

**A MORPHOLOGICAL STUDY OF MIXED-USE FUNCTIONS IN AN  
UNPLANNED AREA OF DHAKA**

By

**Aneeka Habib**

A Thesis submitted in partial fulfillment of the requirement for the degree of  
**MASTER OF ARCHITECTURE**

March 2023



Department of Architecture

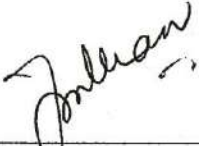


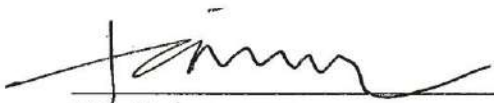
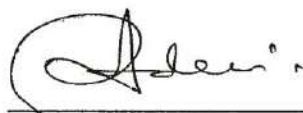
**BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY**

Dhaka, Bangladesh

**Department of Architecture**  
**Bangladesh University of Engineering and Technology**  
**Dhaka-1000, Bangladesh.**

The thesis titled "A MORPHOLOGICAL STUDY OF MIXED-USE FUNCTIONS IN AN UNPLANNED AREA OF DHAKA" Submitted by Aneeka Habib, Roll No-1016012028 F, Session: October-2016, has been accepted as satisfactory in partial fulfillment of the requirements for the Degree of MASTER OF ARCHITECTURE on this day 20<sup>th</sup> March, 2023.

**BOARD OF EXAMINERS**

1.   
\_\_\_\_\_  
Dr. Fatema Meher Khan  
Associate Professor  
Department of Architecture, BUET, Dhaka  
**Chairman  
(Supervisor)**
2.   
\_\_\_\_\_  
Dr. Mohammed Zakiul Islam  
Professor and Head  
Department of Architecture, BUET, Dhaka  
**Member  
(Ex-Officio)**
3.   
\_\_\_\_\_  
Dr. Catherine Daisy Gomes  
Professor  
Department of Architecture, BUET, Dhaka  
**Member**
4.   
\_\_\_\_\_  
Md. Tariquzzman  
Assistant Professor  
Department of Architecture, BUET, Dhaka  
**Member**
5.   
\_\_\_\_\_  
Dr. Neelopal Adri  
Assistant Professor  
Department of URP, BUET, Dhaka  
**Member  
(External)**

## CANDIDATE'S DECLARATION

It is hereby declared that this thesis or any part of it has not been submitted elsewhere for the award of any degree or diploma.

A handwritten signature in black ink, appearing to read 'Aneeka', written over a diagonal line.

Signature of the Candidate

**Aneeka Habib**

# DEDICATION

To my Family

## ACKNOWLEDGEMENT

All praise be upon the Almighty for his endless blessings on me throughout this thesis.

I would like to express my sincere gratitude and deepest thankfulness to my supervisor Dr. Fatema Meher Khan for her unwavering guidance, methodical support and constructive advice at every stage of this thesis. This work would not have reached its current state without her profound knowledge, relentless effort and moral support.

I would like to mention the personnel from DSCC and DNCC for sharing resources during the archival survey. Many thanks to Arch.BU team; my colleagues, for their guidance and countless motivational boosts, my students, Emran for the RAJUK base map data and Faisal for assisting during the field survey. I extend my gratitude to all the people who had a peripheral or minor impact on this work.

I am deeply indebted to my beloved parents who underpin my every strength with unconditional support. Immense gratitude to my sisters, Dr. Adiba and Dr. Brishti for their affectionate care and support at different stages of my M.Arch. Big thanks to my spouse for his invaluable support and persevering effort to keep my motivation high. Lastly, I acknowledge my powerhouse, my son, Mahrus Amayr Rahman, for the sacrifices he endured during this work.

Any omission in this brief acknowledgment does not indicate lack of gratitude.

Aneeka Habib

March 2023

## **ABSTRACT**

Mixed functions have been an urban design principle for ensuring vitality and land-use efficiency. Dhaka exhibits a mix of planned-unplanned areas where unplanned areas offer an understanding of spontaneous mix of uses. Historically, Dhaka's land use was primarily mixed which existed within the old fabric and later expanded in different areas. By the end of 20<sup>th</sup> Century, Dhaka's land use was identified as 'predominantly mixed-use functions. Presently, the extent and functional complexities of mixed functions have created a composite land use where mixed functions work in connection with their associated morphologies. These interconnections are fundamental for comprehending cities' operations. Urban design theories assert that morphological element and their attributes guide land-use patterns. Conversely, in unplanned areas, mixes develop spontaneously within organic morphologies. Hence, complex integrations of mixed functions require investigation to explore the logic – how unplanned morphologies sustain mixed functions.

This study thus employs an empirical approach to explore interconnections between mixed functions and associated morphologies in unplanned areas which have remained underexplored in previous studies. The Study area, Moghbazar (wards-19,34,35) is an old unplanned area where mixes have evolved for decades within organic morphologies. The area's proximity to the urban center and business district influences its functional diversity. Hence, Moghbazar is an appropriate context to understand processes of spontaneous mix of uses by investigating alliances of different uses and their interconnections with urban morphology.

The findings depict spontaneously developed extensive mixed functions are evident throughout the study area, ranging from primary to secondary and tertiary roads. In the study area, these mixes have been found to be developed in different spatial layers –both horizontally (at street level within buildings and as informal street traders) and vertically (stacked through vertical extension of non-residential functions). These mix of uses work in connection with the associated morphologies – streets, plots, and densities. Mostly the mixed functions seek better accessibility for their business and prevail along the primary nodes, well-accessible roads connected to primary roads. Non-residential mixes are mostly seen on larger plots and residential mixed functions commonly develop on small plots. The mix of functions occurs more in the mid-high density (FAR) plots. These plots mostly have high coverage and more floors of these buildings hold diverse mixes.

<b>TABLE OF CONTENTS</b>	<b>Page No.</b>
<b>Candidate's Declaration</b>	i
<b>Dedication</b>	ii
<b>Acknowledgment</b>	iii
<b>Abstract</b>	iv
<b>Table of Contents</b>	v
<b>List of Appendices</b>	vii
<b>List of Illustrations</b>	viii
<b>List of Tables</b>	ix
<b>List of Abbreviations</b>	x

---

## **CHAPTER 01: INTRODUCTION**

---

1.1	Background	1
1.2	Problem Statement	2
1.3	Research Questions, Specific Aim and Objectives	3
1.4	Outcomes of the Study	4
1.5	Research Gap	4
1.6	Research Rationale	5
1.7	Scope and Limitation	5
1.8	Overview of the Methodology	6
	1.8.1 Literature Review	6
	1.8.2 Case study and Field survey	6
	1.8.3 Mapping	7
	1.8.4 Analysis and Synthesis	7
1.9	Dissertation Structure	7

---

## **CHAPTER 02: LITERATURE REVIEW**

---

2.1	Introduction	10
2.2	Mixed-Use Functions and Theoretical Perspectives	10
2.3	Significance of Mixed-use Functions	12
2.4	Urban Morphological Elements	13

2.5	Morphology of Unplanned Areas	16
2.6	Chronological Development of Mixed-use Functions in Dhaka	19
2.7	Mixed-use in the Regulatory Scheme of Dhaka	25
2.8	Morphology of Mixed-use Functions in Unplanned Cities in Global Context	30
2.9	Space Syntax Theory	34
	2.9.1 Natural Movement	36
	2.9.2 Movement Economics	37
2.10	Urban Economics	37
2.11	Summary	38

---

### **CHAPTER 03: RESEARCH FRAMEWORK**

---

3.1	Introduction	39
3.2	Research Strategy: Mixed Method Research	39
3.3	Case Study Research and Study Area	40
3.4	Data Collection	41
	3.4.1 Literature Review	41
	3.4.2 Archival Data Collection	41
	3.4.3 Field Survey	43
	3.4.4 Photographic Survey	44
3.5	Mapping and Analysis	44
	3.5.1 Mapping of Mix of Uses in the City Scale	44
	3.5.2 Mapping of Mixed Functions in the Study Area	45
	3.5.3 Mapping of Morphological Elements	46
3.6	Analytic Method of Space Syntax	46
3.7	Summary	50

---

### **CHAPTER 04: FIELD SURVEY AND FINDINGS**

---

4.1	Introduction	51
4.2	Background of Moghbazar	51
4.3	Mixed Functions	53
	4.3.1 Vertical Mix	53
	4.3.2 Horizontal Mix	59



4.3.3	Vertical Extension of Non-Residential Functions	63
4.4	Mixed-use and Morphology	63
4.4.1	Road Network and Accessibility	63
4.4.2	Plot	78
4.4.3	Building Density	78
4.4.3.1	Building Height	80
4.4.3.2	Building Coverage Ratio (BCR)	82
4.4.3.3	Floor Area Ratio (FAR)	85
4.5	Summary	85

---

## **CHAPTER 05: SUMMARY OF FINDINGS AND CONCLUSION**

---

5.1	Introduction	88
5.2	Pattern of Mixed Functions in the Study Area	88
5.2.1	Vertical Mix	88
5.2.2	Horizontal Mix	90
5.2.3	Vertical Extension of Non-Residential Functions	90
5.2.4	Street Traders	91
5.3	Morphological Attributes of the Study Area	92
5.4	Mixed Functions and Morphology	94
5.5	Interconnections of Mixed Functions and Associated Morphologies	96
5.6	Deviation with the Planning Scheme	98
5.7	Conclusion and Scope for Future Research	98

---

## **BIBLIOGRAPHY**

---



---

## **LIST OF APPENDICES**

---

### **Chapter 1**

Appendix 1.1:	Mixed-use in Dhaka from the Inception	108
Appendix 1.2:	Mixed-use in Dhaka from the Recent Past	109

### **Chapter 2**

Appendix 2.1:	Thana Boundary in Dhaka Map	110
---------------	-----------------------------	-----

Appendix 2.2: DMDP Urban Area Plan (1995-2005) indicated zone-wise Land use map	111
Appendix 2.3: The Historical Growth of Dhaka City	112
<b>Chapter 3</b>	
Appendix 3.1: Base map of Ward no 36	113
Appendix 3.2: Base map of Ward no 19	114
Appendix 3.3: Base map of Ward no 22	115
Appendix 3.4: Base map of Ward no 23	116
Appendix 3.5: Base map of Ward no 35	117
Appendix 3.6: Combined map of Ward no 19, 22, 23, 35 and 36	118
<b>Chapter 04</b>	
Appendix 4.1: Moghbazar Map with Building Reference Number (Blue Text) and Plot Reference Number (Red Text).	119
Appendix 4.2: Base Data of the Maps for Individual Buildings and Plots	120

---

## LIST OF ILLUSTRATIONS

---

<b>Chapter 1</b>	
Figure 1.1: Conceptualization of the Research Process	8
<b>Chapter 2</b>	
Figure 2.1: Overlapping functions and Live/Work/Visit triangle	12
Figure 2.2: Dhaka's Unplanned Areas	17
Figure 2.3: Chronological Development of mixed-use functions in Dhaka	24
Figure 2.4: Mixed-use Addressed by the Planning Scheme	29
Figure 2.5: Traditional Shop-houses and Current Mixed-use in Unplanned Cities	33
<b>Chapter 3</b>	
Figure 3.1: Moghbazar Area	42
Figure 3.2: Different Steps in the Process of Axial Map Generation and Analysis	48
Figure 3.3: Steps of Modeling Axial Map from the Layout Plan of a Settlement.	49
<b>Chapter 4</b>	
Figure 4.1: Study Area-Moghbazar	52

Figure 4.2: Vertical Mix in the Study Area	55
Figure 4.3: Diverse Vertical Mixes Along Different Hierarchical Roads	56
Figure 4.4: Bar Chart Showing the Percentages of Vertical Mix in the Study Area.	
A. According to the Number of Plots per Function/mixes	57
B. According to the Percentage of Area per Function/mixes	
Figure 4.5: Section of Vertical Mix of Uses in the Study Area.	58
Figure 4.6: Horizontal Mix in the Study Area.	60
Figure 4.7: Diverse Horizontal Mix Along Different Hierarchical Roads	61
Figure 4.8: Bar Chart Showing the Percentages of Horizontal Mix in the Study Area.	
A. According to the Number of Plots per Function/ mixes	62
B. According to the Percentage of Area per Function/ mixes.	
Figure 4.9: Vertical Extension of Non-Residential Functions	64
Figure 4.10: Vertical Extension of Non-Residential Functions at Different Floors along Different Hierarchical Roads	65
Figure 4.11: Bar Chart Showing the Percentage of Vertical Extension of Non-residential Functions in the Study Area According to the Number of Individual Buildings.	66
Figure 4.12: Hierarchical Road Layout	67
Figure 4.9: Road Network	68
Figure 4.14: Typical Sections of Different Hierarchical Roads.	69
Figure 4.15: Different Hierarchical Roads.	70
Figure 4.16: Accessibility map. Integration (HH), R=4 (A) without Rail line, (B) with Railline	72
Figure 4.17: Location of Street Traders on Street	76
Figure 4.18: Fixed and Semifixed Street Traders at Different Public Spaces	77
Figure 4.19: Plot Size	79
Figure 4.20: Bar Chart Showing the Percentage of Plot Size in the Study Area According to the Number of Plots.	80
Figure 4.21: Building Height	81
Figure 4.22: Bar Chart Showing the Percentage of Building Height in the Study Area According to the Number of Individual Buildings.	82

Figure 4.23: Building Coverage Ratio (BCR)	83
Figure 4.24: Bar Chart Showing the Percentage of Building Coverage Ratio in the Study Area According to the Number of Plots.	84
Figure 4.25: Floor Area Ratio (FAR)	86
Figure 4.26: Bar Chart Showing the Percentage of Floor Area Ratio in the Study Area According to the Number of Plots.	87

---

## LIST OF TABLES

---

### Chapter 4

Table 4.1: Vertical Mix in the Study Area.	57
Table 4.2: Horizontal Mix in the Study Area.	62
Table 4.3: Vertical Extension of the Non-Residential Functions in the Study Area.	66
Table 4.4: Road Network of the Study Area.	71
Table 4.5: Integration [HH] R4 values of Primary, Secondary and a Few Significant Tertiary Roads (Axial lines) in the Study Area (with the rail line)	73
Table 4.6: Integration [HH] R4 values of different Primary, Secondary and a Few Significant Tertiary Roads (Axial lines) in the Study Area (without the rail line)	74

### Chapter 5

Table 5.1: Pattern of Vertical Extension of Non-residential Functions	91
Table 5.2: Pattern of Street Traders in the Study Area	92
Table 5.3: Functional and Morphological Attributes of Mix of Uses in the Study Area.	95
Table 5.4: Table showing the Association of the Different Functions and Their Mixes with Associated Morphologies	97

---

## LIST OF ABBREVIATIONS

---

RAJUK	Rajdhani Unnayan Karttripakkha
DMDP	Dhaka Metropolitan Development Plan
LWV	Live Work Visit

HBE	Home Based Enterprise
DIT	Dhaka Improvement Trust
DMAIUDP	Dhaka Metropolitan Area Integrated Urban Development Project
DMA	Dhaka Metropolitan Area
DMBCR	Dhaka Metropolitan Building Construction Rules
FAR	Floor Area Ratio
BCR	Building Coverage Ratio
UAP	Urban Area Plan
SP	Structure Plan
CBD	Central Business District
GIS	Geographic Information System
DAP	Detailed Area Plan
DNCC	Dhaka North City Corporation
DSCC	Dhaka South City Corporation
HH	Hillier and Hanson

# CHAPTER 01

## INTRODUCTION

### 1.1 Background

The mixing of different uses has been an inherent characteristic of the urban fabric since the dawn of human civilization (DeLisle & Terry, 2013; Herndon J. D., 2011). The mixed function has become a central principle of the underlying visions and ideals for urban development goals and movements relating to build-environment improvement (Hirt, 2016; Herndon J. D., 2011). Mixed-use is the co-location or immediate proximity of homes, workplaces, and services within buildings, neighborhoods, and districts (Hirt, 2016; Schwanke, 1987). Mixed-use brings multiple interrelated independent functions in close proximity and injects more life into the locality. Thus, mixed function has long been a major urban design principle for ensuring vitality, land-use efficiency, and reduced travel distance (Jacobs, 1961; Rabianski, Karen, O. Alan, & J. Sherwood, 2009). Diverse mix of uses interacts with each other and revealing these interactions is critical to comprehending how cities work (Jacobs, 1961).

Mixed-use in South Asia and Southeast Asia has a distinct characteristic (DeLisle & Terry, 2013). Literature stages mixed-use practice in South Asia and Southeast Asia to have developed spontaneously which is characterized by unplanned land-use conversions and complex mix of functions. (Nahrin, 2008; Shakil, Begum, & Begum, 2017; Verma, 1993; Nahrin, 2019).

Dhaka's land-use pattern has primarily been mixed since its inception. Historically, mix of uses was evident within Dhaka's old fabric in the form of 'shop-houses<sup>1</sup>' where various professional groups used to live and work within the same housing unit (Islam & Adnan, 2011; Mohsin, 1991; Ahsan, 1991). Over time, to keep pace with the growing population and economic demand, diverse mixed uses have developed in different areas of the city. At present, the extent of diverse functions and their complexities have created a

---

<sup>1</sup> Shop-house is a building type that has shops on the ground floor and living quarters on the upper floors (Wakita & Shiraishi, 2010)

composite land-use pattern. The unpredictable strive for mixed functions has also led mixed-use to occupy many levels and almost the whole coverage of the buildings (Imon, 2001; Khan T. H., 2014). These compactly developed mixed functions interact combinedly in Dhaka's fabric. Thus, a complex pattern of urban form has emerged, where these spontaneous growths of mixes have developed an intricate relationship with the legal/formal system.

Consequently, in Dhaka Metropolitan Development Plan (DMDP) 1995-2015 and later in the Detailed Area Plan (DAP) 2016-2035, the city's land use was identified as a 'predominant mixed-use function' (RAJUK, 1997; RAJUK, 2020). DAP (2016-2035) also encourages the use of mixed functions for future Dhaka where only 5% of the urban area has been designated as residential, the rest has been proposed as a mix of residential and commercial uses. Hence, mixed-use has been visioned to play an important role in terms of land use in Dhaka in the upcoming future. Therefore, this study aims to obtain a comprehensive knowledge of the development of mixed-use functions in Dhaka. In particular, this study intends to comprehend the pattern and working process of mixed-use functions in an unplanned area of Dhaka in connection with their associated urban morphologies – street, plot, and density. It is necessary to study the interconnections between mixed-use functions and associated morphologies as these interconnections can make urban life lively.

## **1.2 Problem Statement**

Urban Dhaka exhibits a mix of planned and unplanned settlements. The unplanned settlement is primarily characterized by spontaneously developed mixed -use functions. Initially, the Planning Authority never conducted the need assessment of the growing population of Dhaka and planned different areas without adequate supporting community facilities (Ahsan R. , 1991; Afroj, et al., 2021). Hence, later, the lack of city services, steady infrastructural provision and weak governance influenced the development of spontaneous mixed functions in different localities to fulfill the needs of the common people (Islam & Adnan, 2011). Presently, in unplanned areas of Dhaka, the extent, nature of functional complexity and mixing have created a composite land-use pattern including incompatible mix of uses (Nahrin, 2008; Islam & Adnan, 2011; Shakil, Begum, &

Begum, 2017). These mixed functions work in connection with associated morphologies and these interconnections are fundamental for comprehending cities' operations (Dovey & Pafka, 2019; Dovey, 2016).

Urban theories affirm that morphological element and their attributes – street accessibility, plot size, building density, etc. guide land-use patterns (Gentin M. , 2009; Prasad, 2014). In unplanned areas, mixes develop spontaneously within organic morphologies to fulfill common needs (Islam & Adnan, 2011). In this regard, the unplanned morphology requires a careful examination to interpret the continuing forces that shape the city's functions. Such investigation of the complex integrations of mixed functions within the morphology of unplanned areas will help to explore the logic – of how unplanned morphologies sustain mixed functions. This study thus focuses on interconnections between mixes and associated morphologies in unplanned areas. Moreover, DAP (2016-2035) proposes unplanned areas of Dhaka as wholly mixed functions (RAJUK, 2020). Therefore, this also forms a basis for investigating mixed functions in unplanned areas to evaluate whether the spatial logic of spontaneous mixes complies with the latest planning scheme.

To explore the pattern and working process of spontaneous mixed-use functions, Moghbazar, an old unplanned area is selected as the case study where mixes have evolved for decades within organic morphologies (Ahsan R. , 1991; Nilufar, 2010). Presently, it contains considerable concentrations of mixed functions that are the result of several morphological adjustments. Moghbazar is also spatially important for its proximity to the urban center and business district which likely influences the area's functional diversity. Hence, Moghbazar offers an appropriate context for understanding working processes of spontaneous mixes by exploring synergies of diverse functions and their interconnections with associated morphologies.

### **1.3 Research Questions, Specific Aim and Objectives**

Reviewing the issue and considering the complex nature of mixed-use, the research problem starts with the following queries:



- What is the pattern of mixed-use functions in an unplanned area of Dhaka?
- What are the interrelations between these mixed functions and the morphology of the study area – the building, plots, access networks, and densities?

To respond to the research questions, the research has established a specific aim and two objectives which are as follows.

The specific aim is,

To explore the existing morphology (form and structure) and working process of spontaneous mixed-use functions in an unplanned area of Dhaka.

Objectives are,

- i. To investigate the morphological pattern of horizontal and vertical mixed-use functions in the study area.
- ii. To identify how mixed-use functions work in connection with associated morphology in the study area.

#### **1.4 Outcomes of the Study**

The outcomes of this study are listed as follows,

- The emerging pattern of mixed-use functions in an unplanned area, Moghbazar.
- Exploration of the interrelations between urban functions and associated morphological elements.

The outcome of this study will lead to an understanding of how morphological forces shape the city. This knowledge can help to plan and control the future development of mixed-use functions in an unplanned city like Dhaka. The outcome of the study can be feasibly generalized to other informal cities containing mixed-use functions.

#### **1.5 Research Gap**

A considerable concentration of spontaneously developed mixed-use functions is evident in Dhaka presently, particularly in the unplanned morphology. Still, there is a lack of case

study based empirical research on the mixed-use functions in the Dhaka context.

Though, there are studies on the history and morphology of shophouses of old Dhaka and street vendors (Khan F. M., 2015; Huq, Akter, Hafiz, Mamun, & Rahman, 2017; Husain, Yasmin, & Islam, 2015; Lata, Walters, & Roitman, 2019). But the existing pattern and working process of mixed-use functions in unplanned areas of new Dhaka has remained underexplored. Hence, this study has addressed a gap in the literature on the morphological pattern and operation of mixed functions.

## **1.6 Research Rationale**

Mixed-use functions have evolved in Dhaka since the inception of urban development and it has been operated in the city's fabric through till today. The embeddedness of mixed functions in Dhaka's fabric has been recently acknowledged by the Planning Scheme and it has also promoted mixed functions for the future development of the city. Thus, mixed-use functions have become an emerging issue for the urban research. The knowledge of this study can help the respective authorities, and professionals to formulate effective policies and design guidelines regarding the future development of mixed-use functions in different areas of Dhaka. This study shall also be useful documentation for the researchers in similar fields.

## **1.7 Scope and Limitation**

The scope of this study is to investigate the pattern and working process of mixed functions in relation to associated urban morphologies. To investigate the pattern of mix of uses, this study extends to find out diverse mixed functions and detect their locations in different spatial levels in the study area. For investigating their working processes, the scope is to explore the morphological characteristics of the study area (streets, plots, building densities) and compare these with the location of mix of uses to understand their interconnections.

The scope of the study has been impeded because of a few limitations. Physical investigation of the interior functional arrangements of a few buildings was hindered due

to the privacy and safety issues of a few local residents. Hence, for the functional data of those buildings, the research relied on the residents' verbal information and on-site observation.

## **1.8 Overview of the Methodology**

In response to the aim and objectives of the thesis, various modes of data collection, and analysis are done in different methodological steps. This section provides a brief overview of the research method. A detailed description of the methodological framework has been discussed in chapter-03 of this dissertation.

### **1.8.1 Literature Review**

The initial step of the literature review was to find the research topic and formulation of the research questions. Literature on published articles, books, and web documents has been reviewed to understand the notion of mixed functions, significance, and their development in Dhaka. Literature was also reviewed to comprehend urban morphological elements, their influence on the textures of the urban fabric and the morphology of mixed functions in unplanned cities in global context. Theories of space syntax and urban economics were also reviewed from the literature.

### **1.8.2 Case Study and Field Survey**

An intensive field survey was conducted with the aim to acquire in-depth data on the current morphology of mixed functions from the context of the study area. The (entire) Moghbazar area (1374241.61 m<sup>2</sup>) consisting of ward no-19, 34, 35 has been selected as the case study where mixed functions have evolved within organic morphologies for a long and presently, it contains considerable mixes. Moghbazar allows an understanding of the processes of mixes by studying alliances of functions and their interconnections with morphologies. A survey of all buildings and related morphologies has been conducted to collect data on land use mix, street network, plot, building height, and coverage.

### **1.8.3 Mapping**

Mixed-use and morphological mapping have been done on collected data. The field survey data regarding mixed functions have been categorized according to the LWV (Live, Work, Visit) triangular mapping index (which has been elaborated in section 3.5.2) in terms of both horizontal and vertical mixes. During mapping, diverse functions and their mixes were marked with respective colors on the specific plots. Other functional and morphological aspects – the vertical extension of non-residential functions, streets, plots, building height, BCR, and FAR are mapped through color graphical representations.

### **1.8.4 Analysis and Synthesis**

Mapped data have been statistically analyzed to understand the current pattern and morphology of mixed functions regarding horizontal-vertical mixes, plots, building height, coverage, and FAR. The spatial structure of Moghbazar has been modeled by ‘Space Syntax’ and used to analyze street accessibility of mixed functions. All analyses regarding mixed functions and morphologies have been synthesized to understand their interconnections.

This methodical approach is a linear analytic framework towards achieving the objectives of the study. The framework has been illustrated in Figure 1.1. Initially, the literature review has been done to understand the basic notions of mixed functions and to develop the research questions, aim and objectives. Eventually, field survey and mapping have been conducted to understand the pattern and process of mixed functions in the study area. Ultimately all the data have been analyzed and synthesized to achieve the findings of the thesis.

## **1.9 Dissertation Structure**

The dissertation is divided into 5 chapters. **Chapter 01** introduces the research topic with background and the problem statement finds out research gaps, formulates the research questions, aim, and objectives, and states an overview of the methodology. **Chapter 02** includes literature review regarding mixed-use functions and morphology. It also reviews methodological and theoretical concepts like space syntax, natural movement, movement

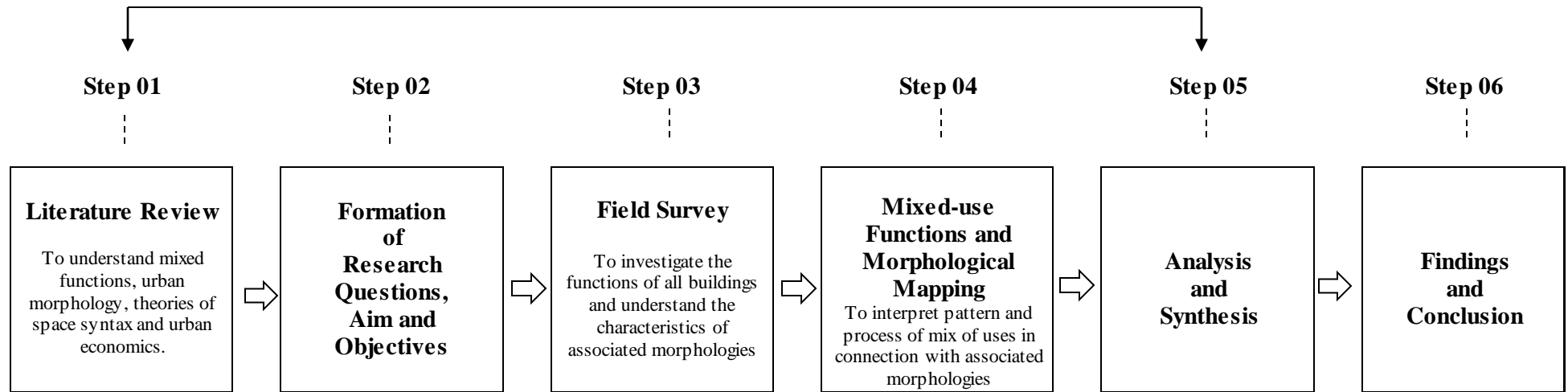


Figure 1.1: Conceptualization of the Research Process.

economics and urban economics. **Chapter 03** discusses the methodological framework that the research followed. This includes a detailed description of data collection, field survey, mapping and analysis techniques. **Chapter 04** discusses the analytical findings about the case study area from first-hand data. These findings are illustrated by the mapped representations. The findings are arranged in the order of, the mixed-use functions, associated morphologies- street, plot, and building densities and their interrelationships. **Chapter 05** summarizes the significant findings of the research by providing some propositions and a direction for further research.

## **CHAPTER 02**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter reviews the literature to comprehend the notion of mixed-use functions and their development in unplanned morphologies. It also reviews different theories to understand the operation of mix of uses in the urban system. The chapter is structured into eleven (11) parts. The first and second parts (sections-2.2, 2.3) discuss the theoretical perspective of mixed-use and its significance. The third and fourth parts (sections-2.4, 2.5) describe urban morphological elements and their characteristics in unplanned areas. The fifth and sixth parts (sections-2.6, 2.7) narrate the chronological development of the mix of uses in Dhaka and the status of mixed-use in the city's regulatory scheme. The seventh part (section-2.8) discusses the morphology of mixes in general in unplanned Asian cities. The eighth and ninth parts (sections- 2.9 and 2.10) review the theories of space syntax and urban economics. The last part (section-2.11) summarizes the chapter.

#### **2.2 Mixed-use Functions and Theoretical Perspectives**

In general terms, 'Mixed-use functions' means the combination of different functions within a building, neighborhood or urban district (Coupland 1997). Mixed-use functions have been defined by many scholars differently in literature. In 1961, the notion of mixed-use functions was revived in Jane Jacobs's book "The Death and Life of Great American Cities" where she emphasized the importance of mixed-use functions and criticized the modernist segregation of cities. Jane Jacobs categorized urban functions into two groups- primary and secondary uses. Primary uses - dwellings, offices, factories - are the attractors that draw people to a certain place. The secondary uses i.e., enterprises like shops, restaurants and other small-scale facilities evolve to serve the need of the primary uses. Jacobs argued that diverse functions work in interactions, and revealing these interconnections was key to comprehending how cities work. According to her, an urban district must serve more than one primary function; preferably more than two. For Jacobs, the mixed-use function is significant for its contribution to the city's socio-economic vitality and intensity (Jacobs, 1961).

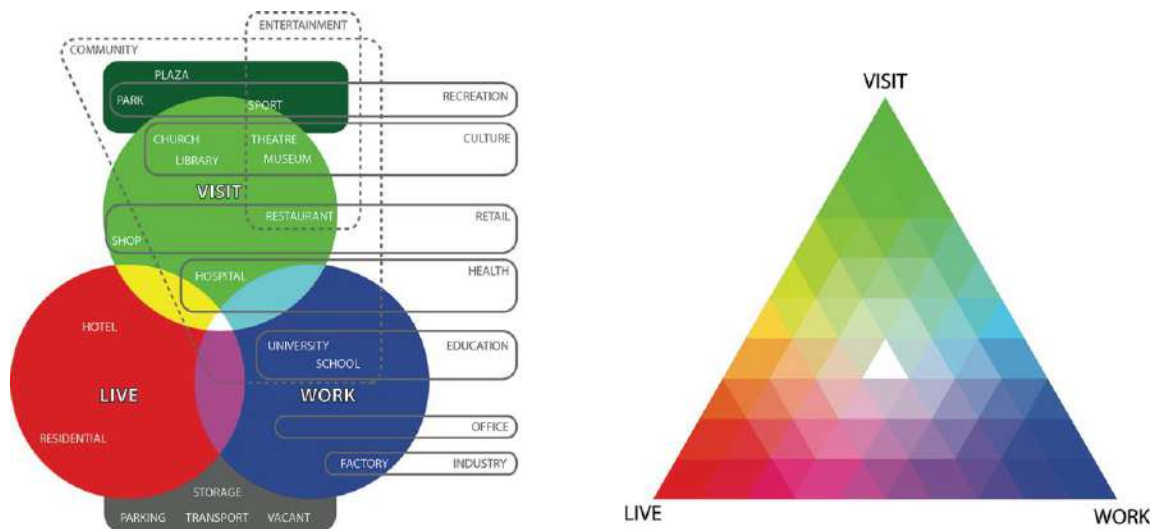
The Urban Land Institute (1987) has defined 'mixed-use' as the combination of at least three physically and functionally integrated revenue-generating uses within an architectural project. Other literature also discussed mixed functions under the concept of 'mixed-use development'. But the term 'mixed-use' was criticized as an ambiguous concept (Rowley, 1996; Hoppenbrouwer & Louw, 2005; Gentin, 2009). The trouble remained for the clarification of functions and to limit the number of developments. Different types of land uses exist in the city. These can be mixed in diverse ways and in this way infinite forms of development are possible. The critical definition of functions that emerges due to the mix of two or more uses was undeveloped.

Scholars and academicians like Kim Dovey and Elek Pafka (2017) have critically explained the mixed-use functions under the title "Functional Mix" in order to map the mixed functions in the city. Following the work of Hoek and the Delft-based research team, Dovey and Pafka have divided the urban functions into three major categories of live, work and visit (Van Nes, Berghauer Pont, & Mashhoodi, 2012; Hoek, 2008). This categorization is based on the conception that at any particular time, the population in a building, street or neighborhood remains there because they live there, work there or visit the place. As the background for formulating this concept of "Functional Mix", Dovey and Pafka clarified that prior studies considered urban functions in categories, like residential, industrial, commercial, retail, education, entertainment, recreation, health, transport, government, community, parking, vacant, hospitality, etc., which is a modernist approach to segregate the city into different categories. Such categorization of functions has some problems. First, any well-mixed urban area will have too many functional categories for any analysis of patterns. Second, many of these functional categories overlap and become subsets of one another.

A triangular model has been suggested by Dovey and Pafka as a framework to map the city as an assemblage of flows between diverse functions. This mapping index is represented as LWV (live, work, visit) triangle with three primary colors (Red, Blue, and Green) indicating the three primary functions plus various forms of a mix between them that fade towards white for the mix of all three functions. This triangular scheme is useful to map mixed functions as it is not focused on the primary functions, but instead on the



mix and flows between them. In the LWV mapping index, live indicates the residential functions i.e., dwelling unit, housing, residence, hostel etc., work indicates the offices, educational institutes, industries etc. and visit refers to the amenities like shops, plazas, parks, theatre, museum (Dovey & Pafka, 2017). Also, a mix of live and visit is represented as yellow, a mix of work and visit as cyan, a mix of live and work as magenta, while a mix of all three primary uses is white. Dovey and Pafka recommended this mapping index for cities that are complex and informal.



**Figure 2.1: Overlapping Functions and Live/Work/Visit Triangle (Dovey & Pafka, 2017).**

### 2.3 Significance of Mixed-use Functions

The mixed function has long been considered a sustainable urban development strategy for ensuring social equity, economic vitality and environmental quality (Grant, 2002). Different social, economic, health, and environmental factors explain the significance of mixed-use functions in the urban fabric.

Mixed-use functions bring people to the public space all day long which enhances vitality and provides a sense of security (Jacobs, 1961; Rabianski, Gibler, Tidwell, & Clements, 2009). The mixed function thus allows social interactions that enhance neighborhood relationships. The combination of different functions and diversifying complementary

activities produces an attractive urban environment and creates a sense of place. This urban environment where more people use diverse functions also ensures urban intensity. The mix of uses thus creates a live-work-play environment for urban dwellers (Anunobi, Adedayo, Oyetola, Shuaib, & H.I, 2015).

Since mixed-use functions provide scope for different employment choices, it becomes more attractive to the workers for ensuring equity. Additionally, the merge of commercial with residential uses results in higher property values and an increase in local tax. Business functions provide recognizable benefits for people of different abilities together and further increase economic activity and mutual support (Herndon, 2011). With enhanced proximity of the related activities, mixed-use reduces car ownership, and vehicle trips and increases pedestrian and transit use (Hoek, 2008). Thus, the environmental consequences associated with automobile use get alleviated (Grant, 2005). Additionally, the by-product, 'walkable environment' produced by mixed-use function saves the dwellers from cardiac diseases and many more adverse health effects (Rabianski, Gibler, Tidwell, & Clements, 2009). Mixed-use promotes the retention of the scale and character of the older areas and helps to preserve historic buildings (Tucker, 1980).

#### **2.4 Urban Morphological Elements**

This section discusses the functional and physical elements of urban morphology, their characteristics, and how they influence the texture of urban form and mixed functions.

Urban Morphology is the study that creates coherent theoretical logic for urban research through its physical form (Whitehand, 2001). During the Seminar on Urban Form (ISUF or *SIFU*) in 1996, urban morphology has been acknowledged as an interdisciplinary field by a group of researchers from different arenas and distinguished countries (Moudon, 1997). This methodical approach evaluates the form, shape, map, structure and functions of the city, and the origin and evolution process of urban fabric (Madanipour, 2001; Sadeghi & LI, 2019). The prevalent interrelationship between the dynamic state of the city and its morphological elements has led many urban morphologists to prefer the term 'urban morphogenesis' to describe their field of study (Moudon, 1997).

Researchers like Moudon, Koster and Cortes worked on the framework of dividing urban morphological studies into three schools of thought - British, Italian and French (Cortes, 2005; Sadeghi & LI, 2019). Moudon has summed these three schools of thought to have three main objectives i.e. explanatory-descriptive, prescriptive and evaluation (Sadeghi & LI, 2019). These schools have a widespread acknowledgment that morphological studies of urban form are defined by functional and physical elements recognized by Conzen (Moudon, 1997). Conzen has divided the complex town plan elements into three plan elements.

- Streets and their arrangement in a street system;
- Plot and its aggregation in street block
- Buildings, or more precisely their block plan (Conzen M. R., 1960).

M.R.G Conzen also noted functional aspects like land use as a significant element of analyzing and understanding urban form (Whitehand, 2001). These morphological elements can be understood at different time resolutions from their history (Conzen M. R., 1960; Moudon, 1997; Sadeghi & LI, 2019).

**Land use** is the functional element of urban form. Different functions in the urban environment can be defined as land use (Dempsey, et al., 2010). Location, terrain, and accessibility are determinants of land use and different stages of histogenesis evolution shape or bring more changes to it (Deyllas, 1997). Land use pattern is the restructuring of land use like-residential to commercial, and the development of different mixed-use. Land use is the least resilient of all the morphological elements of urban form (Mandal, Chatterjee, & Chatterjee\*, 2016). Land use goes through rapid changes compared to the physical elements of urban morphology. The aggregated volume of change makes the spatial pattern of land use at local and regional levels (Verburg, Kling2, & Hecky, 2003).

A **street** is an open space within the urban area which creates surfaces for different traffic and is bounded by street lines (Conzen M. R., 1960). Separately viewing these independent and connected spaces arrangements in an urban area is defined as a street

system. This morphological element of urban form prevails like a transition and allows the private and public to interact. The relationship between the plot and the street in an urban system remains consistent (Erickson & Jones, 1997). Street patterns can bring differences in plot patterns and geographical characteristics widely. Accessibility is related to the morphology of the urban street network. Accessibility can be measured by the interconnectivity of the street pattern. According to Hiller (1996), increased accessibility attracts more commercial use within an area.

An individual **plot or lot** is the basic element of urban form physically defined by boundaries on or above ground (Kropf, 2009). The arrangement of the adjacent plots defined by boundaries considered separate from other elements of the town plan may be defined as plot patterns (Conzen M. R., 1960). Plot/lot defines the boundary for initial building or development for functions. The size of the plot/ lot/ grain influences the texture of the urban fabric which can be fine or coarse grain. Gentin stated fine grain sustains more mix of functions than coarse grain in close proximity (Gentin, 2009). Dovey argued that a mix of small (fine) and large (coarse) grain helps encourage more mix of uses for both opulent and marginal enterprises (Dovey, 2016). Plots may be subdivided or amalgamated to accommodate land use changes over time (Erickson & Jones, 1997).

The **building** is the smallest element of urban form. 'Building' defines the third dimension sitting on an individual lot/plot and creates the basic unit for two-three-dimensional space attribution in the city. The smallest cell of the city comprises a combination of buildings and associated open spaces on an individual parcel of land (Conzen M. R., 1960). The relations between an area and a certain number of entities, for instance, people, services, dwellings, or floor areas are described by density (Mashhoodi & Pont, 2011). Building density is an important aspect of cities. FAR (floor area ratio) is popularly used as a measure of density to manage the total floor area and total bulk of a building (Dovey, 2016). Building density is also affected by building height and coverage. Building density measures can be either net or gross. Net density is measured within a development site and gross density include the wider network of public space (Dovey & Pafka, 2014). Density encourages a horizontal and vertical mix of functions.

Also, density can change over time and bring change to the prevailing functions (Ryan, 2006; Zarin, 2009).

## 2.5 Morphology of Unplanned Areas

Unplanned areas are those that are not developed according to any formal planning scheme (Marpaung & Silaban, 2018). The unplanned areas develop with the cumulative experience of the settlers and their refinement over the course of time to cater to their living needs (Marpaung & Silaban, 2018; Student research, McGill.CA). The organic morphology of the unplanned areas may appear random and difficult to identify, yet, there is a pattern that connects the formation of an unplanned area with another unplanned area (Sobreira & Gomes, 2001). The major part of the development of Dhaka is spontaneous and beyond any rigid planning proposal (Khan & Nilufar, 2009). Thus, the city exhibits a complex mix of planned and unplanned fabric with a dominance of unplanned areas within (Detail Area Plan 2016-2035).

The patterns of unplanned morphology have been very little investigated (Iovene, Córdova, Romice, & Porta, 2018). Urban morphological studies are generally conducted using its elements as parameters. The morphological elements are mentioned widely in different literature while investigating problems encountered in unplanned areas. The spontaneous fabric due to lack of planning is the most distinctive feature of unplanned areas (Khalifa, 2011; Bek, Azmy, & Sameh, 2018). Research using spatial metrics on segmented images shows that unplanned areas share similar spatial features like (i) organic layout (i) high densities; (iii) lack of public (green) spaces; (iv) small plots and building sizes (Filho & Sobreira, 2005; Kuffer & Barrosb, 2011).

To accommodate rapid uncontrolled urbanization, **land use** in unplanned areas develops as mainly mixed-use functions (Hossain, 2001; Nilufar, 1997). While describing the unplanned morphology of Dhaka, Nilufar noted that the unplanned areas have dominant residential uses and the more accessible roads hold commercial activities and most

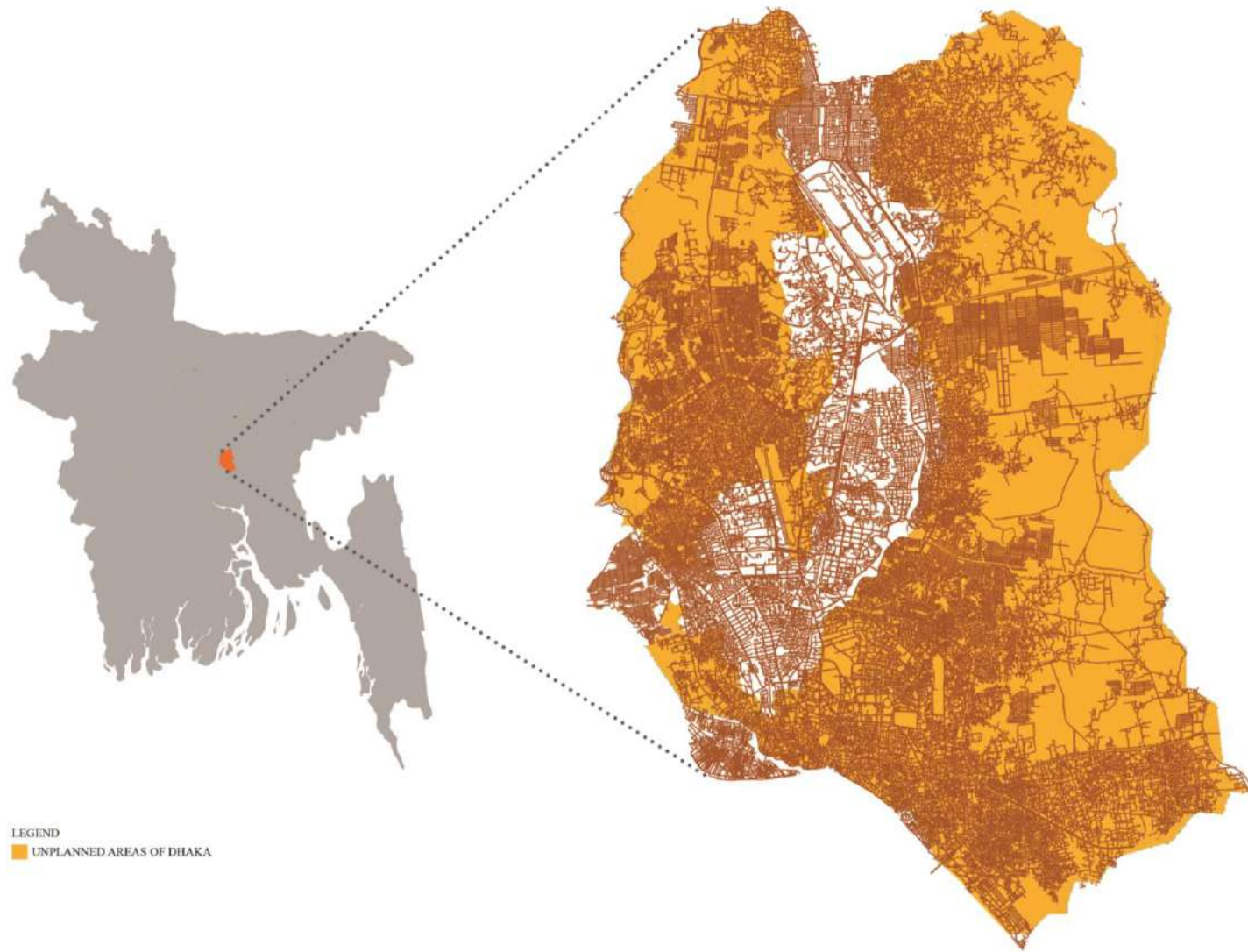


Figure 2.2: Dhaka's Unplanned Areas; Source: Author,2021; Reference: DAP 2015-2035).

buildings are designed to accommodate shops at the ground level (Nilufar, 1997). Furthermore, Khan (2020) stated that in unplanned areas the large-scale mix of uses are found along the main roads and small-scale mixes, like- small shops and enterprises develop in the local streets. This kind of mixed land use is the result of informal practices derived from local needs (Khan, 2020). In unplanned urban structure, land use is influenced by the spatial patterns and at times makes it easier to determine the land-use policies by unrevealing the unique spatial pattern (Marpaung & Silaban, 2018).

Nilufar (1997) described the important morphological element of unplanned areas-street to be less intricate than old city streets but there prevails a labyrinthine mixture of lanes, by-lanes and cul-de-sacks like in the old city (Nilufar, 1997). Generally, the urban development process in unplanned areas creates irregular, curved and unpaved accesses that link built forms with the utilities where the inner roads or alleys are narrow and winding (Kuffer & Barrosb, 2011; Nilufar, 2010). Nilufar has added that the main streets in some unplanned areas of Dhaka appear as wider lines as parts of a formal planning system, which generally holds - broad land use (Nilufar, 2010).

Plot divisions are common in unplanned areas for their organic growth (Nilufar, 2010). More plots have been noticed in unplanned settlements to have subdivided in the early time than in the subsequent period through private initiatives to serve their need without any approved plan (Khan & Nilufar, 2009). In the case of Dhaka's unplanned areas, recent studies found that sub-division/amalgamations of plots in different neighborhoods have been influenced by the growth of the mixed-use (Ferdous & Nilufar, 2007; Zaman & Lau, 2000; Zareen, 2009). Khan described unplanned areas as a mix of different plot sizes of irregular shapes. She further added that smaller plots prevail throughout the unplanned settlement- primarily in local streets and larger plots are more evident on the main roads (Khan F. M., 2020).

The buildings in unplanned areas are mostly a combination of modern and traditional features and designed to hold mixed-use within it, especially the building along with the major access roads. These buildings merely leave narrow strips beside boundary walls by covering the whole plot most of the time (Nilufar, 2010). Unplanned areas have an ever-increasing deficit of land and open spaces (Hassain, 2014). In unplanned areas of Dhaka,

the building coverage is at around 80% and there is no control over the height as building owners develop buildings beyond the legal height (Kuffer & Barrosb, 2011). This again contributes to the flux of more density as consequence. Khan (2020) has mentioned that in unplanned areas, buildings with higher FAR (Floor Area Ratio) are noticed along main roads, around the principal node and adjacent areas, and also into some local streets.

## **2.6 Chronological Development of Mixed-use Functions in Dhaka**

This section discusses the chronological development of the mixed-use functions with the growth of Dhaka in different historical phases. The growth and development of Dhaka can be categorized as, Pre-Mughal (Before 1608), Mughal (1608-1764), East India Company and British colonial period (1764-1947), Pakistan (1947-1971) and Bangladesh period (1971-to-date) (Ahsan, 1991; Ahmed et al., 2014). Here, the evolution of mixed-use functions has been reviewed from the literature along with historic maps.

### **Pre-Mughal Period (Before 1608)**

During the pre-Mughal time, Dhaka was located on the southern bank of the Buriganga river. Buriganga river and Dholai Khal formed the north-eastern boundary of the city which can be demarcated as part of present Old Dhaka (Ahsan, 1991; Chowdhury & Faruqui, 1991, Mowla, 2012; Ahmed et al., 2014). In this era, the main settlement was laid between the River Buriganga and Dholai Khal (Islam & Adnan, 2011). Since then, Dhaka has been suitable as a trade center for its location on stable soil, above the highest flood levels of the surrounding rivers, and having strategic short-cuts of water routes from the river Brahmaputra to the Ganges (Ahsan, 1991). Mixed-use settlements were developed spontaneously on the north side of the river in the form of “shop-houses” (Islam & Adnan, 2011; Mohsin, 1991). No segregation of land use was evident then, since the main business centers contained markets, shops and workshops adjacent to the settlements with clusters of shophouses (Islam & Adnan, 2011; Khatun, 1991). During this time, many parts that contained mixed-use were named after the profession of craftsmen like Lakshmibazar, Banglabazar, Shankhari Bazar, Tantibazar, Sutarnagar, Goalnagar, Banianagar, Kamarnagar, Patuatuli, and Kumartuli (Islam & Adnan, 2011). These areas grew spontaneously along the streets in a linear pattern (Islam & Adnan,



2011). These settlements were accessed by adjacent waterways and formed opportunities for great open-air trade (Mowla, 2016).

Pre-Mughal Dhaka had informal morphology that is still prevalent. Street network was winding and intricate. There is evidence of a few long lines passing through the residential areas but most of the streets were narrow and continuously twisted. The long roads had no lanes and by-lanes held the central commercial interfaces. Therefore, two contrasting patterns define the morphological pattern of the old city in which some streets are characterized by closely spaced buildings in contrast to the pattern with loosely spaced buildings (Nilufar, 2011).

