REGENERATING PUBLIC REALM IN THE PERI- URBAN NEIGHBORHOOD

A CASE APPLICATION AT BARUIPUR, W.B.

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

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JADAVPUR UNIVERSITY
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~~I~~/We certify that the thesis entitled "Regenerating Public Realm In The Peri- Urban Neighborhood: A Case Application at Baruipur, W.B." submitted by Shri/~~Smt~~ Sayantan Paul 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.

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ACKNOWLEDGEMENT

This thesis would not have been complete without many people who helped me directly and indirectly through there constructive criticism in the evolution and preparation of this work. I want to thank all of them for their sincere advice which made this period really educative, enlightening, pleasurable and memorable for me.

First and foremost, I would like to express my deepest appreciation to my thesis supervisor **Assistant Professor Tanmoy Datta**, Department of Architecture, Jadavpur University for his continuous support and valuable guidance, which has remained as a valuable asset for the completion of my thesis.

I am grateful to the thesis coordinator **Prof. Dr. Tapas Kumar Bhattacharyya**, Department of Architecture, Jadavpur University for his support along with his effective and timely communication throughout the project.

I am indebted to my family and friends for their unwavering support, understanding, and encouragement throughout this journey. Their belief in me and their constant motivation have been the driving force behind my accomplishments. I am grateful to the library staff who provided valuable assistance in accessing relevant resources and materials for this study.

Lastly, I would like to express my gratitude to all the individuals who have contributed directly or indirectly to the completion of this thesis. Your support and encouragement have been instrumental in this endeavor. The entire process was very enriching and informative. I am looking forward to use these in future.

Thanking you.

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ABSTRACT

Public Realm has fluently revealed the difficulties of their towns in physical, socio-economic, cultural, ecological and behavioral setting above the magnitude of Urban Public life. Urban Public Realm illustrates a significant charm in the practicality of urban public spaces in a very impressive, meaningful and significant way of places. Though, the planners and designers on urban public realm reveal that few of the public places are presently undergoing a failure in its corporeal and aesthetical design. Thus, in this revolutionary and industrial period, it develops a vital thing to examine the definite use of contemporary urban public places, and to identify how and in what way they are being used by public. Therefore, a vision occurs to comprehend the interrelationship amongst corporeal arrangements of modern urban civic places and individual's activity in such public places and also to prospect the behavior of people in such public spaces. The Paper relates to urban public spaces particularly Squares, Piazzas, Plazas, Streets, Chowks, their uses and to comprehend the interrelationship between their corporeal design of Modern Urban Public space and people activity outlines in such places.

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1.0
INTRODUCTION

1.1 Background:

1.1.1 Definition – ***Regeneration***

Regenerative architecture is a subset of architectural regeneration that involves engaging the natural world as the medium for and generator of architecture

Source : thedesigngesture.com

Significance of Regenration:

• Regenerative design seeks to not merely lessen the harm of new development but rather to put design and construction to work as positive forces that repair natural and human systems The diagram below illustrates the path from sustainability to regenerative design.

• The term **regeneration** refers to a process that repairs recreates or revitalizes its own sources of energy or air water or any other matter It is a sustainable system that shapes the needs of a society on the integrity and balance of nature.

4 R strategy of Urban Design:

• Redevelopment - Improve living environment and raise quality of life by replacing old and dilapidated areas by new development.

• Reservation - Preserve buildings of historical or cultural values.

• Rehabilitation - Prolong the life span of old buildings.

•Revitalization – Connect redevelopment, reconstruction and preservation as dots, lines and faces in 3D way.

Source : Frontiers of Architectural Research Volume 7, Issue 2, June 2018,

1.1.1 Definition – ***Public realm***

"Public realm is defined as space that is shared community by the public."

Source : Oxford Dictionary

"Streets and their sidewalks, and main public spaces of a city are its most vital organs", said Jane Jacobs in her book The Death and Life of Great American Cities.

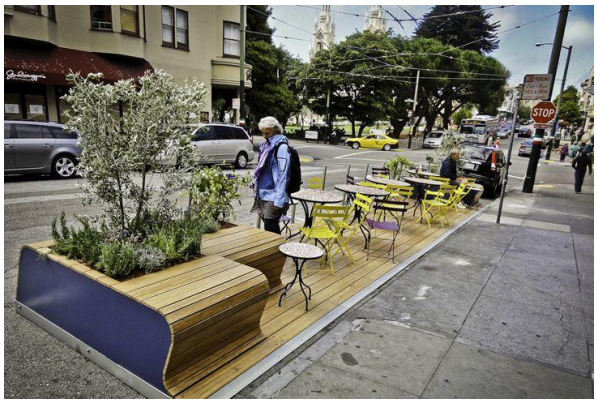


Fig1: Walket in San Francisco / Rebar
Source : ASLA

Fig 2: Public Realm vision
Source : https://haveyoursay.developmentwa.com

*1.1.1 Definition – **Neighborhood***

"A geographically localized community within a larger city, town, suburb or rural area, sometimes consisting of a single street and the buildings lining it."

Source: Schuck, Amie and Dennis Rosenbaum 2006 "Promoting Safe and Healthy Neighborhoods

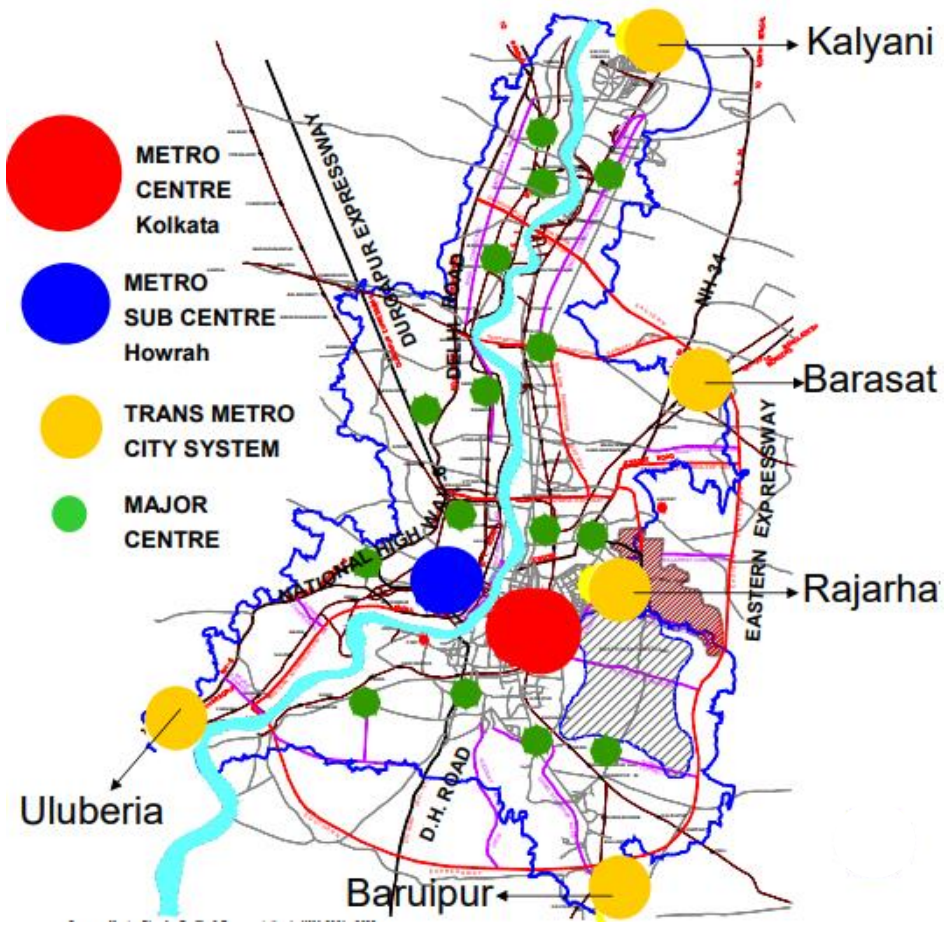
Fig 3: Neighborhood
Source : PPS.org

1.1.2 Relevance / Justification

GOVERNMENT PROPOSALS – VISION 2025

- As per KMA demographic pattern in 2013, Baruipur municipality area had 9.07sq. Km. with a population of 55,628. Annual growth rate of population was 19.2%. **The projected population 2025 is going to rise to 300000.** According to the vision 2025, it is proposed to achieve the title of **Trans Metro City System** area at Balarampur adjoining to Baruipur, is proposed to relief the pressure of population.
- **Slum Free City Plan of Action (SFCPoA) in 2014 is also proposed for Baruipur Municipality.**

Fig 4- **PROPOSED METROPOLITAN STRUCTURE-SPATIAL DISTRIBUTION OF CENTERS 2025**



Source: Comprehensive mobility plan, KMA (2001 - 2025)

1.1.2 Relevance / Justification

Government of West Bengal
Urban Development & Municipal Affairs Department

The Green City Mission

The Standing Committee of the Cabinet on Industry, Infrastructure & Employment, in their meeting held on 4th July 2016, approved the concept of Green City Mission proposed by the Urban Development and Municipal Affairs Department in principle. The same committee also approved the formation of a High Powered Committee headed by the Chief Secretary of the state. The Implementation Mechanism of the Green City Mission was also approved. The High Powered Committee was constituted with the Departmental Heads of various Departments under the chairmanship of the Chief Secretary.

Approval of Projects under the Green City Mission

- The urban local bodies and Development Authorities prepare the DPRs/Estimates as per the Guideline of the Green City Mission and get the DPRs/Estimates vetted by the competent authority of Municipal Engineering Directorate or KMDA (for KMA area only), PWD, PHED or by the office of the Special Engineer, SLRDC and submits the same to the UD and MA Department for approval.
- The improvement of public spaces such as development of parks, green strips, footpaths, afforestation and landscaping around heritage buildings, district and sub-divisional hospitals have received priority. Conservation of Water Bodies has also been taken up by many municipal bodies.

Centre for Science and Environment

DownToEarth India Environment Portal Rainwate

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How will West Bengal's Green City Mission really make a difference - CSE presents a blueprint

Green City Mission and incentive programmes for green buildings to curb resource guzzling and pollution can help only if resource-saving targets, norms and guidelines are adopted and monitoring is mandated

Kolkata, March 10, 2018: The West Bengal government's Green City Mission and other green building programmes offer an excellent opportunity for early action which can lead to resource savings and lesser environmental impacts, but only if it adapts sustainability guidelines and performance monitoring benchmarks – says Centre for Science and Environment (CSE), the New Delhi-based research and advocacy think tank. CSE recently conducted a workshop in the city on this issue, in association with the Institute of Town Planners of India, West Bengal Regional Chapter.

Fig 5: Report of CSE on West Bengal Source : cseindia.org

The Indian EXPRESS
JOURNALISM OF COURAGE

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News / India / Green City Mission: Rs 50 lakh each for all 125 municipalities in West Bengal

Premium

Green City Mission: Rs 50 lakh each for all 125 municipalities in West Bengal

Previously, the state government had created a corpus of Rs 400 crore for the entire project after it opted out of the Centre's Smart City project, stating that it wasn't feasible.

Written by Aniruddha Ghosal
Kolkata | December 21, 2016 05:58 IST

NewsGuard

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Chief Minister Mamata Banerjee had also flayed the Smart City project. PTI Photo

UNDER ITS Green City Mission, the West Bengal government is set to handover an initial funding of Rs 50 lakh each to all the 125 municipalities of the state. This is part of the project under which New Town near Kolkata will reportedly be built as the country's first ever 'green city'.

LIVE BLOG

- Assembly Elections 2023 Live Updates: Rajnath Singh to address public meetings in Mizoram; TDP, JSP to release joint manifesto — 54 mins ago
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- Delhi News Live Updates: India should aim to become a developed nation by 2047, says PM Modi at 'Amrit Kalash' event — 11 hours ago

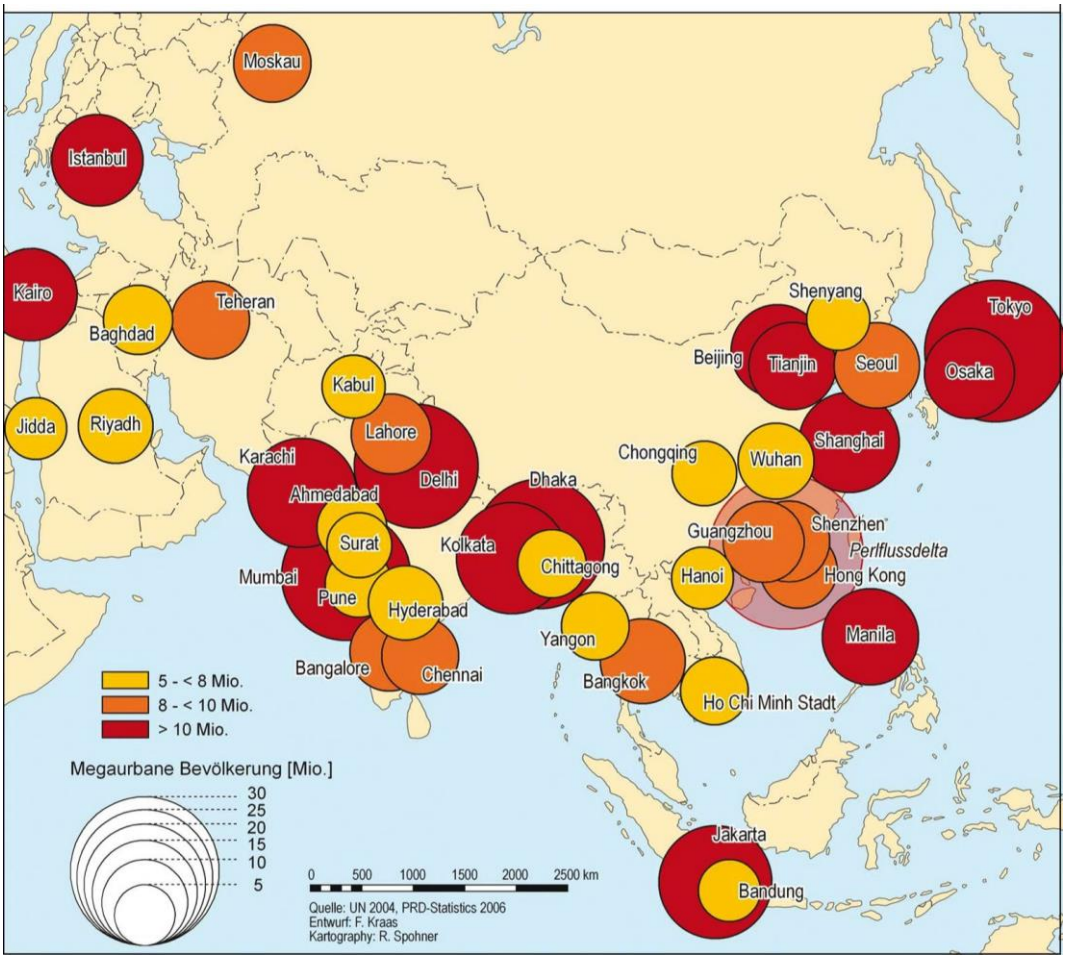
BEST OF EXPRESS

Fig 6: Newspaper clipping of the Indian express journal Source : indianexpress.com

1.1.2 Relevance / Justification

URBANIZATION TRENDS – A GLOBAL CONCERN

Fig 7- **Urbanization trend in South Asia, growth of megacities :**



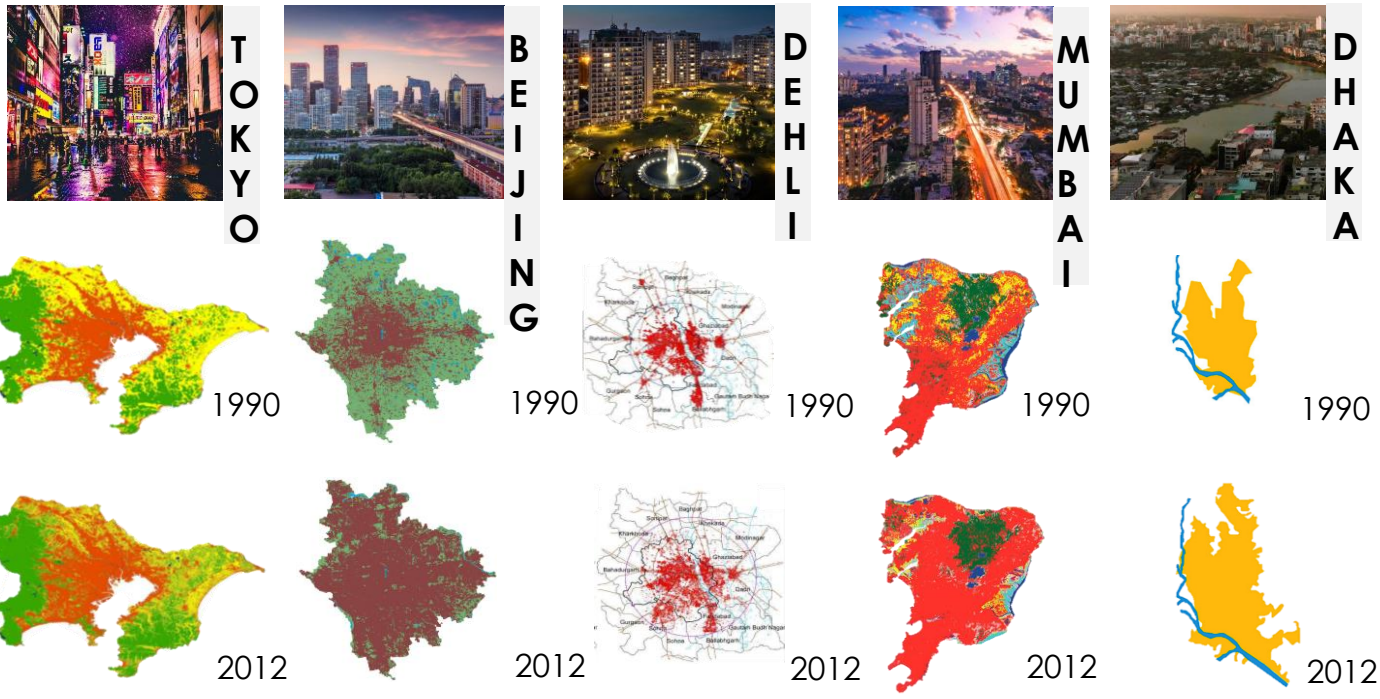
Source: Asian megacities (F. Kraas, U. Nitschike 2008)

Fig 8- linear graph showing Urbanization trend in Asia

Source: UN, Department of Economic and Social Affairs population division (2011)

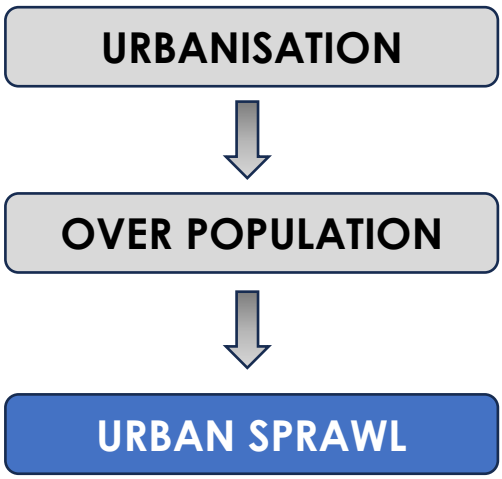
1.1.2 Relevance / Justification

Fig 9- **Urbanization trend in Asia, a comparison of South Asian countries:**



Source: UN, Department of Economic and Social Affairs population division (2011)

Fig 10 - **Comparison of average, annual urban population share growth rates globally:**



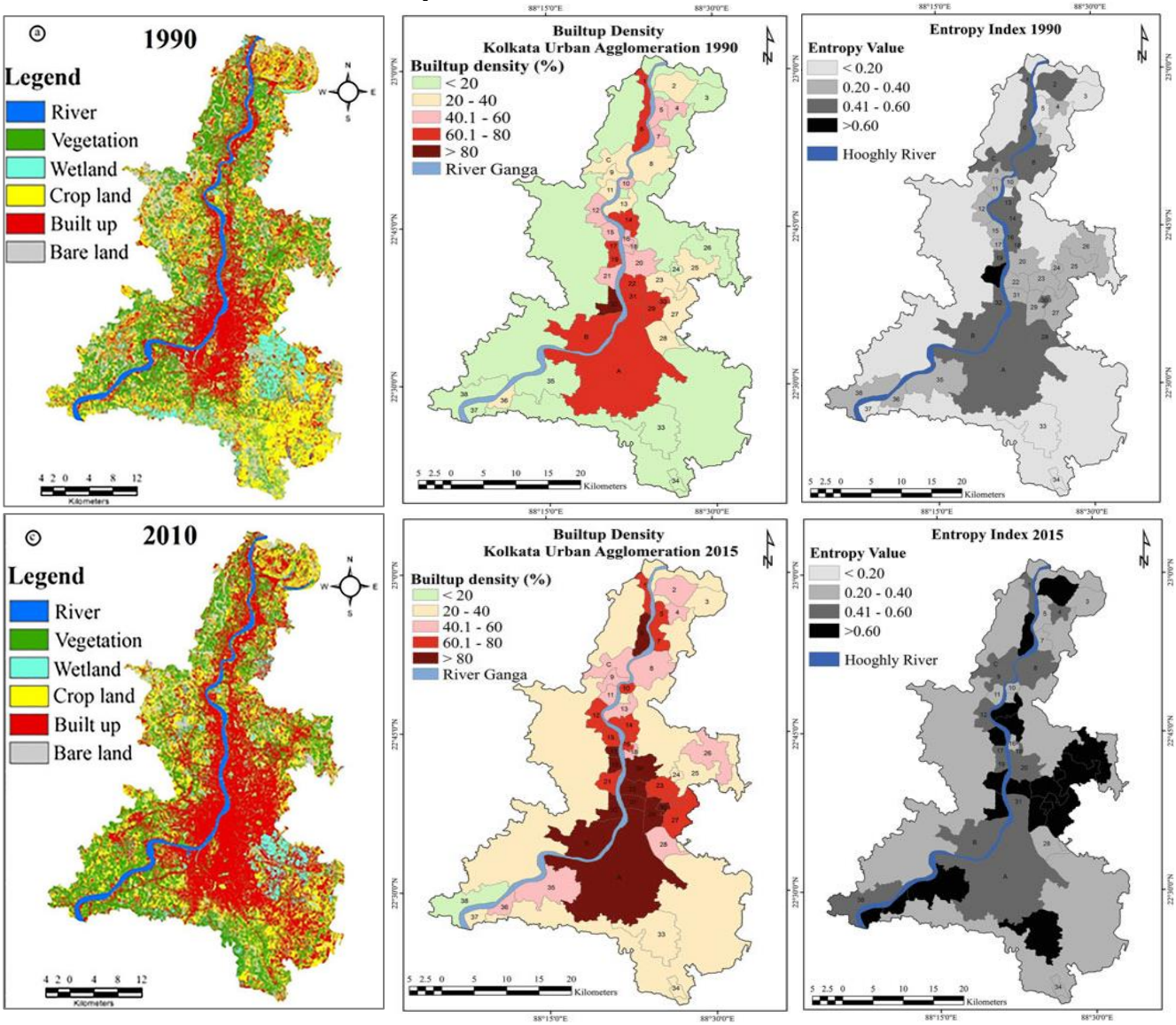
Source: Author

"Dull, inert cities, it is true, do contain the seeds of their own destruction and little else. But lively, diverse, intense cities contain the seeds of their own regeneration, with energy enough to carry over for problems and needs outside themselves."

(Ref.- The Death and Life of American Cities by Jane Jacobs)

1.1.2 Relevance / Justification

Fig 11- **Changes in the continuous buildup area and urban agglomeration area of KMC with respect to KMDA area and its 10 kilometer buffer boundary, between 1990 to 2015.**



Source: Kolkata Metropolitan Development Authority (1990-2015)

The classification of land use and land cover from images reveal that:

1. Increase in the built up areas along the major transport corridors revealing steady urban expansion.
2. General direction of expansion is southward and southeastward.
3. There is steady decrease in natural covers like water bodies and vegetation.
4. Scale of expansion seems to be maximum during 1990 and 2000.
5. Many areas have been encroached during the period 2000 to 2010.

1.2 Aim:

To provide an urban design framework for peri-urban neighborhood enhancing the public realms.

1.3 Objectives:

- To define peri-urban area in Indian context.
- To recognize the peri-urban nature of selected site.
- To enhance the public-realm of the neighborhood.
- To derive the policy and guidelines for the development.
- To apply the formulated guidelines in the specific site.

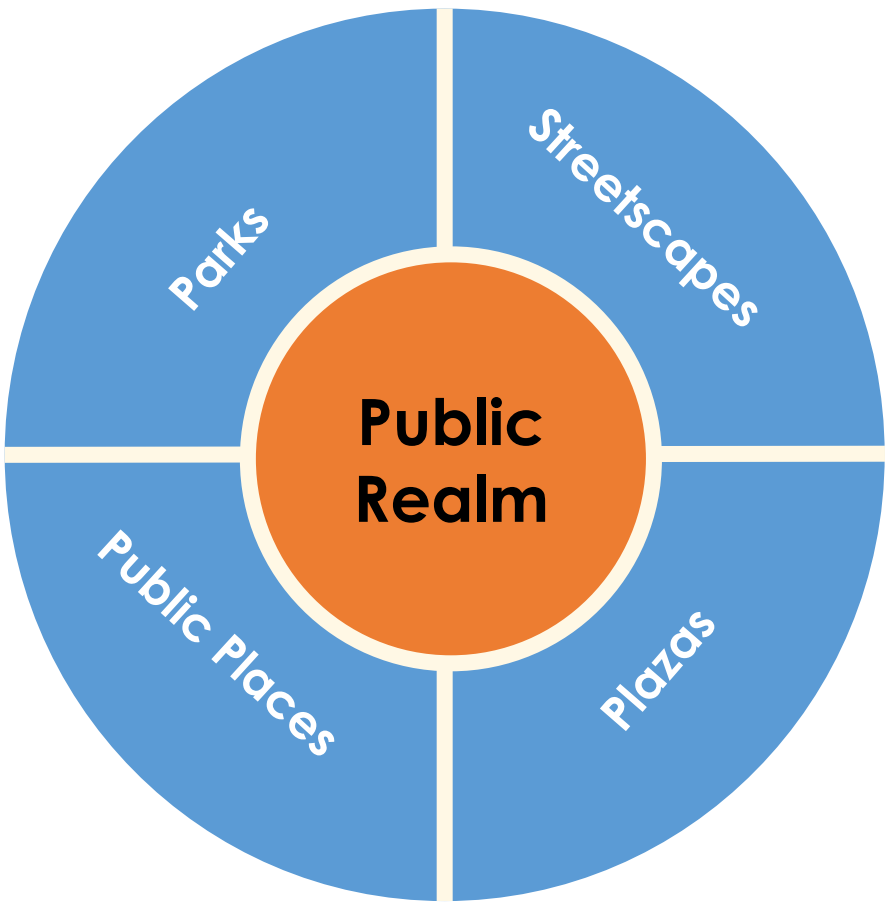


Fig 12- Elements of public realm

Source: www.upc.gov.ae

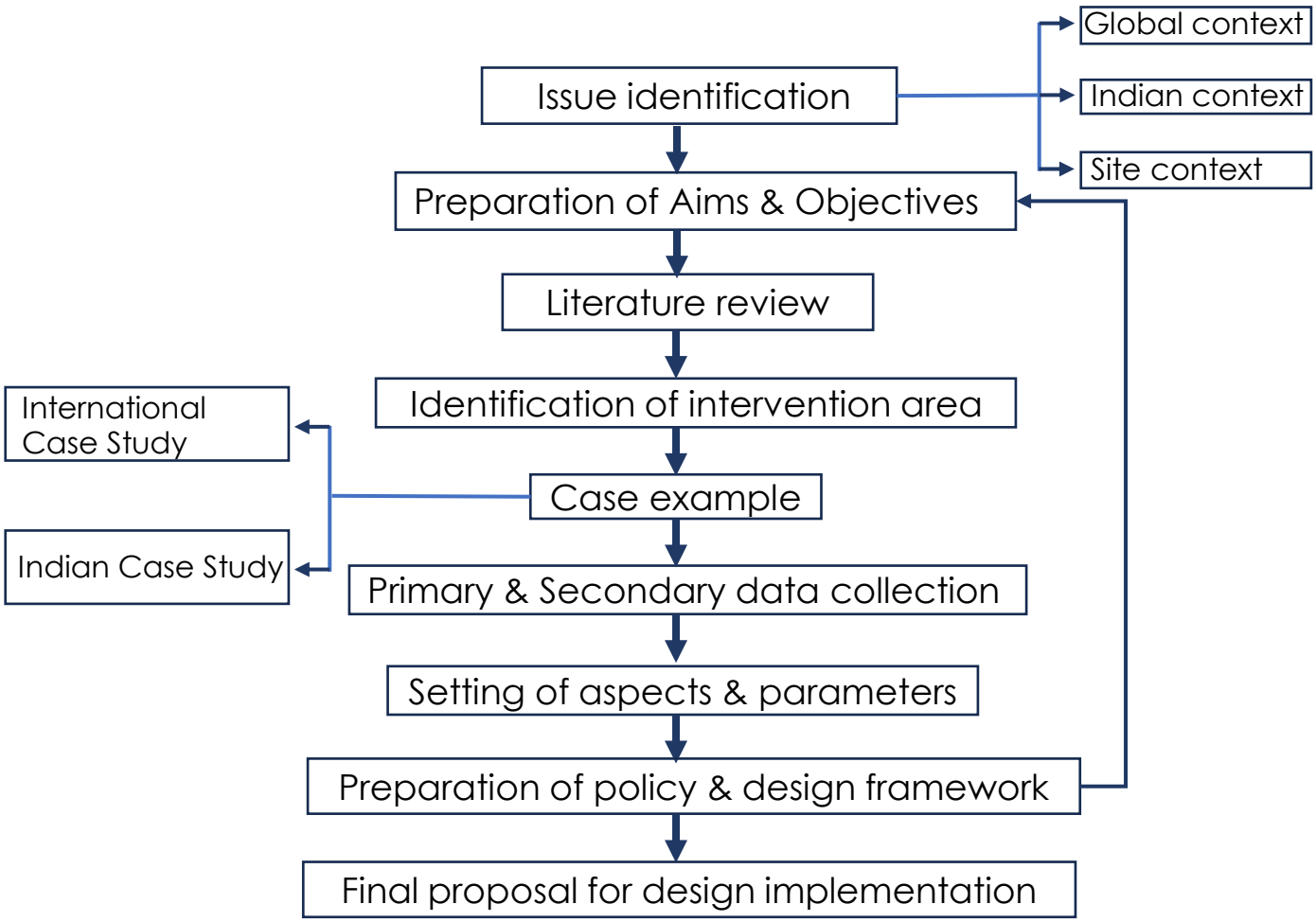
1.3 Scope of Work:

1. The framework will focus on designing and enhancing various public spaces such as parks, plazas, squares, and streets.
2. Designing for a sustainable, walkable & sociable neighborhood.
3. Improving the legibility of the neighborhood & its context.
4. Enhancing community engagement and inclusivity.
5. Integrating diverse land uses within the public realm, to create a vibrant and multifunctional peri-urban environment.

