

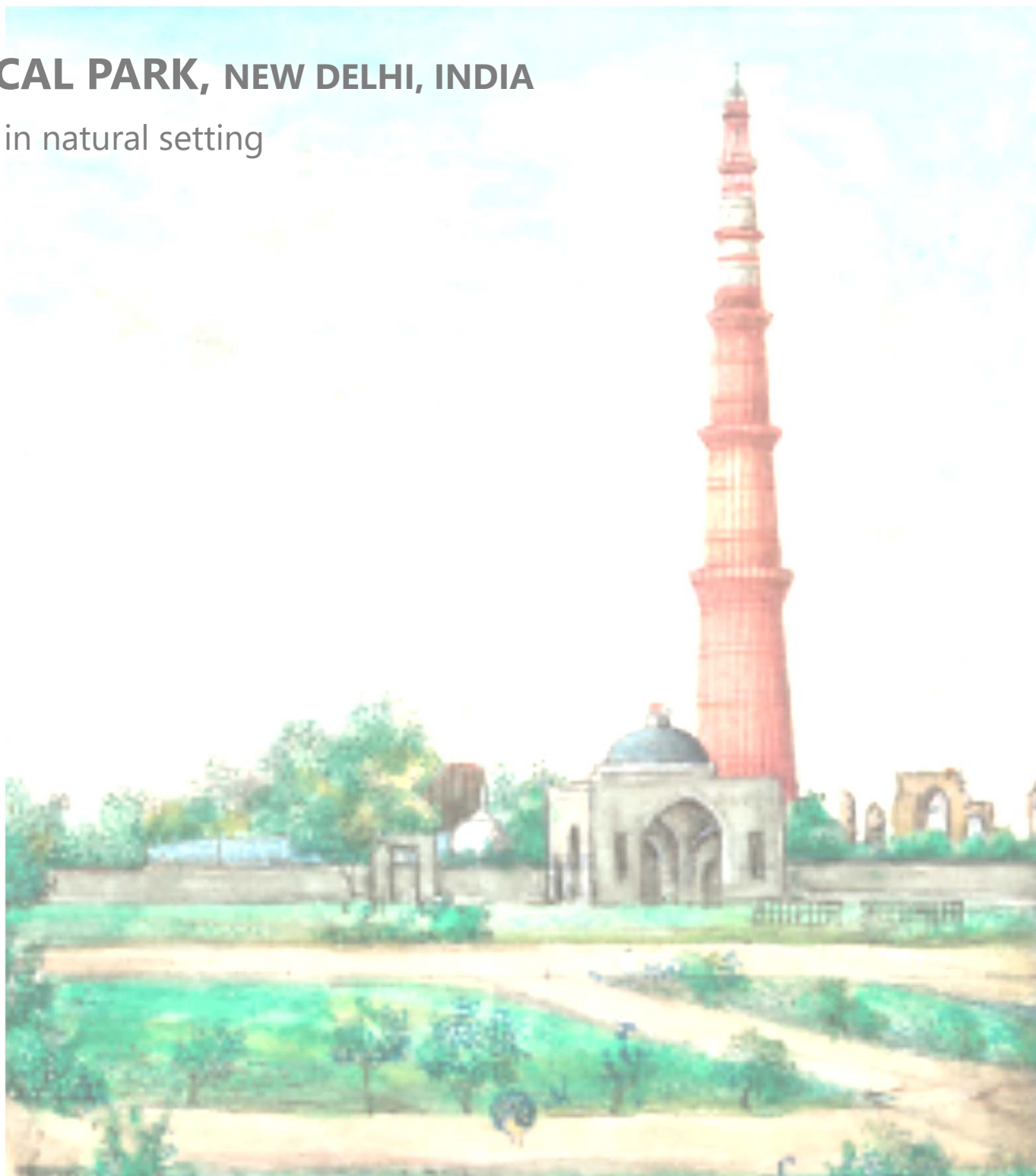
MEHRAULI ARCHAEOLOGICAL PARK, NEW DELHI, INDIA

Interpreting historical built heritage in natural setting

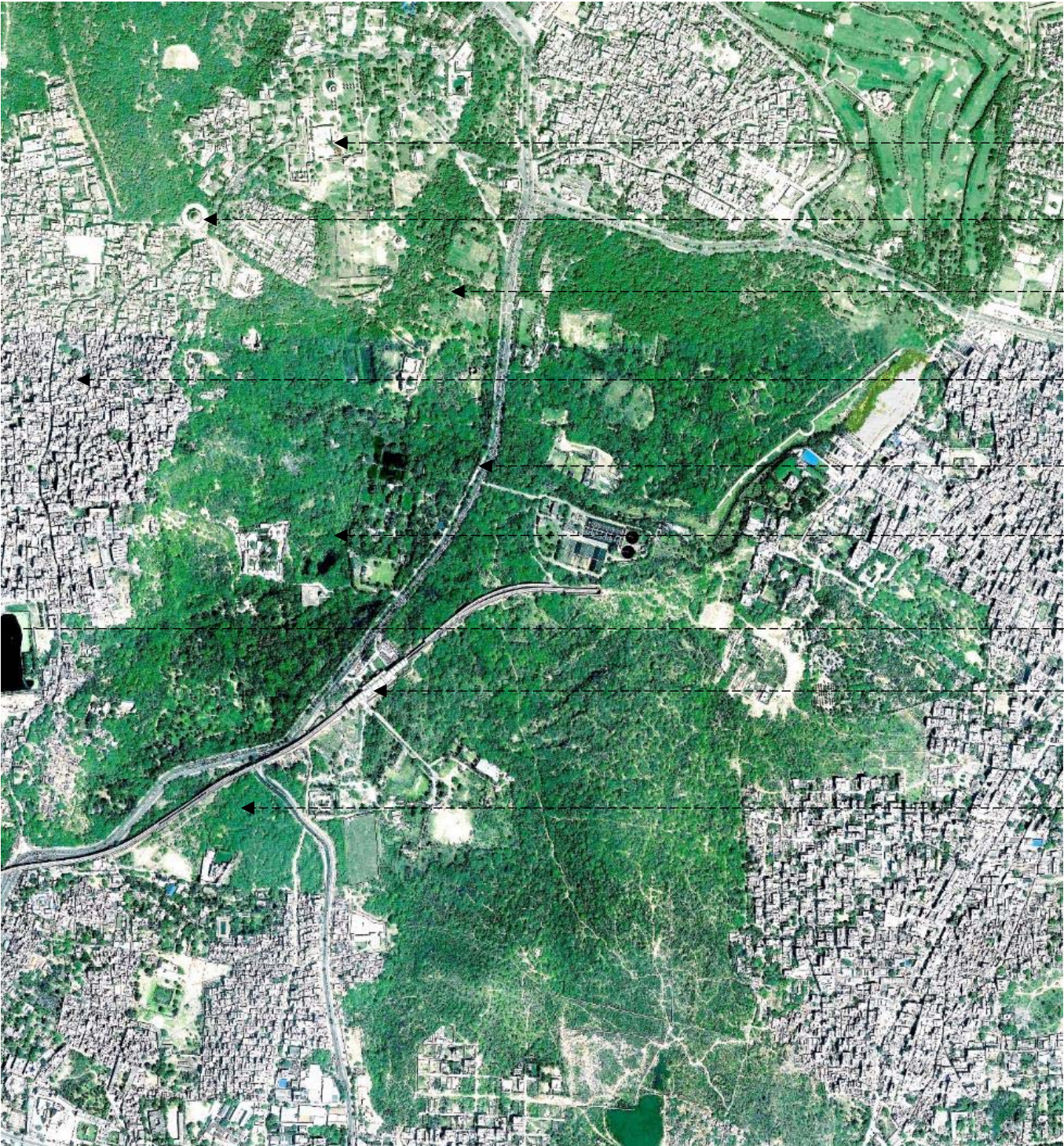
Amit Bhattacharya
Landscape Architect | Ph.D Scholar

Design with Nature, Online Seminar
Le: Notre Institute | ECLAS

December 19, 2018



CONTEXT AND SETTING



- Qutab Minar
- Adam Khan's Tomb at Hillock
- Flower garden
- Historical Rural settlement
- Mehrauli-Gurgaon Road
- Archaeological Park
- Hauz-e-Shamsi – water Tank
- Metro Station
- Ladha Sarai- historic Resting hub



