

**BRIDGING GAPS IN
NON-MOTORISED NETWORK
ADARSH PALM RETREAT, BANGALORE**

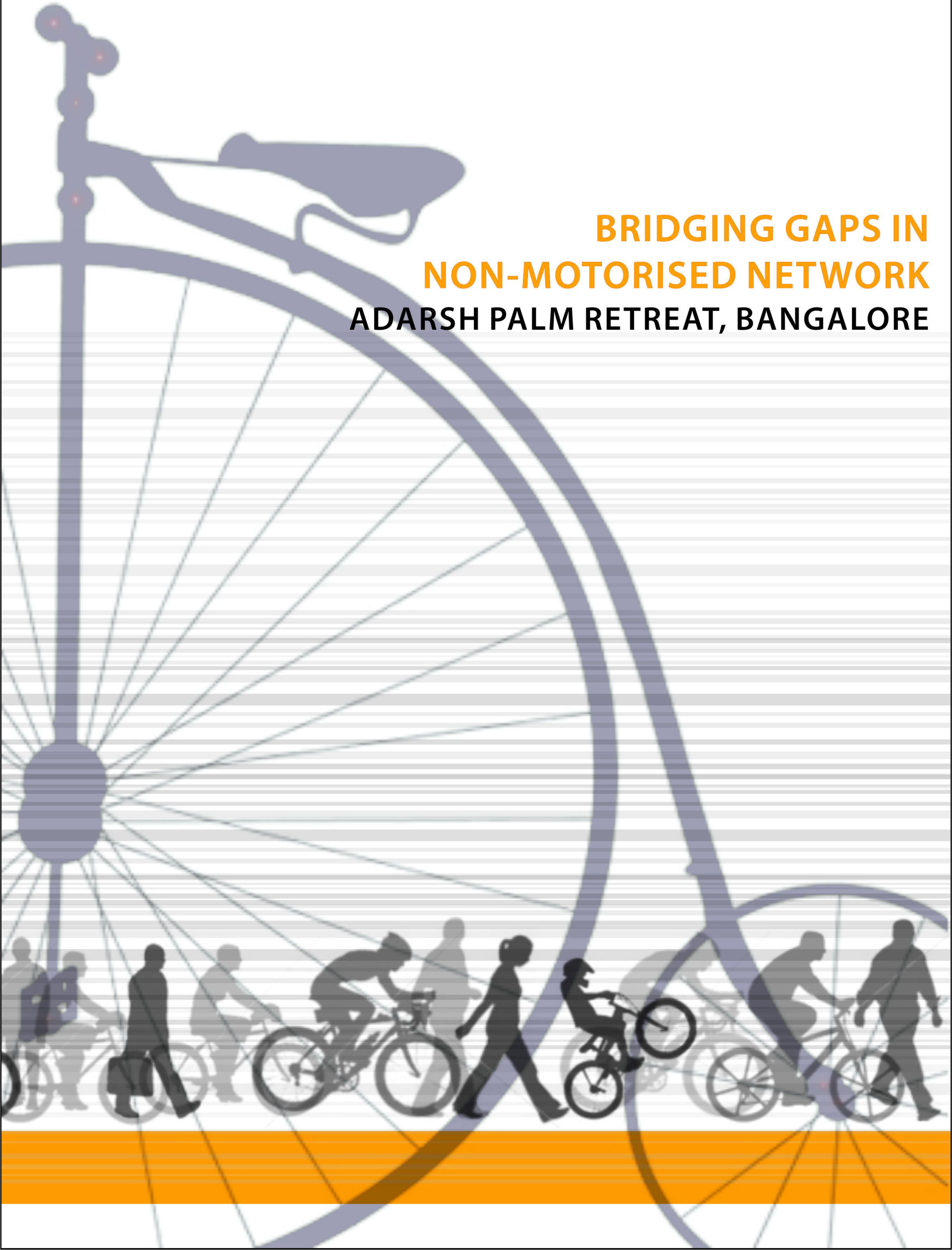


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Project Brief

The Adarsh Group foresaw a large car usage and large vehicular volumes in the Adarsh Palms development and sought to look into strategies that would allow a smooth and harmonious functioning of the development. A few intersections had also been experiencing issues of traffic clogging.

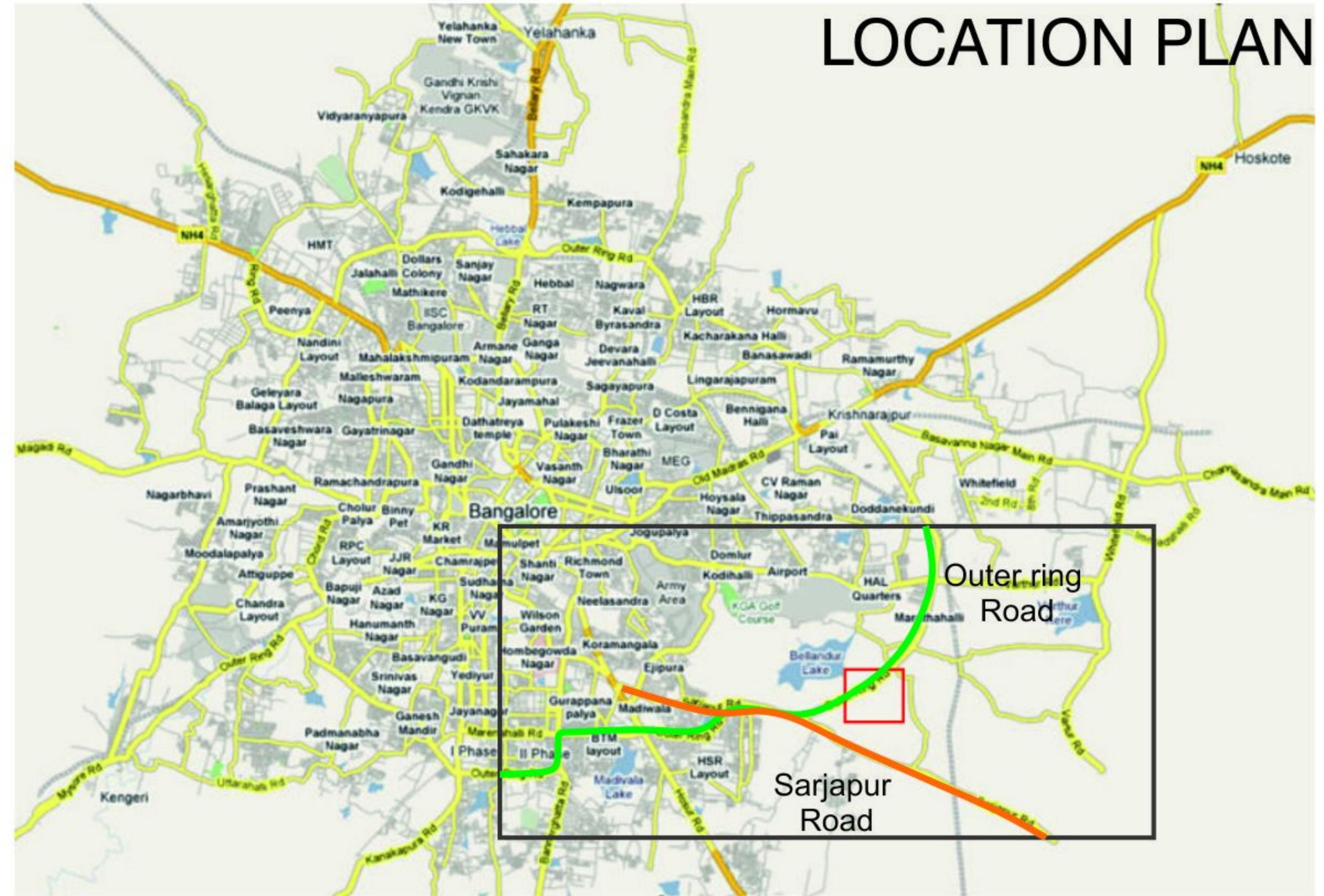
They also looked to enhance the livability factor of the development by creating safer and lively neighbourhoods.

Movement of people and goods within and to other destinations was proving to be an emerging issue due to the large distances to be covered. The problem was of creating sufficient connectivity without disrupting the security of the developmental phases within the site.

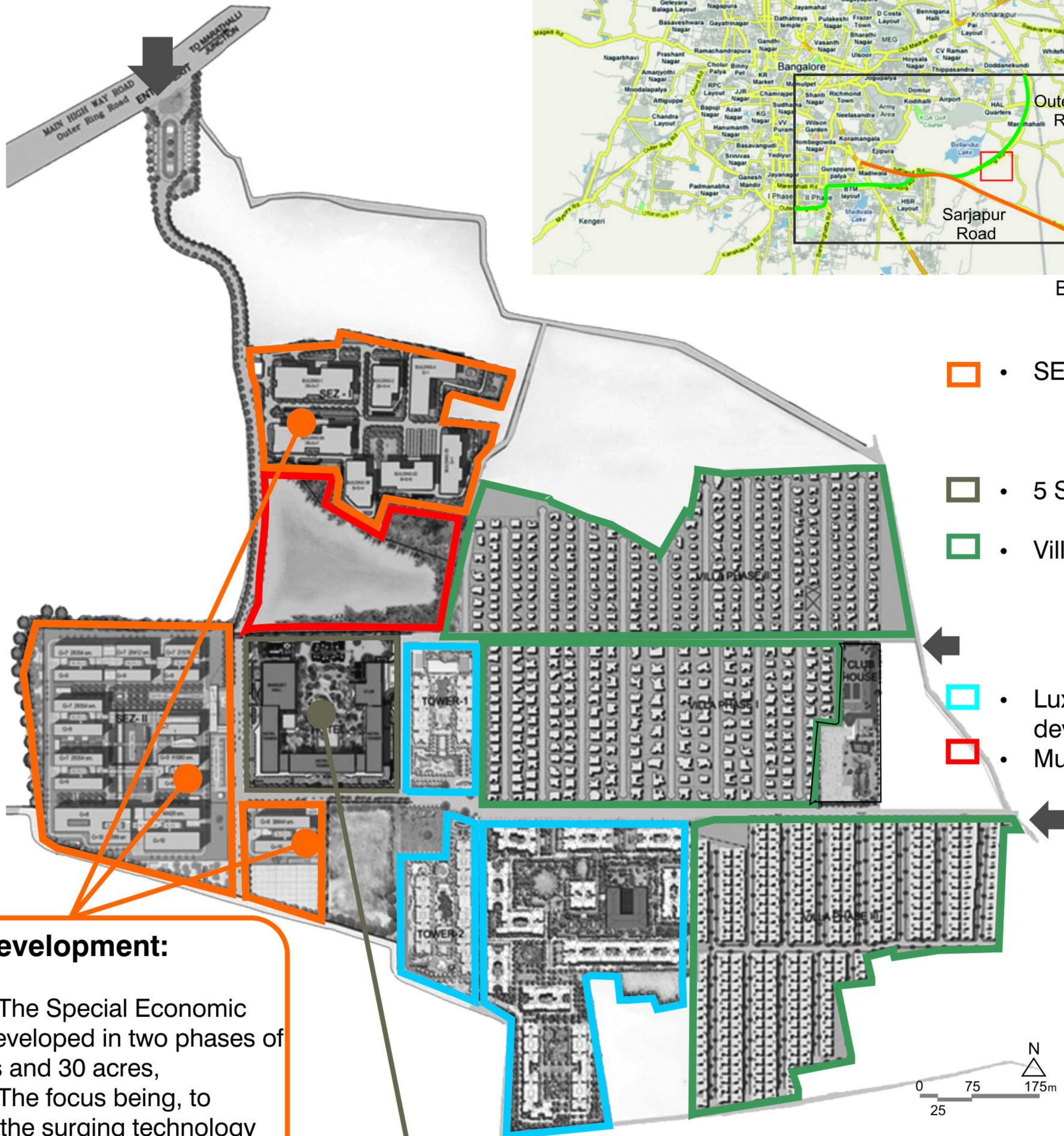
THE ADARSH PALMS RETREAT MASTER PLAN

The Adarsh Palms Retreat project by the Adarsh Group in constituted by individual phased developments.

LOCATION PLAN



Bangaluru City Map



- SEZ Phase 1
- SEZ Phase 2
- 5 Star Hotel
- Villa development
Phase 1
Phase 2
Phase 3
- Luxury apartment development
- Municipal Lake

SEZ Development:

The Special Economic Zone developed in two phases of 20 acres and 30 acres, The focus being, to support the surging technology sector in the surrounding areas. The first phase of development is complete and has been pre-leased already to organisations such as Honeywell Technology solutions Ltd. (HTSL), Subex Limited, KPIT Cummins, Sasken Technologies and Connectm. Second Phase of the construction has just been initiated.

Hotel Shangri-la:

A project covers nearly 14 acres and situated in Adarsh's Palm Retreat. The Shangri-la boasts of an array of sophisticated amenities to position itself as a prime hotel.



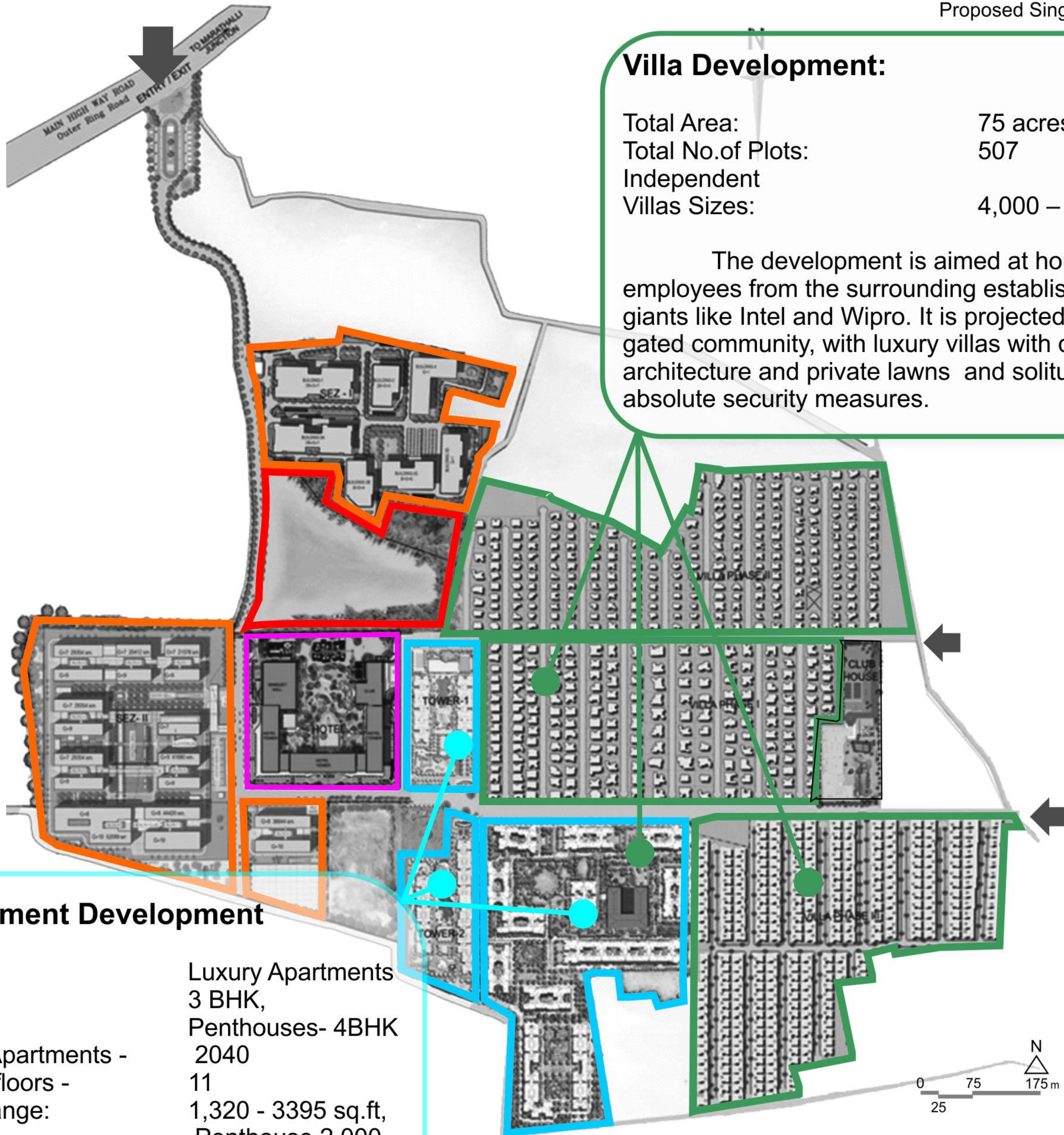
Proposed Shangri-La Hotel



Proposed SEZ office units



Proposed Single family villa units



Villa Development:

Total Area: 75 acres
 Total No. of Plots: 507
 Independent Villas Sizes: 4,000 – 10,000 sq.ft

The development is aimed at housing employees from the surrounding establishments of IT giants like Intel and Wipro. It is projected as a serene gated community, with luxury villas with distinguishing architecture and private lawns and solitude through absolute security measures.

