

URBAN RENEWAL OF COMMERCIAL HUB AT SHYAMBAZAR-HATIBAGAN AREA, KOLKATA

PRESENTED BY: SANDIPAN SINHA

M.ARCH II_2010202008

Guided By: Dr. SHIVASHISH BOSE (PROFESSOR)

DEPARTMENT OF ARCHITECTURE

Jadavpur University

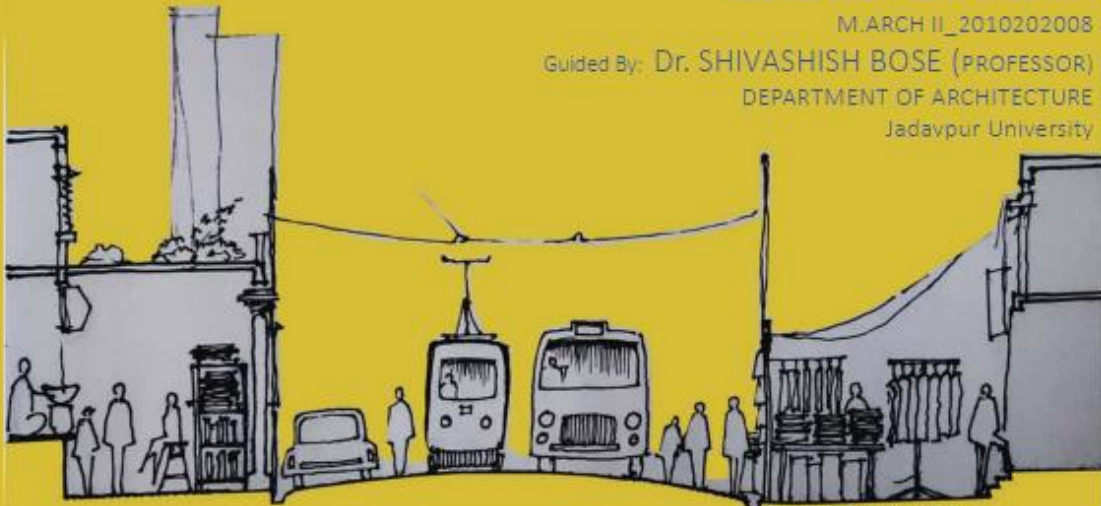


Figure 1 | Source-Author

Urban Renewal of Commercial Hub

At Shyambazar-Hatibagan Area, Kolkata

An Urban Design Thesis Report

Submitted in partial fulfillment of the requirement for
The post-graduation degree of Masters of Architecture (Urban Design)
Under the Faculty of Engineering & Technology,
Jadavpur University, Kolkata

Supervised by:

Professor Dr Shivashish Bose

Submitted by:

Sandipan Sinha

Roll no. 002010202008

Student of Final year, M.Arch (Urban Design)

Department of Architecture

Jadavpur University

Kolkata – 700032

AUGUST 2022

JADAVPUR UNIVERSITY

DEPARTMENT OF ARCHITECTURE

Kolkata-700032

I/We certify that the thesis entitled “Urban Renewal of Commercial Hub at Shyambazar-Hatibagan Area, Kolkata” submitted by Shri /Smt Sandipan Sinha in partial fulfillment of the requirements of the Masters’ Degree in Architecture of this university, is a bonafide work, to the best of my/our knowledge, and may be placed before the examination board for their consideration.

SUPERVISOR

HEAD OF THE DEPARTMENT

EXTERNAL EXAMINER

DEAN, FACULTY OF ENGINEERING & TECHNOLOGY

ACKNOWLEDGEMENT

I am deeply indebted to my thesis guide Professor Dr Shivashish Bose, who irrespective of working day or holiday, early morning or late night has always been there to help, discuss, advise and suggest me to learn and unlearn during my project development days till date.

I am grateful to the thesis coordinator Professor Dr Mainak Ghosh, HOD, Department of Architecture, Jadavpur University for his constant support beside his effective and timely communication throughout the project.

I am extremely grateful to Professor Dr Keya Mitra ma'am and Mr. Ranjan Chattopadhyay sir for their wise inputs during the interim review process of the project. I am grateful to the Editors and proofreaders of the journal, "Urbanisation-A Sage Track Journal" for considering my paper on the current project worth to consider for publication.

I could not have undertaken this journey without the lecture inputs as well as the sessional projects during my previous semesters by all the other learned faculties and professors of our department. Our librarian sir has always been very helpful to assist my search for literature many a times during my project.

Word cannot express my gratitude to my supportive wife Koyel, my parents, my elder brother Susovan, my mother-in-law and Payel who has always inspired me to pursue for excellence. A very special thanks to Aritro Sen for assisting my entire field studies.

CONTENT

1. Abstract	1
2. Introduction	2
2.1. Keywords	
2.2. Background	
2.3. Site Selection Criteria	
2.4. Site Overview	
2.5. Aims & Objective	
2.6. Scope & Limitation	
2.7. Methodology	
2.8. Research Question	
3. Theoretical Framework	9
3.1. Urban Renewal	
3.1.1. Introduction	
3.1.2. Potential	
3.1.3. Typologies	
3.2. Commercial Hub	
3.2.1. Introduction	
3.2.2. Potential	
3.2.3. Typologies	
3.3. Formal/Informal Marketplace	
3.3.1. Introduction	
3.3.2. Potential	
3.3.3. Typologies	
3.4. Good City Form	
3.4.1. Analysis	
3.4.2. Adaptation	
3.5. Life Between Buildings	
3.5.1. Analysis	
3.5.2. Adaptation	
3.6. Complexity of Urban Form & Design	
3.6.1. Analysis	
3.6.2. Adaptation	
3.7. Urban Design Parameter	
3.7.1. Analysis	
3.7.2. Adaptation	
4. Case Study	16
4.1. Case Study I- Pondy Bazaar- Chennai	
4.1.1. Introduction	

4.1.2.	Analysis	
4.1.3.	Inference	
4.2.	Case Study II- Manek Chowk- Ahmedabad	
4.2.1.	Introduction	
4.2.2.	Analysis	
4.2.3.	Inferences	
5.	The Study Area	31
5.1.	Visual Survey	
5.2.	History	
5.3.	Land Use	
5.4.	Morphology	
5.5.	Transportation	
5.6.	Activities and Spaces	
5.7.	Site Zoning	
6.	Zone 1	61
6.1.	Description	
6.2.	Delineation	
6.3.	Analysis	
6.4.	Identification of Intervention sites	
6.5.	Design Guidelines	
7.	Zone 2	69
7.1.	Description	
7.2.	Delineation	
7.3.	Analysis	
7.4.	Identification of Intervention sites	
7.5.	Design guidelines	
8.	Design Intervention	77
8.1.	Zone I	
8.2.	Zone II	

List of Illustrations:

- Illustration 1: Location of the Study Area (Source-Author)
- Illustration 2: decadal growth of population. Source: census of India 2011
- Illustration 3: and spatial growth in KMA area. Source: census of India 2011
- Illustration 4: Shyambazar as an important area of the city from the inception of the city of Kolkata. Source: Columbia.edu
- Illustration 5: Market clusters of KMA area. Source: Chatterjee & Roy (2016)
- Illustration 6: Dimensions of Urban Renewal. Source: Onkar, Dhote and Sharma (2008)
- Illustration 7: transformative benefits of public market. Source: Project for Public Space, pps.org (2010)
- Illustration 8: Different Form and Spaces of Markets. Source: Author
- Illustration 9: Patterns of markets: (a) linear market, (b) ramified market, (c) aggregated market Source- Ministry of Municipal and Rural affairs, Riyadh, Saudi Arabia (2006)
- Illustration 10: Good City Form by Kevin Lynch
- Illustration 11: Relationship Between Outdoor Environment Quality and Outdoor Activity, Source: Jan Gehl
- Illustration 12: A step-by-Step Study Leading to Urban Revitalization. Source: Author
- Illustration 13: Key map for Pandy Bazar- T-Nagar. Source: Author
- Illustration 14: Design Approach Zoning, Pandy Bazar, T-Nagar. Source: OASIS Design Inc.
- Illustration 15: Connectivity Plan and Nodal Analysis, Pandy Bazar, T-Nagar. Source: OASIS Design Inc.
- Illustration 16: Vehicular Movement Restriction Proposal, Pandy Bazar, T-Nagar. Source: OASIS Design Inc.
- Illustration 17: Design Proposals at Pandy Bazar, T-Nagar. Source: OASIS Design Inc.
- Illustration 18: Theyagaraya Road Section, Before and After Intervention. Source: ITDP India
- Illustration 19: Key Location Map of Manek Chowk, Ahmedabad. Source: Author
- Illustration 20: Location of Bhadra Chowk Adjacent to Manek Chowk. Source: WRI India.
- Illustration 21: Pedestrian and Traffic Route Plan, Manek Chowk. Source: WRI India.
- Illustration 22: Land Use and Building Use of the Manek Chowk market Precinct. Source: WRI India
- Illustration 23: Specialized streets surrounding Manek Chowk, Source: WRI India
- Illustration: 24: Changing Accessibility to Walled City Due to major Infra Projects. Source: WRI India
- Illustration 25(a,b): Surrounding Land Use of Walled City, to locate potential commercial magnets. Catchment Area for Residents and Shopping Visitors to and From Manek Chowk. Source: WRI India.
- Illustration 26: Street Section Showing sustainable relationship between the Edge and the Vendor. Source: WRI India
- Illustration 27: Street Space Utilization by Pedestrian and Vendors. Source: WRI India.

Urban Renewal of The Commercial Hub at Hatibagan-Shyambazar Area, Kolkata

Illustration 28: Final Proposal with Design Intervention. Source WRI India.

Illustration 29: The Part or the Whole of the KMC Ward no. 10, 11 and 12a constitutes the whole study area. Source: Author

Illustration 30: The Study Area as a whole. Source Author

Illustration 31: The Site, Figure Ground Map. Source: Author

Illustration 32: Basic Properties of The Site. Source: Author

Illustration 33: Basic Catch-Basin of The Market. Source: Author.

Illustration 34: Street Section Bidhan Sarani, near Hatibagan (NTS). Source: Author

Illustration 35, 36: Classical Structures in the precinct. Source: Sketches Author

Illustration 37: The Google Map Reference of Study Area of Shyambazar Hatibagan Commercial Hub. Source: Author

Illustration 38: The growth projection of Kolkata city. Source: Springer

Illustration 39: The growth of nodes of the city. Source: Springer

Illustration 40: The landuse of KMC area. Source: KMC

Illustration 41: The landuse of the site. Source: Author

Illustration 42: The Landuse distribution of the site. Source: Author

Illustration 43: Time series analysis of the housing, 1911 vs 1961. Source: NATMO

Illustration 44: Time series analysis of the housing, present day (NTS). Source: Author

Illustration 45: Time series analysis of functional use, 1911, 1961(NTS). Source: NATMO

Illustration 46: Time series analysis of functional use, present day (NTS). Source: Author

Illustration 47: Proximity to the major transit nodes to the site. Source: Author

Illustration 48: Five-point junction of Shyambazar connecting Kolkata. Source: Nibedita Das

Illustration 49: Traffic Survey Analysis. Source: Author

Illustration 50: To assemble or disperse. Source: Jan Gehl

Illustration 51: To integrate or segregate. Source: Jan Gehl

Illustration 52: To invite or repeal. Source: Jan Gehl

Illustration 53: To open up or close in. Source: Jan Gehl

Illustration 54: Figure Ground Map of the site. Source: Author

Illustration 55: Space syntax analysis to define zones. Source: Dr. Sumanta Deb

Illustration 56: Identified Action Area. Source: Author

Illustration 57: Zoning distribution of the site. Source: Author

Illustration 58: Delineation of Zone I. Source: Author

Illustration 59: Conflict points at five-point junction at Zone I. Source: Author

Illustration 60: Block Geometry of Zone I. Source: Author

Illustration 61: Age, Height and Value mapping of Zone I. Source: Author

Illustration 62, 63: Major Roads section of Zone I. Source: Author

List of Pictures:

Picture 1-4: Fast changing socio-cultural landscape in and around the site. Source: Author.

Picture 5-6: Theyagaraya Road Before and after Intervention. Source: ITDP India

Picture 7-8: Theyagaraya Road, Before and after intervention. Source: ITDP India

Picture 9-10: Theyagaraya Road, Before and after intervention. Source: ITDP India

Picture 11,12: Tram Depot at Bidhan Sarani(A), Tram at Move Through Bidhan Sarani(B). Source: Author

Picture 13: Carriageway Blocked by Pedestrian, On-Road Parking and Vendors. Source: Author

Picture 14,15: Vendor occupied Pavement, Bidhan Sarani. Near Minar Hall(A), Near V2 Shopping Store(B). Source: Author

Picture 16,17: Movement inside the Hatibagan Market. The stored materials block the pathways(A). Rain water gets released at the middle of the pathway(B). Source: Author.

Picture 18,19: Pedestrian Path on the Carriageway. At Shyambazar Five Point(A), At Bidhan Sarani during Durga Puja Festival(B). Source: Author.

Picture 20, 21: Shops on the Edge Get Sometimes Completely Blocked(A) or Partially Blocked(B) By Vendors. Source: Author

Picture 22,23,24,25: Vendors Blocking the Edge of the Road(A), Inadequate Hygiene for Vendors, Toilet inside the market and on The Road(B). Source: Author.

Picture 26,27: Roof showing the total space of Hatibagan (A) and Shyambazar (B) Market. Source: Author

Picture 28-31: Transforming Movie Halls into commercial and mixed-use development. Source: Author

Picture 32: Architectural features of Zone I. Source: Author

List of Tables:

Table 1: Methodology Flow Chart. Source: Author.

Table 2: Major strategies of Urban Renewal in India. Source: Onkar, Dhote & Sharma. (2008)

Table 3: Key dimensions of complexity in Urban Design. Source: Geoff Boeing

Table 4: Urban Design Parameters selection for study. Source: Author

Table 5: Inferences from Case Study of Pandy Bazar, T-Nagar, Chennai. Source: Author

Table 6: Inferences from Case Study of Manek Chowk, Ahmedabad. Source: Author

Table 7: Critical analysis of the area on the visual elements and qualities. Source: Author

1. Abstract:

Marketplace is much more than commercial gathering place. They offer a vivid and inclusive public space with their flexible spatial and temporal space organization. Historically, marketplace have been an engine of sustainable urban growth. Today, marketplaces are also the sites where citizen can sense the life and heartbeat of a city. This quality of urban space, created by market and temporary retail vending set-up, attract both the tourists as well as the residents. However, they have been instrumental for creating the problems of health and safety, traffic congestion, chaos often in prime locations of a city. This project will establish the context of Urban Renewal of a commercial hub including the traditional marketplace, street vendors, indiscriminately occupying the road and pedestrian area, around traditional marketplace. The site has been identified at Shyambazar-Hatibagan area where the Shyambazar Market and Hatibagan Market are two anchors around which the commercial hub has spread out around the area. The project aims to find out the issues of the place by visual survey and empirical study and then provide urban design intervention to increase the functionality of the spaces to create a place which is socially, economically and environmentally more vibrant.

Keywords: Urban Renewal, Commercial Hub, Kolkata

2. Introduction:

2.1. Keywords:

Urban Renewal: According to Oxford Thesaurus Revitalization refers to make something stronger, more active and healthier. In Urban Design practice this term is not much older than fifty years. During 1950s the term 'Urban Renewal' first conceptualized by rebuilding a part of the city after the devastation of WWII. Later on, as the Government/s started changing the policies, the concept started to evolve as well. "So, in 1960s, it was urban revitalization, in 1970s urban renewal, 1980s urban redevelopment and finally in 1990 it was urban regeneration." (Robert & Sykes, 2000) ^[1]. Nowadays urban renewal is considered as a tool to upgrade city core areas as they can retain their value in the fast changing twenty first century city landscape. In a report by ADB (Asian Development Bank) Florian Steinberg (2008) ^[2] opines- "While cities in Asia and the Pacific have been concentrating on their conventional infrastructure requirements, many cities are still discovering how to deal with the challenge of urban renewal in a broader sense." Often, we get to see the concentration of commercial activities into a certain stretch of these old city areas, besides their high-density residential blocks.

Commercial Hub: As per the Oxford Thesaurus the Commercial Hub is the most important part of a place where commercial activity takes place. Commercial activity is conceptualized by buying or selling goods where at both the sides there will be common people. Commercial Hubs are sometimes defined as downtown business district which could be delineated by mostly mixed-use kind of land use of the area where, plots adjacent to the road are commercial and behind that mostly of residential use. Very often revitalizing urban commercial areas of an existing city comes up with these advantages:

- Accessibility of that hub from the catchment areas improves.
- It reduces urban sprawl by concentrating business in that particular hub.
- This part of the commercial hub becomes part of the walkable community.

Being a place of multiple activities, it creates a visual as well as functional chaos which could be addressed by revitalizing an urban commercial hub. According to, Paul D Spreinger ^[3], there are some standard steps to revitalize a commercial hub:

- Orientation of Building to the street
- Creation of inviting corners for pedestrians

- Addition of community space and special features
- Placing of parking behind or beside a building
- Provision of pedestrian connection
- Addressing human scale with building and landscape details
- Incorporation of mixed use

If one area of the city, where the commercial hub lies, gets developed without proper master planning, i.e., just by piecemeal growth then the trade companies take the initiative to build the major distribution network. Eventually this type of developments has a major impact in terms of the biased and unplanned infrastructure development with respect to the entire city.

Kolkata: Kolkata has a rich history of more than 300 years, in between it has served as Capital of British India from 1772 to 1911. When Job Charnock established Kolkata, long ago before that it was a natural region for trade and commerce even with the Portuguese from Goa. “The Portuguese began to frequent the river by 1530. They did not risk their ships in the shallow water and lay at anchor at Garden Reach. A market sprang at Betor near Shibpur.” – Rama Deb Roy^[6] says.

The trade and commerce of the city of Kolkata was centered around some regions. Sutanuti-Shyambazar region, Bara bazar region are two most old commercial hubs of Kolkata. After the planning intervention at the Esplanade area New Market became another commercial hub since then. In the southern part of Kolkata Gariahat emerged as a natural market and commercial Hub. Apart from that there are a number of small markets to promote the trade and commerce throughout the city. After the opening of Forum- Courtyard, the first shopping mall of Kolkata in 2003 the situation changed hardly a bit. People of Kolkata are more and more comfortable shopping from those former markets as they bring in a lot of options in lower budget. Now the difficulties with these markets are the encroachment of pedestrian area of the road, creation of hustle at the road itself which results in traffic jam, creation of problem by concentrating the vendors at the street junctions, creation of visual clutter and inconvenience to cater the basic services. As the existing commercial hub and the catchment area of Shyambazar-Hatibagan area has developed with piecemeal growth in time the simple problems of distribution channel, overcrowding and juxtaposing of commercial units in the pedestrian area, are needed to be solved in order to revitalize that urban area.

This paper will establish the context of revitalization of a commercial hub including the traditional market spaces as well as street vending along the both side of the road between two traditional market places. The case application has been identified as Shyambazar-Hatibagan area where the Shyambazar Market and Hatibagan Market demarcates the two ends of a commercial hub connecting these two inclusive. The market buildings are century old and prone to manmade accident at any point of time. In fact, 2012 witnessed a devastating fire at Hatibagan market leading to a lot loss of business.

2.2. Introduction:



Illustration 1: Location of the Study Area (Source-Author)

Kolkata is located in the eastern part of India at $22^{\circ}82'N$ $88^{\circ}20'E$, as a capital city of the state of West Bengal. Altitude 9m, from sea level it is 6.4m.

Kolkata, spreading linearly along the banks of the river Hooghly, has a rich history of more than 300 years. When Job Charnock established Kolkata, long ago before that it was a natural region for trade and commerce even with the Portuguese from Goa. “The Portuguese began to frequent the river by 1530. They did not risk their ships in the shallow water and lay the anchor at Garden Reach. A market sprang at Betor near Shibpur.” – Rama Deb Roy says.

Kolkata, from its days of inception, was never a planned city. It grew haphazardly around the port, the old fort and the ancient Barabazar market by the river (Dutta, 2003)

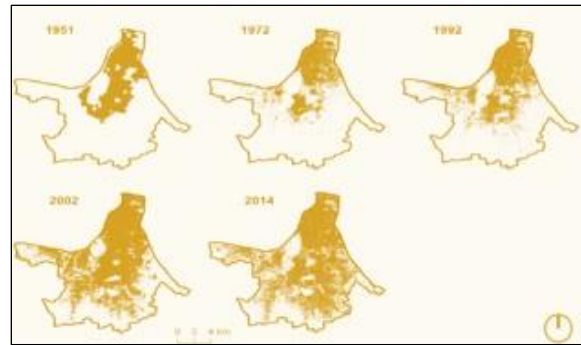
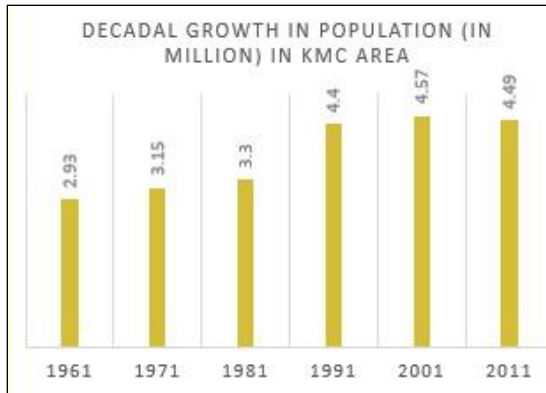


Illustration 2,3: decadal growth of population and spatial growth in KMA area. Source: census of India 2011.

2.3. Site Selection Criteria:

Following are the reason why Shyambazar area has been selected as study area are:

- i. Shyambazar-Hatibagan Area bazar is there before the inception of the city.
- ii. This market area is a combination of built-up and hawker market.
- iii. Best intra and intercity connectivity with diverse modes of public transit systems.

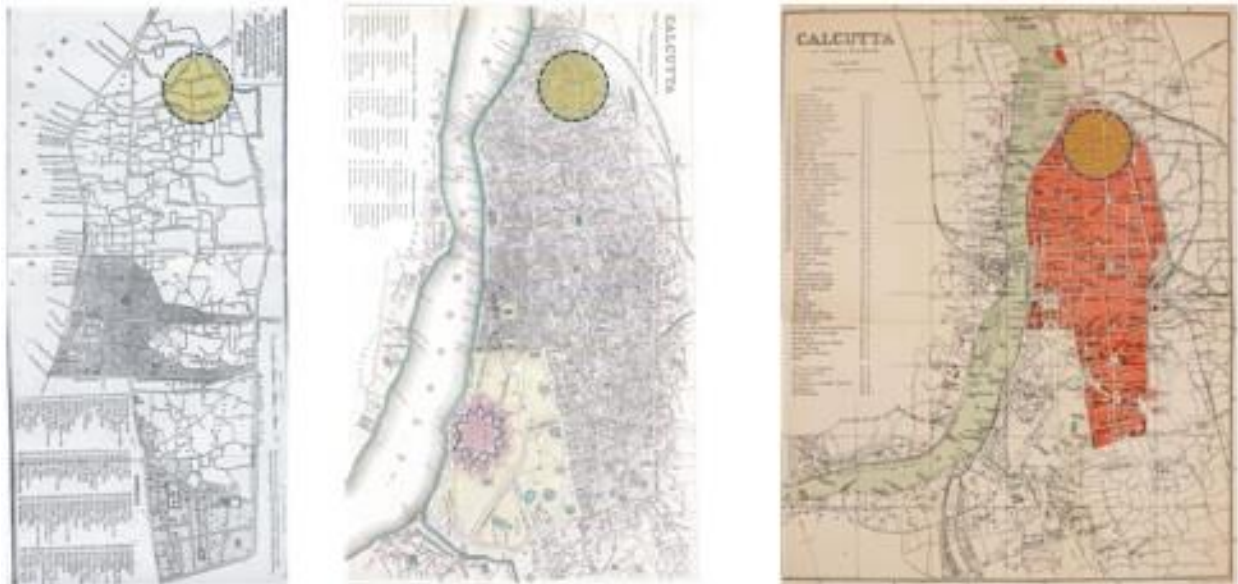


Illustration 4: Shyambazar as an important area of the city from the inception of the city of Kolkata. Source: Columbia.edu

Shyambazar has been the integral part of the city since the inception of city of Kolkata. It has been a consistent point for commercial activities across the centuries. Nowadays if the vendors markets are plotted inside the city core area the Shyambazar will be most prominent point in North Kolkata.

