



CITY LEVEL PROJECTS

# NICHOLSON CEMETERY AND ITS PRECINCTS

Landscape and Pedestrian Connections  
Ward Number 77





(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**  
**Mohammad Shaheer**

## Consultants

Kirti Kawale

Monika Soota (3D Visualizer)

Nikhil Pandey (3D Visualizer)

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

<b>1</b>	<b>Introduction</b>	<b>6</b>
<b>2</b>	<b>Historical Significance</b>	<b>8</b>
2.1	Early Mughal Period, Late Mughal Period, Delhi 1857	8
2.2	Delhi – Early 19th Century and Post-Independence	10
<b>3</b>	<b>Context</b>	<b>12</b>
3.1	Zonal Plan ‘C’	12
3.2	Ward Boundaries, Location and Connectivity	13
<b>4</b>	<b>Mapping and Site Analysis</b>	<b>14</b>
4.1	Topography	14
4.2	Open Space System	15
4.3	Heritage	16
4.4	Site	17
4.5	Movement around the Site	18
4.6	Development around the Site	21
4.7	Existing Vegetation	22
4.8	Heritage Monuments	24
4.9	New Proposals	25
4.10	Nicholson Cemetery	26
4.11	Conclusion	30
<b>5</b>	<b>Design Proposal</b>	<b>32</b>
5.1	Schematic Plan: Potentials	32
5.2	Landscape Strategy	34
5.3	Design Concept	36
5.4	Design Development	37
5.5	Site Plan	40
5.5.1	Metro Entrance Plaza	42
5.5.2	Shops	43
5.5.3	Island Plaza	44
5.5.4	Para-Transit Bay	45
5.5.5	Food Plaza	46
5.5.6	Tree Plaza	48
5.5.7	Metro Walkway	50
5.5.8	Nicholson Cemetery	52
5.5.9	Aerial View	56
<b>6</b>	<b>Annexures</b>	<b>58</b>
6.1	AMASR Act	58
6.2	Brigadier John Nicholson	59
6.3	Heritage Inventory	60
6.4	Physical Characteristics of Pedestrian	62
6.5	Spatial Standards	64

## Summary

The design proposal demonstrates how historically significant places can be efficiently made part of the pedestrian system along with the transit nodes as the potential generators of the people on foot. The presence of transit nodes and heritage monuments and historical gardens gives opportunity to bring back this lost legacy into public life for the greater benefit of society.

We have used this site to demonstrate how historically significant places can be part of existing and proposed developments with provision of proper pedestrian spaces and open green spaces, abutting transport interchanges. Articulating the pedestrian needs with appropriate pedestrian widths, auxiliary amenities for the pedestrian walks, the design proposal authenticates these essential urban spaces as anchors, making them dynamic, useful and attractive to people.

## 1. Introduction

The Delhi Urban Art Commission took up Nicholson Cemetery and its precincts as part of the Landscape Project in Phase II of the City Level Projects.

Nicholson Cemetery is a heritage open space associated with the history of Delhi since the 19th century. The Commission felt that it would be able to offer advice and suggest environmental improvements for Nicholson Cemetery and its surroundings at a conceptual level, which would be in keeping with the intention of giving due importance to its history, without infringing on its sanctity as a cemetery.

In this regard, the Commission worked jointly with the concerned authorities of the Delhi Cemeteries Committee (DCC) which looks after the cemetery, to explore how this could be best accomplished. A meeting was held to understand the scope and possibilities with DUAC consultants as representatives and Delhi Cemeteries Committee's Secretary Mr Eugene Ratnam, and Chairman, Father J Rebello.

### Methodology:

The role of the Delhi Urban Art Commission was explained to DCC with regard to the environmental improvements and landscape proposals for the area within and immediately outside the Nicholson Cemetery. It was understood that the advice and comments of the representatives of the Delhi Cemeteries Committee would be actively and consistently sought whilst developing a design brief and proposal.

The Secretary DCC, Mr Eugene Ratnam, outlined the administration and functioning of the Delhi cemeteries. He noted that despite being a place of immense historical significance, very little of the history is either known or documented, and that the Committee has been considering some means of initiating research through young scholars or academic institutions.

Many significant personalities associated with important historical events over the last two centuries have found their final resting place here; it would be appropriate therefore, that the scope of the proposed work would be a comprehensive and systematic historical documentation together with proposals for improvements to its physical appearance and infrastructure.

The Chairman and Secretary of the DCC expressed their appreciation of the DUAC initiative, giving an assurance of all help and cooperation in making the site available for surveys or photography, and also making available any historical information that may exist within their own records.

Since Nicholson Cemetery and its precincts form a heritage conservation project, any proposals or suggestions must have a basis in the history of the place. For better understanding of this project, it was sought to involve eminent Delhi historian and former DUAC member Dr Narayani Gupta. Her advice on documentation and history, as well as her role in guiding the research, was a valuable resource.

Involving stakeholders and their points of view for the project was a significant part of the methodology for project initiation. The historical significance of the site plays a vital role, thus giving the design brief for the project.

### Approach:

The historical maps available with the Archaeological Survey of India (ASI) as well as maps available from secondary sources like various books were studied to strengthen the study. The site surveys around the cemetery that included the existing and proposed developments, movement patterns, heritage monuments, topography and open space systems etc., were also studied.

## 2.1 Early Mughal Period, Late Mughal Period, Delhi 1857

### Early Mughal Period

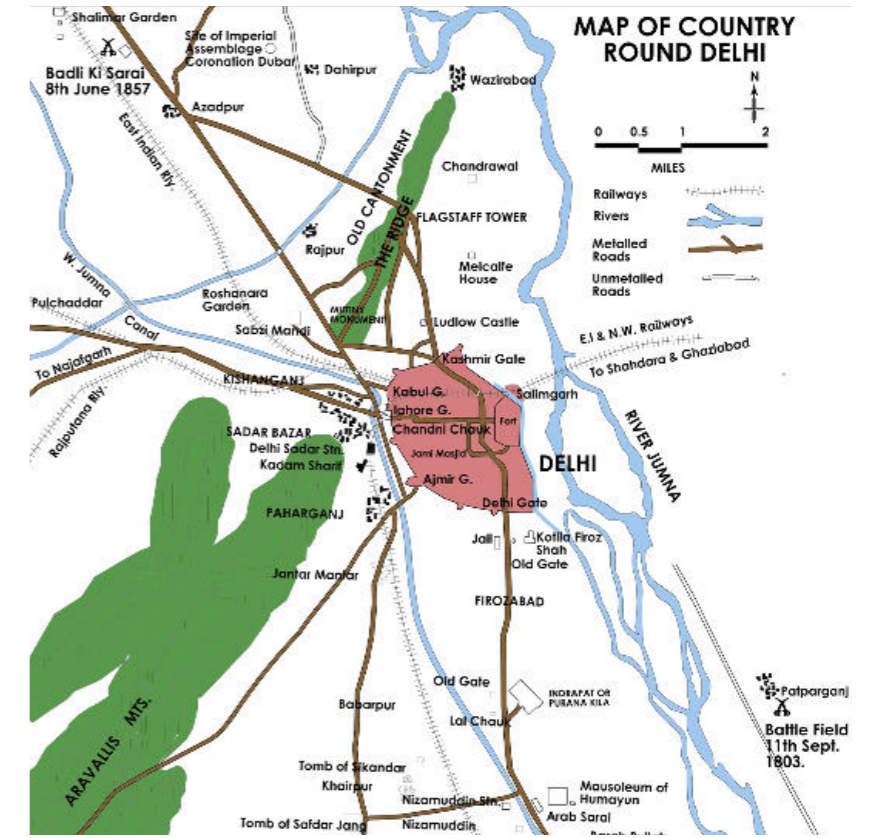
Shah Jahan shifted his capital from Agra alleging that the excessive heat to which the city was exposed during summer was unfit for the residence of a monarch. The Royal Palace was built between 1638 and 1648. The city walls, Jama Masjid, palaces of the nobles and some public buildings were erected by members of the family of Emperor Shah Jahan. The site which lies besides Qudsia Bagh was an open space just outside the walled city of Shahjahanabad, with almost no habitation. The palace was inhabited for nearly five to six years after it was fairly established.



### Delhi 1857

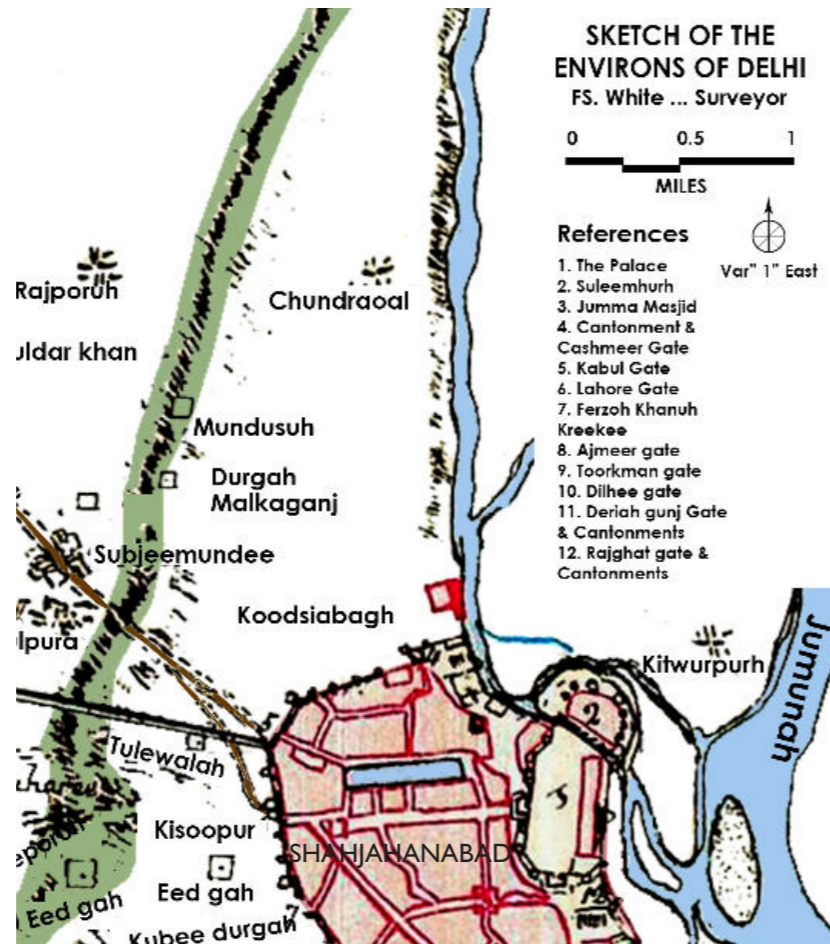
The Battle of Delhi took place on 11 September 1803 between British troops under General Lake, and the Marathas of Scindia's army under General Louis Bourquin and Wable Sardar. The battle was fought at Patparganj, right across the Yamuna River from Humayun's Tomb, which also gave the battle its local name. The city of Delhi surrendered three days later.

The Battle of Badli-ki-Serai was fought early in the Indian Rebellion of 1857, or the First War of Indian Independence as it has since been termed in Indian histories of the events. A British and Gurkha force defeated a force of sepoys who had rebelled against the British East India Company. The British victory allowed them to besiege and ultimately capture Delhi.



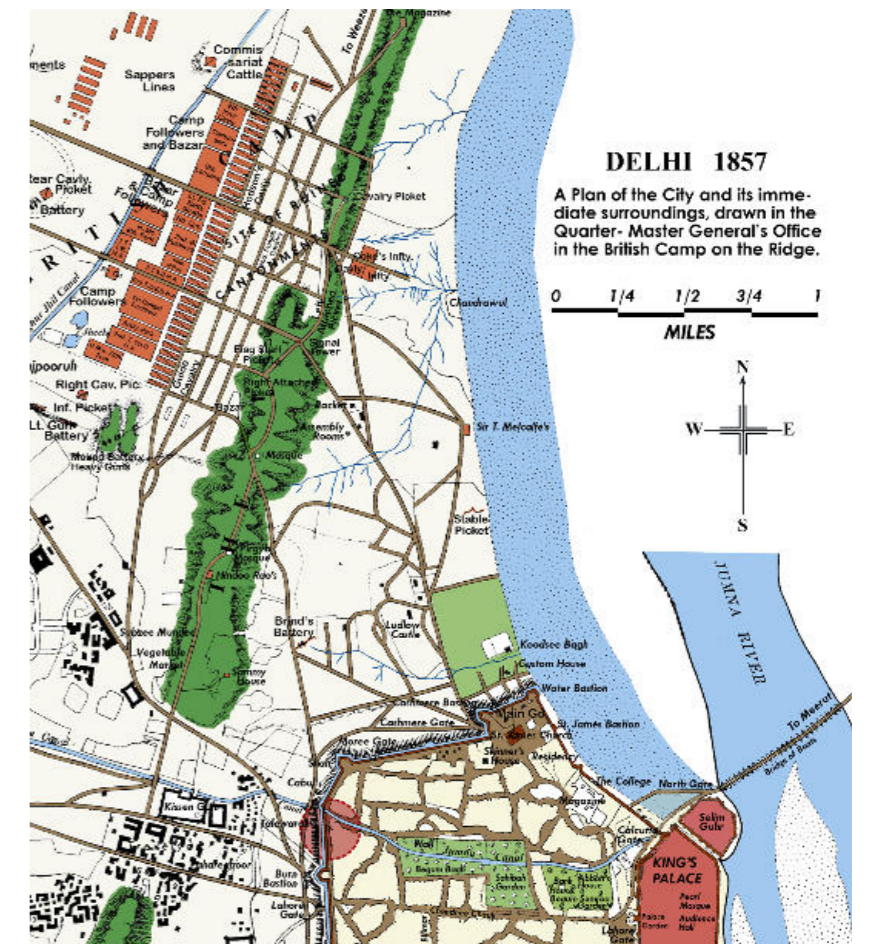
### Late Mughal Period

During the British conquest in 1803, Shahjahanabad had withstood ravages of civil war and invasion. The city was battered but not ruined, and was taken over from the Marathas by the British in 1803. The longest portion of the city walls on the north side were constructed between 1804 and 1811 by the British Government, after the attack by the Marathas. At this time Kashmere Gate was also reconstructed. From 1803 or at least 1806 there was no pretence of Delhi being an imperial city of India. Mughal walls were never properly completed, and had been seriously damaged by a severe earthquake in 1720. The site area which is just outside the walled city towards the northwest had little development.



The Siege of Delhi was one of the most decisive conflicts of the Indian Rebellion of 1857. The rebellion against the authority of the British East India Company was widespread through much of Northern India, but essentially it was sparked by the mass uprising by the sepoys of the units of the Army which the company had itself raised in its Bengal Presidency.

The area around the site was important with respect to the assault led on Shahjahanabad. Near Ludlow Castle was site of No. II Siege Battery to breach Kashmere bastion. Qudsia Bagh which is adjacent to the site area was one of the locations for No. III Siege Battery, which was constructed behind the Old Customs, only 200 yards distant from the breach.



## 2.2 Delhi – Early 19th Century and Post-Independence

### Delhi 1909

Most of the northern part beyond the walled city of Shahajahanabad was settled by the British in the mid-19th century. Here they established their churches, banqueting halls, bungalows and civil lines. The traditional dense, built form of the old city with central courtyards and narrow streets was counter pointed by the new prototype of the European-style bungalow with vast green spaces around structures, elaborate compound walls and wrought-iron gates.

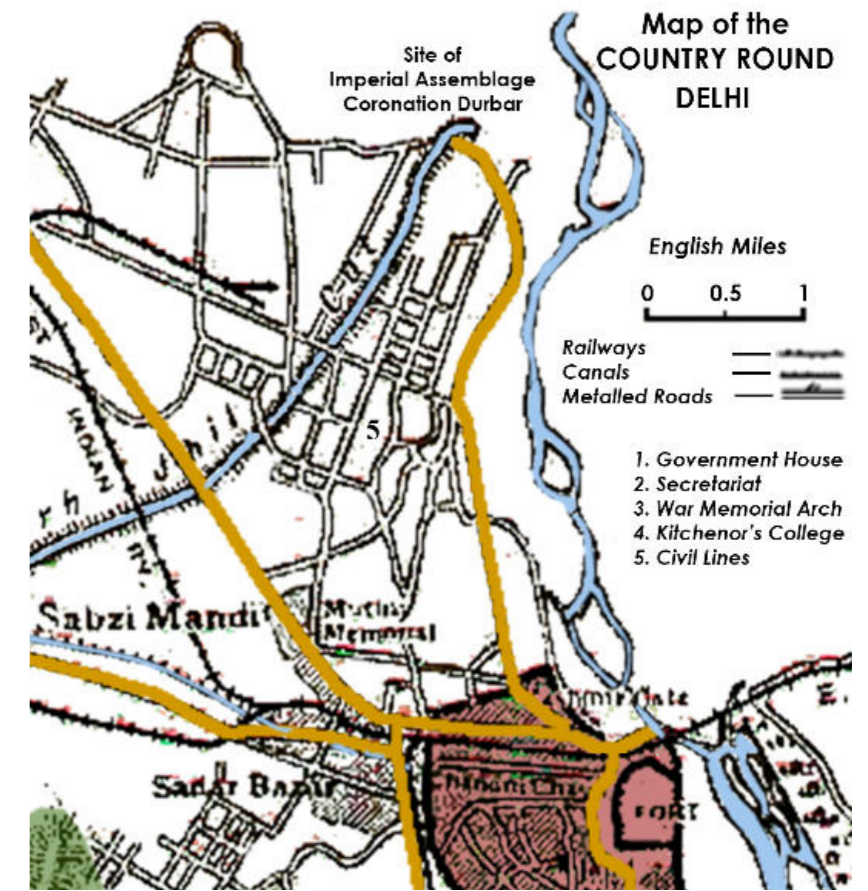
The residence of Sir Thomas Metcalfe and Samuel Ludlow's Castle were important buildings present in the vicinity of the site.



Source: www.columbia.edu

### Delhi 1924

The British presence around northern ridge since the 18th century, helped develop this area. The northern part of the walled city was developed with a road network strengthening the connectivity to different parts of the city. The area around the site mostly constituted government offices, educational institutions and churches.



Source: www.columbia.edu

### Delhi 1914

The area around the site was part of the green area for the walled city, mostly the gardens. After the Rebellion of 1857 the number of casualties of the Siege of Delhi created the rising demand for a Christian cemetery in the area. A new burial ground was opened in front of Kashmere Gate, near Ludlow Castle. The area in front of the cemetery and across Kashmere Gate was known as Nicholson Garden.

The place where Nicholson fell near Kabul Gate during the assault is near Nicholson Garden laid by British in 1860s which is now called Maharaja Agrasen Park.

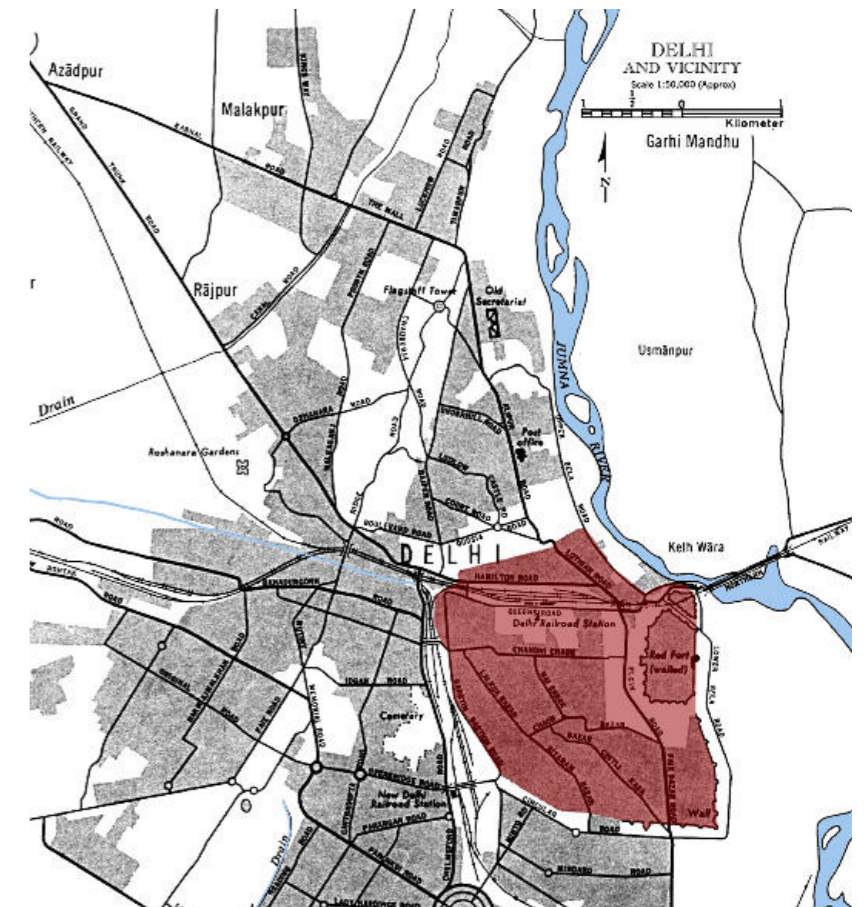


Source: www.lib.utexas.edu

### Delhi 1962

The Delhi Master Plan 1962 was the first step towards modern planning in India and was prepared with the assistance of a Ford Foundation team. In order to check the haphazard and unplanned growth of Delhi following the partition of the country and the phenomenal growth of the city's population, the Master Plan of 1962 aimed at the integrated development of Delhi.

This was the time when land use designation came into being. The site and the area around it was essentially a part of an open space system.