Apartment Development

Type - Luxury Apartments
 3 BHK,
 Penthouses- 4BHK
 No of Apartments - 2040
 No. of floors - 11
 Area range: 1,320 - 3395 sq.ft,
 Penthouse 2,000 sq.ft and above

Amenities- Swimming Pool,
 Community Hall, Children's Play area,
 Health club and many other premium facilities.

**THE ADARSH PALMS
 RETREAT MASTER PLAN**

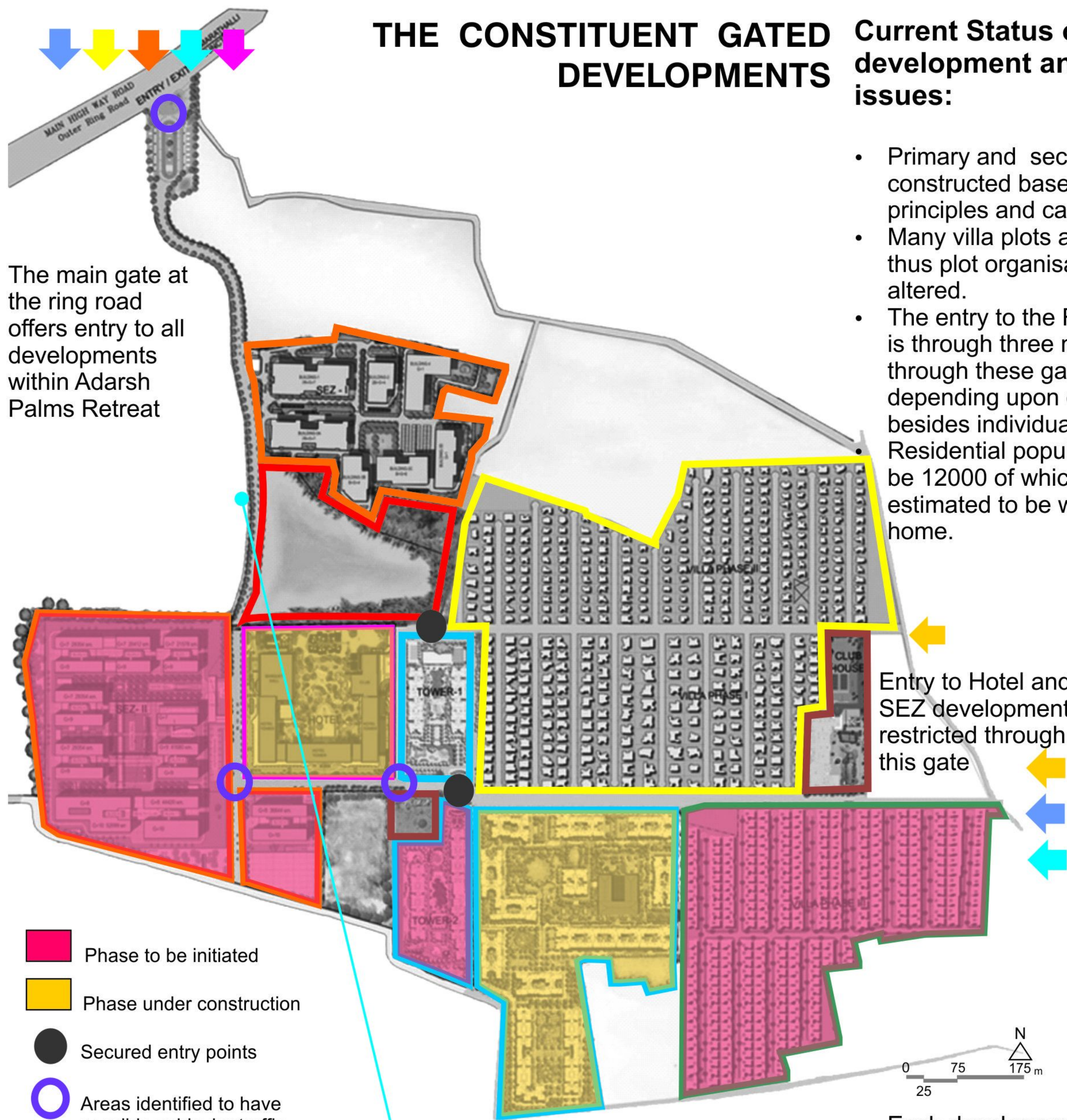


Proposed Multifamily apartment units

THE CONSTITUENT GATED DEVELOPMENTS

Current Status of development and identified issues:

- Primary and secondary roads constructed based on Vastu principles and cannot be altered.
- Many villa plots are pre-sold and thus plot organisation cannot be altered.
- The entry to the Retreat township is through three main entries. Entry through these gates is restricted depending upon destination besides individual phase securities.
- Residential population estimated to be 12000 of which 20-30% estimated to be working from home.



The main gate at the ring road offers entry to all developments within Adarsh Palms Retreat

Entry to Hotel and SEZ development restricted through this gate

Existing condition of walkways and roads



Insufficient walk way widths



Discontinuous pedestrian pathways



Insufficient shade elements along walkway and road. Large width of road creates higher vehicular speeds and hinders pedestrian safety and mobility.



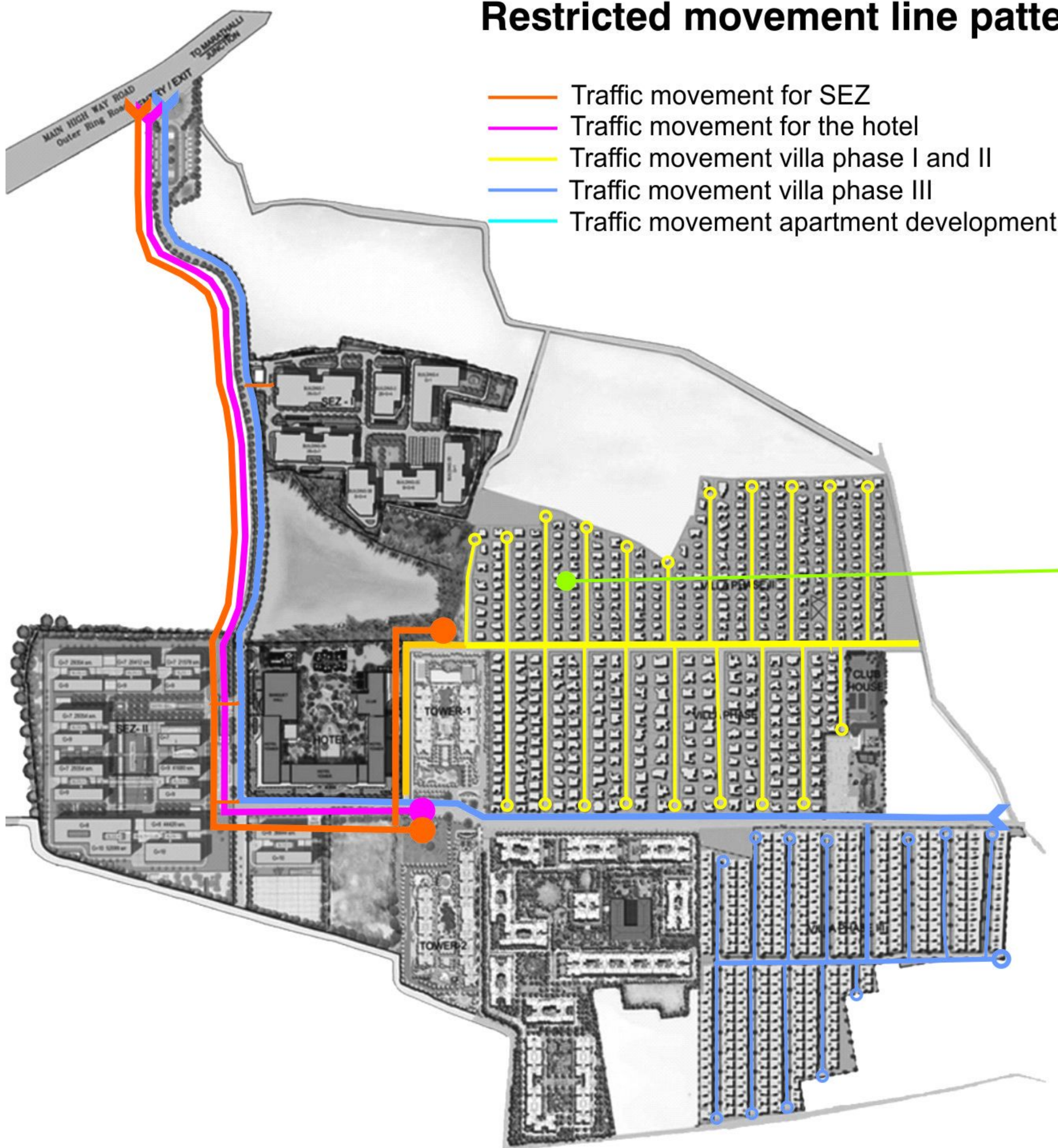
Lack of edge activity

- Each developmental phase to have its own recreational amenities. The market and the Club House to be the only shared amenities on site.
- Each developmental phase is a separate municipal sanction and thus requires to be segregated off from each other. Also the mixed nature of uses of the area requires a control of passage through secured entries.
- The average trip distance of the residents range from a 1km to 2km and to facilitate movement to the ring road a vehicular service is provided within the development.
- Expected vehicular volumes to create points of jamming in the site

Lake development:

- Lake under Municipal ownership and separate access to it must be provided. The Adarsh Group is currently in process to acquire the maintenance and developmental rights of the lake.

Restricted movement line pattern



Restricted Traffic movement

The restricted traffic movement based on the phase of development further restricts the connectivity provided by the existing road network concentrating traffic volumes at the ring road entry.

Existing condition of walkways and roads



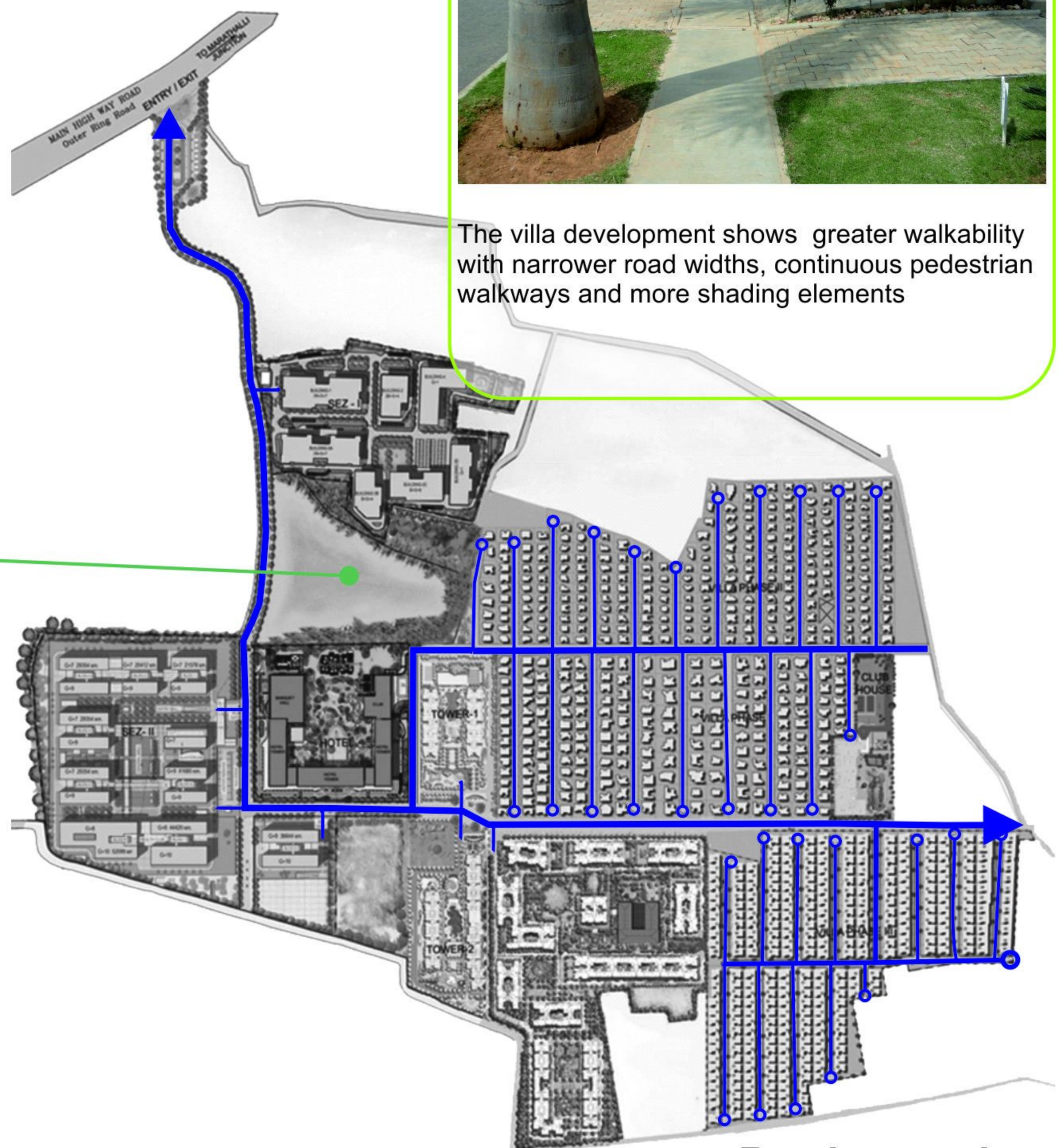
The villa development shows greater walkability with narrower road widths, continuous pedestrian walkways and more shading elements

Hierarchal road layout

The hierarchal layout of the road network and the low connectivity factor in the network creates larger concentrations of vehicles along the main roads creating jamming situations and endangering pedestrian safety.

