



CITY LEVEL PROJECTS

PEDESTRIANISATION OF KHAN MARKET





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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”.



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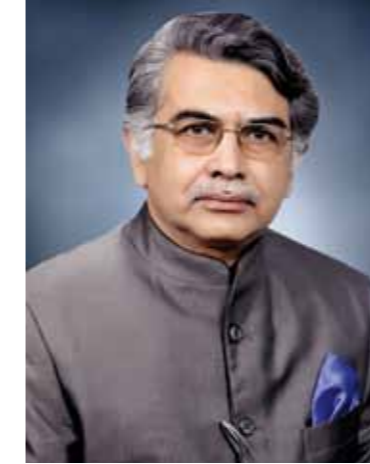
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Preface



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 coexistence 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.

January, 2018

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

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Summary

Khan Market in Central Delhi was essentially a housing colony for the immigrants from the North - West Frontier Province after Partition of India which transformed to a Commercial hub in 1980's due to the needs of the growing families. It is ranked the 28th most costliest retail location in the world (according to a study by Cushman & Wakefield. *Source: <http://www.livemint.com/Industry/uxT0YipQGukZIYZPeXSnKI/Delhis-Khan-Market-is-the-28-mostcostliest-retail-location.html>*) with eatries and high-end retail showrooms. The nature of shoppers i.e. Elite customers attracted to high-end brands, increases the use of private vehicles to access the market. Furthermore, 'Free Parking' provided by the 'Shopkeepers Association' encourages the customers to bring their vehicles instead of using public transport and other sustainable options. Thus, it results in a situation where the urban quality of the neighborhood is compromised, due to the growth of vehicles which leads to:

1. **Loss of urban 'living space:** Motorized transport infrastructure- such as roads and car parking — takes up highly valuable city centre land, and spoils and threatens existing open spaces.
2. **Air and noise pollution:** The growing number of vehicles coming into the Market precincts are the main causes of urban noise and air pollution.
3. **Visual intrusion:** The quality of the Urban and visual environment diminishes due to the parked cars and other infrastructure.

In the wake of above problems, DUAC was approached by NDMC to prepare a comprehensive scheme which integrates design with policy interventions to enable pedestrianisation of Khan Market. This exercise studied the various issues associated with Traffic movement, parking, pedestrian infrastructure, utilities, urban image and quality of Khan Market. It was envisioned to make Khan Market a 'Pedestrianised Commercial Hub' where people can live, work, shop and socialize without compromising on safety and quality.

The other major intervention was to take away the surface parking to basement to open up spaces in the cramped surroundings. This move rose concerns of the Shopkeepers association of losing the clientele once the surface parking was taken away. Thus the proposal ensured provision of enough amenities for the pedestrians i.e. shoppers to offer them comfortable user experience. This included shaded walkways, swift connections between the basement parking and market plaza, pedestrian facilities like benches for seating, adequate signages for wayfinding, and provision of other necessary utilities like drinking water and public conveniences at regular intervals. This process would enable a seamless pedestrian movement which clearly segregates the vehicular circulation from pedestrian network. Separate drop off / pick bays are designed to enable users to identify the relevant lanes which allow specific modes of transport. Spots are earmarked for IPT to cater to the population using public transport or other means to reach the destination. A designed landscape plaza caters to the demand for open spaces to explore and experiment. These can be used for holding various events, activities and festivals contributing to the local economy of the Market.

Therefore, in order to make Khan Market a successful pedestrian shopping hub it is essential to amalgamate the following factors to achieve a great shopping neighborhood:

- Providing an identity to the space by opening up spaces for human exploration i.e. Central landscaped plaza
- Inducing outdoor activities to make it more attractive and appealing to people - Outdoor cafes, kiosks etc.
- Provision of essential amenities to provide a comfortable user experience i.e. Drinking water and toilets
- Flexible design of open spaces to respond to natural fluctuations
- Ease of Access to the neighborhood to allow seamless movement of different users



Chapter 1 - Introduction

I.1 Literature study - Project for Public spaces (PPS)

I.2 Best practices

I.2.1 Kajaani, Finland

I.2.2 Nuremberg, Germany

I.3 Site description

I.3.1 Location and context

I.3.2 Evolution of Khan market

I.3.3 Site connectivity

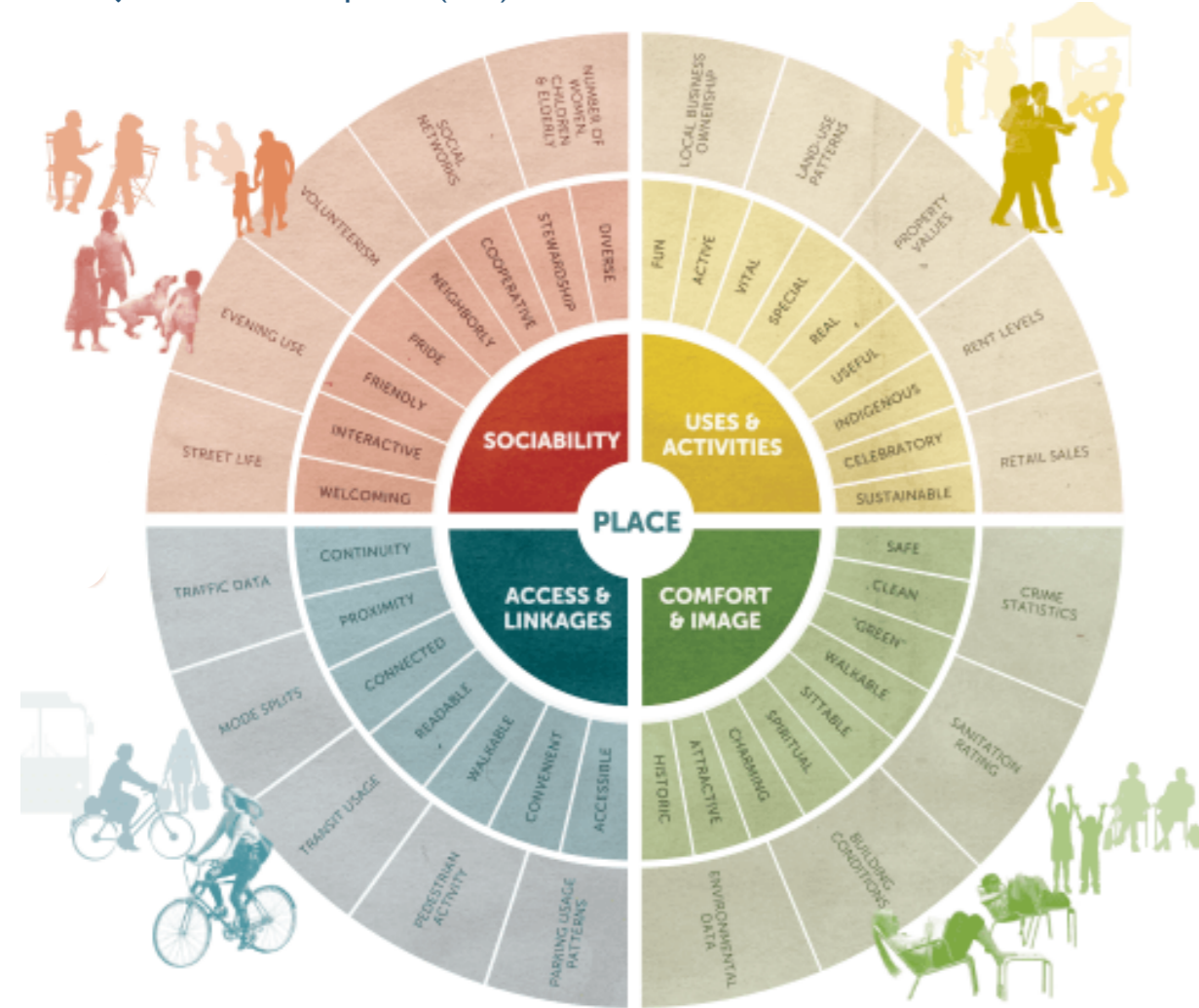
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1.1 Literature study

1.1.1 Project for Public spaces (PPS)



'The Place Diagram'

Source: [Online], Available from: <https://www.pps.org/reference/grplacefeat/>

What Makes a Successful Place?

Great public spaces are those places where celebrations are held, social and economic exchanges occur, friends run into each other, and cultures mix. They are the "front porches" of our public institutions – libraries, field houses, schools – where we interact with each other and government. When these spaces work well, they serve as the stage for our public lives.

What makes some places succeed while others fail?

Evaluating thousands of public spaces around the world, PPS has found that the successful ones generally share following qualities: they are accessible; people are engaged in activities there; the space is comfortable and has a good image; and finally, it is a sociable place: one where people meet each other and take people when they come to visit.

For any given place: a street corner, a playground, a plaza outside a building, one can carry out evaluation (of that place) according to the four criteria in the orange ring. In the ring outside these main criteria are a number of intuitive or qualitative aspects by which to judge a place; the next outer ring shows the quantitative aspects that can be measured by statistics or research.



Access & Linkages

A successful public space is easy to get to and get through; it is visible both from a distance and up close. The edges of a space are important as well



Sociability

When people see friends, meet and greet their neighbors, and feel comfortable interacting with strangers, they tend to feel a stronger sense of place or attachment to their community – and to the place that fosters these types of social activities.



Uses & Activities

Activities are the basic building blocks of a place. Having something to do gives people a reason to come to a place – and return. When there is nothing to do, a space will be empty and that generally means that something is wrong.



Comfort & Image

Whether a space is comfortable and presents itself well – has a good image – is key to its success. Comfort includes perceptions about safety, cleanliness, and the availability of places to sit – the importance of giving people the choice to sit where they want is generally underestimated.

1.2 Best practices

This chapter presents certain design considerations with reference to the case studies of selected European cities, where traffic congestion is not dealt by the traditional approach of providing supply to meet demand, but rather, with a vision to take away congested road space from private cars. Favoring the approach of incorporating more sustainable transport modes, these cases, illustrate the potential for more effective uses of urban road space, as an 'exchange space' rather than just a 'movement space'. As a design strategy, many of these cities have gone ahead with road space reallocation schemes despite predictions of increasing traffic chaos. However, in each of these cases, any initial problems of traffic congestion were short-lived, and after a 'settling-in' period a proportion of the traffic was found to have 'evaporated'. This concept of 'Traffic Evaporation' creates attractive car-free spaces and enables pedestrians and cyclists to enjoy a cleaner, quieter and safer environment.

The following case studies, represent sustainable planning options for cities which can be achieved through well-planned integrated strategies, combined with effective public consultation and communication.



Map showing the location of Kajaani in Finland



Map highlighting Kajaani pedestrian zone in the city centre



Before and after pedestrianisation in 1998

Source : www.lakesy.fi/File/kavelykeskustanvaikutuksia.pdf

1.2.1 Case study I : Kajaani, Finland - Literature review

Kajaani city lies in the north-east of Finland. The city dates from the 17th century and is the cultural, industrial, administrative and commercial centre of its region. This case study involves the closure of the main square and a section of the main high street in Kajaani to traffic, as part of an integrated response to traffic congestion and urban decline.

Issues:

During the early 1990s Kajaani city centre was in decline due to a combination of factors including:

- Traffic congestion in the main high street, and associated problems of air and noise pollution;
- Competition from supermarkets;
- Net migration of population from the city;
- High level of empty properties leading to urban decay.



Paved Public plaza used for various activities



Paved Street for People to walk after pedestrianisation



Shops spill over to host food events



Public Plaza, with events and other activities hosted



Learnings

- A partnership approach
- Clear political vision and commitment by the city council in solving problems of traffic congestion and urban decline
- An integrated regeneration strategy
- Public participation

Strategy:

- An active strategy to regenerate the city centre was initiated in 1996 by the local authority, as part of a national initiative 'Better town centres'.
- Central to this strategy was pedestrianisation of a section of the congested main high street and main city square along with facilitating commercial activities in the city centre.
- The project was finally made possible with the support of an alliance of the local authority, developers, shopkeepers and residents in the realisation that action was needed to stem the decline of Kajaani city centre.
- The project area has now been pedestrianized and upgraded with public infrastructure, creating a comfortable, attractive and a more sustainable urban environment.
- The integrated strategy also includes the development of new shopping yards, and residential properties above shops along the main street, the promotion of public transport services, some replacement parking outside the pedestrian zone, and the development of new cycle paths both to and within the town Centre.

Results:

- Considerable decrease in traffic congestion and increase in pedestrian journeys to and within the city centre.
- Enhancement of public spaces and civic pride.
- Improved business.
- Transformation into a more aesthetically pleasing, comfortable and safer place for the inhabitants of the city.
- Car free street with traffic flowing on adjacent streets making it a completely 'No Car' zone.

