

A THESIS REPORT ON

Urban Renewal Project

Case application at Tram depot, Behala, Kolkata.

A Thesis Report
Submitted in partial fulfillment of the requirements
For the post graduate degree of
Master of Architecture (Urban Design)
By the Jadavpur University, Kolkata

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CERTIFICATE

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Prasenjit Karmakar

Roll No.- 001410202001

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----- THANKYOU -----

1.0 INTRODUCTION

1.1 ABSTRACT

Behala encompasses one of the largest suburban agglomerations of the city of **Kolkata**. It consists of many small localities like **Parnasree Pally, Taratala, Sahapur, Behala Tram depot, Manton, Behala Chowrasta (Barisha), Sakherbazaar, Silpara, Kadamtala and Behala Thakurpukur**. Huge growth of population especially since the early eighties resulted in the area being on the radar of both the daily wage earners, common populace and educated classes. Due to this enormous and unplanned growth, the traffic is by and large dependent on the arterial Diamond Harbour Road, in spite of the availability of the parallel James Long Sarani (Commonly known as Rail Line) as an option. During the construction the Taratala fly-over, a large portion of traffic flowed through James Long Sarani to avoid construction activity, causing development of other areas of Behala.

Due to lack of planning and space, encroachments by street-hawkers of the sidewalks on both sides of the busy Diamond Harbour Road, push the pedestrians to the already busy road. Areas like Behala Tram Depot, Behala Chowrasta and Behala Sakher Bazar have been added to the 'Calcutta Green Zone' and traffic moves at a snail's pace during the peak office hours. **A tramline used to run through the centre of Diamond Harbour Road from Joka to Behala Tram Depot and often the people moved faster in the trams, the service on this stretch has been withdrawn due to the elevated metro railway construction on the Diamond Harbour road which will run from Joka to B B D Bag.** Previously it was well connected by tram lines towards the north. However the trams were stopped when the flyover at the Taratala junction was constructed.

The thesis would mainly involve the study of the whole **Behala Tram Depot** area considering the upcoming Behala Bazaar metro station and then selecting a specific site for intervention, which would be the focus to the whole area.

1.2 DEFINITION OF URBAN RENEWAL

- the rehabilitation of city areas by renovating or replacing dilapidated buildings with new housing, public buildings, parks, roadways, industrial areas, etc., often in accordance with comprehensive plans.....<http://dictionary.reference.com>
- Urban Renewal i.e. “redevelopment of inner (old) city areas [this would include items like widening of narrow streets, shifting of industrial/commercial establishments from non-conforming (inner city) to ‘conforming’ (outer-city) areas to reduce congestion, replacement of old and worn-out water pipes by new/higher capacity ones, renewal of sewerage/drainage/solid waste disposal systems, etc].”- **JNNURM Guidelines**

- Urban renewal is a program of land redevelopment in areas of moderate to high density urban land use. Renewal has had both successes and failures. Urban renewal involves the relocation of businesses, the demolition of structures, the relocation of people, and the use of eminent domain (government purchase of property for public purpose) as a legal instrument to take private property for city-initiated development projects. **Wikipedia.org**

1.3 SITE SELECTION CRITERIA

Site: Tram depot, Behala.



Fig.1. Showing the site Behala Tram Depot.



Fig. 2. Important nodes.

- With the BBD Bag – Joka metro project -Behala bazaar, one of the proposed station, adjacent to the Behala tram depot market, will bring in a change to the place.
- Behala tram depot market connects two of the important nodes in Behala (14 no. Bus stand node and node near State Archaeological Museum)
- Behala tram depot is one of the important area in Behala and is opposite to the Behala bazaar. Hence making the place more important.
- Renovation, relocation and conservation of the required buildings will help in future.
- Behala tram depot area is between the Diamond harbour road and James long Sarani road.

- One of the important place during festive season. Notable durga pujas occur within the periphery of tram depot area.
- **Tram depot is no longer there and that space is converted into a market zone.**

1.4 INTRODUCTION OF THE SITE

- Behala tram depot market is famous for Clothes, jewellery, electronic items, sports goods, books and footwear shops and eateries. Tram depot is opposite to Behala bazaar. Behala tram depot market connects two of the important nodes in Behala (14 no. Bus stand node and node near State Archaeological Museum). Behala tram depot area is between the Diamond harbour road and James long Sarani road. This place is crowded with hawkers. A tramline used to run through the centre of Diamond Harbour Road from Joka to Behala Tram Depot and often the people moved faster in the trams, the service on this stretch has been withdrawn due to the elevated metro railway construction on the Diamond Harbour road which will run from Joka to B B D Bag. Now Tram depot is no longer there and that space is converted into a market zone. Transport system is good. The major landmarks at Behala tram depot are West Bengal State Archaeology Museum and Siddheshwari Kali Temple.
Coordinates: 22°29'24"N 88°18'54"E

1.5 ISSUES

- Hawker encroachment
- Dilapidated buildings
- Wastes from market overflowing from vats
- Illegal parking, taxi stand on road
- No public space where people can rest awhile. This particular stretch has very little greenery. It is heavily polluted.
- Hawker's encroachment on the pavements forcing people on the busy road.
- Buses, autos, taxis park on the road itself. Amenities like drinking water, public toilet is nearly absent.
- Entrances to markets are not proper.
- Shop fronts are rendered invisible by hawker – structures.
- The vegetable and fish market wastes are not cleared properly – they rot on open vats beside the main road giving out unpleasant odours.
- Presence of unused space within the market zone.

1.6 AIM

- **Aim:** To create a urban centre that becomes a focus in Behala.

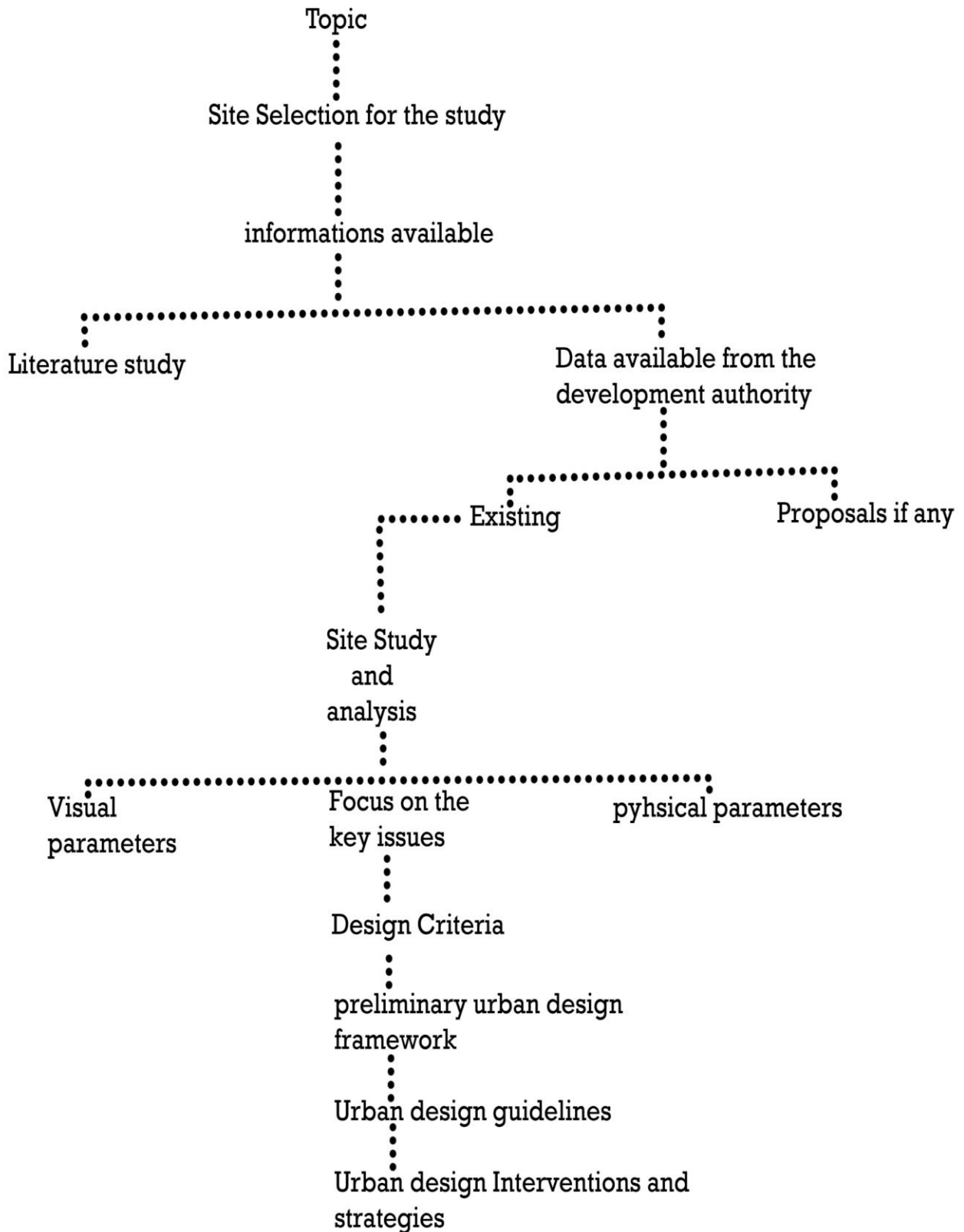
1.7 OBJECTIVES

- Creation of an more public friendly spaces.
- Environmental up gradation.
- Develop the market area within tram depot
- Creation of more open spaces for public gatherings.
- Providing adequate amenities.

1.8 LIMITATION

The project deals with only the Tram depot market area, not the whole Behala.