Low connectivity increases the average trip length creating a need to use vehicles, thus compounding the vehicular volumes.

Of the total trips that are made, work trips at an average account for only 30%, where as discretionary trips account for 70%. Thus reduction of discretionary vehicular trips will considerably reduce vehicular volumes.



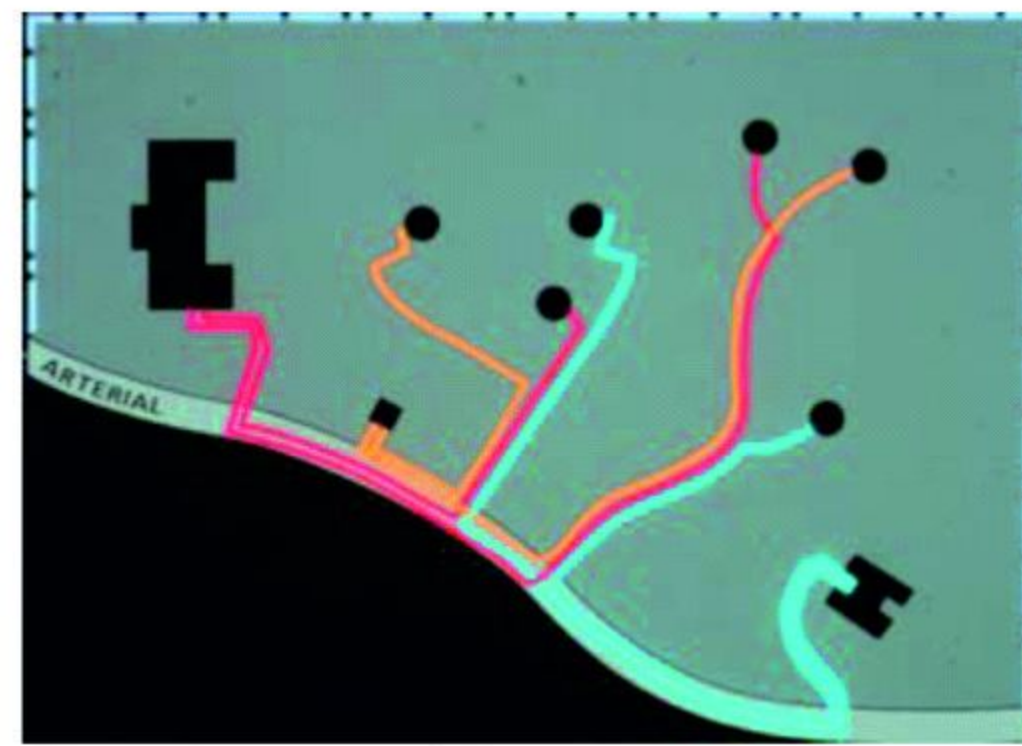
Road network



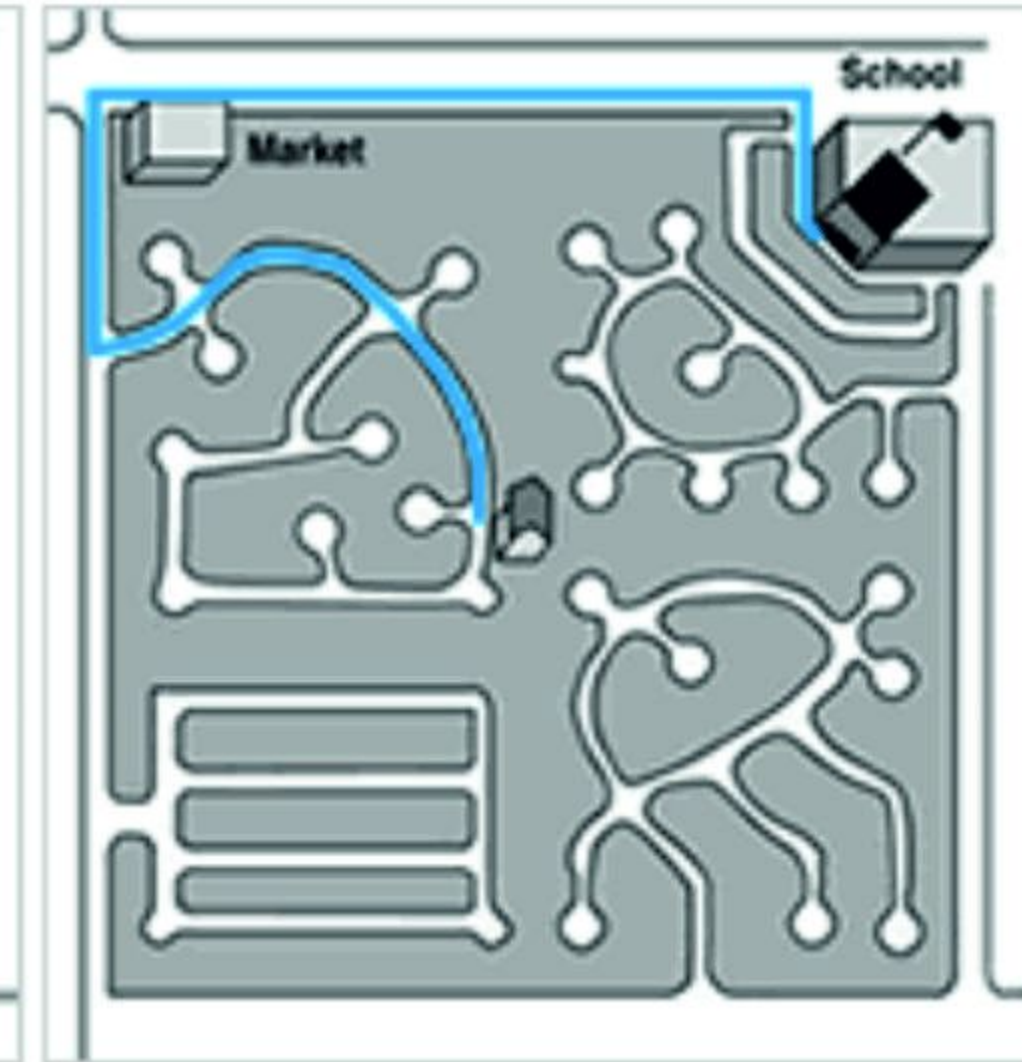
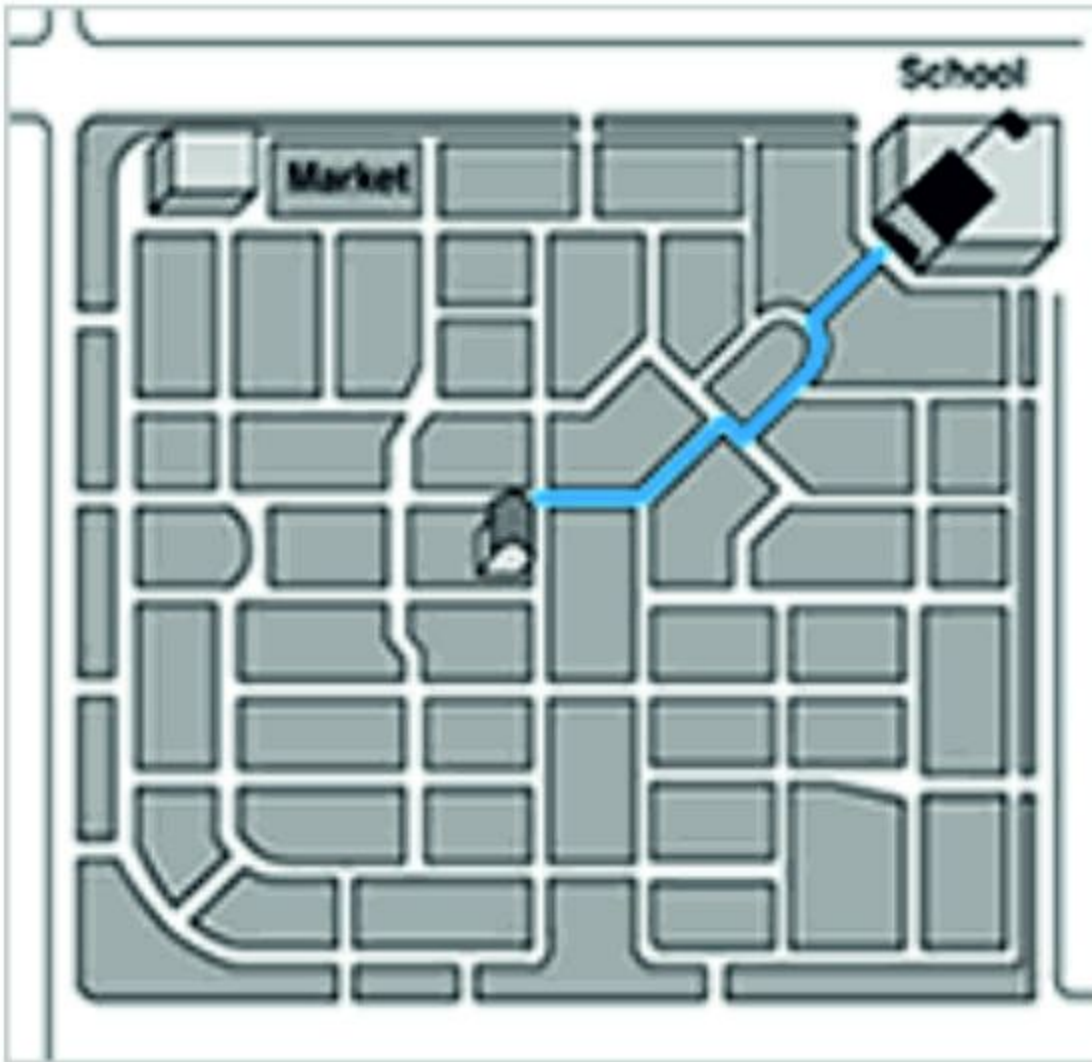
The lake exhibits a great potential to develop as a recreational node for the township.

DESIGN PRINCIPLES:

Planning scale: connectivity



Conventional land use patterns Conventional trip patterns



Direct routes help reducing trip lengths

Higher connectivity of streets creates:

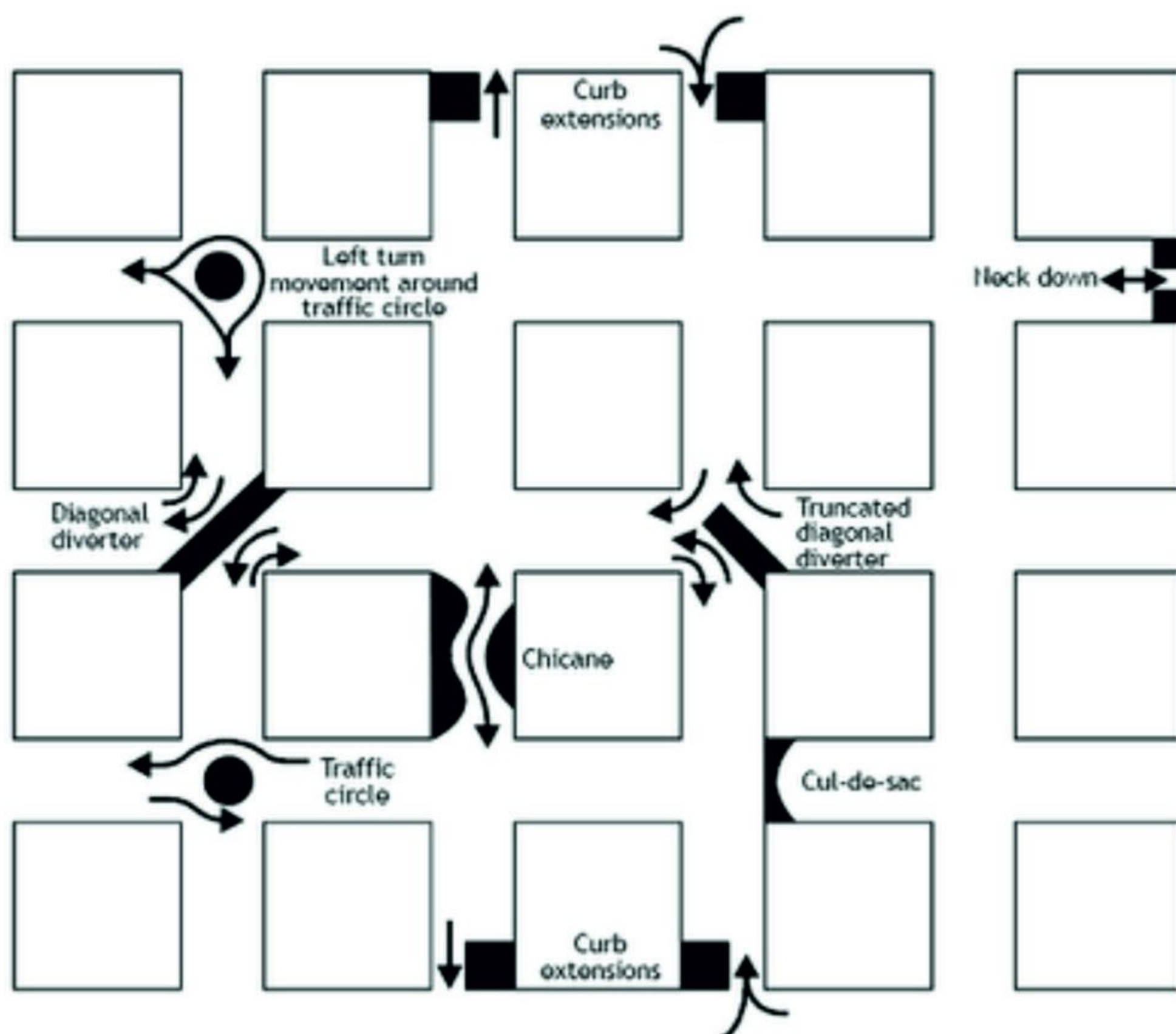
- Greater route options to destination thus distributing traffic.
- Does not concentrate traffic movement along select routes thus reducing the need for wider road widths, increasing pedestrian safety.
- Direct routes mean shorter trip lengths developing the option for non motorised trips.
- Connectivity network to be designed keeping nature of destination in mind. eg. child safety along school routes, greater accessibility to market and recreational areas.
- Can used to prioritise accessibility based on connectivity provided, e.g. create greatest connectivity for walking and cycling routes followed by public transport routes and finally private vehicular route network.