1.4 Limitations:

1. Adhering to the existing regulatory frameworks and zoning restrictions may limit the flexibility of design interventions.
2. Resistance or reluctance from the community to adapt the proposed changes in the public realm may pose a limitation to the successful implementation of the urban design framework.
3. Maintenance expenses would be posing challenges for long-term upkeep.

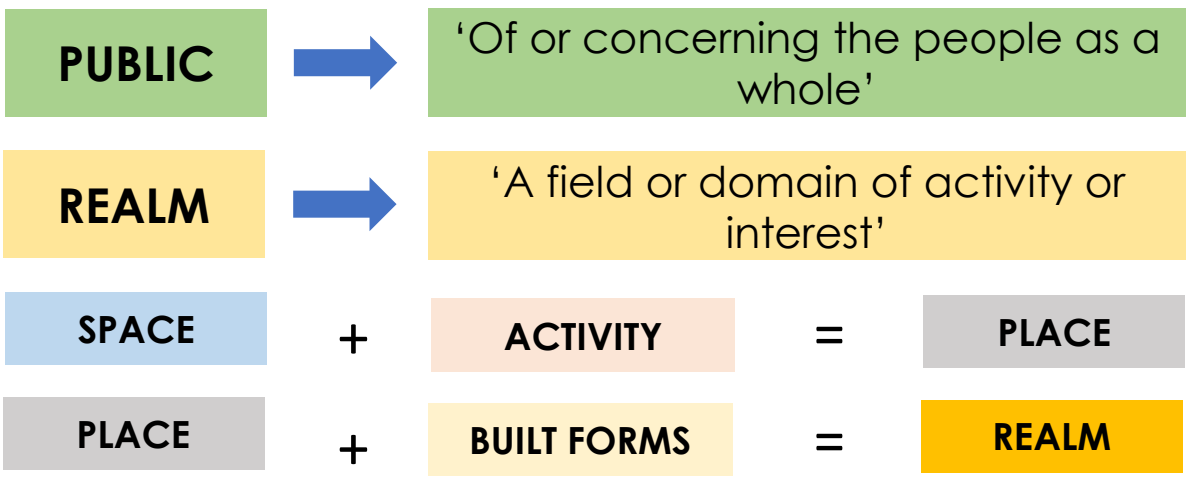
1.6 Methodology:



2.0
LITERATURE STUDY

2.1 What is the Public Realm?

- The public realm comprises spaces and places that are open and freely accessible to everyone, regardless of their economic or social conditions. These spaces can include streets, laneways and roads, parks, public plazas, waterways and foreshores.
- Public realm structure delivers the location of and connection to destinations and activities. It includes layout and detailed design to support the function and amenity of streets, public spaces, public transport access and the interface between the public realm and private property.
- While the overall urban structure may be enduring, the purpose and detailed arrangement of public spaces may change over time.
- The link between 'the city' and 'the people'.
- The natural and built environment used by the general public on a day-to-day basis.



Why is it important?

The public realm provides a space for people to be free to access, to move about and to enjoy recreation. It enables people to carry out their daily business, to engage in activities or meet with others or simply to be. The public realm must be attractive, inclusive and safe to be in. An inhabited and well maintained public realm feels safe and encourages people to use spaces.

2.2 Role of the Public Realm?

The community's development fabric is composed of two distinct, yet inter-related components: the "public" realm and the "private" realm. The "public realm" consists primarily of the publicly-owned street rights-of-way and other publicly accessible open spaces such as parks, squares, plazas, courtyards, and alleys. The "private realm" consists of privately-owned areas in large part developed with buildings and associated improvements, and is more limited in its accessibility to the public.

The public realm plays a critical role in the area's character and function, serving overlapping roles, including:

- **Circulation and Access.** The public street rights-ofway provide for circulation within and through the community—accommodating pedestrians, bicycles, and buses, in addition to automobiles and trucks.

- **Development Framework.** The public street rights-ofway provide the fundamental structure that contains and organizes individual developments into a cohesive whole.

- **Public Open Space.** In addition to the community's parks and plazas, public street rights-of-way play an PRIVATE REALM PUBLIC REALM important role as public open space—allowing for light, air, landscaping within developed areas, and serving as the "living room" for community life—places where people meet, interact, and linger.

- **Visual Character.** While buildings are important visual elements, the physical design of the public realm is critical in establishing the community's identity and overall character.

2.3 Objectives to create good Public Realm

1. Ensuring a public realm structure where the movement network and the land uses support each other.
2. Ensuring the public realm structure provides for accessible, safe and conveniently located public spaces.
3. Ensuring the public realm structure provides for suitably-sized, comfortable and purposeful public spaces.
4. ensuring a public realm structure where streets support the amenity and function of neighborhoods.
5. Ensuring the public realm structure provides high amenity and safe interfaces between different uses.
6. Ensuring a well-managed, high amenity public realm

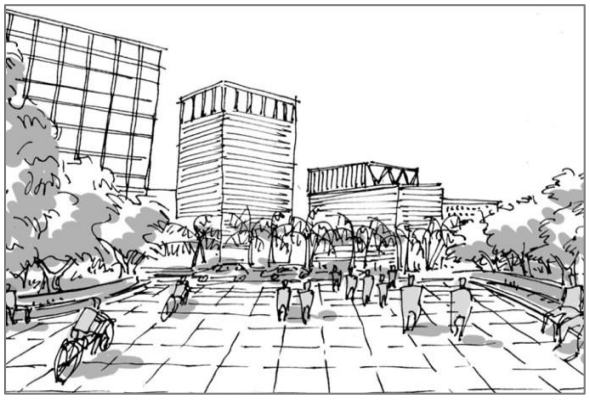
Fig 13- Objectives to create good Public Realm

Fig 14- Key aspects of the Public Realm:

ACCESSIBILITY

PLACEMAKING

SOCIAL INTERACTION



MOBILITY AND CONNECTIVITY

ENVIRONMENTAL SUSTAINABILITY

SAFETY AND SECURITY

2.4 What is Peri – Urban?

- A transition area moving from strictly rural to completely urban, related to high pressure towards urban development is known as **Peri-Urban Area.** Here development is mostly visible in the form of urban sprawl. This phenomenon can be termed as peri urbanization.
- Rivets, Fertner and Nielsen describe peri-urban areas as **"a new kind of multi-functional territory."**

2.4.1 The Dynamics of Peri-urbanization

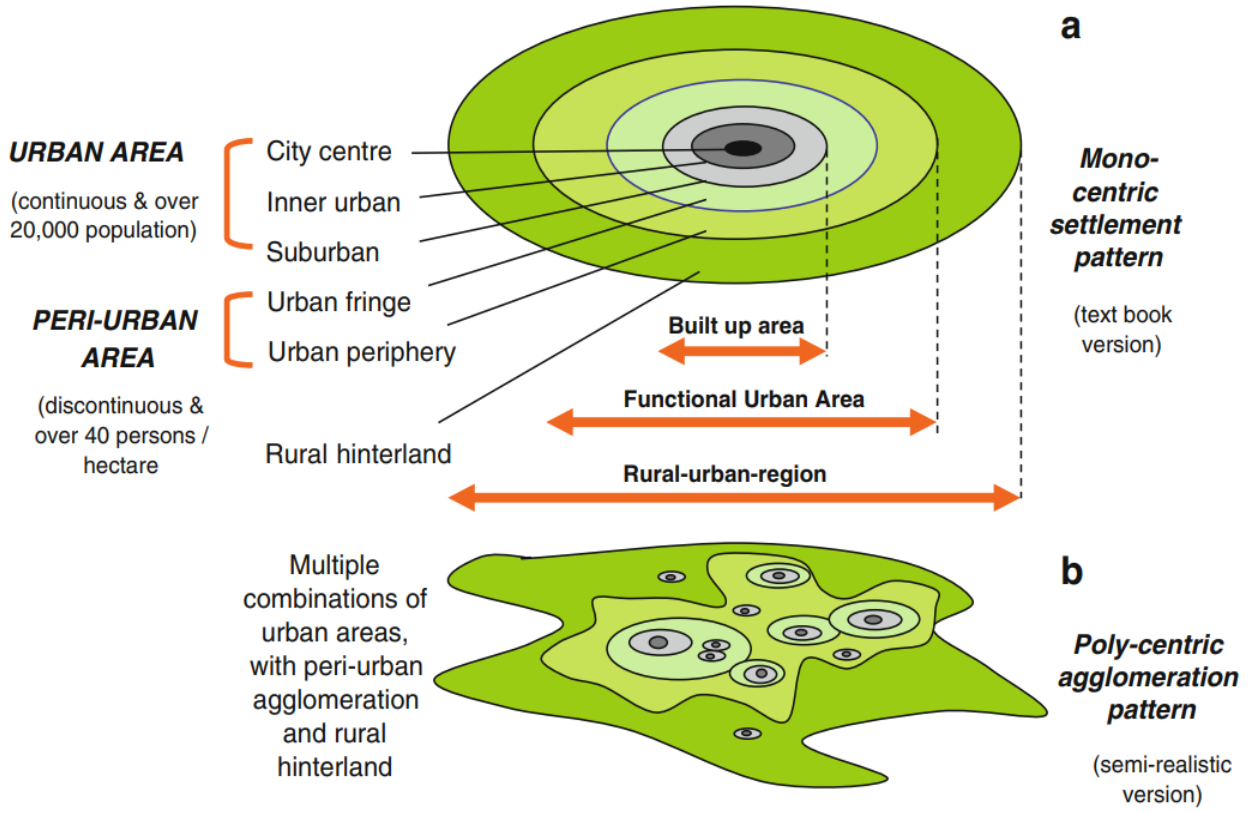
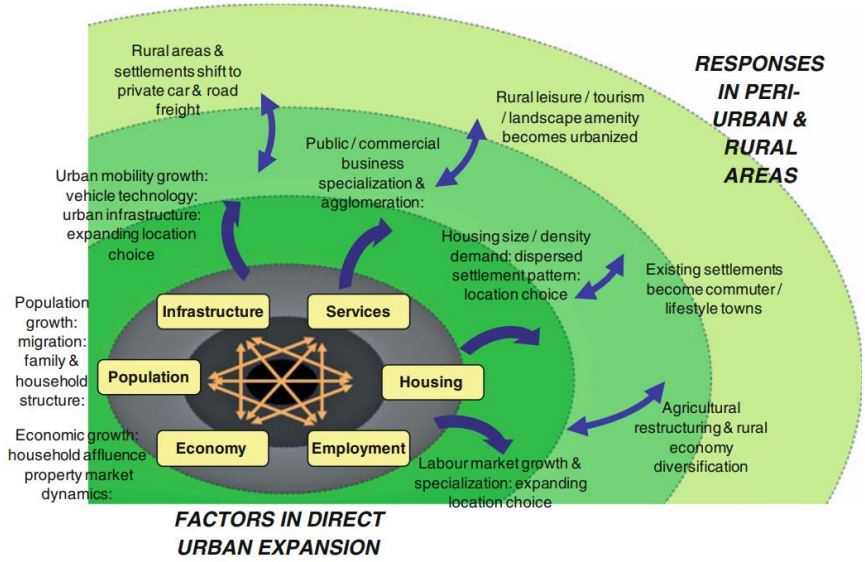


Fig 15- PLUREL concept of peri-urban areas and rural–urban-region

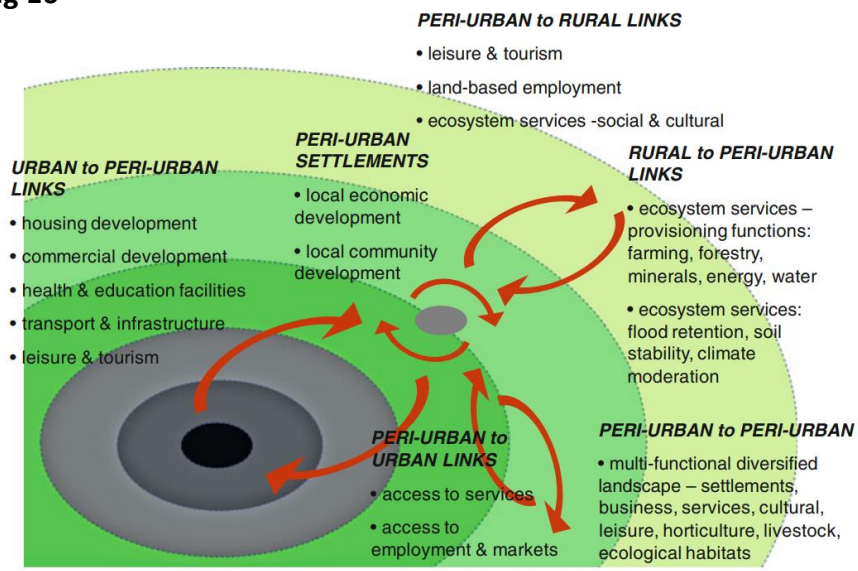
The PLUREL project used the term 'rural–urban-region' (RUR) as the main unit of analysis, with a range of area types, shown below as nesting circles (Gallentet al. 2006).



In simple terms, peri-urban change is a direct result of urban expansion, the peri-urban area spreading outwards into rural areas

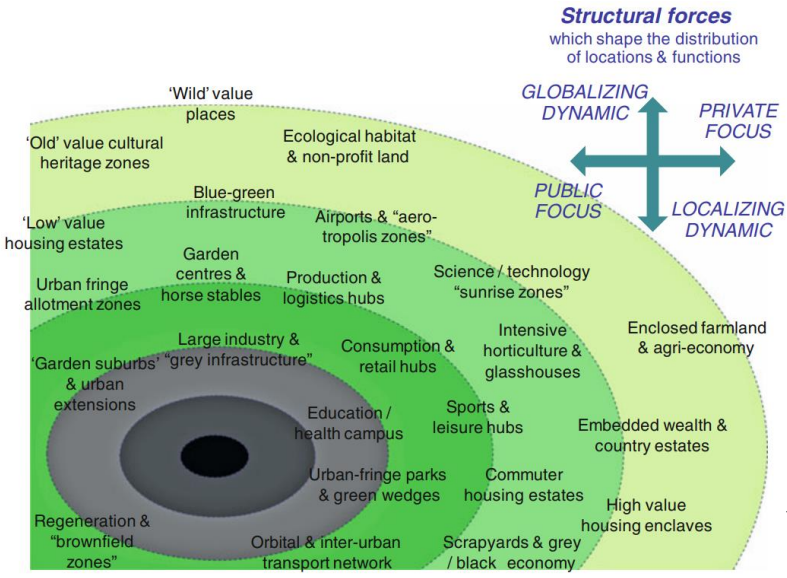
Source: (Bell et al. 2010).

Fig 16- Dynamics of the peri-urban: (**a**) urban expansion



The result is that previously separate peri-urban areas can become the linking spaces, forming continuous, functional, low density zones, which provide for most living/working/shopping needs for the majority of suburban or ex-urban car-based residents (Soja 2000).

Fig 17- Dynamics of the peri-urban: (**b**) agglomeration and linkages



Each of the above factors – urban expansion, regional agglomeration, and structural effects – can work in combination, with many feedback loops between them, amplifying the processes of change (Geels 2005).

Source: Peri-urban Land Use Relationships (PLUREL) concept of peri-urban areas and rural–urban-region, (J. Ravetz,, C. Fertner, T.S. Nielsen 2013)

Fig 18- Dynamics of the peri-urban: (**c**) global–local and structural

2.4.1 Urban to Peri-Urban linkage

a) Urban areas are at a constant pressure for space for various urban activities, with a even more evident scarcity of resources including that of land. This space is provided in the peri urban area, creating a link of resource scarcity in one and availability in the other.

b) The urban area in return is a zone of opportunity and facilities, which becomes an attraction center for the residents of the transitional areas and the rural areas.

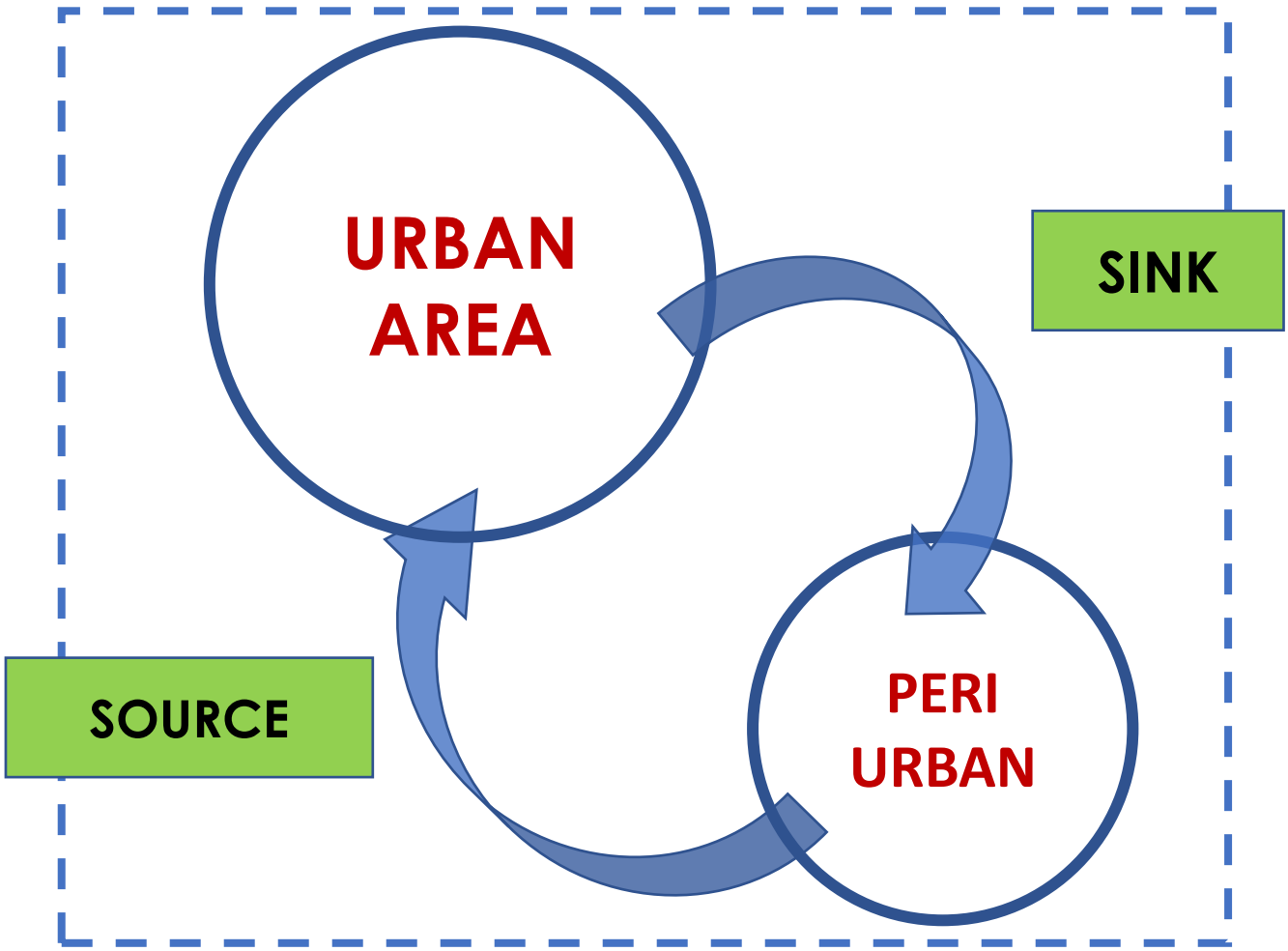


Fig 19 - **Urban to Peri-Urban Linkage**

Source: International Journal of Scientific & Engineering Research Volume 10, Issue 4, April-2019

2.4.1 Urban to Peri-Urban linkage

The areas in context are characterized by their transformative character. Various parameters are identified in this paper to establish the changes that occur and thereby define the peri urban boundary.

a) Changes in the demography
b) Changes in socio economic parameters
c) Changes in the physical and infrastructural aspects
d) Changes in the environmental conditions.

Fig 20 **– Pull factors of Peri-Urban Linkage**

Fig 21 **– Push factors of Peri-Urban Linkage**

Source: International Journal of Scientific & Engineering Research Volume 10, Issue 4, April-2019

2.4.2 City & its growth

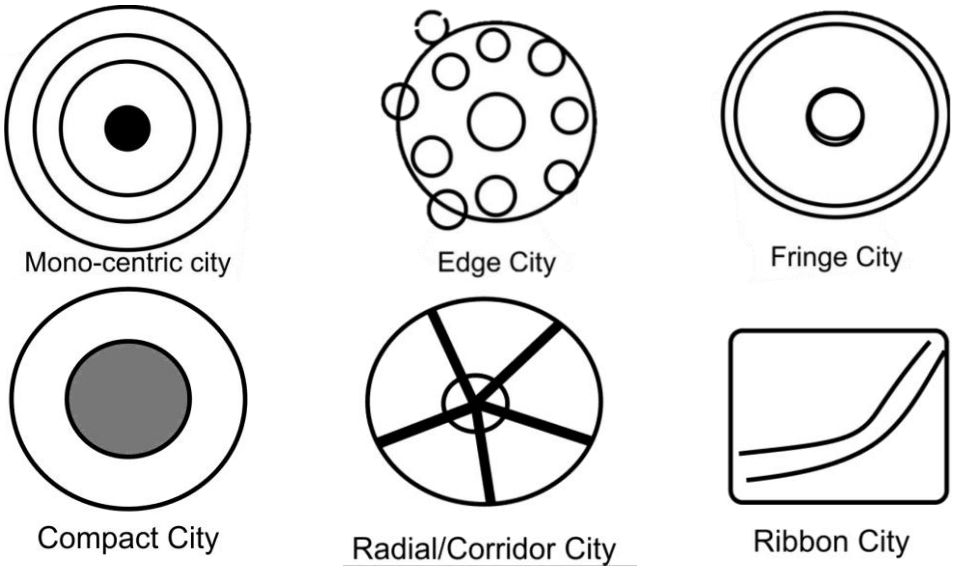


Fig 22- **Growth of a city with respect to various factors**

City starts with the bounded region and slowly evolves to former region by consuming the adjacent hinterland or the zone of its influence, mainly along the linkage corridors and supportive physical infrastructure.

Stages of transformation of villages:

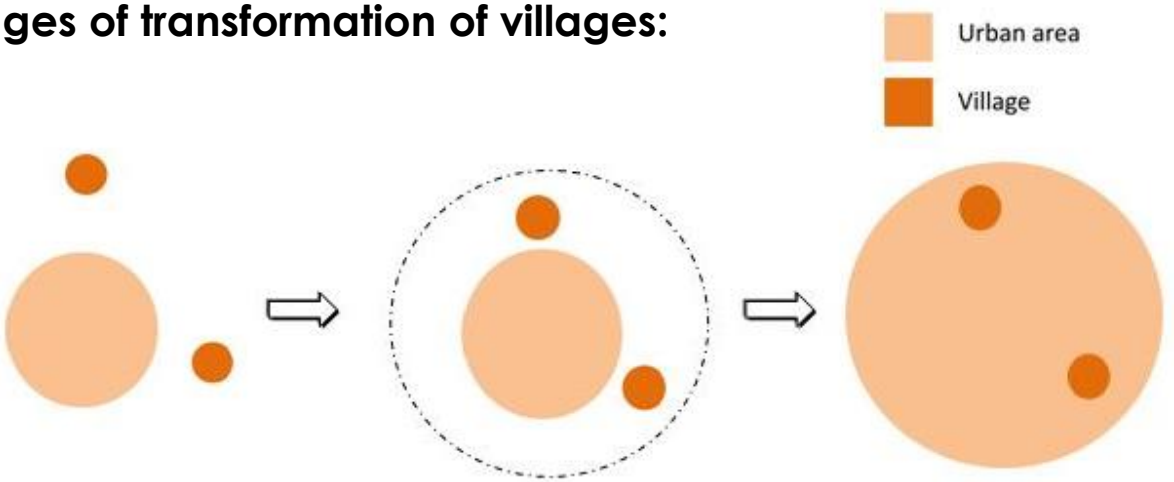


Fig 23- Stages of transformation of villages

Source: "Emphasizes functions that encourage rural-urban relations" (Chigbu, 2013,)

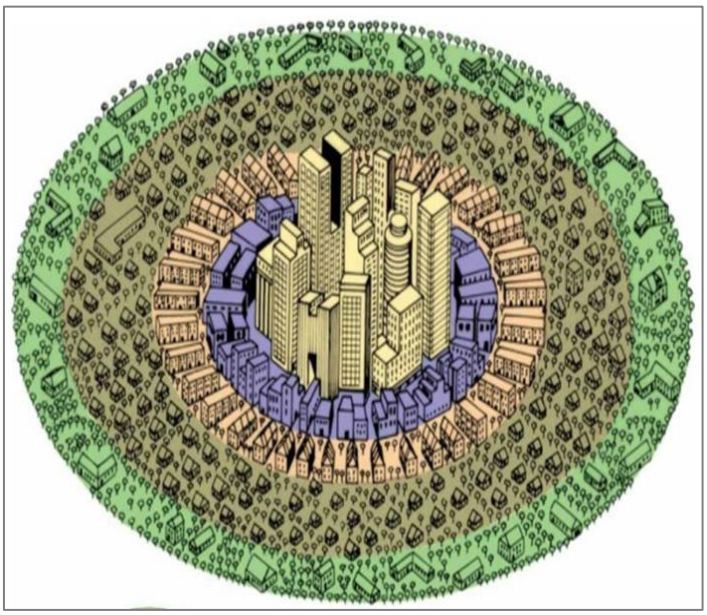
Urban Fringe: Scattered pattern of lower density settlement areas, urban concentrations around transport hubs, together with large green open spaces.

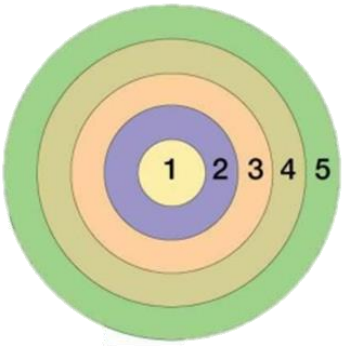
Urban periphery: Zones surrounding the main built-up areas with the lower population density but belonging to the Functional Urban Area.

Rural hinterland: Rural areas surrounding the Peri urban area, but within the rural urban region an accessible within a practical commuting time.