Source: www.cs.jhu.edu

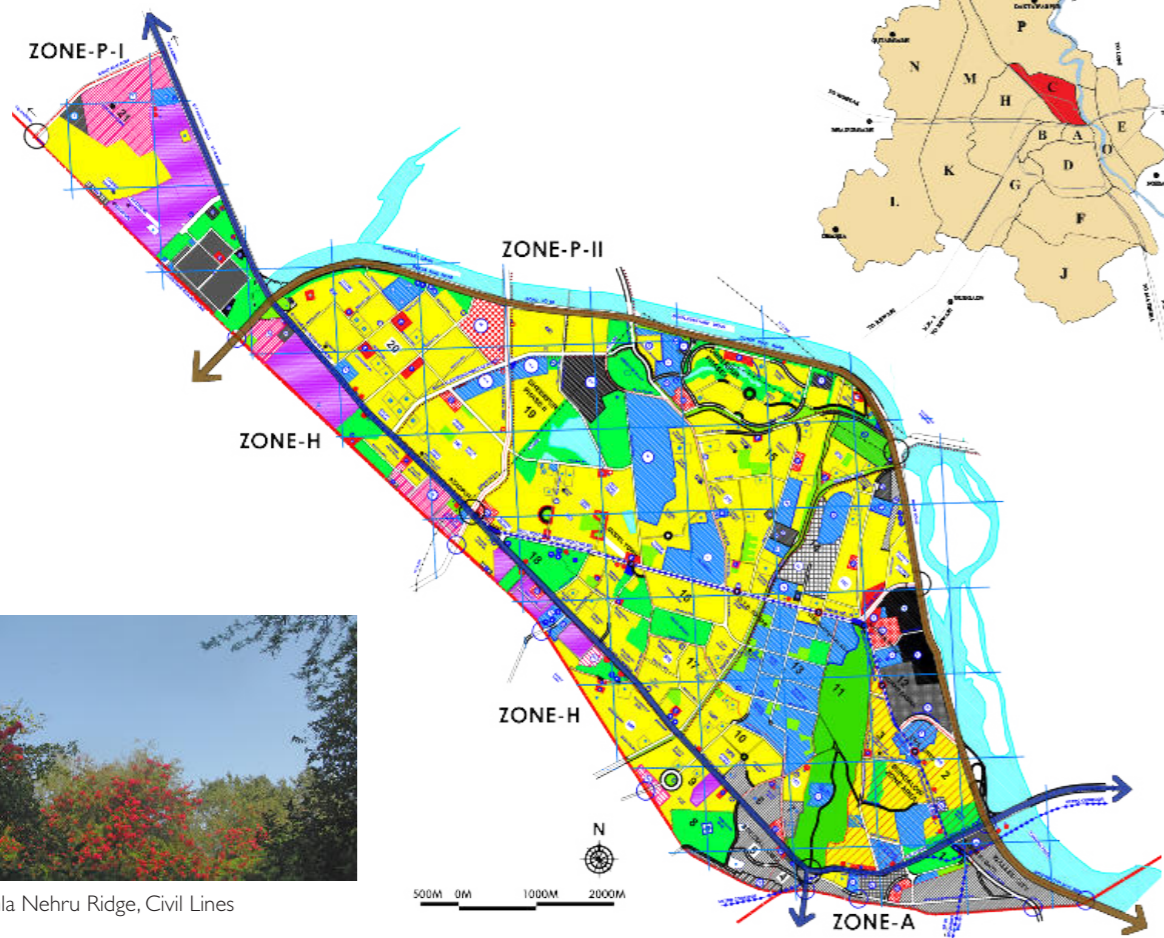
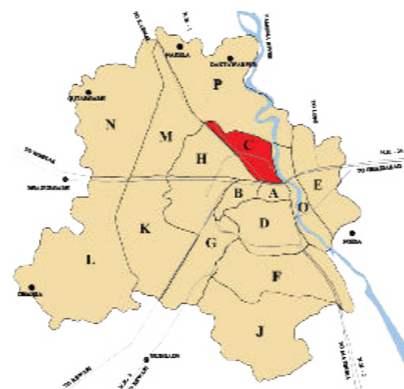
### 3.1 Zonal Plan 'C'

#### Introduction

The NCTD has been divided into 15 planning Zones (divisions) designated as 'A' to 'P' (except Zone 'I') in the Master Plan 2021. Zone 'C' is also known as 'Civil Lines Zone' and it is located towards the north, covering an area of 3959 ha and consists of 21 Sub-zones. The boundaries of the Zone 'C' are as under: North-East Part Ring Road, Outer Ring Road, Zone 'O' (River Yamuna) N.H.-I & P-II (North Delhi) adjoining Sub-zone C-21. North-West Zone P-I (Narela) & Zone 'P-II' (North Delhi) South-East Old City (Zone 'A') South-West Delhi-Amritsar Railway Line, Zone 'H' (North West Delhi-I)



Red Fort, Old Delhi



Zonal Development Plan: Zone 'C'. Source: DDA

#### Special Characteristics of the Zone

Zone C is a mix of diverse cultures from the Mughal and British periods and this is reflected in its heritage buildings and gardens. A part of the Special Area – Shahjahanabad (Old City) is located in this zone. The Old Secretariat of the Imperial Government was built in Civil Lines with large and spacious residential bungalows in the Civil Lines Bungalow Area. Qudsia Bagh forms a green buffer between the Old City and Bungalow Zone. The significant features of this Zone are:

- i) Civil Lines Bungalow Area.
- ii) Special Area
- iii) Old Secretariat Complex
- iv) Delhi University Campus
- v) Northern Ridge (Regional Park).
- vi) Azadpur Fruit & Vegetable Wholesale Market
- viii) ISBT, Kashmere Gate
- ix) Coronation Pillar
- x) Dheerpur Project Phase-I
- xi) Dheerpur Project Phase-II



Kamla Nehru Ridge, Civil Lines



Flagstaff Tower, Civil Lines

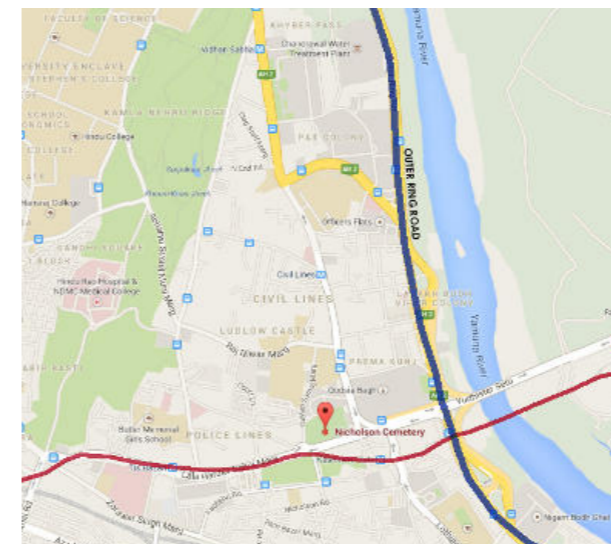


Old Secretariat, Civil Lines

### 3.2 Ward Boundaries, Location and Connectivity

#### Ward Boundaries

The study under consideration encompasses two wards which form the edge of the site, therefore it is important that there is coordination between the two wards. These two wards are Ward no. 77 – Majnu ka Tila, and Ward no. 78 – Kashmere Gate.



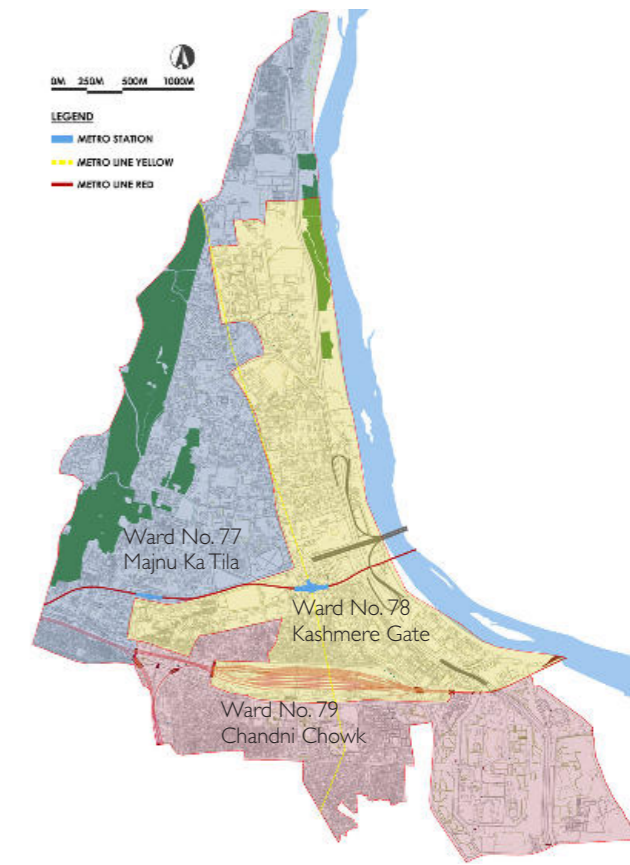
Map showing Outer Ring Road and Metro line

#### Location

The site abuts the walled city and has historical importance. It is surrounded by various heritage monuments and government institutions with good connectivity.



Map showing connectivity to different areas.



Map showing surrounding wards

#### Connectivity

The area has a historically significant past, thus development over the years has brought good connectivity to Delhi as a city as well as to the surrounding states. Inter State Bus Terminal (ISBT) at Kashmere Gate is the major entry point of Delhi. It connects Outer Ring Road which forms the northeastern boundary of this zone and was added as an embankment to protect this low-lying area from floods in 1982. The first phase of Underground Metro Corridor has improved the connectivity of this zone.

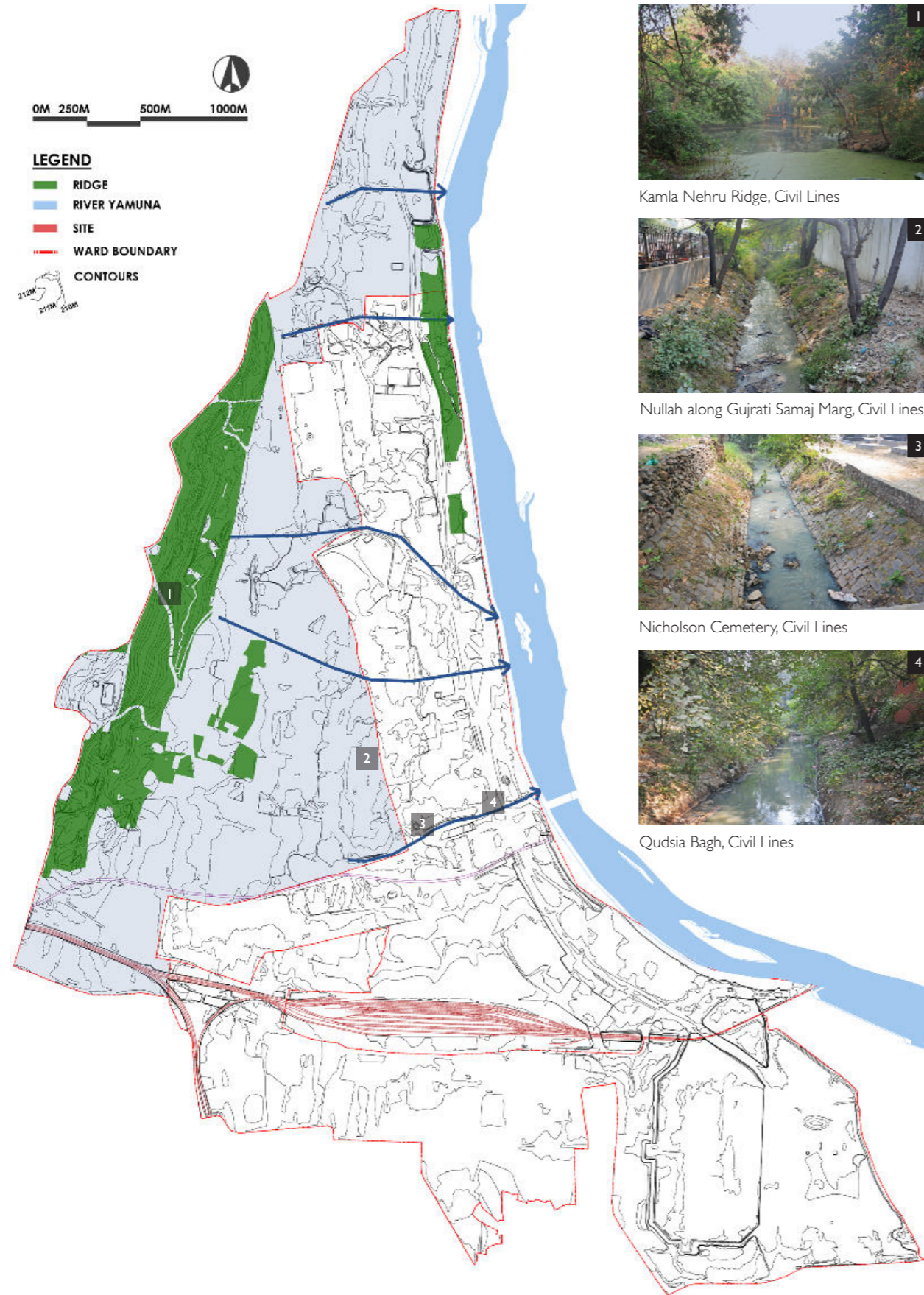
Source: Zonal Development Plan, Zone-C



Lala Hardev Sahai Marg



### 4.1 Topography



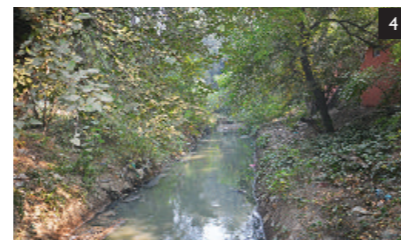
Kamla Nehru Ridge, Civil Lines



Nullah along Gujrati Samaj Marg, Civil Lines



Nicholson Cemetery, Civil Lines



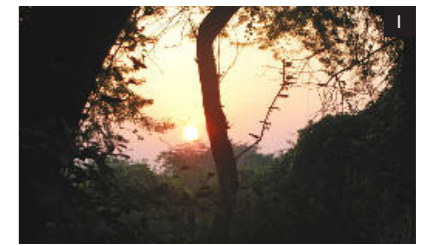
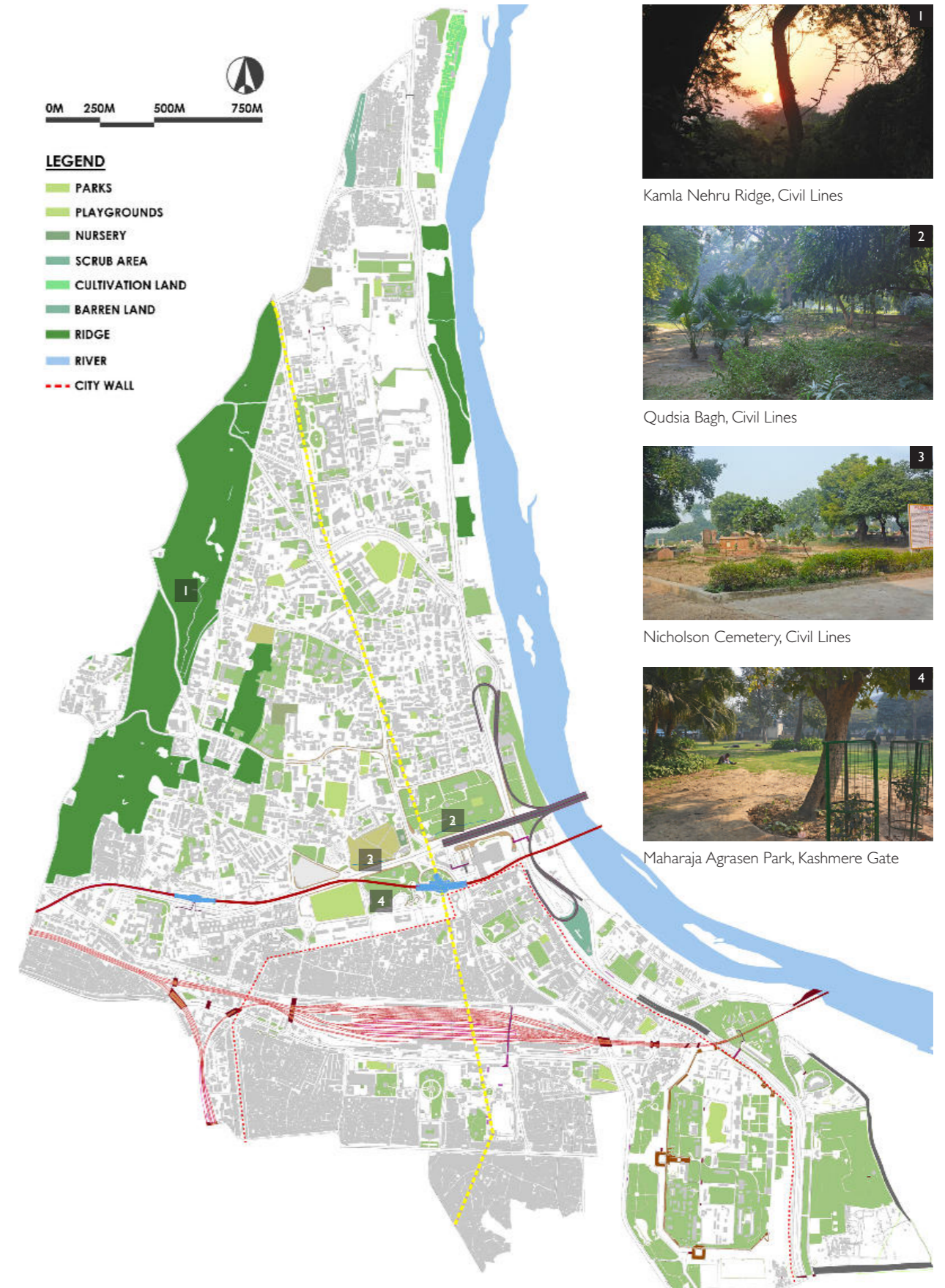
Qudsia Bagh, Civil Lines

#### The Ridge and River Yamuna

The northernmost spur of the Aravali Mountains rises 80-110 ft above the land and disappears from the surface at Wazirabad, three miles north of Delhi. This northeast plain trend of the Ridge and the outlying spurs under the Salimgarh Fort have been protected from erosion by the river. The Ridge is virtually the green lungs for Delhi and protects the city from the hot winds from Rajasthan.

Source: *Delhi Past and Present*, H.C. Fanshawe

### 4.2 Open Space System



Kamla Nehru Ridge, Civil Lines



Qudsia Bagh, Civil Lines



Nicholson Cemetery, Civil Lines

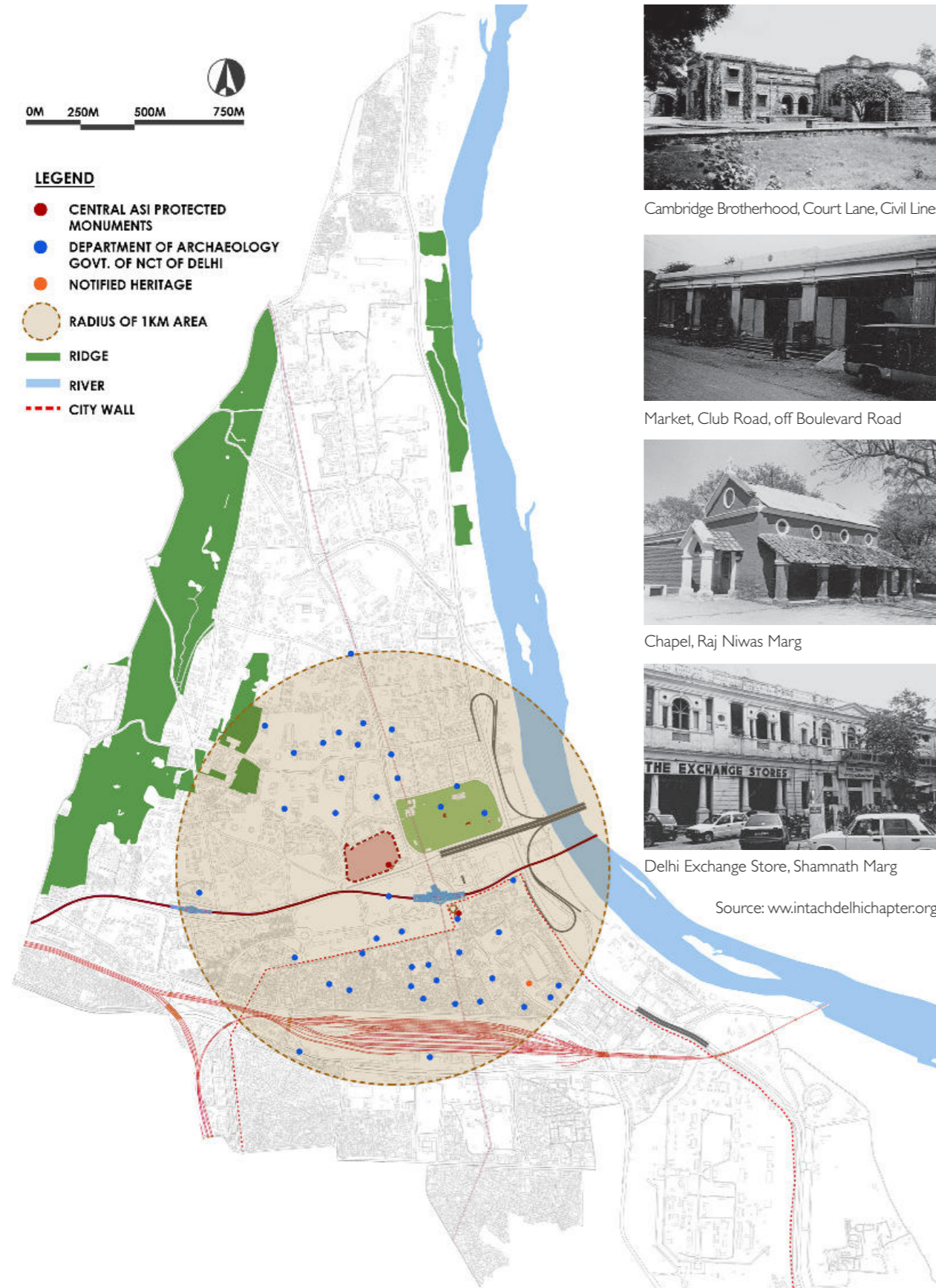


Maharaja Agrasen Park, Kashmere Gate

#### Open Green Spaces

Qudsia Bagh acts as a green buffer between the Old City and the Civil Lines Bungalow Zone. These are fragmented, remnants of the past. Historically this was a continuous stretch of open land extending from east-west to the River Yamuna but it is now fragmented. It has a very significant history and is dotted with remains and memories of the events ranging from the Early Mughal, Late Mughal and Colonial Periods.