Street scale: design based on the green hierarchy of planning

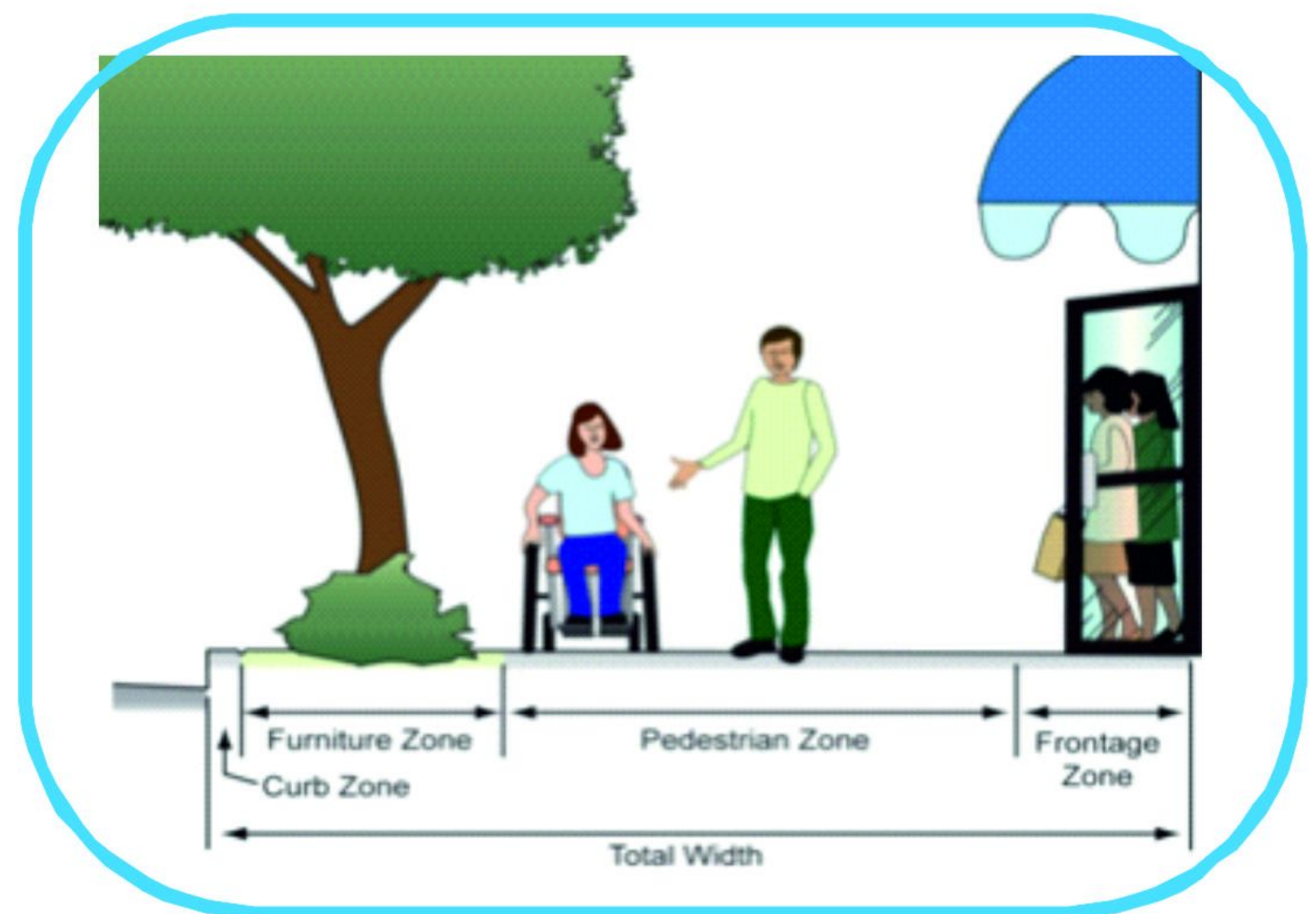


Slower traffic: Safer pedestrian environment

- Considering the high traffic volumes expected in the area traffic calming measures would help create a safer pedestrian environment.
- Utilising cul-de-sacs and roundabouts will help in prioritising pedestrian accessibility in comparison to vehicular accessibility.



Micro scale: conducive walking environments



- Pedestrian walkway planning based on four zone method.
- Creating a livelier building edge through induced activities creates more secure and engaging walking environments.
- Integrated street furniture and public facilities such as restrooms and drinking fountains.
- Creating weather protection through plantations and other elements.



SCOPE & LIMITATION

Scope:

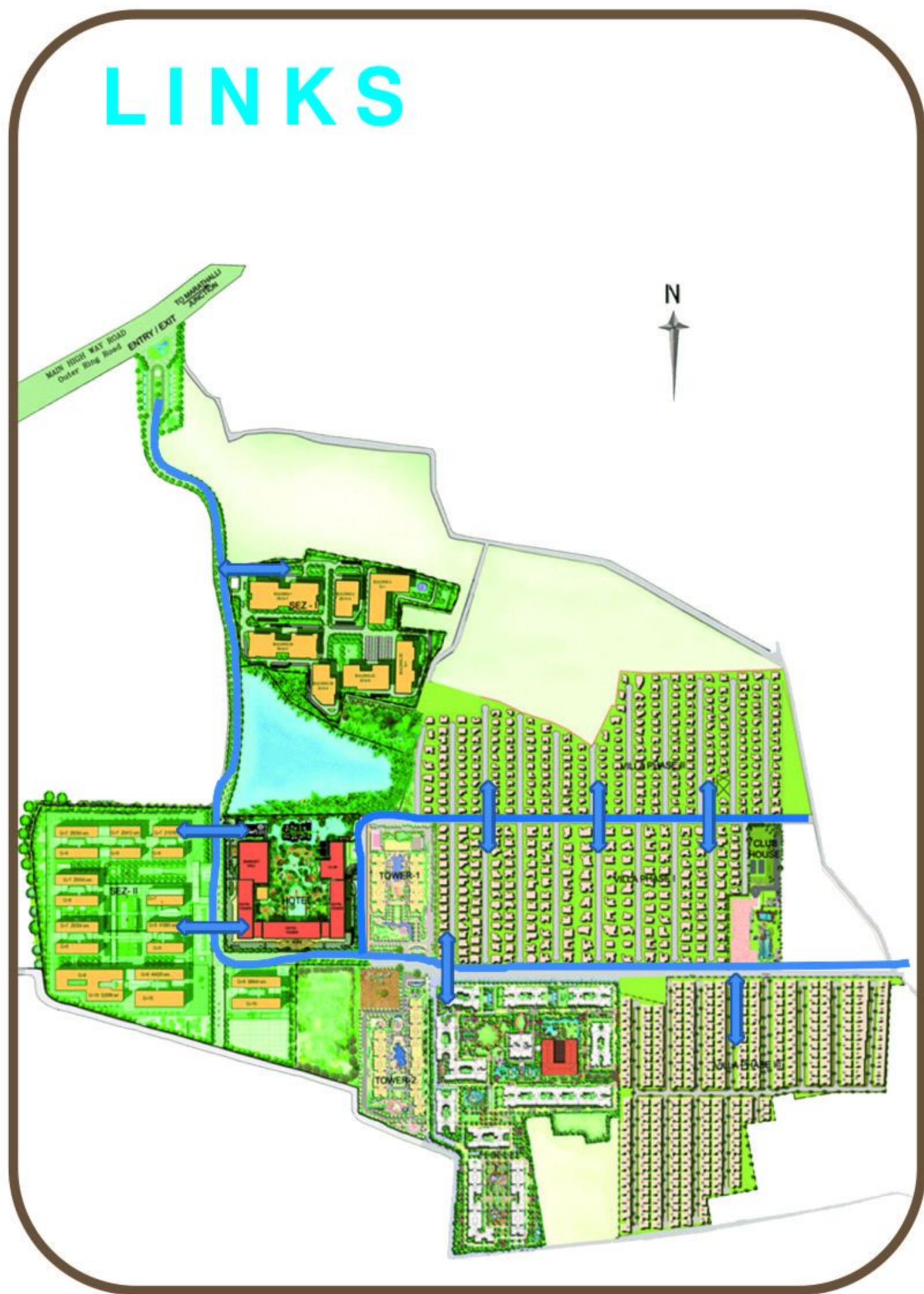
- Improve non-motorised network within the project limits
- Reduce trip lengths & number of trips within the premises

Limitations:

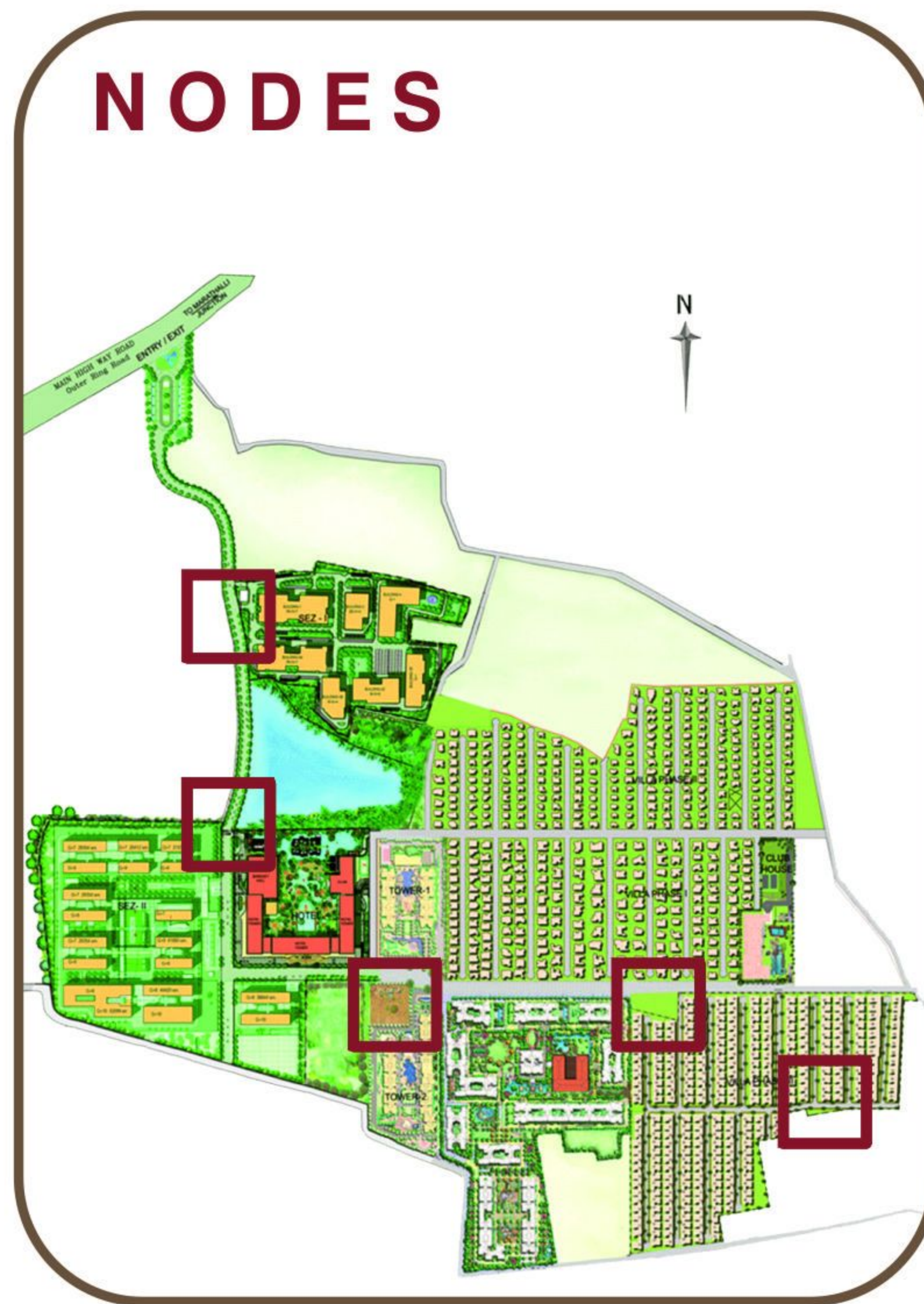
- Outer perimeter barriers cannot be changed.
- Land parcels cannot be changed.
- Road network cannot be changed.

STRATEGY & RECOMMENDATIONS

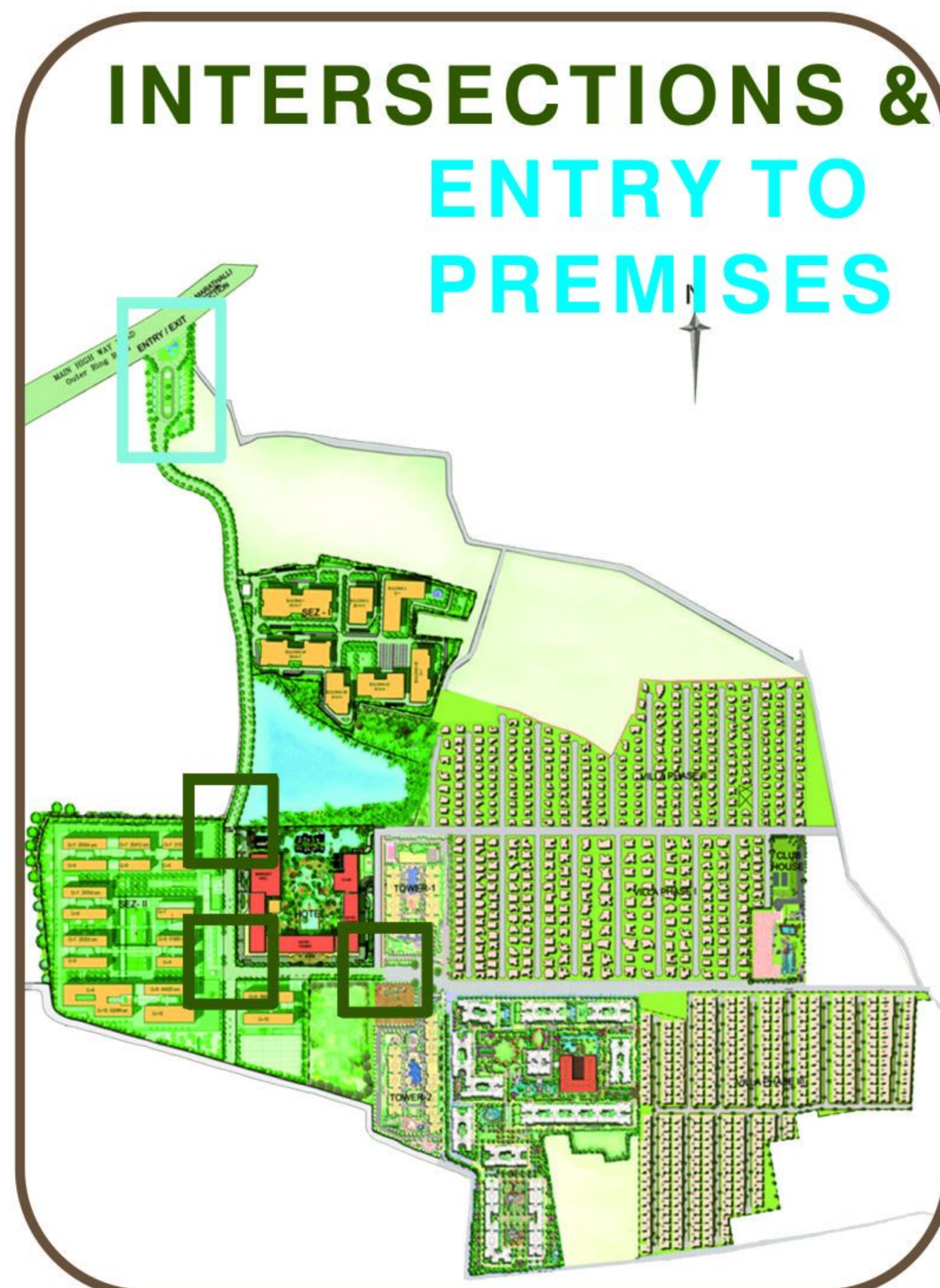
The strategy to bridging the gaps in the connectivity network of the Adarsh Palms retreat is through the following five levels of interventions:



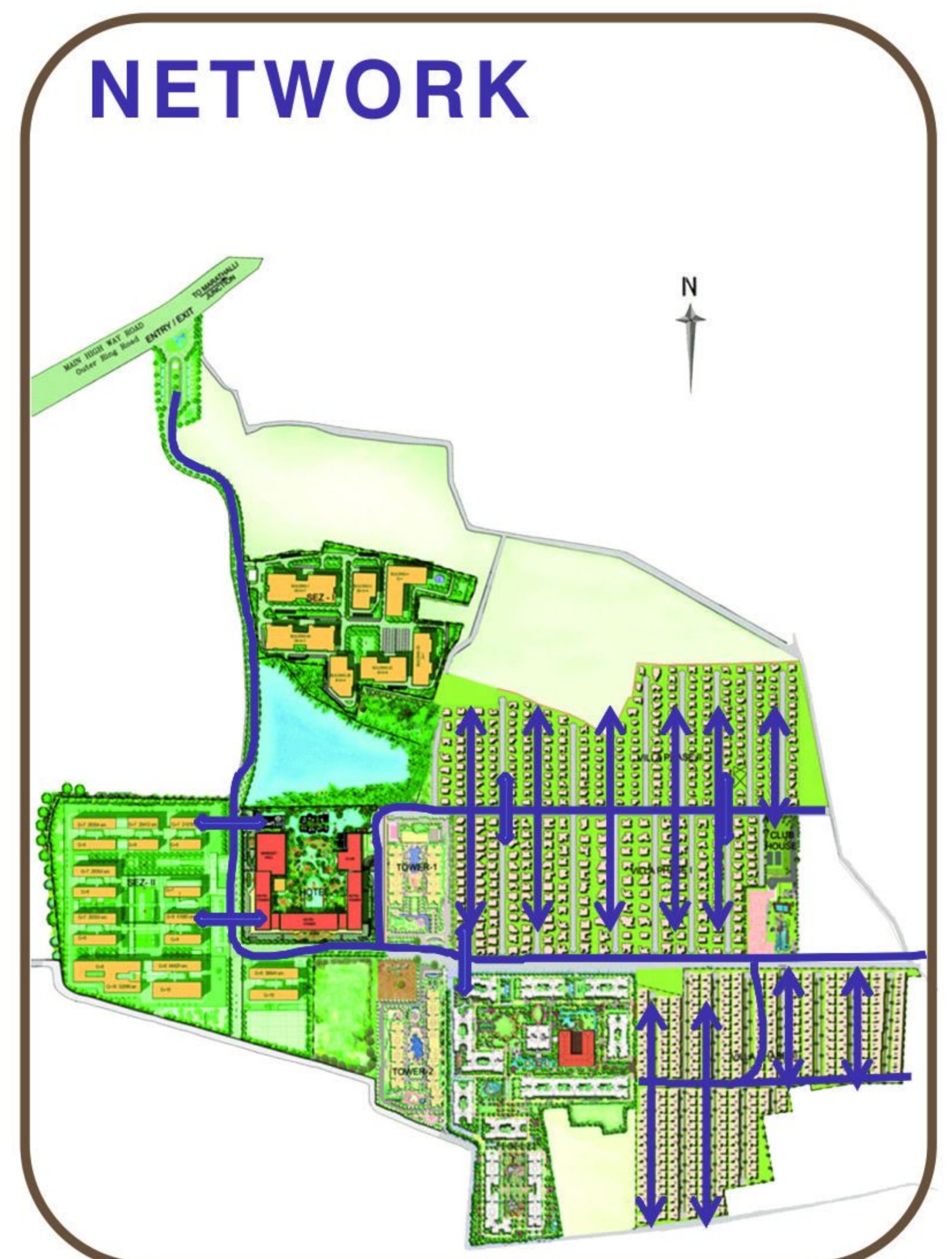
STRATEGY 1



STRATEGY 2

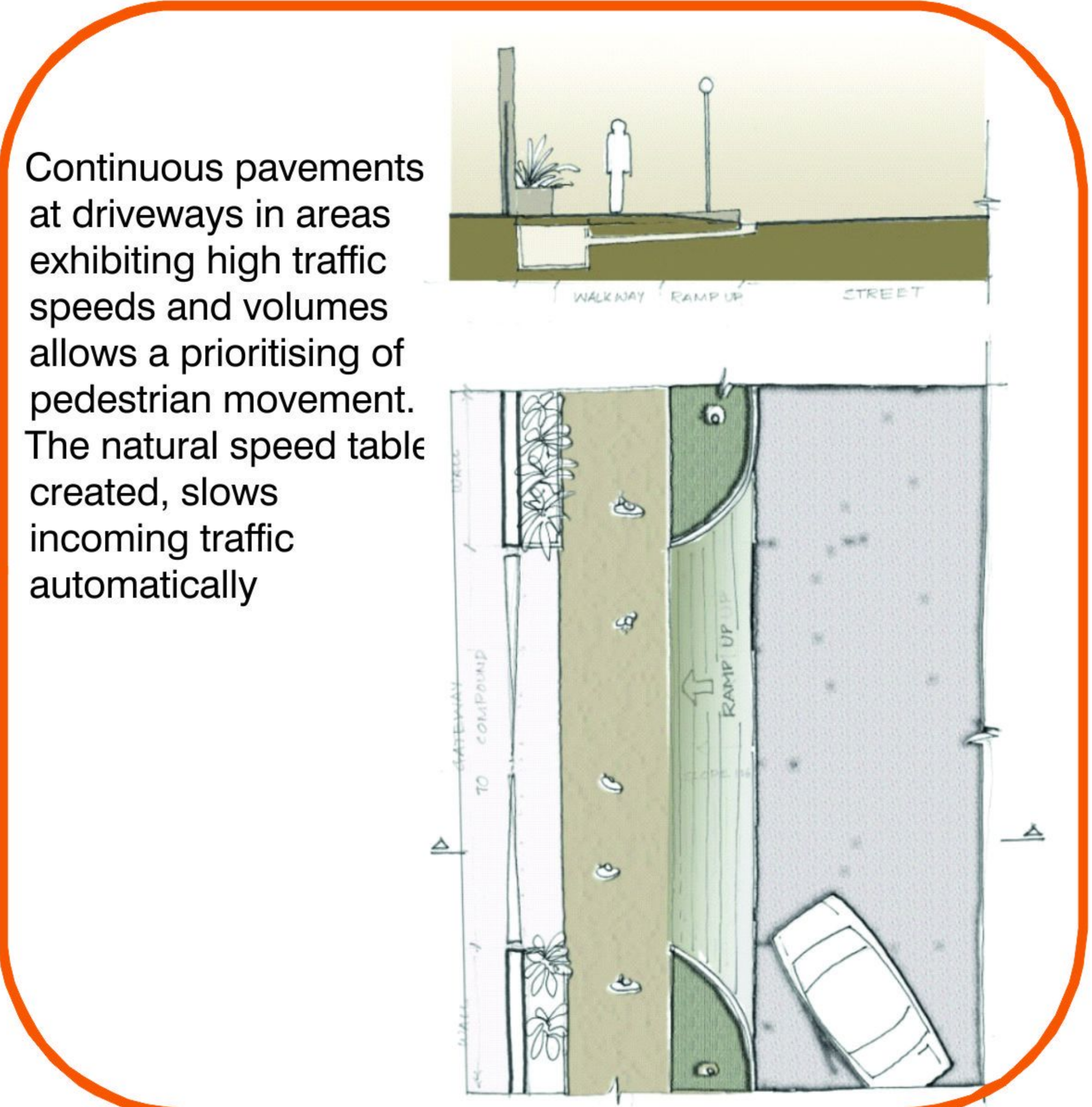
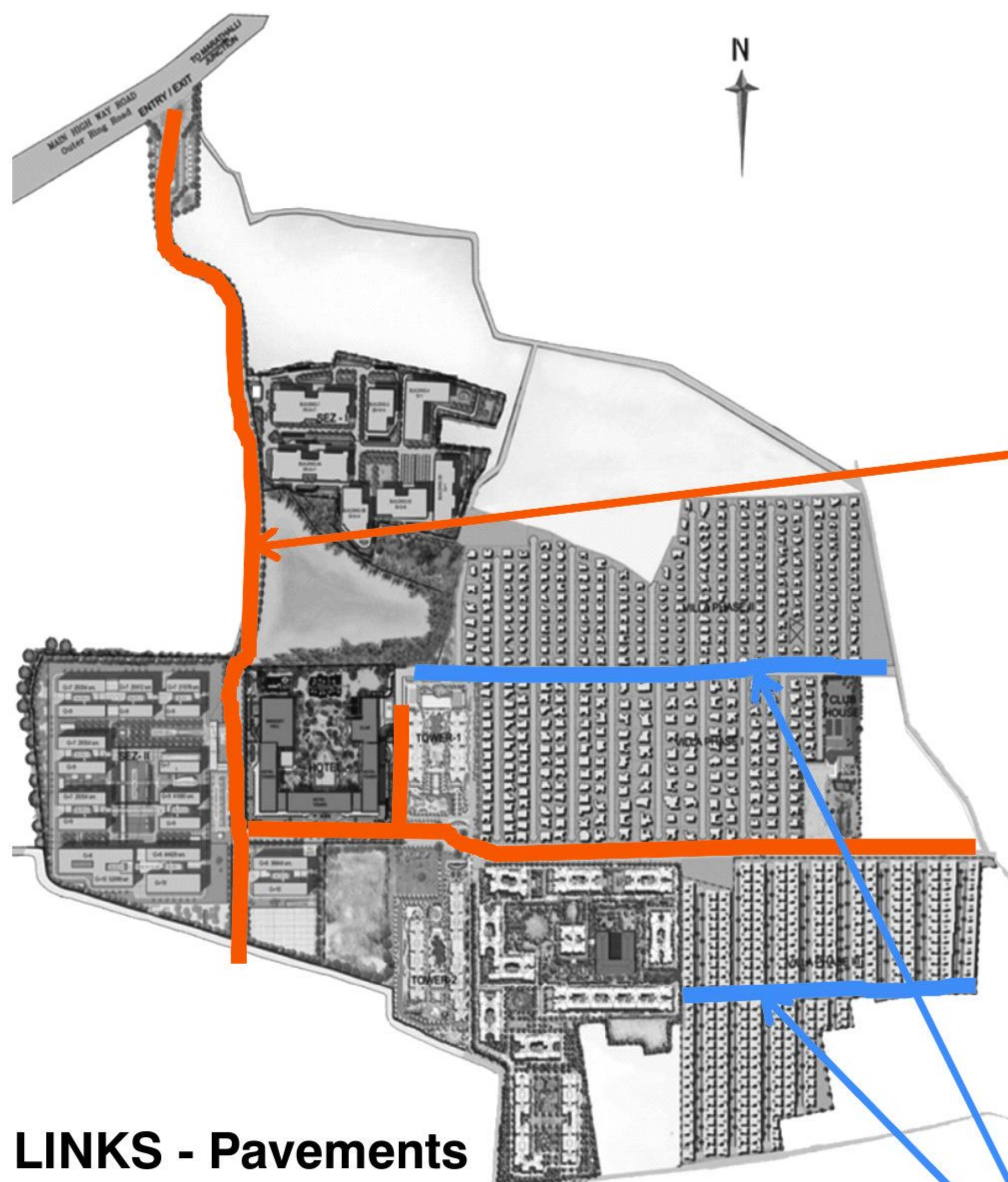


STRATEGY 3



STRATEGY 4

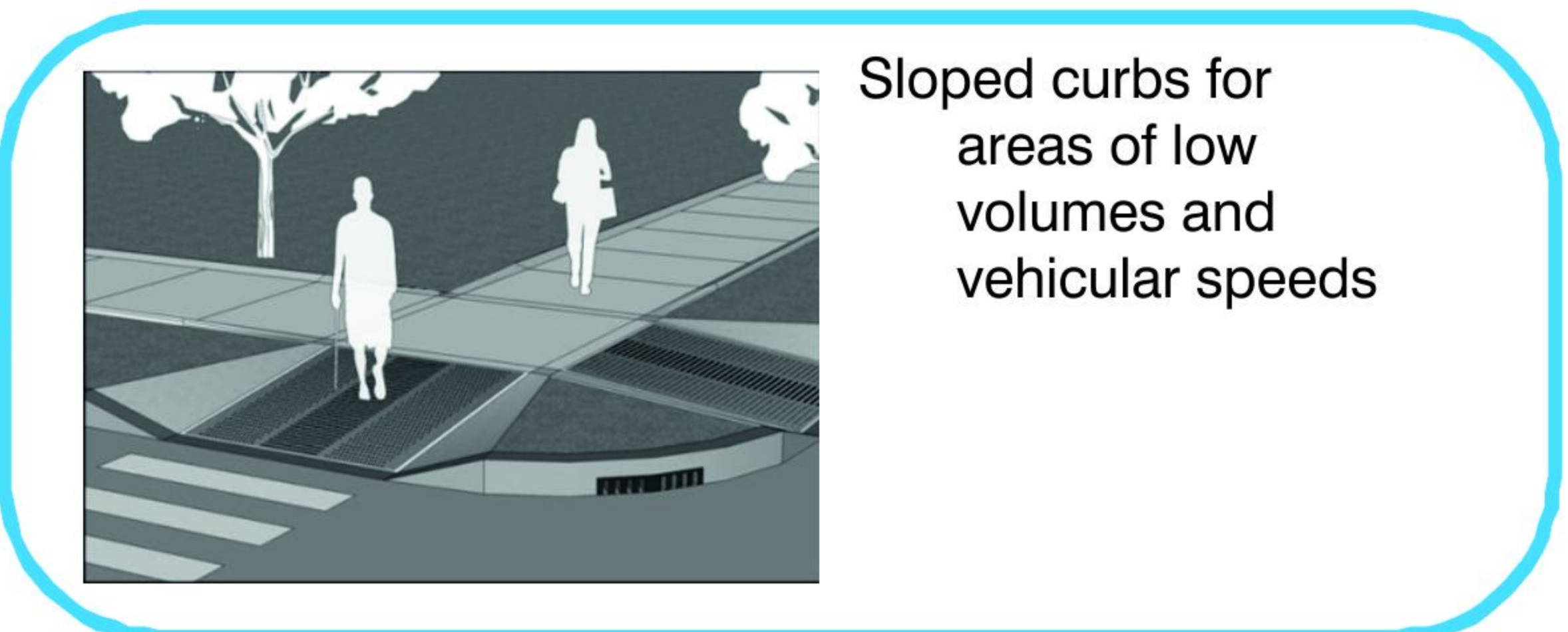
LINKS - PAVEMENTS



Continuous pavements at driveways in areas exhibiting high traffic speeds and volumes allows a prioritising of pedestrian movement. The natural speed table created, slows incoming traffic automatically

