CITY LEVEL PROJECTS

ADARSH NAGAR

Site Specific Design for Ward Number 14

(An ISO 9001 : 2008 Certified Organisation)

Delhi Urban Art Commission

Prof. Dr. P.S.N. Rao	Chairman
Sonali Bhagwati	Member
Samir Mathur	Member
Sonali Rastogi	Member
Durga Shanker Mishra	Member & Addl. Secretary, Ministry of Urban Development
Vinod Kumar	Secretary

DUAC Staff

Rajeev Kumar Gaur, Raghvendra Singh, Amit Mukherji, V. K.Tyagi, Uma Bhati, Nishi Sachdeva, Manju Anjali, Siddharth Sagar, Indu Rawat, Nihal Chand

Senior Consultant

Amit Ghosal

Consultants

Parul Kapoor
Mukhar Singh
Bharat Chugh
Rahul Chauhan

DELHI URBAN ART COMMISSION with gratitude duly acknowledges the valuable contributions of the following in making this report:

Raj Rewal	Former Chairman, DUAC
Satish Khanna	Former Member, DUAC
Eric P. Mall	Former Member, DUAC
D. Diptivilasa	Former Member DUAC & Addl. Secretary, Ministry of Urban Development

Organisations/Others

Ministry of Urban Development, Government of India
Delhi Development Authority
Government of National Capital Territory of Delhi
North Delhi Municipal Corporation
East Delhi Municipal Corporation
South Delhi Municipal Corporation
New Delhi Municipal Council
Geospatial Delhi Limited
Delhi Metro Rail Corporation
Delhi Urban Shelter Improvement Board
BSES Rajdhani Power Limited
BSES Yamuna Power Limited
RWA

Preface

The city of Delhi, capital of this vast land of diversities, is a city laden with layers of history, a place where civilizations have lived, prospered and perished over centuries. The modern city today, built over and around a rich tapestry of heritage, presents an opportunity at every turn, to allow for co-existence of the past, present and the future. In order to understand this multidimensional urban spectrum and attempt to plan the future, various city level studies have been initiated by the DUAC. I hope that these studies will help the planners of modern day Delhi to carefully articulate urban space, structure, form and environment and sensitively address future requirements.

I convey my thanks to all the Consultants and Members of the Commission who have tirelessly worked on this research project to bring out this document. I also take this opportunity to place on record my sincere appreciation of the efforts of Secretary and other staff of DUAC for providing the necessary administrative support to make this happen.

I fondly hope that the authorities of the local, state and national government take these studies seriously and implement, in right earnest, the suggestions given herein.

March, 2015

Sd/-
Prof. Dr. P.S.N. Rao
Chairman, DUAC

Contents

Summary

Adarsh Nagar ward is a mélange of urban typologies which vary from Azadpur Mandi viz. a heavy commercial development to Adarsh Nagar, an unauthorized regularized colony and Azadpur Village, an urban village. This interesting yet complex mix of typologies is currently very chaotic due to the varied activities going on in the parcels of land with an explosion of unchecked development. Also, the fact that the ward is located at a prime location in the city, means that it holds a lot of potential which needs to be unleashed in order to improve the quality of the urban fabric and lives of the users.

Various proposals have been prepared under the concept of Local Area Planning which could form a model for such future developments.

Adarsh Nagar Colony

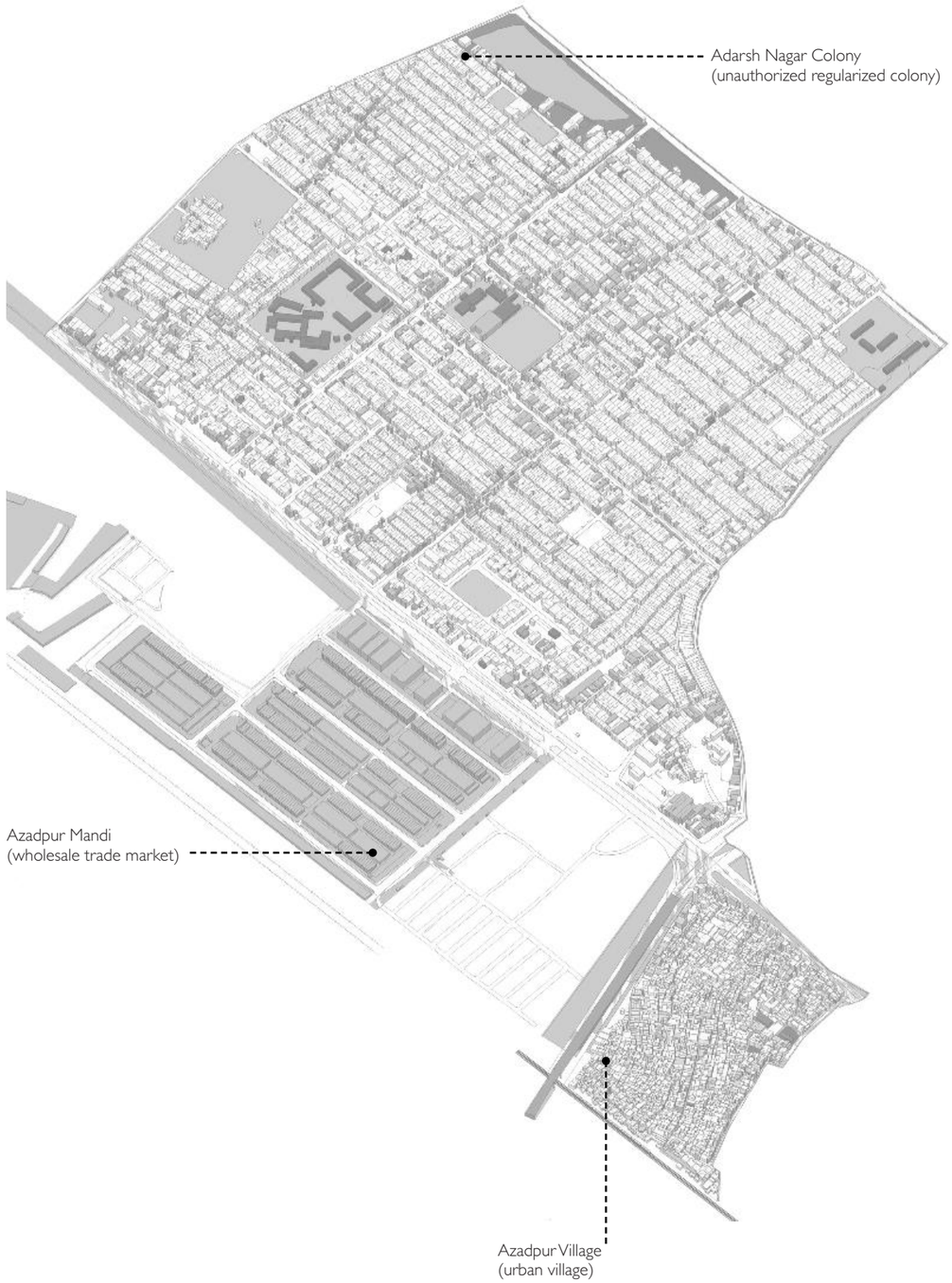
The colony is primarily a mixed-use development with heavy traffic movement owing to multiple activities on major roads. It is proposed to redensify the existing plots and develop compact neighbourhoods with a higher FAR. Simultaneously it is suggested to enhance the ROW to accommodate different users, i.e. pedestrians, NMVs and motorists. Also, large green areas which act as reliefs and social spaces are sculpted in the proposals.

Azadpur Village

The village being an unplanned organic development, with new unsafe structures coming up, has become a challenge to deal with. It is proposed to redensify and redevelop the existing plots, yet keeping the inherent character of the village intact by rejuvenating certain spaces like chaupals or nodes which are much required social congregational spaces in any typical village. Open greens, which are interlinked by pedestrian trails, acting as lungs to any urban fabric have been carved out to induce life into the dead spaces. Also, self-sustainability at site level is suggested for better utilization of resources.

Azadpur Mandi

MPD 2021 suggests relocating the existing Sabzi Mandi to decongest the existing area and reduce the pressure that it puts on prime land and infrastructure. The same is suggested with a view to relocate the Sabzi Mandi to the fringes of the city and retain and redevelop the fruit mandi as a sub-city level market. Another proposal suggests a change in land use on the existing Sabzi Mandi site with facilities like large open public spaces, schools and healthcare facilities which are lacking in the ward. Urban edges are opened up to uplift the existing dead character. Also, it is envisaged to interlink the three different entities, i.e. Mandi, Adarsh Nagar Colony and Azadpur Village via pedestrian trails which cross through various existing and proposed greens. This would result in a comprehensive and wholesome integration of the ward which is missing today.

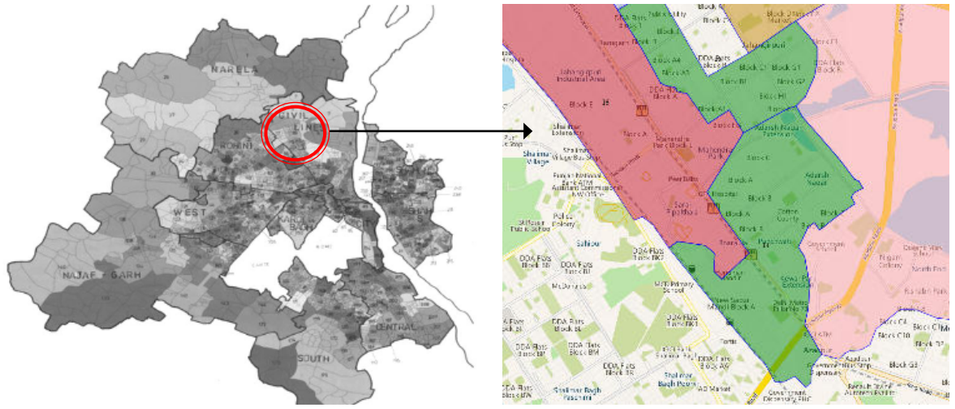


1.1 Area Location

Municipal wards of Delhi

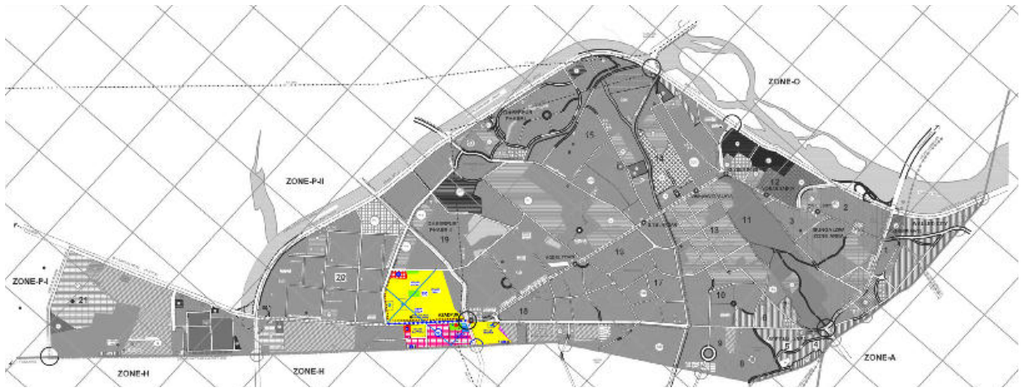
Delhi is divided into various municipal zones, such as south-west, west, south, east, north-east, north and central zones. Out of these, **the study area falls under the North-west Zone (MCD zones)**. The NCTD has been divided into 15 planning zones (divisions) designated A to P (except Zone I) in the Master Plan 2021. The study area, i.e. **Zone C, is also known as Civil Lines Zone**, and is located towards the north-west, covering an area of 3959 hectares and consists of 21 sub-zones.

Zone C is identifiable by the prestigious Delhi University, Northern Ridge, ISBT (Kashmere Gate) and Tis Hazari Courts. A significant feature of this zone is the Old Secretariat complex and Civil Lines Bungalow area of the colonial period. Roshanara Bagh and Qudsia Bagh are historical gardens from the Mughal period. This zone has posh residential areas, rehabilitation colonies and pre-1962 residential colonies.



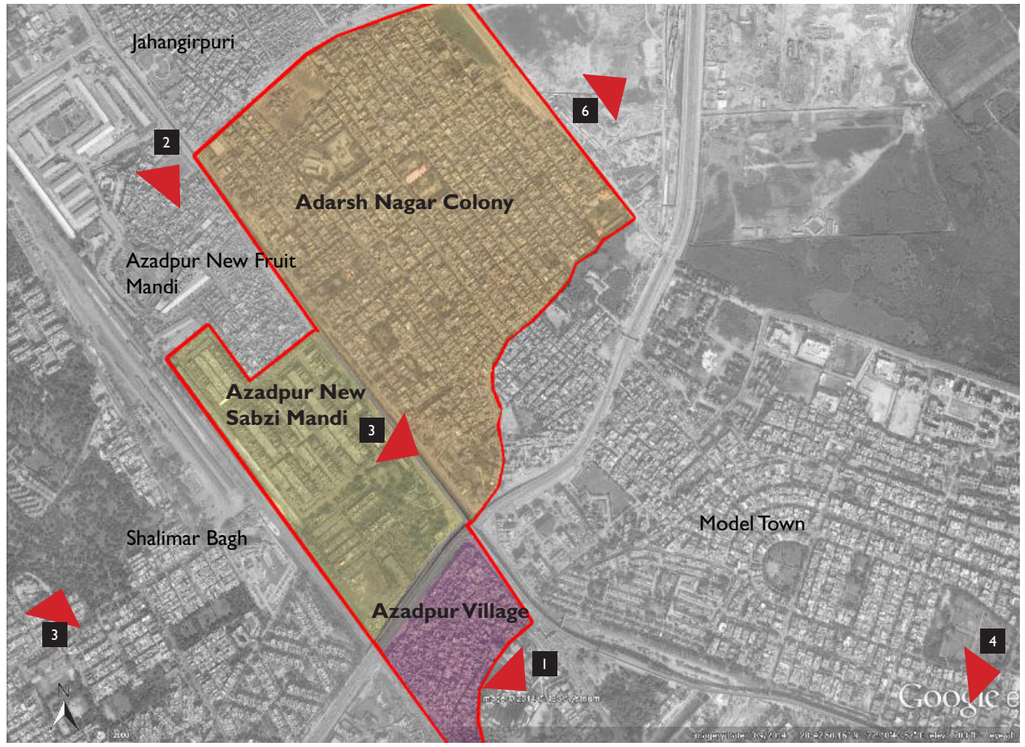
Zones of Delhi

A part of the Special Area also falls in this zone. Other **important activities in this zone are Azadpur Wholesale Fruit and Vegetable Market** and Sanjay Gandhi Transport Nagar. Metro corridor is operational in this zone. Dheerpur (Phase I & II) is an important project in this zone. Zone C is further subdivided into sub-zones. **Ward 14 falls under the sub-zone C 20. It is situated close to colonies such as Shalimar Bagh, Model Town and Ashok Vihar.**

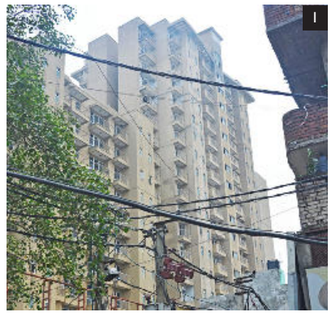


Zonal Development Plan Zone C – Highlighted Area: Sub-zone C 20

1.2 Area Context



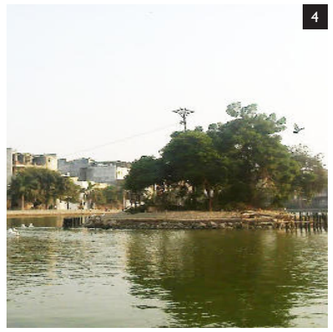
Area of Study and its surroundings



M2K Victoria Garden

Badli ki Sarai Mutiny Memorial

Sheesh Mahal, Shalimar Bagh



Naini Lake, Model Town

Adarsh Nagar Metro station

Vacant side adjoing the site along Flying Officer SS Rana Marg

1.3 Connectivity

Map showing Connectivity in and around the study area

Jahangirpuri Metro station

Adarsh Nagar Metro station

Azadpur Metro station

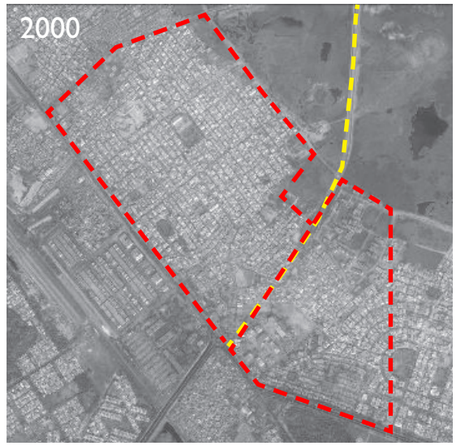
Connectivity

The area is accessed by two roads namely – **GT Road and Ring Road.** GT Road is mostly congested due to the presence of heavy vehicles coming to Azadpur Mandi for goods transfer. These **stretches experience heavy traffic movement throughout the day** as they are major spines connecting to the rest of the city.

Distance from various destinations

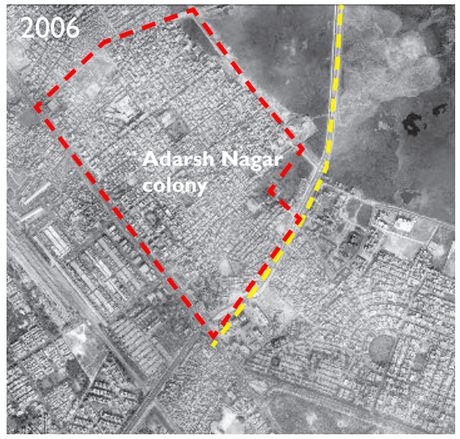
- IGI Airport = 21 km
- New Delhi Railway Station = 10.3 km
- Old Delhi Railway Station = 8.7 km
- ISBT Kashmere Gate = 13.5 km
- Delhi University = 6 km
- AIIMS = 25 km

1.4 Temporal Development



A continuous area of settlement existed earlier with a narrower road

A community centre came up in the village during this time period.



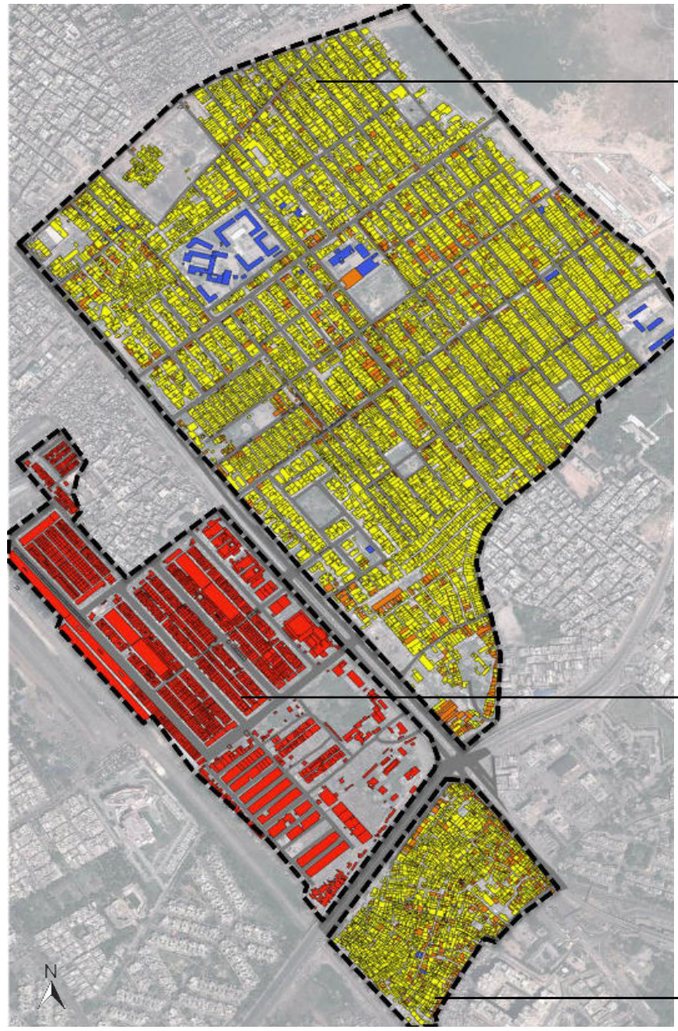
Work started on Arihant Marg, segregating Adarsh Nagar colony, Azadpur commercial complex and Gopal Park

Construction of Azadpur flyover and Metro station in progress

The development work continues on Metro stations

Azadpur flyover completed. Azadpur Metro station becomes functional

1.5 Study Area Introduction



Adarsh Nagar (unauthorized regularized colony)

Azadpur Mandi (wholesale mandi)

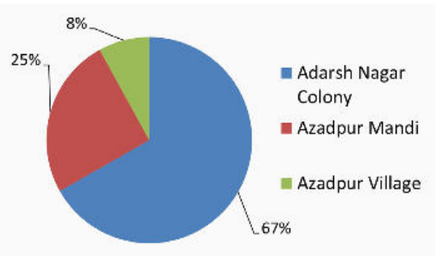
Azadpur Village (urban village)

Map showing different study areas and their boundaries

Typology of study area and demographics

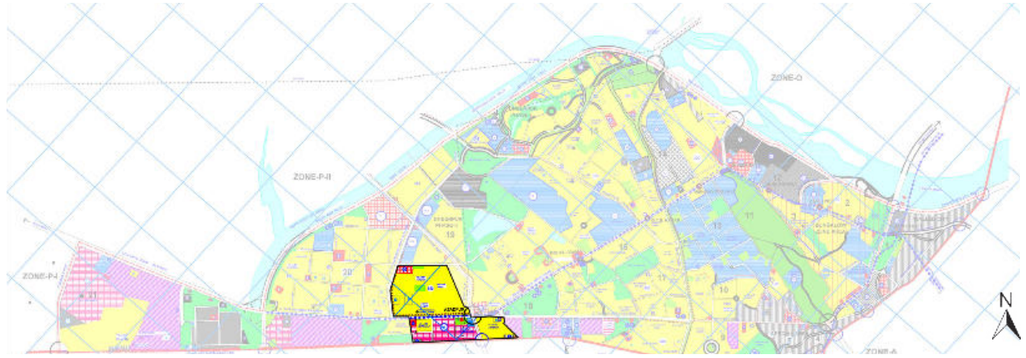
Name	Typology	Area (sq m)	Population (Persons)
Adarsh Nagar Colony	Unauthorized Regularized Colony	8,67,000	88,000
Azadpur Mandi	Wholesale Market	3,27,000	-
Azadpur Village	Urban Village	1,04,000	45,000

Area distribution for the three study areas

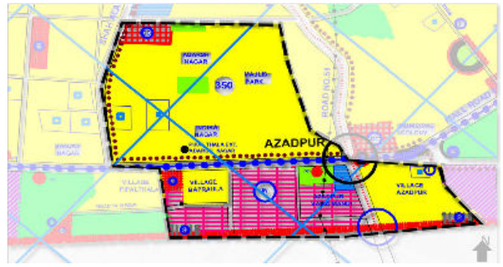


Density in Azadpur Village is 865 DUs/ha.	Suggests that the existing development is very dense and compact.