### **Mughal Period (1608-1764)**

Dhaka was the capital of Mughal Bengal in 1608 (Islam & Adnan, 2011). Then the city started extending toward the west and the north (Ahmed et al., 2014). Prevailing trading towns of the pre-Mughal period flourished during this period. Dhaka's prominence increased with the influx of both poor and high-class residents and foreign traders (Ahsan, 1991, Mohsin, 1991; Chowdhury & Faruqui, 1991; (Islam & Adnan, 2011). Like the pre-Mughal period, the industry and/or shop used to grow within the same residential units (Chowdhury & Faruqui, 1991; Mohsin, 1991; Ahsan,1991). Thus, Dhaka's natural trait of being developed with mixed-use continued (Khan, 2020). By 1640, the city had extended to the west to Maneshwar and Hazaribagh with the eastern limit at Narinda and Phulbaria (Ahsan, 1991; Karim, 1991, Chowdhury and Faruqui, 1991). The northern limit of the city extended up to the Mir Jumla's Gate (at present Dhaka gate) located near the south-eastern corner of the Suhrawardy Udyan (Chowdhury & Faruqui, 1991; Karim, 1991). During this period, Dhaka grew from a suburban to metropolis (Chowdhury & Faruqui, 1991; Khan & Atiquallah, 1965). The markets containing shops, workshops, and industries were developed on the riverbank by primarily using waterways for a good supply (Ahsan, 1991; Islam & Adnan, 2011). The western end of the city also contained similar kind of commercial functions like workshops, industries and shops (Ahsan, 1991). On the other hand, the European trading companies settled their industries and settlements on the northern outskirts of the city (Tejgaon area) and existed during the next century (Chowdhury & Faruqui, 1991).

During the Mughal reign, the spontaneous morphological pattern followed through. The city extended with no particular plan and the streets were narrow and winding like the other Indian cities (Chowdhury & Faruqui, 1991, Ahsan, 1991). Most people used to move in and around the city on foot while some used horses (Huq, 1991).

### **East India Company & British Colonial Period (1764-1947)**

After the Palashi Battle (1757), an English trading company (East India Company) ruled India and Bengal capital was moved from Dhaka to Kolkata. Thus, Dhaka lost its political importance and faced a massive economic fall. Many trading activities of the Mughals were closed during that time. The old Mughal city did not expand much and the mixed functions had their dominance with no regulating plan in an unplanned manner (Nilufar, 2011).

British colonies developed in the northern part of the old city. The commercial activities extended from the old core (Chawkbazar) to the north of the town along the adjacent roads (Ahsan, 1991; Ahmed et al., 2014). The British developed some utility services. Dhaka became the capital (1905) of the new province of east Bengal and Assam (Ahsan, 1991). The mixed function of the new urban area had extended within its new municipality limit to serve the British bureaucrats which was towards the north through Nababpur into Ramna area (Ahsan, 1991; Islam & Adnan, 2011; Nilufar, 2011).

While the irregular pattern prevailed in the historic core, the eastern part of the old city was developed as planned residential neighborhoods (Wari and Gandaria) with the introduction of the grid pattern of roads in 1885 (Nilufar, 2011). The streets and rectangular blocks followed a general grid. In the new neighborhood, the streets were broad traversing with low-density and horizontal development by the British (Nilufar, 1997).

### **Pakistan Period (1947-1971)**

Dhaka resumed its glory after becoming the capital of east Pakistan. The influx of people and the increase in the area fostered the expansion of businesses and industries in Dhaka. The city developed primarily northward during this period (Ahmed et al., 2014; Nilufar, 2011). Later the growth continued rapidly in an unplanned way in every direction

(Ahmed et al., 2014).

Initially, mixed-use settlements were no more evident in new development of the city (Khan, 2020). Planning for a number of single-function areas had been undertaken from government initiatives in 1956. Thus, the city adapted to the trend of the concept of functional segregation and it extended accordingly (Mowla, 2012; Chowdhury & Faruqui, 1991; Nilufar, 2011). Different planned residential projects, industrial areas, and market hubs developed in the west, northwest and northeast parts without following any formal planning (Khan, 2020). Despite mixed-use being located within Central Business Districts in Motijheel and Azimpur, the traditional business stayed close to the old city in Chawk, Patiatuli and Sadarghat during 1960 (Ahsan, 1991; Islam & Adnan, 2011). Thus, during 1960-1970 Dhaka experienced two urban centers with two different characteristics (Ahsan, 1991). The mix of business and residential functions retained in the spatial center of the old town and the Central Business District lacked residential functions as the trend of developing segregated residential projects persisted.

The high land that was available in Ramna's north-east and north-west within various pockets between the previously developed areas like Purana Paltan to Naya Paltan, Eskaton to Mogbazaar, Siddheswari and Kakrail to Kamlapur through Razarbagh, Shantinagar and Segun Bagicha became residential dominant mixed-use areas (Nilufar, 2011). These residential settlements were developed without following any formal planning.

Morphology of the unplanned areas during this period characterize mix of winding lanes, by-lanes and cul-de-sacs like the Historic Core but simpler and wider than the old city. The primary roads followed the master plan of 1959; hence they were long and wider. The street pattern seemed like a representation of traditional urban development with a modern backdrop. The planned residential areas of this period follow the pattern of the street layout with a few semicircular arcs (Nilufar, 1997).

### **Bangladesh Period (1971-to date)**

In 1971 Dhaka had undergone a vast readjustment with political and economic alteration

of the newly formed independent country “Bangladesh”. During this period, the retail trade areas in the city extended towards the north with the residential neighbourhood (Ahsan, 1991, Ahmed and Mohuya, 2013). Previous business centers had faced characteristic changes due to functional and political frictions (Ahsan, 1991). The evolution of new business centers like Elephant Road, Moghbazar, Mouchak, Farmgate and Gulshan became specialized in two or three uses (Ahsan, 1991). Ahsan (1991) mentioned that these centers led to the city’s prosperity and took advantage of the access points. Shopping areas grew in an unplanned manner along major roads like New Elephant Road, specifically the frontage of the road thus creating ribbon patterns and the retail areas clustered along the nodes (Ahsan, 1991). In 1995, there were three major thoroughfares (Mirpur Road, Mymensingh Road and Green Road) which are the functional core in reality (Nilufar, 2011). Later on, private developers became interested to invest in mixed-use buildings with shopping at the lower stories (Islam & Adnan, 2011). The spontaneous and non-regulatory development of mixed-use functions also occupied the middle and upper-income planned residential areas - Dhanmondi, Bonani, and Gulshan- located in the north, northeast, and northwest parts of the city (Khan, 2020). Over time, to keep pace with the growing population and economic demand, diverse mixed uses have developed in different areas of the city. Spontaneous retail functions also infiltrated the local streets connected with the main roads - Mirpur Road, Sat Masjid Road, Dhanmondi 27, Banani 11 and Elephant Road (Ahsan, 1991). The growth of these retail functions within planned and unplanned areas was beyond the regulatory framework (Nilufar, 2011). Consequently, the retail functions faced many demolitions and alterations in these residential areas.

Around 1986, functions like government institutes and major shopping areas had been distributed in the north and the formation of the new CBD made the land use involving offices and factories close to the strategic center of the city (Ahsan, 1991; Mohsin, 1991; Nilufar, 2011). Commercial facilities began to spread out from a single core to many centers to cope with the city's physical and demographic growth. Dhaka transformed from monocentric to polycentric city like many other cities in the world (Ahsan, 1991; Islam& Adnan, 2011). Consequently, in DMDP 1995-2015 and later in DAP 2016-2035, the city’s land use was identified as a “predominant mixed-use function” (RAJUK, 1997;

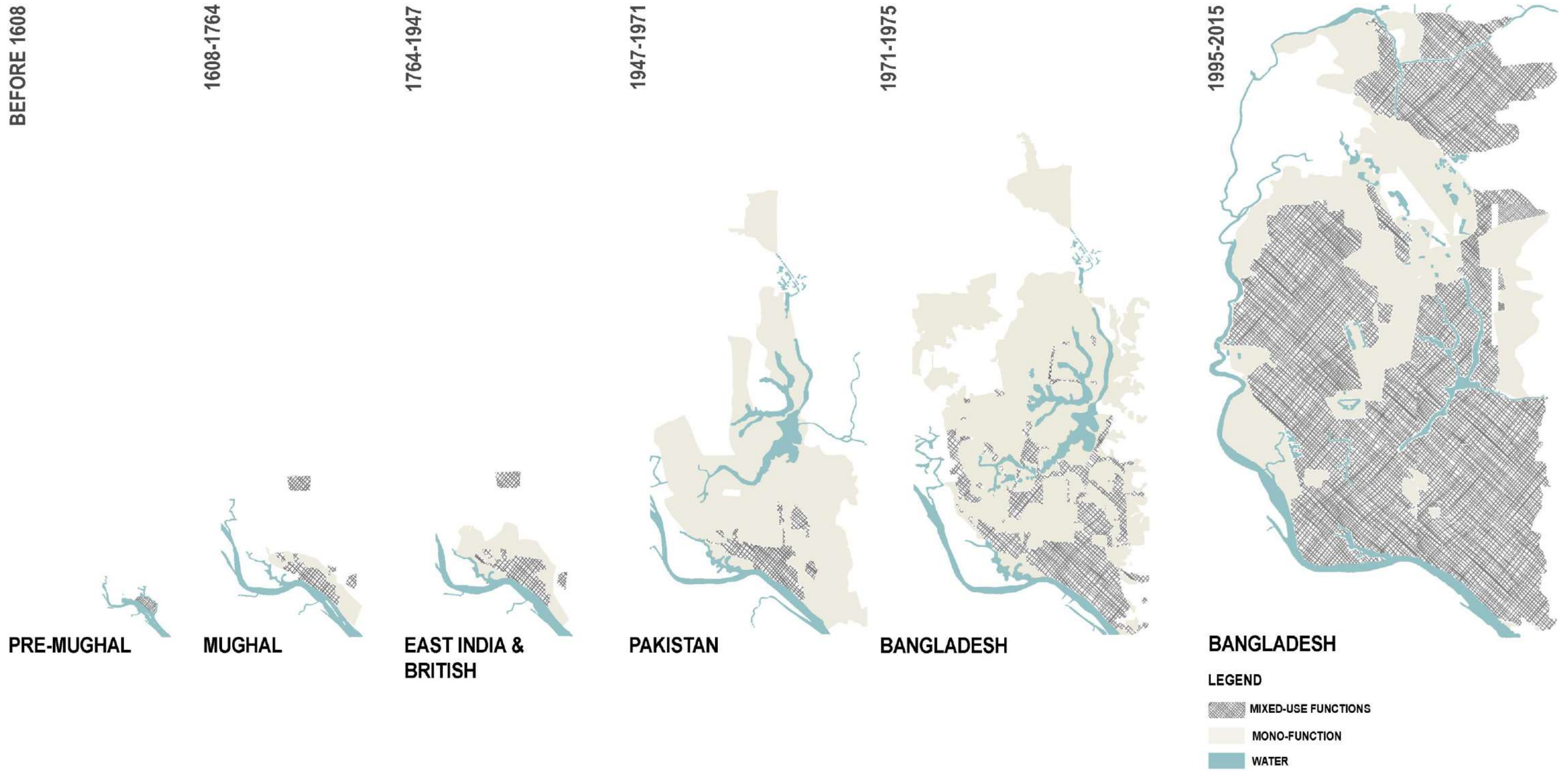


Figure 2.3: Chronological Development of Mixed-use Functions in Dhaka. Source: Author.

RAJUK, 2020).

## **2.7 Mixed-use in the Regulatory Scheme of Dhaka**

The major portion of mixed-use functions in Dhaka city is self-regulated and unplanned, but it has always been the dominant land-use pattern in Dhaka. Despite this, no planning effort before DMDP (1995-2015) had a trace of acknowledging the development of mixed-use in Dhaka.

Dhaka has seen a number of master/ structure/ urban plans developed by experts, professionals and relevant authorities. Among them, the first master plan for the city was done in 1917 by Patrick Geddes. The Sir Patrick Gaddes master plan recommended transportation systems by encouraging waterways and motor buses considering the density, socio-economic and physical environment of the city (Jahan, 2011). The unimplemented plan did not include recommendations for the city's mixed functions.

The Second Master Plan 1959 was prepared by reputed British firm Minoprio Spencely, and P. W Macfarlane. This Master Plan for Dhaka for the then Dhaka Improvement Trust (DIT) mainly gave assumptions about the futuristic population growth and expansion of the city. The plan had indications towards some areas that were assumed for major expansion. It also proposed the development of a few "commercial" functions between major roads. But the master plan of 1959 became obsolete due to several unpredicted physical, economic, social and environmental changes after 1971 (Jahan, 2011). The prediction about population growth and expansion of cities with existing densities became absolutely obsolete after the extreme intensification. Despite these consequences, no alterations led to revision of the master plan. As a result, the Master Plan 1959 became impractical and incompetent.

Dhaka Metropolitan Area Integrated Urban Development Plan (DMAIUDP), 1981 was directly undertaken by the Planning commission and not by RAJUK. This master plan was set out to guide and regulate the future growth of Dhaka with long-term urban development strategies. The plan mainly established general guidelines for physical development within Dhaka Metropolitan Area (DMA) and undertook development

programs to address priority projects.

The Dhaka Building Construction Act (ঢাকা ইমারত নির্মাণ বিধিমালা) 1996 by RAJUK incorporated rules for adjacent road and distance of building form which is a general guideline, not specific to any building use. For non-residential functions<sup>2</sup> in the residential and ancillary use zone, this regulation provides directions for location of plot (at the junction of two roads) and minimum width (6 m) of at least one adjacent road. These non-residential uses will follow the rules of residential and ancillary uses for protection of open space, building coverage rules. According to this act (1996), in the areas for residential-commercial mixes residential, commercial and mixes of both can be developed with the rules for residential and ancillary use ensuring direct entry from adjacent road if non-residential use is provided. According to this act, junctions of several roads are restricted to develop non-residential functions (market, theater, auditorium or such assembly place) within 50 m. But for permitted road width (23 m or more) market can be built with condition (total floor area not exceeding 500 m<sup>2</sup>). For market (300 m<sup>2</sup>) there is regulation for keeping area within plot (6m parallel to road apart from parking) for entry-exit and drop-off-pickup. Though this act has permitted non-residential uses in residential and residential-commercial mixed areas, there is no directions provided regarding types of mixing, extend of mixing or any specific FAR and ground coverage guidelines for mix of uses.

The Dhaka Metropolitan Building Construction Rules, 2008 (ঢাকা ইমারত নির্মাণ বিধিমালা, ২০০৮) by RAJUK proposed the rules and regulations for improving the city's living environment through the proper layout of different functions like residential, commercial, institutional, industrial, health care, etc (Jahan, 2011). In the plan of 2008, guidance for FAR and maximum ground coverage was mentioned but has no trace of distinct regulation exclusively for mixed-use buildings (Jahan, 2011). According to the regulation for the mix of residential and commercial uses, FAR and maximum ground coverage will follow the regulation for residential functions (*Rajdhani Unnayan*

---

<sup>2</sup> Buildings with non-residential uses that can be build in residential and ancillary use areas are not more than 10-bed clinics, banks, fast food restaurants, grossary shops, hairdresser saloon, doctor's chamber, pharmacies, newspapers and periodicals stands, flower kiosk, library, video club, nursery, school, laundry and tailoring shops.

*Kartripakkha, 2008*). The rules have mentioned different permissible FAR ranging from 3.15-6.5 for road widths ranging from 6-24 m and plot size ranging from 134 m<sup>2</sup> to 1340 m<sup>2</sup> and more. On the other hand, for the mixes of shops/markets and offices, FAR and plot coverage will follow the regulation of commercial functions. Mixes other than residential and commercial, buildings will follow stringent requirements like-lowest FAR, MGC and set-back as per lowest FAR) of specific type of buildings. Additionally, in the regulation there are a few restrictions regarding setback (2.5 m setback from residential plot), utilization of road (widest road for non-residential vehicular movement) and placement of opening and veranda (veranda of non-residential uses are not permitted to place on the side of residential plots) for mixed-use plots. In Dhaka Metropolitan Building Construction Rules, 2008, there is regulation for road width (min 6 m) in case of plot amalgamation and subdivisions for non-residential uses. Hence, 2008 regulation provided no specific rule for the types of uses that are permitted within mixed-use buildings. The regulation has also discouraged mixed-use in residential areas by restricting informal changes in land use. These building construction regulations were not implemented strictly.

DMDP 1995-2015, was the first gazetted development plan of Dhaka. It consisted of three tiers, i.e., the Structure Plan (SP), Urban Area Plan (UAP) and Detailed Area Plan (DAP). The Urban Area Plan 1995-2005 in DMDP 1995-2015 involved a concentrated and mixed land-use development strategy where the land-use of the whole of Dhaka has been identified as 'predominant mixed-use functions', including existing mixed-use areas, along with areas that have the potential for future development as mixed-use (Dhaka Metropolitan Development Plan - DMDP: 1995-2015). The Urban Area Plan 1995-2005 showed two types of mixed-use developments- planned and spontaneous mixed-use. DMDP 1995-2015 was criticized for not being implemented, as, the Detailed Area Plan could not be prepared in 12 years after the adoption of the DMDP. This hindered the development of particular areas of Dhaka with detailed plans by the Planning Authority. Consequently, Dhaka encountered a major drawback to progress by following the mixed-use planning scheme.

Later on, the Dhaka Structural Plan 2016-2035 initially made contradiction with the



previous plan of DMDP 1995-2015. Only 0.59% of the area of the city has been identified as mixed-use i.e., the Dhaka Structural Plan 2016-2035 includes only the then-first CBD and some parts of Old Dhaka as mixed-use functions (Khan F. M., 2020). This does not portray the actual spontaneous mixed-use that prevails all over Dhaka. But structure plan has raised the needs of harmonized and pre-planned mix of uses to maintain an acceptable level of livability in centers. Later in DAP 2016-2035, the city's land use was identified as "predominant mixed-use function" (Detailed Area Plan: 2016-2035, Dhaka, 2022). DAP (2016-2035) also encourages mixed functions for future Dhaka from farmland to industrial zones (Detailed Area Plan: 2016-2035, Dhaka, 2022; Devnath, 2020). In the document, area-wise proposed land use shows most of the land use has been proposed as mixed-use under four (4) categories- residential dominant mixed-use, commercial dominant mixed-use, industrial dominant mixed-use, residential-commercial mixed-use zone (Detailed Area Plan: 2016-2035, Dhaka, 2022).

DAP 2016-2035 also mentions the possibility of uncontrolled mixed-use functions and advocates for guidelines regarding "Guided Mixed Use" to avoid any adverse effect on the surrounding environment. "Guided Mixed-use" means the development that will follow rules and regulations so that the development do not deteriorate the surrounding environment. The incompatible mixed functions such as residences and heavy industries have been foresightedly given alert for future developments. DAP 2016-2035 mentioned to impose appropriate conditions for essential uses at different scales. DAP 2016-2035 has mentioned "Overlay Zone" to describe the areas that are of special nature and mentioned further development for those areas considering the probable change in the innate nature and land price hikes. Experts also suspect a rise in uncontrolled urban development in Dhaka city as DAP 2016-2035 restricts commercial use to at least 40% of floor area and monofunctional zoning has been reduced to not more than 10-15% of the total land. DAP 2016-2035 permits poultry farms, and commercial units to spice grinding and manufacturing of shoes and leather goods in some of the permissible mixed use of land in residential areas which might be the issues of sound and air pollution as well as stench. Although, DAP does not specify how many building floors can be used for business purposes within the four types of mixed-use

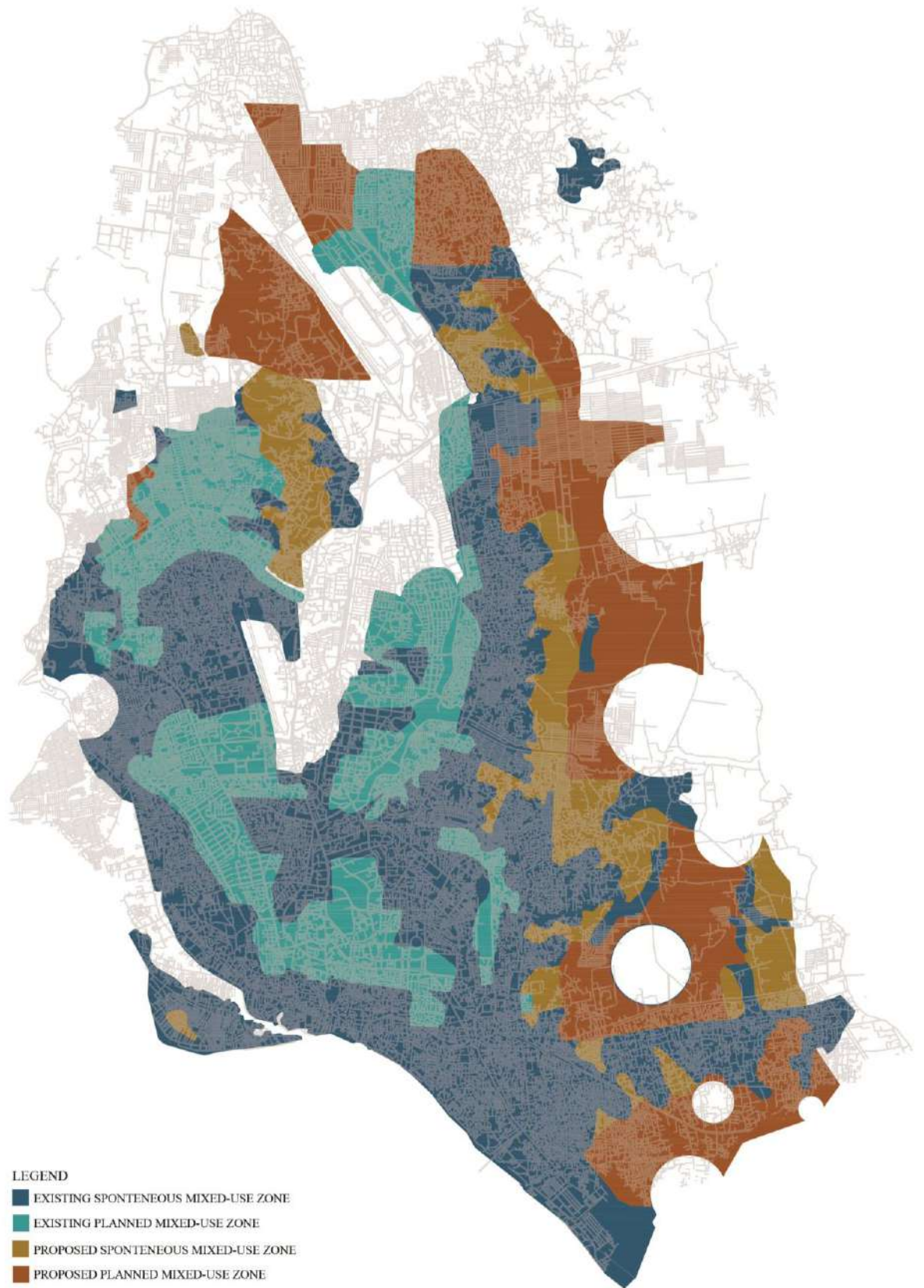


Figure 2.4: Mixed-use Addressed by the Planning Scheme.

Source: Author, Reference: Detail Area Plan 2016-2035.

zone proposed. Planners and experts stated that horizontal mixed-use functions (at street level) like a grocery store or a community space within a residential building as well as functions like schools, hospitals and shops provide social services for the residential areas but those should be restricted to the ground and first floors. To respond to this, DAP needs to mention the portion of land to be used for business entities in a particular area and their locations. DAP proposed entire area is subject to mixed-use which is a very broad decision (Detailed Area Plan: 2016-2035, Dhaka, 2022).

## **2.8 Morphology of Mixed-use Functions in Unplanned Cities in Global Context**

Land use patterns in unplanned cities are typically characterized by intensive mixed-use functions (Verma, 1993; Tu & Lin, 2008; Zhong & Hui, 2021; Shankar & Vidhya, 2013). Mostly, these mixed functions in unplanned cities have developed spontaneously beyond any formal framework. Such non-residential uses have developed in residential localities to combat the population growth and the increasing need for community facilities (Haque, 2015). These mixed functions support the city's needs. They also put some adverse impacts on the urban environment (Shankar & Vidhya, 2013). Therefore, mixed functions in unplanned cities have sustained the urban morphology in an intricate manner, along with the legal system.

The traditional form of mixed-use functions is found in form of 'shophouses' particularly in Asian and Southeast-Asian cities (Bahadure & Kotharkar, 2015; Han & Beisi, 2015; Zakariaa, Kubota, & Toe, 2015; Omar & Syed-Fadzil, 2011). There is also evidence of similar structures like shophouses in other region of the world including parts of Latin America and Caribbean islands (The Shophouse Investment Guide, 2023). Literature also portrays a mix of economic activities and residential functions in European cities before industrialization (Tasan-Kok, Kempen, Raco, & Bolt, 2014). Mixed-use functions have gained prominence in several cities across Europe and North America since World War-II (Hoppenbrouwer & Louw, 2005). The compact units (shophouses) with shops and residences are evident till now in the old fabric of Asian and other cities mentioned above (Wakita & Shiraishi, 2014). These linear building units are set perpendicular to the street on fine grains (Khan, 2020). These 'shop-houses' are low-storied buildings and organize their shorter edges on the

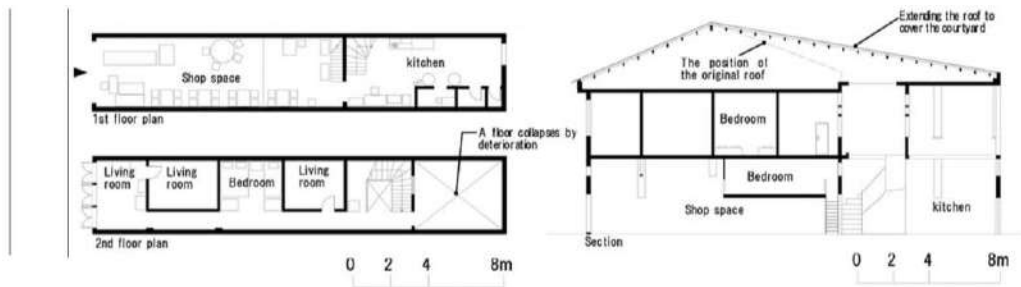
roadside to ensure the street frontage for business (Yung, Langston, & Chan, 2014; Aranha, 2013). In the case of single-story shop-houses, the shops are positioned in the front of the structure, and the residential quarters are placed in the back (Han & Beisi, 2015; Yung, Langston, & Chan, 2014; Aranha, 2013). For the multi-storied shop-houses, residential units stack over the services (like, shops, workshops, wholesale, etc.) (Han & Beisi, 2015). These traditional shop-houses offer the scope of adaptability that can alter for any transition evolved from personal or communal demands (Aranha, 2013).

Currently, a greater concentration of mixed-use functions is evident not only along the important major roads and nodes of unplanned cities but also in the local streets of residential neighborhoods (Ratnayake, 2015; Verma, 1993). The contemporary layout and building morphology of mixed-use functions of Southeast Asian cities are characterized by some conversions from the traditional shophouses (Khan, 2020). Presently, mix of functions include diverse uses such as- offices, restaurants, storage, wholesale, micro-industries, educational institutes and residences (Haque, 2015; Ujang & Shamsuddin, 2008). Mixing of non-residential and residential functions occurs both at ground and multiple levels in multi-storied buildings (Weinberger, 2010). This sometimes led to incompatible mixing of functions and thus, deteriorates the residential environment. Non-residential functions like retail, and restaurants seek good accessibility from the road to run their business well (Sim, 2019). Hence, these visit functions are mainly found at the ground floor and sometimes at the upper floors to accommodate the increased demand. There is evidence that contemporary mixed-use functions contain diverse uses and mixes in four to more than ten floors of the buildings (Aranha, 2013). Home-based enterprises (HBE) are another form of mixed-use functions that are widespread in developing Asian cities (Tipple A. , 2006). These are service hubs for different production and repairing of different items like craft, furniture, food, woodwork, cloth, shoes, mechanical items, and electrical supplies. But these HBEs have no separate spaces as work-place (Tipple A. G., 2005). Thus, conflicts between work and live functions remain in these HBEs.

Street vending is an age-old occupation found in every country and major cities around the world (Bromley, 2020). Particularly in Asian cities, street traders are common features of mixed functions (Aranha, 2013). They do not bear legal status for their vending activities but they play an important part in the urban economy (Mahadevia, Vyas, & Mishra, 2014). In some countries street vending is actual source of potential revenue as they are liable to pay charges on the consumption, incomes or property of the street vendors and their dependents (Bromley, 2020).

In Asian cities, unauthorized carts develop in an area, bringing an influx of permanent commercial activities with well accessed places (Bhowmik, 2012). They often hinder the flow of street users and cause inconvenience to them (Husain, Yasmin, & Islam, 2015). Street traders can be categorized into three according to their way of functioning (Bhowmik S. K., 2005). Those are- (a) stationary (fixed); (b) peripatetic / partially mobile (semi-fixed) and (c) mobile (Dimas, 2008; Bhowmik S. K., 2005). Stationary vendors are those who possess a public space or sidewalk on regular basis to vend their goods. Peripatetic vendors are those who vend under temporary sheds or pushcarts and settle in several locations. Mobile vendors are those who walk/cycle around from place to place and announce their goods and services for their target groups to buy goods /services from them. These street traders sometimes have conflicts with the shop owners by blocking shop frontage and threatening their business by selling similar goods at fewer wages (Husain, Yasmin, & Islam, 2015). On the other hand, there are cases where a mutual business runs between the shop owners and vendors using the shop fronts (Recio, 2018; Husain, Yasmin, & Islam, 2015).

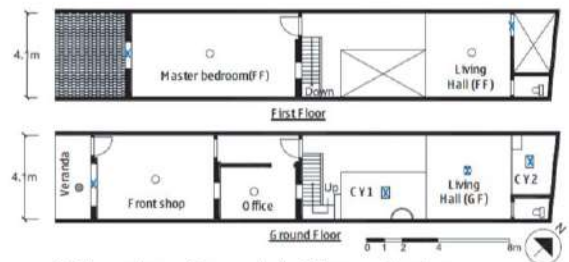
Mixed-use comes with dual characteristics in all cases (Hoppenbrouwer & Louw, 2005). It brings community facilities together and serves the needs of the residents. On the other hand, the unplanned development of mixed functions sometimes affects the residential characteristics in many ways including, disturbing the calmness, breaking social cohesiveness, causing a lack of privacy and security, and management of utilities etc (Ratnayake, 2015; Bahadure & Kotharkar, 2015). The transformation from residential functions to an unregulated mix of uses also brings high population density.



A. Shop-House in Phnom Penh (Cambodia). Adapted from Wakita, Y., & Shiraishi, H. (2010).



B. Band Type Urban Prototype, Singapore; Source: Firley, E., & Stahl, C. (2011)



C. Floor plans of case study Chinese shophouse; Source: Zakaria, M. A., Kubota, T., & Toe, D. H. C. (2015)



D. Vibrant Shophouses in Singapore; Source: <https://www.istockphoto.com/photo/singapore-main-attractions-gm1199670510-343329467>



E. Shophouse in Phuket, Thailand; Source: <https://diwerent.com/blog/the-shophouse---fusional-style--functional-elegance-290>



F. Mixed Functions in Cambodia; Source: <https://diwerent.com/blog/the-shophouse---fusional-style--functional-elegance-290>



G. Current Mixed-use in Wellington Street and Graham Street, Hongkong, Source: Yung, E. H., Langston, C., & Chan, E. H. (2014)

Figure 2.5: Traditional Shop-houses and Current Mixed-use Functions in Unplanned Cities.

This causes stress on power, infrastructure and utility supplies like water supply, traffic and transportation, sewerage, etc. (Shankar & Vidhya, 2013).

## **2.9 Space Syntax Theory**

Space Syntax is a theory and method for analyzing the layout of space in buildings and cities (Nes and Yamu, 2021). This theory describes the correlation between the spatial structure of the city and its way of functioning (Nilufar, 2010). This theory contains a set of techniques that can be used individually or in various combinations to study the different morphologies of cities and their relations to urban functions (Nes & Yamu, 2021; Rashid, 2019). Space syntax as a widely used method connects the fields of urban spatial analysis and urban design in the arena of transport, land use, and people's behavior (Nes and Yamu 2021).

Space Syntax explains the accessibility of different spaces in an urban grid (Hillier & Hanson, 1984). The accessibility between spaces in an urban grid varies according to changes in the configuration of the urban form (Marcus, 2010). With the increase of accessibility of an area, the movement pattern and integration of the area will increase with the whole urban grid and the area will attract more movement-seeking functions - market or retail land uses - within it (Hillier, 1996). Thus, space syntax investigates how movement and various activities are influenced by urban spatial configuration with the help of a computer-based analytic tool called "Depth map"<sup>3</sup> (Hillier & Hanson, 1984). This research investigates the correlation between the morphology of unplanned areas and mixed-use functions within. Thus, the measure of integration i.e., accessibility is important for this study to help understand the pattern of the functional mix in the study area.

In the study of space syntax, urban spaces are categorized by human visual ability and scale. Based on the categorization of human movement, urban space comprises free and blocked spaces. Blocked spaces are those where human movement from one location

---

<sup>3</sup> Depthmap is primarily a computer program to perform visibility analysis of architectural and urban systems. It takes input in the form of a plan of the system and is able to construct a map of visually integrated locations within it. In addition, the most recent version of Depthmap now supplies a range of configurational analyses which come under the umbrella term of space syntax'. (Turner, 2004)

to another is blocked by spatial obstacles like built forms. On the contrary, free urban spaces allow free human movement which includes streets, squares, alleys, etc. Space

Syntax analyzes free urban spaces measured by Euclidean distance<sup>4</sup> (Hillier 1996). Free urban spaces can be large-scale and small-scale free spaces. Large-scale free spaces are perceived from the set of fragmented small-scale spaces called Convex Space. Convex spaces are used to explain the two-dimensional organization of space. It can be defined as any two points in a space that can be joined by a straight line to form a polygon that does not go beyond the boundaries (Hillier and Hanson 1984). The other hand, the “axial lines” are the longest and fewest sight lines (straight lines) that cover all the convex spaces and represent the one-dimensional organization of the spatial layout (Yamu, Nes, and Garau 2021).

Of the four first-order syntactic measures of space syntax (Integration, Connectivity, Control and Choice), integration is the most important and widely used syntactic unit in space syntax for the quantitative description of urban layout. Integration is a static global measure that describes the average depth of a space to all other spaces in the system (Klarqvist 1993). Integration analyses through the calculation of how close the origin space is to all other spaces, and can be seen as the measure of relative asymmetry or relative depth. The spaces of a system can be ranked from the most integrated to the most segregated. The average number of lines and direction changes required to reach all other spaces in the system determine the integration (Hillier and Hanson 1984). Therefore, integration is about syntactic accessibility rather than metric accessibility, and the term "depth" rather than "distance" is used to describe how far the space is. In integration, any spatial system's relative depth and shallowness are seen from any particular point inside it. A global index of relative integration and segregation for that line relative to all others is provided from a global static measure in which all axial lines are assigned a value that is the characteristic of their relation to all other lines in the grid. These values of well below 1 - of the order of 0.4 to 0.6 indicate more segregation and; while the value ending to and above 1 shows strong integration. The space syntax

---

<sup>4</sup> In mathematics, the Euclidean distance between two points in Euclidean space is the length of a line segment between the two points. (Wikipedia)



method is also used to understand the urban structure locally through the measure of local integration which is one of the fundamental properties of urban space. It is conjectured that parts of the urban grid are differentially connected within and between themselves, which should be revealed by the rank order of the local integration value. High global or local integration values are presented in the axial line with warmer color, and vice versa. For example, the red line represents the highest integration value; the dark blue line represents the lowest integration value, i.e., the most segregated. "Integration core" illustrates the important deep structure of a spatial system. Once the integration of each space of the whole system has been calculated, the "Integration core" can be identified. The integration core forms the pattern of the most integrated lines of an urban system. The shape, connectivity, and geometry of the urban system as well as its manner of expansion determine the character of the integration core, its size and space.

### **2.9.1 Natural Movement**

Human movement pattern in urban systems is primarily caused by the system's configuration itself (Hillier et al. 1992). The spatial attractors are equalizers or multipliers for movement on the core pattern set by the configuration. They might, at times, succeed in the configuration with the multiplier effect<sup>5</sup> on human movement. Arguments state that the morphology of the urban grid and the distribution of the attractors over the grid require an understanding of the configuration to reveal the pattern of human movement. The theory of natural movement depicts the observable quantity of movement along the line with its association with the configuration of the urban system and the spatial attractors (Hillier et al. 1992). This theory establishes a primary basis of movement generation with global spatial configuration rather than spatial attractor and secondarily with local spatial configuration by connecting one space with its neighboring space and so on (Hillier 1988). Natural movement is

---

<sup>5</sup> According to the theory of natural movement and movement economics, the location of the retail land use has been influenced by the configuration of the urban system in which they are distributed. In such cases, shops locate themselves on the most integrated (most accessible) route and these groups of attractors act as a multiplier on the basic pattern of natural movement. However, according to Hillier this concept "Multiplier effect" follows the conventional gravity model which is an attempt to explain accessibility in terms of the relationship between attraction and distance. Hillier's concept of accessibility refers to the most integrated route in an urban grid configuration. Thus, there will be more integrating and less integrating areas, depending on how the internal structure of the area is embedded into the larger-scale structure of the grid. This will lead to the area with more multiplier effect and the area with less.

essential and consistent in an urban system irrespective of any urban grid and culture. With the diversity of grid patterns and different cultures, natural movement is seen to be molded with respect to the particular pattern. Also, the urban grid seems to create a probabilistic ground for movement to free flow or be obstructed (Hillier et al. 1992).

### **2.9.2 Movement Economics**

Both empirical and theoretical evidence suggests that attractor and configuration are interrelated in the processes of causing natural movement and creating attraction inequalities in the urban configuration through the operation of the movement economy (Hillier et al. 1992). Urban functions seek movement and act as attractors of natural movement on the line. A well-functioning urban system creates harmony between, its configuration, attractors, and movement to create the multiplier effect on the pattern of movement (Hillier 1999). With the increase of movement, the diverse attractors i.e., diverse urban functions seem to use the benefit of the space-movement relationship by multiplying the movement pattern. According to the theory of space syntax, this process is known as movement economics. Movement economics is a very dynamic process since the urban configuration initially creates movement, later movement-seeking functions cater to the movement-rich lines and produce multiplier effects on movement, which further attract retail and other uses to develop and this allows the local grid to adapt to the accommodation of the greater density and mix of uses. Thus, it can be said that space and movement have a correlative effect that helps the movement economics run its process. The urban spatial pattern develops naturally toward a combination of busy and quiet areas and with the extreme end in the most integrated areas where the process is initiated from the configuration of the spatial grid of the area (Hillier, 1997).

### **2.10 Urban Economics**

Urban Economics is an economic analysis of the locational perspective of urban phenomena aiming to address the intersection between economics and geography (Griffith, 2021). Urban economics explores the location choices of different functions and their efficiencies supporting the concept of creating resilient urban habitats for the current city without hampering the future cities' socioeconomic/demographic and environmental impacts. The theory depicts that while making locational choices utility

maximization is the priority for household functions and profit maximization is the priority for offices, firms, shops, etc. (O'Sullivan, 2012). Accessibility is the primary consideration as a locational advantage for urban functions to develop land-use patterns. According to the theory, site location, plot area, and configuration of the site foster maximization of profit. Urban functions get an economic boost for the selection of the site measuring more accessibility as it increases consumer access more frequently (Goodall, 1972). Goodall added, the increase in degrees of accessibility makes higher chances for different activities to interact and cluster.

Urban economics has emphasized the locational choice of retail functions in a city. Retail functions focus on profit maximization as the fundamental principle guiding the position, scale, and design of the site of economic activity. Retailing plays a vital role in attracting diverse marketplaces and offers to retail the highest prices for the location. Such functions require locations accessible by all consumers and workers. Generally, groups of retail activity, and chain of shops occupy the ground level of the urban district (Goodall, 1972). This makes retail a major part of mixed functions (Zakariaa, Kubotaa, & Toe, 2015; Firley & C. , 2011)

## **2.11 Summary**

This chapter has reviewed the notion of mixed functions, urban morphology, different theories of space syntax and urban economics to understand the development and operation of mix of uses in the urban fabric. Based on these understandings, the next chapter will describe detailed methodology i.e., various data collection and analytic methods to conduct this study.

## **CHAPTER 03**

### **RESEARCH FRAMEWORK**

#### **3.1 Introduction**

This chapter discusses the research approach and methodology. This chapter is structured into six (6) parts. The first part, (section-3.2) discusses the research strategy adopted. The second part, (section-3.3) briefly discusses the case study research and study area. The third part, (section 3.4) describes the different methods for data collection. The fourth part, (section-3.5) narrates the mapping and analysis processes. The fifth part, (section-3.6) describes the methodology of space syntax. And the last part, (section-3.7) concludes the chapter.

#### **3.2 Research Strategy: Mixed Method Research**

This research explores the morphological pattern and working process of mixed-use functions of an unplanned area of Dhaka in correlation with the associated urban morphological elements. To explore these objectives, the research converged a mix of both quantitative and qualitative methods. Quantitative research explains a phenomenon by acquiring data based on numbers which are analyzed using a mathematical basis of methods (Aliaga & Gunderson, 2000) . This research attempts to generalize the results from an investigation of a large sample area (Babbie, 2004). In complement, qualitative research explores details of a particular subject involving the interpretation of the natural settings (Denzin & Lincoln, 2000). Simultaneous answers to the qualitative and quantitative questions and multiple viewpoints, perspectives, and positions can be found with the combination of the qualitative and quantitative methods. This combination is applied here since the research has the urge to analyze both numerical and contextual data. As a qualitative approach, this study employs- field survey, photographic survey, and analyses of mixed functions and morphological maps. As a part of quantitative approach, numerical data analysis of the study involves the computation of the number of buildings, plots, and density and calculation of the integration level i.e., accessibility of the street network. Both the qualitative and quantitative approaches helped the analysis and synthesis process to find distinct morphological pattern of mixed-use in the unplanned study area.

### **3.3 Case Study Research and Study Area**

This research applies “Case Study” as methodology. Case study research is a systematic investigation of a single event or a series of associated events with the aim to describe and explain the phenomena of interest (Eisenhardt, 1989). This empirical study explores contemporary phenomena within their real-life context when the boundaries between phenomena and the context are not clearly evident and in which multiple sources of evidence are used (Yin, 1984). The case study method enables researchers to conduct a detailed contextual analysis of the data within a small geographical area or a very limited number of individuals to explore and investigate the true essence of the contemporary real phenomenon of a finite number of events or conditions and their relationships (Zainal, 2007). This research explores a technically distinctive situation with more variables of interest than data points and numerous levels of analysis including qualitative and quantitative approaches (Yin, 1984; Groat & Wang, 2013). Since this strategy focuses on the embeddedness of the case in its context, this holds the capacity to explain causal links between the richness of multiple data sources and allow generalization to theory (Zainal, 2007; Groat & Wang, 2013).

This study investigates- the pattern and working process of the spontaneously developed mix of uses within a specific context that has not been explored before. The number of first-hand studies based on this subject is also the least. Hence, the case study method has been applied to acquire in-depth and up-to-date data on the topic.

Moghbazar has been selected as the case study area. It is an old unplanned area where mixes have evolved for decades within organic morphologies (Nilufar, 2010; R.M.Ahsan, 1991). Presently, it contains considerable concentrations of mixed functions that are the result of several morphological adjustments. Also, Moghbazar is spatially significant for its proximity to the urban center and business district which likely influences the area’s functional diversity. Hence, Moghbazar offers an appropriate context for understanding processes of spontaneous mixes by exploring synergies of diverse functions and their interconnections with associated morphologies.

Moghbazar is located near the spatial center of the city near Tejgaon, Ramna, and

Malibagh areas under the Ramna thana (Figure 3.1). It partly falls under Dhaka North City Corporation (DNCC) and mostly under Dhaka South City Corporation (DSCC) (Ward-19 of DNCC and Ward-35,36 of DSCC). A recent intervention, Hatirjheel, is bounded at one side of the case study area. DIT Road on the other side has separated the study area from Malibagh and created a defined outline for Moghbazar. Its origins date back to the Mughal Empire (Haider, 1967) . Since the 20<sup>th</sup> century, various mixed-use functions have developed here and gradually it has intensified over time. The present morphology presents a substantial concentration of mixed-use with a combination of narrow-wide streets and fine and coarse grain development.

### **3.4 Data Collection**

Prior to the field survey, literature survey and archival data collection have been performed to prepare the base data for the field survey, mapping and analysis.

#### **3.4.1 Literature Review**

Fundamental conceptions and exploration of the research questions have been led by a theoretical framework. The theoretical framework focuses on the topics like mixed-use function, it's significance, urban morphology, growth of mixed-use in Dhaka, its regulatory framework and morphology of mix of uses in unplanned cities. The theoretical framework also covers the theories like space syntax, natural movement, movement economics and urban economics to understand the operation of mix of uses in the urban system.

#### **3.4.2 Archival Data Collection**

Base maps of different wards have been collected from Dhaka City Corporations. The base map of ward no 19 has been collected from Dhaka North City Corporation (DNCC) and base maps of wards no 35 and 36 have been collected from Dhaka South City Corporation (DSCC). These base maps (2003) contain, street pattern, block outlines, and plot demarcation, placement of the building on the plot and building height. These base maps of three wards have been joined to produce the base map of the entire site. This map was eventually used to produce maps of mixed-use functions and associated morphological aspects from the field survey data.

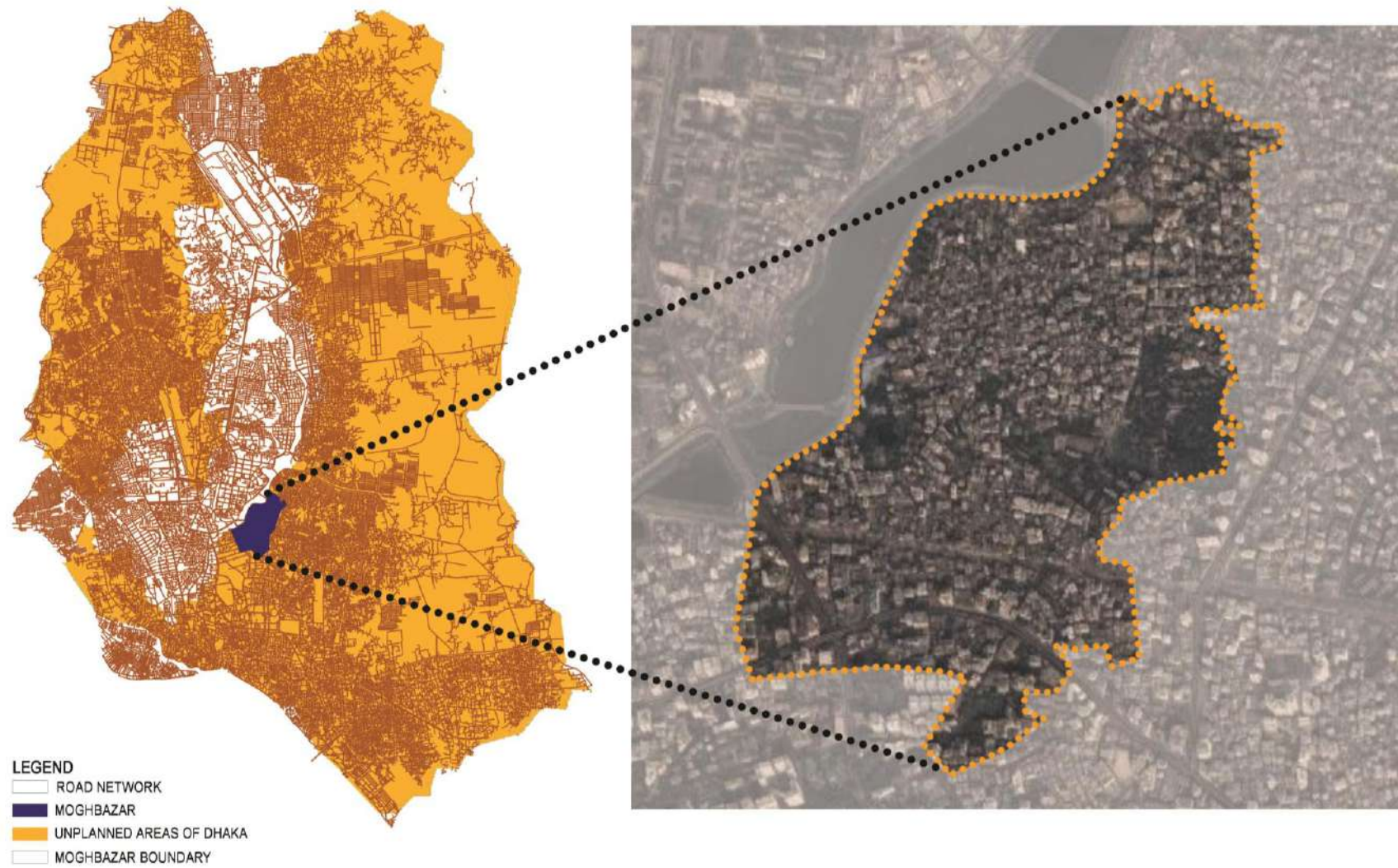


Figure 3.1: Moghbazar Area; Source: Author; Reference: Google Earth.

### **3.4.3 Field Survey**

Field investigation is the study of a phenomenon as it occurs without much intervention (Fidel, 1984). In this study, field survey is the primary data acquisition process for mapping and analysis.

Prior to the actual field investigation, a number of unplanned areas in Dhaka like Moghbazar, Monipur, Eskaton, and Malibag were preliminary surveyed to choose the specific site and its initial boundary. Based on the availability of data, base maps and the presence of a diverse mix of uses and their concentration, Moghbazar was finally chosen as the study area. This preliminary survey was undertaken during December, 2021. This preliminary survey supported the formulation of the research process in which the field survey followed the detailed steps further.

The detail field survey was conducted from mid-February, 2022 to mid-May 2022, mostly from 11 pm to 6 pm on office days. Moghbazar has its weekly close day on Thursday. Thus, Thursdays were avoided for the survey since usual mixed-use functions and associated activities may not be observed on that day.

The field survey explored the diversity of mixed-use functions in the study area and their interconnection with the associated morphological elements. A detailed field survey of a total area of 1374241.61 m<sup>2</sup> was conducted covering the whole Moghbazar (Figure-3.1) area containing wards no. 19, 35 and 36. The demarcation of the study area was primarily inquired from the personnel of DNCC and DSCC during the data and base map collection process. The recheck and precision of the site line have been marked during the intensive field survey.

The field survey included two steps. The first task was to observe the exterior of individual buildings to identify the various types of functions and their distributions on different floors. The second task was to survey and inquire about the interior functions from building residents/concerned people. During the detailed field survey, all the buildings on individual plots within the site line (the entire Moghbazar area) have been surveyed to investigate functional data at different spatial levels. Field survey has



recorded the functional aspects like horizontal mixed functions (mixes side-by-side at the street level), vertical mixed functions (stacked), vertical extension of non-residential functions and street traders' locations. Street traders have been categorized following the literature review. Field survey has also recorded the morphological aspects like street, plot, building height (stories), plot coverage. During the survey process, the base map that has been drawn combining the three ward maps has been updated with the data from the field survey. Regarding roads, the categorization of roads and mode of movement have been recorded. For the calculation of densities, the number of stories in a building and plot coverage have been updated from the base map.