1.2.2 Case study 2 : Nuremberg, Germany

Literature review

Introduction

In the early 1970s, the city centre of Nuremberg in Northern Bavaria, with its narrow streets, historic monuments and shopping areas, was facing growing problems of traffic-related air pollution, causing decay of historic buildings, health concerns, and excessive traffic congestion in the city centre.

Strategy – ‘Civilizing Urban Traffic’

In response to the increasing traffic congestion within the city, local authorities have adopted a progressive strategy to give:

- Priority to more sustainable, less polluting modes of transport,
- To provide better access to shopping and offices within the area, and,
- To improve parking space management.

Phase wise development

1988 and 1989: Culminating the closure of the last major traffic corridor through the city centre between with only public transport permitted

1989: Pedestrianisation made permanent which turned into an attractive pedestrian precinct with renovated buildings; upgraded street furniture and art works.

Results:

- Significant reduction of Traffic flow
- Enhancement of public place
- Improved air quality (emissions of nitrogen dioxides decreased by about 30 %, carbon monoxide and particulate matter by about 15 %)

Source : www.lakesryfi/File/kavetykesustanvaikutuksia.pdf



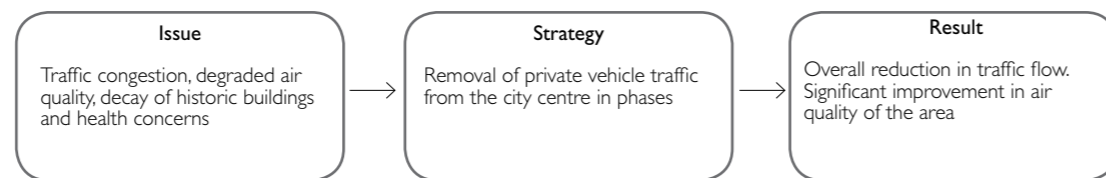
Map showing the location of Nuremberg in Germany



Map highlighting Nuremberg pedestrian zone in the city centre

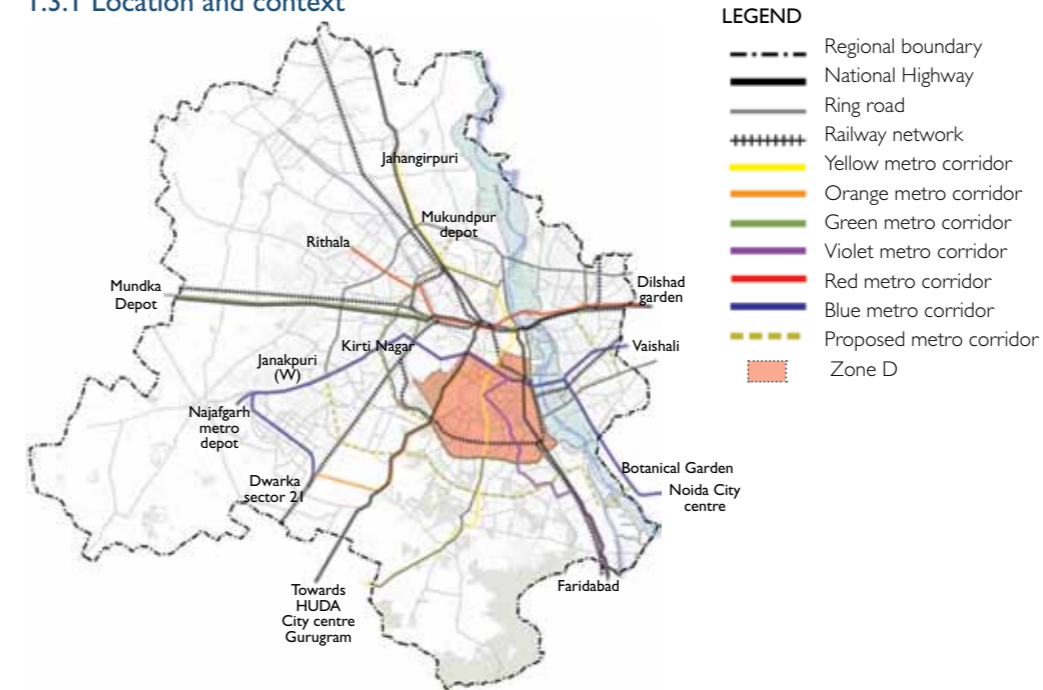


Inner city of Nuremberg after pedestrianisation

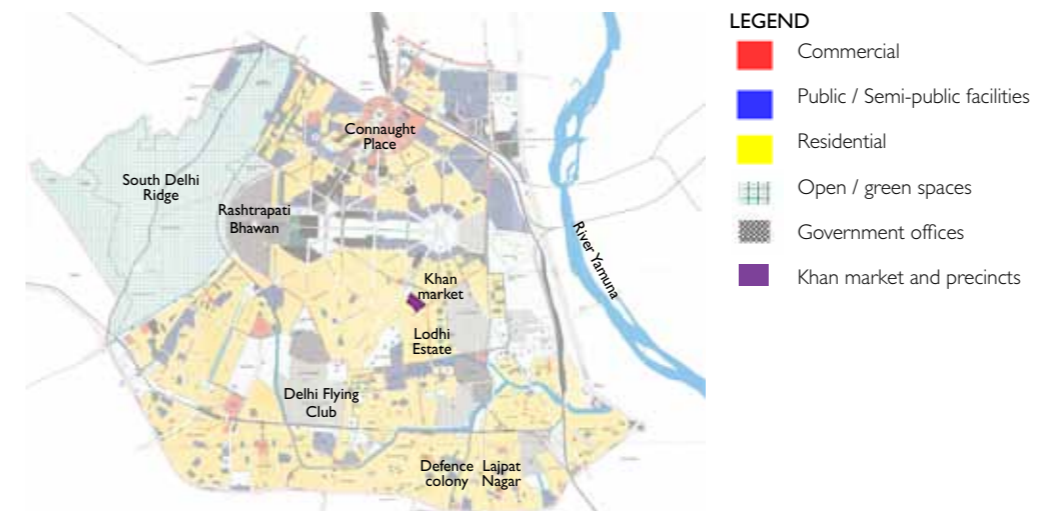


1.3 Site description

1.3.1 Location and context



Map depicting location of Zone D in Delhi



Zone D map depicting Location of Khan Market and neighbouring areas

- Khan market lies in Zone 'D' which mainly comprises of Lutyens Bungalow Zone (LBZ).
- Zone 'D' is located in the south and adjacent to the historical city of Shahjahanabad and extends upto the Ring Road. In the east, it is surrounded by River Yamuna & in the west, by Paharganj, Karol Bagh, rehabilitation colonies (Rajinder Nagar) and Pusa Institute.
- These areas are accessed by Panchkuian and Minto road in the North, Mathura Road in the East, Sir Ganga Ram marg in the West and Ring Road in the South.
- This zone is situated between river Yamuna on one side and the ridge on the other and comprises of important central areas of Delhi.
- It is well connected by Road transport and Metro Rail Transit System (MRTS), together with exclusive cycle and, pedestrian tracks.

- Zone 'D' (Division) measures 6855 hect. And is divided into 21 sub-zones.
- Zone D comes under the jurisdiction of New Delhi Municipal Council.
- Rashtrapati Bhawan, Parliament House, Supreme Court, Delhi High Court and the Central Government Ministries are some of the important land marks of this zone.
- The zone is unique i.e. it has a number of historical monuments and tree-studded character.
- MRTS corridors which pass through this zone are Yellow line, Violet line, Blue line, Orange line and new line coming up along the Ring Road.

1.3.1 Location and context



Map depicting location of Khan Market in the precinct

- Khan Market is almost in the heart of the city, close to India Gate. It is surrounded by residential complexes government owned and private including Golf Links, Lodhi Estate, Shahjahan Road, Pandara Road, Rabindra Nagar and Sujan Singh Park.
- Its environs are home to a significant number of bureaucrats from the central government, and famous people like the satiric author Late Khushwant Singh.
- It is one of the greenest pockets of the city, very close to the Lodhi Gardens.
- Also in proximity are the India International Centre(IIC), the India Habitat Centre(IHC), offices of the World Wide Fund for Nature, and other organizations.

1.3.2 Evolution of Khan Market

1951

- U-Shaped settlement in which shops were allocated to the immigrants from the North - West Frontier Province after Partition of India.
- The market originally had 154 shops and 74 flats on first floor for the shopkeepers.

1980

- The neighbourhood that was the soul of Khan Market started disintegrating in the late 1980s when residents started selling or renting out their flats to relocate to bigger houses elsewhere in the city .All flats on first floor continued.
- Neighbourhood grocery stores and middle class shops existed in the middle lane

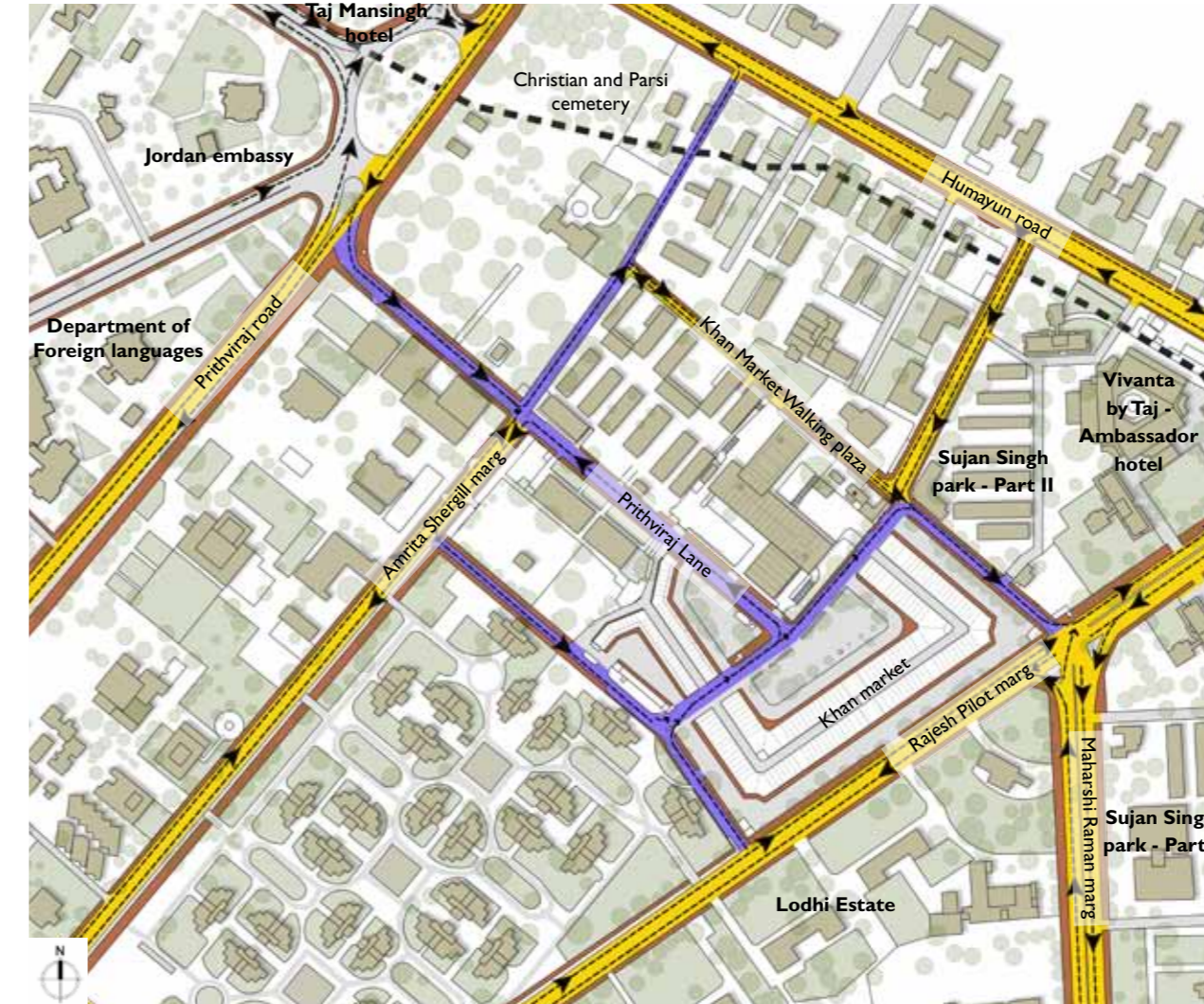
Late 1980's

Expanding families and real estate boom led to first generation of occupants to move out

1980

Only few families now live in two room flats. Rest of the market has become commercial with majority of the units converted into eateries and high - end showrooms.

1.3.3 Site Connectivity



LEGEND

- Two way movement
- One way movement
- Violet Metro line crossing Khan Market

Map depicting connectivity in Khan Market and precincts

- Khan market is accessed by Amrita Shergill marg in the north, Rajesh Pilot marg in the South, Humayun road in the East and Amrita Shergill marg in the West.
- It is surrounded by posh residential colonies like Sujan Singh park and Lodhi Estate which house high ranking government officials, thus making it a part of the VIP area.
- The various landmarks neighbouring Khan Market are Ambassador hotel (now Taj -Vivanta), Lok Nayak Bhawan, Hotel Taj Mansingh, Golf Links etc.