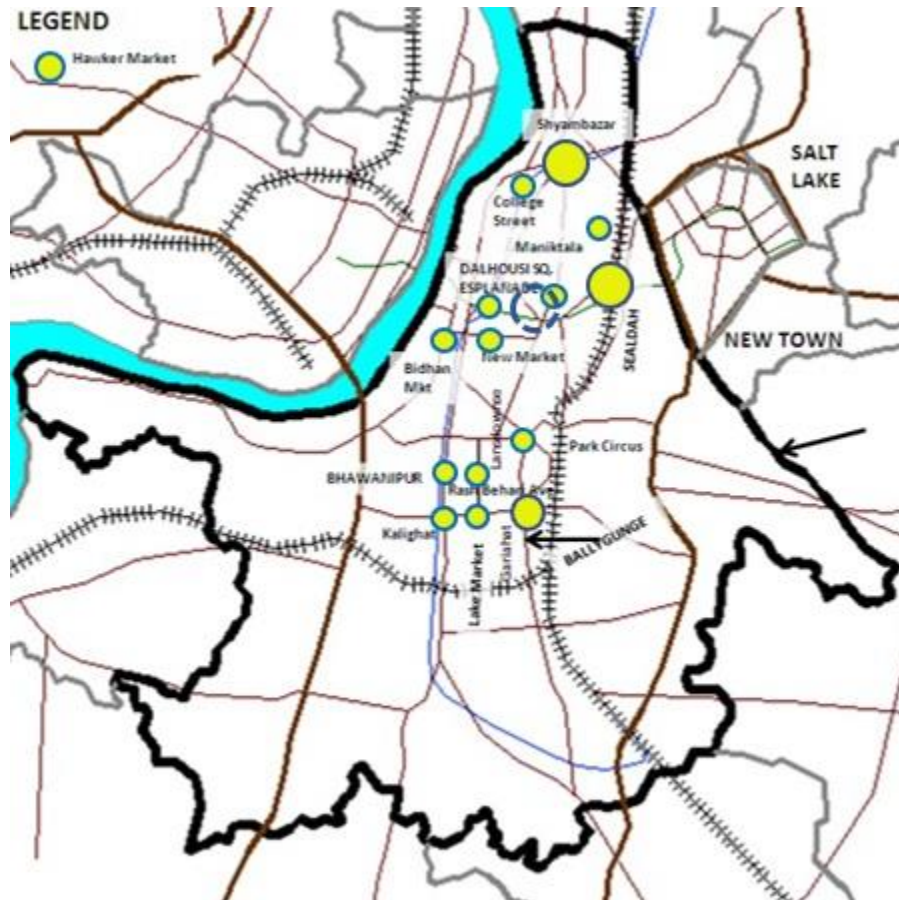


Illustration 5: Market clusters of KMA area. Source: Chatterjee & Roy (2016)

2.4. Site Overview:

- i. The social, Economic, Cultural as well as Architectural trend of North Kolkata is changing very fast. But the unplanned and haphazard growth results into chaos, traffic jam and inconvenience for the pedestrians and local residents.
- ii. Tradition wraps public spaces with people and their defined activities, which creates the identity of a space. This identity of Shyambazar-Hatibagan area is losing.

- iii. Shyambazar as a magnet is fading out with time, as small magnets are emerging all around surrounding ULBs to Kolkata, which Shyambazar used to attract customers from.



Picture 1-4: Fast changing socio-cultural landscape in and around the site. Source: Author.

Star theatre has been retained some of its character while restoration was taken place. It has been transformed into single screen movie hall, art gallery and restaurant inside. Bidhushree, which was on Grey street has been replaced by multi-storied condominium with Pantaloons store in frontal part of the site. Mitra has been broken down after long time closure of the facility. Talkie Show House has been transformed into toy store and restaurant although the theatre hall remains intact inside, nowadays used as go down space.

2.5. Aims & Objectives:

Aim:

Improving the physical condition of the built environment to retain the originality of the place beside improving the functionality of that place properly planned and provided with adequate infrastructures and community facilities.

Objectives:

- i) To study the role and impact of commercial hub on the built environment and vice versa.
- ii) To transform the area socially, economically and environmentally more resilient.
- iii) To restructure the space effective for more diverse activity.
- iv) To make the place more legible.

2.6. Scope & Limitations:

Scope:

- i) Detailed study of the commercial hub including the formal and informal market setup.
- ii) Study and analysis of gradual change in land use pattern towards mixed use commercial type.
- iii) Study and analysis of traffic movement through traffic channel besides parking of vehicles.
- iv) Creation of livable public space for optional activities like seat-outs, child-friendly space.

Limitations:

- i) The project deals with only the commercial area.
- ii) The depth of the market street character is only up to commercial/mixed use land use plot from the main street and intervention is limited to this.

2.7. Methodology:

Methodology is a system or method used in a particular area of study. The present project research has been formulated on the survey method, which includes visual survey, interview and collection of data through questionnaire, documentation and testing of urban design parameters. All findings are analyzed, and applied in terms of Urban Design intervention at Area, Zonal and Site level.

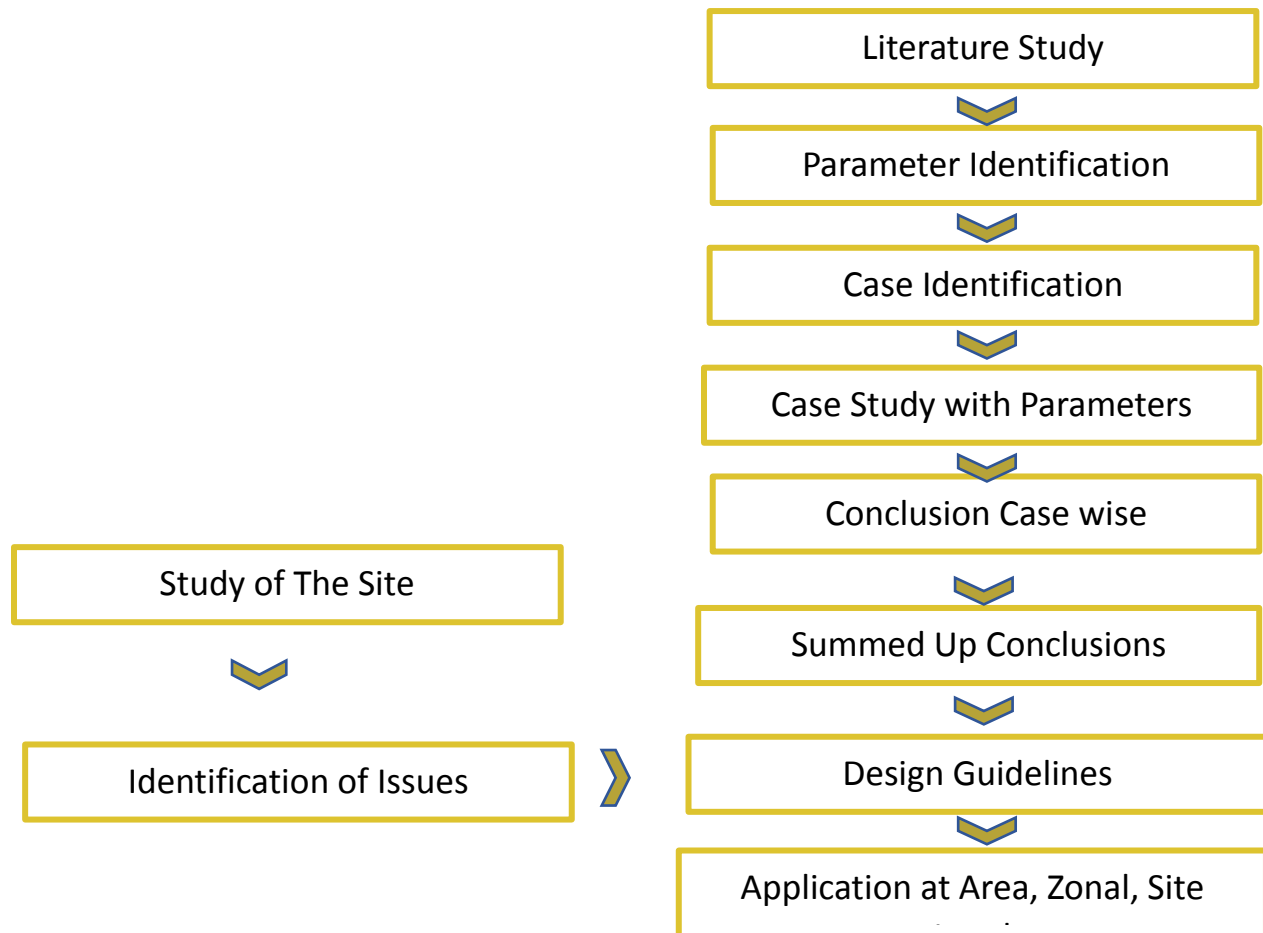


Table 1: Methodology Flow Chart. Source: Author.

2.8. Research Question:

Is the public space only for consumption or do they act as a space to bring the community together?

Where to develop and where not to develop?

How to control the developments to sustain the image of the place?

3. Theoretical Framework:

3.1. Urban Renewal:

Urban Renewal involves change in physical fabric of a city. This improves both functionality and imageability of a city. A primary purpose of urban renewal is to restore economic viability to a given area by attracting external private and public investment and by encouraging business start-ups and survival.

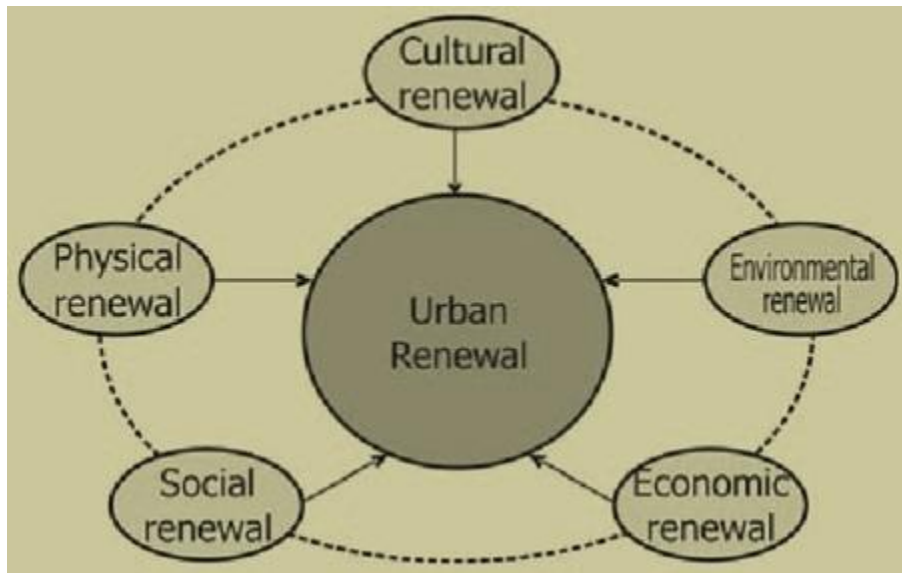


Illustration 6: Dimensions of Urban Renewal. Source: Onkar, Dhote and Sharma (2008)

The Urban Renewal policy by Indian Government has been adapted at different times since the independence in 1947. The strategy kept on changing across the different phase of time has been put together here:

1950's	1960's	1970's	1980's	1990's	1990's Till Date
Reconstruction and extension of older areas of towns and cities often based on a Master Plan, suburban growth.	Continuation with some early attempts of rehabilitation.	Focus on institutional and neighborhood schemes in continuation to development of peripheries.	Many major schemes of development and redevelopment projects.	Move towards a more comprehensive form of policy and practice, more emphasis on integrated treatments.	Focus on urban quality of life.

Table 2: Major strategies of Urban Renewal in India. Source: Onkar, Dhote & Sharma. (2008)

3.2. Commercial Hub:

As per the Oxford Thesaurus the Commercial Hub is the most important part of a place where commercial activity takes place. Commercial activity is conceptualized by buying or selling goods where at both the sides there will be common people.

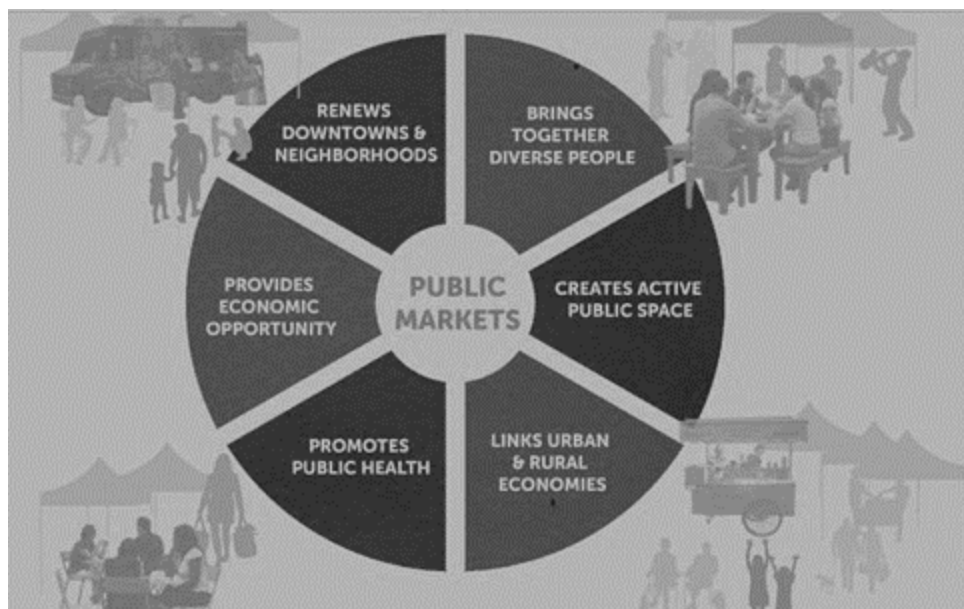


Illustration 7: transformative benefits of public market. Source: Project for Public Space, pps.org (2010)

According to, Paul D Spreiregen, there are some standard steps to improve the quality of a commercial hub:

- Orientation of Building to the street
- Creation of inviting corners for pedestrians
- Addition of community space and special features
- Placing of parking behind or beside a building
- Provision of pedestrian connection
- Addressing human scale with building and landscape details Incorporation of mixed use.

3.3. Formal & Informal Marketplace:

Different form and space of marketplace has been studied here:

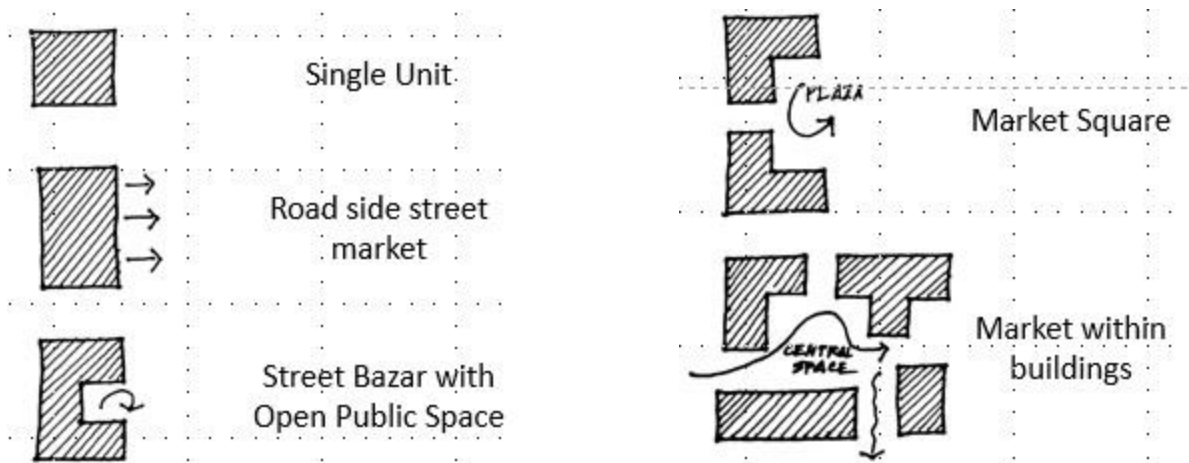


Illustration 8: Different Form and Spaces of Markets.

Source: Author

The general composition of the market or Commercial Street is the final result of a simplified aggregation method for adjacent module cells in a parallel assembly that generates a middle void in which the visitor reveals its specific trajectory on the market, and through parallel assembly and network aggregation produces bar and open spaces on the outside and central. (M.M. Kamal, Al Menia University, 1998)

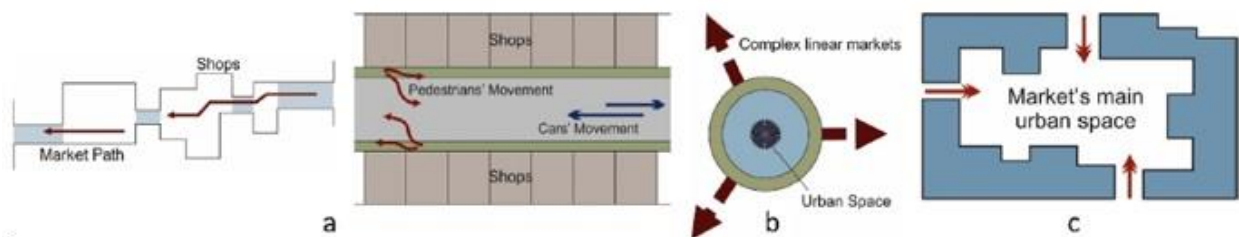


Illustration 9: Patterns of markets: (a) linear market, (b) ramified market, (c) aggregated market | Source- Ministry of Municipal and Rural affairs, Riyadh, Saudi Arabia (2006)

3.4. Good City Form:

Now the discussion will be on some theories of urban design, we consider them important regarding revitalization and very much contextual regarding this study. Firstly, we will discuss the theory of Kevin Lynch i.e., Good City Form^[7].

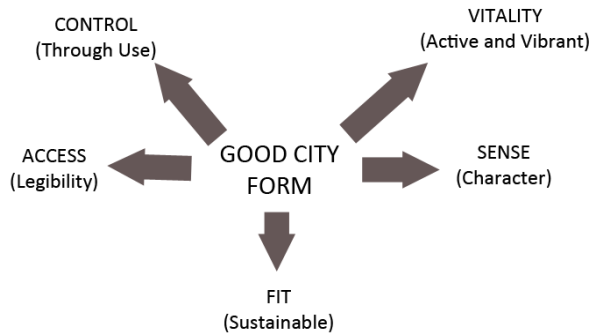


Illustration 10: Good City Form by Kevin Lynch

In his book “A Theory of Good City Form”, Kevin Lynch figured out the answer to the question ‘What makes a good city core?’ and the process leads to a comprehensive discussion of Urban Design Theory. Lynch provided 5 criteria (Illus. 10) plus, two meta-criteria named Vitality, Control, Access, Fit, Sense plus Efficiency and

Justice. These two meta criteria actually direct towards the robustness of the system as well as inclusive design approach.

Vitality: The degree to which the form of the settlement supports the vital functions, the biological requirements for human being.

Sense: The degree to which the settlement can be clearly perceived and mentally differentiated.

Fit: The degree to which the form and capacity of spaces, channels and equipment in a settlement match the pattern and quality of action of the people in that settlement.

Access: The ability to reach other persons, activities, resources, services, information or place.

Control: The degree to which the use and access and access of spaces and activities are controlled by the user of the space itself.

The two more dimensions are Efficacy and Justice.

Efficacy: The cost in terms of other valued things of creating and maintaining the settlement.

Justice: The way in which environmental benefits and costs are distributed among the people of the city.

3.5. Life Between Buildings:

In his book 'How to Study Public Life' (2013) Jan Gehl [8] have shown that how increased outdoor quality can increase optional and social outdoor activities. This has been shown with a nice illustration in terms of relationship between these two (Illus. 11). Optional activity can be, according to Gehl, reading newspaper sitting on a bench by the road. Social Activity

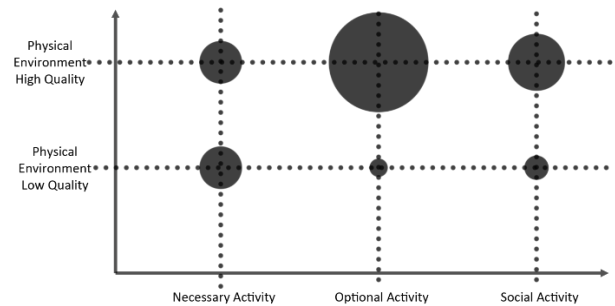


Illustration 11: Relationship Between Outdoor Environment Quality and Outdoor Activity, Source: Gehl

Refers to meeting a friend suddenly and chit-chatting for sometimes, may be inside the market or on the pavement of the road, or near a street crossing.

3.6. Complexity of Urban Form and Design:

The term complexity refers to the higher-order phenomena arising from a system's many connected, interacting subcomponents and describes both dynamics (i.e., processes) and structure (i.e., patterns and configurations) (Batty 2005).

Jane Jacobs's theories of complexity and bottom-up urbanism have been embraced by complex systems scholars studying cities – particularly from the physical sciences (Batty 2005; Bettencourt 2014; Batty and Marshall 2016; cf. O'Sullivan and Manson 2015).

Dimension	Description	Example
Temporal	how processes and behavior change over time, unpredictability of human behavior and city futures	traffic jams crowd behavior/dynamics economic booms and busts population growth and decline
Visual	human perception of built environment's visual coherence, scale, interest, order, legibility, and detail	sense of enclosure unity in variety building façades and signage human activity/vitality sunlight patterns tree canopy
Spatial	land patterns and grain, particularly in terms of diversity and scale	mixed land uses racial integration block sizes and shapes economic agglomeration/clustering spatial distributions of urban form elements
Fractal	similarity of structure and patterns across multiple scales	city area-perimeter allometric surface textures buildings of all sizes streets of all sizes
Network	city's and citizens' internal organization, connectedness, circulation	communication and exchange human travel patterns destination accessibility street connectivity and permeability intersection types and density

Table 3: Key dimensions of complexity in Urban Design. Source: Geoff Boeing

When we talk about the Urban Renewal of Commercial Hub, we need to study the existing setup in detail. Because in Indian context commercial hubs grow in a very organic pattern. So, before we propose we need to ensure that we concentrate on these aspects:

- Design/Physical Improvement
- Promotion
- Economic Development
- Safety and Cleanliness

To serve these all purposes we must follow a step-by-step procedure to study the whole area designated as commercial hub. Eventually when the hub extends on the

pavements of the adjacent road and a mixed-use type of land use zone then these steps become very essential to lead towards an incisive design solution.