1.6 Development Guidelines for Zone C



Zonal Plan: Zone C



Detailed Zonal Plan of Study Area

Zonal Plan proposals

1. One Community Centre (CC) in Adarsh Nagar
2. Azadpur as sub-city level market
3. Water Treatment Plant within Azadpur Mandi
4. One temple in Azadpur Village

MPD 2021 Guidelines

1. Unauthorized/Regularized Unauthorized Colonies

In all unauthorized colonies whether on private or public land, regularization shall be done as per the Government orders issued from time to time. It shall be ensured that for the **improvement of physical and social infrastructure, the minimum necessary/feasible level of services and community facilities are provided as per norms given in MPD 2021.**

2. Azadpur Fruit & Vegetable Market

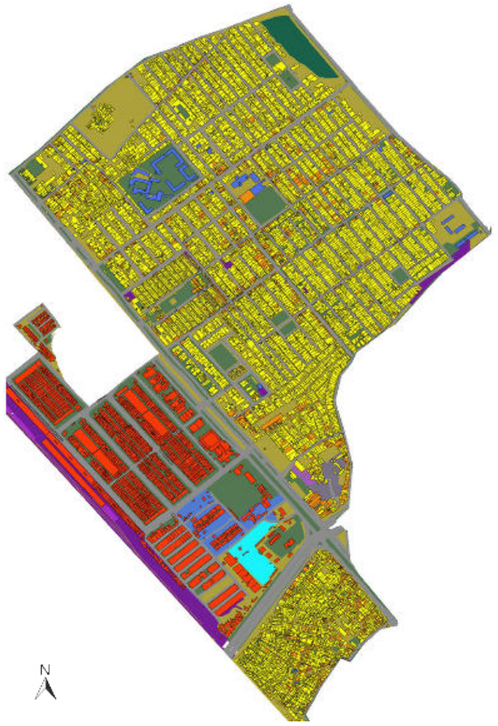
As per MPD 1962 proposals, the Fruit and Vegetable Market in Sabzi Mandi (C5) was shifted to the Azadpur Mandi (C-20) which was then on the periphery of the city. But due to the fast pace of urbanization, the Azadpur Mandi now forms part of the centrally located urbanized area with a heavy inter-city and intra-city truck movement. **MPD 2021 has designated the market as sub-city level market. The city level requirement shall be shifted to Integrated Freight Complexes in Narela near the entry point of Delhi.**

3. Urban Villages

The Urban villages in Zone C have experienced substantial socio-economic changes. **Village Redevelopment Schemes shall be prepared for villages** giving the development control parameters by the concerned local body. **The redevelopment plans shall ensure that the permissibility of mixed-use zoning at property or within the premise level is compatible to the predominant residential areas.**

MPD 2021 suggests the relocation of the existing mandi to the fringes of Delhi and the development of a satellite market at the existing location.	The existing mandi puts a lot of pressure on the existing infrastructure and surrounding areas. Thus, it becomes inevitable to relocate it to outer parts of the city. This would relieve a large chunk of prime land in the city for further development.

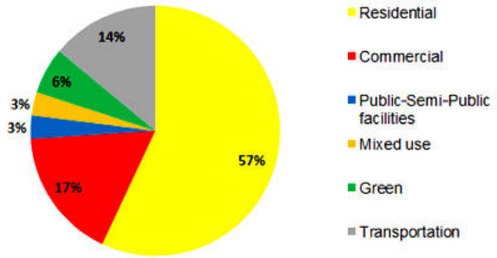
2.1 Land Use



Existing Land Use Plan of the Study Area

In MPD 1962, the Azadpur Mandi was spread over a much smaller portion of the existing land, however in MPD 2001, a bigger consolidated chunk of land was allocated due to the growing requirements.

As per MPD 2021, sub-city level wholesale markets cater to the needs of population at local levels. These markets of medium size need to be dispersed throughout the city to enable even distribution of commodities from these complexes to the retail outlets.

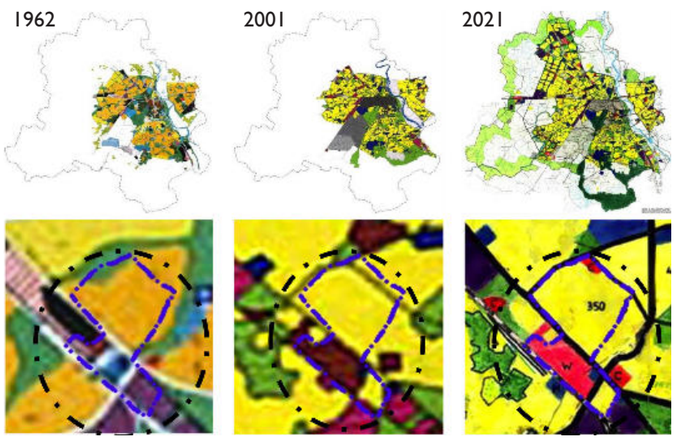


Land Use Distribution of the Study Area

Most of the existing planned markets and warehousing were developed in the early 1970s for specific commodities.

Due to their proximity to residential areas, these markets need to be redeveloped to overcome the environmental and traffic problems.

Also a 36-metre wide road (Arihant Marg) was added to decongest GT Road from heavy traffic caused due to the presence of a wholesale trade market (New Mandi).

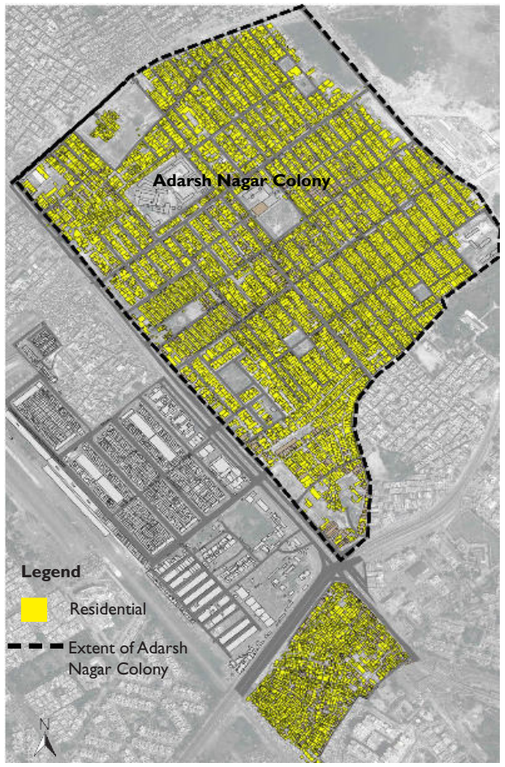


Comparative Analysis of Earlier and Present Master Plans of Delhi

The Land Use Associated Issues in Study Area

Public–Semi-Public is only 3% in the entire study area	The area majorly lacks in institutional facilities like schools, community facilities
Greens accounts for only 6% of the entire study area	Greens are very scarce or completely absent in most of the area, thus reducing the quality of living.

2.2 Residential Character: Adarsh Nagar Colony



Existing Residential Character of Adarsh Nagar Colony

- **Typology** – Unauthorized regularized colony
- **Density** – 200 PPH approximately.
- **Dwelling unit sizes** – ranging from 50 sq m to 250 sq m
- **Heights** – heights vary from G+1 to G+4
- **Ownership** – mostly occupied by owners, but the recent trend suggests increase in rental housing with the onset of builder floors.
- **Condition of the buildings** – most of the houses are in good condition except for the houses that occupy the edges facing the Flying Officer SS Rana Marg

The houses along the secondary roads are mostly G+3 or higher and have a heavy mixed-use character

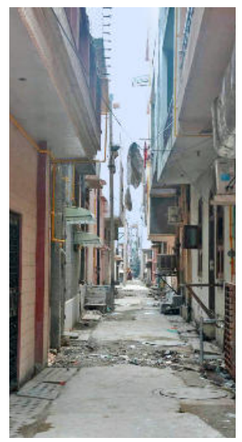
The houses along the tertiary roads are mostly G+2

A typical tertiary street in Adarsh Nagar Colony

Issues Associated with the Residential Character of Adarsh Nagar Colony

Encroachment	The main roads of the colony forming the spines have been transformed into heavy mixed-use development with encroachment up to 2 m on the road.
Plot Amalgamation	New builder plots are coming up in the area by merging plots without following building bylaws, thus creating unsafe structures.

A new G+4 builder constructed residential unit next to a self-constructed smaller unit



Narrow service lane, mostly encroached by overhangs

2.3 Residential Character: Azadpur Village

Existing Residential Character of Azadpur Village

- **Typology** – Urban village
- **Density** – 400 PPH
- **Dwelling unit sizes** – ranging from 25 sq m to 80 sq m
- **Heights** – heights vary from G to G+3
- **Ownership** – mostly occupied by owners.
- **Condition of the buildings** – most of the houses are in a dilapidated condition except for the houses that face the main road and some new constructions.

Residential units along the main Ring Road

The houses along the main roads are mostly G+3 or higher and have a mixed-use character

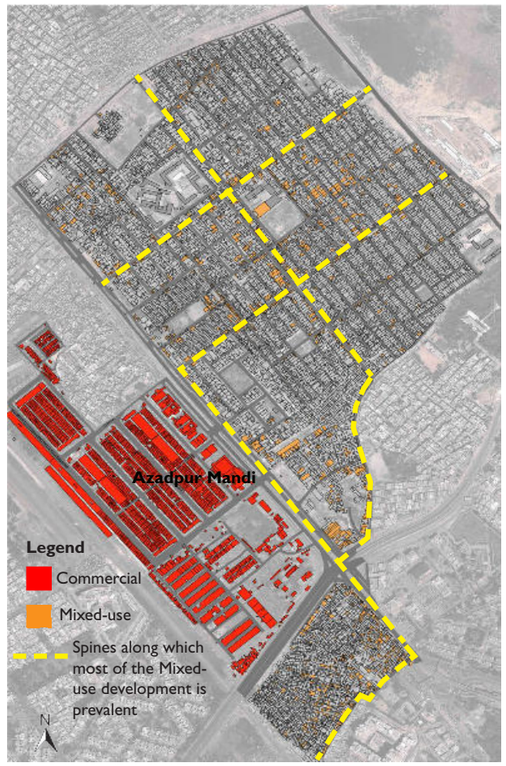
A mixed character is seen along the main road, i.e. local commercial on lower levels and residential on upper levels

Condition of kutcha and pucca houses in a typical street

Issues Associated with the Residential Character of Azadpur Village

Ground Coverage	The existing village has approximately **75% ground coverage** leaving almost no open space.
Density	Due to unplanned development the density is much less than permissible, therefore the **area is not utilized in terms of Dwelling Units Density**.
Quality of Construction	The quality of houses varies considerably in the entire village. The plots facing the railway line are **kutcha houses (G, G+1 structures) in a dilapidated condition.** The bigger plots inside the village are built in old style and have little scope for improvement.

2.4 Commercial Character



Existing Commercial & Mixed-use Character of the Study Area

- **Azadpur Colony and Azadpur Village** predominantly have **mixed-use character** on the ground floors on the secondary roads.
- **Azadpur Mandi** being a **wholesale trade market** (Fruit and Vegetable Mandi) receives a heavy footfall (approximately 1 lakh persons per day).
- A heavy traffic inflow is experienced in this area owing to the movement of goods.

Mixed-use development along Rajan Babu Road in Adarsh Nagar Colony

Small shops coming up on the ground floors of the village on the site edges.

Small-scale mixed-use along outer edges

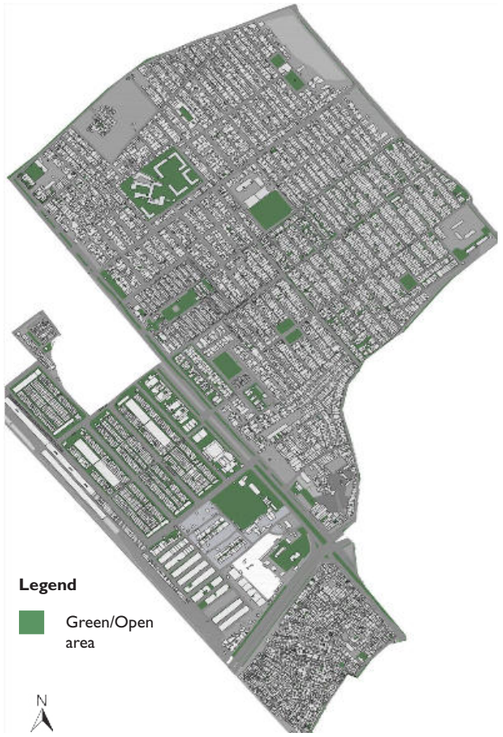
Storage sheds in Azadpur Mandi which have a huge footfall and heavy traffic inflow every day

Issues Associated with the Commercial Character of Study Area

Large-scale Commercial Development (mandi)	Due to extensive urbanization the study area now falls in a prime location in the heart of the city. Thus, this **scale of commercial development (Azadpur Mandi) has put a pressure on the surrounding infrastructure due to the heavy inflow of goods and vehicles** and also the huge footfall witnessed on an everyday basis.
Unorganized Mixed-use Development	The mixed-use development along the primary and secondary roads (primarily in Adarsh Nagar Colony) has gained in size. But there is **no check on the encroachments and traffic inflow, thus leading to congestion and chaos** in the area at peak hours.

2.5 Green/Open Areas

- Few greens and open areas lie scattered in Adarsh Nagar, but these are small in size and often not maintained.
- Azadpur Village is devoid of any green parks/ playgrounds/open areas.
- Even if any vacant land is available it is encroached upon by parking of heavy vehicles.



Existing Institutional Character of the Study Area

Open spaces near institutes in Adarsh Nagar Colony

Encroached chaupal which forms an unorganized meeting space in every village

Any open space available is encroached by parked vehicles, vendors or garbage

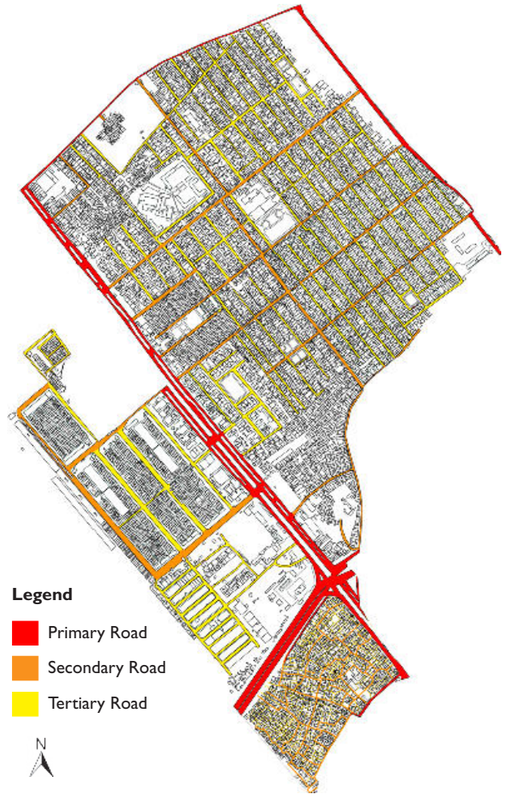
Vacant plot used for parking heavy vehicles.

A marshy swamp has come up along the site edge in Adarsh Nagar Colony as the land was lying vacant

Issues Associated with the Green/ Open spaces of Study Area

Absence of Playgrounds and Parks	Azadpur village has **no open areas for kids to play, residents to socialize** depriving them of the essentials for a good quality of life.
Encroached Open Spaces	Whatever **open spaces are available in the site are encroached** upon by parked vehicles, streetside vendors or dumped garbage, creating breeding grounds for mosquitoes.
Badly - maintainedParks	The **existing parks (in Adarsh Nagar Colony) are not maintained** enough to be used by the residents. These spaces are used for big gatherings (like marriages, functions) and are never cleaned thereafter leaving garbage strewn all around, making them unfit for use.

2.6 Road Typology and Transportation



Existing Road Typology of the Study Area

A typical narrow street in Adarsh Nagar Colony

Issues Associated with the Road Typology of Study Area

Encroachment	The ROW is mostly **encroached upon by on-street parking and encroachments by shops** to about +2 m on the road in form of raised plinths, staircases etc.
No Segregation of Vehicular and Pedestrian Traffic	Secondary roads in Adarsh Nagar Colony are chaotic at peak hours as there are **no segregated lanes for pedestrians/cyclists and motorized vehicles.**

The existing ROW of secondary roads in Adarsh Nagar Colony is 7.5 m with no segregated lanes for pedestrians and vehicles

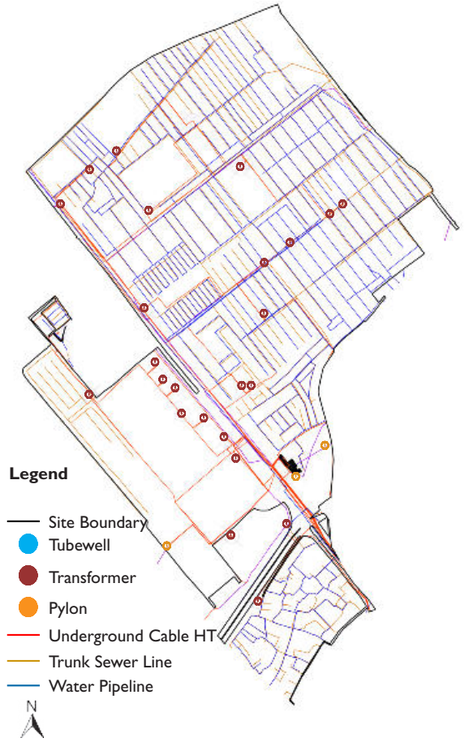
The tertiary roads measure 5.5 m (ROW) with on-street parking due to lack of designated parking spaces

A typical street in Azadpur Village measuring approximately 3.5 m

A narrow, dingy street in Azadpur Village

An internal street with encroachments

2.7 Physical Infrastructure



Existing Physical Infrastructure of the Study Area

Uncovered, broken drains which are poorly maintained

Source of water in Azadpur Village is mostly through piped network. At outer edges (towards railway track) handpumps can be found

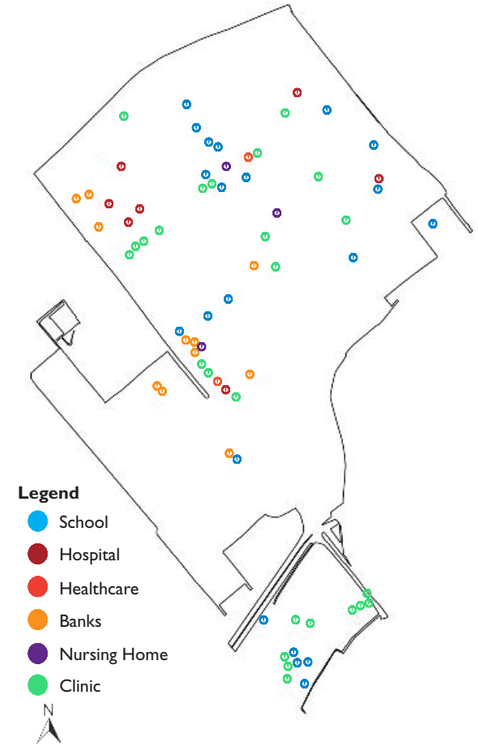
Stormwater drains (where present) are either not operational or are not maintained thus leading to clogged drainage system.

Badly-maintained dhalaos with overspilling garbage

Issues Associated with the Physical Infrastructure of Study Area

Water Supply	Network is available but supply is intermittent.
Drainage	Stormwater drains (where present) are either not operational or are not maintained thus leading to **clogged drainage system.**
Solid-waste Management	Dhalaos have been distributed throughout the colony, but are not maintained leading to unhygienic conditions. In Azadpur Village there is no system of SWM.

2.8 Social Infrastructure



Existing Social Infrastructure of the Study Area

Community centre, Azadpur Village

Issues Associated with the Social Infrastructure of Study area

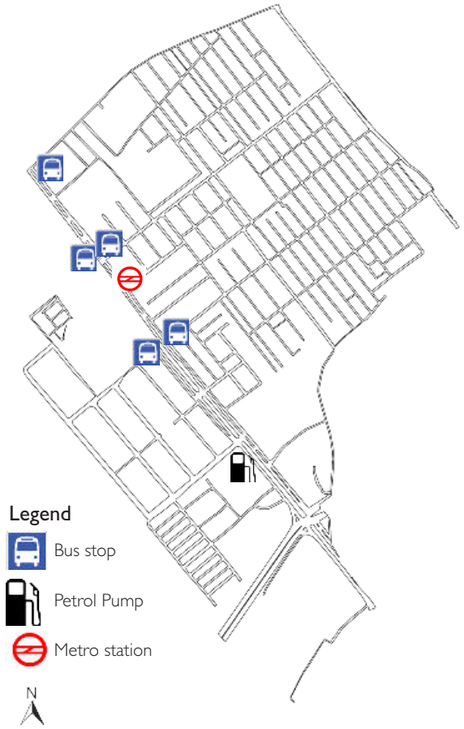
No. of Schools	The number of schools in the site does not cater to the entire population especially in Azadpur Village, therefore the children of Adarsh Nagar Colony and Azadpur Village attend schools in the neighbourhood.
Medical Facilities	The study area has a few polyclinics/ nursing homes within its extent but does not have specialized medical facilities nearby.
Community Facility	The area lacks the required designated community facility spaces like Baraat Ghars, community hall etc., which are required for congregational purposes.

Primary and secondary schools in Adarsh Nagar Colony

Facilities like ATMs, milk booths etc. are well distributed in Adarsh Nagar Colony but need to be located in Azadpur Village

Hospital in nearby Adarsh Nagar Colony

2.9 Public Amenities and Para-Transit modes



Existing Public Amenities (Transportation) of the Study Area

Existing bus stand along GT Road, Adarsh Nagar

Existing bus stand along GT Road, Azadpur Mandi

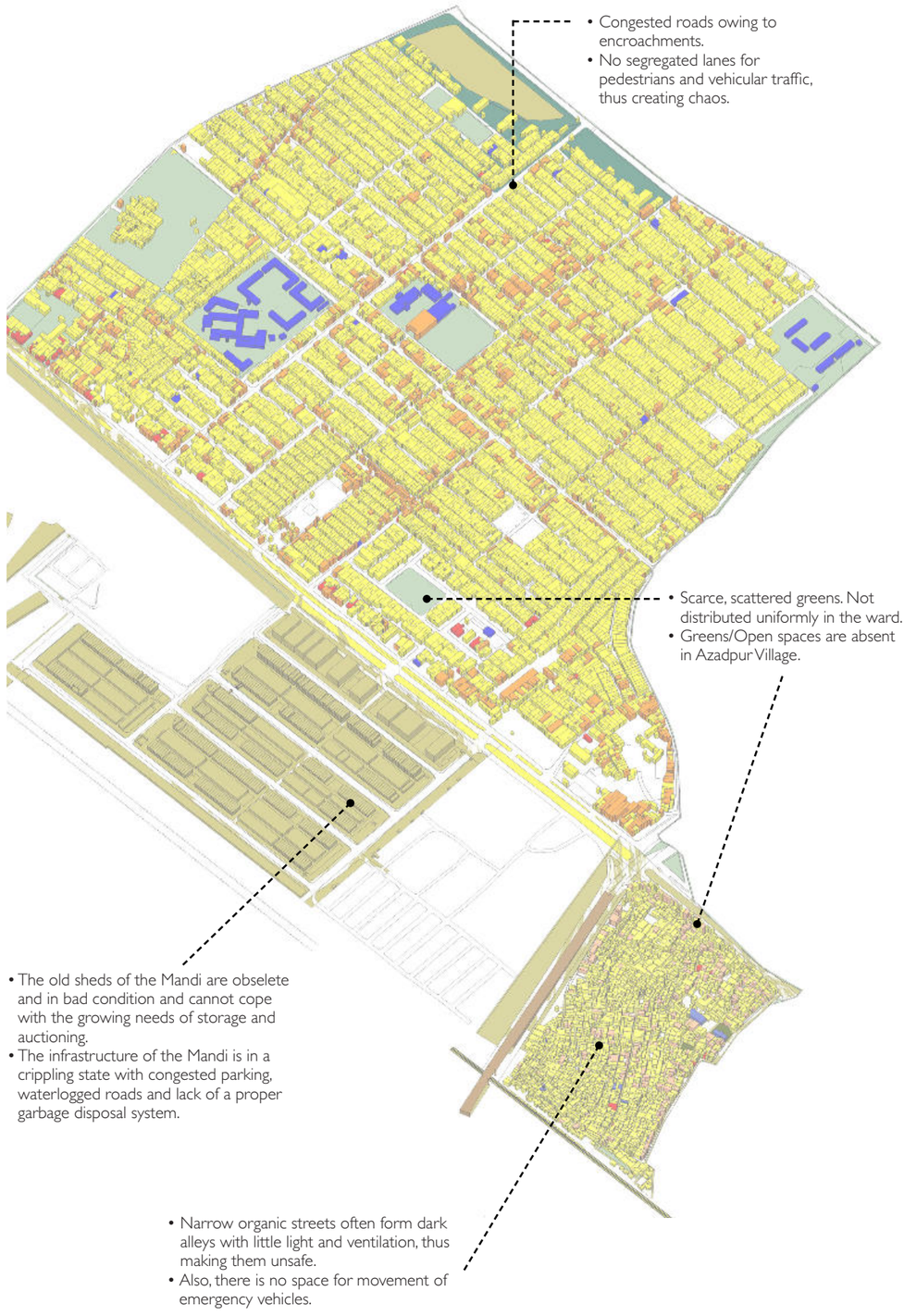
Entry point near Adarsh Nagar Colony. There is no designated bus stand, therefore the entrance to the site is chaotic

Existing petrol pump along GT Road

Existing Para-Transit modes in the area

Issues Associated with the Public Amenities and Para-Transit of Study Area

Bus Stands	• Bus stops in Adarsh Nagar ward are sparsely located and do not cater to all parts of the ward, especially Azadpur Village. • Also wherever they are present they are either in a bad condition or are not accessible easily due to high kerb heights and narrow footpaths.
Para-Transit Modes	Para-Transit Modes ply within the site, these include manual rickshaws, battery operated rickshaws, shared auto rickshaws etc. The area is not well connected by feeder buses to nearest Metro station, thus the residents have to depend upon the above modes of transport or private vehicles.