### 4.3 Heritage



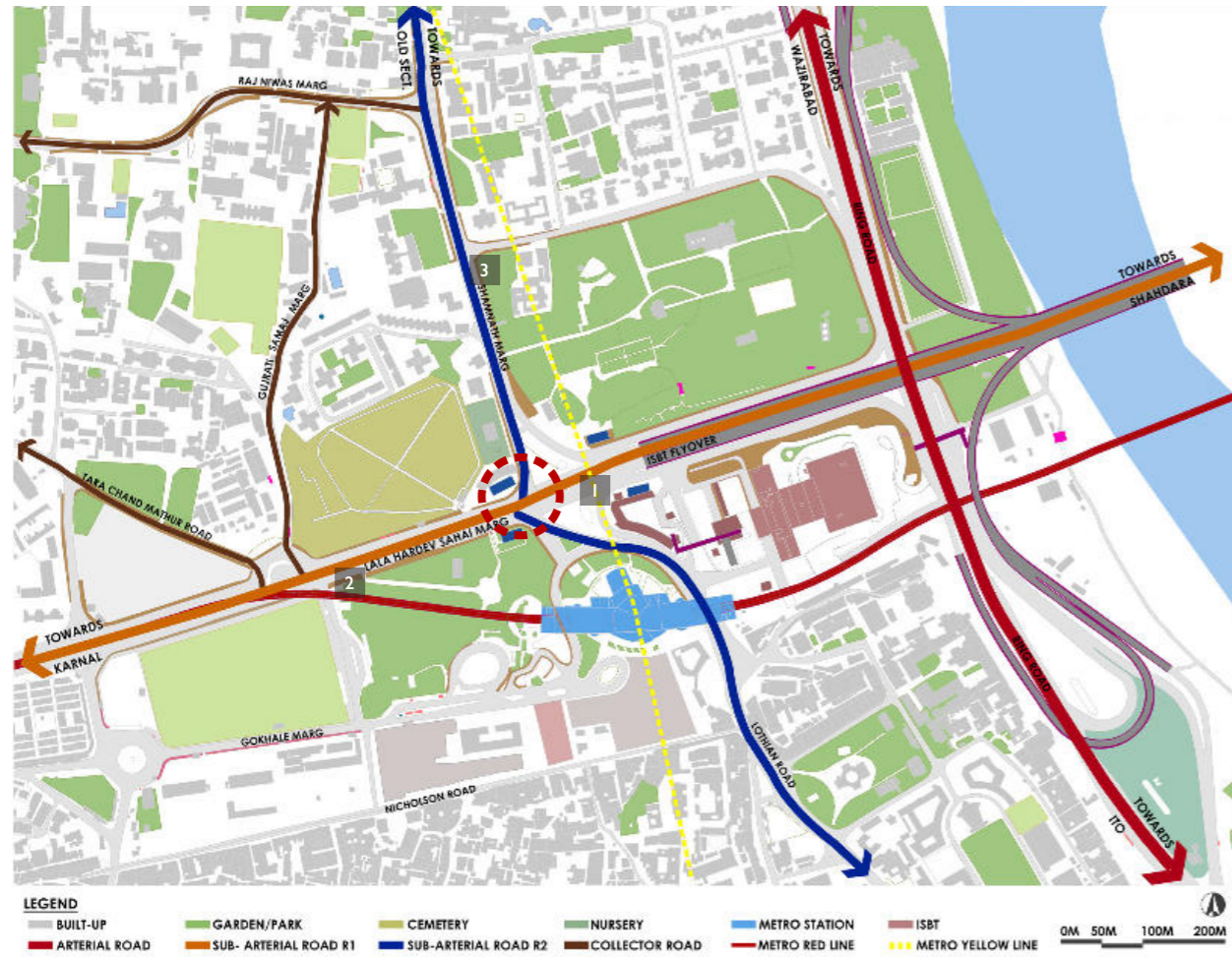
#### Heritage

The city of Delhi has been important since ancient times. The Aravalli Range and the River Yamuna were rich in natural resources and provided habitation since prehistoric times. This was one of the major reasons why this plain was continuously occupied from the Mahabharata era till date. Heritage forms the crucial component of the built-up area of Civil Lines, with its many colonial buildings. The map above shows the heritage structures within a radius of 1 km around Nicholson Cemetery.

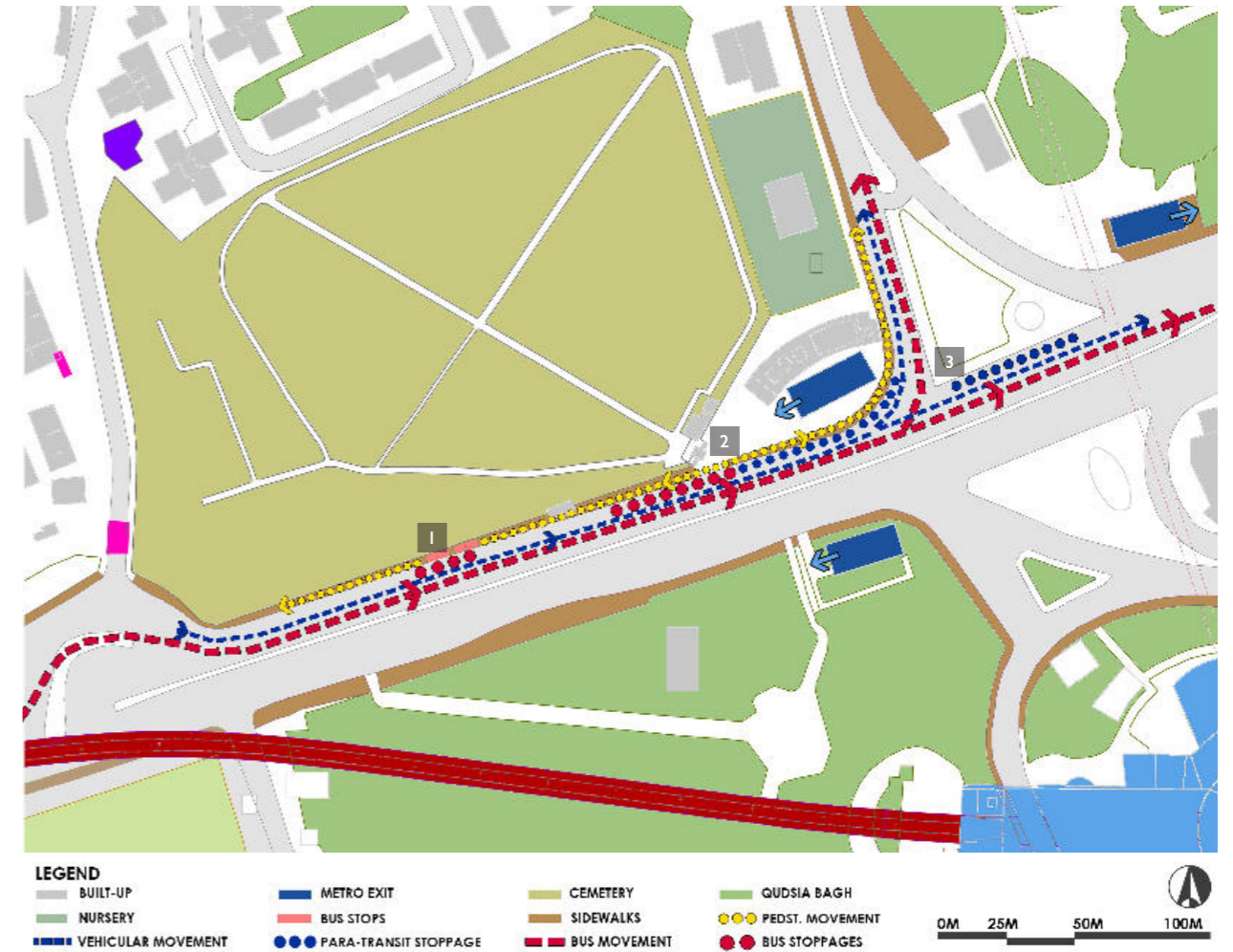
### 4.4 Site



### 4.5 Movement around the Site



### 4.5.1 Movement Issues



Lala Hardev Sahai Marg, towards Shahdara



Sharnath Marg, Civil Lines



Bus Stops at Lala Hardev Sahai Marg



View showing congestion along traffic island.



Lala Hardev Sahai Marg

The Civil Lines area and the Kashmere Gate area have been significant since historical times and have been vital with regard to the connectivity to different parts of the city as well as the states. With its important location and connectivity over the past, it has become a major transit node for the city as well as for the northern states of the country. The Ring Road is a major north-south connector while Lala Hardev Sahai Marg forms the east-west corridor. The presence of ISBT and MRTS gives good connectivity to the city and surrounding states.

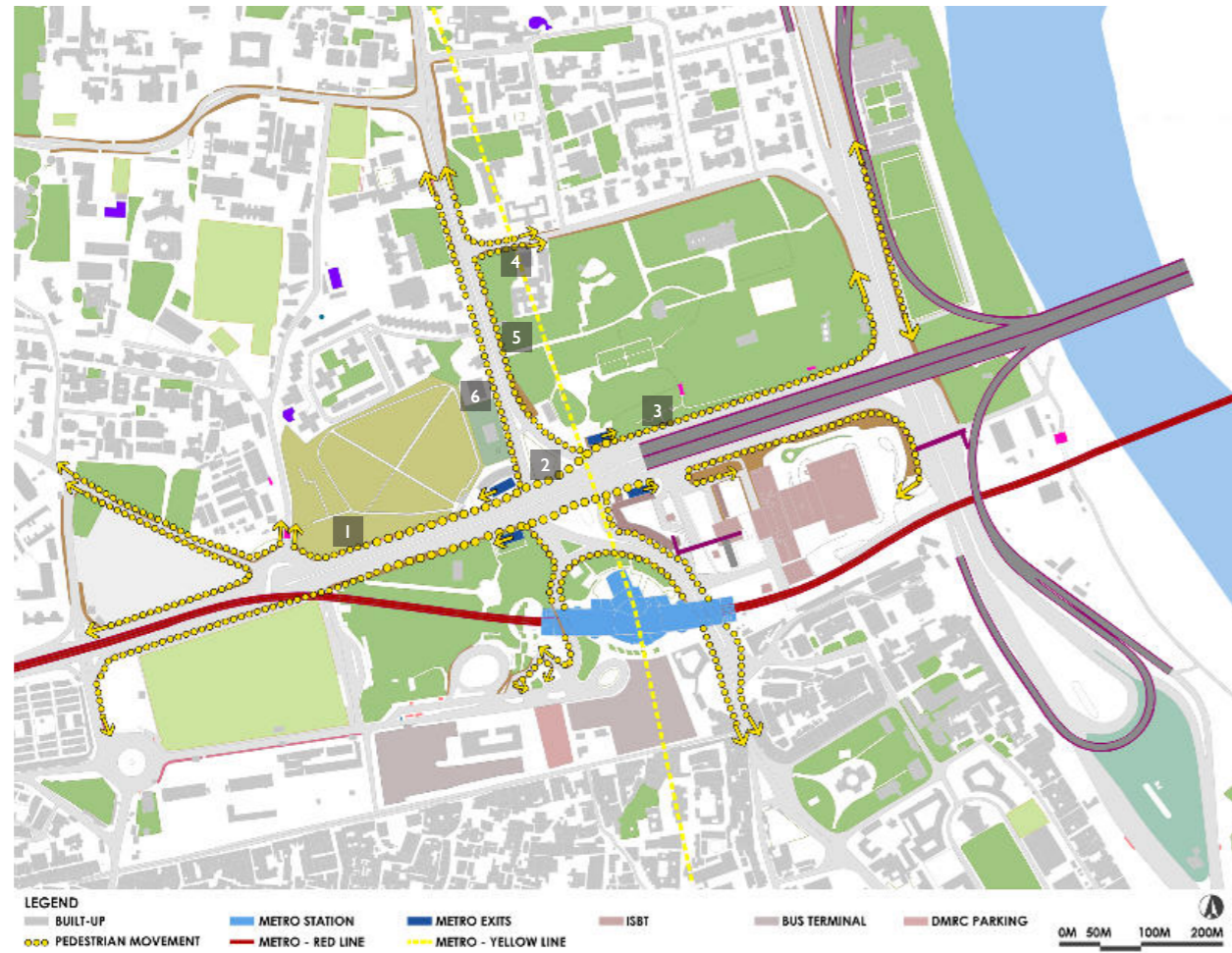


Buses stopping outside the entrance to Nicholson Cemetery

The Metro exits on the Nicholson Cemetery side increases the pedestrian volume, thus creating the need for para-transit modes. The stoppages of allied modes of transport, like cycle-rickshaws and autos, cause chaos, creating traffic congestion at this particular junction. Buses stop in front of the entrance to Nicholson Cemetery adding to the chaos.

The para-transit modes of transport stoppages extend to the traffic island along Lala Hardev Sahai Marg creating traffic jams.

### 4.5.2 Pedestrian Movement



1 Pedestrian walkway along Nicholson Cemetery, Lala Hardev Sahai Marg



4 Pedestrian walkway along Qudsia Bagh, Yamuna Marg



2 Pedestrian walkway along traffic island, Lala Hardev Sahai Marg



5 Pedestrian walkway along Qudsia Bagh, Shamnath Marg



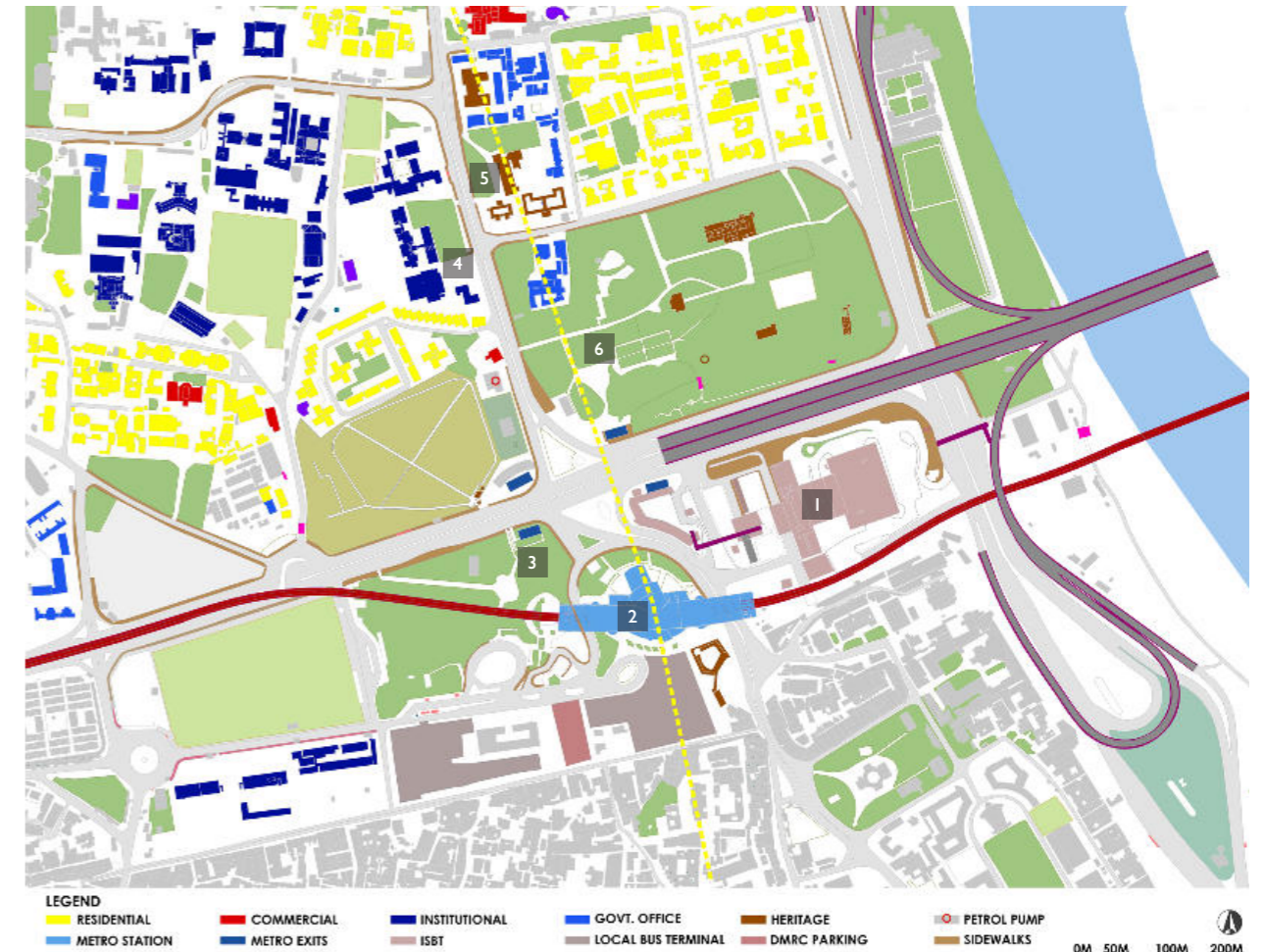
3 Pedestrian walkway along Qudsia Bagh



6 Pedestrian walkway along Shamnath Marg

The number of people on foot because of the transit nodes and surrounding development has given this area its pedestrian infrastructure. Thus pedestrian sidewalks are prevalent, but lack the maintenance and pedestrian related facilities. The residential areas are also equipped with the pedestrian sidewalks.

### 4.6 Development around the Site



1 ISBT Kashmere Gate



4 Ludlow Castle Wrestling Training Venue, Shamnath Marg



2 Kashmere Gate Metro Station



5 Canal Rest House, Shamnath Marg



3 Maharaja Agrasen Park, near Kashmere Gate



6 Qudsia Bagh, Shamnath Marg

The area of Civil Lines was mostly dominated by British military and civilian buildings after the British took over power from the Mughals. Today, the area mainly has government offices and residential areas termed as the Civil Lines Bungalow Zone. Educational institutions also form a large component. There are many heritage structures with historically significant open green spaces.

The area is rich with its heritage and it has also blended with the newer developments like the Inter State Bus Terminal (ISBT) and Mass Rapid Transit System (MRTS) which have improved the connectivity to the rest of the city.

### 4.7 Existing Vegetation



Qudsia Bagh, Shamnath Marg



Nicholson Cemetery, Lala Hardev Sahai Marg



Maharaja Agrasen Park, Lala Hardev Sahai Marg

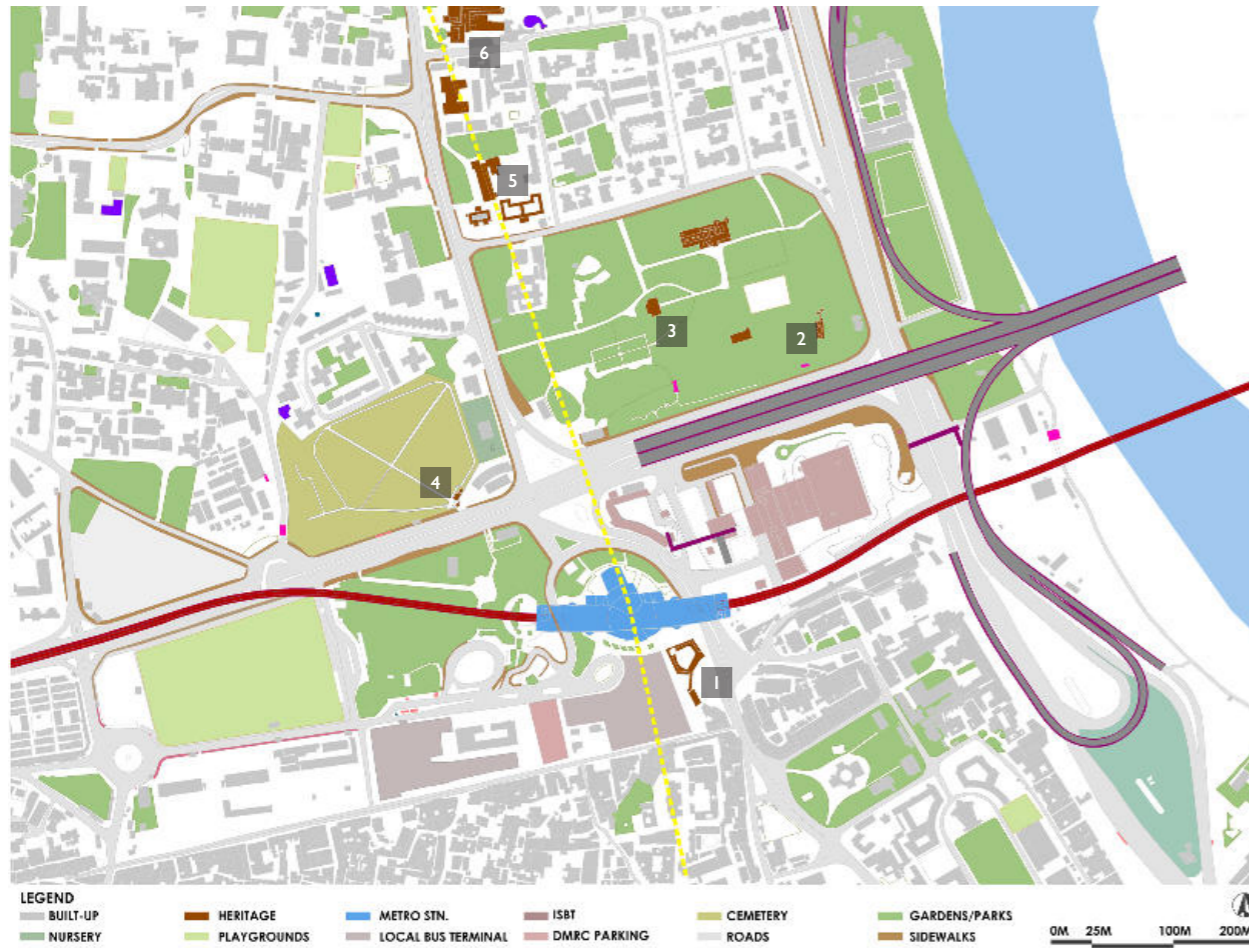


ISBT Nursery, Shamnath Marg

The green areas around the site are remnants of the historical past and have served as the buffer for two important areas of the city – the Civil Lines zone and the Old City. These green areas have been fragmented over the years due to development in and around the site. These green pockets have been crucial in maintaining the area's ecological balance and the microclimate.