LINKS - Pavements

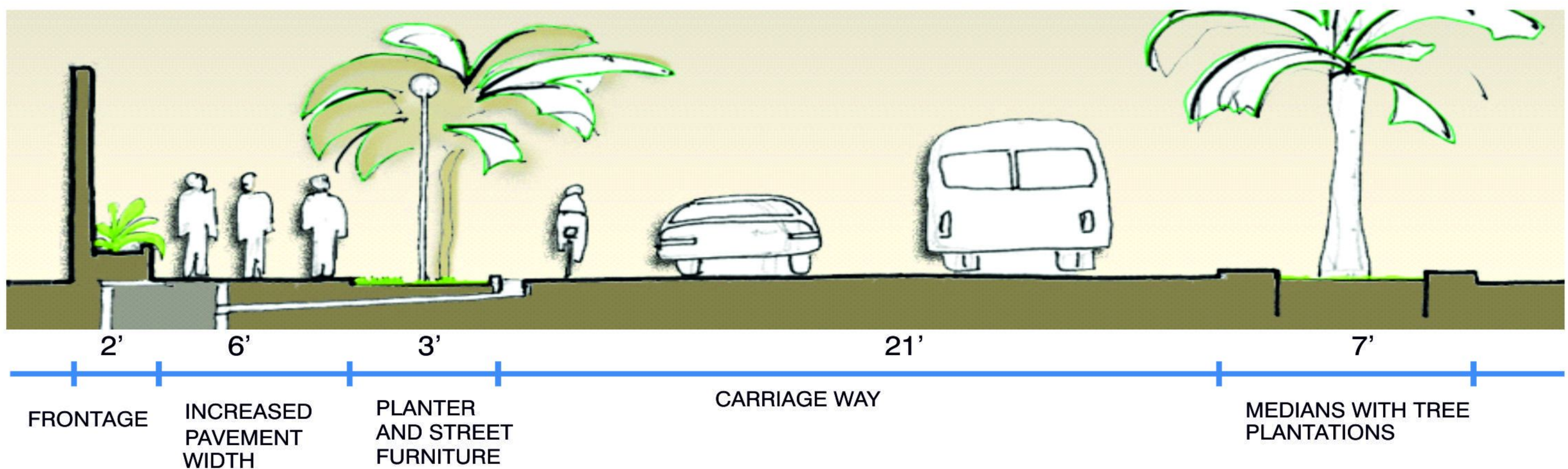
- Increase pavement width
- Surface treatment
- Evaluate tree shade - increase tree planting along street edge
- Continuous pavements or speed table at minor intersections and driveways



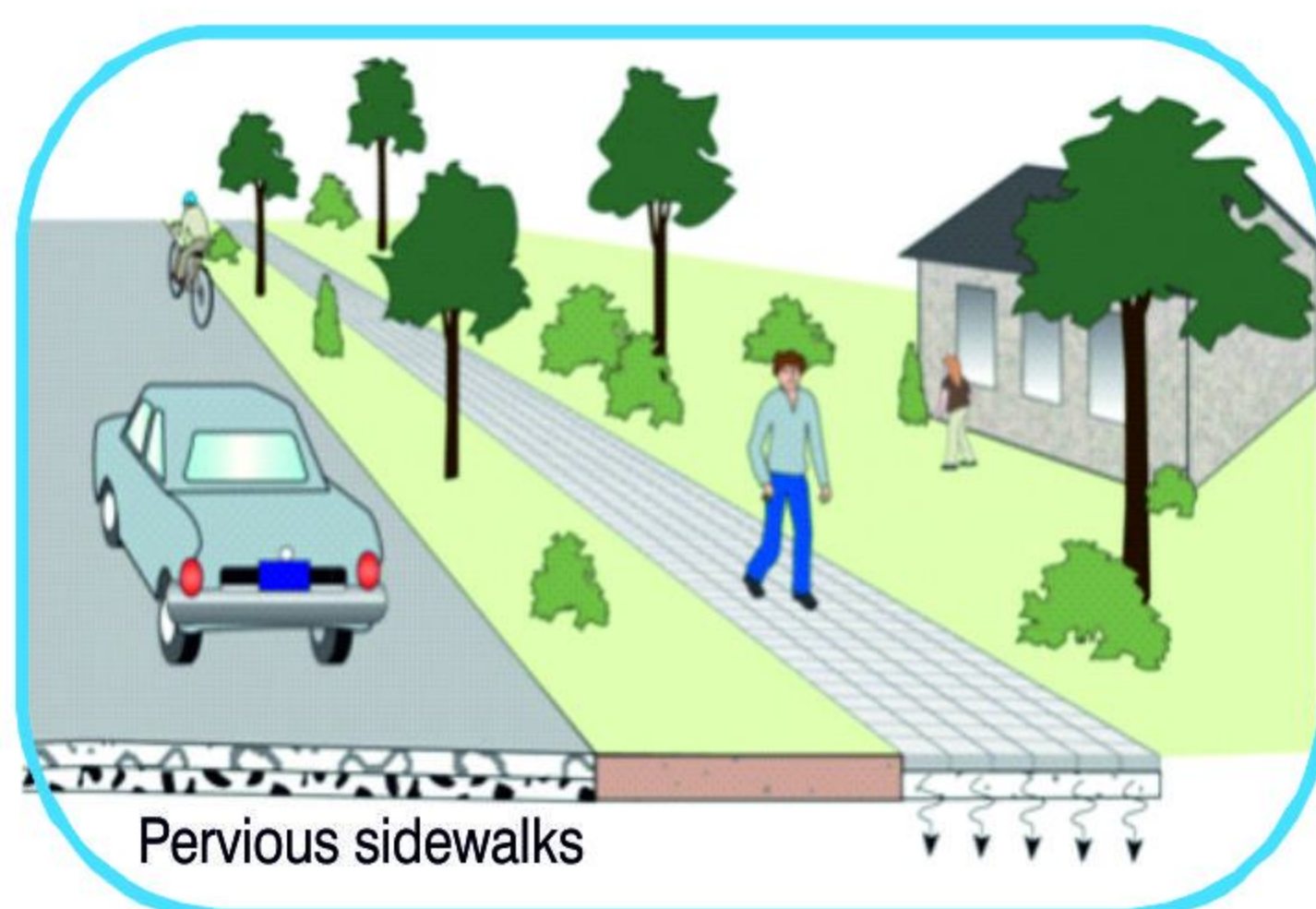
Sloped curbs for areas of low volumes and vehicular speeds



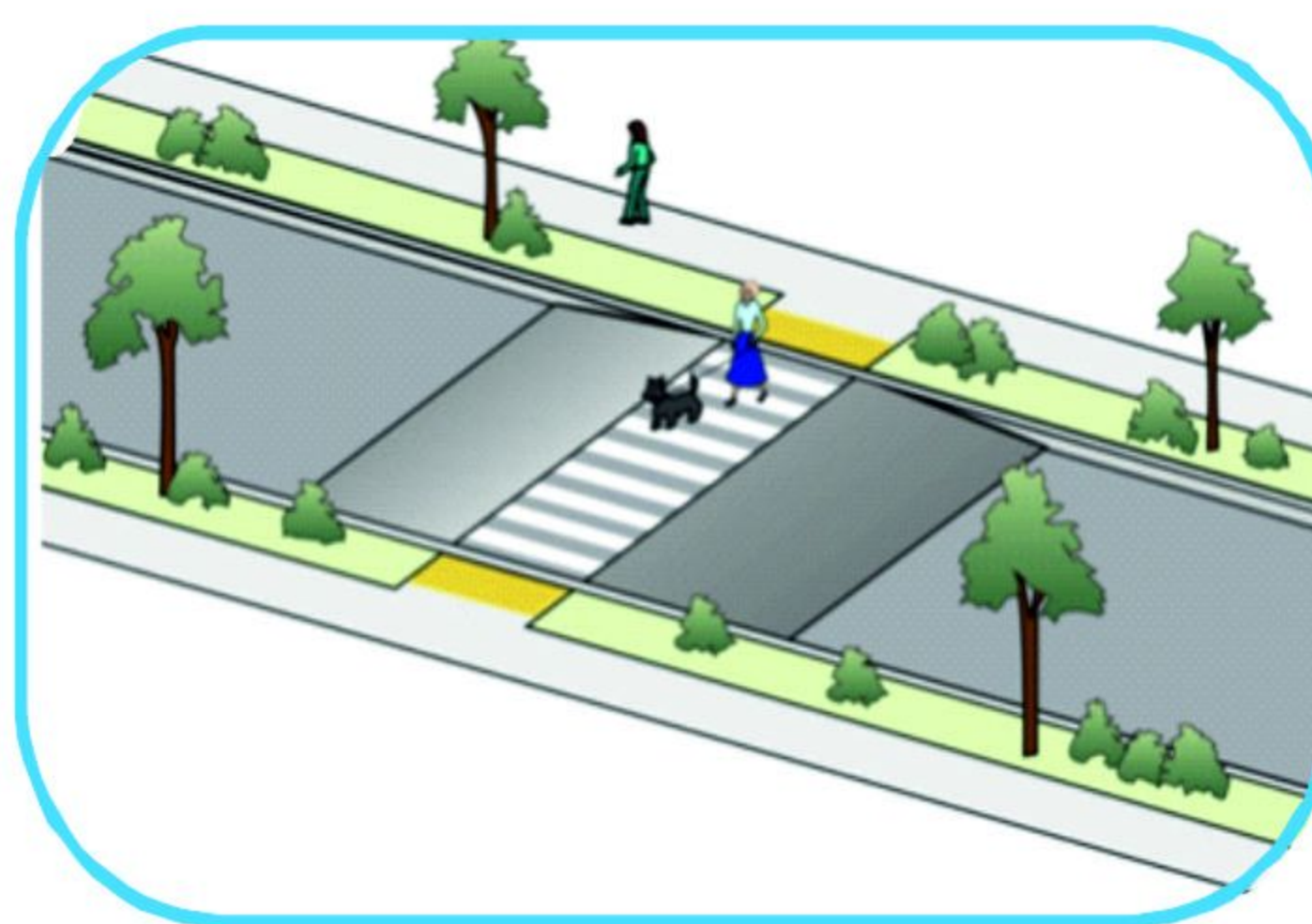
Reworked street section



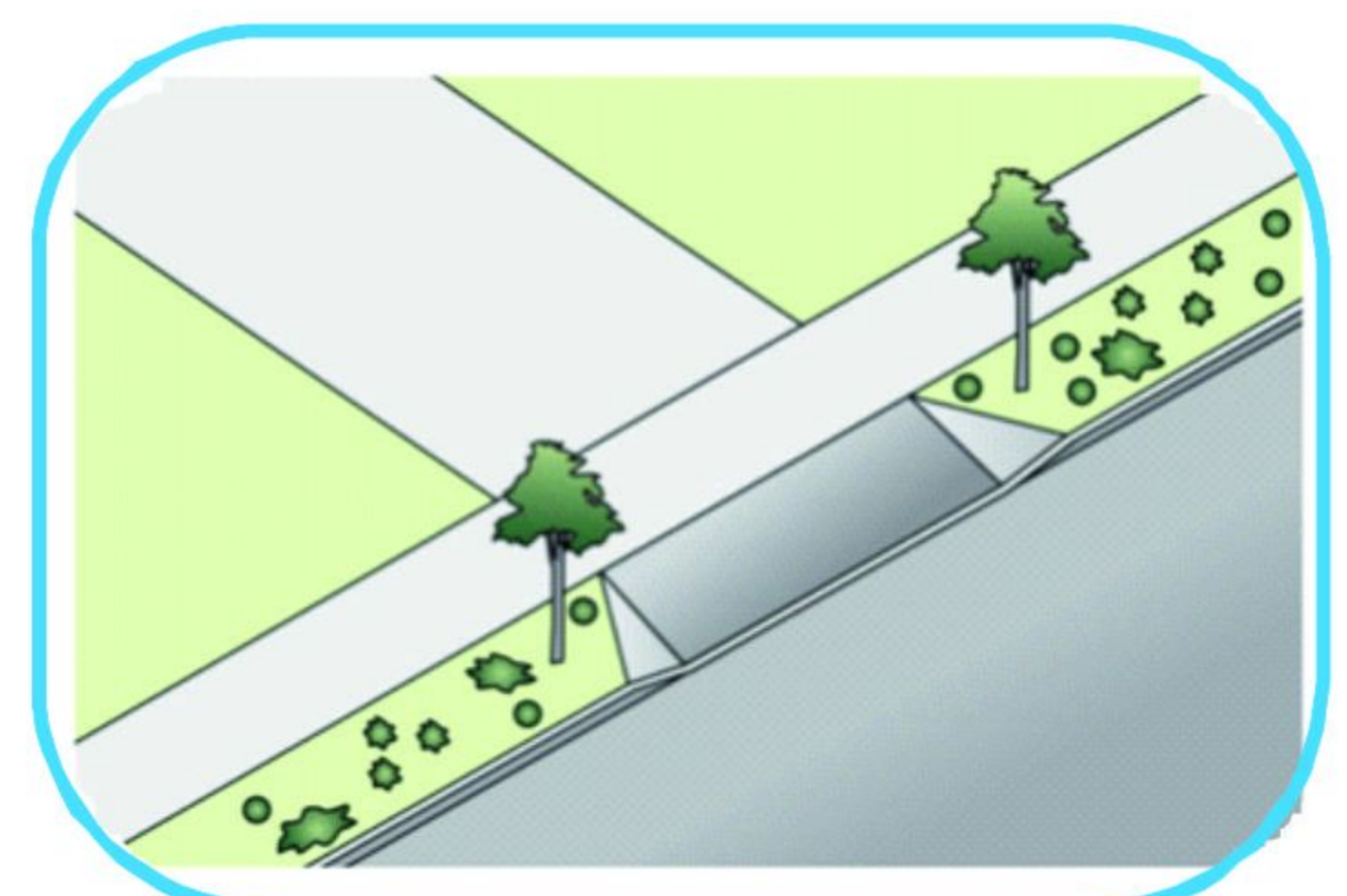
General recommendations:



Pervious sidewalks



Speed tables and table top pedestrian crossing



Continuous pedestrian walkways

NODES

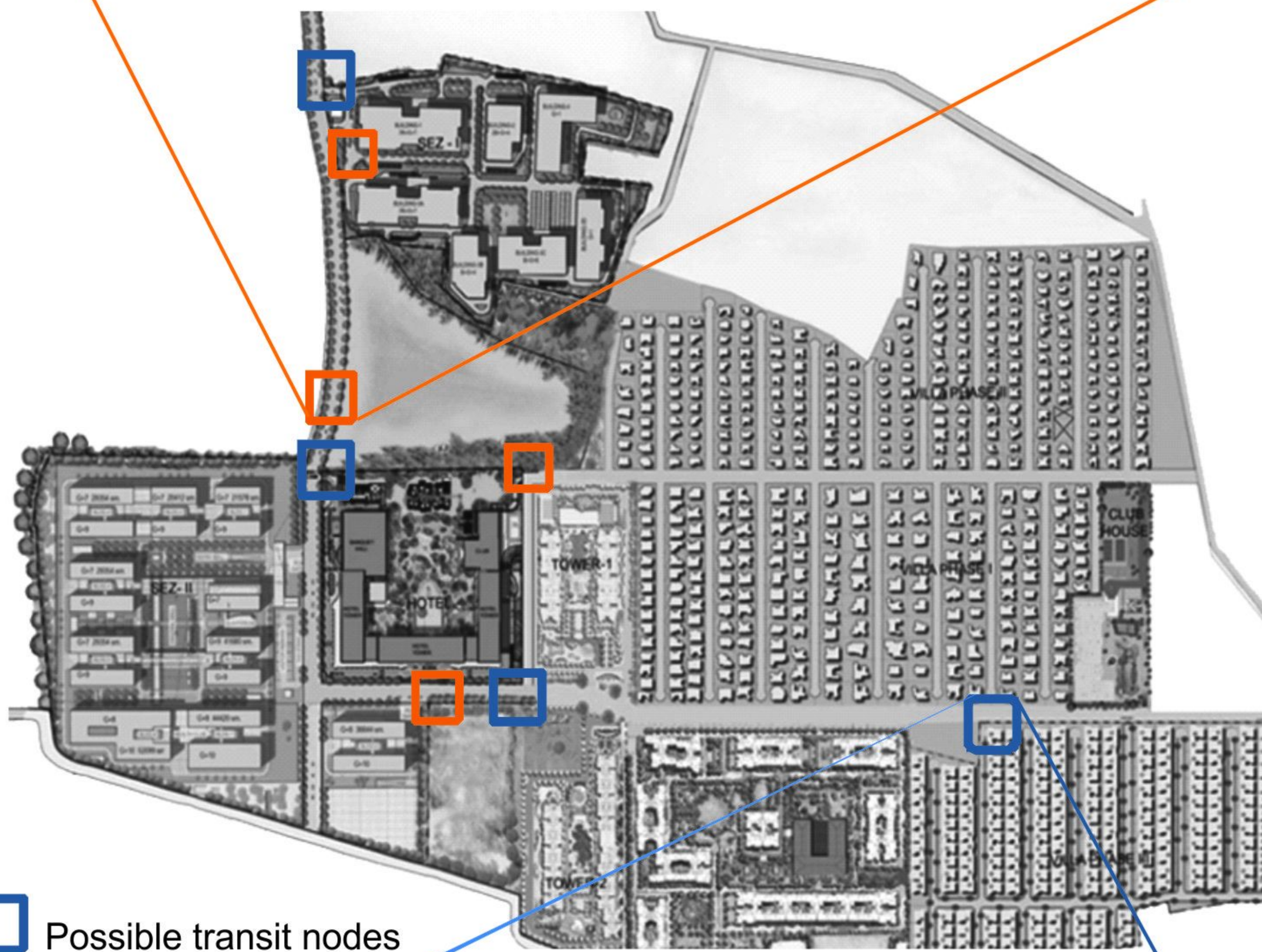
NODES - TRANSIT



Utilising transit stops and waiting areas to create pause points along pedestrian networks by introducing complimentary activities .