3.1 Issues (Adarsh Nagar Colony)

Congestion on Rajan Babu Road at peak hours

On-street parking due to absence of parking space within plots

GT Road stretch with no designated space for auto/taxi stand

Transport Network and Street Design

- **Lack of proper Para-Transit modes** (feeder buses) from ward to nearest Metro station like Adarsh Nagar and Jahangirpuri Metro stations.
- **Major roads like Rajan Babu Road** which are heavily pedestrianized as well as experience vehicular traffic are **congested at peak** hours due to lack of **segregated lanes for different modes of transport** and **on-street parking** by local shoppers.
- **Absence of designated auto and taxi stands on GT Road** leading them to queue up in front of bus stands causing chaos and congestion near bus stands.
- Also, the **GT Road stretch does not have designated spaces for public amenities** like public convenience, hawkers etc. which come up on the road specially near the bus stops.
- **Lack of designated parking facility within the plots** resulting in the residents parking their private vehicles on the streets. This leaves no space for proper movement of moving vehicles and pedestrians.

Plots on Rajan Babu Road. They have been amalgamated to form bigger plots with shops on the ground floor

New builder construction coming up

Site edge along Flying Officer SS Rana Marg with small plots

Urban Design

- The plots in the colony are built edge-to-edge. Thus, the **block sizes are too long and difficult to walk by.**
- There is **no façade control** as there are encroachments in the form of overhangs, raised plinths, uneven heights etc.
- A heavy mixed-use development on Rajan Babu Road leads to **encroachments up to +2 m on the road** by shops on ground floors and basements.
- New builder apartments (G+4) structures are coming up in the village. These are unsafe structures which mostly do not follow building bye-laws properly. (i.e. maximum ground coverage with little scope for light and ventilation).

Open spaces wherever left within the site are used for parking, dumping garbage etc.

Green/Open spaces

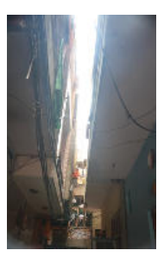
- **Open and green spaces encroached** upon for parking, construction sites, dumping grounds etc., therefore there are no playgrounds/parks for children and the elderly.
- **Swamp is used as a dumping ground for solid-waste** and is a breeding ground for mosquitoes.

3.2 Issues (Azadpur Village)

A typical street with encroachments created by raised plinths, covered drains etc.

Transport Network and Street Design

- **Lack of Para-Transit facilities** to reach to the nearest Metro station (Azadpur).
- **The streets in the village** are maximum 3.5 m-wide, which are mostly **encroached** upon by covered drains, raised plinths etc., leaving just about 3 m-wide road for movement of vehicles and pedestrians. This narrow ROW fails in case of an emergency like fire or any safety hazard.



Streets inside the village have become narrower due to encroachments

Urban Design

- **Dense, non-uniform development** with kutcha structures in some parts of the village which are **unsafe structurally** and pose a hazard to the residents.
- **Encroachments** in form of overhangs and extended balconies end up in **blocking natural light for the streets**, creating dark narrow alleys.

The existing chaupals/nodes in the village

Green/Open spaces

- The village character has **chaupals** where villagers socialize. These spaces in Azadpur Village are not utilized properly as they have been encroached upon by randomly parked vehicles, hawkers or dumped garbage.
- **No open grounds/parks** for children to play or people to socialize in.

Physical Infrastructure

- Dhalaos are distributed throughout the site, but are not maintained properly leading to unhygienic conditions around them.
- Drains are either not operational or are not maintained, leading to clogged drainage system and water-logging.

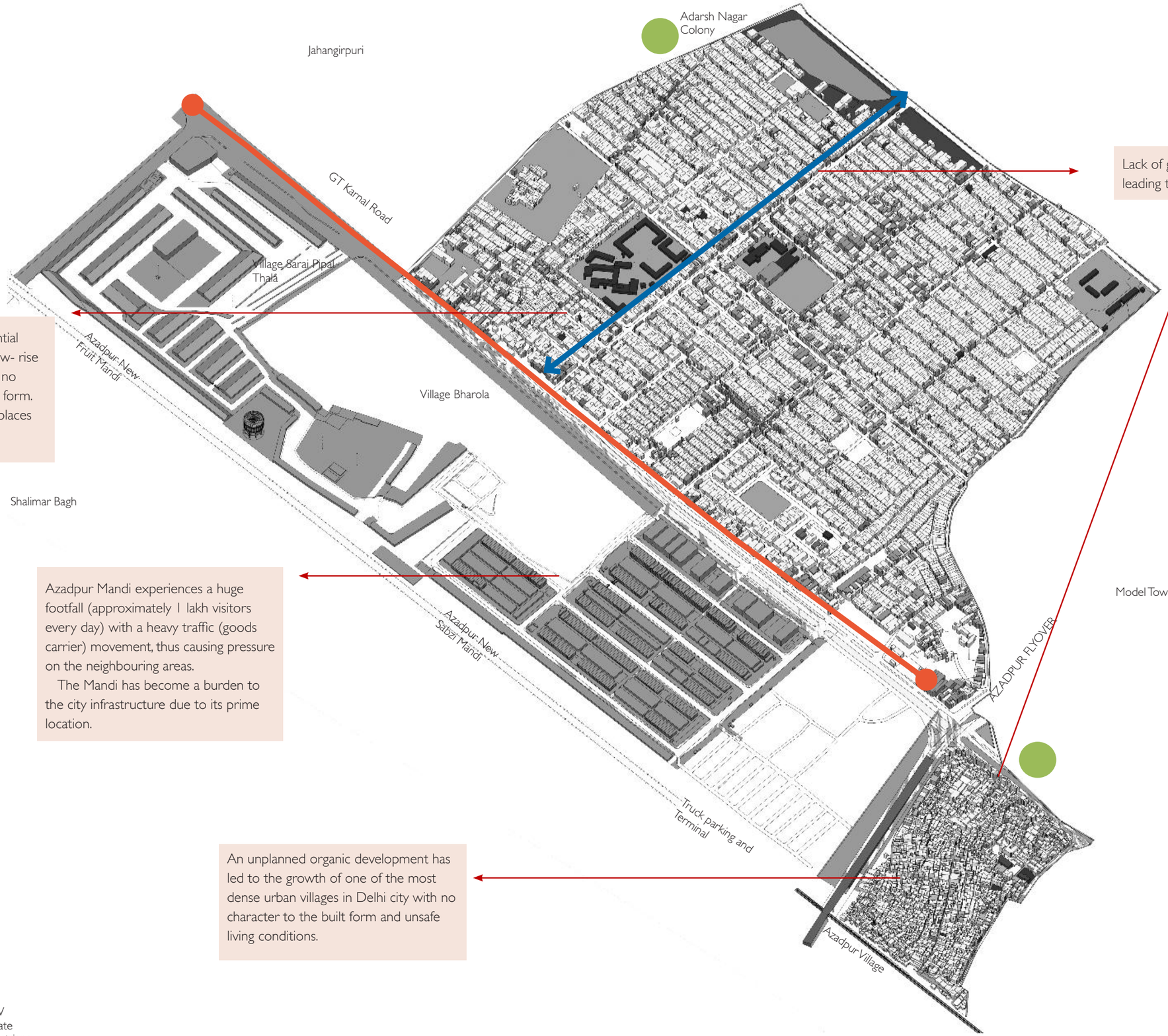
Dhalaos are not maintained properly

Waterlogging in the drains

Social Infrastructure

- Lack of required number of senior secondary schools and Anganwaris in the village
- Only one community centre for a population of approximately 45,000.
- Lack of healthcare facilities inside the village except for some small polyclinics.

3.3 Potentials of the Study Area



The colony is a mix of residential and retail which results in a low- rise mixed-use development with no norms and scale to the urban form. The development is at many places uncontrolled and unsafe.

Lack of green and open spaces leading to a low quality of life.

Azadpur Mandi experiences a huge footfall (approximately 1 lakh visitors every day) with a heavy traffic (goods carrier) movement, thus causing pressure on the neighbouring areas.

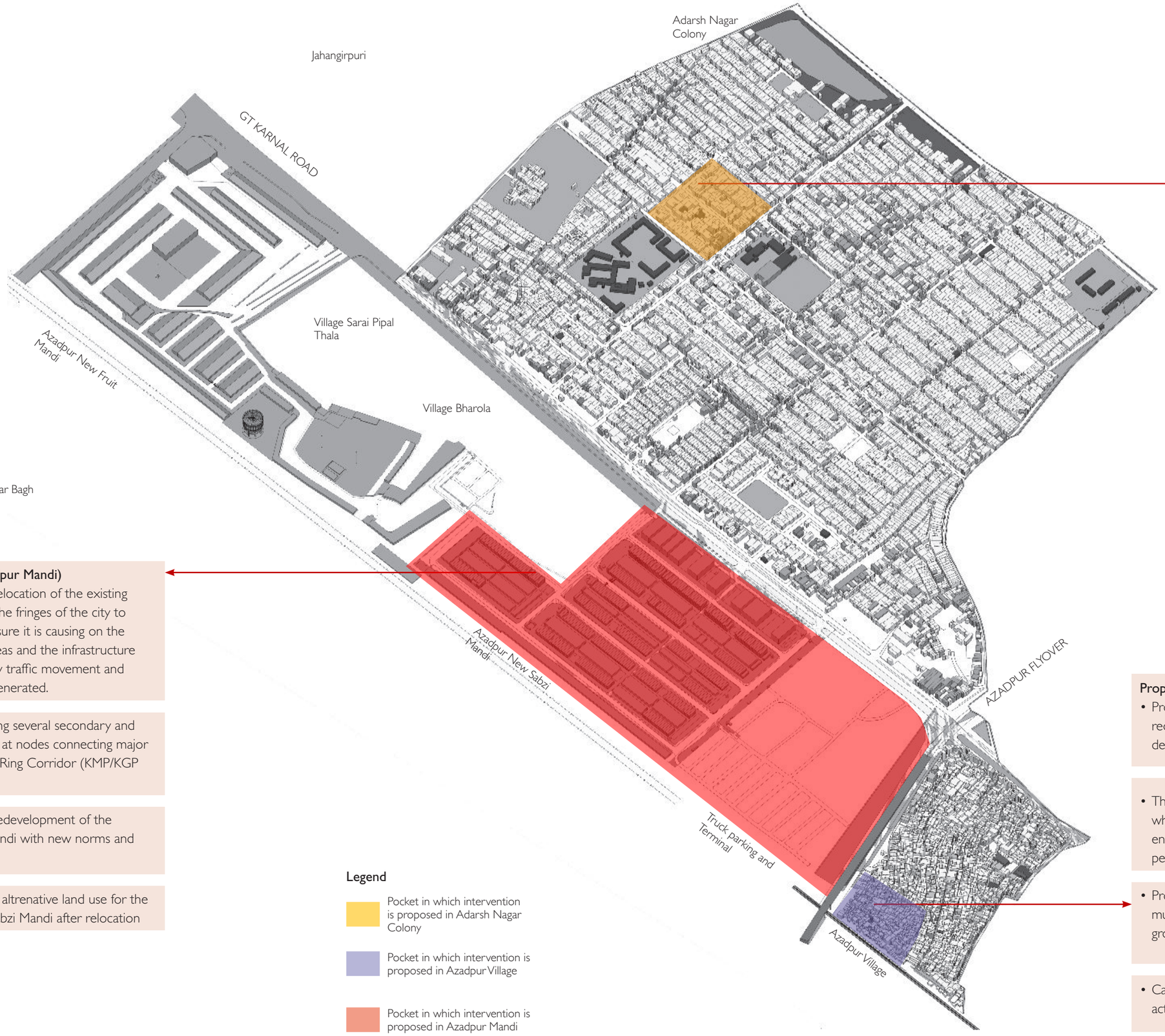
The Mandi has become a burden to the city infrastructure due to its prime location.

An unplanned organic development has led to the growth of one of the most dense urban villages in Delhi city with no character to the built form and unsafe living conditions.

Legend

- Proposed bus stops
- GT Road stretch to be streetscaped
- Rajan Babu Road – ROW enhanced to accommodate different modes, i.e. pedestrians, NMVs and motorists

3.4 Suggested Proposals



Proposal 1: (Adarsh Nagar Colony)

- Suggesting a prototype which could be replicated on the entire site, where a block is redensified and redesigned to accommodate a larger number of dwelling units with mixed-use development on the street front.

- Carving out open spaces, pedestrian-friendly road network and provision for designated parking space.

Proposal 3 : (Azadpur Mandi)

- Suggesting the relocation of the existing Sabzi Mandi to the fringes of the city to reduce the pressure it is causing on the neighbouring areas and the infrastructure due to the heavy traffic movement and massive waste generated.

- Further proposing several secondary and tertiary markets at nodes connecting major highways to the Ring Corridor (KMP/KGP Expressway).

- Suggesting the redevelopment of the existing Fruit Mandi with new norms and requirements.

- Lastly, proposing altrenative land use for the land parcel of Sabzi Mandi after relocation

Proposal 2 : (Azadpur Village)

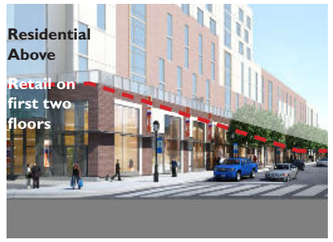
- Proposing redensification and redevelopment of the existing development.

- The road network is kept intact, while the road widths have been enhanced to accommodate pedestrian paths and carriageways.

- Proposing walk-up apartments and multistorey towers with retail on ground floor.

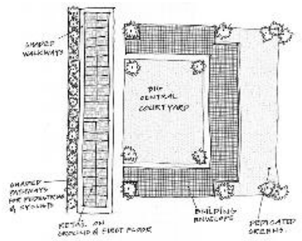
- Carving out green spaces which also act as interlinked pedestrian trails.

3.5 Recommendations (Adarsh Nagar Colony)



Retail on the first two floors with residential on upper floors allows mixed-use development

A covered walkway adds comfort for the shoppers and segregates the pedestrian zone



Proposed concept design for site zoning

Urban Design

- **Redensification of the residential component.**
- Promotes urban form that allows **easy access to adjacent land uses by pedestrians** and **clear visibility of the uses for all passers-by.**
- **Small, compact blocks** allow comfortable walkable distances (5-10 minutes walking) within the site and within blocks.
- Reinforce urban character with a **greater mix of residential and commercial uses.**
- Introducing an organized and defined **mixed-use development** that combines **ground and first floor retail space** with **high density** housing. Also **makes the streets active and safe** ("eyes on the street").
- The **streets define space for urban corridor,** including **covered walkway** to provide shaded sidewalks for passers-by and shoppers.

Street view with various activities and functions

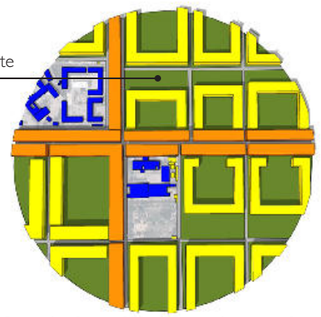
Street Furniture | Pedestrian Zone | Frontage Zone

Street Design

- Efficient circulation by widening of streets and designating tracks for pedestrians and cyclists.
- Proposing Multi-Functional Zone (MFZ) on major roads to create streets which are multi-utility zones and active i.e. "eyes on the street", adding a factor of safety.

Green/Open spaces

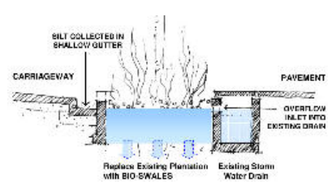
- Create **public open spaces and play areas** to add to the urban fabric and improve social life for the inhabitants.
- A **central green** which could contain a **variety of uses including gardens, seating areas and open lawn** which engage and encourage passive and active uses in a single space.

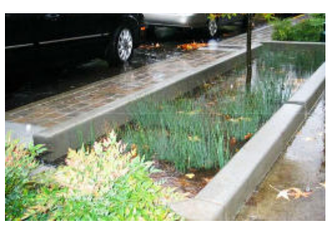


A typical module repeating on the entire site

Parking

- Underground parking for private vehicles to avoid on-street parking.
- Also, it enables a lot of space to open up on the ground which could be used as Green Areas, playgrounds etc., which are currently lacking in the colony.





Bio-Swales along the streets help in proper stormwater run-off

Physical Infrastructure

- Upgradation of existing physical infrastructure including sewerage, drainage and SWM (Solid-waste Management).
- Proposing an organized SWM process in segregated sections (door-to-door collection/proper dhalaos with segregation of waste.

3.6 Recommendations (Azadpur Village)

A model study proposing retaining of the village character by design interventions

Urban Design

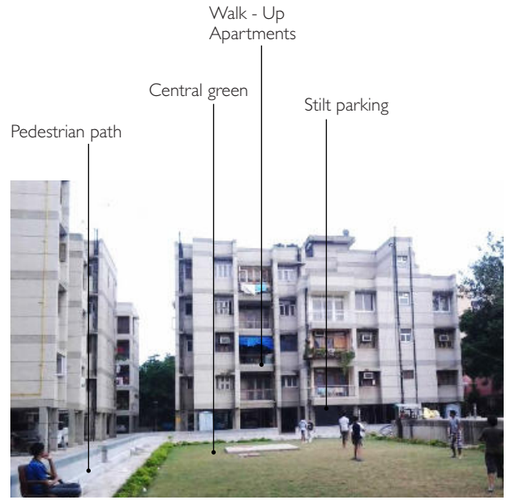
- **Retaining the original character** by proposing an organic development.
- **Proposing walk-up apartments** i.e. low-rise structures that create a pleasant and scaled human environment and maintain the original character of the urban fabric.
- Proposing incentive FAR with multistorey structures in part of the site to increase the viability.
- **Proposing small-scale mixed-use** (retail on ground floor) for local convenient shopping in the stilts at intervals; **active uses create a vibrant, safe environment.**
- Dwelling unit design with a compact development, with multi-utility spaces and areas like kitchen and bathroom opening outwards for good light and ventilation.

Street Design

- Proposing to **keep the existing road intact** to allow the inherent character of the village to be retained.
- **Enhancing the existing road** width to provide clear access to emergency vehicles.
- Chaupals in villages where people mostly socialize **need to be revitalized.** At present **they are mostly encroached** upon due to unplanned developments and lack of other open spaces.

Green/Open spaces

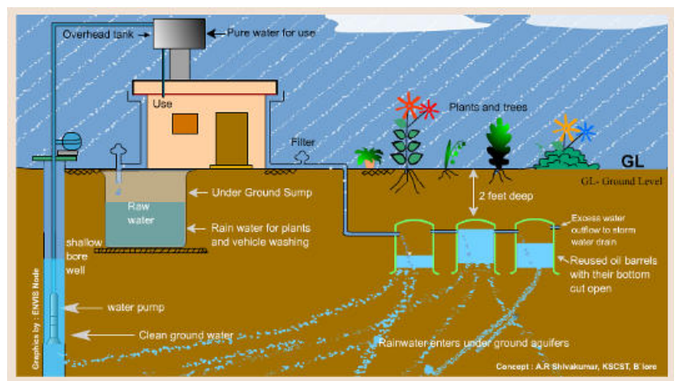
- Proposing to keep the existing road intact to allow the inherent character of the village to be retained.
- Enhancing the existing road width to provide clear access to emergency vehicles.
- Chaupals in villages where people mostly socialize i.e. need to be revitalized. At present they are mostly encroached upon due to unplanned developments and lack of other open spaces.



An example of Live project showing S+4 structures with stilt parking with open green spaces

Parking

- Proposing stilt parking for private vehicles within the site, to avoid on-street parking in the already narrow streets.



An example of sustainability on a site

Physical Infrastructure

- **Upgradation of existing physical infrastructure** including sewerage, drainage and SWM (Solid-waste Management)
- **Proposing an organized SWM process** in segregated sections (door-to-door collection/proper dhalaos with segregation of wastes.
- **Proposing each site to be self-sustainable with services** like rainwater harvesting, sewerage treatment, solar energy harvesting, so that there is a decentralized system of services.

Social Infrastructure

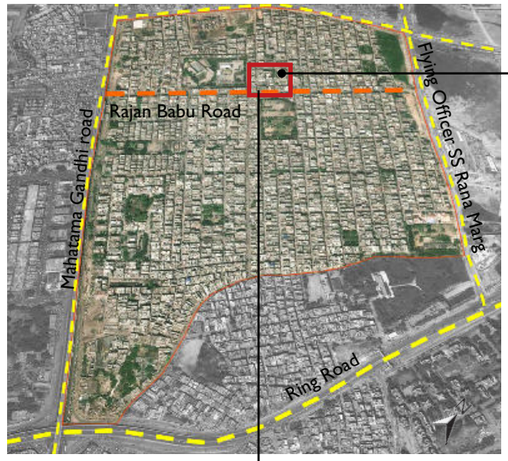
- Earmarking vacant plots that lack facilities (as per MPD 2021) like medical facilities (nursing homes, polyclinics etc.) and public amenities (such as community centres).

ISSUES, POTENTIALS AND RECOMMENDATIONS

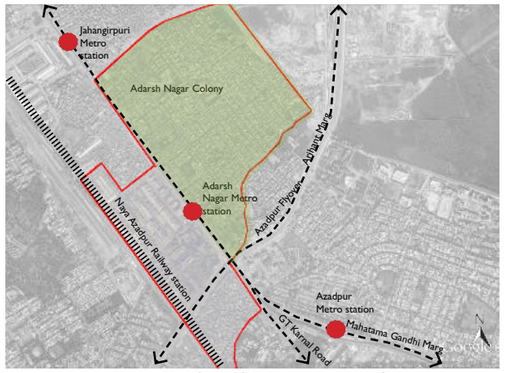
Adarsh Nagar Colony (unauthorized regularized colony)

- Predominantly residential colony with mixed-use development on main roads.
- Small, scattered greens with no regular pattern or linkages.
- No system of a compact neighbourhood, discouraging walkability.
- No segregated grades/footpaths for pedestrians creating chaos on the roads.

4.1 Introduction to the Site and Issues

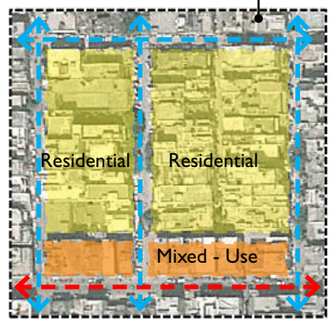


Chosen pocket to be designed as a module highlighted. This could be replicated in the entire site



Key Plan showing Profile of Adarsh Nagar Colony

Profile of Adarsh Nagar Colony



The existing pocket to be designed as a module

Introduction to the Pocket to be Designed

- Most **busy and active street** within the site.
- Main **street which acts as the entry and exit to the site.**
- **Can become an avenue** which can form a part of everyday social life for the users.
- Considering the **uniform layout of the site,** the proposed design **model can be replicated** for other pockets.
- The **pocket also falls under Standard TOD Zone,** i.e. 300-800 m or 10-minutes walking distance of all MRTS stations.

