial integration within the neighbourhood.

Now a days the gated communities have now been a global phenomenon, therefore the issues and problems leading to it , some improvements and principles, guidelines could be recommended right in planning stage of sector by the local authorities, before laying out to the private developers. Greater Noida, Ghaziabad, Faridabad, Noida, Gurugram are the Satellite Cities surrounding Delhi and they all constitute to form the National Capital Region (NCR) of Delhi. For control and development of the entire regions along with Delhi, NCR plan was introduced to reduce immigration to Delhi from surrounding regions. Hence all the facilities like metro rails, expressways with all transportation facilities etc have been extended to these places also along with regional centers, marketing hubs, drainage systems, parks, which were also developed in these Satellite cities to make the areas at par with Delhi in terms of facility. These absorb the huge migration to Delhi from these areas as the people opt to stay in these areas also this thesis intent, an effort is made to understand the issues of gated communities with respect to livability and urban life.

Gated enclaves are high in demand due to
1. Strict and controlled entrances.
2. Perimeter boundary wall or fence.
3. Shared facilities.

Major Characteristics of Gated societies are:

Positives of gated societies

1. Segregation brings social equity issues within themselves
2. Shared services – collective unity
3. Social networks
4. Community participation
5. Sense of place
6. Community stability
7. Security (crime)
8. Controlled lifestyle

Negatives of gated societies

1. Interaction within the developments is not happening.
2. High rate of crime
3. Less bridging social capital
4. General public open spaces eg sector level parks, streets, market are not used and act as detrimental to societies.

While due to the changing trends in the society there is lack of social interaction with the people outside the gates, formation of social islands in between a neighborhood, lack of sense of belongingness of the residents in the city also leading to social issues such as fear of crime, less bridging capital between groups of people.

Objective

Hence an effort has been intended to understand the issues of gated communities with respect to livability and urban life and finally indicating some of the parameters which can determine the spatial relationship between gated areas and public areas, which further can be worked on design upon for livability of the above mentioned issues and problems.

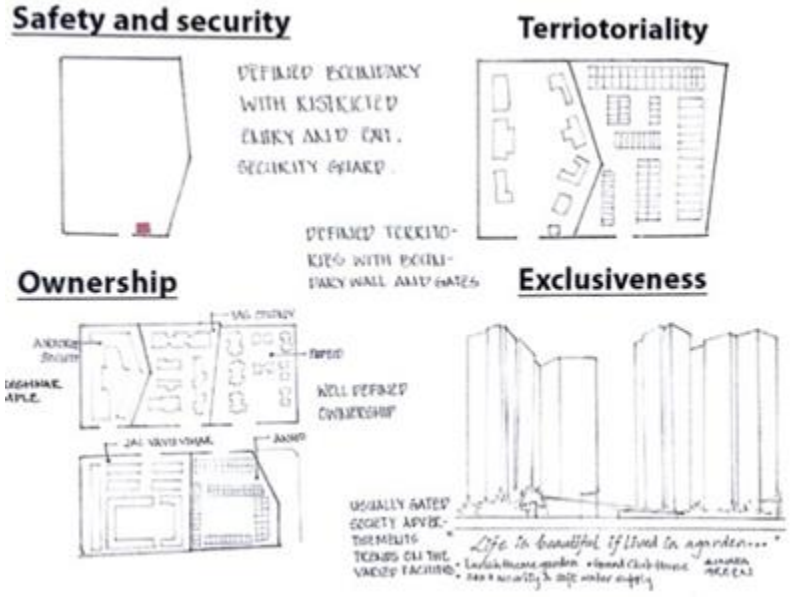

Fig 1: The features of a Gated Society

Problem Identification and Justification

Greater Noida has now been developed as the Gated housing societies within neighborhoods with communities of similar occupations, say - Army, Navy, Air-Force, NRIs, Indian Administrative Services, Indian Foreign Services, Engineers, Doctors, Lawyers etc. These developments are generally preferred due to safety, security, shared facilities, exclusiveness etc. The gated community developments have been popular in the Real Estate Market. These were made by the Developers, who sell these housing units (flats) to individuals through attractive amenities. However these are viewed by the Researchers as a symbol of Social Segregation and were strongly criticized. The city is well connected to Noida & Delhi through 20 KM long Express Highway from Noida apart from As regards economic conditions, source of income is mainly from salary and family pension scheme and very few from business activities. However, people generally stay away from home from morning till evening to attend office & business activities etc with average income more than Rs 1,00,000.00 per month. Moreover, in some of the families, both husband & wife are working and both of them have to be away from their residences at Greater Noida during the office hours. The roads in Sector-Omega1 are busy with vehicles mostly during morning from 8-30 AM to 10 AM for going to office / business and again from 5-30 PM to 7-00PM for returning to their residences. Apart from these hours, remaining part of the day, the roads and the housings are lonely. As most of the people are service holders, they are depend upon their domestic helpers, who report during morning hours and return after duty to their respective houses, which are outside of the sector.

The high economic conditions of the people residing in the sector and loneliness of the sector during most part of the day are two major factors leading to crimes and several miscreants activities in this sector during recent past.

We had come across various theft, burglary& snatching cases in the recent past, which is now in increasing trend. However, in most of the cases, the service gangs, frequently deployed for general household repair & maintenance inside the gated societies as well as service helps are found to be entangled in the cases directly or indirectly also. In spite of CCTV surveillance, some cases are yet to be sorted out, which is a major point of concern.

Problem Statement

The sense of ownership within the gated development is superior when compared to the cities, which has a negative impact on public life.

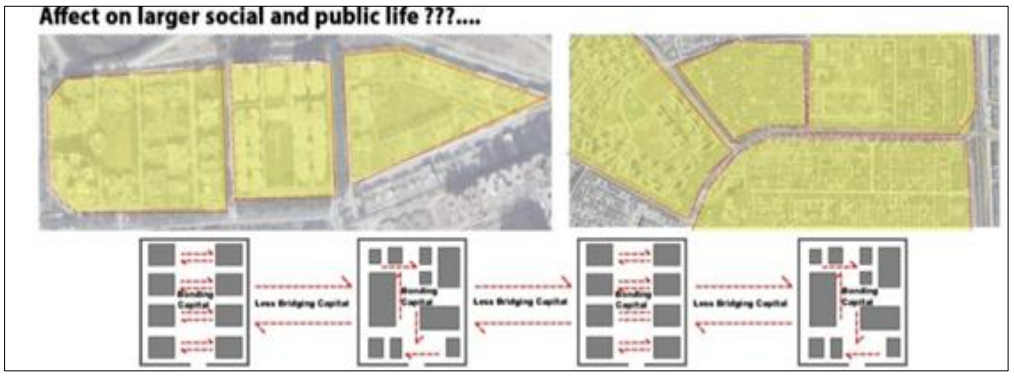

Fig 2: Impact of Gated societies

Research Question

1. What is the impact of gated community in Greater Noida on the neighboring public spaces ?
2. How could the gated societies be guided and controlled in planning today for a better integration beyond the society gate and the adjoining urban neighborhood in both social and spatial terms?
3. The design for centers on the socio-spatial relationship between the gated community and the adjoining public space and impact on the wider urban neighborhood.