### 4.8 Heritage Monuments



Kashmere Gate



Nicholson Cemetery



Shahi Masjid, Qudsia Bagh



Canal Rest House, Shamnath Marg



Gateway, Qudsia Bagh

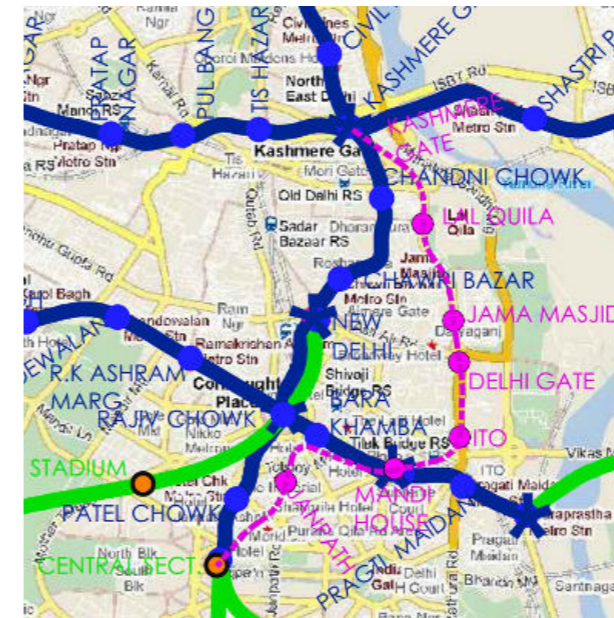


Oberoi Maidens Hotel

### Heritage

The area is rich in both Mughal and Colonial era monuments. The area abuts the Old City of Shahjahanabad which features as a Special Zone in Master Plan 2021. Qudsia Bagh formed a recreational area for the Old City. Nicholson Cemetery was established in the late Mughal period

### 4.9 New Proposals



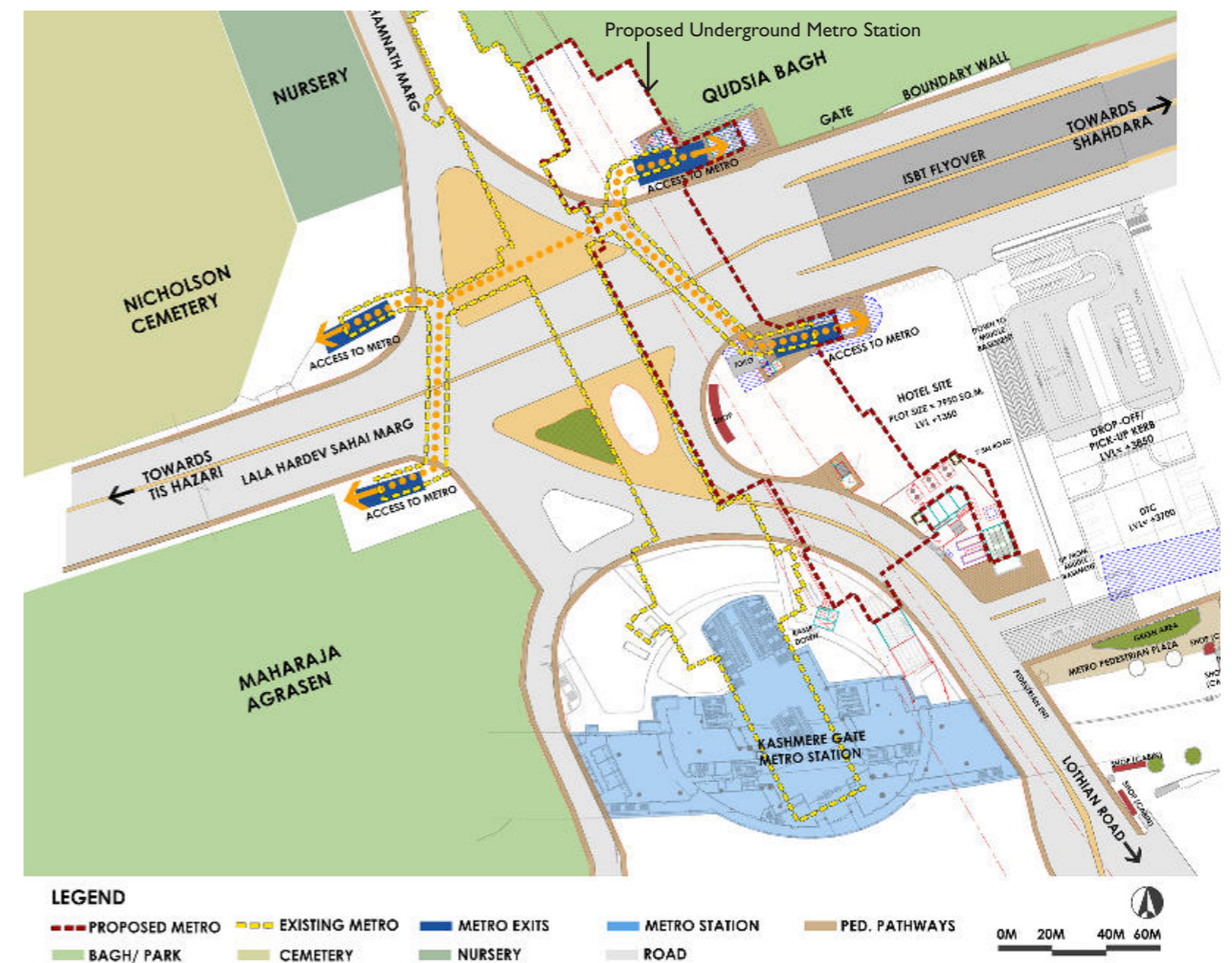
Key Plan showing Metro routes

### Underground Metro Station

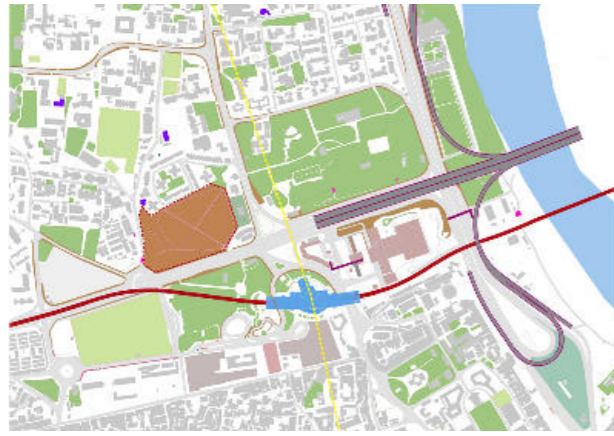
DMRC under Phase III of its project to expand the MRTS network, has proposed an underground Metro station besides Kashmere Gate Metro Station for which the work has already begun. This will add to the number of pedestrians around this area.



Key Plan showing Metro stations



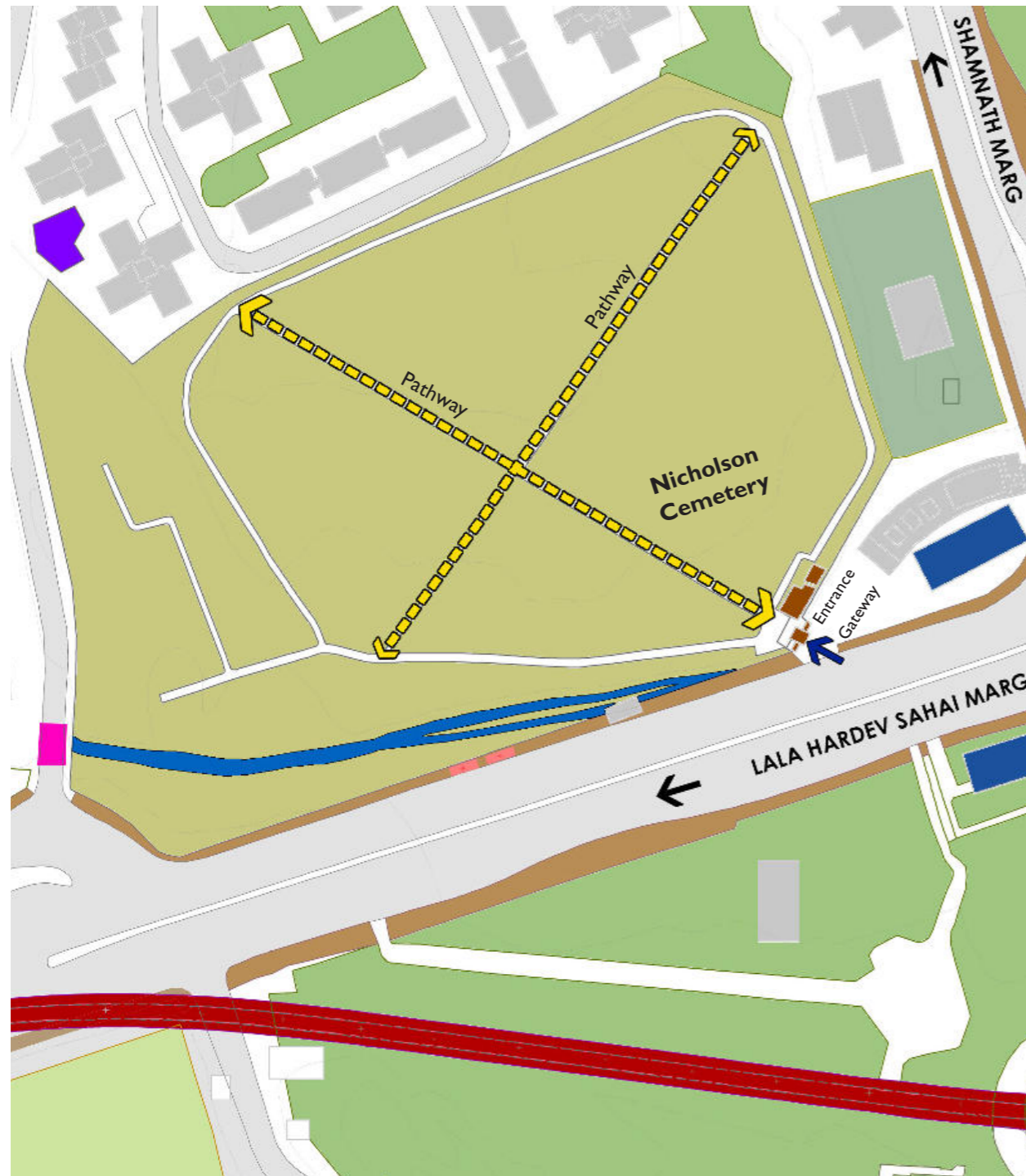
### 4.10 Nicholson Cemetery



Key Plan

#### Introduction

Nicholson Cemetery near Kashmere Gate Metro station and west of the Inter State Bus Terminal was established in 1857. This is the oldest Christian cemetery in Delhi NCR and was known as the Old Delhi Military Cemetery or Kashmere Gate Cemetery until the early 1900s. It was then named after John Nicholson, a brigadier-general in the British Army. Nicholson played an instrumental role during the Indian Rebellion of 1857. The cemetery is administered by Group Four under which the British High Commission looks after its upkeep. In 2006, landscaping for the cemetery was undertaken by this group.



Panoramic View I, Nicholson Cemetery



Panoramic View II, Nicholson Cemetery



Entrance Gate, Nicholson Cemetery



Entrance Gate and Guard Room, Nicholson Cemetery

#### 4.10.1 Conservation Works for Entrance Gateway Building

- Restoration and Gate Design
- Removal of Planters at the Entrance
- Signage
- Finishes
- Paving



Pathway, Nicholson Cemetery



Central Pathway, Nicholson Cemetery

#### 4.10.2 Pathways

- Development of additional pathways and areas based on existing path structure
- Possibility of avenue plantation on existing pathways



Pathway, Nicholson Cemetery



Pathway, Nicholson Cemetery



Existing seating area near entrance gate, Nicholson Cemetery



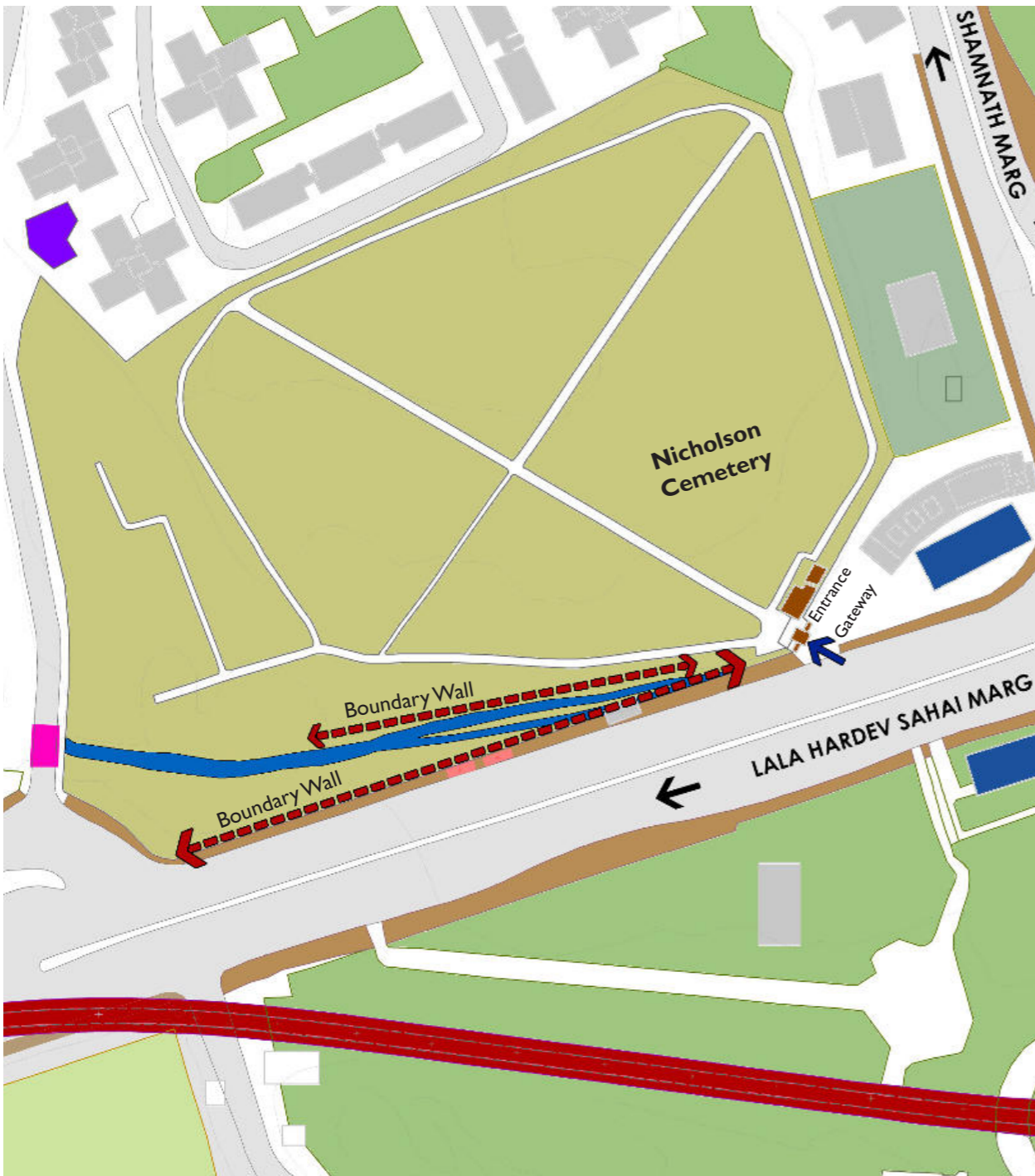
Outdoor furniture along pathway, Nicholson Cemetery

#### Outdoor Furnishing:

- Proposal for outdoor furniture assessing the need and based on the existing usage
- Design – Heritage character
- Well designed seating areas consonant with the heritage character of the complex



Key Plan



Boundary wall along Nullah, Nicholson Cemetery



High boundary wall along graves, Nicholson Cemetery



Vegetation alongside the Nullah, Nicholson Cemetery



Embankment along the Nullah, Nicholson Cemetery

### 4.10.3 Boundary Wall

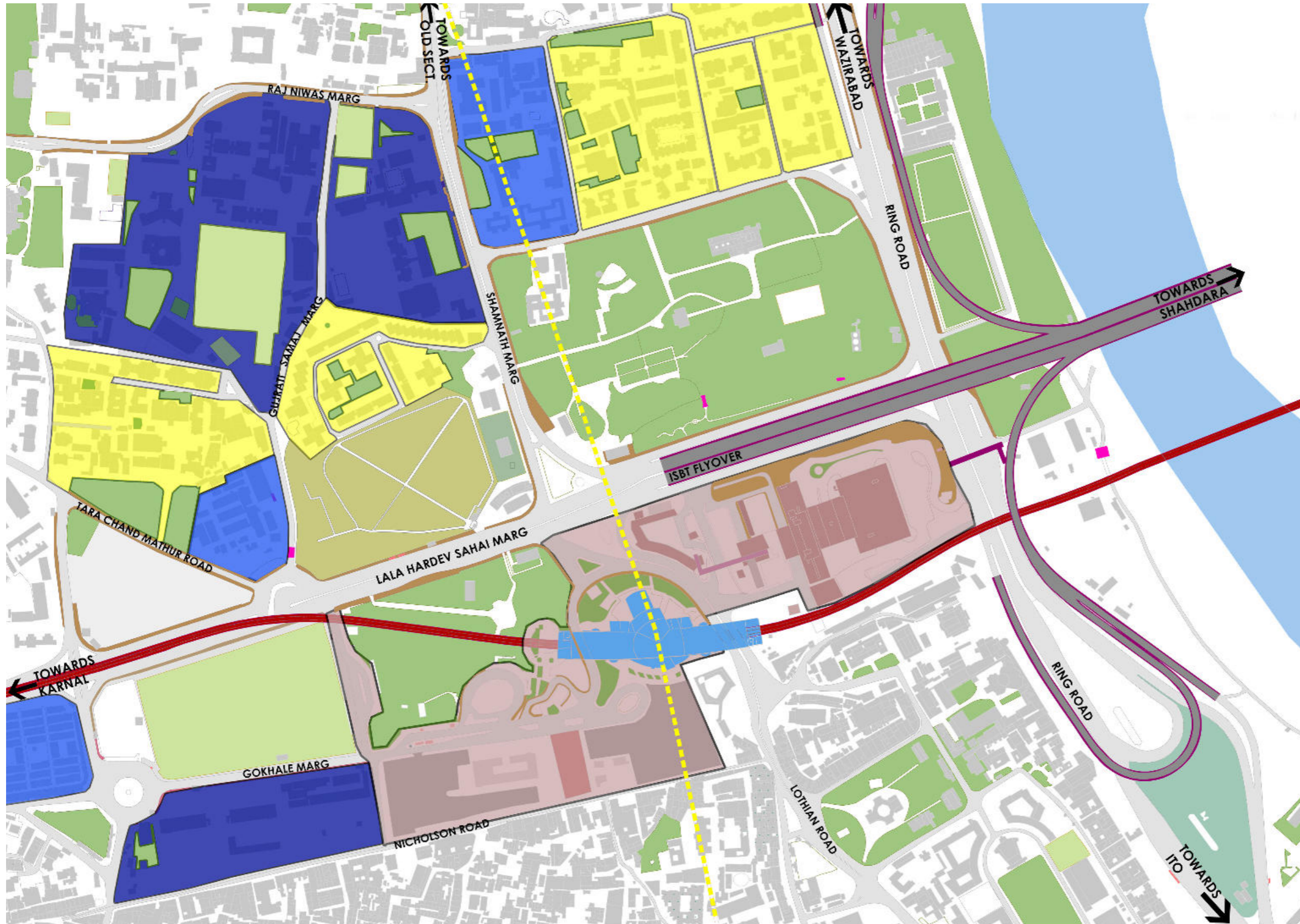
- Uniformity
- Practicality in terms of costs, durability
- Maintaining its heritage character – (Colonial Style)
- Design – More visible, without totally screening the cemetery
- Shrub planting

### 4.10.4 Nullah

- Cleaning and landscape proposal for Nullah
- Stormwater drainage and Rainwater Harvesting System