CONTEXT OF THE PARK



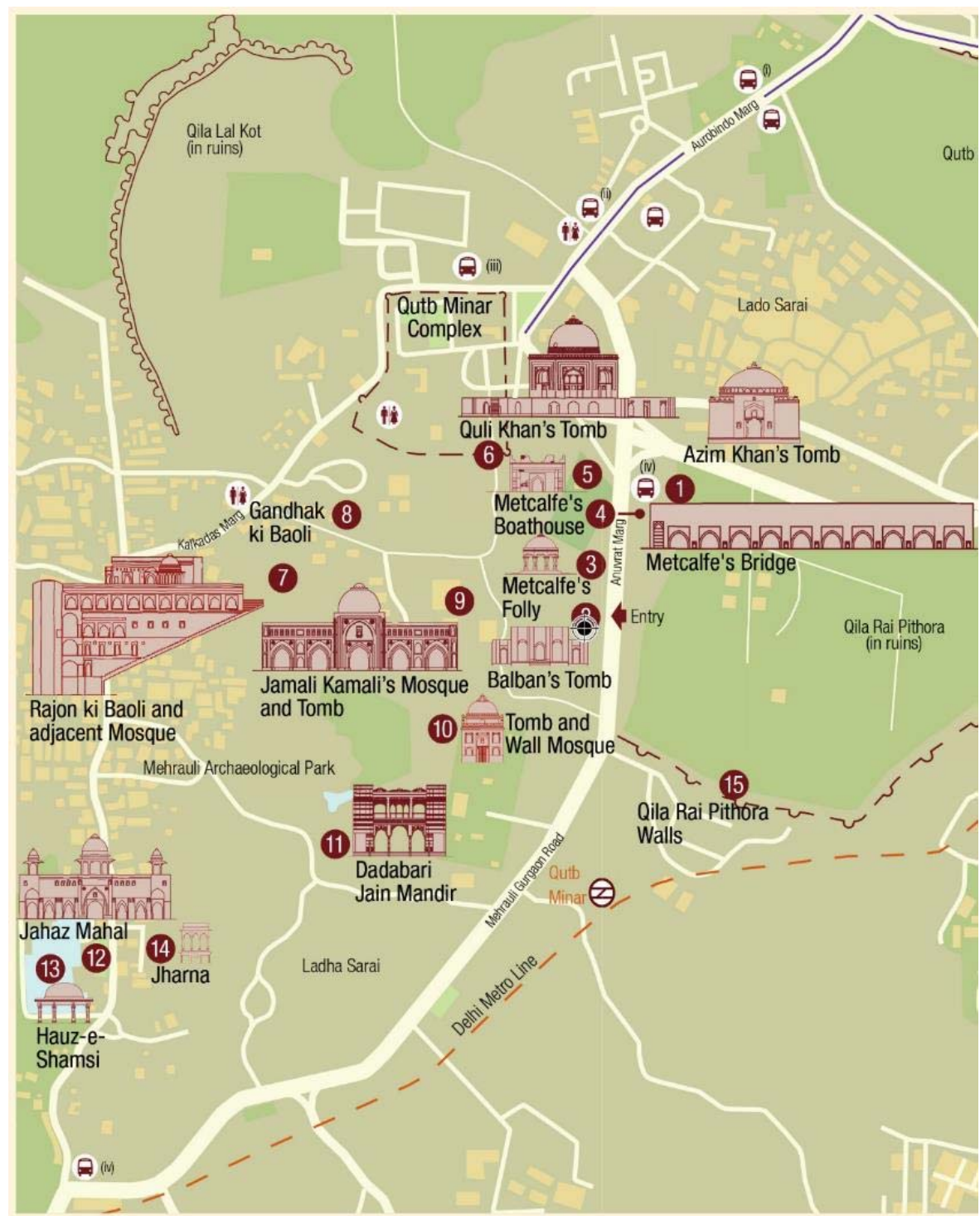
CONTEXT OF THE PARK



CONTEXT OF THE PARK



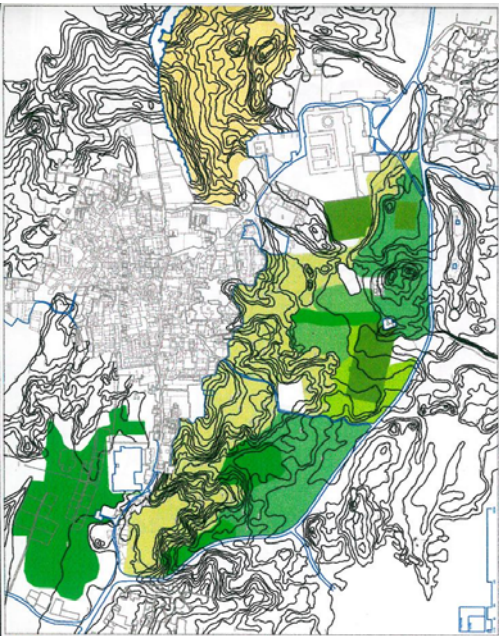
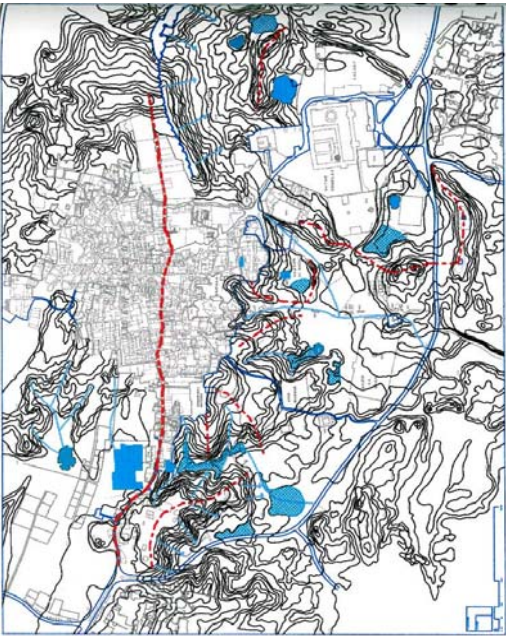
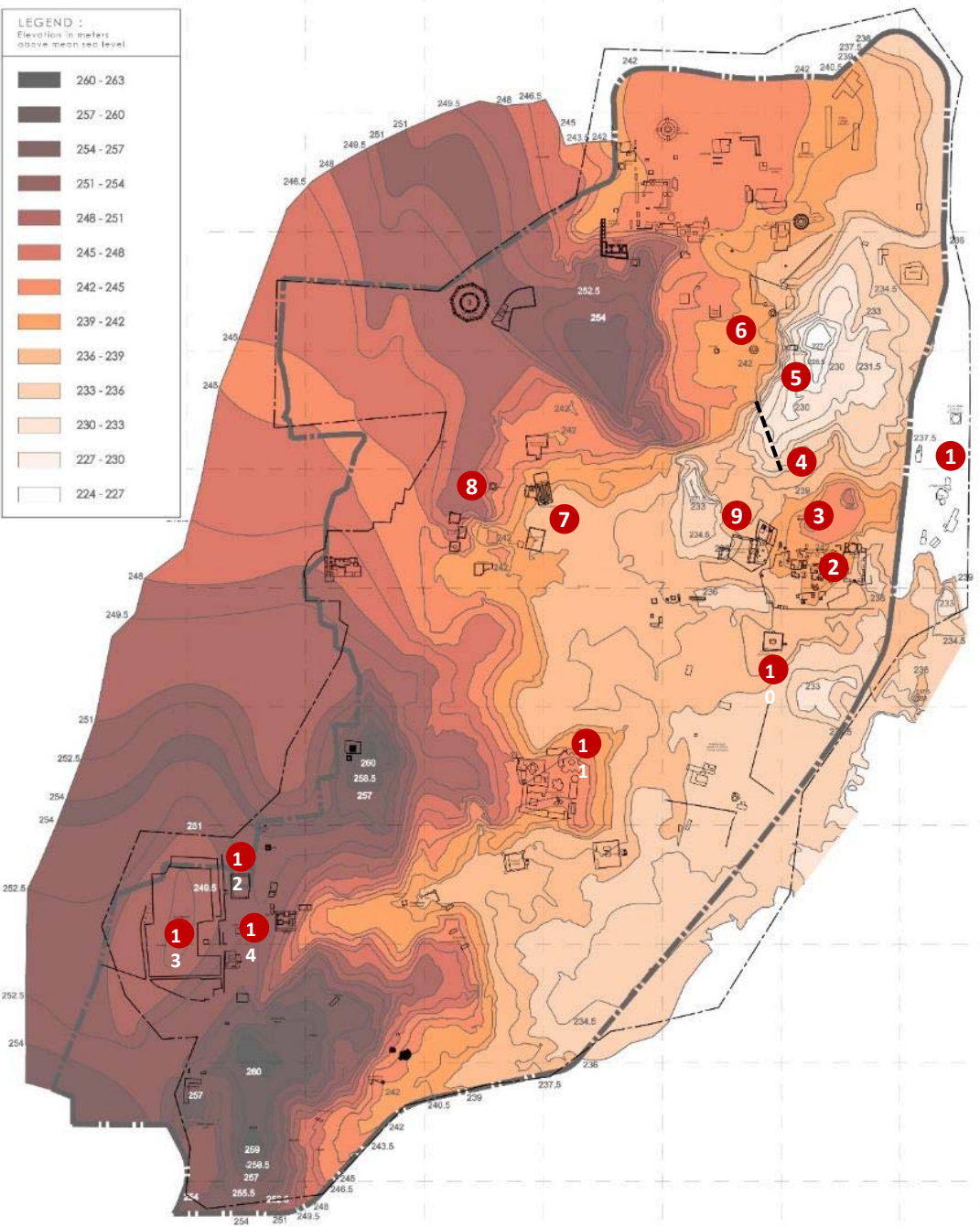
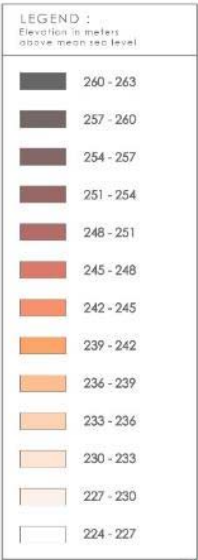
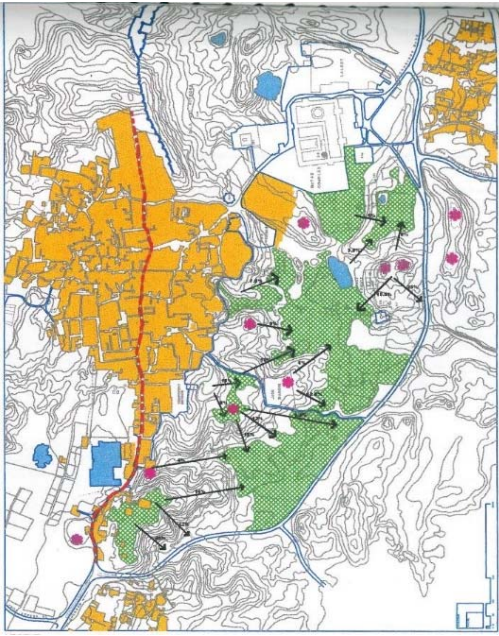
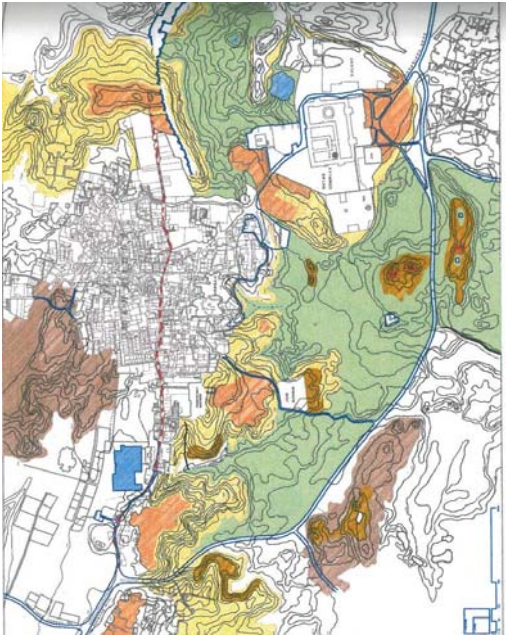
THE UNEXPLORED PLETHORA



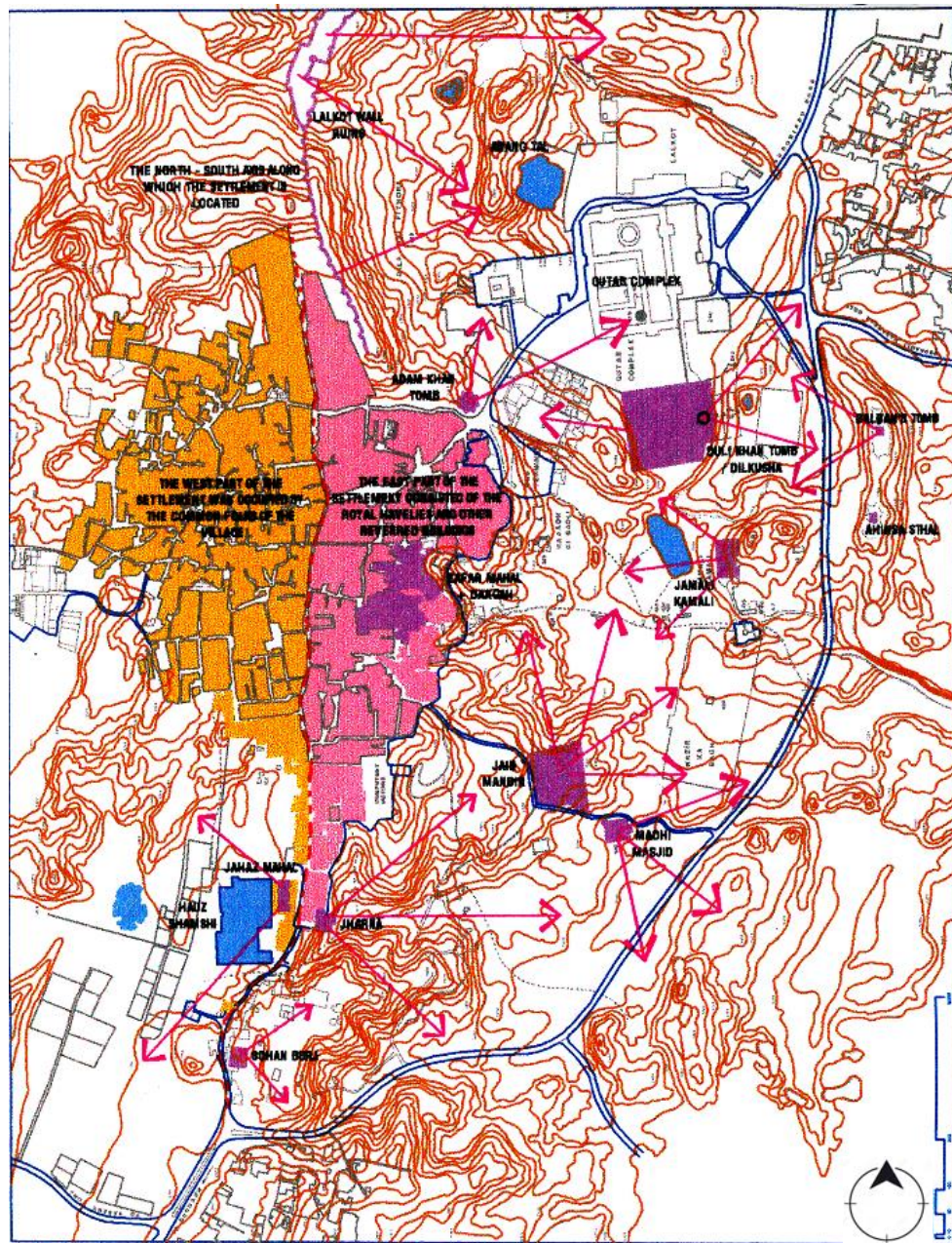
1. Azim Khan's Tomb
2. Balban's Tomb (1266 – 87)
3. Metcalfe's Folly (1835 – 1853)
4. Metcalfe's Bridge (1835 – 1853)
5. Metcalfe's Boat House (1835 – 1853)
6. Quli Khan's tomb (1840)
7. Rajaon Ki Baoli (1506)
8. Gandhak Ki Baoli (1506)
9. Jamali Kamali's Mosque and Tomb (1528)
10. Tomb and Wall Mosque
11. Dadabari jain Mandir
12. Jahaz Mahal (1700)
13. Hauz-e-Shamsi (1230)
14. Jharna (1700)
15. Qila Rai Pithora (1100)



INTERPRETATION OF NATURAL RESOURCE AND BUILT SETTING THROUGH REDUCTIVE ANALYSIS – PHYSIOGRAPHIC FEATURES



BUILT FORMS RESPONDING TO NATURAL SETTING



LEGEND --

- THE WEST SIDE OF SETTLEMENT OF MEHRAULI
- THE EAST SIDE OF SETTLEMENT OF MEHRAULI
- THE MONUMENTS SITUATED ON HIGH POINTS
- THE NORTH-SOUTH RIDGE ALONG WHICH MEHRAULI IS SITUATED
- THE HISTORIC WATER BODIES (EXISTING & THOSE REQUIRING REVIVAL)

RELATION OF BUILT FORM TO THE LANDFORM

OVERALL PLANNING:

The main **settlement of Mehrauli** is located along the North-South ridge; i.e. on relatively higher ground.