#### **3.4.4 Photographic Survey**

The photographic survey was undertaken from mid-February, 2022 to mid-May 2022, mostly from 11 pm to 6 pm on office days. This photographic survey was conducted to gather and document information on diverse mixed functions in the study area. Vertical extension of the non-residential functions, location of street traders, their variety, building height and coverage have also been captured with cameras during this survey. 723 photographs have been taken from different streets, nodes and strategic points. This survey has been done in daylight to ensure the accuracy in the visibility of the variety of mixed-use of the site and their associated morphologies. This survey excludes the areas where the streets became too narrow to capture the full view of buildings and the built form that completely contain residential functions.

### **3.5 Mapping and Analysis**

A map is a visual representation of the physical layout and settlement patterns of a region. Mapping allows multi-scale of analysis of urban data to understand cities' working processes and predict futuristic transformation through planning and design (Dovey, 2016).

#### **3.5.1 Mapping of Mix of Uses in the City Scale**

The development of mixed-use functions in Dhaka city has been mapped to understand its chronological growth in different time periods. The information about the growth of mixed functions in different time periods has been collected from different literature and

historical maps. Mapping of mixed functions at the city level has been done with color graphical representation.

### **3.5.2 Mapping of Mixed Functions in the Study Area**

Mapping of the mixed-use functions in the study area includes mapping of the horizontal mix, vertical mix, vertical extension of the non-residential functions and the street traders. For the convenience of mapping, individual plots and buildings have been given unique reference IDs (numbers) and those unique IDs were followed to mention to the individual plots and holdings for mapping (appendix-4.1).

Vertical and horizontal mix of functions has been mapped following the LWV (live, work, visit) triangular mapping index. LWV triangle is a mapping index conceptualized and developed by Kim Dovey and Elek Pafka in 2017. This mapping index can be used to comprehend and map the diverse mixed functions in different urban morphologies since it is more focused on the mix and flows between urban functions. In this mapping index, live, work, and visit as the three primary urban functions are represented by three primary colors (red, blue, and green) plus various forms of mixes between them (live/work-purple; live/visit-yellow; work/visit-cyan), that fading towards white for the mix of all three functions (Dovey & Pafka, 2017). In the mapping process, the plots containing different single and mixed functions are coded by specific colors mentioned in the LWV triangular mapping index in CAD. The plots containing different mixed functions are mathematically analyzed to find out the pattern of horizontal and vertical mixed functions in the study area.

Vertical extension of non-residential functions and location of street traders have been mapped with color graphical representation through CAD and Photoshop. In the map of vertical extension of functions, the darker colors in the gradation scale indicate increasing number of floors of non-residential functions and vice-versa. The number of floors containing non-residential functions were numerically analyzed to find out the pattern of non-residential functions in buildings. The pattern of different types of street traders were identified from their locations in maps.

From these maps, the data regarding the counts and area of plots, buildings and vertical extension of non-residential functions have been numerically analyzed through the “data extraction” tool in CAD to comprehend the morphology of the study area.

### **3.5.3 Mapping of Morphological Elements**

The morphological maps that have been produced in this study are street, plot size, building height, building coverage ratio (BCR), and floor area ratio (FAR). These morphological aspects have been mapped with color graphical representation through ArcMap software. With data on building height, plot area and building area, BCR and FAR have been calculated from ArcMap through the operation “spatial join” and following the formulas below –

$$BCR(\%) = \frac{\text{Building area}}{\text{site area}} \times 100$$

$$FAR(\%) = \frac{\text{Total Floor Area}}{\text{Site Area}} \times 100$$

The first-hand numerical data regarding building height and the number of buildings on a single plot has created the basis for the quantitative analysis to get realistic outcomes for the calculation of the building coverage ratio (BCR) and floor area ratio (FAR).

### **3.6 Analytic Method of Space Syntax**

The spatial structure of Moghbazar modeled by ‘Space Syntax’ has been used to analyze the street accessibility. Eventually, all the maps of mixed functions and morphologies will be compared with the accessibility map to understand their interconnections.

Prior research regarding the neighborhood of Dhaka represents that, the new localities represent intensified local area effect at the radius R=4, whereas the historic area characterizes its localities at the radius R=3 (Nilufar, 1997) . Therefore, in this research, the local integration of Moghbazar area has been performed at radius R=4 to find out the accessibility. Local integration relates to the spatial properties up to four steps (R=4)

away from the root. The two axial analyses had been performed in Moghbazar to show the integration level including and excluding the railway line within the study area.

The syntactic analysis of accessibility has been done in the 'Depthmap'. Depthmap is a multi-platform software to perform a set of spatial network analyses which works at a variety of scales from building through small urban to whole cities or states (UCL Space Syntax, 2023). At each scale, the aim of the software is to produce a map of open space elements, connect them via some relationship and then perform graph analysis of the resulting network.

Most studies of urban areas and cities in the space syntax literature use the techniques of axial map analysis in which axial lines represent straight lines of movement and visibility (Rashid, 2019). Through the axial analysis, the movement routes' degrees of (inter) connectivity can be examined using a graph-based approach (Van Nes and Yamu, 2021). For a strategic city model, all streets and roads whether incorporating a tram or bus line or are pedestrianized or are only accessible for public transport are treated in the same manner for generating an axial map (Van Nes and Yamu, 2021). In this study, the updated drawing of the street polygon of the study area (drawn from the DCC base map and updated from field survey) has been used to produce the axial map in Depthmap.

Figure 3.2 shows the stepwise process and 3.3 illustrates the process involved in producing and analyzing axial maps from the open space structure of the urban grid. At first, road polygon map<sup>6</sup> has been prepared in CAD by drawing enclosed polylines on the base map of Moghbazar. During drafting careful measures have been taken so that all the polylines enclosing each street polygon are properly joined. Then the resultant CAD drawing of the road polygons of Moghbazar has been imported into Depthmap. After that, an all-line map<sup>7</sup> has been generated from the imported file using Depthmap tool.

---

<sup>6</sup> Road polygons often contain the road right of way between blocks of parcels and often include the area occupied by sidewalks and curbs. (GIS Online; accessed on 02 April 2023)

<sup>7</sup> The all-line map joins all pairs of inter-visible vertices in the map. The number of lines in all-line maps varies with the level of detail of the map, and it, therefore, has limited use.

Finally, the all-line map has been converted into fewest-line map<sup>8</sup> which is the axial representation of the street network. Axial map is used to derive the measure of the properties of the configuration of the street grid. In this way, spatial configurations in Moghbazar are modeled with axial lines, generated from the open space structure of the urban grid. Eventually, axial maps are simulated by the ‘Depth map’ to do the spatial analysis of street configurations. ‘Depth-map’ generates colored maps, where different colors indicate different degrees of spatial order.

In this study, the axial map was simulated to analyze the local integration. Integration (HH) at radius = 4 map shows higher to lower integration level of the street network with colored axial lines where blue line shows the lowest integration value, and red line shows the highest value. Higher values indicate higher integration level in the map. Integration value is the determination of accessibility for each road. According to the theory of space syntax, more integrated streets are more accessible ones and streets showing lower integration value are less accessible.

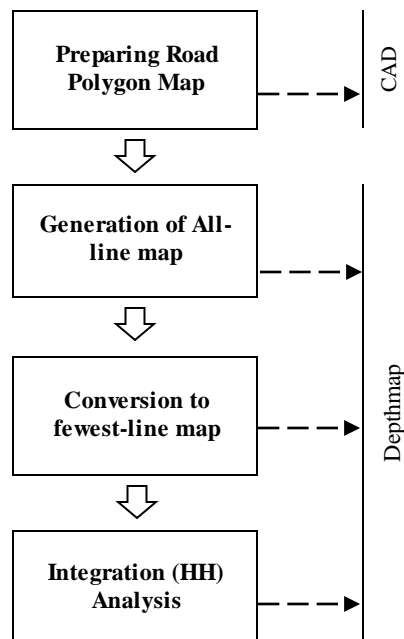


Figure 3.2: Different Steps in the Process of Axial Map Generation and Analysis.

<sup>8</sup> A fewest-line map attempts to cover the system with as few lines as possible. This fewest-line map is used for axial analysis.

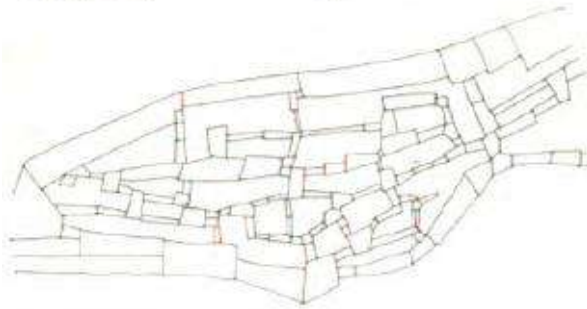
Reference: UCL Depthmap 7: Axial Line Analysis by Alasdair Turner available at <https://archtech.gr/varoudis/depthmapX/LearningMaterial/depthmap7axial.pdf> (Accessed: 3 April 2023)



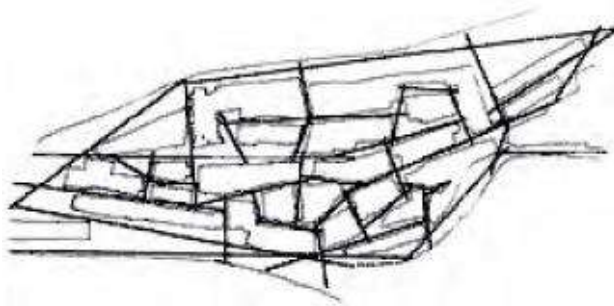
**Layout plan of small town of G in the VAR Region France**



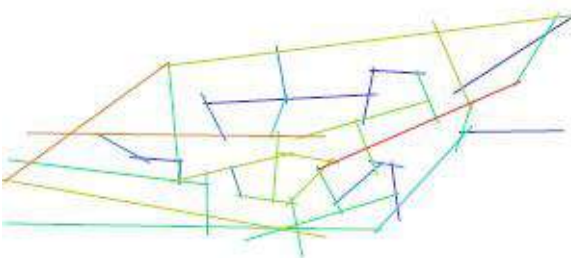
**Free space Structure of G**



**Convex map of G**



**Axial map of G**



**Syntactic Analysis of G**

Figure 3.3: Steps of Modeling Axial Map from the Layout Plan of a Settlement. Source: (Khan F. M., 2013); Adapted from the Social Logic of Space, 1984.

### **3.7 Summary**

This chapter discusses different methods to study the pattern and process of mixed-use functions in an unplanned area of Dhaka. This may work as a helpful framework for the morphological study of mixed-use functions in different urban fabrics. The next chapter points out the findings of the study based on the analysis of the functional mix and morphological maps.

## **CHAPTER 04**

### **FIELD SURVEY AND FINDINGS**

#### **4.1 Introduction**

This chapter investigates the pattern and working process of mixed-use functions in connection with the associated morphology of an unplanned area – Moghbazar by juxtaposing and comparing the mixed-use and morphological maps. The mixed-use and morphological maps have been prepared based on the field survey. The chapter has been structured into four (4) parts. The first part (section-4.2) introduces the contextual background of the study area. The second part (section-4.3) narrates the pattern of mixed-use functions of the study area with a focus on the vertical mix, horizontal mix, and vertical extension of non-residential functions. The third part (section- 4.4) discusses the morphological aspects of the mixed-use functions in terms of road network and accessibility, plot, and density (building height, BCR, FAR). The last part (section-4.5) concludes the findings with a brief description.

#### **4.2 Background of Moghbazar**

Maghbazar (মগবাজার) is among the old unplanned areas of Dhaka (RAJUK, 2022; Nilufar, 2010). The present boundary of Maghbazar demarks the west by Eskaton, the south by Ramna, the north by Tejgaon and the east by the Malibagh-Siddheswari area. The area is under Ramna thana and is administered partly by Dhaka North City Corporation and mostly by the Dhaka South City Corporation. This historic area can be traced back to the Mughal period (Ahsan, 1991). The name Maghbazar appears to be derived from the Maghs or Mogs of Arakan. The area where the Maghs were permitted by the Mughal subadar Ibrahim Khan Fath-I-Jang to build their settlements was subsequently known as Maghbazar (Haider, 1967). Even at the end of the nineteenth century (1801-1900), Maghbazar was a dense forest with ferocious animals (Nessa, 2012).

With the pace of urban development, Moghbazar has developed as a spatially significant area for its proximity to the urban center and business district of Dhaka. Currently, the





Figure 4.1: Study Area-Moghbazar.

area is structured by two major primary roads –Outer Circular Road and Shaheed Tajuddin Ahmed Avenue. Hatirjheel Link Road, Moghbazar Road and DIT Road surround the site and a long secondary road- Old Elephant Road -crosses and connects the Moghbazar area with Hatirjheel Link Road. Outer Circular Road and the Mouchak-Mailbag flyover establish a connection between the study area and the city. The recent intervention of the Hatirjheel project has also made transportation easier in the area. The well connectivity of Moghbazar with other major parts of the city influences the area to hold significant functional diversity and mixes.

As Moghbazar has existed since the Mughal period, the area has undergone many alterations and still encountering many changes. Presently, the area features unplanned morphological aspects with spontaneously developed mixed-use functions which have been elaborated in the following sections. This area also characterizes mix of built types, rents and middle and upper-middle groups of people (Huda, Zubayer, & Faruk, 2011). Most of the area consists of built-up spaces except for a limited number of parks, school fields, and graveyards (figure-4.1).

### **4.3 Mixed Functions**

This section describes the pattern of mixed-use functions in Moghbazar area in terms of vertical mix, horizontal mix, and the vertical extent of non-residential functions.

#### **4.3.1 Vertical Mix**

Figure 4.2 demonstrates vertically prevailing mixed-use functions within the site and figure 4.4 represents the percentages of vertical mixes in the study area with bar charts. The map (figure 4.2) depicts a diversity of mixed functions in the study area with a dominance of live functions (49%). These live functions are mostly evident along the tertiary roads and lanes. There are a number of gated communities in the study area where mix of uses is restricted to develop. There is a prevalence of governed residential quarters like BTCL colony, Pubali bank quarter, Eastern apartments, and Century state apartments in the study area. These quarters/housings have open spaces that are restricted for public use, few community functions and residential units within their boundaries.

Among the mixed functions, live-visit mixes are dominant (20%) and they are mostly found along the secondary, tertiary roads and nodes. Among other mixes, work-visit and live-work-visit mixes characterize the primary roads as these functions require good accessibility and visibility from primary roads. Along secondary and tertiary roads, these mixes (work-visit and live-work-visit) are evident closer to the major nodes. Live-work mixes are evident in the north, north-western side, a few on the south and close to the spatial center of the study area.

Visit functions, are a significant part of mixed-use functions in the study area. Visit functions are evident along the primary, secondary and tertiary roads and nodes. Mainly northern side of the study area characterizes the visit functions. Visit functions like hospitals, mosques, restaurants, shopping malls, convention centers, super shops, and showrooms are dominant, along the primary road. Small shops like food shops, stationery, grocery, vegetable shop, beauty parlors, ATM booths and laundry are evident along secondary and tertiary roads. Visit functions like, small tea stalls are dominant around the site especially near the rail line.

Besides live and visit functions, numerous work functions are apparent throughout the site, particularly along the secondary and tertiary roads as these functions don't require higher accessibility and visibility from the primary roads. Work functions like Government offices - BTCL (Bangladesh Telecommunication Company Limited), Vat Bhaban, RAB headquarter and Hatirjheel police station, different schools, colleges, medical colleges and technical institutes, etc. are evident along the primary, secondary and tertiary roads. Small offices and local enterprises are found only along the secondary and tertiary roads. Besides, a good number of workshops are found along a few secondary and tertiary roads and the Hatirjheel link road.

The combination of residential and non-residential functions in buildings is found differently along primary, secondary and tertiary roads. In most of the cases along the primary road, non-residential functions prevail on the lower floor/s and residential functions develop on the upper floors. On the contrary, some buildings in the secondary and tertiary roads are found to have residential functions on the lower floor and non-

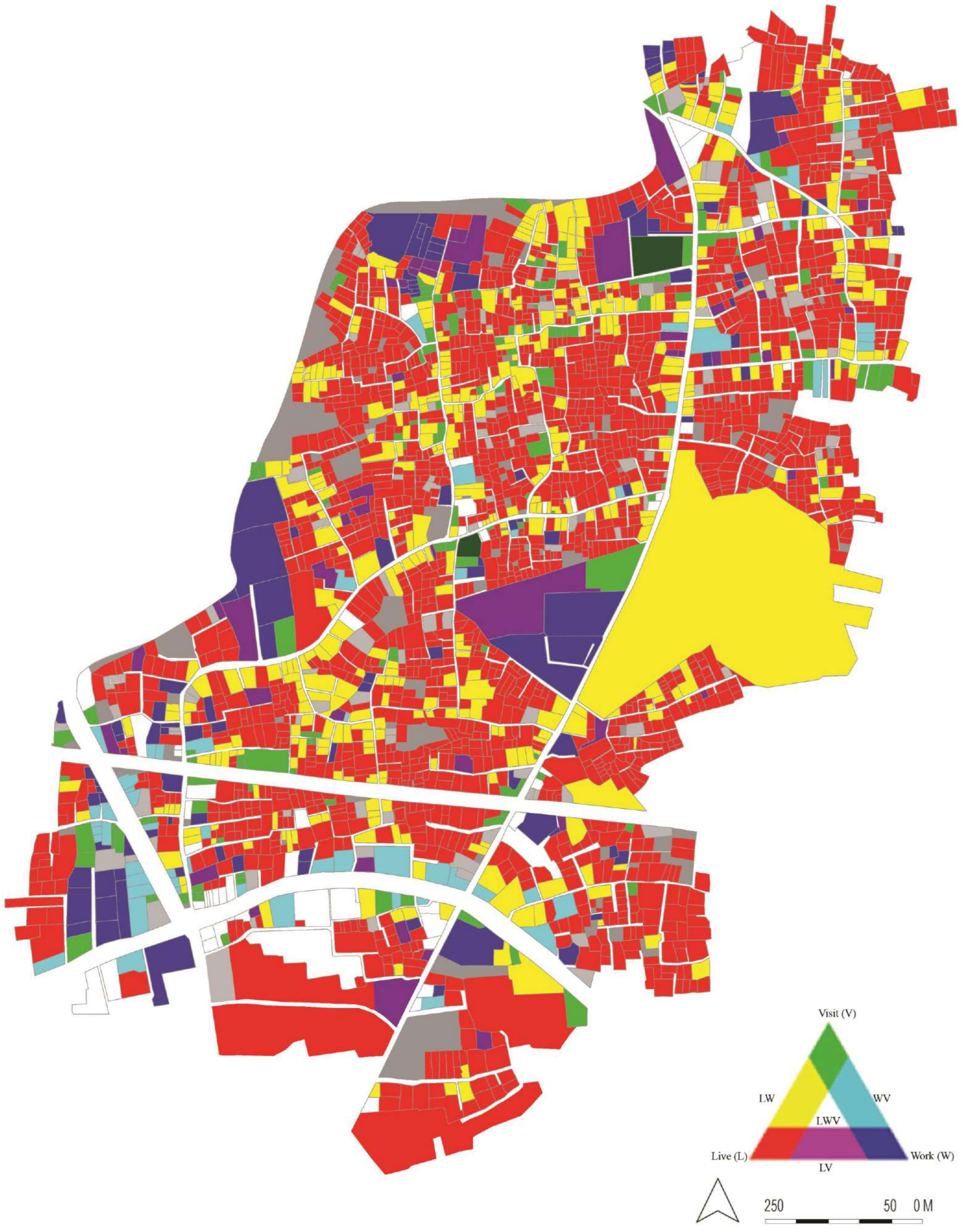


Figure 4.2: Vertical Mix in the Study Area.



A. Vertical Work-Visit, Live-Work-Visit mixes along Primary Road



B. Vertical Work-Visit, Live-Work-Visit Mixes along Primary Road



C. Vertical Work-Visit, Live-Visit Mixes along Secondary Road



D. Vertical Live-Visit Mixes along Secondary Road



E. Vertical Live-Visit Mixes along Secondary Road

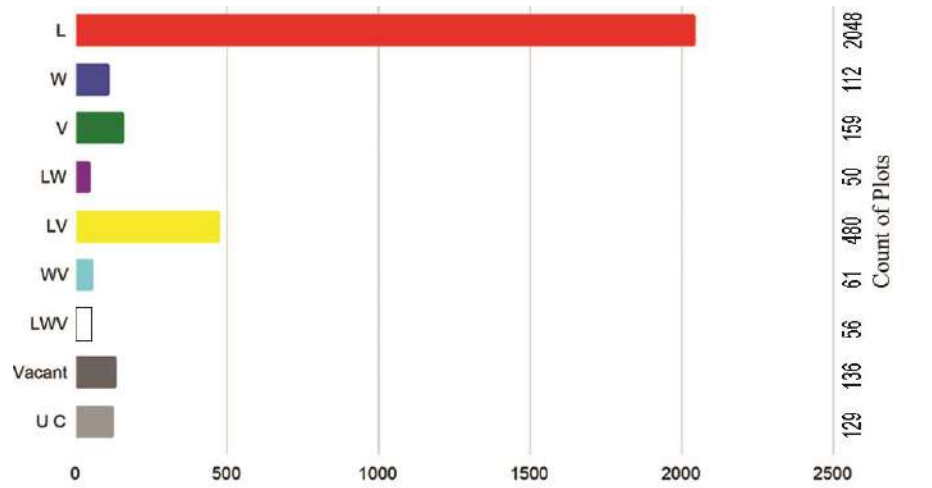


F. Vertical Live Functions along Tertiary Road

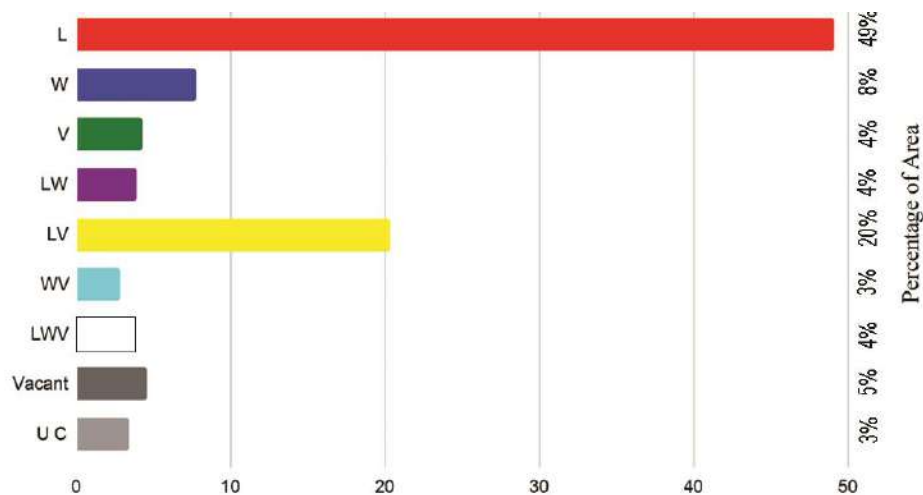
Figure 4.3: Diverse Vertical Mixes Along Different Hierarchical Road.

Table 4.1: Vertical Mix in the Study Area.

Vertical Mix	Functions	No of plot	Calculated Area	Percentage (%)
	Live	2048	628523	49
	Work	112	99505	8
	Visit	159	47769	4
	Live-Work	50	49240	4
	Live-Visit	480	260142	20
	Work-Visit	61	36010	3
	Live-Work-Visit	56	48504	4
	Vacant	136	59985	5
	Under Construction	129	43934	3
	<b>Total</b>	<b>3231</b>	<b>1273612</b>	<b>100</b>



(A)

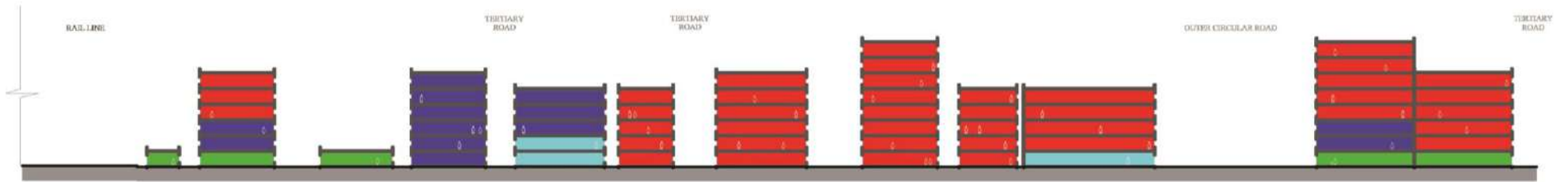


(B)

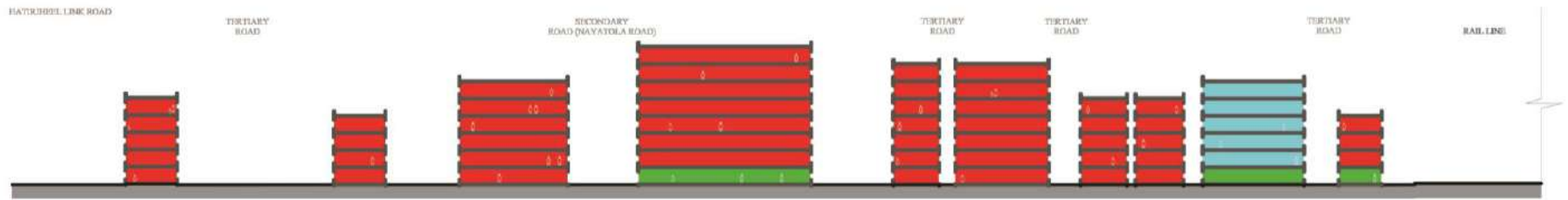
Figure 4.4: Bar Chart Showing the Percentages of Vertical Mix in the Study Area.

C. According to the Number of Plots per Function/mixes.

D. According to the Percentage of Area per Function/mixes.



A. A Section of the Southern Side of the Rail-line



B. A Section of the Northern Side of the Rail-line

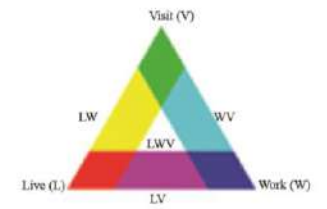


Figure 4.5: Sections of Vertical Mix of Uses in the Study Area.

residential functions like doctor's chambers (visit), small schools (work), and prayer spaces (visit) on the upper floors.

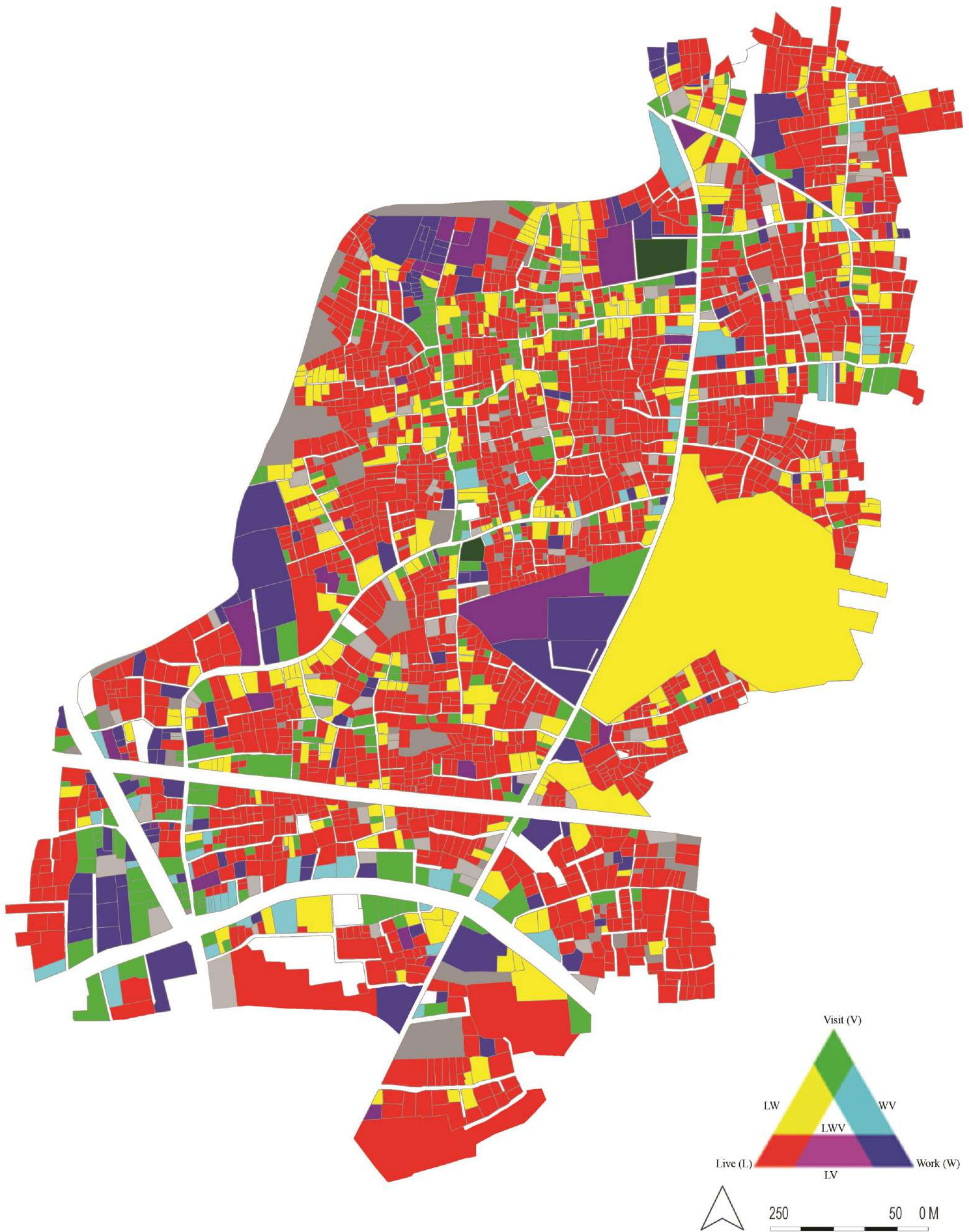
#### **4.3.2 Horizontal Mix**

Figure 4.6 illustrates the pattern of mix of functions at the ground level and figure 4.8 represents the percentages of horizontal mixes in the study area with bar charts. The map (Figure 4.6) shows that various types of mixed functions are evident throughout the site along the primary, secondary and tertiary roads. The area is dominated by live functions (49%) since it was developed as a middle-income residential area at its inception. Live functions are widespread throughout the study area specifically along the secondary and tertiary roads. On the other hand, visit functions and work-visit mixes characterize primary roads (Outer Circular Road and Shaheed Tajuddin Avenue) as these functions require good accessibility and visibility from the primary road. It has been found that with the increase of depth from the primary roads to secondary and tertiary roads, live functions get prominence and mixed-use reduces.

Among the mixed functions, the live-visit mix is predominant (19%) and they are mostly found along the secondary, tertiary roads and nodes. Among these live-visit mixes, a combination of residences, residential hotels, boys'/girls' hostels and condominiums with shops are common. Among the other mixes, mix of live-work-visit functions are found scattered throughout the study area but are mostly evident along secondary and tertiary roads. Live-work mixes are evident along the northern side and close to the spatial center of the area. Apart from the primary road, a few work-visit mixes are also found along the secondary and tertiary roads.

Visit functions are evident throughout the site – mostly along the secondary, and tertiary roads and nodes. However, they are dominantly evident along the northwest and western part of the study area. Besides live and visit functions, numerous work functions are apparent throughout the site, particularly along the secondary and tertiary roads. These Work functions are most evident along the northern and north-western parts of the study area.





**Figure 4.6: Horizontal Mix in the Study Area.**



A. Horizontal Work-Visit, Live-Work-Visit Mixes along Primary Road



B. Horizontal Work-Visit Mixes along Primary Road



C. Horizontal Work-Visit Mixes along Secondary Road



D. Horizontal Work-Visit Mixes along Secondary Road



E. Horizontal Live-Visit Mixes along Secondary and Tertiary Road

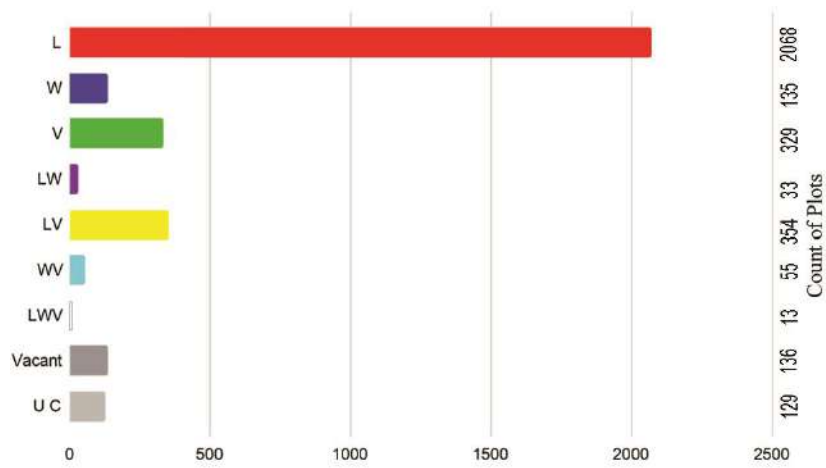


F. Horizontal Live-Visit Mixes along Tertiary Road

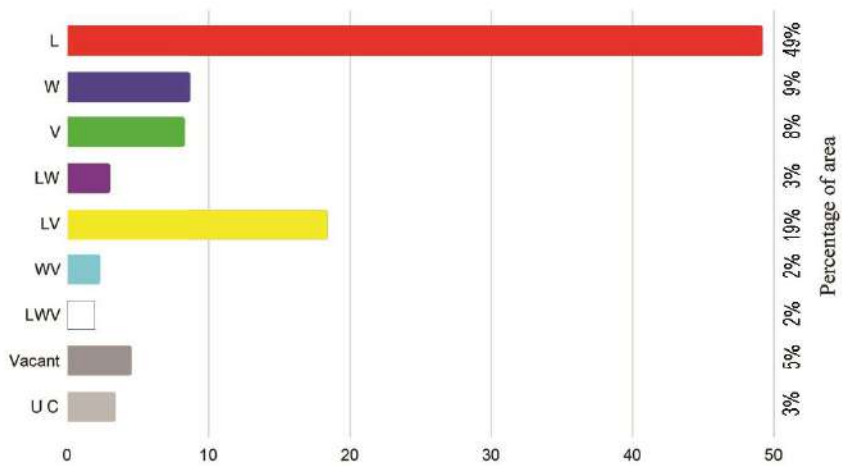
Figure 4.7: Diverse Horizontal Mix Along Different Hierarchical Roads.

Table 4.2: Horizontal Mix in the Study Area.

Horizontal Mix	Functions	No of plot	Calculated Area	Percentage (%)
	Live	2068	632654	49
	Work	135	111910	9
	Visit	329	99674	8
	Live-Work	33	38402	3
	Live-Visit	354	237135	19
	Work-Visit	55	30422	2
	Live-Work-Visit	13	25511	2
	Vacant	136	59985	5
	Under Construction	129	43934	3
<b>Total</b>	<b>3252</b>	<b>1279627</b>	<b>100</b>	



(A)



(B)

Figure 4.8: Bar Chart Showing the Percentages of Horizontal Mix in the Study Area.

A. According to the Number of Plots per Function/ mixes.

B. According to the Percentage of Area per Function/ mixes.

Street trading is an inseparable part of mixed-use at ground level. The pattern of street trading has been elaborated with the road network in section 4.4.1 to understand their interconnections.

### **4.3.3 Vertical Extension of Non-Residential Functions**

Figure 4.9 illustrates the vertical extension of non-residential functions and figure 4.11 illustrates a bar chart showing the percentage of the vertical extension of non-residential functions in the study area according to the number of individual buildings. The map (Figure 4.8) shows that most of the mixed-use functions have non-residential uses confined to the ground floor and these types of buildings are evident throughout the study area, particularly along the secondary and tertiary roads. Non-residential functions on the multiple floors of the building are evident along the primary roads (Outer Circular Road, Moghbazar Road and New Eskaton Road) and around the principal nodes. Non-residential functions on the multiple floors are also found along the secondary and tertiary roads, particularly on the northern, north-western and south-eastern sides of the study area. In this study area, non-residential functions are organized up to the sixteenth floor of the building.

Typically, non-residential functions like shops develop on the ground floor. Other visit functions like, shopping malls, convention centers, etc. extend to the upper floors (more than 4th floor) in the study area. Besides, work functions like, educational institutes and offices extend to more than fourth floor of the building.

## **4.4 Mixed-use and Morphology**

This section describes the working process of mixed functions in the study area in connection with the associated morphological elements - roads, plots, and building densities.

### **4.4.1 Road Network and Accessibility**

Figures 4.12 and 4.13 show the road layout of the study area where Figure 4.12 demonstrates the hierarchical layout of roads and streets of varying widths and Figure 4.13 categorizes the roads based on vehicular and pedestrian accessibility. The road

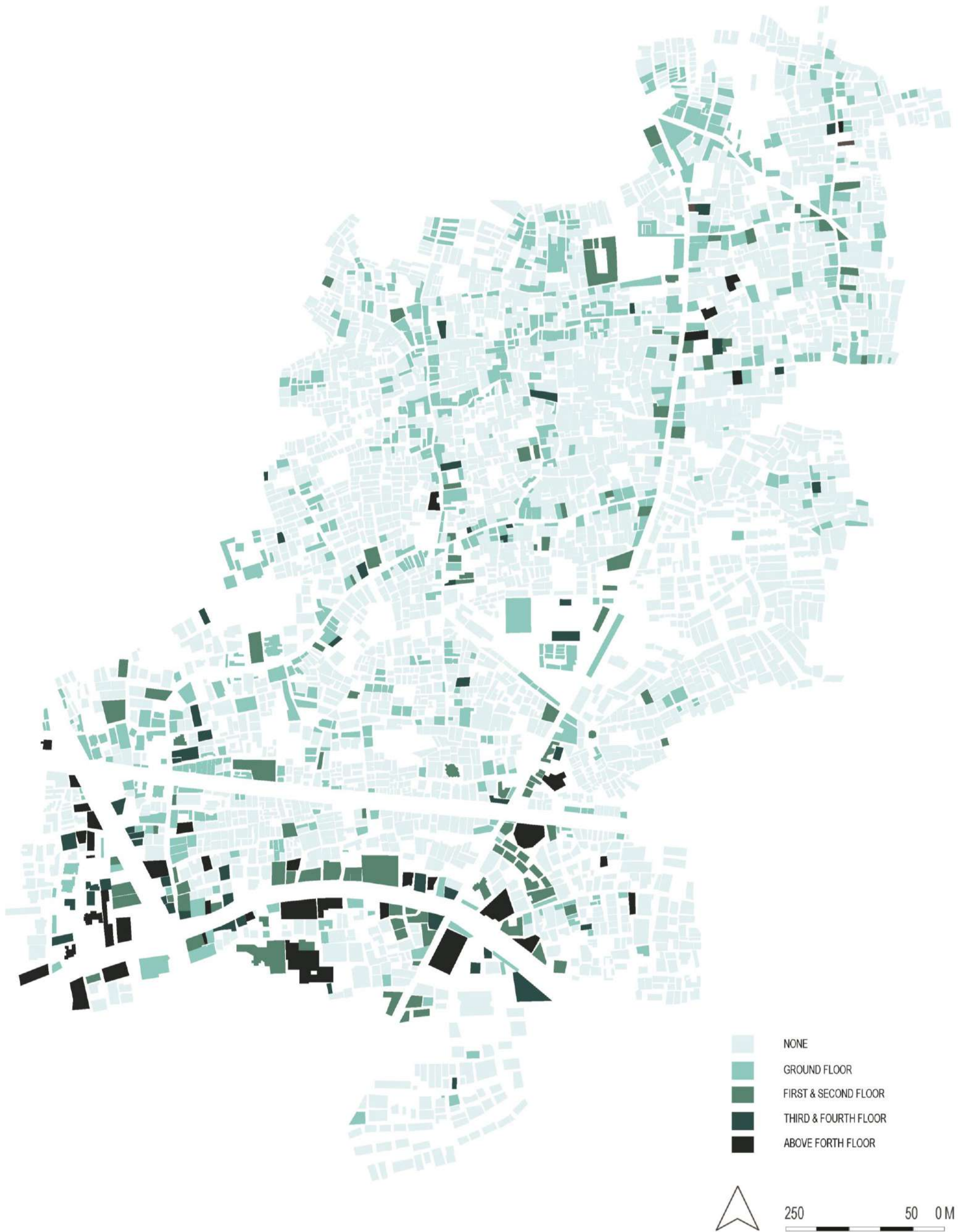


Figure 4.9: Vertical Extension of Non-Residential Functions.



A. Vertical Extension of Non-Residential Functions Till multiple Floors along Secondary Road



B. Vertical Extension of Non-Residential Functions till Second to fourth Floors along Secondary Road



C. Vertical Extension of Non-Residential Functions in More than 4th Floors along Primary Road



D. Vertical Extension of Non-Residential Functions in More than 4th Floors along Primary Road

Figure 4.10: Vertical Extension of Non-Residential Functions at different Floors along Different Hierarchical Roads.

Table 4.3: Vertical Extension of the Non-Residential Functions in the Study Area.

Vertical Extension of the Non-Residential Functions	No of Floors	No of buildings	Percentage (%)
	None	3303	77
	Ground	774	18
	1-2 Floor	123	3
	3-4 Floor	59	1
	4+	52	1
	<b>Total</b>	<b>4311</b>	<b>100</b>

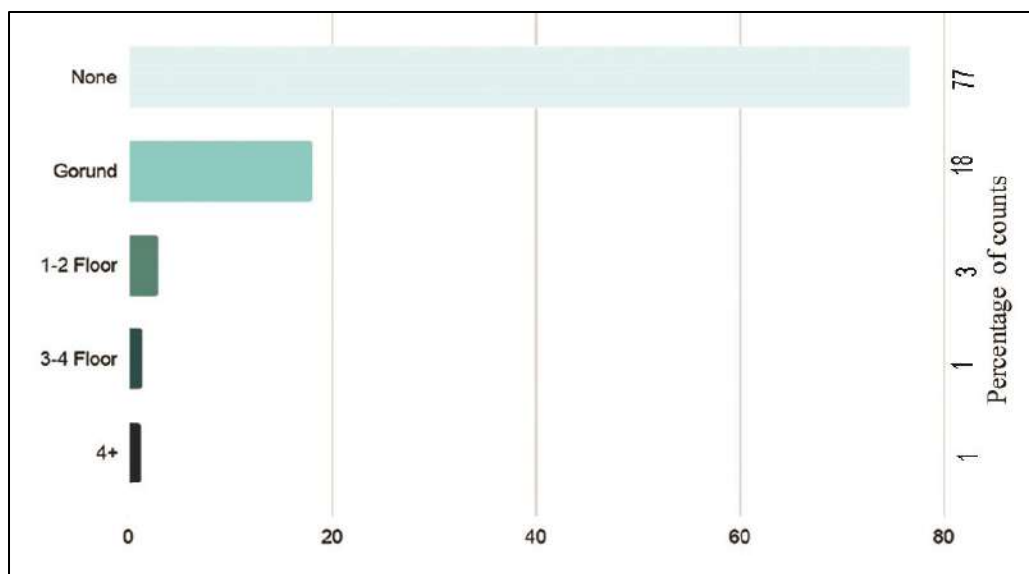


Figure 4.11: Bar Chart Showing the Percentage of Vertical Extension of Non-residential Functions in the Study Area According to the Number of Individual Buildings.

network of the study area (Figure 4.12 and Figure 4.14) can be grouped into four categories. The first in the hierarchy are the primary roads (Outer Circular Road, Moghbazar Road and New Eskaton Road). The width of these roads ranges between 20 to 27 meters. These roads are accessed by cars, other motorized and non-motorized vehicles. These roads have sidewalks for pedestrians. Next in the hierarchy are secondary roads. Here, those roads are categorized as secondary roads (Old Elephant Road, Nayatola road and Modhubagh road) which are long and branched from the primary roads. The width of these roads range between 8 to 10 meters. These roads are accessed by cars, other motorized, and non-motorized vehicles and have separate pedestrian

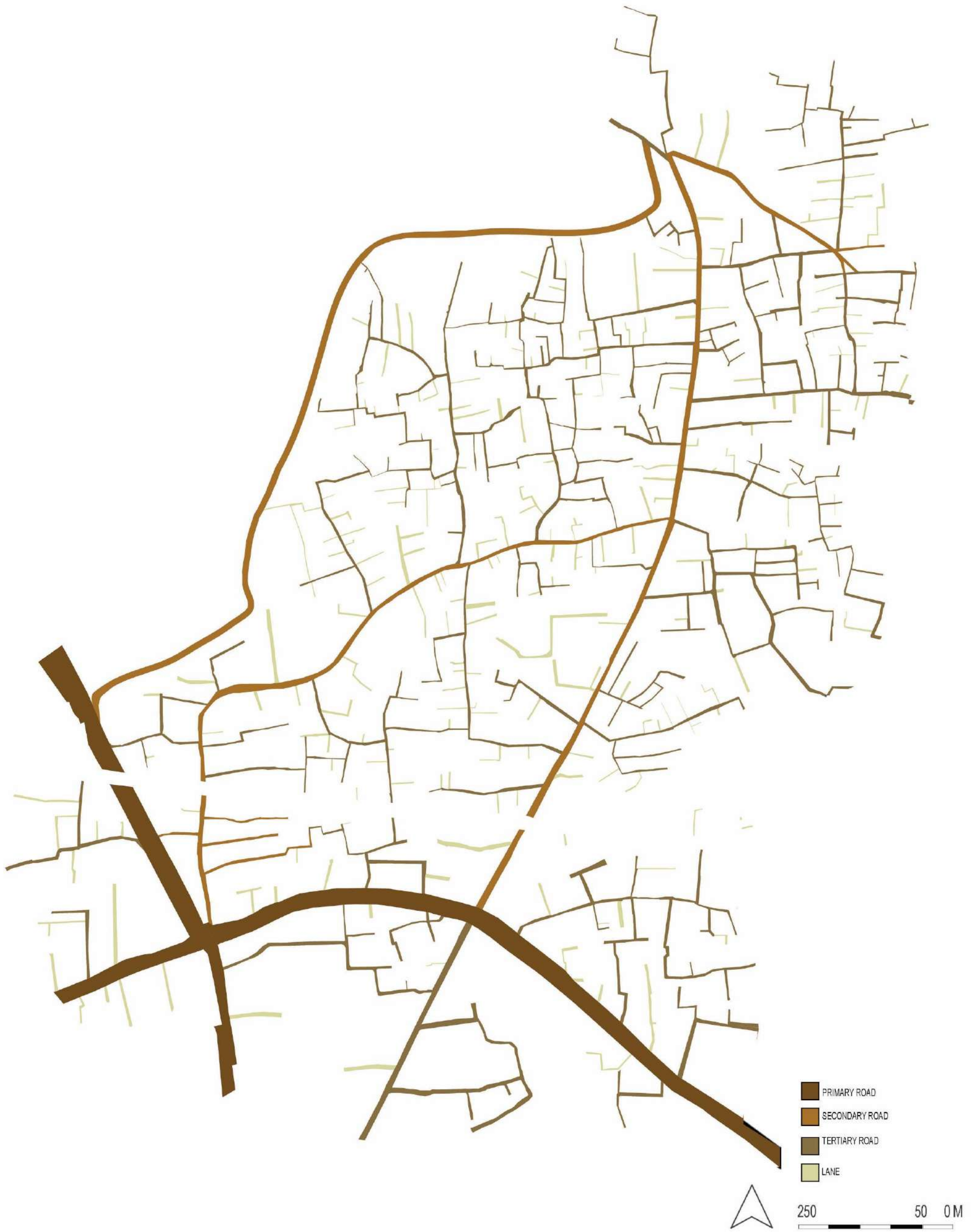


Figure 4.12: Hierarchical Road Layout.



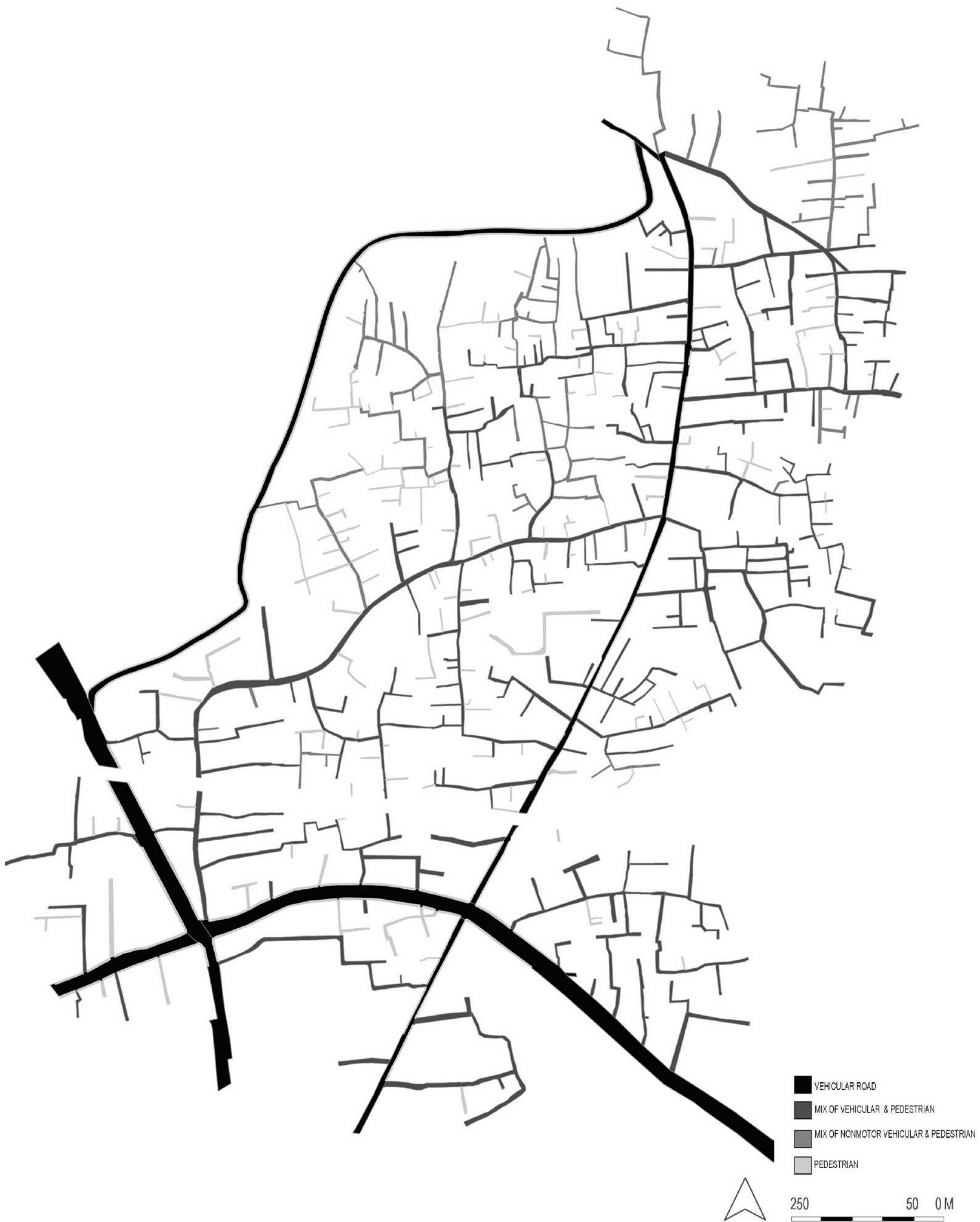


Figure 4.13: Road Network.