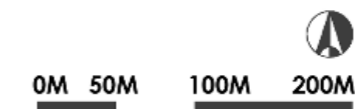


### 4.11 Conclusion



**Legend**

- Residential
- Educational Institutions
- Govt. Offices
- Transport
- Cemetery
- Playground



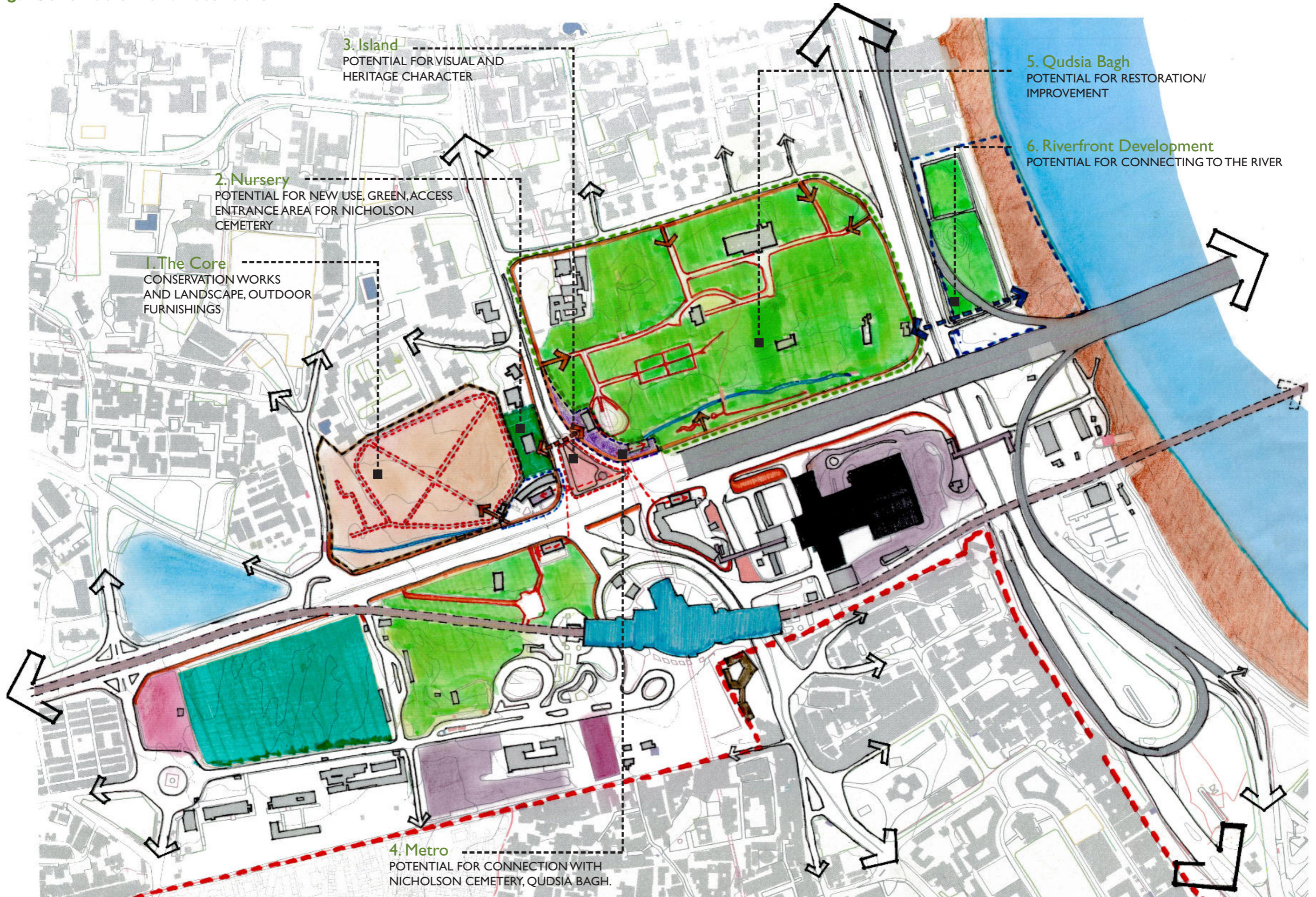
### Conclusion

The area is mostly surrounded by educational institutions, government offices as well as residential areas. The historically significant open green spaces and heritage structures also form a vital part of this area. The transit nodes like the ISBT, MRTS have made this area important with respect to connectivity to various areas. The proposed new Metro station will increase the footfall, thus amenities related to pedestrians become an essential design parameter.

### Aims and Objectives

- To identify all open spaces and give them identity in keeping with their historical significance such that the future developments take into consideration this legacy, and carry forward this historical past to the greater benefit of the citizens of the city.
- To make the identified system of green spaces attractive with respect to the heritage character and activity associated with the existing and proposed transit nodes.
- This area is very crucial with respect to the Rebellion of 1857. Therefore it is important to commemorate the event and derive meaning of this space through elements that relive and memorialize it.

### 5.1 Schematic Plan: Potentials



## 5.2 Landscape Strategy

### Metro Entrance Plaza

Entrance Plaza with shade and waiting areas



Garden of Five Senses, New Delhi

### Shops and Food Joints

Anchor to the pedestrian movement



Kiosks along pedestrian pathway, ITO, New Delhi



Shops along Khan Market Metro station

### Pedestrian Walkway

A walkway with resting and seating places



Khan Market Metro station exit.



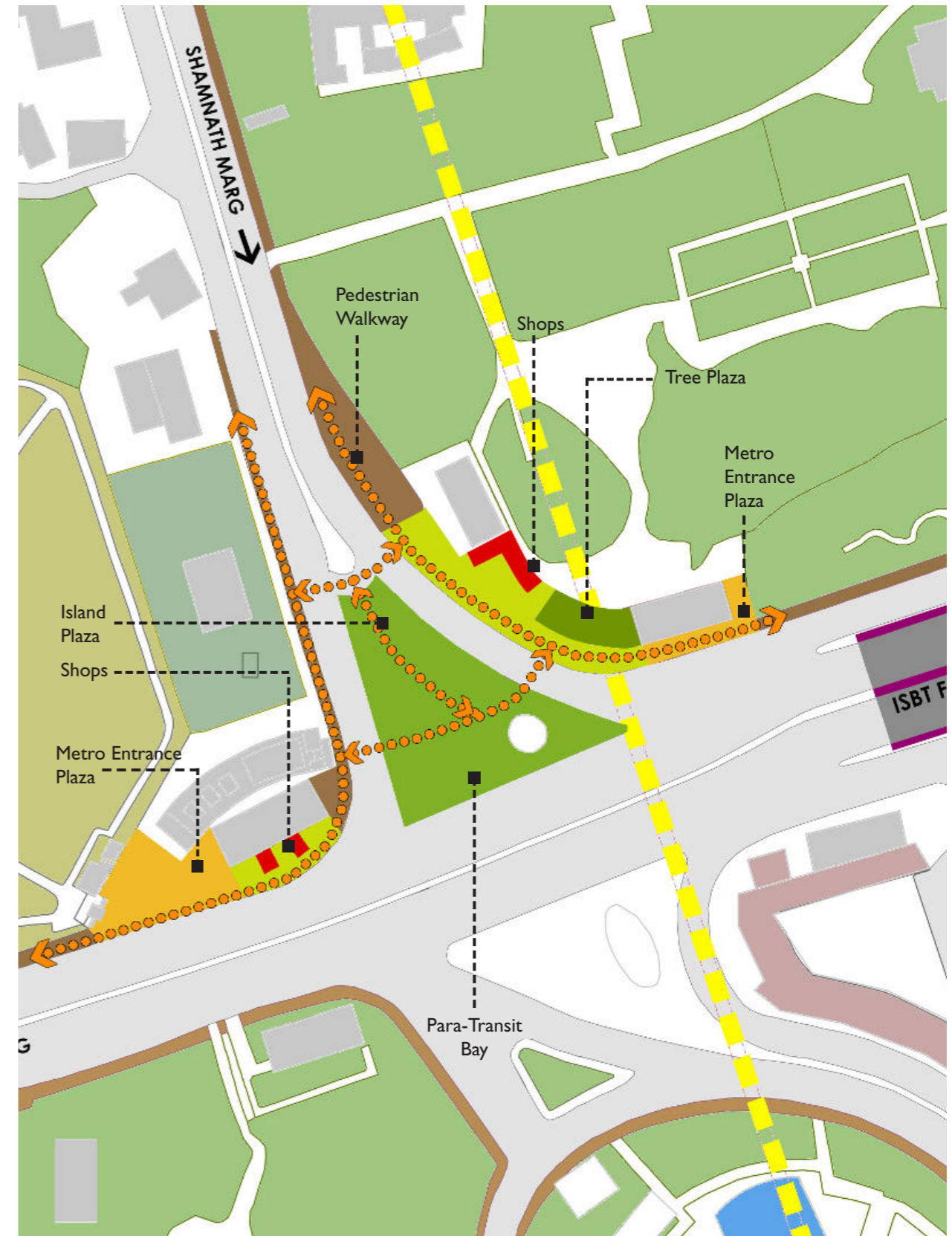
Pedestrian walkway, Police Headquarters, New Delhi

### Tree Avenue

A physical and a visual connector to the plaza

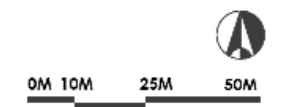


Pedestrian walkway, School of Planning and Architecture, New Delhi

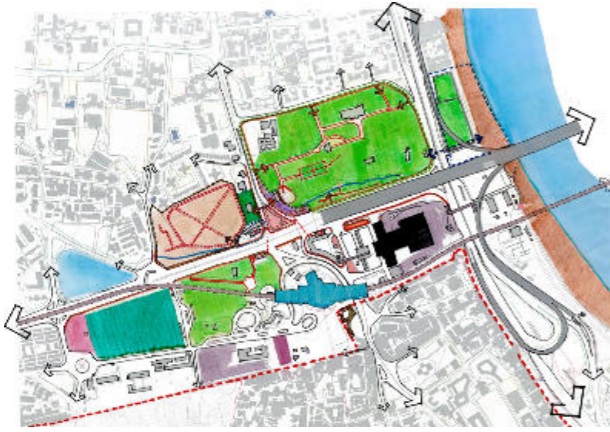


**LEGEND**

- BUILT-UP
- ISBT
- GARDENS/ PARKS
- CEMETERY
- PLAYGROUNDS
- ISBT
- ROAD
- SIDEWALKS
- PEDESTRIAN MOVEMENT
- UNDGR. METRO



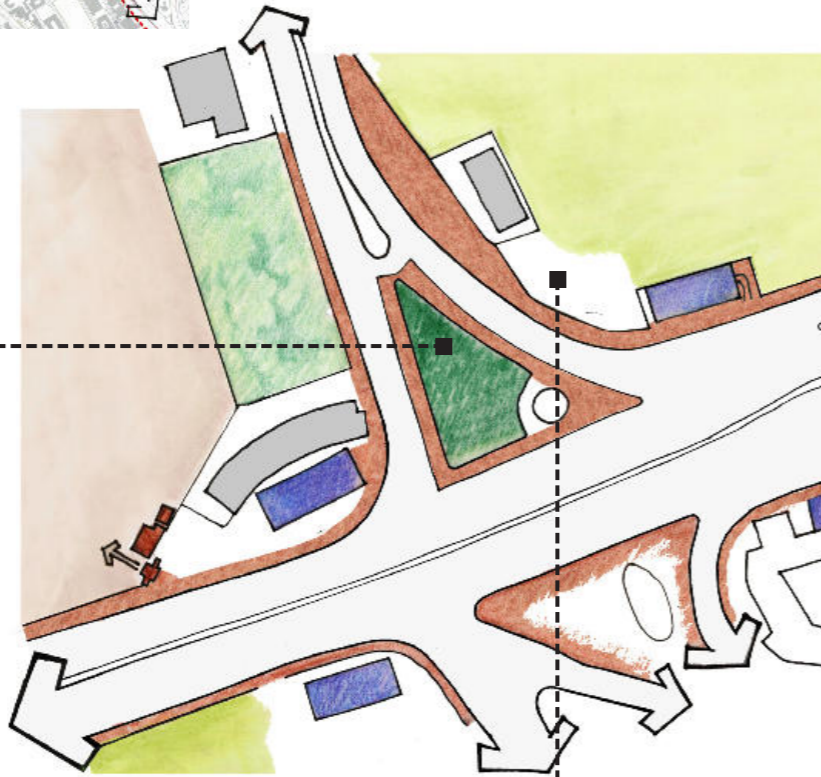
### 5.3 Design Concept



The site has an existing pedestrian system with respect to the transit nodes. The heritage character around the site plays a vital role in guiding the design parameters. Since the pedestrian movement is linear in nature, the island is a connector to these two linear pedestrian movements. The island thus forms an essential design element of the proposal.

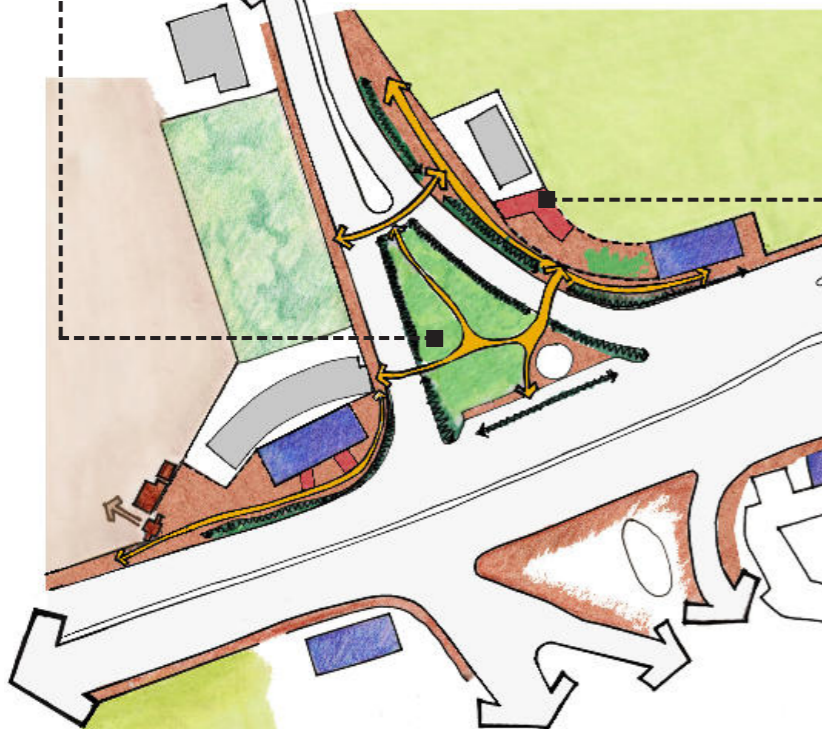
#### Island

An integral part of the design proposal, the island forms a connector to two plazas as well as to the pedestrian movement along the site. It reiterates the green system and connects to the transit nodes as a part of the pedestrian system.



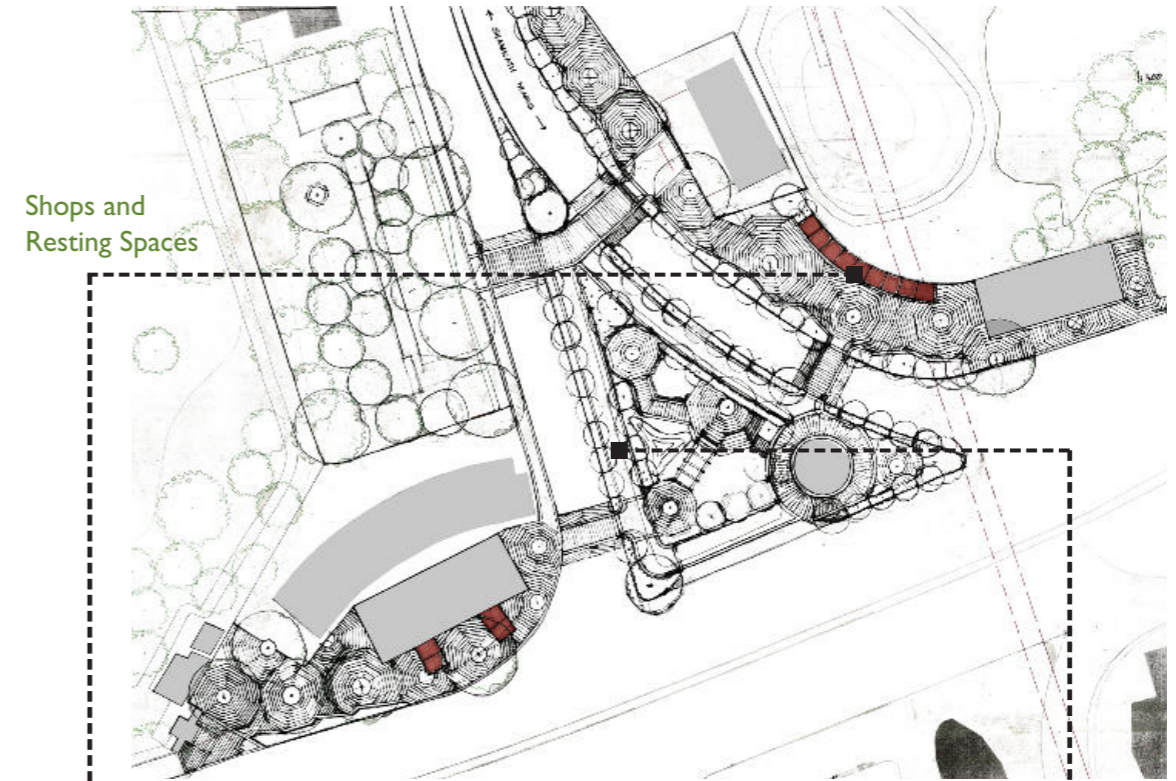
#### Shops

They strengthen the pedestrian network, increasing the functionality of the pedestrian system



### 5.4 Design Development

#### Design Alternative



Shops and Resting Spaces

Pedestrian Movement and Green Spaces



#### Design Intent

The vicinity of the Metro station gives rise to the idea of a pedestrian pathway which is reinforced with pedestrian infrastructure and amenities. As the island has the potential for further strengthening the pedestrian movement, it provides the opportunity to explore the pedestrian options and consolidate green spaces.

5.4.1 Initial Design

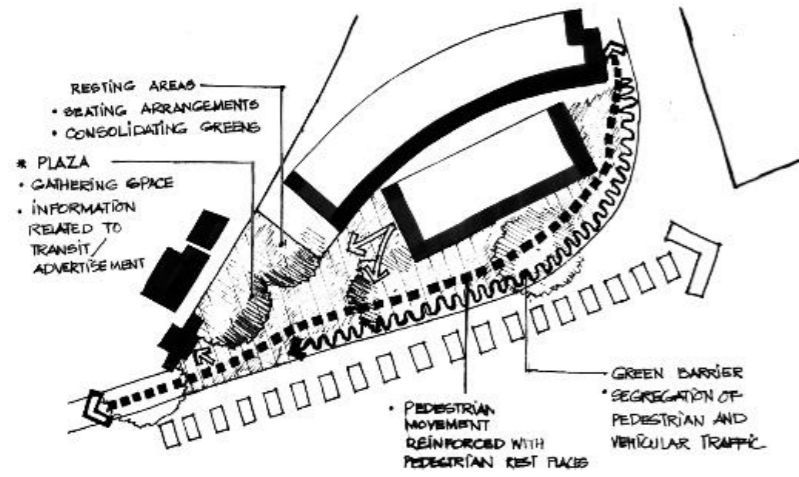


### 5.5 Site Plan

- 1 Metro Entrance Plaza
- 2 Shops
- 3 Island Plaza
- 4 Para-Transit Bay
- 5 Food Plaza
- 6 Tree Plaza
- 7 Metro Walkway

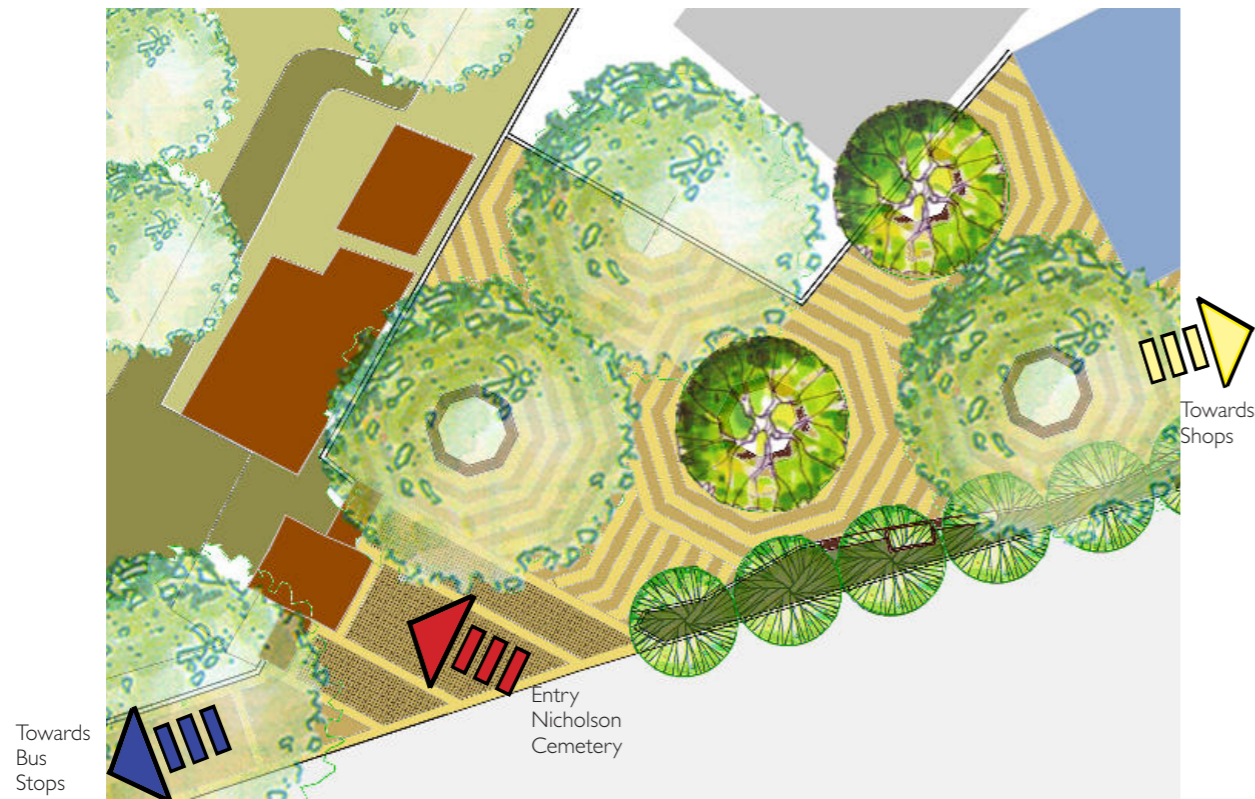


### 5.5.1 Metro Entrance Plaza



**Entrance to Nicholson Cemetery and Metro Station**  
Plazas and pedestrian walkways are planned to provide greater visibility, safety and convenient access to the stations. Plazas also encourage concentration of people and provide opportunity for transit information and identification of the surroundings. Plazas and pedestrian corridors with paved surfaces, lighting, signage reinforce the pedestrian system.