Illustration 12: A step-by-Step Study Leading to Urban Revitalization. Source: Author

3.7. Urban Design Parameters:

The process of Urban Design study is based upon a group of parameters. For the current project requirement directs to eventually choose 7 to 9 of most suitable ones from the parameters listed below.

<p>Paul D Spreiregen’s Parameters:</p> <ul style="list-style-type: none"> • Topography • Microclimate • Shape • Pattern, Texture and Grains • Urban spaces and Open Space • Vistas • Magnets, Generators and Linkage • Special and Overall Activity Structure • Hubs of intense visual experience • Strong and weak axes of orientation • Sign axes <ul style="list-style-type: none"> • Point of conflict • Historic and special district • Community Structure • Areas for preservation • Places needing clarifying design element 	<p>Kevin Lynch’s Imageability parameters:</p> <ul style="list-style-type: none"> • District • Edge • Path • Node • Landmark <hr/> <p>Other Parameters:</p> <ul style="list-style-type: none"> • Land Use, Building Use • Built Form • Architectural Feature • Multi-Modal Connectivity
--	--

Table 4: Urban Design Parameters selection for study. Source: Author

4. Case Study:

4.1. Case I: Pondy Bazar, Chennai:

Greater Chennai Corporation's most anticipated project of transformation of Chennai's busiest and car-centric shopping street, 700 m long Sir Theyagaraya Road. A Project under the Chennai Smart City Plan initiated by ITDP and funded by World Bank.



Illustration 13: Key map for Pondy Bazar- T-Nagar. Source: Author

Site problems:

- i. Discontinuous pedestrian pathway surface.
- ii. Obstacles on the pedestrian path.
- iii. Unsafe pedestrian crossing.
- iv. Congestion and haphazard parking.
- v. Insufficient lighting.

Pondy Bazar has 2,668,113 square feet of retail space. A parking lot with 800 capacities used to compel people to go for on street parking. A MLCP has been proposed for that. Street vendors have been shifted to a building called "Platform shop owners business complex".

Site distributed into 3 zones based on major nodes. Linear development has been seen in this case. Plan and restriction of traffic movement has been proved as an effective leverage to design control.



Illustration 14: Design Approach Zoning, Pondy Bazar, T-Nagar. Source: OASIS Design Inc.

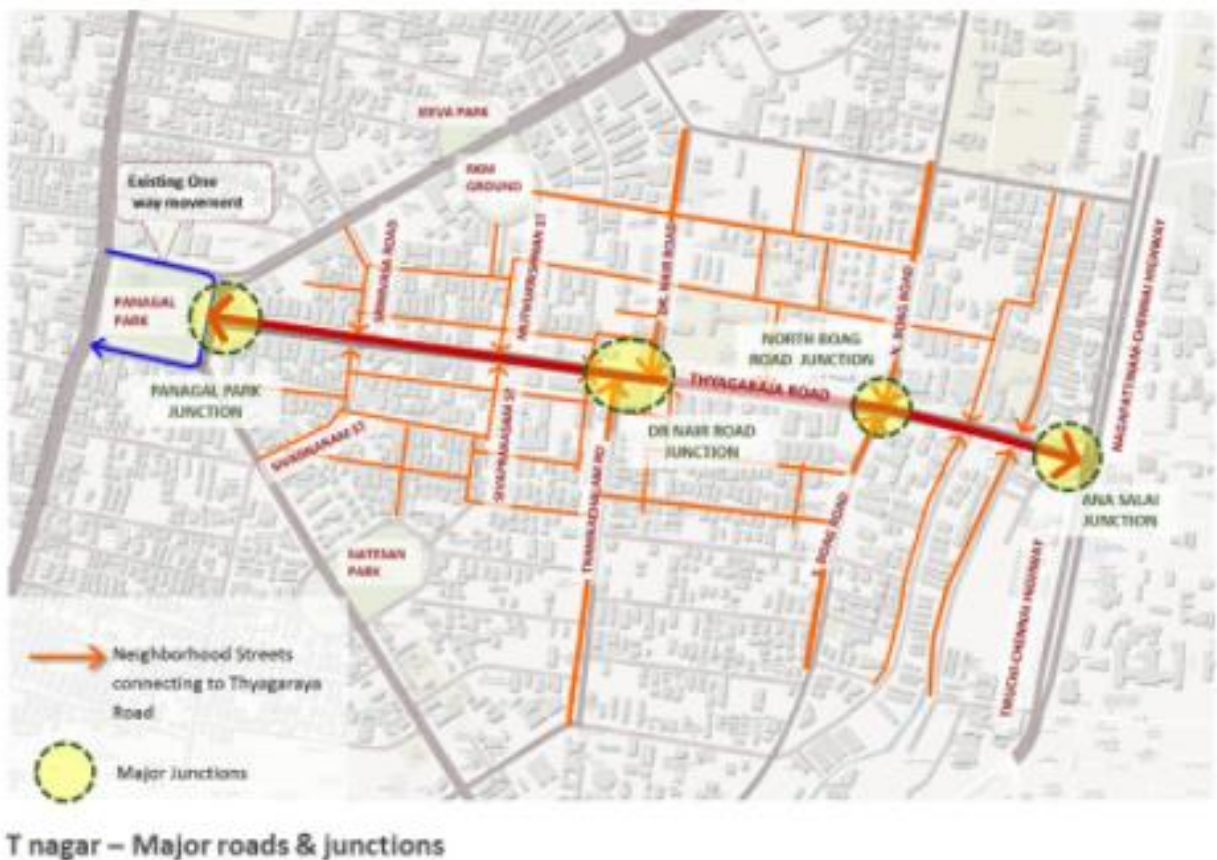


Illustration 15: Connectivity Plan and Nodal Analysis, Pondy Bazar, T-Nagar. Source: OASIS Design Inc.

- Design of the street/path has been the focus.
- Movement along major nodes and junctions has been observed and analyzed.

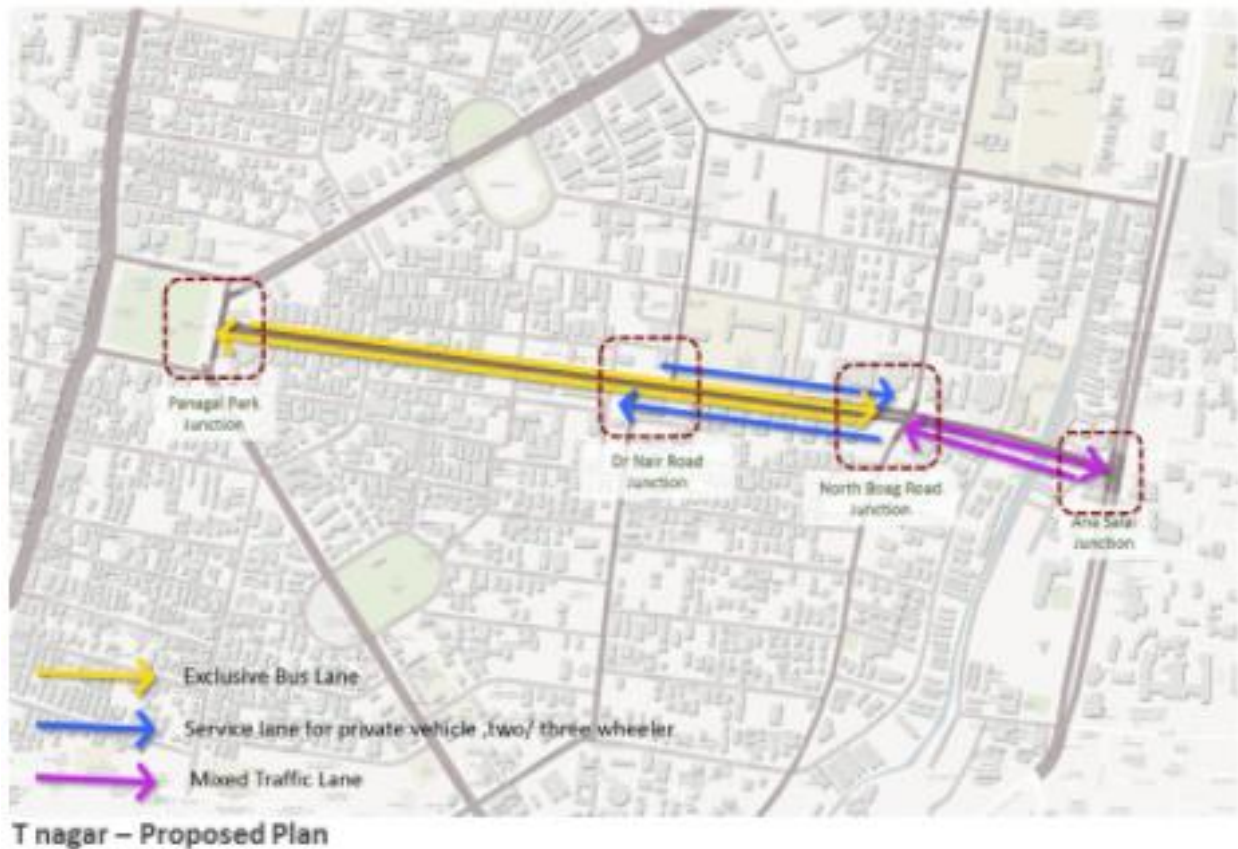


Illustration 16: Vehicular Movement Restriction Proposal, Pondy Bazar, T-Nagar. Source: OASIS Design Inc.

- This type of restriction sometimes has a direct impact on adjacent roads. That is also need to be noted.
- Introducing service lane are need to be added if necessary.



Illustration 17: Design Proposals at Ponds Bazar, T-Nagar. Source: OASIS Design Inc.

Design Proposals:

- i. Parking near the junction was removed.
- ii. Dumped debris at footpath in front of the police station removed.
- iii. Small vendors near the junction got rehabilitation in another place.
- iv. Panagal Park entry has been landscaped by arranging parking beside the entry gate.
- v. Carriageway reduced to the previous effective carriageway size to increase the width of sidewalk.
- vi. Traffic movement controlled in terms of one-way traffic.

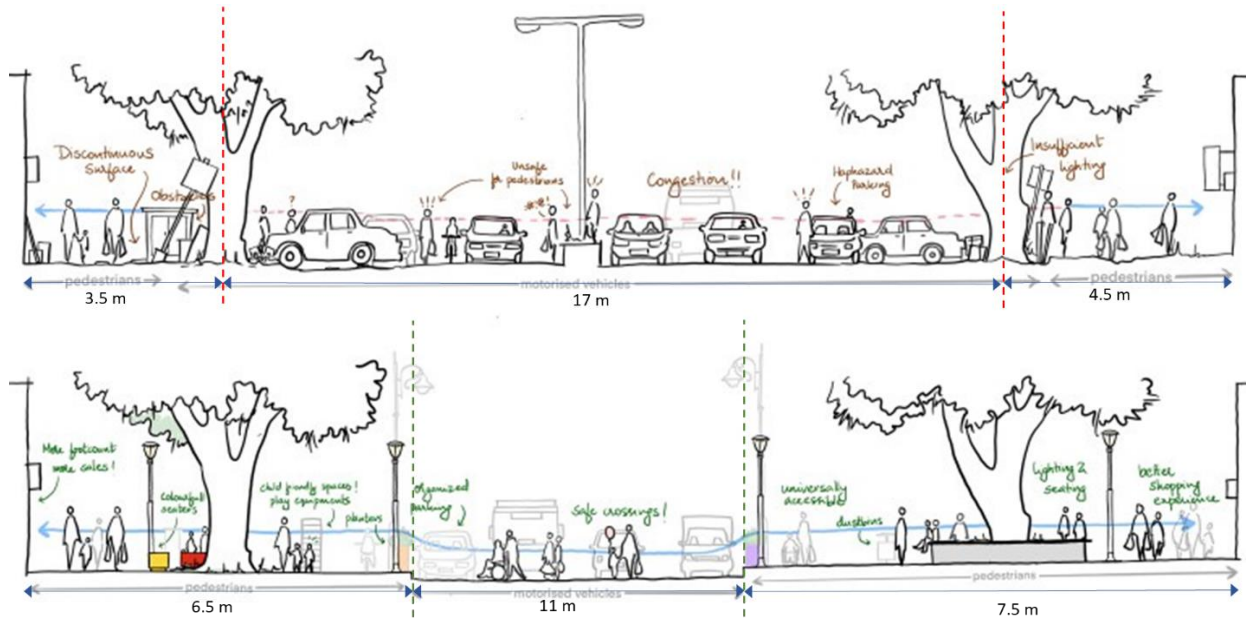


Illustration 18: Theygaraya Road Section, Before and After Intervention. Source: ITDP India



Picture 5-6: Theygaraya Road Before and after Intervention. Source: ITDP India

Pedestrian has been given importance. The walking experience has been improved manifold.

Trees being the points of shades have been provided with seating.

Designed lampposts, and vibrant color seats are the street furniture added to the convenience for pedestrian



Picture 7-8: Theygaraya Road, Before and after intervention. Source: ITDP India

Haphazard parking has been given a distinct street side parking besides the MLCP. People used to walk on carriageways get a safe space to walk and observe the market around.



Picture 9-10: Theygaraya Road, Before and after intervention. Source: ITDP India

Beside the edge of the road being more accessible as well as more legible the transformers which used to be visual clutter has been wrapped with perforated metal sheet. This same treatment is done to all of these elements lying in the site stretch.

Edge Recovered from encroachment	Path Prominently designed for designated user
Node Carefully used to break the stretch into zones	Open Space Wide open pedestrian space enhances optional activity
Shape The linear shape of the site	Magnets and Generators The revival will attract more visitors for Gold and Silk Market
Land Use and Building Use Only the commercial area has been developed with height restriction	Architectural Features Interesting street furniture, seating, lighting, graphic wall, covered transformers.
Special and Overall Activity After the intervention optional activity has been increased significantly	

Table 5: Inferences from Case Study of Pandy Bazar, T-Nagar, Chennai. Source: Author

4.2. Case II: Manek Chowk, Ahmedabad:

Manek Chowk is very old market precinct inside walled city of Ahmedabad. Study shows that 25% of street area covered by parking. Vending takes only 11%. One of the most amazing figures is 70% of the traffic passing through do not contribute to any activity here.

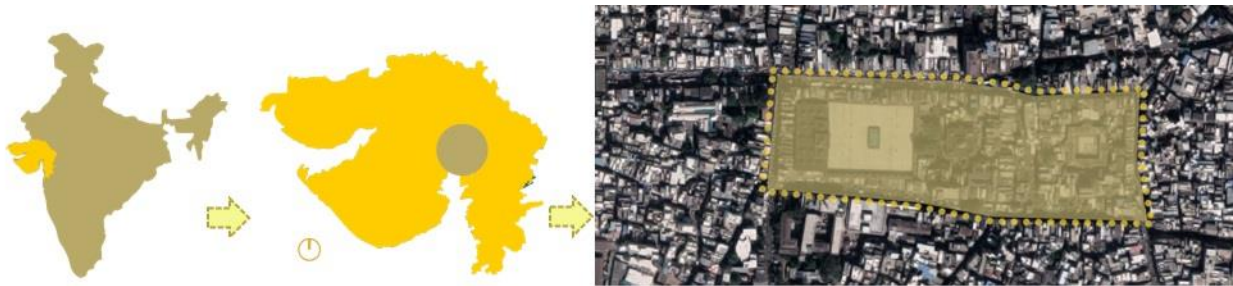


Illustration 19: Key Location Map of Manek Chowk, Ahmedabad. Source: Author



Illustration 20: Location of Bhadra Chowk Adjacent to Manek Chowk. Source: WRI India.

Manek Chowk has a very rich history as a marketplace. It is one of its kind with a temporal feature added to it i.e., the market spaces are used for different purpose at different time of a day. This feature and the heritage structures inside the market precinct makes this place a unique one. To revive the spaces had to be proposed followed by a series of decisions made on the meticulous study of the place.

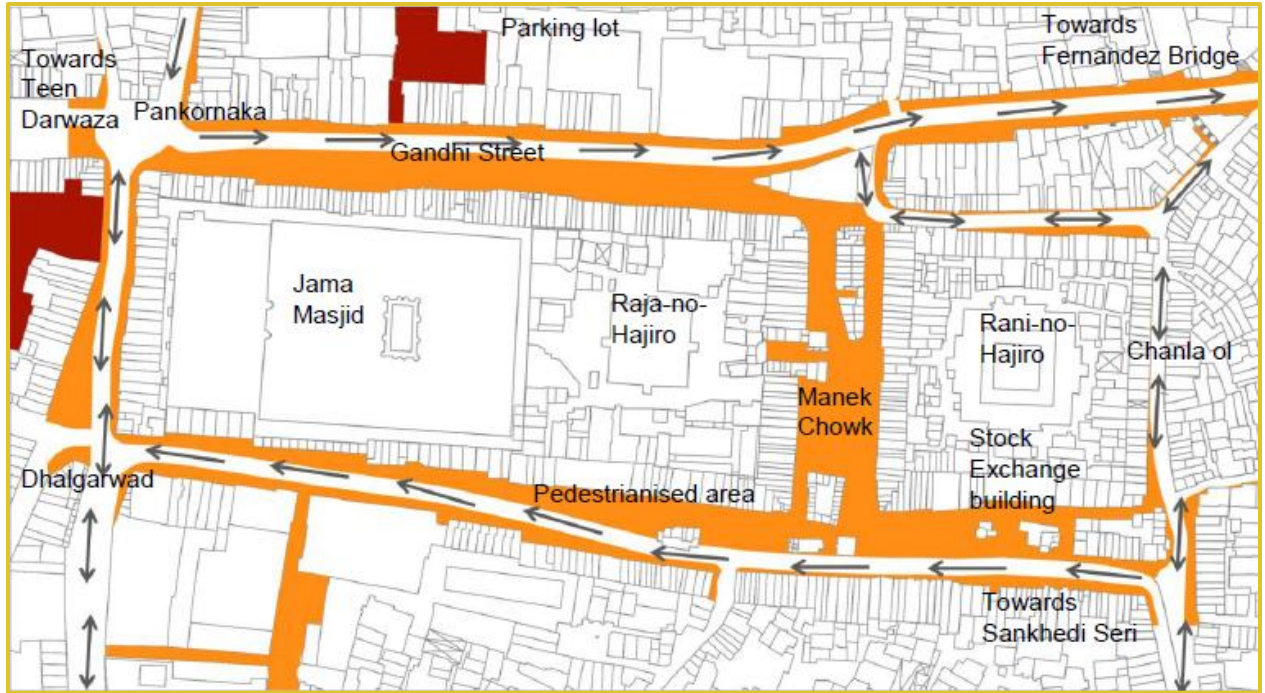


Illustration 21: Pedestrian and Traffic Route Plan, Manek Chowk. Source: WRI India.

Pedestrian and traffic origin-destination survey has been conducted and plotted on the base map.



Illustration 22: Land Use and Building Use of the Manek Chowk market Precinct. Source: WRI India

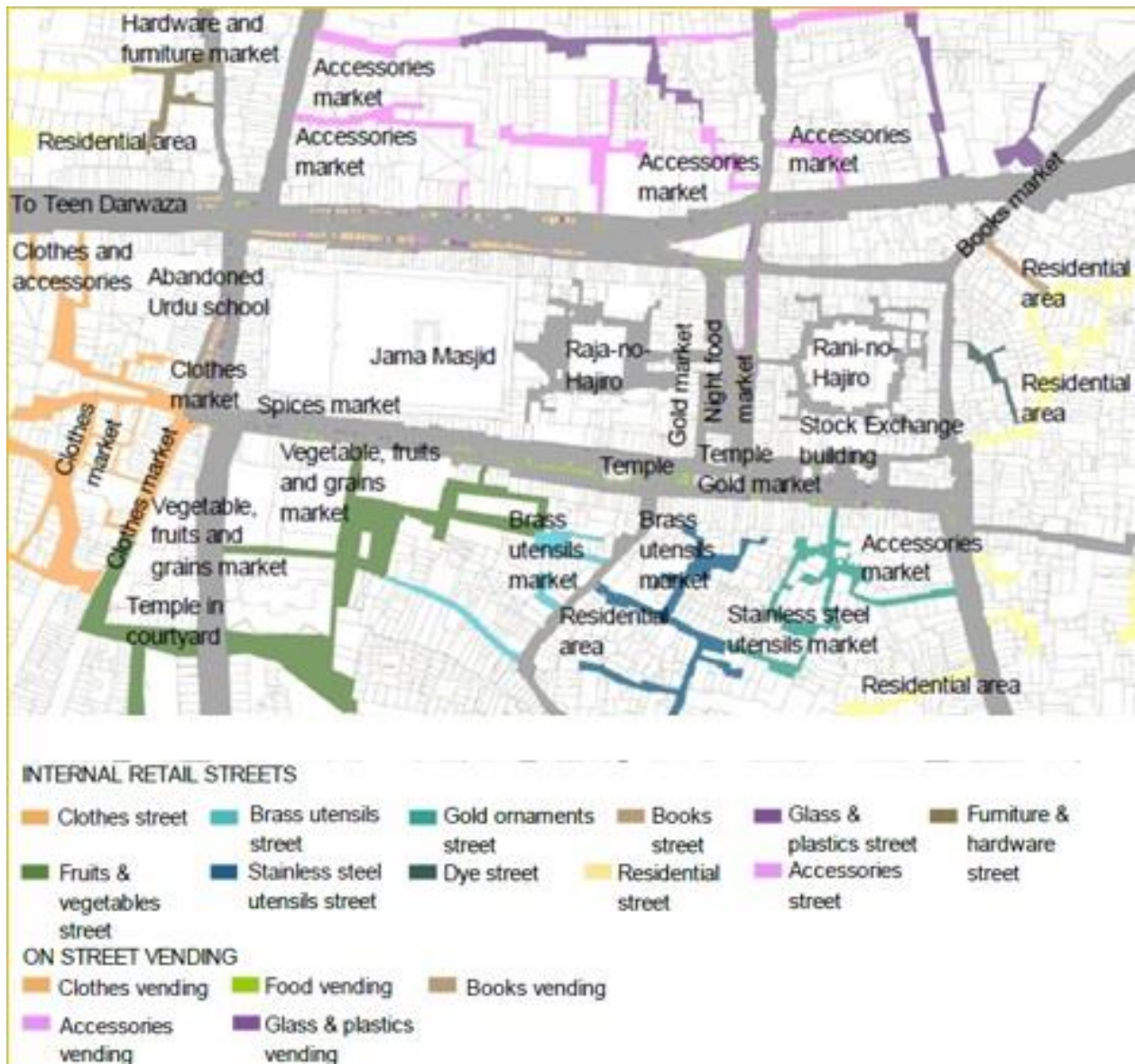


Illustration 23: Specialized streets surrounding Manek Chowk, Source: WRI India

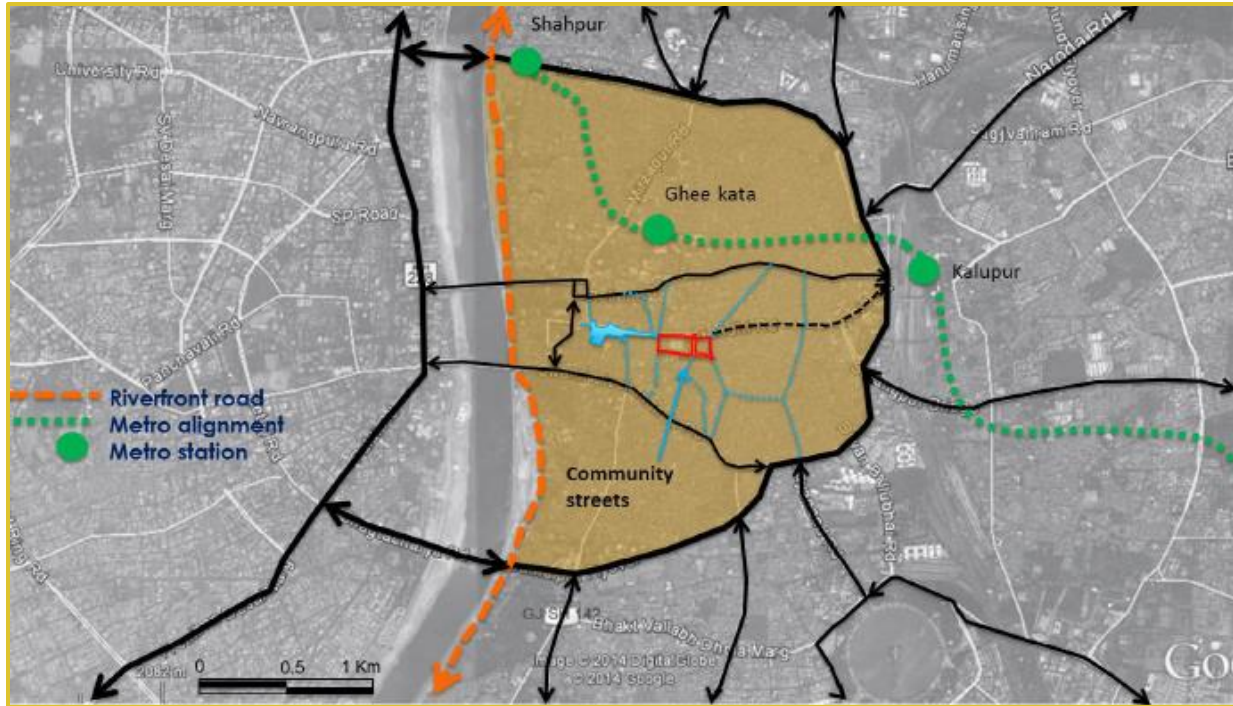


Illustration: 24: Changing Accessibility to Walled City Due to major Infra Projects. Source: WRI India

All the streets of the precinct and the specific business settlement has been mapped and documented.