Introduction to Site

The sector is an interface in between institutional, industrial and residential block. The figure shows the immediate context around the site study area with sectoral references. The sector is along side of Noida Greater Noida expressway with a major entry chowk to the city.

Site study are is a sectoral residential development in Greater Noida which includes 10 gated societies of varied plot sizes as listed below with varied amenities.

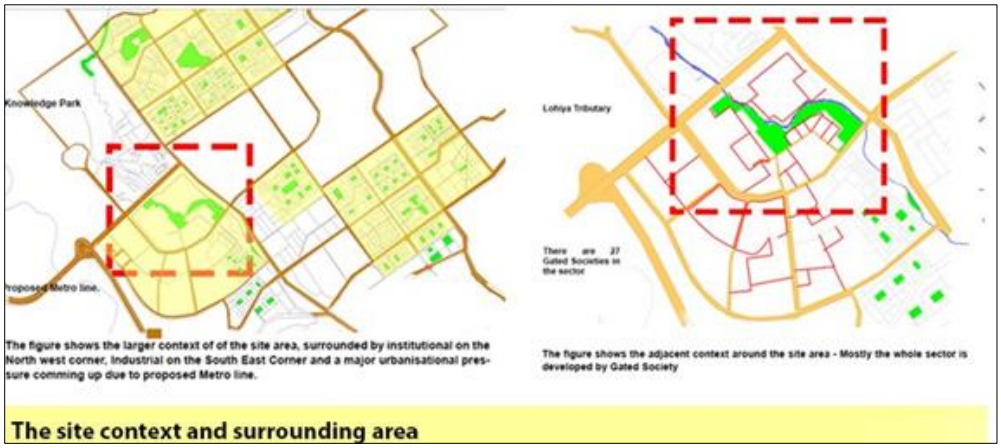

Fig 4: Immediate Site Context

From, the ground data as shown, its is found that the major occupants staying in the gated societies are majorly those who has a controlled lifestyle, likeminded people with their own territoriality.

The figure analyzes each housing units (gated societies) on the basis of interfaces between the units and the sector and within the units.

Since the major emphasis of the research area is in between inside and out of gated societies hence the interfaces between inside out can be the parameters to be evaluated. The interfaces or links between inside and outside of gated societies can be entrances to the plot, plot boundaries. Also the amenities provided inside the gated development devoid the outside public interactions due to which the amenities inside such gated developments also play a vital role in the level public interaction.

Each Gated societies types of occupants were evaluated and found that most of the societies were formed on the basis of common interest groups. There were mainly gated society groups formed on the basis of occupations or organizational based. For Eg Occupants in Aashiyana Black Gold Apartments occupants were mainly based on Petroleum Public Sector based. Green Woods society has occupants were mainly IAS Officers serving or retired.This survey was done to understand the common interests of the people and the amenities inside the societies which has a greater impact on the social life outside of the gated areas. Hence amenities to be created outside the gated areas for a interactive public areas depends on the category of occupants in the sector for greater interest.

Periphery along the Plot.

Sl.No.	Name	Type	Area (in hect.)	No. Of Flats or Plots	Amenities
A	Ansal Housing	Plotted	41	658 plots	Club, Swimming pool, Grocery Shop
B	Ashiyana Black Gold Apartments	Flatted	2.1	176 units, 11 towers	Club, Swimming pool, Grocery Shop
C	Alpine Housing Society	Plotted	2.7	100 plots	Club, Temple
D	Green Wood Housing Ltd.	Plotted	11.6	199 plots	Club, Temple
E	Devine Grace	Flatted + Plotted	3.4	332 units	Club, Swimming pool, Grocery Shop,Stationary Shop
F	Engineers's Park	Flatted	2	225 units	Club
G	Eldeco Residency	Flatted	1.3	228 units	Cub, Swimming pool
H	Shakti Awas Ltd.	Flatted	2	180 units	Club
I	Parshvnath Housing	Flatted	4	608 units	Club, Swimming pool, Grocery Shop, Temple, Stationary Shop
J	N.R.I City	Flatted + Plotted	38.8	NRI Residence : 936 (19 floors) NRI Omaxe : 729 NRI City : 584	Club,Mall, Hospital, Primary School, Temple

Fig 5: Analysis of Each Housing Units

Hence the parameters identified are boundary edges, entrances, amenities inside the gated society.