1.9 METHODOLOGY



2.0 SITE ANALYSIS

2.1 VISUAL SURVEY

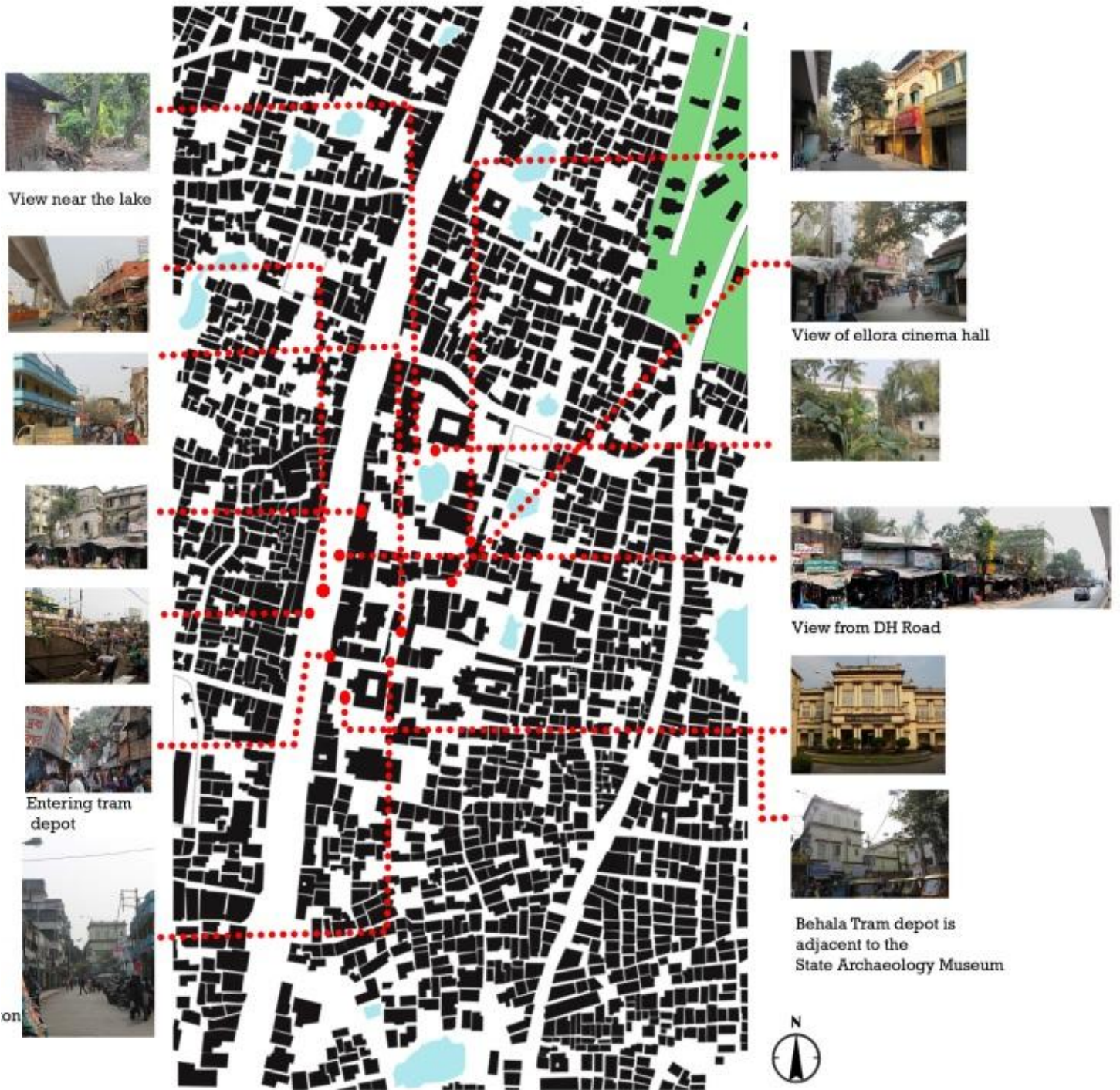


Site : Behala Tram depot

Site Area 25945 sqm, Commercial shop area- 14500 sqm

Residential area- HIG-50 , MIG-21

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2.2 CHARACTER STUDY

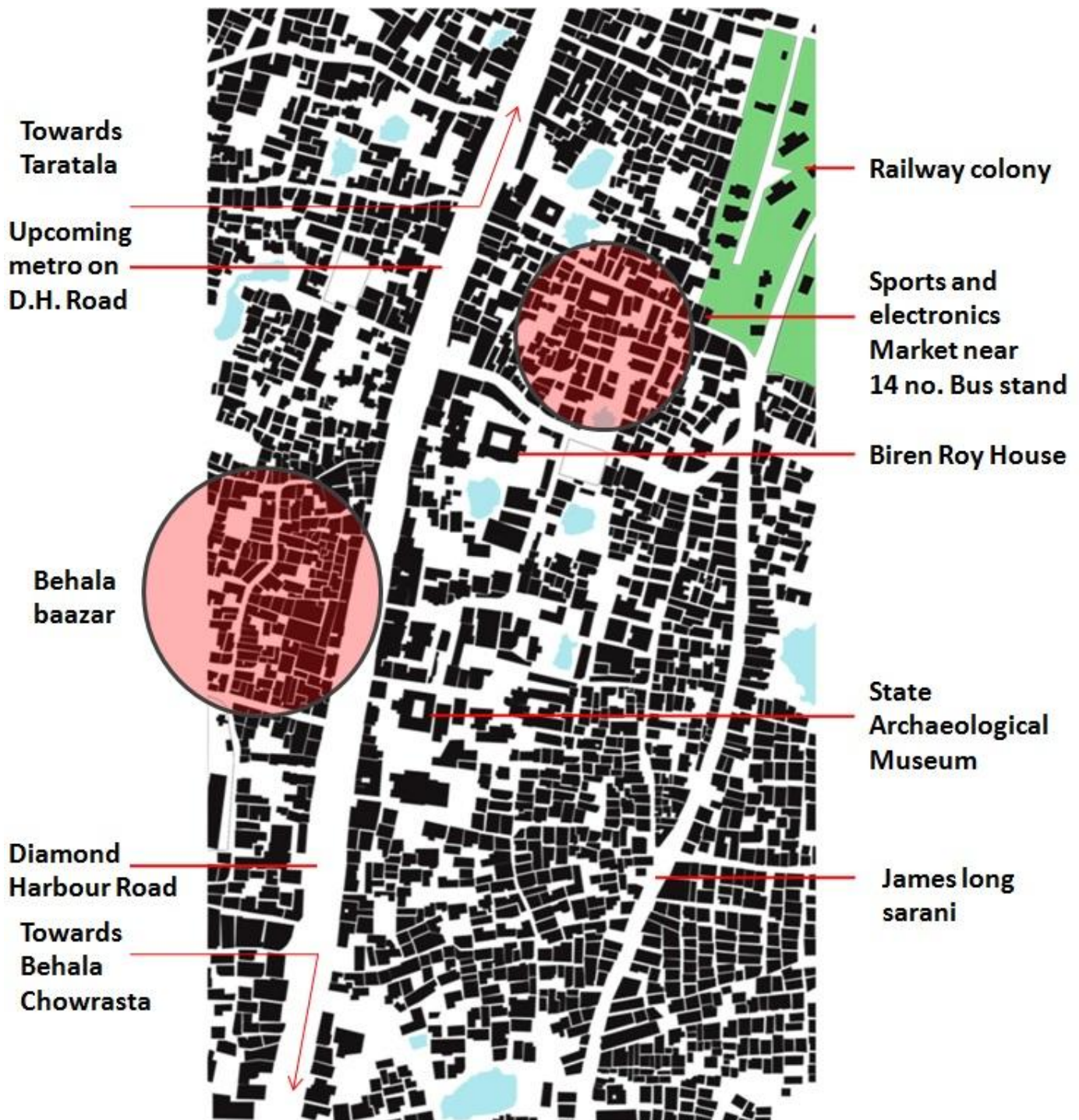




Fig. 3. Showing major Pathways

Diamond Harbour road,
James Long sarani road and
other pathways connecting
Behala tram depot .



Fig. 4. Showing important nodes

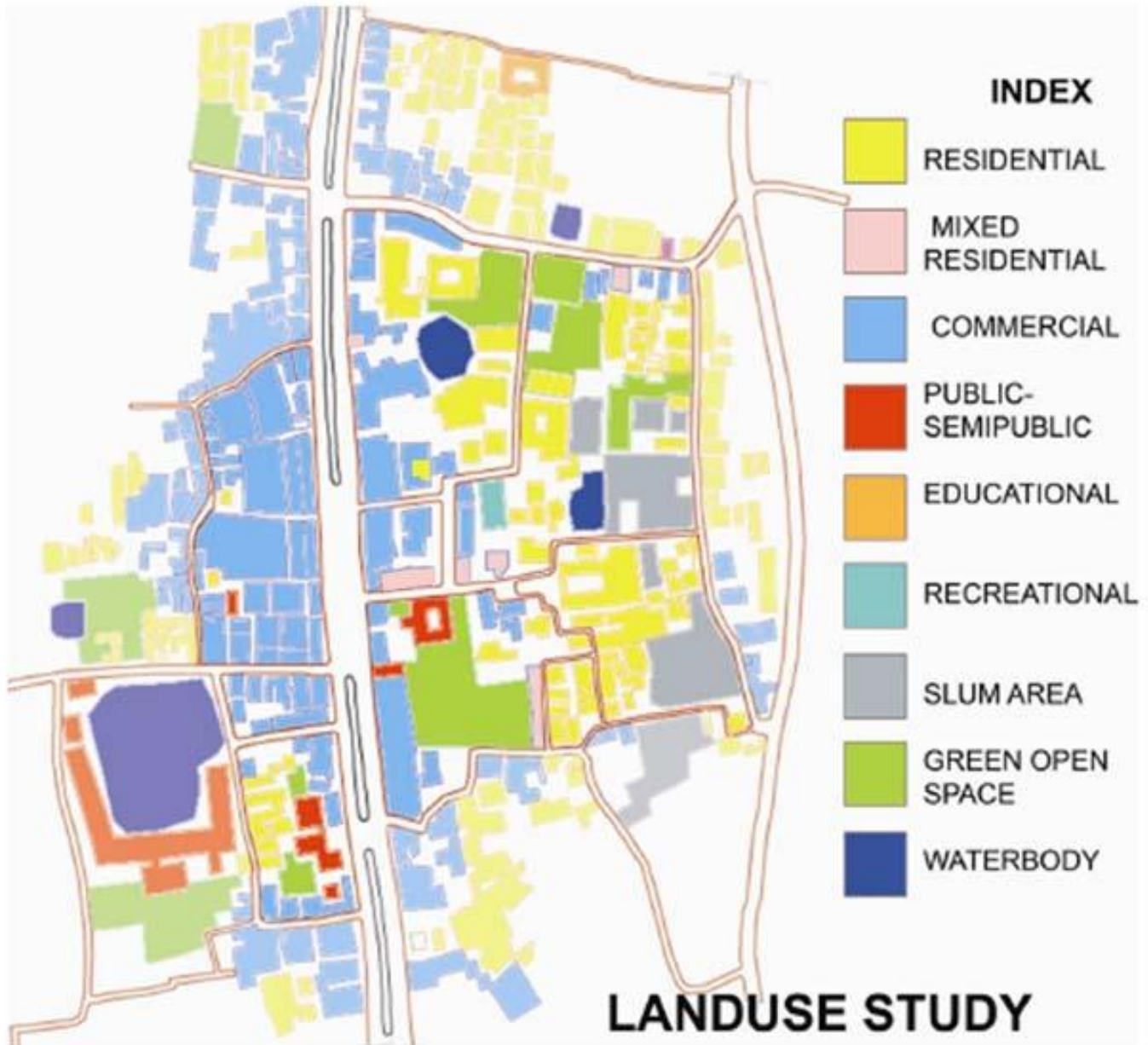
14 No. bus stand node
State archaeological museum node
and other nodes