#### Design Exploration

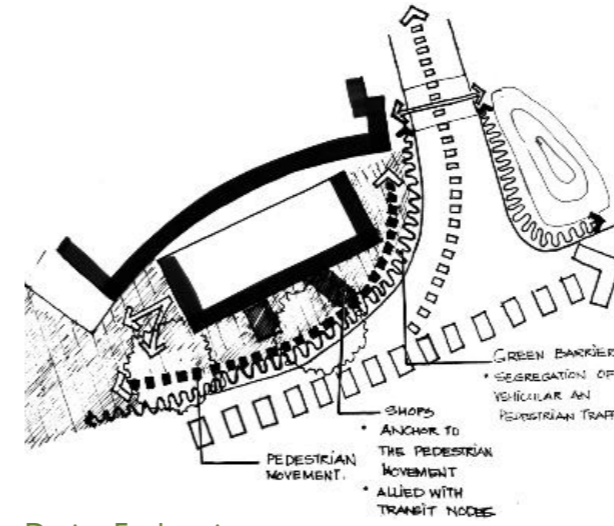


View 1



Key Plan

### 5.5.2 Shops



#### Design Exploration

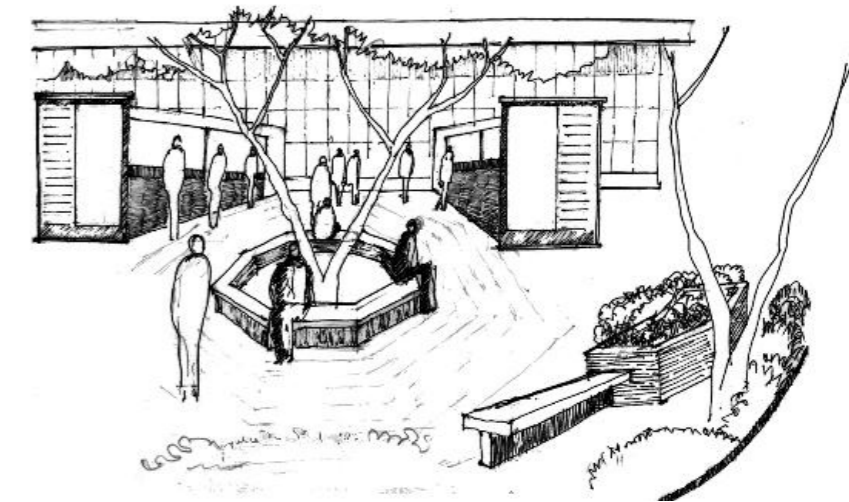
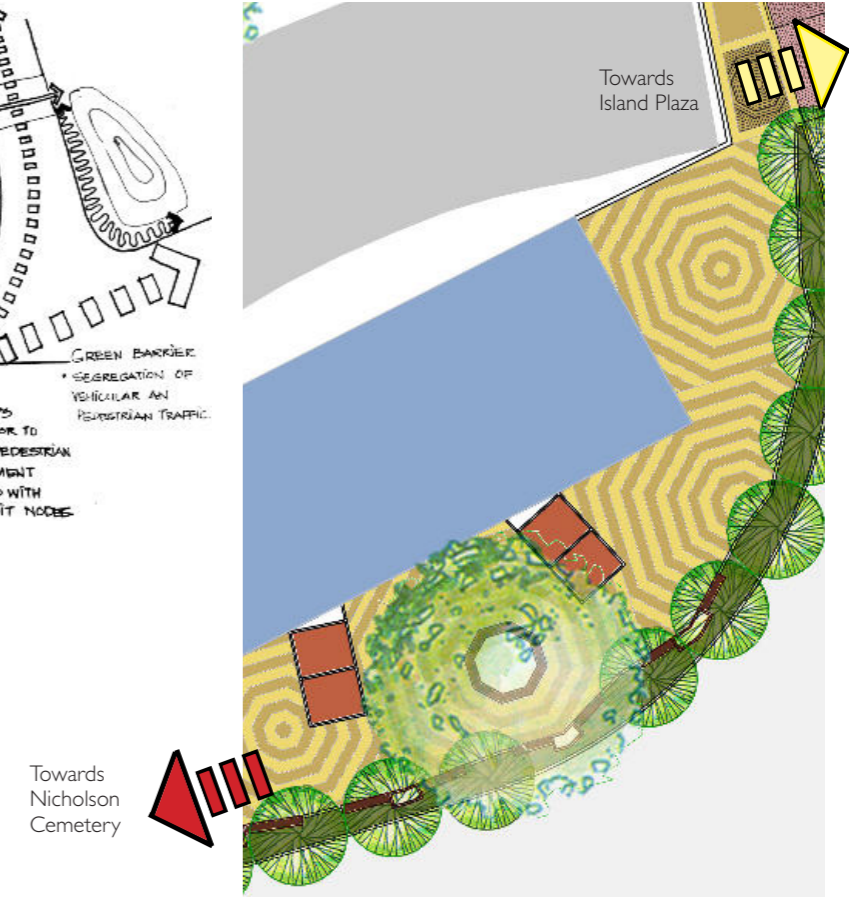
##### Shops

The pedestrian experience is strengthened by the introduction of shops. Kiosks form a magnet for the pedestrian movement. These could be in the form of large stores or smaller, compact markets.

These facilities attract pedestrians, increasing the concentration of pedestrians and their movements.

A designated space for shops which is ancillary to the transit nodes gives commuters an opportunity to associate with the space, thus also identifying with the place, without interfering with the regular pedestrian flow.

A designated space in the form of a small plaza invariably gives a design guideline to integrate the pedestrian movement.

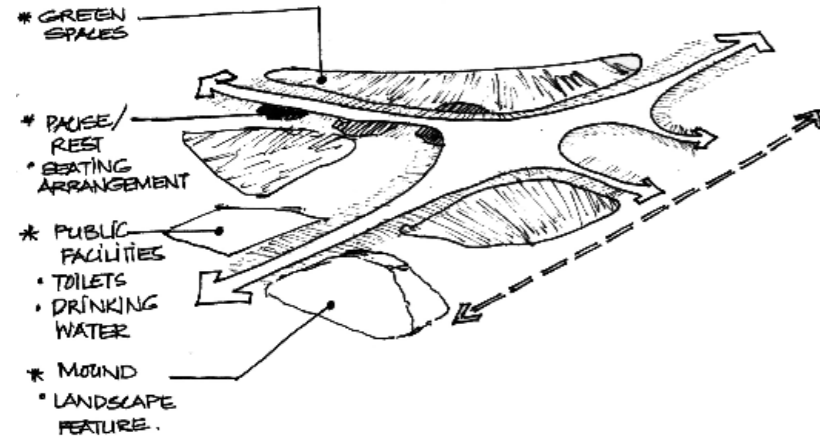


View 1



Key Plan

5.5.3 Island Plaza



The plaza serves as a connector to the Metro station as well as gives pedestrians the option of para-transit modes of transportation. The pedestrian movement integrated with places of pause and rest makes it efficient in relation to the transit nodes. Public facilities such as toilets and drinking water strengthen the pedestrian network. Landscape forms an integral part of the design, improving the functionality and usability of the space. Information display related to the heritage of the place make the path interesting.

Design Exploration

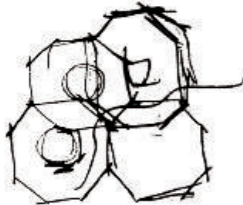
Pathway Alignment



Paving Module Arrangement



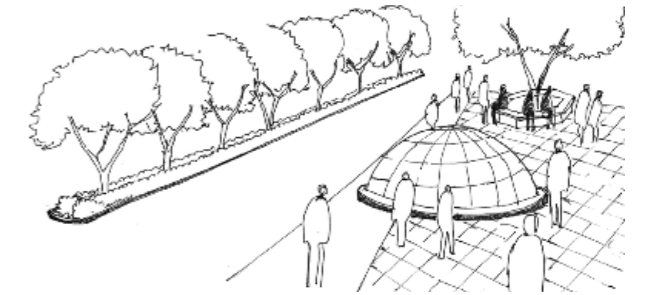
Paving Module Arrangement and Movement Pattern



5.5.4 Para-Transit Bay



For efficient transport, the connectivity and accessibility to subsequent modes of transport is essential. The para-transit bay extends the transport network and gives pedestrians an opportunity to continue their journey. The segregated bay provides easy access to the commuters without any hindrance for the thoroughfare.



Section - AA: Through Island Plaza, Para-Transit Bay.



View 1



Seating Arrangement with Information Display



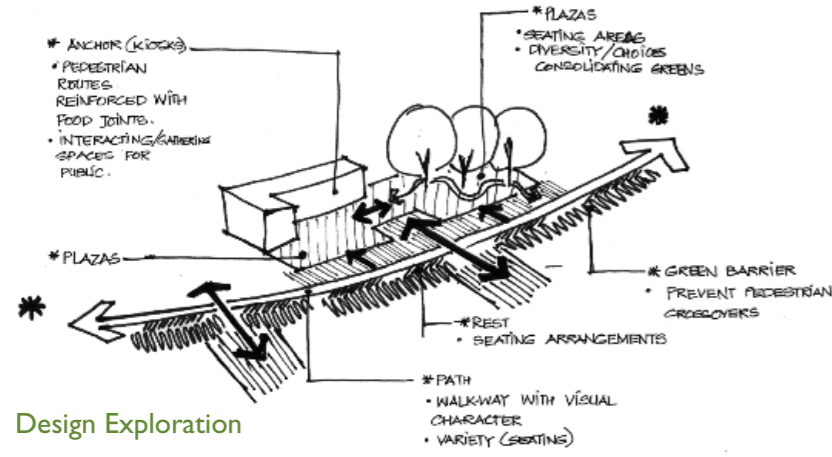
View 2



Key Plan

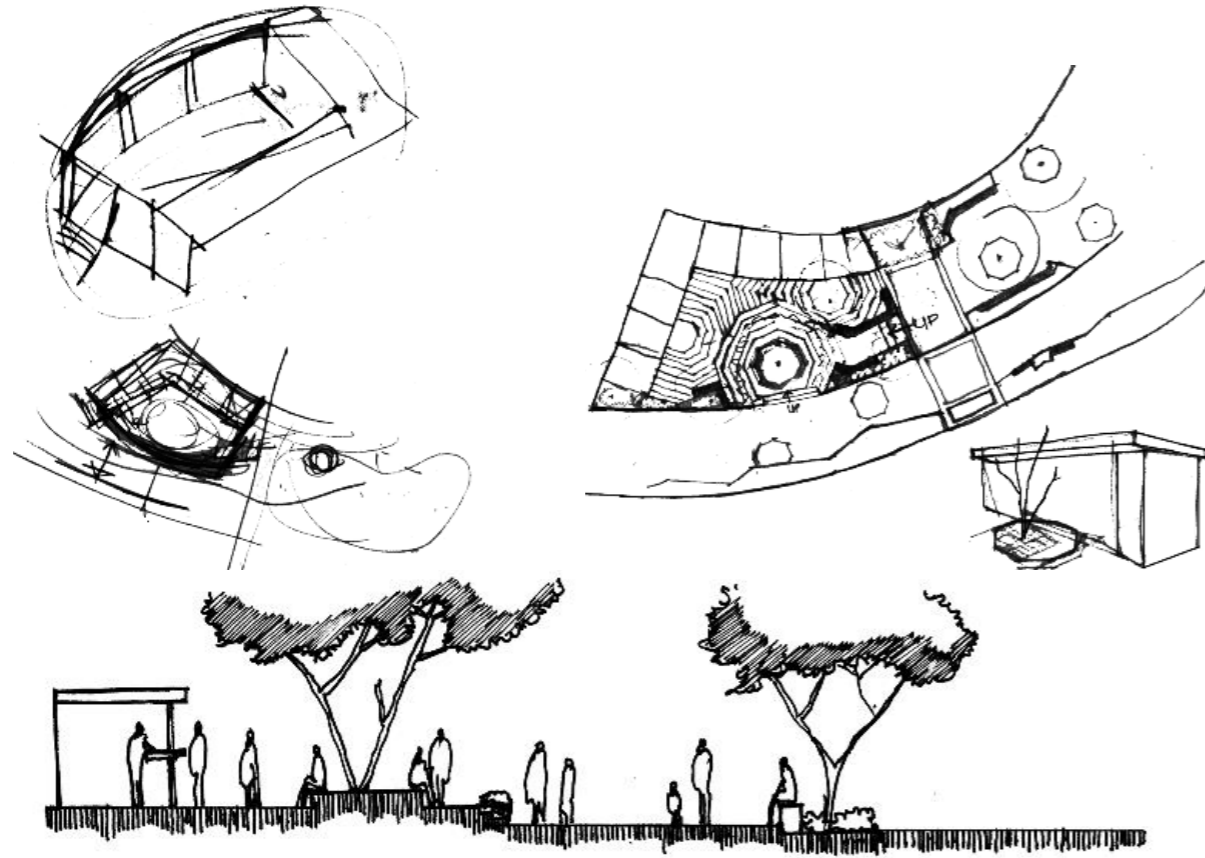


5.5.5 Food Plaza



The activities related to pedestrian movement strengthen the pedestrian system. The food plaza gives the users the opportunity to interact with appropriate seating and resting spaces. These places become more rejoicing with proper shade and landscape elements. The different floor levels add an element of interest for the user of the space.

Design Exploration



View 1



Section - AA: Through Food Plaza, Road and Island Plaza

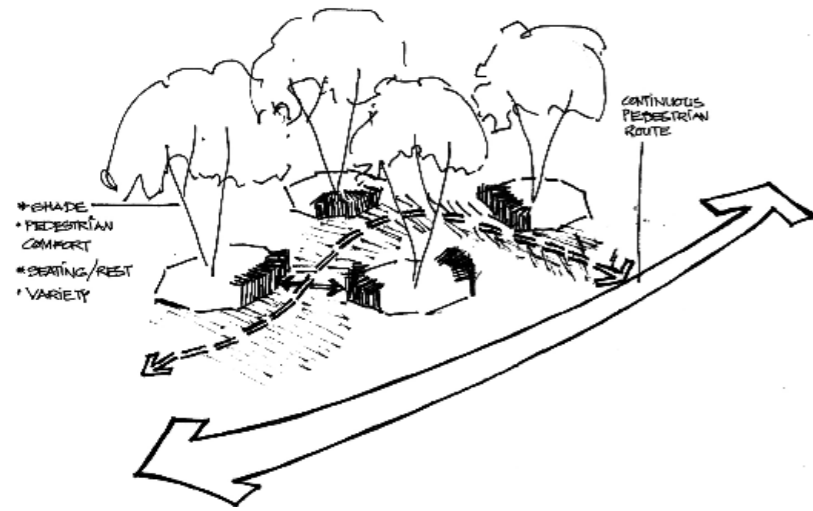


View 2

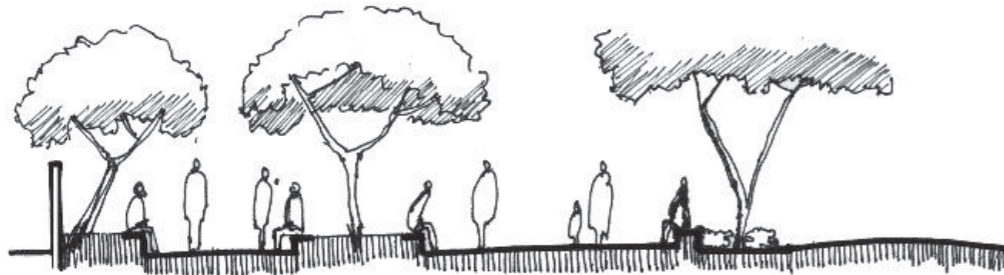
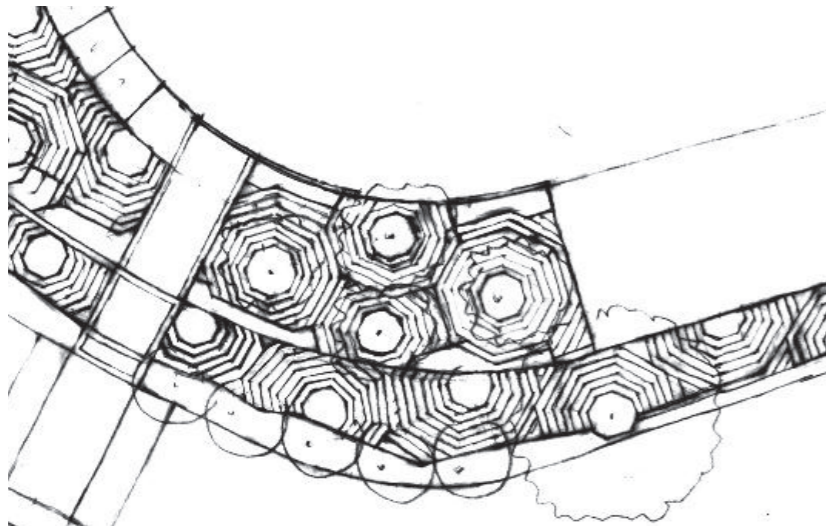


Key Plan

5.5.6 Tree Plaza



Design Exploration



Transit nodes are major generators of pedestrians thus increasing the footfall in the area. The success of such nodes also depends on the ancillary facilities provided for the pedestrians. A pathway that has seating areas and shade proves beneficial for the functioning of the place. Spaces carved along the pathway with landscape elements enrich the place.

A tree plaza gives the pedestrians opportunity to rest while on their way. Consolidation of greens within the space provides shade and increases the efficiency.



View 1



Section -AA: Through Tree Plaza and Metro Walkway



View 2



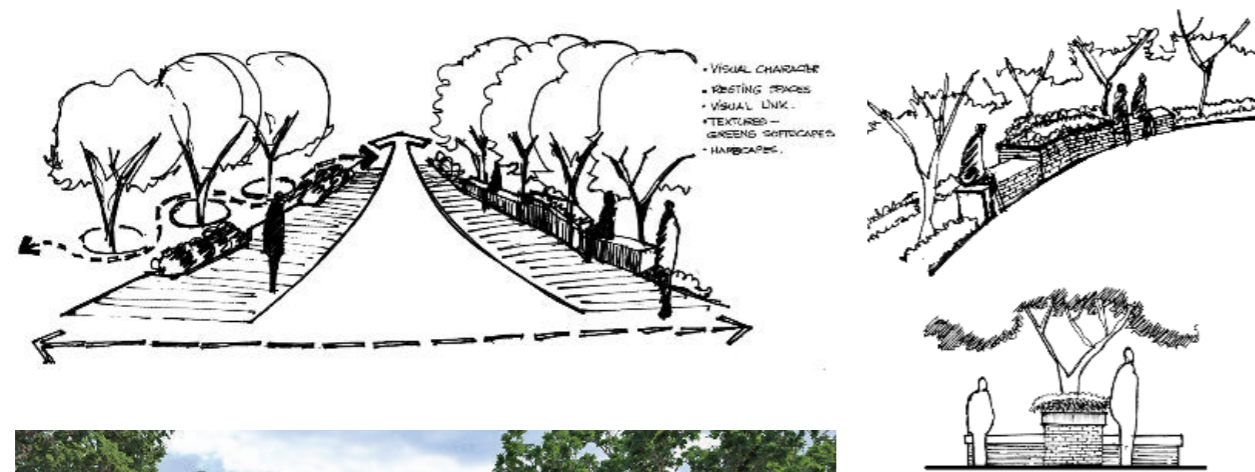
Key Plan

### 5.5.7 Metro Walkway

The efficiency of a pedestrian system is governed by the comfort and shelter provided for the pedestrians. Resting and places of pause strengthen the pedestrian network and thus become places to socialize.

Landscape plays a crucial role in defining the pathway and making spaces interesting and attractive, thereby increasing the usability of the space. Shade, street furnishings, adequate lighting are essential components of pedestrian walkways and help improve the quality of the pedestrian environment.

The functionality of any pedestrian movement is reinforced by seating spaces designed along the movement path. The Metro walkway has interjections and places of pause thus integrating the landscape for pedestrian comfort.



Seating Arrangement



View I



Key Plan

### Tree Species



Pilkhan (*Ficus virens*)

Variety of tree and shrub species can be proposed along the walkways. Following can be suggested as a part of the proposal.

← A large deciduous tree, with a spreading canopy, height approximately 18 m.