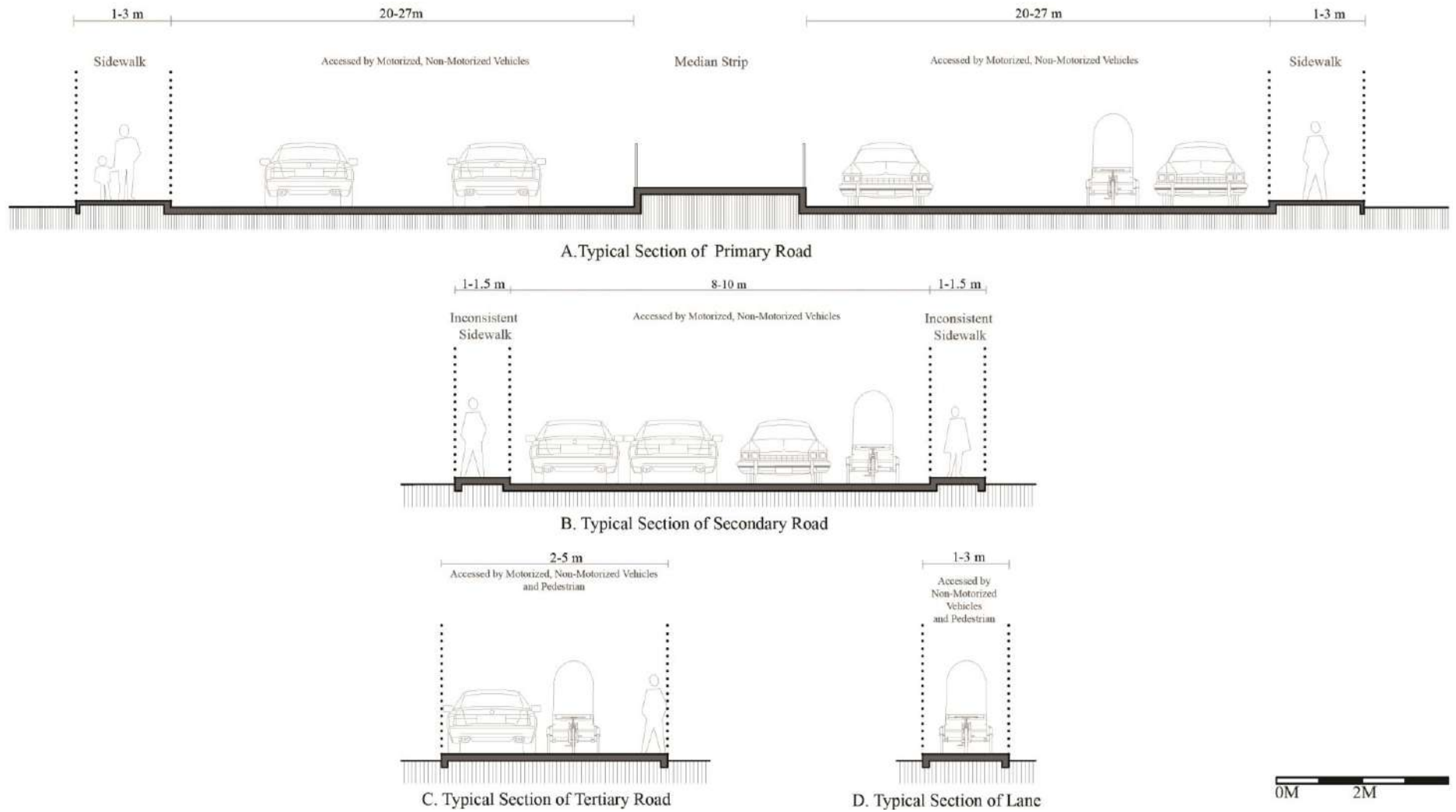


Figure 4.14: Typical Sections of Different Hierarchical Roads.



A. Primary Road (Outer-Circular Road)



B. Secondary Road (Old Elephant Road)



C. Tertiary Road



D. Lane

Figure 4.15: Different Hierarchical Roads.

Table 4.4: Road Network of the Study Area

Type of Hierarchical Road	Road Names	Width (m)	Mode of Movement			Separate Pedestrian Walkway
			Motorized Vehicles	Non-Motorized Vehicles	Pedestrian	
Primary Roads	Outer Circular Road	20-27	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Yes
	Moghbazar Road					
	New Eskaton Road					
Secondary Roads	Old Elephant Road	8-10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Inconsistent
	Nayatola Road					
	Modhubagh					
Tertiary Roads		2-5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No
Lane		1-3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No

sidewalks inconsistently. Third, in the hierarchy, are tertiary roads. Here, tertiary roads mean those roads which are branched from secondary roads and are comparatively narrow. The width of these roads ranges between 2 to 5 meters. These roads are mostly accessed by motorized, non-motorized vehicles and pedestrians. Last, in the hierarchy are narrow lanes and dead-ends which are only accessed by pedestrians. The width of these lanes ranges between 1 to 3 meters. The primary and secondary roads of the study area divide the whole area into large blocks.

This study also analyzes the accessibility of the road network through the syntactic analysis of the axial map. Figure 4.16 maps the accessibility of the road network. Two axial analyses had been performed where figure 4.16 (A) shows the analysis of integration without the rail line and figure 4.16 (B) shows the analysis with the rail line. According to the theory of space syntax, higher values of the axial lines indicate higher integration in the map. In figure 4.16 (A), the Old Elephant Road (secondary road) is the major integrated axis that runs through the spatial center of the area. Here, the absence of the railway line makes the integration stronger in the northern part along Old Elephant Road and Mirertek Road. The connectivity is relatively weak in the southern part of the area than in the northern part. In figure 4.16 (A), the integration of the primary roads and important secondary roads like Outer Circular Road, Moghbazar Road, Nayatola Road, Old Elephant Road, and Modhubagh Road is higher than the average integration level (1.28614) which means these roads have better accessibility in the study area.



(A)



(B)

Figure 4.16: Accessibility Maps. Integration (HH), R=4 (A) without Rail line, (B) with Railline.

From Map 4.16 (B), two major axes/highest integrated roads can be identified from the local integration analysis. One is the inter-city railway line, another is the Old Elephant Road. These two axes intersect near the Beapri Goli. Here, the railway line integrates the southern part of the Old Elephant Road with the Outer Circular Road. As the spatial influence of the railway line does not seem to have a strong impact on the overall configuration. In both maps (Figure 4.16 A and B), the portion of Old Elephant Road is more integrated with the northern part of the area near Modhubagh Road where the number of connecting streets is relatively high. An important road - Nayatola Road -

Table 4.5: Integration [HH] R4 values of Primary, Secondary and a few Significant Tertiary Roads (Axial lines) in the Study Area (with the rail line).

SL No.	Road name	Axial line Reference	Integration [HH] R4	Average Integration [HH] R4 of the road	Average Integration [HH] R4 of Moghbazar (with rail line)
1	New Eskaton road	559	2.134976	2.152352	1.28614
		515	2.169728		
2	Outer Circular Road	559	2.134976	2.21072575	1.28614
		515	2.169728		
		420	2.244035		
		234	2.294164		
3	Moghbazar Road	574	2.043623	2.185539	1.28614
		572	2.327455		
4	Old Elephant Road	353	2.584893	2.422472833	1.28614
		237	2.419958		
		209	2.553466		
		219	2.587512		
		7	2.440574		
		201	1.948434		
5	Nayatola Road	574	2.043623	1.816873154	1.28614
		586	2.292384		
		575	1.838085		
		558	1.690429		
		538	1.552216		
		504	1.698876		
		487	1.665197		
		438	1.483129		
		423	1.704322		
		380	1.852177		
		336	1.768685		
		282	1.921006		
		242	2.109222		
6	Modhubagh Road	178	1.61593	1.706193	1.28614
		144	1.551727		
		105	1.776806		
		15	1.880309		
7	Rail line	155	2.679457	2.679457	1.28614

Table 4.6: Integration [HH] R4 values of different Primary, Secondary and a Few Significant Tertiary Roads (Axial lines) in the Study Area (without the rail line).

SL No.	Road name	Axial line Reference	Integration [HH] R4	Average Integration [HH] R4 of the road	Average Integration [HH] R4 of Moghbazar (with rail line)
1	New Eskaton road	514	2.158828	2.137444	1.24572
		558	2.11606		
2	Outer Circular Road	514	2.158828	2.18095225	1.24572
		418	2.204748		
		221	2.244173		
		558	2.11606		
3	Moghbazar Road	571	1.969631	1.998952	1.24572
		573	2.028273		
4	Old Elephant Road	327	2.342659	2.3991565	1.24572
		224	2.415715		
		202	2.593888		
		207	2.632373		
		195	2.453579		
		194	1.956725		
5	Nayatola Road	573	2.028273	1.741515308	1.24572
		585	2.000114		
		574	1.684103		
		557	1.535519		
		537	1.287434		
		503	1.616225		
		485	1.648037		
		436	1.48068		
		421	1.707096		
		354	1.852177		
		309	1.768685		
		263	1.921114		
		228	2.110242		
6	Modhubagh	171	1.624907	1.70870325	1.24572

appears relatively distinct in both the maps which connect Old Elephant Road with Moghbazar bus stop. The spectrum of the spatial grid around the railway line and some other connecting roads in the northern part, i.e., Nayatola Road, remained almost unchanged in both maps.

Accessibility has a strong connection with mixed-use functions. A comparison of vertical mix with accessibility shows that better accessible roads characterize more mix of uses. For example, visit functions, work-visit and live-work-visit mixes need more traffic for their business. Hence, these functions are more evident along the primary roads (Outer Circular Road, Moghbazar Road) and principal nodes that have better connections with surroundings and good accessibility. On the other hand, the dominant

mixes of the area- live-visit mixes, are more prominent along the important secondary roads like Old Elephant Road and Nayatola Road which are well connected with the primary roads. This study has also found connections between mixed functions and access modes. Roads accessed by motorized, non-motorized vehicles and pedestrians simultaneously develop more work-visit and live-work-visit mixes. On the other hand, roads that are only accessed by non-motorized vehicles and pedestrians mostly develop live functions.

Figure 4.17 maps the street traders in the study area. Here, the location of street traders is juxtaposed with the vehicular and pedestrian access road network map (Figure 4.13). The circles shown here as locations of vendors have been exaggerated a bit for better visibility. A high association between road network and street traders is evident in the study area. The map depicts a higher concentration of street traders along the rail line, primary roads (Outer Circular Road) and secondary roads (Nayatola Road and Old Elephant Road) that are well connected and accessible from the main roads. Some street traders are also seen on a few tertiary roads specifically along the northern, north-western and southern sides of the area. In the study area, three types of street traders- fixed, semi-fixed and mobile - are noticeable. They sell both food (fruits, vegetables, fish, meat, snacks, etc.) and non-food goods (clothes, utensils, lights, toys, accessories, etc.). Fixed vendors are those who have fixed locations for their regular vending on sidewalks or in any other public space. Fixed street traders generally choose their location in front of mixed-use buildings close to the work, visit functions and work-visit related mixes. They seem to act more like permanent shops. Semifixed vendors are those who vend with a moving cart and at times settle at specific locations. The semi-fixed vendors are more likely to develop around live functions and live-visit mixes. Lastly, mobile vendors are those who vend around walking or cycling with their goods or services with a convenient carrying mode. Mobile vendors are widespread throughout the site even in the lanes with minimum accessibility. These street traders are more prevalent near the visit, work functions and live-visit mixes. Some visit functions shelter the street traders by partially sacrificing the shop frontage/interface in exchange for wages. These street traders spill from the visit functions of the pedestrian spaces and hinder the movement flow. However, the intensification of street traders



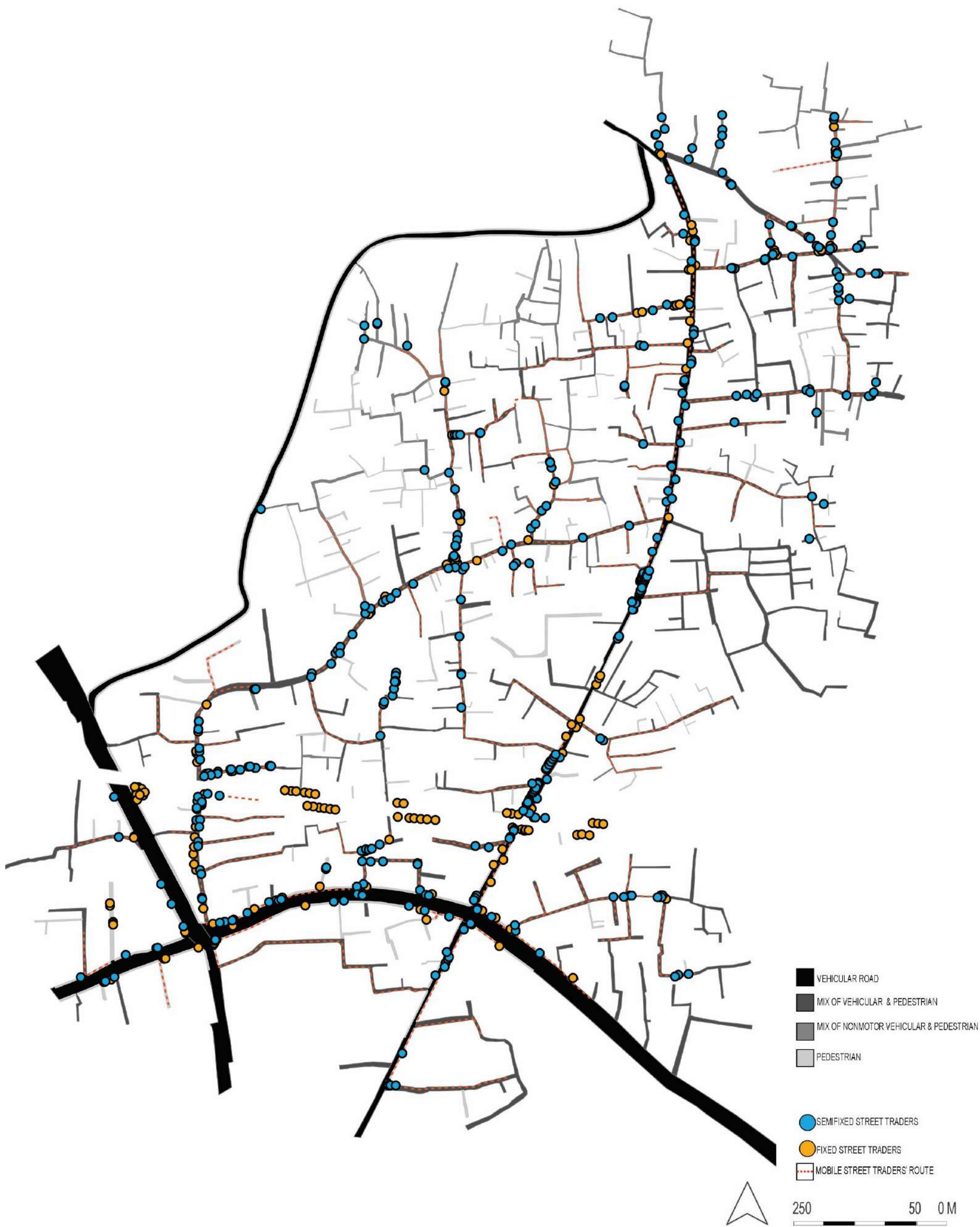


Figure 4.17: Location of Street Traders.



A. Fixed Street Traders clustering on the Pedestrian Space



B. Fixed Street Trader long Primary Road



C. Fixed Street, Semifixed and Mobile Trader on both side of the Rail Line



D. Semi-Fixed Street Trader on Secondary Road



E. Mobile Street Trader on Pedestrian along Primary Road



F. Mobile Street Trader on Tertiary Road



G. Mobile Street Trader in Secondary Road

Figure 4.18: Fixed, Semi-fixed and Mobile Street Traders at Different Public Spaces.

makes the public spaces active by attracting visitors and creating vibrant spaces with social interactions.

#### **4.4.2 Plot**

Figure 4.19 maps the current pattern of plots in the study area and figure 4.20 shows bar chart showing the percentage of plot size in the study area according to the number of plots. The map (figure 4.19) demonstrates that this area has a combination of plots with various geographical shapes- irregular, quadrilaterals and polygons. The plot sizes differ to a great degree between 23 sqm (smallest) to 103099 sqm (largest). The most of the plots are small (0-250 sqm) and they are distributed throughout the site. These small plots are more common in the northern part than in the southern part. Large plots (above 1000 sqm) are apparent along the primary roads and a few secondary roads (Outer Circular Road, Old Elephant Road, Hatirjheel Link Road). A number of plots (3%) in the study area are found to be under construction. Many large plots (above 1000 sqm) are detected vacant within the site in the present condition. This phenomenon seems to indicate a future subdivision of the plots according to the usual pattern in the study area.

At present, an association of plot sizes, types of functions and vertical extension of non-residential functions is evident in the study area. The majority of the large plots along the primary road (Outer Circular Road) are noticeably characterized by multi-storied work functions, work-visit and live-work-visit mixes. The non-residential functions extend to higher floors (more than 4 stories) in the bigger size plots. Mid-size plots (501-750sqm) mostly have live, work functions and live-visit mixes. Small plots mostly characterize live functions in the residential dominant part of the study area.

#### **4.4.3 Building Density**

This section discusses densities regarding building height, building coverage ratios (BCR) and floor area ratio (FAR). The maps of building height, BCR and FAR have been under critical analysis with the functional mix maps in order to understand their working process in connection with these aspects.

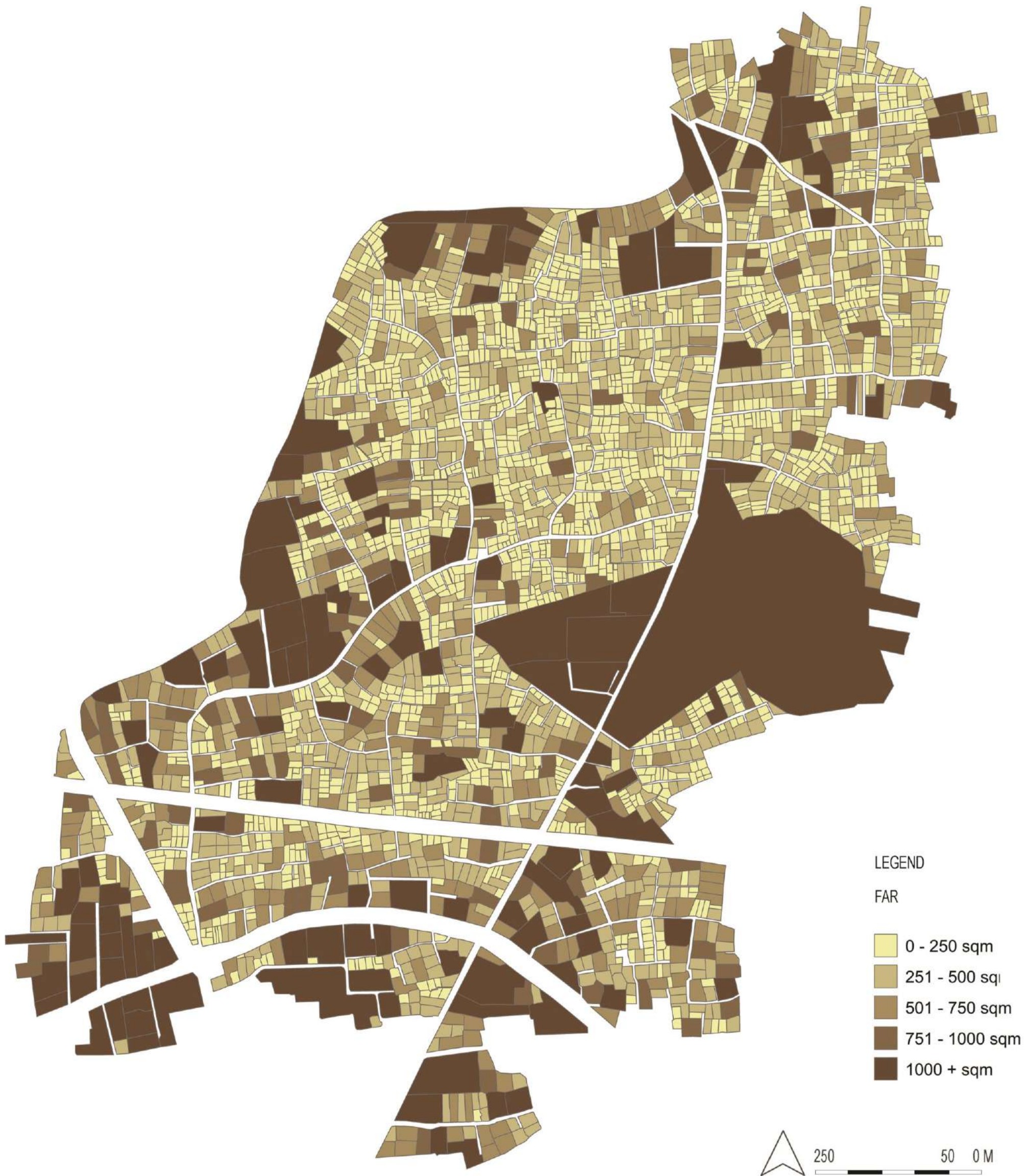


Figure 4.19: Plot Size.

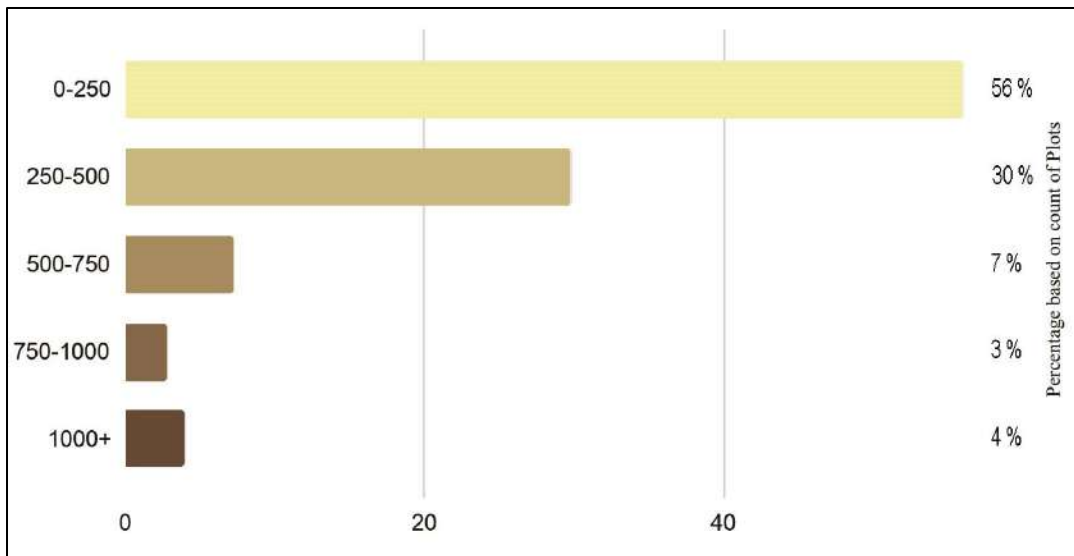


Figure 4.20: Bar Chart Showing the Percentage of Plot Size in the Study Area According to the Number of Plots.

#### 4.4.3.1 Building Height

Figure 4.21 illustrates the building height of the study area and figure 4.22 shows bar chart showing the percentage of building height in the study area according to the number of plots. The map (Figure-4.21) demonstrates that the building heights range between 1 - 17 stories. Buildings between 1-6 stories are prevalent within the study area and those are mostly evident along the secondary and tertiary roads. Higher stored (above 10 stories) buildings are scattered all over the site. However, those are dominant along the primary roads (Outer Circular Road, Shaheed Tajuddin Avenue) and major nodes.

According to Building Construction Rules 2008, the permissible building heights of the area should be within 5-13 stories, considering the plot size and road width ranging from 23-103099 sqm and 1-27 meters. DAP 2022-2035 has also referred Building Construction Rules 2008 for calculating the building height for Dhaka. However, most of the building height in the area depict deviations (below the standard range specified in the Building Construction Rules, 2008 for this area) from the regulation.

The mix of functions occurs along both primary, secondary and tertiary roads of the study area irrespective of all heights. Yet, an association between building height, types of functions, and the vertical extension of non-residential uses is evident in the study area.

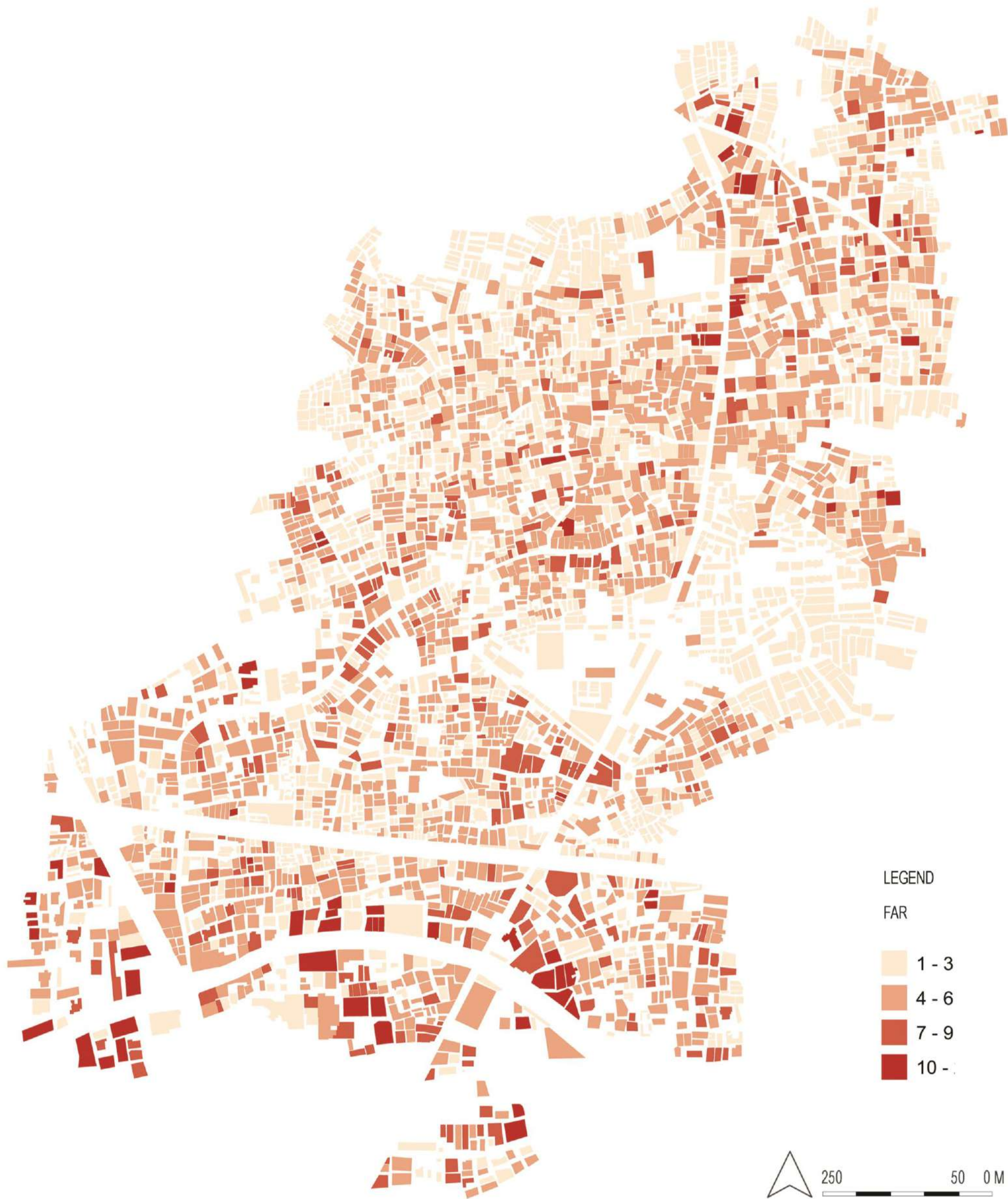


Figure 4.21: Building Height.

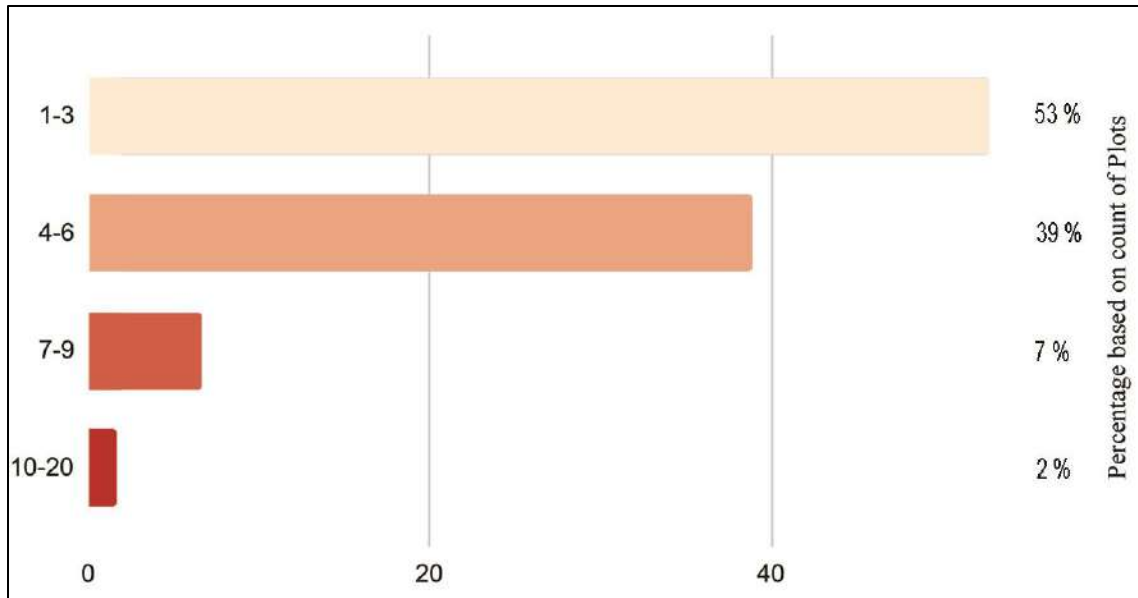


Figure 4.22: Bar Chart Showing the Percentage of Building Height in the Study Area According to the Number of Individual Building.

Along the primary road and major node, building heights ranging from 4-6 and 7-9 stories have work, visit functions, work-visit and live-work-visit mixes. Higher-storied buildings mostly (10+ stories) hold live-visit mixes. Along the secondary and tertiary roads, buildings of 4-6 stories have live-visit mixes and buildings of 7-9 stories, generally, have live functions. 1-3 storied buildings mostly hold live-work mixes. The vertical extension of non-residential uses is mostly evident in buildings with more heights ranging from 7- 10 stories. There are buildings within the study area that contain non-residential functions till the top 17th floor of the building.

#### 4.4.3.2 Building Coverage Ratio (BCR)

Figure 4.23 illustrates the building coverage ratio within the study area and figure 4.24 shows bar chart showing the percentage of building coverage ratio in the study area according to the number of plots. The map (Figure 4.23) demonstrates that the majority of the plots have high coverage (60-100%). These higher coverage plots are dominant along the primary roads and a few secondary roads (Outer Circular Road, Old Elephant Road and Nayatola Road). The lower coverage plots (0-40%) are mostly located on the west side of the site. In cases of the governed quarters, BCR is mid-ranged (41-60%). But the gated community depicts the presence of higher BCR (61-100%) similar to the

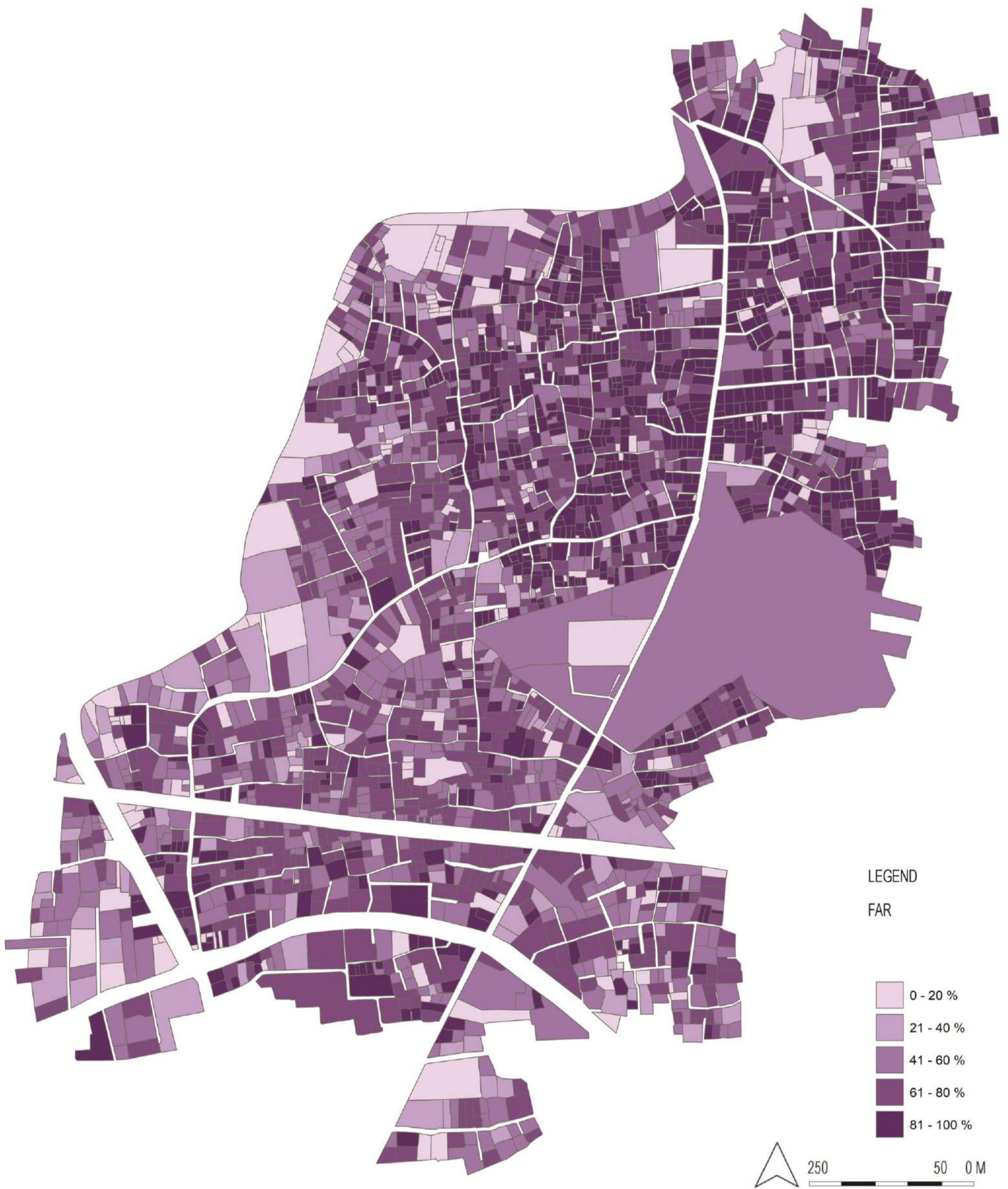


Figure 4.23: Building Coverage Ratio (BCR).



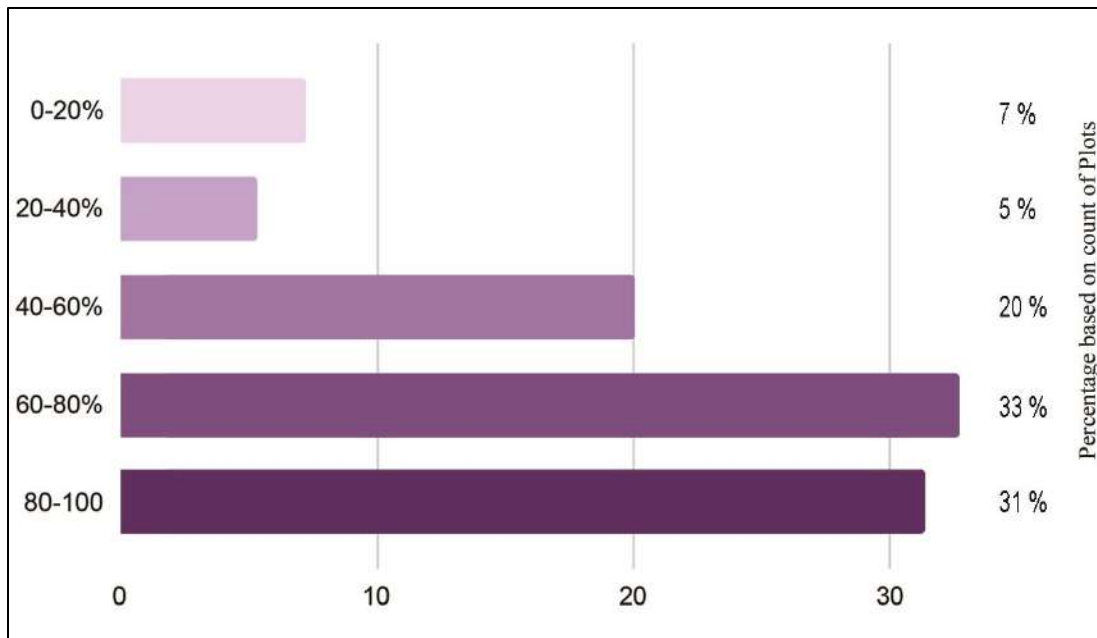


Figure 4.24: Bar Chart Showing the Percentage of Building Coverage Ratio in the Study Area According to the Number of Plots.

other residential developments. The highest plot coverage of the area is 98.18% and the lowest is 7.52%.

According to the building construction rules 2008, BCR ought to be 50% -67.5%. DAP 2022-2035 has also referred the Building Construction Rules 2008 for calculating the building coverage ratio (BCR) for Dhaka. However, many of the constructions deviate from these rules. Most of the buildings have higher coverage (60%-100%) than the specified one for this area.

In the study area, an affiliation between building coverage ratio (BCR), types of functions, vertical extension of non-residential functions and plots is evident. The plots with higher BCR (61-100%) along the primary road contain work-visit and live-work-visit mixes. These plots are also characterized by vertical extension of nonresidential functions up to higher floors. Conversely, the plots with higher BCR (61-100%) in the secondary and tertiary roads are characterized by live, visit functions and related mixes. In the study area, the smaller plots (0-500 sqm) have high building coverage ratio ranging

from 61-100%. On the other hand, big plots (751-100 sqm) along the primary road (Outer Circular Road) have high coverage of 61-100%.

#### **4.4.3.3 Floor Area Ratio (FAR)**

Figure 4.25 illustrates the Floor Area Ratio (FAR) of the study area and figure 4.26 shows bar chart showing the proportion of floor area ratio in the study area according to count of plots. The map (figure-4.25) demonstrates that the majority of the plots have low FAR (0-6) and these are distributed all over the site. Among the plots with high FAR, the majority are located along the primary road (Outer Circular Road). A few plots with higher FAR (8.1 -10) is evident along a secondary road (Old Elephant Road). The highest FAR of the area is 17.6 and the lowest is 0.1.

DAP 2022-2035 presents two types of FAR rules, area-wise FAR and plot-wise FAR. Area-wise FAR of Moghbazar ranges from 1.8-2.2 (DNCC\_ward 35-2, DNCC\_ward 36-1.8 and DSCC\_ward 19- 2.2) and plot-wise FAR ranges from 1.5-4.5. According to the Building Construction Rules, 2008, FAR for this area ought to be from 3.15-6.5. Since most of the buildings were constructed before both of the mentioned regulations, deviations regarding FAR are found in the area.

An association between FAR and types of function is evident in the study area. Along the primary road, plots with mid-FAR (4.1-6) are characterized by work, work-visit and live-work-visit mixes. On the secondary and tertiary roads, plots with FAR ranging from 4.1-8 are dominated by live and live-visit mixes.

#### **4.5 Summary**

This chapter has explored the pattern of mixed-use functions and its operation process in relation to the associated morphological elements. From its inception as a residential area, Moghbazar has emerged into a complex functional and physical form due to its spontaneous growth. Initially, the lack of community facilities influenced the development of mixed-use to cater to the demand of the area. Better accessibility, connectivity and building densities also influenced the densification of mixed functions in the area over time. Thus, the interconnections of diverse mixed functions and

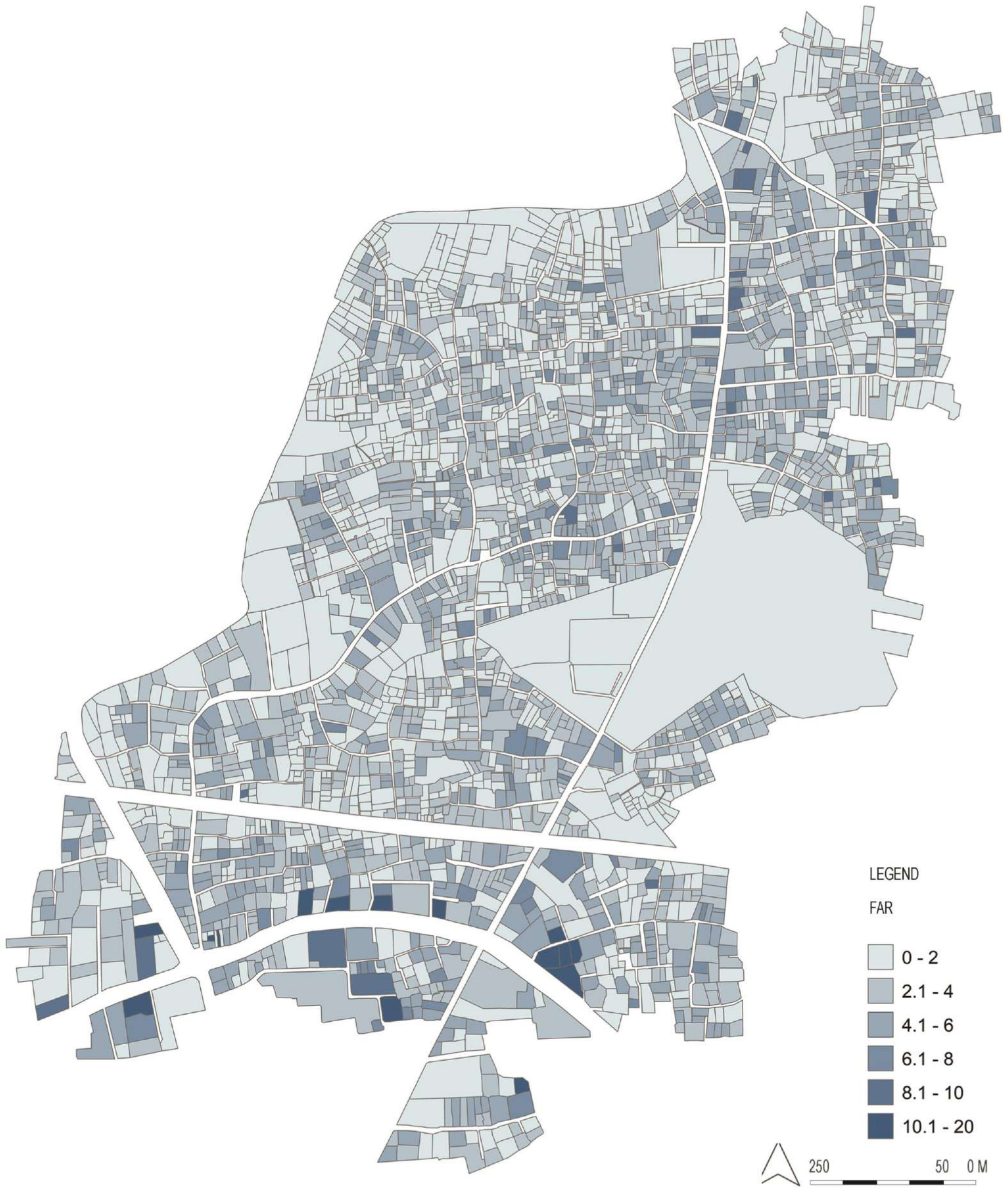


Figure 4.25: Floor Area Ratio (FAR).

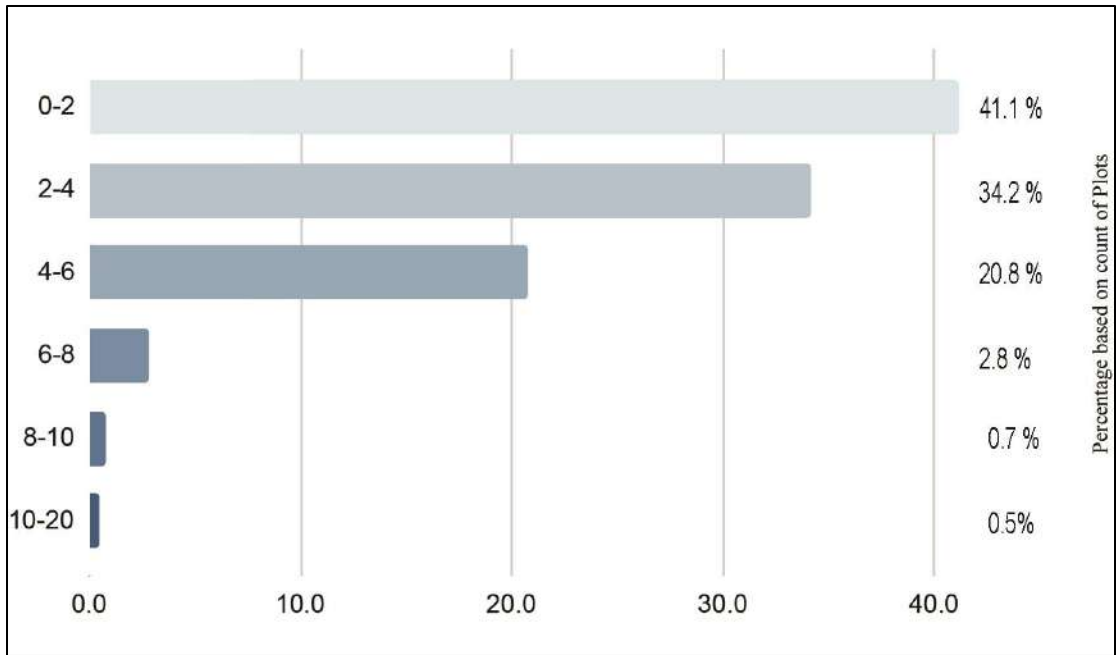


Figure 4.26: Bar Chart Showing the Percentage of Floor Area Ratio in the Study Area According to the Number of Plots.

associated morphological elements have shaped the current unplanned fabric of Moghbazar area.

## **CHAPTER 05**

### **SUMMARY OF FINDINGS AND CONCLUSION**

#### **5.1 Introduction**

This thesis takes a morphological approach to investigate the pattern of mixed functions and their working process within an unplanned area of Dhaka-Moghbazar. This chapter draws the conclusion of this thesis with an affirmation of the significant findings of the investigation toward the core questions -What is the pattern of mixed-use functions in an unplanned area of Dhaka? -What are the interrelations between these mixed functions and the morphology of the study area – buildings, plots, access networks, and densities? The significant findings have been asserted into the seven (7) sections of this chapter. The first part (section 5.2) discusses the pattern of mixed functions in the study area. The second part (section-5.3) describes the morphological attributes of the study area. The third and fourth parts (sections 5.4 and 5.5) discuss the associated morphologies of the functional mix and the interconnections between them. The Fifth part (section 5.6) points out the deviation of the Planning Scheme from the actual pattern of mix in the study area. Lastly, section 5.7 provides conclusive remarks and proposes directions for future research.

#### **5.2 Pattern of Mixed Functions in the Study Area**

The spontaneous mix of uses in the study area associated with the legal framework reflects a complex land use pattern. The morphological pattern of mixed functions in the study area has been reviewed in the following segments in different spatial levels- vertical mix (stacked), horizontal mix (side-by-side at street level), vertical extension of non-residential functions and street trading.

##### **5.2.1 Vertical mix**

- Diverse mixes comprising different combinations of functions are evident along the primary roads and a few secondary and tertiary roads. As the depth of the urban block increases, the mix of uses decreases, and live functions get prominence.

- The live uses dominate the study area-at present. Since its inception, the area was developed as a residential neighborhood. Here, live functions are mainly private residences which are mostly seen on the tertiary streets and lanes. The dominance of live functions like residential hotels and hostels is evident on the primary roads.
- In vertical mixes, the live-visit mix is the most prevalent and mostly evident along the secondary and tertiary roads. These live-visit mixes mostly contain shops and residences. These visit functions (shops) on the ground floor have developed in response to the common needs of the locality along the secondary and a few tertiary roads. But shops near the principal nodes and primary roads target the people outside the locality who come to work functions and other visit functions as consumers/ customers.
- Among the other mixes, live-work mixes are mostly seen along secondary and tertiary roads. The presence of work-visit and live-work-visit mixes is evident along the primary roads. The non-residential mixes in the study area serve a large number of people inside and outside the locality. Hence, these mixes generally develop along primary roads as they seek good accessibility for their business.
- Visit functions are significant part of mixed functions in the study area. Visit functions like, markets and bazar are evident along the primary and secondary roads. Small shops and super shops are seen along the secondary and tertiary roads.
- Work functions are prevalent throughout the site. People do not need to travel far away to avail these work functions. Work functions that offer services to a comparatively large number of people like- banks, corporate offices, and medical colleges are evident along the primary road. The work functions like schools, small enterprises, and specialized offices that offer services to a selective or comparatively less number of people tend to develop along the secondary roads. A large number of workshops are also seen specially surrounding the periphery. These workshops are mainly service functions and they don't need good accessibility for their business.

### **5.2.2 Horizontal mix**

- In terms of the horizontal mix (at the street level), the area is also dominated by residential (live) functions (49%).
- Among the mixes at the street level, the live-visit mix is dominant (49%). Live-visit mixes comprise mostly residences and shops and these mixes are prevalent throughout the study area. These shops mainly serve residential needs and usually sell household products.
- A typical pattern of horizontal mix in the study area comprises, work, visit functions and their mixes mainly prevail along the primary roads and live functions and live-visit mixes exist throughout the site, mainly along the secondary and tertiary roads. Better accessible roads tend to have more non-residential functions.

### **5.2.3 Vertical Extension of Non-Residential Functions**

- The general pattern of the vertical extension of non-residential functions shows that, along the secondary and tertiary roads, non-residential uses tend to confine to the ground floor whereas along the primary roads they extend up to multiple floors (table 5.1). Since functions along the primary roads get the most exposure, the non-residential functions there tend to extend to multiple floors.
- However, in some locations particularly on the northern, north-western and south-eastern sides of the study area, non-residential functions are found on multiple floors along the secondary and tertiary roads. For the spatial proximity of these locations to the city, these areas seem to hold non-residential functions on multiple floors.
- In the study area, ground floors are found to be mostly occupied by non-residential functions like shops, whereas shopping malls, convention centers etc. extend up to 4th floor of the building. Some work functions like educational institutes are also

found to be extended up to the 4th floor, however, office functions extend further, sometimes to the top floor of the building.

Table 5.1: Pattern of Vertical Extension of Non-residential Functions.

Vertical Extension of Non-Residential Functions	Morphological Pattern
<b>Ground Floor</b>	- Along the secondary and tertiary roads.
<b>Till 1<sup>st</sup> Floor</b>	- Along the secondary and tertiary roads.
<b>Till 2<sup>nd</sup> Floor</b>	- Along the secondary and tertiary roads.
<b>Till 3<sup>rd</sup> Floor</b>	- Along the primary roads.
<b>More than 4<sup>th</sup> Floor</b>	- Along the primary roads. - On the bigger size plots. - In the buildings with heights ranging from 7- 10 stories. - On the plots with higher BCR (61-100%).