The gentle slopes are dotted with many monuments especially mosques and gardens.

SITES OF STRUCTURES:

Hauz Shamshi is located such that it gets the run-off from surrounding slopes.

The **Jhama** is also placed such that the views to the whole area can be observed from the edge of the valley.

Plateaus and peaks have been sensitively exploited:

- o The 'belvedere' at the high point seems to have been sited for the distant views, and possibly for the breeze.
- o **Jain mandir** is on another plateau.
- o Tombs namely those of **Adam Khan, Quli Khan, Azim Khan** and those near Sohan Burj are placed on eminent locations for prominence.

Smaller peaks have been used for siting **folies of Metcalf** to enhance the picturesque views.

The **service buildings of the Metcalf Estate**, the ruins of which can be seen near Jamali Kamali, are discreetly placed behind the hillock.

GARDENS AND ORCHARDS:

A characteristic of the location of the **historic gardens** identified is that they occupy well-defined spaces, which are suitable from the point of view of enclosure, shelter and availability of water.

- o In special defined spaces - Jhama garden and upper garden of Dilkusha
- o In gentle slopes - Nazir ka Bagh and Bagichi ki Masjid garden

In undulating land is the **extensive landscape garden of Thomas Metcalf**

The low plain to the SW has the **Hauz Shamshi and the old mango orchards** , sited here to utilise the pocket of soft soil with absence of rocks and slopes, and to take advantage of the seasonal runoff.

Similarly **guava and khirni orchards** are also located below slopes to maximise the water availability.



A VIEW OF THE ENTIRE VALLEY FROM THE JHARNA GARDEN. THE VEGETATION SEEN IS A MIX OF DENSE WOODLANDS AND SCRUB TYPE.

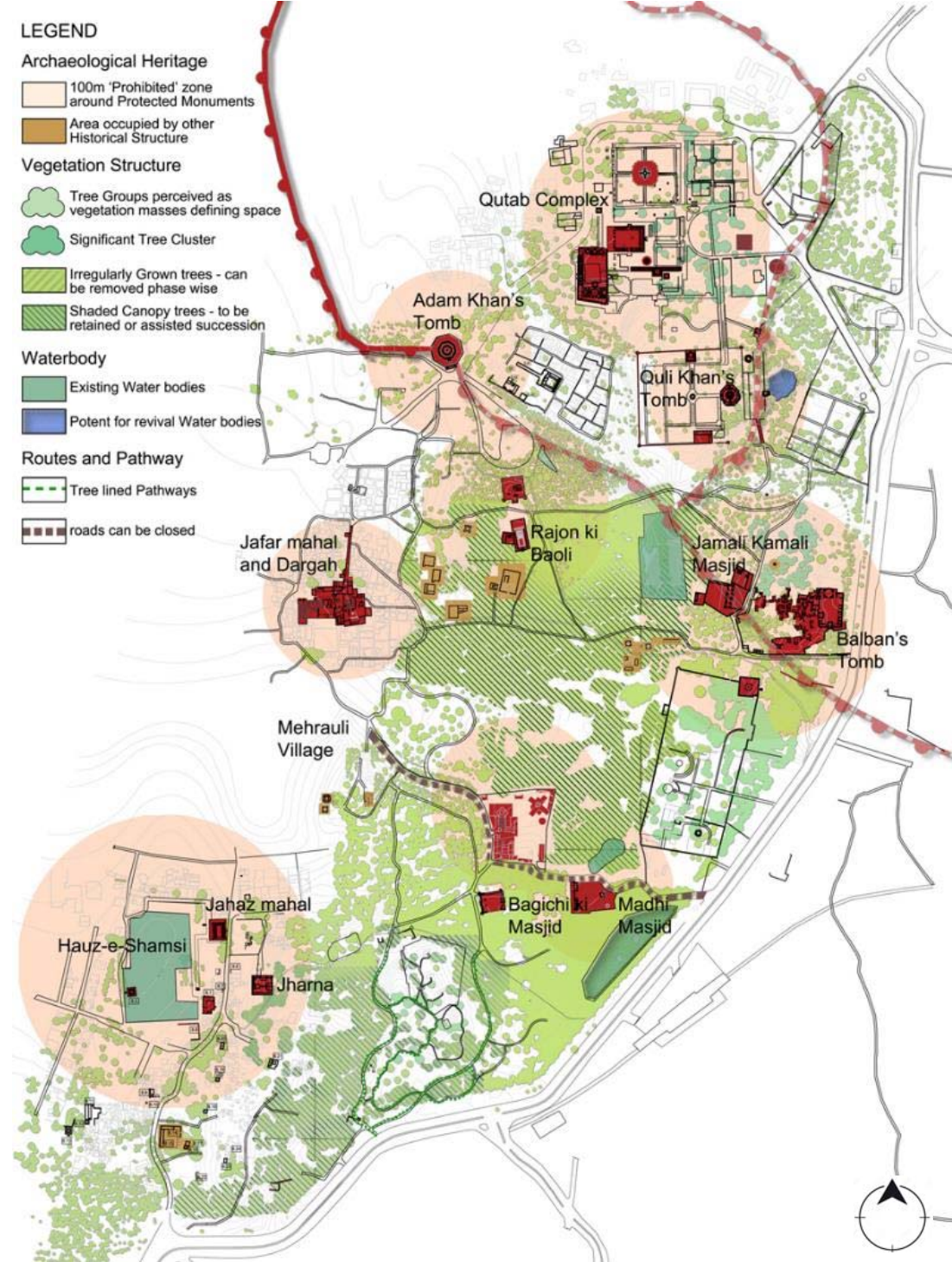


THE VIEW OF SITE FROM THE SOHAN BURJ. THIS AREA IS PREDOMINANTLY MODERATE TO SPARSE SCRUB VEGETATION TYPE.



THE VIEW OF SITE FROM THE DADA BARI JAIN TEMPLE. THERE IS A PREDOMINANCE OF MODERATE TO DENSE SCRUB IN THIS AREA

MEHRAULI SITE ASSETS – TANGIBLE AND INTANGIBLE EXTANTS



HISTORIC MONUMENTS REGULATIONS IN INDIA

ASI 50M PROTECTED ZONE -

THIS IS AN AREA WITHIN 50M FROM THE MONUMENT.
NO CONSTRUCTION ACTIVITY IS PERMITTED IN THIS AREA.

ASI 100M RESTRICTED ZONE -

THIS IS AN AREA WITHIN 100M FROM THE PROTECTED ZONE.
ONLY DIGGING PERMISSIBLE UPTO 12 INCHES FROM THE SURFACE.
NO CONSTRUCTION OR INDUSTRIAL ACTIVITY ALLOWED.
NO VEHICLES ARE PERMITTED IN THIS AREA.

THE BASIC INTENT FOR THIS AREA IS TO PRESERVE ANY ARCHAEOLOGICAL REMAINS UNTIL SUCH A TIME THAT AN ARCHAEOLOGICAL INVESTIGATION CAN BE CARRIED OUT.

ASI 200M REGULATED ZONE -

THIS IS AN AREA WITHIN 200M FROM THE EDGE OF THE RESTRICTED ZONE.
DEVELOPMENT CAN HAPPEN WITH PERMISSION FROM THE ASI.
MAXIMUM HEIGHT FOR CONSTRUCTION TO NOT EXCEED THE MAXIMUM HEIGHT OF THE MONUMENT.

THE BASIC INTENT FOR THIS AREA IS TO AVOID VISUAL AND FUNCTIONAL INCOMPATIBILITY.

ANCIENT MONUMENTS AND ARCHAEOLOGICAL SITES AND REMAINS ACT 1958 -

THIS IS AN ACT TO 'PROVIDE FOR THE PRESERVATION OF ANCIENT AND HISTORICAL MONUMENTS AND ARCHAEOLOGICAL SITES AND REMAINS OF NATIONAL IMPORTANCE, FOR THE REGULATION OF ARCHAEOLOGICAL EXCAVATIONS AND FOR THE PROTECTION OF SCULPTURES, CARVINGS AND OTHER INLAY OBJECTS'.

THIS ACT HAS SPECIFIED THE PROTECTED AREA, RESTRICTED AREA AND THE REGULATED AREA WHICH ARE 50M, 100M AND 200M RESPECTIVELY AS DEFINED IN A COURT ORDER OF 1992. IT IS IMPORTANT TO UNDERSTAND THAT IN NO SITUATION SHOULD THESE AREAS LIMIT THE MAJOR AGENDA FOR THE PROTECTION OF THE HERITAGE.

AS PER THE MASTER PLAN, DELHI MEHRAULI AREA HAS BEEN IDENTIFIED AS A HAERITAGE ZONE. IT THUS NEEDS TO BE CONSERVED BECAUSE OF ITS RICH URBAN HERITAGE AND HIGH TOURIST POTENTIAL.
THE AREA AROUND THE MONUMENTS (FALLING IN THE ZONE - F) MAY BE SUITABLY LANDSCAPED.

RIDGE AREA GUIDELINES:

THE SITE FALLS UNDER THE DESIGNATED SOUTH-CENTRAL RIDGE WHICH IS A REGIONAL PARK AS PER THE MASTER PLAN, DELHI. THE MPD RECOMMENDS THAT THE 'RIDGE' BE CONSERVED WITH UTMOST CARE AND MAINTAINED IN ITS PRISTINE FORM. IT SHOULD BE AFFORESTED WITH INDIGENOUS SPECIES AND MINIMUM OF ARTIFICIAL LANDSCAPE.