2.4.3 Classical Models Of Urban Structures

1.CONCENTRIC ZONAL MODEL Fig 24 (a) & (b)

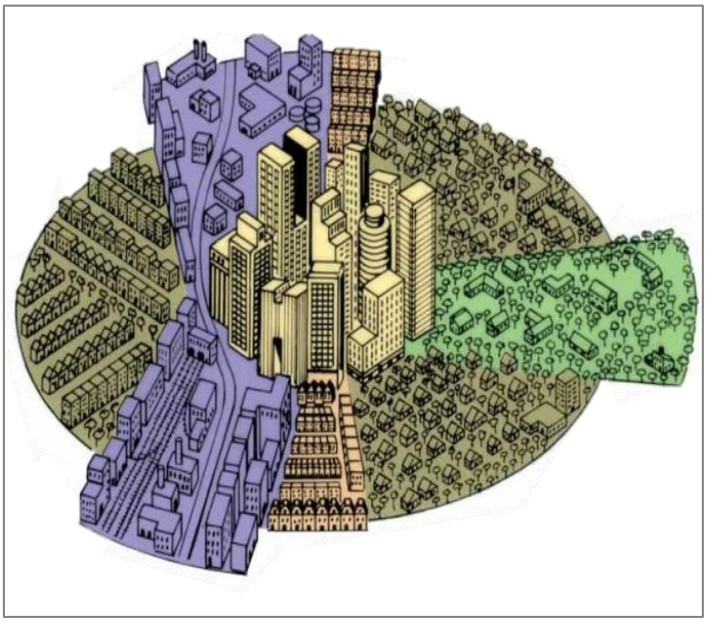


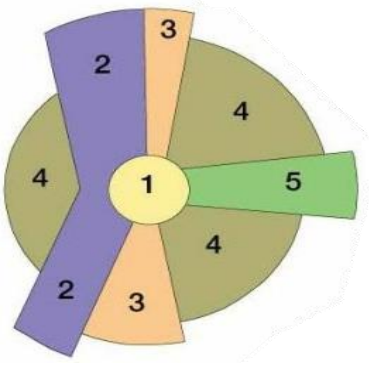


1 Central business district
2 Zone of transition
3 Zone of independent workers' homes
4 Zone of better residences
5 Commuter's zone

An early model showed the CBD as the "Bull's eye" of the urban area. Surrounded by other activities . -by E.W. Burgess

2. SECTOR MODEL Fig 25 (a) & (b)





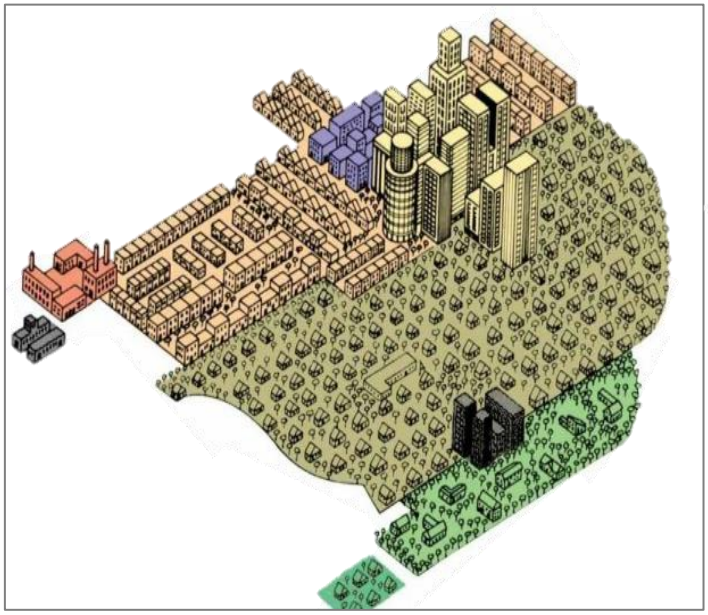
1 Central business district
2 Zone of transition
3 Zone of independent workers' homes
4 Zone of better residences
5 Commuter's zone

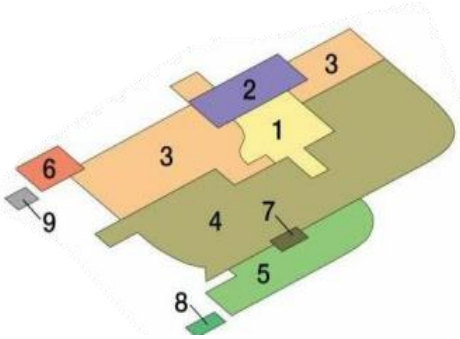
Activities are concentrated in wedges or sectors, which may follow transportation lines or natural features such as a river. -by H. Hoyt

Source: Models of Urban Land use Structure,1939

2.4.3 Classical Models Of Urban Structures

3. MULTIPLE NUCLEI MODEL Fig 26 (a) & (b)

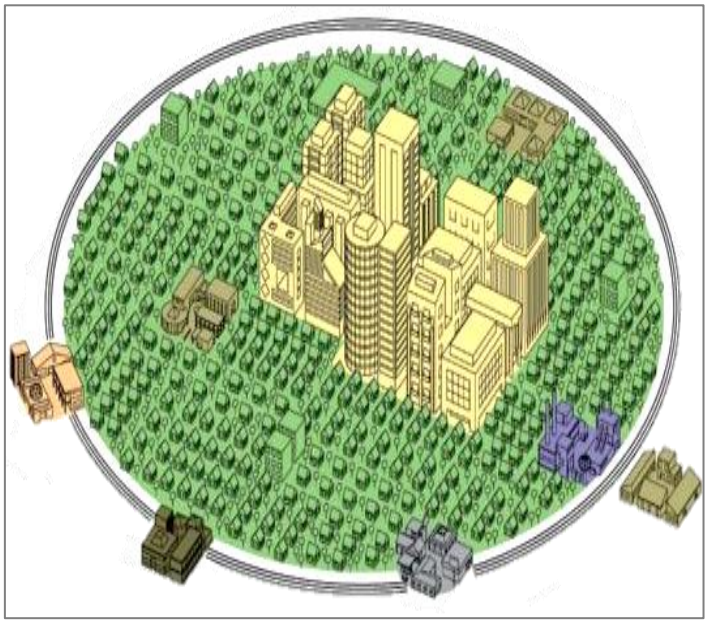


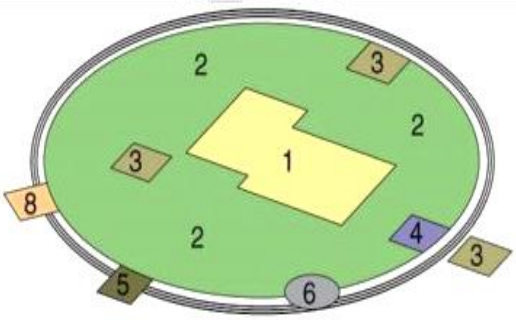


6 Heavy manufacturing
7 Outlying business district
8 Residential suburb
9 Industrial suburb

Districts, called nuclei, specialize in one urban activity, and are found throughout the urban area. -by C. D. Harris and E.L. Ullman

4. EDGE CITY MODEL Fig 27 (a) & (b)





1. Central City
2. Suburban Residential Area
3. Shopping Mall
4. Industrial Distric
5. Office Park
6. Service Cen
7. Airport Complex
8. Combined Employ ent & Shopping Center

The central city surrounded by a ring road around which are the suburban areas and edge cities, shopping malls, office parks, industrial areas and service complexes.

Source: Models of Urban Land use Structure,1939

2.5 Evolution of the Neighborhood concept

The **'neighborhood unit'** as a planning concept evolved in response to the degenerated environmental and social conditions fostered as a consequence of industrial revolution in the early 1900s. One of the earliest authors to attempt a definition of the 'neighborhood unit' in fairly specific terms was **Clarence Arthur Perry (1872-1944)**, a New York planner. Perry's neighborhood unit concept began as a means of insulating the community from the ill-effects of burgeoning sea of vehicular traffic. However, it evolved to serve a much broader purpose of providing a discernible identity for the concept of the neighborhood, and of offering to designers a framework for disseminating the city into smaller subareas.

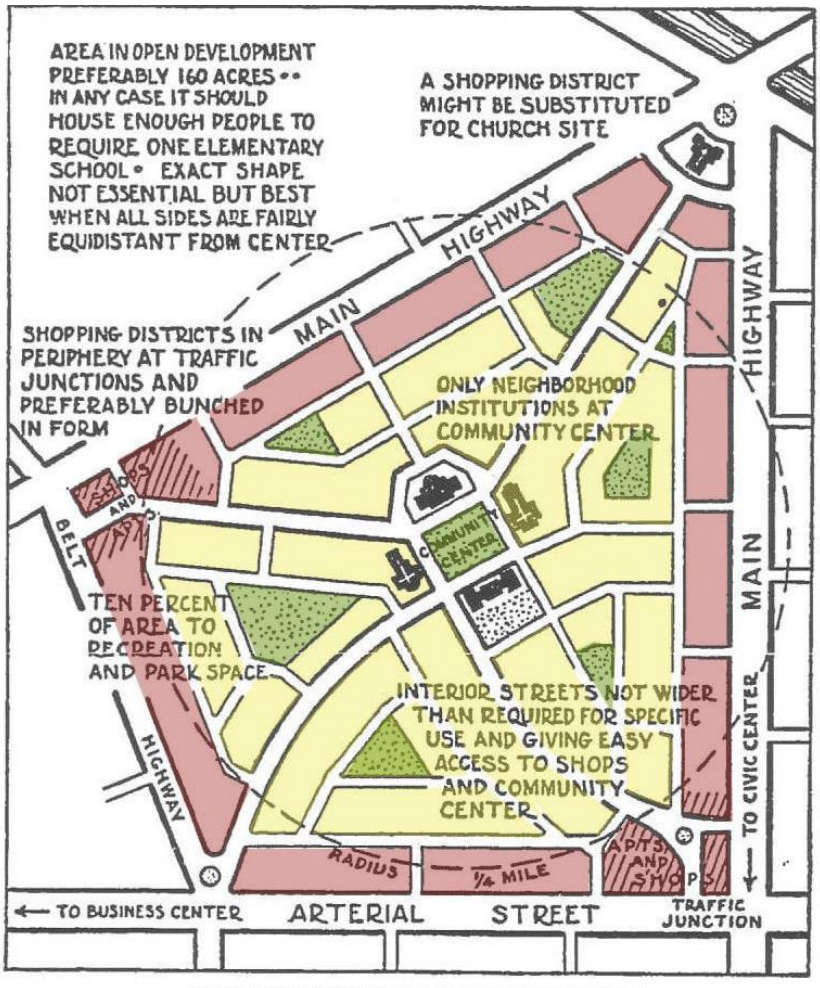


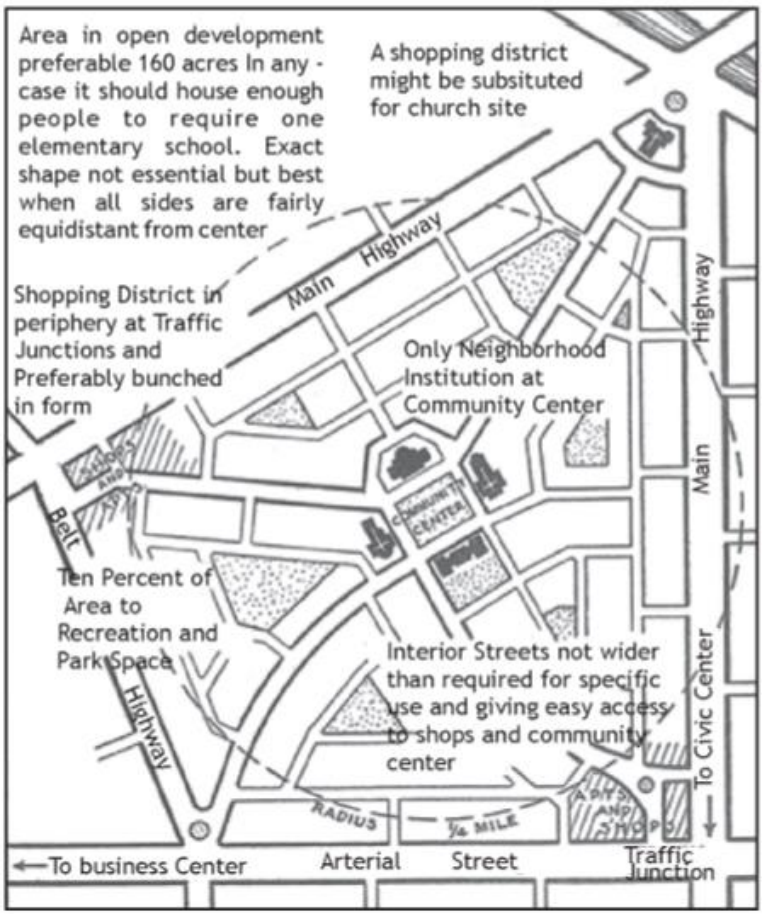
Fig 28: Idea of Neighborhood unit By Clarence Perry

Source: Clarence Perry's dwelling unit model, 1992

2.5.1. Clarence a. Perry's Conception of the neighborhood unit

Perry described the neighborhood unit as that populated area which would require and support an elementary school with an enrolment of between 1,000 and 1,200 pupils. This would mean a population of between 5,000 and 6,000 people. Developed as a low density dwelling district with a population of 10 families per acre, the neighborhood unit would occupy about 160 acres and have a shape which would render it unnecessary for any child to walk a distance of more than one-quarter mile to school. About 10 percent of the area would be allocated to recreation, and through traffic arteries would be confined to the surrounding streets, internal streets being limited to service access for residents of the neighborhood. The unit would be served by shopping facilities, churches, and a library, and a community center, the latter being located in conjunction with the school (Gallion, 1984).

Fig 29- Clarence A. Perry's Neighborhood Unit of 1929



Source: Berk, M.G. (2005) The Concept of Neighborhood in Contemporary Residential Environments

Perry outlined basic principles of good neighborhood design.

1. Centre the school in the neighborhood.
2. Place arterial streets along the perimeter so they define and distinguish the "place" of the neighborhood.
3. Design internal streets using a hierarchy that easily distinguishes local streets from arterial streets.
4. Restrict local shopping areas to the perimeter.
5. Dedicate at least 10 percent of the neighborhood land area to parks and open space.

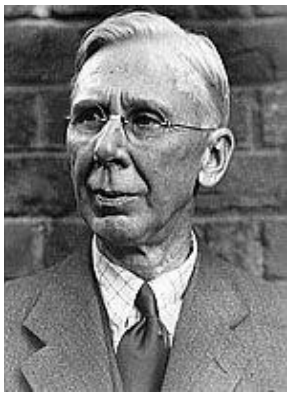
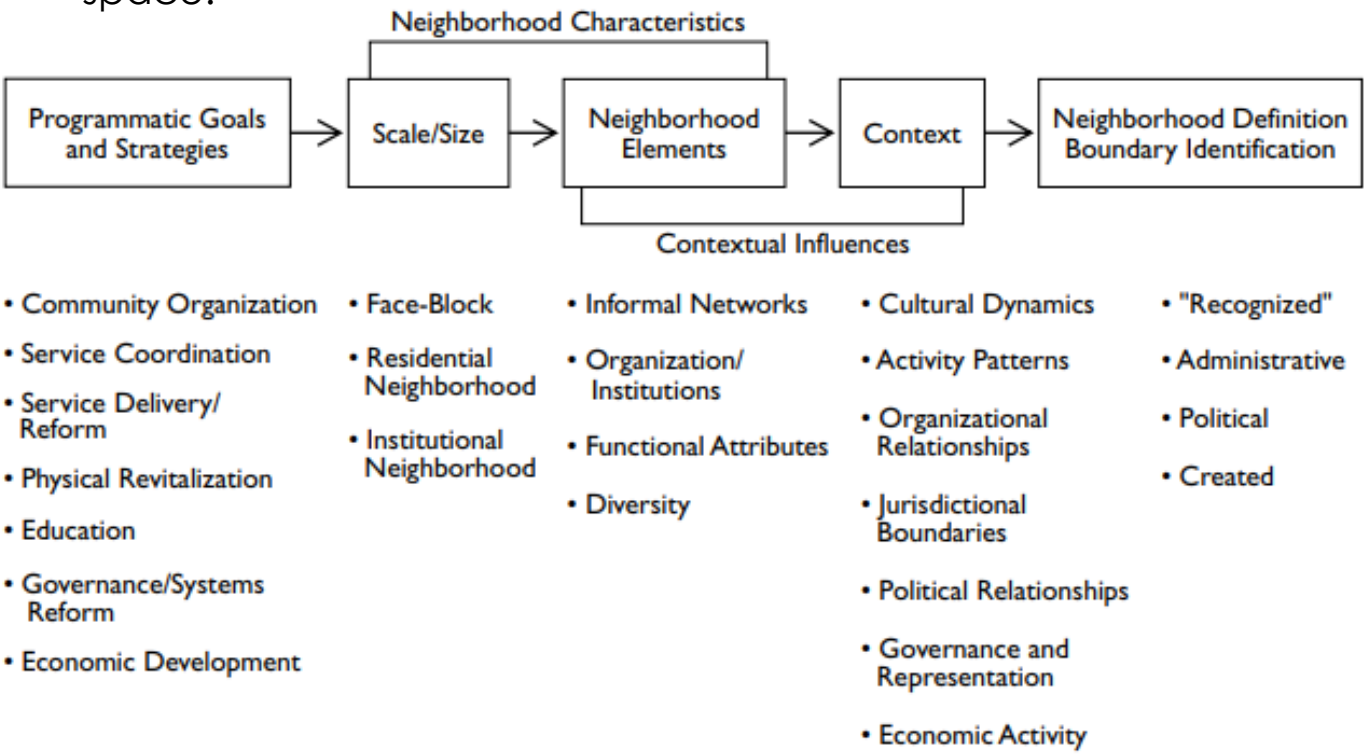


Fig30- Clarence Perry



Source: Chaskin, Robert J. 1998. "Defining Neighborhoods."

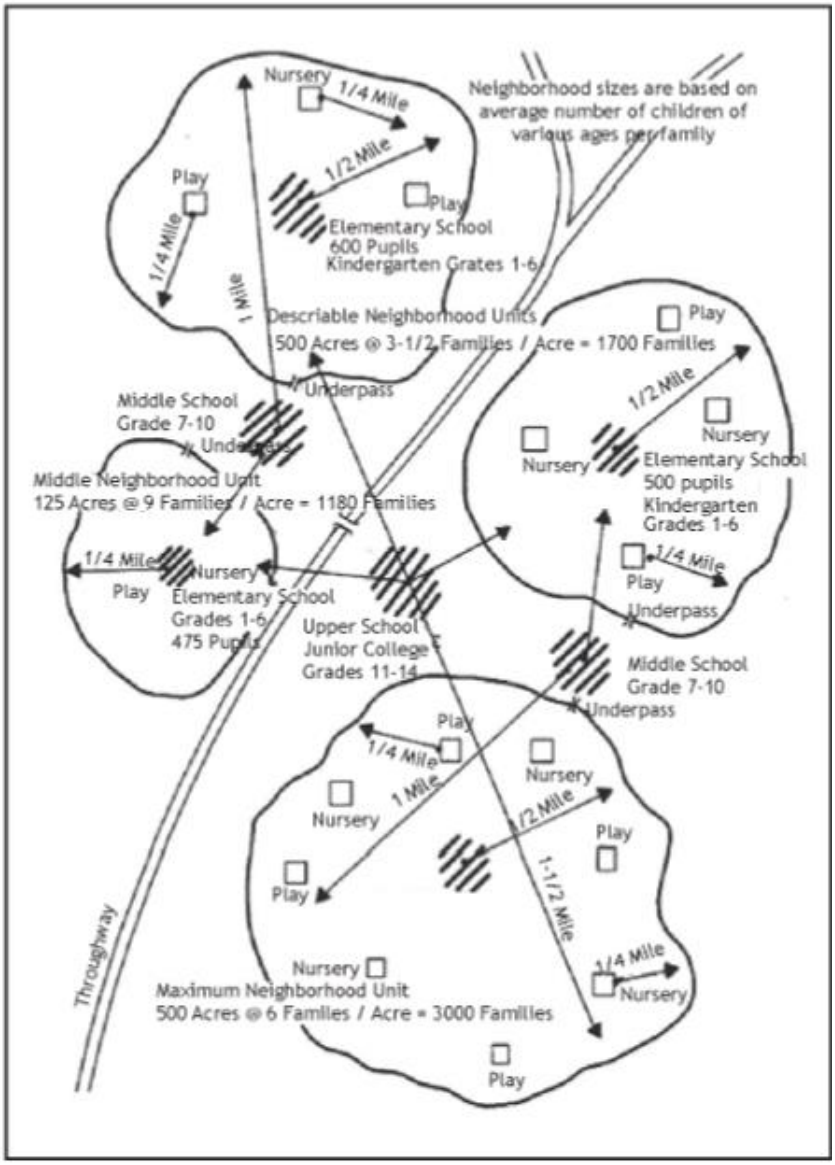
Purpose of Neighborhood Planning:

1. To make the people socialize with one and another.
2. To enable the inhabitants to share the public amenities and recreational facilities.
3. To support a safe and healthy environment within the neighborhood.
4. To provide safety and efficiency to road users and pedestrians.
5. To maintain, enhance, and improve area for recreational activities.
6. To determine community's prospects for the future.

2.5.2. N.L. Engelhardt Conception of the neighborhood unit

The concept propagated by Clarence A. Perry was carried forward by several others with certain variations or elaborations. For example, N.L. Engelhardt, Jr. presented a comprehensive pattern of the neighborhood units grouped in relation to the various levels of school facilities. He proposed a radius of ½ mile as maximum walking distance to the elementary school. Playgrounds and nursery schools are proposed with a radius of ¼ mile walking distance for the families in the neighborhood.

Fig 31 Engelhardt's Diagram of Neighborhoods

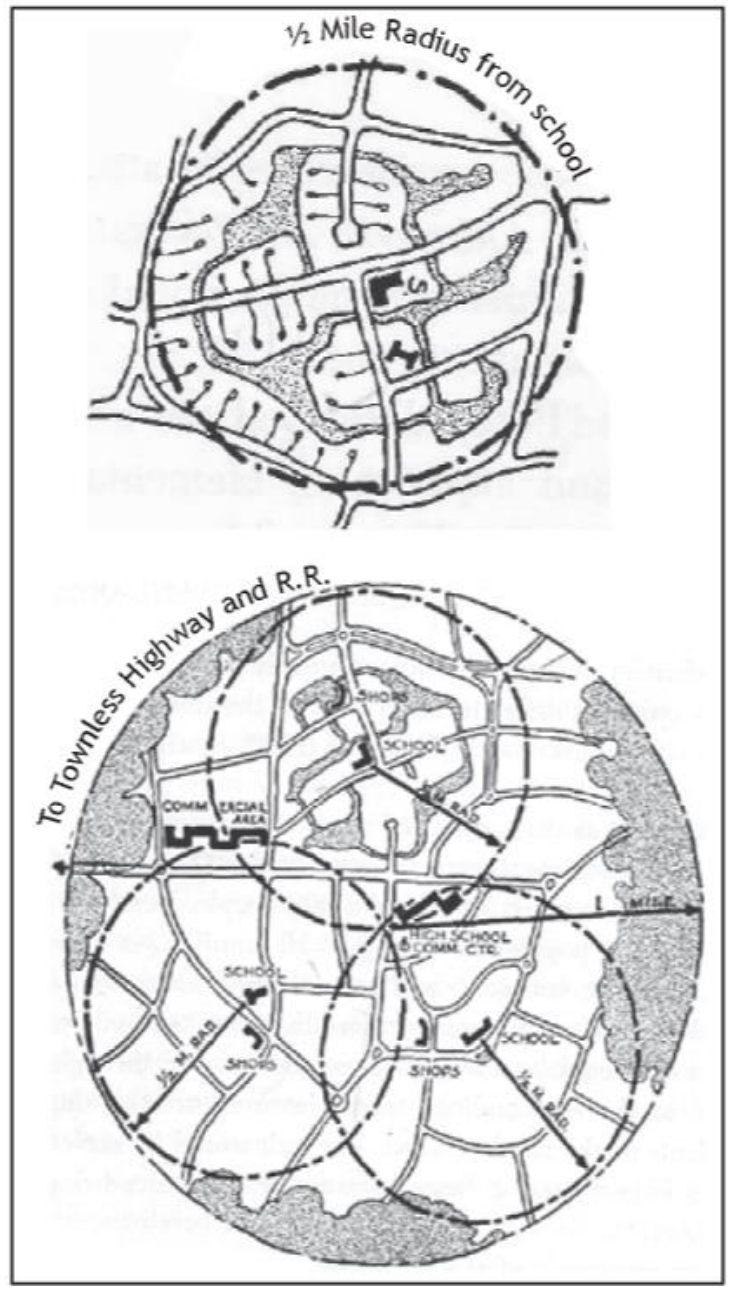


Source: Berk, M.G. (2005) The Concept of Neighborhood in Contemporary Residential Environments

2.5.3. Clarence stein's Conception of the neighborhood unit

Clarence Stein placed the elementary school at the center of the neighborhood unit and within ¼ mile radius of all residents. A small shopping center for daily needs is located near the school. Most residential streets are suggested as cul-de-sac or 'dead-end' roads to eliminate through traffic, and park space f lows through the neighborhood in a manner reminiscent of the Radburn Plan. He further expanded the definition of neighborhood center by connecting the neighborhoods together to create towns. The diagram shows the grouping of three neighborhood units served by a high school and one or two major commercial centers, the radius for walking distance to these facilities being one mile. The neighborhood unit has been defined and redefined throughout the planning history. Despite several variations, the principle of neighborhood unit runs through all considerations for social, physical and political organization of the city. It represents a unit of the population with basic common needs for educational, recreational and other service facilities, and it is the standard for these facilities from which the size and design of the neighborhood emerge.

Fig 32 : Clarence Stein's 1942 Diagram of Neighborhoods



Source: Berk, M.G. (2005) The Concept of Neighborhood in Contemporary Residential Environments

2.6 Existing theories

2.6.1 Kevin Lynch – The Image of the City

Lynch's (1960) approach is by analyzing the physical environment to obtain the perceptual structure of an urban space. He defined several physical elements that constitute the legibility and imageability of a city. Hence, Lynch's theory of urban structure is based on the society's mental image of their city.
As a part of "Making Places", Kevin Lynch identified five performance dimensions of urban design:
1. Vitality, the degree to which the form of places supports the functions, biological requirements and capabilities of human beings.
2. Sense, the degree to which places can be clearly perceived and structured in time and space by users.
3. Fit, the degree to which the form and capacity of spaces matches the pattern of behaviors that people engage in or want to engage in.
4. Access, the ability to reach other persons, activities, resources, services, information, or places, including the quantity and diversity of elements that can be reached.
5. Control, the degree to which those who use, work, or reside in places can create and manage access to spaces and activities.

Fig 33- Image of the city

Source: Image of the city, Kevin Lynch

2.6 Existing theories

2.6.1 Kevin Lynch – 5 Key elements

Prof. **Kevin Lynch** conducted a study of what people mentally extract from the physical reality of a city. He wrote his findings in a book called **'The Image of the City' (196**0). In his examination of the form of the city, Professor Lynch found that there are five basic elements which people use to construct their mental image of a city:

PATHS- Paths are the channels which the observer moves. They can be streets, walkways, transit lines, canals and railroads.

EDGES- Edges are the boundaries between two phases, linear breaks in continuity. For instance shores, railroad cuts, edges of development and walls.

DISTRICTS- Districts are large city areas which observer can mentally go inside of. The physical characteristics that determine districts are; texture, space, form, detail, symbol, building type, use, activity, inhabitants, degree of maintenance, topography.

NODES - Nodes are the strategic foci into which the observer can enter either junctions of paths or concentrations of some characteristic.

LANDMARKS - Landmarks are the point references which are external to the observer and simple physical elements vary in scale.

Fig 34- 5 Key elements

Source: Image of the city, Kevin Lynch

2.6 Existing theories

2.6.2 Jan Ghel

First, We Shape the Cities, then they shape us (Gehl, 2010)

"If we look at the history of cities, we can see clearly that urban structures and planning influence human behavior and the ways in which cities operate." This explains the existence compact urban fabric of the medieval cities with their short distances, layout of main streets, public squares and marketplaces functioned as center of trade and craftsmanship.

There will always be a mutual influence between the city and the people. This connection between invitations and behavior can be seen in present condition of cities which are trying to solve the issue of growing traffic in our cities. "We can always find new ways to increase our car use, building a direct invitation to buy and drive more cars.

Finding new ways to use the space should be concern for us as in cities modern urban planning which is used as problem solving exercise without understanding the core problem. Physical planning can greatly influence the activities and usage of city space "If better city space is provided, use will increase". The better the quality of spaces in cities the better it will be the quality of life.