Rajan Babu Road: acting as entry/exit to the site

Existing Issues

- At present the **streets do not have the adequate widths** to sustain the daily heavy traffic volume.
- During peak hours the traffic volume increases substantially and the roads become clogged owing to **on-street parking** and heavy traffic from neighbouring schools and institutions.
- In the **absence of footpaths and dedicated bicycle lanes** there is no segregation between the different modes of transport, which causes safety concerns, especially for pedestrians.

Narrow service lane, mostly encroached upon by overhangs

Tertiary road with on-street parking

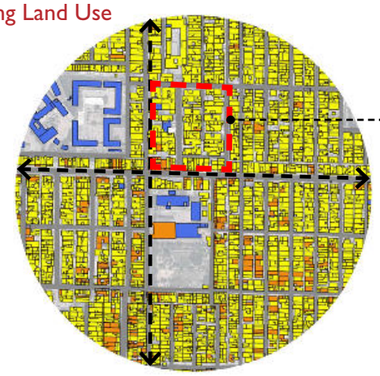
Typical mixed-use development

- A typical façade on a secondary road showing mixed-use development, non-uniform façades and signages.

PROPOSAL 1 - ADARSH NAGAR COLONY

4.2 Concept Design

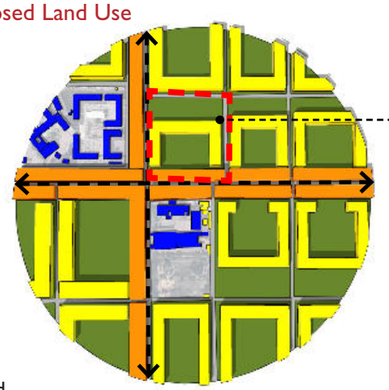
Existing Land Use



Legend

Residential | Mixed-use | Public/Semi-public

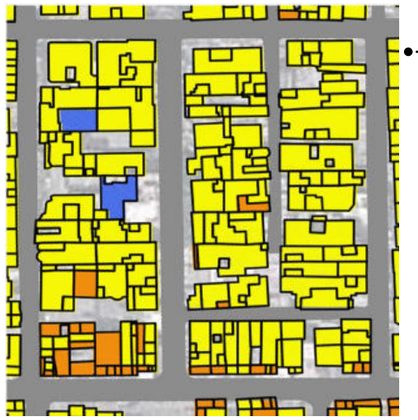
Proposed Land Use



Legend

Residential | Mixed-use | Public/Semi-public | Green/Open space

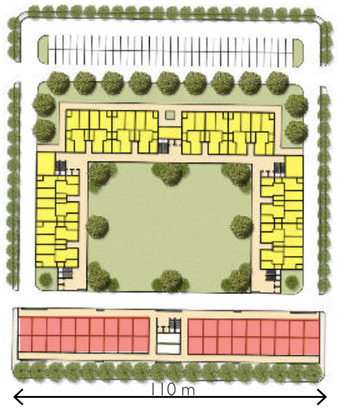
Existing Pocket (chosen site for module)



Legend

Residential | Mixed-use | Public/Semi-public

Proposed Module

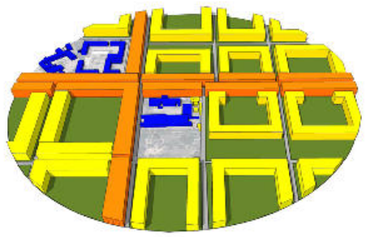


Legend

Residential | Mixed-use | Green/Open spaces

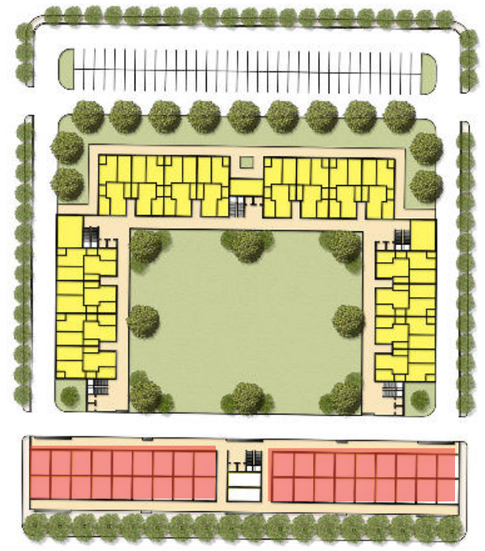
- **Module replication**: allows to maintain a façade control as same blocks would be repeated at regular intervals.
- **Compact development** (approximately m): Small blocks allow easy walkability within the site, compact neighbourhoods.
- **Mixed-use street front**: allow convenient shopping to be located at walkable distances and make the streets active and safe.
- **Common central green and open spaces**: enable the community to interact and socialize via shared spaces.
- **Public/Semi-public facilities**: when decentralized and uniformly distributed enable a larger population to make use of them with lesser vehicular trips.

Existing Development Model



Proposed Development Model

Proposed Module

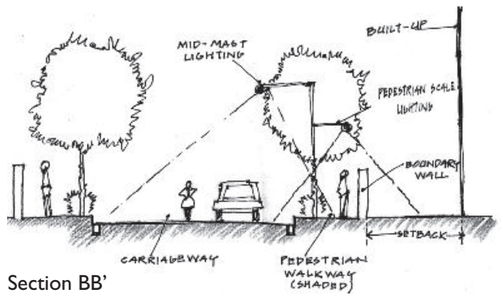


Legend

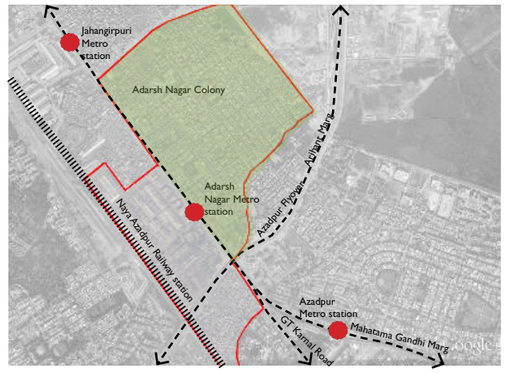
Residential | Mixed-use | Green/Open spaces

- **Design on a Human Scale**

Compact, pedestrian-friendly communities allow residents to walk to shops, services, cultural resources and jobs and can reduce traffic congestion and benefit people's health.



Section BB'



Key Plan showing profile of Adarsh Nagar Colony

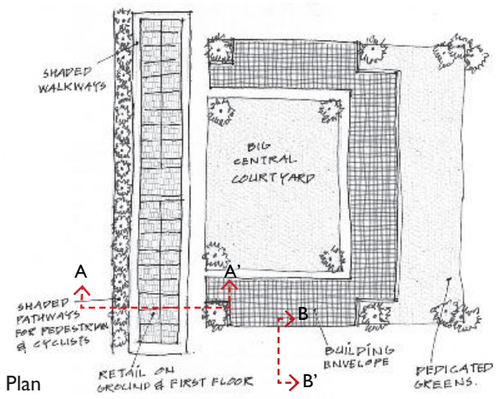
Profile of Adarsh Nagar Colony

- **Land Uses**

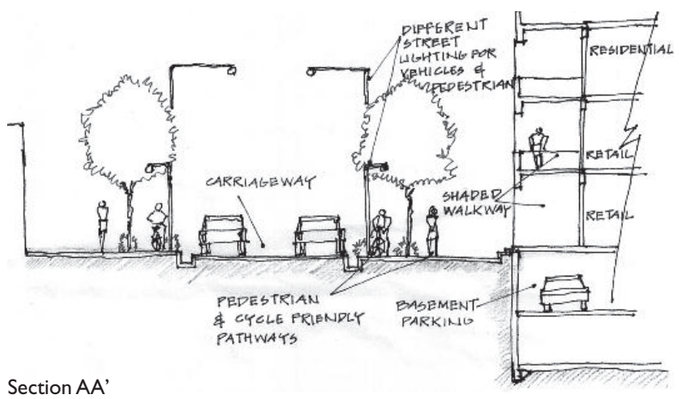
Integrating different land uses and varied building types creates vibrant, pedestrian-friendly, diverse communities.

- **Encourage Mixed-use Development**

Create a mixed-use structure that combines ground and first floor retail space with high density housing, surrounded by a large, shared courtyard.
Construct mixed-use along main streetfront to define space of urban corridor, including covered walkway to provide shaded sidewalks for passers-by and shoppers.



Plan



Section AA'

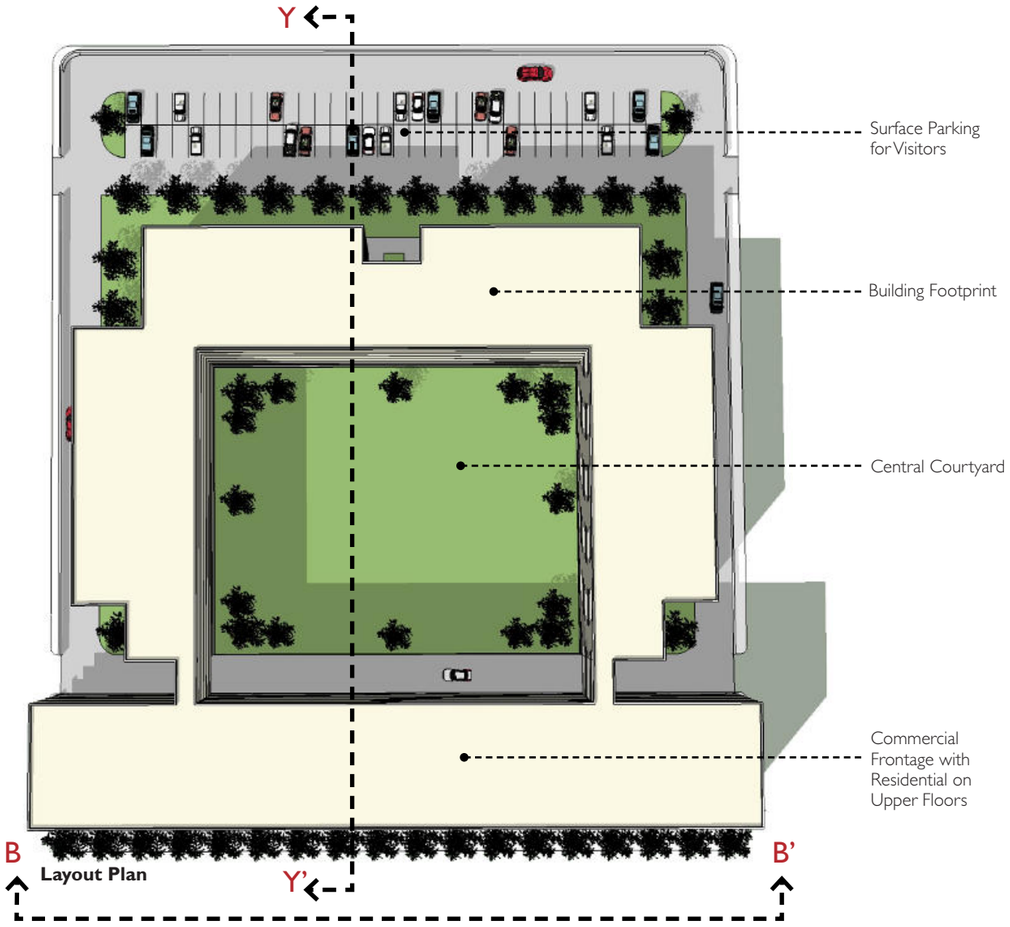
- **Parking**

Locate parking beneath building envelope, i.e. basement with cars to make land on-site available for gardens and courtyards, rather than for surface parking. Also, allows air movement, which helps alleviate the micro climate.

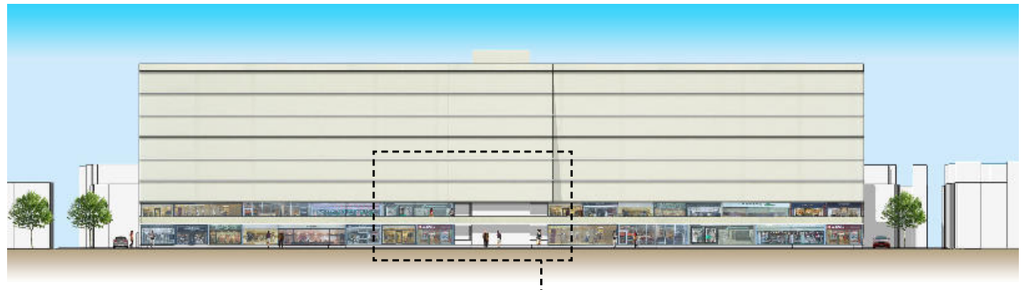
- **Green/Open Spaces**

The central courtyard contains a variety of uses including gardens, seating areas and open lawn which engage and encourage passive and active uses in a single space.

4.3 Design Proposal



Layout Plan



Elevation BB'

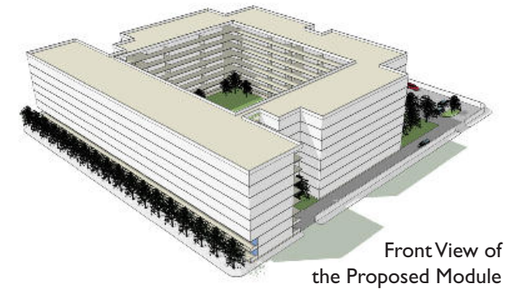
The emphasis is to propose a design which:

- **Reinforces urban character** with a greater mix of residential and commercial uses.
- Promotes urban form that **allows easy access to adjacent land uses by pedestrians** and clear visibility of the uses for all passers-by.
- Develops **sustainable, compact neighbourhoods and centralized commercial areas** that promote a **sense of community, reflect the character of the region, integrate the environment. These are economically mixed, and are pedestrian and transit friendly.**

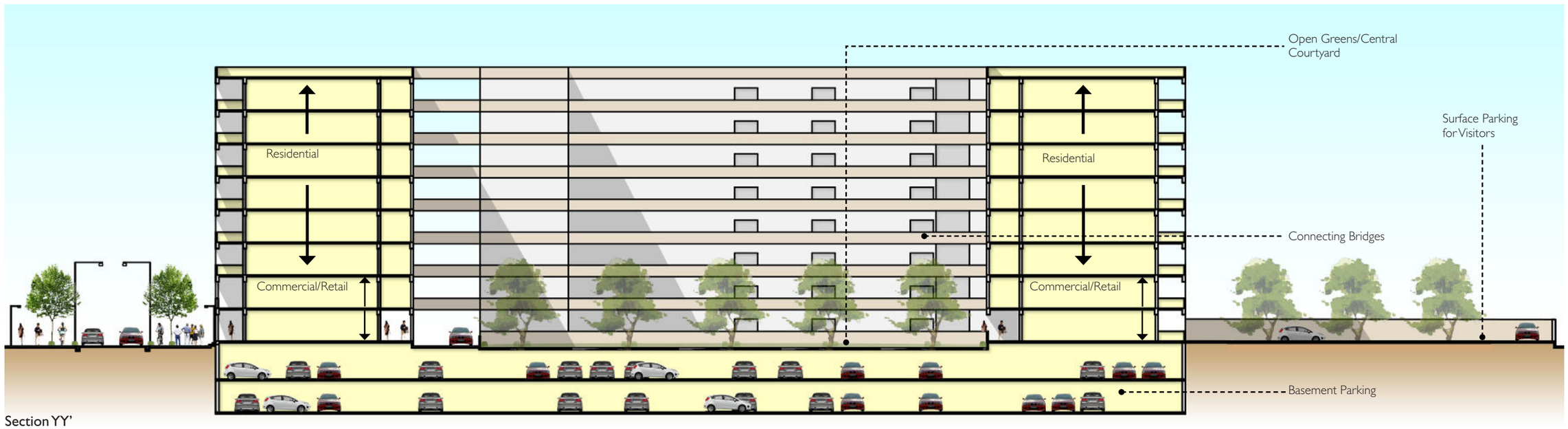
Commercial Frontage with Residential on Upper Floors

Points of Design Intervention

WALKABILITY	OPEN GREENS
MIXED-USE	DESIGNATED PARKING



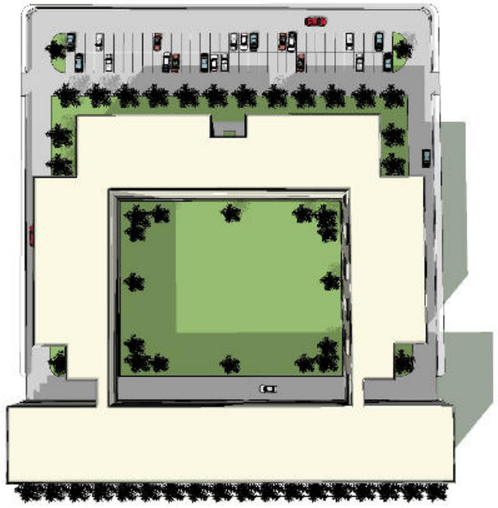
Front View of the Proposed Module



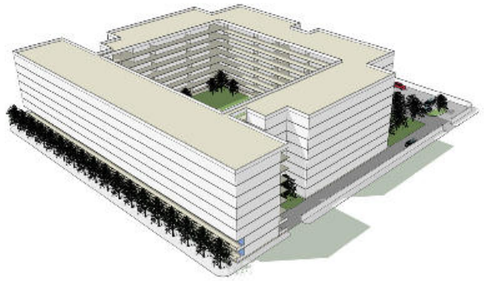
Section YY'

PROPOSAL 1 - ADARSH NAGAR COLONY

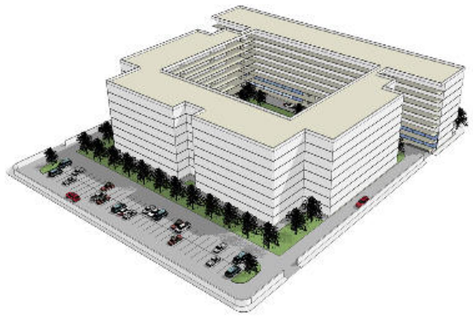
4.4 Comparative Analysis



Layout Plan



Front View of the Proposed Module

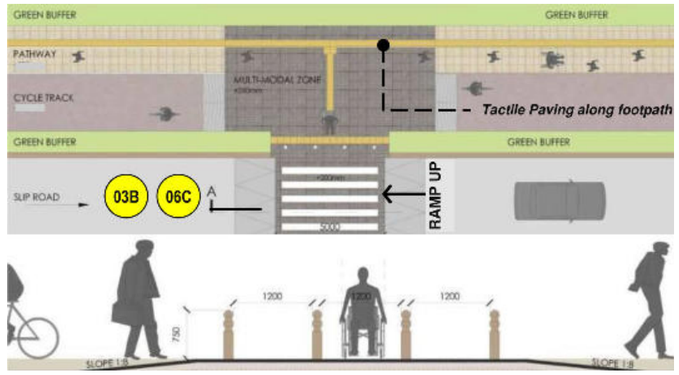


Rear View of the Proposed Module

Description	Existing		Proposed	
	sq m		sq m	
Plot Area	15332.0		13822.0	
Average Built-up Area/Unit	150-200		120.0	
Dwelling Units	138.0		200.0	
Ground Coverage		54%		34%
Total Built-up Area	24150.0		37792.0	
FAR.		1.6		2.7
Open Area Including Roads	8050.0	46%	9098.0	66%
Maximum Heights (m)	12.0		24.0	
No. of floors		G+3		G+7
Area for Commercial Use	2415.0		3780.0	
Car Parking (No.)	482.0		754.0	

Existing	• High density development with no uniformity in height or frontage • No proper setbacks • Lack of light and ventilation • Lack of green/open spaces
Proposed	• Higher number of DUs achieved in the same parcel of land. • Ample light and ventilation. Bigger green/open spaces achieved • Provision for basement parking • Uniformity in heights and frontage (façade control)

4.5 Street Design Elements



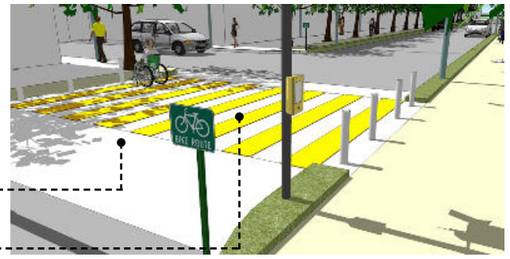
Raised Table Top Crossings (Source : UTTIPEC Guidelines)

Table Top Crossing

- Raised table top crossings bring the level of the roadway to that of the sidewalk, forcing vehicles to slow down before passing over the crossing, and enhancing the crossing by providing a levelled pedestrian path of travel from kerb to kerb.
- Also they increase visibility of pedestrians and physically slow down traffic allowing pedestrians to cross safely.

Table tops enable ease of access to pedestrians, disabled people and cyclists

- Signage that provides information and direction to pedestrians and cyclists are essential for creating a public transport friendly city.



Signage

Pelican Crossing

Signages help pedestrians and cyclists navigate the area i.e. wayfinding

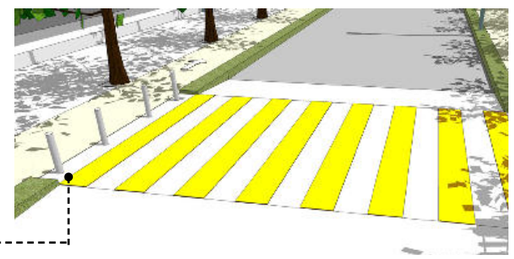
- NMVs are clearly segregated from faster moving motorized traffic by providing different lanes for pedestrians and cycles.

Pedestrian Path

Cycle Lane

Signages for information of pedestrians and cyclists (guiding street flow)

- Protection of NMVs and pedestrians can be ensured by treating the roads with hedges, hedge planting, bollards (which could be designed as expressions for public art).