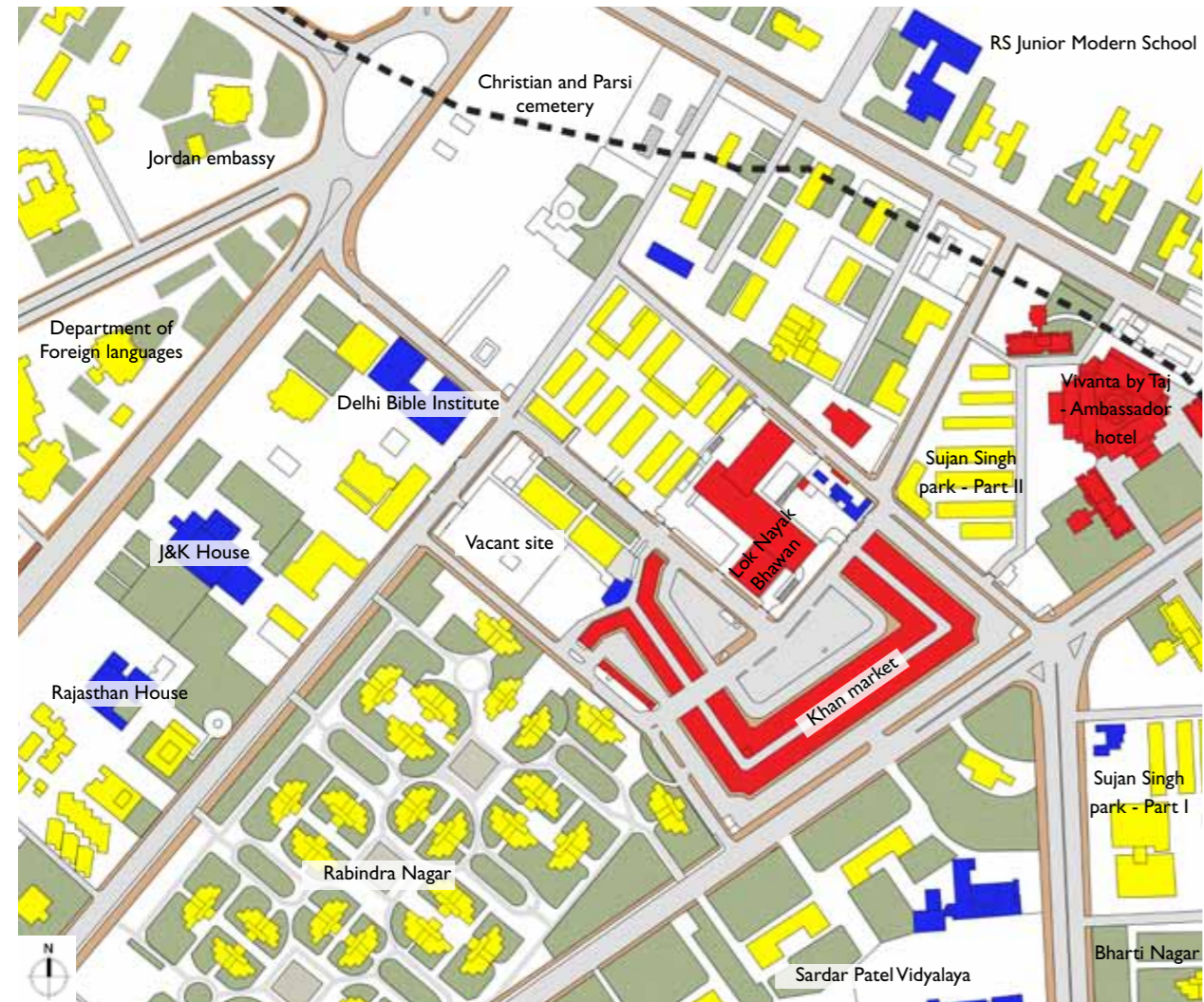
Taj Ambassador - Vivanta by Taj
Source: [Online]. Available from: <https://www.heritagehotelsindia.com/new-delhi/vivanta-by-taj-ambassador.html>



Sujan Singh park
Source: [Online]. Available from: <http://www.aishwaryatipnisarchitects.com/other-consultancy-projects.html>

- Prithviraj lane is a one way road directing the traffic compulsorily left on Amrita Shergill marg.

I.3.4 Existing Landuse



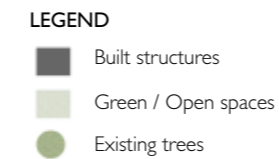
- Khan Market is primarily a Commercial pocket as per Zonal plan 'D'. It serves as a shopping centre for the elite neighbourhood around the complex.
- Few residences remain on the first floor and the rest has been converted to shops or restaurants (Of the 74 residential spaces on the first and second floors, 44 are engaging in commercial activities housing 30 restaurants, while another 10 eateries are located on the ground floor.
- Source : <http://www.hindustantimes.com/delhi-news/after-crackdown-on-cp-rooftop-restaurants-is-delhi-s-khan-market-next/story-eP9SuGWEtmmaX25KXIrV9K.html>.



Lok Nayak Bhawan

- The residential pockets surrounding Khan Market like Sujuan Singh Park, Rabindra Nagar etc. are low - rise , low - density developments.
- Prominent landmarks located around Khan Market are State Bhawans like Rajasthan House, J&K house etc. , embassies like Jordan embassy, Israel embassy, Hotel Taj Mansingh, Hotel Taj Ambassador to name a few.
- Institutes like Modern Junior school, Sardar Patel Vidyalaya and Dayal Singh college located in the vicinity attract huge number of students to the complex.

I.3.5 Built v/s open spaces



Map highlighting built v/s open in and around Khan Market

Lutyens Bungalow Zone is an example of low - rise, low - density development with plots having colonial structures and large open & green spaces, thus imparting the precinct a unique character.

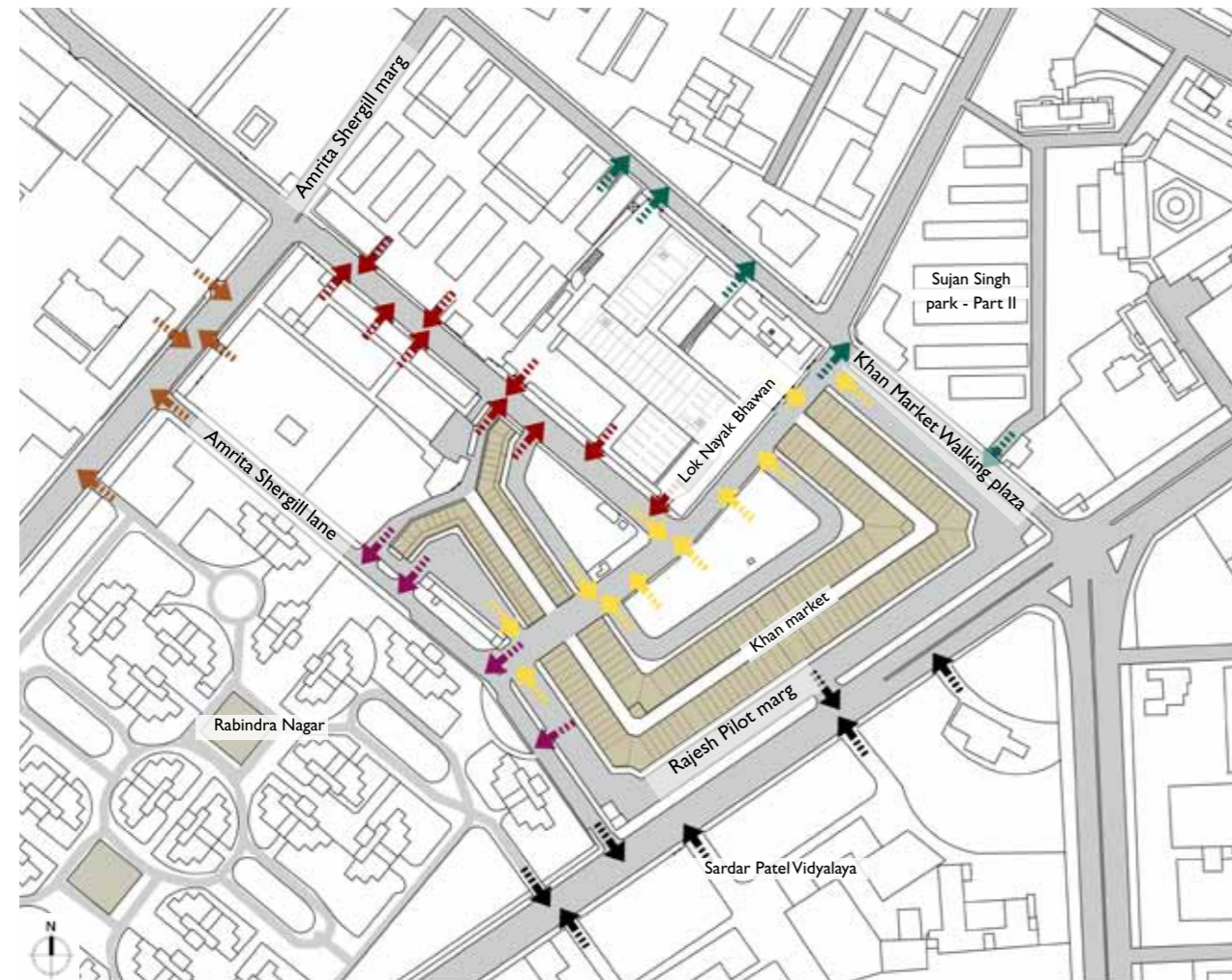


All the old green pockets have now been converted into Parking lots to accommodate the growing parking demand for the market.



An under utilised pocket lying vacant which is currently being used for car parking

I.3.6 Permeability



LEGEND

- Permeability across Khan Market Walking plaza
- Permeability across Amrita Shergill Marg
- Permeability across
- Permeability across
- Permeability across Prithviraj Lane
- Permeability across Rajesh Pilot marg

Prithviraj lane has the maximum number of entry and exit points of complexes like Lok Nayak Bhawan, etc. making it a busy and congested lane.



The various lanes leading to Amrita Shergill marg have multiple openings on them along with on street parking on both sides of the road causing traffic congestion.



Amrita Shergill lane has minimum openings thus vehicles are parked parallelly on the dead edge of the road. Also the lane is deserted as it has a dead edge along one side of the road.