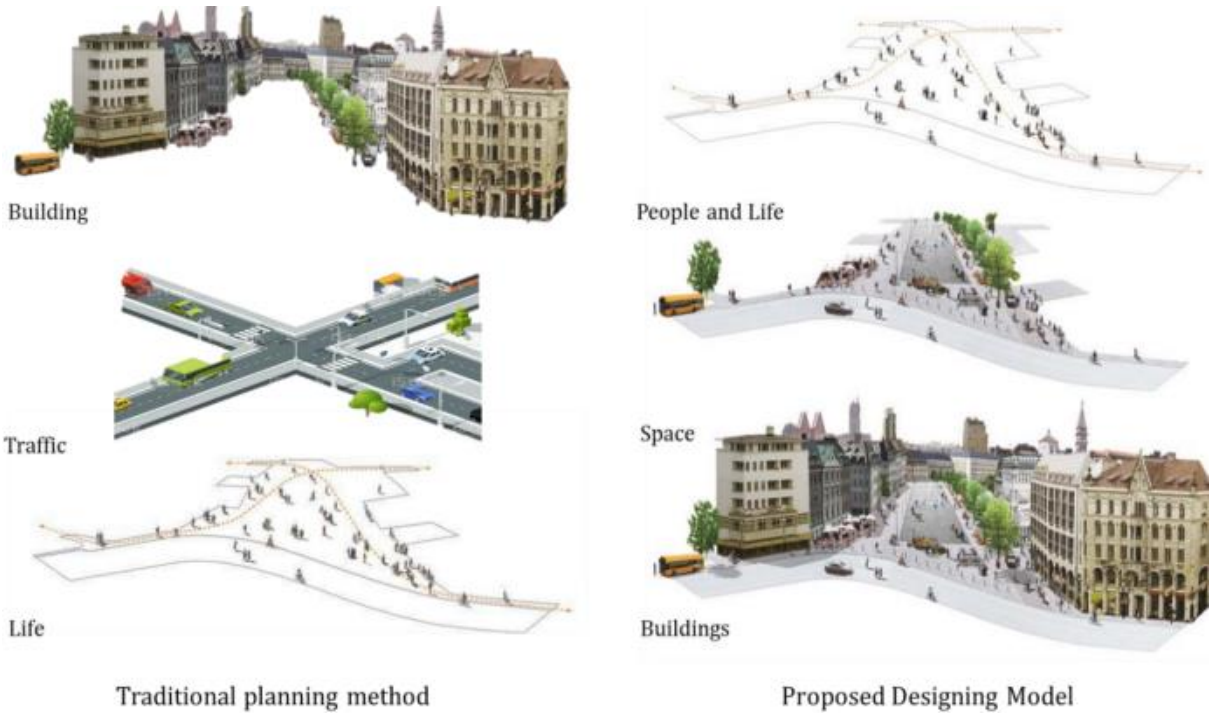
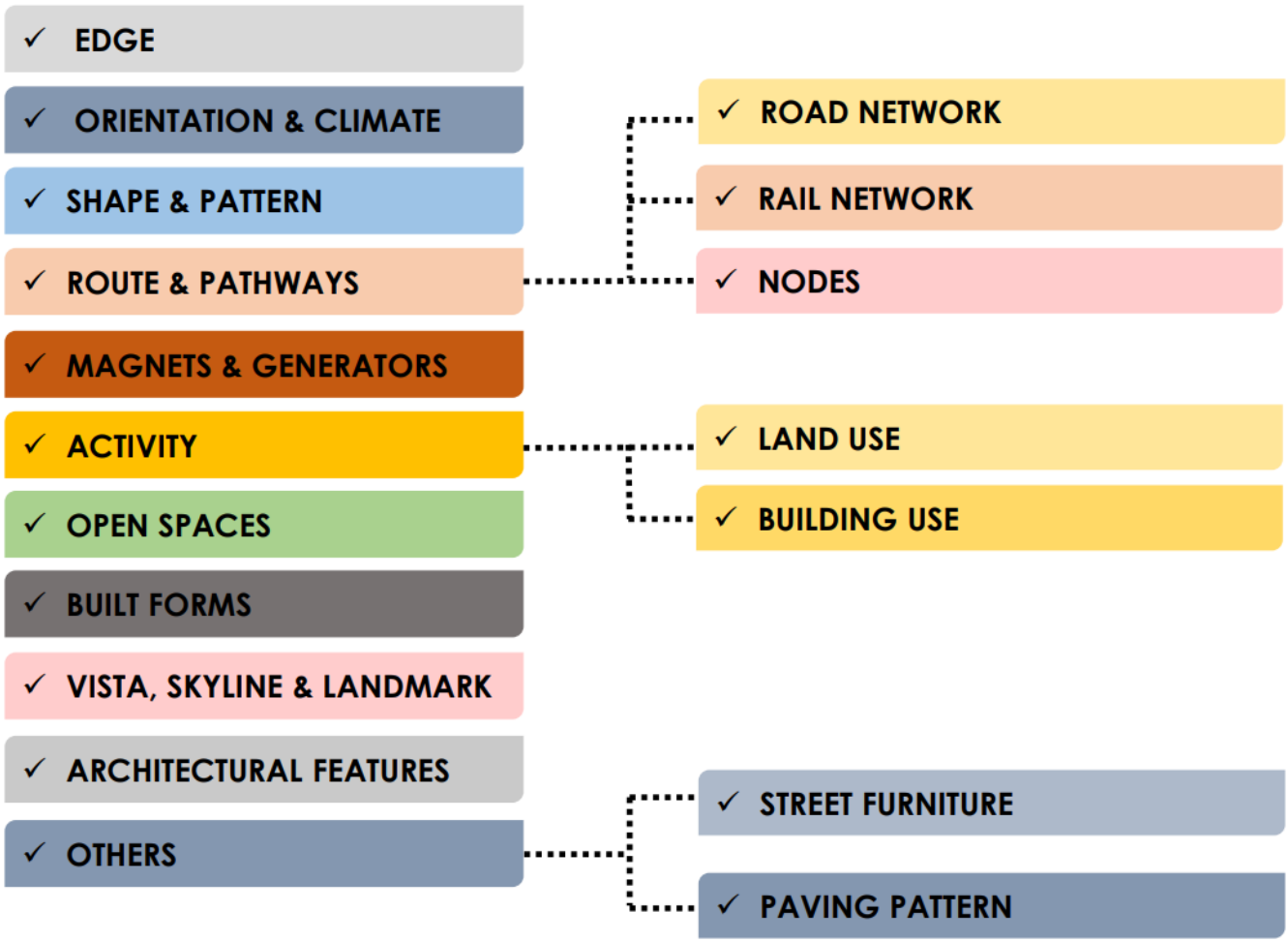


Fig 35- The traditional planning process and suggested to incorporate the methodology suggested by Gehl in deigning of cities.

Source: UN- Habitat Reviewed

2.7 Parameters for the study



2.8 Government Schemes

1. The **Sustainable Development Goals (SDGs)** especially the goal of making cities safe, inclusive, resilient, and sustainable **(SDG 11)** firmly places urbanization at the forefront of the national development policy discourse.
2. India has been making comprehensive efforts in this direction. While the **Ministry of Housing and Urban Affairs (MoHUA)** in India, through its various developmental programs, has been consistently making efforts to align its initiatives to achieve the SDGs, it is imperative for the cities to play an important role in localizing SDGs.

The Ministry of Housing and Urban Affairs (MoHUA) is mapping its programmatic interventions like the **Smart City Mission**, **Atal Mission for Rejuvenation and Urban Transformation (AMRUT)**, **Clean India Mission (SBM Urban)**, **Housing for All (Urban) and Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and National Urban Livelihood Mission (NULM)**.

TARGETS-

11.1 Ensuring access to adequate, safe and affordable housing and basic services for all and upgrade slums.

11.2 Access to safe, affordable, accessible and sustainable transport along with road safety and inclusivity of vulnerable sections is one of the targets

11.3 Urban planning & designing are essential for achieving SDG 11 and the preparation of city Master Plan is a sine qua non for planned and sustainable urbanization.

11.4 Protecting and safeguarding the culture and natural heritage is an important target of SDG 11.

11.5 Making cities resilient against natural disaster and reducing the loss of people and property due to disasters is another target under SDG 11.

11.6 Reducing the adverse per capita environmental impact on cities..

11.7 For promoting healthy cities, providing universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities is essential.

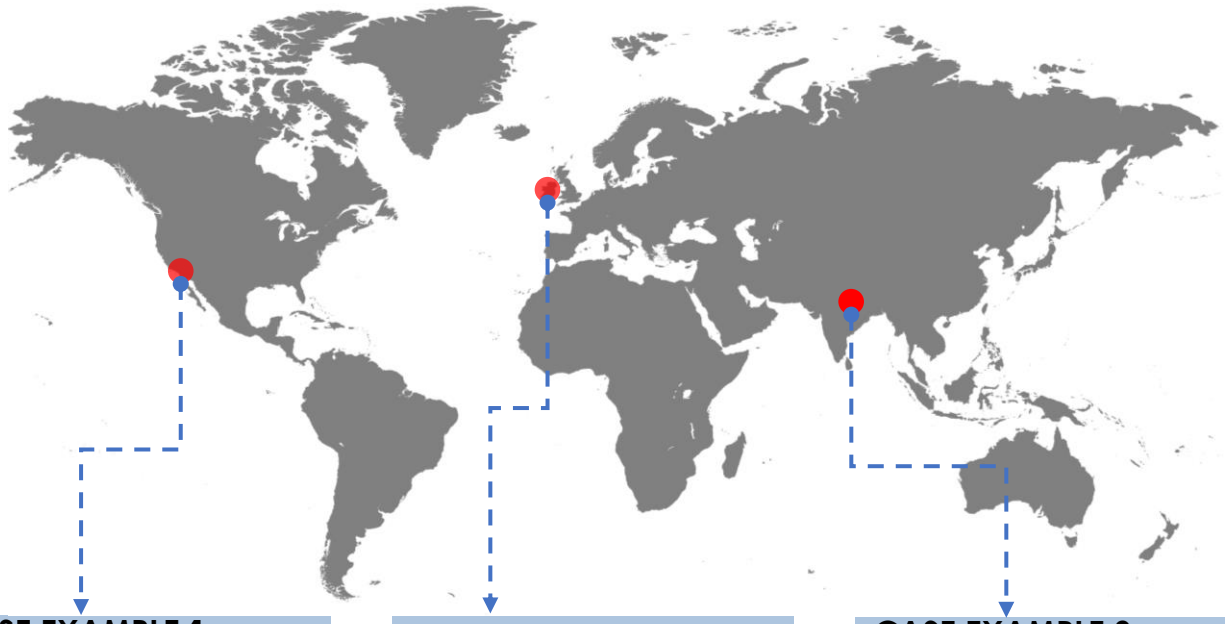
11.8 It aims at strengthening the national and regional development planning approach by establishing economic, social and environmental linkages between urban, peri-urban and rural areas.

3.0
CASE EXAMPLE

3.1 Selection of case example

Criteria for selecting the case examples wrt to the site:

1. Similar texture and pattern
2. Local level interventions aimed at people.
3. Enhancing public amenities.
4. Creating a sense of place.
5. Retaining urban character.
6. Improving visual aesthetics.
7. Contextual fit of modern elements.
8. Improving accessibility .



CASE EXAMPLE 1: Public Realm Intervention, San Jose , California

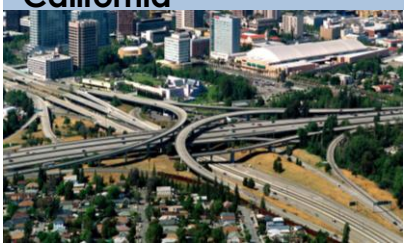


Fig 36

CASE EXAMPLE 2: Public Realm Strategy, Dublin , Ireland

Fig 37

CASE EXAMPLE 3: Public Realm Intervention, Gomti Nagar ,Lucknow , India

Fig 38

3.2 International case study

3.2.1 San Jose, California

The San Jose public realm is the space to which the general public has right of access: specially the setting for street life. It also includes places that are privately owned or operated but accessible to the general public.

The major focus in designing the public realm in San Jose
are in these aspects:

- Street scape [All roads, pathways, boulevard, paseos]
- **Public open spaces** [such as: Plaza de Cesar Chavez, Arena Garden etc
- **Parks** [such as: McEnery Park, St. James Park etc.]
- **Public activities** along Guadalupe River bank

Fig 39: Map of San Jose, California

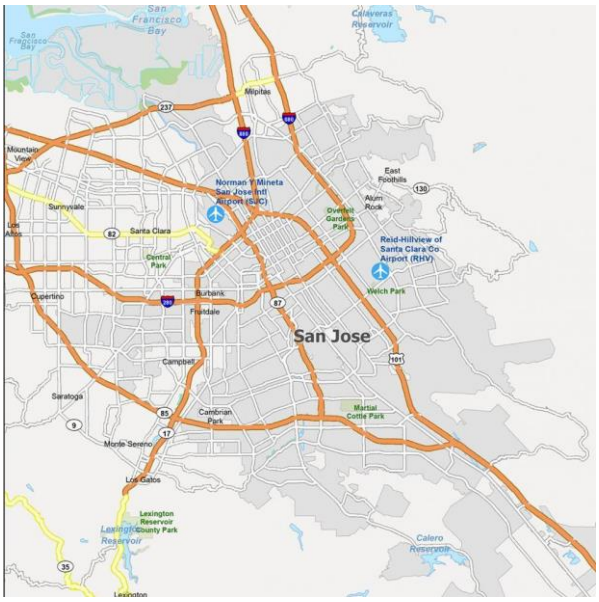
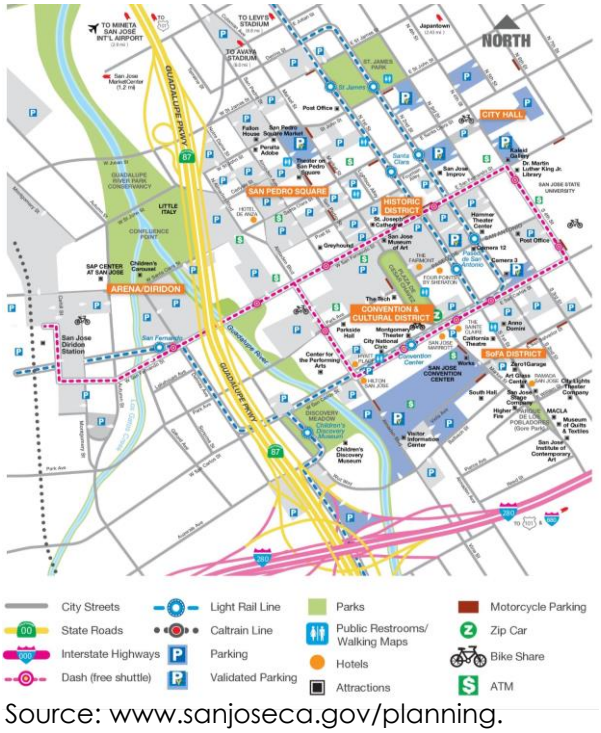


Fig 40: Neighborhood Map of San Jose, California



Source: www.sanjoseca.gov/planning.

Fig 41: City of San Jose, California

Fig 42: Skyline of San Jose, California

Road & movement

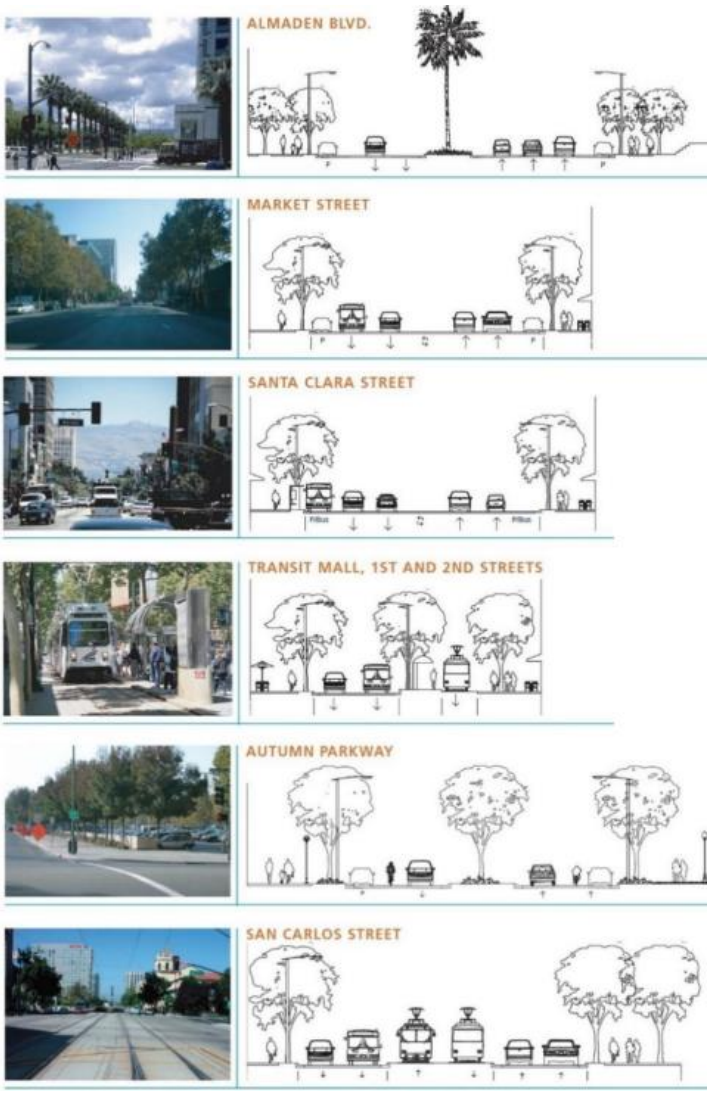


Fig 43: Road sections of San Jose, California

Roads are mainly grade separated according to the requirements. Dedicated pedestrian connections throughout the area. The downtown Road network has been classified majorly in three categories:

- **Major Arterial Roads:** Heavy Vehicular Arterial Road to cater to the heavy traffic with important street furniture, parking, planter divider, etc.
- **Downtown Pedestrian Network:** Pedestrian oriented street with an attractive & safe pedestrian
- **Downtown Paseos:** Pedestrian only streets with varied retail activities & high pedestrian volume.
- **Downtown Residential Street:** Mainly found in the residential zones, with more soft, more landscaped area to enhance the residential zones character.

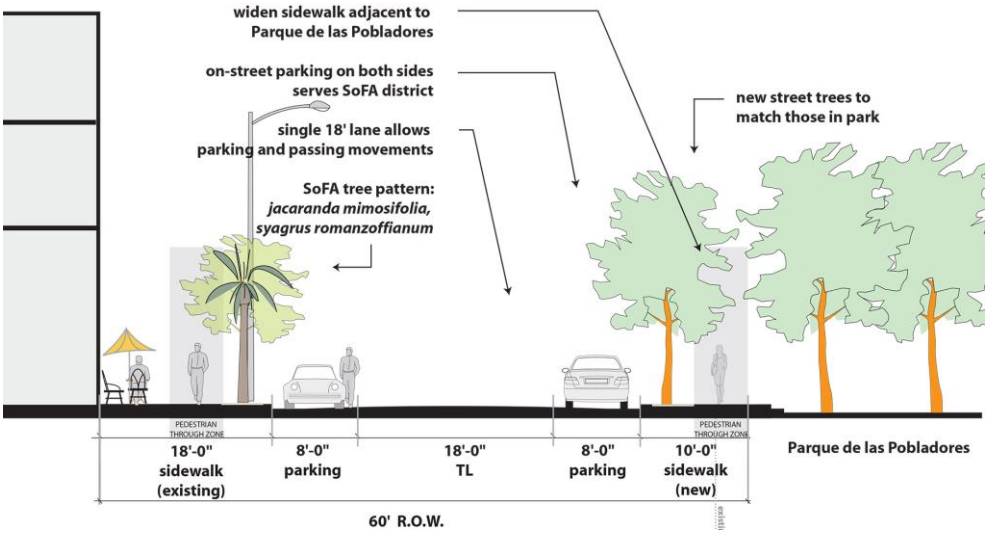


Fig 44: Measurements of Road sections

Magnets & generators

Major magnets are well connected through the roads. Specially the dedicated Pedestrian ways to \connect them.

Open spaces

- All major open spaces around this area are full of designated activities for public.
- This open public places are also interconnected by dedicated pedestrian walkways.

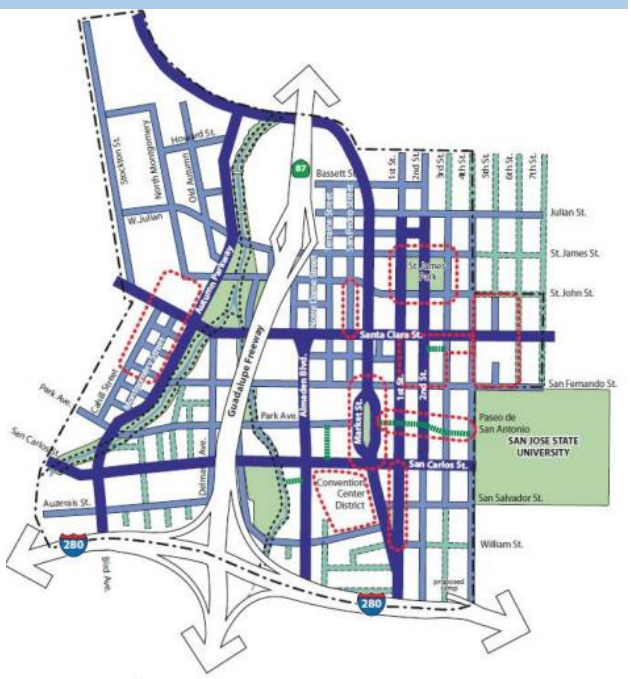


Fig 45: Road network map

Fig 45: Road network map

Fig 46- A mixture of play elements can attract both young and old to share the same park space

Nodes

Nodes are enough spacious with respect to the roads. Building blocks around the nodes are chamfered to address the nodes & enhance the visibility.

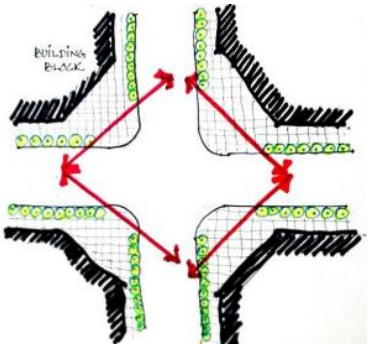


Fig 46- Nodes

Architectural features

a. Use a strong and harmonious architectural concept and organizing idea.
b. Accentuate vertical orientation to reduce the apparent bulk that may originate with local height limits.
c. Design a building to maintain consistency with its own rules for massing and facade organization.
d. Use high quality materials on building exteriors and use materials and colors to indicate the building's role in the Downtown skyline.
e. Active Frontage is a Pedestrian Level building frontage that allows visual or physical access to Active Use within the building via windows, doors, or both.
f. Configure non-residential ground floor space for Active Frontage, character, and human scale.

Fig 50- Active frontage on the ground floor

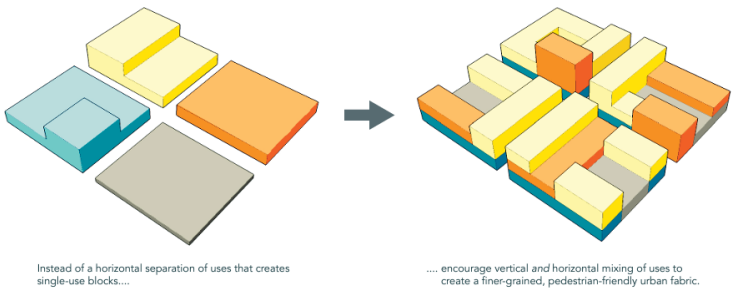


Fig 51- Mixed land use built-up concept

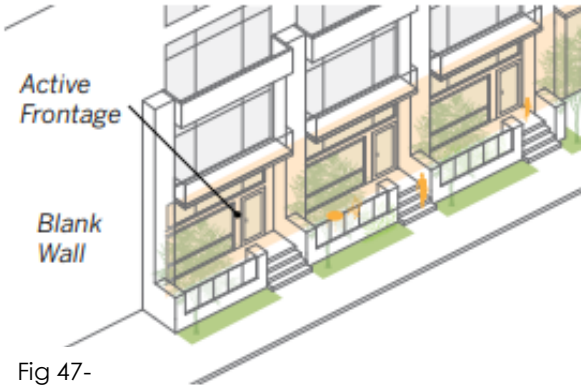


Fig 47-

a. *Active Frontage* length extends to the last window or door into the applicable *Active Use*.

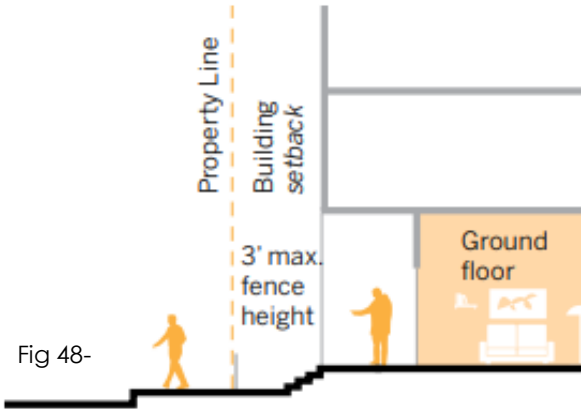


Fig 48-

b. **DO -** Create a residential frontage with individual unit entries. The ground floor must be within 3 feet of ground level.

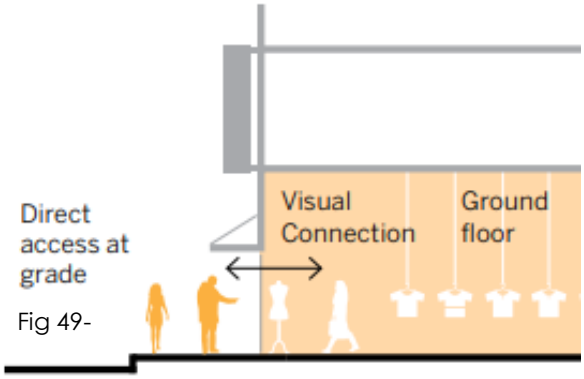


Fig 49-

c. **DO -** Use transparent material on at least 60% of the commercial ground floor *facade* between 3 and 7 feet above ground level.

3.2.2 Dublin City Centre, Dublin, Ireland

In case of Dublin city, the fundamental philosophy of the design was to connect the public places to integrate the city realm. Different qualitative aspects are assessed to implement the design guidelines such as: character of the place, microclimate, level of street activities and security, vehicular traffic volumes, environmental conditions, pedestrians' facilities & conditions etc.

Fig 52- Location of Dublin, Ireland

Dublin City Centre - Public Realm Strategy Area Fig 53

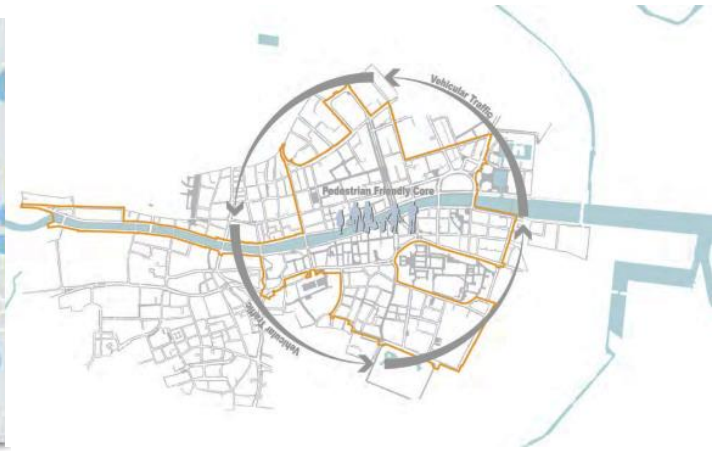


Fig 54- Pedestrian-Friendly Core

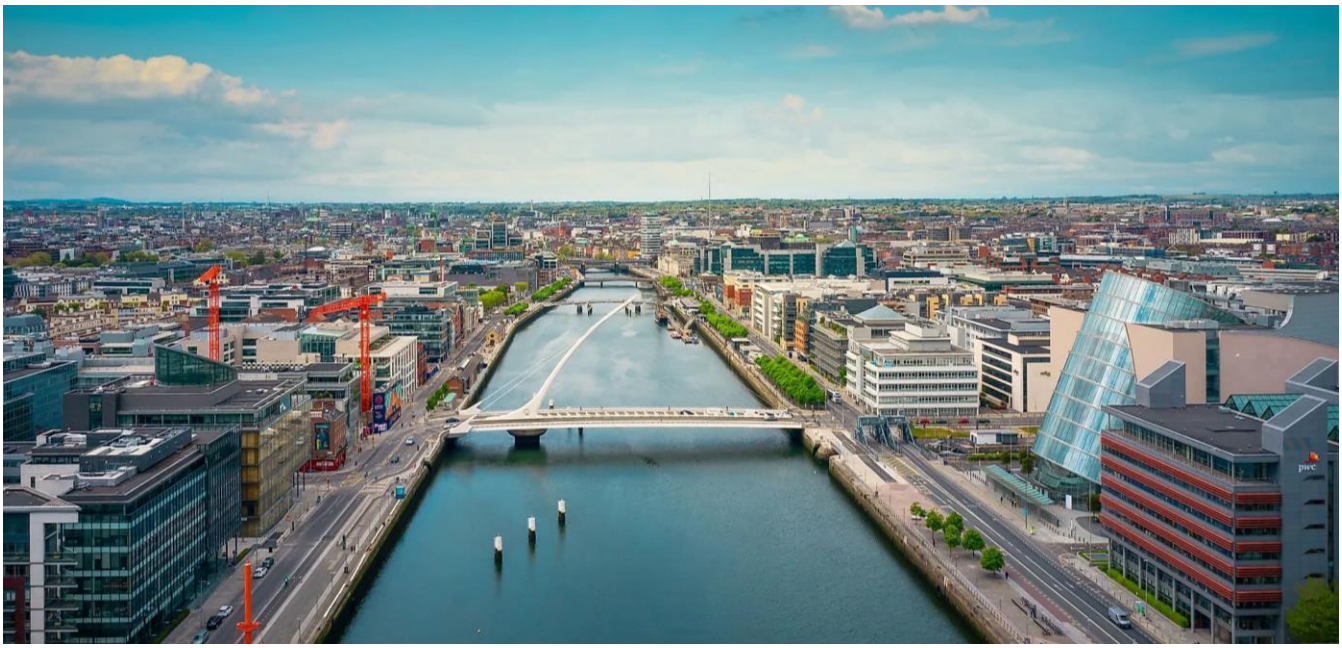


Fig 55- City view of Dublin, Ireland

Road & movement

Pedestrian Walkway: The pedestrian environment is dedicated to all users, including commuters, tourists and shoppers.

- Bi-Cycle way: Dedicated Bi-cycle path, as Cycling trips increases almost 40% between the year 2006 & 2011.
- Railways : Dublin railway system such as , DART [Dublin Area Rapid Transit] and LUAS [Light Railway Tram] within the City Centre.
- Bus: The bus route is through the City center & connecting the major public places.
- Private Vehicles: The private car is an important mode for people travelling to the City Centre, especially for commercial purposes (as opposed to commuting).
- Goods Vehicles : The supply chain for goods and services into Dublin has been considered as an essential element of a working City Centre.