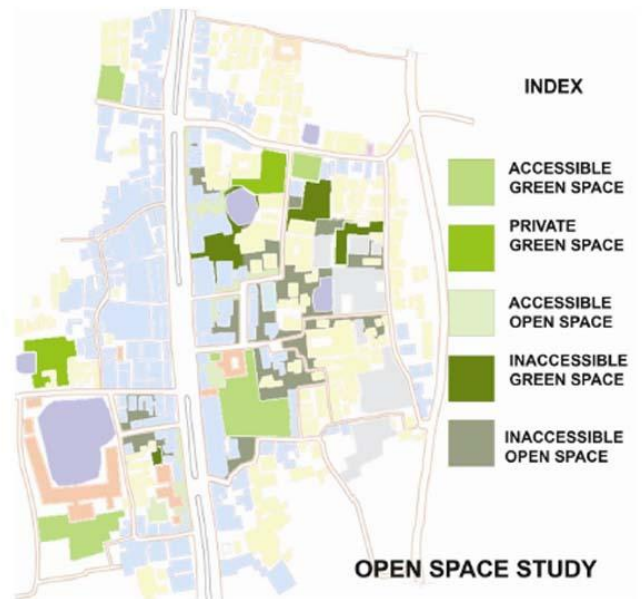
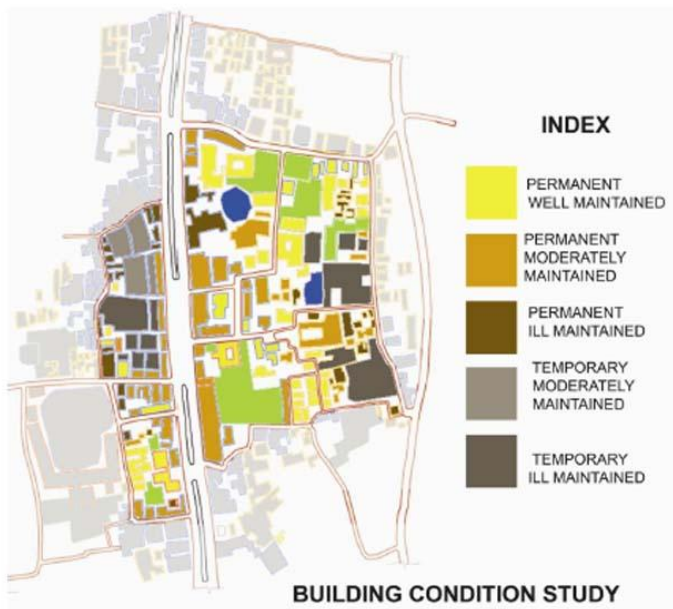
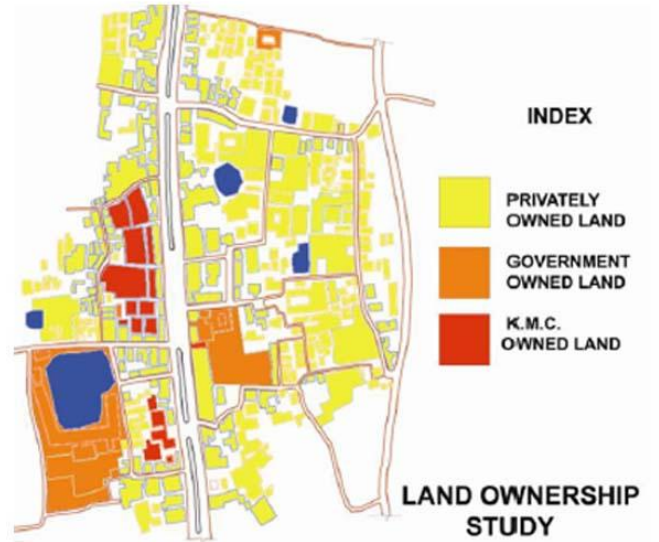
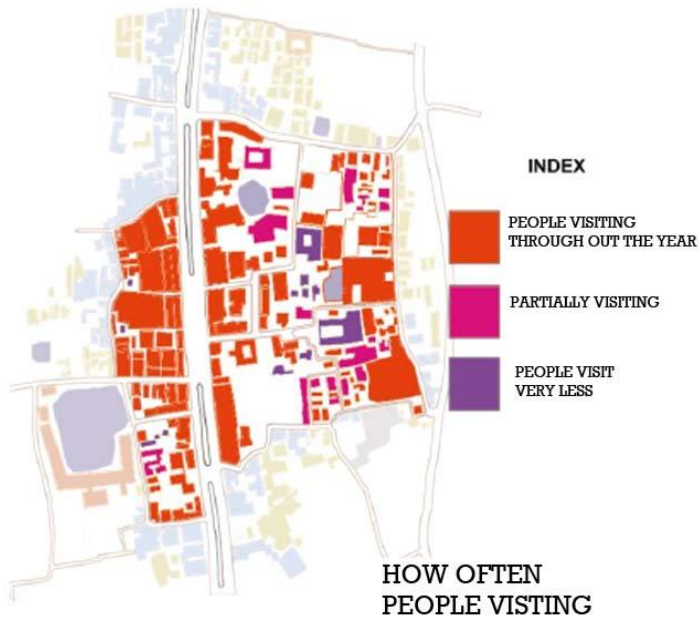
Fig 5. Showing landmarks

Biren Roy House
state archaeological museum
Shideshwari kali mandir
Ellora cienema hall
Tram depot market

2.3 LANDUSE STUDY



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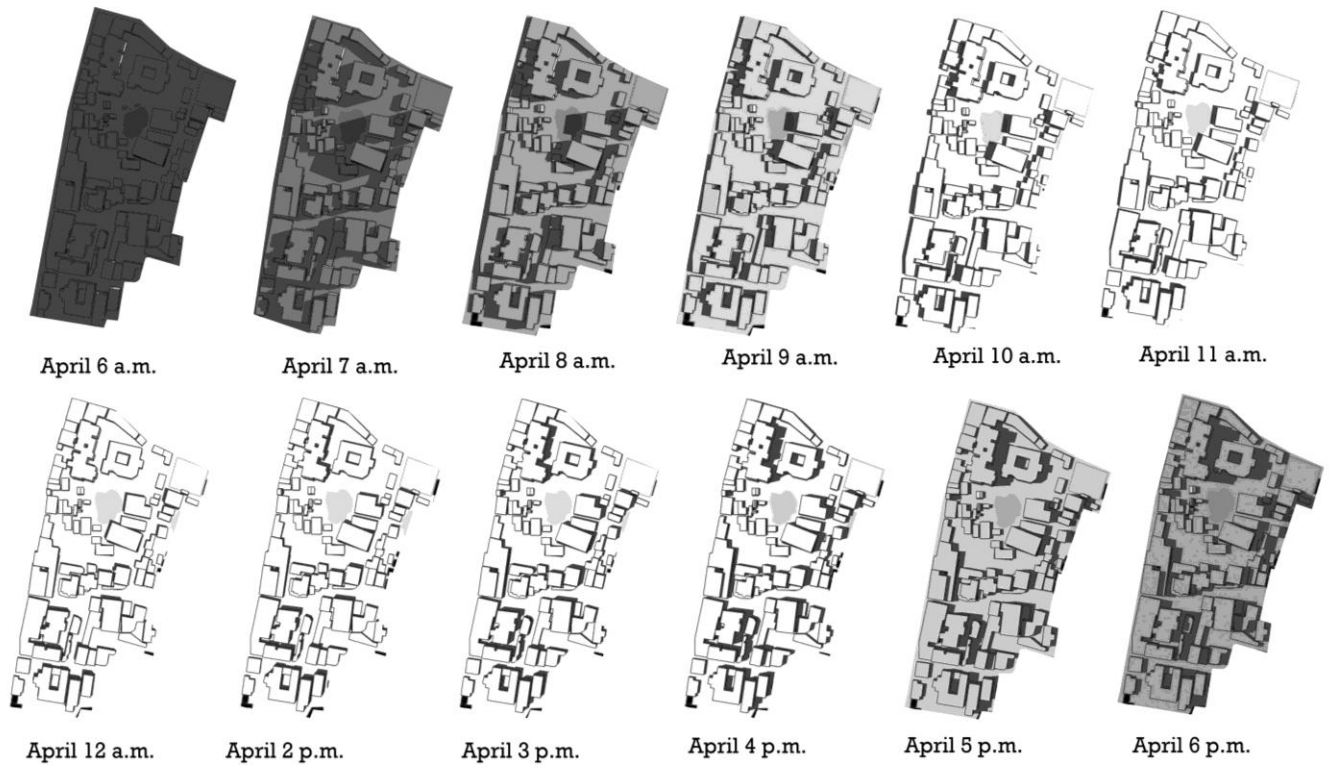
[Source: NATMO]



2.3.1 INFERENCES

- Lack of accessible green spaces
- Lack of seatable spaces
- Lack of public amenities
- Footpaths encroached by the hawker
- No proper parking area
- Area surrounding the water body is not properly utilized
- Mostly commercial

2.4 SHADOW ANALYSIS



- Roads and open spaces are not properly shaded
- Pleasant whether at 5 p.m.
- Addition of trees to the site will provide more shade.

3.0 LITERATURE STUDY
SOUK WAQIF
THE STANDING MARKET, DOHA

3.1 INTRODUCTION

Souk Waqif

Winner of Aga Khan Architecture Award

Location: Doha, Qatar (Arabian Peninsula)

Architect: Private Engineering Office, Mohamed Ali Abdullah

Client: Amiri Diwan

Completed: 2008

Design: 2004-2007

Site size: 164'000 m²



1947's settlement



1970's settlement



Present day
settlement

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- Souq Waqif ("the standing market") is a souq in Doha, in the state of Qatar. The souq is noted for selling **traditional garments, spices, handicrafts, and souvenirs**. It is also home to dozens of **restaurants and Shisha lounges**. Although it dates back at least a hundred years, it was renovated in 2006 to conserve its **traditional architectural style**.
- The origins of the Souq Waqif date from when Doha was a village and its inhabitants gathered on the banks of the wadi to buy and sell goods. The restoration project was based on a thorough study of the history of the market and its buildings in order **to restore the dilapidated historic structures and remove inappropriate alterations and additions**. **Modern buildings were demolished; roofs of metal sheeting were replaced with traditionally built roofs of 'dangeal' wood and bamboo with a binding layer of clay and straw; and traditional strategies to insulate the buildings against extreme heat were reintroduced**. New technologies were introduced such as a sophisticated lighting system.