- In most of the cases along the primary roads, non-residential functions prevail in the lower floor/s and residential function develops in the upper floors. On the contrary, some buildings along the secondary and tertiary roads are found to have residential functions on the lower floor and non-residential functions like doctor's chambers (work), small schools (work), and prayer spaces (visit) are found on the upper floors.

#### 5.2.4 Street Traders

- Table 5.2 shows that three types of street traders (i.e., fixed, semi-fixed and mobile) selling foods and non-food goods are mostly found on the streets near mixed-use buildings in the study area.
- From the distribution pattern of the street traders, it has been observed that their locational preferences are highly influenced by the road network. The street traders in the study area are found to be concentrated along the primary roads, secondary roads and the rail line. Better accessible roads welcome more fixed and semi-fixed traders with vehicles. Tertiary roads and lanes welcome more mobile street traders.
- Fixed street traders are commonly located around visit, work and work-visit mixes. Most of the semi-fixed vendors tend to develop near the live functions. Mobile



vendors, on the other hand, are found throughout the study area even along the least accessible lanes. Their locations are more common near the visit, work, and live-visit mixes (Table 5.2).

- Frontages of some visit functions i.e., shops are often rented to the street traders. Therefore, they spread from the visit functions in the buildings to the front pedestrian zones on public spaces, thus, impeding the normal movement flow.
- Street traders usually seek public spaces for their business without exchange of any wages. Since there are a good number of vacant lands (5%) and under-construction buildings (3%) in the study area at present, street traders are often found to cater around these vacant lands and under-construction buildings.

Table 5.2: Pattern of Street Traders in the Study Area.

Type of Street Trader	Total Count (approx.)	Interconnections with Road Network	Interconnections with Mixed-Functions
<b>Fixed Street Traders</b>	186	High association with the primary and secondary roads.	Develop close to buildings with work, visit functions and work-visit mixes.
<b>Semifixed Street Traders</b>	404		Develop close to live functions and live-visit mixes.
<b>Mobile Street Traders</b>	-	All hierarchical roads and lanes with minimum accessibility	Develop near the visit, work functions and live-visit mixes.

### 5.3 Morphological Attributes of the Study Area

Moghbazar is one of the indigenous neighborhoods and resembles spontaneous spatial structure in the streets, plots, and building densities.

#### Street

- The street network of the study area is categorized into four hierarchical types - primary, secondary, tertiary roads, and lanes based on the width and mode of movement.

- The primary and peripheral roads are wider and secondary and tertiary roads are winding and narrow which are also locally named.
- The wide primary and peripheral roads are more integrated/ accessible and secondary and tertiary roads show a mid-integration value (Average Integration [HH] R4 of Moghbazar with rail line: 1.28614) that reduces further with the decrease in length. This depicts that those roads having more length are better accessible and shorter length roads and dead-ends show a lower value i.e., less accessibility.
- The rail line crossing the study area leaves the area with two morphological patterns. The north part has larger urban blocks and the south part shows a contrast.
- All hierarchical roads - primary, secondary, and tertiary characterize mixed functions. However, intensity of mix reduces with the hierarchy from primary to tertiary roads.

### **Plot**

- The north part of the study area has smaller plots (0-500 sqm) and the south part accommodates the larger ones (751-1000+ sqm). It seems that the small plots occurred as a result of gradual subdivisions.
- The plot shapes are irregular. This unplanned configuration and subdivisions of plots reflect the anticipation of the private owners to develop the plots according to their own interests.

### **Densities**

#### **Height**

- The building heights range between 1 -17 stories. The north part of the study area has most of the buildings with lower floors (1-9 stories) and the buildings in the south part have comparatively higher floors (6-20 stories).
- The majority of the buildings are between 1-6 stories and those are mostly evident along the secondary and tertiary roads.

- Buildings above the 10 stories mainly prevail along the primary roads and major nodes.

#### **BCR (Building Coverage Ratio)**

- The majority of the plots have high coverage (60%-80%). These higher coverage plots are dominant along the primary roads and along a few secondary roads.
- The lower coverage plots (0-40%) are mostly located on the west part of the site.
- The highest building coverage of the area is 98.18% and the lowest is 7.52%.

#### **FAR (Floor Area Ratio)**

- The majority of the plots have low FAR (0-6) and these are distributed all over the site.
- Among the plots with high FAR, the majority are located along the primary roads. A few plots with higher FAR (8.1 -10) are evident along a secondary road.
- The highest FAR of the area is 17.6 and the lowest is 0.1.

### **5.4 Mixed Functions and Morphology**

Table 5.3 summarizes the functional and morphological characteristics of the mix of uses in the study area. This table thus also fosters the understanding regarding the associated morphological pattern of mixed-use functions. Here, the morphological characteristics are summarized in a quantitative approach with percentages, averages, and values of individual attributes. Along with the percentages and averages, table 5.3 also shows the mode (the ranges that appears the most in the data set), for all the attributes under investigation. For better understanding, the values have been coded with graduated color from low to high for all the attributes.

Both for vertical and horizontal mixes, live-visit mixes are the most prevalent in the study area. Table 5.3 shows that 56% of the plots are between 0-250 sqm which is the lowest range and the average plot size is 351 sqm which is also comparatively a lower value. This seems to be a representation of gradual plot subdivisions that characterize unplanned areas. In the study area, mixed functions are found to be developed on all sizes and shapes of plots. However dominant functions- live functions and live-visit mixes are commonly seen on small to mid-sized plots. In terms of building height, for the highest 53% of buildings, height ranges from 1-3 stories and the average height is 3.8 which also belongs to a lower height range. Since a major portion of the area was under development, the average value of building height shows a bit deviated scenario than usual. The same reason applies to FAR and in the sequence for the majority of buildings, FAR also

Table 5.3: Functional and Morphological Attributes of Mix of Uses in the Study Area.

Functional and Morphological Attributes	Mode	Percentage	Average
<b>Vertical Mixed Functions</b>	<b>Live-Visit</b>	<b>20%</b>	-
<b>Horizontal Mixed Functions</b>	<b>Live-Visit</b>	<b>19%</b>	-
<b>Street</b>	<b>Tertiary Road</b>	-	-
<b>Plot</b>	<b>0-250 sqm</b>	<b>56%</b>	<b>312 sqm</b>
<b>Building Height</b>	<b>1-3</b>	<b>53%</b>	<b>3.7</b>
<b>BCR</b>	<b>61-80%</b>	<b>33%</b>	<b>63.41%</b>
<b>FAR</b>	<b>0-2</b>	<b>41%</b>	<b>2.8</b>



remains in the lowest range (0-2) and the average value of FAR (2.2) is also closer to the lower range. In the study area, plots with low FAR mostly have live functions and plots with mid-FAR (4.1-6) are characterized by work, work-visit and live-work-visit mixes along the primary road. The plots with FAR ranging from 4.1-8 are dominated by live and live-visit mixes along secondary and tertiary roads. But the calculation of BCR depicts a different situation where the majority of the buildings (33%) belong to mid-high

range values (60-80%) and the average coverage (63%) also follows this. In the study area, plots with high coverage have live-visit, work-visit and live-work-visit mixes.

### **5.5 Interconnections of Mixed Functions and Associated Morphologies**

The interconnection of mixed-use function and associated morphologies is evident in the study area in various spatial levels.

- An association between mixed functions with street network is seen in the study area. The prominent live-visit mixes demonstrate their presence along the well-accessible secondary and tertiary roads. The work-visit mixes seek more accessibility and thus, cater along the (wider) primary roads. With the decrease in accessibility, mix of functions decrease significantly in the inner urban areas.
- Also, the mixed functions have non-residential uses confined to the ground floor throughout the study area, particularly along the secondary and tertiary roads. Non-residential functions on the multiple floors of the building are evident along the primary roads and around the principal nodes. At present, non-residential functions are organized up to the sixteenth floor in the building.
- An association of plots with mixed functions shows that large plots hold more mix of uses than small plots. Live-visit mixes are evident, particularly in the small-mid sized plots. In contrast, large plots hold work-visit mixes. However, there are a few large plots in the study area which hold live-visit and live-work mixes.
- The study area also demonstrates an interconnection between mixed functions, streets and densities. The mix of functions occurs more in the higher mid and high FAR plots. Mixes mostly intensify in the plots with higher coverage and buildings with more floors hold diverse mixes. These high-density developments are evident along the primary roads and occasionally along the secondary and tertiary roads.
- Street traders (Fixed) densify on the rail line, primary roads, and secondary roads that are well connected and accessible from the main roads. Street traders are also seen on

a few tertiary roads specifically along the northern, north-western, and southern sides of the area.

Table 5.4: Table showing the Association of the Different Functions and Their Mixes with Associated Morphologies.

Mixed Functions	Morphological Pattern
<b>Live</b>	<ul style="list-style-type: none"> <li>- Along tertiary roads and lanes.</li> <li>- Along roads with lower integration value (<math>\leq 1.70</math>).</li> <li>- Develops on mid-sized plot (501-750sqm) and small plots (250-500 sqm and 0-250 sqm).</li> <li>- On plots with BCR (61-100%) on the secondary and tertiary roads.</li> <li>- On plots with FAR ranging from 4.1-8.</li> </ul>
<b>Work</b>	<ul style="list-style-type: none"> <li>- Along secondary roads.</li> <li>- Along roads with mid-integration value (<math>\geq 1.81</math>).</li> <li>- Develops on mid-sized plot (501-750sqm).</li> <li>- In buildings of 4-6 and 7-9 stories.</li> <li>- On plots with mid FAR (4.1-6).</li> </ul>
<b>Visit</b>	<ul style="list-style-type: none"> <li>- Along primary, secondary and tertiary roads.</li> <li>- Along roads with high integration value (<math>\leq 2.21</math>).</li> <li>- In buildings of 4-6 and 7-9 stories.</li> <li>- On plots with higher BCR (61-100%) on the secondary and tertiary roads.</li> </ul>
<b>Live-Visit</b>	<ul style="list-style-type: none"> <li>- Along secondary and tertiary roads (with mid to low integration value).</li> <li>- Develops on mid-sized plot (501-750sqm).</li> <li>- Along primary road in 10+ storied buildings.</li> <li>- Along secondary and tertiary roads in 4-6 storied buildings.</li> <li>- On plots with high BCR (61-100%) on the secondary and tertiary roads.</li> <li>- On plots with mid FAR ranging from 4.1-8.</li> </ul>
<b>Live-Work</b>	<ul style="list-style-type: none"> <li>- Along secondary and tertiary roads (with high to mid integration value).</li> <li>- In 1-3 storied buildings.</li> </ul>
<b>Work-Visit</b>	<ul style="list-style-type: none"> <li>- Along primary Roads (with high integration value).</li> <li>- Situates on large plots (750-1000 sqm &amp; 1000+ sqm).</li> <li>- Along primary roads in 4-6 and 7-9 storied buildings.</li> <li>- In 4-6 and 7-9 storied buildings.</li> <li>- On plots with higher BCR (61-100%) along the primary road.</li> <li>- On plots with mid-FAR (4.1-6).</li> </ul>
<b>Live-Work-Visit</b>	<ul style="list-style-type: none"> <li>- Along primary roads (with high integration value).</li> <li>- Situates on large Plots (750-1000 sqm &amp; 1000+ sqm).</li> <li>- In 4-6 and 7-9 storied buildings.</li> <li>- On plots with higher BCR (61-100%) along the primary road</li> <li>- On plots with mid-FAR (4.1-6)</li> </ul>

Since it's a residential dominant area, a few incompatible mixes between urban functions occur but, in most cases, the synergy of diverse functions and their interconnections with associated morphologies benefits the areas for achieving vitality, and utilization of resources.

## **5.6 Deviation with the Planning Scheme**

It has been mentioned earlier in Chapter 01 that, the Planning Scheme directs that the entire Dhaka will be developed as mixed functions (DAP, 2022). The field investigation and analysis find that particularly in unplanned areas, mixed functions do not develop irrespective of the surrounding morphological elements but rather are highly interconnected with associated urban morphology. The more accessible roads sustain more mix of uses. The space syntax study of the street network of the study area demonstrates any of the four categories (primary, secondary and tertiary roads, and lanes) of roads/streets having integration value more than average attract more mix of uses. Hence, the statement of the Planning Scheme regarding the whole Dhaka to be developed as mixed functions deviates from the actual scenario of the working process of mixed functions. Therefore, regarding the future development of mixed functions of Dhaka, the Planning Scheme should be responsive to the specific attributes of the morphology of unplanned areas.

## **5.7 Conclusion and Scope for Future Research**

This thesis investigates the pattern and working process of mixed functions in an unplanned area of Dhaka. Here, empirical data has been collected and mapped to get an understanding of the operation of mix of uses. This section concludes the thesis with remarks and shows the scope for further research.

From the traditional ‘shophouses’ within the fabric of old Dhaka to the current use trend, Dhaka’s land use has always been mixed. Mixed functions mainly prevail in the unplanned settlements of Dhaka. Currently, the intensification of spontaneous mixed functions, their nature of functional complexity and mixing within the unplanned morphology have created a combined land-use pattern. The Government Planning Scheme has also acknowledged spontaneous mix of uses as the norm of the city and has suggested mixed functions for its future development. The schemes have also mentioned the threat due to the prevailing situation of unregulated mixes and promoted ‘guided mixed-use’ for future Dhaka. With an intention to reveal such a complex pattern of mixed functions, this study has employed an in-depth and up-to-date study of Moghbazar, as a representative of unplanned areas to comprehend the current

pattern and process of spontaneous mixed-use functions in connection with the associated morphologies.

This research depicts that, mixed-functions have developed following the common need of the people and this has been the norm of land-use changes in unplanned settlements in Dhaka. Literature asserts this norm prevails in other Asian cities too. Like the other cities, in unplanned areas of Dhaka, mixed-use comes with many integral advantages. Mixed-use functions create a retail-like environment within the neighborhood and give scope for further economic boots by bringing different uses at close proximity and customization of the services according to the local need. Mixed-use functions also play an important role in keeping the liveliness of the street throughout the day and to some extent ensuring a secure environment for daily activities. Although some literature have critically analyzed the challenges of unregulated mixed-use functions but mix of uses are considered vital for the vibrancy and diversity of urban life (Bakır, 2020; Green, 2020; Harris, 2017; Mualam, Salinger, & Max, 2019; Nahrin, 2008). This research also explored the ways how unplanned morphology sustains mixed-functions. Mixes have interconnections with associated morphologies and to get the full benefits of mixes in diverse morphologies, the synergy between mixed-use functions and associated morphologies is vital.

Despite many emerging potentials of mixed-use functions in urban life, the spontaneously evolved mixed-use in unplanned morphology has not been the subject of many empirical studies. Hence, this thesis encourages future studies that will investigate the operation of the spontaneous mix of uses in the similar contexts to investigate their similarity and/or differences. Also, studies regarding the incremental adaptive process of spontaneous mixes in unplanned morphology and the impact of the growth of mixes in the urban fabric may be conducted. This can help to formulate future guidelines for the further improvement of mixed functions in unplanned settlements.



## **BIBLIOGRAPHY**

- Afroj, S., Hanif, F., Hossain, M. B., Fuad, N., Islam, I., Sharmin, N., & Siddiq, F. (2021). Assessing The Municipal Service Quality of Residential Neighborhoods Based on Servqual, AHP and Citizen's Score Card: A Case Study of Dhaka North City Corporation Area, Bangladesh. *Journal of Urban Management*, 10(3).
- Ahmed, B., Hasan, R., & Maniruzzaman, K. M. (2014). Urban Morphological Change Analysis of Dhaka City, Bangladesh, Using Space Syntax. *ISPRS International Journal of Geo-Information*, 3(4) (1412-1444).
- Ahmed, S. U., & Mohuya, F. A. (2013). Growth and Development of Dhaka North: 1971-2011. *Journal of The Asiatic Society of Bangladesh (Hum.)*, 58(2).
- Ahsan, R. (1991). Changing Pattern of The Commercial Area of Dhaka City. In S. U. Ahmed, *Dhaka Past*. The Asiatic Society of Bangladesh.
- Aliaga, M., & Gunderson, B. (2000). *Interactive Statistics*. Prentice Hall: The Statistics Teacher Network.
- Anunobi, A., Adedayo, O., Oyetola, S., Shuaib, I., & H.I, A. (2015). Assessment Of Parking Spaces in Mixed-Used Buildings in Kano State. *Assessment*, 27.
- Aranha, J. (2013). The Southeast Asian Shophouse as A Model for Sustainable Urban Environments. *International Journal of Design & Nature and Ecodynamics* 8, 4.
- Babbie, E. (2004). *The Practice of Social Research*. Cengage Learning. Belmont: A: Wadsworth/Thomson Learning.
- Bahadure, S., & Kotharkar, R. (2015). Assessing Sustainability of Mixed-Use Neighbourhoods through Residents' Travel Behaviour and Perception: The Case of Nagpur, India. *Sustainability*, ISSN 2071-1050.
- Bakir, N. Y. (2020). Bakir, N. Y. (2020). Replacing "Mixed Use" With "All Mixed Up" Concepts; A Critical Review of Turkey Metropolitan City Centers. *Land Use Policy*, 97.
- Bek, M., Azmy, N., & Sameh, E. (2018). The Effect of Unplanned Growth of Urban Areas on Heat Island Phenomena. *Ain Shams Engineering Journal* 9, No. 4.
- Bhowmik, S. K. (2005). Bhowmik, S. K. (2005). Street Vendors in Asia: A Review. *Economic And Political Weekly*.
- Bhowmik, S. K. (2012). *Street Vendors in Asia: Survey of Research*. Street Vendors in The Global Urban Economy. Taylor & Francis Group.
- Chowdhury, A. M., & Faruqui, S. (1991). Physical Growth of Dhaka City. In *Dhaka; Past, Present & Future* (S. U. Ahmed, Ed.). Asiatic Society of Bangladesh.
- Conzen, M. P. (1969). Spatial Data from Nineteenth Century Manuscript Censuses: A Technique for Rural Settlement and Land Use Analysis. *The Professional Geographer*, 21(5).
- Conzen, M. R. (1960). *Alnwick, Northumberland: A Study in Town-Plan Analysis*. Transactions And Papers, Institute of British Geographers.

- Cortes, C. P. (2005). Morphologies Of Fragmentation and Continuity. In M. Barke (Ed.), *Approaches in Urban Morphology*, University of Northumbria.
- Dhaka Metropolitan Development Plan - DMDP: 1995-2015, (Vol. I & II). (N.D.). Rajdhani Unnayan Kartripakkha - RAJUK (1997).
- Delisle, J., & Terry, G. (2013). An Empirical Study of The Efficacy of Mixed-Use Development: The Seattle Experience. *Journal Of Real Estate Literature* 21, No. 1.
- Dempsey, N., Brown, C., Raman, S., Porta, S., Jenks, M., Ones, C., & Bramley, G. (2010). *Elements Of Urban Form*. In M. J. Jones, *Dimensions of The Sustainable City*. London: Springer.
- Denzin, N., & Lincoln, Y. (2000). *Handbook Of Qualitative Research*. London: SAGE.
- Detail Area Plan 2016-2035. (2022).
- Deyllas, J. (1997). Berlin In Transition: Analyzing the Relationship Between Land Use, Land Value and Urban Morphology. *Proceedings Space Syntax Today*.
- Dimas, H. (2008). Street Vendors: Urban Problem and Economic Potential. Fakultas Ekonomi Universitas Padjajaran. Bandung.
- Devnath, B. (2020, December 7). More Chaos Is Feared as The Revised DAP Allows Mixed Land Use. *The Business Standard*.
- Dovey, K. (2016). *Urban Design Thinking: A Conceptual Toolkit*. London: Bloomsbury Publishing.
- Dovey, K., & Pafka, E. (2014). The Urban Density Assemblage: Modelling Multiple Measures. *Urban Design International*, 19(1).
- Dovey, K., & Pafka, E. (2017). 'What Is Functional Mix? An Assemblage Approach'. *Planning Theory and Practice*, 18(2).
- Dovey, K., & Pafka, E. (2019). What Is Walkability? The Urban DMA. *Urban Studies*, Vol.57.1.
- Duarte, P. G. (2009). Informal Settlements: A Neglected Aspect of Morphological Analysis. *Urban Morphology*,13(2).
- Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *The Academy of Management Review*, Vol. 14, No. 4.
- Erickson, B., & Jones, T. L. (1997). Experiments With Settlement Aggregation Models. *Environment And Planning B: Planning and Design*, 24(6).
- Ferdous, F., & Nilufar, F. (2007). Morphological Transformation and Evolution of Panthapath as A Commercial Belt of Dhaka City. *Protibesh* 11.
- Fidel, R. (1984). The Case Study Method: A Case Study. *Library And Information Science Research*, 6(3).
- Filho, M. B., & Sobreira, F. (2005). Assessing Texture Pattern in Slum Across Scales: An Unsupervised Approach. *CASA Working Papers Series*.
- Firley, E., & C., S. (2011). *The Urban Housing Handbook*. John Wiley & Sons.

- Foley, J. A., Defries, R., Asner, G. P., Barford, C., Bonan, G., Carpenter, S. R., . . . Coe, M. T. (2005). *Global Consequences of Land Use*.
- Gentin, M. (2009). *All Mixed Up, A Critical Analysis of Mixed Use*, Unpublished M.S. Thesis, City Planning, University of New South Wales, Australia.
- Goodall, B. (1972). *The Economics of Urban Areas (Vol. 3)*. Pergamon Press Limited, Oxford.
- Grant, J. (2002). *Mixed Use in Theory and Practice: Canadian Experience with Implementing a Planning Principle*. *Journal of the American Planning Association*, 68(1).
- Grant, J. (2005). *Planning The Good Community: New Urbanism in Theory and Practice*. Routledge, Abingdon.
- Green, J. (2020). *Holistic Understanding of Mixed-Use Theory in Practice: Analyzing the Factors of Success in Three Kansas City Mixed-Use Developments*. Unpublished Master Thesis.
- Griffith, D. A. (2021). *Urban Economics: Geography and Spatial Dependence Matter to The Sustainability of Cities*. Specialty Grand Challenge Article, *Frontiers in Sustainable Cities*.
- Groat, L., & Wang, D. (2013). *Architectural Research Methods*. Willy.
- Haider, A. (1967). *Dacca: History and Romance in Place Names, Dacca, 1967*. In Dhakar Kotha.
- Harris, M. (2017). *Competitive Precinct Projects: The Five Consistent Criticisms Of "Global" Mixed-Use Megaprojects*. *Project Management Journal*, 48(6).
- Han, W., & Beisi, J. (2015). *A Morphological Study of Traditional Shophouse in China and Southeast Asia*. *Procedia-Social and Behavioral Sciences*, 179.
- Haque, N. U. (2015). *Flawed Urban Development*. PIDE Working Paper, Pakistan Institute of Development.
- Hassain, N. (2014). *'Street' As Accessible Open Space Network in Earthquake Recovery Planning in Unplanned Urban Areas*. *Asian Journal of Humanities and Social Sciences*.
- Herndon, J. D. (2011). *Mixed-Use Development in Theory and Practice: Learning from Atlanta's Mixed Experiences*.
- Hillier, B., & Hanson, J. (1984). *The Social Logic of Space*. Cambridge University Press.
- Hillier, B. (1988). *Against Enclosure. Rehumanizing Housing 2*.
- Hillier, B., Perm, A., Grajewski, T., & Xu, J. (1992). *Natural Movement: or, Configuration and Attraction in Urban Pedestrian Movement*.
- Hillier, B. (1996). *Cities As Movement Economics*. Cambridge University Press.
- Hillier, B., & Hanson, J. (1984). *The Social Logic of Space*. Cambridge University Press.
- Hillier, B. (1988). *Against Enclosure. Rehumanizing Housing 2*.

- Hillier, B., Perm, A., Grajewski, T., & Xu, J. (1992). *Natural Movement: Configuration and Attraction in Urban Pedestrian Movement*.
- Hillier, B. (1996). *Cities as Movement Economics*. Cambridge University Press.
- Hillier, B. (1996). *Space is the Machine: A Configurational Theory of Architecture*. Space Syntax.
- Hirt, S. A. (2016). Rooting Out Mixed Use: Revisiting the Original Rationales. *Land Use Policy* 50
- Hoek, J. (2008). The MXI (Mixed-Use Index) as Tool for Urban Planning and Analysis. *Corporation and Cities*, Delft University of Technology, 1-15.
- Hoppenbrouwer, E., & Louw, E. (2005). Mixed-Use Development: Theory and Practice in Amsterdam's Eastern Docklands. *European Planning Studies*, 13(7).
- Hossain, N. (2001). *The Socio-Spatial Structure of 'Spontaneous' Retail Development in Dhaka City*. University of London, University College London (United Kingdom).
- Huda, S. S., Zubayer, M., & Faruk, O. (2011). Marketing Strategies of Retail Stores: An Evaluation of Grocery Shops of Dhaka City. *Global Journal of Management and Business Research* Volume 11 Issue 7 Version 1.0.
- Husain, S., Yasmin, S., & Islam, M. (2015). Assessment of the Socioeconomic Aspects of Street Vendors in Dhaka City: Evidence from Bangladesh. *Asian Social Science*; 11(26).
- Iovene, M., Córdova, G. F., Romice, O., & Porta, S. (2018). Towards Informal Planning: Mapping the Evolution of Spontaneous Settlements in Time. 24th ISUF International Conference. *Book of Papers* (Pp. 545-557). Editorial Universitat Politècnica De València.
- Islam, I., & Adnan, S. (2011). Commercial Land-Use in Dhaka: An Analysis of Trends and Pattern. In S. U. Ahmed, *400 Years of Capital Dhaka and Beyond*, Vol.3. Dhaka: Asiatic Society of Bangladesh, Dhaka.
- Jahan, S. (2011). Dhaka: An Urban Planning Perspective. In *400 Years of Capital Dhaka and Beyond* (Vol. III). Asiatic Society of Bangladesh.
- Jacobs, J. (1961). *Death And Life of Great American Cities*. New York: Vintage Books.
- Kamalipour, H. (2016). Urban Morphologies in Informal Settlements. *Contour Journal*, 1(2).
- Karim, A. (1991). Origin And Development of Mughal Dhaka. In *Dhaka; Past, Present & Future*. Asiatic Society of Bangladesh.
- Khalifa, M. A. (2011). Redefining Slums in Egypt: Unplanned Versus Unsafe Areas. *Habitat International* 35, 1.
- Khan, F. M. (2020). *Functional Mix and Changing Morphology of Dhaka*. Unpublished PhD Thesis.
- Khan, F. M. (2020). Urban Transformation of Informal Mix in Dhaka. *Context*. Retrieved September 29, 2022, From: <https://contextbd.com/urban-transformation-informal-mix-dhaka/>

- Khan, F. M. (2021, September). Tracing The Pattern of Morphological Transformation of Shop-Houses in Tanti Bazar. Conference Paper.
- Khan, N., & Nilufar, F. (2009). Spatial Logic of Morphological Transformation: A Paradigm of Planned - Unplanned Areas in Dhaka City. In Proceedings of the 7th International Space Syntax Symposium, 52.
- Khatun, H. (1991). Pre-Mughal Dhaka. In Dhaka; Past, Present & Future. Asiatic Society of Bangladesh.
- Klarqvist, B. (1993). A Space Syntax Glossary. NA, 2.
- Kropf, K. (2009). Aspects of Urban Form. Urban Morphology 13.
- Kuffer, M., & Barrosb, J. (2011). Urban Morphology of Unplanned Settlements: The Use of Spatial Metrics in VHR Remotely Sensed Images. 1st Conference on Spatial Statistics 2011, Mapping Global Change.
- Madanipour, A. (2001). Design of Urban Space: An Inquiry into A Socio-Spatial Process. Tehran: Publication of Pardazeshvabarnamerizi Shahri.
- Mahadevia, D., Vyas, S., & Mishra, A. (2014). Informal Economy Monitoring Study: Street Vendors in Ahmedabad, India. Manchester. UK: WIEGO.
- Mandal, K., Chatterjee, S., & Chatterjee\*, N. D. (2016). Morphological Analysis of a Historical Urban Landscape: The Case of Tamluk, An Early Urban Centre of Eastern India. International Journal of Scientific and Research Publications.
- Marpaung, B., & Silaban, N. W. (2018). The Spatial Study of Unplanned Settlements on The Coastal of Belawan Medan Fishermen Village. In IOP Conference Series: Earth and Environmental Science, 126.
- Mashhoodi, B., & Pont, M. B. (2011). Studying Land-Use Distribution and Mixed-Use Patterns in Relation to Density, Accessibility and Urban Form. ISUF 2011: 18th International Seminar on Urban Form: Urban Morphology and The Post-Carbon City.
- Mohsin, K. M. (1991). Commercial And Industrial Aspects of Dhaka in The Eighteenth Century. In S. U. Ahmed, Dhaka Past Present Future. The Asiatic Society of Bangladesh.
- Mowla, Q. A. (2016). Colonial Spatial Planning Versus Local Tradition in The Morphology of Urban Dhaka. Dhaka: An Urban Reader, 01-28.
- Moudon, A. V. (1997). Urban Morphology as An Emerging. Urban Morphology.
- Mowla, Q. A. (2012). A Mega City of Persistence and Change. Urbanization In South Asia- Focus on Mega Cities. Cambridge University Press.
- Mualam, N., Salinger, E., & Max, D. (2019). Increasing The Urban Mix Through Vertical Allocations: Public Floorspace in Mixed Use Development. Cities, 87.
- Nahrin, K. (2008). Violation of Land Use Plan and Its Impact on Community Life in Dhaka City', Jahangirnagar Planning Review, 6.
- Nahrin, K. (2019). Environmental Area Conservation Through Urban Planning: Case Study in Dhaka. Conservation.

- Nes, A. V., & Yamu, C. (2021). Introduction to Space Syntax in Urban Studies 123. 3.
- Nilufar, F. (1997). The Spatial and Social Structuring of Local Areas in Dhaka City-A Morphological Study of The Urban Grid with Reference to Neighborhood Character Within Naturally-Grown Areas. University of London, University College London (United Kingdom).
- Nilufar, F. (2010). Urban Morphology of Dhaka City: Spatial Dynamics of Growing City and The Urban Core. Proceedings of International Seminar Proceedings on The Celebration of, Vol. 400.
- O'Sullivan, A. (2012). Urban Economics. Eighth Edition, McGraw-Hill, Irwin.
- Omar, N., & Syed-Fadzil, S. (2011). Assessment of Passive Thermal Performance for a Penang Heritage Shop House. The 2nd International Building Control Conference 2011. Procedia Engineering, 20.
- Prasad, J. (2014). Emerging Urban Land Use Characteristics of Jhansi City. JAUTS, Vol. 2(1and 2).
- Rabianski, J., Gibler, K., Tidwell, O., & Clements, J. (2009). 'Mixed-Use Development: A Call for Research', Journal of Real Estate Literature, 17(2), 205-230. Journal of Real Estate Literature, 17(2).
- Rabianski, J., Karen, G., O. Alan, T., & J. Sherwood, C. (2009). Mixed-Use Development: A Call for Research. Journal of Real Estate Literature 17, No. 2.
- RAJUK, R. U. (1997). DMDP: 1995-2015, Dhaka Metropolitan Development Plan, Volume 01. Dhaka.
- RAJUK, R. U. (2020). Detailed Area Plan: 2016-2035. Dhaka.
- Rashid, M. (2019). Space Syntax: A Network-Based Configurational Approach to Studying Urban Morphology. Springer Nature Switzerland, 199-251.
- Ratnayake, R. (2015). Traditional Small Retail Shops Vs. Emerging Supermarkets and Shopping Malls in a Sri Lankan City. Bhúmi, The Planning Research Journal (Special Issue).
- Recio, R. (2018). Who Governs The 'ungovernable'? Examining Governing Relations in Urban Informality. Unpublished PhD Thesis.
- Rowley, A. (1996). Mixed-Use Development: Ambiguous Concept, Simplistic Analysis and Wishful Thinking? Planning Practice & Research, 11(1).
- Ryan, B. (2006). Morphological Change through Residential Redevelopment: Detroit. Urban Morphology.
- Sadeghi, G., & LI, B. (2019). Urban Morphology: Comparative Study of. Current Urban Studies, 7.
- Schwanke, D. (1987). Urban Land Institute and Urban Development/Mixed-use Council, "Mixed-use Development Handbook", Washington, D.C.: Urban Land Institute.
- Shakil, H., Begum, D., & Begum, A. (2017). Assessment of Housing and Community Status in Higher Middle Class Residential Areas of Dhaka City: A Case Study of Wari."

- Shankar, D., & Vidhya, D. (2013). Changing Dynamics of Land Use in Residential Neighbourhood of Vani Vilasa Mohalla, Mysore. *International Journal of Modern Engineering Research (IJMER)*, 3.
- Sim, D. (2019). *Soft City: Building Density for Everyday Life*. Island Press.
- Sobreira, F., & Gomes, M. (2001). *The Geometry of Slums: Boundaries, Packing and Diversity*. Center for Advanced Spatial Analysis, Working Paper Series, UCL.
- Student Research, McGill.CA. (N.D.). *Settlement Patterns in Unplanned Areas*. Retrieved Oct 10, 2022.
- Swapan, M. S. H., Zaman, A. U., Ahsan, T., & Ahmed, F. (2017). Transforming Urban Dichotomies and Challenges of South Asian Megacities: Rethinking Sustainable Growth of Dhaka, Bangladesh. *Urban Science*, 1(4)(31).
- Tipple, A. (2006). Employment And Work Conditions in Home-Based Enterprises in Four Developing Countries: Do They Constitute ‘Decent Work’? *Work, Employment and Society* 20.1.
- Tipple, A. G. (2005). 'The Place of Home-Based Enterprises in The Informal Sector: Evidence from Cochabamba, New Delhi, Surabaya and Pretoria. *Urban Studies*, 42(4).
- Tu, K.-J., & Lin, L.-T. (2008). Evaluative Structure of Perceived Residential Environment Quality in High-Density and Mixed-Use Urban Settings: An Exploratory Study on Taipei City. *Landscape And Urban Planning*.
- UCL Space Syntax, “Depthmapx”, UCL Space Syntax, University College London. Available At: <https://www.spacesyntax.online/software-and-manuals/depthmap/> [Accessed: 27 Feb 2023]
- Ujang, N., & Shamsuddin, S. (2008). Place Attachment in Relation to Users’ Roles in The Main Shopping Streets of Kuala Lumpur. *Urban Design Issues in The Developing World, The Case Study in Malaysia and Nigeria*.
- Van Nes, A., Berghauser Pont, M., & Mashhoodi, B. (2012, January). Combination Of Space Syntax with Space matrix and The Mixed-Use Index: The Rotterdam South Test Case. In *8th International Space Syntax Symposium, Santiago De Chile*.
- Verburg, P., Kling2, H., & Hecky, R. E. (2003). Ecological Consequences of a Century of Warming in Lake Tanganyika. *Science* 301.
- Verma, G. D. (1993). *Inner City Renewal: Lessons from The Indian Experience\**. Great Britain: Habftatii, YTL. Vol. 17. No. I.
- Wakita, Y., & Shiraishi, H. (2010). Spatial Recomposition of Shophouses in Phnom Penh, Cambodia. *Journal Of Asian Architecture and Building Engineering*, Vol.9, No.1.
- Weinberger, N. (2010). *The Shophouse as A Tool for Equitable Urban Development: The Case of Phnom Penh, Cambodia*. Unpublished Master Thesis, University of Pennsylvania.
- Whitehand, J. W. (2001). *British Urban Morphology: The Conzenian Tradition*. *Urban Morphology* 5, 2.
- Yamu, C., Nes, A. V., & Garau, C. (2021). *Bill Hillier’s Legacy: Space Syntax- A Synopsis of Basic Concepts, Measures, and Empirical Application*. MDPI.

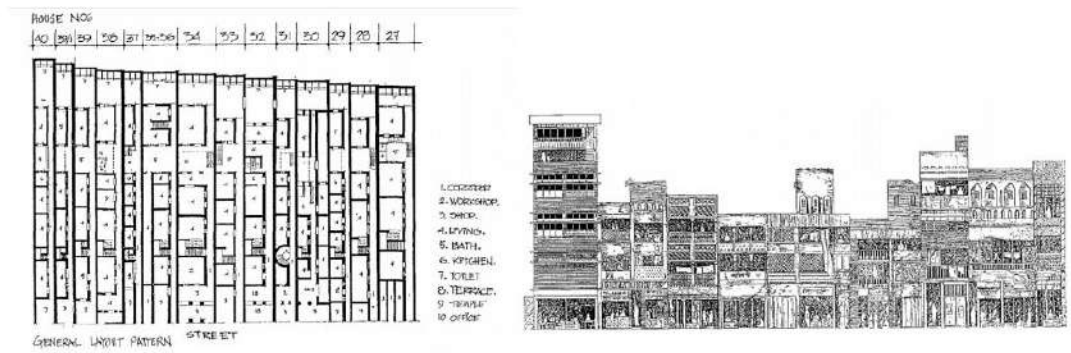
- Yin, R. K. (1984). *Case Study Research: Design and Methods*. California: SAGE.
- Yung, E. H., Langston, C., & Chan, E. H. (2014). Adaptive Reuse of Traditional Chinese Shophouses in Government-Led Urban Renewal Projects in Hong Kong. *Cities* 39.
- Zainal, Z. (2007). Case study as a Research Method. *Jornal Kemanusiaan* bil.9.
- Zakariaa, M. A., Kubota, T., & Toe, D. H. (2015). The Effects of Courtyards on Indoor Thermal Conditions of Chinese Shophouse in Malacca. 9th International Symposium on Heating, Ventilation and Air Conditioning (ISHVAC) and the 3rd International Conference on Building Energy and Environment (COBEE). Hiroshima, Japan: *Procedia Engineering* 121.
- Zakariaa, M. A., Kubotaa, T., & Toe, D. H. (2015). The Effects of Courtyards on Indoor Thermal Conditions of Chinese Shophouse in Malacca. 9<sup>th</sup> International Symposium on Heating, Ventilation and Air Conditioning (ISHVAC) and the 3<sup>rd</sup> International Conference on Building Energy and Environment (COBEE).
- Zaman, M. U., & Lau, S. S. (2000). City Expansion Policy versus Compact City Demand: The Case of Dhaka. In *Compact Cities*.
- Zareen, N. (2009). A Study on the Morphological Transformation and the Emerged Built Forms along Gulshan Avenue Dhaka. Unpublished M. Arch Thesis.
- Zarin, N. (2009). Study on the Morphological Transformation and the Emerged Built-forms along Gulshan Avenue, Dhaka. Unpublished M. arch Thesis.
- Zhong, J., & Hui, E. C. (2021). Real Option and Vertical Mixed-use Development. *International Journal of Strategic Property Management*, 25.



# APPENDICES

## CHAPTER 01

### APPENDIX 1.1



SHAKHARI BAZAR (Imamuddin, a.h., Hassan, s.a. and Alam, w., 1990.)



NOBABPUR ROAD (1954)  
LINK <https://www.pinterest.ca/pin/353673376957909976/>



JOHNSON ROAD (1962)  
source: Islam N. (1996)

Figure: Mixed-use in Dhaka from the Inception.

## APPENDIX 1.2



KAKRAIL (2007)  
Link: <https://dhakadailyphoto.blogspot.com/2007/07/shantinagar-kakrail-malibagh-area.html>



BAILY ROAD (2009)  
Link: [https://commons.wikimedia.org/wiki/File:Baily\\_Road\\_-\\_panoramio\\_\(2\).jpg](https://commons.wikimedia.org/wiki/File:Baily_Road_-_panoramio_(2).jpg)



GREEN ROAD (2014)  
Link: [https://www.flickr.com/photos/william\\_veerbeek/14358683575/](https://www.flickr.com/photos/william_veerbeek/14358683575/)



MODDHYA BADDA (2012)  
Source: Google street view

Figure: Mixed-use in Dhaka from the Recent Past.

CHAPTER 02

Appendix 2.1



Figure: Thana boundary in Dhaka Map.

Source: *Banglapedia*, National Encyclopedia of Bangladesh, 2014.

Appendix 2.2

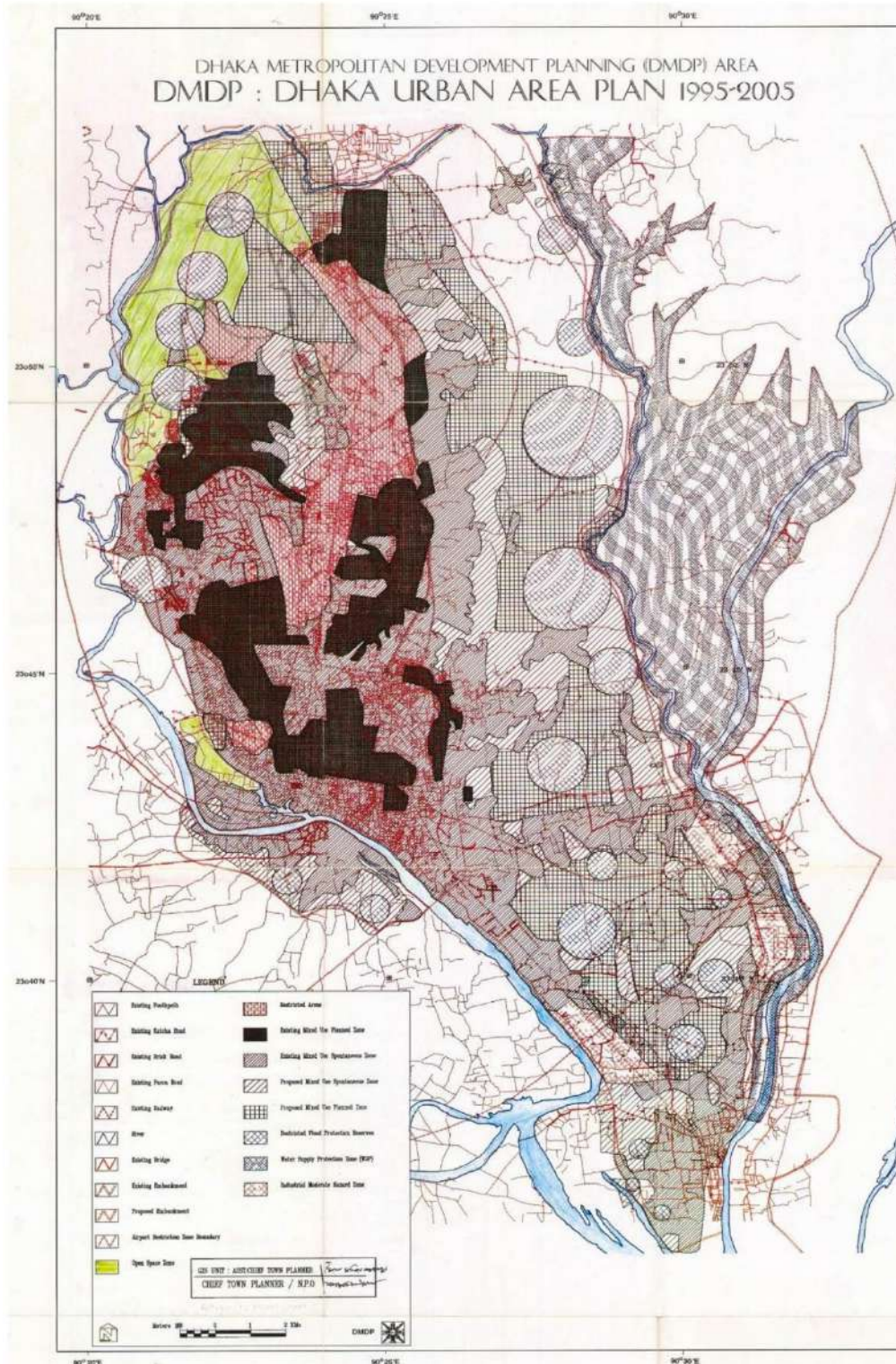


Figure: DMDP Urban Area Plan (1995-2005) Indicated Zone-wise Land-use Map.  
(Source: DMDP Volume-2, Urban Area Plan, 1995-2005).

## Appendix 2.3

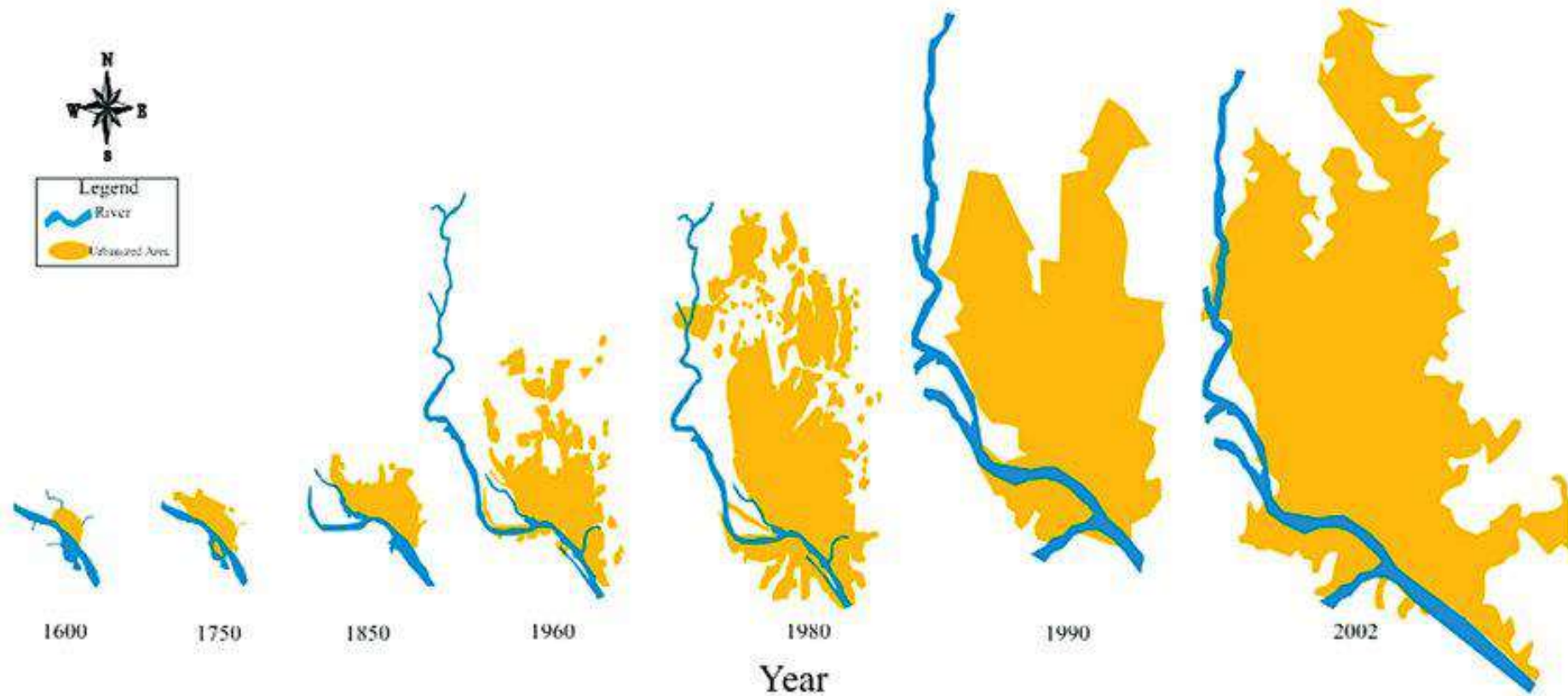


Figure: B. The Historical Growth of Dhaka City.

Source: Urban Planning Department, Dhaka City Corporation, 2007 (Ahmed, 2014).



Appendix 3.2

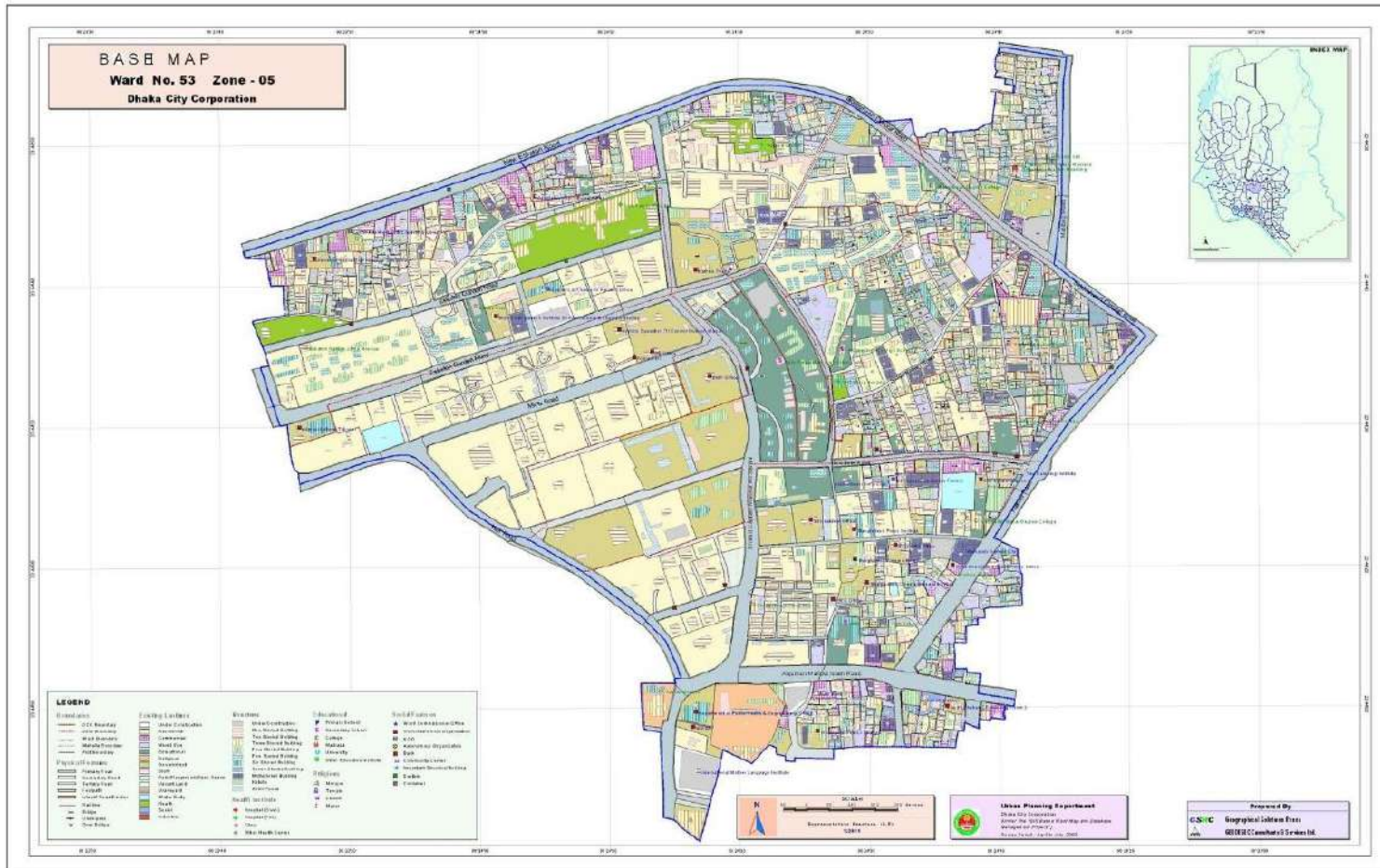


Figure: Base map of Ward no 19; Source: DCC (Dhaka City Corporation).