Chapter 2 - Issues and analysis

2.1 Existing pedestrian circulation

2.1.1 Associated issues

2.2 Existing vehicular circulation

2.2.1 Associated issues

2.3 Existing parking facilities

2.3.1 Associated issues

2.4 Existing pedestrian circulation

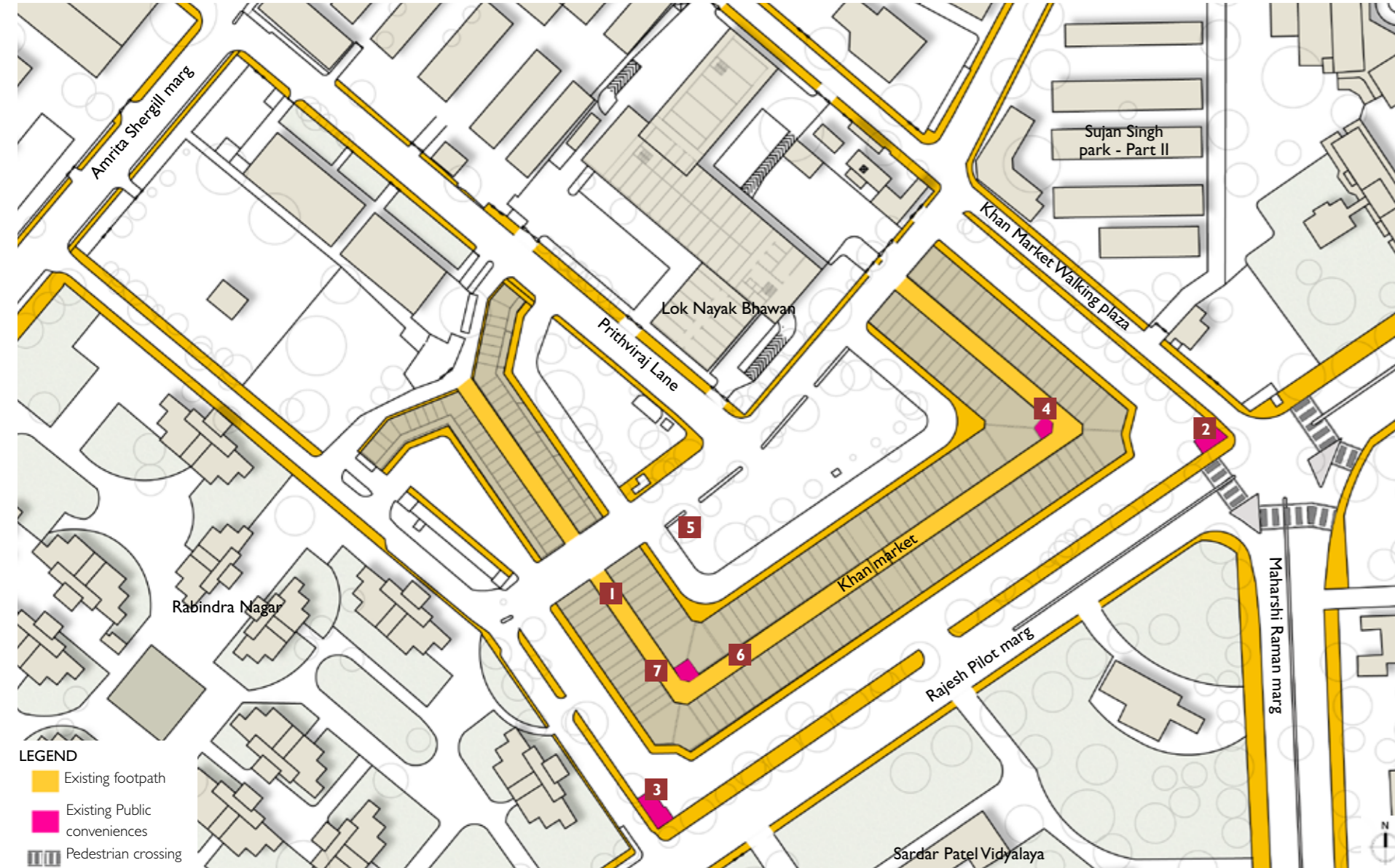
2.4.1 Associated issues

2.5 Visitor's profile

2.6 Summary of issues

2.1 Existing Pedestrian circulation

Khan Market has pedestrian footpaths in and around it but it has been observed that the footpaths lack maintenance and continuity which makes the walking experience uncomfortable especially during extreme weathers. Also, at certain places the widths are insufficient for two people to pass by together. The footpaths are also not universally accessible.



Map highlighting pedestrian infrastructure in Khan Market

2.1.1 Issues associated with Pedestrian infrastructure and circulation



Middle lane acts as the access to the restaurants and shops and is treated as a service lane. The footpath in the middle lane is poorly maintained with broken pavers making it difficult to walk.



Public Convenience provided by NDMC is located on the edge along Rajesh Pilot marg. The utility being on the front road blocks direct view to the front edge of the market.



Dhalao and public toilet located on the edge along Rajesh Pilot marg create a foul smell around them and cause discomfort to the passers-by.



Public toilet located in the Middle lane at the corner which makes it an unpleasant experience to walk by.



A badly maintained and inconspicuous drinking water facility in parking lot used by drivers and parking attendants.

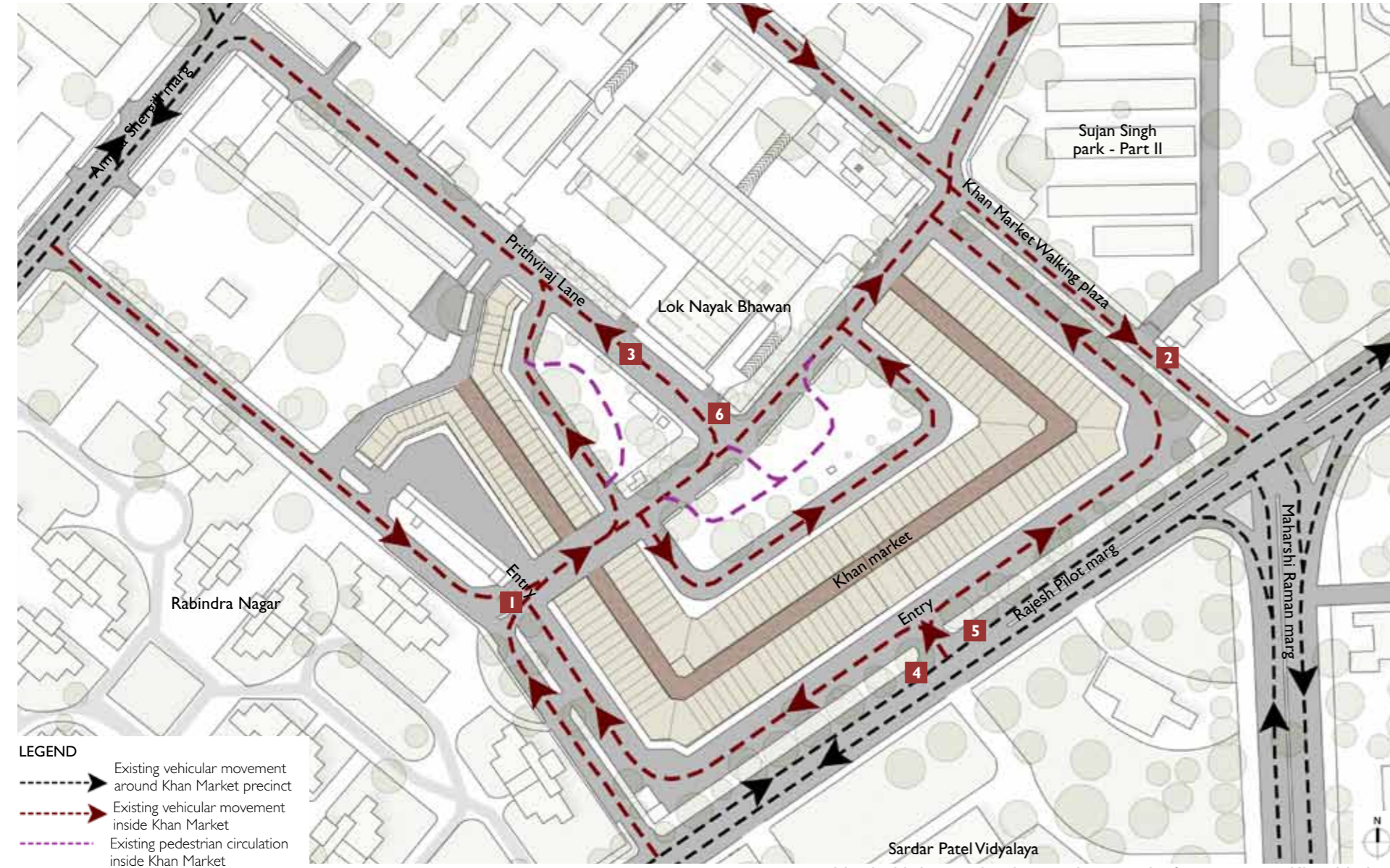


Middle lane not shaded, thus walking in extreme weather becomes cumbersome.



2.2 Existing Vehicular circulation

As seen below, the traffic enters from 2 points into Rajesh Pilot Marg and Amrita Shergill Marg and merges onto the middle lane leading to parking and Lok Nayak Bhawan. This movement causes congestion as vehicles are pulling in/pulling out from parking causing build up/ queuing. Also due to lack of signages the movement is confounding.



2.2.1 Issues associated with Vehicular infrastructure and circulation



One - way entry towards Khan Market from Rajesh Pilot marg and Amrita Shergill lane merging into a single lane towards parking.



Vehicles tend to go wrong side on Khan Market Walking plaza due to lack of signages, thus causing traffic congestion.



Designated on street parking on both sides of the road along Prithviraj Lane. In peak hours it aggravates traffic congestion due to constrained widths.



Idling on Amrita Shergill marg near entry to Khan Market which is a No Parking zone



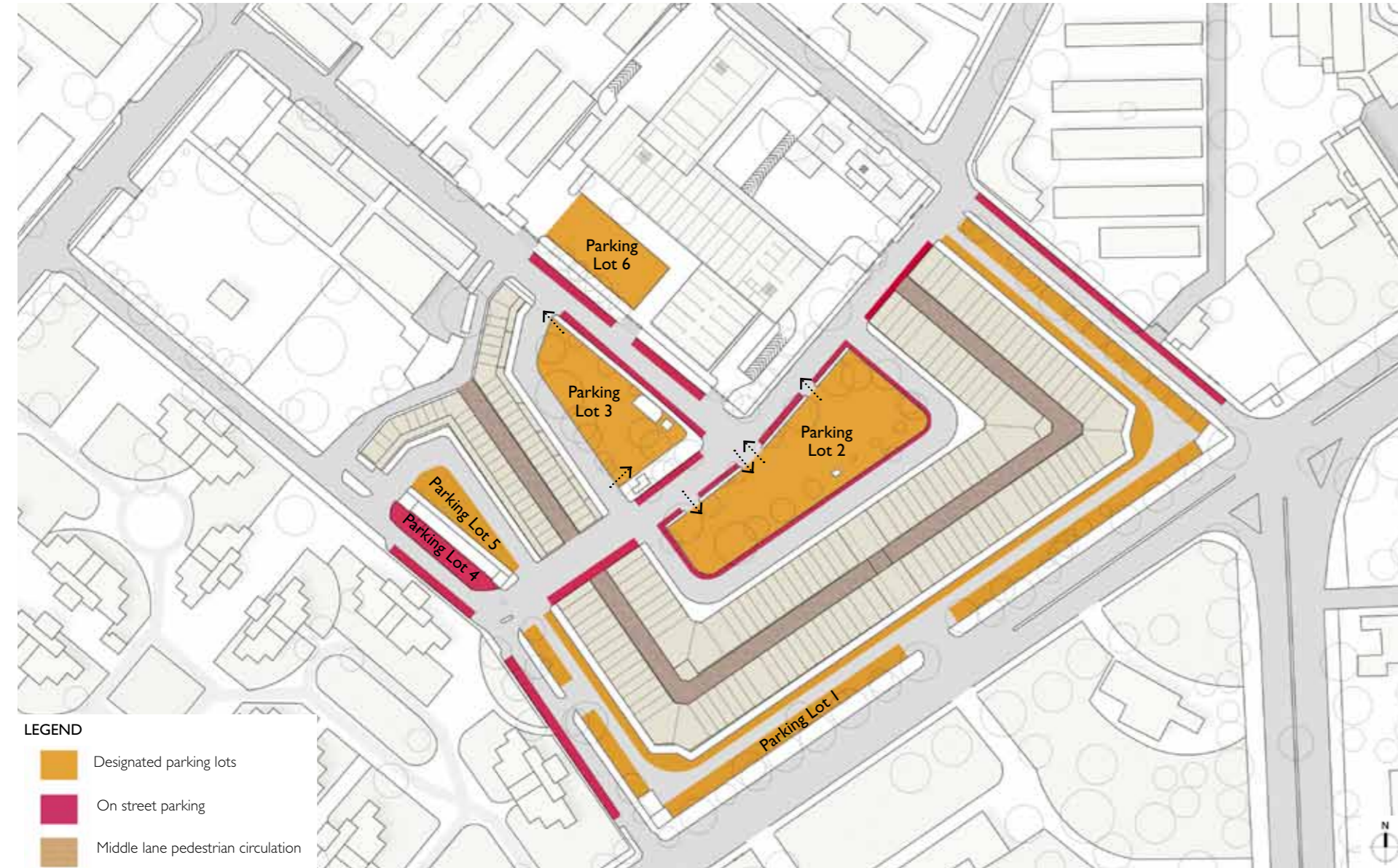
Auto / cab Idling on Amrita Shergill marg near entry to Khan Market



Two way movement channelised by cones along Prithviraj lane. On street parking on either side of the road causes congestion in peak hours.

2.3 Existing Parking facilities

The various parking lots (designated and on-street) accommodate upto 800 cars managed by Khan markets traders association (data as provided by NDMC). The on - street parking is a result of the demand which is facilitated by the shopkeepers by providing free parking facility as there are no other parking lots near Khan Market.



Map highlighting parking lots in Khan Market

2.3.1 Issues associated with Parking facilities



Parking Lot 1 : On street designated parking along Rajesh Pilot marg edge.



Parking Lot 2
A fully saturated parking Lot provided by NDMC and managed by Khan Market Welfare association. The parking lots offer 'Free parking' and thus shoppers are encouraged to bring the vehicles to the market.



Parking Lot 3



Parking Lot 4 : Vehicles parked On - street on both sides of Amrita Shergill lane causing slow traffic movement, as it leaves only one lane for movement.