Connecting the Wadi Mishreib river to Souk Waqif and Msheireb by a road



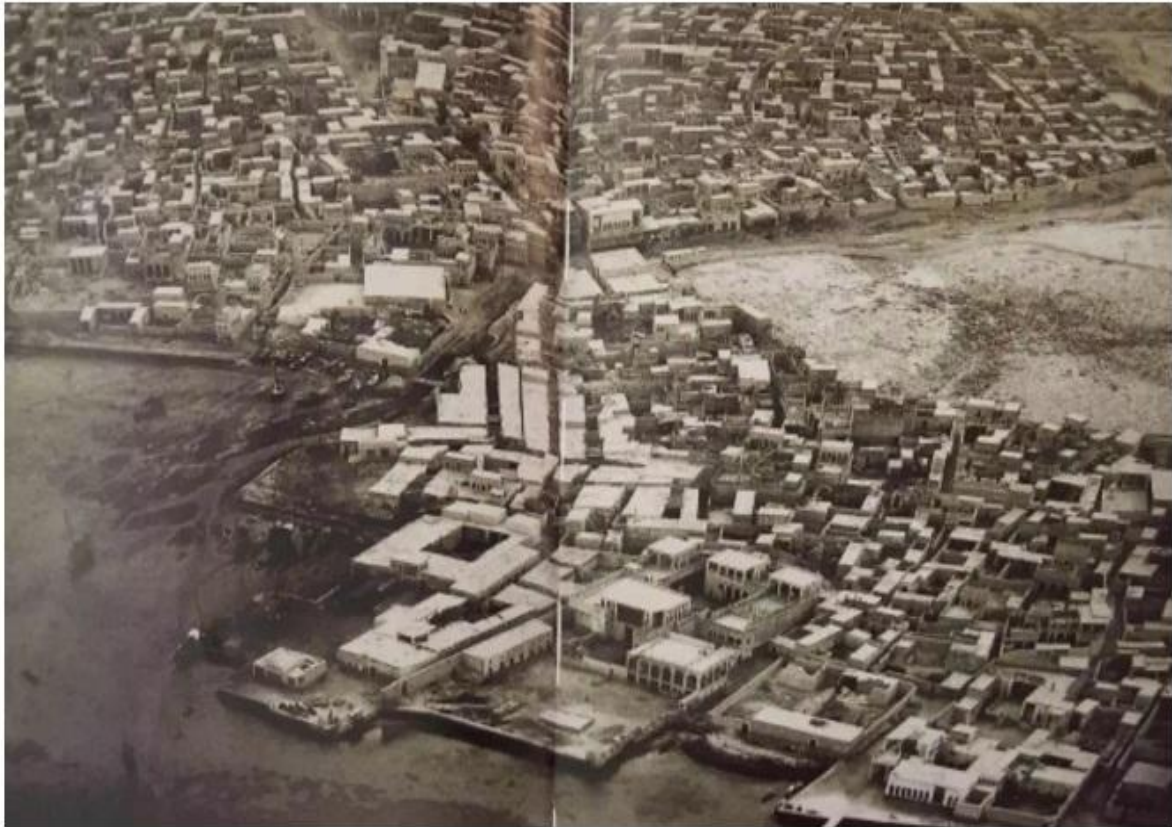
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INSPIRATIONS



Different views of the souq shops and alleyways. On the bottom left: the oldest hotel in doha, which is renovated to be a boutique hotel today with the same name.

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Areal view of the souq and developing urban fabric surrounding it.

Old Pictures



After Renovation



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[source: <http://www.akdn.org/architecture>]











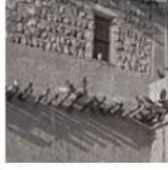






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A STABLE AREA	Primary function is the engineering office for the Emir technical staff. However it is said that the entire area is not very well designed.		
THE AL JASSRAH AREA	There is traditionally building heritage while the urban pattern was entirely reconstructed by adding different functions.		
THE OLD SOUK	This sector is the most authentic of the Souq areas in relation to the architectural elements, building vocabulary as well as urban forms.		
THE AL-AHMED AREA	Formerly this zone was a wetland and a part of the shoreline detached from the original Souq by the Mishrieb river. The area is newly built		
AL NAGADA AREA	This area is a recently created pedestrian route, it is considered the most vibrant zone of the Souq and is quite original to a certain degree.		



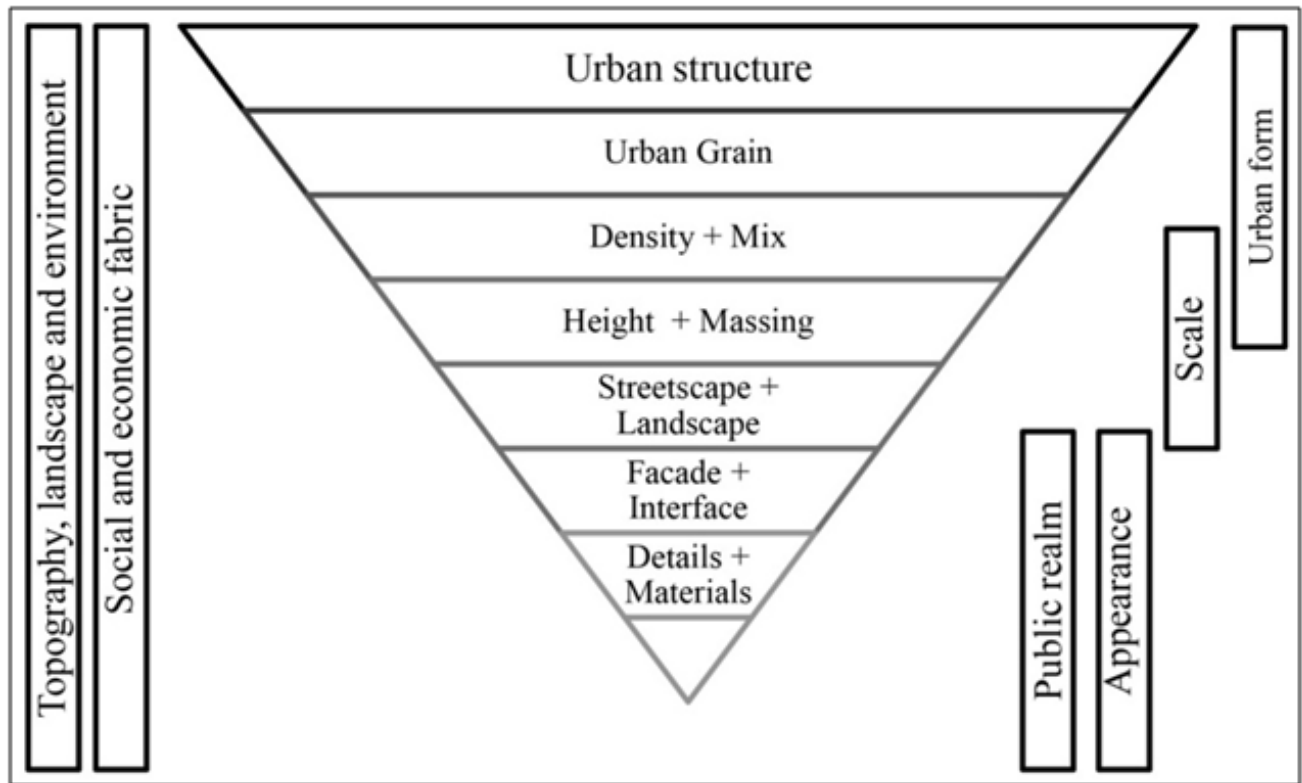
	Form and design	Materials and substance	Use and function	Traditions, Techniques and management systems	Location and setting	Language and other forms of Intangible heritage	Spirit and feeling
Horses stable		Natural stones , wood, clay, concrete and brick.	Private engineering office	Cooperate systems	West edge	Totally New	Uninspired
Al-Ahmed area		Natural stones , wood, clay, concrete and brick.	Restaurant, cafes, and craft shops	Touristic systems	East edge	New	Unoriginal

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	Form and design	Materials and substance	Use and function	Traditions, Techniques and management systems	Location and setting	Language and other forms of Intangible heritage	Spirit and feeling
Al Jassrah area		Natural stone, wood, concrete and clay.	Hotels, shops	Touristic systems	North-West edge	Original and New	Unoriginal
Al Nagada area		Natural stones, Sun-backed blocks, wood, concrete and clay.	Restaurants, art galleries	Touristic and local systems	South Edge	Original	Relatively genuine
							
	Form and design	Materials and substance	Use and function	Traditions, Techniques and management systems	Location and setting	Language and other forms of Intangible heritage	Spirit and feeling
Old Souk		Sun-backed blocks, "dangeel" wood, bamboo mats and clay.	Traditional Market (herb, cloth, and street food)	Totally local systems	core	Totally original	Totally genuine