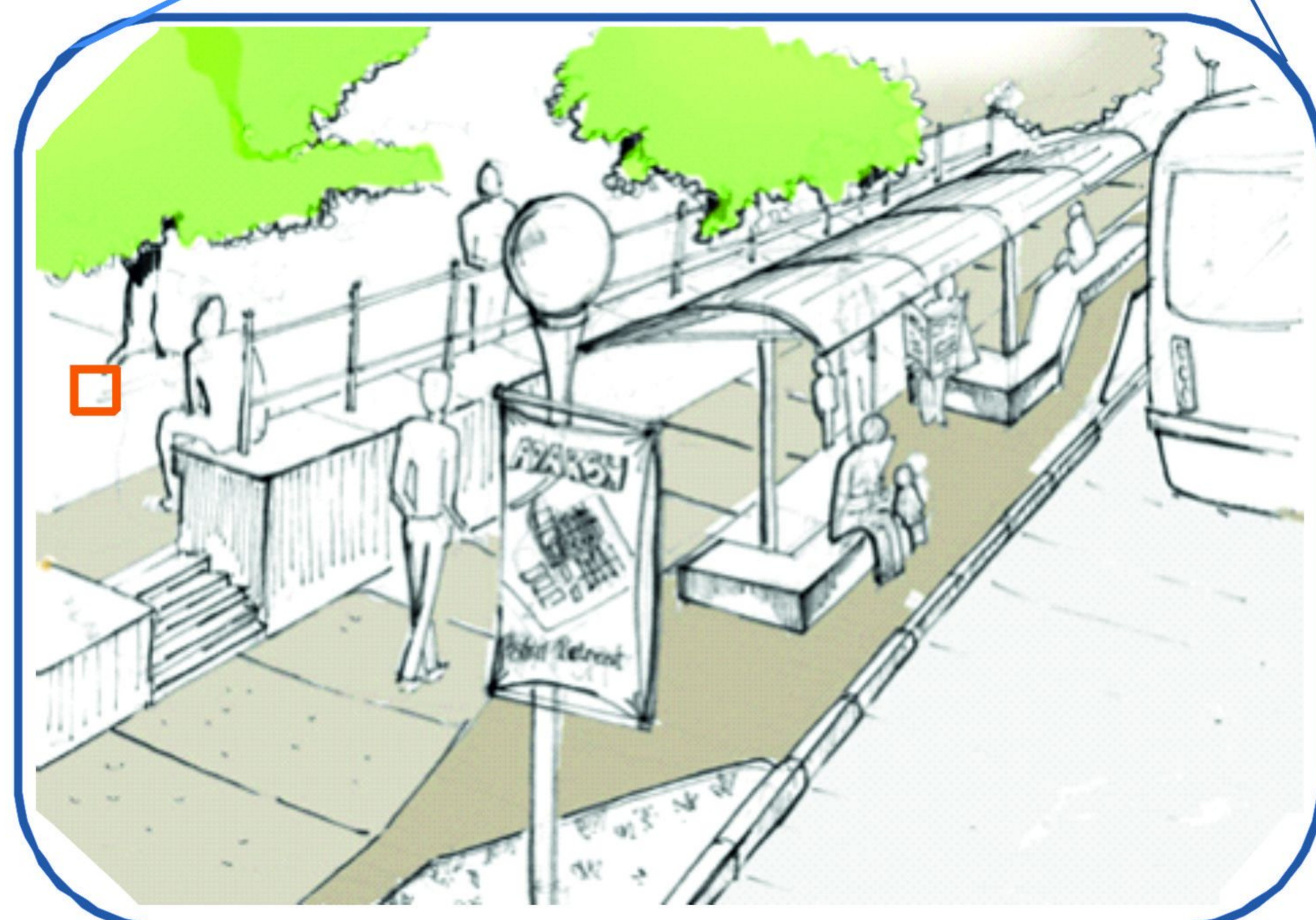
NODES - RESIDUAL SPACES

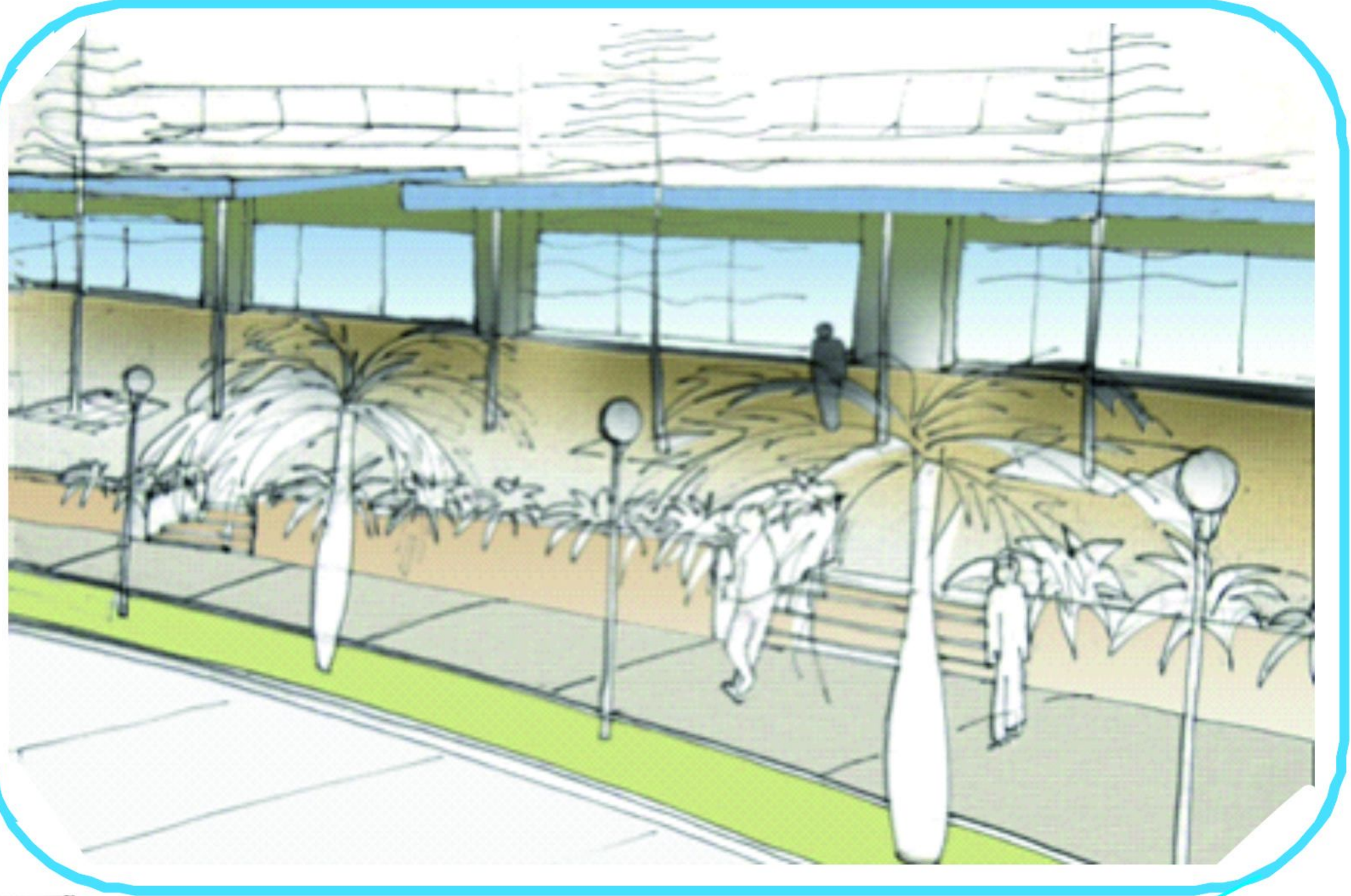
Utilising left over spaces along streets and properties to create seating and socialising areas

- Infrastructure that can be added:
- Benches or built-in seating areas
 - Shelter and shade
 - Drinking fountain
 - Lighting
 - Garbage cans
 - Signage
 - Newspaper stands

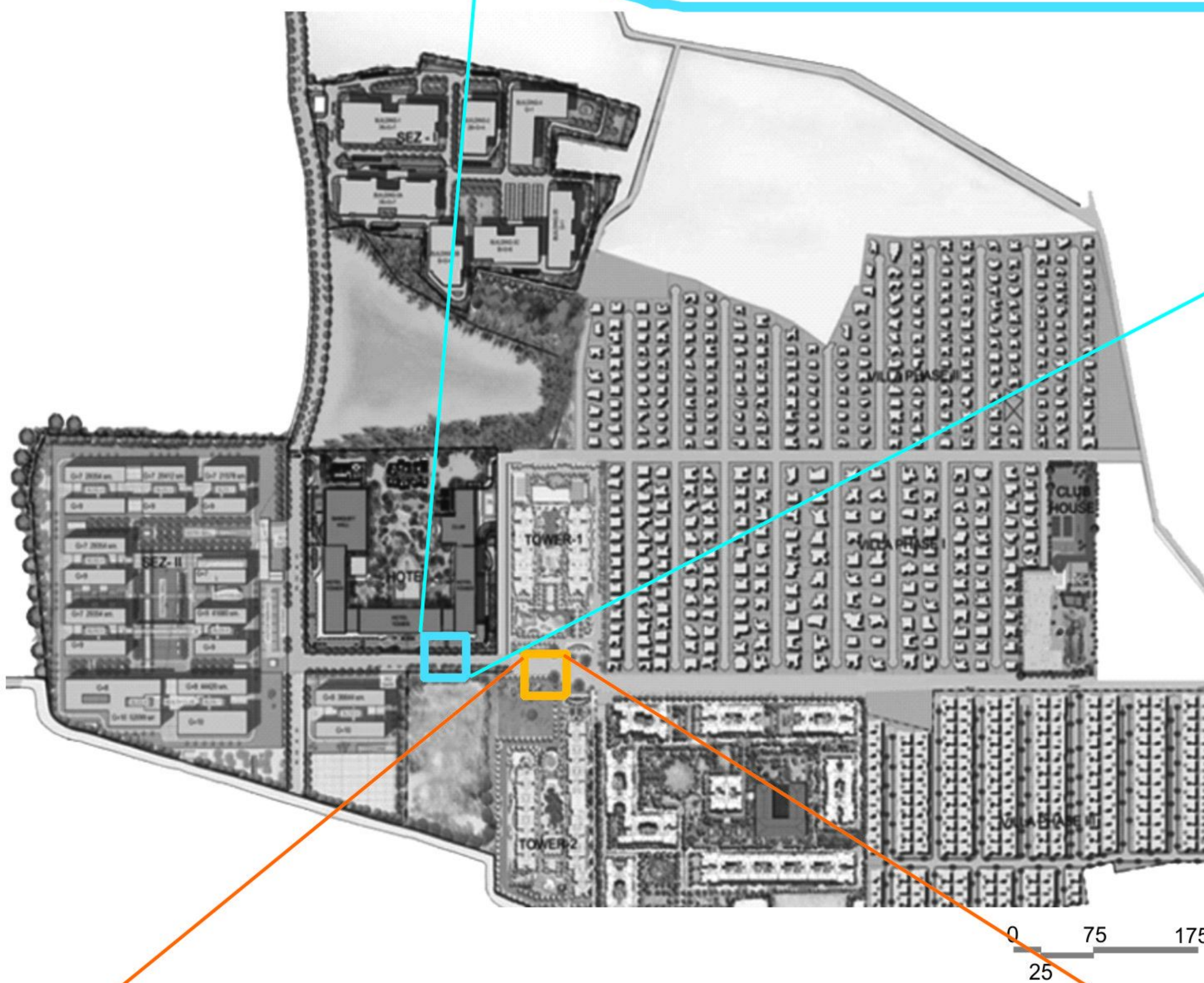


-  Possible transit nodes
-  Possible residual nodes





Proposed nature of Hotel edge



NODES

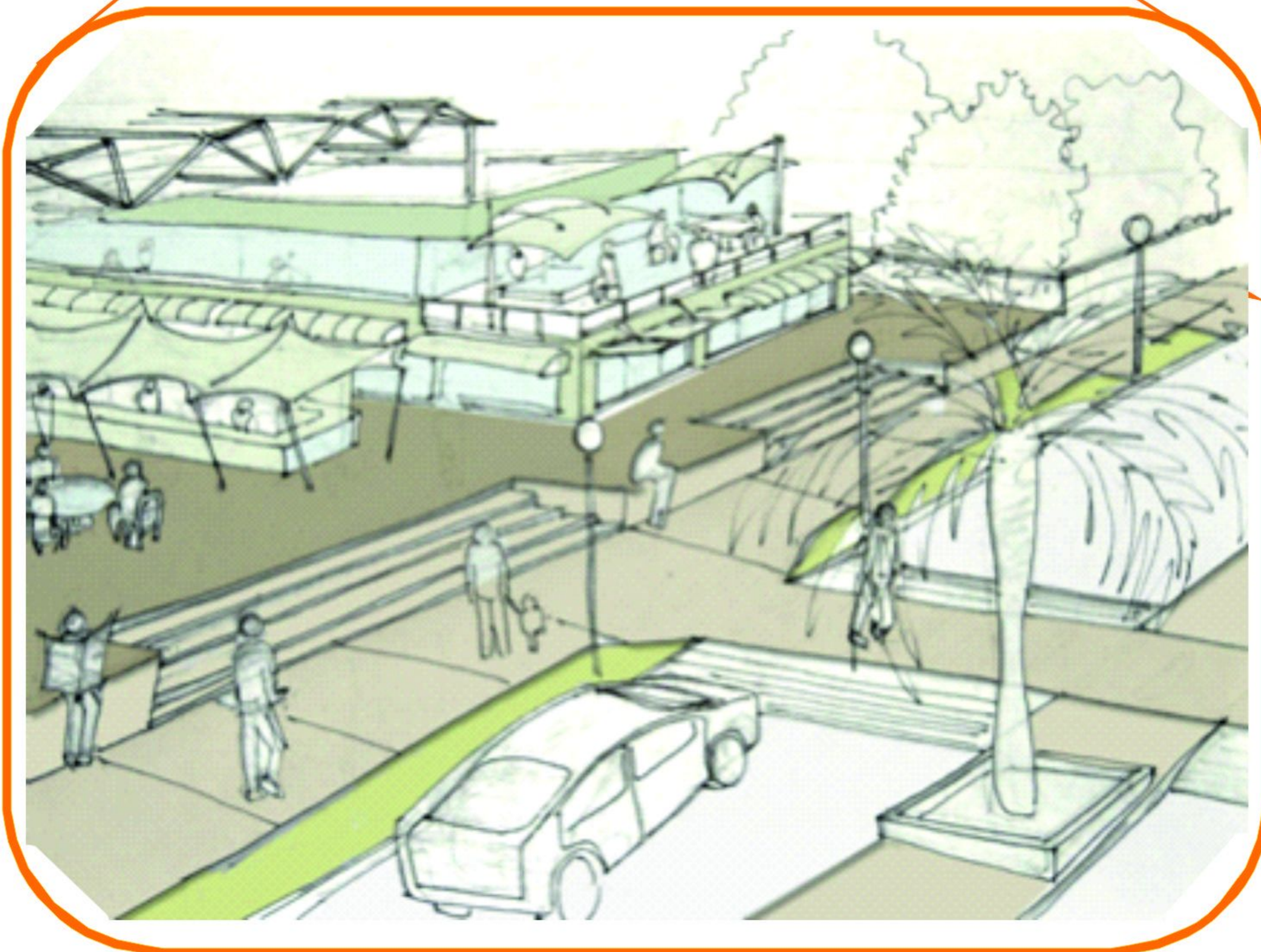
NODES - MARKET & HOTEL

Utilising public and semi public buildings such as markets and building edges to create larger scale nodes and public spaces of the development by programming appropriate functions and creating accessible and inclusive designs.