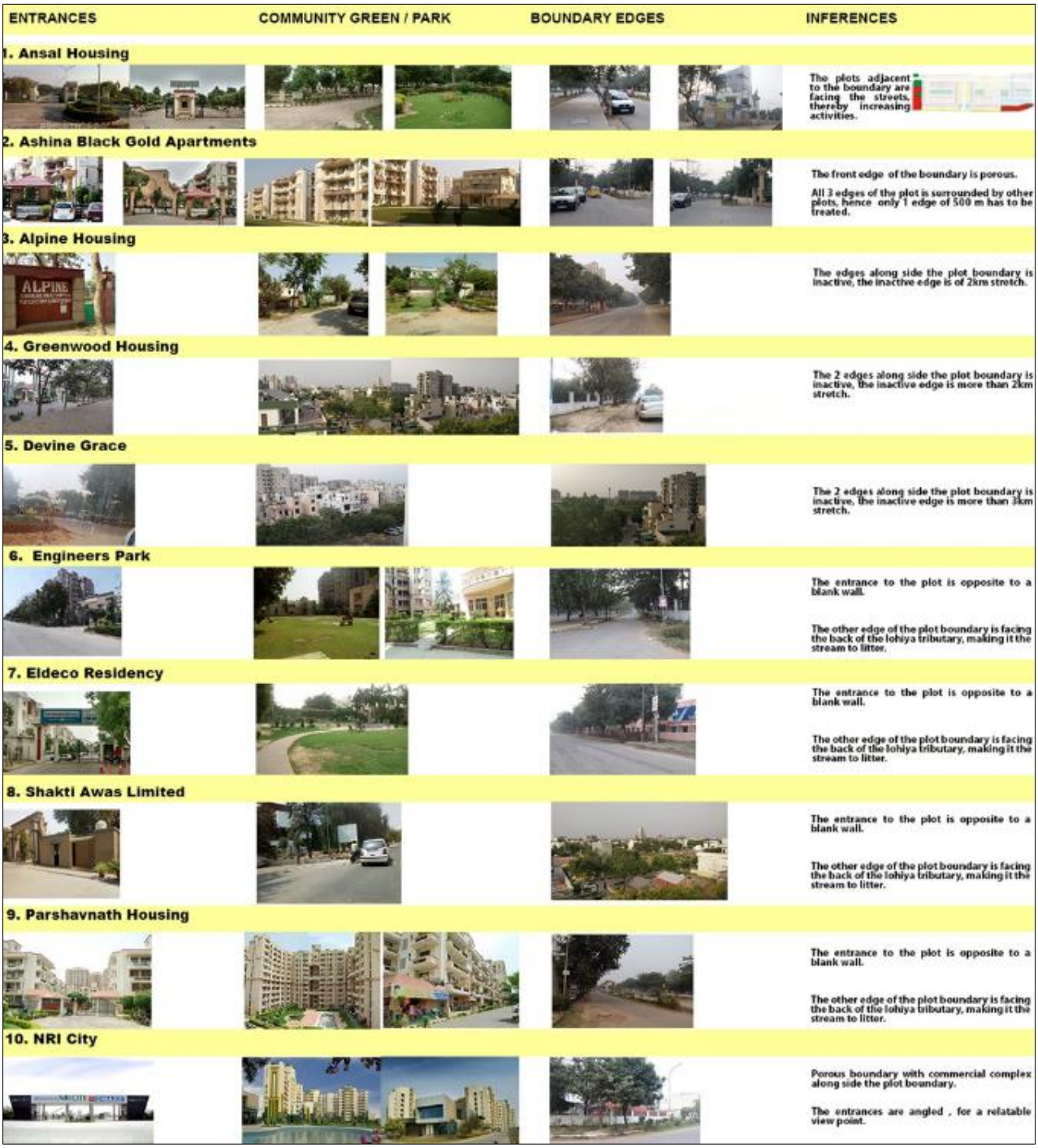

Fig 6: Photographic documentation of each gated developments on the basis of parameters identified.

3. Analysis

Some of the analytical figures below shows the various impact on the community living or the socio cultural relationship within a sector.

1. The figure ground mapping has been done to understand the relationship and % of the built un-built spaces.
2. The open space mapping shows the public and private green spaces or recreational spaces in the sector. The public green spaces could have been created as the major point of contact between every gated society; where as the green space around the natural feature is currently used as a dump yard.
3. The edge condition mapping indentifies the % of active neutral and dead facades to understand the impacts of each category of facades.
4. The edge between the gated society outside and inside gated societies is one of the physical element and the impact on the sector.

4.1 Edge: The design of edges which acts as a physical barrier between two spaces which plays a crucial role and experience in connectivity (visual & physical), walkability and activity generation. The following diagrams show the experiential quality of edges in the sector.

Any cone of vision creates four planes:

a. Ground plane (pathways)
b. Building edges (mostly the boundary walls)
c. Roadside
d. Upwards (tree canopy, sky etc.)

5. The inferences can be framed that the Size and type (blocked, partially visible or completely visible.) of edge may influence the impact in the public life of the people. Hence, % can be defined in a gated plotted developments for inside and outside these developments.
6. Layout of entrances to the site which may create a drop off zone or so aces given to accumulate or gather also has a significant impact on the social public life between the residents inside and people around.
7. Length of the perimeter wall (avg length) can also be decided so as ti minimize the length of the barrier between inside and outside of gated developments.
8. Analysis of activity mapping during different intervals of the day which are the major source of interaction points. Hence commercial spaces, institutional blocks play a major role in this with sizes and at what interval and how much to be planned in a sector.

Then the edges have been categorized into 3 frontages:

a. Active : Entrances, commercial spaces
b. Neutral : Physical and Visible
c. Inactive : Dead wall

Fig 7: Analytical drawings showing Figure Ground, Landuse Mapping, Open Space structure (inside and outside the gated developments), Edge conditions of gated developments of the sector

4. Parameters

The above analysis four parameter to design gated communities in a sectoral development:

The figure below shows some of best possible practices in this 3 categories which could act as prototype while designing a sectoral development.

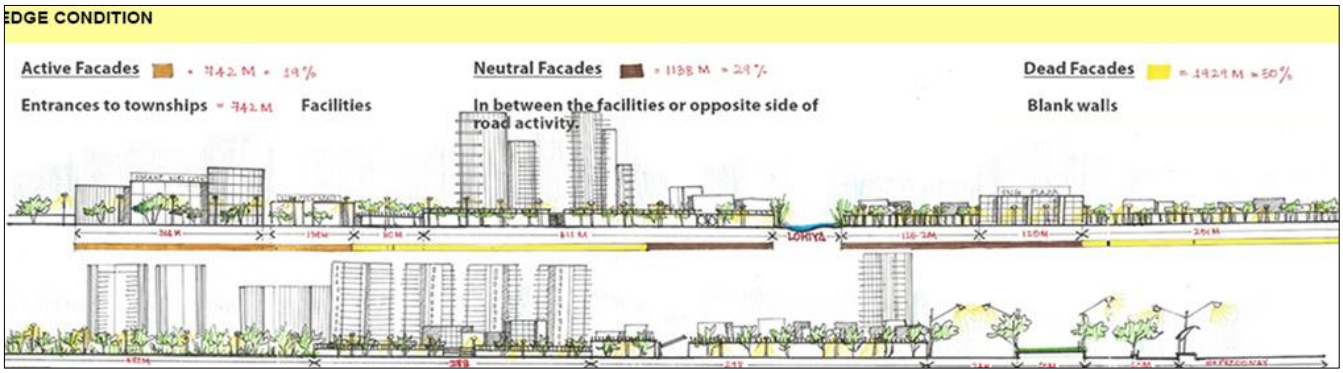

Fig 8: Figure shows the percentages of active, neutral and dead facades between the sectoral interfaces.

Fig 9: The edges of the periphery of gated developments are into 3 categories. The categorization of edges are done with respect to physical elements in 4 planes.

Fig 10: Figure shows the 3 categorization

Natural Features: Any natural features if any in a sector can be used as a tool for place making and interaction points. The following images shows the existing condition of Lohiya tributary of Hindon river (tributary serves as backyard of the plots of gated societies). Since the sites of gated developments which in return act as a dumping ground to all the society. Therefore those significant natural features should be actively considered and guidelines to be framed accordingly.