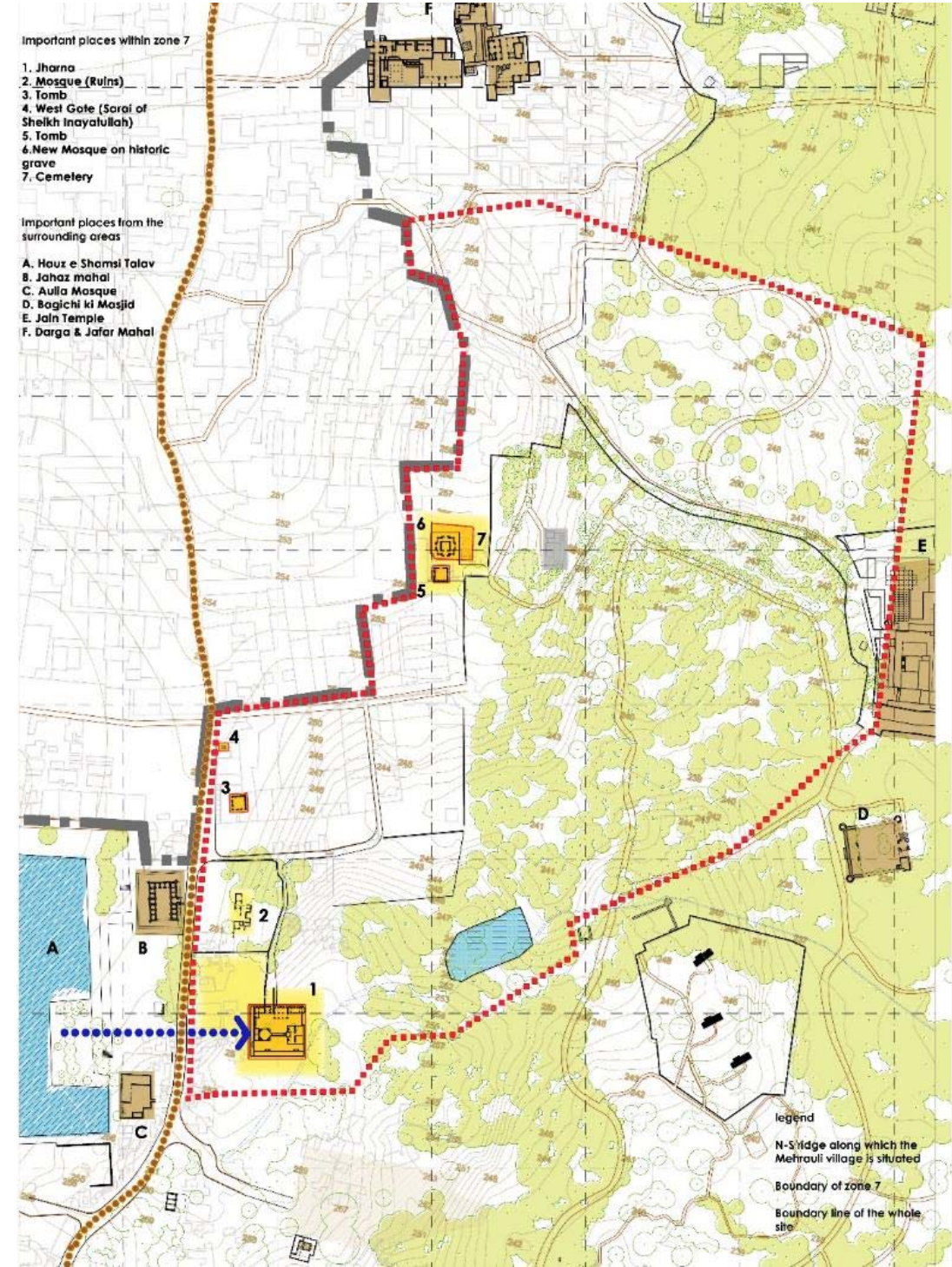
CONSERVATION AND RESTORATION OF THE PLACES OF RICH URBAN HERITAGE AND HIGH TOURIST VALUE FALLING IN THE RIDGE NEED TO BE TAKEN UP ON PRIORITY.
PERMITTED ACTIVITIES IN THE RIDGE ARE WILDLIFE SANCTUARY, SHOOTING RANGE, GOLF COURSE, OR GARDEN.

THE ENVIRONMENT (PROTECTION) ACT, 1986 -

ACCORDING TO THIS ACT 'ENVIRONMENT' INCLUDES WATER, AIR AND LAND AND THE INTER-RELATIONSHIP THAT EXISTS AMONG AND BETWEEN WATER, AIR, LAND AND HUMAN BEINGS, OTHER LIVING CREATURES, PLANTS, MICRO-ORGANISMS AND PROPERTY.

IT IS AN ACT FOR THE 'PROTECTION AND IMPROVEMENT OF ENVIRONMENT AND MATTERS CONNECTED THEREWITH'.
IN CLAUSE 5 OF THIS ACT, IT STATES THE 'PROHIBITION AND RESTRICTION ON THE LOCATION OF QUARRYING AND MINING INDUSTRIES IN CLOSE PROXIMITY TO A PROTECTED MONUMENT'.

DESIGN WITH NATURE EXEMPLAR – HAUZ-E-SHANSI & JHARNA -- RELEVANCE OF THE CASE SELECTION



hauz e samshi

overflow of water

retreat

Jharna

Introduction

Jharna was the water fall emanating from the Hauz-i-Shamsi.

It is located on the South-western part of the Mehrauli, close to the Jahaz Mahal. It is identified as a significant water structure that had developed by Nawab Ghaziuddin around 1700 AD as a pleasure garden during the Mughal rule.

Jharna is a cascade which is now damaged and dry. An underground pipe (still visible in ruins) supplied the runoff to the Jharna from Hauz-i-Shamshi. This was in addition to an open channel close by that carried the overflow of the tank to Tughlaqabad fort to enhance the drinking water supply.

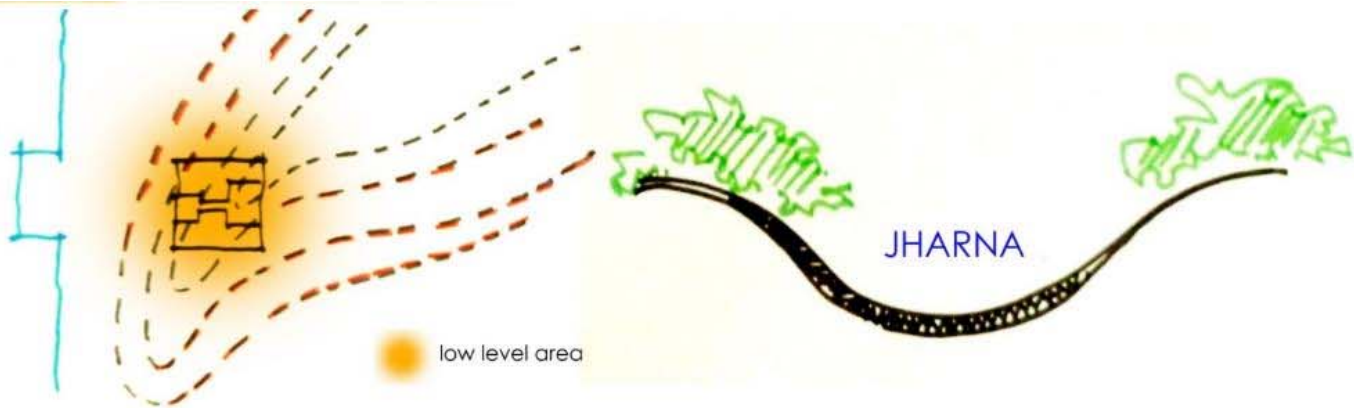


JHARNA – LANDSCAPE PLANNING PRINCIPLES – “DESIGN WITH NATURE” -DESIGN WITH WATER

Site planning Principles -

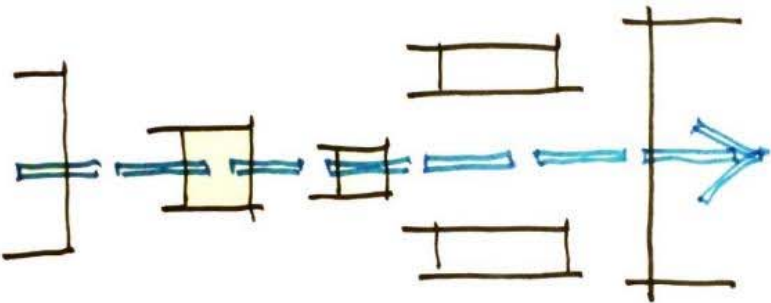
Siting of Jharna

- Hauz e Shamsi is strategically located to collect the runoff from surrounding slopes and also exploits the subterranean water system.
- The end of the valley has been cleverly utilized to place the 'Jharna'
- It is built below the edge of the ridge inside the mouth of the valley - to take the overflow of Hauz e Shamsi.

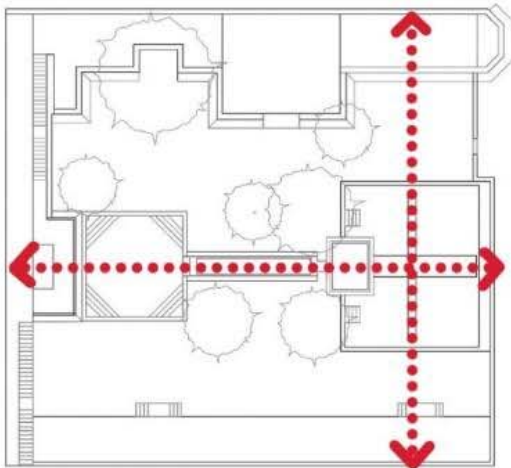


Organisation and Order

- The organisation of Jharna respects and accentuates the direction of natural flow of water from Hauz e Shamsi.



accentuating the direction of natural flow of water



1229 A.D.

1600 A.D.

1700 A.D.



Function

- It was the mughal retreat and highlight of the three day festival of the 'phul-walon ki sair'
- The jharna was there to catch the overflow of hauz e shamsi tank.
- Today it is in ruins and surrounding area is encroached by twenty five families, waterfall has become a drain.



JHARNA – LANDSCAPE PLANNING PRINCIPLES – DESIGN RESPONSES AND HUMAN EMOTIONS

Ownership

- This structure was built by Sultan Shamsuddin Illtutmish in 1229 A.D.
- The pavilions and the water tanks were constructed by Nawab Ghiyasuddin emporar in 1600 A.D.
- Further improvements were done by the Last Mughal Emporar Bahadur Shah Jafar (1700 A.D.)

Symbolism

- This place is the archetypal grove from the Islamic mythology. It is an introverted place stating the royal pleasure principle – appropriating the first right to the resource of water in a dry hilly landscape and by implication asserting its right over the orchards and agricultural lands down the valley.
- Inscribed down the middle of the platform is a channel which rhythmically widens and contracts, creating shallow square pools, as it carries the overflow of the Hauz Shamsi into the valley. Delicate pavilions, typical of late Mughal architecture sit on this play of water.

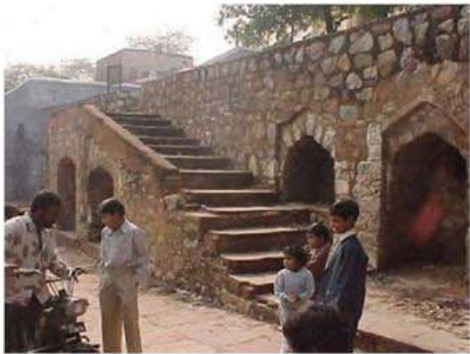
Scale

- In Jharna, the built form is of a human scale, not dominating over the surroundings. Since nature was to be given predominance, the structure is placed very subtly into the natural setting and terrain of the area.

Use of Land, Water and Vegetation

- This is an example of the ingenious way in which hydrology and landform were utilised
- The site is located on the very significant gradient in between the Hauz-i-shamsi and a stream.
- The natural flow of water is cleverly utilized
- Trees on the ridge limit the amount of sky over the platform – providing the optimum amount of sense of enclosure

Present Condition



Entrance area



Entry gate



Baradari at the centre



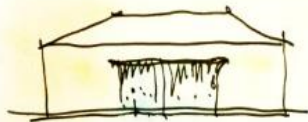
Water used in various ways as a design element in Jharna