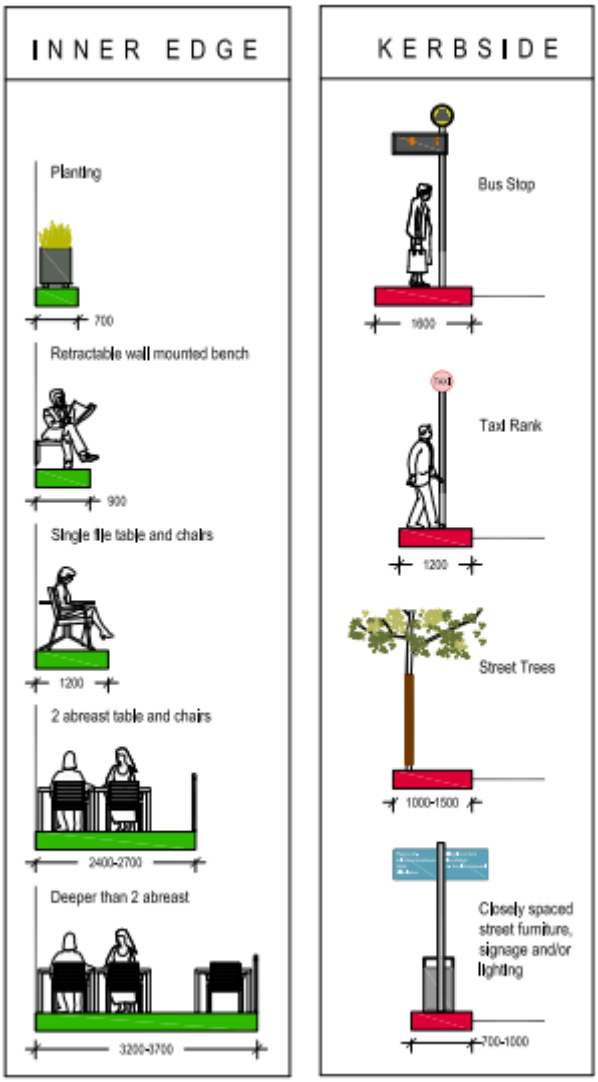
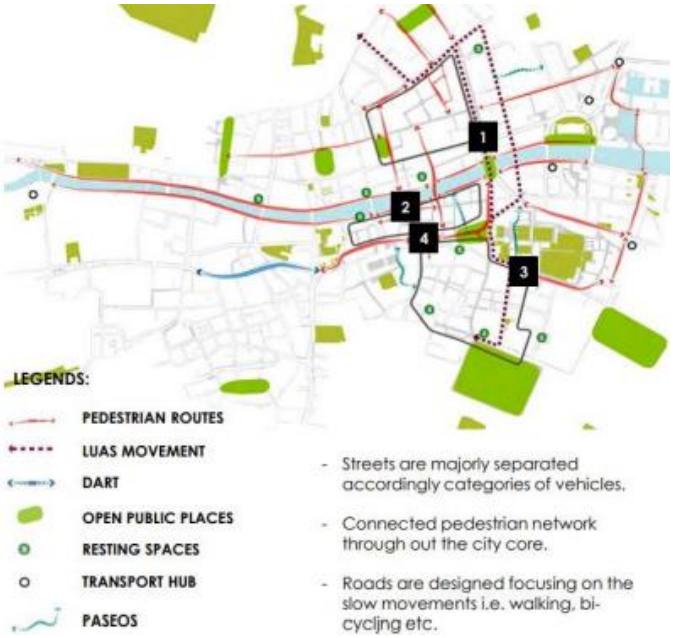


Fig 56- Pedestrian flow requirements for streets.

Fig 57- Pedestrian flow map for streets.



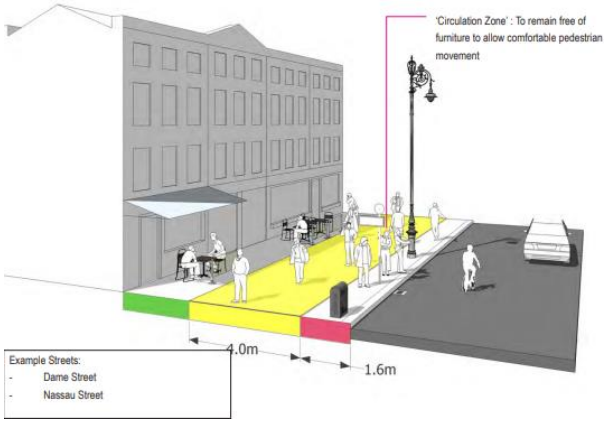
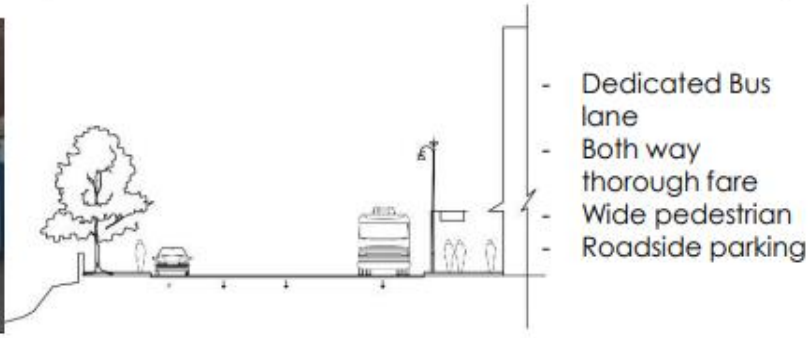


Fig58- Pedestrian flow requirements along a high footfall street

Source: Dublin Master Plan 2011

Road & movement



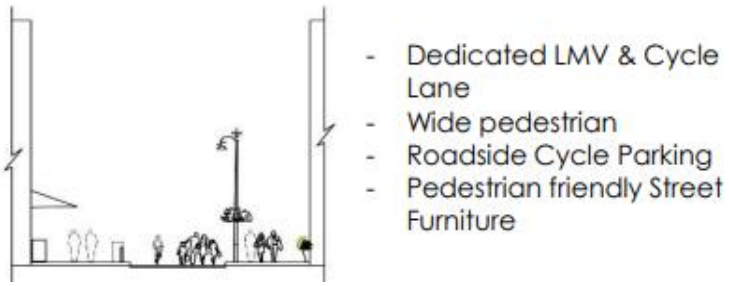


Fig 59- Road section requirements for streets.

Architectural features

a. Uniform elevation lines & characters. Use of almost similar kind of building colors & materials.
b. Integrated street furniture, signage & Advertisement bill boards.
c. Corner buildings are specially treated with chamfered edges & corners splay.

Fig 60- View of streets.

Fig 61- Pedestrian & bi-cycle movements on streets.

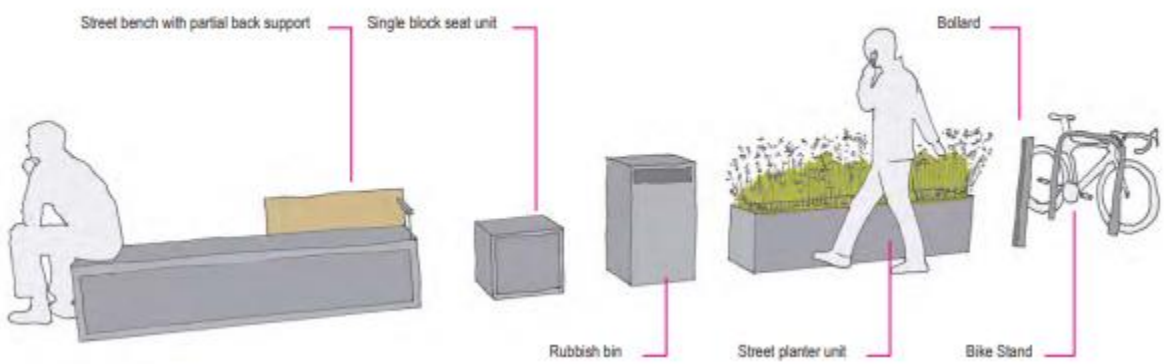
Street Furniture, Paving Patterns

Design measurements have been taken in case of Street furniture like:
- Public Art & structures
- Banners
- Benches
- Bi-Cycle racks
- Bollards
- Informal Vendor Kiosks
- Flowering trees
- Planter beds
- Public phone booth
- Public Toilets
- Litter bins
- Bus stops

a.

b.

Fig 62-Concept sketch of Modular Street Furniture Suite



3.3 National case study

3.3.1 Gomti Nagar, Lucknow, India

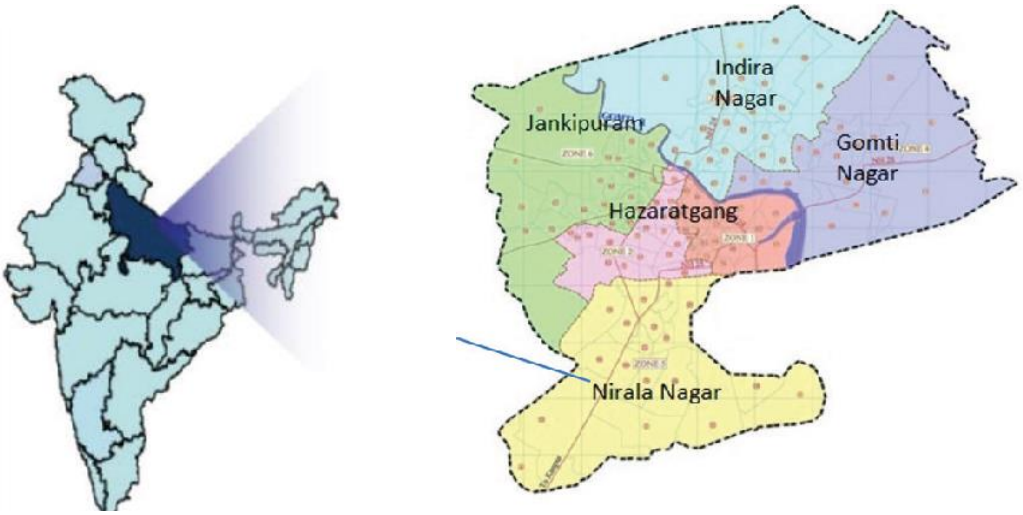


Fig 63- Location map of Gomti Nagar, Lucknow

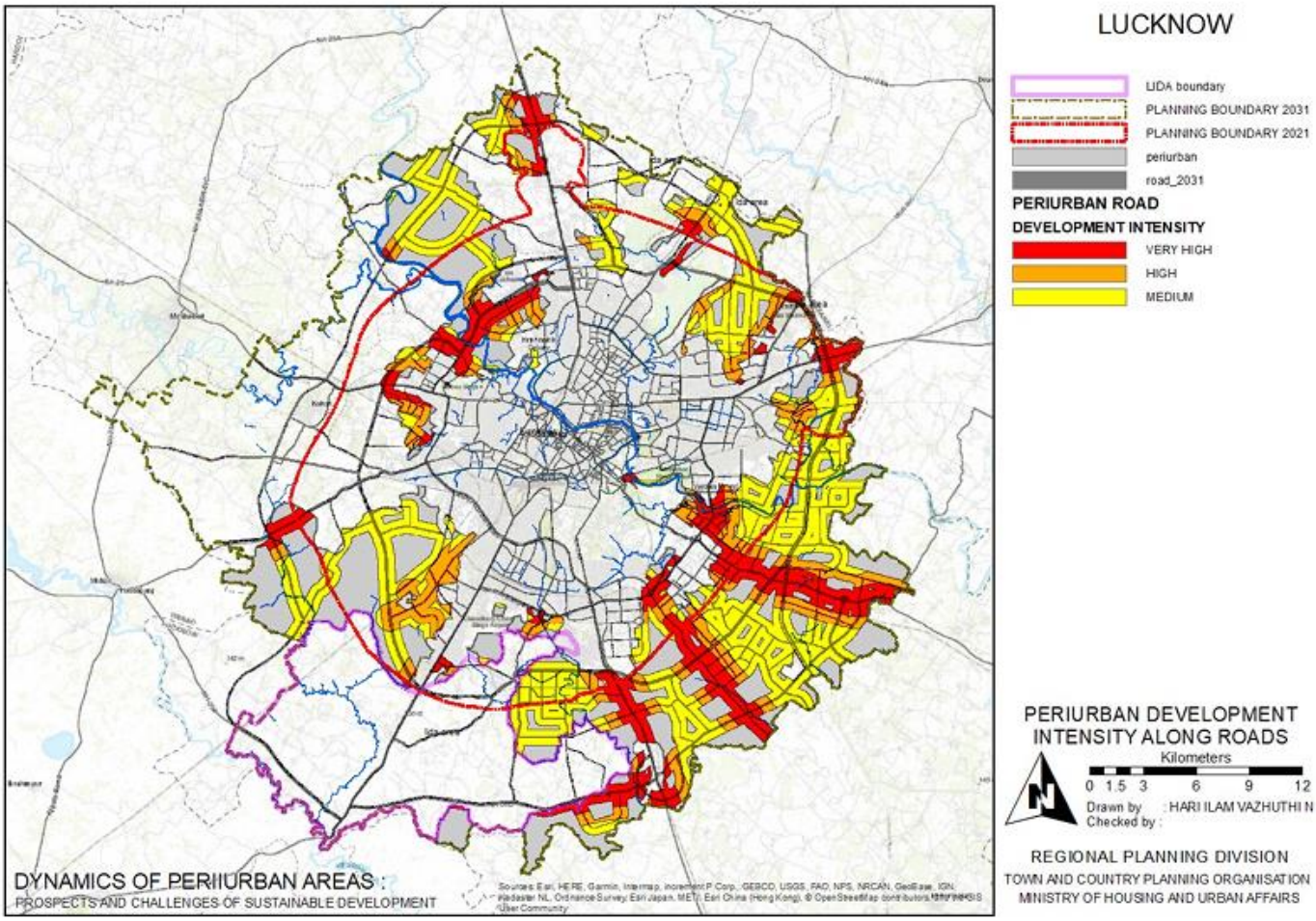
Project Aim:

Lucknow and its peri-urban areas are poised for a real estate boom. With the expansion of the metro, connectivity will become much more efficient and cost-effective, attracting a huge influx of population and investors, ultimately leading to more development.

Vision of the Area:

- **Serene Surrounding:** Let's take Gomti Nagar, for instance. Situated right next to the Gomti River and on the outskirts, Gomti Nagar is less densely populated compared to other old areas of Lucknow, thus offering more serene surroundings.
- **Spacious Living:** Lucknow's peri-urban areas are not as cramped up as compared to other metropolitan cities. There are significantly larger houses and plots, often at affordable rates, thus making homebuyers and investors choose these areas.
- **Access to Essential Amenities:** Lucknow's peri-urban area's tactical location, making it close to urban and rural areas, makes it easier for residents to have easy access to schools, hospitals, markets, and even shopping centers.
- **Slow Pace:** Life in peri-urban areas of Lucknow is prolonged compared to the frenetic ethos of congested and cramped-up urban areas.
- **Solid Investment Potential:** With Lucknow's expansive development, investors have their sights set on this city, and in the years to come, more investors will be boosting the city's development.

Fig 64- Lucknow Peri-Urban Development - Intensity Along Roads



Source: Shahjahanabad Redevelopment Corporation, Govt. of NCT Delhi

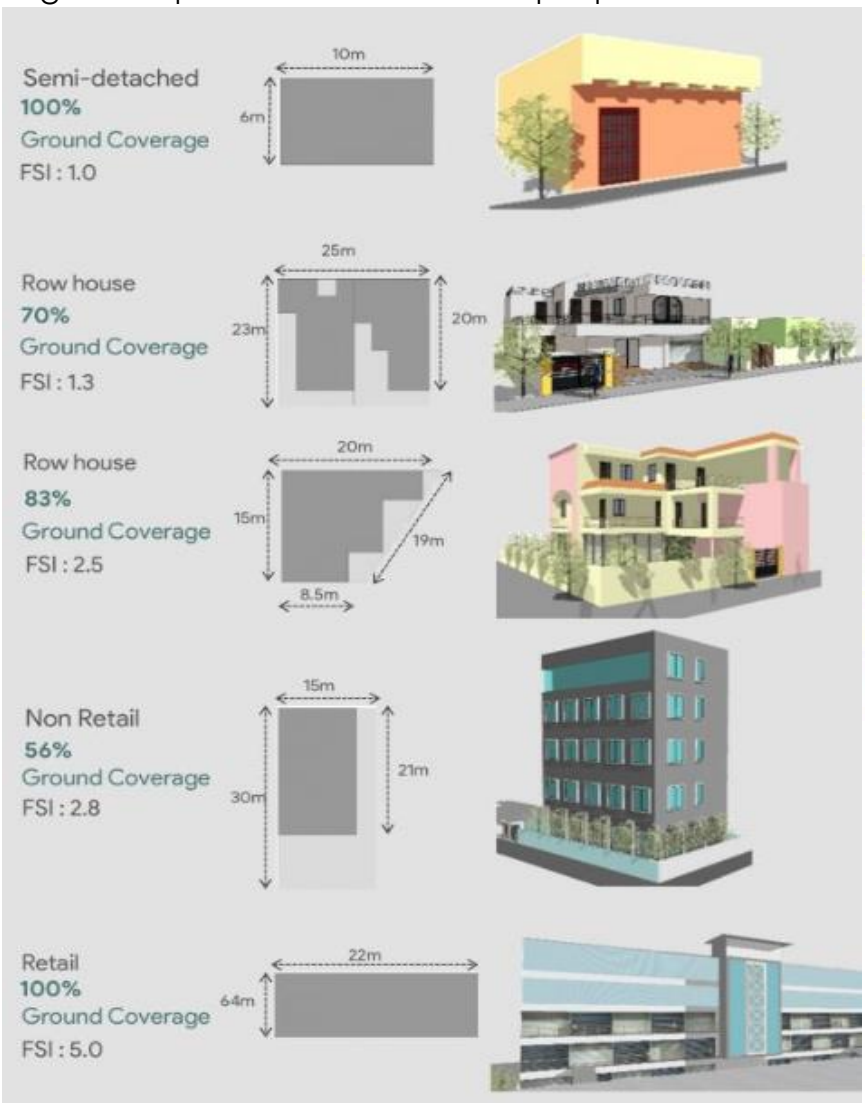
Parameters of mixed-use development:

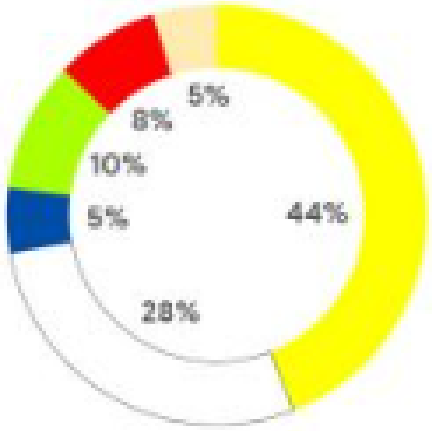
The mixed use development in the neighborhood will be analyzed on the basis of these parameters:

- **Land and built characteristics**
- **Building use**
- **Built typologies**
- **Road network and linkages**
- **Walkability and active streets**
- **Public realm**

Fig 65- Various types of built uses in the neighborhood

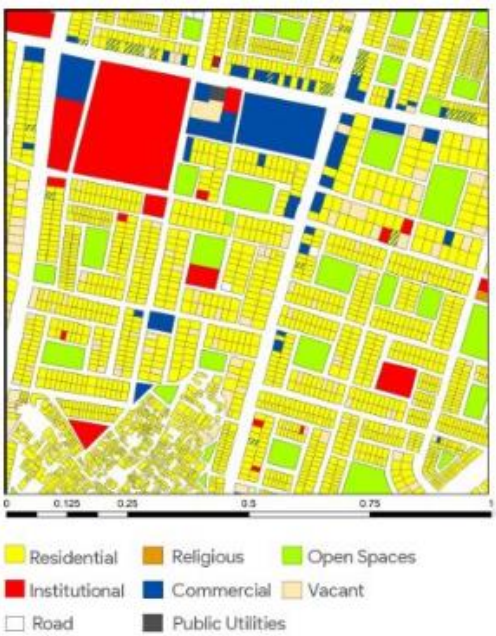
Fig 66- Proposed road section for peripheral road





44% Residential
28% Roads
10% Green open spaces
8% Institutional
5% Commercial

Fig 67- Mixed use plan



The existing land use map depicts that the commercial and institutional land use are majorly concentrated along the sub arterial roads of the precinct.
Amenities like commercial retail and non-retail in form of commercial plazas on the major junction of the sub arterial roads and some smaller shops on local streets.

Bigger Institutional buildings like schools and hospitals etc. are placed on sub arterial roads and smaller units like clinics, pathology, tution centres etc are spread throughout on collector and local streets.

Source: Shahjahanabad Redevelopment Corporation, Govt. of NCT Delhi

3.4 Conclusion - Table 1

PARAMETERS	CASE EXAMPLE 1: Public Realm Intervention, San Jose , California	CASE EXAMPLE 2: Public Realm Strategy, Dublin , Ireland	CASE EXAMPLE 3: Public Realm Intervention, Gomti Nagar ,Lucknow , India
NODE	✓ Nodes are quite spacious which enables safety as well as enhances grandeur of the city.	✓ Junctions are well defined with urban landscape.	✓ Majority of the retail & non-retail amenities are present at the nodes.
EDGE	✓ Majorly buildings are oriented parallel or perpendicular to the street grid which helps to create a uniform elevation corridor through the streets.	✓ Buildings are oriented parallel or perpendicular to the street grid which helps to create a uniform edge through the streets.	✓ Active edges due to spill over activities on edges of commercial center.
PATHWAYS	✓ Classifications of roads according to the movement requirements. ✓ Dedicated pedestrian ways connecting all along the major public areas.	✓ Classifications of roads according to the movement requirements. ✓ Dedicated pedestrian ways connecting all along the major public areas.	✓ The road network is wide an efficient to cater optimal traffic in Gomti Nagar. ✓ This was done in a planned manner keeping mind of future growth of the city.
LANDMARKS	✓ Major landmarks are well connected through the roads. ✓ Dedicated Pedestrian ways to connect the important landmarks.	✓ The landmarks across the city are very prominent in scale. ✓ Also these landmarks are visually connected.	✓ Major educational institutes & economic centers are present.
VISUAL TRAITS	✓ Straight line roads create some good vistas to enjoy.	✓ Uniform building height & uniformity in building lines helps to create beautiful vistas through street.	✓ The precinct is majorly low-rise mixed use settlement.
OPEN SPACE	✓ Open spaces around this area are designated for public activities. ✓ Interconnections between the open spaces through pedestrian walkways,	✓ Public open greens are created in close proximity. ✓ Continuous Green corridors in between the Public open spaces.	✓ Presence of good amount of green cover spread all throughout.
LANDUSE & BUILTUSE	✓ Mostly mixed used development is present.	✓ Mostly mixed used development is present.	✓ Mostly mixed used development is present.

Source: Author

4.0
CASE APPLICATION

4.1 Area Level Study

4.1.1 Selection of the area

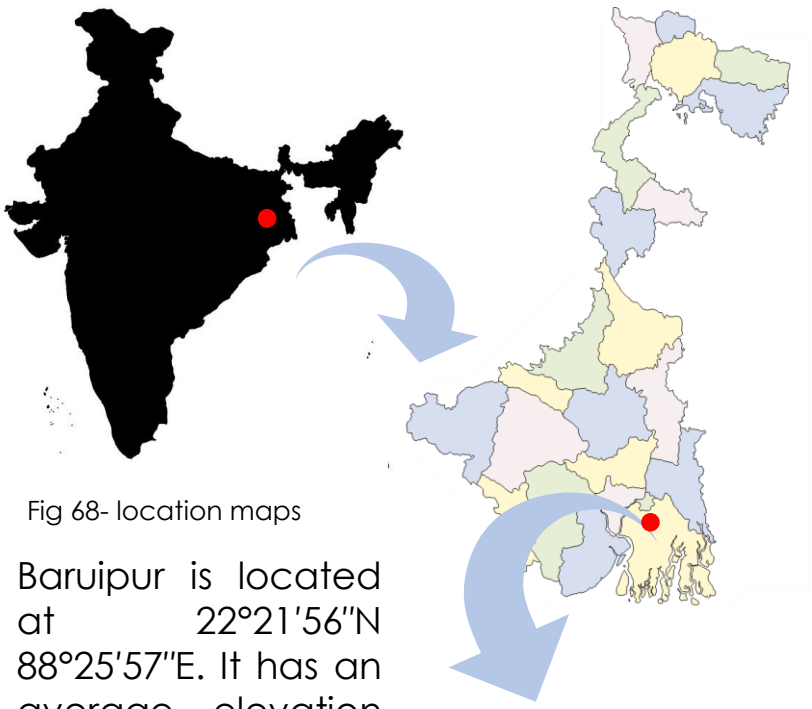


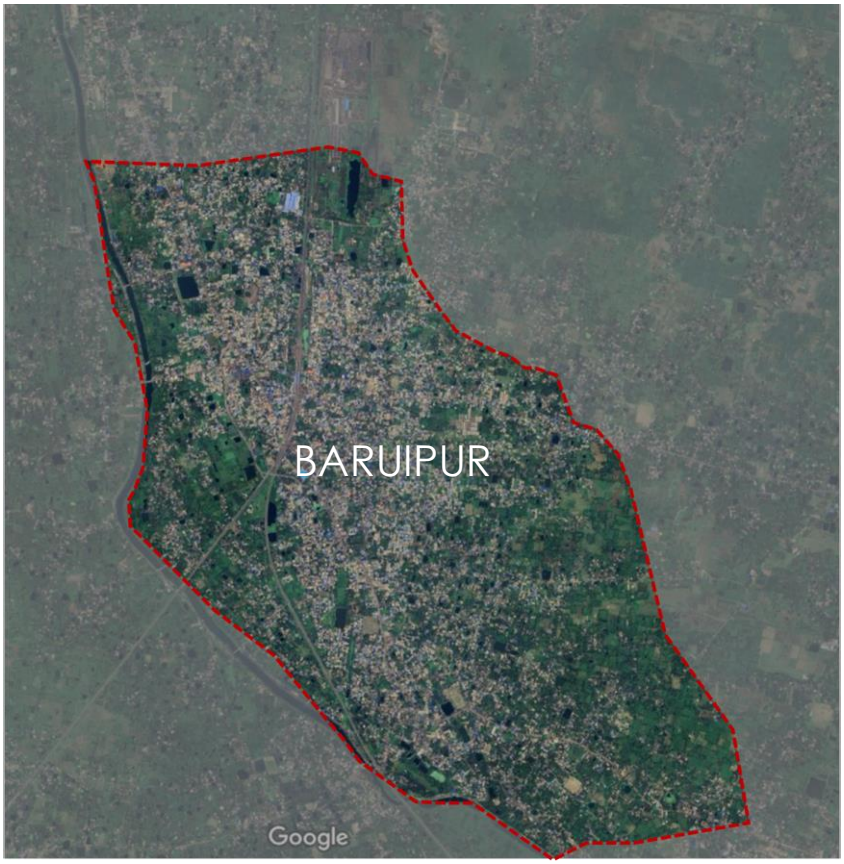
Fig 68- location maps

Baruipur is located at 22°21′56″N 88°25′57″E. It has an average elevation of 9 meters (30 ft).

4.1.2 Description

Baruipur is a town and a municipality of an area 9.50 km2 (3.67 sq mi) the South 24 Parganas district in the state of West Bengal. It is a part of the area covered by the Kolkata Metropolitan Development Authority (KMDA). It is the headquarters of the the neighborhood subdivision.

The entire district is situated in the Ganges Delta and the southern part is covered by the Baruipur -Jaynagar Plain.



Source: google earth

Baruipur subdivision is a rural subdivision with moderate levels of urbanization. 31.05% of the population lives in the urban areas and 68.95% lives in the rural areas. In the southern portion of the subdivision there are 20 census towns.

Source: Planning For Baruipur District Headquarters, S.Ghosh, July 2012

4.1.3 Physical linkages

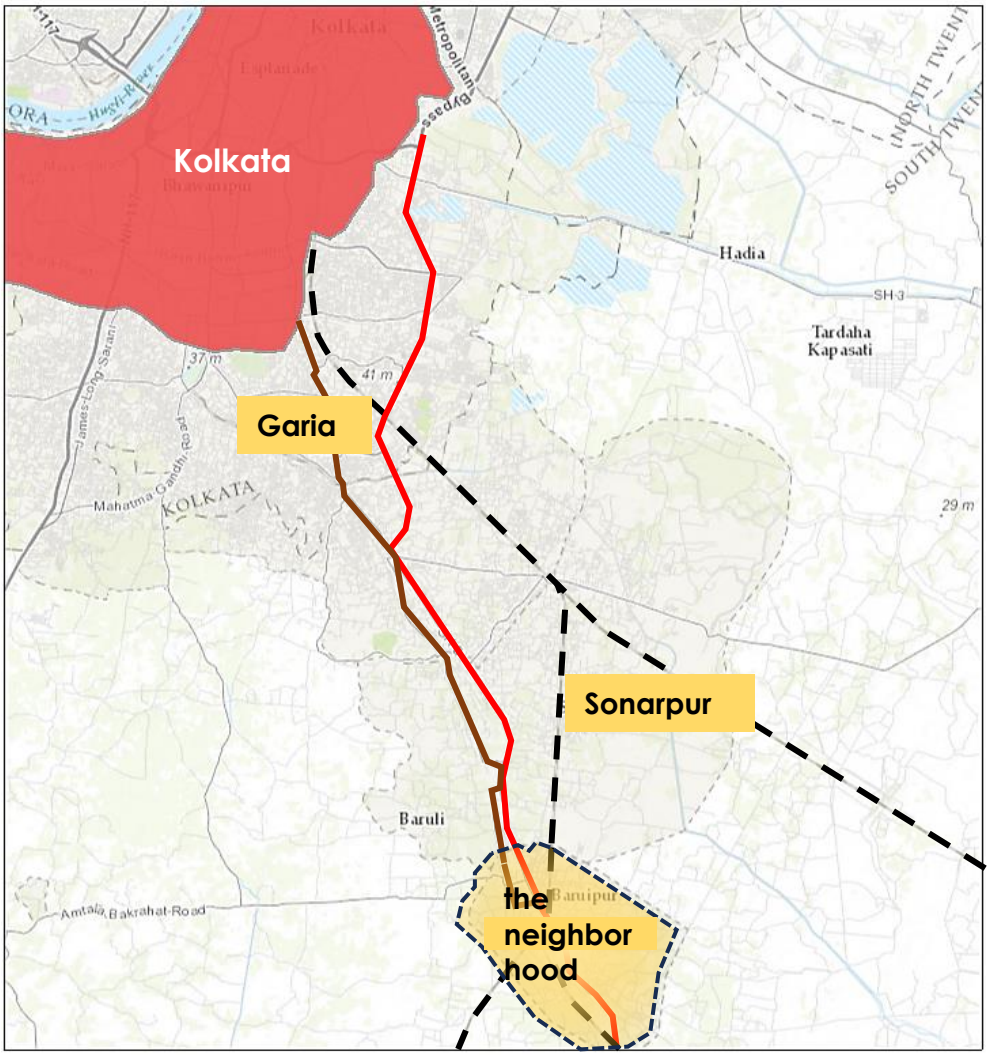


Fig 69- Roadways & railway connection

Source: ESRI, Mapindia

Physical Linkages :

- Baruipur is located 27 Km South of Kolkata and it is linked by two modes of transportation viz. Road and Rail.
- All the important towns and places of South 24 Parganas district are connected with Kolkata through the neighborhood.
- The regional road pattern of Baruipur fans out in all directions.
- The Garia – the neighborhood Road or Kulpi Road is one of the major roads, which has connected the area with Kolkata and North 24 Parganas through E.M Bye Pass.