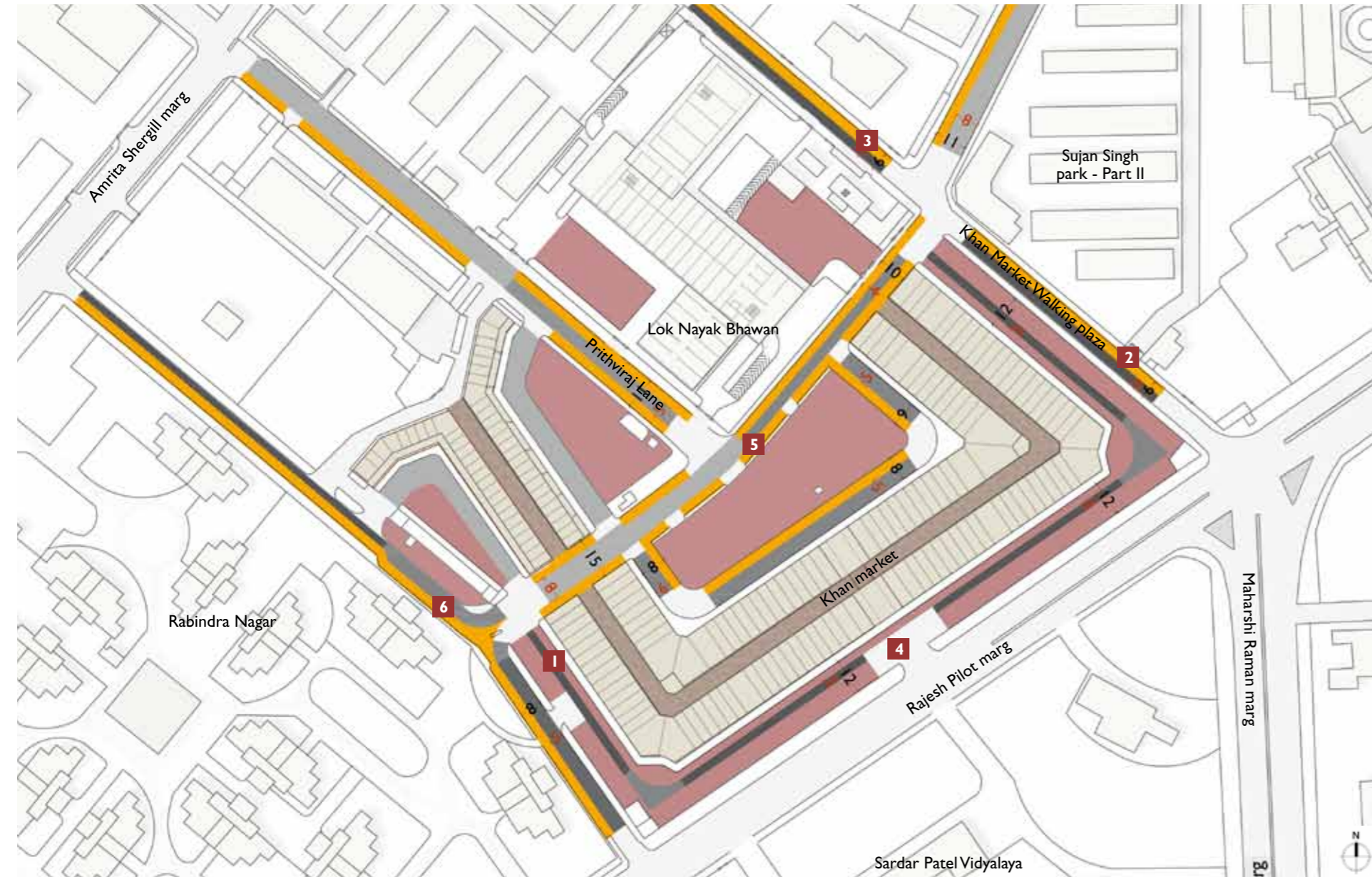
Parking Lot 5 : Car parking for the vehicles coming in the Mechanic market.



Parking Lot 6 : Surface parking in Lok Nayak Bhawan complex open to public. Basement parking is reserved for employees in the complex.

2.4 Restrictive traffic movement

The existing road widths have been reduced substantially due to On -street parking.This leaves no lane for movement of thorough traffic and thus constricts seamless traffic movement.



Map highlighting parking lots in Khan Market

2.4.1 Issues associated with Traffic movement



On street parking on either side of the road breaks the seamless movement of pedestrians



Vehicles parked on the footpath interfering with the pedestrian movement



Vehicular movement hampered with pedestrian movement



On - street parking (mostly on both sides, where space permits) restricts vehicular movement.

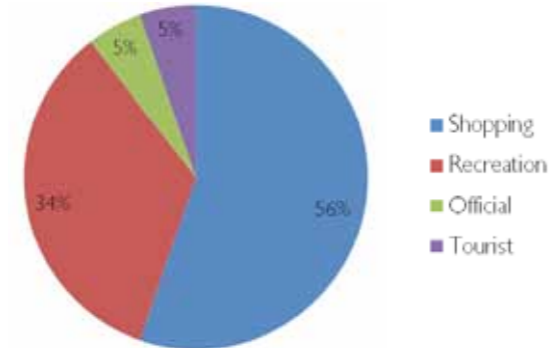
2.5 Visitors profile

Source : DUAC Site Survey carried out in February 2017

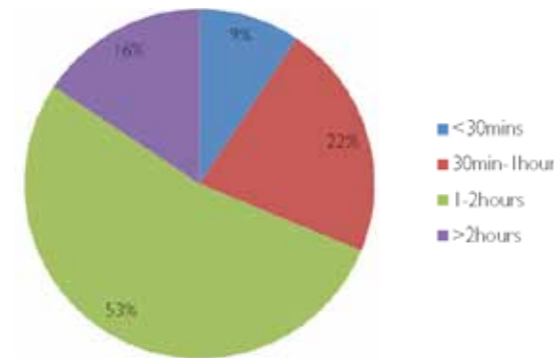
Visitors are one of the key stakeholders for any kind of development in Khan Market. They are also largely cited as the reason for opposing the project by traders. To realistically assess the impact on visitors, a sample interview survey (100 samples) was carried out to determine the broad visitor profile, nature of parking requirement, and stated preference for various services that would be provided or removed due to it.

Following are the key observations from the survey findings:

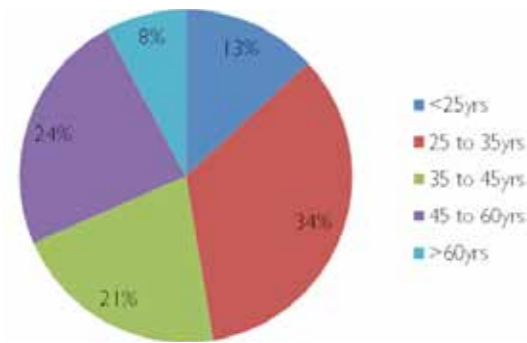
1. All age groups frequent the market for different activities - convenience shopping, utilities and apparel shopping, eateries, and pubs, etc
2. Given it's historical background, location and unique character, 5% of the respondents were found to be tourists.
3. With nearly 10% of the trips shorter than half an hour, a need for short term surface parking for quick drop bys has been ascertained.
4. Mode of transport primarily used to access the market is private cars (72%) with half of them driven by chauffeurs. Therefore, an argument for segregated multilevel parking holds merit from convenience standpoint as well.



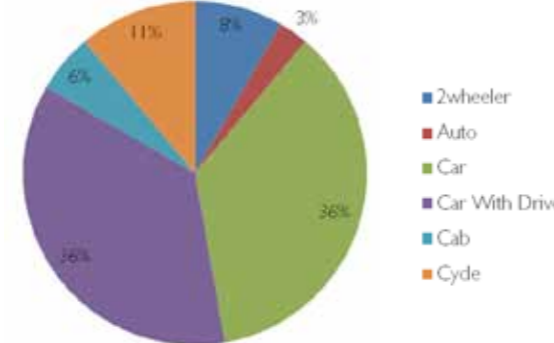
Graph showing percentage distribution of different Purposes of visit



Graph showing amount of time spent by visitors in Khan market

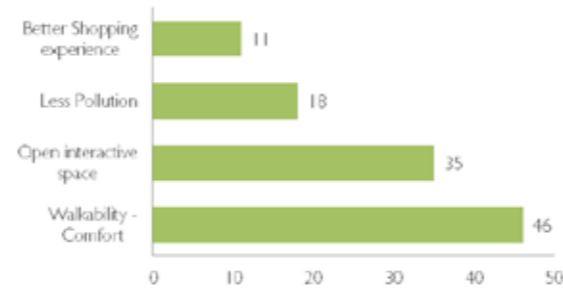


Graph showing age-wise distribution of visitors

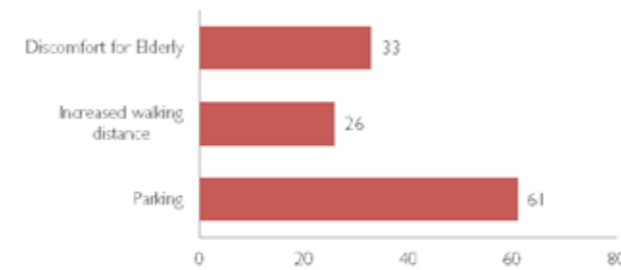


Graph showing Modal Split of visitors

During the interviews, the respondents were also asked to choose the desirable as well as undesirable outcomes of implementing pedestrianisation. Surprisingly, 35% of the respondents felt that an open space for social interactions has been lacking and would be a welcome development along with improved walkability. 61 (out of 72 car owners) respondents felt that parking would become inconvenient who made up 85% of those who had come by car including the 50% chauffeur driven ones as well as the short term visitors who would not be required to park off-site.



Opinion on advantages of pedestrianisation



Opinion on disadvantages of pedestrianisation

From the opinion survey it can be inferred that a majority of visitors at Khan Market are supportive to pedestrianising the market (77%). Also there is a scope of attracting more footfall by better designing the available open space.

77% In Favour of Project

23% In Opposition of Project

2.6 Summary of issues

Components	Issues	Description	Photographic evidences
Pedestrian	(a) Insufficient footpath width	The footpaths along the side lanes are only 1.0m wide which do not enable two pedestrians to cross over.	
	(b) Encroached footpath breaking the pedestrian continuity	Since Khan Market has a lot of grocery stores, they display their items on the footpath, thus encroaching half the available widths.	
	(c) Middle lane footpath not shaded and maintained	<ul style="list-style-type: none"> The Middle lane is not shaded . Pavers broken at various points making the walking experience cumbersome. 	
Vehicular	(d) Auto idling at the entrance of Khan Market	<ul style="list-style-type: none"> Autos queue up at the entry of market disrupting traffic movement No provision for cabs/autos (IPT) leads to idling on surrounding roads. 	
Parking	(e) Along the roads	Parking spillover on roads causes congestion in peak hours due to in and out movement of vehicles	
	(f) Along the shopfronts	Disconnects the shop front visually and also congests the vehicular circulation.	
	(g) Free parking made convenient for the shoppers by the traders association	It is made easy and accessible by parking attendants and designated on street parking which fulfils the parking demand.	
Utilities	(h) Utilities like solid waste management and waste water management not planned for	The utilities are not formalised in the market as the buildings are old and, retrofitted. They do not have defined mechanisms for maintaining the utilities like solid waste.	

Chapter 3 - Proposal

3.1 Project program

3.2 Proposed site zoning

3.3 Proposed pedestrian infrastructure

3.3.1 Proposed elements in pedestrian plaza

3.3.2 Detailed proposal along Rajesh Pilot Marg

3.4 Proposed vehicular circulation and infrastructure

3.4.1 Proposed strategies for vehicular infrastructure

3.4.2 Detailed proposal along Amrita Shergill lane

3.4.3 Detailed proposal along Khan Market Walking plaza

3.5 Proposed green / open spaces

3.5.1 Proposed elements in green / open spaces

3.5.2 Detail along proposed Central landscaped plaza

3.5.3 Detailed along proposed dedicated green over basement parking

3.5.4 Proposed strategies for dedicated green over basement parking



Dedicated landscaped green above basement parking

Central landscaped court with OAT and mist fountain

Existing Khan Market built fabric

Continuous hedge screening the front edge from traffic

Widened pedestrian plaza

3.1 Project program

Aim of the study

Khan Market to be a safe, comfortable and accessible place to live, work, shop and socialize where: walkability is promoted, equity of users is ensured, traffic movement is channelized by design, public spaces are carved out to socialize and a conducive micro - climate is created with the design elements.

Objectives

1. To design a seamless and efficient vehicular movement network.
2. To improve universal user safety and mobility (users including pedestrians, elderly , disabled, cyclists and motorists).
3. To promote walkability by creating pedestrian friendly infrastructure and enhance the walking experience.
4. To design Open Public spaces for interaction, socialization and revitalization.
5. To design greens which also become (green)lungs to the neighborhood.

Adopted strategies

1 Traffic management



- Proposing a traffic management plan to prevent congestion caused due to bottlenecks, traffic volumes and reduced road capacity.
- This would enable reduced travel time to the destination and also lower carbon footprint caused due to pollution.