Rhythmic contraction & expansion of water



Char bagh - water flowing from four corners of the world



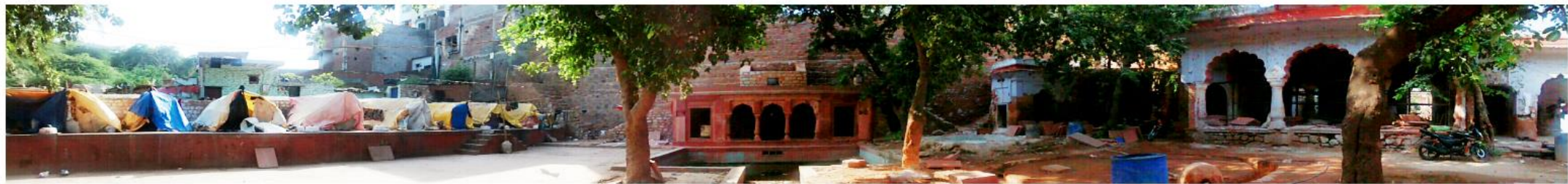
Falling and breaking of water



Chaddar - religious belief symbolism

HAUZ-E-SHAMSI & JHARNA – EXTANT LAYERS – THE UNSEEN THREATS

ALL THE MAJOR ELEMENTS OF JHARNA



FOREST ADJACENT TO THE JHARNA AREA

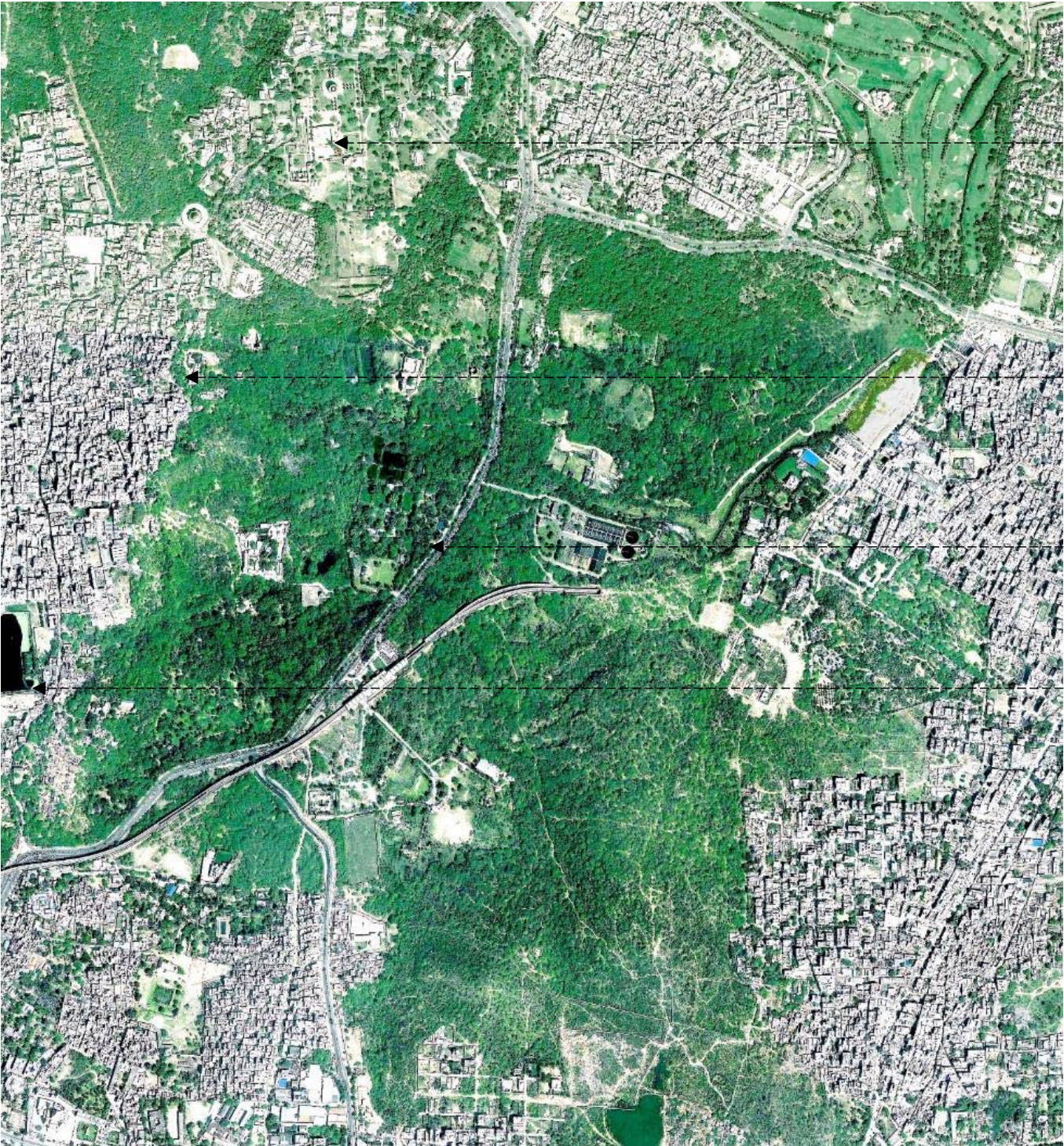


AREAS ARE ENCROACHED AND SOMETIMES USED TO KEEP CONSTRUCTION MATERIALS



CANAL FLOWING JUST ADJACENT TO THE JHARNA

THE CHALLENGES TO THE HERITAGE PARK – READING FROM THE CONTEXT



----- Qutab Minar – Protected Monument – Maintained visitor’s place of attraction

----- Blurred and undefined boundary conditions encourage trespassing and encroachment from settlement

----- Major transportation corridor intercepting the vegetation cover watershed

----- Urban sprawl and unplanned development disrupting the water flow from tank to Jharna inside the Park

THE CHALLENGES TO THE HERITAGE PARK

CHALLENGES

ECOLOGICAL

1. Introduced invasive species *Prosopis juliflora* by British Ruler



2. Alteration of Terrain to accommodate Lawns



3. Intercepted Drainage pattern



ANTHROPOGENIC

1. Encroachment by village settlements at surrounding



2. Uncontrolled grazing through forested land



3. Legislative ignorance – Natural heritage vs. Monument



- Enhancing the promotion and recognition of the park
- Enhancing the equipment and information infrastructure
- An overall systematic reconstruction and development plan
- Innovative restoration design
- Sustainable management plan
- Participatory and cognitive activities to attract citizen

IMPROVEMENT STRATEGY – IDEA OF CONNECTING TO CONTEXT



Identify ,highlight and enhance three inherent characteristics of the site...



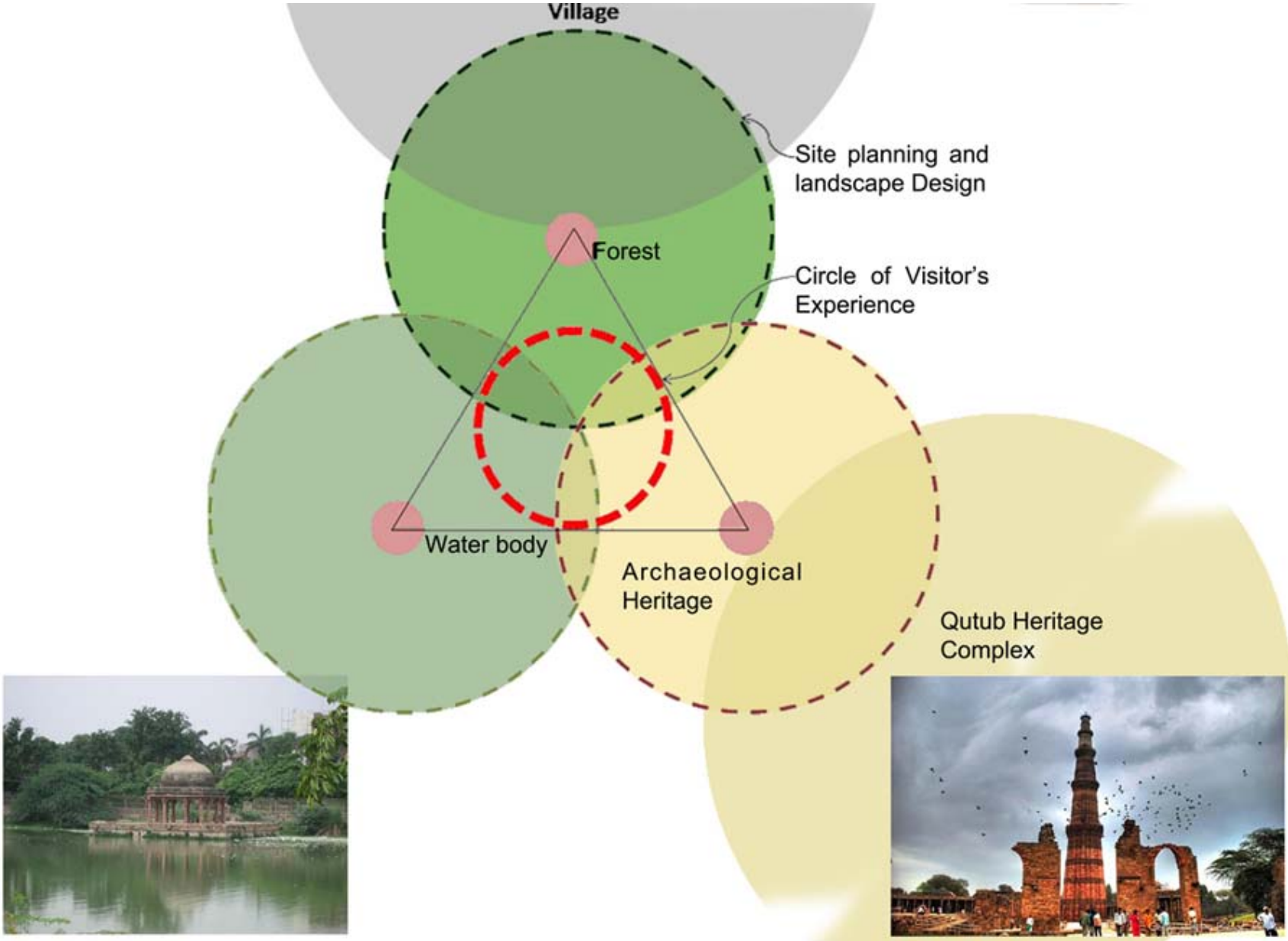
Establish Relationship , between heritage, forest and water resources



Incorporate visitor's experience , between heritage, forest and water resources and also offers opportunity for recreation, education and discovery



IMPROVEMENT STRATEGY – SENSITIVE SITE PLANNING



Sensitive Site Planning

landscape design to create spatial identities that overlap and interest but the unique identity of each component, far from being compromised, contributes vigorously to the character of the whole archaeological park

PLANTING RESTORATION – ASSISTED SUCCESSION THORUGH NATIVE SPECIES TO DELHI RIDGE

01 - 05 years

- Carrisa spinarium

- Adhatoda zeylanica
- Boswellia serrata

- Schleichera oleosa
- Asparagus racemosus

05 - 10 years

- Zizypus mauritiana
- Acacia leucophlea

- Jatropha gossypifolia
- Sterculea urens
- Acacia modesta

- Calotropis
- Capparis decidua

10 - 20 years

- Anogeissus pendula
- Alianthus excelsa

- Mitragyna parviflora
- Butea monosperma

- Salvadoria persica
- Anthocephalus cadamba

STEEP SLOPE (15% & Above)

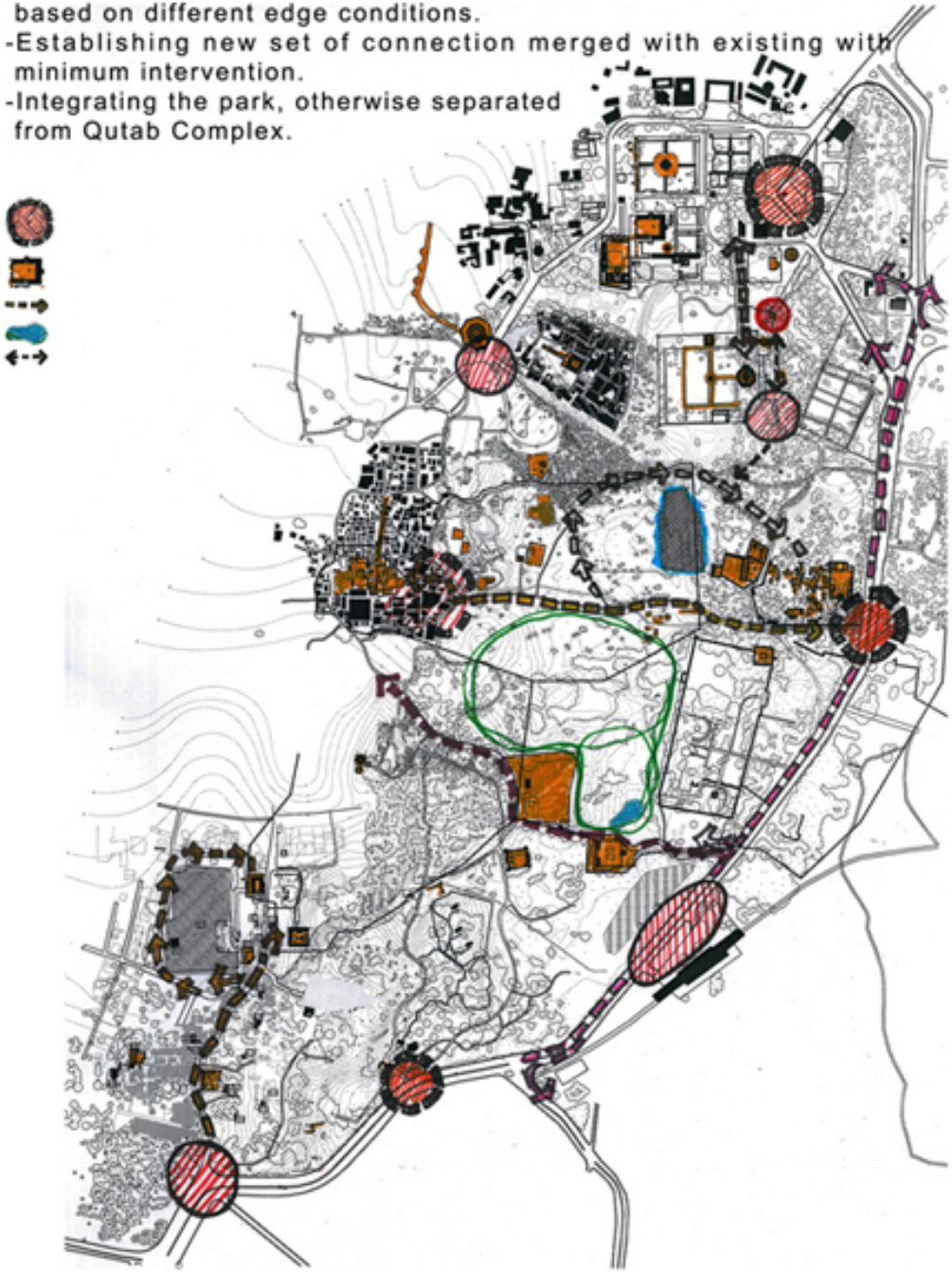
MODERATE SLOPE (7-9%)