Major connections to walled city has been identified with new mode of transportation taking into account.

Land use of surrounding area to walled city has been studied to understand of growth of other commercial magnets which might pull the customers of Manek Chawk.

Catchment area for residents of Manek Chowk area and shoppers of Manek Chowk area to and from the city level is documented for the analysis of movement of people to and from the site.

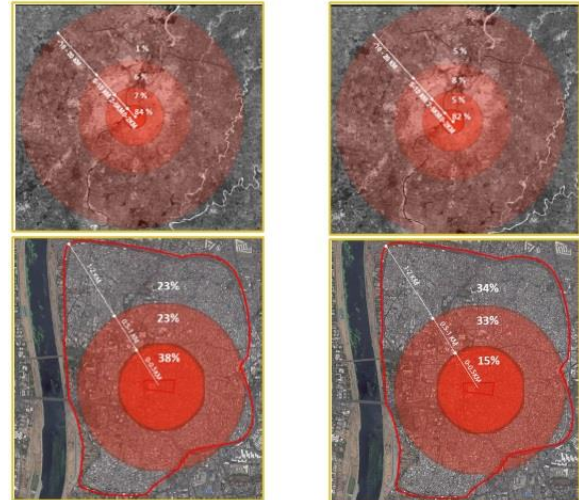
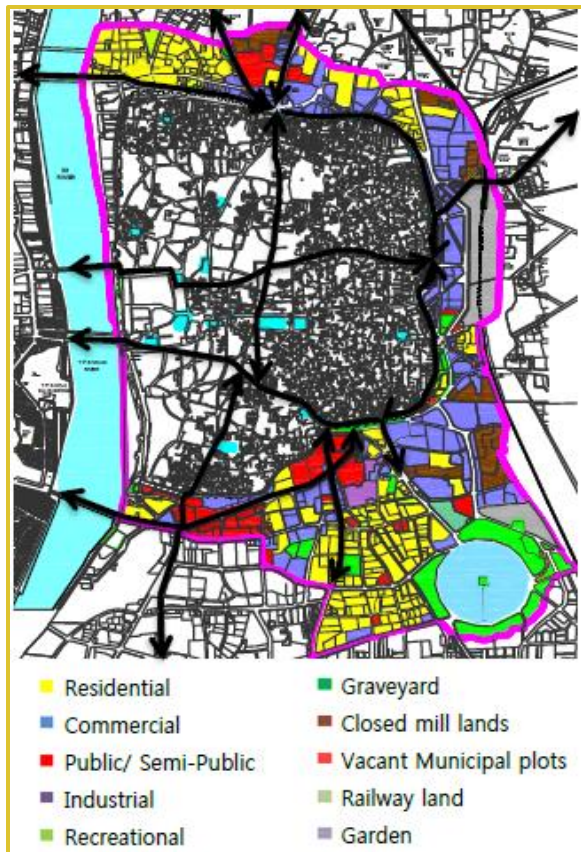


Illustration 25(a,b): Surrounding Land Use of Walled City, to locate potential commercial magnets. Catchment Area for Residents and Shopping Visitors to and From Manek Chowk. Source: WRI India.

The detailed study helped to distinctively identify the potential of the place as well as the major components constituting the whole commercial precinct. Now, vendors are one of the most important components here. At the same time, they create some of the clutters for movement by their encroachment onto the vehicular and pedestrian movement channel.

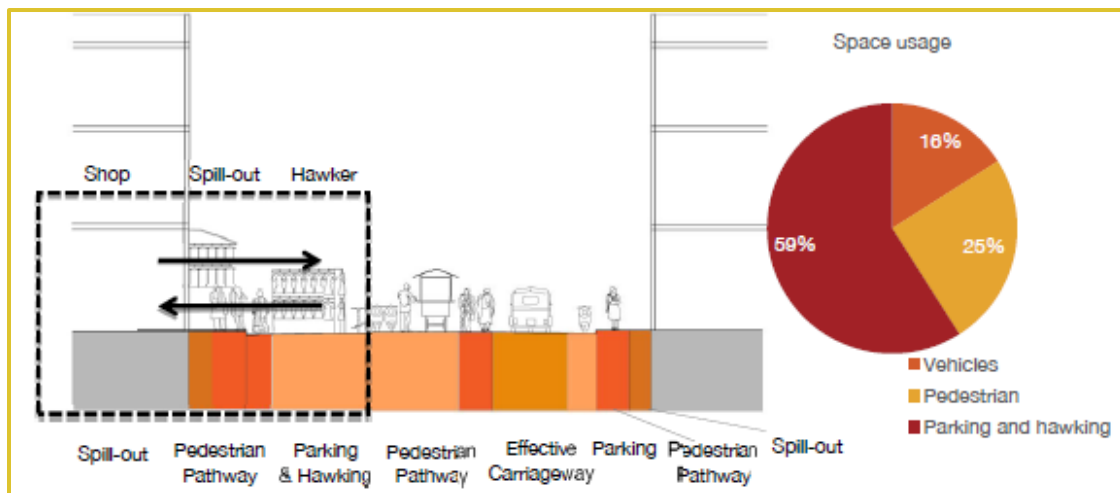


Illustration 26: Street Section Showing sustainable relationship between the Edge and the Vendor. Source: WRI India



Illustration 27: Street Space Utilization by Pedestrian and Vendors. Source: WRI India.

Section has been drawn to draw the relationship between the commercial edge and vendors.

Space utilization based on activity have been documented on the base map. The analysis shows:

- Total Footpath area = 2506 square meter (13%)
- Vending activity on carriageway and the footpath = 2079.2 square meter (11%)

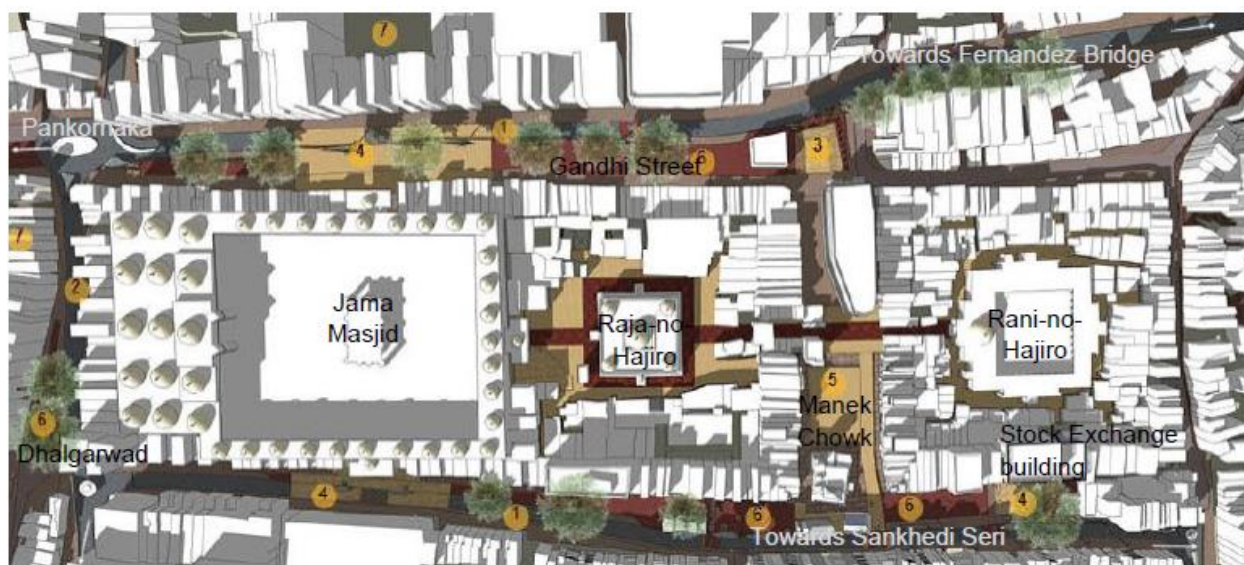


Illustration 28: Final Proposal with Design Intervention. Source WRI India.

Design Intervention:

- i. The heritage structures have been retained with originality.
- ii. Carriageway designed carefully with required width from vehicular movement survey and analysis.
- iii. At the entrance to Manek Chowk has been landmarked with an entrance amphitheater.
- iv. Plazas has been created for optional as well as vending activities.
- v. Derelict structures have been used for accommodation of parking space.

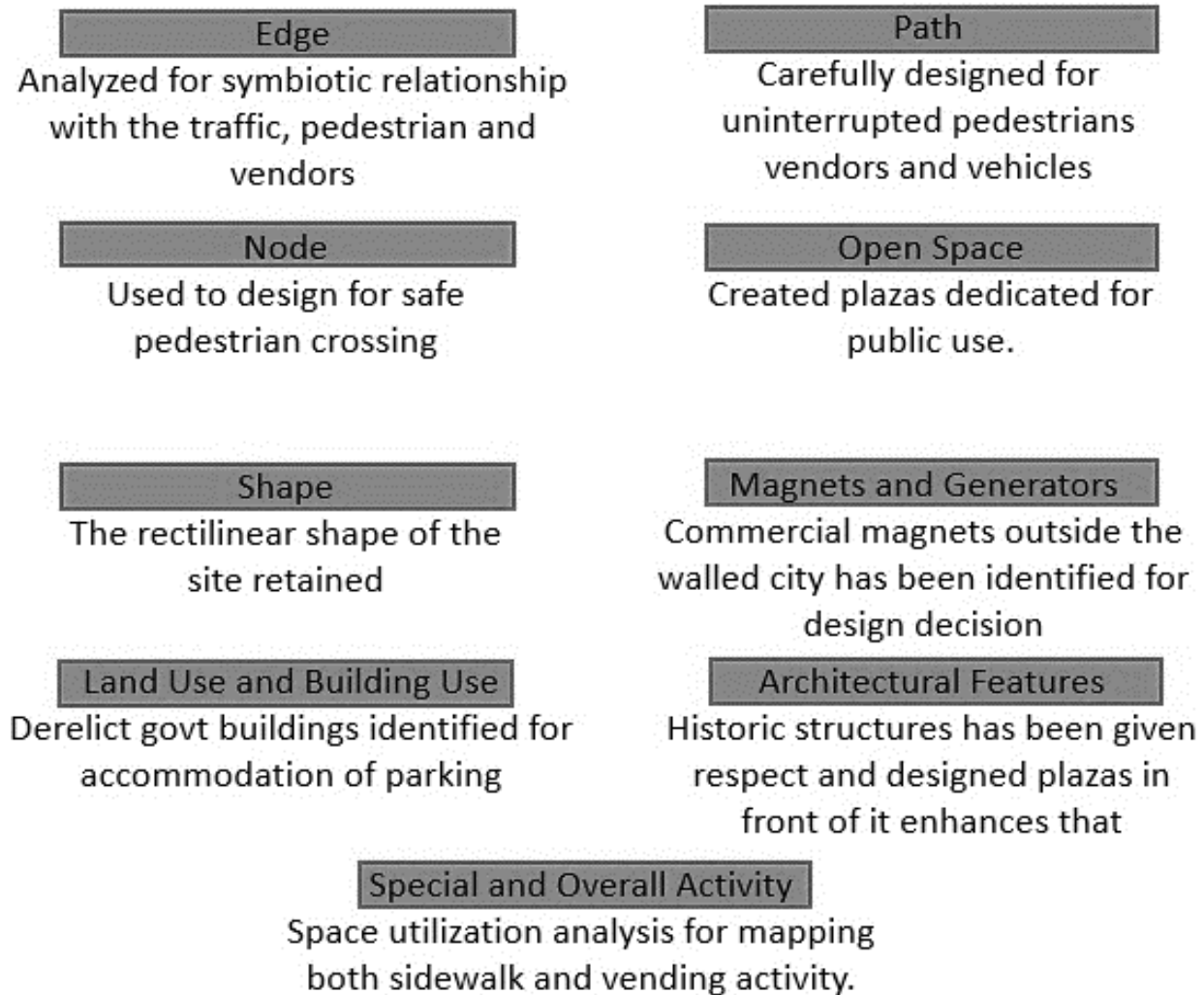


Table 6: Inferences from Case Study of Manek Chowk, Ahmedabad. Source: Author

5. The Study Area:

For the current project Shyambazar-Hatibagan Area has been chosen and the reason behind this selection has already been briefly discussed. Now the Study of the area is to be carried out.



Illustration 29: The Part or the Whole of the KMC Ward no. 10, 11 and 12a constitutes the whole study area. Source: Author



Illustration 30: The Study Area as a whole. Source Author

Ward No. 10 ,11and 12 are within the study area

The whole study area is the part of North Kolkata area of Lok Sabha constituency.

The whole study area falls under Borough 2, KMC area.

Bidhan Sabha constituency- Ward no. 10- Shyampukur, Ward no. 11, 12- Maniktala.

Area of the site 256 Acres. Perimeter 5000m.



Illustration 31: The Site, Figure Ground Map. Source: Author

The very basic properties of the site have been thought to assimilated in a graphical representation. The catchment area has also been drawn in terms of 500 m radius circles around two bazar magnets, Hatibagan and Shyambazar market. The concentration of the hawker market is also most in the stretch of the road connecting these two markets, i.e., Bidhan Sarani.

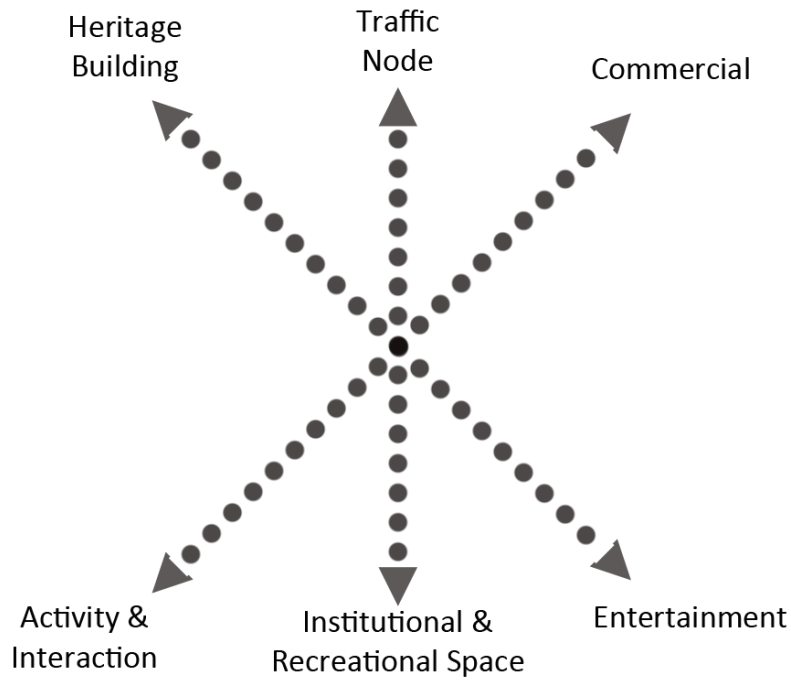


Illustration 32: Basic Properties of The Site. Source: Author



Illustration 33: Basic Catch-Basin of The Market. Source: Author.

According to Christopher Alexander,

Web of Shopping is the surrounding area around commercial set-up from which it pulls its most frequent and daily customers. Here the diameter has been considered to be 500 m around Shyambazar and Hatibagan market area.

The moment Urban Design intervention in terms of Revitalization gets coined up one of the inevitable points also coins up as the issues with the place. We know that the market area, may be indoor or outdoor, covered or uncovered, mostly unorganized and the traditional one is a public interactive space also. If this aspect of public interactive space is neglected then the obvious outcome of the degradation of quality of the space is inevitable. According to Lefebvre the urban space is a social construct, rather than a neutral construct. The social relations, through which these spaces are being created, that he characterizes as a triad of spaces: spatial practice, space of representation and representation of space. So, when we approach for the urban design intervention for a commercial hub, which is a public space as well we need to concentrate towards the inclusive design approach.

In Kolkata there are some specific commercial hubs which are operational and here is the mapping of the same according to Chatterjee and Roy (2016)^[9]

Hatibagan-Shyambazar area is one of the big hawker markets in North Kolkata. It was found that, the hawkers have taken over almost the whole pavement towards more south up to Rupobani Cinema Hall, in east it stretches all along the Aurobindo Sarani up to APC Road as well. The hawkers have taken over the both sides of the road along RG Kar Road from Shyambazar Market to Canal West Road. So, the market is actually spread occupying the roads of Ward no 10, 11 and 12. The whole urban district of market is characterized by very old market centers, all the pavements of adjacent road occupied by street vendors, disturbed traffic movement due to the pedestrian moving along the carriageway, a total visual clutter with innumerable billboard, sometimes completely covering up the edge of the buildings along two sides of the road. Another very important aspect of this area is the Heritage buildings and many dilapidated buildings stuck in the fight of ownership lawsuit. A number of buildings, which used to be once very famous cinema and theater halls are very fast closing off and changes its character from recreational to commercial.

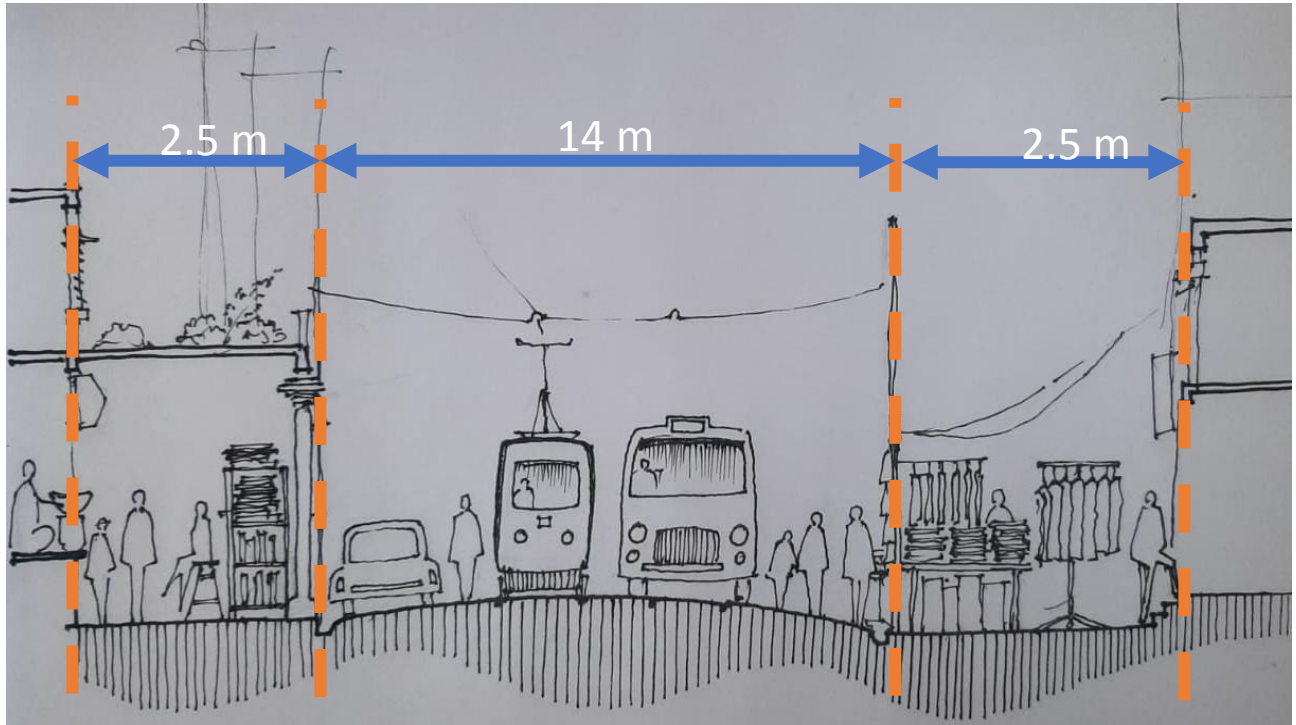


Illustration 34: Street Section Bidhan Sarani, near Hatibagan (NTS). Source: Author

The observations are:

25% of the carriageway occupied for parking.

10% of the carriageway occupied by vendors and pedestrians.

Almost the 75% of the sidewalk occupied by vendors.

Kolkata's heritage Tram route 5 is still operating here from Shyambazar Tram Depot.

Although it was found that, the hawkers have taken over almost the whole pavement towards more south up to Rupobani Cinema Hall, in east it stretches all along the Aurobindo Sarani up to APC Road as well. The hawkers have taken over the both sides of the road along RG Kar Road from Shyambazar Market to Canal West Road. So, the market is actually spread occupying the roads of Ward no 10, 11 and 12. The whole urban district of market is characterized by very old market centers, all the pavements of adjacent road occupied by street vendors, disturbed traffic movement due to the pedestrian moving along the carriageway, a total visual clutter with innumerable billboard, sometimes completely covering up the edge of the buildings along two sides of the road. Another very important aspect of this area is the Heritage buildings and many dilapidated buildings stuck in the fight of ownership lawsuit. A number of buildings, which used to be once very famous cinema and theater halls are very fast closing off and changes its character from recreational to commercial.

This image (Illustration 33) shows two designated markets of Shyambazar and Hatibagan. The two circles have been drawn with these two markets at the center and with 500m radius around it as walking distance to and from those markets. River and Canal near the place have been shown beside the major roads in and around the area.