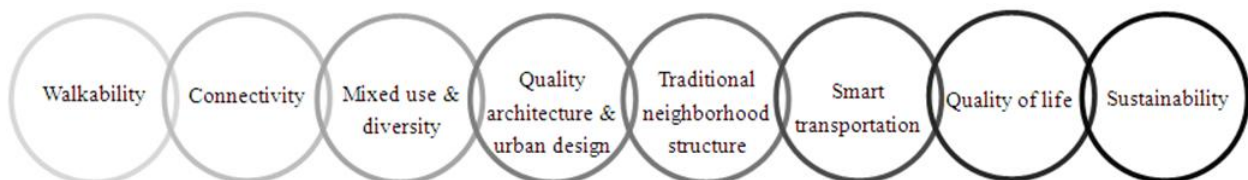
Souk Waqif

The elements of urban design from macro to micro level



Souk Waqif

The main objectives of new urbanism movement

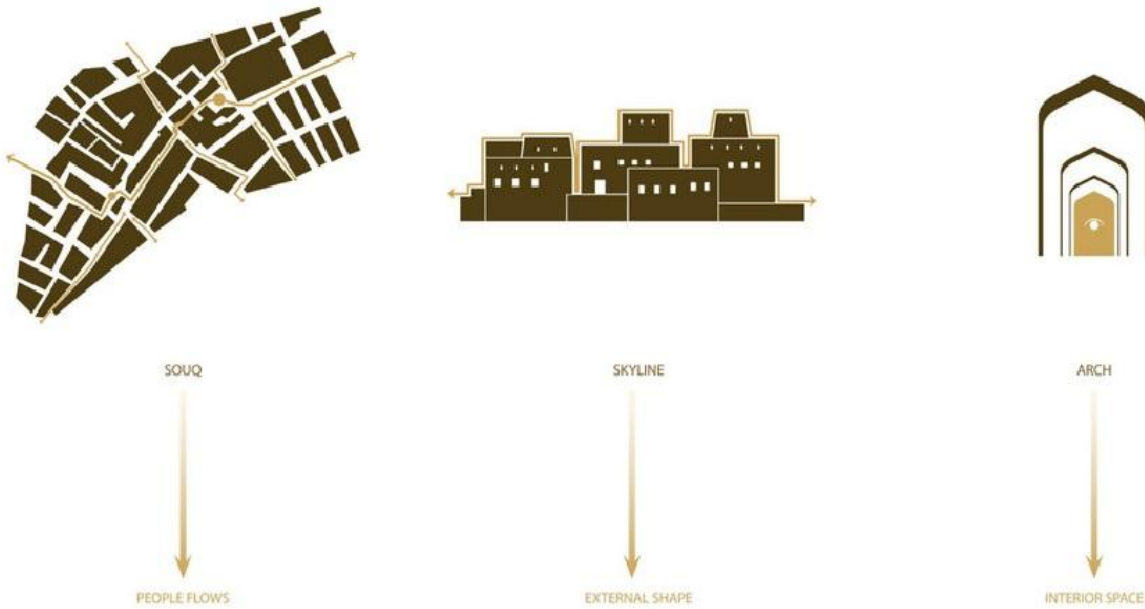


Souk Waqif

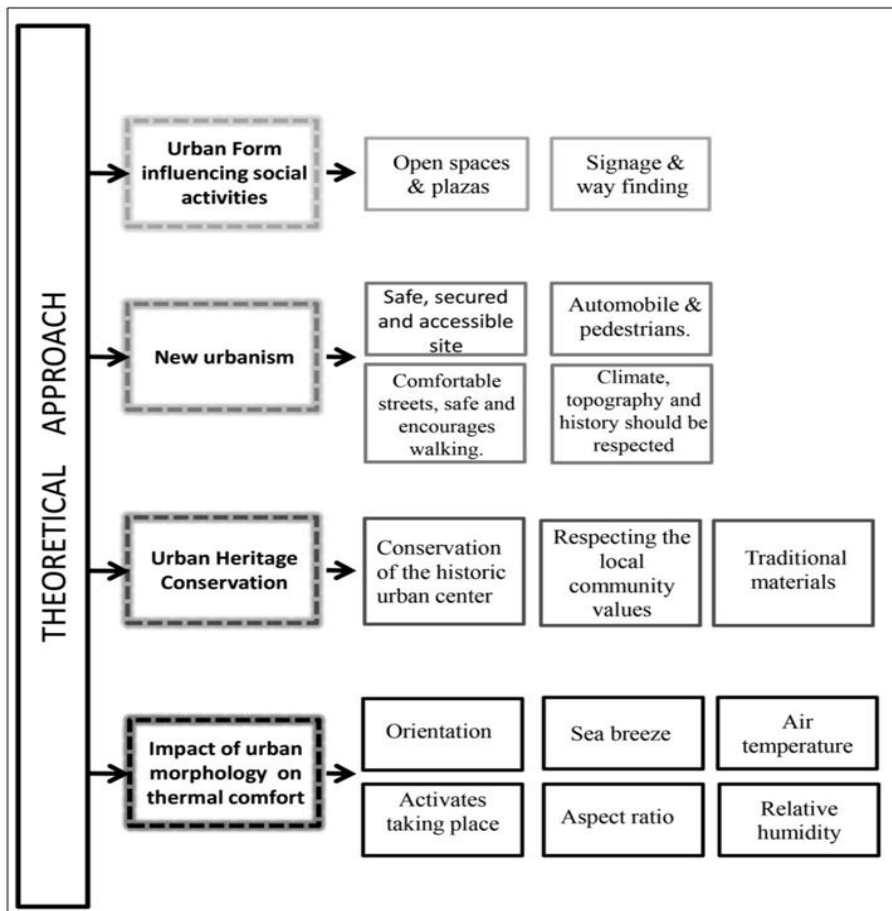
Nine principle for designing the block, street and the building

- 1) The primary task of all urban architecture and landscape design is the physical definition of streets and public spaces as places of shared use.
- 2) Individual architectural projects should be seamlessly linked to their surroundings. This issues transcends style.
- 3) The revitalization of urban places depends on safety and security. The design of streets and buildings should reinforce safe environments, but not at the expense of accessibility and openness.
- 4) In the contemporary metropolis, development must adequately accomidate automobiles. It should do so in ways that respect the pedestrian and the form of public space.
- 5) Streets and squares should be safe, comfortable and interesting to the pedestrian. Properly configured, they encourage walking and enable neighbours to know each other and protect their communities.
- 6) Architecture and landscape design should grow from local climate, topography, history, and building practice.
- 7) Civic buildings and public gathering places require important sites to reinforce community identity and the culture of democracy. They deserve distinctive form, because their role is different from that of the other buildings and places that constitute the fabric of the city.
- 8) All buildings should provide their inhabitants with clear sense of location, weather and time. Natural methods of heating and cooling can be more resource-efficient than mechanical systems.
- 9) Preservation and renewal of historic buildings districts, and landscapes affirm the continuity and evolution of urban society.

Souk Waqif **Design ideas**



Souk Waqif **The research theoretical framework**



Souk Waqif

The strategies adopted in conserving Souk Waqif consisted of following measures and actions:

- Restoration of the old part,
- Reconstruct the old ones wherever possible,
- Modernize the local infrastructure,
- Remove all the advertisement signs around.

General program objectives:

The artist's strategy relied mainly on the following objectives in order to synergize the souk again:

- Reconstruct the lost image of the historic Doha through the rehabilitation of its authentic Souk Waqif.
- Protect the area of the souk from real estate development.
- Create an open air public area totally pedestrianised.
- Establish a vibrant souk with its original layout and goods.

3.2 LITERATURE STUDY INFERENCES

- Prominent visual features.
- Landmarks give the whole place a identity.
- Well maintained car parking.
- Organized pedestrian market.
- Public amenities are well provided.
- Pedestrian activity and traffic don't conflict.
- People friendly design.
- Souk Waqif is well connected by roads.
- Sustainable design.
- Lots of open spaces for public gatherings.

4.0 CASE STUDY
CHANDI CHOWK
DELHI

4.1 INTRODUCTION

Chandni Chowk is one of the oldest and busiest markets in Old Delhi, India. Chandni Chowk is located close to Old Delhi Railway Station. The Red Fort monument is located within the market. It was built in the 17th century by Mughal Emperor of India Shah Jahan and designed by his daughter Jahan Ara. The market was once divided by canals (now closed) to reflect moonlight and remains one of India's largest wholesale markets

Chandni Chowk's speciality is its variety and authenticity: food, delicacies and sweets of more than 1,000 kinds, sarees with chikan andzari. Narrow lanes host shops sell books, clothing, electronic, consumer goods, shoes and leather goods. It is the location of the original Haldiram's and brands such as Gianis. A particular local delicacy are the jalebis, which are fried in pure ghee (clarified butter).

The Cloth Market, supplies home furnishing fabrics, including ready-made items as well as design services.

Nai Sarak is the wholesale market of stationery, books, paper and decorative materials. It house folder stores including SOLO and Shipra. It also offers bridal Saris and Lehengas from DIVASA by Devta Apparels Pvt. Ltd jogiwara, Arun Sarees and Nandlal Silk Mills.

Lal Kuan is a wholesale market for hardware and hotel kitchen equipment. It is adjacent to Tilak Market which is a wholesale market for industrial chemicals.

Dariba is the market for silver and gold jewelry. The popular jewelry stores are Hare ram Hare Krishna and MM Jewellers. This market also offers trophies, shields, mementos and related items.

Restaurants and eateries

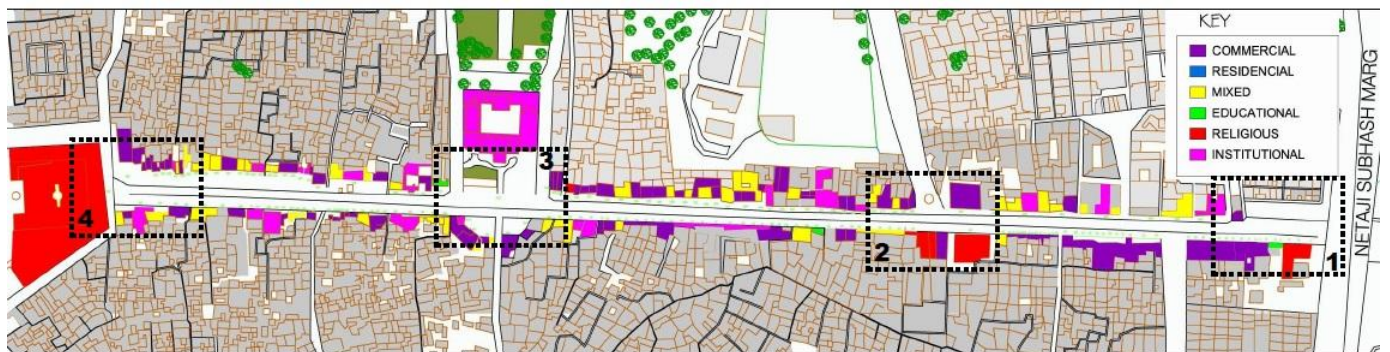
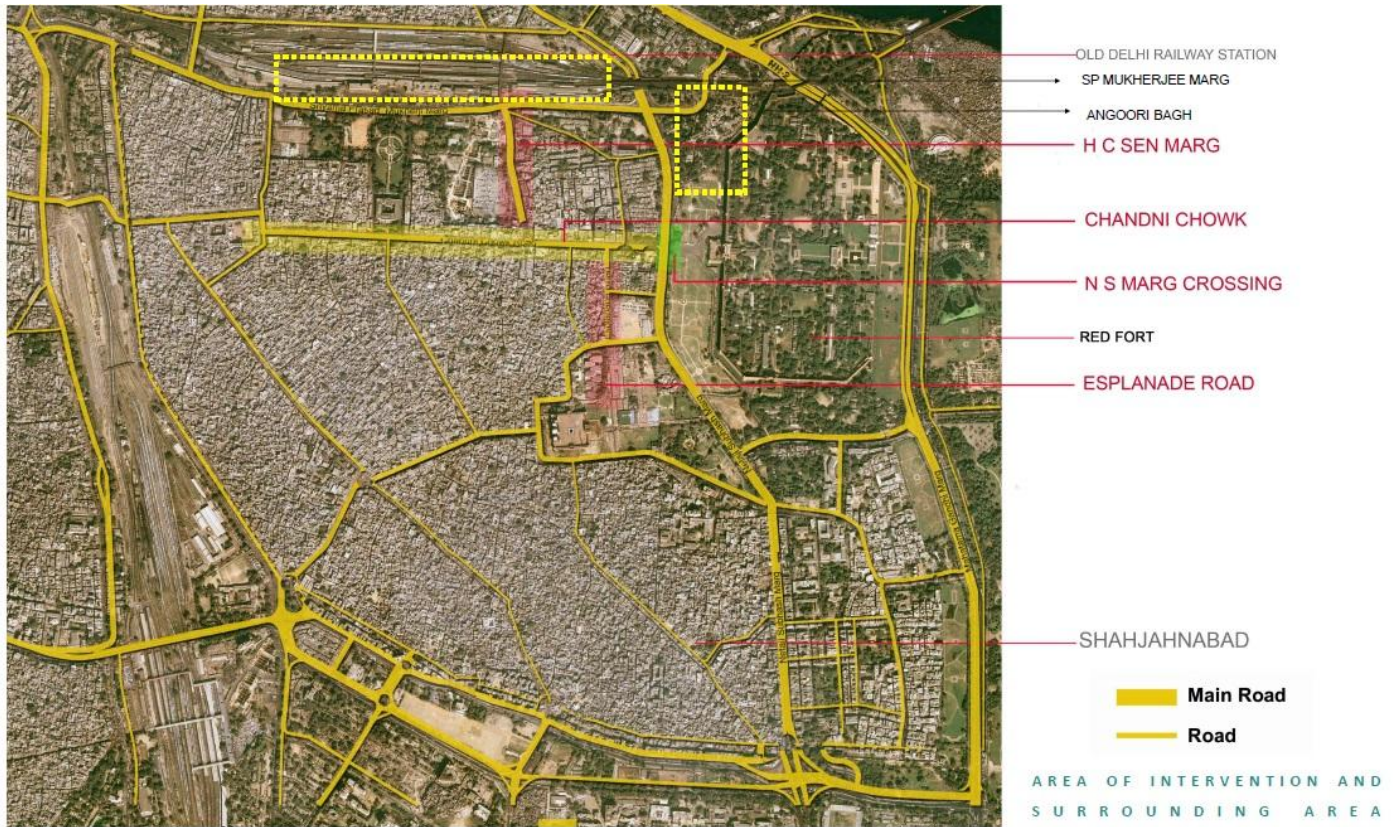
Food shop on Khari Baoli Road

Chandni Chowk is home to several famous restaurants/confectioners (halwais)