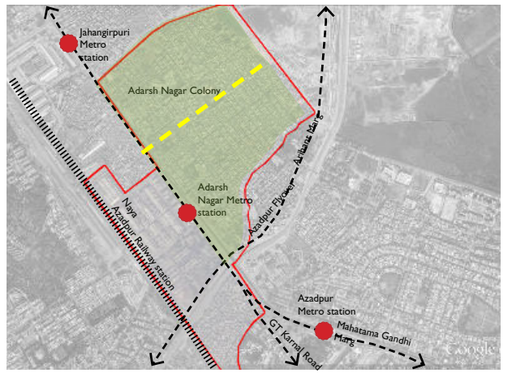
Bollards

Bollards to keep cars from entering "Walk Only Zones" along the edges of the street

4.6 Street Section (Secondary Roads)

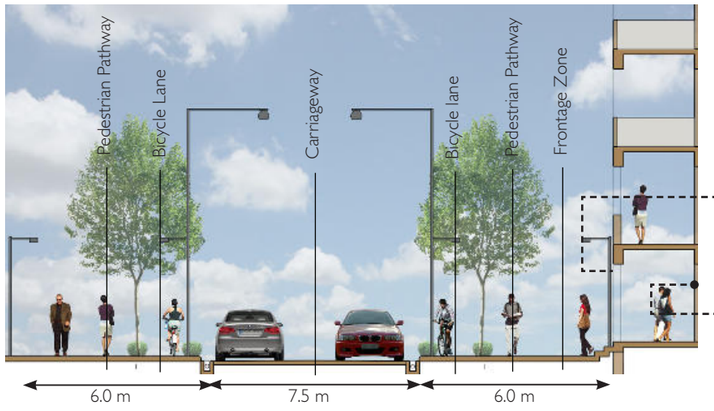
Existing Street View:
Rajan Babu Road

Proposed Street View

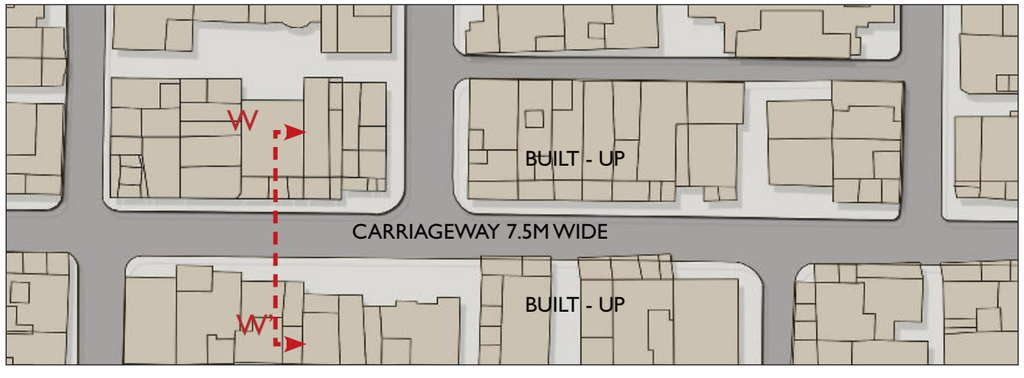


Key Plan showing Profile of Adarsh Nagar Colony

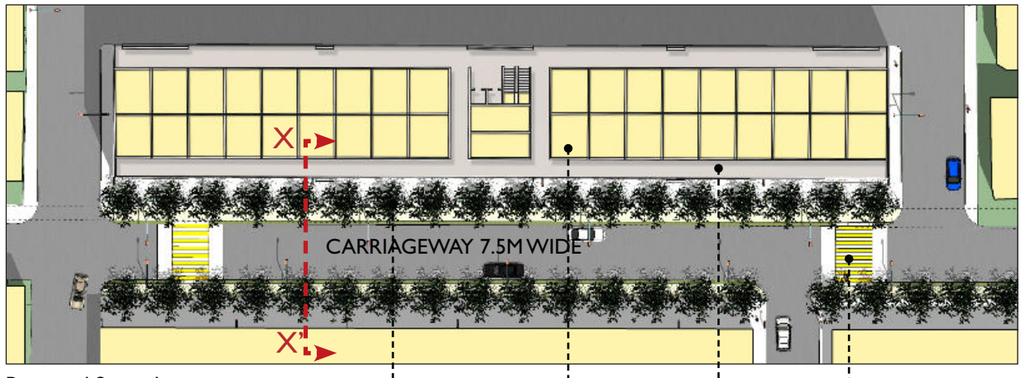
Existing Section WW'



Proposed Section XX'



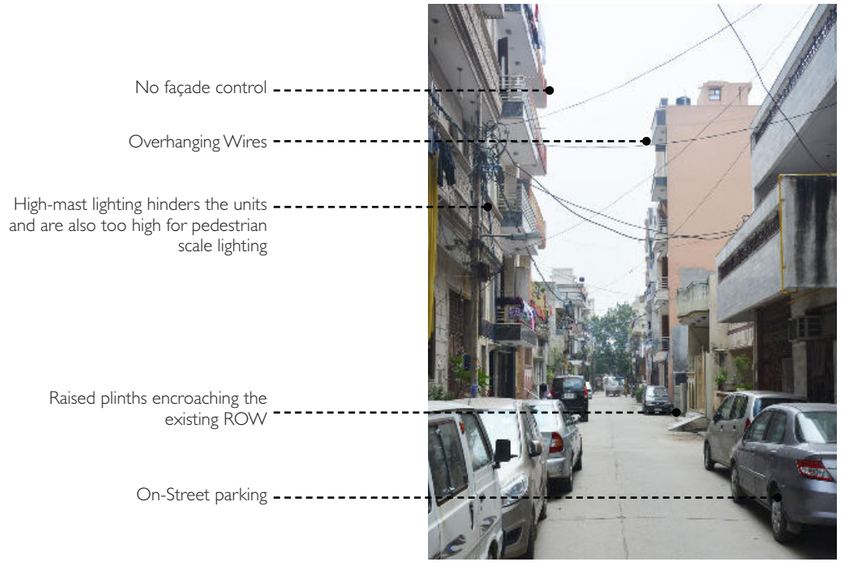
Existing Street Layout



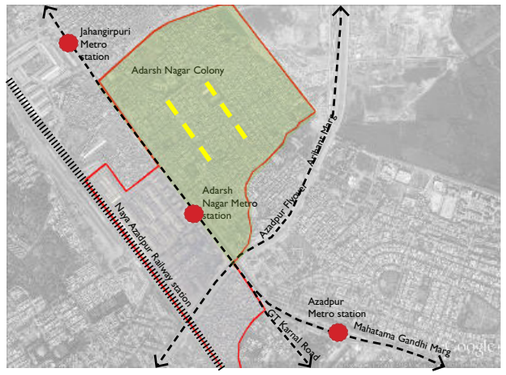
Proposed Street Layout

PROPOSAL 1 - ADARSH NAGAR COLONY

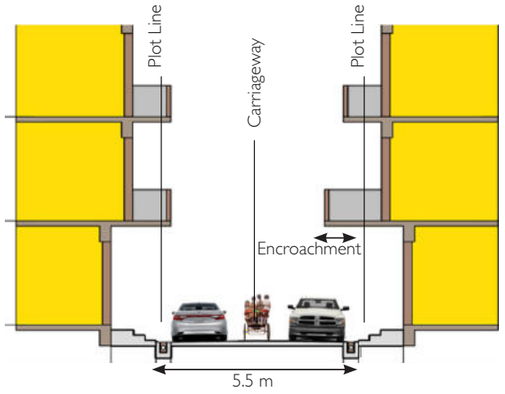
4.7 Street Section (Tertiary Roads)



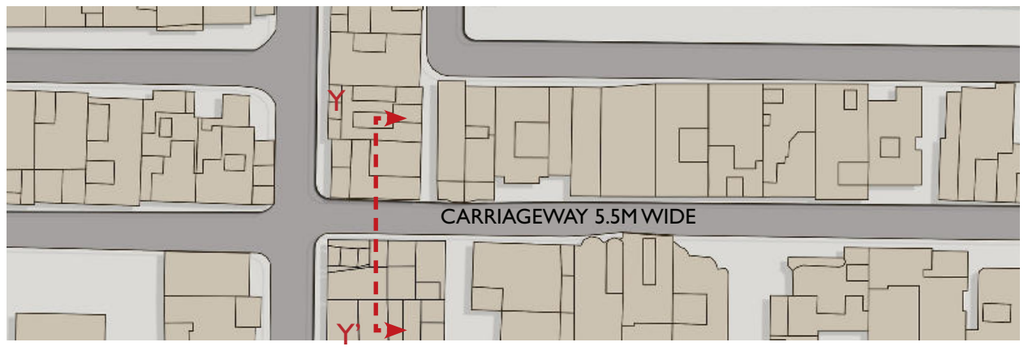
Existing Street View: Tertiary Road



Key Plan showing profile of Adarsh Nagar Colony



Existing Section YY'



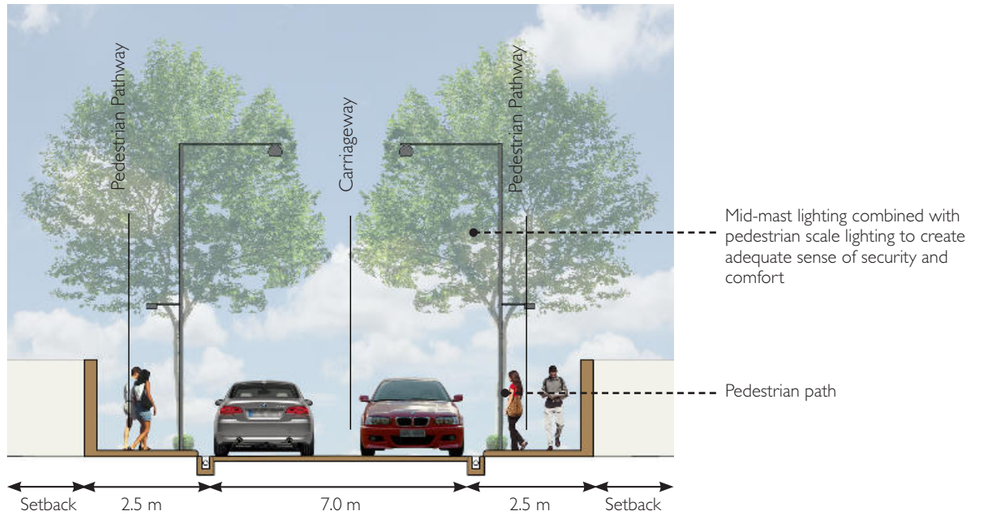
Existing Street Layout

Proposed Street View

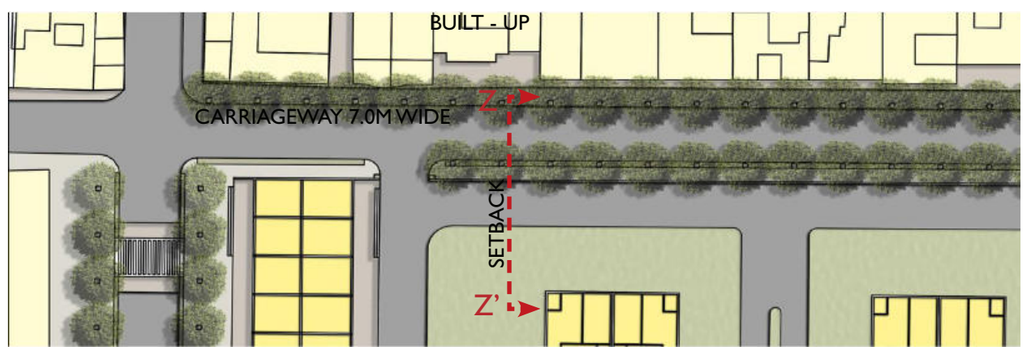
Mid-mast lighting combined with pedestrian scale lighting to create adequate sense of security and comfort

Dedicated pedestrian pathway

Setback between road and built-up



Existing Section ZZ'



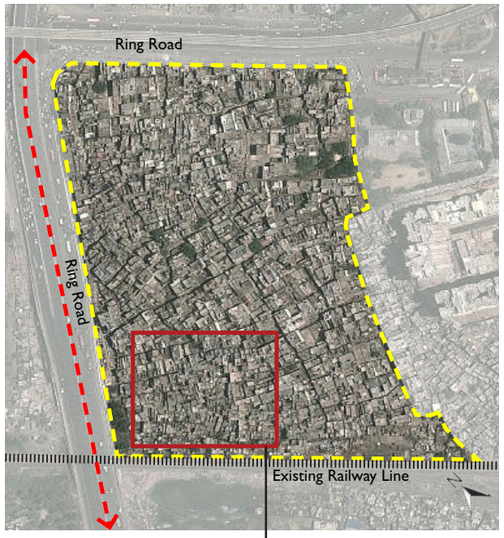
Proposed Street Layout

PROPOSAL 1 - ADARSH NAGAR COLONY

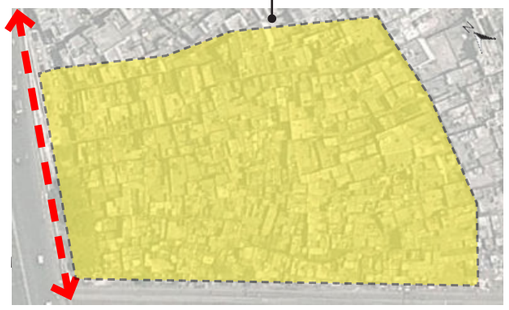
Azadpur Village

- Unplanned organic development with primarily low-rise plotted residential development.
- Narrow street network with improper light and ventilation.
- Major lack of greens and open spaces leading to unhealthy living conditions.
- New unsafe structures coming up with no following of norms.

5.1 Introduction to the Site and Issues

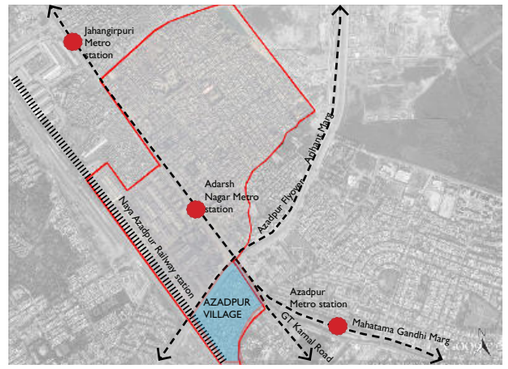


Azadpur Village site boundary with chosen mohalla to be designed highlighted



The existing pocket/mohalla to be redesigned

Narrow lanes with encroachments and overhangs



Profile of Azadpur Village

Key Plan showing profile of Azadpur Village

Introduction to the Pocket to be Designed

- Most **dense and underdeveloped pocket** with slum-like conditions.
- One of the **biggest pockets** of the site which could be replicated as a model.
- The road network in the area is too narrow and congested.
- **New construction with G+4 walk-up apartments is already prevalent** in this pocket which could be re-designed in a planned manner.
- Considering the fact that the site is at a junction, it gives an opportunity to explore the organic and mixed character which forms an inherent part of this village.
- The pocket falls under standard TOD zone, i.e. 300-800 m or 10 minutes walking distance of all MRTS stations.

Existing Issues

- The existing streets are very narrow (approximately 3.5 m) which are often encroached upon by raised plinths, covered drains etc.
- The existing chaupals are mostly used for parking vehicles and dumping garbage instead of social places.
- Builder floors are coming up in the village, but they are not following building norms and are unsafe structures.

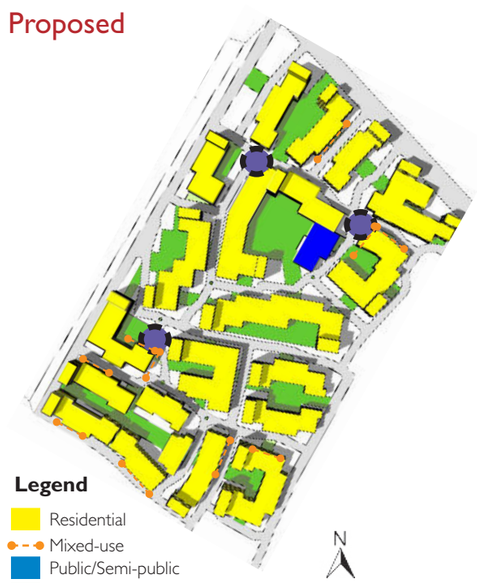
Existing chaupals not utilized for social gatherings but for parking

5.2 Concept Design

Existing

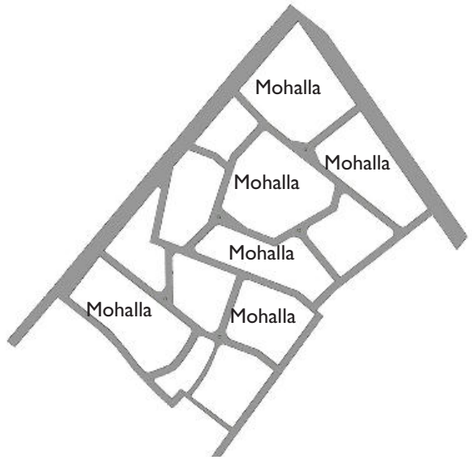
Existing Land Use

Proposed



Proposed Land Use

Existing Road Network



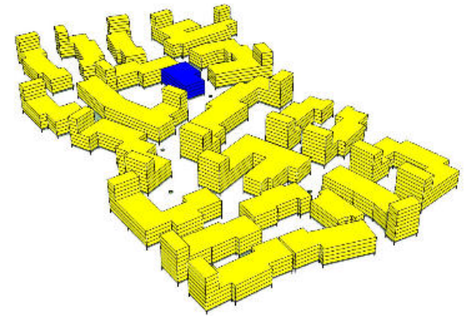
Proposed Road Network

The Existing Situation

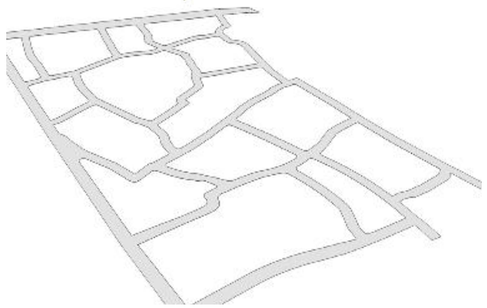
- Organic, haphazard growth, plotted development.
- The **nodes are not defined** and often are encroached upon by parking or vendors, thus no space is left for any public/recreational activities.
- Each pocket is further divided by **narrow, dark lanes** with no proper widths and light and ventilation, thus creating unsafe living conditions.
- **Rampant redevelopment** going on with builders bringing down old houses and raising brand new floors for sale or rental with stilt parking and four floors.

Proposed Design Solution

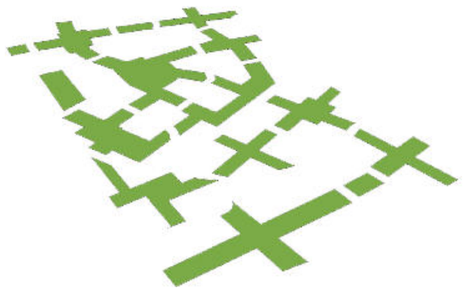
- **Existing pockets to be redefined, treated as a mohalla** where the pocket size varies from 2500 sq m to 10,000 sq m.
- The mohalla pocket holds a certain number of population and serves its basic needs.
- The **nodes to be identified and designed** so that they can be used as small congregation/public spaces, – a typical character of the village.
- The **existing 3.5 m roads are proposed to be widened to 7.5 m** with segregation of vehicular and pedestrian movement.



Built-Up Mass



Road Layout



Network of Greens

Built-up Mass

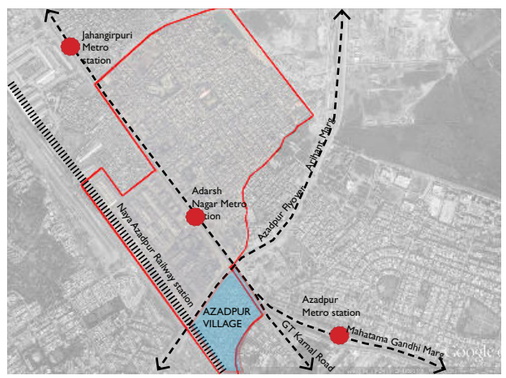
- Phased cluster redevelopment.
- Original organic character of the village is retained.
- S+4 walk-up apartments: Proper massing with the road network creates a pleasant and scaled human environment and maintains the original character of the urban fabric.
- Provision of parking in the stilts to avoid on-road parking.
- Mixed-use: Local shopping in the stilts at intervals, active uses create a vibrant, safe environment.

Road Layout and Network

- Existing road network kept intact. ROW widths have been enhanced to 7.5 m to provide clear access to emergency vehicles.
- Nodes and chaupals enhanced where seating areas and adjoining open/green spaces encourage passive and active uses in a single space

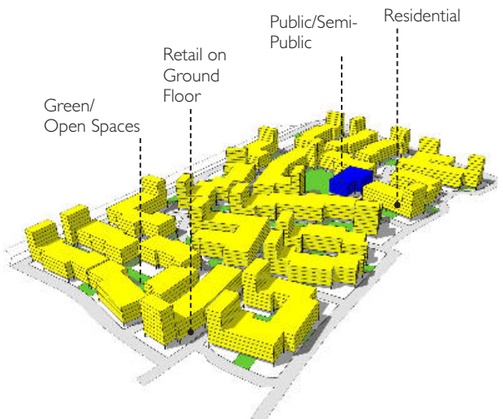
Network of Greens

- Big central greens carved out creating open spaces for recreational activities.
- The greens flow in the stilts, therefore a connectivity is maintained within the blocks.
- Connecting greens to act as pedestrian paths linking a variety of open spaces to enable walkability and allows movement in the site bringing the users to a variety of spaces.



Profile of Azadpur village

Key Plan Showing Profile of Azadpur Village



Conceptual view showing different hierarchy of uses on the site

5.3 Site Layout

Road Network
The site is divided into pockets with the existing road network intact. The road widths are enhanced by a ratio of 2:1 (height:width) to accommodate a broader carriageway and footpaths to streamline the movement of pedestrian and motorized vehicles.

Mixed-use Streets
The outer edges of each pocket could be mixed-use on the stilt floor (at intervals) to accommodate the convenience shopping (already a prevalent trend).

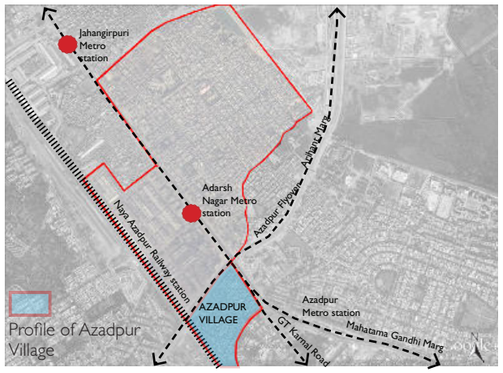
Public/Semi-Public
Pockets are designated to integrate the institutional facilities like primary and secondary schools, anganwari, special schools, nursing homes etc.

Green & Open Spaces
Each pocket would be designed with 'Green Lungs' which also form pedestrian trails connecting each other visually and physically, maintaining a harmony.

Nodes/Chaupals
The nodes and chaupals are redefined by design interventions.

Residential (Multistorey Towers)
Multistorey towers with stilt + 8 floors with 2 bedroom units.

Residential (Walk-Up Apartments)
These pockets would be termed as 'mohallas' which would be redeveloped to accommodate the existing population with the basic facilities at the neighbourhood level.



Key Plan showing profile of Azadpur Village

5.4 Node Design

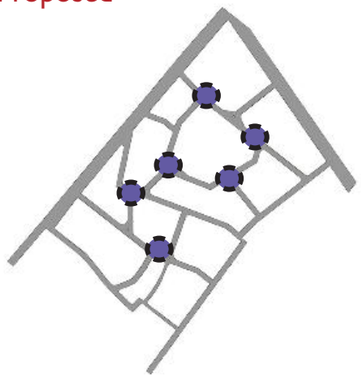
Existing

Existing Road Network with no Defined Nodes/Chaupals

Nodes or chaupals (local terminology) are a community building or space in the rural areas.
The existing chaupals are:
- Not defined spaces.
- Mostly they are encroached upon by vehicles, vendors etc. thus making them unused/redundant spaces.
- Lack any character.

Existing chaupal and nodes are informal spaces for gatherings, but are often encroached upon by cars.

Proposed



Proposed Road Layout with Defined Nodes/Chaupals

The nodes/chaupals are redefined by design interventions to create:
- Small public spaces, an inherent character of villages, which need to be retained.
- These spaces could double up as community spaces by integrating them with institutional areas (which are located at nodes) where different groups like NGOs, local councillors can interact with the villagers and acquaint them on various topics including healthcare.

Proposed Chaupal Views

- Also the space could become a ground where design installations could come up to educate the villagers on relevant topics.