4.1.3 Physical linkages

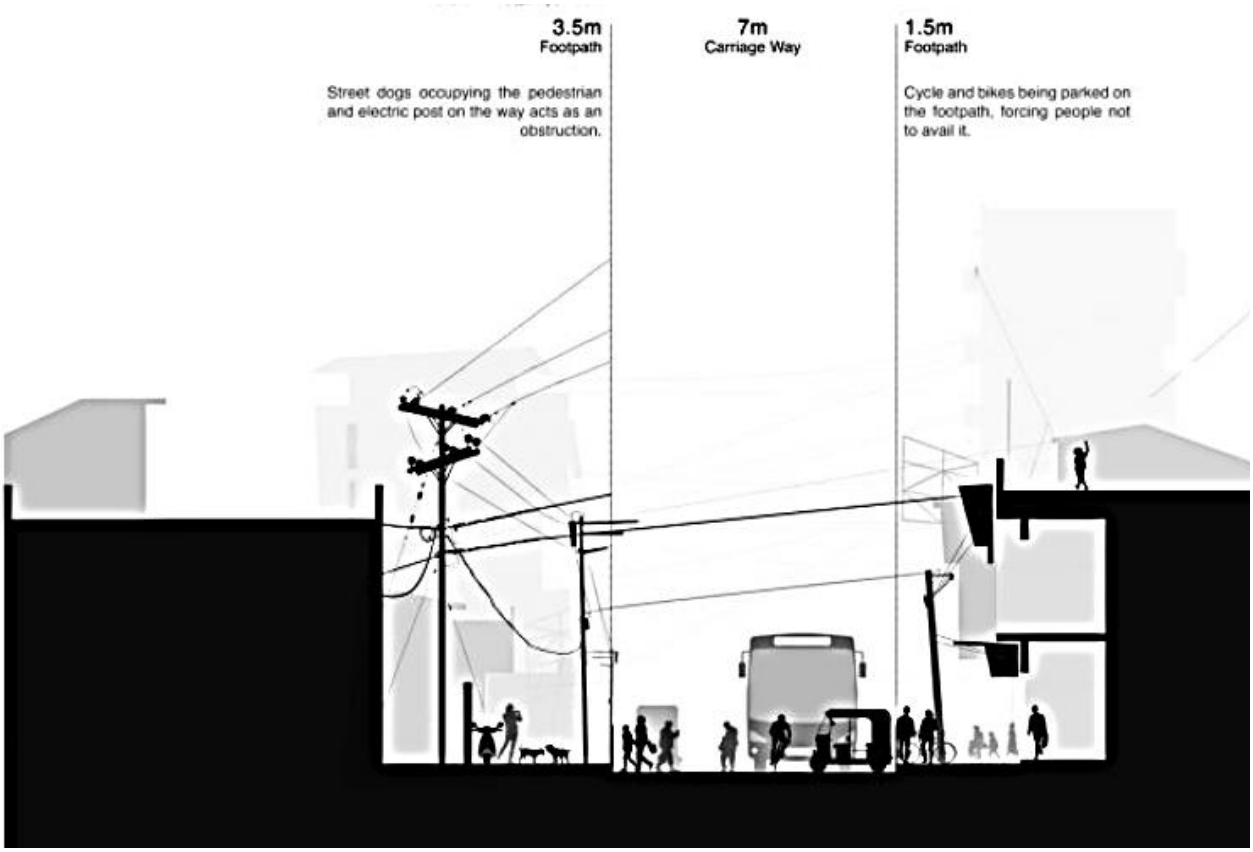
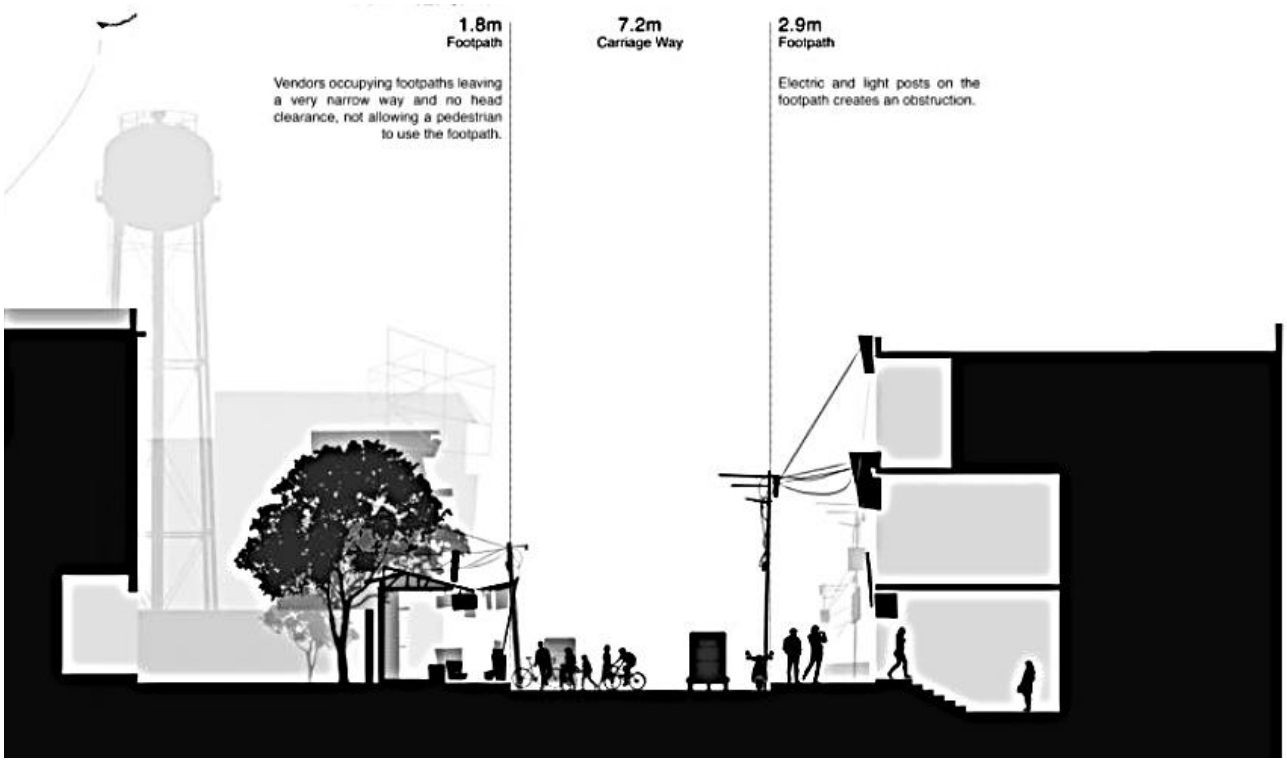


Fig 70 (a) & (b) Road sections of Garia- Kulpi Road.



Source: CEPT,portfolio 2024 archive

4.1.4 Historical evolution

During 1800's-1900's

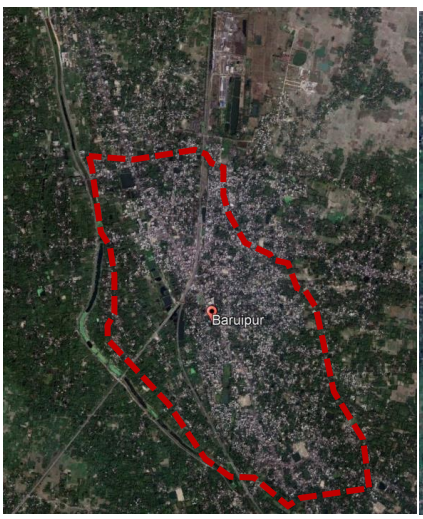
- It was a river-port along the Adi Ganga channel under zamindar Rama Chandra Khan.
- the neighborhood High School was established.
- The Municipality formed in 1889.
- The Railway station was build during 1882.

During 1900's-2000's

- The Madarhat Popular Academy was built.
- Kachari Bazar was formed.
- Public infrastructure was built that included asphalt roads
- Immigration in 1965-1981
- EM bypass was extended to the neighborhood during 1992.

During 2000-2020

- 2013, Fly over under JNNURM was built.
- 2014, Four new connecting bridges between Kulpi road & EM Bypass was built.
- 2016, Super Specialty hospital was built
- Gargi Memorial Institute of Technology (GMIT), established in 2011



During 2011

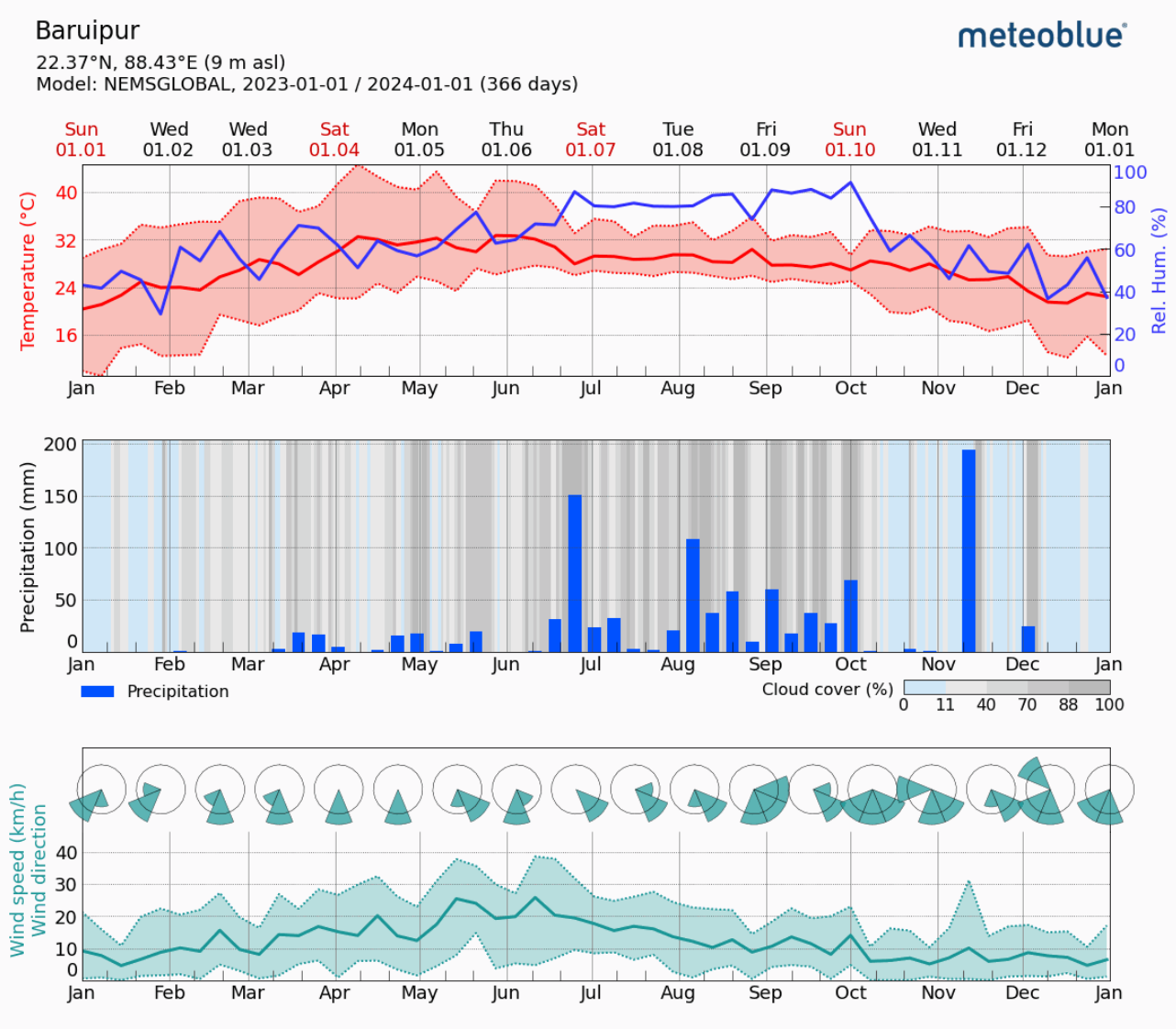
During 2024

Fig 71 (a) & (b) evolution of built-form
Source: google earth

4.1.4 Historical evolution (fig 72)

Source: CEPT,portfolio 2024 archive

4.1.5 Climatic conditions (fig 73)



Source: multimodel weather date by Meteoblue

The weather archive diagrams is separated in 3 charts:

- Max. temp. between April to June.
- Max humidity between July to October.

- Max. precipitation occurs during the months of July-October.
- Returning monsoon occurs during the November end.

- The wind direction is majorly towards south-west direction.

4.1.6 Analysis based on the parameters

Selection of the area

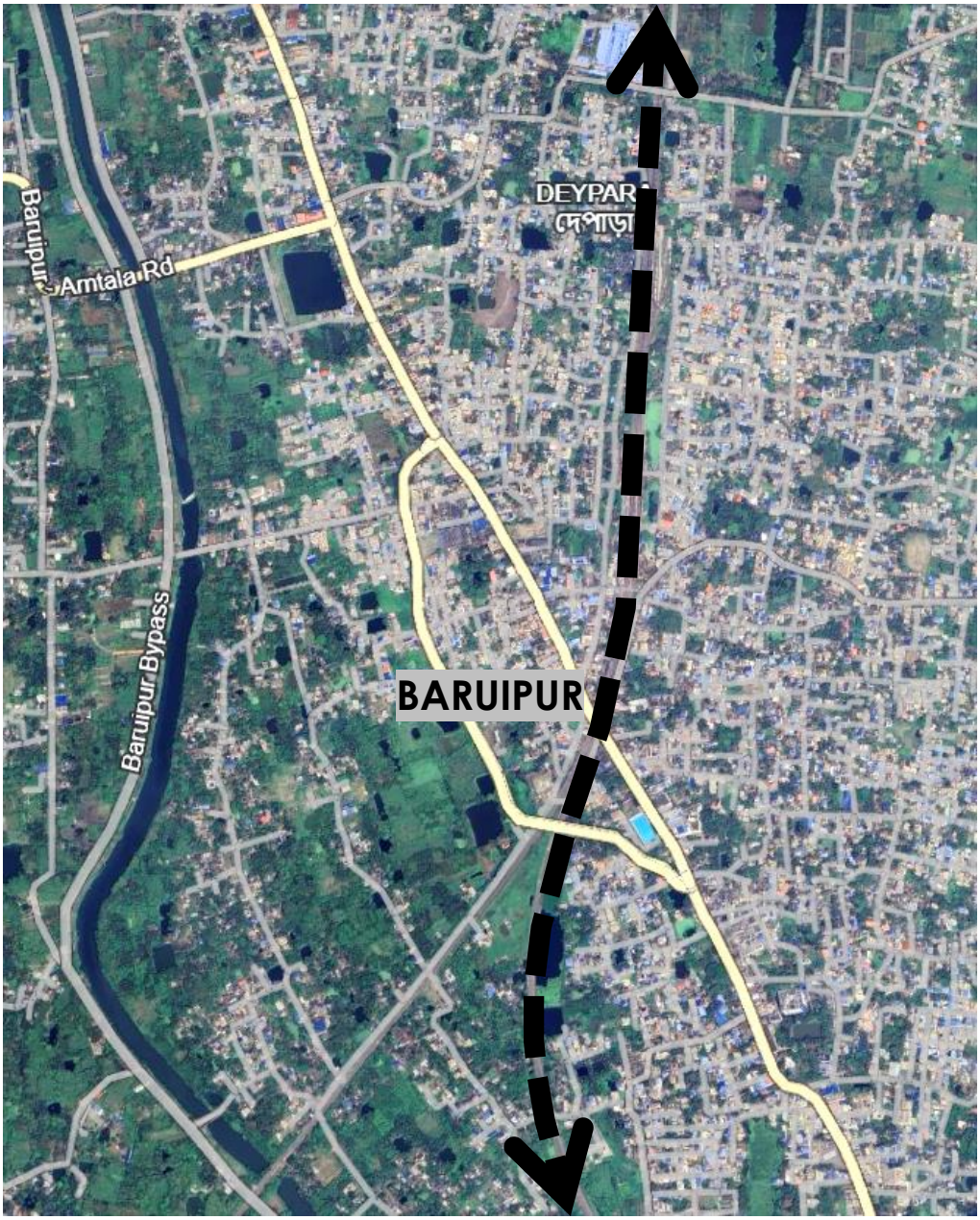


Fig 74- Area map of Baruipur

1. **Strategic Location**
2. **Historical Significance**
3. **Growing Population**
4. **Economic Potential**
5. **Transportation Hub**
6. **Natural Beauty**
7. **Community Engagement**

Area Description – Land Use Map (fig 75)

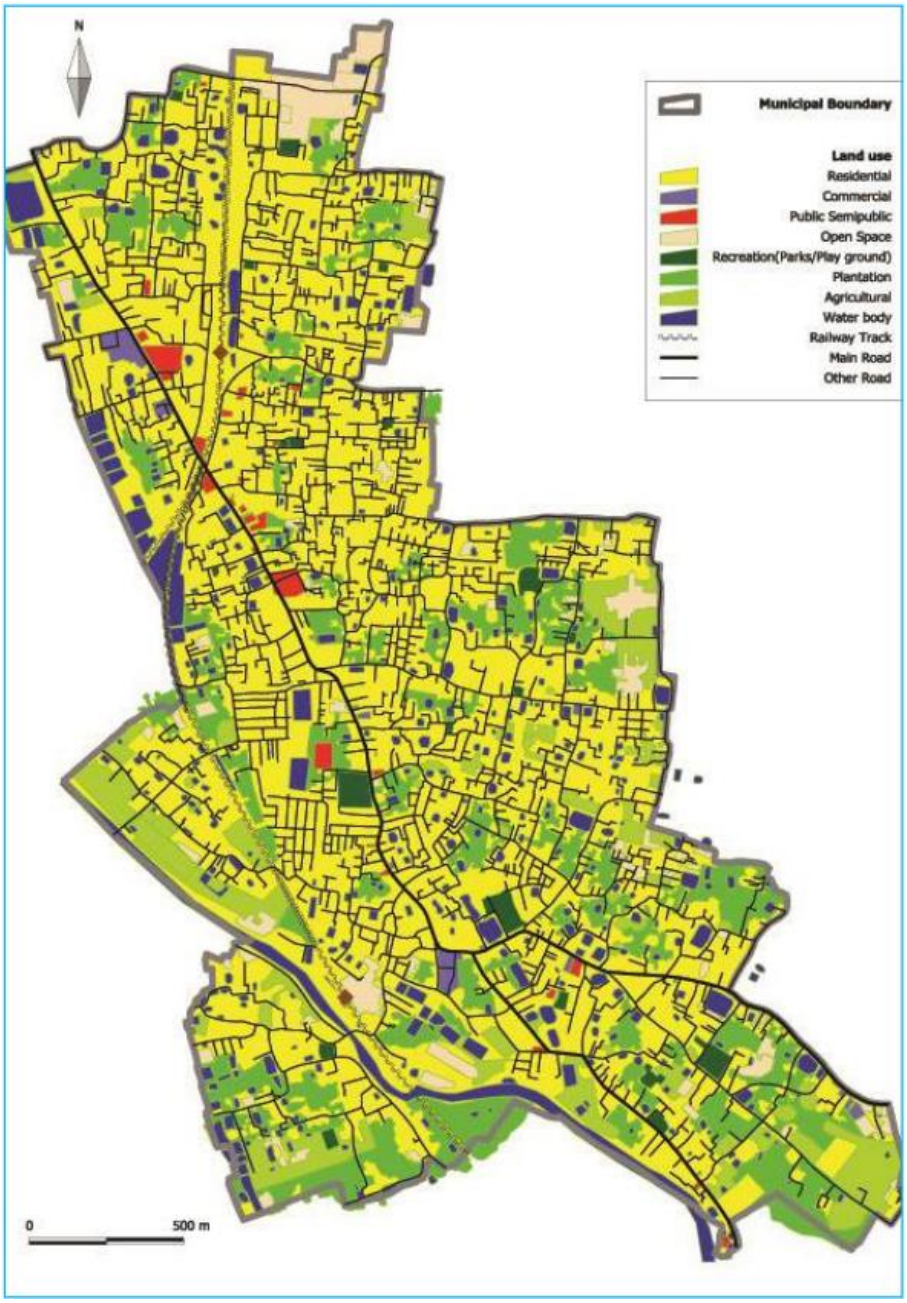


Fig 76- Welkin School

Fig 77- Retail zone

Fig 78- Residencial Built forms

- Commercial
- Residential
- Public, semi-public
- Waterbody
- Playgrounds
- Plantations
- Open spaces

1. Most of the area is dominated by residential use with the density that neighborhoods which is mostly a mechanic and cloth pattern.
2. The northern part comprises of India's firmware industrial and institutional uses.
3. Small scale commercial retailer can be found dispersed in most of the parts.
4. Nonuniform greens along with vast open spaces consisting of water bodies constitutes the open spaces in the area.
5. Intervention required creation of more public spaces to cater to the demands of public usage.

Area Description – Nodes (fig 79)

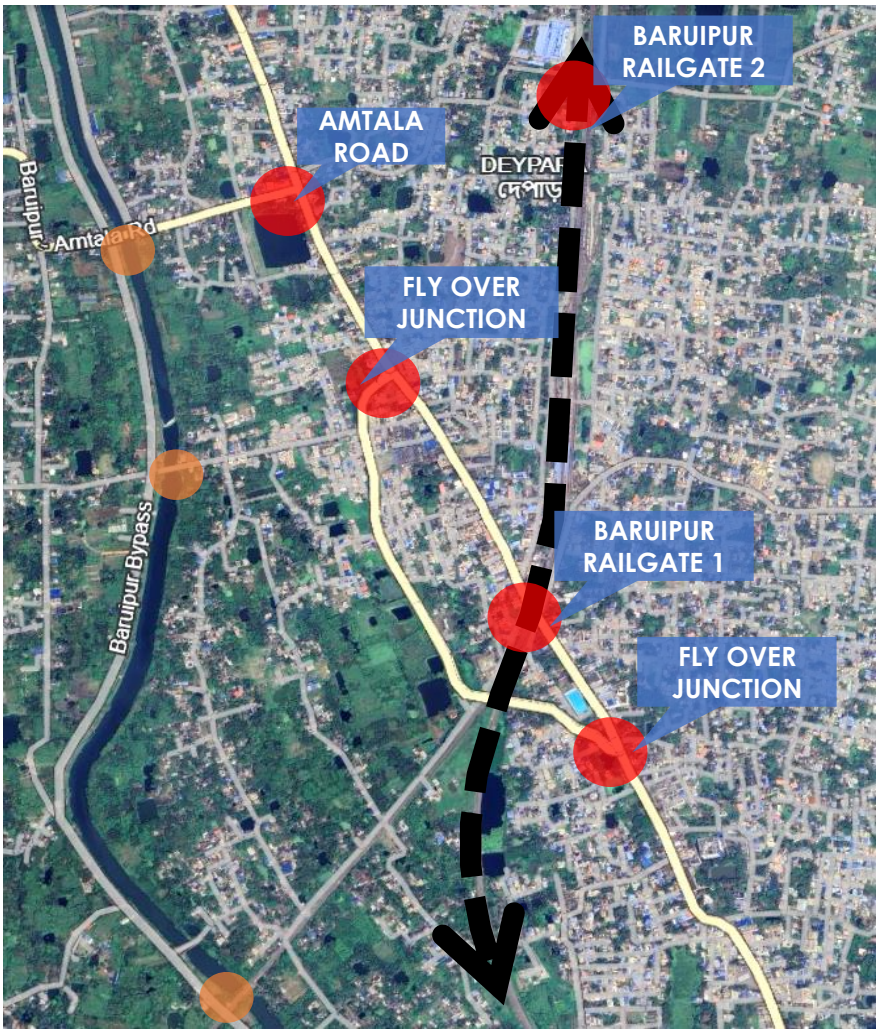


Fig 80- Baruipur Railgate 1

Fig 81- Amtala Road

Fig 82- Baruipur Flyover

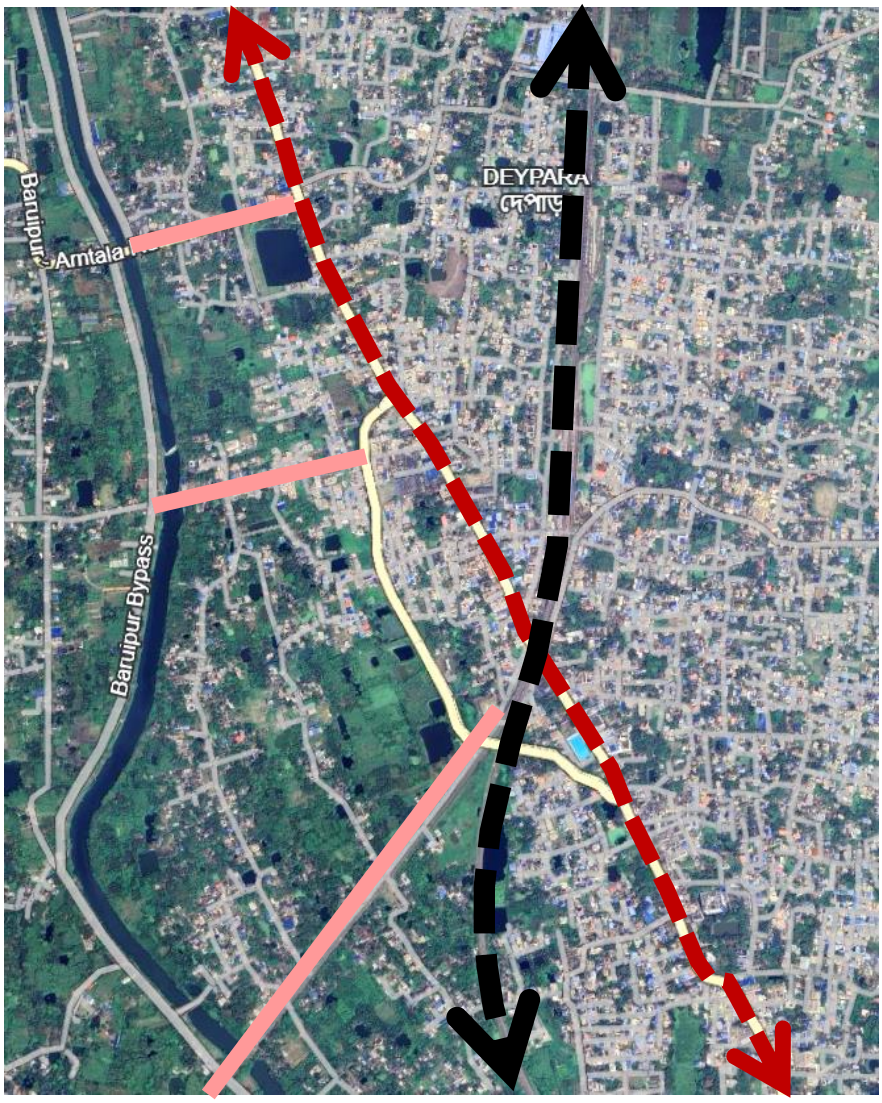
1. Baruipur rail gates, Amtala road junction and the Baruipur flyover constitutes the major nodes both in terms of activity and connectivity .

2. traffic volume is always high in these places as they serve as strategically important places with various modes of transport and activities.