- The Ghantewala Halwai, established in 1790.
- Natraj's Dahi Bhalle, established in 1940.
- The jalebi wala.
- Kanwarji Bhagirathmal Dalbijiwallah established in the mid-19th century.
- Chaatwallah, established in 1923, famous for fruit chaat.
- Bikaner Sweet Shop, famous for rasmalai.
- Gianiji ka Falooda, famous for Rabri Falooda, established around 1947.
- Paranthewali Gali with paratha shops from 1875–1886.
- Meghraj and Sons, since the 1950s
- Chainaram, established in 1948
- Annapurna Bhandar established in 1929 by Late Mr.Purna Chander Modak is popular for Bengali sweets.
- Tewari Brothers Confectioners, (famous for Motichoor Laddoo, Samosa) established in 1987

[Source : Internet]

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L A N D U S E P A T T E R N O F C H A N D N I C H O W K



RED FORT CHOWK



FOUNTAIN CHOWK



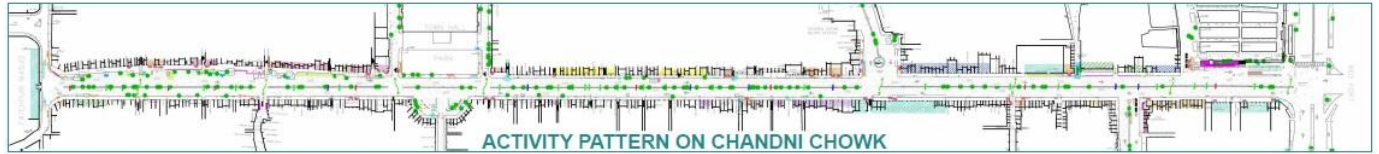
TOWN HALL CHOWK



FATEHPURI CHOWK

T H E C H O W K S A L O N G T H E C H A N D N I C H O W K S T R E T C H

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TYPE OF HAWKERS



SEMI PERMANENT HAWKER



HAWKERS ON THELA



ON FOOTPATH HAWKER



- | | | |
|------------------------|---|----------------------|
| THELAS | HAWKER WITH FOOTPATH/SMALL TABLE | MOBILE HAWKER |
| 1. CHAI WALLA | 7. MITHAI WALLA | |
| 2. TIKKI WALLA | 8. KULFI WALLA | |
| 3. CHOLE KULCHA WALLA | 9. NIMBU PANI WALLA | |
| 4. GOL GAPPE WALLA | 10. PAKORA WALLA | |
| 5. BREAD OMLETTE WALLA | 11. CHURNUR WALLA | |
| 6. FRUIT WALLA | | |

FOOD HAWKERS



- | | | |
|------------------------|--------------------------|----------------------|
| THELAS | TABLE/ON FOOTPATH | MOBILE HAWKER |
| 1. CLOTHES/SHOES/SOCKS | 7. PHOT ALBUM | |
| 2. PHONE ACCESSORIES | 8. CARDS | |
| 3. WALLET/HANDKERCHIEF | 9. COIN EXCHANGE | |
| 4. COBBLER | 10. POSTER | |
| 5. PAN/CIGERRATE | ETC... | |
| 6. JEWELLERY | MISC. HAWKERS | |



ON FOOTPATH HAWKER



SEMI MOBILE HAWKERS



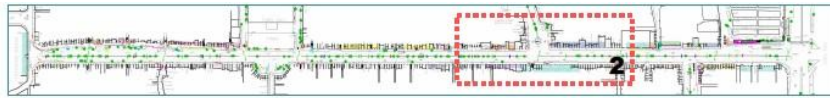
MOBILE HAWKERS



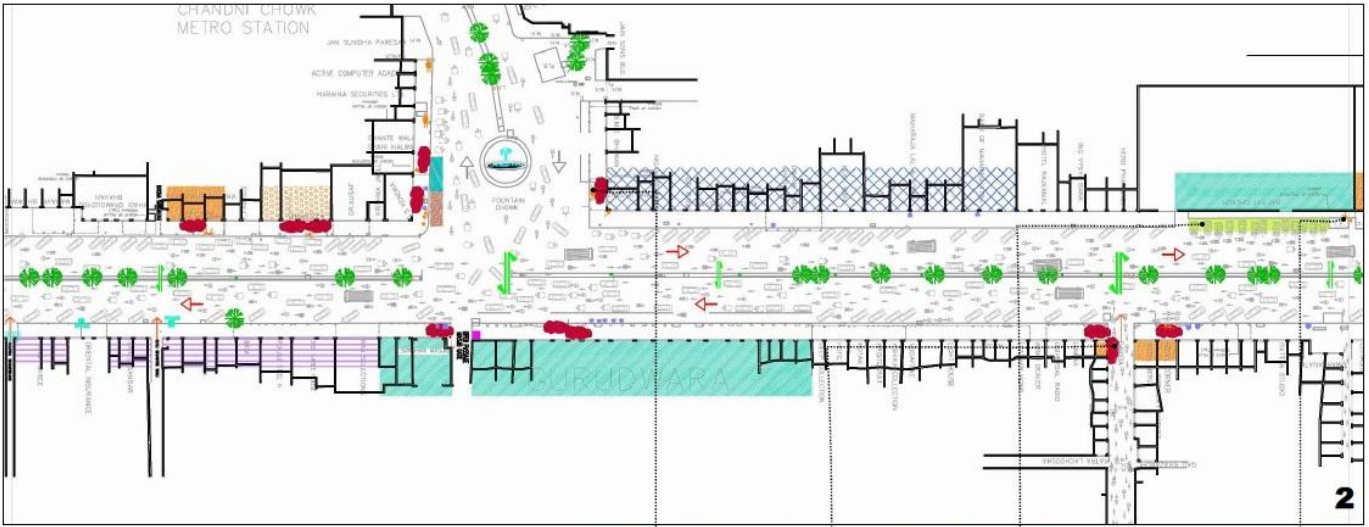
INFORMAL ACTIVITY	MOVEMENT AND SERVICES	FORMAL ACTIVITY
FOOD HAWKERS	GOODS/THELAS STATIONED	BANKS
MISC. HAWKERS	CLASH AREA	ELECTRONICS
TEMPORARY STALLS	CYCLE RICKSHAW PARKED	RELIGIOUS
LABOUR	AUTOS PARKED	FOOD
MAJOR SPILL OVER AREAS	BUS PARKED	SAREES
MAJOR PEDESTRIAN INFLOW	PARKING ON FOOTPATH	JEWELLERY
	EXISTING CROSSINGS	CYCLE MARKET
	EXISTING TOILETS	PHOTO MARKET
	EXISTING PAVO	SHOES/BAGS
		TEXTILES



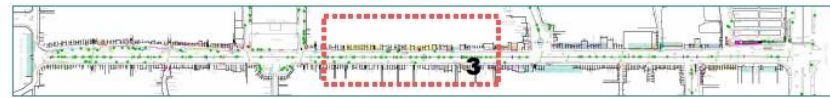
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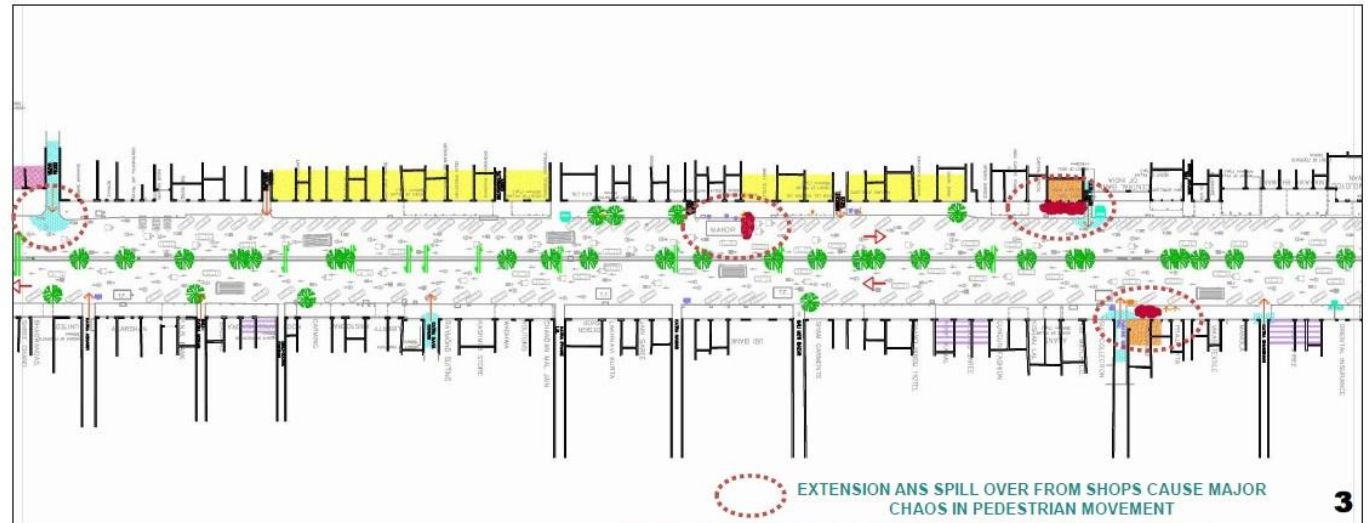
ACTIVITY PATTERN AT FOUNTAIN CHOWK



INFORMAL ACTIVITY	MOVEMENT AND SERVICES	FORMAL ACTIVITY
FOOD HAWKERS	GOODS/HELAS STATIONED	BANKS
MISC. HAWKERS	CLASH AREA	ELECTRONICS
TEMPORARY STALLS	CYCLE RICKSHAW PARKED	FOOD
LABOUR	AUTOS PARKED	JEWELLERY
MAJOR SPILL OVER AREAS	BUS PARKED	CYCLE MARKET
MAJOR PEDESTRIAN INFLOW	PARKING ON FOOTPATH	PHOTO MARKET
	EXISTING CROSSINGS	RELIGIOUS
	EXISTING TOILETS	SAREES
	EXISTING PAVAD	SHOES/BAGS
		TEXTILES