2 Creating Open public spaces to socialize and gather



- Designing Open Public spaces which are spots for human interaction, gathering and congregation facilitating communication and socialization.
- These spaces attract business's & tourism, improve public health & environment, improve pedestrian safety, provide cultural opportunities and increase the use of public transportation.

3 Envisioning a User - friendly neighborhood



- Segregating access for different users to make the neighbourhood user friendly i.e. for pedestrians including elderly and disabled, cyclists and motorists.

4 Sustainable landscape



- Sustainable design of open spaces can reduce energy use by capturing the resources around the site and recycling the same.

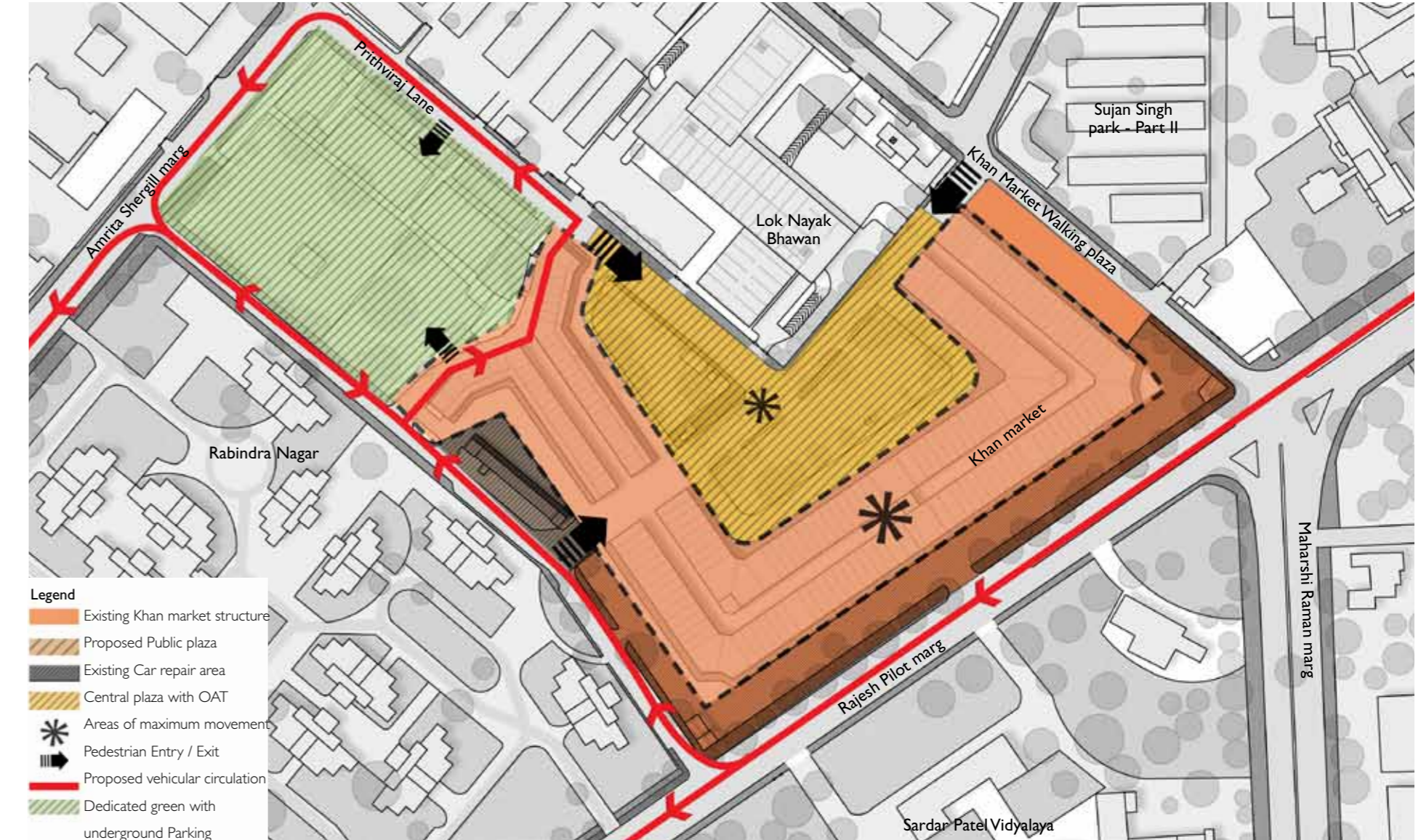
5 Smart features



- For a smart and efficient environment, technology plays an important role.
- Features like CCTV surveillance, Waste management, Free WIFI, Access control, Public transit etc. yield significant cost and energy savings, improved the quality of life for the users, help city agencies to improve city operations by better understanding the local environment, reduces congestion and emissions, improves air quality, water conservation,

3.2 Proposed Site Zoning

The main aim of the study is to decongest the market from the increasing traffic saturation and create open spaces which would serve as grounds for interaction and socializing. Also, free pedestrian movement without vehicular conflict is established by segregating the respective movement paths. The traffic is channelized through a directed one way movement towards a basement parking to accommodate the traffic of Khan Market and the surrounding areas. The market complex would be a pedestrian only zone with provision of supporting infrastructural facilities for the same.



3.3 Proposed pedestrian infrastructure

It is proposed to upgrade the pedestrian infrastructure like better maintained footpath, marked pedestrian crossings, table top crossings and supporting facilities like benches, shading devices for streets, signages for wayfinding and proper lighting.



3.3.1 Proposed elements in Pedestrian plaza



1 Pedestrian corridor in shopping plaza
Source: [Online]. Available from: <http://www.archdaily.com/783748/5-steps-to-creating-high-performance-communities>

Pedestrian corridor in shopping plaza

- A widened pedestrian corridor helps to handle pedestrian volumes and provide adequate landscaping / amenities.
- It also improve safety, calm traffic, and have the potential to revitalize the economy of the street as window shoppers take up about 1.5 to 2 feet of space.



2 Seating arrangement along road edge
Source: [Online]. Available from: <http://arquitetando.com.br/o-crescimento-dos-parklets/>

Seating around the road edge

- Bench seating with pergola for shading become pause points for people to sit, relax and become 'Eyes on the street'.
- These seating spaces are intermittently placed along the edge facing Rajesh Pilot Marg.



3 Fabric and tensile shading devices to cover lanes in shopping complexes
Source: [Online]. Available from: <http://blog.urbanfile.org/2015/07/06/zona-loreto-possibile-non-trovare-un-rimedio-a-corso-buenos-aires/>
Source: [Online]. Available from: https://www.washingtonpost.com/news/capital-weather-gang/wp/2015/08/14/keeping-cool-in-the-sizzling-summer-the-covered-streets-of-granada-spain/?utm_term=.fa7a56bd10d7

Shading devices in pedestrian streets

Due to the extreme weather conditions of the city, it is suggested to provide shading mechanisms to provide comfort and protection from the harsh weather.



Directional signages and maps for wayfinding
Source: [Online]. Available from: <http://restoresmedicinaldesign.blogspot.in/2011/05/>
Source: [Online]. Available from: <http://www.corbindesign.com/wayfindings/category/civic/city-wayfinding/>

Directional and wayfinding signages

- Signages help locating various public facilities like Public Toilet, drinking water, parking etc.
- Maps help in wayfinding logical places like halting zones, taxi/auto stands, bus stop/metro stations etc.



Drinking water facility
Source: [Online]. Available from: <http://restoresmedicinaldesign.blogspot.in/2011/05/>
Source: [Online]. Available from: http://www.pinsdaddy.com/apollo-280-drinking-fountain-urban-fountains-and_

Drinking water facility

Drinking water fountains / taps should be placed conveniently and at accessible points where the users can locate them easily.

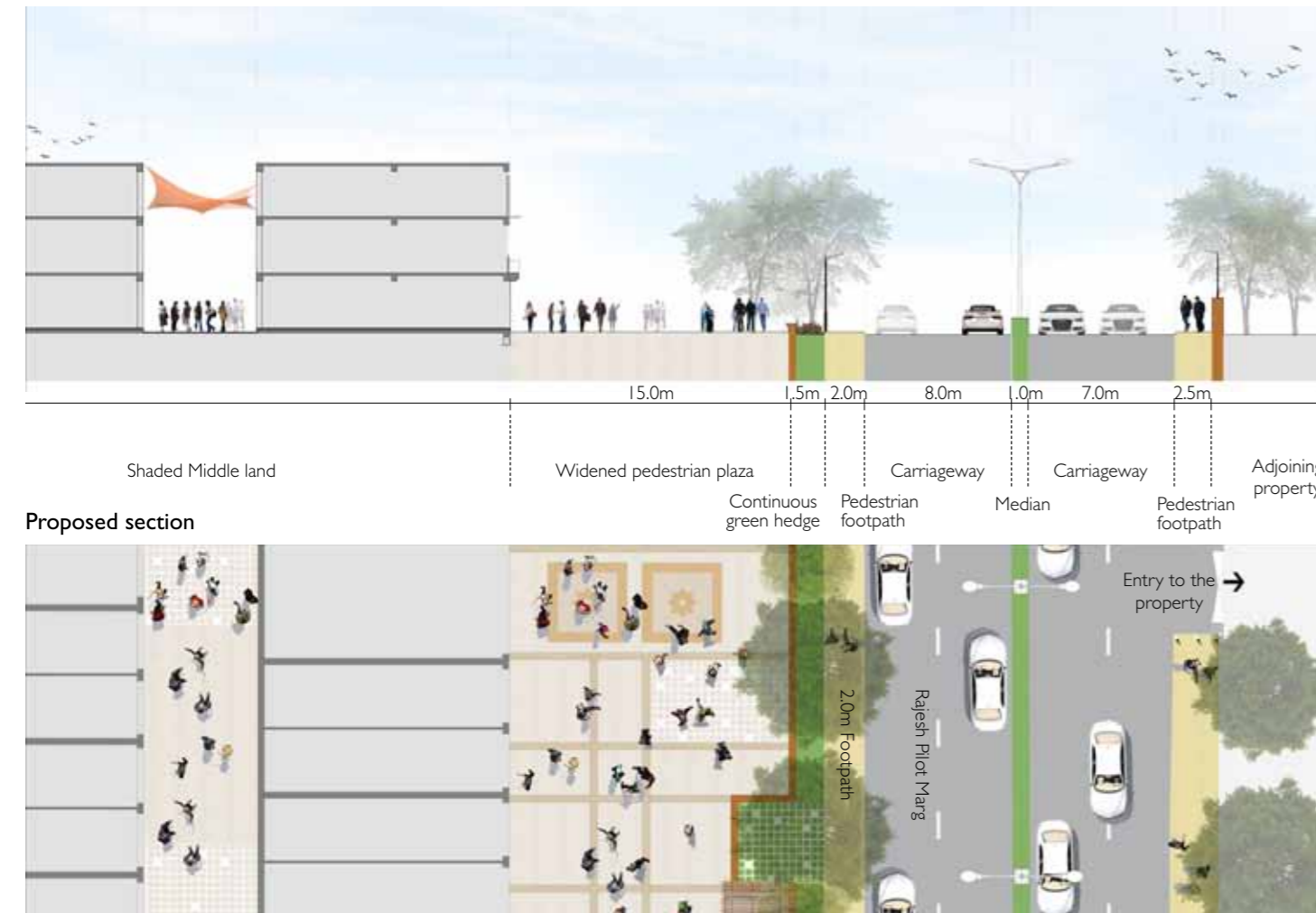


Segregated dustbins along the footpaths
Source: [Online]. Available from: <http://www.recycleeverywhere.ca/programs/community/>
Source: [Online]. Available from: <http://www.parkworks.ca/receptacles>

Dustbins

- Dustbins to be placed in the pedestrian plazas and pathways to discourage littering.
- Colour coded dustbins enable segregation of wet and dry waste.

3.3.2 Detailed proposal along Rajesh Pilot Marg edge



Proposed section

Part plan along Rajesh Pilot Marg edge

Detail proposals

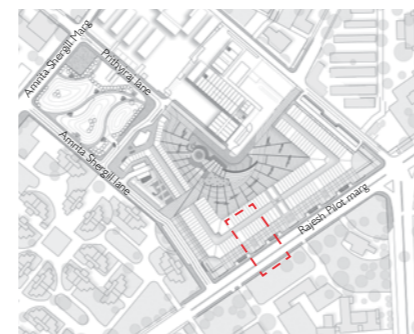
- The existing footpath is proposed to widen to 15.0mts to accommodate more pedestrian volume and thus increase the commercial footfall.
- The widened footpath would also enable provision of street furniture i.e. shaded benches, street lighting, signages, dustbins and a continuous hedge along Rajesh Pilot Marg to limit access and for traffic calming.
- Shading devices have been provided in the middle lane to protect the users from harsh weather condition and encourage walkability.