Functions that could be included are

- Groceries, pharmacy, coffee shop
- Beauty parlor, photocopy, courier
- ATM, laundry

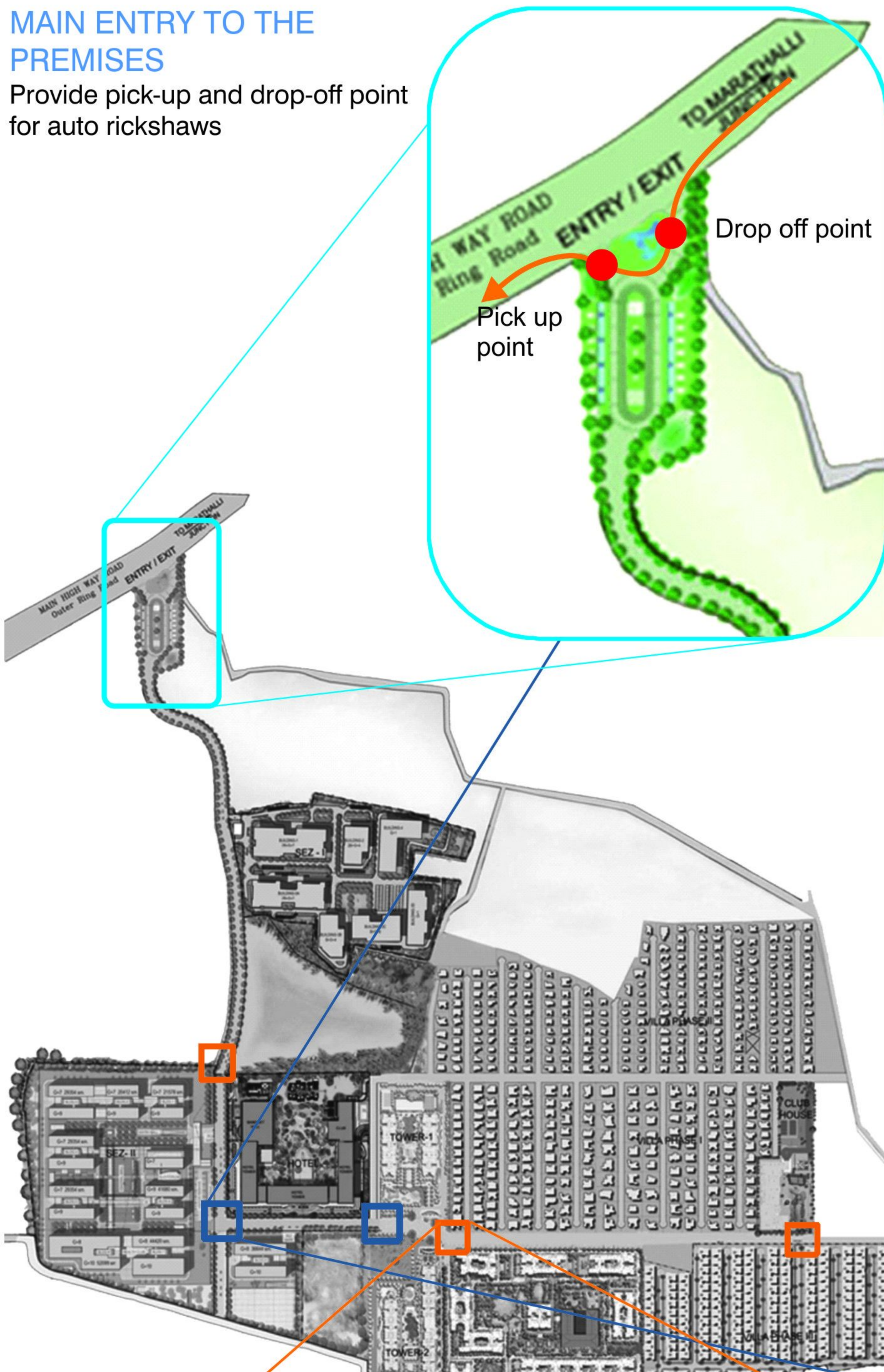
The hotel amenities and commercial services could cater to the larger residential clientele of the development, thus weaving it into the development rather than developing it as an exclusive entity.



Proposed nature of Market edge

MAIN ENTRY TO THE PREMISES

Provide pick-up and drop-off point for auto rickshaws



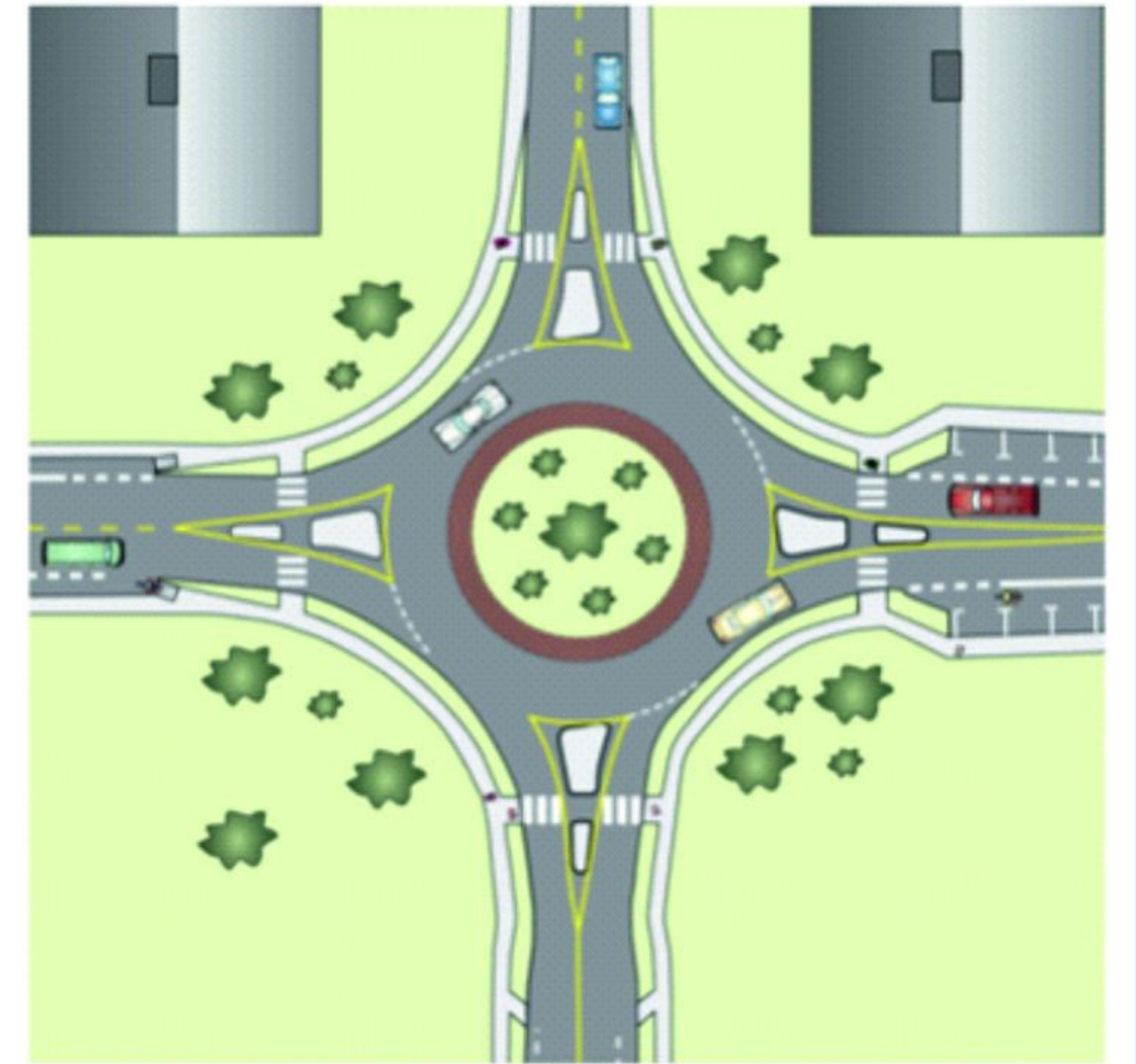
INTERSECTIONS :

Round-abouts

- Reduces traffic crashes
- Traffic calming measure
- Better pedestrian crossing
- Creates gateway
- Gives identity to neighbourhood

Raised Intersection

- Reduces traffic crashes
- Traffic calming measure
- Better pedestrian crossing
- Creates gateway



Round-abouts as traffic calming measures

 Possible areas of round-abouts

 Possible table tops



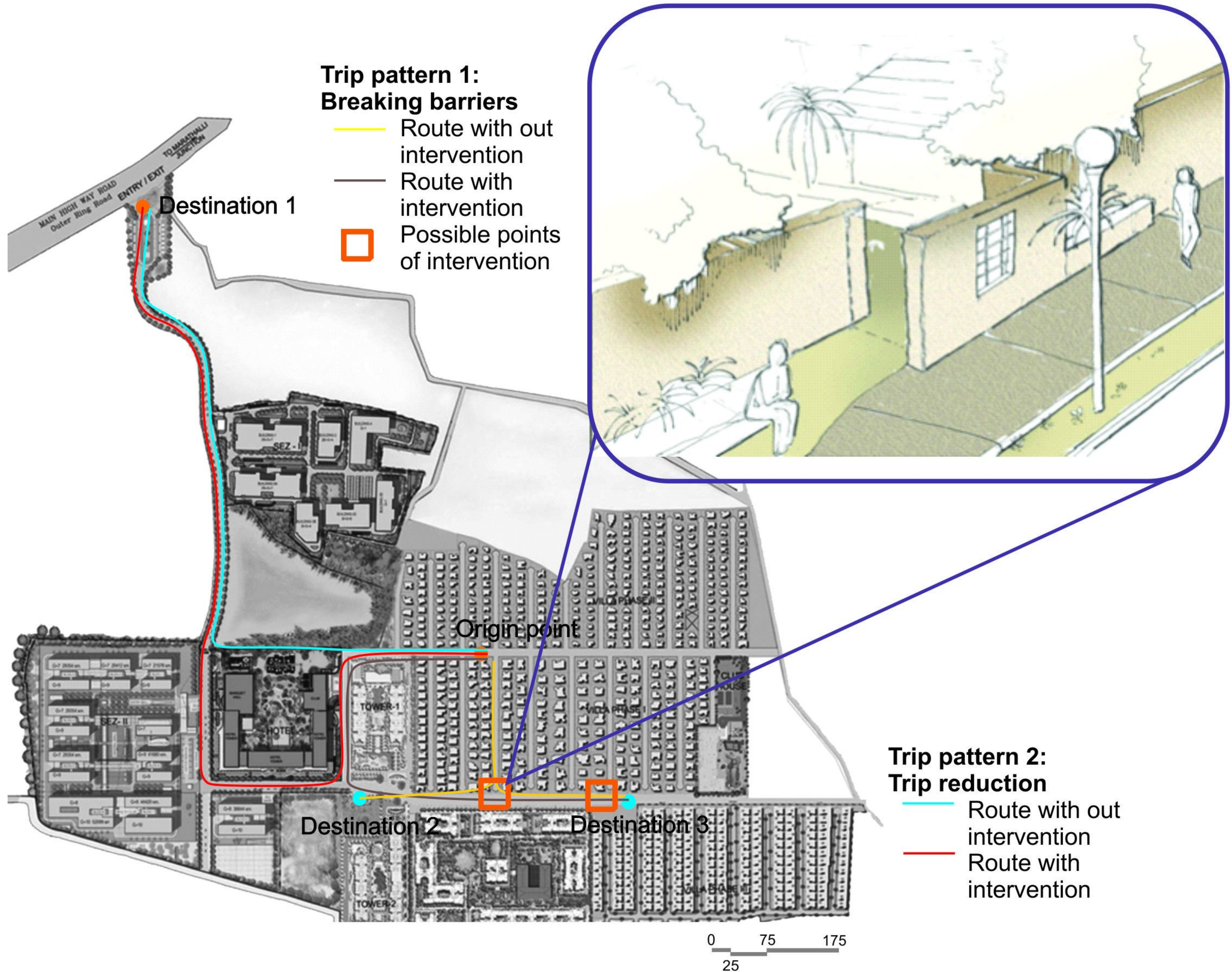
Table intersections as traffic calming measures

NETWORK

NETWORK :BREAKING BARRIERS

- Puncture the existing physical barriers
- Create nodes with new activities & provide opportunity for socializing
- Opportunity for utilizing the residual spaces

- In this case, the trip was reduced from 1000 m to 500 i.e by 10min per trip
- About 200 households will benefit; at 4 people per household, that is 800 people
- Total trip reduction being:4,00,000 m or about 133 hrs collectively



NETWORK :TRIP REDUCTION

Improved physical connectivity (2 previous examples) helps in trip reduction

- Other possible strategies:
 - Mixed-use, for example inviting schools and other services to be a part of the development
 - Open back of hotel to market, so guests know they can access goods and services on premises
- Other “soft” strategies:
 - Provide incentives (for example free shuttles) for
 - Staff
 - Residents
 - Hotel guests
- In this case, the trip was reduced from 2100 m or 2.1 km to 1500m or 1.5 km
- The whole of villa phase 1 & 2 i.e about 500 households will benefit; at 4 people per household, that is 2000 people
- Time saved:10minutes per trip
- Collective time saved : 330 hours