GENTLE SLOPE (2% & Less)

CONCEPT FOR STRATEGIC MANAGEMENT MASTERPLAN

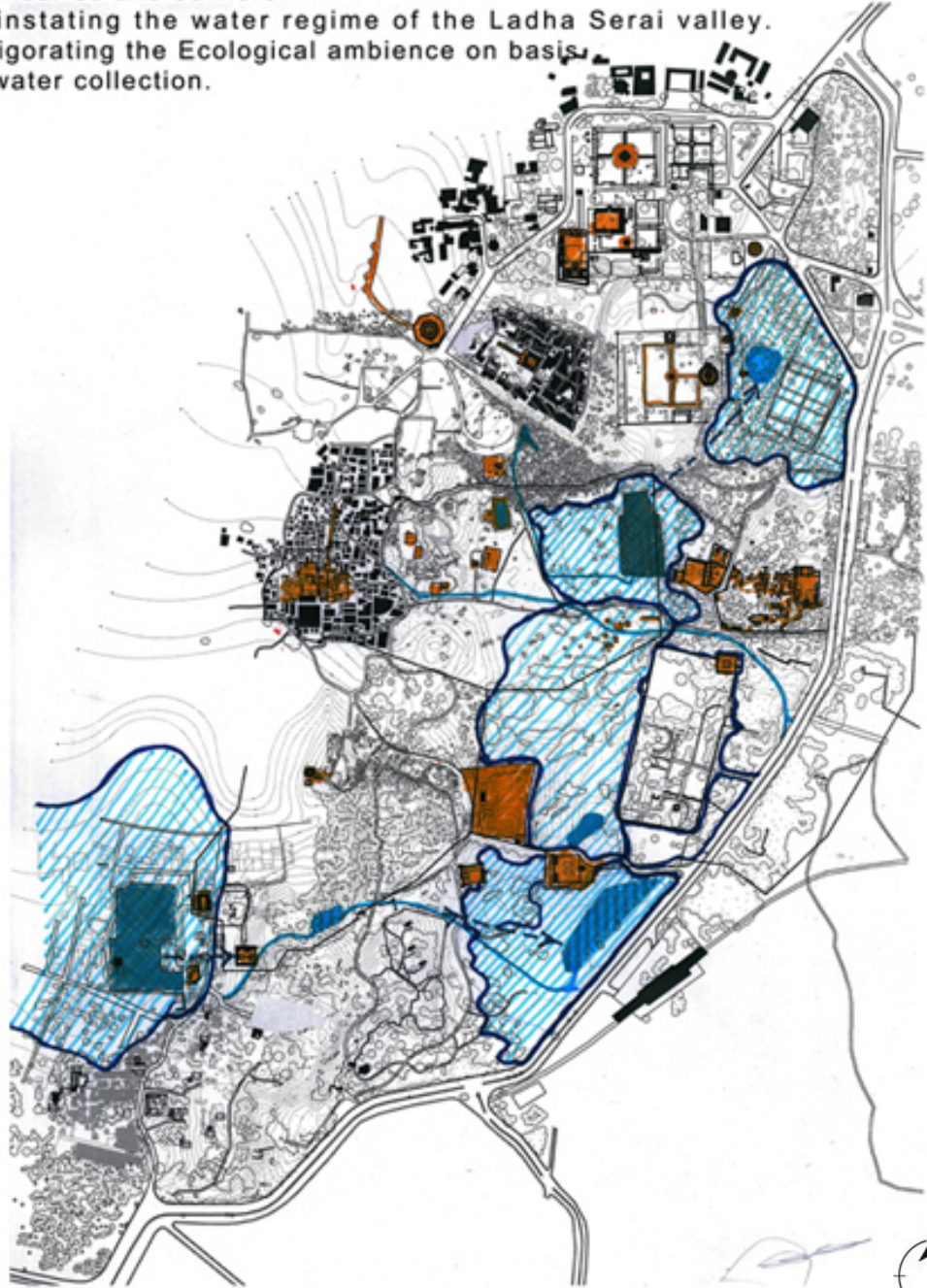
Existing Nodes and Accessibility

- Identifying critical junctions and potentially suitable access points based on different edge conditions.
- Establishing new set of connection merged with existing with minimum intervention.
- Integrating the park, otherwise separated from Qutab Complex.



Existing Watershed and Catchment

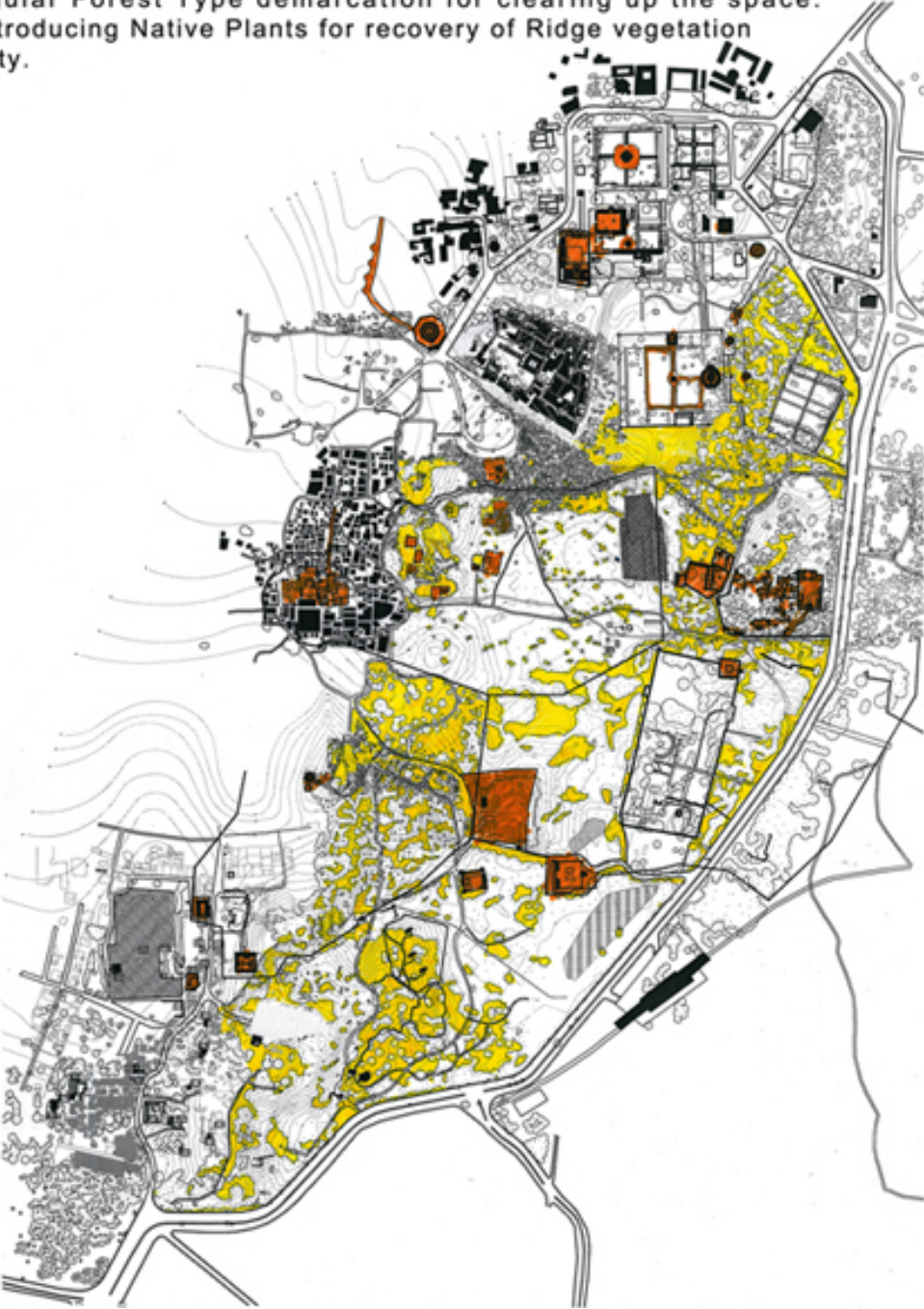
- Identifying Catchment based on Monuments and existing boundaries and barriers.
- Reinstating the water regime of the Ladha Serai valley.
- Invigorating the Ecological ambience on basis of water collection.



CONCEPT FOR STRATEGIC MANAGEMENT MASTERPLAN

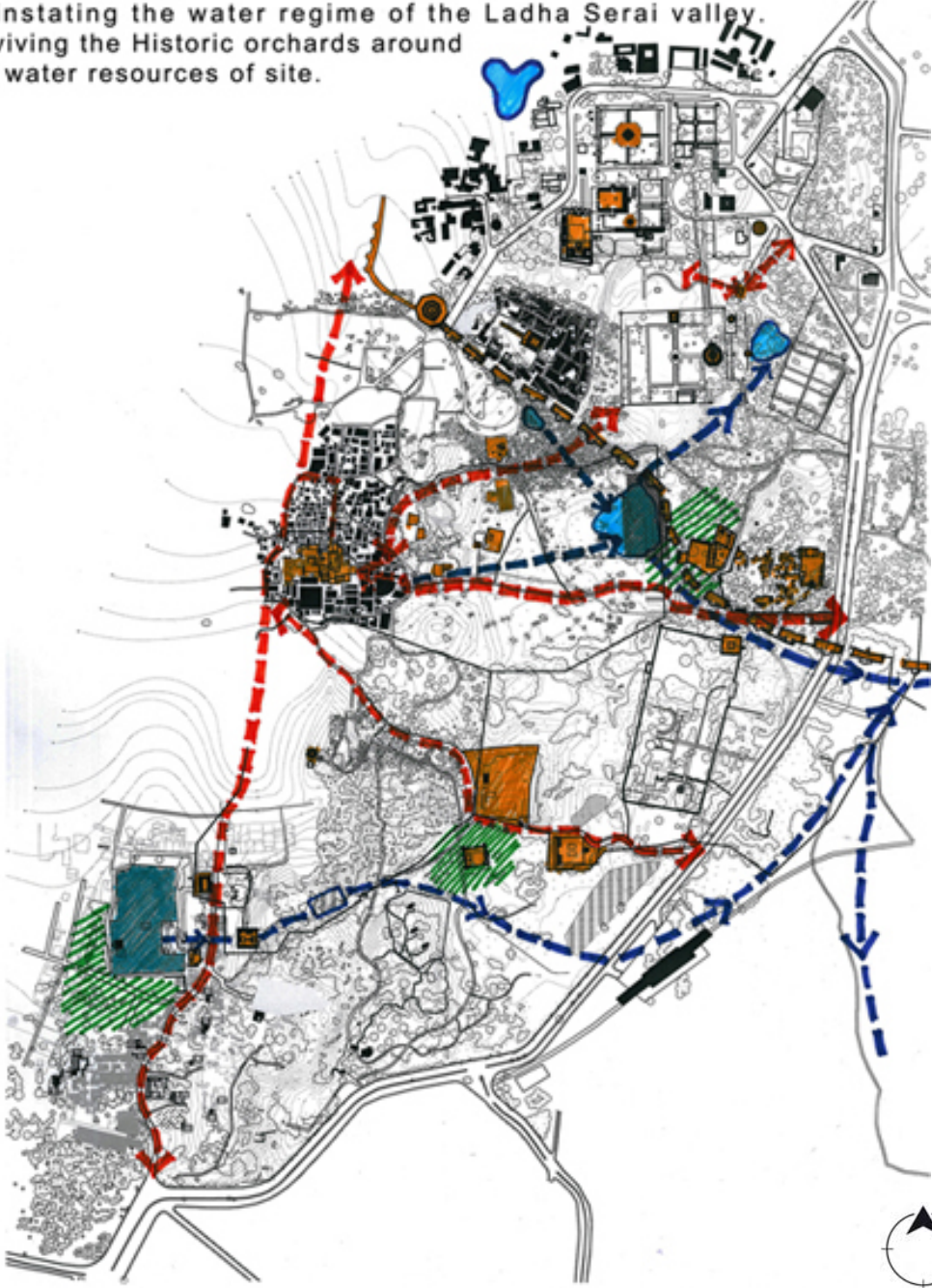
Open Spaces defined by Vegetation Cluster

- Identifying Clear Open Spaces marked by vegetation masses .
- Irregular Forest Type demarcation for clearing up the space.
- Reintroducing Native Plants for recovery of Ridge vegetation quality.