5.5 Design of a Mohalla Pocket

Existing

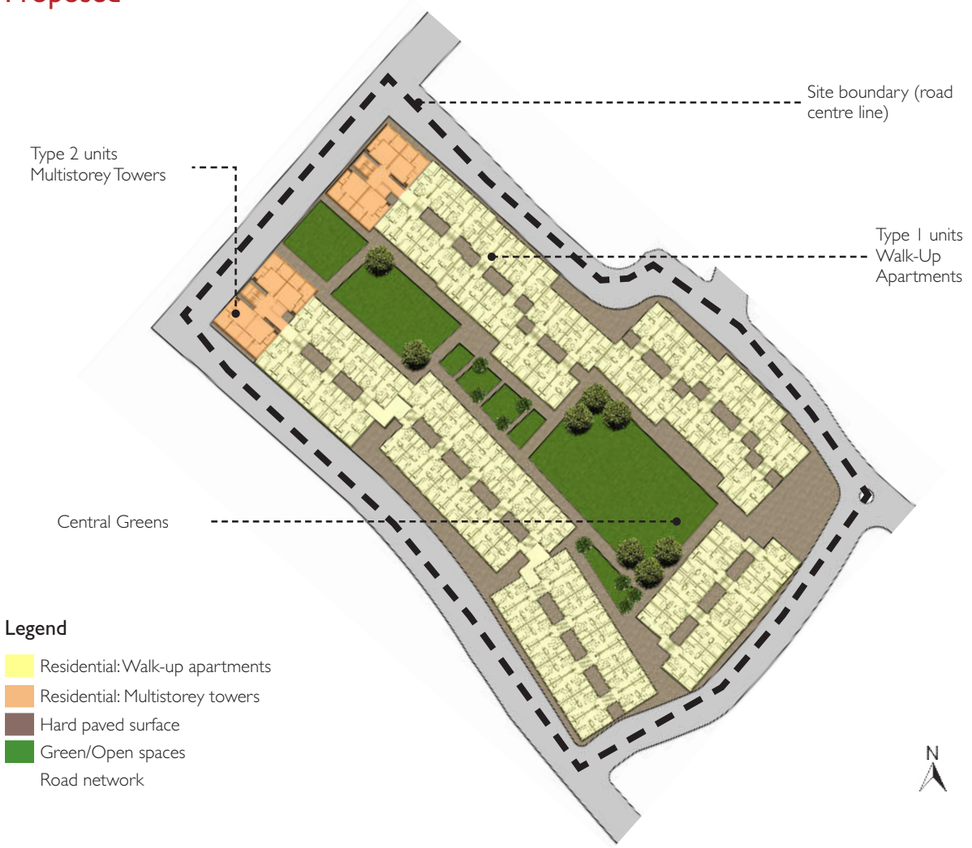
- Azadpur village for many years has had an organic growth of plotted development.
- The plots on the periphery are 3–4 storeys whereas towards the interior, they are 1-3 storeys, thus the average height of the structures is 2.5 storeys.
- There is a rampant redevelopment going on with builders bringing down old houses and raising brand new floors for sale or rental with stilt parking and four floors.
- The street widths range from 1-3 metres.
- There are no green/open areas in the pocket, thus leaving the residents with no space for recreation and socializing.
- Due to unplanned development the physical infrastructure is not properly available or in working condition.

Key Plan showing chosen mohalla pocket highlighted on-site

Organic, haphazard development with unsafe structures

New builder floors coming up in the village

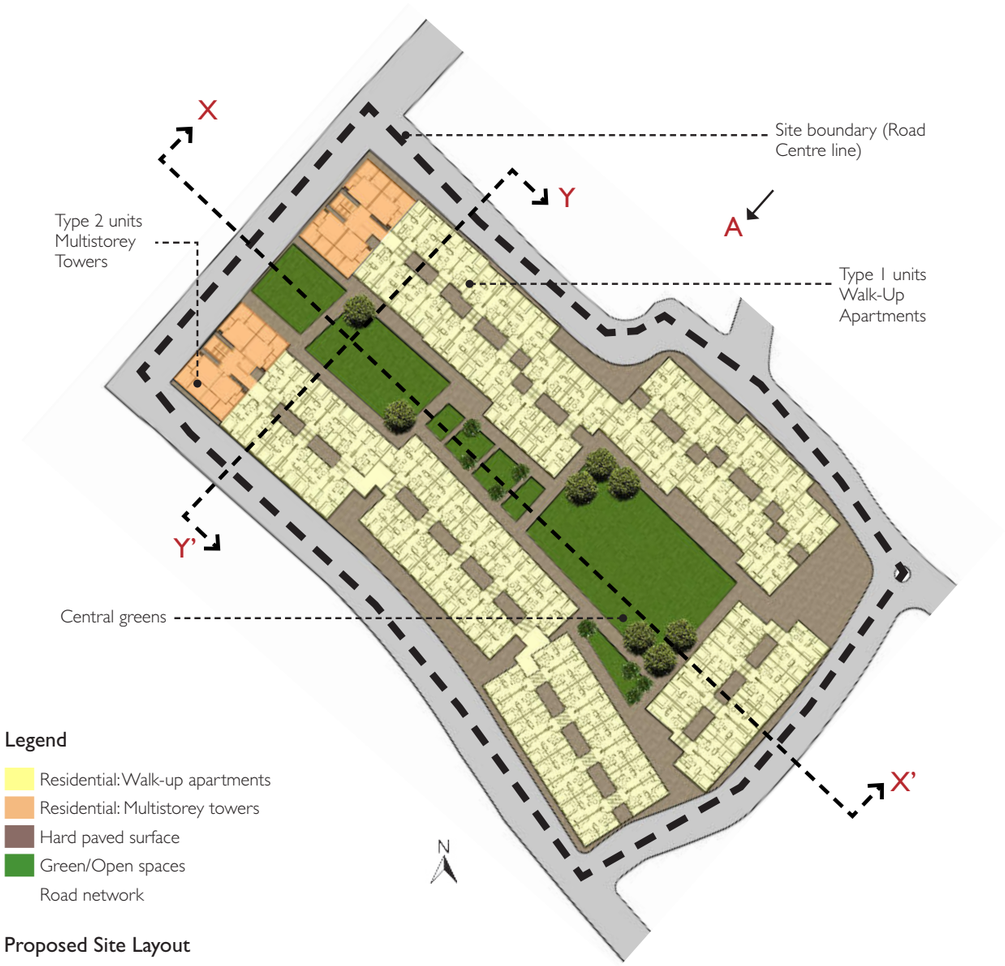
Proposed



Comparative analysis showing the existing and proposed area distribution of residential component

Distribution of residential component: Walk-up apartments					Additional FAR incentivized for a viable development model – Multistorey towers	
Description	Existing		Proposed		Description	Proposed
	sq m	ha	sq m	ha		(sq m)
Total Site Area	9985	0.999	9985.00	0.999	Dwelling Unit Area (carpet area)	45.00
Dwelling Unit Area (carpet area)	45		38.00		No. of DUs in one block	34.00
No. of DUs in one block			18.00		No. of Floors	8.00
No. of blocks			27.00		No. of Blocks	2.00
Area of a typical floor			152.00		Area of a Typical Floor	210.00
Ground Coverage	7488.75		4104.00		Ground Coverage	420.00
Ground Coverage (%)	75		41.10		Ground Coverage (%)	45.31
No. of Dwelling Units	416.04		486.00		No. of Additional Dwelling Units	68.00
No. of Floors	2.5		4.00		Additional Built-up Area	3485.00
Built-up Area	18721.875		18621.00		Total Built-up Area	22106.00
FAR	1.875		1.86		FAR	2.21
Density (DU/ha)		416.66		486.730	Density (DU/ha)	554.83

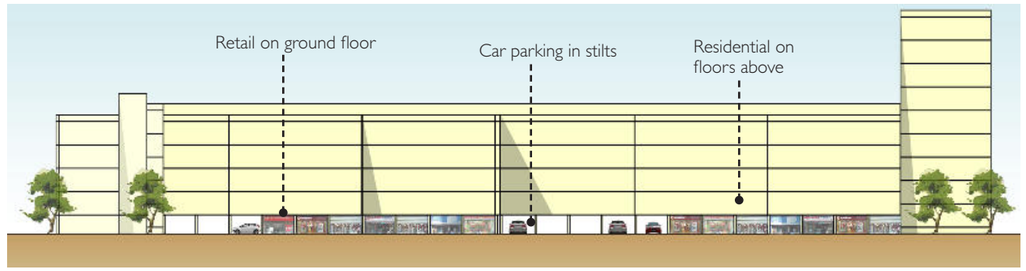
5.6 Layout Plan



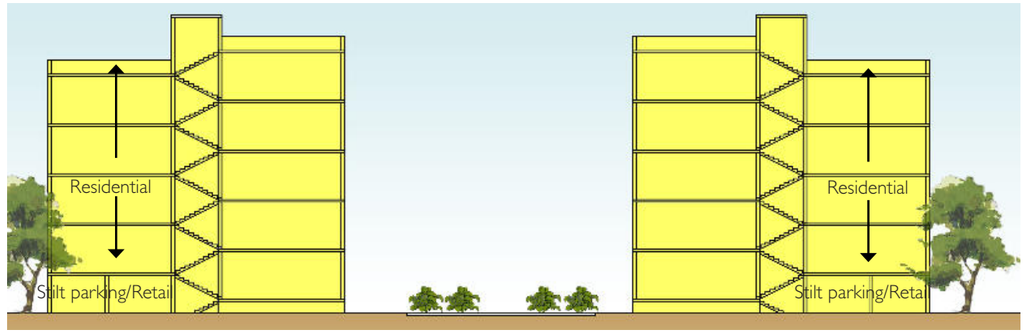
Legend

- Residential: Walk-up apartments
- Residential: Multistorey towers
- Hard paved surface
- Green/Open spaces
- Road network

Proposed Site Layout



Proposed Elevation A (facing the road)



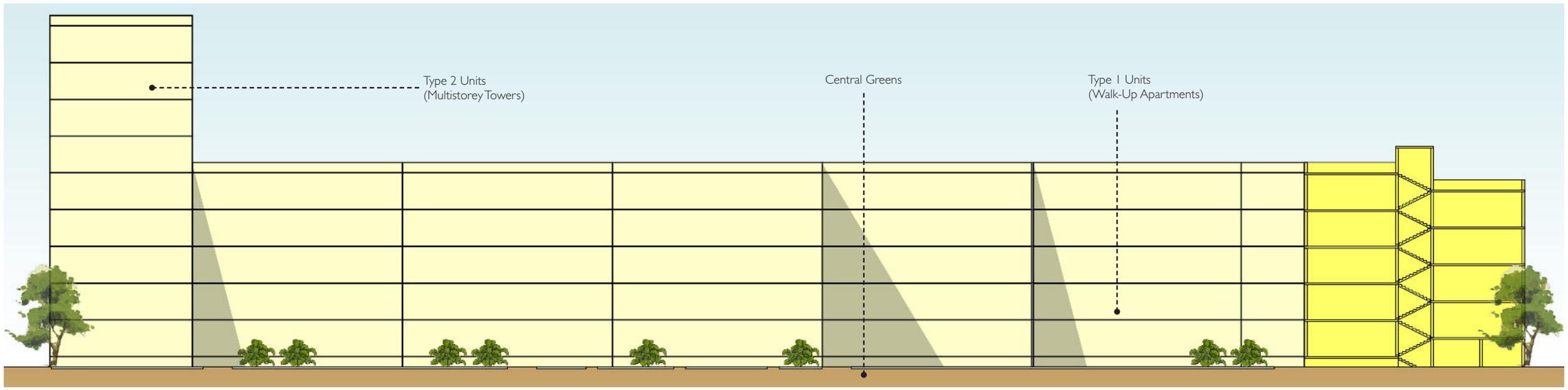
Proposed Section YY'

Redeveloping the mohalla pocket with 170 sq m plots (approximately 203 sq yard) accommodating a central green and open area with defined nodes and chaupals.

→ The site boundary is taken from the centre line of the existing road network.

→ The site measuring approximately 0.99 ha accommodates 27 walk-up apartment blocks and 2 multistorey towers achieving a density of approximately 554 DU/ha.

→ The existing big plot owners can be compensated with the whole plot, i.e. 170 sq m. Further, the small plot owners can be compensated with floors depending on their ownership.

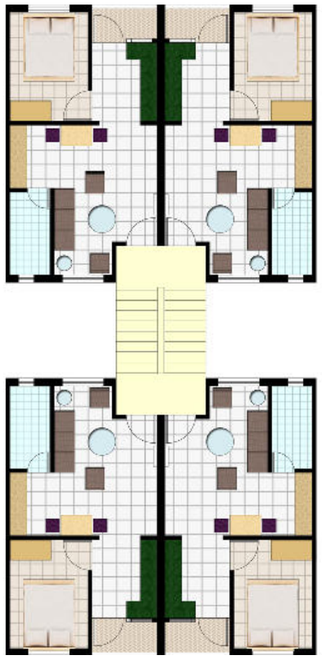


Proposed Section XX' (facing the central greens)

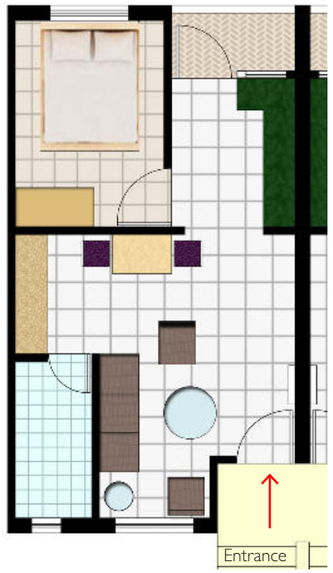
PROPOSAL 2 - AZADPUR VILLAGE

5.7 Dwelling Unit layouts

Type I Units (Walk-Up Apartments)



Typical Cluster Plan



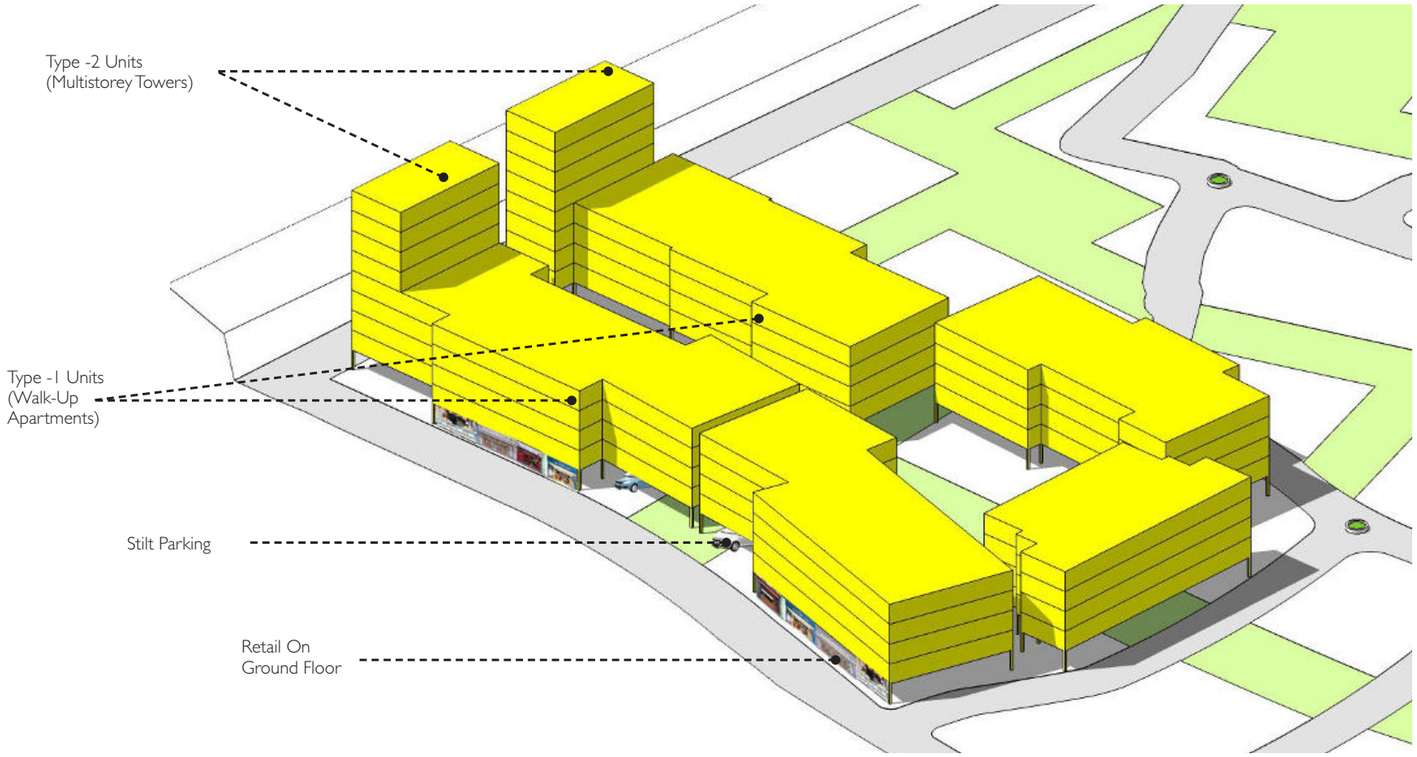
Typical Dwelling Unit Plan

Unit type -1	
Description	Unit (sq m)
Carpet Area	29.5
Plinth Area	35
Super Area	40.25
No. of floors	S+4

- Walk-up apartments with stilt parking and retail on ground floor.
- 1 bedroom units, 4 to a core, with outer facing kitchens and bathrooms.
- Each floor is accessed by a common staircase.

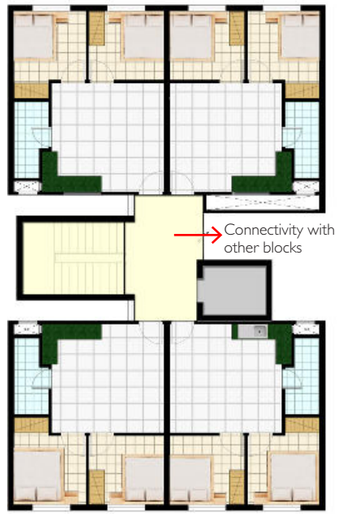
Different typologies of Dwelling units to achieve the following :

- **Walk–up apartments** with stilt parking and retail on ground floor to retain the existing mixed-use character.
- **Low-rise structures** reduce the cost yet accommodate the facilities in a compact form with carved open and green spaces.
- **Additional 2 towers** with S+8 floors facing the main road, which form a part of incentive/additional FAR.
- Locating the **multistorey towers on the main roads** to achieve maximum viability.

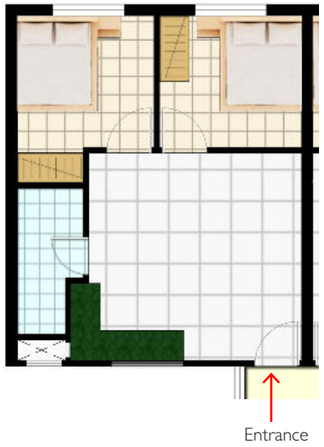


Volumetric View of the chosen Mohalla pocket

Type II Units (Multistorey Towers)



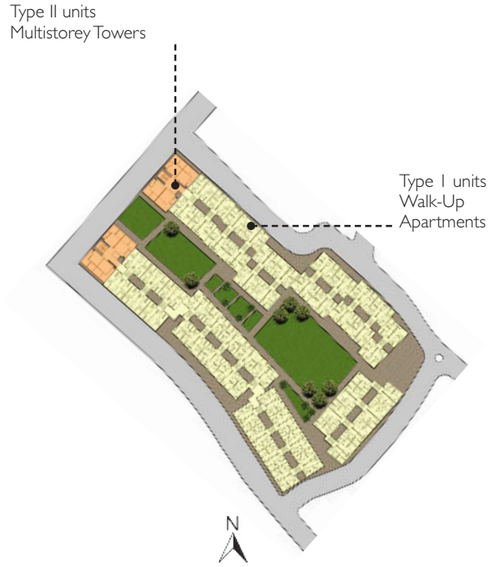
Typical Cluster Plan



Typical Dwelling Unit Plan

Unit type II	
Description	Unit (sq m)
Carpet Area	40
Plinth Area	44.2
Super Area	50.83
No. of floors	S+8

- Multistorey towers with stilt + 8 floors.
- 2 bedroom units, 4 to a core, with outer facing bathrooms.
- Each floor is accessed by a common staircase and lift.
- The first 4 floors are connected with walk-up apartment units.



Key Plan showing Site Layout

5.8 Sustainability Model for Mohallas

The sixteen flats co-own the plot so that they maintain and take care of their property with a common pool.

- **Treatment of Grey Water for Reuse**: The water from each one is **segregated in grey and black water.**
- **Grey water** is taken through **secondary treatment methods** and **reused for rain harvesting or horticulture.**
- Black water is also treated through primary methods to generate compost etc.

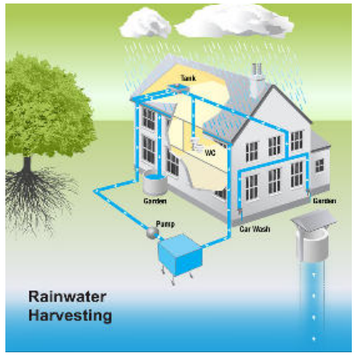
This maintains the recharge of the groundwater table.

- **Recharge of Groundwater/Aquifer**: The **ground water can also be used with the help of booster or submersible** to add to the MCD supply.
- **Solar Energy Harvesting**: The **roofs** of the developed structures can be preplanned to **install solar panels** so that sufficient energy can be generated which can be used within the mohalla or connected to the common grid.

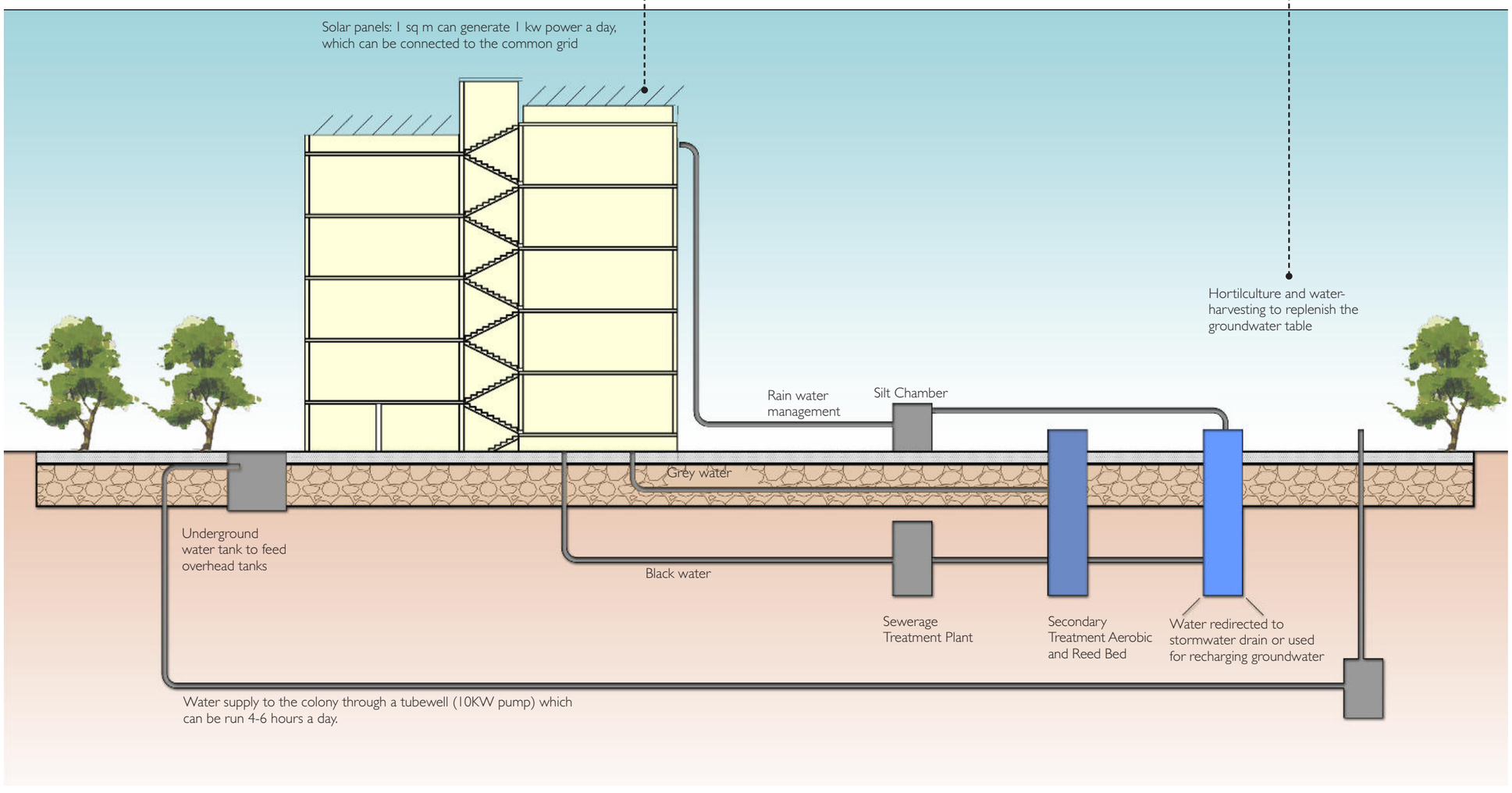
- **One sq mt of panel can generate 1 kw of electricity**, and the first pocket designed will have a coverage of 4525 sq mts. Even if we use 50% area, 2 mw of energy can be generated within this area.