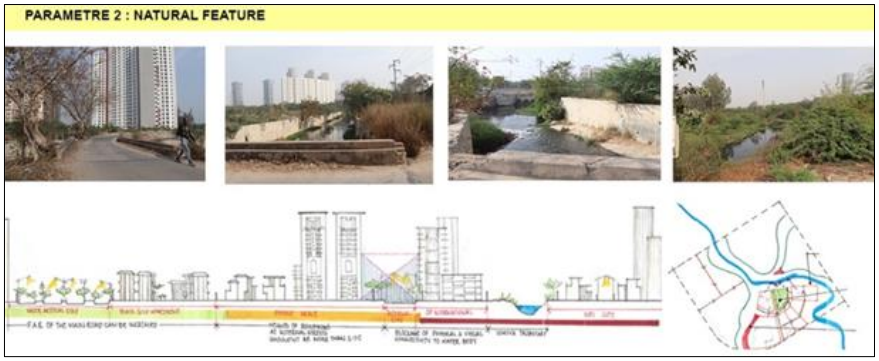

Fig 11: Figure shows the natural feature lohiya tributary its impact on physical and visual connectivity.

Plot Sizes, FSI Setbacks could be guided according to the need. Because the larger sizes of plot will be more blank sized wall. Eg. Larger plot sizes could be recommended towards the major sectoral roads and smaller plot sizes on the internal streets, which creates more number of entry points consequently creating less blank walls and more interactive streets. The images below are some of the analytical figures which should be / can be/ should'nt be followed in the case examples.

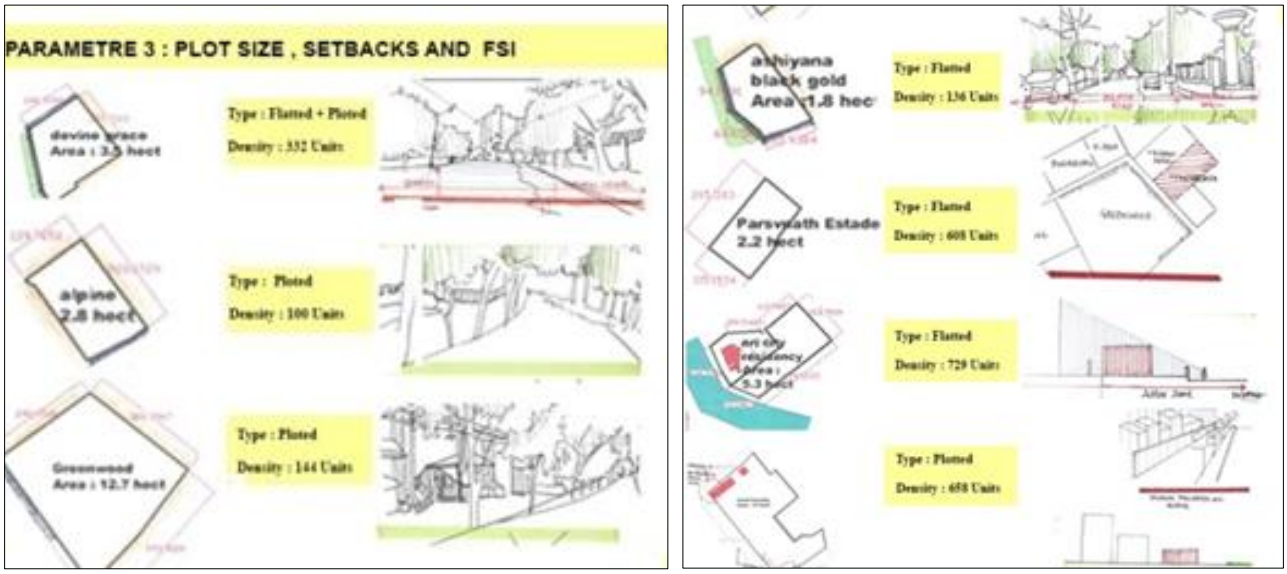

Fig 12: Figure shows the impact of plot sizes and setbacks in the outer areas.

4.4 Connectivity: Connectivity can be created both physical and visual. Hence a guidelines to be framed with respect to visual connectivity from streets to the buildings.

The images below shows the existing sections of the buildings from different roads and its visual linkages from it. The following figures shows the % of vehicular and pedestrian pathways in 3 different types of roads to innumerate the % of comfortable waling in the sector and due to which factors.

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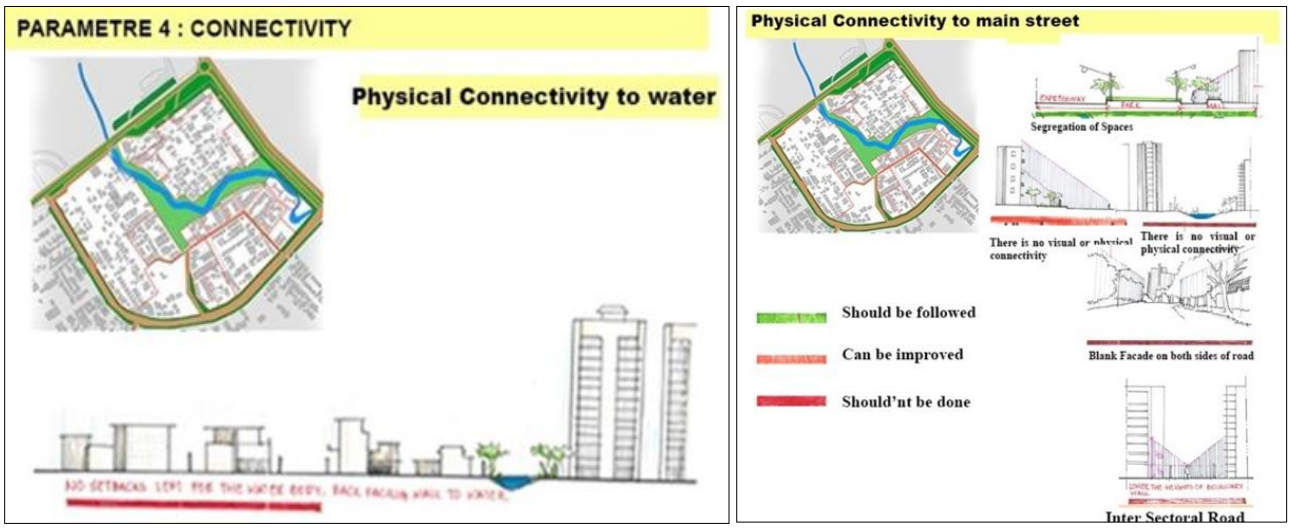


Fig 13: Figure shows the impact of visual and physical connectivity

Inferences

Some of the analysis are done on the basis of comfortable walking at various connecting points, transitional areas, and at various categories of roads. And at different levels the percentages of vehicular, and pedestrian ways are also defined and the activities or spaces subjecting to Vehicular or Pedestrian movement.