Bu Halima's Gate (Humayun's Tomb), New Delhi



African Wattle (*Peltophorum africanum*)

← A medium-sized deciduous tree, with a spreading canopy, height approximately 12 m.

### Shrub Species



*Hamelia patens*



Hibiscus



*Tecoma stans*

5.5.8 Nicholson Cemetery



Existing Site Plan

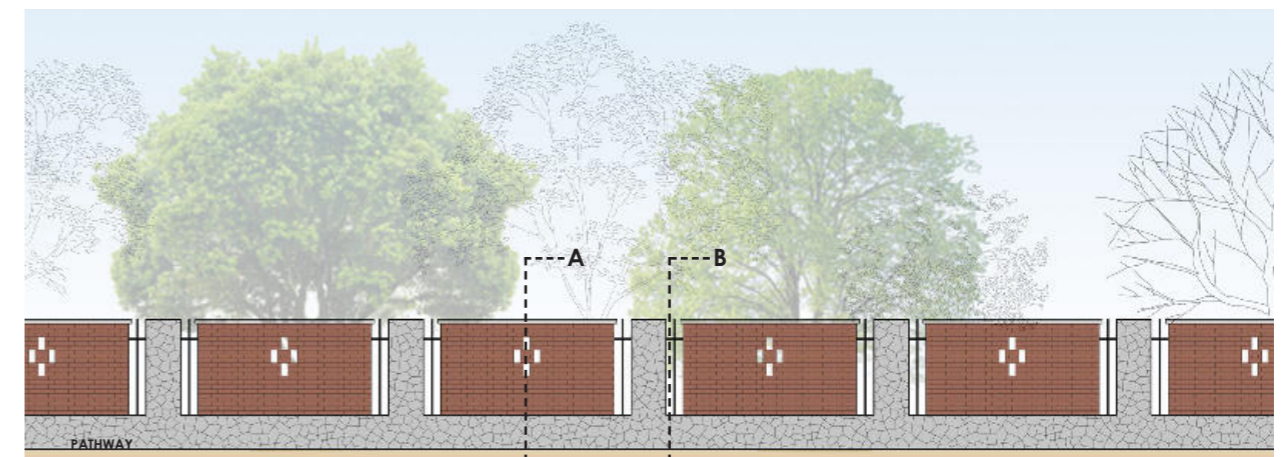


Design Proposal

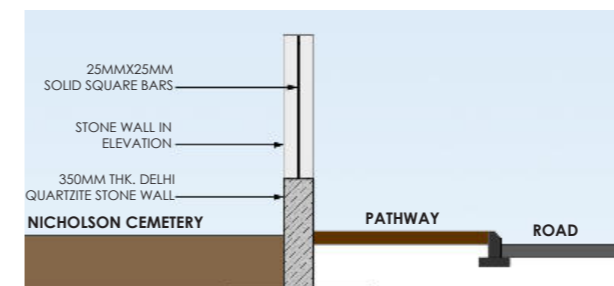
**1. Entrance Gateway Building**  
 Conservation of Entrance Gate.  
 Removal of Planters



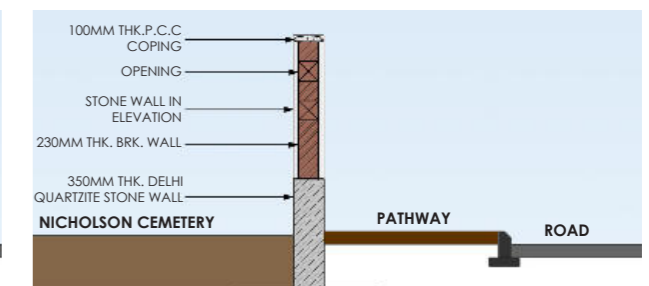
**2. Boundary Wall**  
 Proposed Boundary Wall Design



Elevation

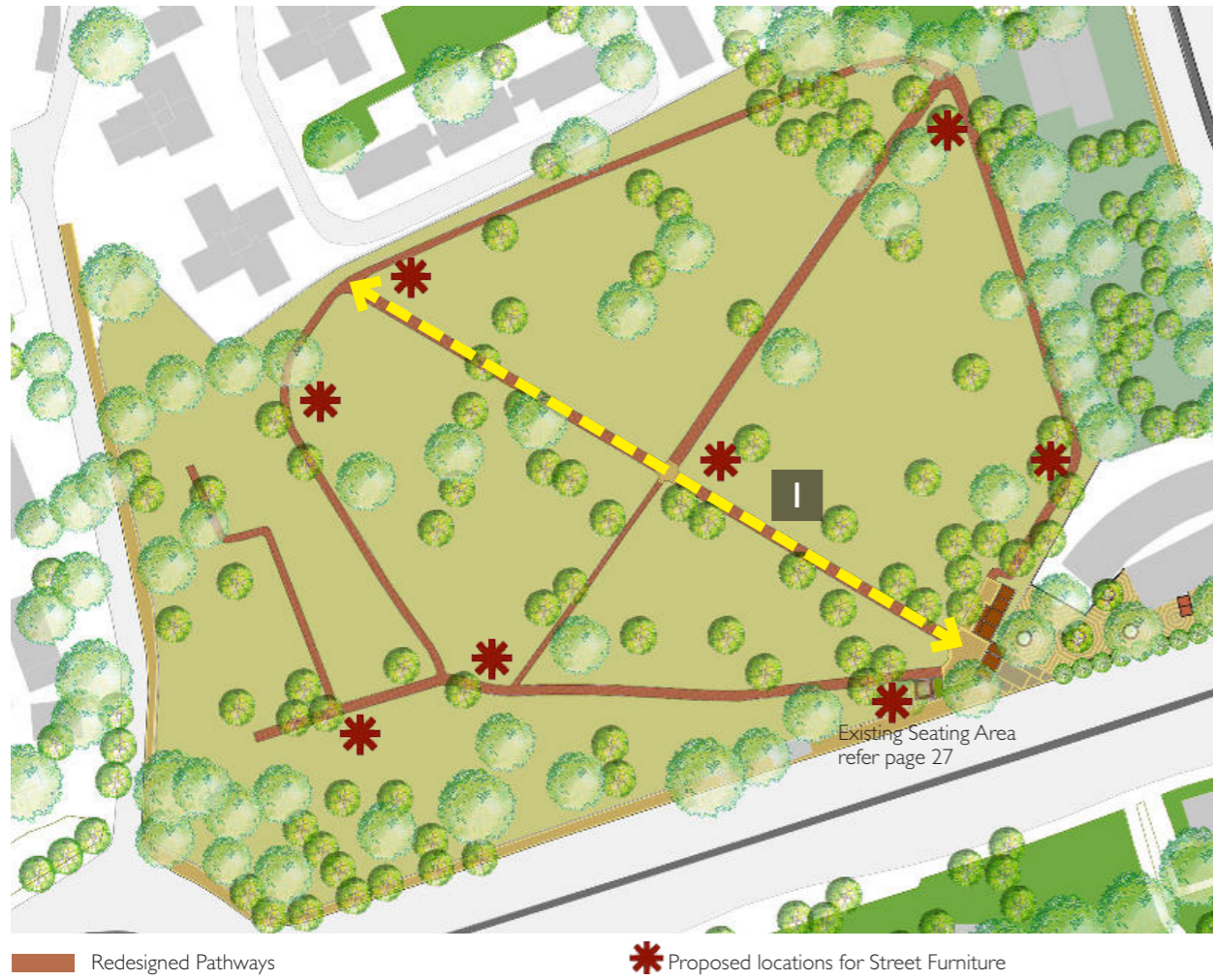


Section: AA



Section: BB

### 3. Pathway



Existing Main Pathway



Redesigned Main Pathway

### 4. Outdoor Furnishings



Cast-Iron Three-Seater Benches

Source: [www.kararamujassme.in](http://www.kararamujassme.in)

### Shrub Species



*Plumeria alba*



*Calliandra haematocephala*



*Tabernaemontana* or Chandni

5.5.9 Aerial View



## 6.1 AMASR Act

The Ancient Monuments and Archaeological Sites and Remains Act (AMASR), 1958, defines an 'Ancient Monument' as follows:

Ancient Monument means any structure, erection or monument, or any tumulus or place of interment, or any cave, rock-sculpture, inscription or monolith, which is of historical, archaeological or artistic interest and which has been in existence for not less than 100 years and includes:

1. Remains of an ancient monument.
2. Site of an ancient monument,
3. Such portion of land adjoining the site of an ancient monument as may be required for fencing or covering in or otherwise preserving such monument, and
4. The means of access to, and convenient inspection of, an ancient monument;

The section 2(d) defines archaeological site and remains as follows:

Archaeological site and remains means any area which contains or is reasonably believed to contain ruins or relics of historical or archaeological importance which have been in existence for not less than 100 years, and includes—

1. Such portion of land adjoining the area as may be required for fencing or covering in or otherwise preserving it, and
2. The means of access to, and convenient inspection of the area;

### Protection of monuments

The Archaeological Survey of India (ASI) under the provisions of the AMASR Act, 1958, protects monuments, sites and remains of national importance by giving a two-month's notice for inviting objections, if any in this regard.

After the specified two-month period, and after scrutinizing the objections, if any, received in this regard, the ASI makes decisions to bring a monument under its protection.

The limits of prohibited area and regulated area around the monuments, archaeological sites and remains declared by the Central Government as protected have been specified in the principal Act as 100 m and 200 m, respectively. The limits so fixed may be further extended on the basis of gradation and classification of the monuments, archaeological sites to be done by the National Monument Authority, which is to be constituted by the Central Government by virtue of the Amendment in the principal Act.



Kashmere Gate, New Delhi



Old Fort, New Delhi



Safdarjung Tomb, New Delhi

## 6.2 Brigadier John Nicholson

John Nicholson was a brigadier-general in the British Army. He was born on 11 December 1821 in Dublin, Ireland. He obtained a cadetship from the Bengal Infantry. He joined for duty at Banaras, and was attached to the 41st Native infantry. He served in the First Anglo-Afghan War (1839–1842) and First Anglo-Sikh War (1845–1846). He is best known for his pivotal role in the Indian Rebellion of 1857 especially during the Siege of Delhi, one of the decisive conflicts of the rebellion.



The assault of Delhi took place on 14 September 1857, and Nicholson was selected to command the main storming party. He was shot in the chest by a rebellious sepoy. He died of his wounds on 23 September.

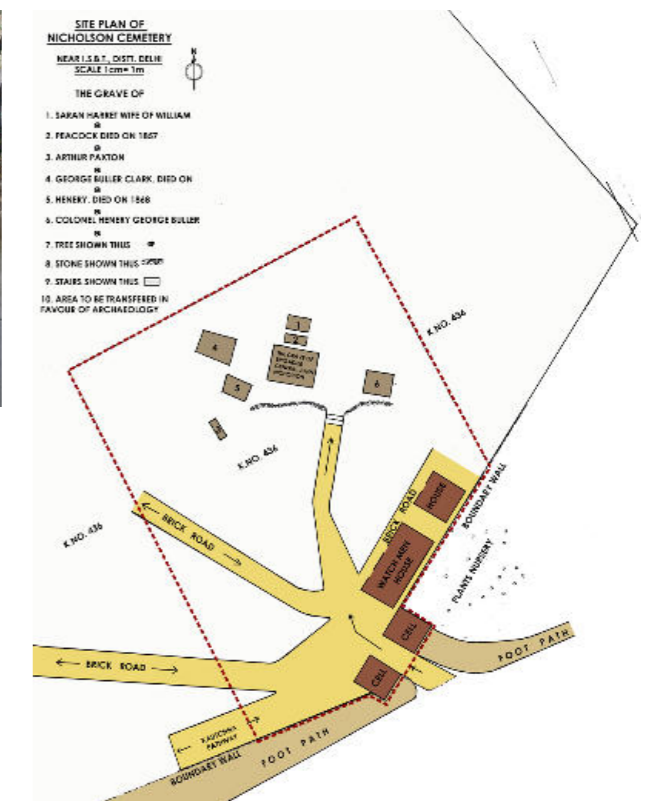
The number of casualties resulting from the Siege of Delhi created the rising demand for a Christian cemetery in the area. A new burial ground was opened in front of the Kashmere Gate, near to Ludlow Castle.

Nicholson was among the first people who were buried there. A white marble slab from the Red Fort was taken to build his tombstone and epitaph on it reads:

**The Grave of Brigadier General Nicholson who led the assault of Delhi, but fell in the hour of Victory, mortally wounded and died, 23rd September 1857 aged 35**



Source: Bourchier, George (1858) *Eight months' campaign against the Bengal Sepoy Army during the mutiny of 1857*, London: Smith, Elder and Co., p. 54



Source: Archaeological Survey of India

### Protected Boundary for Nicholson Cemetery

For the maintenance of ancient monuments and archaeological sites and remains of national importance, the entire country is divided into 24 Circles. The adjacent map shows the protected boundary earmarked by the ASI for Nicholson Cemetery.

## 6.3 Heritage Inventory



Key Plan showing heritage structures in 1 km radius

### 1. Hotel Oberoi Maidens

**Location:** Shamnath Marg, Civil Lines

**Ownership:** Private

**Function:** Hotel

**Status:** Unprotected

#### SPECIAL FEATURES

**Significance:** Among the first hotels to be built in the city, this colonial building is of architectural merit.

**State of Preservation:** Fair

**Date:** Early 1907

**Grading:** Architectural Value B



### 2. St. Xavier's School

**Location:** 4, Raj Niwas Marg, Civil Lines

**Ownership:** Public Trust

**Function:** School (Present)

**Status:** Unprotected

#### SPECIAL FEATURES

**Significance:** This building of architectural merit was the Cecil Hostel until Independence.

**State of Preservation:** Fair

**Date:** Early 1900s

**Grading:** Architectural Value B



### 3. Nicholson Cemetery

**Location:** Boulevard

**Ownership:** Public

**Function:** Cemetery

**Status:** Protected

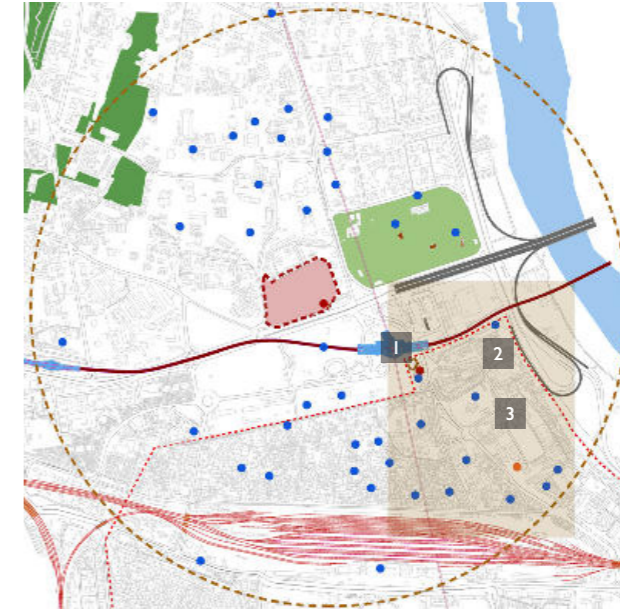
#### SPECIAL FEATURES

**Significance:** This is one of the earliest British cemeteries in Delhi. Nicholson, who died in 1857, is buried here.

**State of Preservation:** Deteriorating

**Date:** 1857

**Grading:** Architectural Value B



Key Plan showing heritage structures in 1 km radius

### 1. Kashmere Gate

**Location:** Opposite Inter State Bus Terminal

**Ownership:** Public

**Function:** Gate of City

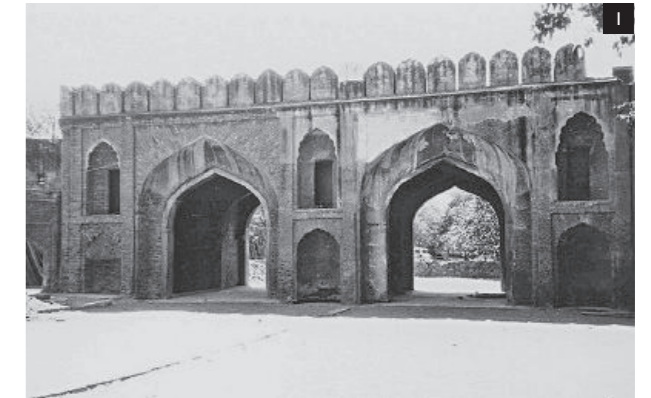
**Status:** Unprotected

#### SPECIAL FEATURES

**Significance:** This is one of the four gates of the city of Shahjahanabad which still survives.

**State of Preservation:** Deteriorating

**Date:** Period of Shahjahan



### 2. St. James Church

**Location:** Kashmere Gate area

**Ownership:** Public

**Function:** Church

**Status:** Unprotected

#### SPECIAL FEATURES

**Significance:** This is the first church to be built by the British in Delhi.

**State of Preservation:** Fair

**Date:** 1836



### 3. Archaeological Museum

**Location:** Inside Delhi Institute of Technology, Kashmere Gate

**Ownership:** Public

**Function:** Library

**Status:** Unprotected

#### SPECIAL FEATURES

**Significance:** This was originally the library of Dara Shikoh. It also housed a government college (1804-77).

**State of Preservation:** Fair

**Date:** 1867

**Grading:** Architectural Value B





## 6.4 Physical Characteristics of Pedestrian

Source: Excerpts from Time Savers Standards Landscape Architecture.

### Dimensional Criteria

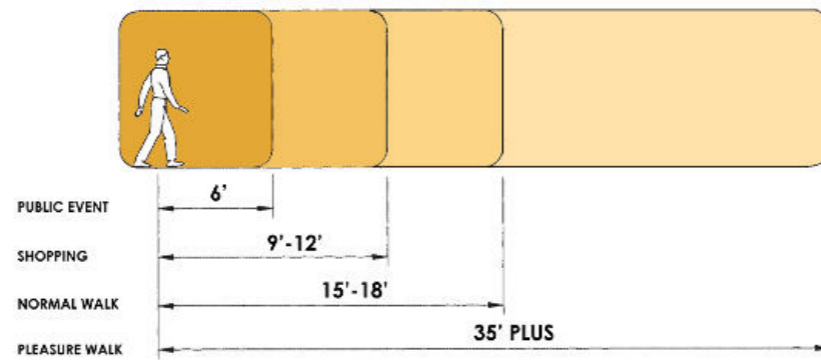
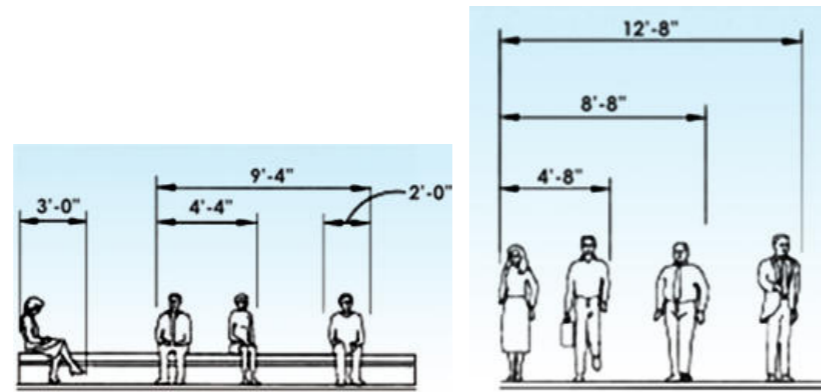
#### Human Dimensions and Activity

Spatial requirements differ in various regions and between different cultures as a function of accustomed densities of people, heritage and social and environmental values.

#### Forward Spatial Bubbles

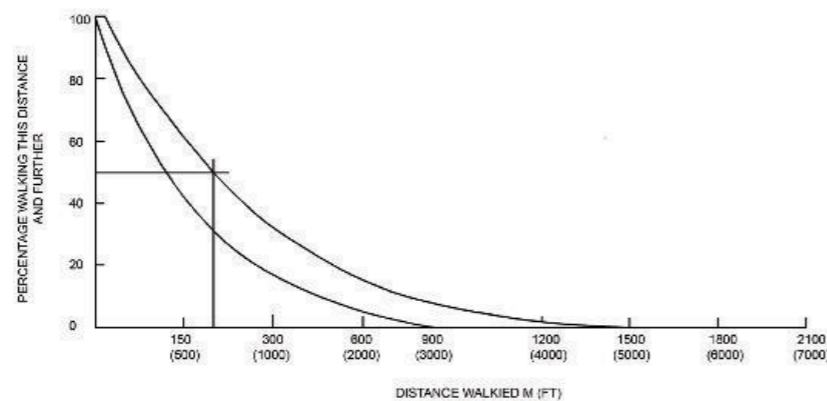
Forward spatial bubbles refer to the extent of unobstructed forward vision held to be psychologically comfortable for the average pedestrian under various circumstances.

The spatial requirements for psychological comfort will differ across regions and cultures.