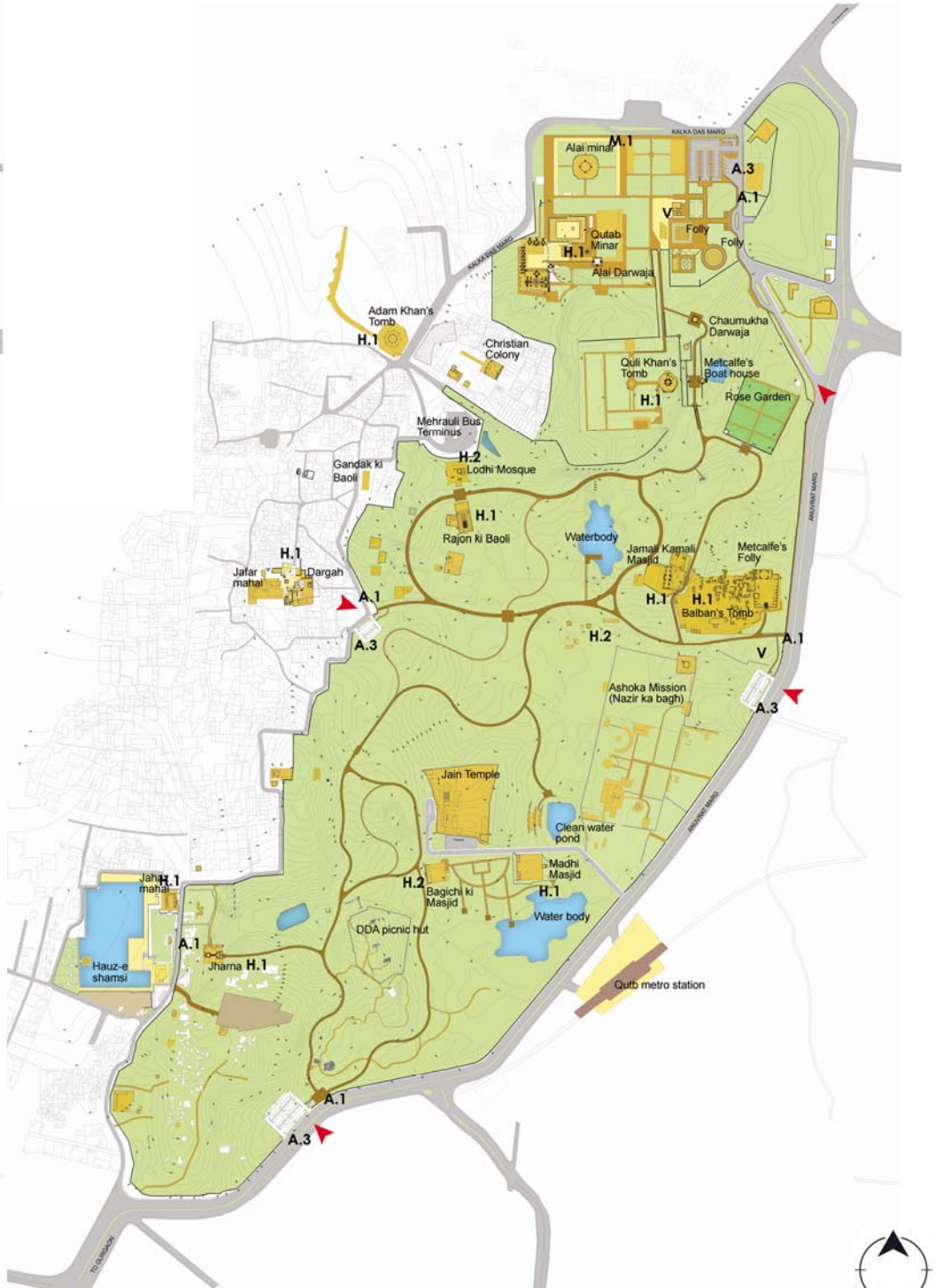
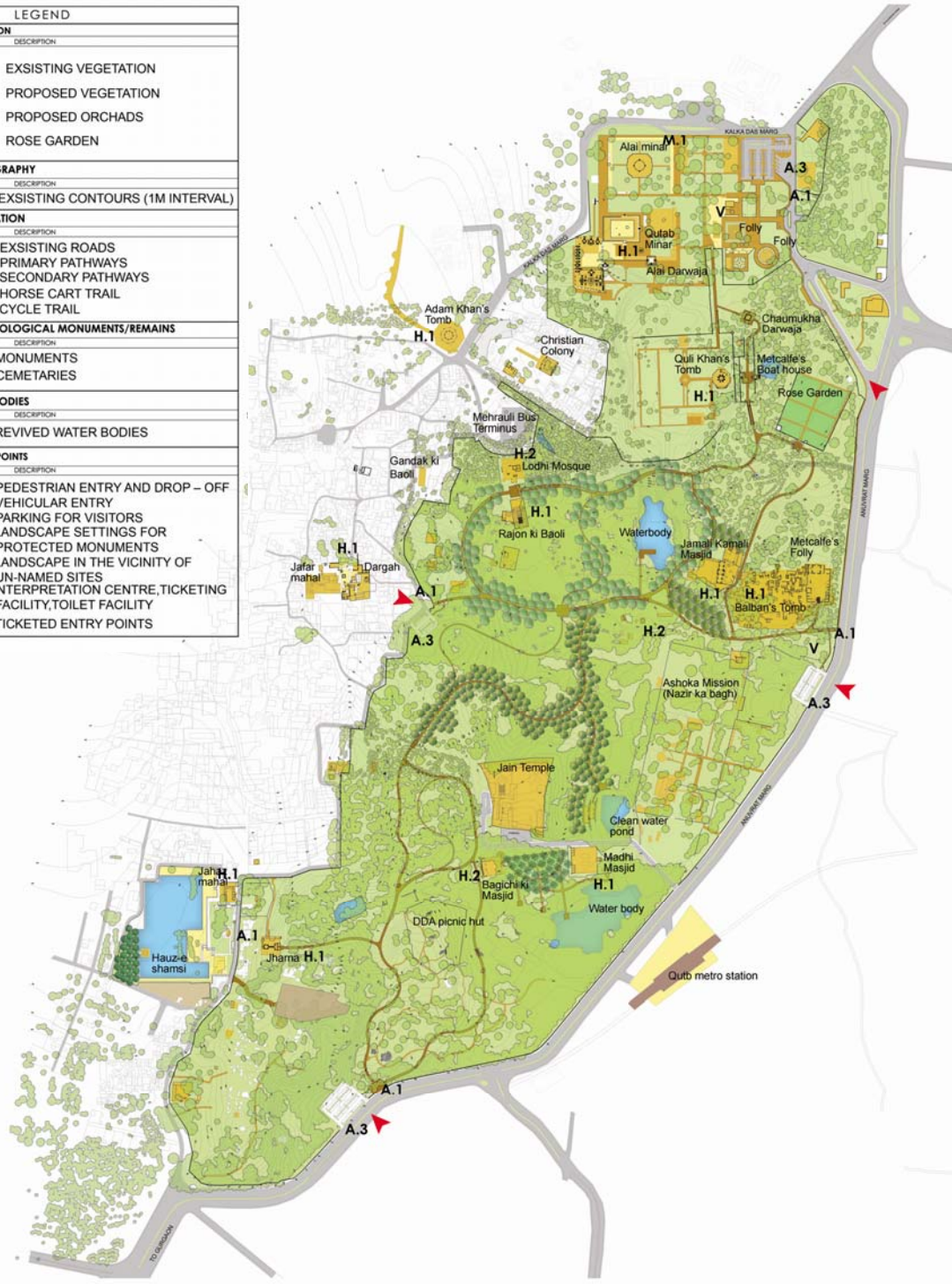
Historical Connections and Hydrological Potential

- Tracing out the historic connection and trails with village and Ladha Serai.
- Reinstating the water regime of the Ladha Serai valley.
- Reviving the Historic orchards around the water resources of site.