Appendix 3.6

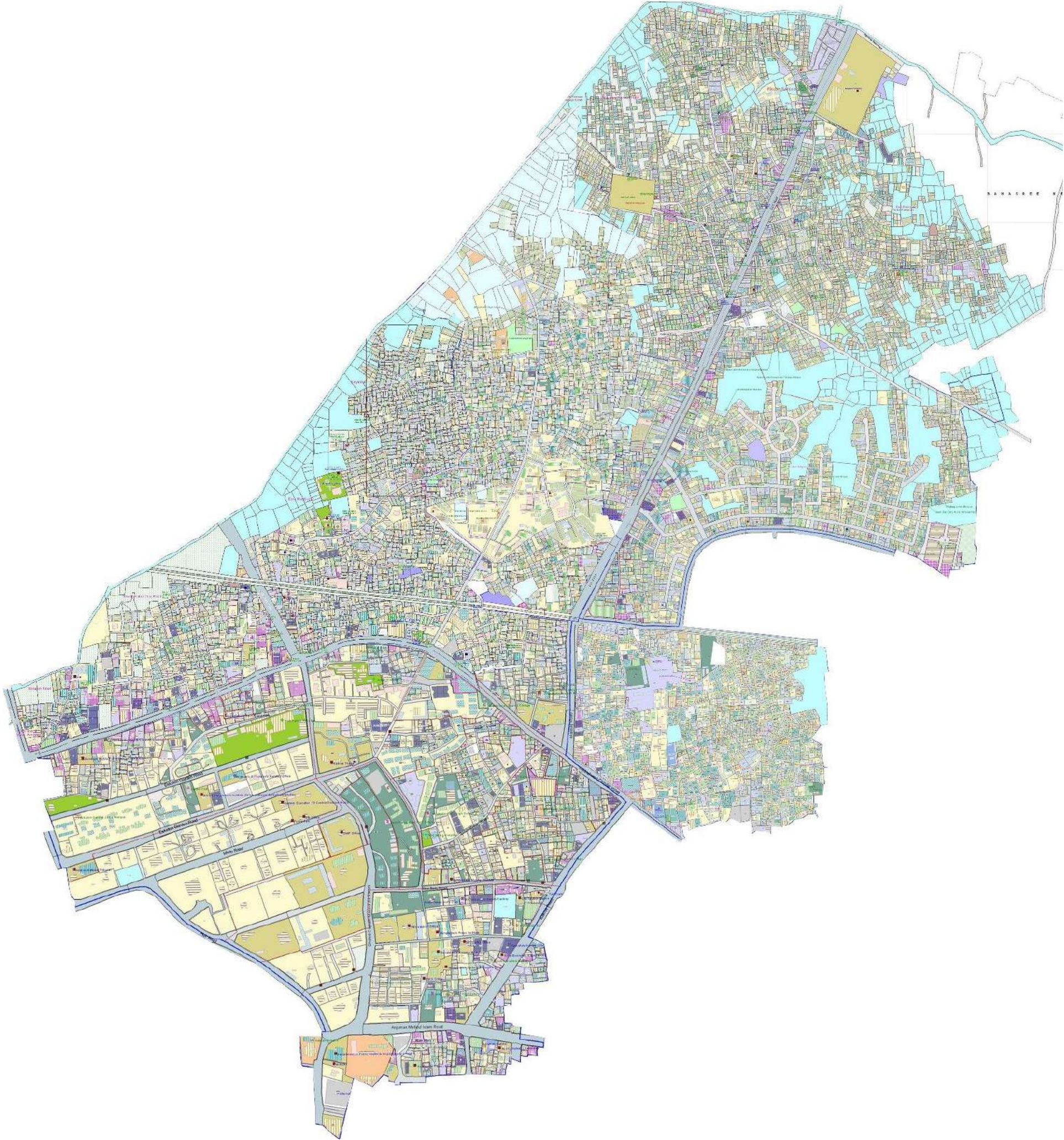


Figure: Combined Base Map of wards – 19, 35, 36, 22, 23.



Figure: Moghbazar Map with Building Reference Number (Blue Text) and Plot Reference Number (Red Text).

## Appendix 4.2

Table: Base Data of Mapping for Individual Buildings and Plots.

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
1	360	1	33.923	33.92	38.12	1	33.92	33.92	89.00	0.9
2	359	2	82.302	164.60	90.94	2	82.30	164.60	90.51	1.8
3	358	3	110.828	332.48	288.39	7	228.70	803.99	79.30	2.8
4	357	4	117.875	471.50						
5	356	6	149.279	895.68	162.37	6	149.28	895.68	91.94	5.5
6	355	6	165.890	995.34	186.31	6	165.89	995.34	89.04	3.0
7	499	4	90.110	360.44	118.43	4	90.11	360.44	76.09	3.0
8	352	11	109.838	1208.22	133.31	11	109.84	1208.22	82.39	9.1
9	805	4	43.448	43.45	87.66	4	43.45	43.45	49.56	0.5
10	366	2	56.099	112.20	134.04	2	56.10	112.20	41.85	0.8
11	350	1	84.067	84.07	142.61	1	84.07	84.07	58.95	0.6
12	349	1	31.975	31.97						
13	348	1	164.234	164.23	2377.08	4	1818.88	3441.55	76.52	1.4
14	347	2	1622.673	3245.35						
15	367	1	55.677	55.68	96.39	1	55.68	55.68	57.76	0.6
16	360	4	176.179	704.72	213.34	4	176.18	704.72	82.58	3.3
17	361	1	48.355	48.35						
18	369	2	84.030	128.06	339.11	4	155.35	219.38	45.81	0.6
19	362	1	44.963	44.96						
20	369	3	124.819	374.46						
21	368	4	51.323	205.29	604.54	12	274.98	1073.93	45.49	1.8
22	370	5	98.837	494.18						
23	363	3	81.603	244.81	129.51	3	81.60	244.81	63.01	1.9
24	394	2	67.877	135.75	135.80	2	67.88	135.75	49.98	1.0
25	371	5	213.576	1067.88	337.30	5	213.58	1067.88	63.32	3.2
26	377	2	121.852	243.70	199.91	2	121.85	243.70	60.95	1.2
27	372	3	94.649	283.95	196.57	3	94.65	283.95	48.15	1.4
28	373	2	51.833	103.67	122.18	3	68.44	120.27	56.01	1.0
29	374	1	16.606	16.61						
30	376	4	72.987	291.95	261.00	5	115.35	334.31	44.20	1.3
31	375	1	42.365	42.37						
32	380	1	32.424	32.42						
33	378	1	56.359	56.36	266.06	3	132.23	132.23	49.70	0.5
34	379	1	43.448	43.45						
35	406	2	90.300	180.60	226.86	3	131.32	221.62	57.89	1.0
36	405	1	41.024	41.02						
37	459	5	84.578	422.89	217.58	6	154.30	492.61	70.92	2.3
38	460	1	69.719	69.72						
39	404	2	208.680	417.36	322.12	2	208.68	417.36	64.78	1.3
40	381	5	220.432	1102.16						
41	383	2	154.421	308.84	794.41	8	480.04	1516.19	60.43	1.9
42	382	1	105.187	105.19						
43	407	5	58.750	293.75	106.79	5	58.75	293.75	55.02	2.8
44	464	2	27.455	54.91	56.07	2	27.46	54.91	48.97	1.0
45	461	4	35.789	143.15	130.99	7	79.16	273.28	60.44	2.1
46	462	3	43.374	130.12	130.99	7	79.16	273.28	60.44	2.1
47	463	2	35.034	70.07	59.72	2	35.03	70.07	58.66	1.2
48	408	4	112.681	450.72	151.89	4	112.68	450.72	74.19	3.0
49	409	5	197.789	988.84	278.00	5	197.77	988.84	71.14	3.6
50	806	2	49.525	99.05	153.88	3	82.82	132.34	53.82	0.9
51	3845	1	33.291	33.29						
52	410	5	172.891	864.46	235.20	5	172.89	864.46	73.51	3.7
53	449	4	148.412	593.65	208.21	4	148.41	593.65	71.28	2.9
54	550	3	154.743	464.23	216.11	3	154.74	464.23	71.60	2.1
55	551	4	218.441	873.76	279.97	4	218.44	873.76	78.02	3.1
56	465	2	32.966	65.93	45.24	2	32.97	65.93	72.88	1.5
57	466	2	25.302	50.60	44.82	2	25.30	50.60	58.46	1.1
58	467	3	40.706	122.12	66.47	3	40.71	122.12	61.24	1.8
59	412	4	51.988	207.99	95.24	4	52.00	207.99	54.59	2.2
60	411	3	73.908	221.72	139.15	3	73.91	221.72	53.11	1.6
61	472	2	38.954	77.91	135.18	4	76.09	152.19	56.29	1.1
62	473	2	37.140	74.28	135.18	4	76.09	152.19	56.29	1.1
63	474	5	69.936	349.68	111.61	5	69.94	349.68	62.66	3.1
64	475	1	116.544	116.54	168.19	1	116.54	116.54	70.13	0.7
65	476	6	231.395	1388.37	359.19	6	231.39	1388.37	64.42	3.9
66	413	4	73.220	292.88						
67	414	5	74.907	374.54	451.26	14	306.16	1457.58	67.85	3.2
68	415	5	158.033	790.16						
69	417	5	43.684	218.42	381.64	10	197.11	985.53	51.65	2.6
70	418	5	153.421	767.11						
71	416	5	162.682	813.41	367.48	5	162.68	813.41	44.27	2.2
72	419	5	124.131	620.65	395.33	9	274.51	1222.15	69.44	3.1
73	420	4	150.375	601.50						
74	422	4	253.330	1013.32						
75	423	4	246.474	985.90	819.59	9	646.44	2145.85	78.87	2.6
76	4549	1	146.632	146.63						
77	427	5	249.950	1249.75	363.13	5	249.95	1249.75	68.83	3.4
78	558	6	144.806	868.84	182.15	6	144.81	868.84	79.50	4.8
79	557	2	65.414	130.83	181.34	2	65.41	130.83	36.07	0.7
80	471	5	306.656	1533.28	373.68	5	306.66	1533.28	82.06	4.1
81	470	5	212.422	1062.11	250.97	5	212.42	1062.11	84.64	4.2
82	469	1	30.909	30.91	777.65	4	367.58	1040.91	47.27	1.3
83	468	3	336.668	1010.01						
84	424	2	160.845	321.69	302.78	2	160.84	321.69	53.12	1.1
85	425	2	192.442	384.88	242.25	2	192.44	384.88	79.44	1.6
86	428	4	235.314	941.26						
87	429	1	105.966	105.97	549.81	6	470.59	1176.53	85.59	2.1
88	4550	1	129.305	129.31						
89	426	3	288.762	866.28	379.09	3	288.76	866.28	76.17	2.3
90	1925	3	278.087	834.26	376.39	3	278.09	834.26	73.88	2.2
91	-	-	-	-	-	0	0.00	0.00	0.00	0.0
92	802	8	298.756	2390.05	442.37	8	298.76	2390.05	67.53	5.4
93	803	6	257.859	1547.15	340.43	6	257.86	1547.15	75.74	4.5
94	842	8	343.928	2751.42	672.76	8	343.93	2751.42	51.12	4.1
95	848	1	184.543	184.54	524.17	5	264.12	502.83	50.39	1.0
96	849	4	79.572	318.29						
97	853	1	76.788	76.77						
98	852	4	230.320	921.28	406.02	5	307.09	998.05	75.63	2.5
99	861	1	14.985	14.99						
100	862	1	13.595	13.60						
101	863	4	104.306	417.22	363.91	14	211.15	758.84	58.02	2.1
102	864	4	35.726	142.90						
103	865	4	42.534	170.13						
104	1264	15	862.794	12941.91	1285.61	15	862.79	12941.91	67.11	10.1
105	1265	15	497.122	7456.83	1726.93	29				
106	1261	7	219.029	1533.20	1726.93	29	977.34	10818.33	56.59	6.3
107	1262	7	261.185	1828.30	1726.93	29				
108	1263	7	424.257	2969.80	1087.60	7	424.26	2969.80	39.01	2.7
109	1266	2	237.553	475.11						
110	1267	7	203.071	1421.50	1521.62	23	826.61	7328.47	54.46	4.8
111	1268	14	387.990	5431.87						
112	-	-	-	-	-	0	0.00	0.00	0.00	0.0
113	-	-	-	-	-	0	0.00	0.00	0.00	0.0
114	1287	7	911.898	6383.28	1741.32	7	911.90	6383.28	52.37	3.7
115	-	-	-	-	-	0	0.00	0.00	0.00	0.0
116	79	8	343.213	2745.71	1305.36	8	343.21	2745.71	26.29	2.1
117	81	5	277.832	1389.16	348.34	5	277.83	1389.16	79.76	2.0
118	3866	5	271.248	1356.24						
119	4525	5	349.753	1748.77	1357.31	10	621.00	3105.00	45.75	2.3
120	-	-	-	-	-	0	0.00	0.00	0.00	0.0
121	-	-	-	-	-	0	0.00	0.00	0.00	0.0
122	1269	12	711.665	8539.98	756.95	12	711.66	8539.98	94.02	11.3
123	1271	6	529.972	3179.83	532.97	6	529.97	3179.83	99.44	6.0
124	3818	1	195.446	195.45	194.93	1	195.45	195.45	100.26	1.0
125	1272	3	161.537	484.61	329.76	3	161.54	484.61	48.99	1.5
126	1285	1	120.850	120.85	561.33	1	120.85	120.85	21.53	0.2
127	1294	5	326.941	1634.71	554.77	5	326.94	1634.71		

Plot Ref. No.	Building Ref. No.	Buildings Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
215	194	4	283.143	1132.57	375.30	4	283.14	1132.57	75.44	3.0
216	193	4	74.898	289.59	124.12	4	74.90	289.59	60.34	2.4
217	4528	8	260.487	2083.90	446.65	8	260.49	2083.90	58.32	4.7
218	299	4	85.719	342.88	139.10	4	85.72	342.88	61.62	2.5
219	298	4	69.592	278.37	119.78	4	69.59	278.37	58.10	2.3
220	188	4	158.406	633.62	225.88	4	158.41	633.62	70.13	2.8
221	187	4	225.132	900.53	369.24	4	225.13	900.53	60.97	2.4
222	186	5	305.009	1525.04	418.53	5	305.01	1525.04	72.88	3.6
223	185	6	252.420	1514.52	361.85	6	252.42	1514.52	69.76	4.2
224	184	4	137.143	548.57	323.60	4	137.14	548.57	42.38	1.7
225	183	5	318.961	1594.80	381.88	5	318.96	1594.80	83.52	4.2
226	4529	5	119.772	598.86	468.37	5	119.77	598.86	25.57	1.3
227	290	1	88.215	88.22	106.39	1	88.22	88.22	82.92	0.8
228	288	5	197.495	987.48	316.98	5	197.50	987.48	62.31	3.1
229	289	4	297.902	1191.61	408.11	4	297.90	1191.61	73.00	2.9
230	287	6	230.871	1385.23	308.19	6	230.87	1385.23	74.91	4.5
231	4360	9	286.319	2576.87	909.89	14	609.47	4192.62	66.98	4.6
232	285	5	418.636	2093.18	646.49	5	418.64	2093.18	64.76	3.2
233	284	4	104.847	418.59	187.75	4	104.85	418.59	55.74	2.2
234	284	5	120.973	604.87	178.28	5	120.97	604.87	67.85	3.4
235	182	3	192.035	576.10	495.40	6	282.31	846.94	56.99	1.7
236	4346	8	90.280	270.84	167.15	8	90.10	792.83	59.29	4.7
237	181	6	567.842	3407.05	685.18	6	567.84	3407.05	82.87	5.0
238	282	6	105.334	632.00	184.58	6	105.33	632.00	84.00	3.8
239	275	2	97.315	194.63	144.06	2	97.32	194.63	87.55	1.4
240	274	3	97.937	293.81	162.82	3	97.94	293.81	80.15	1.8
241	4361	1	91.043	91.04	136.78	1	91.04	91.04	66.56	0.7
242	180	6	162.341	974.04	236.08	6	162.34	974.04	68.76	4.1
243	4366	4	300.032	1200.13	474.81	4	300.03	1200.13	63.19	2.5
244	152	6	164.267	985.60	250.20	6	164.27	985.60	65.65	3.9
245	153	5	202.074	1010.37	250.74	5	202.07	1010.37	80.59	4.0
246	151	2	143.302	286.60	368.18	8	269.29	1042.54	73.14	2.8
247	149	6	283.068	1698.40	693.01	6	283.07	1698.40	40.85	2.5
248	4364	1	20.749	20.75	569.06	4	263.63	749.40	46.33	1.3
249	3872	3	242.884	728.65						
249	148	3	2539.853	7619.56	2540.73	3	2539.85	7619.56	99.97	3.0
250	147	10	349.162	3491.62	496.06	10	349.16	3491.62	70.39	7.0
251	4352	14	192.629	2696.80						
251	4350	16	179.207	2867.32	687.35	46	546.90	8365.15	79.57	12.2
251	4351	16	175.064	2801.03						
252	3841	6	170.566	1023.40	306.72	6	170.57	1023.40	55.61	3.3
253	4530	4	202.741	810.96	312.43	4	202.74	810.96	64.89	2.6
254	177	4	190.235	780.94	287.31	4	190.24	780.94	66.21	2.6
255	179	3	144.361	433.08	215.69	3	144.36	433.08	66.93	2.0
256	3842	3	180.244	540.73	396.51	4	273.05	633.53	68.86	1.6
257	178	1	92.801	92.80	396.51					
257	280	2	33.232	66.46						
257	279	2	68.093	136.19	460.19	6	169.41	338.81	36.81	0.7
257	278	2	68.083	136.17						
258	174	6	231.312	1387.87	680.33	8	345.63	1616.50	50.80	2.4
258	176	2	114.317	228.63						
259	173	4	96.052	384.21	135.08	4	96.05	384.21	71.11	2.8
260	281	3	138.133	408.40	229.00	3	138.13	408.40	59.45	1.8
261	142	4	205.532	822.13	594.32	8	431.46	1725.84	72.60	2.9
261	143	4	225.928	903.71						
262	175	6	267.008	1335.04	317.61	5	267.01	1335.04	84.07	4.2
263	172	7	146.075	1022.53	182.44	7	146.08	1022.53	80.07	5.6
264	171	7	162.056	1134.39	232.29	7	162.06	1134.39	69.76	4.9
265	170	2	89.539	179.08	286.00	4	181.58	363.17	63.36	1.3
266	320	1	128.248	128.25	216.51	1	128.25	128.25	59.24	0.6
267	145	2	238.203	476.41	286.17	2	238.20	476.41	83.24	1.7
268	144	2	251.349	502.70	319.53	2	251.35	502.70	78.66	1.6
269	146	3	357.352	1072.05	1048.63	6	752.82	2258.45	71.79	2.2
269	3843	3	395.464	1186.39						
270	97	17	580.137	9862.33	729.84	17	580.14	9862.33	79.49	13.5
271	141	16	183.137	2930.19	846.46	27	504.15	6461.32	59.56	7.6
272	138	6	705.727	4234.36	837.98	6	705.73	4234.36	84.22	5.1
273	96	7	319.018	2233.12	433.12	7	319.02	2233.12	73.65	5.2
274	95	2	266.610	533.22	385.24	2	266.61	533.22	69.21	1.4
275	3890	6	138.061	834.36	601.51	12	578.63	3459.78	95.86	5.8
276	346	6	437.569	2625.41						
276	343	1	46.695	46.70	170.72	2	77.06	77.06	45.14	0.5
276	344	1	30.362	30.36						
277	166	1	97.288	97.29	127.98	1	97.29	97.29	76.02	0.8
278	167	1	134.871	134.87	216.14	1	134.87	134.87	62.40	0.6
279	165	2	56.038	112.08	187.21	6	126.11	397.37	67.38	2.1
280	164	4	70.074	280.30						
280	163	4	92.880	371.52	121.52	4	92.88	371.52	76.43	3.1
281	162	5	174.761	873.80	224.80	5	174.76	873.80	77.74	3.9
282	161	1	50.852	50.85						
282	160	1	49.841	49.84	320.13	3	147.68	147.68	46.13	0.5
283	159	1	46.986	46.99						
283	158	1	75.784	75.78	113.45	1	75.78	75.78	66.80	0.7
284	157	1	105.582	105.58	268.50	1	105.58	105.58	39.32	0.4
285	295	1	39.575	39.58						
285	296	1	42.188	42.19	228.41	3	129.98	129.98	56.91	0.6
285	294	1	47.931	47.93						
286	119	3	140.303	420.91	203.72	3	140.30	420.91	68.87	2.1
287	121	1	23.702	23.70						
287	122	1	39.126	39.13						
287	155	1	26.080	26.08						
287	154	1	129.538	129.54	655.55	7	299.00	299.00	45.61	0.5
287	120	1	18.579	18.58						
287	156	1	16.362	16.36						
287	118	1	45.609	45.61						
288	117	4	131.697	526.79	192.88	4	131.70	526.79	68.35	2.7
289	116	4	166.320	665.28	435.99	10	331.16	1654.31	75.96	3.8
289	3886	6	164.838	989.03						
289	111	8	148.741	1189.93	217.28	8	148.74	1189.93	68.45	5.5
291	114	7	112.428	786.99	177.10	7	112.43	786.99	63.48	4.4
292	115	4	102.360	409.44	160.42	4	102.36	409.44	63.81	2.6
293	113	8	82.363	658.90	138.03	8	82.36	658.90	59.67	4.8
294	112	10	86.681	866.81	134.55	10	86.68	866.81	64.42	6.4
295	3887	7	152.580	1068.06	268.58	12	198.45	1297.43	73.89	4.8
295	3888	5	45.873	229.37						
296	78	5	143.496	717.48	186.72	5	143.50	717.48	78.85	3.8
297	87	7	85.770	600.39	120.20	7	85.77	600.39	71.36	5.0
298	109	1	56.662	56.66	203.82	5	128.94	345.77	63.26	1.7
298	110	4	72.276	289.10						
299	107	1	53.333	53.33	90.98	1	53.33	53.33	58.62	0.6
300	108	4	67.462	269.85	97.90	4	67.46	269.85	68.91	2.8
301	106	1	141.446	141.45	197.68	1	141.45	141.45	71.55	0.7
302	104	6	79.740	478.44	162.07	6	79.74	478.44	49.20	3.0
303	4527	4	45.191	180.76	108.99	4	45.19	180.76	41.46	1.7
304	105	1	45.191	45.19	105.44	1	45.19	45.19	42.86	0.4
305	99	1	251.239	251.24	387.31	1	251.24	251.24	64.87	0.6
306	3881	4	60.350	241.40	91.26	4	60.35	241.40	66.13	2.6
307	85	6	563.571	3381.43	1045.73	9	661.73	3675.91	63.28	3.5
308	4354	3	98.161	294.48						
309	76	6	202.606	1215.63	266.40	6	202.61	1215.63	76.05	4.6
309	78	3	150.124	468.37	250.83	3	150.12	468.37	62.24	1.9
310	77	5	218.054	1090.27	291.66	5	218.05	1090.27	74.76	3.7</

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
459	1378	1	487.34	487.34	6780.70	8	2041.06	2041.06	30.10	0.3
	1379	1	198.59	198.59						
	1380	1	593.13	593.14						
	1381	1	99.553	99.55						
	1382	1	323.061	323.06						
	1383	1	82.163	82.16						
	1384	1	154.440	154.44						
460	3870	1	102.772	102.77	5205.89	21	1529.83	6681.13	29.38	1.3
	614	5	310.546	1552.73						
	616	5	245.120	1225.60						
	615	5	319.227	1596.13						
	618	5	412.984	2064.92						
	617	1	241.750	241.75						
	619	5	230.055	1150.27						
461	763	1	104.263	104.26	987.12	3	317.53	317.53	32.17	0.3
	3823	1	12.394	12.39						
462	761	1	200.870	200.87	1162.26	6	513.89	702.89	44.21	0.6
	463	2	117.402	234.80						
463	1374	2	71.602	143.20	1162.26	6	513.89	702.89	44.21	0.6
	1373	1	23.180	23.18						
463	1371	1	301.703	301.70	1162.26	6	513.89	702.89	44.21	0.6
	1375	7	227.797	1154.58						
465	386	6	144.175	865.05	175.86	6	144.17	865.05	81.99	4.9
	385	6	120.660	723.96						
467	401	5	97.314	486.57	135.81	5	97.31	486.57	71.66	3.6
	398	4	115.534	462.13						
469	654	1	56.125	56.12	77.01	1	56.12	56.12	72.88	0.7
	655	1	63.466	63.47						
471	396	4	140.271	561.08	229.25	4	140.27	561.08	61.19	2.9
	399	4	184.731	738.92						
473	485	1	60.309	60.31	233.24	3	147.22	234.13	63.12	1.0
	486	2	86.913	173.83						
474	481	1	72.346	72.35	444.18	6	361.71	1519.18	81.43	3.4
	480	5	289.368	1446.84						
475	482	1	75.593	75.59	389.66	6	234.39	869.57	60.15	2.2
	483	5	158.796	793.98						
476	484	5	206.077	1030.38	321.15	5	206.08	1030.38	64.17	3.2
	477	5	161.405	484.21						
477	543	3	77.400	358.35	358.35	6	238.51	715.82	68.58	2.0
	544	6	205.739	1234.43						
478	547	4	71.863	287.45	102.90	4	71.86	287.45	69.84	2.8
	480	5	77.452	309.81						
481	656	6	374.272	2245.63	504.36	6	374.27	2245.63	74.21	4.5
	482	-	-	-						
482	-	-	-	-	231.98	0	0.00	0.00	0.00	0.0
	483	-	-	-						
484	-	-	-	-	199.14	0	0.00	0.00	0.00	0.0
	484	-	-	-						
485	540	4	114.552	458.21	706.78	7	414.89	1359.22	58.70	1.9
	539	3	300.336	901.01						
486	545	4	197.562	790.25	252.31	4	197.56	790.25	78.30	3.1
	487	3	230.274	690.82						
488	506	4	129.443	517.77	672.53	10	185.35	853.19	27.56	1.3
	507	6	55.903	335.42						
489	519	7	75.255	526.79	118.89	7	75.26	526.79	63.30	4.4
	518	7	111.486	780.40						
490	515	6	197.196	1183.18	313.27	6	197.20	1183.18	62.95	3.8
	516	5	236.711	1183.58						
492	493	3	91.897	275.69	150.18	3	91.90	275.69	61.19	1.8
	494	3	24.700	74.10						
495	496	3	73.686	221.06	173.65	6	96.13	288.39	55.36	1.7
	495	3	22.445	67.33						
496	4535	2	14.110	28.22	207.84	2	14.11	28.22	6.79	0.1
	4535	2	14.110	28.22						
497	521	2	67.845	135.69	281.79	4	100.58	168.42	35.69	0.6
	520	1	17.138	17.14						
498	522	1	15.594	15.59	268.46	6	193.79	581.38	72.19	2.2
	525	3	60.356	181.07						
499	524	3	133.437	400.31	176.27	3	150.11	450.32	85.16	2.6
	477	3	150.106	450.32						
500	526	3	61.788	185.36	114.12	3	61.79	185.36	53.15	1.6
	523	6	79.658	477.95						
502	523	6	79.658	477.95	112.53	6	79.66	477.95	70.79	4.2
	503	4536	3	98.072						
504	475	3	239.385	718.16	343.96	3	239.39	718.16	69.60	2.1
	528	1	13.842	13.84						
505	527	1	21.580	21.58	255.70	4	77.88	77.88	30.46	0.3
	530	1	19.058	19.06						
506	529	1	23.396	23.40	282.66	2	73.96	73.96	26.16	0.3
	532	1	43.033	43.03						
507	533	1	30.924	30.92	92.01	0	0.00	0.00	0.00	0.0
	534	6	293.545	1761.27						
508	534	6	293.545	1761.27	345.77	6	293.54	1761.27	84.90	5.1
	509	476	3	277.764						
510	498	2	206.057	412.11	278.24	2	206.06	412.11	74.06	1.5
	478	4	248.309	993.24						
511	479	1	70.277	70.28	424.87	5	318.59	1063.51	74.98	2.5
	659	5	71.099	355.49						
512	660	5	102.913	514.57	808.97	20	363.83	1819.16	44.97	2.2
	658	5	95.607	478.03						
513	657	5	94.214	471.07	200.78	5	119.35	596.75	59.44	3.0
	661	5	119.351	596.75						
514	3828	6	130.610	783.66	863.36	17	612.05	3554.92	70.89	4.1
	3827	6	364.086	2184.51						
515	663	5	117.350	586.75	129.80	6	72.74	436.43	56.04	3.4
	662	6	72.739	436.43						
516	794	4	154.629	618.51	259.41	4	154.63	618.51	59.61	2.4
	799	5	211.512	1057.56						
517	612	4	209.880	839.52	218.51	4	209.88	839.52	96.05	3.8
	519	511	6	171.502						
520	513	7	178.623	1236.36	218.93	7	178.62	1236.36	80.68	5.6
	521	3820	6	273.449						
522	638	7	165.816	1147.32	217.91	7	163.90	1147.32	75.21	5.3
	523	508	4	407.619						
524	4534	6	229.002	1374.01	252.17	4	229.00	1374.01	90.81	5.4
	525	4533	6	241.221						
526	628	8	537.273	4298.19	791.24	8	537.27	4298.19	67.90	5.4
	527	-	-	-						
528	629	1	28.829	28.83	479.88	10	236.30	1896.10	49.24	4.0
	630	9	207.474	1867.27						
529	510	2	112.864	225.73	403.29	2	112.86	225.73	27.99	0.6
	530	509	3	228.132						
531	632	6	626.342	3758.05	800.77	6	626.34	3758.05	78.22	4.7
	532	633	6	647.509						
533	631	6	353.386	2120.31	826.28	6	353.39	2120.31	42.77	2.6
	634	1	33.025	33.03						
534	635	1	39.373	39.37	713.94	8	297.80	1423.59	41.68	2.0
	636	6	225.199	1351.19						
535	637	6	439.875	2639.85	671.27	6	439.88	2639.85	65.54	3.9
	639	1	16.795	16.79						
536	640	6	197.904	1187.43	517.34	7	214.70	1204.22	41.50	2.3
	690	3	171.350	514.05						
537	631	4	105.847	423.39	177.32	4	105.85	423.39	59.69	2.4
	539	646	6	107.325						
540	647	6	86.550	519.30	153.18	6	86.55	519.30	56.50	3.4
	644	6	103.908	623.45						
542	645	6	140.061	840.37	226.38	6	140.06	840.37	61.87	3.7
	641	7	113.926	797.48						
544	642	1	128.380	128.38	362.88	7	223.93	701.66	61.71	1.9
	643	6	95.546	573.28						
545	691	3	200.620	601.86	200.48	3	200.62	601.86	100.07	3.0
	692	3	179.437	538.31						
547	693	6	106.066	636.40	128.87	6	106.07	636.40	82.31	4.9
	649	6	195.720	1174.32						
548	694	1	14.2							

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
679	1361	1	108.320	108.32	239.57	1	108.32	108.32	45.21	0.5
680	1351	2	123.362	246.72	469.20	10	296.08	1628.47	63.10	3.5
681	1368	1	51.238	51.24	247.95	1	51.24	51.24	20.66	0.2
682	1366	2	34.536	69.07	197.01	12	135.39	573.35	68.72	2.9
683	1370	5	65.850	329.25	197.01	5	51.16	255.79	60.54	3.0
684	1369	2	54.606	109.21	99.40	2	54.61	109.21	54.94	1.1
685	1367	3	114.328	342.98	131.87	3	114.33	342.98	86.70	2.6
686	1360	2	141.932	283.86	207.06	2	141.93	283.86	68.55	1.4
687	1358	7	83.727	586.09	220.36	14	161.73	1132.11	73.39	5.1
688	1357	6	143.341	860.05	222.86	6	143.34	860.05	64.32	3.9
689	1356	6	89.670	538.02	153.27	6	89.67	538.02	58.51	3.5
690	1355	5	49.967	249.84	153.57	5	49.97	249.84	32.54	1.6
691	-	-	-	-	3919.69	0	0.00	0.00	0.00	0.0
692	1376	7	150.891	1056.24	311.19	7	150.89	1056.24	48.49	3.4
693	1377	5	119.509	597.55	169.31	5	119.51	597.55	70.59	3.5
694	1589	6	143.091	858.54	198.03	6	143.09	858.54	72.26	4.3
695	1505	9	355.345	3198.10	954.16	36	583.27	5249.45	61.13	5.5
696	3971	6	204.549	1227.29	291.18	6	204.55	1227.29	70.25	4.2
697	3972	5	166.936	834.68	194.81	5	166.94	834.68	85.69	4.3
698	3973	5	140.088	700.44	162.29	5	140.09	700.44	86.32	4.3
699	1390	4	132.778	531.11	444.46	8	294.19	1176.77	66.19	2.6
700	1389	2	187.470	374.94	267.93	2	187.47	374.94	69.97	1.4
701	1385	3	215.539	646.62	719.76	5	294.47	725.55	40.91	1.0
702	1388	6	115.451	692.71	225.85	6	115.45	692.71	51.12	3.1
703	1401	2	135.522	271.04	185.73	2	135.52	271.04	72.97	1.5
704	1389	1	212.232	212.23	888.49	4	535.90	790.21	60.32	0.9
705	1393	3	259.567	778.70	630.27	4	321.15	840.28	50.95	1.3
706	1392	1	122.966	122.97	348.19	5	276.08	735.41	79.29	2.1
707	1396	2	149.957	299.91	190.61	2	149.96	299.91	78.67	1.6
708	1588	1	73.698	73.70	180.32	1	73.70	73.70	40.87	0.4
709	1397	4	99.855	399.42	137.44	4	99.86	399.42	72.66	2.9
710	1402	1	102.599	102.60	218.13	1	102.60	102.60	47.04	0.5
711	1403	2	72.484	144.97	157.34	2	72.48	144.97	46.07	0.9
712	1409	6	182.098	1092.59	267.66	6	182.10	1092.59	68.03	4.1
713	1410	1	58.903	58.90	101.10	1	58.90	58.90	58.26	0.6
714	1404	4	158.370	633.48	224.24	4	158.37	633.48	70.62	2.8
715	1406	1	31.615	31.62	56.34	1	31.62	31.62	56.12	0.6
716	1405	1	48.201	48.20	375.37	3	221.17	221.17	58.92	0.6
717	1414	7	208.570	1459.99	330.63	7	208.57	1459.99	63.08	4.4
718	1411	6	137.809	826.86	249.10	6	137.81	826.86	55.32	3.3
719	1412	4	124.558	498.23	170.15	4	124.56	498.23	73.21	2.9
720	1413	4	121.881	487.52	152.79	4	121.88	487.52	79.77	3.2
721	1415	4	69.604	278.42	108.40	4	69.60	278.42	64.21	2.6
722	1416	5	72.918	364.59	112.82	5	72.92	364.59	64.63	3.2
723	1417	9	199.579	1796.21	815.97	30	569.14	4260.25	69.75	5.2
724	1421	10	158.129	1581.29	226.15	10	158.13	1581.29	69.92	7.0
725	1425	4	103.636	415.34	136.79	4	103.64	415.34	75.91	3.0
726	1424	4	74.204	296.82	127.29	4	74.20	296.82	58.30	2.3
727	1423	6	132.967	797.80	172.38	6	132.97	797.80	77.14	4.6
728	1422	6	140.506	843.04	178.62	6	140.51	843.04	78.66	4.7
729	1426	6	137.920	827.52	1128.76	36	756.14	3966.58	66.99	3.5
730	1440	7	77.749	544.24	646.00	22	449.95	1955.54	69.65	3.0
731	1442	4	140.882	563.53	312.83	11	249.22	1321.91	79.67	4.2
732	1441	4	216.643	866.57	243.92	4	216.64	866.57	88.82	3.6
733	1434	4	121.766	487.06	135.19	4	121.77	487.06	90.07	3.6
734	-	-	-	-	1846.66	0	0.00	0.00	0.00	0.0
735	1444	1	44.863	44.86	768.16	5	300.03	300.03	39.06	0.4
736	1449	7	235.976	1651.84	434.27	7	235.98	1651.84	54.34	3.8
737	1450	6	172.068	1032.41	572.12	15	340.04	1897.54	59.44	3.3
738	1460	7	114.211	799.47	169.16	7	114.21	799.47	67.52	4.7
739	1459	1	59.778	59.78	59.78	1	59.78	59.78	100.00	1.0
740	1456	1	68.720	68.72	409.69	5	188.16	307.60	45.93	0.8
741	1457	2	87.865	175.73	203.66	2	87.86	175.73	43.14	0.9
742	1494	5	171.779	858.89	258.30	5	171.78	858.89	66.50	3.3
743	1493	4	109.404	437.62	166.90	4	109.40	437.62	65.55	2.6
744	-	-	-	-	191.00	0	0.00	0.00	0.00	0.0
745	1491	5	118.473	592.36	143.64	5	118.47	592.36	82.48	4.1
746	1492	5	97.738	488.69	106.88	5	97.74	488.69	91.44	4.6
747	1490	5	72.253	361.26	357.33	9	202.64	882.80	56.71	2.5
748	1486	1	169.738	169.74	172.84	1	169.74	169.74	98.20	1.0
749	1485	1	168.694	168.69	171.42	1	168.69	168.69	98.41	1.0
750	1484	4	139.014	556.06	238.74	4	139.01	556.06	58.23	2.3
751	1487	5	112.861	564.31	144.23	5	112.86	564.31	78.25	3.9
752	1488	4	118.933	475.73	197.30	4	118.93	475.73	60.28	2.4
753	1482	2	235.973	471.95	393.62	2	235.97	471.95	59.95	1.2
754	1481	3	157.315	471.94	166.60	3	157.31	471.94	94.42	2.8
755	1479	1	54.520	54.52	93.95	1	54.52	54.52	58.03	0.6
756	1480	1	68.629	68.63	102.53	1	68.63	68.63	66.94	0.7
757	-	-	-	-	0.00	0	0.00	0.00	0.00	0.0
758	3976	2	159.860	319.72	589.27	4	335.79	671.57	56.98	1.1
759	3975	2	175.927	351.85	240.04	5	132.49	662.46	55.20	2.8
760	1483	2	101.818	203.64	190.57	2	101.82	203.64	53.43	1.1
761	-	-	-	-	4794.07	0	0.00	0.00	0.00	0.0
762	-	-	-	-	5129.83	0	0.00	0.00	0.00	0.0
763	1477	3	146.165	438.50	230.51	3	146.17	438.50	63.41	1.9
764	1475	3	288.904	866.71	459.93	3	288.90	866.71	62.81	1.9
765	1476	2	95.998	192.00	132.36	2	95.99	192.00	72.53	1.5
766	1475	2	56.180	112.32	92.35	2	56.18	112.32	60.81	1.2
767	1468	1	53.389	53.39	79.18	1	53.39	53.39	67.43	0.7
768	1467	1	24.609	24.61	114.25	1	24.61	24.61	21.54	0.2
769	1470	1	38.971	38.97	620.93	7	321.99	321.99	51.86	0.5
770	1469	1	45.158	45.16	221.28	2	154.92	154.92	70.01	0.7
771	1472	2	90.274	180.55	341.39	6	262.18	524.36	76.80	1.5
772	1464	2	76.445	152.89	397.59	6	304.33	608.66	76.54	1.5
773	1461	1	92.431	92.43	253.45	2	189.05	189.05	74.59	0.7
774	1465	2	252.277	504.55	292.48	2	252.28	504.55	86.25	1.7
775	1466	2	215.251	430.50	262.41	2	215.25	430.50	73.61	1.5
776	1696	2	106.142	212.28	126.09	2	106.14	212.28	84.18	1.7

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot (sqm)	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
777	1440	7	77.749	544.24	646.00	22	449.95	1955.54	69.65	3.0
778	1433	9	448.951	4040.56	592.11	9	448.95	4040.56	75.82	6.8
779	1436	6	219.875	1319.25	459.63	6	219.87	1319.25	47.84	2.9
780	1234	7	143.747	1006.23	246.51	7	143.75	1006.23	58.31	4.1
781	1232	1	33.731	33.73	784.93	3	301.90	570.06	39.47	0.7
782	1233	2	268.164	536.33	823.19	9	220.27	1982.43	26.76	2.4
783	1231	7	185.366	1297.56	240.38	7	185.37	1297.56	77.12	5.4
784	1227	7	229.025	1603.18	269.22	7	229.03	1603.18	85.07	6.0
785	1230	2	148.770	297.54	310.36	2	148.77	297.54	47.93	1.0
786	1229	2	98.513	197.03	256.94	3	177.60	276.11	69.12	1.1
787	1228	1	79.078	79.08	308.63	6	224.57	1347.42	72.76	4.4
788	1240	8	275.847	2206.78	1006.49	9	440.08	2371.02	43.72	2.4
789	1238	6	155.492	932.95	243.88	6	155.49	932.95	63.76	3.8
790	1238	5	269.431	1347.16	366.59	5	269.43	1347.16	73.50	3.7
791	1237	8	222.749	1781.99	310.29	8	222.75	1781		



Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
867	937	5	183.610	918.05	184.10	5	183.61	918.05	99.73	5.0
868	934	4	102.296	409.18	103.64	4	102.30	409.18	98.70	3.9
869	939	4	44.414	177.66	76.60	4	44.41	177.66	57.98	2.3
870	941	4	160.67	160.67	81.10	4	160.67	160.67	49.52	2.0
871	938	1	64.40	64.40	99.44	1	64.40	64.40	64.77	0.6
872	942	5	93.093	465.46	122.87	5	93.09	465.46	75.76	3.8
873	323	1	137.706	137.71	201.19	1	137.71	137.71	68.44	0.7
874	258	6	189.800	1138.00	288.07	6	189.80	1138.00	65.89	4.0
875	324	7	119.323	835.26	161.79	7	119.32	835.26	73.75	5.2
876	3853	7	118.217	827.52	160.77	7	118.22	827.52	73.53	5.1
877	319	6	130.886	785.32	168.29	6	130.89	785.32	77.77	4.7
878	327	6	150.610	903.66	189.37	6	150.61	903.66	79.53	4.8
879	328	6	138.512	819.07	168.81	6	138.51	819.07	80.86	4.9
880	329	6	142.672	856.03	188.57	6	142.67	856.03	75.66	4.5
881	318	6	615.182	3691.09	715.28	6	615.18	3691.09	86.01	5.2
882	334	6	147.602	885.61	276.00	6	147.60	885.61	53.48	3.2
883	332	6	103.670	622.02	174.09	6	103.67	622.02	59.55	3.6
884	331	6	295.544	1773.26	369.88	6	295.54	1773.26	79.90	4.8
885	256	6	884.310	4105.86	1670.66	11	1014.59	5757.24	60.73	3.4
886	205	5	299.956	1499.78	591.90	5	299.96	1499.78	50.68	2.5
887	203	1	215.938	215.94	1075.69	3	810.58	1405.23	75.35	1.3
888	192	4	325.832	1303.33	377.43	4	325.83	1303.33	86.33	3.5
889	235	8	197.408	1579.26	340.01	8	197.41	1579.26	58.06	4.6
890	1560	6	290.906	1745.44	529.55	6	290.91	1745.44	54.93	3.3
891	1258	4	426.002	1704.01	652.14	4	426.00	1704.01	65.32	2.6
892	1559	4	449.672	1798.69	582.53	4	449.67	1798.69	77.19	3.1
893	-	-	-	-	504.82	0	0.00	0.00	0.00	0.0
894	1254	9	263.081	2367.73	443.78	9	263.08	2367.73	59.28	5.3
895	1248	5	200.475	1002.38	-	-	-	-	-	-
896	1252	1	121.680	121.68	585.72	7	412.93	1214.83	70.50	2.1
897	1575	6	123.118	738.71	211.35	6	123.12	738.71	58.25	3.5
898	-	-	-	-	113.95	0	0.00	0.00	0.00	0.0
898	213	3	70.273	210.82	-	-	-	-	-	-
898	214	3	276.964	830.59	-	-	-	-	-	-
898	4356	1	7.916	7.92	468.60	10	372.28	1066.55	79.44	2.3
898	4357	1	6.040	6.04	-	-	-	-	-	-
898	4358	1	6.039	6.04	-	-	-	-	-	-
898	4359	1	5.146	5.15	-	-	-	-	-	-
898	4367	4	148.647	694.69	-	-	-	-	-	-
898	206	4	213.238	852.95	-	-	-	-	-	-
898	207	4	207.793	831.17	-	-	-	-	-	-
898	208	3	208.684	620.05	-	-	-	-	-	-
898	209	4	185.724	742.90	-	-	-	-	-	-
898	211	2	175.260	350.52	-	-	-	-	-	-
898	210	3	209.680	629.04	-	-	-	-	-	-
898	212	9	83.885	574.79	-	-	-	-	-	-
898	301	16	545.160	8722.56	1284.54	30	886.17	13496.65	68.99	10.5
898	1566	14	341.006	4774.09	-	-	-	-	-	-
898	302	8	342.283	2738.27	478.19	8	342.28	2738.27	71.58	5.7
898	303	6	345.969	2075.81	863.15	6	345.97	2075.81	40.08	2.4
898	-	-	-	-	484.99	0	0.00	0.00	0.00	0.0
898	1576	2	63.378	126.76	1238.01	11	476.93	1927.81	38.52	1.6
898	1563	4	268.726	1066.90	-	-	-	-	-	-
898	1564	5	146.831	734.15	-	-	-	-	-	-
898	4524	6	76.459	458.75	265.51	6	76.46	458.75	28.80	1.7
898	1561	6	372.235	2233.41	464.21	6	372.24	2233.41	80.19	4.8
898	-	-	-	-	628.72	0	0.00	0.00	0.00	0.0
898	1562	7	209.824	1468.77	210.57	7	209.82	1468.77	99.64	7.0
898	3850	7	104.885	734.20	271.19	7	104.89	734.20	38.68	2.7
898	1573	5	162.825	814.12	317.57	5	162.82	814.12	51.27	2.6
898	1572	6	361.913	2171.48	512.77	6	361.91	2171.48	70.58	4.2
898	-	-	-	-	123.07	0	0.00	0.00	0.00	0.0
898	1571	6	257.277	1543.66	516.23	6	257.28	1543.66	49.84	3.0
898	333	5	97.032	485.16	250.89	5	97.03	485.16	38.67	1.9
898	-	-	-	-	314.23	0	0.00	0.00	0.00	0.0
898	1574	6	148.422	878.53	320.97	6	148.42	878.53	44.78	2.7
898	1579	6	134.549	807.30	181.04	6	134.55	807.30	70.43	4.2
898	1577	6	179.915	1079.49	239.15	6	179.92	1079.49	75.23	4.5
898	-	-	-	-	102.02	0	0.00	0.00	0.00	0.0
898	303	6	156.058	936.35	619.85	6	156.06	936.35	25.18	1.5
898	306	4	88.101	352.40	292.11	4	88.10	352.40	30.16	1.2
898	311	1	84.576	84.58	-	-	-	-	-	-
898	312	1	132.732	132.73	343.75	2	217.31	217.31	63.22	0.6
898	237	8	258.747	2069.98	-	-	-	-	-	-
898	310	1	102.598	102.60	478.10	9	361.34	2172.57	75.58	4.5
898	308	6	344.174	2065.04	-	-	-	-	-	-
898	307	6	515.744	3094.47	1202.43	13	960.68	5260.27	79.89	4.4
898	309	1	100.764	100.76	-	-	-	-	-	-
898	3851	1	116.925	116.92	303.11	1	116.92	116.92	38.58	0.4
898	317	6	131.105	786.63	201.79	6	131.10	786.63	64.97	3.9
898	325	5	133.519	667.59	192.87	5	133.52	667.59	69.23	3.5
898	326	5	110.920	554.60	164.41	5	110.92	554.60	67.47	3.4
898	330	5	47.504	237.52	201.57	5	47.50	237.52	23.57	1.2
898	316	1	16.231	16.23	-	-	-	-	-	-
898	315	1	48.067	48.07	384.87	3	124.43	124.43	32.33	0.3
898	314	1	60.133	60.13	-	-	-	-	-	-
898	1235	8	292.346	2338.76	712.81	11	351.27	2515.52	49.28	3.5
898	1236	3	58.920	176.76	-	-	-	-	-	-
898	1578	6	189.257	1135.54	355.79	6	189.26	1135.54	53.19	3.2
898	911	5	103.806	519.03	146.61	5	103.81	519.03	70.81	3.5
898	3870	2	74.711	149.42	-	-	-	-	-	-
898	953	5	227.305	1136.53	1143.19	10	530.76	1972.19	46.43	1.7
898	954	3	228.747	686.24	-	-	-	-	-	-
898	3869	7	859.935	6019.54	1044.12	7	859.93	6019.54	82.36	5.8
898	955	8	199.601	1596.81	315.51	8	199.60	1596.81	63.26	5.1
898	957	9	259.571	2336.13	315.02	9	259.57	2336.13	82.40	7.4
898	957	4	137.478	549.91	235.79	4	137.48	549.91	58.31	2.3
898	952	2	198.086	396.17	346.64	2	198.09	396.17	57.14	1.1
898	951	2	116.608	74.61	740.67	3	193.82	313.04	26.17	0.4
898	1929	5	209.899	1049.50	220.09	5	209.90	1049.50	95.37	4.8
898	1930	1	63.095	63.09	64.94	1	63.09	63.09	97.17	1.0
898	1927	5	157.994	789.97	162.88	5	157.99	789.97	97.00	4.8
898	1928	1	167.847	167.85	187.90	1	167.85	167.85	89.33	0.9
898	1931	2	139.505	279.01	147.97	2	139.51	279.01	94.28	1.9
898	1932	4	89.741	358.96	94.03	4	89.74	358.96	95.44	3.8
898	945	5	109.497	547.49	134.77	5	109.50	547.49	81.25	4.1
898	944	5	100.772	503.86	159.63	5	100.77	503.86	63.13	3.2
898	940	5	140.654	703.27	171.32	5	140.65	703.27	82.10	4.1
898	943	3	134.724	404.17	410.52	10	216.59	977.23	52.76	2.4
898	1933	7	81.865	573.06	-	-	-	-	-	-
898	1934	8	99.936	799.49	180.82	8	99.94	799.49	55.27	4.4
898	3876	4	115.925	463.70	203.76	4	115.92	463.70	58.89	2.3
898	1926	4	231.897	927.59	327.66	4	231.90	927.59	70.77	2.8
898	-	-	-	-	153.71	0	0.00	0.00	0.00	0.0
898	-	-	-	-	546.78	0	0.00	0.00	0.00	0.0
898	977	4	120.203	480.81	264.69	4	120.20	480.81	45.41	1.8
898	976	4	249.168	996.67	339.72	4	249.17	996.67	73.34	2.9
898	3875	3	238.678	716.03	360.73	3	238.68	716.03	86.16	2.0
898	979	8	130.695	1045.66	-	-	-	-	-	-
898	975	4	179.807	719.23	421.46	12	310.50	1764.79	73.67	4.2
898	978	4	271.352	1085.41	341.70	4	271.35	1085.41	79.41	3.2
898	980	1	77.981	77.98	289.01	1	77.98	77.98	26.07	0.3
898	989	5	84.791							