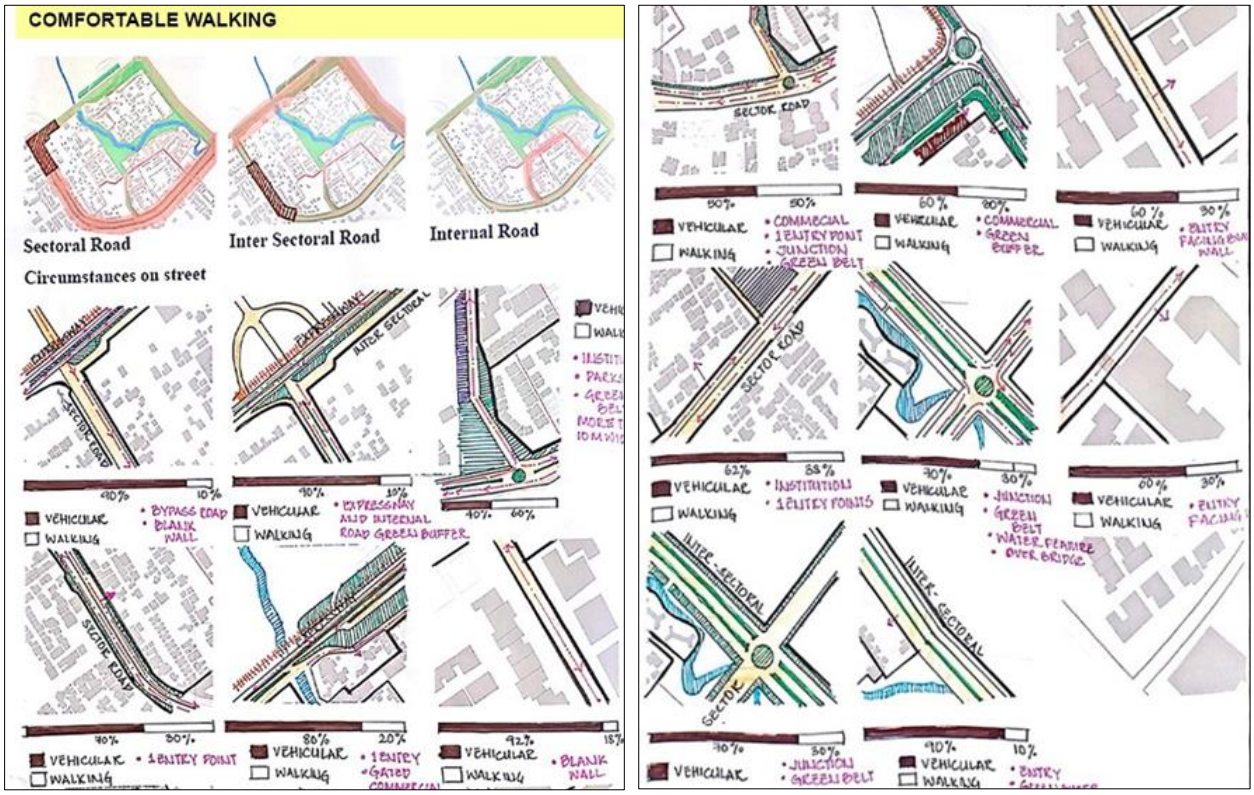


Fig 14: The figure shows evaluates comfortable walking on each type of road major/ minor on the basis of functionality, vehicular movement, Landuse it is catering to.

Recommendations

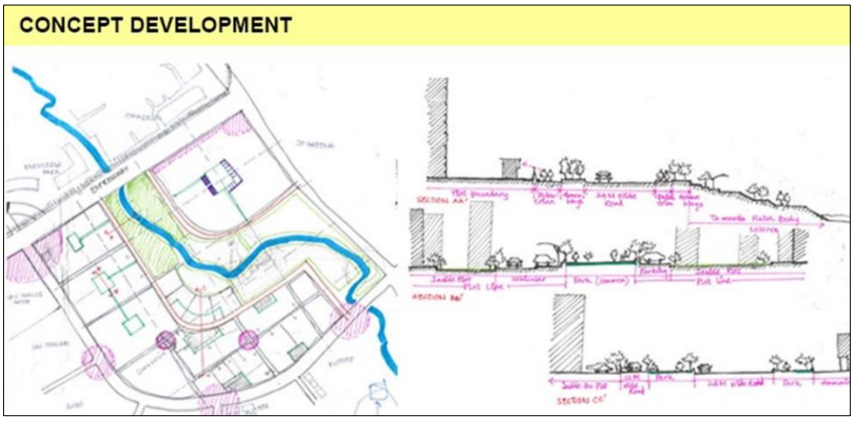


Fig 15: Conceptual Design of Sector Omega 1, Greater Noida

An alternative way of designing Gated Societies in a Sectoral Development is laid.

1. The Gated Societies are placed inwards facing each other with a green open serving as a connecting space between all the Plots of Gated Societies. In case of Sector Omega1 the natural feature Lohiya tributary may be developed as a major interaction space with series of open spaces connecting each other.
2. The circles indicate the some commercial activities between the plots to avoid black wall space and greater walkability.
3. The treatment of the periphery walls can be visiually accessible with low heighted solid walls and grills in the upper portion.
4. The plot sizes of the gated societies may be administered with larger plots on the major inter sectoral roads and smaller plots on the minor roads. Hence forth the higher FSI area may be towards the outer periphery of the sector and lower density towards the middle.

The conceptual development of the sector is demonstrated through the figure for reference. A detailed recommendations has also been discussed catering to each parameter for the reference.