Key Plan showing Site Layout

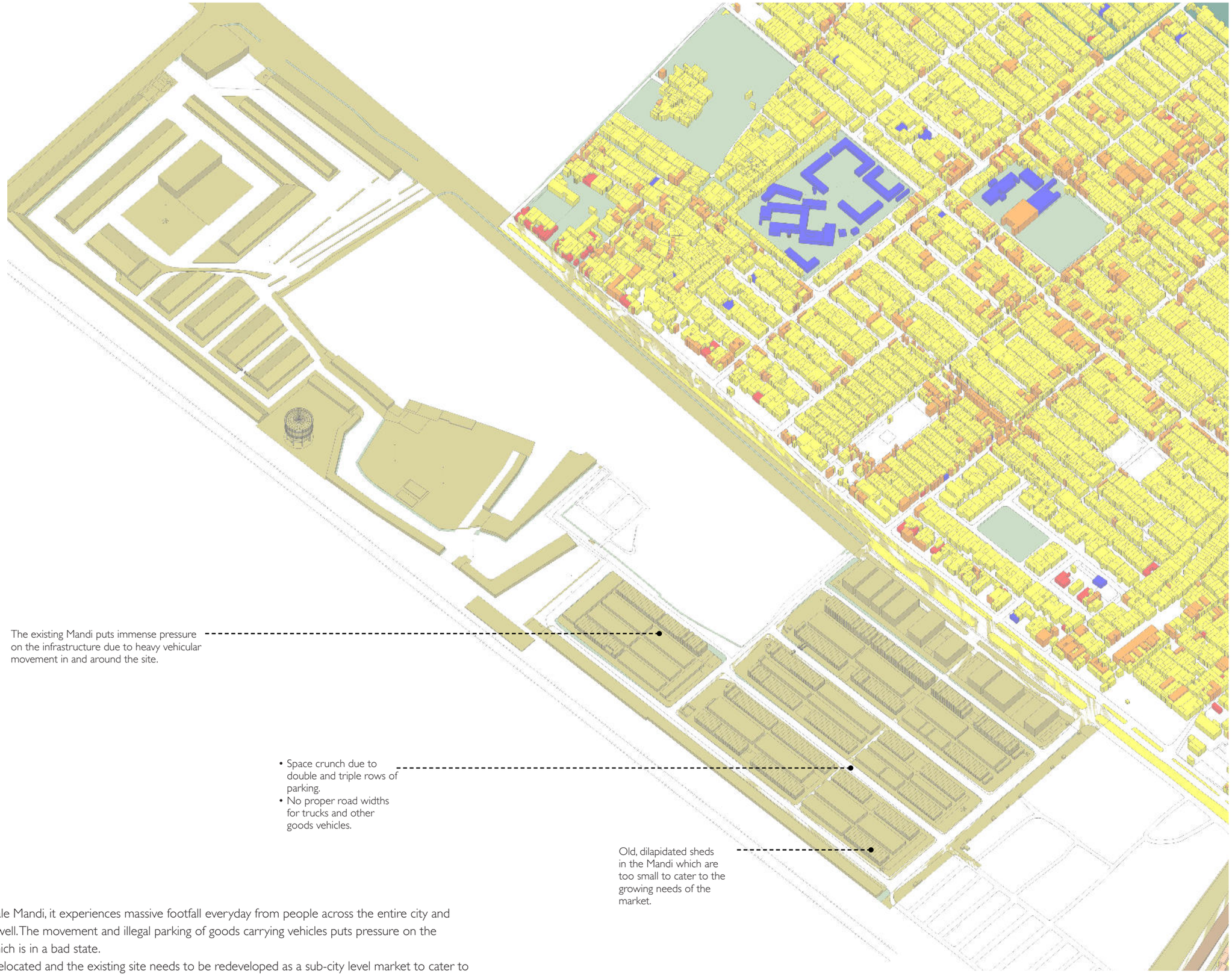
Solar panels on the rooftop to harvest solar energy which can be used for common areas like lobbies, corridors, street lights etc.



Rainwater harvesting by rooftop collection or groundwater recharge to be reused for purposes like horticulture etc.



PROPOSAL 2 - AZADPUR VILLAGE



The existing Mandi puts immense pressure on the infrastructure due to heavy vehicular movement in and around the site.

- Space crunch due to double and triple rows of parking.
- No proper road widths for trucks and other goods vehicles.

Old, dilapidated sheds in the Mandi which are too small to cater to the growing needs of the market.

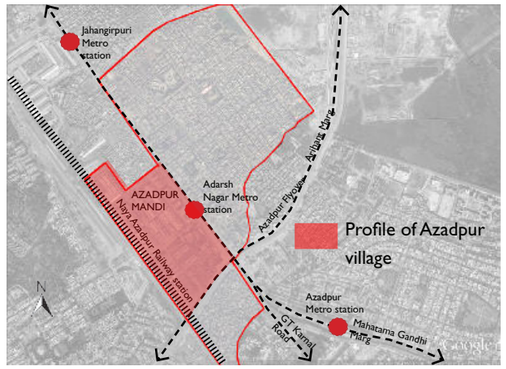
Azadpur Mandi

- Being a city level wholesale Mandi, it experiences massive footfall everyday from people across the entire city and from outside the city as well. The movement and illegal parking of goods carrying vehicles puts pressure on the existing infrastructure which is in a bad state.
- The Mandi needs to be relocated and the existing site needs to be redeveloped as a sub-city level market to cater to the local neighbourhood.

PROPOSAL 3 - AZADPUR MANDI

6.1 Introduction to the Site and Issues

6.1.1 Site and its Surroundings

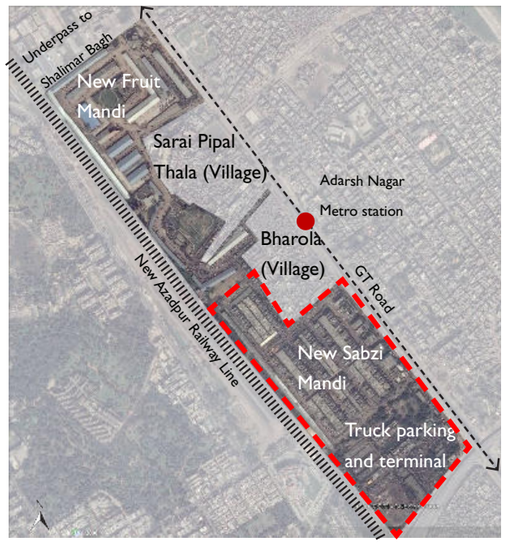


Key Plan showing Profile of Azadpur Mandi

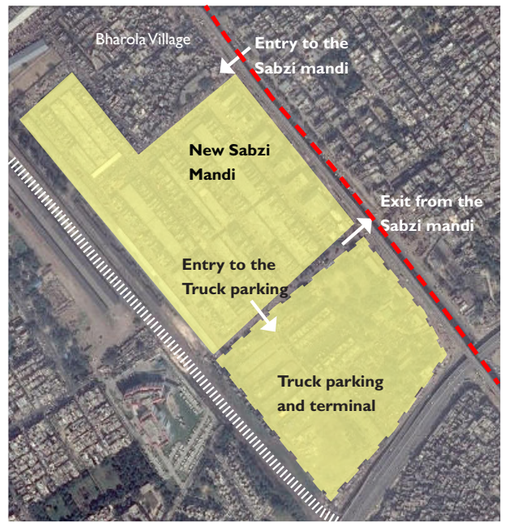
Entry gate into the Mandi

Entrance to the truck parking from New Sabzi Mandi

Entrance road between the New Sabzi Mandi and Bharola Village



Azadpur Mandi: Study Area with Surroundings



Azadpur Mandi: Detailed Study Area

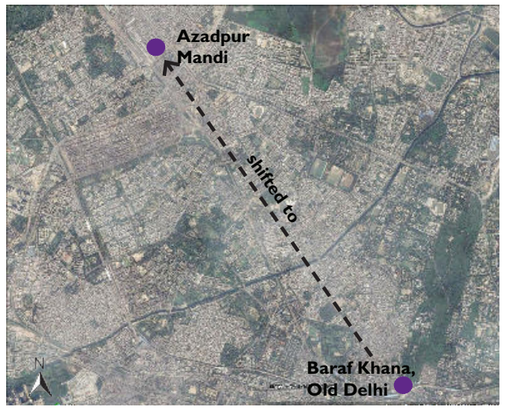
Legend

- Study area
- Azadpur railway line
- GT Road

Azadpur is the largest wholesale vegetable market in all of Asia. It spans 80 acres in North Delhi, and receives over 700 truckloads of produce every day.

6.1.2 Background of Azadpur Mandi

- The original fruit and vegetable market at Azadpur was spread over an area of 43.65 acres and was constructed by Delhi Development Authority (DDA) in the year 1968-69.
- The Old Fruit and Vegetable Market was shifted from Baraf-khana, Old Delhi to New Sabzi Mandi Azadpur on 12th July 1975.
- Delhi Agricultural Produce Marketing (Regulation) Act 1976 was enacted and made effective in the Union Territory of Delhi from 5th November 1976 for regulating the marketing of agricultural produce.
- The plots for shops were allotted to traders by the DDA. Initially the market was maintained by DDA itself. DDA withdrew its maintenance staff w.e.f 1st December 1979 and the market was handed over to APMC, Azadpur, for maintenance and regulation.
- The market has been declared as Market of National Importance.

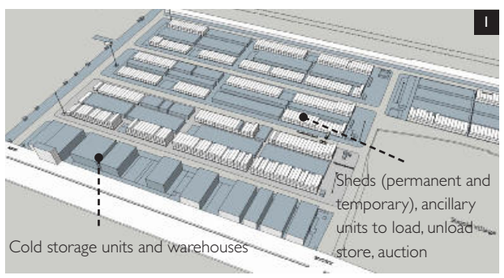


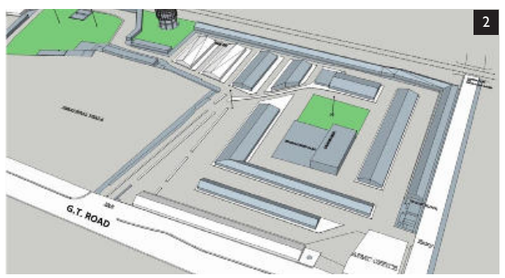
Location of Azadpur Mandi earlier

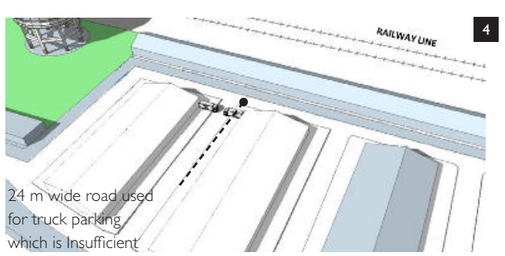
The development of this market comprises tin sheds with raised platforms, erected on steel columns and trusses, which seems to be a makeshift arrangement.

6.1.3 Existing Layout and Land Use

Existing land use plan of Azadpur Sabzi Mandi and adjacent New Fruit Mandi







Volumetric Study of Existing Mandi

6.1.4 Issues

Poor Entrance: Entrance of Azadpur Mandi is an a very bad condition. It is not properly maintained with bad road conditions.

Parking and Traffic Movement: Due to heavy inflow of goods, the traffic in and around Azadpur Mandi is very congested and creates a heavy pressure on the surrounding area.

Blank Edges: The GT Road stretch is lined with blank edges of cold storage units which do not have any character and bring a monotony to the road stretch.

Small Shop Sizes: The small shops of 12' x 56' can no longer sustain the enormous business opportunities in this sector. The road width of 24 mts is not sufficient to take double corridor of big trucks, trailers and containers.

Unorganized Auction Spaces: The market lacks planned development, thus haphazard activities are carried out at any place available. A lot of areas like the basements are kept redundant, thus leading to wastage of prime space in an already dense area of the city.

Waterlogging: One of the major problems in the Mandi area is waterlogging. Many areas lie knee deep in water as they are either not maintained or are lowlying.

No Organized Waste Disposal System: No waste disposal system inspite of generating 125 tonnes of organic waste every day.

Badly Maintained Infrastructure: The existing condition of the dhalaos is very bad. They are either not maintained properly or are insufficient in number for the quantity of garbage produced.

Basic Amenities Missing: Basic facilities, such as toilets, ATMs, banks, milk booths, are missing or poorly maintained; neither have they been allocated in a planned manner.

Space Crunch: There is a space crunch because of narrow roads, encroachment by shops and parked vehicles. Extra coverage needs to be provided for double and triple row parking for private vehicles and small trucks.

Flouting of Norms: Narrow internal lanes have numerous encroachments and lack basic facilities. There have been huge Master Plan violations in terms of coverage, parking and poor traffic management. Construction, design and facilities were set up 40 years ago and are thus outdated.

6.1.5 Comparison of Master Plan Stipulations with the Existing Situation

Master Plan Stipulates 30% Ground Coverage & 0.8 FAR
Parking Requirement : 3 ECS for 100 sq m of Floor Area

New Sabzi Mandi

Description	Area
Area of New Sabzi Mandi (sq m)	174150.00
Total Ground Coverage (sq m)	72250.00
Total Built-up on all floors (sq m)	206875.00
Extra Built-up (sq m)	2500.00
Total Built-up on-site (sq m)	209375.00
Existing Ground Coverage	41.49
FAR	1.20

Parking Requirement

ECS per 100 sq m	3
Per car area requirement for surface parking (sq m)	23
Current floor area (/100 sq m)	2093.75
No. of parking required (No.)	62.81.25
Area requirement for parking (sq m)	144468.75
% of area required for parking (surface parking as per MPD 2021 norms)	82.96

Ad Hoc Road Edge Parking Observed in New Sabzi Mandi
Parking in Shed Frontage Seen in New Fruit Mandi

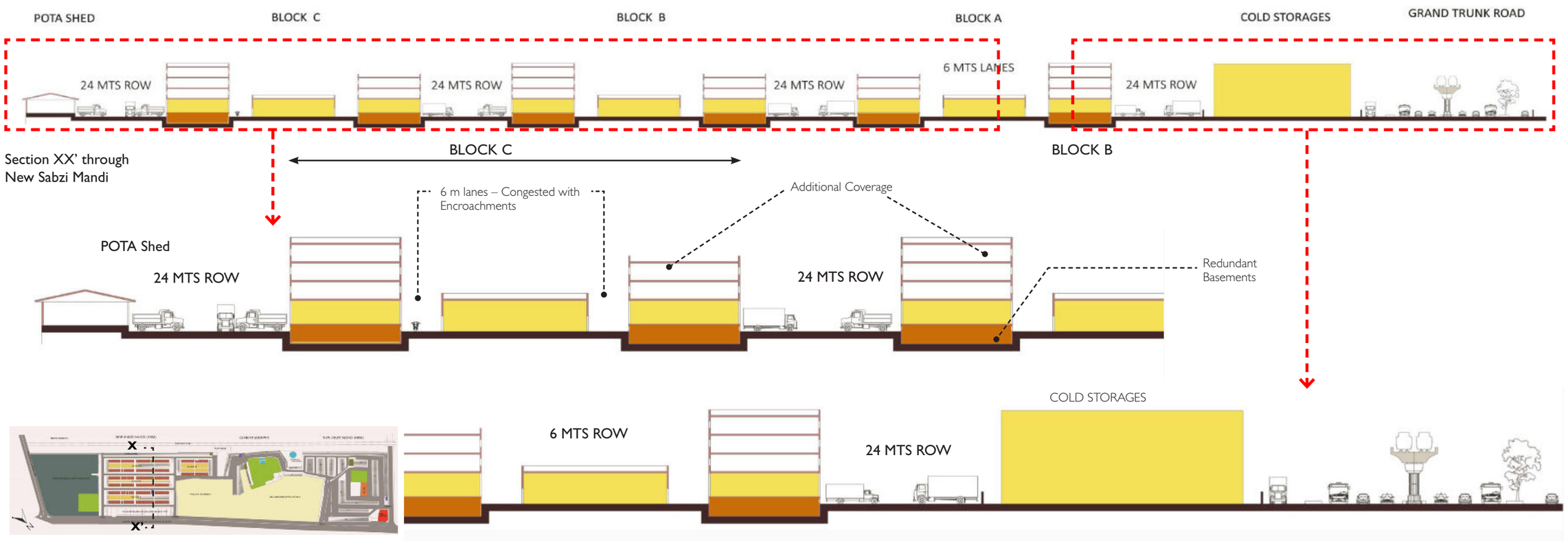
New Fruit Mandi

Description	Area
Area of New Sabzi Mandi (sq m)	153900.00
Total Ground Coverage (sq m)	59796.00
Total Built-up on-site (sq m)	67592.00
Extra Ground Coverage (%)	38.85
FAR	0.44

A dedicated parking is needed for 5000 commercial vehicles and trucks that come every day for offloading/ loading which is specific to this market

Parking Requirement

ECS per 100 sq m	3
Per car area requirement for surface parking (sq m)	23
Current floor area (/100 sq m)	675.92
No. of parking Required (no.)	2027.76
Area requirement for parking (sq m)	46638.48
% of area required for parking (Surface parking as per MPD 2011 norms)	30.30

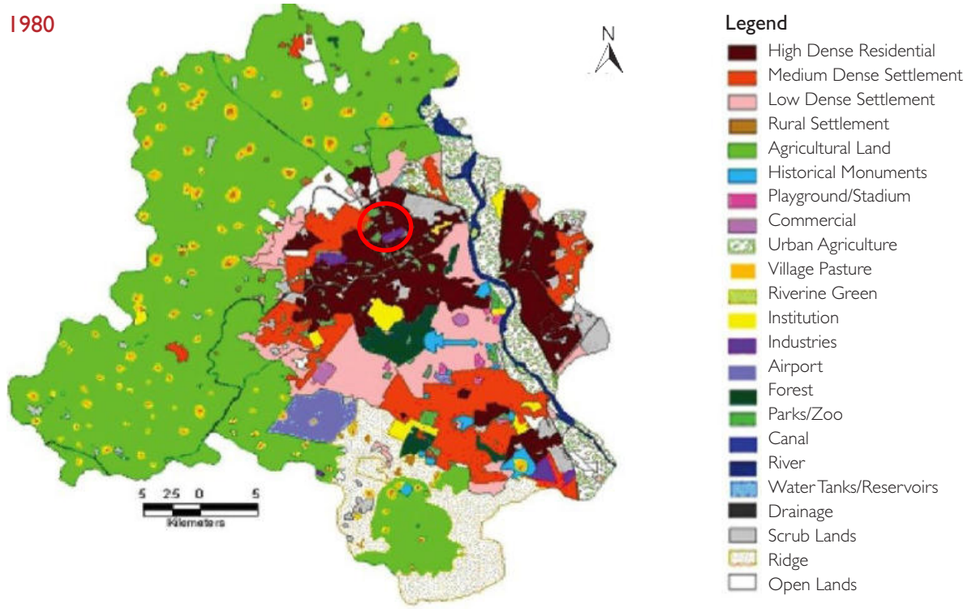


Key Plan: Mandi

PROPOSAL 3 - AZADPUR MANDI

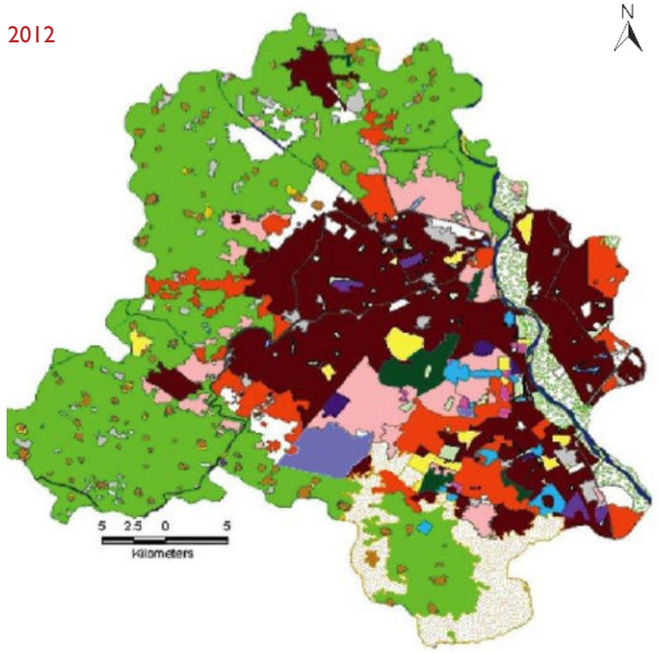
6.1.6 City Metamorphosis and its Impact on Azadpur Mandi

1980



Legend
- High Dense Residential
- Medium Dense Settlement
- Low Dense Settlement
- Rural Settlement
- Agricultural Land
- Historical Monuments
- Playground/Stadium
- Commercial
- Urban Agriculture
- Village Pasture
- Riverine Green
- Institution
- Industries
- Airport
- Forest
- Parks/Zoo
- Canal
- River
- Water Tanks/Reservoirs
- Drainage
- Scrub Lands
- Ridge
- Open Lands

2012



Legend
- Location of Mandi
- Extent of High Density residential area which has grown over the years

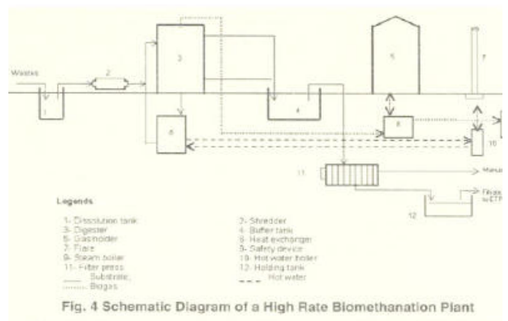
Map showing transformation of Delhi city over the years

- The city has experienced enormous growth over the years and the extent of Delhi has increased manifold.
- As per MPD 1962 the **fruit and vegetable market in Sabzi Mandi was shifted to the Azadpur Mandi** which was **then on the periphery of the city.** But due to fast pace of urbanization, the **Azadpur Mandi now** forms part of the centrally located urbanized area with a heavy inter-city and intra-city truck movement.
- **Heavy traffic (trucks, thelas, freights etc.)** coming to the Mandi as freight carriers **makes GT Road very congested.**
- On-road truck parking adds to the congestion.
- **MPD 2021 has designated the market as sub-city level market.**
- The city level requirement shall be shifted to Integrated Freight Complexes in Narela near the entry point of Delhi.