5.1. Visual Survey:

Path: According to Kevin Lynch^[10] Paths are the channels along which the observer moves. The movement can be customary, occasional or potential type of movement. To discuss about Path in an urban set up first thing comes in mind is movement along road, both on the carriageway as well as on the pavement. If pavement is taken over by informal vendors, then pedestrians are compelled to use carriageway to walk and thus it disturbs the movement of vehicles. Vehicles includes the public transit as tram, bus, para transit like auto, Hand pulled rikshaw and private vehicles including two wheelers along with four wheelers. Apart from that we can mention the vehicle of goods as this is indispensable for marketplace, both formal as well as informal. To reinforce this importance of streets Jane Jacobs (1961)^[11] said, “Think of a city and what comes to mind? Its streets” (p.29)

So free flow traffic and pedestrian movement needs to be ensured by creating designated pavement space for pedestrian, designated carriageway space for

vehicle and designated parking space for vehicles. As the pavement is almost blocked by vendors then vendors also are needed to be reframed in the place to accommodate them also in designated pavement area.

The movement problem of the study area is shown by a cross section of the road (Illustration 34). The tram service is still operational here in route no.5 i.e., Esplanade-Shyambazar route. Shyambazar Tram Depot (Pic 11,12) is the point which is situated at Bidhan Sarani and still operating a historic public transport system.



Picture 11,12: Tram Depot at Bidhan Sarani(A), Tram at Move Through Bidhan Sarani(B). Source: Author

The other traffic movement have reduced to only the central part of the carriageway (Pic. 13, A). Both the sides have been taken over by parking and pedestrian (Pic.13, B) and vendors with pedestrian either buying or a simply walking through (Pic. 13, C).



Picture 13: Carriageway Blocked by Pedestrian, On-Road Parking and Vendors. Source: Author

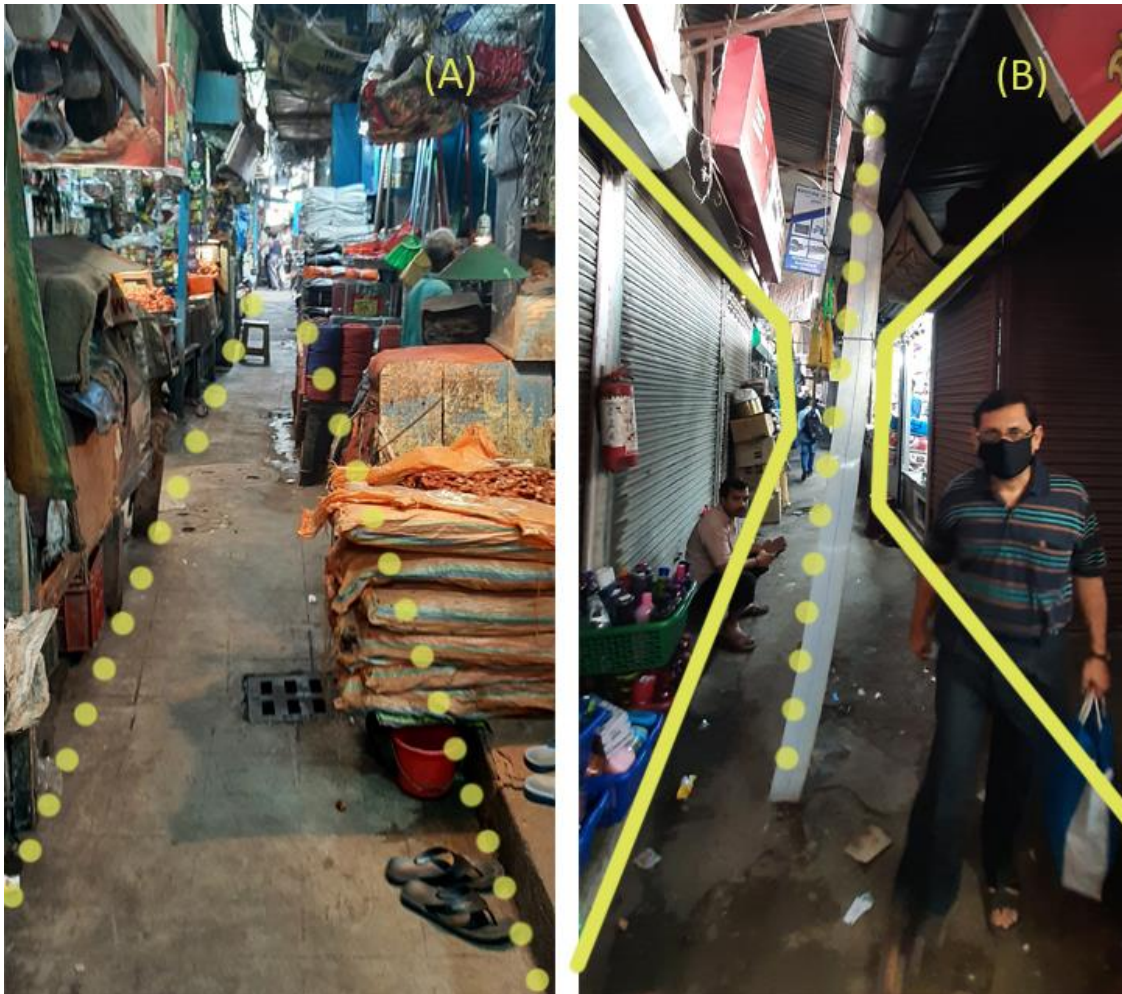
The pavement also has hardly had space for pedestrians as they have been almost blocked by street vendors. There is no standard size for the vending stations and they perform all the loading unloading activity during day-time and their stored materials along with the displayed ones also eat-up public movement space (Pic. 14,15).



Picture 14,15: Vendor occupied Pavement, Bidhan Sarani. Near Minar Hall(A), Near V2 Shopping Store(B). Source: Author

Movement along the Paths inside the market area are also another issue which need to be addressed. Generally, through the allies which are now being used to walk through the market is also being jeopardized by the space occupied by the spaces occupied by the shops. Inside the market area. People need to stand in front of the shops and order for the product or look for the right product. Sometimes in

the middle of movement channel the rain water from the vast roof area are released and this makes the movement for the buyers very difficult. This alley is actually not adequate for the movement of the materials as well, which gets delivered during business hours only. When this type of movement occurs, it becomes almost impossible to move through these paths (Pic 16,17).



Picture 16,17: Movement inside the Hatibagan Market. The stored materials block the pathways(A). Rain water gets released at the middle of the pathway(B). Source: Author.

Due to this problem of the movement along the designated pathways Kolkata police creates another pedestrian channel on the main road by putting fence on the carriageway itself. If observed then it is clearly visible that these needs are getting needed as there are inadequate space left in the pavement and it doesn't let pedestrian to move freely when one is intended to just walk through fast without getting the attention of the vendors and vice versa. This tendency shows that there is immense need of design intervention in this area (pic 18). During Durga

Puja festival all along the Bidhan Sarani this temporary fence is created by Kolkata Police to ensure pedestrian safety as the whole pavement becomes almost impossible to move for a passerby, who is not a buyer. (Pic. 19)



Picture 18,19: Pedestrian Path on the Carriageway. At Shyambazar Five Point(A), At Bidhan Sarani during Durga Puja Festival(B). Source: Author.

Activity: Activity is referred to the dominant visible activity. Lynch said ^[10], concentration of special use or activity may create a prominent idea about the place in the mind of an observer. Activities can be classified in three types, necessary activity, optional activity and social activity. There are sellers, buyers and vendors as three important components of commercial hub. Apart from that there are through traffic and pedestrians, local residents out for a walk. All of these components are needed to be taken care when the activity of people is being studied.

For sellers, their necessary activity is to load unload and store their products. Among them food products need to be sold directly in the store or to be cooked in the kitchen. The stores like KFC manages their kitchen very professionally and there is hardly any loading unloading during daytime. But local sweet sellers like 'Sen Mohashoy' are having quiet small kitchen, and their stock of food comes from a distant workshop daily in the early morning and evening time. Food sellers perform another activity of waste store and disposal. Sellers of garments are seen the most among all the sellers. There are pretty good need to perform the display activity for this kind of sellers. In most of the cases their promotion and display get disturbed

by the vendors on the pavement, who almost block the frontage of the shops (Pic 20, 21).



Picture 20, 21: Shops on the Edge Get Sometimes Completely Blocked(A) or Partially Blocked(B) By Vendors. Source: Author

Buyers from in and out of Kolkata prefer this market mostly during festival shopping because this place offer both the branded and local made garments. Apart from it bags, footwear, ornaments, home decors etc. are available with an option of high range of pricing from expensive to very cheap ones. Street vendors accept negotiations regarding the price and it takes comparatively long time to buy a product result into standing long time in front of the stall thus blocking the very small pedestrian path for that time. The optional activity like having a fast food from the street side vendor also result into same whereas this don't happen when people choose an eatery which has interior seat out facility. So instead of the lack adequate pedestrian path and lack of social activity space this area still attracts the buyers and they could have been given the improved environment quality so that the buyers could be attracted more to this commercial hub.

Vendors, as they are one of the indispensable parts of this area, should have got better space management so that, the quality of the place improves. They perform loading and unloading their products during pick time also as there is no control of it. They not only occupy the pavement but also sometimes to increase their display and to protect their products from sun or rain they made the edge of the road completely blunt and messy sometimes (Pic 22). the hygiene is completely ignored as there are no good toilet for the vendors (Pic 23, 25) inside the market as well as on the stretch of Bidhan Sarani.



Picture 22,23,24,25: Vendors Blocking the Edge of the Road(A), Inadequate Hygiene for Vendors, Toilet inside the market and on The Road(B). Source: Author.

Space: Space is referred to Public Space/Urban Space. Both the markets Hatibagan and Shyambazar are occupying big urban area/space almost 1.5 Acre each. The single-story structures could have been increased one story up for better operability and better space utilization. These two century old markets are standing on land area more than 1.5 acre each. Both of them are covered mostly or partly with metal sheets over iron truss (Pic 26, 27). As the land price of this region is going up in leaps and bounce with time, this is the only way to increase the height of the building and create more spaces for better accommodation and improved space quality effectively. There used to be a time when the land of these markets used to belong to rajas and zamindars. Gone are those days and the ownership of the land are in dispute. This is the high time to intervene with urban design principals and to make these place more and more usable and effective.



Picture 26,27: Roof showing the total space of Hatibagan (A) and Shyambazar (B) Market. Source: Author

There is the urgent need of designated space for each and everyone. When the intervention takes place, it is to be remembered that each one of the vendors or sellers are getting designated space. Unofficial encroachment should be replaced by spaces designed for a purpose which really don't change the character of the place but improve the quality of environment towards a higher level. May it be the bus-stop or a simple seating arrangement, a small child play area or adequate pedestrian pathway or even a stall for the vendors has to be minutely thought out and designed.

The Shyambazar area once used to be the cultural center of the Kolkata. Beside the classical Star Theatre there used to be a number of cinema and theater halls here. Theatre has been the established fine art, from which cinema was evolved, but slowly it lost its appeal and popularity with the rise of cinema. With the advancement of multiplexes now all the cinema hall land parcels here are being substituted with commercial, residential or mixed-use commercial-residential type of establishment. Star Theatre has gone through restoration to evoke a feel of multiplex (Pic 1). Recently cinema hall Mitra has been broken down for another commercial set-up to be established (Pic 2). Bidhushree cinema hall has been transformed into a mixed-use residential high-rise and Pantaloon store (Pic 3). Talkie Show house is closed and the front part is being used as toy-shop and restaurant (Pic 4). The hall space is now being used as store for those commercial set-ups. Shree has been broken down to build food court like KFC, Wow Momo etc. Bazaar Kolkata has been built on the site of Radha Cinema Hall, where as City Mart site used to be Uttara Hall. Rupbani Cinema has been transformed into Disha Eye Foundation.



Picture 28-31: Transforming Movie Halls into commercial and mixed-use development. Source: Author

Form: Form here has been referred to the Urban Form. Here in the study area the Urban Form can be classified by the characteristics called, dense and coarse built form. The Shyambazar-Hatibagan area of the city is one of the oldest settlements of the city of Joy. But as the city grew slowly after independence and at a fast pace in last few decades^[12]. (Illustration 3)

With this fast change the demographic and economic characteristics of the urban population also getting changed and these triggers change of land use pattern and the very form of the city. As the study area is taken from Shyambazar Commercial Hub it shows that the very dense population, crowded pavement, disturbed traffic and changing land use are reshaping the form of the city which have been taken into consideration for this study.

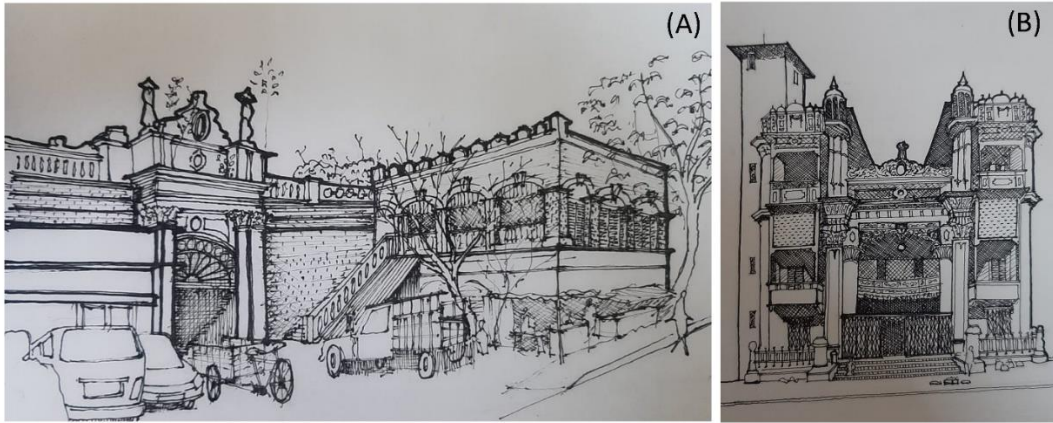


Illustration 35, 36: Classical Structures in the precinct. Source: Sketches Author

The study area falls under three municipal wards of KMC i.e., Ward no. 10, 11 and 12. This area shows a classic part of Kolkata city where there are lots of Heritage Buildings (Pic. 18) and some of the old structures are at derelict condition. There are three important nodes among which Shyambazar five point is one. The Hatibagan Market and Shyambazar Market has been identified to be inside the study area. Along all the both sides of Bidhan Sarani, Gray Street and APC Road which is inside the study area the edges mostly are commercial and the pavements are being taken away by the vendors. (Pic. 19)

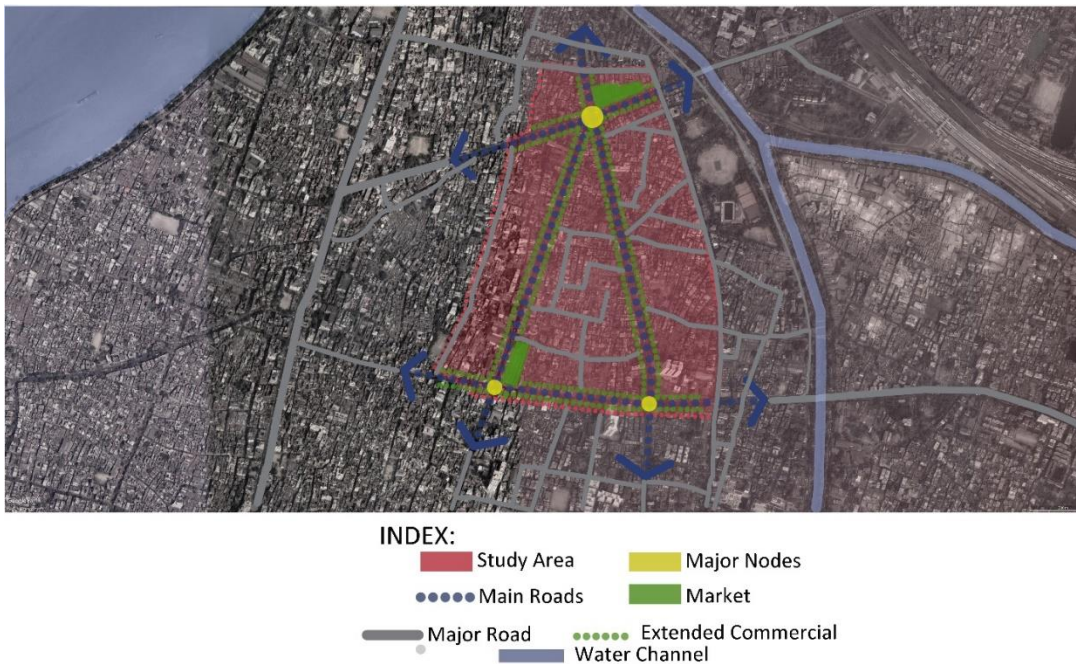


Illustration 37: The Google Map Reference of Study Area of Shyambazar Hatibagan Commercial Hub. Source: Author

5.2. History:

The market is a mixed type of market consisting both built up and sprawled hawker market area. The whole market area is having a long history of commercial agglomeration in this place.

This area of the city is really the representation of rich culture and heritage of Bengal with multiple theatre halls beside Star Theatre. The Bengali culture of football fan following is another cultural aspect here with Mohon Bagan Row within the action area of the site. Bengali people are food lovers and this place is the location of some of the century old food joints along with new ones to represent the great Bengali cuisine here in and around the study area.

1968: The city of Kolkata was established by Job Charnock. The development was taken place by taking 3 small villages Kolikata at the center, Sutanuti at the north and Gobindopur at the south. Current study area falls under the Sutanuti area.

1757: Chitpur Road was constructed all along the spine of the city from north to south. The most influential businessmen and rich people started constructing their houses all along the road and it became the single connection of the city.

1777: Raja Nabakrishna Deb leased the Sutanuti area in exchange of his lands at Krishnanagar. He established bazar in this area. This is the first official establishment of market at Sutanuti area although there were fragmental existing markets here in this area before the city was established.

1799: Circular Road was constructed. Now we got to have two main roads which connect north to south. Later on, Lower Circular and Upper Circular Road was established.

1854: Howrah Railway Station was built and it provided connection to Kolkata from the suburb area of southern Bengal and eventually in 1862 Sealdah Station was established to connect the northern suburban areas with Kolkata.

1883: In this year the great Star Theatre was established. The culture of Theatre was accepted by the people of Bengal very much in this time. Mostly the stories of Purana, Ramayana or Mahabharata used to be staged during the initial years and it was a great tool for "Loksikkha" (Public Lesson) and it became very much famous.

1902: In this year the Tramline was constructed in the city and it became a very popular mode of public transportation since then. Tram is definitely a milestone in the development of the city and its rich history.

1911: Shyambazar five-point junction was created. This is one of the most important points in the study area because this is probably the most important city node since then.

1994: Metro Rail station of Shyambazar was started in this area. The very important MRTS corridor helped to connect Shyambazar with rest of the city now with less amount of travel time.

2000: Since the emergence of multiplexes the age-old Kolkata city movie theatres started falling back in competition and started changing their character from entertainment points to commercial joints. Eventually the character of the place also started changing here from market with cultural and entertainment hub to only commercial hub.

Demographics: Kolkata is a highly populated city with dense residential fabric. The site of Shyambazar-Hatibagan area is not any difference. Sex ratio is 928 women per 1000 men. Literacy rate is quite higher i.e., 81% then the national average of 66% and the growth rate is very slow, just 4.1%. Here is a growth projection of Kolkata city given below:

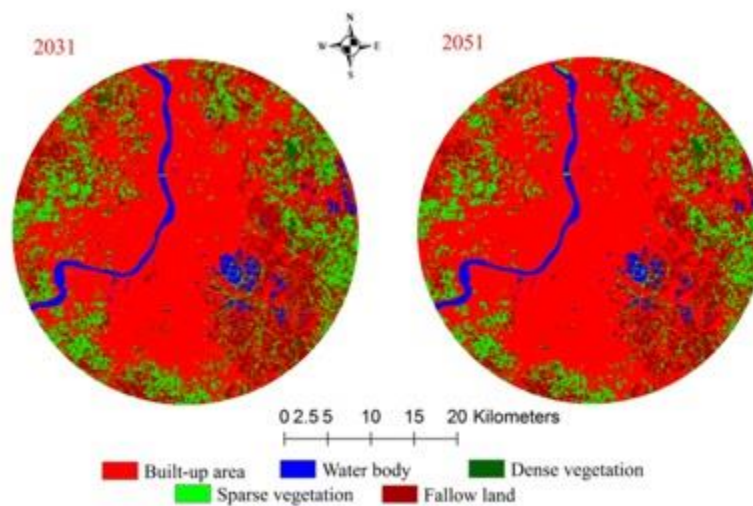


Illustration 38: The growth projection of Kolkata city. Source: Springer

Nodal Development: City, from its inception was developed according to the plan by British people and they found a need to connect the city from north to south and started construction of roads. Previously there were road connectivity but all of them were village road, mainly non-motorized road. But since then, the node of Shyambazar has been an important node with the existence of market here.

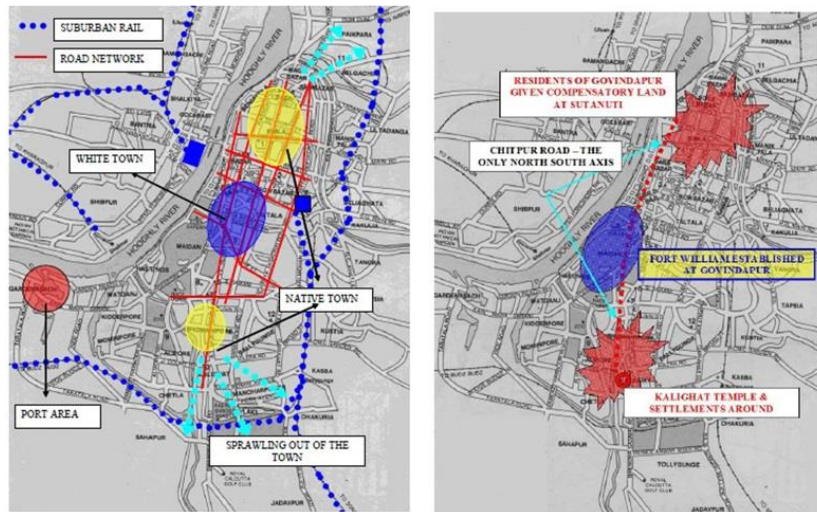


Illustration 39: The growth of nodes of the city. Source: Springer

Here also it has been seen in the illustration that there has been a systematic development of nodes of the city, in which Shyambazar is marked as the prime node of North Kolkata.

Key node: in today’s context also, the node is significant. The five points junction is the most important junction of north Kolkata, consisting one of major metro vomiting point here, Shyambazar metro station. The central point Netaji sculpture has been the identification of this place.

5.3. Landuse:

For any urban design study, the landuse study is one of the most important one to decide upon the further development or any kind of intervention. Here we know at Kolkata the population density is very high. The landuse also reflect the implication of the same. Dense residential and commercial areas with almost no open space it become a very fine grain urban fabric.