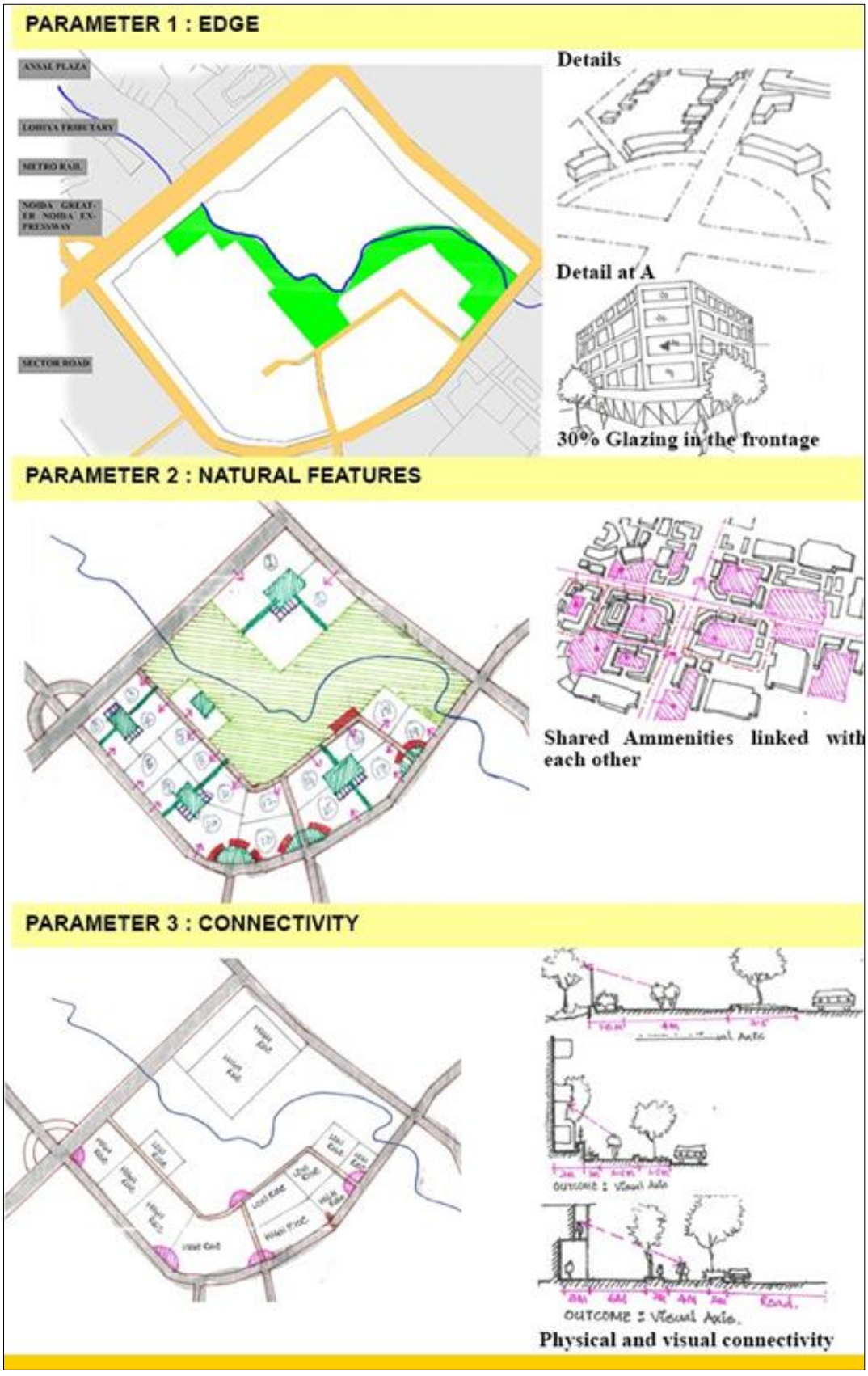


Fig 16: Demonstration of recommendations according to parameters discussed

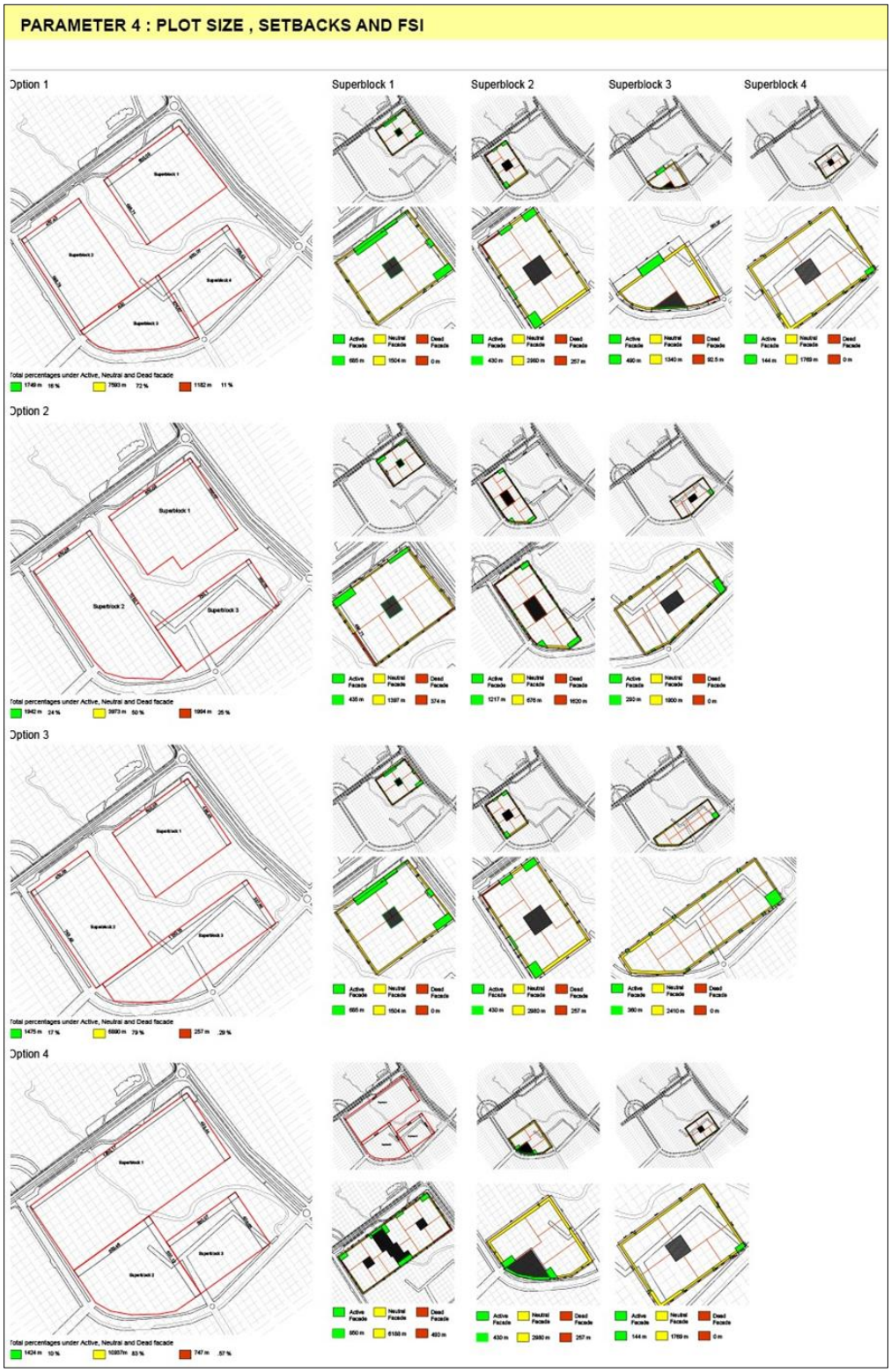