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
1104	1801	1	46.727	46.73	531.21	5	308.82	1095.10	58.14	2.1
1104	1800	4	262.094	1048.37						
1105	1802	6	115.076	690.46	243.64	6	115.08	690.46	47.23	2.8
1106	1783	9	528.403	4755.63	636.63	10	573.24	4800.47	90.04	7.5
1107	1797	1	44.836	44.84						
1108	1796	5	54.156	270.78	54.16	5	54.16	270.78	99.98	5.0
1109	3832	1	12.202	12.20	22.98	1	12.20	12.20	53.10	0.5
1110	1794	7	74.814	523.69	98.76	7	74.81	523.69	75.75	5.3
1111	1795	1	36.801	36.80	58.67	1	36.80	36.80	62.73	0.6
1112	3927	1	17.371	17.37	128.85	5	125.71	450.73	97.57	3.5
1113	3828	4	108.341	433.36	48.79	1	47.26	47.26	96.87	1.0
1114	1762	5	141.745	708.72	171.06	5	141.74	708.72	82.86	4.1
1115	1764	7	211.479	1480.35	274.58	7	211.48	1480.35	77.02	5.4
1116	1765	7	141.720	992.04	215.43	8	184.53	1034.85	85.66	4.8
1117	1768	1	42.814	42.81						
1117	1766	7	135.596	949.17	225.81	8	186.23	999.80	82.47	4.4
1117	1767	1	50.633	50.63						
1118	1769	7	202.719	1419.03	269.21	7	202.72	1419.03	75.30	5.3
1119	-	-	-	-	159.10	0	0.00	0.00	0.00	0.0
1120	1770	7	141.606	991.24	280.10	7	141.61	991.24	50.56	3.5
1121	1839	6	164.537	997.22	177.77	6	164.54	997.22	92.56	5.6
1122	1837	3	79.193	237.58	235.88	6	162.87	488.60	69.05	2.1
1122	1838	3	83.675	251.03						
1123	1779	2	71.312	142.62	198.18	9	183.96	931.14	92.82	4.7
1124	1778	7	112.645	788.51						
1124	1780	4	135.382	541.53	135.27	4	135.38	541.53	100.08	4.0
1125	1781	5	112.586	562.93	113.38	5	112.59	562.93	99.30	5.0
1126	-	-	-	-	751.25	0	0.00	0.00	0.00	0.0
1127	1774	7	41.457	290.20	318.56	9	240.09	687.46	75.37	2.2
1127	1773	2	198.628	397.26						
1128	1782	1	143.022	143.02	142.99	1	143.02	143.02	100.02	1.0
1128	1785	6	75.848	455.09						
1129	1786	1	19.128	19.13	251.25	10	141.93	615.08	56.49	2.4
1129	1787	3	46.955	140.86						
1130	1788	4	317.980	1271.92	319.74	4	317.98	1271.92	99.45	4.0
1131	1789	4	190.881	763.52	303.74	4	190.88	763.52	62.84	2.5
1132	1790	6	119.390	716.34	150.07	6	119.39	716.34	79.56	4.8
1133	1791	4	116.885	467.54	127.25	4	116.88	467.54	91.86	3.7
1134	1792	4	140.853	563.41	165.03	4	140.85	563.41	85.35	3.4
1135	1857	6	123.416	740.50	404.72	14	343.35	2499.97	84.84	6.2
1135	1858	8	219.934	1759.48						
1136	1775	6	162.908	977.45	275.58	6	162.91	977.45	59.11	3.5
1137	1859	5	139.786	698.93	171.82	0	0.00	0.00	0.00	0.0
1138	1860	3	129.889	362.61	185.54	3	129.89	362.61	74.22	3.7
1139	1862	6	109.239	649.44						
1140	1861	6	55.501	333.01	201.49	12	163.74	982.44	81.26	4.9
1141	1772	9	169.401	1524.61	168.59	9	169.40	1524.61	100.48	9.0
1142	1771	7	208.781	1447.32	239.71	7	208.78	1447.32	88.25	6.0
1143	3836	3	78.118	234.35	246.62	3	78.12	234.35	31.68	1.0
1144	1844	3	149.738	449.21	305.19	7	237.48	800.19	77.82	2.6
1144	1843	4	87.744	350.97						
1145	1864	5	159.993	799.97	349.82	10	268.13	1340.67	76.65	3.8
1146	1863	5	108.141	540.70						
1146	1865	4	197.085	788.34	210.78	4	197.08	788.34	93.50	3.7
1147	1856	1	64.075	64.07	282.75	2	173.95	173.95	61.52	0.6
1148	1840	4	184.688	738.75	243.94	5	243.81	797.88	99.95	3.3
1149	1841	1	59.124	59.12						
1149	1842	5	171.769	858.84	291.48	5	171.77	858.84	58.93	2.9
1150	1846	2	165.739	331.48	172.93	2	165.74	331.48	95.84	1.9
1151	1845	5	186.725	933.63	186.73	5	186.73	933.63	100.00	5.0
1152	1866	4	179.297	717.19	179.30	4	179.30	717.19	100.00	4.0
1153	1854	1	111.750	111.75	267.06	2	232.55	232.55	87.08	0.9
1153	1853	1	120.801	120.80						
1154	1868	3	117.526	352.58	117.53	3	117.53	352.58	100.00	3.0
1155	1869	3	71.573	214.72	71.57	3	71.57	214.72	100.00	3.0
1156	1867	4	211.556	846.23	213.44	4	211.56	846.23	99.12	4.0
1157	1848	3	38.561	115.68	154.76	8	75.04	298.08	48.49	1.9
1157	1847	5	36.480	182.40						
1158	1849	6	76.773	460.64	159.42	6	76.77	460.64	48.16	2.9
1159	1850	1	124.432	124.43	132.62	1	124.43	124.43	93.82	0.9
1160	1852	3	279.773	839.32	280.57	3	279.77	839.32	99.72	3.0
1161	1851	6	141.383	848.30	146.16	6	141.38	848.30	96.73	5.8
1162	3913	5	144.215	721.07	173.85	5	144.21	721.07	82.95	4.1
1163	3914	5	143.593	717.97	150.10	5	143.59	717.97	95.66	4.8
1164	3915	5	118.789	593.94	127.66	5	118.79	593.94	93.05	4.7
1165	1883	5	132.057	660.29	139.33	5	132.06	660.29	94.78	4.7
1166	1886	6	139.628	837.77	159.77	6	139.63	837.77	87.40	5.2
1167	-	-	-	-	25.16	0	0.00	0.00	0.00	0.0
1168	1881	5	123.910	619.55	147.58	7	137.70	647.14	93.31	4.4
1169	4310	2	13.792	27.58						
1170	3912	5	132.461	662.31	147.38	5	132.46	662.31	89.88	4.5
1170	1867	4	159.462	637.37	159.64	4	159.46	637.37	99.81	4.0
1171	3967	6	44.354	286.13	44.66	6	44.35	286.13	99.32	6.0
1172	1880	5	210.826	1054.13	211.31	5	210.83	1054.13	99.77	5.0
1173	1879	4	179.000	719.60	193.79	4	179.00	719.60	92.83	3.7
1174	1878	6	136.835	821.01	464.70	12	320.64	1923.85	69.00	4.1
1174	1877	6	183.807	1102.84						
1175	1876	5	237.496	1187.48	466.59	5	237.50	1187.48	50.90	2.5
1176	1875	3	316.729	950.19	688.68	3	316.73	950.19	47.37	1.4
1177	2097	1	48.537	48.54	187.36	8	181.53	979.48	96.89	5.2
1177	2098	7	132.991	930.94						
1178	2100	2	123.630	247.26	249.76	3	162.13	285.76	64.91	1.1
1179	2099	1	38.502	38.50						
1179	2101	4	253.230	1012.92	253.23	4	253.23	1012.92	100.00	4.0
1180	2102	8	314.474	2515.79	397.16	8	314.47	2515.79	79.18	6.3
1181	2111	5	241.370	1206.85	500.82	5	241.37	1206.85	48.20	2.4
1182	2103	2	132.406	264.81	363.96	2	132.41	264.81	36.38	0.7
1183	2104	3	105.166	315.50	463.63	6	229.04	687.12	49.40	1.5
1183	2105	3	123.873	371.62						
1184	2109	4	73.772	295.09	82.02	4	73.77	295.09	89.95	3.6
1185	2110	4	73.152	292.61	86.32	4	73.15	292.61	84.75	3.4
1186	2108	4	81.236	324.94	107.16	4	81.24	324.94	76.81	3.0
1187	-	-	-	-	55.78	0	0.00	0.00	0.00	0.0
1188	2106	4	278.622	1106.49	369.22	4	278.62	1106.49	74.92	3.0
1189	2107	4	109.740	438.96	114.22	4	109.74	438.96	96.07	3.8
1190	2141	3	163.944	491.83	168.98	3	163.94	491.83	97.02	2.9
1191	2142	4	150.403	601.61	154.36	4	150.40	601.61	97.44	3.9
1192	2138	3	163.663	490.99	231.68	3	163.66	490.99	70.64	2.1
1193	2139	4	201.228	804.91	201.60	4	201.23	804.91	99.82	4.0
1194	2140	4	172.900	691.60	201.28	4	172.90	691.60	85.90	3.4
1195	1887	3	107.337	322.01	175.19	3	107.34	322.01	67.27	1.8
1196	1894	1	48.815	48.81	180.67	5	137.53	403.67	76.12	2.2
1196	2115	4	88.713	354.85						
1197	1893	4	74.499	298.00	248.21	9	198.68	918.82	80.05	3.7
1197	2114	5	124.184	620.92						
1198	1888	4	105.898	422.79	226.12	8	188.95	755.79	83.56	3.3
1198	1889	4	83.249	333.00						
1199	1891	3	27.693	83.08	650.31	11	394.56	801.54	60.67	1.2
1199	1892	3	46.302	138.91						
1199	1890	4	86.330	345.32						
1200	2120	1	234.229	234.23						
1201	2113	3	262.67							

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
1342	1698	1	36.078	36.08	166.99	2	59.55	59.55	35.66	0.4
1342	1697	1	23.473	23.47	166.99	2	59.55	59.55	35.66	0.4
1343	4303	5	57.294	286.47	71.78	5	57.29	286.47	79.81	4.0
1344	4304	5	35.903	179.51	48.70	5	35.90	179.51	73.72	3.7
1345	4305	5	37.629	188.14	48.39	5	37.63	188.14	77.75	3.9
1346	4306	7	74.253	519.77	90.63	7	74.25	519.77	81.93	5.7
1347	4307	1	64.384	64.38	75.83	1	64.38	64.38	84.91	0.8
1348	3959	4	49.548	198.19	96.57	4	49.55	198.19	51.31	2.1
1349	1705	4	71.706	286.82	144.30	8	144.30	577.20	100.00	4.0
1350	1706	4	72.595	290.38	121.52	4	78.78	315.12	64.83	2.6
1350	1707	4	78.779	315.12	121.52	4	78.78	315.12	64.83	2.6
1351	2405	5	203.909	1019.54	678.18	14	531.77	2443.37	78.41	3.6
1351	2406	4	215.485	861.94	678.18	14	531.77	2443.37	78.41	3.6
1351	2404	5	112.377	561.88	678.18	14	531.77	2443.37	78.41	3.6
1352	1544	4	97.897	391.59	150.76	4	97.90	391.59	64.94	2.6
1353	1646	3	125.573	376.72	681.18	12	458.10	1407.85	67.25	2.1
1353	1647	3	116.581	349.74	681.18	12	458.10	1407.85	67.25	2.1
1353	1645	4	124.746	498.99	681.18	12	458.10	1407.85	67.25	2.1
1353	1644	2	91.203	182.41	681.18	12	458.10	1407.85	67.25	2.1
1354	1636	4	46.450	185.80	855.16	30	557.25	2191.84	65.16	2.6
1354	1637	4	44.954	179.82	855.16	30	557.25	2191.84	65.16	2.6
1354	1638	4	68.237	272.95	855.16	30	557.25	2191.84	65.16	2.6
1354	1639	3	90.486	271.46	855.16	30	557.25	2191.84	65.16	2.6
1354	1640	3	95.280	285.84	855.16	30	557.25	2191.84	65.16	2.6
1354	1641	5	77.839	389.19	855.16	30	557.25	2191.84	65.16	2.6
1354	1642	1	39.446	39.45	855.16	30	557.25	2191.84	65.16	2.6
1354	1643	6	94.556	567.34	855.16	30	557.25	2191.84	65.16	2.6
1354	1633	4	129.937	649.66	855.16	30	557.25	2191.84	65.16	2.6
1354	1632	4	59.684	238.74	855.16	30	557.25	2191.84	65.16	2.6
1355	1634	5	148.395	741.98	626.72	19	535.07	2615.64	85.38	4.2
1355	1635	5	197.049	985.24	626.72	19	535.07	2615.64	85.38	4.2
1356	1545	5	188.157	940.78	268.70	5	188.16	940.78	65.17	3.3
1357	1758	6	186.281	1117.75	445.49	6	186.29	1117.75	41.82	2.5
1358	1608	6	249.539	1247.70	353.20	6	313.77	1311.92	88.84	3.7
1359	1609	3	106.080	318.24	174.57	3	106.08	318.24	60.77	1.8
1360	-	-	-	-	104.41	0	0.00	0.00	0.00	0.0
1361	3907	5	117.777	588.89	145.46	5	117.78	588.89	80.97	4.0
1362	3906	2	86.075	172.15	99.84	2	86.08	172.15	86.21	1.7
1363	1704	8	282.953	2263.62	299.76	8	282.95	2263.62	94.39	7.6
1364	2521	4	85.922	343.69	253.23	10	234.92	820.54	92.77	3.2
1364	3960	1	67.039	67.04	253.23	10	234.92	820.54	92.77	3.2
1364	3961	5	81.963	409.82	253.23	10	234.92	820.54	92.77	3.2
1365	-	-	-	-	79.61	0	0.00	0.00	0.00	0.0
1366	1611	5	279.952	1399.76	350.36	5	279.95	1399.76	79.90	4.0
1367	-	5	120.978	604.89	133.81	5	120.98	604.89	90.41	4.5
1368	-	-	-	-	146.83	0	0.00	0.00	0.00	0.0
1369	1610	1	185.869	185.87	271.43	1	185.87	185.87	68.48	0.7
1370	1613	7	180.641	1264.49	395.96	14	264.83	1853.82	66.88	4.7
1370	1614	7	84.190	589.33	395.96	14	264.83	1853.82	66.88	4.7
1371	3908	1	45.930	45.93	45.81	1	45.93	45.93	100.27	1.0
1372	3909	6	282.506	1095.03	282.51	6	282.51	1095.03	100.00	6.0
1373	3964	6	134.792	808.75	186.04	6	134.79	808.75	72.45	4.3
1374	1873	1	43.172	43.17	228.98	5	201.12	674.95	87.83	2.9
1374	1874	4	157.945	631.78	228.98	5	201.12	674.95	87.83	2.9
1375	2386	1	54.891	54.89	228.20	3	145.91	145.91	63.94	0.6
1375	2385	1	35.726	35.73	228.20	3	145.91	145.91	63.94	0.6
1375	2384	1	55.290	55.29	228.20	3	145.91	145.91	63.94	0.6
1376	1872	4	120.809	483.23	266.80	4	120.81	483.23	45.28	1.8
1377	-	-	-	-	108.09	0	0.00	0.00	0.00	0.0
1378	2393	1	27.207	27.21	134.71	1	27.21	27.21	20.20	0.2
1379	1871	4	187.019	748.08	285.51	4	187.02	748.08	65.50	2.6
1380	2397	2	69.611	139.22	121.76	2	69.61	139.22	57.17	1.1
1381	-	-	-	-	133.12	0	0.00	0.00	0.00	0.0
1382	1605	2	209.088	418.18	1085.67	4	474.27	683.36	43.68	0.6
1382	1606	1	132.593	132.59	1085.67	4	474.27	683.36	43.68	0.6
1382	3910	1	132.593	132.59	1085.67	4	474.27	683.36	43.68	0.6
1383	-	-	-	-	813.08	0	0.00	0.00	0.00	0.0
1384	1260	1	1359.432	1359.43	4668.21	1	1359.43	1359.43	29.12	0.3
1385	3819	10	1074.035	10740.35	2294.51	10	1074.03	10740.35	46.81	4.7
1386	1304	4	220.342	881.37	334.47	4	220.34	881.37	65.88	2.6
1387	1307	1	55.704	55.70	497.04	7	236.89	788.91	47.46	1.6
1387	1306	1	42.429	42.43	497.04	7	236.89	788.91	47.46	1.6
1387	1305	5	137.755	688.78	497.04	7	236.89	788.91	47.46	1.6
1388	605	6	200.770	1204.62	218.62	6	200.77	1204.62	91.83	5.5
1389	604	6	134.066	804.39	504.90	6	134.07	804.39	26.55	1.6
1390	102	7	57.333	401.33	977.77	15	376.12	1146.93	38.47	1.2
1390	101	1	73.829	73.83	977.77	15	376.12	1146.93	38.47	1.2
1390	100	2	184.345	368.69	977.77	15	376.12	1146.93	38.47	1.2
1390	103	5	60.617	303.08	977.77	15	376.12	1146.93	38.47	1.2
1391	4338	2	257.975	515.95	543.75	2	257.98	515.95	47.44	0.9
1392	61	2	113.896	227.39	162.85	2	113.70	227.39	69.81	1.4
1393	-	-	-	-	54.10	0	0.00	0.00	0.00	0.0
1394	124	7	102.627	718.39	169.61	7	102.63	718.39	60.51	4.2
1395	762	6	255.126	1530.75	341.63	6	255.13	1530.75	74.88	4.5
1396	1906	1	179.280	179.28	1874.72	3	604.69	1029.90	32.25	0.5
1396	1905	2	425.310	850.62	1874.72	3	604.69	1029.90	32.25	0.5
1397	1975	5	200.803	1004.02	290.70	5	200.80	1004.02	69.08	3.5
1398	1974	3	191.624	574.87	231.83	3	191.62	574.87	82.86	2.5
1399	1972	1	152.153	152.15	435.79	5	302.54	753.69	69.42	1.7
1400	1973	4	150.385	601.54	435.79	5	302.54	753.69	69.42	1.7
1400	1920	6	315.649	1893.89	433.87	6	315.65	1893.89	72.75	4.4
1401	1919	3	158.619	475.86	177.03	3	158.62	475.86	89.60	2.7
1402	1918	5	120.254	601.27	150.24	5	120.25	601.27	80.04	4.0
1403	1917	4	122.817	489.27	178.28	4	122.82	489.27	68.61	2.7
1404	1907	1	88.938	88.94	94.57	1	88.94	88.94	94.05	0.9
1405	1908	1	32.234	32.23	334.71	2	202.78	202.78	60.58	0.6
1406	1910	1	98.182	98.18	247.52	2	191.50	191.50	77.37	0.8
1406	1911	1	93.316	93.32	247.52	2	191.50	191.50	77.37	0.8
1407	1912	2	251.159	502.32	264.07	2	251.16	502.32	88.41	1.8
1408	1913	2	81.771	163.54	122.40	4	115.31	230.62	94.21	1.9
1409	1914	2	33.540	67.08	122.40	4	115.31	230.62	94.21	1.9
1409	1915	1	103.835	103.84	104.11	1	103.84	103.84	99.73	1.0
1410	1916	3	252.062	756.19	263.90	3	252.06	756.19	95.51	2.9
1411	1921	1	42.699	42.70	155.73	2	103.26	103.26	66.30	0.7
1412	-	-	-	-	44.03	0	0.00	0.00	0.00	0.0
1413	1981	1	143.489	143.49	323.34	1	143.49	143.49	44.38	0.4
1414	1980	2	279.584	559.17	288.43	2	279.58	559.17	96.93	1.9
1415	1976	2	252.886	505.39	347.37	3	342.00	594.69	98.45	1.7
1415	1977	1	89.302	89.30	347.37	3	342.00	594.69	98.45	1.7
1416	1978	1	106.582	106.58	289.78	1	106.58	106.58	36.78	0.4
1417	4371	3	163.869	491.61	172.03	3	163.87	491.61	95.25	2.9
1418	4372	5	156.581	782.90	178.56	5	156.58	782.90	87.89	4.4
1419	4373	5	190.204	951.02	222.41	5	190.20	951.02	85.52	4.3
1420	-	-	-	-	280.02	0	0.00	0.00	0.00	0.0

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
1552	1668	4	81.591	326.36	246.50	5	134.73	379.50	54.66	1.5
1553	3990	1	53.136	53.14						
1554	1669	5	144.162	720.81	210.69	5	144.16	720.81	68.42	3.4
1555	3991	1	41.170	41.17		1	41.17	41.17	50.38	0.5
1556	1670	5	129.087	645.44	214.42	5	129.09	645.44	60.20	3.0
1557	1681	1	37.262	37.26		7	183.99	576.83	25.73	0.8
1558	1682	1	48.516	48.51						
1559	1683	2	70.692	141.38	243.50	7	195.73	766.58	80.38	3.1
1560	1684	5	125.038	625.19						
1561	1746	5	140.695	703.47	249.49	7	250.13	922.34	100.26	3.7
1562	1745	2	109.431	218.86						
1563	1747	7	200.052	1400.36	200.05	7	200.05	1400.36	100.00	7.0
1564	-	-	-	-	119.01	0	0.00	0.00	0.00	0.0
1565	-	-	-	-	214.94	0	0.00	0.00	0.00	0.0
1566	1749	6	232.187	1393.12	274.00	6	232.19	1393.12	84.74	5.1
1567	1750	2	80.520	161.04	147.77	2	80.52	161.04	54.49	1.1
1568	1751	3	82.698	249.09	196.36	6	139.08	417.23	70.83	2.1
1569	1753	3	56.378	169.13						
1570	3917	5	221.621	1108.11	758.73	5	221.62	1108.11	29.21	1.5
1571	1754	4	97.665	390.66	322.00	4	97.66	390.66	30.33	1.2
1572	1755	2	166.088	332.18	542.43	5	334.12	836.28	61.60	1.5
1573	1756	3	168.034	504.10						
1574	-	-	-	-	126.97	0	0.00	0.00	0.00	0.0
1575	1757	1	284.356	284.36	528.20	1	284.36	284.36	53.83	0.5
1576	3922	1	155.221	155.22						
1577	3923	2	211.951	423.90	1217.08	4	467.05	679.00	38.38	0.6
1578	4308	1	99.879	99.88						
1579	-	-	-	-	116.89	0	0.00	0.00	0.00	0.0
1580	-	-	-	-	84.59	0	0.00	0.00	0.00	0.0
1581	3937	4	56.277	225.11	56.26	4	56.28	225.11	100.00	4.0
1582	3992	1	66.911	66.91	66.92	1	66.91	66.91	99.99	1.0
1583	3993	2	127.523	255.05	185.67	2	127.52	255.05	76.98	1.5
1584	2422	2	92.743	185.49	135.58	2	92.74	185.49	68.40	1.4
1585	2419	3	129.634	385.90	267.17	3	129.63	385.90	48.15	1.4
1586	2445	3	185.851	557.55	235.47	3	185.85	557.55	78.93	2.4
1587	2446	2	109.581	219.16	181.61	2	109.58	219.16	57.19	1.1
1588	2481	7	245.337	1717.36	404.90	7	245.34	1717.36	60.59	4.2
1589	2414	4	374.776	1499.11	376.81	4	374.78	1499.11	99.51	4.0
1590	2380	5	166.591	832.95	310.89	8	288.94	1200.01	92.94	3.9
1591	2381	3	122.351	367.05						
1592	2376	6	149.900	898.90	174.35	6	149.90	898.90	85.92	5.2
1593	-	-	-	-	183.43	0	0.00	0.00	0.00	0.0
1594	2378	6	90.161	540.97	146.36	7	146.19	596.99	99.88	4.1
1595	2379	1	56.026	56.03						
1596	2439	4	165.443	661.77	265.35	6	240.63	812.15	90.69	3.1
1597	4107	2	75.189	150.38						
1598	2435	4	249.492	997.97	342.84	4	249.49	997.97	72.77	2.9
1599	4279	1	48.317	48.32	117.71	1	48.32	48.32	41.05	0.4
1600	4283	2	73.451	146.90	122.43	2	73.45	146.90	60.00	1.2
1601	2434	1	16.154	16.15						
1602	2432	4	87.939	351.76						
1603	2433	1	50.709	50.71	625.41	13	350.85	1168.09	56.10	1.9
1604	2431	6	110.685	664.11						
1605	2430	1	85.363	85.36						
1606	2423	5	136.369	681.84	163.07	5	136.37	681.84	83.62	4.2
1607	2425	1	64.535	64.53	190.98	6	167.88	581.26	87.91	3.0
1608	2424	5	103.345	516.73						
1609	2428	4	68.590	274.36	376.23	8	170.11	680.43	45.21	1.8
1610	2429	4	101.517	406.07						
1611	2443	3	128.992	380.97	204.85	3	128.99	380.97	61.99	1.9
1612	2426	4	42.648	170.59	192.19	5	83.35	211.30	43.37	1.1
1613	2427	1	40.707	40.71						
1614	1666	3	83.739	251.22	138.07	3	83.74	251.22	60.65	1.8
1615	1661	6	102.415	614.49	138.86	6	102.42	614.49	73.75	4.4
1616	1683	6	95.121	570.72	130.70	6	95.12	570.72	72.78	4.4
1617	1659	1	30.866	30.87	434.17	2	227.53	227.53	52.41	0.5
1618	1660	1	196.665	196.66						
1619	1662	1	190.033	190.03	247.98	1	190.03	190.03	76.63	0.8
1620	1663	6	45.826	274.95	85.73	6	45.83	274.95	69.77	4.2
1621	1665	4	57.672	230.69	92.54	4	57.67	230.69	62.32	2.5
1622	1664	5	35.372	176.86	53.83	5	35.37	176.86	65.71	3.3
1623	4277	5	71.427	357.14	81.22	5	71.43	357.14	87.94	4.4
1624	4276	1	80.466	80.47	86.15	1	80.47	80.47	91.41	0.9
1625	4278	7	83.312	583.18	102.07	7	83.31	583.18	81.62	5.7
1626	4275	6	75.077	450.46	96.66	6	75.08	450.46	77.67	4.7
1627	2369	5	143.758	718.79	173.59	5	143.76	718.79	82.81	4.1
1628	2370	6	134.035	804.21	166.10	6	134.03	804.21	80.70	4.8
1629	2315	3	89.781	289.34	183.57	6	177.04	531.11	96.44	2.9
1630	4313	3	87.257	261.77						
1631	2298	6	81.259	487.55	84.30	6	81.26	487.55	96.39	5.8
1632	2348	4	79.980	319.92	79.98	4	79.98	319.92	100.00	4.0
1633	2349	3	51.420	154.26						
1634	2350	5	43.112	215.56						
1635	2352	5	50.452	252.26	331.45	21	238.01	994.18	71.81	3.0
1636	2351	4	27.402	109.61						
1637	2347	4	65.622	262.49						
1638	2317	3	222.455	667.36	236.31	3	222.45	667.36	94.14	2.8
1639	2316	5	92.219	461.09	101.63	5	92.22	461.09	90.74	4.5
1640	4114	3	97.085	291.25	97.26	3	97.08	291.25	99.82	3.0
1641	4113	1	160.984	160.98	304.01	1	160.98	160.98	52.95	0.5
1642	1619	4	77.118	308.47	77.12	4	77.12	308.47	100.00	4.0
1643	1618	1	82.679	82.68	82.68	1	82.68	82.68	100.00	1.0
1644	1620	6	57.304	343.82	59.91	6	57.30	343.82	95.65	5.7
1645	1621	5	225.983	1129.91	385.32	5	225.98	1129.91	58.65	2.9
1646	1686	4	119.302	477.21						
1647	1687	1	26.256	26.26	282.32	9	178.78	636.34	63.33	2.3
1648	1688	4	33.219	132.87						
1649	2321	5	198.873	994.36	220.35	5	198.87	994.36	90.26	4.5
1650	2322	2	148.747	297.49	218.16	2	148.75	297.49	88.18	1.4
1651	2323	5	128.324	641.62	175.80	5	128.32	641.62	73.08	3.7
1652	2303	1	52.288	52.27						
1653	2299	1	78.949	78.95						
1654	2301	1	71.426	71.43	495.78	6	274.12	417.07	55.29	0.8
1655	2302	3	71.476	214.43						
1656	2334	3	72.398	217.19	156.33	3	72.40	217.19	46.31	1.4
1657	2339	1	80.029	80.03	270.13	2	127.42	127.42	47.17	0.5
1658	2338	1	67.391	67.39						
1659	2340	4	146.942	587.77	153.89	4	146.94	587.77	95.48	3.8
1660	2344	6	43.879	263.28						
1661	2345	1	21.039	21.04	105.85	8	105.25	324.64	99.43	3.1
1662	4314	1	40.328	40.33						
1663	2304	2	120.293	240.59	167.91	2	120.29	240.59	71.64	1.4
1664	2314	5	201.689	1008.45	201.69	5	201.69	1008.45	100.00	5.0
1665	2305	8	188.995	1511.96	201.40	8	188.99	1511.96	93.84	7.5
1666	4137	6	156.713	940.28	173.96	6	156.71	940.28	90.08	5.4
1667	2313	2	34.245	68.49						
1668	2311	5	64.950	324.75	422.25	15	262.86	1702.53	62.25	4.0
1669	2312	8	163.661	1309.29						
1670	2310	4	235.818	943.27	327.44	7	305.96	1153.68	93.44	3.5
1671	2346	3	70.137	210.41						
1672	2309	6	108.943	653.66	320.20	8	184.26	804.29	57.55	2.5
1673	2307	2	75.317	150.63						
1674	2306	9	133.990	1205.91	358.35	9	133.99	1205.91	37.39	3.4
1675	2308	3	67.460	202.38						
1676	4168	4	75.774	303.10	248.25	9	201.29	621.58	81.08	2.5
1677	4169	2	58.051	116.10						

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
1770	2520	1	66.27	66.27	79.46	1	66.27	66.27	83.40	0.8
1771	-	-	-	-	144.57	0	0.00	0.00	0.00	0.0
1772	4153	4	95.74	382.96	95.74	4	95.74	382.96	100.00	4.0
1773	2479	5	220.29	1101.46	466.20	11	409.23	1519.35	87.78	3.3
1774	4150	5	57.24	286.19	466.20	11	409.23	1519.35	87.78	3.3
1775	4151	1	131.70	131.70	466.20	11	409.23	1519.35	87.78	3.3
1776	2523	2	99.62	199.24	115.58	2	99.62	199.24	86.19	1.7
1777	4146	5	117.09	585.45	152.56	5	117.09	585.45	76.75	3.8
1778	4145	6	173.55	1041.29	188.49	6	173.55	1041.29	92.08	5.5
1779	2465	6	198.53	1191.19	501.11	6	198.53	1191.19	39.62	2.4
1780	2466	5	121.52	607.58	141.90	5	121.52	607.58	85.63	4.3
1781	2458	3	66.91	200.73	284.22	9	206.68	1039.34	72.72	3.7
1782	2459	6	139.77	838.62	416.27	5	410.61	2053.05	98.64	4.9
1783	2464	5	125.66	628.29	135.01	5	125.66	628.29	93.07	4.7
1784	2463	4	142.38	569.51	177.70	4	142.38	569.51	80.12	3.2
1785	2462	3	138.07	414.20	247.54	3	138.07	414.20	55.77	1.7
1786	2483	5	197.12	985.60	282.24	5	197.12	985.60	67.45	3.4
1787	2199	1	61.96	61.96	230.85	3	179.58	179.58	77.79	0.8
1788	2198	1	63.64	63.64	230.85	3	179.58	179.58	77.79	0.8
1789	2197	1	53.99	53.99	230.85	3	179.58	179.58	77.79	0.8
1790	2200	5	111.36	556.78	113.17	5	111.36	556.78	98.40	4.9
1791	2481	3	102.14	306.42	108.92	3	102.14	306.42	93.78	2.8
1792	3053	1	54.30	54.30	62.70	1	54.30	54.30	86.80	0.9
1793	2484	4	126.19	504.75	158.60	4	126.19	504.75	79.56	3.2
1794	2038	1	121.01	121.01	171.57	1	121.01	121.01	70.53	0.7
1795	2036	5	187.89	939.46	218.29	5	187.89	939.46	86.07	4.3
1796	2037	4	115.34	461.38	144.96	4	115.34	461.38	79.57	3.2
1797	2027	4	124.49	497.96	160.95	4	124.49	497.96	77.34	3.1
1798	2028	4	155.02	620.07	214.64	4	155.02	620.07	72.22	2.9
1799	2029	3	112.78	338.35	127.68	3	112.78	338.35	88.33	2.6
1799	2030	1	62.86	62.86	84.61	1	62.86	62.86	74.30	0.7
1799	2031	5	109.34	546.70	143.93	5	109.34	546.70	75.97	3.8
1799	-	-	-	-	166.01	0	0.00	0.00	0.00	0.0
1799	2032	4	184.36	737.43	256.05	4	184.36	737.43	72.00	2.9
1800	2042	2	133.93	267.86	133.93	2	133.93	267.86	100.00	2.0
1801	2065	5	84.00	420.01	169.53	14	169.93	1193.34	100.23	7.0
1801	2096	9	85.93	773.33	169.53	14	169.93	1193.34	100.23	7.0
1802	2452	2	225.92	451.83	422.15	2	225.92	451.83	53.52	1.1
1803	-	-	-	-	290.11	0	0.00	0.00	0.00	0.0
1804	-	-	-	-	108.93	0	0.00	0.00	0.00	0.0
1805	2092	8	125.94	1007.52	130.89	8	125.94	1007.52	96.22	7.7
1806	4293	1	53.78	53.78	227.02	1	53.78	53.78	23.69	0.2
1807	2075	4	127.32	509.30	127.32	4	127.32	509.30	100.00	4.0
1808	2076	4	157.18	628.71	157.18	4	157.18	628.71	100.00	4.0
1809	2079	2	107.85	215.70	107.85	2	107.85	215.70	99.99	2.0
1810	2077	3	95.19	285.58	191.05	3	95.19	285.58	49.83	1.5
1811	2078	1	229.79	229.79	382.39	1	229.79	229.79	60.09	0.6
1812	2083	8	226.82	1814.54	278.39	8	226.82	1814.54	81.47	6.5
1813	2033	5	224.00	1119.98	330.92	5	224.00	1119.98	67.69	3.4
1814	2024	1	254.17	254.17	303.04	1	254.17	254.17	83.87	0.8
1815	2041	4	149.64	598.55	231.83	4	149.64	598.55	64.55	2.6
1816	2023	1	146.21	146.21	165.61	1	146.21	146.21	88.29	0.9
1817	2022	3	177.66	532.99	189.63	3	177.66	532.99	93.69	2.8
1818	1998	4	111.81	447.24	140.00	4	111.81	447.24	79.96	3.2
1819	2000	5	316.80	1584.01	348.93	5	316.80	1584.01	90.79	4.5
1820	2003	3	131.15	393.45	144.77	3	131.15	393.45	90.59	2.7
1821	2002	7	102.43	717.04	121.55	7	102.43	717.04	84.27	5.9
1822	2001	1	191.70	191.70	228.56	1	191.70	191.70	83.87	0.8
1823	1999	10	188.31	1883.05	219.24	10	188.31	1883.05	85.89	8.6
1824	2080	4	227.31	909.25	487.24	4	227.31	909.25	46.65	1.9
1825	2081	3	189.14	567.41	663.27	5	376.40	941.94	56.75	1.4
1826	2084	4	132.90	531.59	148.30	4	132.90	531.59	89.61	3.6
1827	2085	4	124.37	497.48	132.89	4	124.37	497.48	93.59	3.7
1828	-	-	-	-	337.08	0	0.00	0.00	0.00	0.0
1829	2014	4	218.77	875.09	232.69	4	218.77	875.09	94.02	3.8
1830	2015	5	184.77	923.85	207.18	5	184.77	923.85	89.18	4.5
1831	2016	5	214.75	1073.73	231.58	5	214.75	1073.73	92.73	4.6
1832	2018	1	53.69	53.69	387.31	11	357.63	1552.69	92.34	4.0
1832	2017	6	141.63	849.79	387.31	11	357.63	1552.69	92.34	4.0
1832	2091	4	162.30	649.21	387.31	11	357.63	1552.69	92.34	4.0
1833	2089	1	45.25	45.25	141.73	2	110.66	110.66	78.08	0.8
1833	2090	1	65.41	65.41	141.73	2	110.66	110.66	78.08	0.8
1834	2088	4	101.10	404.41	155.75	8	155.81	623.23	100.04	4.0
1835	4326	4	54.71	218.82	155.75	8	155.81	623.23	100.04	4.0
1835	2086	4	129.54	518.15	166.39	4	129.54	518.15	77.85	3.1
1836	2087	10	141.82	1418.17	162.24	10	141.82	1418.17	87.41	8.7
1837	2019	2	170.05	340.10	198.48	2	170.05	340.10	85.68	1.7
1838	2020	5	102.15	510.75	143.10	5	102.15	510.75	71.38	3.6
1839	-	-	-	-	162.26	0	0.00	0.00	0.00	0.0
1840	2021	1	86.20	86.20	139.76	1	86.20	86.20	61.68	0.6
1841	3946	6	149.66	897.97	324.88	7	194.80	943.11	59.96	2.9
1841	2485	1	45.14	45.14	324.88	7	194.80	943.11	59.96	2.9
1842	2343	3	176.20	528.60	177.46	3	176.20	528.60	99.29	3.0
1843	2342	3	147.00	441.00	146.77	3	147.00	441.00	100.16	3.0
1844	-	-	-	-	151.14	0	0.00	0.00	0.00	0.0
1845	2438	4	169.26	677.05	170.81	4	169.26	677.05	99.09	4.0
1846	2436	3	203.43	610.30	312.98	3	203.43	610.30	85.00	1.9
1847	4327	5	231.24	1156.21	337.45	5	231.24	1156.21	88.53	3.4
1848	2530	4	167.59	670.35	375.67	8	302.69	1210.77	80.57	3.2
1849	4288	4	78.41	549.90	188.11	7	78.41	549.90	41.69	2.9
1850	2525	10	453.42	4534.19	718.20	10	453.42	4534.19	63.13	6.3
1851	2526	1	74.22	74.22	311.37	3	217.35	217.35	69.80	0.7
1851	2527	1	88.01	88.01	311.37	3	217.35	217.35	69.80	0.7
1851	2528	1	55.11	55.11	311.37	3	217.35	217.35	69.80	0.7
1852	2524	1	63.60	63.60	277.36	1	63.60	63.60	22.93	0.2
1853	3175	6	69.74	418.41	123.69	6	69.74	418.41	56.38	3.4
1854	3176	2	87.85	175.71	117.95	2	87.85	175.71	74.48	1.5
1855	3940	2	137.22	274.43	324.63	2	137.22	274.43	42.27	0.8
1856	2534	1	49.36	49.36	122.60	1	49.36	49.36	40.26	0.4
1857	2533	1	51.90	51.90	120.89	1	51.90	51.90	42.93	0.4
1858	2532	1	41.00	41.00	219.79	2	121.98	121.98	55.50	0.6
1859	2536	1	50.25	50.25	204.01	2	109.47	109.47	53.66	0.5
1860	2538	1	59.22	59.22	89.39	1	59.22	59.22	63.05	0.6
1861	2539	1	60.15	60.15	97.63	1	60.15	60.15	61.61	0.6
1862	2540	2	119.25	238.51	217.47	3	155.75	275.01	71.62	1.3
1863	4105	1	36.50	36.50	306.68	12	191.12	685.25	62.32	2.2
1863	2537	2	153.24	306.48	306.68	12	191.12	685.25	62.32	2.2
1864	4104	1	39.30	39.30	132.44	1	39.30	39.30	29.67	0.3
1865	2543	1	66.72	66.72	254.15	3	126.66	126.66	49.84	0.5
1865	2544	1	34.77	34.77	254.15	3	126.66	126.66	49.84	0.5
1865	2545	1	25.18	25.18	254.15	3	126.66	126.66	49.84	0.5
1866	4102	1	77.38	77.38	120.40	1	77.38	77.38	64.27	0.6
1867	2542	2	184.06	368.12	256.65	2	184.06	368.12	71.72	1.4
1868	2541	2	201.31	402.63	232.51	2	201.31	402.63	86.58	1.7
1869	4099	1	139.10	139.10	177.99	1	139.10	139.10		

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
2007	2682	1	73.10	73.10	269.65	2	165.79	165.79	61.48	0.6
2008	2680	1	92.99	92.99	189.95	4	175.26	701.06	92.27	3.7
2009	2681	4	125.33	501.31	127.94	4	125.33	501.31	97.96	3.9
2010	4096	1	34.13	34.13	81.43	1	34.13	34.13	41.92	0.4
2011	4093	3	78.67	236.01	143.92	4	118.34	275.68	82.22	1.9
2012	4094	1	39.66	39.66						
2012	4095	3	30.90	92.69	57.95	3	30.90	92.69	53.32	1.6
2013	4092	4	136.60	546.39	174.10	4	136.60	546.39	78.46	3.1
2014	2660	4	179.02	716.06	318.63	7	281.69	1024.07	88.41	3.2
2015	2659	3	102.67	308.01						
2015	2652	5	161.10	805.50	161.10	5	161.10	805.50	100.00	5.0
2016	2651	5	138.51	692.56	152.67	5	138.51	692.56	90.73	4.5
2017	2653	1	54.67	54.67						
2017	2654	1	46.70	46.70						
2017	2655	1	41.80	41.80	579.05	6	307.61	307.61	53.12	0.5
2017	2657	1	54.20	54.20						
2017	2658	1	43.25	43.25						
2017	2656	1	66.99	66.99						
2018	2670	1	159.24	159.24	159.24	1	159.24	159.24	100.00	1.0
2019	-	-	-	-	1044.61	0	0.00	0.00	0.00	0.0
2020	-	-	-	-	405.86	0	0.00	0.00	0.00	0.0
2021	2700	4	346.31	1385.24	363.52	4	346.31	1385.24	95.27	3.8
2022	2678	4	82.53	330.11	186.97	8	144.19	576.78	77.12	3.1
2022	2679	4	61.67	246.67						
2023	2677	5	135.18	675.89	197.50	5	135.18	675.89	68.44	3.4
2024	2482	5	194.79	973.97	230.86	5	194.79	973.97	84.38	4.2
2025	2727	5	123.69	618.46	141.03	5	123.69	618.46	87.70	4.4
2026	2728	5	118.91	594.53	136.63	5	118.91	594.53	87.03	4.4
2027	2761	1	139.89	139.89						
2027	2760	1	105.62	105.62	815.08	5	529.90	529.90	65.01	0.7
2027	2759	1	98.58	98.58						
2027	2757	1	103.44	103.44						
2027	2758	1	84.37	84.37						
2028	2756	2	329.71	659.42	1219.45	3	582.38	912.09	47.76	0.7
2028	4216	1	252.66	252.66						
2029	-	-	-	-	522.40	0	0.00	0.00	0.00	0.0
2030	2701	3	219.82	659.45	269.39	3	219.82	659.45	81.60	2.4
2031	4217	1	106.53	106.53	131.82	1	106.53	106.53	80.81	0.8
2032	4179	1	90.46	90.46	121.60	1	90.46	90.46	74.39	0.7
2033	4178	1	86.08	86.08	106.91	1	86.08	86.08	80.51	0.8
2034	4180	2	38.69	77.39	92.54	2	38.69	77.39	41.82	0.8
2035	2769	1	72.46	72.46	85.87	1	72.46	72.46	84.38	0.8
2036	2768	1	77.61	77.61						
2036	2767	1	30.70	30.70	290.13	3	131.13	131.13	45.20	0.5
2036	2766	1	22.82	22.82						
2037	2702	3	150.67	452.02	180.73	3	150.67	452.02	83.37	2.5
2038	4219	1	62.83	62.83	94.04	1	62.83	62.83	66.82	0.7
2039	4218	2	101.35	202.71	150.04	2	101.35	202.71	67.55	1.4
2040	2703	3	165.44	496.31	173.56	3	165.44	496.31	95.32	2.9
2041	2704	4	126.60	506.39	136.61	4	126.60	506.39	92.67	3.7
2042	2707	1	24.34	24.34						
2042	2706	1	81.68	81.68	281.83	4	142.99	142.99	50.74	0.5
2042	2708	1	17.00	17.00						
2042	2705	1	19.97	19.97						
2043	2709	4	254.55	1018.21	321.65	4	254.55	1018.21	79.14	3.2
2044	2713	4	102.23	408.94	602.49	4	102.23	408.94	16.97	0.7
2045	2754	5	90.64	453.21	130.07	5	90.64	453.21	69.68	3.5
2046	2735	1	29.17	29.17	217.96	4	96.17	230.18	44.12	1.1
2047	2734	3	67.00	201.01						
2048	4161	5	99.50	497.51	115.32	5	99.50	497.51	86.28	4.3
2048	2733	2	90.21	180.41	207.93	2	90.21	180.41	43.39	0.9
2049	-	-	-	-	70.89	0	0.00	0.00	0.00	0.0
2050	2755	5	59.97	299.85	68.45	5	59.97	299.85	87.61	4.4
2051	2871	5	210.51	1052.57						
2051	4263	1	254.83	254.83	907.38	6	465.34	1307.39	51.28	1.4
2052	4228	4	98.86	395.43	112.14	4	98.86	395.43	88.16	3.5
2053	4229	1	47.02	47.02	59.27	1	47.02	47.02	79.32	0.8
2054	2752	4	104.99	419.96	168.89	4	104.99	419.96	62.17	2.5
2055	3172	2	55.21	110.42	136.32	4	106.13	212.25	77.85	1.6
2055	3173	2	50.92	101.84						
2056	2751	3	175.52	526.55	228.00	3	175.52	526.55	78.98	2.3
2057	-	-	-	-	88.07	0	0.00	0.00	0.00	0.0
2058	2753	1	37.44	37.44	197.26	1	37.44	37.44	18.98	0.2
2059	2750	4	247.11	988.43	273.10	4	247.11	988.43	90.48	3.6
2060	2749	1	35.93	35.93	210.23	2	111.83	111.83	53.19	0.5
2060	2748	1	75.89	75.89						
2061	4222	1	92.20	92.20						
2061	4223	1	122.99	122.99	765.21	5	427.60	427.60	55.88	0.6
2061	4224	1	122.99	122.99						
2061	4225	1	44.71	44.71						
2061	4226	1	44.71	44.71						
2062	4221	4	156.25	625.00	194.24	4	156.25	625.00	80.44	3.2
2063	2712	4	140.69	562.77	158.28	4	140.69	562.77	88.89	3.6
2064	4200	4	78.96	315.85	109.04	4	78.96	315.85	72.42	2.9
2065	2711	1	60.52	60.52	163.48	2	133.17	133.17	81.46	0.8
2065	2710	1	72.66	72.66						
2066	2672	4	293.94	1175.74	511.62	4	293.94	1175.74	57.45	2.3
2067	-	-	-	-	116.23	0	0.00	0.00	0.00	0.0
2068	3178	4	93.32	373.26	93.32	4	93.32	373.26	100.00	4.0
2069	4154	4	82.41	329.64	82.41	4	82.41	329.64	100.00	4.0
2070	4155	4	69.29	277.15	69.29	4	69.29	277.15	100.00	4.0
2071	2147	3	221.57	664.70	250.96	3	221.57	664.70	88.29	2.6
2072	4158	2	176.96	353.91	229.83	2	176.96	353.91	78.99	1.5
2073	4312	5	114.29	571.43	169.25	5	114.29	571.43	67.52	3.4
2074	-	-	-	-	157.55	0	0.00	0.00	0.00	0.0
2075	4098	4	75.24	300.96	104.37	4	75.24	300.96	72.09	2.9
2076	4097	5	61.57	307.85	88.29	5	61.57	307.85	69.74	3.5
2077	4128	7	197.67	1383.71	255.47	7	197.67	1383.71	77.38	5.4
2078	2719	5	134.31	671.54	149.69	5	134.31	671.54	89.72	4.5
2079	4127	4	137.19	548.75	152.53	4	137.19	548.75	89.94	3.6
2080	2720	4	109.86	439.45	204.48	4	109.86	439.45	53.73	2.1
2081	4126	3	155.51	466.53	198.73	3	155.51	466.53	78.25	2.3
2082	4136	3	154.42	463.27	157.55	3	154.42	463.27	98.01	2.9
2083	2721	5	133.07	665.33	133.07	5	133.07	665.33	100.00	5.0
2084	4130	1	146.46	146.46	170.87	1	146.46	146.46	85.72	0.9
2085	2673	2	157.13	314.25	163.98	2	157.13	314.25	95.82	1.9
2086	2674	5	146.34	731.70	169.14	5	146.34	731.70	86.52	4.3
2087	2675	5	133.10	665.48	148.68	5	133.10	665.48	89.52	4.5
2088	4157	2	55.27	110.54	87.62	2	55.27	110.54	63.08	1.3
2089	2736	2	120.40	240.81	158.51	2	120.40	240.81	75.96	1.5
2090	4160	2	71.24	142.47	143.78	3	134.65	205.89	93.68	1.4
2091	4159	1	63.42	63.42						
2091	2732	1	31.45	31.45	205.17	2	78.87	78.87	38.44	0.4
2091	4156	1	47.42	47.42						
2092	2715	2	38.78	77.57	352.39	8	173.22	884.21	49.16	2.5
2092	2714	6	134.44	806.65						
2092	2718	1	78.09	78.09						
2093	2717	2	82.09	164.19	259.98	4	255.47	337.57	98.27	1.3
2093	2716	1	95.29	95.29						
2093	2723	1	49.54	49.54						
2094	2722	1	41.18	41.18	256.48	3	136.23	136.23	53.11	0.5
2094	2724	1	45.50	45.50						
2094	2725	3	108.36	325.08						
2095	2725	2	182.53	365.06	398.33	6	356.87	756.13	89.59	1.9
2095	4131	1	65.98	65.98						
2096	4134	1	34.85	34.85	61.80	1	34.85	34.85	56.38	0.6
2097	4132	1	21.03	21.03						
2										