3. The miner loads constitute the small bridges over the Canal.

4. These minor nodes consisting of minor groups serve food vehicle and pedestrian traffic throughout the day

Area Description – Road Network (fig 83)



Railway track
Kulpi road (SH1)
EM Bypass
Minor roads
Baruipur flyover

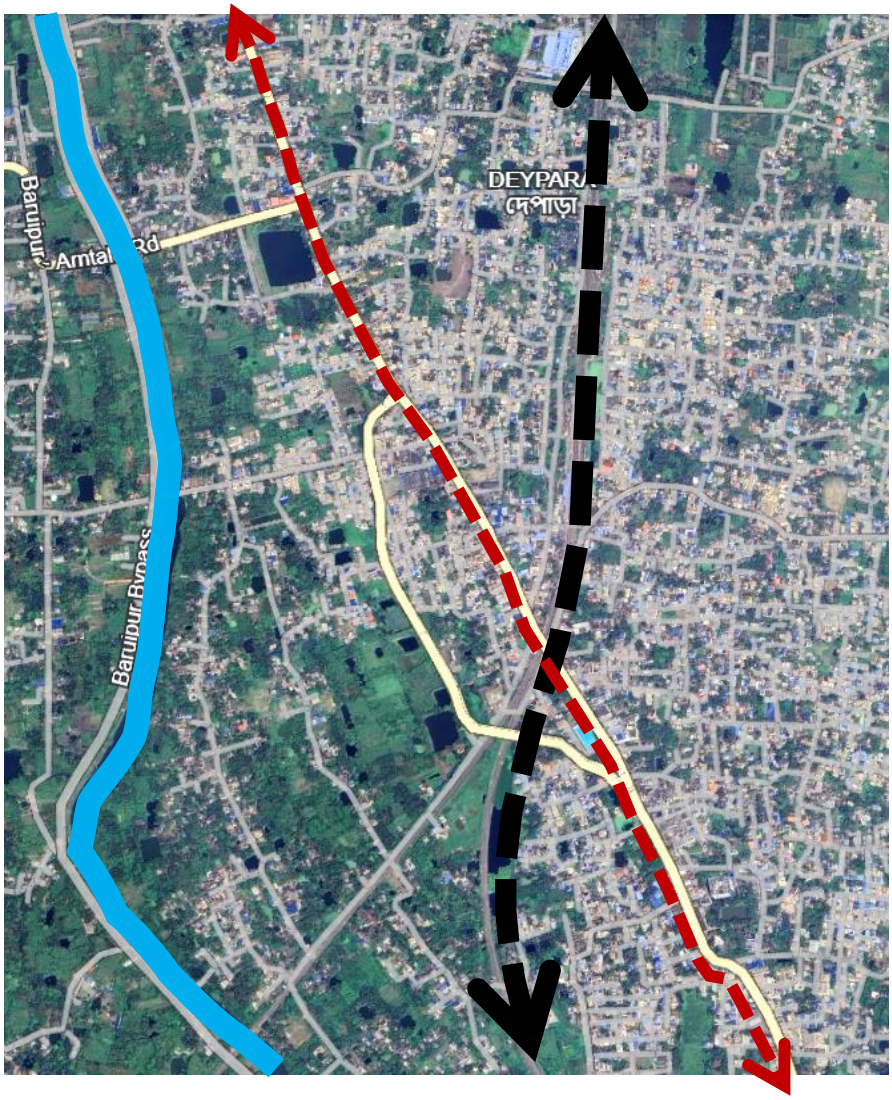
Fig 84- EM Bypass

Fig 85- Kulpi Road

Fig 86- Baruipur Flyover

1. Eastern metropolitan bypass or EM Bypass is present alongside of the Adi Ganga canal.
2. Garia - Baruipur road (SH1) or Kulpi road is one of the major roads which connects the area with the rest of the Kolkata.
3. Amtala road has linked it with the adjacent western part.
4. Other roads like Madarat Road, Dhabdhabi Road, Canning Road connected the area with eastern part
5. The railway track is a part of the many tracks emerging from Sealdah (South-section).

Area Description – Edge (Fig 87)



Railway track

Kulpi road (SH1)

Adi Ganga canal

Fig 88- Adi Ganga canal

Fig 89- Kulpi Road

Fig 90- Baruipur Railway track

1. Eastern metropolitan bypass or EM Bypass is present alongside of the Adi Ganga canal forming an prominent edge.
2. Garia - Baruipur road (SH1) or Kulpi road is one of the major roads which connects the area with the rest of the Kolkata & acting as an edge.
3. The railway track is a part of the many tracks emerging from Sealdah (South-section) which is also an prominent edge here.

4.2 Zonal Level Study

4.2.1 Selection of intervention zone

BASED ON THE STUDY DONE IT IS ESTABLISHED THAT THE SELECTED ZONES HAVE THE MOST POTENTIAL TO BE DEVELOPED AS PROMINANT PUBLIC REALM

ZONE I

AREA NEAR BALARAMPUR

ZONE II

AREA NEAR PADMAPUKR TRANSIT HUB

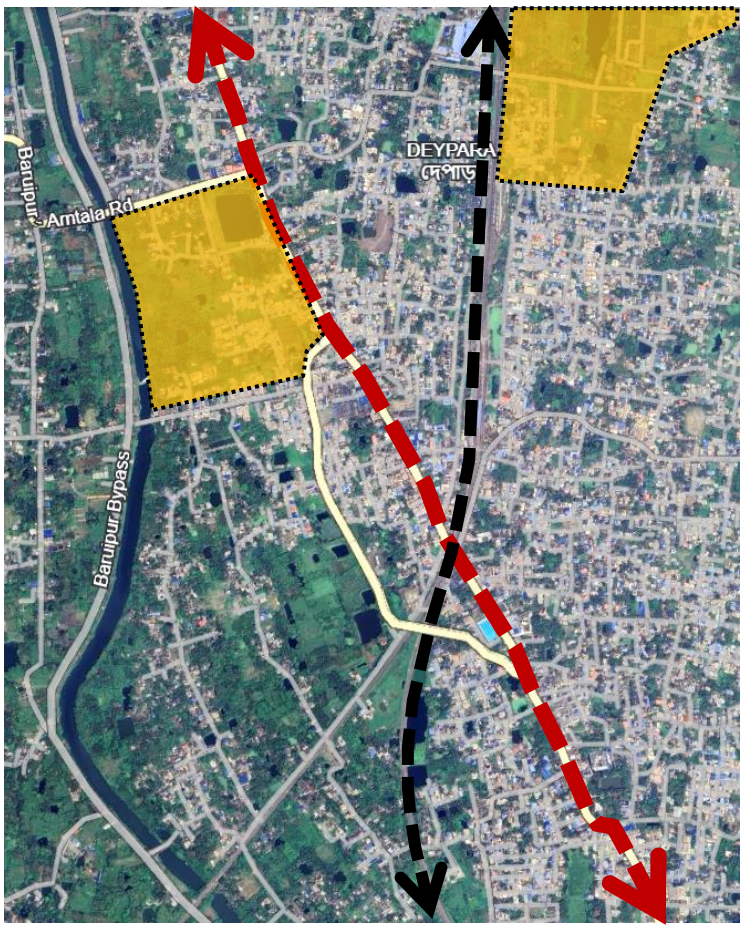


Fig91- Zoning map

ZONAL LEVEL STUDY WILL BE **LIMITED TO ZONE 1** ONLY, SINCE THIS AREA HAS BEEN IDENTIFIED WITH THE MOST EFFICIENT PUBLIC OPEN SPACES OF BARUIPUR.

4.2.2 Analysis based on the parameters

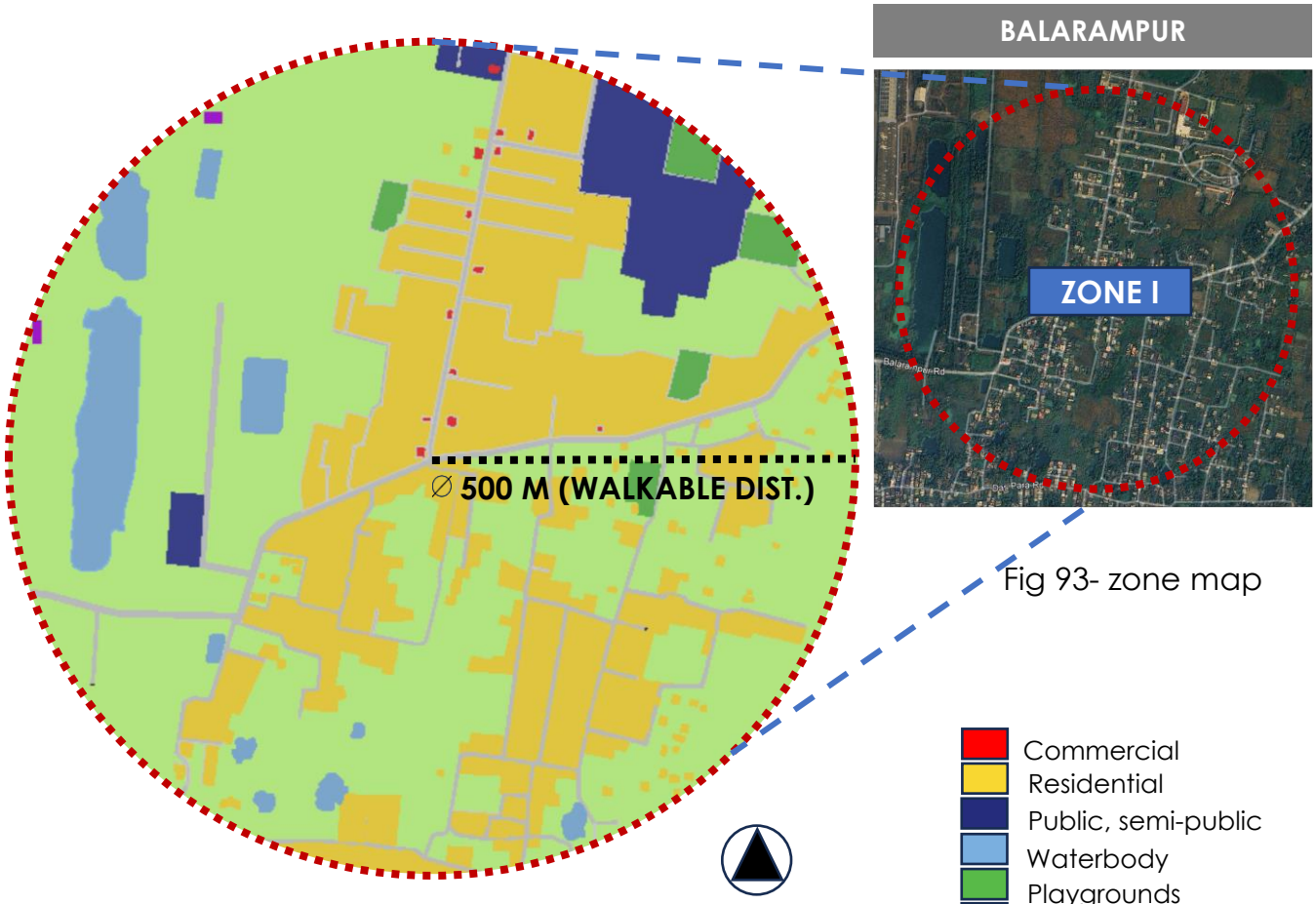


Fig 93- zone map

Fig 92- LAND USE PLAN

Source: Author

Physical traits of site:

1. Most of the spaces are open green & vacant land.
2. The residential growth is mainly towards the periphery.
3. The industrial belt act as an edge for the site.
4. The institutional buildings acts as the major landmarks.
5. The scattered water bodies are present.

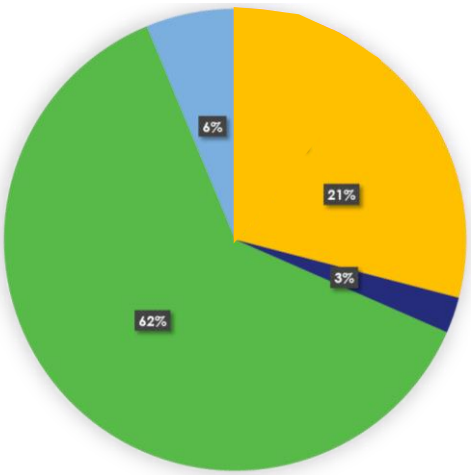


Fig 94 Pie- Chart showing the land-use of the zone

Source: Author

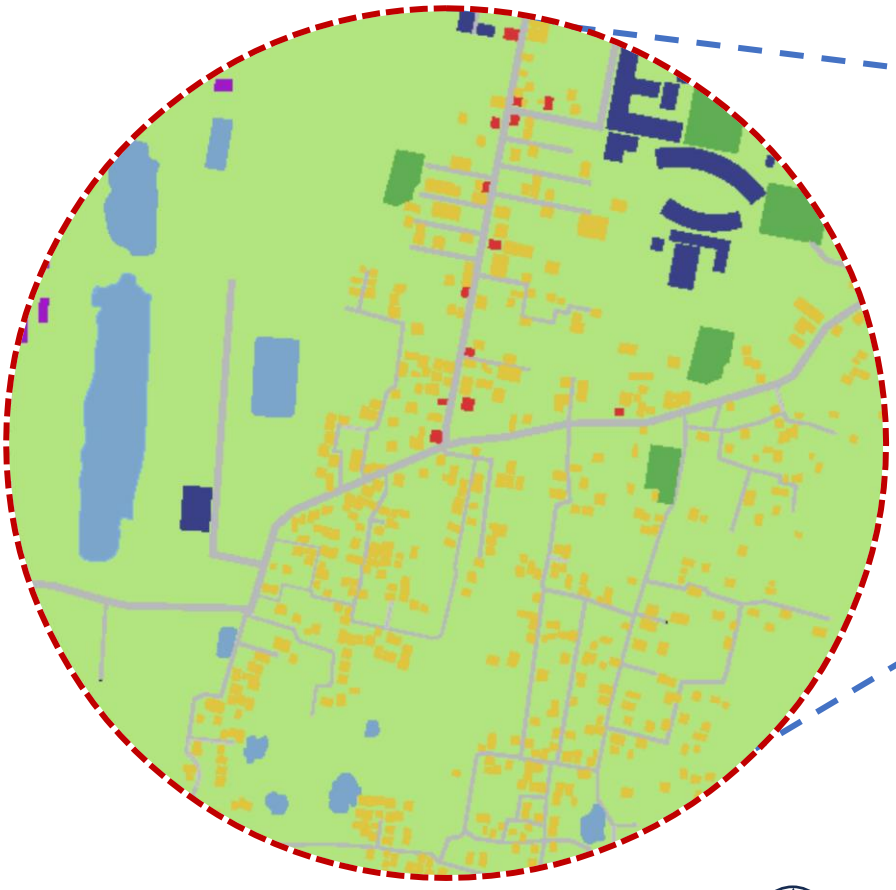


Fig 93- zone map

Commercial
Residential
Public, semi-public
Waterbody
Playgrounds
Open spaces

Source: Author

Fig 95- BUILDING USE PLAN

BUILT UP

UN-BUILT SPACE

Fig 96- FIGURE GROUND MAP

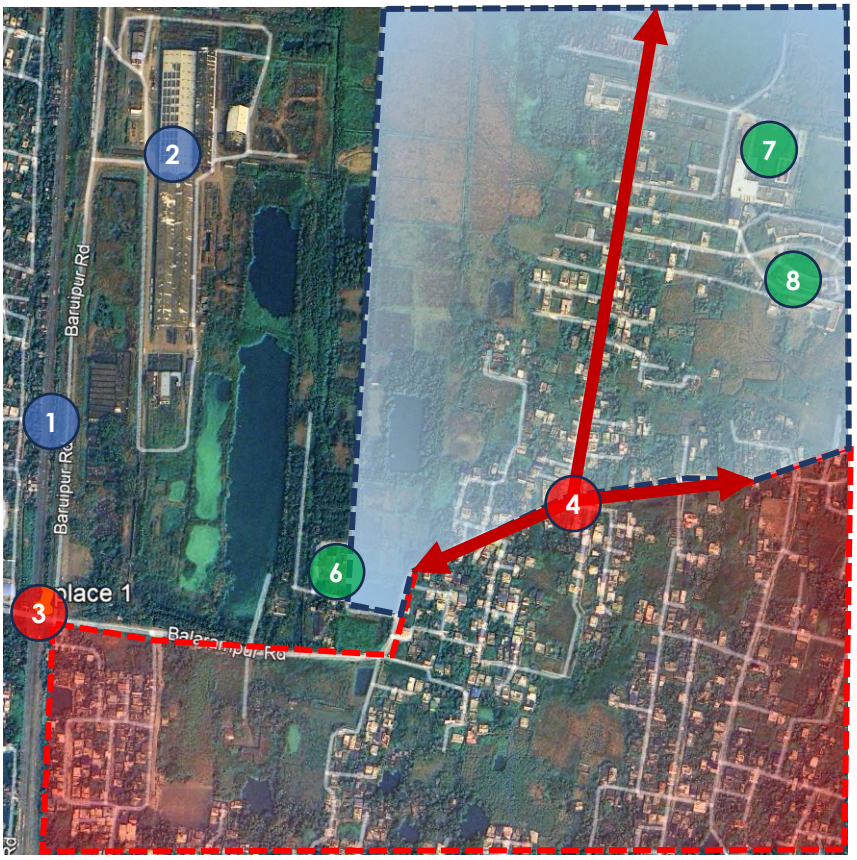


Fig 97- Analyzing the parameters of the zone

EDGES

1

Fig 98- Baruipur Railway track

2

Fig 99- BESCO wagon Factory

DISTRICTS

1

2

Areas with common features mainly building usage & typology.

NODES 3

Fig 100- Rail gate 1

4

Fig 101- Para-transit parking & market

LANDMARKS

6

Fig 102- Agricultural Experimental Farm(CU)

7

Fig 103- ST. Montfort SSC school(CBSE)

8

Fig 104- GMIT College (WBUT)

PATHS

Fig 105- 5M wide roads

Fig 106- 2.5-3M wide roads

Source: Author

CONCEPT PLAN OF SITE:

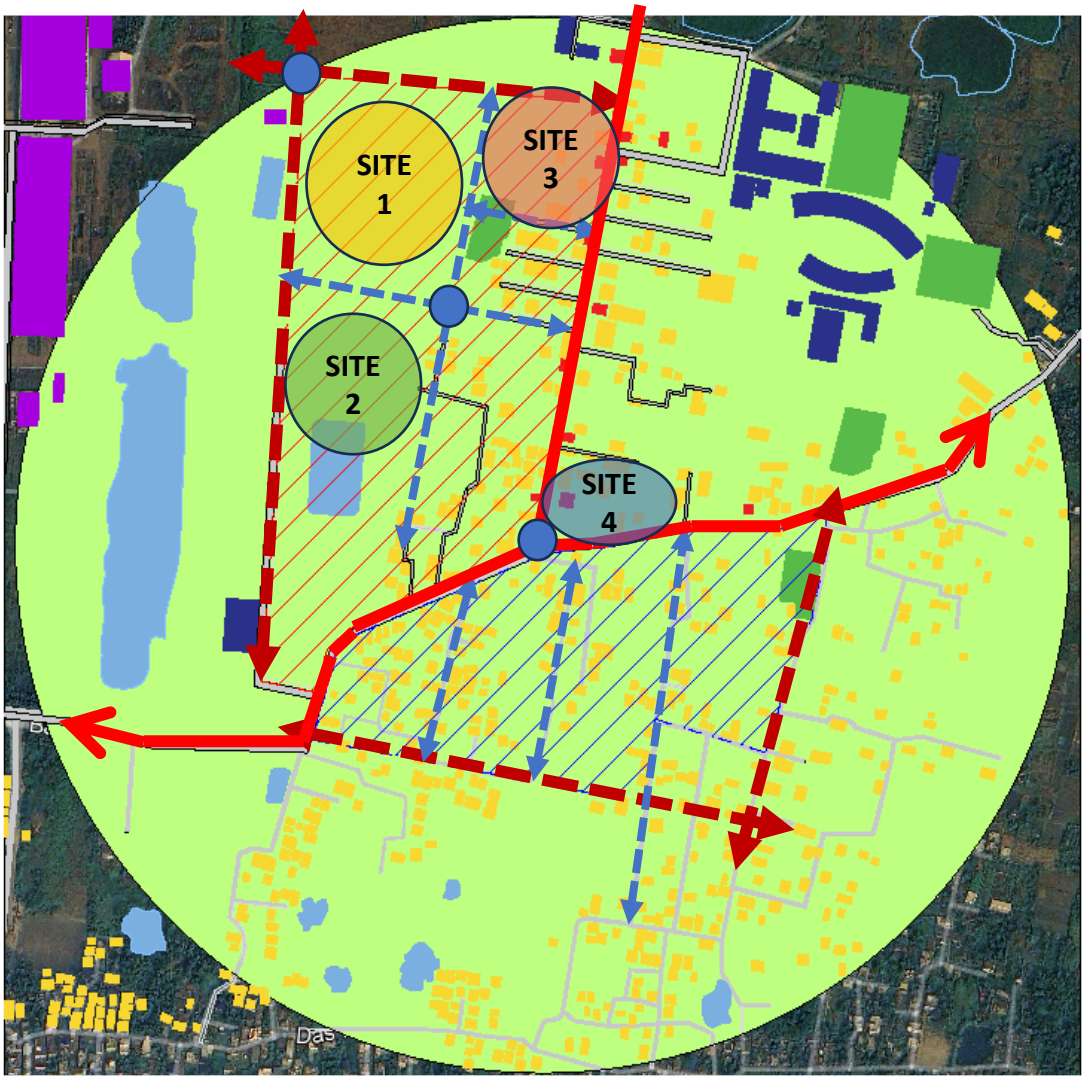


Fig107

ZONE – I (13.5HECTARES)

ZONE – II (8.3HECTARES)

PROPOSALS

MAIN ROAD (5M)

INTERNAL ROAD (3M)

EXISTING ROAD (5M)

SITE 01

PUBLIC PLAZA

SITE 02

ECO- TRAIL

SITE 03

MIXED-USE BUILT FORM

SITE 04

NODE ACTIVITY

Table 2: Challenges & Policies

CHALLENGES	POLICIES
Lack of community engagement.	Prioritize community engagement by involving residents in the design process.
Absence of multi-functional spaces.	Foster multi-functionality by designing spaces for diverse activities and uses.
No connection between nature & public spaces.	Integrate green infrastructure by incorporating nature into public spaces.
Inaccessible & non-inclusive spaces.	Ensure inclusivity by designing for accessibility and social equity.
Unorganized chaos at the nodes.	Nodes reinforcement enhancing visual elements & signages which would help in wayfinding

5.0
DESIGN IMPLEMENTATIONS

5.1 Guideline formulations

EDGE: BUILT EDGE

Design considerations:

1. Built form should be far appropriate scale and façade management with FAR constraints.
2. Increase permeability to the public realm through built form control regulation that is plot size, height and configuration of building and facade management.
3. Scope of terrace, balcony a roof top areas to increase eyes on the streets keeping more safety and security to the pedestrians.
4. Providing commercial use at the ground floor of the built forms use of porticos as an element of design in each buildings for shaded sidewalks.
5. Minimum setback and permissible FSI as for existing building rule based on the local Building by-laws.
6. Mixed used developments with an aim to increase the intensity and diversity of land uses.
7. At least one side of the setback should be left for planting trees or any greeneries there should not be any services running underground.
8. Within the individual plot boundary there should be a fixed place for garbage dumping.
9. For corner plots near any junction of roads it has to be tapered to leave space for the sight radius.

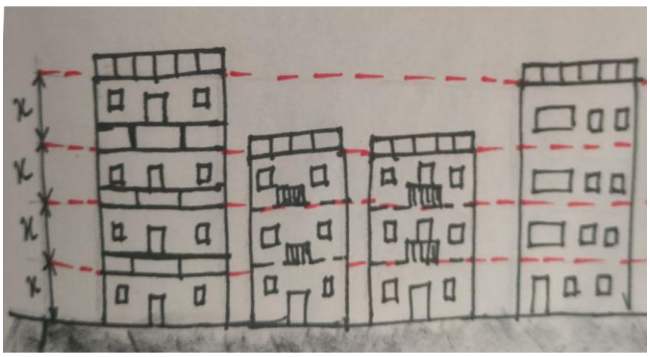


Fig108- Similar building frontage

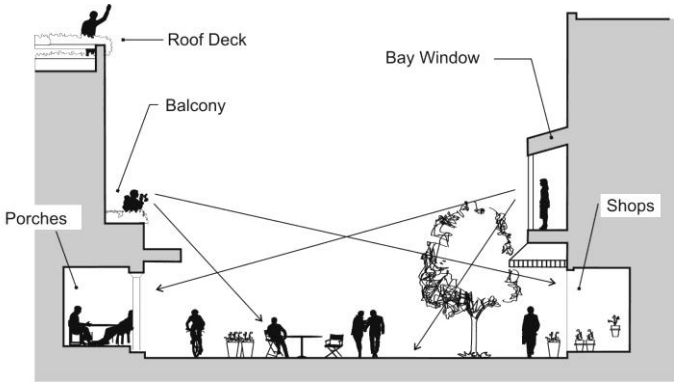


Fig109- Eyes on the street

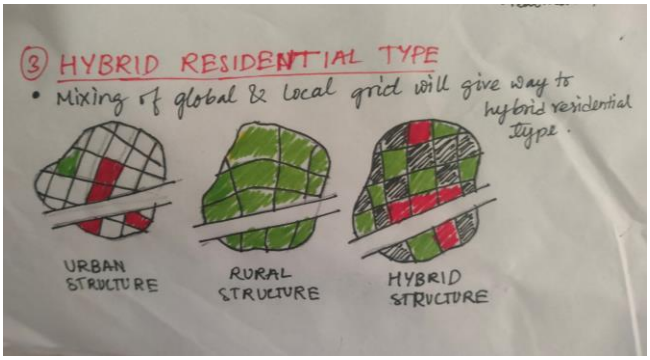


Fig110- Hybrid Residential type

Fig111- Mixed Built-use

NODES

Design considerations:

1. Identification of transitional loads and social nodes to enhance that character to bring special identity to the node.
2. Strengthening of nodes providing improved connection between the streets within the neighborhood.
3. Strengthening of nodes can be done by the built form that is corner treatment of the buildings or by creating tactical plazas at the nodes.
4. Controlling the vehicle movement and providing proper signages.
5. Special care should be given to universal design and pedestrian crossover.

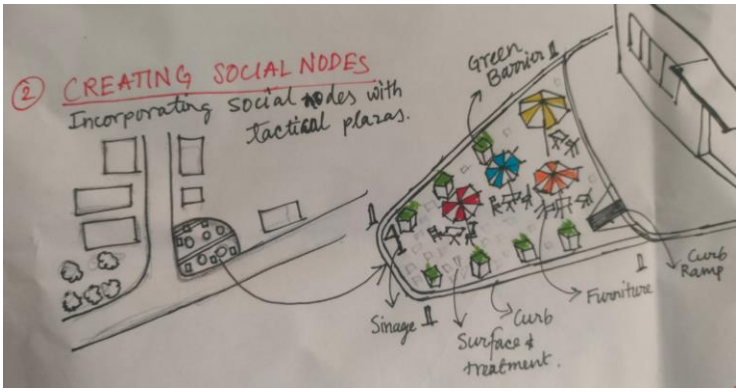


Fig112- Tactical Plaza

Fig113- Pedestrian crossover

ROADS & PATHWAYS

Design considerations:

1. 1-2 vehicular lanes based on the traffic load and IRC guidelines.
2. Shaded sidewalks with min 1.5m is advisable and more where ever possible.
3. Hierarchy of roads are followed from major roads with both vehicular & pedestrian movements and minor roads provided only pedestrian and non-motorized vehicles.
4. Proper underground drainage and electrical lines should be there with durable measures.

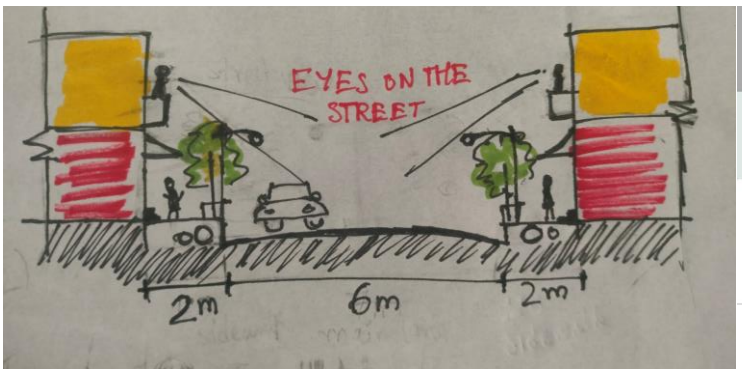


Fig114- Shaded sidewalks

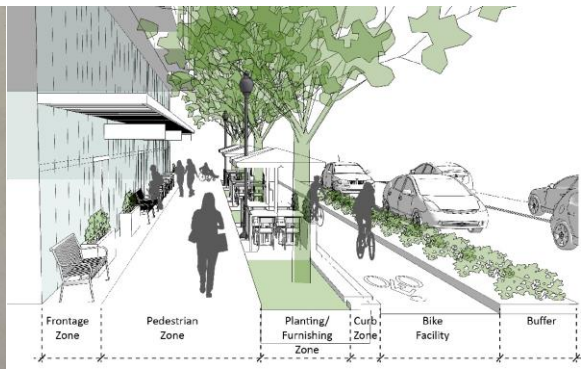


Fig115- Measurements

ELEMENTS OF THE STREET

STREET FURNITURES:

1. To complement the character of the area or the adjacent developments, flexible, interactive street furniture design is very much required.
2. Small focal points, such as the tactical plaza, urban sculpture or landscaping elements, should be designed as landmarks for the purpose of imageability and orientation.

Fig116- Street furniture

STREET LANDSCAPING:

1. Roadside plantations and decent quality hardscapes, such as pavement, sculpture, etc, must be provided to enhance the performance of the street environment.
2. Tree planting, shrub beds, landscaped regions must be integrated at regular interval to balance the hard edges and reduce the thermal discomfort of the streets.

Fig117- Street landscaping

STREET SIGNAGES & LIGHTS:

1. The design recommendations for street signages like direction board, object name board etc, should have better visibility, proper allocation and mounting standards, reflective material as per IRC guidelines.
2. Proper street lighting is also required for the sense of safety.