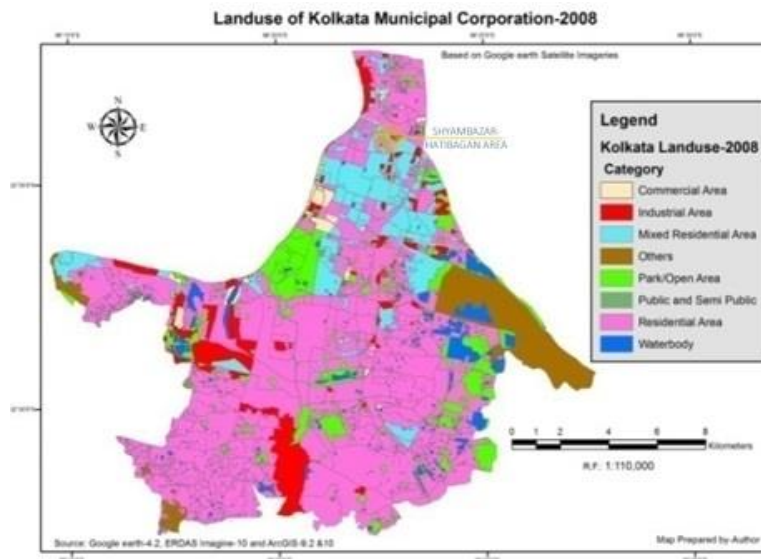


Illustration 40: The landuse of KMC area. Source: KMC

Now if we come more into the study area it is found that the area is not very different than the whole. The small businesses along with residential areas and on street encroachments by vendors there is almost no space left in this area. Sometimes commercial encroaches into the vehicular channel as well. Another reason of slow and very congested traffic is the percentage of road is very less with respect to the built-up plots. This added up with a very diverse traffic including vehicle ranging from hand pulled rickshaw to tram make the situation worse. Some tram company employer said that, to disturb the tram service local feeder vehicle auto-rickshaws deliberately stops or closes the tram line during their operation. This caused a lot of late for the Heritage tram and its nowadays on the blink of extinction. But the hope is the Shyambazar-Esplanade route is still operating and sustaining the heritage and green mode of transportation in the city of joy.

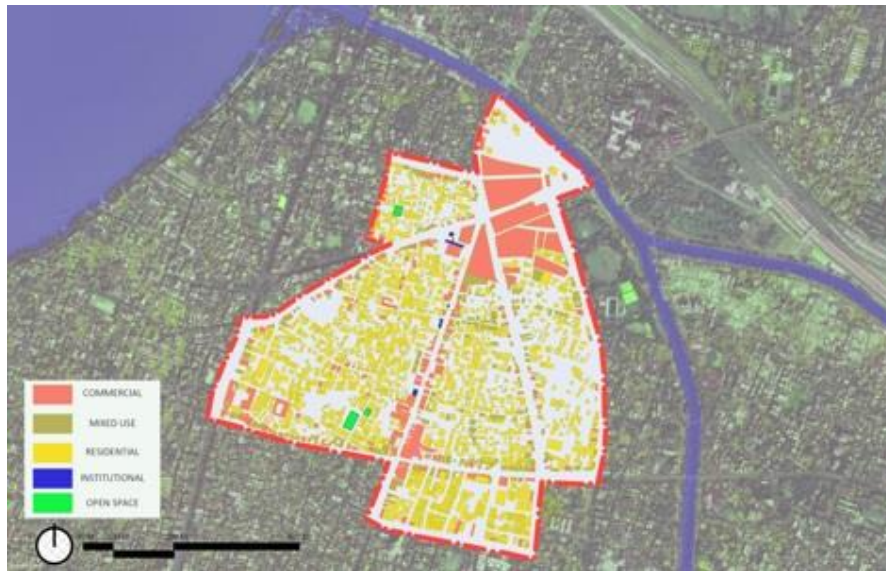


Illustration 41: The landuse of the site. Source: Author

Major Observations: the accumulation of commercial use along the road stretch is shown here mostly along the Bidhan Sarani part. This results in changing of residential buildings along the road are being changed into mixed use. The main node of the Shyambazar five-point has more accumulation of commercial type of buildings. Old buildings are some of them assets and some are liability for the development. Some delapidated buildings are in the conflict of legal litigation and hence are supposed to be liabilities with no option for further development till the legal hustle gets over. The other are assets for development because they have the potential to get restored as per the primitive era and they can be the cultural landmarks of old city of Kolkata. One of them is Star Theatre, a successfully developed restoration project with adaptive reuse of the building close to its previous use as a cultural entertainment center.

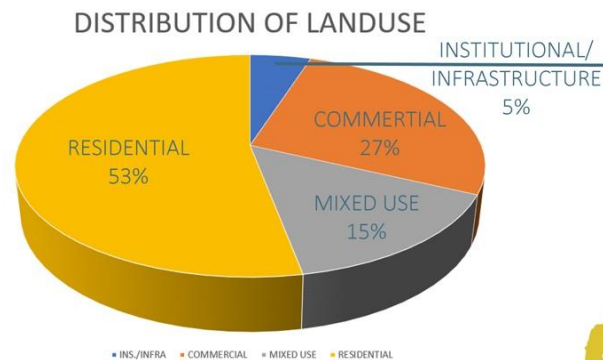


Illustration 42: The Landuse distribution of the site. Source: Author

5.4. Morphology:

To start with this study the most important tool has been Time-Series analysis. This tool helped to identify the development of forms of different house types as well as different functions of use of the space with respect to the time horizon of 100 years. The process has not been easy enough to get some readymade sketches of the site, rather it has been an expedition with old Kolkata maps by NATMO and extract the hardcopy data into a digital one then finding out the ward wise maps of housing and function to cut and attach the different ward maps to finally build up the site/study area map. The images have been taken like of 1911, 1961 and present day to show the morphology of 100 years of development in the area. As the growth rate of Kolkata has been very slow, the maps reflect the same in terms of housing and function of the spaces in the site.

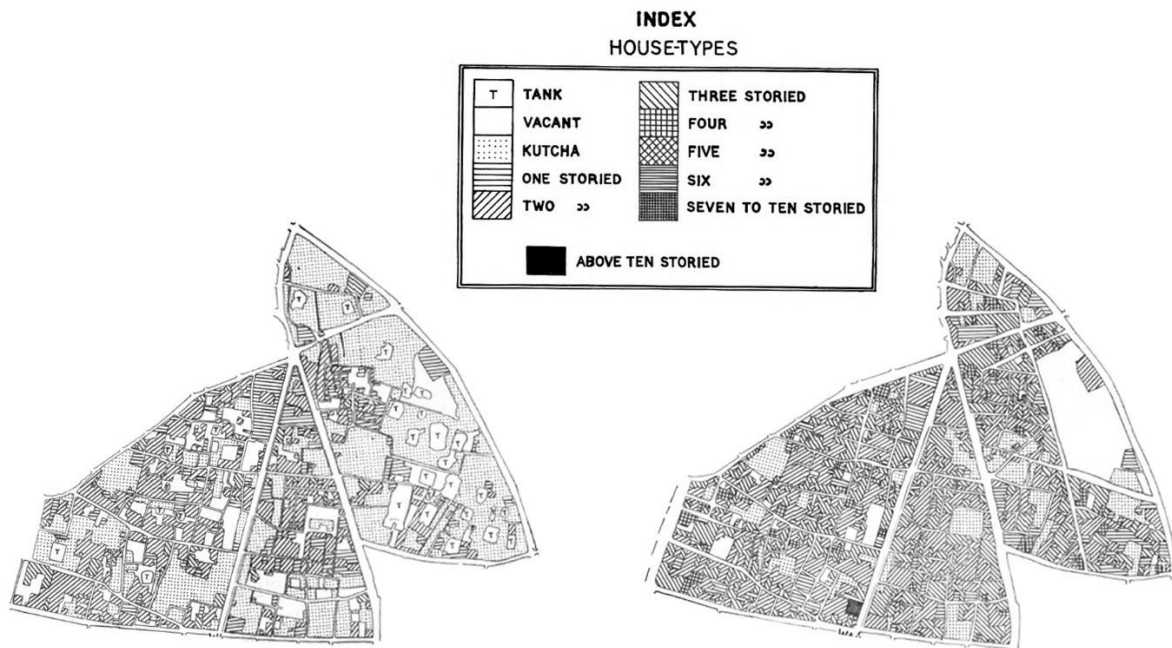


Illustration 43: Time series analysis of the housing, 1911 vs 1961. Source: NATMO



Illustration 44: Time series analysis of the housing, present day (NTS). Source: Author

These illustrations shows that the area which are marked higher structure of building footprints are very less. In last century there have been maximum development of seven storied or higher structure is one in number. Most buildings are found within 3to 5 storied range of height. The buildings along the Bidhan Sarani are found to have building mostly upto three storied high. (Illustration 43,44)

On the other hand, if we consider the function of the space or type of landuse change through this hundred years of time horizon, we can easily conclude that the commercial activity has definitely increased and the accumulation of the commerce has taken place mostly along the both side of the road. Bidhan Sarani is the most significant stretch of this kind of commercial activity accumulation zone. Eventually mixed-use type of building got increased in number. (Illustration 45, 46)

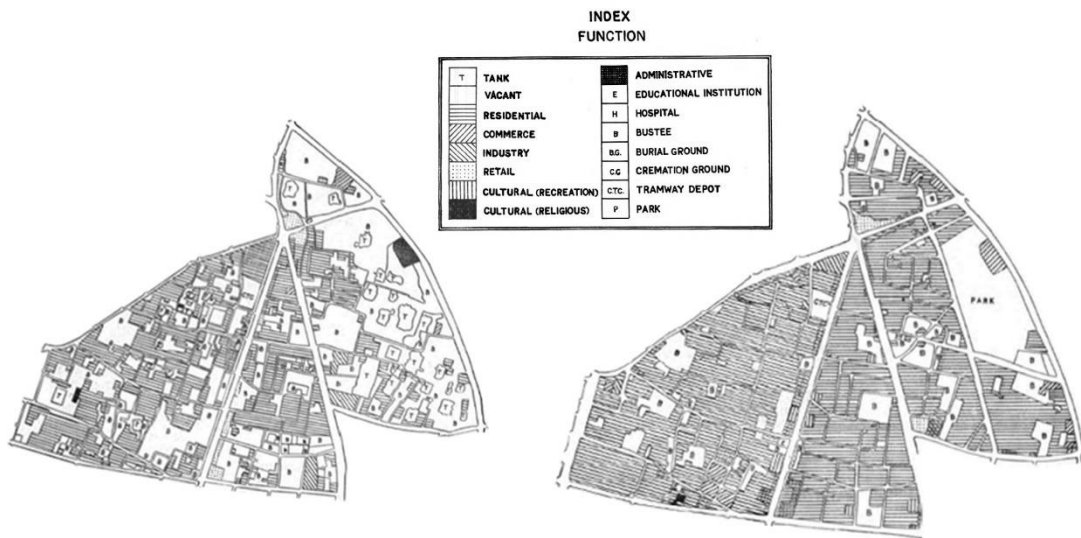


Illustration 45: Time series analysis of functional use, 1911, 1961(NTS). Source: NATMO



Illustration 46: Time series analysis of functional use, present day (NTS). Source: Author

5.5. Transportation:

This is one of the most important factors of the place which needed to consider for urban design intervention. As there are comparatively less percentage of road to build up area is the situation of Kolkata with respect to the other metro cities of India the connectivity is either supposed to be restricted or rerouted for some of the commuters are mandatory. Here in the illustration 47 the proximity to important nodal points to the study area has been shown. All major transit hubs are within the maximum 11 km diameter around the study area. It can be concluded that the area is very well connected to the city as well as the international terminus of NSC Bose International Airport.



Illustration 47: Proximity to the major transit nodes to the site. Source: Author

The five-point node of Shyambazar connects some of Major roads and places of the city. It connects Bidhan Sarani, Central Avenue Road, R.G Kar Road and APC Road. The connectivity is established by bus, metro as well as tram beside the private vehicle and feeder vehicles to serve the short distances. The point is having Netaji Subhash Chandra Bose statue at the center. This has been the iconic identification of Shyambazar now.

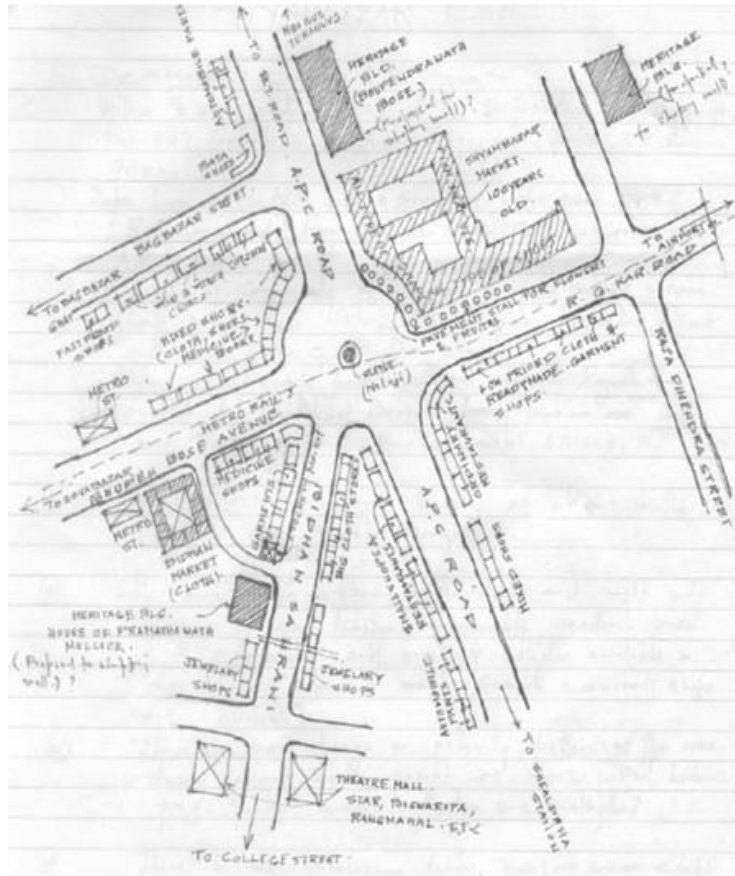


Illustration 48: Five-point junction of Shyambazar connecting Kolkata. Source: Nibedita Das

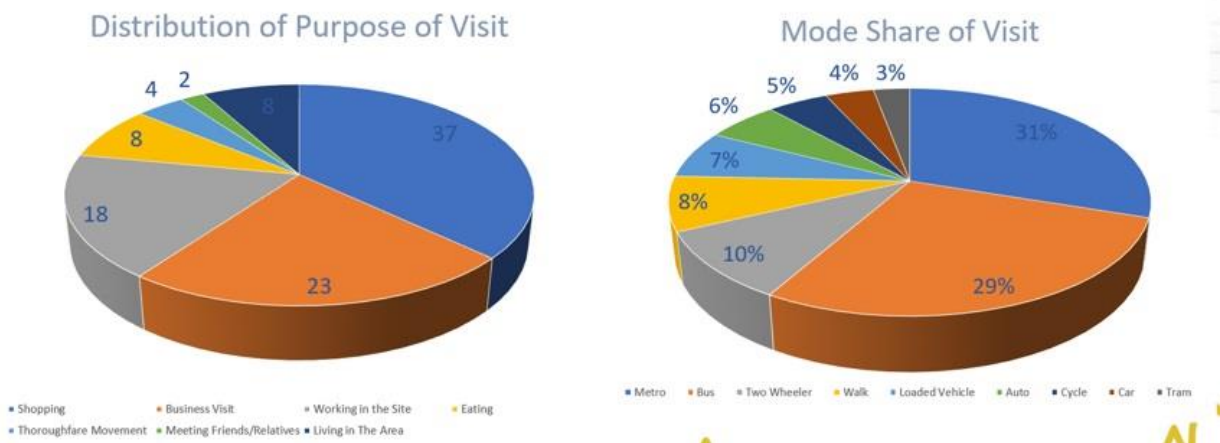


Illustration 49: Traffic Survey Analysis. Source: Author

The survey analysis shows the distribution of purpose of visit is mostly concentrated to shopping and business. If we consider the mode share it will be identified that metro and bus are the bigger chunks contributing 31% and 29% of mode share respectively. So, the Metro vomiting points are major important points

in terms of accumulation of pedestrians. Beside that all the bus stops around the five-point node are also attributed to the points of pedestrian's dispersion.

5.6. Activity and Space:

The arrangement or proposal of arrangement could be done in this following way when the activities in a specific space has to be planned and organized for an intervention from urban design perspective. The ways are proposed by Jan Gehl in his book *Life Between Buildings*.

To Assemble or Disperse: This is actually the process of assembling the diverse multi directional movement into one. This actually streamline the activities along the single movement channel as well as creates a spine of movement through a space.

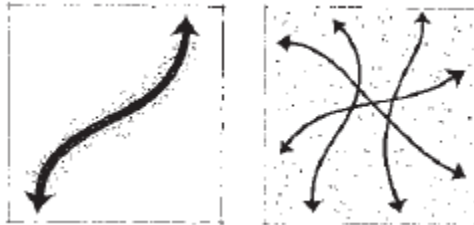


Illustration 50: To assemble or disperse. Source: Jan Gehl

To Integrate or Segregate: This is another set of orientation of activities, to make sure whether they are supposed to concentrate along the single communication spine or in a very haphazard manner.

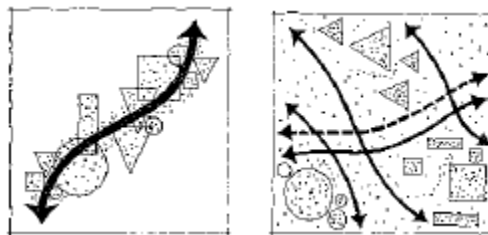


Illustration 51: To integrate or segregate. Source: Jan Gehl

To Invite or Repeal: This is also the other way to look into an arrangement technique which suggests to create the attractiveness of the single spine so that it always invites the visitor towards it. In this way the central spine of prime activity will attract the crowd or the pedestrian and eliminate the sense of repulsion in case when it is unorganized and multi directional.

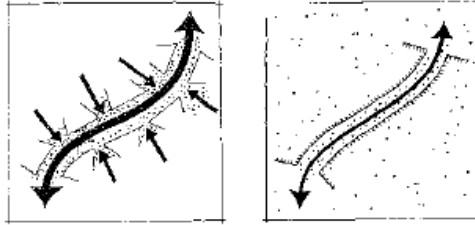


Illustration 52: To invite or repel. Source: Jan Gehl

To Open up Close in: Now this is another aspect of creation of the central spine of activity through a space. How the space has to be articulated at the end is the question here. There are two options to this problem either to open up or to close in.

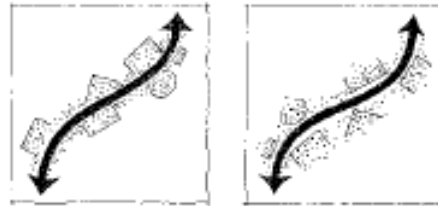


Illustration 53: To open up or close in. Source: Jan Gehl

Figure Ground: The figure ground helps us to decide over this selection of the central spine and subsidiary spines according to the accumulation of built-up spaces along the central spine.



Illustration 54: Figure Ground Map of the site. Source: Author

When the figure-ground is analyzed then the point of concentration of activities are also identified. The five-point junction is the most important node or junction here in the site. The visual qualities and the parameters have been considered to do this.








Visual Qualities	Selected Parameters								
	Edge	Node	Path	Shape	Open Space	Magnets & Generators	Special / overall activities	Landuse building use	Architectural features
Permeability	Shops, building facade	corner plot shops	Pavement, roads	Perimeter development	Entrances to the node			small lanes	Small openings
Variety	Different type of shops	vehicle, pedestrian	Pedestrian, vehicular	both small and large	Pedestrian pathway		needle to dress	increase in mixed use	Residence and Commerce
Legibility		Statue	Overlap of paths	Economic status	encroached	Small business Setups	separate zones		Classic Old Buildings
Robustness	Active and passive areas	Statue	shared street space		age old design	Cheap Retail market	Organic growth		Old, new side by side
Richness	Different food joint		Sensibility	mix of landuse	Timeless classic features	Variety products	Slowly decreasing value	Changed cultural centres	
Personalization	Poverty	Hphazard	Hawkers		Scarcity of open space	Burgaining huge time	movement problem		Restore needed
Visual Apropriateness	Diversified landuse	clutter with wires	Hybrid population	Legibility of user	Dense, congested setup	No distinct separation		Commercial	Represen classic feature

Table 7: Critical analysis of the area on the visual elements and qualities. Source: Author

So, on the basis of this critical analysis some important conclusions could be drawn. They are,

1. The space has overlapping activities which are needed to be segregated.
2. Unauthorized encroachments are to be removed.
3. Landuse change is need to be stopped.
4. Movement channels are needed to be clear of clutters.
5. The Netaji statue could be established as prime vista from every side of five-point junction approach.

5.7. Site Zoning:

The whole site is needed to be divided into different zones when it comes to the question of intervention. The intervention proposals are needed to be given zone wise solutions on the basis of zone wise study. This is the reason the site zoning is very important. Here the tool to determine the zones is Space Syntax. The analysis leads to the distinctive zones with homogeneous features on the basis of movement of pedestrians and vehicles. Axial map, visual integration map and movement trail map helps to determine the different zones to intervene.

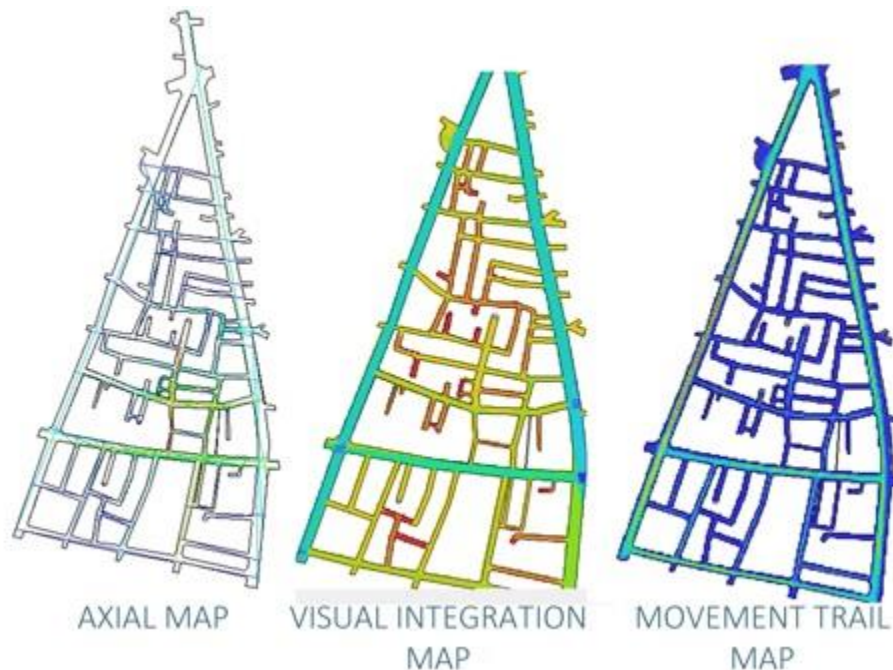


Illustration 55: Space syntax analysis to define zones. Source: Dr. Sumanta Deb

The observations are as follows:

1. Axial Map showing axial intensity at Grey Street near the slum area. This area is also an area of HIG Highrise as well.
2. Visual integration is seen maximum at the inside area of and then the main road like, Bidhan Sarani.
3. Movement trail map shows maximum intensity at Bidhan Sarani stretch.



Illustration 56: Identified Action Area. Source: Author

So, this is the selected action area shown in Illustration 56. This area is the most identified as most intense area of movement and activity. Now the zones are divided like:



Illustration 57: Zoning distribution of the site. Source: Author

Due to the time constraint the intervention is decided to be restricted till zone I and zone II. Zone III is kept for further intervention.

6. Zone I

6.1. Description

The area is having very important node of Shyambazar five-point crossing. It encircles the vomiting point of metro rail Shambazar Station. The market is the biggest chunk of land in this zone. The allied services in terms of store are also included in it. Most of the land here is commercial and rest are of mixed-use type.