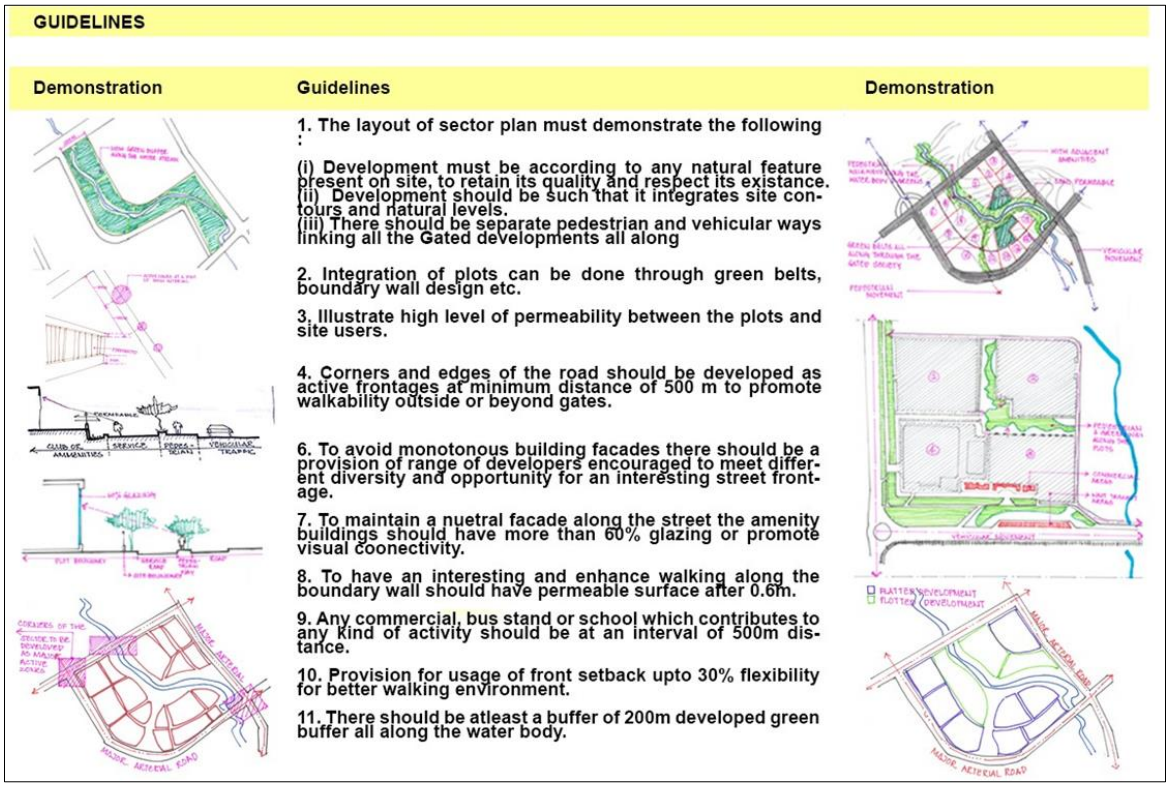


Fig 17: Demonstration of plots sizes, Three super blocks are laid and each super blocks may have 2 – 3 gated societies.