Fig118- Street signages

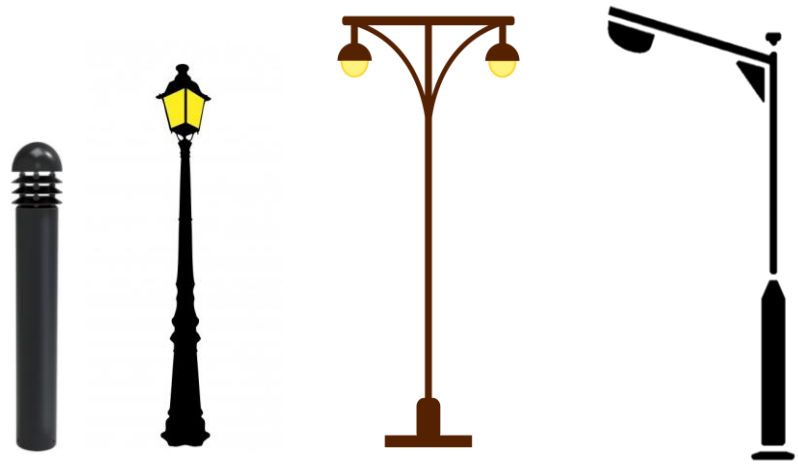
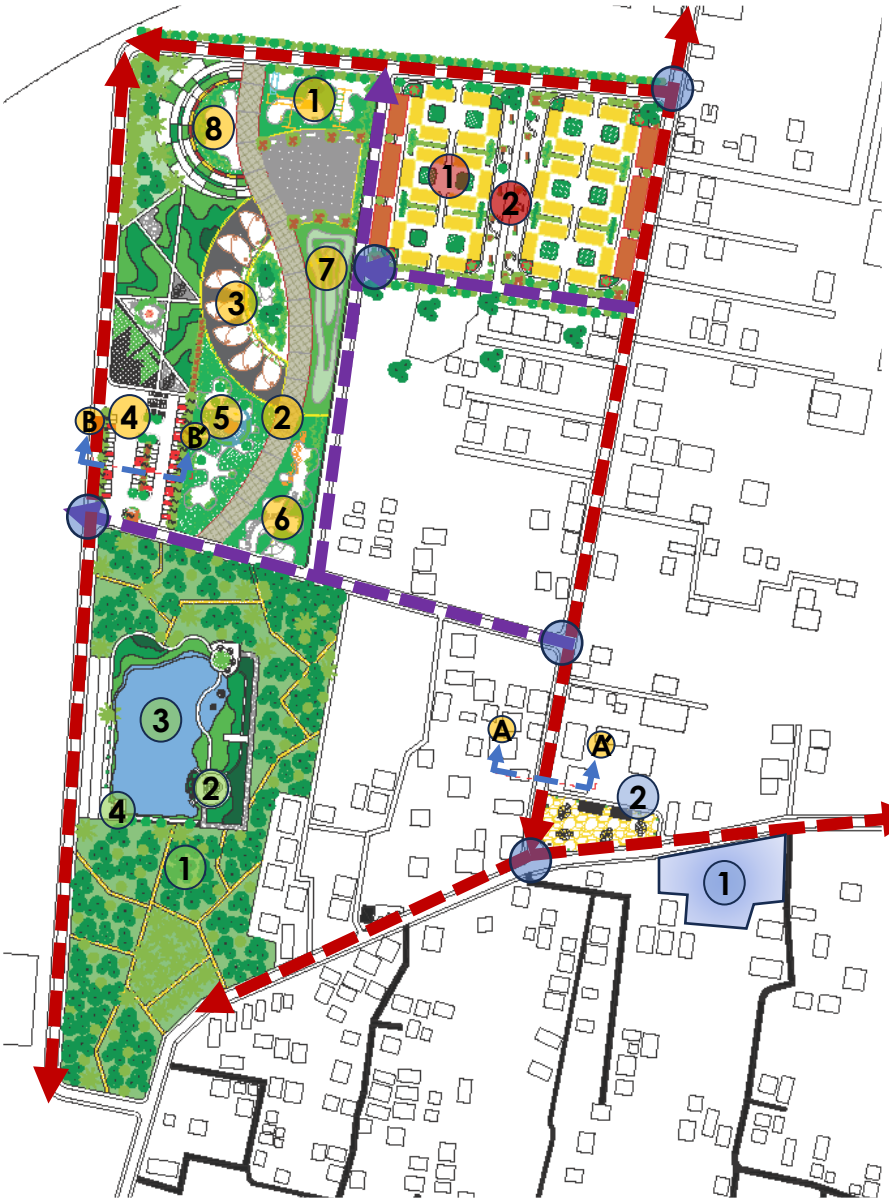


Fig119- Street Lights

Fig 120- Street signages

5.2 Intervention Drawings



SITE 01

1. CHILDRENS PLAY AREA
2. JOGGING TRAIL
3. SHADED PAVILLION
4. PARKING ZONE
5. OPEN AIR THEATER
6. OUTDOOR GYM AREA
7. GREEN MOUND
8. ENTERTAINMENT PLAZA

SITE 02

1. ECO TRAIL
2. URBAN SCULPTURE
3. WATERBODY AREA
4. GAZEBO

SITE 03

1. MIXED-USE RESIDENTIAL AREA
2. BUFFER ZONE

SITE 04

1. DAILY MARKET AREA
2. TACTICAL PLAZA

Fig 121- MASTER PLAN

NODES

MAJOR ROADS (10M)

INTERNAL ROAD (5M)

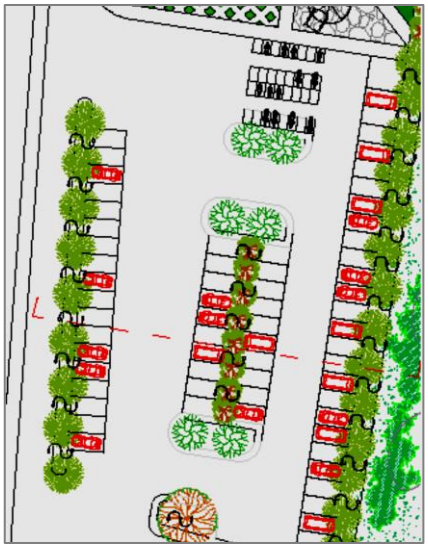
SITE 01

Fig 122- PUBLIC PLAZA

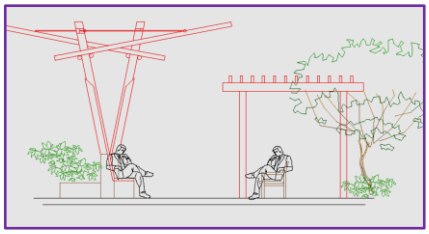
1. CHILDREN'S PLAY AREA
2. JOGGING TRAIL
3. SHADED PAVILION
4. PARKING ZONE
5. OPEN AIR THEATER
6. OUTDOOR GYM AREA
7. GREEN MOUND
8. ENTERTAINMENT PLAZA

1 Fig123- Children's Play Area

5 Fig124- Open Air Theater



4 Fig126- Parking zone



3 Fig125- Shaded Pavilion

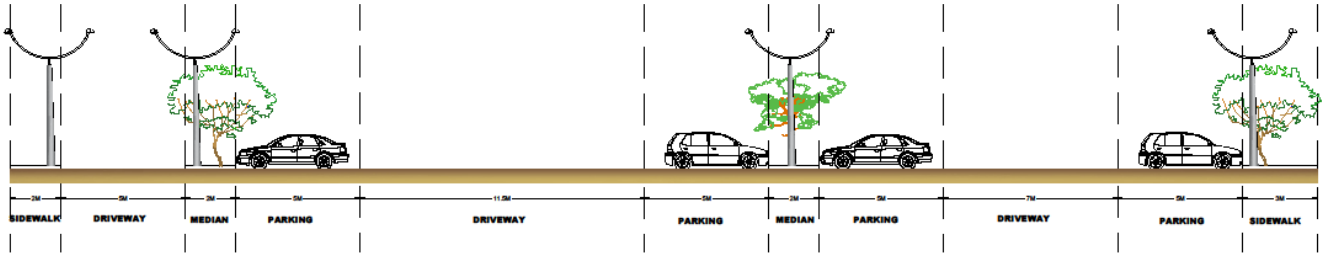


Fig 127- ROAD SECTION B-B'

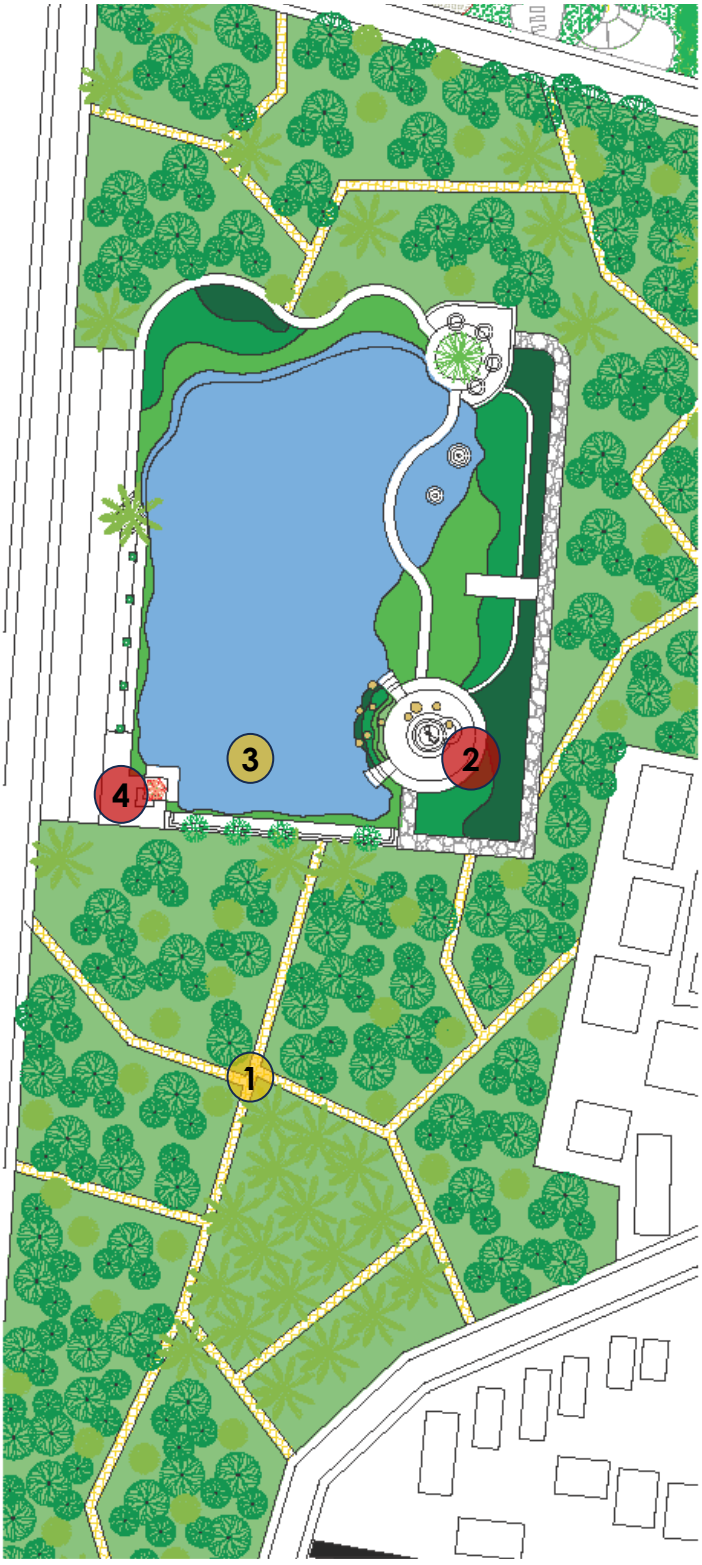
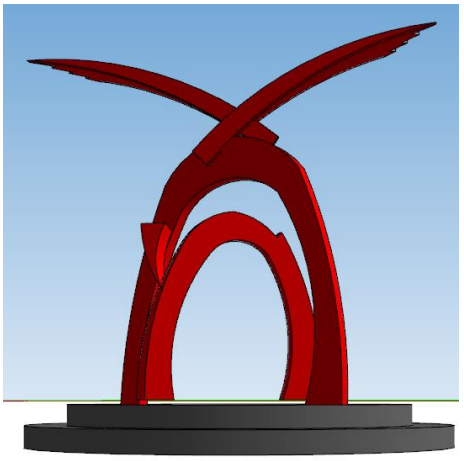


Fig 128- ECO TRAIL

1. **ECO TRAIL**
2. **URBAN SCULPTURE**
3. **WATERBODY AREA**
4. **GAZEBO**

SITE 02

1 Fig 129- Eco Trail



2 Fig 130- Urban Sculpture

4 Fig 131- Gazebo

SITE 03

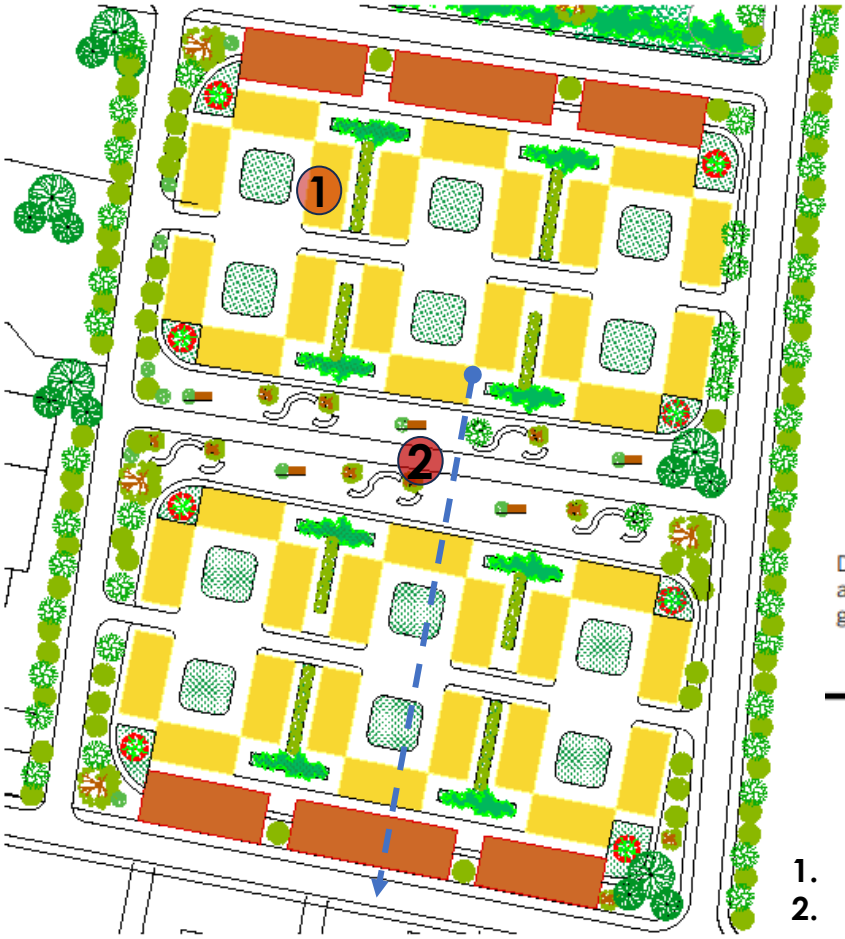


Fig 132- Mixed Use Residential Area

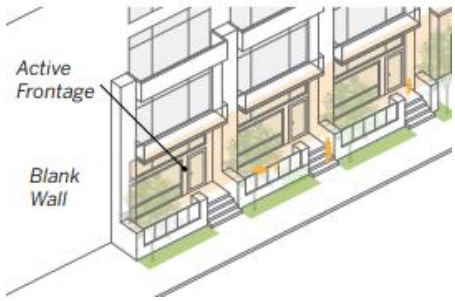


Fig 133- Active frontage

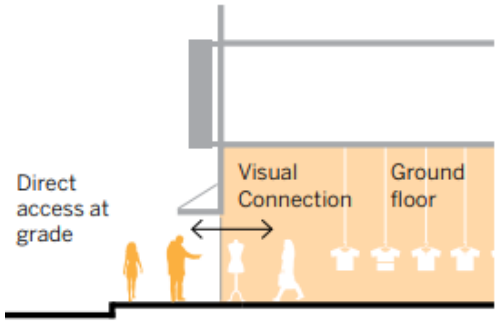


Fig 134- Retail area on the G-floor

1. **MIXED USE RESIDENTIAL AREA**
2. **BUFFER ZONE**

2 Fig 135- Buffer zone

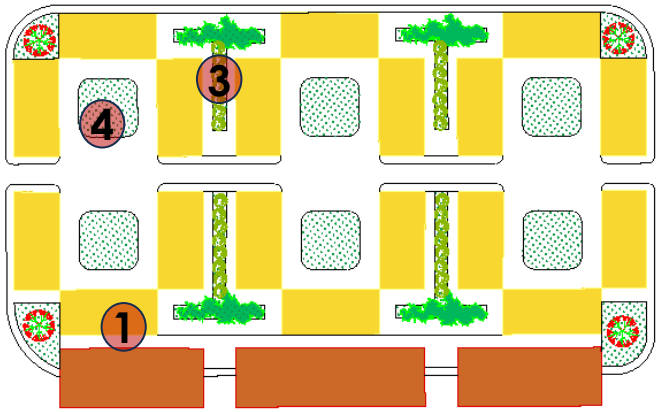
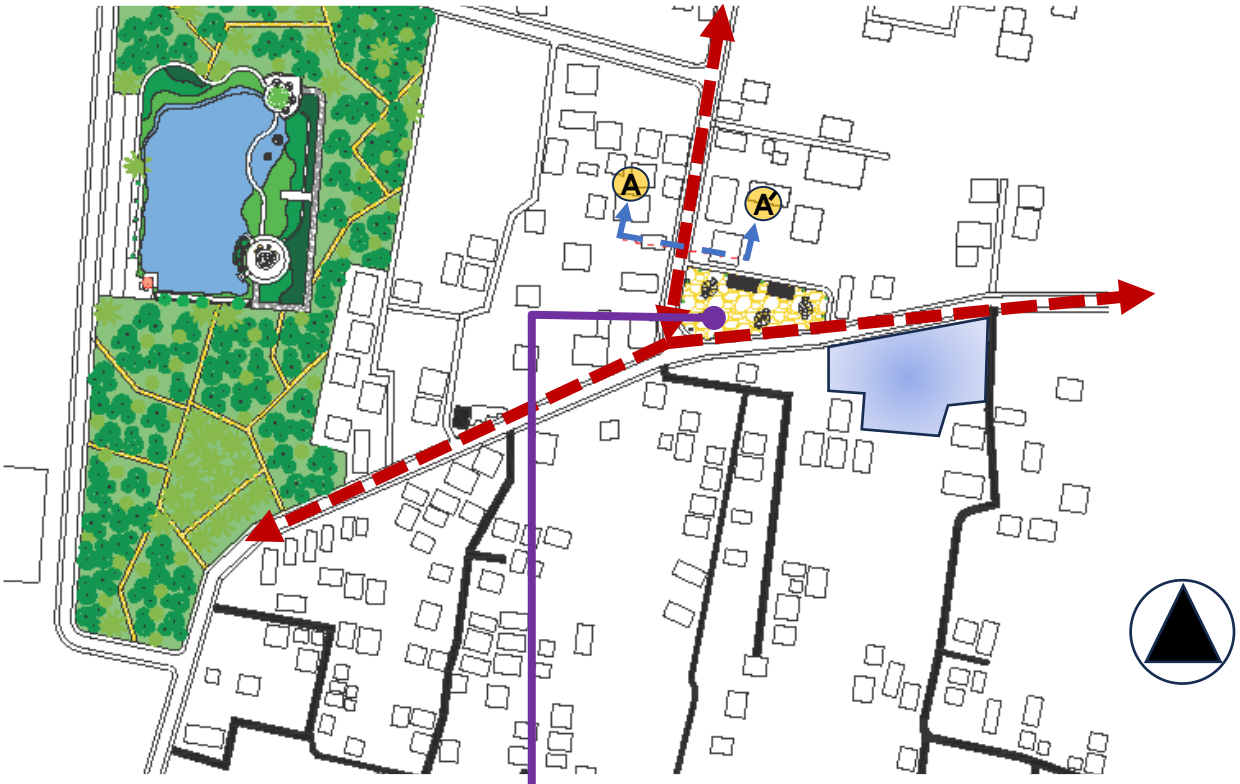


Fig 136- A module unit

1.Mixed used development mainly retail & residential
2. Buffer zone created between the built form to increase community engagement.
3. Green barrier is present to separate plot areas instead of solid walls.
4. Common open space is provided

Fig 137- NODE & PATHWAYS

SITE 04



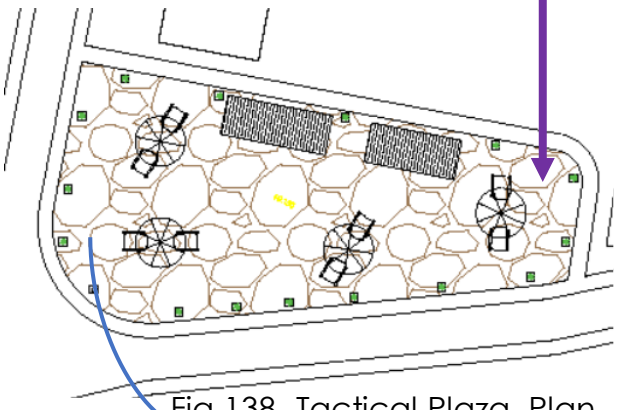


Fig 138- Tactical Plaza, Plan

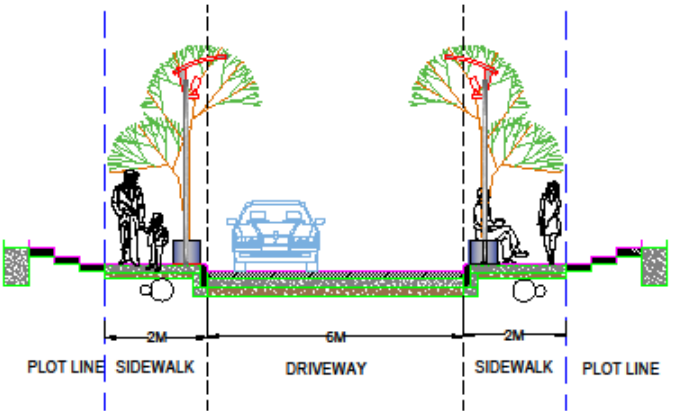


Fig 140- Road Section A-A'

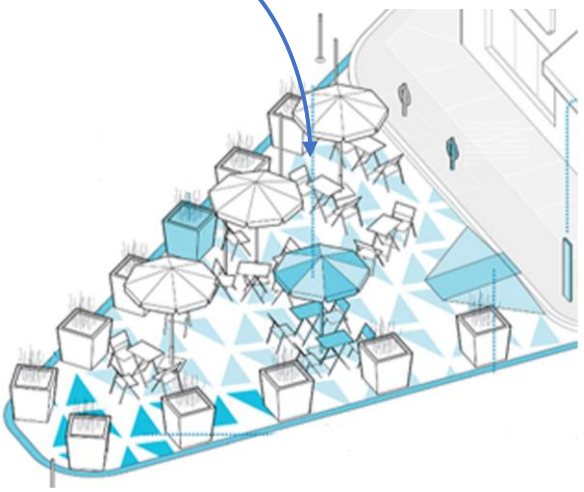


Fig 139- Perspective view

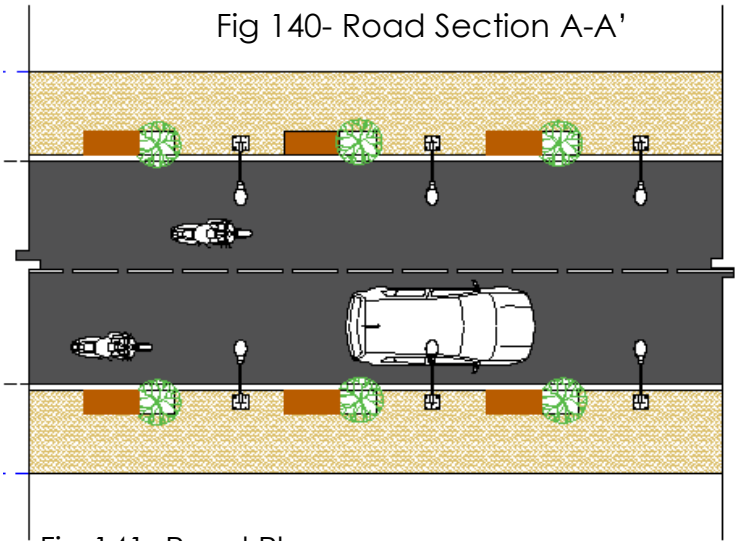


Fig 141- Road Plan

3.4 Conclusion

This urban design project enhances quality of life by focusing on safety, cleanliness, accessibility, transportation, green spaces, and community activities. Improved lighting, security patrols, and maintenance efforts create a secure and healthy environment. Accessibility upgrades ensure inclusivity, while transport improvements enhance connectivity. Expanding green spaces and organizing community activities foster recreation, social ties, and cultural exchange. Celebrating cultural heritage and promoting volunteerism instill civic pride. This comprehensive approach addresses both physical and social aspects, creating a balanced, dynamic, and sustainable urban community.

Source: Author

6.0
REFERENCES

1. https://www.dublincity.ie/residential/planning/strategic-planning/public-realm-strategy/public-realm-master-plan-dublin
2. Tactical Public Realm Guidelines, Mayor Martin J. WalshCity of Boston, August 2018
3. https://www.sanjoseca.gov/home/showpublisheddocument/38781/638058306327430000
4. https://www.slideshare.net/slideshow/neighbourhood-concept/106922786
5. Concepts of Neighbourhood: A Review of the Literature Dr Natalie Allen The Urban Advisory 2018, https://www.buildingbetter.nz/wp-content/uploads/2023/08/Allen_2018_Concepts_of_Neigbourhoods_WP18-02.pdf
6. Public realm structure https://www.planning.vic.gov.au/guides-and-resources/guides/urban-design-guidelines-for-victoria/urban-structure/public-realm-structure
7. https://www.roebuckresidents.com/site-accessibility/
8. What is Regenerative Architecture? https://www.archdaily.com/993206/what-is-regenerative-architecture-limits-of-sustainable-design-system-thinking-approach-and-the-future
9. Urban Magnets https://www.urbanmagnets.com/how-an-urban-magnet-functions/
10. Rural Area Development Plan Formulation and Implementation (RADPFI) Guidelines, 2021 https://rurban.gov.in/doc/REVISED%20SPATIAL%20DEVELOPMENT%20PLAN%20FORMULATION%20AND%20GUIDELINES%20-%202021%20ppt.pdf
11. Planning for district headquarters township at baruipur in south twenty four parganas, D.Chakraborty, 2008
12. https://law.resource.org/pub/in/bis/irc/irc.gov.in.sp.118.2018.pdf
13. https://mohua.gov.in/upload/uploadfiles/files/URDPFI%20Guidelines%20Vol%20I.pdf
14. http://www.maplandia.com/india/west-bengal/south-24-panganas/baruipur/
15. Vision 2025, A Perspective Plan of KMA by KMDA (2005)
16. Climate and monthly weather forecast Baruipur, India https://www.weather-atlas.com/en/india/baruipur-climate
17. https://www.telegraphindia.com/my-kolkata/news/the-lesser-known-history-of-baruipur/cid/1900486

18. Sustainable Urban Regeneration of Public Realm in Historical Cities Centers, Yasmine Kamal Aouf 2019
19. Designing Buildings Wiki – Public Realm https://www.designingbuildings.co.uk/wiki/Public_realm, accessed July 26, 2019
20. 18sfcpoa-for-baruipur-slsmc-approved-march-12
21. The Public Realm of Cities and Urban Design
Barker, Roger (1968) Ecological Psychology: Concepts and Methods for Studying Human Behavior, Stanford: University of Stanford Press.
22. Public Realm - What's the Point of it? https://www.udg.org.uk/publications/articles/public-realm-whats-point-it#:~:text=The%20public%20realm%20is%20the%20life%20blood%20of,is%20at%20its%20most%20democratic%2C%20honest%2C%20and%20energetic.
23. Sidewalk surface design https://hdrstratcommtest.com/design-guidance/sidewalks/sidewalk-surface-design
24. Assessment of Land Use/Land Cover Changes of potential growing fringe areas of Lucknow Using Remote Sensing and GIS
25. City Development Plan Lucknow , overnment of Uttar Pradesh August 14, 2006
26. Trancik, R. (1986). Finding lost space: theories of urban design
27. John Wiley & Sons.Vakarelov,Y., Fracasso, S. (2015). Urban Voids Unpacked. Institute
of Architecture & Design,Aalborg University.
28. Temple, F. C. Report on Town Planning. Jamshedpur Social Welfare Series, November
1919.
29. Stokes, P. G. W. Jamshedpur Town Planning Scheme. Unpublished report, 1937.
30. The Image of the City – Kevin Lynch
31. Planning For Baruipur District Headquarters – A Future Growth Node in the Kolkata Metropolitan Area By 2025
Sanjukta Ghosh, 2012
32. Time saver standards for urban design
33. Urban Design Manual - A Best Practice Guide, 2009
34. Planning and urban Design standards, Frederick Steiner & Kent Butler
35. Public Space Initiatives- Ten Public Spaces Identified by New Delhi Municipal Council (NDMC)

THANK YOU