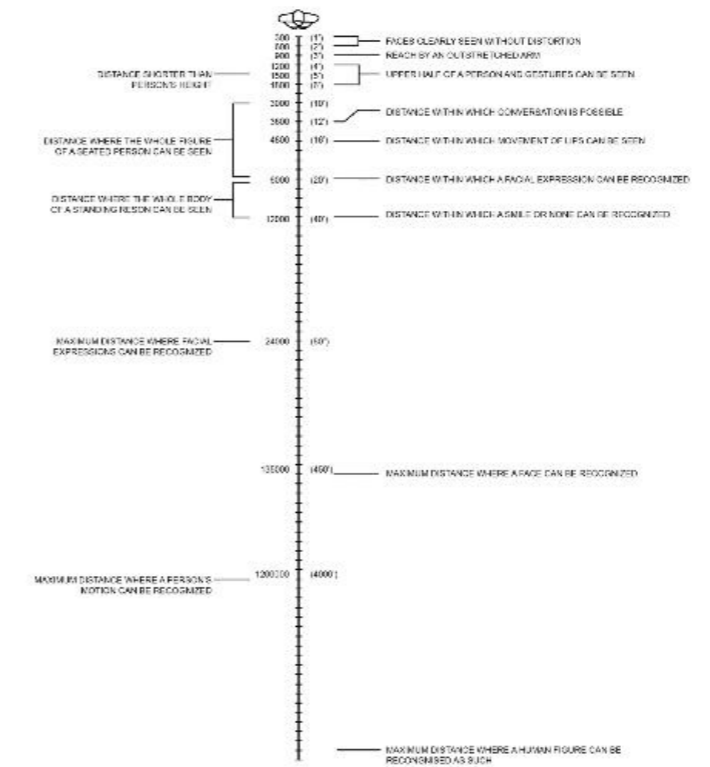
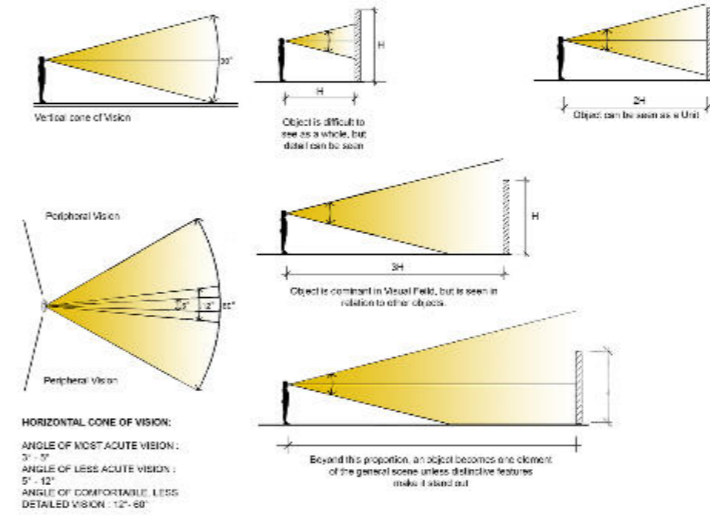
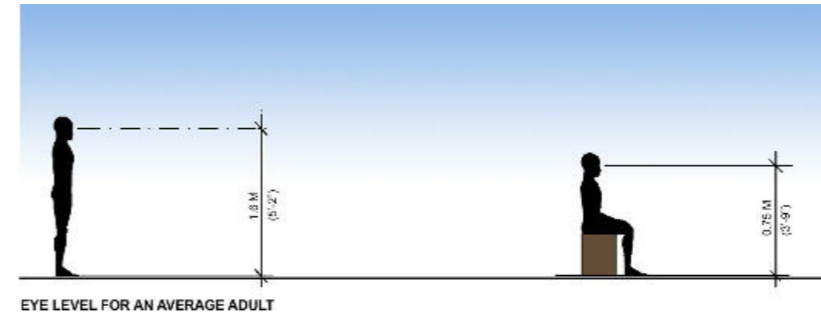


Type	mm/min.	ft/min	km/hr.
Average adult	78000	260	4.3
Elderly (75yrs)	64500	215	4
Bunching	60000	200	3.7
Stairways (going down)	45600	152	2.8
Stairways (going up)	33900	113	2

Table-I



RANGE OF ACCEPTABLE WALKING DISTANCES (U.S. cities). Most people are not willing to walk distances greater than about 220M (700 R).



INHERENT CAPABILITIES OF HUMAN VISION IN TERMS OF SOCIAL COMMUNICATION (not to scale)

### Visual Criteria

#### Eye Levels and Cone of Vision

The eye-level of an average adult in a standing position as well as sitting position is illustrated on the left.

Pedestrians will focus most of their attention at eye level and below during normal perception of their surroundings.

The human cone of vision (i.e., the fixed eye) is approximately 30 degrees vertically and 60 degrees horizontally, with angles of acute vision somewhat less than this, as illustrated on the left.

Eye levels and cone of vision are especially important in terms of the placement and orientation of pedestrian signage.

### Visual Perception

#### Sense of Spatial Enclosure:

An external enclosure is most comfortable when its vertical planes are one-half to one-third as high as the width of the space enclosed.

If the ratio falls below one-fourth, the space begins to lack a sense of enclosure.

#### Social Communication

For a variety of reasons, the scale and form of a space will influence pedestrian behaviour and the type of social communication that may occur within that space.

Physical distances that bring people into close proximity, or separate them, are important design considerations.

Settings are meant to be conducive to active social communication, or those meant to allow a certain degree of eye contact possible, and probable, within the scale and layout of the setting.

## 6.5 Spatial Standards

### Pathway Width and Slope Criteria

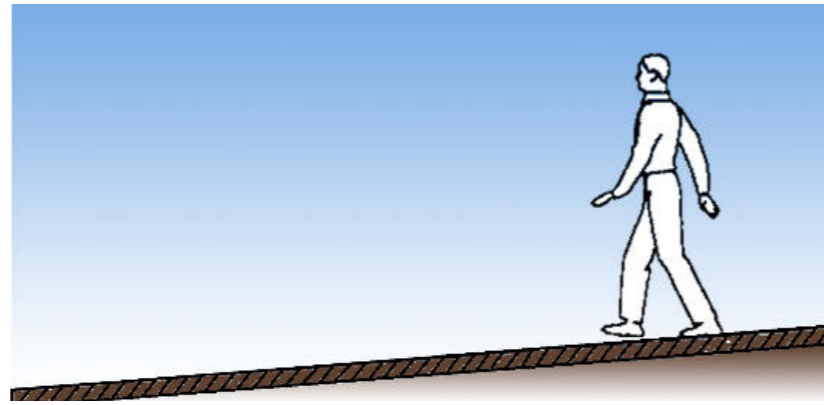
Widths of pedestrian pathways vary depending on the purpose and the existing or expected intensity of use. In general, a 600 mm (24 in) width for each pedestrian is necessary, which suggests a minimum pathway width of 1,200 mm (4 ft) for public walkways.

Pedestrians as a group usually do not use the entire width of most of the pathways.

The edge of the walkway adjacent to a curbed roadway, i.e. 750 mm (30 in.) from the street edge, is avoided by pedestrians, as is the edge of the building façade, i.e. 450 to 750 mm (18 to 30 in.).

These edges are used only under conditions of high pedestrian density.

The presence of street furniture and features, such as fire hydrants, trees, parking meters, telephones, trash receptacles, fountains, sculpture and kiosks, also reduce the effective width of a pathway.



#### Longitudinal Slope

**0% to 3% slopes Preferred**

**5% slopes Maximum**

**5% to 10% slopes Possible if Climatic**

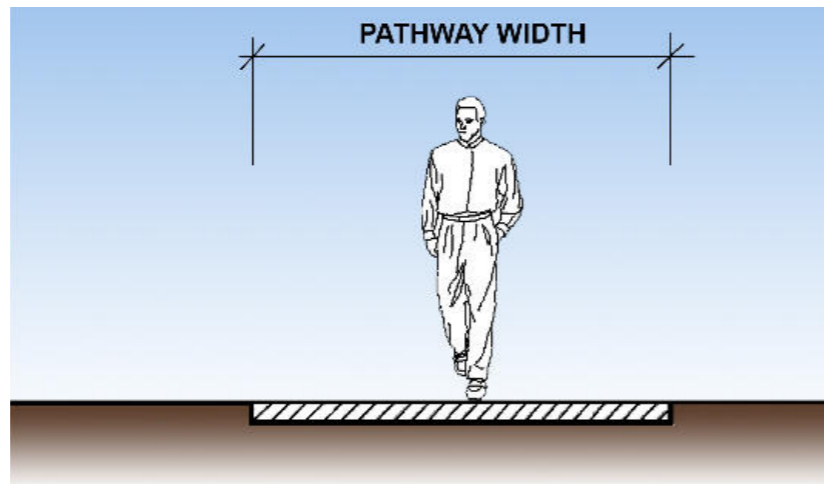
**Conditions permit**

**5% to 8% slopes are Considered ramps**

### Walkway

Longitudinal slope criteria are based on user abilities and design objectives, and cross-slope criteria are based on the need for positive drainage, depending on paving material.

Porous paving material thus won't require as much of a cross-slope for drainage as would non-porous paving material.



#### Cross Slope

**1% cross-slope Minimum**

**(Depending on material).**

**2% cross-slope Typical.**

**3% cross-slope Maximum**

### Stairways

#### Widths

- Minimum width for public stairways should be 1,500 mm (60 in.).
- Minimum width for private stairways should be 1,050 mm (42 in.)

### Tread-Riser Ratios

Tread-riser ratios are always constant within any particular stairway or set of stairways, for ease of ascent or descent, and for safety reasons.

On rare occasions, riser heights in stairways will vary (e.g., stairways built obliquely into a slope), but these are hazardous and should be avoided whenever possible.

On very gentle slopes of 0.5 to 2.0%, a stairway can be built to slope with the grade rather than remain level, in order to keep the bottom riser at a constant dimension.

The bottom of stairway grade (B.S) can be wrapped to maintain a constant along the edge of the bottom tread.

Tread widths also vary for aesthetic reasons, as in the case of terraced plazas, when these are used as informal gathering places rather than as purely utilitarian transitional spaces.

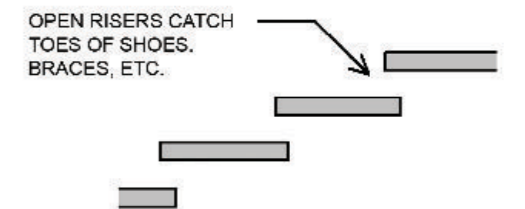
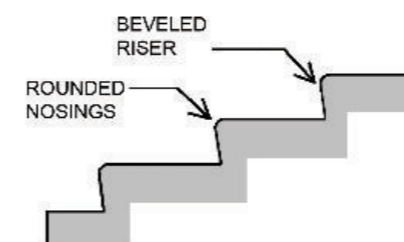
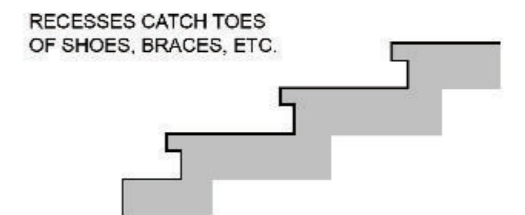
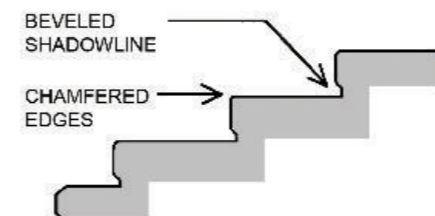
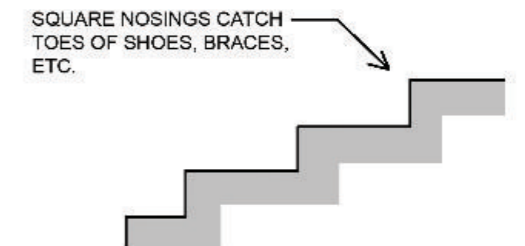
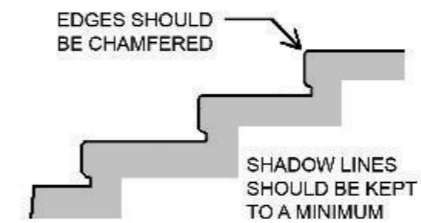
### Additional Considerations

Outdoor stairways should be made easier to ascend than interior stairways. People tend to move at greater rates outdoors than they do indoors.

Single steps in walkways are dangerous and should never be specified. At least two steps, but preferably three, should be specified, and their presence should be announced conspicuously with railings, plantings or lighting.

Risers for outdoor stairways should be a minimum of 115 mm (4.5 in.) and a maximum of 150 mm (6 in.). A 175 (7 in.) riser may be considered for utilitarian purposes.

Tread should be pitched downgrade 2% for drainage.



**THESE PROFILES ARE CONSIDERED RELATIVELY SAFE**

**THESE PROFILES CAN BE HAZARDOUS**

### Height Between Landings

The height between landings is an important criteria for psychological reasons as well as for human endurance.

Abrupt changes in ground levels, even as little as 300 to 500 mm (1-1 1/2 ft), can decrease incentive to proceed.

Changes of 1,800 mm (6ft) or more are found to be strongly discouraging.

Thus, heights between stairway landings are best designed so that an adult of average height standing on one landing can see the ground plane of the next, higher one, i.e. 1,500 mm (5 ft) or less.

A minimum of two steps should be provided.

Three steps are preferred to ensure clear legibility of the grade change

Landings should be long enough to allow an easy cadence with a minimum of three strides on the landing.

A 1500 mm (5 ft) length landing is a typical Minimum.

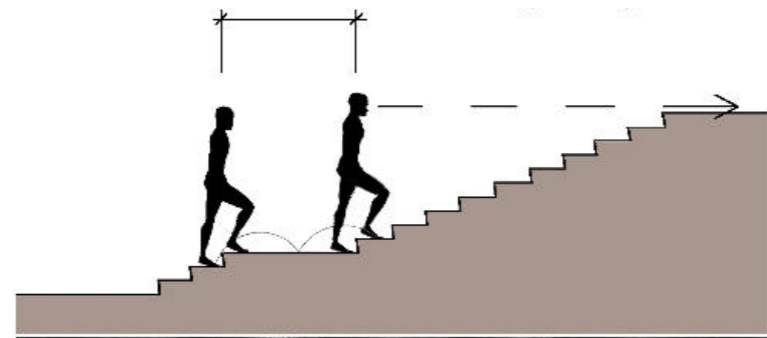
Longer landings are typically multiples of 1500 mm (5 ft) i.e. 1500 (5 ft), 3000 (10 ft), 4500 (15 ft) Etc.

The Height between landings should be kept to a maximum of 1500 mm (5 ft) to allow a view of the next higher landing.

Height Greater than 1500 mm (5 ft) are psychologically less inviting.

Where this is not possible, a minimum of one (1) landing for every twenty (20) treads is recommended to minimize fatigue.

Note that the "Multiple of Five" rule for Stairway Landings Allows an alteration between left and right foot when stepping onto and then off a landing.



**Stairway height and landing proportions.** Check state codes where applicable.

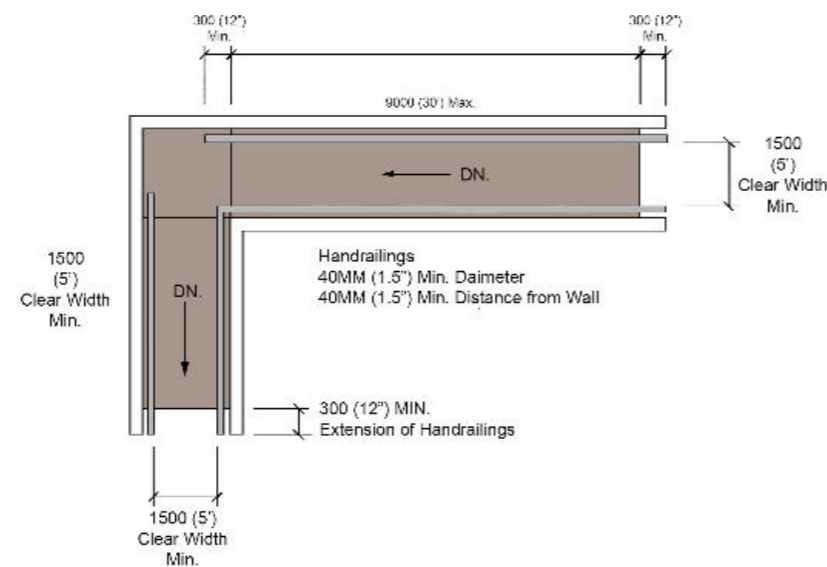
### Ramps

#### Widths

Ramp widths are determined according to the type and intensity of use.

One-way travel requires a clear minimum width of 900 mm (3 ft), whereas two-way travel requires a clear minimum width of 1,500 mm (5 ft).

If turns occur at landings, adequate space for manoeuvring wheelchairs must be provided.



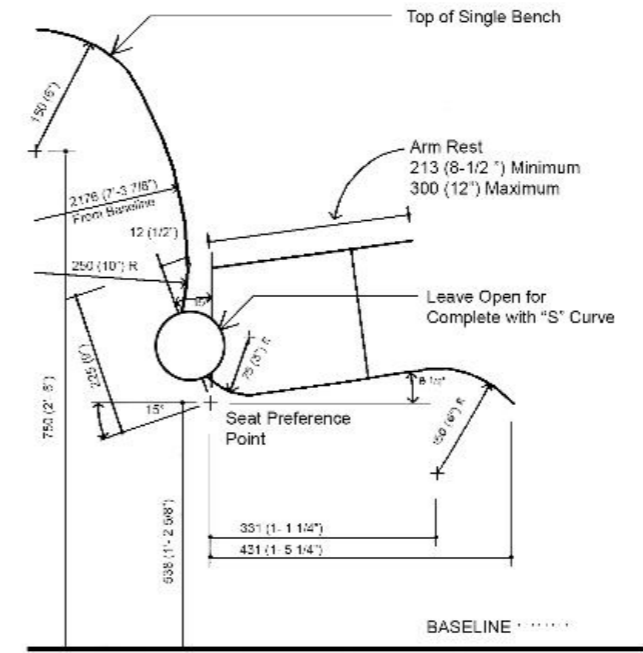
**Dimensional criteria for two-way handicap ramp.** Minimum clear width for one-way travel is 900mm (36 in.). Check state codes where applicable.

### Slope Criteria

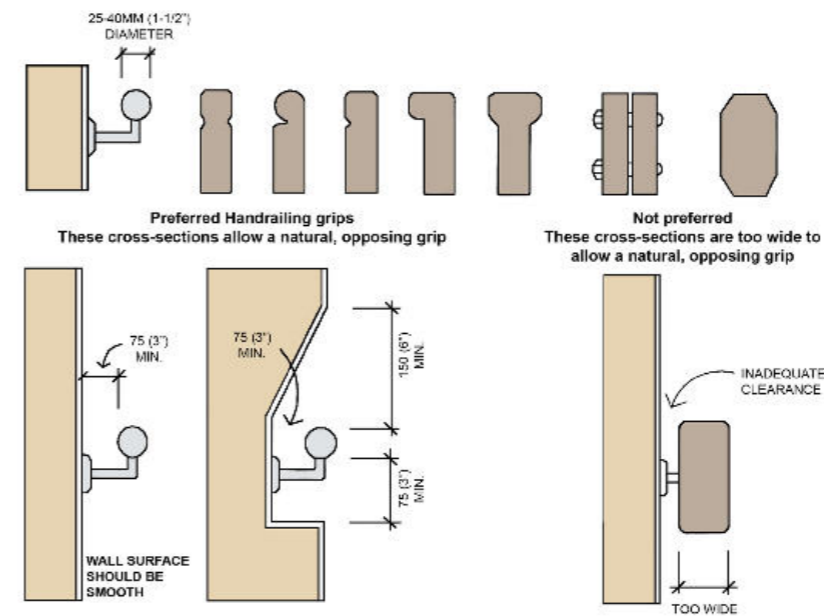
Ramp slopes must not be greater than 1:12 or 8.33%. Curb cuts are an exception: 1:8 or 12% being acceptable if the running distance is less than 900 (3 ft)

#### Distance between Landing:

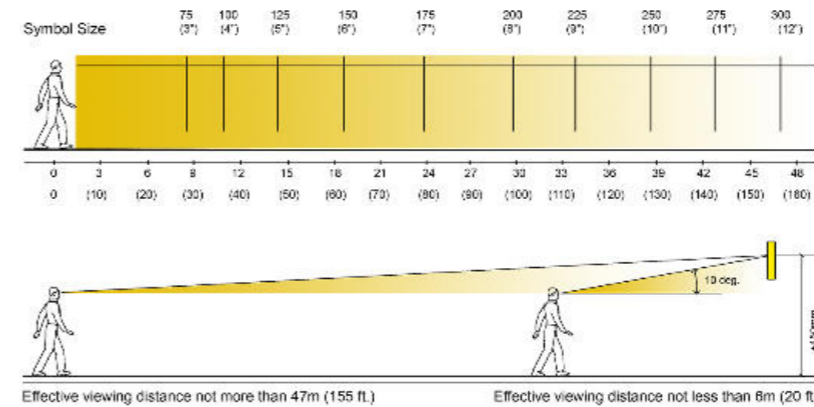
- Landings should be provided within every 9,000 mm (30 ft) or less of ramp length.



**Preferred Height and Seating Angle for Outdoor Benches**



**Preferred Handrailing Profiles**



### Seating Criteria

Benches should be designed to ensure greatest comfort for the individual.

Seat walls are typically 400 to 450 mm (16 to 18 in) wide and between 400 to 450 mm (14 and 18 in), in height, with 400 mm (16 in) being most preferred.

### Handrailings

Handrailings are important on all stairways and ramps, and should allow a secure and comfortable grip for maximum support.

Handrailing heights for outdoor stairways and ramps typically range from 750 to 850 mm (30 to 34 in).

The ends of the railings should extend beyond the top and bottom step by 300 to 450 mm (12 to 18 in.) and should be rounded off or turned under for safety reasons.

This detail is important for individuals with impaired vision.

#### Additional considerations

Handrailings on both sides of a stairway or ramp are important because some people have strength only on one side.

Extra wide stairways should have centre railings for greater convenience. Handrailings should not be 6,000 mm (20 ft) apart.

Railings should continue across intermediate landings.

Handrailings for children, at a height lower than that specified for adults, are sometimes advisable and are also useful on ramps for individuals who use wheelchairs.

### Pedestrian Signage

Design and placement of signs for use by pedestrians involves consideration of visual field, scale of letters, proportions of letters and background.



(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)

## **Delhi Urban Art Commission**

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

Email: [duac74@gmail.com](mailto:duac74@gmail.com) Website: [www.duac.org](http://www.duac.org)