LEGEND

- Existing carriageway
- Proposed footpath
- Continuous hedge along Rajesh Pilot Marg edge
- Existing structure
- Shading device in Middle lane

Salient features

- Widened footpaths
- Shaded walkways
- Provision of street furniture like benches, dustbins, street lighting and appropriate signages.
- Continous hedge along the road edge to block traffic from entering and also acting as a buffer for traffic calming.



Key plan

Proposal along Rajesh Pilot Marg edge



View showing the widened Pedestrian Plaza along Rajesh Pilot Marg edge

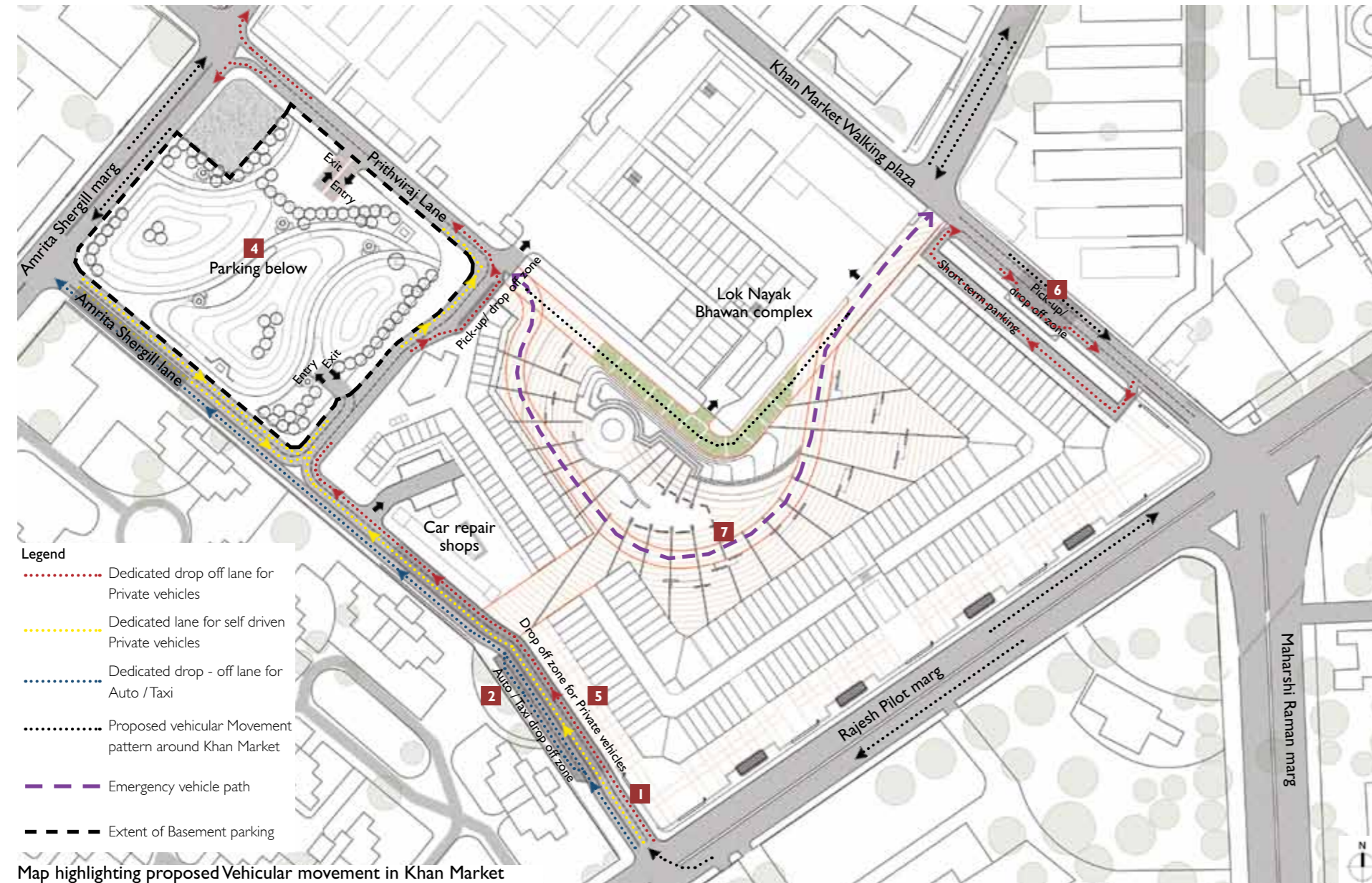
Widened Pedestrian plaza for shoppers and visitors

Pergola shaded seating provided at intervals acting as 'Pause Points'

Continuous hedges along Rajesh Pilot Marg which act as a buffer for Pedestrian plaza from traffic and also break the entry for vehicular movement

3.4 Proposed vehicular circulation and infrastructure

A guided, One way movement has been proposed to enable seamless, uninterrupted movement in and around Khan Market. Parking has been taken away from the surface to be accommodated into basement parking and make way for a central Open plaza.



3.4.1 Proposed strategies for Vehicular infrastructure



Source: [Online]. Available from: <http://m.gulfnews.com/news/uae/society/taxi-drivers-in-uae-manage-to-steer-demanding-job-on-the-road-1.1992395>

Segregate traffic lanes

A segregated lane with access from Subramaniam Bharti Marg has been assigned for IPTs and taxis with a time bound idling zone. The egress is from Amrita Shergill Marg.



Source: [Online]. Available from: <http://www.directenquiries.com/Base.aspx?company=South%20Tyneside%20District%20Hospital&companyId=365281&action=routes&soid=0&type=0&rid=4010-0000917&showall=y>

Demarcated drop off / pick up bays

For ease of movement by minimizing conflicts, a one way circulation loop has been designed which includes pick-up / drop off zones for passengers, a separate unhindered lane for self-driving visitors, and access to the MLCP.



Source: [Online]. Available from: <http://keywordteam.net/gallery/703931.html>

Access control at Entry / exit to curb idling

The circulation would be access controlled with automatic boom barriers at entry as well as exit to:

- Ensure that the circulation space provided is not misused for parking by private vehicles and also to limit the idling time of IPTs and taxis.



Source: [Online]. Available from: <http://keywordteam.net/gallery/703931.html>

Mechanized parking

Long term parking has been provided in a multi-level, sub surface, mechanized parking below the vacant corner plot. This would ensure the most efficient utilization of space and enable fulfilling the demand.



Source: [Online]. Available from: <https://byggkatalogen.byggjanst.se/produkt/cykelstall-cykelgarage/falco-premium-cykelstall/134785>

Cycle parking

A large number of the visitors to Khan Market reside within a radius of 3-4 kms which is a part of Lutyen's Delhi. It is one of the most well maintained areas with excellent cycle tracks and a good green cover on the roads creating a pleasant environment.



Source: [Online]. Available from: <http://ec.europa.eu/environment/europeangreencapital/nottingham-cycle-highway/>



Given the rising trend of recreational cycling among Delhi's elite, providing supporting infrastructure at the market complex is bound to unlock a latent demand for cycling among its patrons. Therefore, multiple docks for safe parking of cycles can be placed within the pedestrian plazas.

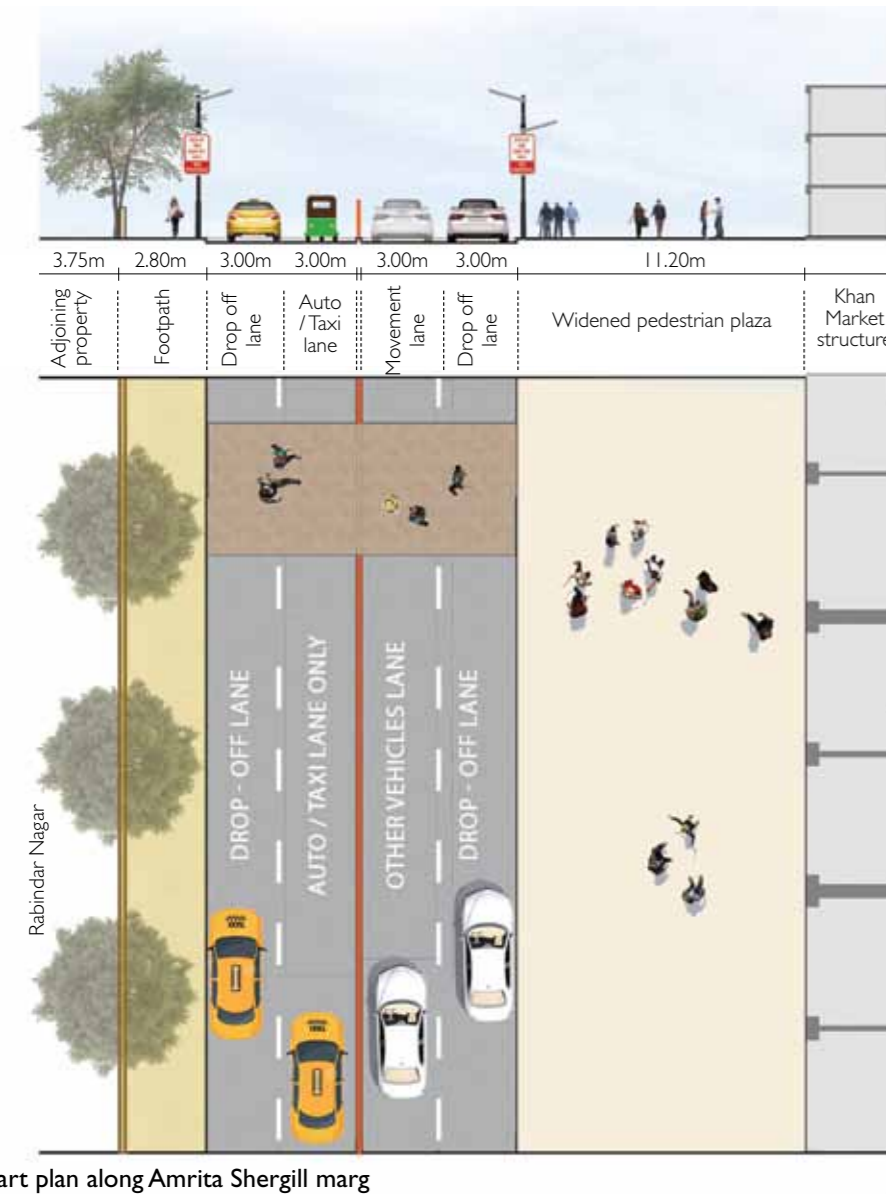
Short term parking

- A small space for surface, short term parking has been earmarked near the Khan Market walking plaza. It can accommodate upto 30 cars.
- Short term parking has been provided for the quick shoppers who frequent the market for convenience shopping. The first 30 minutes of the parking would be nominally charged and the charges would increase exponentially beyond 30 mins to discourage long term parking on surface.

Fire tender circulation

A dedicated access has been provided along the periphery differentiated using surfacing. The area is otherwise merged with pedestrian space.

3.4.2 Detailed proposal along Amrita Shergill lane



Part plan along Amrita Shergill marg

LEGEND

- Existing carriageway
- Proposed widened footpath
- Proposed widened plaza
- Existing structure
- Table top crossing

Salient features

- Segregated lanes for Auto/ Taxi/ private vehicles through movement and drop off points
- Table top crossings for pedestrian and cyclist crossing.
- Widened pedestrian pathway to accommodate pedestrians and cyclists and also acting as refuge area for drop off.