ACTIVITY PATTERN BETWEEN GURUDWARA AND TOWN HALL



EXTENSION AND SPILL OVER FROM SHOPS CAUSE MAJOR CHAOS IN PEDESTRIAN MOVEMENT

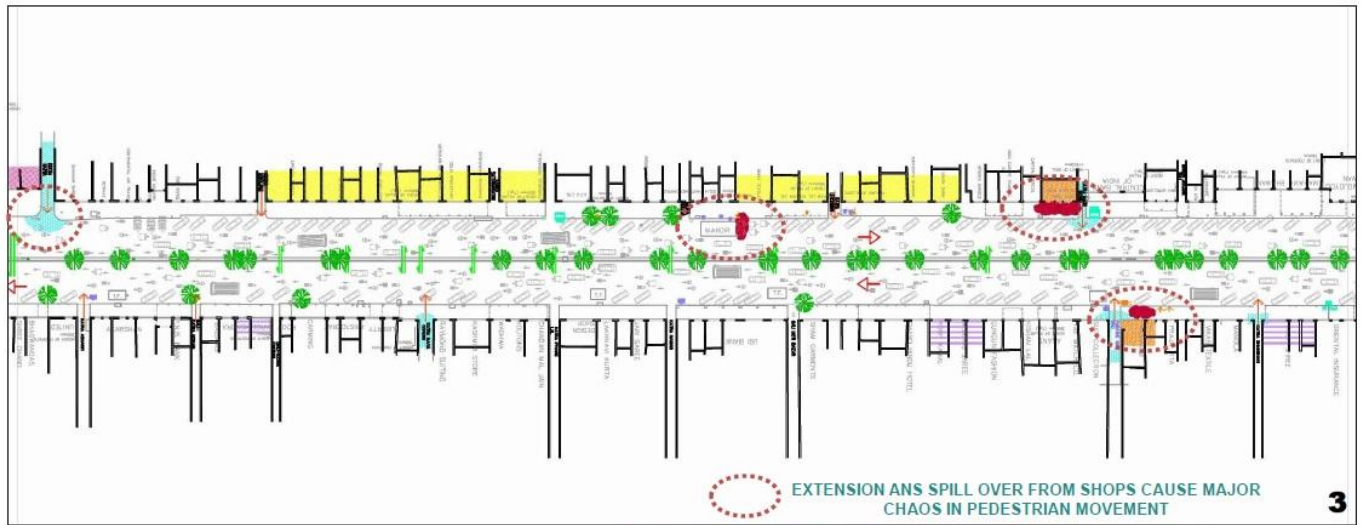
INFORMAL ACTIVITY	MOVEMENT AND SERVICES	FORMAL ACTIVITY
FOOD HAWKERS	GOODS/HELAS STATIONED	BANKS
MISC. HAWKERS	CLASH AREA	ELECTRONICS
TEMPORARY STALLS	CYCLE RICKSHAW PARKED	FOOD
LABOUR	AUTOS PARKED	JEWELLERY
MAJOR SPILL OVER AREAS	BUS PARKED	CYCLE MARKET
MAJOR PEDESTRIAN INFLOW	PARKING ON FOOTPATH	PHOTO MARKET
	EXISTING CROSSINGS	RELIGIOUS
	EXISTING TOILETS	SAREES
	EXISTING PAVAD	SHOES/BAGS
		TEXTILES



Urban Renewal Project, Case application at Tram depot, Behala, Kolkata.



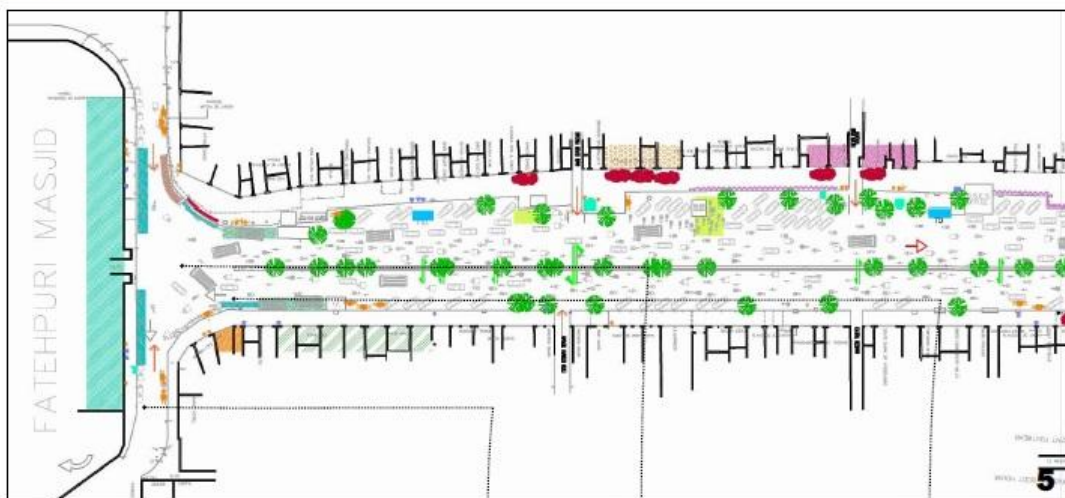
ACTIVITY PATTERN BETWEEN GURUDWARA AND TOWN HALL



INFORMAL ACTIVITY	MOVEMENT AND SERVICES	FORMAL ACTIVITY
FOOD HAWKERS	GOODS/HELAS STATIONED	BANKS
MISC. HAWKERS	CLASH AREA	ELECTRONICS
TEMPORARY STALLS	CYCLE RICKSHAW PARKED	FOOD
LABOUR	AUTOS PARKED	JEWELLERY
MAJOR SPILL OVER AREAS	BUS PARKED	CYCLE MARKET
MAJOR PEDESTRIAN INFLOW	PARKING ON FOOTPATH	PHOTO MARKET
	EXISTING CROSSINGS	RELIGIOUS
	EXISTING TOILETS	SAREES
	EXISTING PIYAD	SHOES/BAGS
		TEXTILES



ACTIVITY PATTERN AT FATEHPURI MASJID CHOWK



INFORMAL ACTIVITY	MOVEMENT AND SERVICES	FORMAL ACTIVITY
FOOD HAWKERS	GOODS/HELAS STATIONED	BANKS
MISC. HAWKERS	CLASH AREA	ELECTRONICS
TEMPORARY STALLS	CYCLE RICKSHAW PARKED	FOOD
LABOUR	AUTOS PARKED	JEWELLERY
MAJOR SPILL OVER AREAS	BUS PARKED	CYCLE MARKET
MAJOR PEDESTRIAN INFLOW	PARKING ON FOOTPATH	PHOTO MARKET
	EXISTING CROSSINGS	RELIGIOUS
	EXISTING TOILETS	SAREES
	EXISTING PIYAD	SHOES/BAGS
		TEXTILES



4.2 CASE STUDY INFERENCE

- Shop fronts are being renovated.
- Too much crowd.
- Car parking on two sides of the road.
- **Chandni Chowk** was its commercial centrepiece, with certain visual character terminating at two landmarks- Red Fort and Fateh Puri Mosque as its two ends.
- Hoardings, street furniture & signages if placed and relocated properly will enhance the visual quality.
- Public amenities and pedestrian friendly design will provide richness in terms of spatial experience and community interaction.
- Well connected transport system
- Open spaces in the chowk help in more public gathering and the traffic should be maintained so that pedestrian and vehicles don't conflict.
- The boulevard of Chandni Chowk is its commercial centerpiece.

5.0 IDENTIFICATION OF DESIGN PARAMETERS

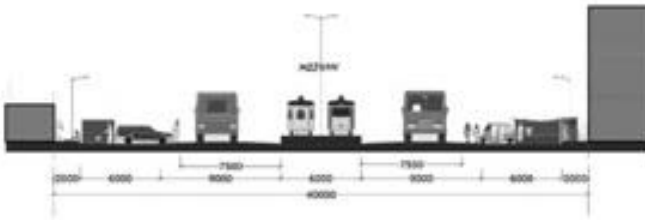
- Activities , spaces and form
- Renovation
- Public gatherings
- Spatial distribution
- Open spaces
- Linkage elements ,spaces and views

6.0 INTERVENTION

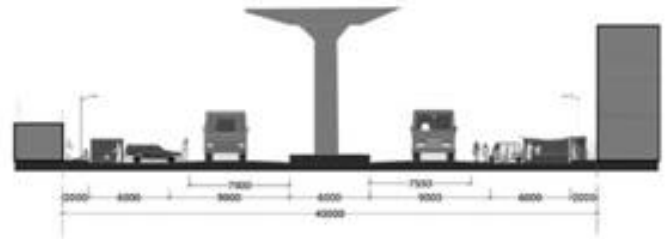
6.1 URBAN DESIGN TOOLS

- Restoration of the blighted area,
- Relocation and reconstruct the old ones wherever possible,
- Modernize the local infrastructure,
- Relocation of the advertisement signs and hoardings,
- Create an open air public area totally pedestrianised,
- Façade treatment

6.2 DRAWINGS AND VIEWS



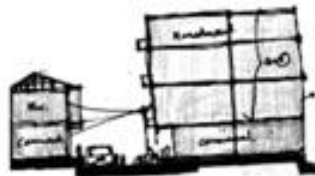
Section at DH road near tram depot in 2005