6.2. Delineation

Zone I is delineated by Bhabanath Sen street along the norther side of Shyambazar Market. Then along the Gallif Street, Raja Dinendra Street and Mohanlal Street and a bit of APC Street delineates the north eastern part of the zone I. At the south it is delineated by K Sanyal Lane at east west orientation which meets Bidhan Sarani. This point of Bidhan Sarani delineates the south and west side of the side till five-point junction.



Illustration 58: Delineation of Zone I. Source: Author

6.3. Analysis

The analysis of the land-use plan is the first which has been looked upon as part of the zone analysis. This concludes that along the street almost all the structures are commercial and mixed-use type. Some of the structures are in dilapidated condition along the RG Kar Road. This type of buildings is identified as good to taken over for development proposal. Residential buildings are mostly situated inside the superblock or along the collector road or access road. Here are the conflict points in the major node of five-point junction is shown.



Illustration 59: Conflict points at five-point junction at Zone I. Source: Author

Block shape geometry is another aspect to analysis from which it could be concluded that the superblocks which are there around the five-point junction are needed to be round edged as the road is not so wide with respect to the movement of the vehicles beside the encroached pedestrian spaces. So new proposal could use the secondary roads for access to the new blocks to avoid congestion and conflicts at the major roads.



Illustration 60: Block Geometry of Zone I. Source: Author



Now all the buildings of the whole area have been analyzed on the basis of Age, Height and value. The age mapping has 4 categories. 20 years or less, 20-50 years old, 50-100 years old and older than 100 years. Some of the old buildings are well maintained by the owners and they are very few. 50-100 years old buildings are seen as a mixed style of construction method and techniques with both classical as well as modern elements. Height mapping maps the building into three categories i.e., single storied, G+1-G+2 and G+3-G+5. The height varies with these range with most residential buildings of the third category. Value mapping ranges are, Untouchables (which are old classical buildings but has been well maintained), retrofitted with adaptive reuse and can be dismantled. The third category buildings could be easily picked up for the development proposal. Retrofitting is proposed to those which buildings are critically stuck into legal litigation or ownership conflicts.

Illustration 61: Age, Height and Value mapping of Zone I. Source: Author

Architectural features of the buildings of this area have been observed and concluded that the most common features are big windows with the French blinds, wrought iron rail works and parapet for balconies stretching along the road side, the columns with classical Greek order features in proportion and different parts. Some of the classical structures like clock-tower could be adopted while proposing retrofitting or new structure.



Picture 32: Architectural features of Zone I. Source: Author

Special or overall activity structures has been studied thoroughly to understand the cultural and practical use of space. According to the observation of this analysis it is evident that small to medium size business is the predominant activity which takes place here in this zone. There are lots of people on the street except late night and early morning. The commercial activity like exhibition of the products or services like washing (eateries mostly), seating armament for the customers are always on the pavement area and thus the pavement is almost not enough to walk on.

Main road is observed to have mixed type of movement in the carriageway because of the lack of the footpath area. As a result, Police has been compelled to put moveable dividers on the carriageway to give some safe passage for the pedestrians. No dedicated bus stop or even if it is there the place is not being used for the people who want a bus. Most of the time people wait for the bus on the carriageway and they wave at the bus to stop at any point of the road. This creates chaos on the movement of vehicles and it results into slow movement of the vehicle along this stretch. The section along two major roads will elaborate the actual scenario that how the spaces in the sidewalk has been taken away for the sake of small commerce services and products at cheap rate.

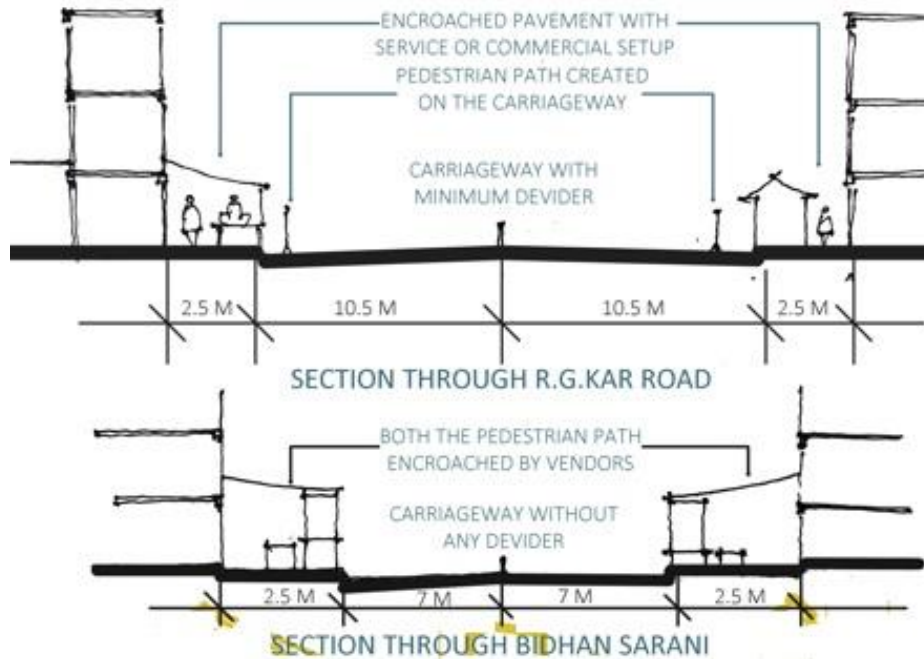


Illustration 62, 63: Major Roads section of Zone I. Source: Author

Statue of Netaji at the five-point junction is the most emphasized vista from all the sides of the major roads meeting at and radiating out from the junction. Sometimes it is seen that service line wires or unplanned billboards hinders the view of the vista which is supposed to be eliminated. This central statue is visually and legibly the focus of the not only the intersection but also the entire area.



Picture 33: Netaji as Central Vista, from the roof of Shyambazar Market. Source: Author

Old heritage buildings which are standing tall against the wheel of time are mainly of private ownership and well maintained. These buildings are needed to be left same and let the essence of bygone era be prevail through them.



Picture 34: Well-maintained old structures, zone I. Source: Author

Some of the dilapidated structures are to be taken over by municipal authority by the enforcement of eminent domain. These structures actually are detrimental for the image of the place. At the same time the land area is having full potential for new structures. These parcels of land could be transformed into vibrant commercial spaces to relocate not all but a few street vendors as well for the sake of restoration of pedestrian spaces.



Picture 35: Dilapidated structures, zone I. Source: Author

6.4. Identification of Intervention Sites

Here in this zone two sites have been identified to propose for new structures which could be developed as mixed-use complex to house both commercial and residential type of spaces. There will be some extra spaces created as the height is allowed for these mixed-use structures more than the existing structures around. This could be a tool to generate revenue from the development which could incentivize the builders to take over the development. There will be spaces created for parking in these structures which could be fee parking for the visitors at those respective markets to avoid on street parking. Some of the buildings are taken along with the dilapidated site or site to be developed just to increase the site size so that the legitimate amount of new space could be created. Those fit plots taken along will be rehabilitated in the new space created.



Illustration 64: Intervention Sites, zone I. Source: Author

6.5. Design Guidelines:

1. The buildings which are supposed to be new construction should keep some common classical features like fenestrations and elevation treatments. It should not look as out of place or should not hamper the image of the place.
2. If there is development of the big chunk of land parcel and the design tasks for high-rise structure then there has to be ample open space in the front.
3. Buildings at the edge has to be developed as mixed-use commercial type which is the essence of the place. The edges could be rounded or if it is rectilinear it should be treated with some vibrant color on those rectilinear facades.
4. As there are hardly any open space or green space the pavements have to be free of any encroachment by commercial activities.
5. Pavements are to be designed as pedestrian friendly places where there should be some breathing space for the passerby at the same time there should be some street furniture and greens for them to sit for some time for a bit of rest or for a simple chit-chat i.e., optional activities.
6. The development is meant for stopping the gentrification of the city core, that's why the developments are supposed to occur the creation of more commercial as well as residential floor space.
7. Safe pedestrian and vehicular pathway segregation will lead to minimizing the chances of conflicts and at the same time it will decrease the chances of conflicts or accidents.
8. Defined bus stops are to be created and getting the bus or getting off from the bus will happen only in these areas.
9. All the goods vehicles are to be allowed at the night only. All the loading unloading activities are supposed to happen only at night (12:00 am to 5:00 am)
10. Cleaning operation as well as garbage disposal has to be in a systematic method and it should occur at nighttime.

7. Zone II

7.1. Description:

The whole linear stretch is having commercial settings along the edge and inside there is dense residential type settlements. Even in the secondary roads also the edge getting mostly commercial setups along the ground floors. This stretch has maximum concentration of on street hawkers. This stretch had lots of theatre halls which are having hardly one or two left. All of them has fallen out of the league after the introduction of multiplexes in Kolkata.

7.2. Delineation:

Zone 2 is delineated by Hatibagan crossing at south, which is also the intersection point of Bidhan Sarani and grey street, and Shyambazar tram depot at the north along the linear stretch. Some of the intersection streets in the stretch are from tram depot point, first K Sanyal Lane, then Naya ratan Lane which connects to the dreamland nursing home. Then towards more south we have intersection of Balarama Ghosh Street. Then we have the intersection of Mohon Bagan lane which at the western side of Bidhan Sarani is known as Padma Nath Lane. Towards more south we have Shyambazar street and Sikdar Bagan Lane and Nalin Sarkar street as another intersection before Hatibagan crossing.

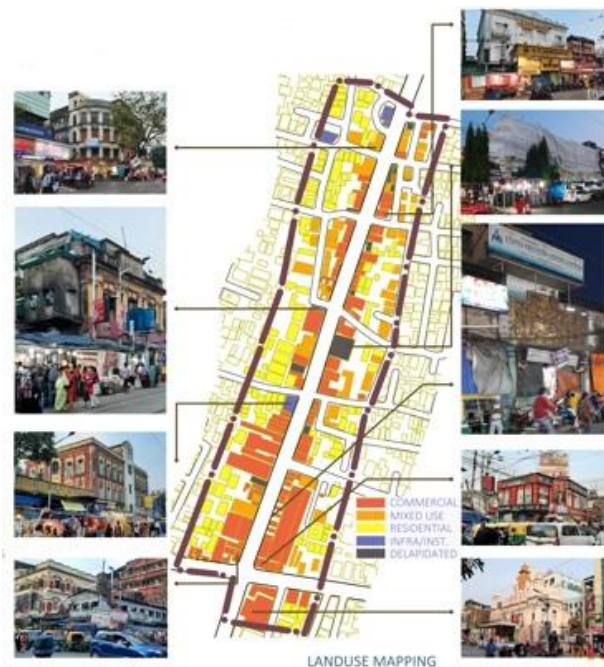


Illustration 65: Delineation and Land-Use Plan, Zone II. Source: Author

7.3. Analysis:

The analysis of land use plan shows the concentration of commercial activities along the stretch of Bidhan Sarani as well as the secondary roads. The next layer is the dense residential type. In this zone there are some other buildings like school and post office. These buildings should be left with no obstruction in their frontage for better visibility and smooth operation. If we look into the cultural shift then it will be evident that which place used to be the cultural center of the city is now slowly losing that character to the commercial activities.



Illustration 66: Movie Theatres substituted by commercial set up, Zone II. Source: Author

Secondly, the shape geometry has been considered for analysis. Mostly polygonal shapes have been seen in the geometry of the superblocs in this zone. Some of the blocks has very small size which are close to the Bidhan Sarani. This character could be considered while looking for creating the open space. Two or three number of these small blocks could amalgamate into one block to create some open space. It could be possible to eliminate at least one small block along the stretch of Bidhan Sarani to create some open space and that commercial space could be rehabilitated into some created commercial spaces somewhere along the road stretch.



Illustration 67: Shape geometry, Zone II. Source: Author

Age mapping has been done on the basis of same classifications as it has been done in zone I.



Illustration 68: Age Mapping, Zone II. Source: Author

The height and value mapping are also done with the same classification as it has been done in zone I.



Illustration 69: Value and height mapping, Zone II. Source: Author

Carriageway blocked by on street parking, vendors encroachment and pedestrian movement. Pedestrians are compelled to use the carriageway due to complete or almost blockage of pavement pathway by the vendors and buyers. Five-point crossing is also having the same problem. To stop frequent accident police has created a barricaded pedestrian path for walkers. During festival time the whole stretch of Bidhan Sarani from Hatibagan to Shyambazar are installed with bamboo barricaded pedestrian path on the carriageway.

Inside the Hatibagan market as well as in the both pedestrian path along the Bidhan Sarani stretch starting from Hatibagan are not having the enough walkway. Inside the market the pathway is blocked with encroached storage space by the

respective shops. On the road the pathway is blocked by illegal, encroached vendors. Pedestrian pathway points are near Minar cinema hall and another is near v2 shopping store.

The edge of the road is either completely or partially blocked by vendors. Some of the most important buildings like post office entrance is also blocked by vendors. Services like toilets are also placed beside the carriageway, creating bad odor, nuisance and visual clutter for the pedestrians and thoroughfare traffic.



Illustration 70: Sketches, Zone II. Source: Author

Star theatre has been redeveloped with a single screen movie hall along with restaurant and art gallery, but rest of the movie halls has lost its existence to either commercial or mixed-use development. Star theatre redeveloped (a), Mitra has been broken down completely(b), Bidhushree has been transformed into high end multi storied residential with pantaloon store in front(c), talkie show house has been transformed into toy store and restaurant(d). The main structure is intact and the hall is used as storage area. Owner lives in upstairs.



Picture 36: Movie Theatres, Zone II. Source: Author

Tram is Kolkata's one of the heritages. Nowadays only one route is operational from Shyambazar tram depot, i.e., route 5, Shyambazar-Esplanade route. To revitalize the city core, we need to conserve our rich heritage. This tram depot building is at the very good strategical position which, if catered with a terrace food court could revive the important heritage. Beside that inside the tram depot there can be infographic walls depicting history of tram at Kolkata. It will remove the visual clutters also in terms of the backside of the buildings adjacent to it.

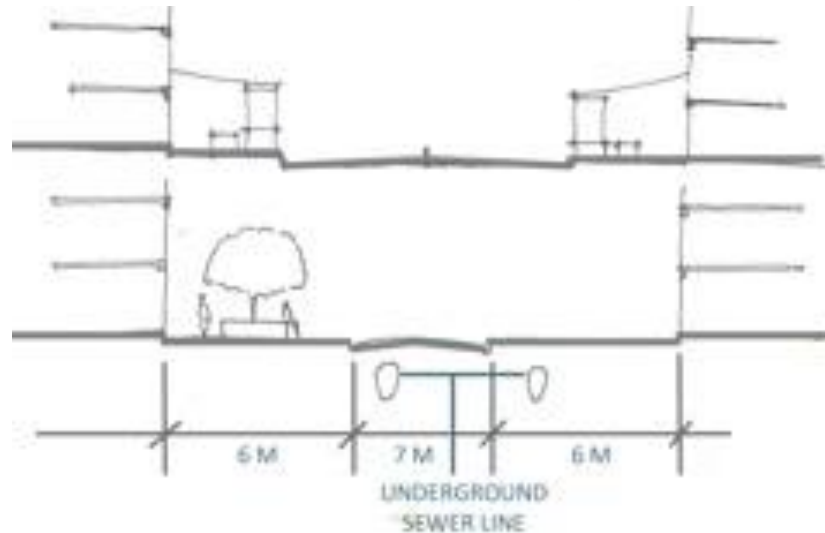


Illustration 71: Section of existing and schematic proposal of Bidhan Sarani, Zone II. Source: Author

7.4. Identification of Intervention Sites:

Here the identifications have been on the basis of not only the age but also the height and value as well as location. Some of the buildings has been chosen to be taken for redevelopment are aged between 40-50 years but as they are located in a position to have the ideal locations to revival of the place in terms of development they have been taken. There has been a block of superstructure which is considered to be the smallest block as well as opposite to the tram depot (open space a bit) has been cleared to rehabilitate in the development proposal buildings and to create an open space along the stretch. The whole stretch of the street has been considered for pedestrianization. The vendors are supposed to get removed from there but not all of them so that the image of the place doesn't get disturbed.



Illustration 72: Intervention sites along with the Bidhan Sarani stretch, Zone II. Source: Author

7.5. Design Guidelines:

1. It is very necessary to create some open spaces in terms of removing small superblock completely and rehabilitate it in the new proposal.
2. Bidhan Sarani is needed to be widened for more public optional activity.
3. All or few of the vendors are needed to be replaced/rehabilitate in the new construction.
4. As there are hardly any open space or green space the pavements have to be

free of any encroachment by commercial activities.

5. Pavements are to be designed as pedestrian friendly places where there should be some breathing space for the passerby at the same time there should be some street furniture and greens for them to sit for some time for a bit of rest or for a simple chit-chat i.e., optional activities.

6. The development is meant for stopping the gentrification of the city core, that's why the developments are supposed to occur the creation of more commercial as well as residential floor space.

7. Safe pedestrian and vehicular pathway segregation will lead to minimizing the chances of conflicts and at the same time it will decrease the chances of conflicts or accidents.

8. Defined bus-bays are to be created and getting the bus or getting off from the bus will happen only in these areas.

9. All the goods vehicles are to be allowed at the night only. All the loading unloading activities are supposed to happen only at night.

10. Cleaning operation as well as garbage disposal has to be in a systematic method and it should occur at nighttime.

8. Design Interventions:

Structure plan:

As the socio-cultural spine is slowly replaced by the existing commercial spine it has been necessary to create a healthy social space experience in terms of pedestrian friendly streets. Bidhan Sarani, with widened pedestrian pathway. The one-way traffic movement is considered to be enough for this shortening of carriageway, because previously the same carriageway only was usable. The most important node of the spine is Shyambazar five-point junction. The pedestrian friendly pathway ends up at the vista in terms of Netaji's sculpture, which is one of the main identities of Shyambazar area. Some open space created in this stretch will add some green patch along this spine.

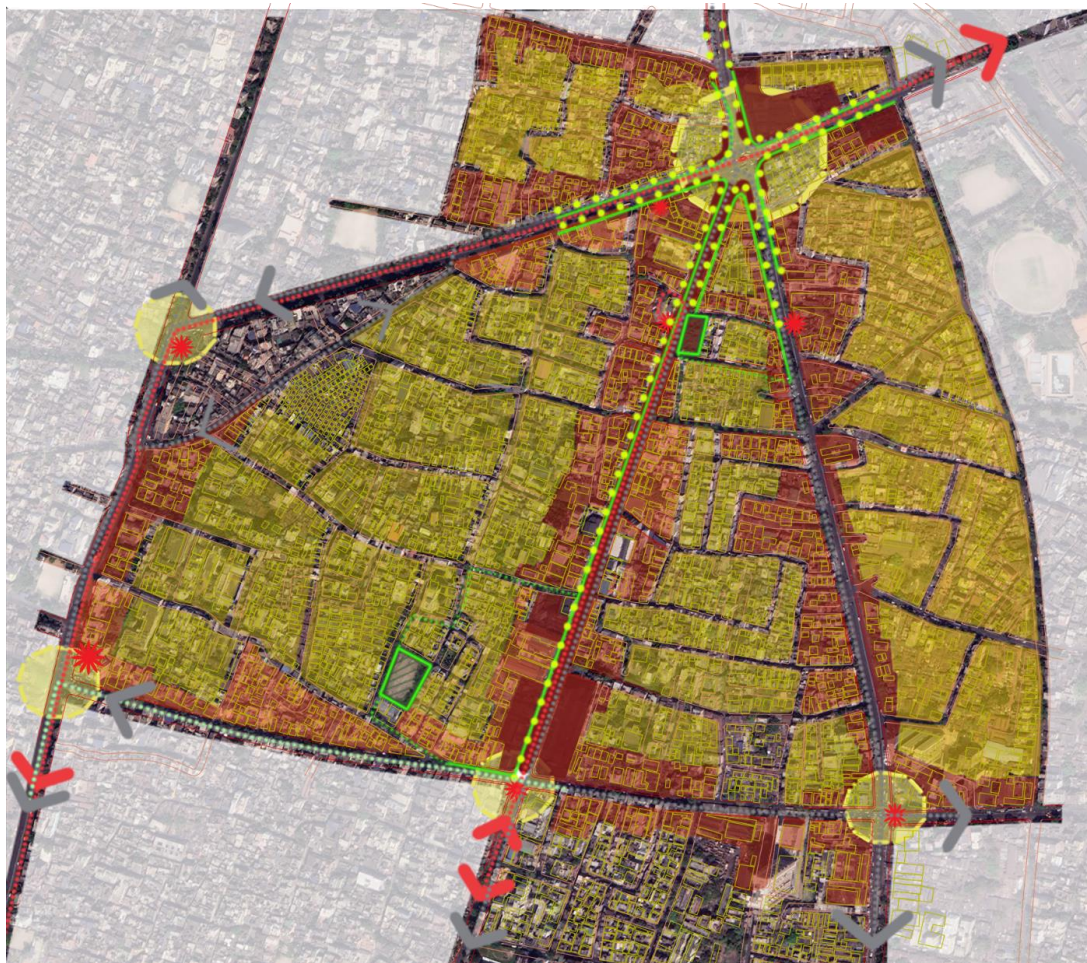


Illustration 73: Structure plan proposal for the study area. Source: Author

STRUCTURE PLAN



Movement



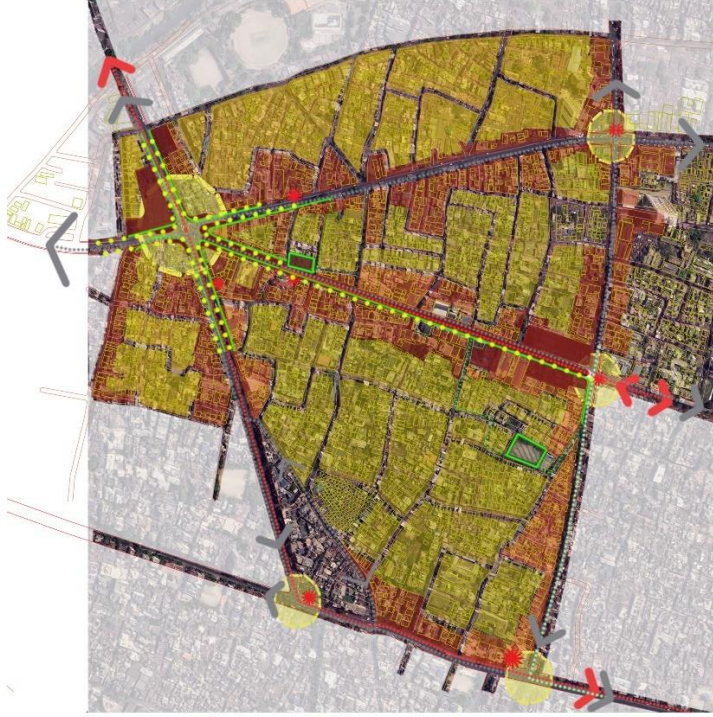
Open Spaces



Important Nodes



Intervention Areas



Structure Plan

- Tram/Metro line
 - Vehicular Line
 - Pedestrian Path
 - Bus/Tram/Metro Stop
 - Open Space
 - Open Space Connection
- Nodes
 - Urban Design Intervention
 - Residential Landuse
 - Commercial Landuse



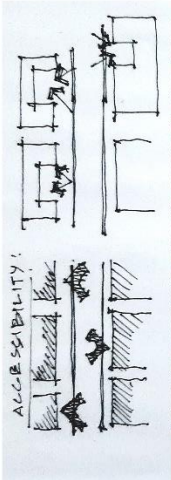
43

PRESENTED BY
SANDIPAN SINHA

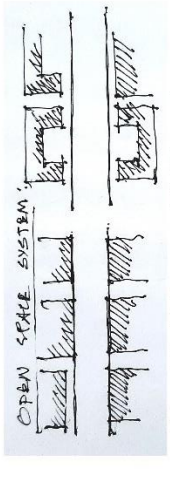
URBAN RENEWAL OF COMMERCIAL HUB AT SHYAMBAZAR-HATIBAGAN AREA, KOLKATA

GUIDED BY: DR. SHIVASHISH BOSE

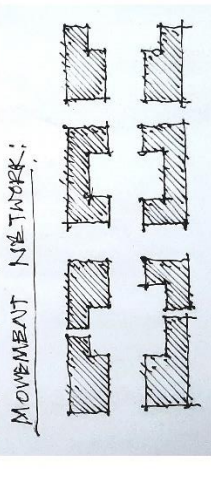
DESIGN GUIDELINES



Pedestrian concentration along the commercial edges increases due to the increase of commercial front edge.