Key plan



Segregated lanes for IPT and private Vehicles parking/ Movement/ Drop - off



Designated Short -term parking and Drop - off / Pick bays

LEGEND

- Existing carriageway
- Proposed widened footpath
- Existing structure

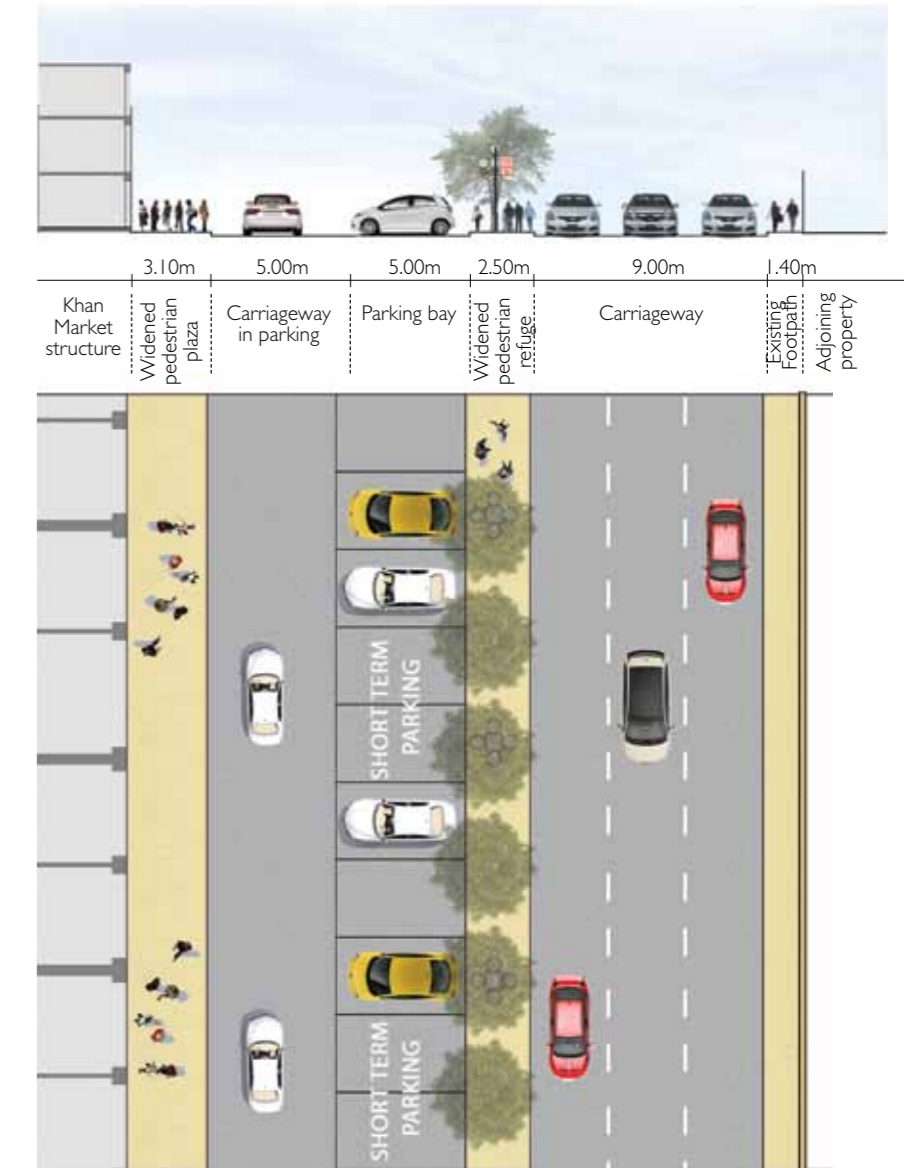
Salient features

- Short term parking for quick shoppers i.e. free for first 30 minutes and charged exponentially every subsequent hour.
- Designated Pick up / drop off bay
- Widened pedestrian refuge to cater to people getting picked / dropped. Also acts as buffer between parking and carriage way.
- Provision of street furniture like street lighting and appropriate signages.



Key plan

3.4.3 Detailed proposal along Khan Market Walking Plaza



Part plan along Khan market walking plaza

3.5 Proposed Green open spaces



Map highlighting proposed open green spaces in Khan Market

3.5.1 Proposed strategies for Central landscaped plaza



1 Stepped Open air theatre

Source: [Online]. Available from: <http://simple-outdoor.com/outdoor-lighting/outdoor-stair-lighting/of-civilizations-plaza-gardens-1009173.html>



2 Open Plaza - Aerial view of Siena, Campo Square and Sienna Duoma, Tuscany, Italy

Source: [Online]. Available from: <https://www.shutterstock.com/search/campo>



3 Dedicated Emergency vehicle path

Source: [Online]. Available from: <http://www.pictot.com/?image=http://omnipropittsburgh.com/images/turf-pave.jpg&title=Grass%20Paver%20Driveway%20with%20Stone%20Images&tag=stone%20and%20grass%20patio%20squaresgardens-1009173.html>

4 Open air theatre

- Open air theatre seating which can be used to hold performances.
- Also, the stepped seating offers view of the central plaza and mist fountain.

5 Fire tender path material

- The paved path stands out distinctly, thus is easy to recognise.
- It takes the heavy vehicle load.
- It helps in minimizing the heat island effect by enabling water percolation.



5a Radial flooring pattern

Source: [Online]. Available from: [https://readtiger.com/wkp/en/Pavement_\(architecture\)](https://readtiger.com/wkp/en/Pavement_(architecture))



5b Radial flooring pattern

Source: [Online]. Available from: <https://www.pinterest.co.uk/pin/408209153705866282/>

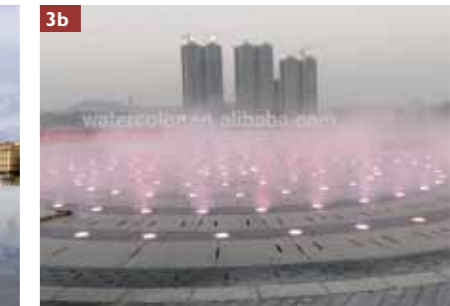
6 Radial flooring pattern

- It directs the focus on the central amenities i.e. mist fountain, OAT and the bench seating.
- It can be furnished in different materials like brick-on-edge or cut - granite.



3a Mist fountain

Source: [Online]. Available from: <http://www.medoc-notizen.de/106.html>



3b Mist fountain

4 Mist fountain

- It helps in creating a micro climate which is comfortable and conducive for the surroundings.
- The 'Mist fountain' when not being used becomes an extension of the plaza



4a Bench seating

Source: [Online]. Available from: <http://www.archdaily.com/458656/ribbons-cliff-garten-studio/52ae8853e8e44e22b9000135-ribbons-cliff-garten-studio-image>



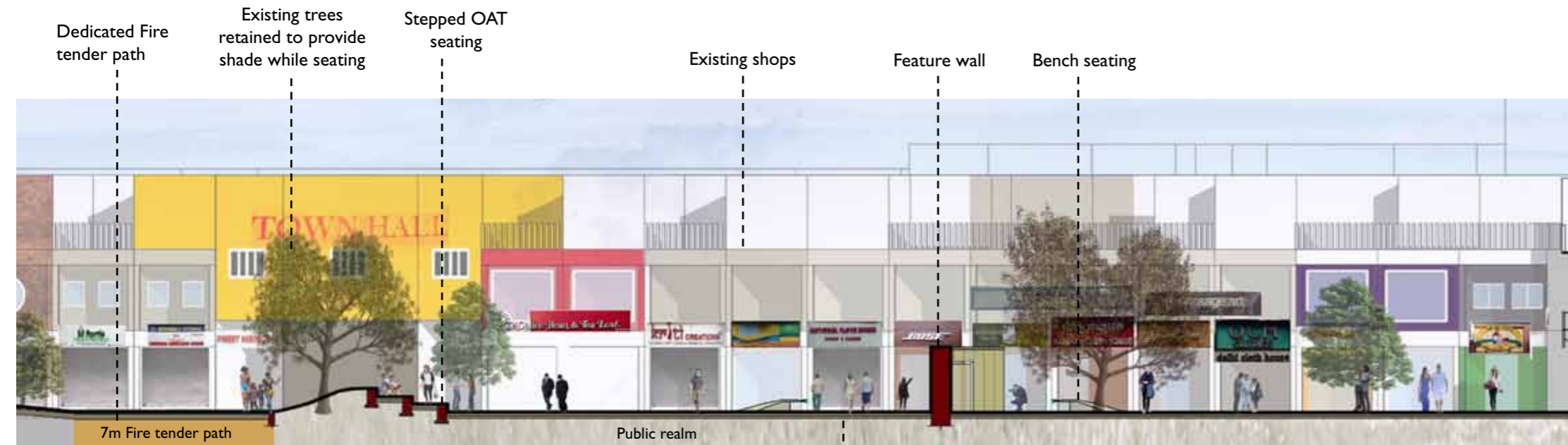
4b Bench seating

Source: [Online]. Available from: <https://es.pinterest.com/pin/338895940701136180/>

5 Bench seating

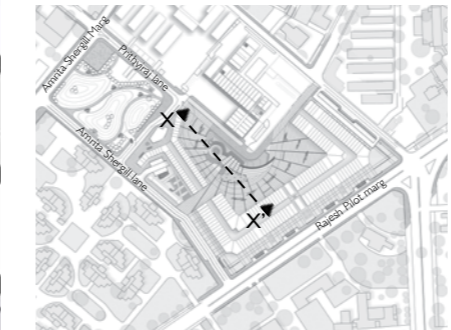
- The bench seating is centred around the existing trees to ensure shade while seating.
- The benches could be designed in the same materials as the flooring to make them look like an extension of the floor.

3.5.2 Detail along proposed Central landscaped plaza



Detail through proposed Central landscaped plaza

- Salient features**
- Feature wall
 - Mist fountain
 - Bench seating around the existing trees
 - Stepped OAT seating



Key plan



Proposed section through Central landscaped plaza

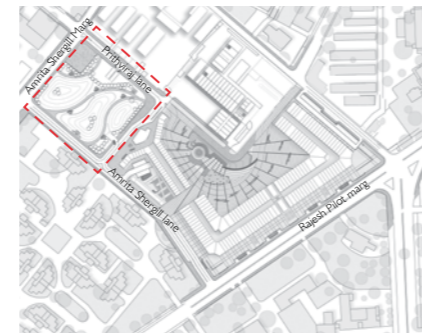


View showing the Mist fountain in the Central landscaped plaza



View showing the feature wall and bench seating in the Central landscaped plaza

3.5.3 Detailed along proposed dedicated green over basement parking

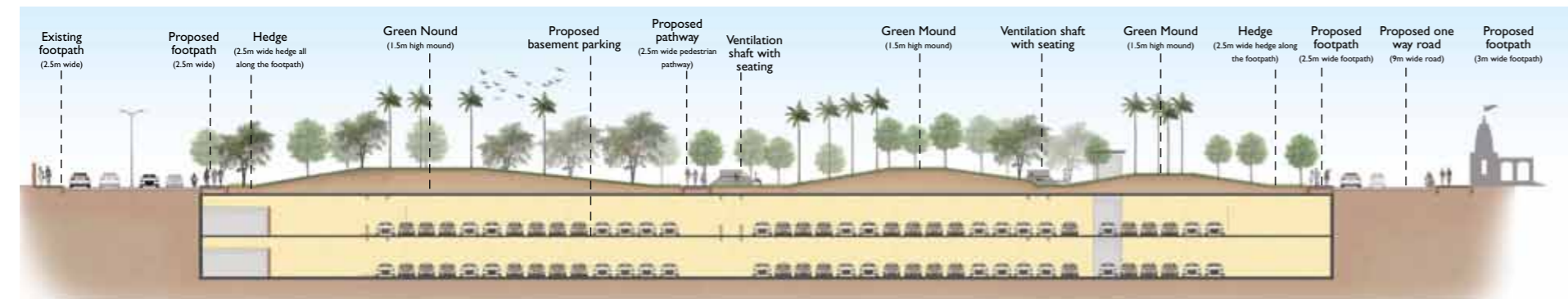


Key plan

Salient features

- Dedicated green with pedestrian tracks and flower beds.
- Green wall conceal surfaces like basement parking ramp.
- Raised mounds which can be used for seating and relaxation.

Part plan highlighting dedicated green above parking



3.5.4 Proposed strategies for dedicated green over basement parking



1a Landscaped dedicated green with pathways

Source: [Online]. Available from: <https://unique-landscape.com/canadian-museum-of-civilizations-plaza-gardens-1009173.html>



1b Landscaped dedicated green with pathways

Source: [Online]. Available from: <https://catalogues.be.unsw.edu.au/2016-bachelor-landscape-architecture-catalogue/ting-gan/>



2 Flower bed along the pathways

Source: [Online]. Available from: <https://catalogues.be.unsw.edu.au/2016-bachelor-landscape-architecture-catalogue/ting-gan/>

A dedicated green designed above the parking to provide green relief to the neighborhood. The green is interspersed with meandering pathways to access the greens and other features.

These greens act as relax and pause points where people from surrounding areas of work, residences etc. could come and enjoy the open spaces.

Flower bed line up along the pathways marking the pedestrian paths.



3 Vertical green wall to conceal features like basement parking Entry/Exit

Source: [Online]. Available from: <https://in.pinterest.com/pin/178736678933064999/>

These green walls act as a camouflage and also at the same time acts a screen to the surface applied to.



4 Cobble pavement along the pedestrian crossing

Source: [Online]. Available from: <https://www.flickr.com/photos/ainh124a/5829394323>

A cobble pathway helps minimize vehicle speeds and also act as comfortable cross-overs for the cyclists.



5 Paving pattern along the pedestrian pathway

Source: [Online]. Available from: <https://in.pinterest.com/pin/206954545345986927/>

Source: [Online]. Available from: <http://www.thehansindia.com/posts/index/Environment/2017-03-07/Things-to-Consider-While-Lighting-Up-Parks--Their-Pathways/285249>



View showing dedicated green above basement parking

Pedestrian pathway

Raised mounds

Flower beds along the pathway

Ventilation shafts

Temporary dividers to segregate different modes of traffic

Lift connecting to the basement parking

Ramp entry / exit to the basement

Reference List

- Delhi Development Authority, 1999, 'Zonal development plan F', Available at <https://dda.org.in/ddanew/planning.aspx>



(An ISO 9001 : 2008 Certified Organisation)

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