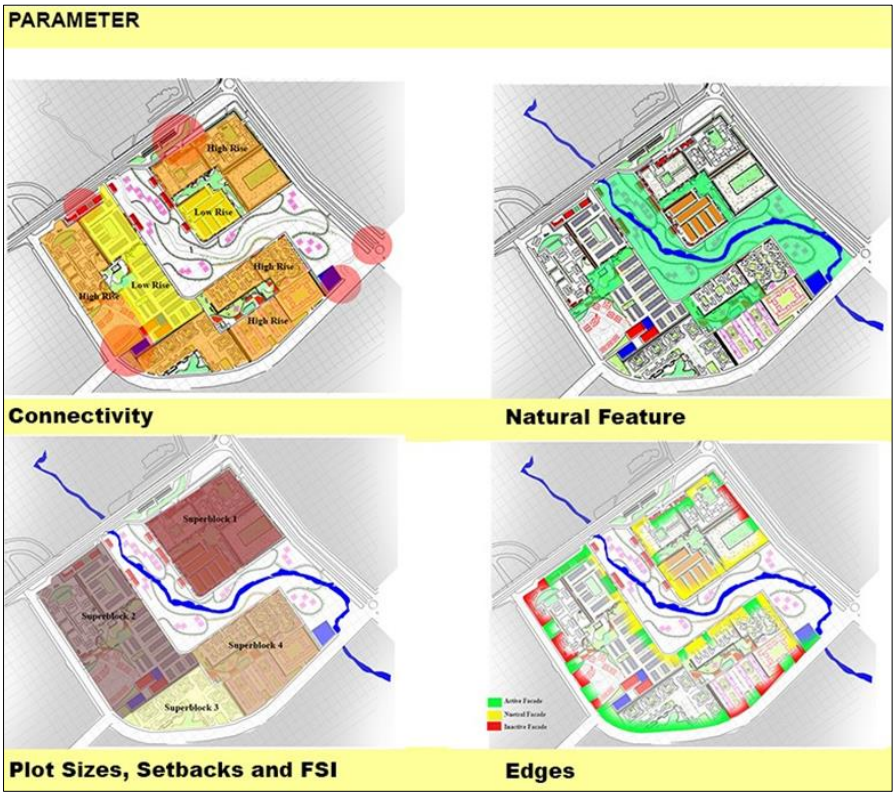


Fig 18: Figure shows the demonstration of parameters

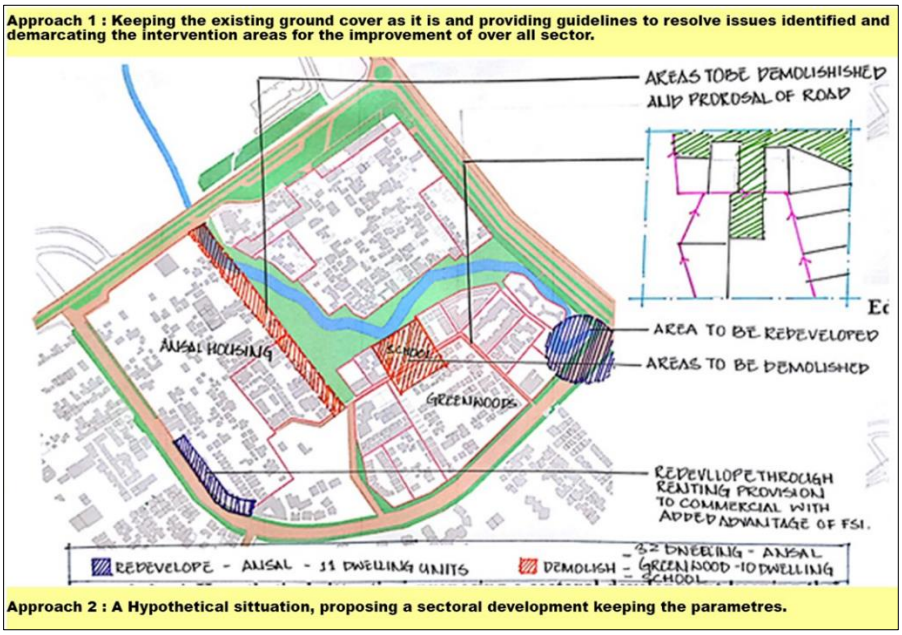


Fig 19: Figure shows the approaches of development in Sector Omega 1 Greater Noida

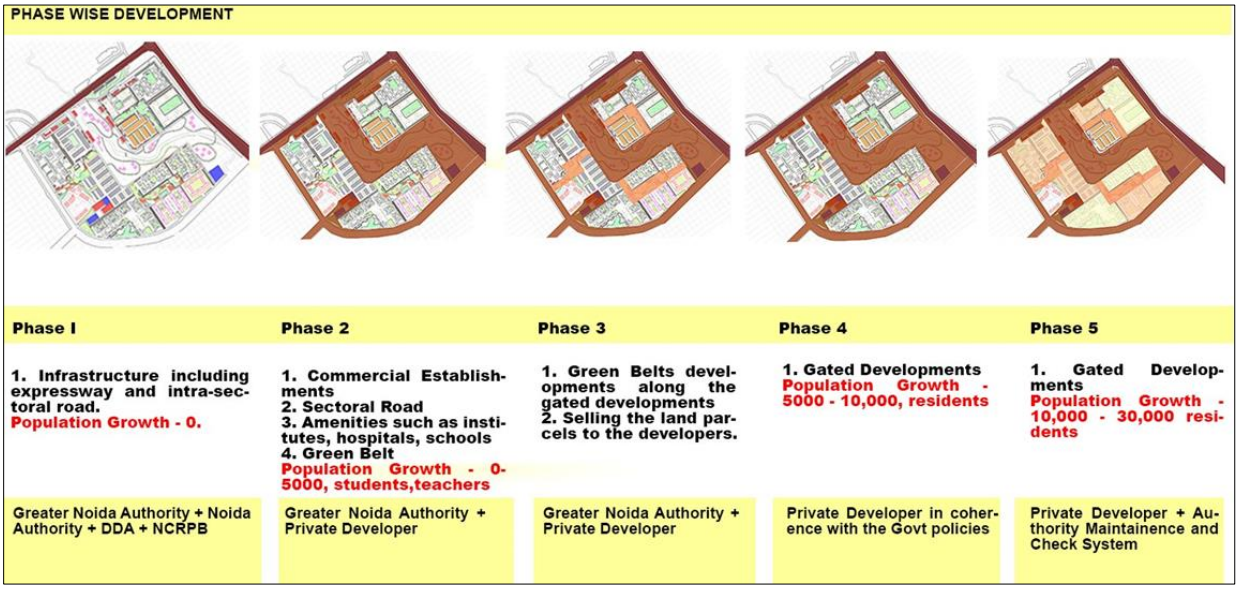


Fig 20: Phase wise development of the Sector

1. There are three types of road such as

Inter sectoral road – Roads connecting sectors
Sectoral Road – Road running through the sector
Internal road – Roads leading to the plots

2. Intensity of both vehicular traffic and pedestrian were surveyed in different points in the existing conditions and after examining the outcome, it has been found as under:

Sectoral Road: 60% - 30% : Parks or green belt >10m width.
Inter sector Road: 80% - 20% - commercial, bus stand and auto stand
Internal Road: 40% - 60% - no entrance facing blank wall.
3 Edges of the sectors to be designed at activity zone areas: institutes, Commercial, Auto Stands, City level public green as these activity zones propagate movement of masses.
4. A sector should be divided into superblocks ie Blocks having access from all sides, and having 4 – 5 plots of gated society and a shared community park between them which leads to the major green of natural feature.

Inter sector Road: 80% - 20% - commercial, bus stand and auto stand
Internal Road: 40% - 60% - no entrance facing blank wall.
5. Far permitted should be regulated by allowing higher building blocks on the major roads G+21 and lower heighted building block towards the natural feature, internal street for more visibility by more no. of occupants.
6. Perimeter boundary wall should be compound wall with solid wall upto 0.6 m high from ground level and porous wall (fencing or grill) above it for clear vision from either side.
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7. 10% areas in between two adjacent communities may be dedicated for common ammine ties like temple, grocery shop or dairy shop for sharing by both the communities.
8. For enhancing visibility and transparency 30% of the wall facing street should be glazed. That area should not be less than 30%.
9. To invite more and more builders and architects in order to avert monotonousness of the style of the building and for better competition proposed in the paper.

7. Conclusions

Special specific guidelines should be laid in accordance to the situation of each sector and should be framed accordingly apart from the overall guidelines of the city with detailed study programs. An alternative way of the case study "Omega 1" has been shown in the figure keeping in mind of all 4 parameter identified.

1. Subsequent to my analysis it has been observed that the % pertaining to active, neutral and inactive frontages have been complied
2. Greenary development as per the proposal will also be met and will respect the natural feature on site.
3. Increase of visibility due to height variation proposed in the thesis.
4. In view of the development of the greeneries there will be more walking and cycling leading to health benefit.
5. Air pollution will be less in view of more greeneries as well as reduction of vehicular traffic in view of less auto emission.
6. Inter personal relationship with all layers of people will increase leading to reduction od the crime rates.
7. Increase in property value. Increase ion brand image of the neighborhood sector.

8. Acknowledgement

The authors must have to convey my high regards to Dr Shruti Hemani, Professor, Aayojan School of Architecture, Jaipur.

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