6.1.7 Literature Case Study (Example of a Planned Wholesale Market in India)

Layout of Koyambedu Wholesale Market Complex (KWMC), Chennai

View of the wholesale market complex from outside and inside

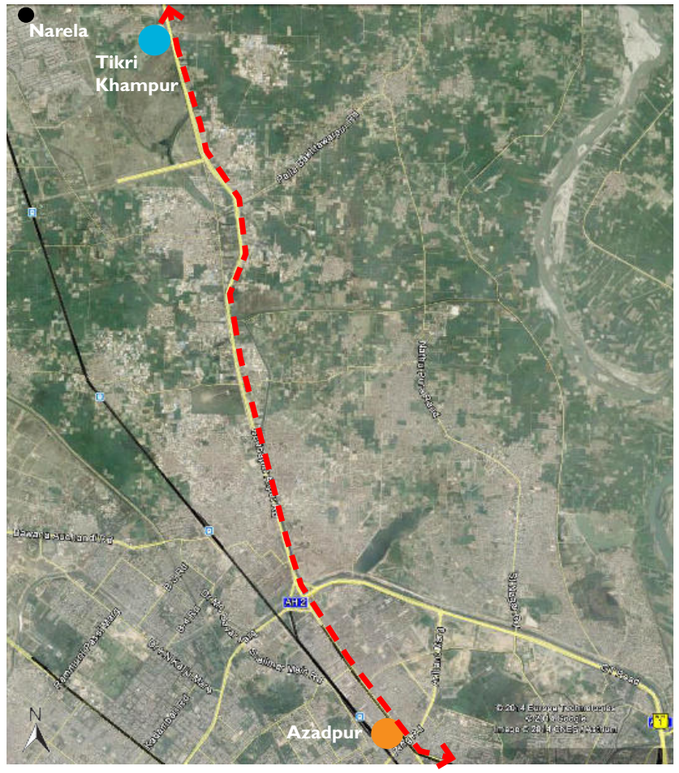


Bio-methanation plant in the complex to generate power from fruit and vegetable waste

- Koyambedu Wholesale Market Complex (KWMC) was established in 1996 for wholesale trading of fruits and vegetables on 70 acres land with approximately 2000 shops.
- The scale is very similar to Azadpur with approximately 1,00,000 visitors and 1500 goods lorry daily. Turnover is Rs. 1.25 crore per day.
- A **bio-methanation plant at the market complex** set up by Chennai Metropolitan Development Authority **generates power from vegetable and fruit waste collected from the wholesale market.**
- The **plant has the capacity to convert 30 tonnes of waste per day into 2500 units.** About 150 tonnes of waste is collected daily and after meeting the requirement of power generation, the rest is converted into manure for which a separate area of about 1.75 acres is made available. Some of the waste like banana stems get recycled.

6.2 Proposals

6.2.1 Relocation of Main Wholesale market



Map showing relocation of Azadpur Mandi to Tikri Khampur

- **Relocation of main wholesale market** with modern infrastructure and requirements along DMIC or KMP/KGP Expressways, **preferably near a railway link**.
- One such proposal can be at Tikri Khampur, NH1 or Narela area.
- Developing several secondary and tertiary markets around Delhi along the KMP/KGP loop to feed the increasing city population.
- Various IMT and industrial parks can be established around these nodes to cater to this growing agro business.

Legend

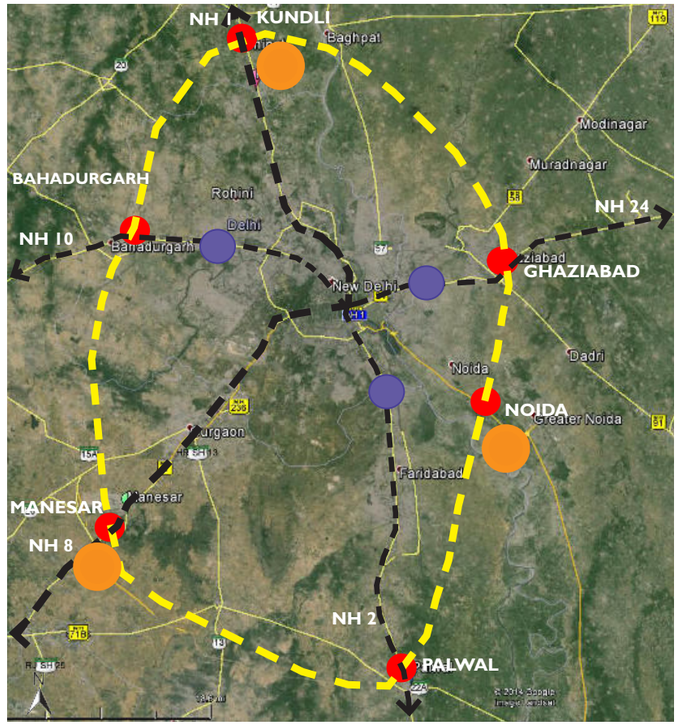
- Proposed Relocation of wholesale market at Tikri Khampur, NH1
- Existing location of Mandi
- Connecting Grand Trunk Road

Master Plan and Zonal Plan Stipulations for the Mandi

- The Zonal Master Plan also suggests shifting the city Level market to Narela.
- As per MPD 1962 the fruit and vegetable market in Sabzi Mandi was shifted to the Azadpur Mandi which was then on the periphery of the city.
- But due to the fast pace of urbanization, the Azadpur Mandi now forms part of the centrally located urbanized area with a heavy inter-city and intra-city truck movement. MPD 2021 has designated the market as sub-city level market.
- The city level requirement shall be shifted to Integrated Freight Complexes in Narela near the entry point of Delhi.

Pictorial map showing major sub-cities connected by KMP – KGP Expressway

6.2.2 Proposal to Develop Several Satellite Markets around Highways



Map showing location of proposed satellite markets around KMP – KGP Expressway

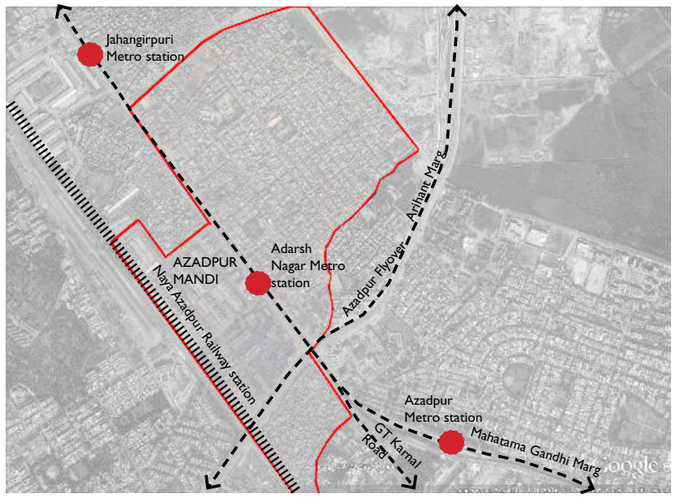
- In this regard the New Fruit Mandi (NFM) should be planned and developed as per a sub-city market requirement, and the New Sabzi Mandi (NSM), which is already saturated, given for alternative use together with the truck parking area, trailers and containers.
- In the current scenario the fruit and vegetable industry is looking way beyond what it was 40 years ago. The small shops of 12' x 56' can no longer sustain the enormous business opportunities in this sector. The road width of 24 mts is not sufficient to take a double corridor of big trucks.

Legend

- Location of sub-cities
- Location of sub-city secondary markets like NSM & NFM along highways
- Location of sub-city tertiary markets like NSM & NFM along highways
- KMP – KGP Expressway
- National Highways

Master Plan and Zonal Plan Stipulations for the Mandi

- Zonal Master Plan suggests retaining this market as a sub-city market.
- There is an ongoing work on the development of a ring expressway around NCR, namely the KMP (Kundli–Manesar – Palwal Expressway and Kundli – Ghaziabad – Palwal Expressway (KGP).
- This is going to connect all the major highways originating from Delhi to various states.
- It is suggested that these several specialized markets can be developed at the nodes of intersections of highways and the KMP/KMG loop for encouragement of this industry.



Key Plan showing profile of Azadpur Mandi

6.2.3 Proposing Change of Land Use for Existing New Sabzi Mandi Site

Map showing proposed Conceptual Land Use Plan for vacated site at New Fruit Mandi

- Change of land use is proposed to accommodate various neighbourhood and community level facilities (as stated in MPD 2021), which could also be utilized by the neighbouring areas like Adarsh Nagar Colony, Azadpur Village, Shalimar Bagh etc.

A pedestrian trail is proposed which connects greens of various levels. It also, connects proposed study pockets to neighbouring areas like Shalimar Bagh and Azadpur Village so that the proposed facilities can be used by them

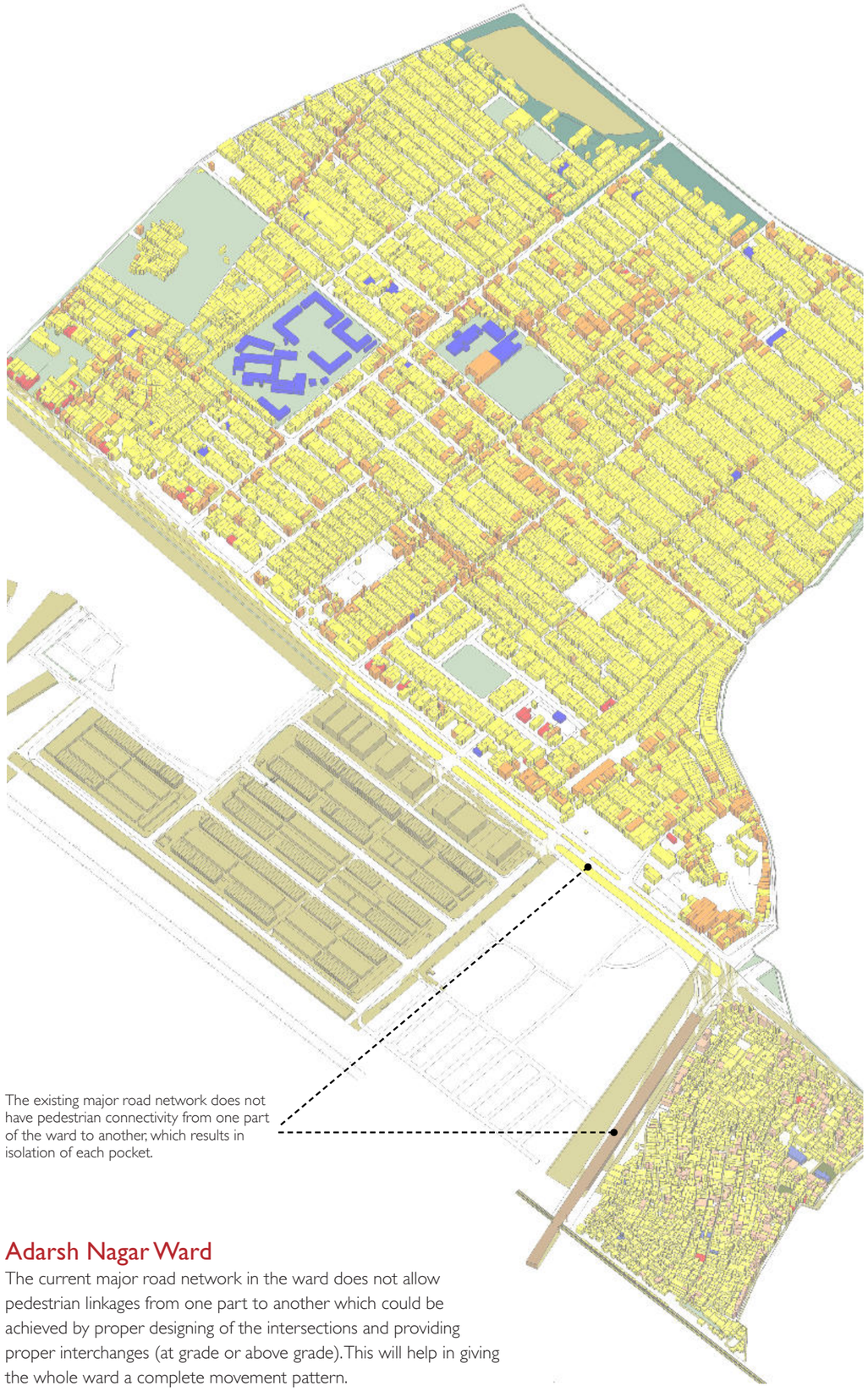
Legend

- Existing Major Roads
- Azadpur Flyover
- Site Boundary
- Pedestrian Trail connecting various Greens
- Railway Track
- Connecting Roads (15 m wide)
- Existing Foot Overbridge (Metro station)
- Proposed Foot Overbridge
- Existing Metro Stations
- Existing Greens
- Commercial
- Public/Semi-Public
- Residential
- Recreational

Foot overbridges are proposed at various locations for safety and ease of access for pedestrian crossings.

Facilities like a recreational club and a community sports centre are proposed at the edge which open up the urban edges due to their development

PROPOSAL 3 - AZADPUR MANDI



The existing major road network does not have pedestrian connectivity from one part of the ward to another, which results in isolation of each pocket.

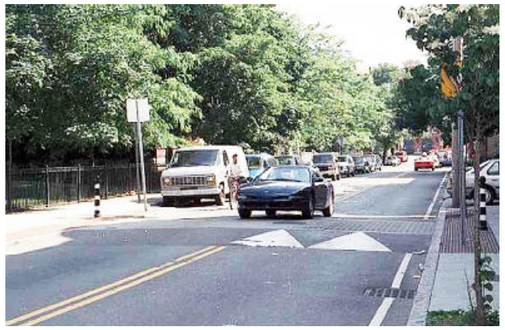
Adarsh Nagar Ward

The current major road network in the ward does not allow pedestrian linkages from one part to another which could be achieved by proper designing of the intersections and providing proper interchanges (at grade or above grade). This will help in giving the whole ward a complete movement pattern.

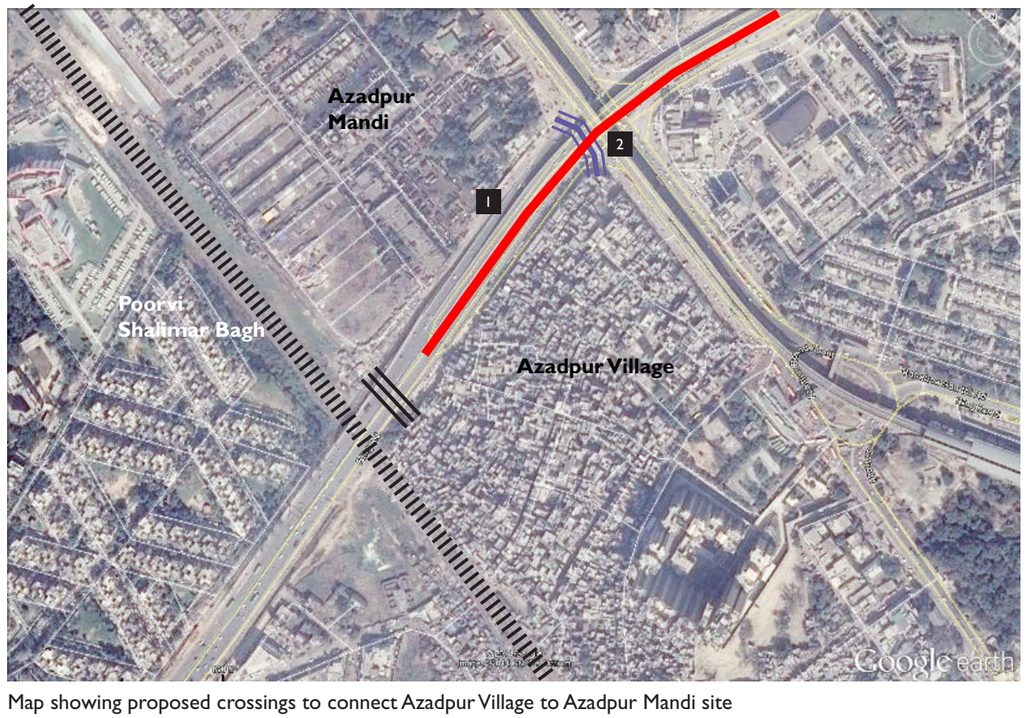
7.1 Proposed Pedestrian Crossings at Ring Road

Existing views of edges and junctions in the study area

Proposed foot overbridges for safety and ease of access for pedestrian movement



Proposed at grade: Table Top Crossing for safety and ease of access for pedestrian movement



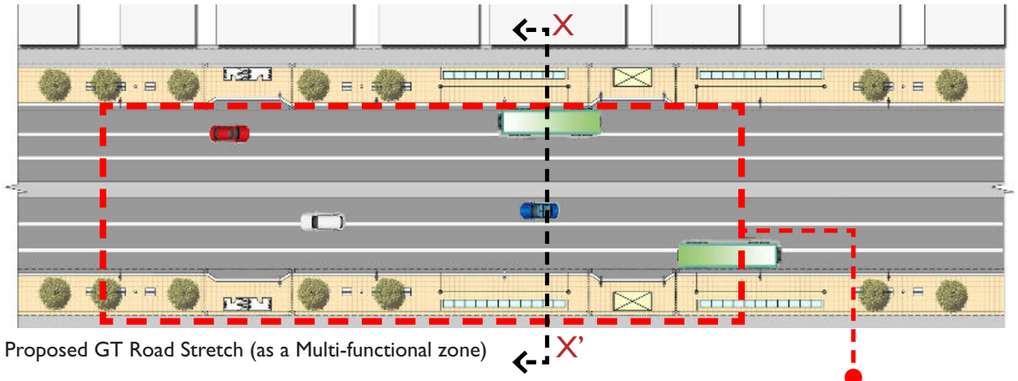
Map showing proposed crossings to connect Azadpur Village to Azadpur Mandi site

Legend

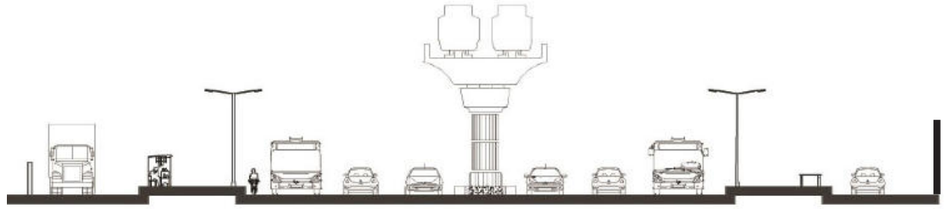
- Existing Railway Track
- Existing Azadpur Flyover
- Proposed Foot Overbridge
- Proposed At Grade Crossing (Raised Table Top)

COMMON PROPOSALS

7.2 Streetscaping (GT Road Stretch)



Proposed GT Road Stretch (as a Multi-functional zone)



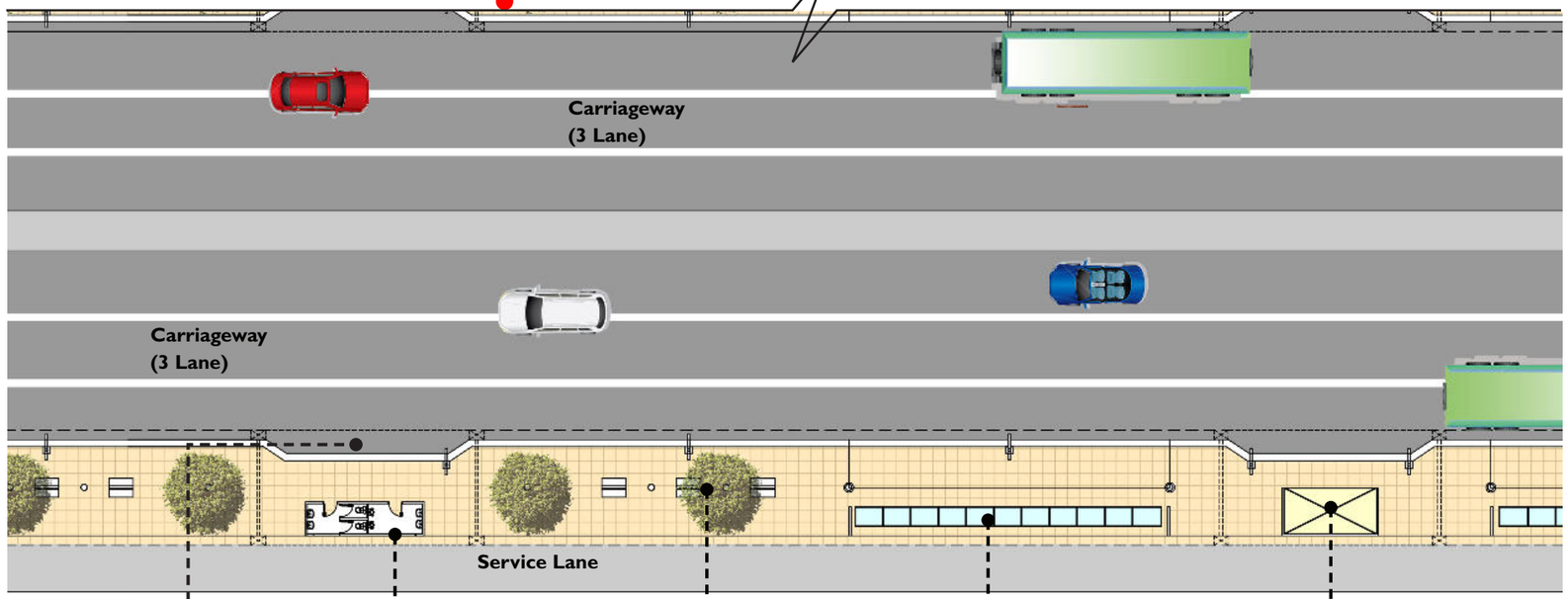
Section XX'

Tree grating to protect trees

Bus stop with provision for advertisements

Bench seating

Public Convenience



Auto/Rickshaw stand

Public Convenience

Tree Pits

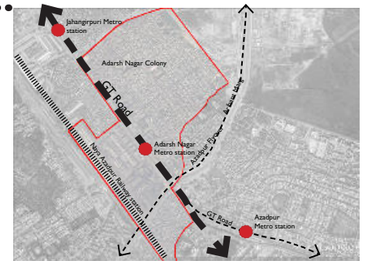
Designated Hawker zones

Bus Stop

- **Auto/rickshaw stand** at a walking distance from the bus stop in order to avoid chaos.
- **Public Conveniences** which are currently absent are proposed at regular intervals (every 500-800 m from each other)
- **Tree Pits** with grating allows pedestrians to walk close to trees, without discomfort to either
- **Hawkers** or 'Micro-entrepreneurs' at designated spaces in proximity to the bus stop to provide a wide variety of services and amenities.
- As of now **Bus Stops** along the GT Road stretch are scattered and not uniformly distributed.
- Thus, they are proposed at regular intervals (radius of 800-1000 m).

Hawker Zone (kiosks) located at regular intervals in proposed MUZ

Dustbins along the road



Key Plan highlighting the GT Road stretch

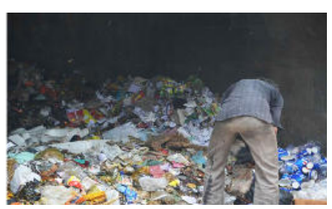
7.3 Location of Public Amenities

Map showing existing and proposed location of dhalaos in Adarsh Nagar Ward

Solid-waste Management

Existing Situation: The dhalaos in the site are not sufficient as per the MPD 2021 (1 for every 10,000 population)
Proposed: The **location** of new additional dhalaos is proposed strategically so that they can be **serviced easily through the main roads.**

- **Decentralized location** of the dhalaos so that the waste is managed more efficiently and effectively.
- Also, proposing **door-to-door collection of garbage** so that the garbage is not thrown on streets, empty plots etc.
- Suggesting garbage **segregation at source,** i.e. using different colour coded dustbins by the residents to avoid mixing of wet and dry garbage.
- The **organic garbage** can be converted into compost and used for manure.



Existing condition of dhalaos is Adarsh Nagar Ward. They are badly maintained with garbage spilling out.

Door-to-door waste collection system ensures proper disposal of the garbage

Waste segregation at source makes disposal easy and efficient

(An ISO 9001 : 2008 Certified Organisation)

Delhi Urban Art Commission

The Delhi Urban Art Commission was set up by an Act of Parliament in 1973 to "advise the Government of India in the matter of preserving, developing and maintaining the aesthetic quality of urban and environmental design within Delhi and to provide advice and guidance to any local body in respect of any project of building operations or engineering operations or any development proposal which affects or is like to affect the skyline or the aesthetic quality of the surroundings or any public amenity provided therein".

(An ISO 9001 : 2008 Certified Organisation)

fnYyh uxj dyk vk;ksx

Delhi Urban Art Commission

Tel: 24619593, 24618607, 24690821, 24636191, Fax: 24648970

Email: duac74@gmail.com Website: www.duac.org