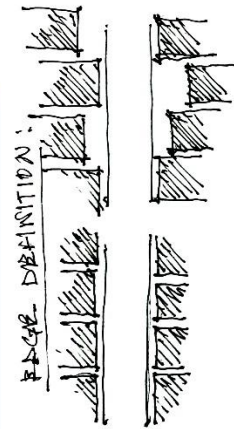
U shaped offsets to the commercial buildings creates some open space which could be used as buffer between the entry and pedestrian pathway.



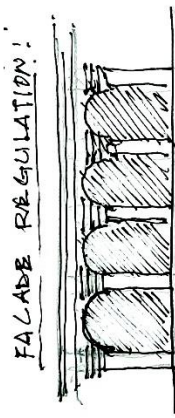
proposed stretch of the Bidha Sarani will be pedestrianised for the improved community space. this stretch will allow train and one-way traffic through its carriageway. Apart from that no goods vehicle is allowed during day and evening time.

Wider footpath will allow some space for seating, childrens play area or simply landscapped area along the open space for visual image.

Four wheelers or bus may be restricted during rush hour, which may be flexible according to the necessity.



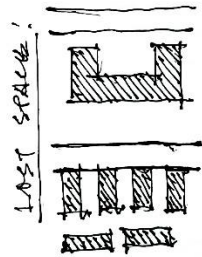
Edge of the road will be redefined according to the front offset regulation.



Parapet line of the buildings should be modified and a regular similar sense of enclosure could be provided.

The character of the street should be maintained on either side of the road.

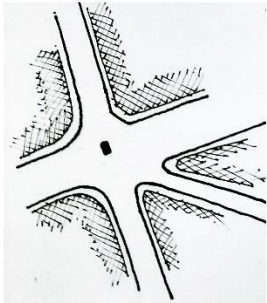
Height restrictions and typology guidelines will be there such as, Mixed use complexes are allowed with greater FAR.



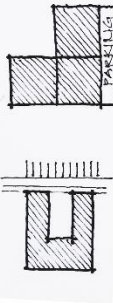
Rear side lost space could be converted into front edge usable space.



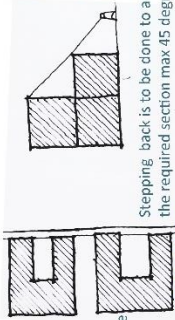
Along the footpath and in the open plaza the use of plantation and the use of proper street furniture is highly recommended.



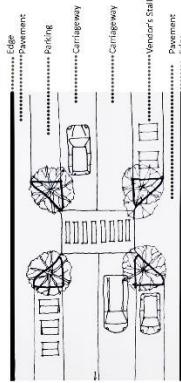
All the edges at Five-Point Junction of Shyambazar area has to be proposed with chamfered or rounded edges. The Building lines are supposed to follow the profile to add up to the uniform nature of build-



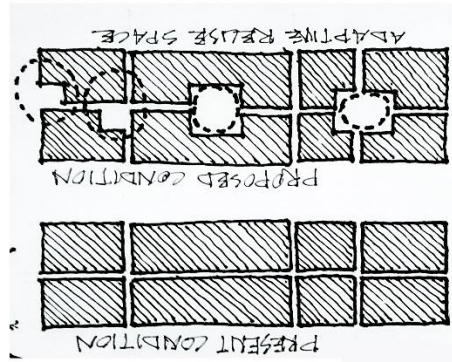
On street parking should be restricted by accommodating basement parking.



Stepping back is to be done to achieve the required section max 45 degrees.



A proper traffic calming measures has to be adopted for this stretch for save pedestrianization of the stretch



To provide plaza which will act as adaptive reuse space, thus open space along the road will increase.

Seasonally this open space will be utilized for hawking throughout the day.

In off-season, this could be used as cultural platform or playing or gathering space.

Stepping back is to be done to achieve the required section max 45 degrees.

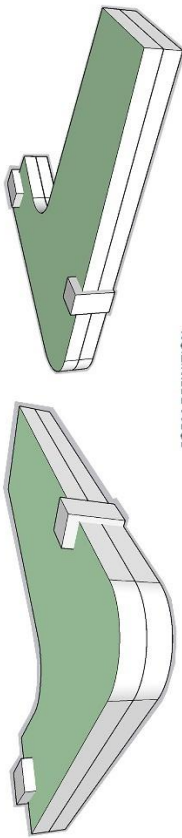


PRESENTED BY
SANDIPAN SINHA

GUIDED BY: DR. SHIVASHISH BOSE

URBAN RENEWAL OF COMMERCIAL HUB AT SHYAMBAZAR-HATIBAGAN AREA, KOLKATA

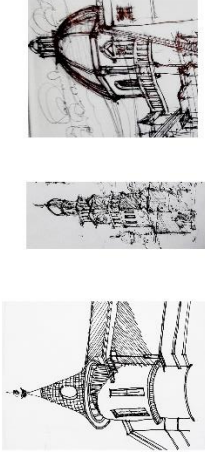
NICHE INTERVENTION



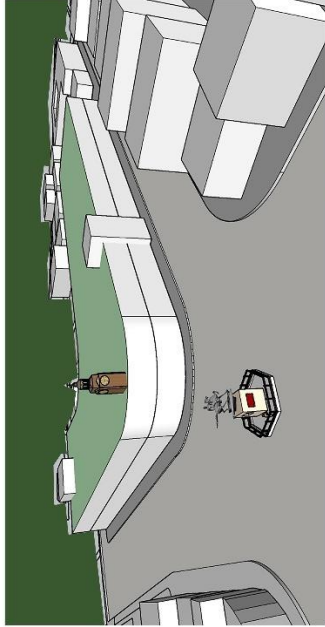
FORM DEFINITION



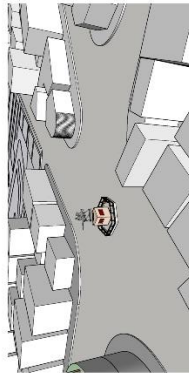
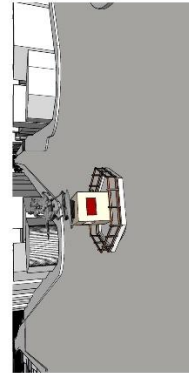
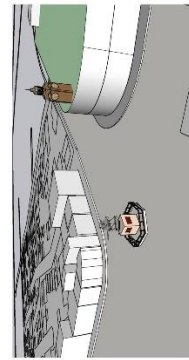
PLAN DEFINITION



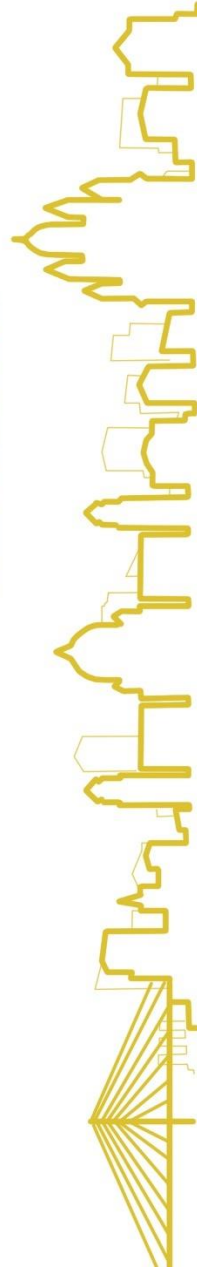
CLOCK TOWER



A STREET CORNER SIDE AERIAL VIEW OF THE BLOCK



TREATMENT OF THE EDGES AT DIFFERENT SIDE



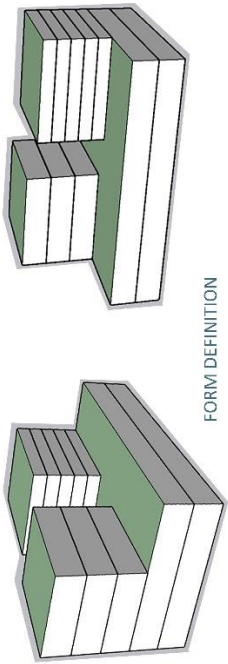
45

PRESENTED BY
SANDIPAN SINHA

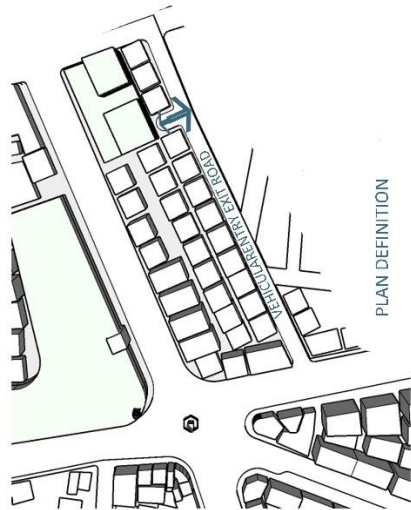
URBAN RENEWAL OF COMMERCIAL HUB AT SHYAMBAZAR-HATIBAGAN AREA, KOLKATA

GUIDED BY: DR. SHIVASHISH BOSE

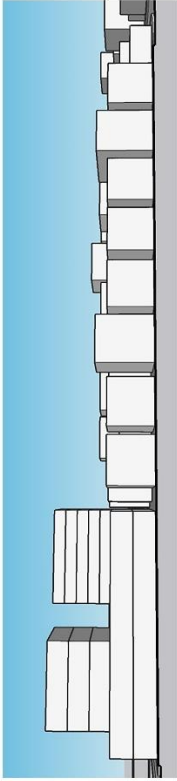
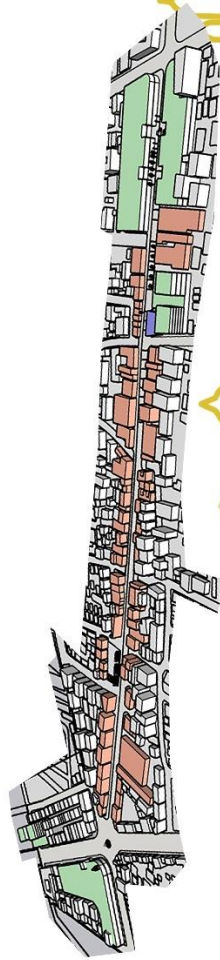
NICHE INTERVENTION



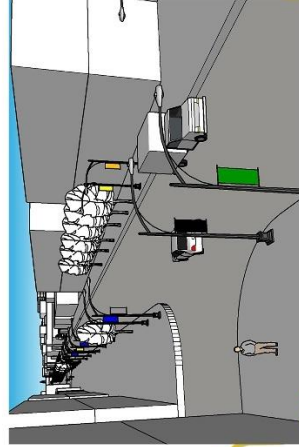
FORM DEFINITION



PLAN DEFINITION



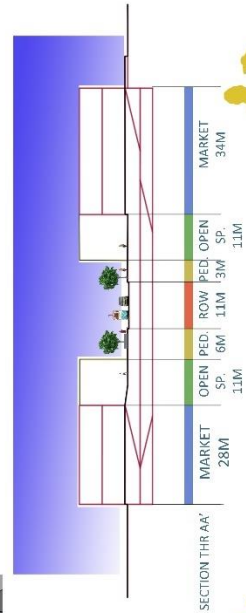
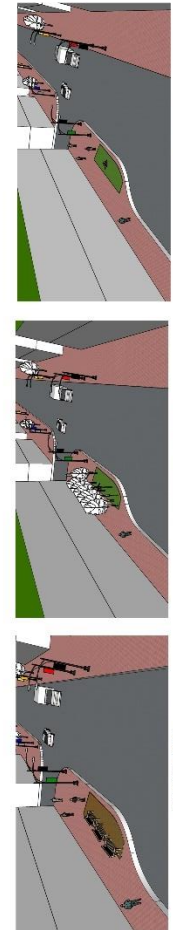
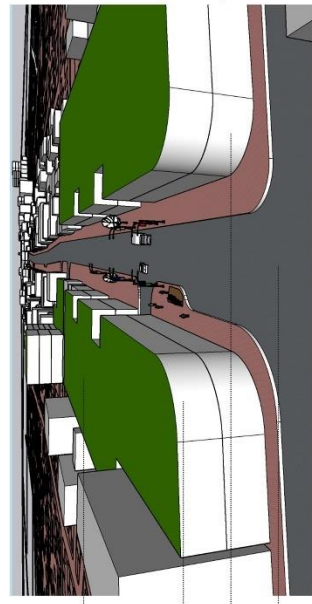
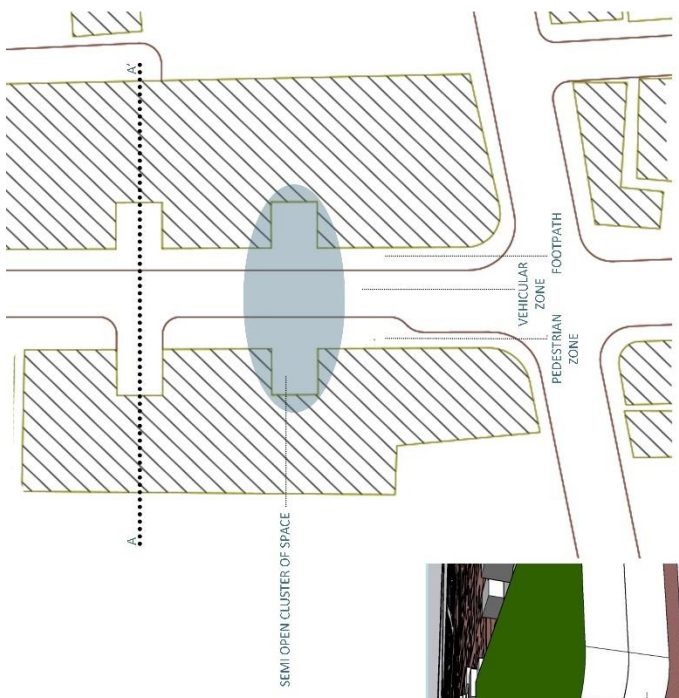
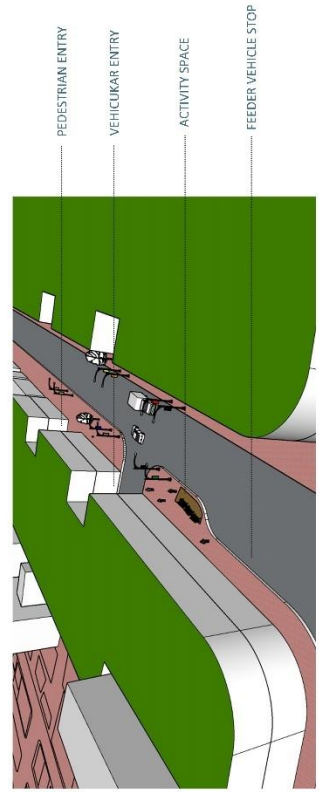
SECTION THROUGH THE ROAD SHOWING THE BLOCK 2 ALONG WITH THE OTHER BUILDINGS IN THE SUPERBLOCK



PRESENTED BY
SANDIPAN SINHA

GUIDED BY: DR. SHIVASHISH BOSE

NICHE INTERVENTION

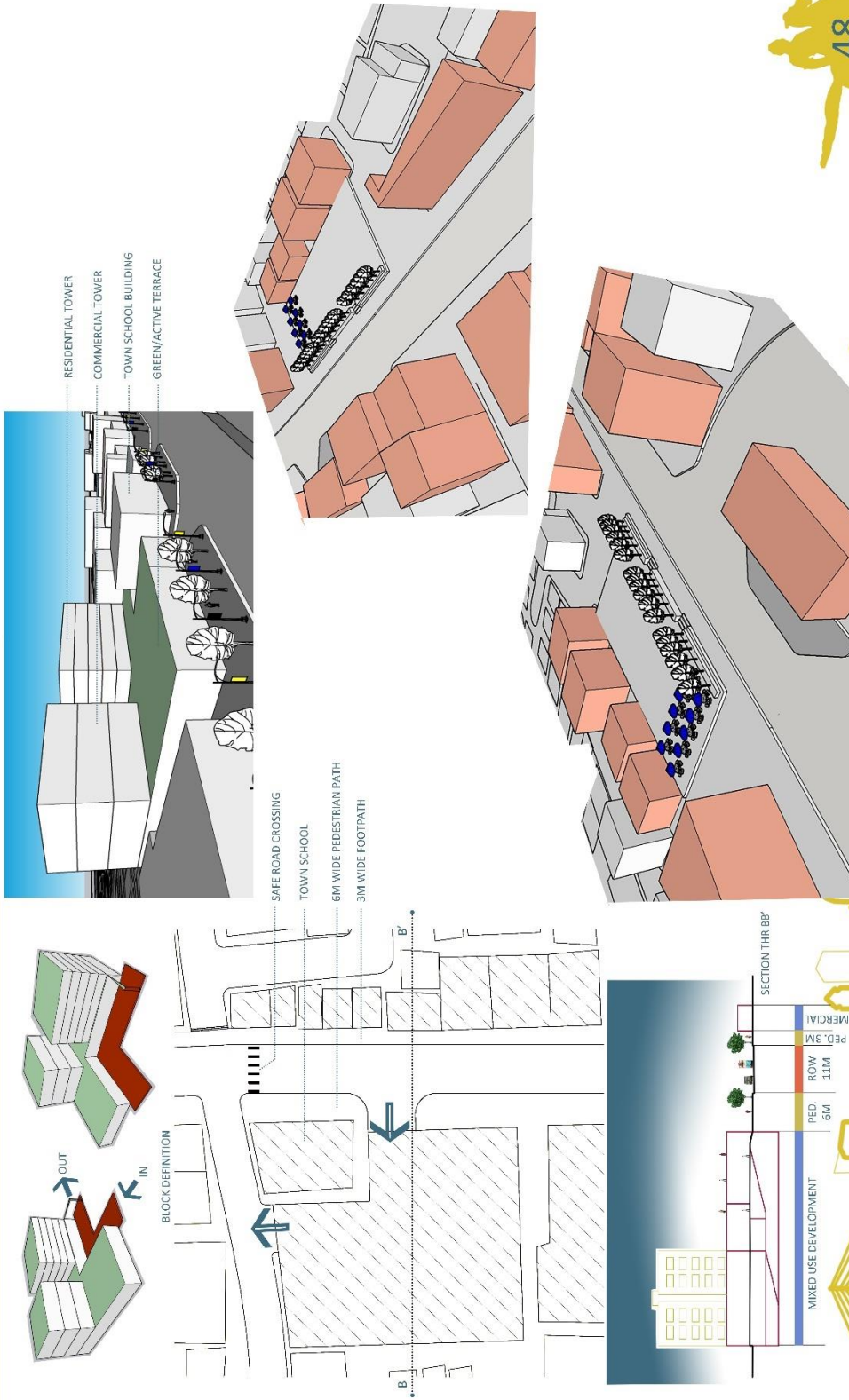


PRESENTED BY
SANDIPAN SINHA

URBAN RENEWAL OF COMMERCIAL HUB AT SHYAMBAZAR-HATIBAGAN AREA, KOLKATA

GUIDED BY: DR. SHIVASHISH BOSE

NICHE INTERVENTION



PRESENTED BY
SANDIPAN SINHA

URBAN RENEWAL OF COMMERCIAL HUB AT SHYAMBAZAR-HATIBAGAN AREA, KOLKATA

GUIDED BY: DR. SHIVASHISH BOSE



9. Conclusion:

It can be concluded that with the constant growth and change of commerce and trade and the advent of E-commerce the Kolkata bazars are still in demand. So, the area designated by the market characteristics, i.e., the commercial hub of Shyambazar-Hatibagan could be identified as a reasonable place to serve the purpose of retail business hub for years to come.

But we should acknowledge that the informal markets and growing number of hawkers are contributing towards the declination of quality of life, at least from middle-class perspective. In the last two decades it has been observed that the middle-class population are moving out from the congested city core to the greenfield gated communities at the city fringe areas. ^[13,14] (Chen, Wang and Kundu 2009, Chatterji 2014). Apart from that all the open space are being consumed by hawkers could lead to the lack of community space as well as gathering place or cultural activity spaces. So, this is the high time to revitalize the city core area to uplift the quality of life of the place to make it ready for a sustainable city life, where inclusive approach will accommodate everyone earning their bread and butter as well as living in this beautiful city.

The development guidelines and the design interventions are meant for this sole purpose and it is expected that the development is done with the SPV or Public-Private partnership then it could solve the problem of fund for revitalization. At the same time of public is having the stake in the development then they will take care of the development and maintenance of the smooth operation of the same.

10. References:

1. Roberts, P. W. et Sykes, H. (2000) *Urban Regeneration- A Handbook*, London: Sage Publications.
2. Steinberg, S. (2008) *Revitalization of Historic Inner-City Areas in Asia, The Potential of Urban Renewal in Ha Noi, Jakarta and Manila*- ADB Publications.
3. Paul D Spreinger (1965), *Urban Design, The Architecture of Town and Cities*, New York, Mc Graw Hills Book Company
4. Birkin, M., Clarke, G., Clarke, M., 2010. Refining and operationalizing entropy— maximizing models for business applications. *Geogr. Anal.* 42(4), 422–445.
5. Dramowicz, E., 2005. Retail Trade Area Analysis using the Huff Model. *Directions Magazine*. Available from: (<http://www.directionsmag.com/entry/retail-trade-area-analysis-using-the-huff-model/123411>) (accessed 20.12.20).
6. Roy D. R., *Glimpses on The History of Calcutta 1600-1800*, (1989)
7. Lynch, A. K., (1981) *A Theory of Good City Forms*, The MIT Press
8. Gehl, J. et Svarre, V., (2013) *How to Study Public Life*, Island Press
9. Chatterjee T., et Roy S., 2016. *From Margin to Mainstream: Informal Street Vendors and Local Politics in Kolkata*
10. Lynch, A. K. (1960) *The Image of The City*, London, The MIT Press.
11. Jacobs, J., 1961. *The Death and Life of Great American Cities*. New York: Random House.
12. Mahata, D., 2017. Trends of Spatial-Temporal Changes and Growth of Kolkata City, India: Evidences from Geospatial Analysis. *IUSSP 2017*. Available from: (Accessed 24.12.21) https://iussp.confex.com/iussp/ipc2017/mediafile/Presentation/Paper6548/Dinabandhu_Mahata_IIPS_Final_Full_Paper_IUSSP_2017.pdf
13. Chen, X., Wang, L. and Kundu, R. 2009- *Localizing the Production of Global Cities: A Comparison of New Town Development Around Shanghai and Kolkata- City & Community*, vol. 8, no. 4, pp-433-65.
14. Chatterji, T. 2014, *Local Mediation of Global Force in Transformation of the Urban Fringe- The Story of India's Regional IT Clusters*, Saarbrücken, Lambert Academic Publishing