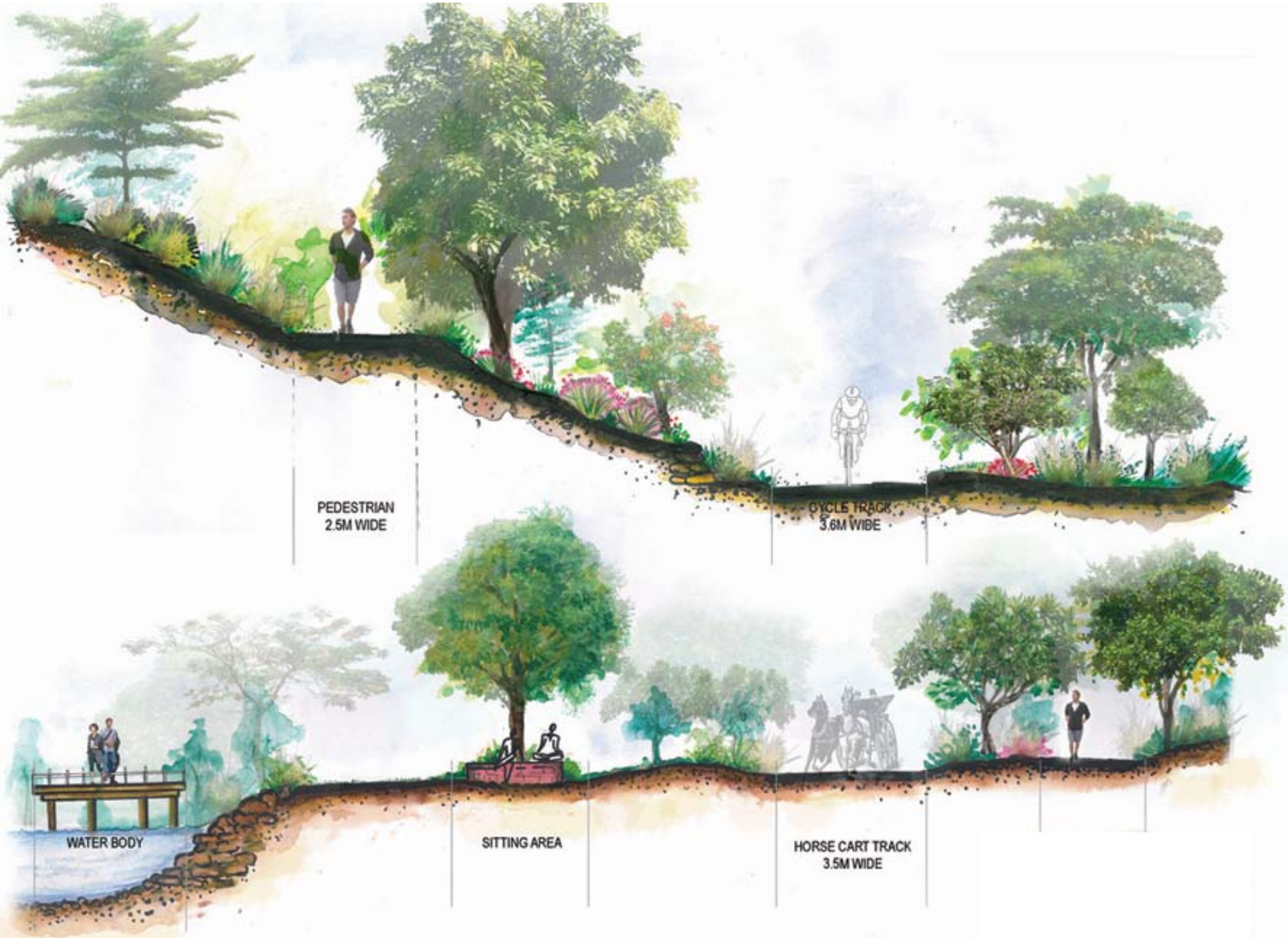


STRATEGIC MANAGEMENT MASTERPLAN AND CIRCULATION PLAN

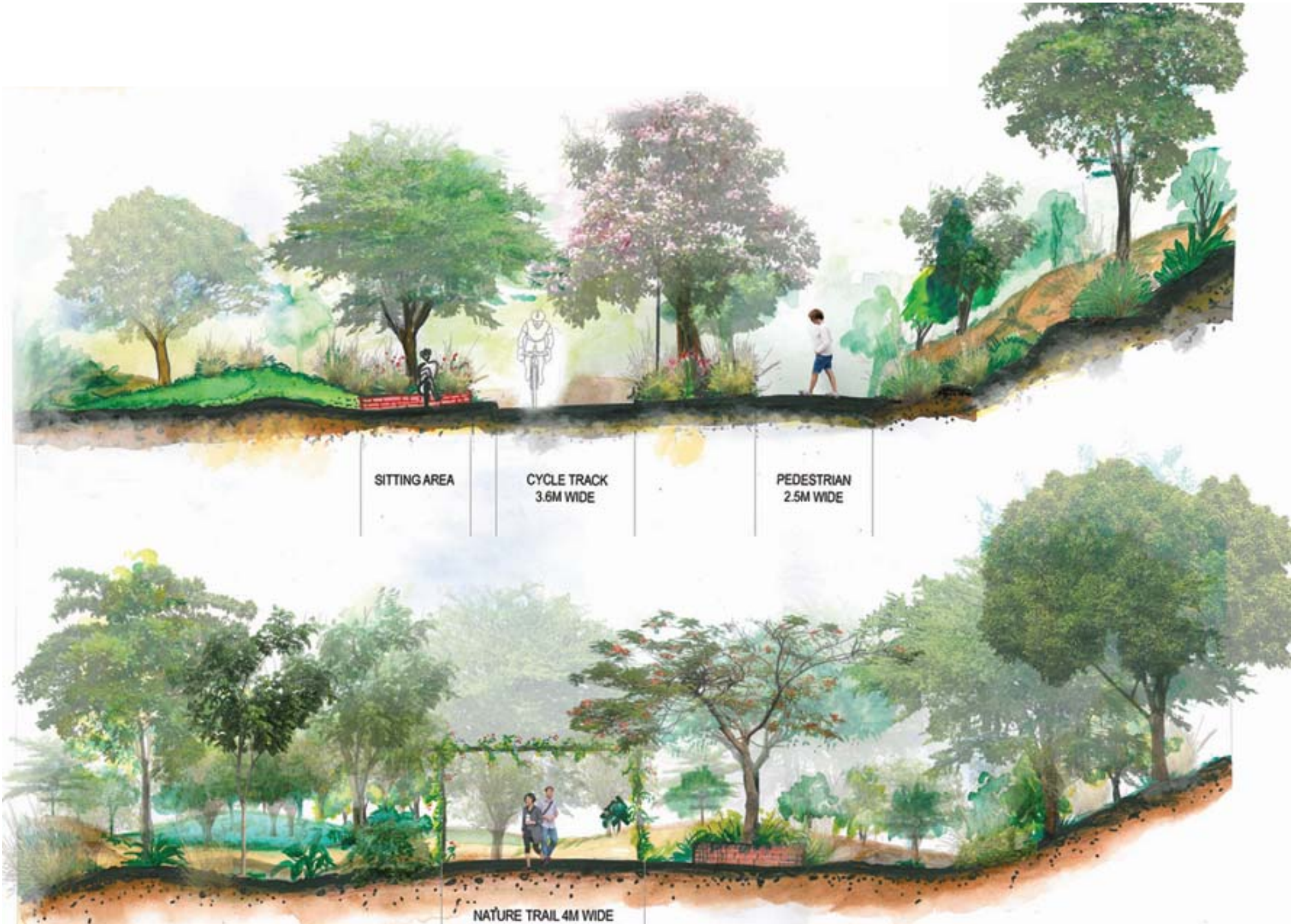
LEGEND	
VEGETATION	
SYMBOL	DESCRIPTION
	EXISTING VEGETATION
	PROPOSED VEGETATION
	PROPOSED ORCHARDS
	ROSE GARDEN
PHYSIOGRAPHY	
SYMBOL	DESCRIPTION
	EXISTING CONTOURS (1M INTERVAL)
CIRCULATION	
SYMBOL	DESCRIPTION
	EXISTING ROADS
	PRIMARY PATHWAYS
	SECONDARY PATHWAYS
	HORSE CART TRAIL
	CYCLE TRAIL
ARCHAEOLOGICAL MONUMENTS/REMAINS	
SYMBOL	DESCRIPTION
	MONUMENTS
	CEMETARIES
WATER BODIES	
SYMBOL	DESCRIPTION
	REVIVED WATER BODIES
ACCESS POINTS	
SYMBOL	DESCRIPTION
A.1	PEDESTRIAN ENTRY AND DROP - OFF
A.2	VEHICULAR ENTRY
A.3	PARKING FOR VISITORS
H.1	LANDSCAPE SETTINGS FOR PROTECTED MONUMENTS
H.2	LANDSCAPE IN THE VICINITY OF UN-NAMED SITES
V	INTERPRETATION CENTRE, TICKETING FACILITY, TOILET FACILITY
	TICKETED ENTRY POINTS



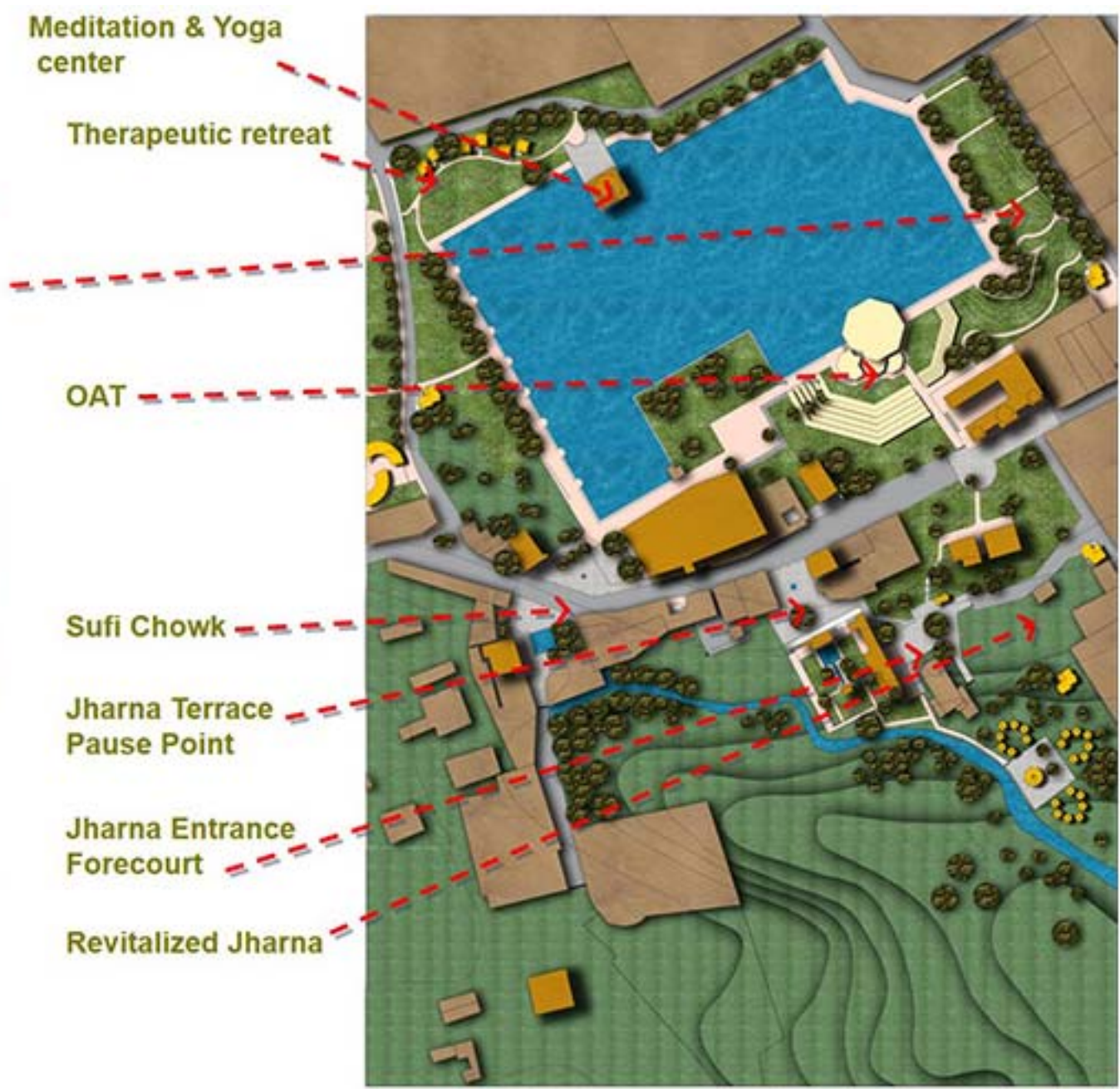
PARTICIPATING WITH CITY LIFE THROUGH NATURE BOUND RECREATIONAL ACTIVITIES



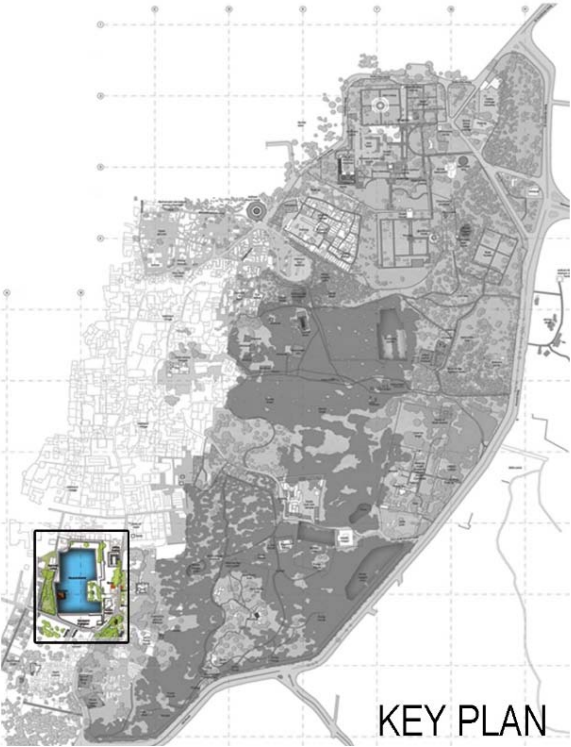
PARTICIPATING WITH CITY LIFE THROUGH NATURE BOUND RECREATIONAL ACTIVITIES



PARTICIPATING WITH CITY LIFE THROUGH NATURE BOUND RECREATIONAL ACTIVITIES



REIMAGINING HAUZ-E-SHAMSHI – INTERPRETIVE DESIGN PROPOSAL



REIMAGINING HAUZ-E-SHAMSHI – INTERPRETIVE DESIGN PROPOSAL



Stepped sitting



Ruin wall as backdrop



Sitting ambience



Experience of Pavilion with Backdrop of Mango Orchard

Thank you