Section at DH road near tram depot in 2016



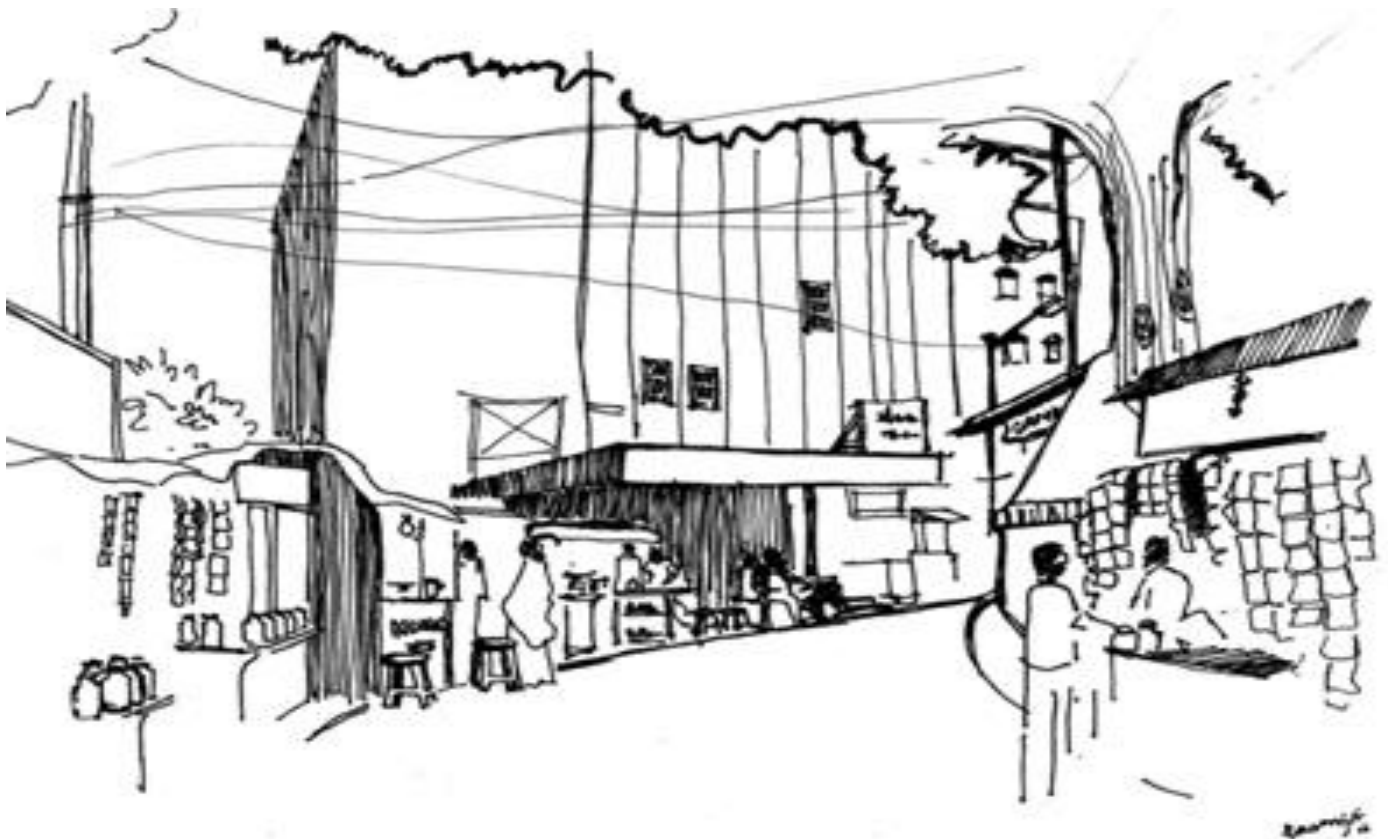
Section AA' near AC market



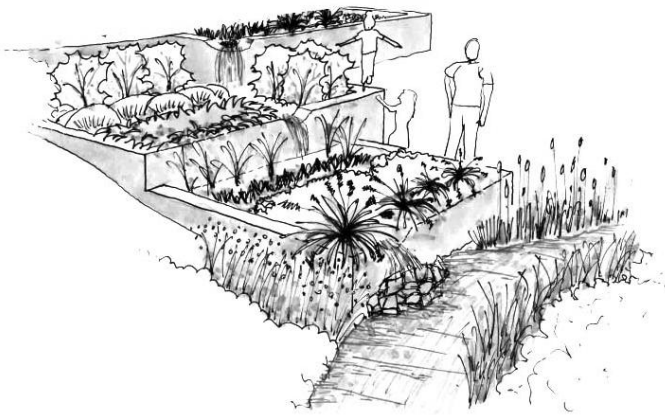
Section BB' at the entrance



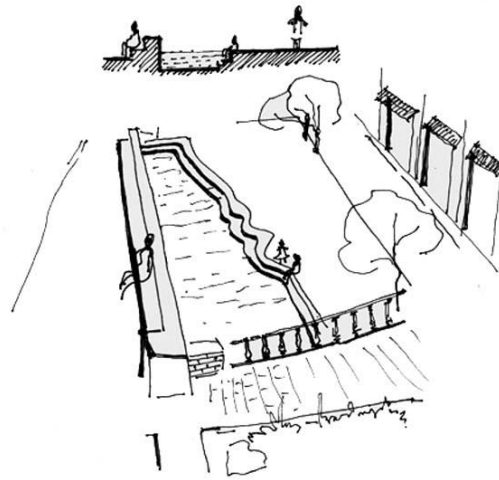
Section CC' Infront of the AC Market



6.3 CONCEPTUAL IDEAS



Beautification of the lake



Designing the small public square with waterbody and trees



Walkable and seatable spaces near lake

6.4 DESIGN APPROACH

> Breaking the linear pattern of the hawker will allow more car parking space.

> Less conjection
> Shop frontage along the footpath will be visible.

> Will allow and attract more people for its openness.

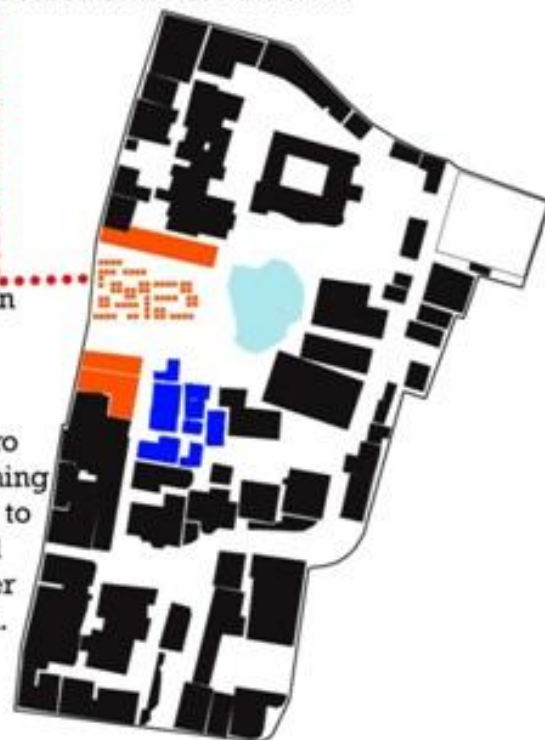
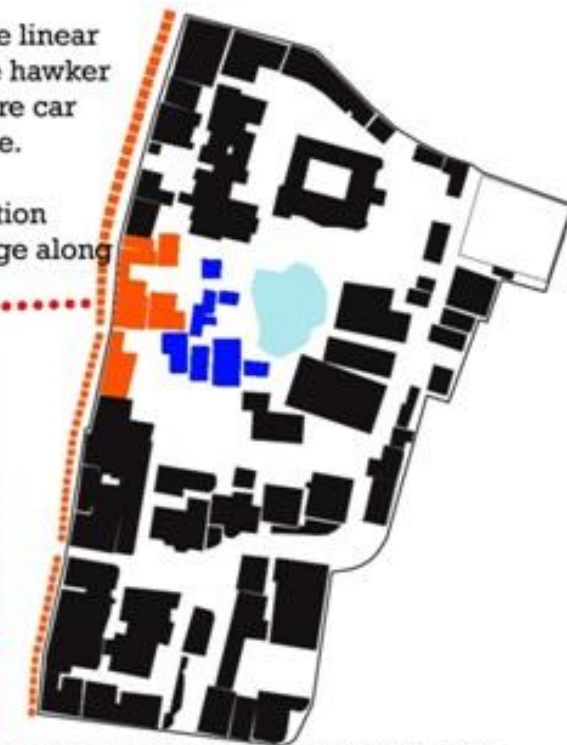
> Design will help in good utilization of space.

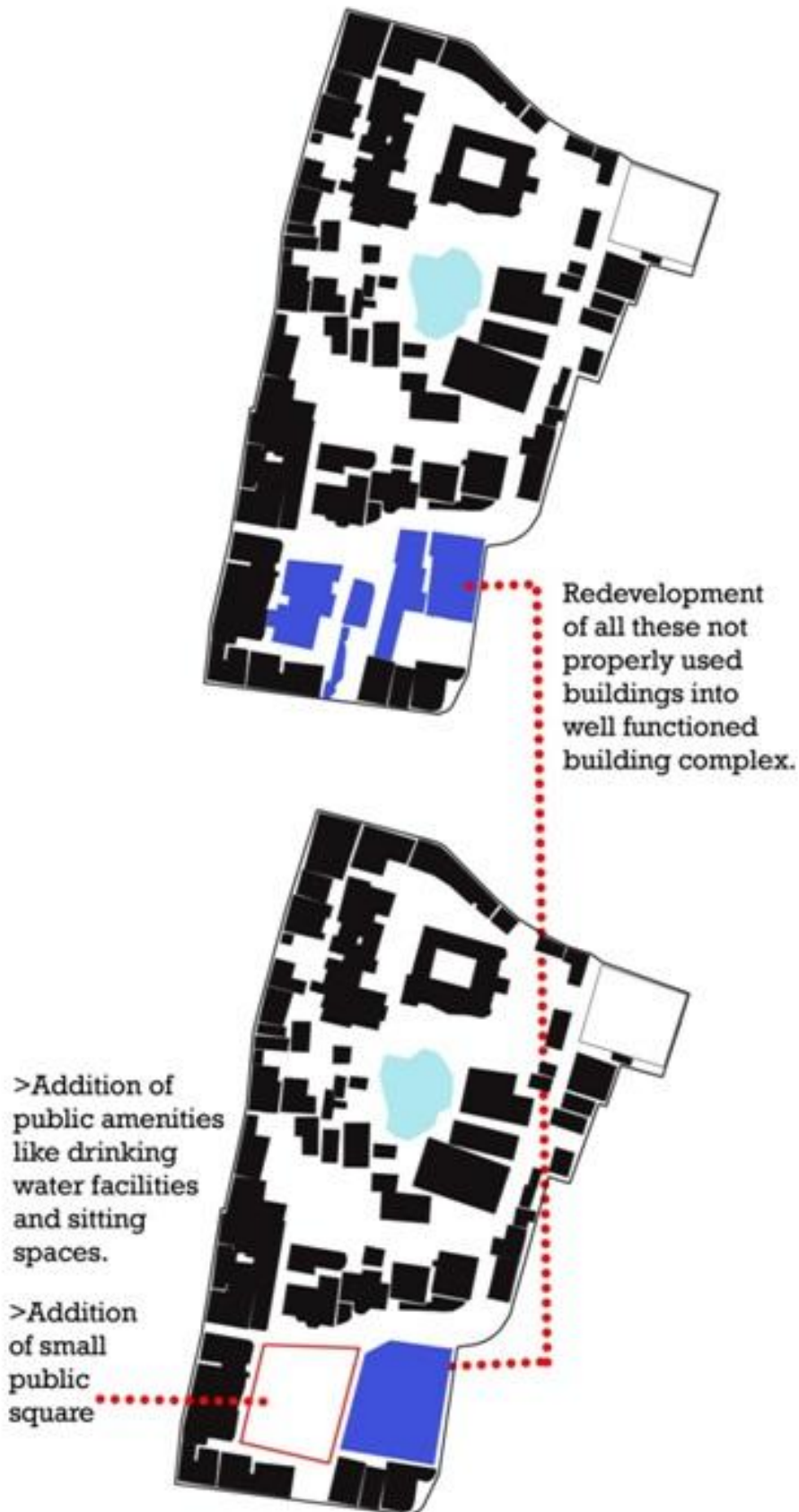
> Removal of linearly settled hawker along the footpath.

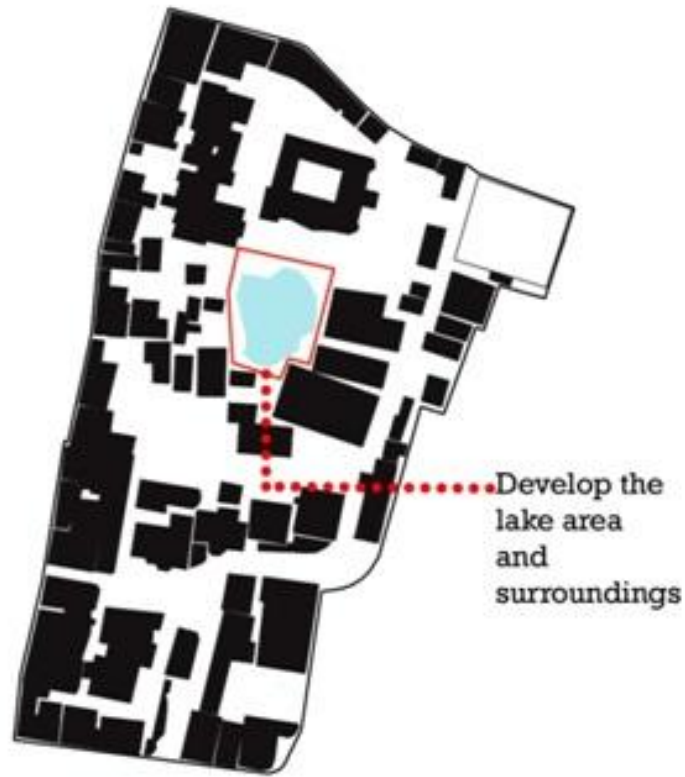
> Relocating the hawkers and the encroached settlements near the lake.

> It will add in more public spaces and hence the landscape can be enjoyed.

> As the metro station is coming up, openness to the place will help in proper flow of crowd.







7.0 BIBLIOGRAPHY

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