Plot Ref. No.	Building Ref. No.	Buildings Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
2217	4212	1	40.48	40.48	297.20	3	263.37	263.37	88.62	0.9
	2975	1	179.95	179.95						
	2976	1	42.94	42.94						
2218	3126	1	197.31	197.31	197.05	1	197.31	197.31	100.13	1.0
2219	3127	2	192.32	384.63	219.37	2	192.32	384.63	87.67	1.8
2220	3140	1	152.22	152.22	302.74	2	267.68	267.68	88.42	0.9
	3139	1	115.45	115.45						
	4267	1	167.97	167.97						
2221	3137	1	61.07	61.07	328.71	2	229.05	229.05	69.68	0.7
	3138	7	409.90	2869.30						
	3091	4	276.62	1106.50						
2222	3093	1	102.45	102.45	102.45	1	102.45	102.45	100.00	1.0
	3092	1	57.12	57.12						
	3080	1	118.73	118.73						
2223	3081	1	114.77	114.77	306.90	2	233.50	233.50	76.08	0.8
	3082	2	140.98	281.96						
	3084	6	62.56	375.34						
2224	4208	6	82.15	492.89	184.58	12	167.90	1007.39	90.96	5.5
	4209	6	85.75	514.49						
	3079	3	185.37	556.10						
2225	4205	3	55.49	166.48	80.75	3	55.49	166.48	91.35	2.7
	3085	1	122.18	122.18						
	3086	2	35.76	71.52						
2226	3078	2	99.55	199.09	99.63	2	99.55	199.09	99.91	2.0
	3078	2	99.55	199.09						
	3078	2	99.55	199.09						
2227	4204	1	115.47	115.47	118.58	1	115.47	115.47	97.38	1.0
	3075	3	75.50	226.50						
	3076	3	136.44	409.32						
2228	3076	3	136.44	409.32	140.07	3	136.44	409.32	97.41	2.9
	3077	5	71.15	355.76						
	4206	5	97.94	489.71						
2229	3077	5	71.15	355.76	71.15	5	71.15	355.76	100.00	5.0
	4206	5	97.94	489.71						
	3049	1	168.09	168.09						
2230	3048	1	90.77	90.77	174.97	1	168.09	168.09	96.07	1.0
	4207	1	94.01	94.01						
	3087	4	92.82	371.30						
2231	3088	1	49.39	49.39	240.45	5	142.21	420.69	59.14	1.7
	3090	7	68.22	477.57						
	3089	6	139.06	834.35						
2232	3009	5	299.30	1496.51	306.67	5	299.30	1496.51	100.23	6.0
	3010	7	110.96	776.72						
	3011	7	102.90	720.32						
2233	3007	1	256.89	256.89	341.83	1	256.89	256.89	75.15	0.8
	3008	2	119.21	238.42						
	3015	1	79.16	79.16						
2234	3006	4	198.83	795.31	311.69	4	198.83	795.31	63.79	2.6
	3016	2	215.43	430.85						
	2254	-	-	-						
2235	3024	5	119.55	597.73	235.78	5	119.55	597.73	50.70	2.5
	3025	5	118.56	592.78						
	3030	1	130.65	130.65						
2236	3031	1	81.17	81.17	160.15	1	81.17	81.17	50.68	0.5
	4231	3	135.67	407.01						
	3027	4	139.71	558.85						
2237	3026	3	196.34	589.02	439.28	7	336.05	1147.87	76.50	2.6
	3033	4	120.36	481.44						
	3029	6	67.91	407.47						
2238	3032	2	54.73	109.46	432.65	14	276.69	1065.75	63.95	2.5
	4335	2	33.69	67.37						
	3034	2	123.42	246.83						
2239	3028	3	130.93	392.79	133.03	3	130.93	392.79	98.42	3.0
	3035	1	76.97	76.97						
	3036	1	72.49	72.49						
2240	3036	1	72.49	72.49	72.49	1	72.49	72.49	100.00	1.0
	3037	1	66.71	66.71						
	3038	2	341.89	683.38						
2241	3043	4	115.65	462.60	198.53	4	115.65	462.60	58.25	2.3
	3041	1	104.74	104.74						
	3042	2	118.50	237.00						
2242	3044	6	87.04	522.22	149.01	6	87.04	522.22	58.41	3.5
	3046	2	85.19	170.37						
	3045	2	67.97	135.94						
2243	3047	1	65.58	65.58	69.31	1	65.58	65.58	94.63	0.9
	3040	1	89.42	89.42						
	3039	1	77.41	77.41						
2244	4202	3	100.96	302.88	395.84	8	380.51	807.87	96.13	2.0
	4203	3	112.72	338.16						
	-	-	-	-						
2245	3174	1	695.89	695.89	695.21	1	695.89	695.89	100.10	1.0
	2966	2	104.34	208.68						
	2967	3	1025.32	3075.97						
2246	2965	7	712.39	4986.75	4861.73	17	2689.40	10592.49	55.32	2.2
	2968	3	626.41	1879.22						
	2969	2	220.94	441.87						
2247	2964	2	99.30	198.60	285.32	2	99.30	198.60	34.80	0.7
	2963	2	175.45	350.91						
	2970	1	31.55	31.55						
2248	2971	2	22.85	45.70	209.46	4	83.08	105.93	39.66	0.5
	2972	1	28.68	28.68						
	3136	1	150.59	150.59						
2249	3133	5	288.30	1441.49	288.30	5	288.30	1441.49	100.00	5.0
	2282	1	47.22	47.22						
	3135	2	60.81	121.61						
2250	4213	1	45.74	45.74	106.48	3	106.55	167.36	100.06	1.6
	2973	1	121.95	121.95						
	2974	1	77.85	77.85						
2251	2962	2	185.89	371.76	257.52	2	199.80	199.80	77.59	0.8
	2961	1	110.36	110.36						
	2960	1	121.08	121.08						
2252	2959	1	67.41	67.41	598.61	5	269.42	501.17	45.01	0.8
	2958	1	86.14	86.14						
	4214	3	115.87	347.62						
2253	2955	3	102.52	307.57	749.81	9	559.48	1831.22	74.62	2.4
	2956	4	304.87	1219.49						
	2957	2	152.08	304.16						
2254	2953	1	23.16	23.16	270.39	3	202.79	202.79	75.00	0.7
	2952	1	153.23	153.23						
	2954	1	26.40	26.40						
2255	2951	1	172.88	172.88	590.18	2	312.33	312.33	52.92	0.5
	2950	1	139.44	139.44						
	2946	1	243.26	243.26						
2256	2945	1	151.76	151.76	591.01	2	395.02	395.02	66.84	0.7
	4188	6	506.44	3038.63						
	2937	1	183.61	183.61						
2257	2936	1	82.42	82.42	686.76	6	459.14	1038.46	66.86	1.5
	2935	4	193.11	772.43						
	2940	1	42.07	42.07						
2258	2941	1	48.70	48.70	424.07	4	304.67	304.67	71.84	0.7
	2939	1	32.35	32.35						
	2938	1	181.55	181.55						
2259	2944	5	89.42	447.11	606.88	15	480.58	2402.88	79.19	4.0
	2942	5	318.08	1590.40						
	2943	5	73.07	365.37						
2260	2934	4	218.09	872.36	365.21	5	239.71	893.98	65.64	2.4
	2933	1	21.62	21.62						
	2932	4	169.95	679.80						
2261	2931	5	181.44	907.20	215.20	4	181.44	907.20	84.31	4.2
	2921	1	76.71	76.71						
	2920	1	89.56	89.56						
2262	2919	1	132.28	132.28	404.96	4	392.32	392.32	96.88	1.0
	2918	1	93.76	93.76						
	2922	5	156.21	781.04						
2263	4336	1	159.82	159.82	316.11	6	316.03	940.87	99.98	3.0
	2923	1	179.98	179.98						
	2877	6	255.41	1532.46						
2264	2878	1	127.90	127.90	591.86	8	549.16	1826.21	92.79	3.1
	2879	1	165.85	165.85						
	2872	5	286.58	1432.91						
2265	2871	6	206.08	1236.46	207.43	6	206.08	1236.46	99.35	6.0
	2869	11	163.20	1795.24						
	2873	2	175.80	351.60						
2266	2868	7	276.80	1937.61	179.66	2	175.80	351.60	97.85	2.0
	2867	2	55.04	110.09						
	2874	1	153.49	153.49						
2267	2876	6	81.83	490.96	87.50	6	81.83	490.96	93.51	5.6
	2875	4	184.30	737.20						
	2309	6	372.81	2236.85						
2268	2870	6	372.81	2236.85	420.67	6	372.81	2236.85	88.62	5.3
	2310	0	0.00	0.00						
	2311	2	109.51	219.02						
2269	2861	5	127.44	637.19	131.67	5	127.44	637.19	96.79	4.8
	2312	6	147.39	884.34						
	2313	6	147.39	884.34						
2270	2863	5	58.89	294.43	172.93	7	88.68	354.02	51.28	2.0
	2862	2	29.80	59.60						
	2315	2	105.83	105.83						
2271	2856	10	319.96	3199.65	370.00	10	319.96	3199.65	86.48	8.6
	2317	5	76.68	383.41						
	2318	3	114.51	343.52						

Plot Ref. No.	Building Ref. No.	Buildings Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
2319	2859	6	187.80	1126.77	192.82	6	187.80	1126.77	97.39	5.8
	2320	10	316.66	3166.58						
	2321	3	202.76	608.29						
2322	2840	3	194.84	584.53	196.03	3	194.84	584.53	99.40	3.0

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
2433	812	6	147.98	887.89	286.16	6	147.98	887.89	51.71	3.1
2434	779	5	130.79	653.96	179.33	5	130.79	653.96	72.93	3.6
2435	782	4	207.46	829.86	394.62	5	264.23	886.62	66.96	2.2
2436	3844	1	56.77	56.77						
2436	784	5	128.25	641.23	178.49	5	128.25	641.23	71.85	3.6
2437	786	1	33.56	33.56						
2437	783	1	24.71	24.71	268.33	6	153.93	440.89	57.37	1.6
2437	785	4	96.65	382.81						
2437	788	5	98.69	493.44						
2438	789	5	34.71	173.56	357.38	15	219.03	1095.15	61.29	3.1
2438	790	5	85.63	428.15						
2439	795	5	113.34	566.72						
2439	1585	3	137.54	412.63	312.54	8	250.89	979.35	80.27	3.1
2440	796	3	86.58	259.73	130.48	3	86.58	259.73	66.35	2.0
2441	797	1	44.66	44.66	164.53	1	44.66	44.66	27.14	0.3
2442	798	4	148.07	592.28	317.29	6	238.42	772.99	75.14	2.4
2442	4540	2	90.35	180.70						
2443	89	4	241.09	964.35	446.64	4	241.09	964.35	53.98	2.2
2444	41	5	217.76	1088.78	219.53	5	217.76	1088.78	99.19	5.0
2445	-	-	-	-	115.14	0	0.00	0.00	0.00	0.0
2446	-	-	-	-	88.92	0	0.00	0.00	0.00	0.0
2447	-	-	-	-	70.11	0	0.00	0.00	0.00	0.0
2448	2848	6	158.50	951.02	271.13	12	272.58	1635.48	100.53	6.0
2448	2847	6	114.08	684.46						
2449	2846	6	249.31	1495.84	250.33	6	249.31	1495.84	99.59	6.0
2450	2854	5	101.86	509.28	195.37	5	101.86	509.28	52.13	2.6
2451	2855	1	12.00	12.00	45.34	1	12.00	12.00	26.46	0.3
2452	2853	1	111.52	111.52	117.33	1	111.52	111.52	95.05	1.0
2453	3194	1	95.68	95.68	610.77	7	383.48	1312.12	62.79	2.1
2453	3179	1	65.84	65.84						
2453	3180	5	232.16	1160.79						
2454	3181	5	155.62	778.08	155.85	5	155.62	778.08	99.85	5.0
2455	3182	5	80.17	400.83	144.98	5	80.17	400.83	55.30	2.8
2456	3183	5	126.41	632.04	126.87	5	126.41	632.04	100.43	5.0
2457	3185	6	125.01	750.05	163.77	6	125.01	750.05	76.33	4.6
2458	3188	1	105.21	105.21	171.30	1	105.21	105.21	61.42	0.6
2459	3187	1	149.40	149.40	149.65	1	149.40	149.40	99.83	1.0
2460	3186	5	147.77	738.84	147.71	5	147.77	738.84	100.04	5.0
2461	3189	1	105.87	105.87						
2461	3192	1	90.64	90.64	694.38	4	358.58	358.58	51.64	0.5
2461	3191	1	83.90	83.90						
2461	3190	1	78.17	78.17						
2461	3206	1	57.61	57.61						
2462	3193	1	187.79	187.79						
2462	3194	1	85.16	85.16	766.45	5	475.97	475.97	62.10	0.6
2462	3207	1	86.43	86.43						
2462	3208	1	58.98	58.98						
2463	3195	1	174.31	174.31	437.72	2	282.51	282.51	64.54	0.6
2463	3196	1	108.20	108.20						
2464	3199	1	146.28	146.28	193.97	2	193.80	193.80	99.91	1.0
2464	3198	1	47.52	47.52						
2465	3200	1	166.82	166.82	327.07	1	166.82	166.82	51.01	0.5
2466	3212	2	48.40	96.80	138.00	2	48.40	96.80	35.07	0.7
2467	3204	4	318.86	1275.43						
2467	3197	2	267.77	535.53						
2467	3205	1	123.61	123.61	1110.21	10	1081.39	2305.73	97.40	2.1
2467	3201	1	108.23	108.23						
2467	3203	1	180.84	180.84						
2467	3202	1	82.08	82.08						
2468	3214	1	187.29	187.29	316.75	2	226.27	226.27	71.44	0.7
2468	3211	1	38.98	38.98						
2468	3210	1	52.84	52.84						
2469	3210	1	118.08	118.08	420.39	3	308.03	308.03	73.27	0.7
2469	3209	1	137.10	137.10						
2470	3215	1	326.32	326.32	477.76	1	326.32	326.32	68.30	0.7
2471	3216	1	175.41	175.41						
2471	3219	1	293.34	293.34						
2471	3218	1	109.57	109.57	769.22	4	704.46	704.46	91.58	0.9
2471	3217	1	126.15	126.15						
2472	3220	1	344.56	344.56	833.27	3	660.46	660.46	79.26	0.8
2472	3221	1	191.80	191.80	833.27	3	660.46	660.46	79.26	0.8
2472	3222	1	124.09	124.09	833.27	3	660.46	660.46	79.26	0.8
2473	3227	4	202.05	808.18						
2473	3223	3	131.03	393.09						
2473	3224	1	85.09	85.09	1428.95	12	897.00	2244.04	62.77	1.6
2473	3226	2	192.85	385.69						
2473	3225	2	296.00	592.00						
2474	3235	2	168.14	336.28	304.24	2	168.14	336.28	55.27	1.1
2475	3234	4	198.62	794.49	342.71	4	198.62	794.49	57.96	2.3
2476	3228	5	273.62	1368.12	342.13	5	273.62	1368.12	79.98	4.0
2477	3229	5	223.83	1119.17	344.70	9	306.54	1449.98	88.93	4.2
2478	3231	4	195.98	783.92	195.98	4	195.98	783.92	100.00	4.0
2479	3232	4	151.61	606.44	186.82	4	151.61	606.44	81.15	3.2
2480	3233	1	103.89	103.89	147.67	1	103.89	103.89	70.35	0.7
2481	2903	4	85.91	343.63	239.22	4	85.91	343.63	35.91	1.4
2482	3238	4	36.03	144.11	298.99	4	36.03	144.11	12.05	0.5
2483	3236	4	117.40	469.61	122.32	4	117.40	469.61	95.98	3.8
2484	3237	1	113.16	113.16	638.76	1	113.16	113.16	17.72	0.2
2485	3239	4	117.51	470.05	131.44	4	117.51	470.05	89.40	3.6
2486	2898	4	243.21	972.83	280.09	4	243.21	972.83	86.83	3.5
2487	3240	1	54.29	54.29	317.01	5	220.18	717.87	69.46	2.3
2488	3241	4	165.90	663.58						
2488	3242	5	216.54	1082.69	309.68	5	216.54	1082.69	69.92	3.5
2489	3246	1	143.73	143.73	335.12	2	208.44	208.44	62.20	0.6
2490	3247	1	64.71	64.71						
2490	3248	1	146.55	146.55	198.69	1	146.55	146.55	73.76	0.7
2491	3249	6	84.41	506.47	84.41	6	84.41	506.47	100.00	6.0
2492	3250	1	86.61	86.61	239.98	3	203.73	320.85	84.90	1.3
2493	3253	4	183.75	734.98	329.84	5	295.44	846.68	89.57	2.6
2493	3252	1	111.69	111.69	329.84	5	295.44	846.68	89.57	2.6
2494	3262	1	49.40	49.40						
2494	3261	1	76.65	76.65	503.15	7	319.69	658.79	63.54	1.3
2494	3259	4	113.03	452.12						
2494	3260	1	80.61	80.61						
2495	3257	3	72.79	218.37	323.08	7	174.54	625.36	54.02	1.9
2495	3258	4	101.75	406.99						
2496	3255	2	230.55	461.11	238.23	2	230.55	461.11	96.78	1.9
2497	3254	9	204.20	1837.80	235.71	9	204.20	1837.80	86.63	7.8
2498	3256	4	215.96	863.82	238.33	4	215.96	863.82	90.61	3.6
2499	4074	4	160.38	641.51	169.14	4	160.38	641.51	94.82	3.8
2500	3266	2	266.20	532.40	328.93	2	266.20	532.40	80.93	1.6
2501	3269	2	80.98	161.95						
2501	3270	2	60.53	121.06	574.60	6	394.82	536.32	68.71	0.9
2501	3268	1	134.99	134.99						
2501	3267	1	118.32	118.32						
2502	3275	3	116.66	349.97	146.95	3	116.66	349.97	79.38	2.4
2503	3274	1	59.86	59.86	954.51					
2503	4075	2	68.38	136.76	954.51					
2503	3273	2	113.86	227.71	954.51	11	515.52	1507.26	54.01	1.6
2503	3272	1	71.04	71.04	954.51					
2503	3271	5	202.38	1011.88	954.51					
2504	3476	4	99.98	399.94	185.72	4	99.98	399.94	53.84	2.2
2505	3477	6	125.72	754.32	150.28	6	125.72	754.32	83.65	5.0
2506	4076	4	104.11	416.45	112.91	4	104.11	416.45	92.21	3.7
2507	3300	1	33.26	33.26	140.36	1	33.26	33.26	23.70	0.2
2508	3299	1	89.99	89.99						
2508	3298	1	87.21	87.21						
2509	-	-	-	-	81.69	0	0.00	0.00	0.00	0.0
2510	4081	1	61.69	61.69	90.71	1	61.69	61.69	68.01	0.7
2511	3301	1	25.							



Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
2632	3334	3	134.71	404.13	153.26	3	134.71	404.13	87.90	2.6
2633	3333	4	107.46	429.83	107.46	4	107.46	429.83	100.00	4.0
2634	3332	5	253.06	1265.31	254.13	5	253.06	1265.31	99.58	5.0
2635	3312	8	188.29	1506.29	240.17	8	188.29	1506.29	78.40	6.3
2636	3311	8	308.75	2470.04	492.67	8	308.75	2470.04	62.67	5.0
2637	3325	2	146.32	292.64	212.92	2	146.32	292.64	68.72	1.4
2638	3326	4	141.70	566.81	171.41	4	141.70	566.81	82.67	3.3
2639	3313	1	260.18	260.18	309.07	1	260.18	260.18	84.18	0.8
2640	3314	5	227.02	1135.11	279.41	5	227.02	1135.11	81.25	4.1
2641	3316	3	62.64	187.93	276.81	11	184.97	1166.57	66.82	4.2
2642	3315	8	122.33	978.63	594.49	15	424.46	2475.60	71.40	4.2
2643	3330	6	123.58	741.46	263.36	10	245.87	1230.63	93.36	4.7
2644	3405	3	194.27	582.82	210.05	3	194.27	582.82	92.49	2.8
2645	3404	3	267.29	801.87	267.86	3	267.29	801.87	99.79	3.0
2646	3393	7	155.31	1087.20	662.51	18	503.18	2915.55	75.95	4.4
2647	3406	4	114.78	459.11	128.19	4	114.78	459.11	89.54	3.6
2648	3407	5	199.01	995.05	199.01	5	199.01	995.05	100.00	5.0
2649	4039	5	132.83	664.14	140.78	5	132.83	664.14	94.35	4.7
2650	3395	6	149.56	897.39	160.80	6	149.56	897.39	82.95	5.6
2651	3397	6	179.25	1075.48	258.00	6	179.25	1075.48	69.47	4.2
2652	3398	3	107.17	321.51	114.35	3	107.17	321.51	93.72	2.8
2653	3399	1	47.86	47.86	3350.97	17	1826.12	5805.36	54.50	1.7
2654	3403	6	261.64	1689.84	989.25	16	635.73	1832.18	64.26	1.9
2655	2949	1	65.58	65.58	544.61	10	264.38	963.72	48.54	1.8
2656	3415	3	114.83	344.49	436.90	8	221.29	876.77	50.65	2.0
2657	3414	5	106.46	532.28	217.33	3	217.33	651.98	100.00	3.0
2658	3417	4	152.20	608.78	164.27	4	152.20	608.78	92.65	3.7
2659	3547	3	266.51	799.52	485.57	4	410.46	943.47	84.53	1.9
2660	3548	1	143.95	143.95	266.51	3	380.07	1140.22	81.11	2.4
2661	3550	2	238.72	477.44	294.68	2	238.72	477.44	81.01	1.6
2662	3551	1	276.94	276.94	292.21	1	276.94	276.94	94.78	0.9
2663	3541	5	281.49	1407.46	311.94	5	281.49	1407.46	90.24	4.5
2664	4024	1	57.44	57.44	208.95	3	120.51	120.51	57.68	0.6
2665	3543	8	147.00	1176.04	198.17	8	147.00	1176.04	74.18	5.9
2666	4022	2	145.68	291.35	244.84	2	145.68	291.35	59.50	1.2
2667	4026	10	77.76	777.63	110.80	10	77.76	777.63	70.18	7.0
2668	3546	2	301.94	603.88	607.81	2	301.94	603.88	40.67	1.0
2669	3540	10	577.43	5774.32	628.98	10	577.43	5774.32	91.80	9.2
2670	3538	1	63.20	63.20	358.33	8	174.25	840.52	48.63	2.3
2671	3534	4	28.24	112.94	70.72	4	28.24	112.94	39.93	1.6
2672	3536	1	24.95	24.95	172.11	2	69.00	69.00	40.09	0.4
2673	3535	4	77.13	308.52	97.82	4	77.13	308.52	78.85	3.2
2674	3533	3	32.73	98.18	77.71	3	32.73	98.18	42.11	1.3
2675	3532	1	41.92	41.92	98.11	1	41.92	41.92	42.73	0.4
2676	3497	7	194.53	1361.70	303.35	7	194.53	1361.70	64.13	4.5
2677	3496	1	231.26	231.26	259.55	1	231.26	231.26	89.10	0.9
2678	3531	2	138.78	277.56	183.97	2	138.78	277.56	75.44	1.5
2679	3530	7	143.46	1004.24	189.12	7	143.46	1004.24	75.86	5.3
2680	3529	6	120.10	720.61	207.61	6	120.10	720.61	57.85	3.5
2681	3528	2	81.64	163.27	129.74	2	81.64	163.27	62.92	1.3
2682	-	-	-	-	91.83	0	0.00	0.00	0.00	0.0
2683	3527	2	52.16	104.31	149.21	2	52.16	104.31	34.95	0.7
2684	4546	1	38.91	38.91	946.73	10	474.69	3960.92	50.14	4.2
2685	3485	5	285.83	1429.13	309.45	6	303.74	1447.04	76.04	3.6
2686	3489	2	62.80	125.59	380.93	10	289.06	578.11	73.94	1.5
2687	3495	2	210.67	421.33	210.67	2	210.67	421.33	100.00	2.0
2688	3494	2	303.47	606.94	302.35	2	303.47	606.94	100.37	2.0
2689	3493	2	325.92	651.84	335.54	2	325.92	651.84	97.13	1.9
2690	3492	1	112.94	112.94	500.47	3	229.11	229.11	45.78	0.5
2691	3508	1	68.68	68.68	209.43	1	163.23	163.23	77.94	0.8
2692	3506	1	51.15	51.15	212.65	2	117.27	117.27	55.15	0.6
2693	3498	7	51.57	361.00	135.21	7	51.57	361.00	38.14	2.7
2694	3499	2	109.87	219.73	170.01	2	109.87	219.73	64.62	1.3
2695	3500	3	115.10	345.30	162.44	3	115.10	345.30	70.88	2.1
2696	3521	6	58.48	350.86	377.66	14	186.61	719.93	49.41	1.9
2697	3522	1	118.84	118.84	240.54	1	118.84	118.84	49.40	0.5
2698	3517	1	120.89	120.89	380.31	2	218.68	218.68	57.50	0.6
2699	3516	1	97.80	97.80	299.06	2	129.63	129.63	43.35	0.4
2700	3524	1	51.40	51.40	566.96	4	221.91	221.91	39.14	0.4
2701	3509	1	104.98	104.98	312.97	2	223.64	223.64	71.46	0.7
2702	3512	1	112.74	112.74	353.24	3	194.99	194.99	55.20	0.6
2703	3552	1	104.16	104.16	645.16	2	187.15	187.15	29.01	0.3
2704	3558	1	170.48	170.48	668.26	1	170.48	170.48	25.51	0.3
2705	3554	1	160.45	160.45	194.73	1	160.45	160.45	82.40	0.8
2706	3557	1	84.79	84.79	512.24	3	343.87	343.87	67.13	0.7
2707	3560	1	180.60	180.60	383.35	2	282.33	282.33	73.65	0.7
2708	3563	1	104.14	104.14	463.40	3	286.42	286.42	61.81	0.6
2709	3567	1	73.78	73.78	267.50	3	202.30	202.30	75.63	0.8
2710	3559	4	139.77	559.06	200.06	4	139.77	559.06	66.86	2.8
2711	3569	5	202.80	1014.00	202.80	5	202.80	1014.00	100.00	5.0
2712	3568	4	183.59	734.38	183.59	4	183.59	734.38	100.00	4.0
2713	3570	1	109.92	109.92	446.73	2	172.88	172.88	38.70	0.4
2714	3573	3	95.31	285.93	433.88	6	321.41	655.84	74.08	1.5
2715	3575	4	180.69	722.77	180.72	4	180.69	722.77	99.99	4.0
2716	3578	4	175.33	701.32	206.13	4	175.33	701.32	85.06	3.4
2717	3576	2	83.66	167.31	257.11	5	245.78	653.69	95.60	2.5
2718	3579	3	162.13	486.38	257.11	2	106.95	213.89	64.70	1.3
2719	3580	1	48.16	48.16	125.45	1	48.16	48.16	38.39	0.4
2720	3581	3	151.81	455.44	156.58	3	151.81	455.44	96.95	2.9
2721	3582	2	126.66	253.32	165.00	2	126.66	253.32	76.76	1.5
2722	3583	4	100.79	403.17	131.83	4	100.79	403.17	76.46	3.1
2723	3584	4	125.08	500.33	176.77	4	125.08	500.33	70.76	2.8
2724	3640	4	253.77	1015.10	312.09	4	253.77	1015.10	81.31	3.3
2725	3641	3	75.80	227.40	333.82	7	196.41	468.62	58.84	1.4
2726	3642	2	67.98	135.97	333.82	7	196.41	468.62	58.84	1.4
2727	3643	2	52.62	105.24	333.82	7	196.41	468.62	58.84	1.4

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot (sqm)	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
2726	3644	1	29.73	29.73	251.32	3	85.08	85.08	33.85	0.3
2727	3645	1	45.31	45.31	251.32	3	85.08	85.08	33.85	0.3
2728	3646	1	10.04	10.04	251.32	3	85.08	85.08	33.85	0.3
2729	3647	3	98.03	294.10	174.31	3	98.03	294.10	56.24	1.7
2730	3648	5	232.47	1162.34	235.66	5	232.47	1162.34	98.65	4.9
2731	3649	4	164.54	658.14	164.60	4	164.54	658.14	99.96	4.0
2732	3650	3	140.96	422.88	159.76	3	140.96	422.88	88.23	2.6
2733	3651	4	162.29	649.15	207.42	4	162.29	649.15	78.24	3.1
2734	3652	4	396.71	1586.86	440.92	4	396.71	1586.86	89.97	3.6
2735	3653	5	316.55	1582.74	438.39	5	316.55	1582.74	72.21	3.6
2736	3654	4	208.71	834.84	211.69	4	208.71	834.84	98.59	3.9
2737	3655	4	227.41	909.63	227.34	4	227.41	909.63	100.03	4.0
2738	3656	4	150.45	601.81	152.18	4	150.45	601.81	98.86	4.0
2739	3657	3	78.22	234.67	304.64	7	204.18	738.49	67.02	2.4
2740	3658	4	125.96	503.82	55.60	0	0.00	0.00	0.00	0.0
2741	4040	1	21.97	21.97	162.77					

Plot No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
2822	3718	1	95.15	95.15	170.25	1	95.15	95.15	55.89	0.6
2823	3722	1	100.24	100.24	108.64	1	100.24	100.24	92.27	0.9
2824	3721	4	96.18	384.72	97.25	4	384.72	384.72	98.80	4.0
2825	3720	4	133.41	533.65	133.52	4	533.65	533.65	99.92	4.0
2826	3719	7	126.99	888.91	129.74	7	888.91	888.91	97.88	6.9
2827	3723	5	124.11	620.54	166.35	5	620.54	620.54	74.61	3.7
2828	3726	1	53.07	53.07	303.46	15	53.07	53.07	75.57	4.2
2829	3727	5	233.03	1165.16	283.34	5	1165.16	1165.16	82.24	4.1
2830	3728	7	280.01	1960.05	419.74	7	1960.05	1960.05	66.71	4.7
2831	3730	4	213.94	855.77	267.58	4	855.77	855.77	79.96	3.2
2832	3999	6	303.96	1823.74	394.53	6	1823.74	1823.74	77.04	4.6
2833	3731	6	138.77	832.60	175.46	6	832.60	832.60	79.09	4.7
2834	3732	1	106.69	106.69	130.97	1	106.69	106.69	81.46	0.8
2835	3733	1	102.47	102.47	152.66	1	102.47	102.47	67.12	0.7
2836	3734	1	148.37	148.37	149.44	1	148.37	148.37	99.28	1.0
2837	3739	5	159.27	796.34	176.98	5	796.34	796.34	89.99	4.5
2838	3740	7	287.40	2011.78	287.40	7	2011.78	2011.78	100.00	7.0
2839	3745	3	102.78	308.34	137.87	4	102.78	308.34	96.28	2.5
2840	3743	2	236.10	472.21	276.23	2	472.21	472.21	85.47	1.7
2841	3741	6	127.31	763.87	149.40	6	763.87	763.87	85.21	5.1
2842	3742	6	105.66	633.96	121.14	6	633.96	633.96	87.22	5.2
2843	3746	4	321.27	1285.10	321.27	7	1285.10	1285.10	199.78	7.0
2844	3749	1	60.09	60.09	413.30	5	60.09	60.09	62.00	0.8
2844	3748	1	68.40	68.40	413.30	5	68.40	68.40	62.00	0.8
2844	3747	1	49.84	49.84	413.30	5	49.84	49.84	62.00	0.8
2844	3750	2	77.92	155.84	413.30	5	77.92	155.84	62.00	0.8
2845	3786	2	50.96	101.92	227.77	4	50.96	101.92	49.25	1.0
2845	3787	2	61.21	122.43	227.77	4	61.21	122.43	49.25	1.0
2846	3784	4	289.76	1159.05	409.97	4	1159.05	1159.05	70.68	2.8
2847	3785	9	136.42	1227.74	313.37	9	1227.74	1227.74	43.53	3.9
2848	3790	2	196.49	392.98	206.49	2	392.98	392.98	95.16	1.9
2849	3789	5	179.10	895.48	206.54	5	895.48	895.48	86.71	4.3
2850	3792	4	123.04	492.18	264.94	10	123.04	492.18	91.59	4.6
2850	3791	6	119.62	717.71	264.94	10	717.71	717.71	91.59	4.6
2851	3793	1	60.33	60.33	561.63	6	60.33	60.33	64.42	1.1
2851	3794	2	78.95	157.90	561.63	6	78.95	157.90	64.42	1.1
2851	3795	2	158.38	316.76	561.63	6	158.38	316.76	64.42	1.1
2851	3796	1	64.15	64.15	561.63	6	64.15	64.15	64.42	1.1
2852	3774	1	112.47	112.47	147.37	1	112.47	112.47	76.32	0.8
2853	3775	4	89.60	358.38	146.29	4	358.38	358.38	61.25	2.4
2854	3773	6	147.75	886.50	171.57	6	886.50	886.50	86.12	5.2
2855	3776	1	88.13	88.13	134.76	1	88.13	88.13	65.39	0.7
2856	3764	10	375.22	3752.20	439.38	10	3752.20	3752.20	85.40	8.5
2857	3762	1	66.51	66.51	477.19	2	66.51	66.51	37.51	0.4
2857	3763	1	112.47	112.47	477.19	2	112.47	112.47	37.51	0.4
2858	3797	1	45.90	45.90	281.79	3	45.90	45.90	72.90	1.3
2858	3798	2	159.54	319.07	281.79	3	159.54	319.07	72.90	1.3
2859	3799	5	229.87	1149.36	234.25	5	1149.36	1149.36	98.13	4.9
2860	3779	1	97.25	97.25	473.10	2	97.25	97.25	47.72	0.5
2860	3780	1	128.50	128.50	473.10	2	128.50	128.50	47.72	0.5
2861	3781	4	297.19	1188.75	391.56	4	1188.75	1188.75	75.90	3.0
2862	3782	3	163.76	491.28	219.52	3	491.28	491.28	74.60	2.2
2863	3783	4	123.87	495.49	141.63	4	495.49	495.49	87.46	3.5
2864	3777	3	326.20	978.60	334.92	3	978.60	978.60	97.40	2.9
2865	3778	1	187.08	187.08	261.86	1	187.08	187.08	71.44	0.4
2866	3765	5	140.56	702.82	265.90	7	140.56	702.82	90.33	3.4
2866	3766	2	99.61	199.23	265.90	7	99.61	199.23	90.33	3.4
2867	3767	2	127.19	254.37	276.97	4	127.19	254.37	88.85	1.8
2867	3768	2	118.90	237.80	276.97	4	118.90	237.80	88.85	1.8
2868	3769	1	65.44	65.44	287.50	7	65.44	65.44	59.41	2.4
2868	4073	6	105.35	632.13	287.50	7	105.35	632.13	59.41	2.4
2869	3772	1	101.70	101.70	244.84	3	101.70	101.70	74.95	0.7
2869	3771	1	33.30	33.30	244.84	3	33.30	33.30	74.95	0.7
2869	3770	1	48.50	48.50	244.84	3	48.50	48.50	74.95	0.7
2870	3761	1	54.15	54.15	378.24	3	54.15	54.15	52.57	0.5
2870	3759	1	90.38	90.38	378.24	3	90.38	90.38	52.57	0.5
2870	3760	1	54.32	54.32	378.24	3	54.32	54.32	52.57	0.5
2871	3757	2	101.78	203.55	422.28	3	101.78	203.55	65.77	0.9
2871	3758	1	175.96	175.96	422.28	3	175.96	175.96	65.77	0.9
2872	3756	2	125.19	250.37	394.78	8	125.19	250.37	92.76	4.3
2872	4068	6	241.01	1446.07	394.78	8	241.01	1446.07	92.76	4.3
2873	4070	5	162.08	810.40	183.49	5	810.40	810.40	88.33	4.4
2874	4071	1	122.04	122.04	145.16	1	122.04	122.04	84.07	0.8
2875	4072	7	111.17	778.21	143.41	7	778.21	778.21	77.52	5.4
2876	4069	5	159.15	795.75	230.07	5	795.75	795.75	69.17	3.5
2877	3755	3	224.40	673.19	249.44	3	673.19	673.19	89.96	2.7
2878	3754	5	303.25	1516.24	316.42	5	1516.24	1516.24	95.84	4.8
2879	3753	4	77.88	311.54	92.17	4	311.54	311.54	84.50	3.4
2880	3752	4	175.59	702.35	182.43	4	702.35	702.35	96.25	3.8
2881	3751	3	198.99	596.96	431.14	4	198.99	596.96	55.19	1.5
2881	4328	1	38.97	38.97	431.14	4	38.97	38.97	55.19	1.5
2882	3804	5	323.91	1619.57	749.53	11	323.91	1619.57	90.96	5.0
2882	4067	6	357.84	2147.05	749.53	11	357.84	2147.05	90.96	5.0
2883	3805	5	276.92	1384.60	504.60	7	276.92	1384.60	86.99	3.4
2883	3806	2	162.02	324.05	504.60	7	162.02	324.05	86.99	3.4
2884	-	-	-	-	212.67	0	0.00	0.00	0.00	0.0
2885	3803	1	140.68	140.68	199.20	1	140.68	140.68	70.62	0.7
2886	3800	5	196.43	982.15	196.43	5	982.15	982.15	100.00	5.0
2887	3801	3	89.37	268.12	182.21	6	89.37	268.12	90.54	2.7
2888	3810	5	276.94	1384.71	279.85	5	1384.71	1384.71	98.96	4.9
2889	3814	4	208.59	834.36	291.46	4	834.36	834.36	71.57	2.9
2890	3813	1	124.81	124.81	148.77	1	124.81	124.81	83.89	0.8
2891	3811	5	122.16	610.80	120.20	5	610.80	610.80	101.63	5.1
2892	3812	3	143.89	431.68	154.86	3	431.68	431.68	92.52	2.8
2893	3809	5	262.92	1314.61	426.89	5	262.92	1314.61	61.65	3.1
2894	-	-	-	-	183.22	0	0.00	0.00	0.00	0.0
2895	-	-	-	-	2887.90	0	0.00	0.00	0.00	0.0
2896	-	-	-	-	602.39	0	0.00	0.00	0.00	0.0
2897	-	-	-	-	609.25	0	0.00	0.00	0.00	0.0
2898	3554	1	160.45	160.45	196.05	1	160.45	160.45	81.84	0.8
2899	-	-	-	-	630.91	0	0.00	0.00	0.00	0.0
2900	4028	1	27.10	27.10	5007.22	7	27.10	27.10	9.94	0.1
2900	4029	1	27.10	27.10	5007.22	7	27.10	27.10	9.94	0.1
2900	4030	1	50.94	50.94	5007.22	7	50.94	50.94	9.94	0.1
2900	4031	1	51.40	51.40	5007.22	7	51.40	51.40	9.94	0.1
2900	4032	1	53.23	53.23	5007.22	7	53.23	53.23	9.94	0.1
2900	4331	1	155.73	155.73	5007.22	7	155.73	155.73	9.94	0.1
2900	4332	1	132.11	132.11	5007.22	7	132.11	132.11	9.94	0.1
2900	4256	1	54.74	54.74	5007.22	7	54.74	54.74	9.94	0.1
2900	4257	1	71.79	71.79	5007.22	7	71.79	71.79	9.94	0.1
2900	4258	1	58.44	58.44	5007.22	7	58.44	58.44	9.94	0.1
2900	4259	1	52.51	52.51	5007.22	7	52.51	52.51	9.94	0.1
2900	4260	1	37.49	37.49	5007.22	7	37.49	37.49	9.94	0.1
2903	-	-	-	-	379.26	0	0.00	0.00	0.00	0.0
2904	-	-	-	-	2939.88	0	0.00	0.00	0.00	0.0
2905	-	-	-	-</						

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
	1062	1	157.72	157.72						
	1052	1	241.76	241.76						
	1057	1	242.77	242.77						
	1063	1	546.87	546.87						
	1051	1	178.47	178.47						
	1058	1	132.77	132.77						
	1064	1	365.77	365.77						
	1065	1	292.05	292.05						
	1059	1	238.30	238.30						
	1066	1	224.47	224.47						
	1103	1	163.14	163.14						
	1102	1	238.76	238.76						
	1067	1	199.61	199.61						
	1085	1	66.06	66.06						
	1084	1	67.90	67.90						
	1082	1	69.81	69.81						
	1081	1	80.42	80.42						
	1080	1	83.41	83.41						
	1074	3	145.19	435.56						
	1075	1	39.05	39.05						
	1078	1	59.14	59.14						
	1076	1	34.29	34.29						
	1077	1	39.49	39.49						
	1079	1	57.79	57.79						
	1096	1	248.09	248.09						
	1091	1	210.56	210.56						
	1092	4	337.43	1349.70						
	1093	1	228.29	228.29						
	1097	1	159.10	159.10						
	1098	1	127.92	127.92						
	1094	1	230.70	230.70						
	1090	1	58.91	58.91						
	1089	1	59.61	59.61						
	1100	1	140.47	140.47						
	1095	1	200.26	200.26						
	1101	1	224.18	224.18						
	1155	1	34.31	34.31						
	1156	1	162.13	162.13						
	1154	1	48.67	48.67						
	1151	1	79.77	79.77						
	1153	3	149.29	447.86						
	1152	3	95.34	286.02						
	1157	4	347.22	1388.89						
	1935	1	1444.68	1444.68						
	1068	1	193.72	193.72						
	1073	1	333.56	333.56						
	1943	1	117.46	117.46						
	1104	1	347.78	347.78						
	1069	1	251.95	251.95						
	1110	1	205.10	205.10						
	1108	1	270.04	270.04						
	1109	1	359.65	359.65						
	1072	1	216.96	216.96						
	1070	1	377.73	377.73						
	1107	1	206.88	206.88						
	1105	1	85.36	85.36						
	1106	1	194.49	194.49						
	1071	1	213.40	213.40						
	1939	1	226.32	226.32						
	1938	1	341.06	341.06						
	1122	1	168.75	168.75						
	1123	1	164.24	164.24						
	1937	1	99.33	99.33						
	1840	1	165.30	165.30						
	1127	1	527.01	527.01						
	1124	1	47.58	47.58						
	1125	1	116.15	116.15						
	1126	1	211.28	211.28						
	1941	1	208.35	208.35						
	1128	1	632.49	632.49						
	1942	1	142.77	142.77						
	1135	1	68.10	68.10						
	1136	1	399.77	399.77						
	1134	1	499.42	499.42						
	1133	1	402.73	402.73						
	1963	1	320.24	320.24						
	1140	2	156.72	313.44						
	1129	1	64.05	64.05						
	1141	2	141.10	282.21						
	1142	2	114.67	229.33						
	1150	1	72.18	72.18						
	1147	3	149.71	449.12						
	1131	1	61.81	61.81						
	1146	1	185.72	185.72						
	1130	1	56.80	56.80						
	1145	2	184.91	369.83						
	1144	1	143.29	143.29						
	1143	1	64.26	64.26						
	1132	1	80.68	80.68						
	1149	3	357.33	1072.00						
	1177	1	155.97	155.97						
	1176	1	66.56	66.56						
	1148	3	204.53	613.59						
	1178	1	261.38	261.38						
	1179	1	208.67	208.67						
	1180	1	267.55	267.55						
	1936	1	373.33	373.33						
	1184	1	174.38	174.38						
	1186	1	203.07	203.07						
	1192	3	270.90	812.70						
	1185	1	211.44	211.44						
	1187	1	120.48	120.48						
	1904	1	113.85	113.85						
	1188	1	102.91	102.91						
	1903	1	102.68	102.68						
	1189	1	97.22	97.22						
	1190	1	96.83	96.83						
	1161	4	315.21	1260.85						
	1165	1	33.56	33.56						
	1166	1	33.37	33.37						
	1171	1	92.79	92.79						
	1160	1	195.28	195.28						
	1172	1	49.16	49.16						
	1170	2	99.70	199.40						
	1159	1	89.50	89.50						
	1167	1	76.30	76.30						
	1169	1	36.56	36.56						
	1173	2	83.60	167.20						
	1158	1	90.22	90.22						
	1162	3	345.39	1036.18						
	1168	2	144.96	289.92						
	1174	3	235.39	706.18						
	1164	3	124.77	374.32						
	1183	3	205.80	617.40						
	1175	3	90.52	271.56						
	1163	3	44.78	134.34						
	1181	1	111.08	111.08						
	1191	1	64.36	64.36						
	1182	1	42.64	42.64						
	1945	9	123.56	1112.00						
	1933	4	465.77	1863.09						
	1946	1	59.63	59.63						
	1952	1	69.68	69.68						
	1951	3	114.14	342.41						
	1953	3	141.98	425.93						
	1962	1	281.72	281.72						
	1961	1	229.80	229.80						
	1955	3	133.99	401.98						
	1954	1	115.28	115.28						
	1949	1	49.33	49.33						
	1948	3	155.08	465.24						
	1950	1	154.50	154.50						
	1959	3	168.46	505.37						
	1958	1	36.97	36.97						
	1960	1	216.94	216.94						
	1957	3	150.91	452.72						
	1956	3	156.53	469.59						
	1947	1	125.68	125.68						
2962					50.04	0	0.00	0.00	0.00	0.0
2963	2286	4	181.34	725.34	181.34	4	181.34	725.34	100.00	4.0
2964	2274	6	164.24	985.41	277.45	11	232.80	1328.23	83.91	4.8
2965	2273	5	68.56	342.82		5	129.17	645.86	94.56	4.7
2966	1784	4	49.46	197.83	53.03	4	49.46	197.83	93.26	3.7

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot (sqm)	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)
2967	3958	5	238.12	1190.58	258.34	5	238.12	1190.58	92.17	4.6
2968	1884	5	160.09	800.44	163.88	5	160.09	800.44	97.69	4.9
2969	1508	3	175.81	527.44	381.33	3	175.81	527.44	46.11	1.4
2970	1500	3	645.06	1935.18	1051.69	3	645.06	1935.18	61.34	1.8
	4297	5	156.43	782.17						
	4299	6	344.19	2065.12						
	4300	2	77.69	155.18						
2971	4301	5	201.03	1005.14	1409.01	32	1157.28	6133.13	82.13	4.4
	1506	7	189.06	1323.42						
	4298	5	141.37	706.87						
	1501	2	47.61	95.22						
2972	-	-	-	-	78.64	0	0.00	0.00	0.00	0.0
2973	2437	5	189.60	947.99	253.60	5	189.60	947.99	74.76	3.7
2974	1548	4	95.73	382.93	124.51					

Plot Ref. No.	Building Ref. No.	Building Storeys	Building Footprint (sqm)	Building Floor Area (sqm)	Plot Area (sqm)	Sum of Storeys of Buildings on Same Plot	Sum of Building Footprint on Same Plot	Sum of Building Floor Area on Same Plot	Building Coverage Ratio (BCR)	Floor Area Ratio (FAR)						
3070	4408	14	1618.61	22660.51	3036.11	30	2395.98	25224.00	78.92	8.3						
	4410	6	53.99	323.91												
	4411	2	326.98	653.97												
	4412	4	161.65	646.60												
	4413	4	234.75	939.02												
3071	4398	3	134.40	403.19	684.55	13	324.97	1834.25	47.47	2.7						
	4403	9	155.06	1395.55												
	4402	1	35.51	35.51												
3072	4404	5	204.61	1023.03	269.64	5	204.61	1023.03	78.50	3.9						
3073					148.31	0	0.00	0.00	0.00	0.0						
3074	4396	6	138.12	828.72	167.51	6	138.12	828.72	82.46	4.9						
3075	4407	5	58.37	291.84	58.37	5	58.37	291.84	100.00	5.0						
3076	4376	9	204.88	1843.88	8705.19	68	5884.33	28903.42	67.60	3.3						
	4377	4	104.56	418.24	8705.19											
	4378	8	350.60	2804.80	8705.19											
	4380	6	94.52	567.13	8705.19											
	4381	6	754.08	4524.50	8705.19											
	4379	8	283.96	2271.67	8705.19											
	4382	6	584.57	3507.41	8705.19											
	4383	6	357.61	2145.64	8705.19											
	4384	2	56.44	112.88	8705.19											
	4385	3	417.44	1252.32	8705.19											
	4386	7	356.98	2498.88	8705.19											
	4387	3	2318.69	6956.07	8705.19											
	3077	4375	9	173.67	1562.99						252.91	9	173.67	1562.99	68.67	6.2
	3078	4442	15	860.62	12909.31						1133.65	15	860.62	12909.31	75.92	11.4
3079	4443	6	160.43	962.59	222.10	6	160.43	962.59	72.23	4.3						
3080	4444	7	241.69	1691.83	280.57	7	241.69	1691.83	86.14	6.0						
3081	4446	6	255.89	1535.32	329.21	6	255.89	1535.32	77.73	4.7						
3082	4445	6	227.86	1367.16	268.06	6	227.86	1367.16	85.00	5.1						
3083	4462	9	321.69	2895.21	490.39	9	321.69	2895.21	65.60	5.9						
3084	4461	9	406.37	3657.33	477.09	9	406.37	3657.33	85.18	7.7						
3085	4459	8	44.84	359.50	243.16	14	118.01	797.95	48.53	3.3						
3086	4460	6	105.55	633.31	195.98	6	105.55	633.31	53.86	3.2						
3087					149.66	0	0.00	0.00	0.00	0.0						
3088	4453	4	466.66	1866.62	490.95	4	466.66	1866.62	95.05	3.8						
3089	4453	4	466.66	1866.62	490.95	4	466.66	1866.62	95.05	3.8						
3090	4457	5	363.19	1815.95	404.95	5	363.19	1815.95	89.69	4.5						
3091	4451	6	56.15	336.92	137.44	6	56.15	336.92	40.86	2.5						
3092	4450	6	72.80	436.82	183.98	6	72.80	436.82	39.57	2.4						
3093	4449	6	81.54	489.24	228.72	11	134.20	752.54	58.68	3.3						
	4448	5	52.66	263.30												
3094	4456	3	229.49	688.47	1199.15	13	874.83	3914.19	72.94	3.3						
	4454	5	477.12	2385.62												
	4455	5	168.02	840.09												
3095	4425	6	294.68	1768.07	414.94	6	294.68	1768.07	71.02	4.3						
3096	4426	4	261.06	1044.23	382.22	4	261.06	1044.23	68.30	2.7						
3097	4428	9	324.41	2919.73	451.33	9	324.41	2919.73	71.88	6.5						
3098	4427	6	98.86	593.17	673.26	6	98.86	593.17	14.68	0.9						
3099	4429	6	289.07	1734.40	367.16	6	289.07	1734.40	78.73	4.7						
3100	4430	4	181.60	726.42	389.96	4	181.60	726.42	46.69	1.9						
3101	4431	1	144.89	144.89	267.83	1	144.89	144.89	54.10	0.5						
3102	4432	6	134.82	808.92	292.24	6	134.82	808.92	46.13	2.8						
3103	4447	6	393.26	2359.56	634.66	6	393.26	2359.56	61.96	3.7						
3104	4433	5	104.42	522.09	215.07	5	104.42	522.09	48.55	2.4						
3105	1217	5	172.76	863.80	352.46	8	264.52	1139.07	75.05	3.2						
	1259	3	91.76	275.28												
3106	4436	7	111.39	779.73	138.33	7	111.39	779.73	80.53	5.6						
3107	4437	4	78.17	312.70	174.62	4	78.17	312.70	44.77	1.8						
3108	4434	10	629.84	6298.44	2099.53	20	1681.66	16816.55	80.10	8.0						
	4435	10	1051.81	10518.11												
3109	4441	3	186.41	559.22	194.61	3	186.41	559.22	95.79	2.9						
3110	4438	7	187.68	1313.78	203.39	7	187.68	1313.78	92.27	6.5						
3111	4439	7	194.57	1362.01	203.39	7	194.57	1362.01	95.67	6.7						
3112	4421	1	66.39	66.39	882.27	1	66.39	66.39	7.52	0.1						
3113	4416	1	338.85	338.85	1159.52	3	495.20	651.56	42.71	0.6						
	4417	2	156.36	312.71												
3114	4414	6	402.73	2416.38	2137.00	33	1357.33	8738.39	63.52	4.1						
	4415	6	360.16	2160.97												
	4418	7	261.99	1833.93												
	4419	7	172.25	1205.74												
	4420	7	160.20	1121.37												
3115	4440	7	94.88	684.19	94.92	7	94.88	684.19	99.97	7.0						
3116	4452	5	400.94	2004.71	487.55	5	400.94	2004.71	82.24	4.1						
3117	4424	2	145.63	291.26	178.52	2	145.63	291.26	81.58	1.6						
3118	4464	1	227.91	227.91	511.58	2	328.24	328.24	64.16	0.6						
	4463	1	100.33	100.33												
	4466	5	156.02	780.09												
3119	4467	4	254.76	1019.05	5116.41	15	2719.83	15653.42	53.16	3.1						
	4465	6	2309.05	13854.28												
	4468	10	376.25	3762.49												
3121	4469	1	112.36	112.36	364.11	2	343.45	343.45	94.33	0.9						
	4470	1	231.09	231.09												
3122	4471	6	1445.79	8674.74	3430.65	6	1445.79	8674.74	42.14	2.5						
3123					2434.42	0	0.00	0.00	0.00	0.0						
3124	4475	9	297.66	2678.92	623.73	9	297.66	2678.92	47.72	4.3						
3125	4472	5	471.33	2356.65	551.93	5	471.33	2356.65	85.40	4.3						
3126	4477	1	10.03	10.03	688.35	10	155.29	1317.34	22.56	1.9						
	4476	9	145.26	1307.31												
3127	4474	1	190.02	190.02	317.41	1	190.02	190.02	59.86	0.6						
3128	4473	6	383.89	2303.37	444.12	6	383.89	2303.37	86.44	5.2						
3129	4478	2	266.43	532.86	668.57	2	266.43	532.86	36.85	0.8						
3130	4479	7	165.88	1161.19	285.00	7	165.88	1161.19	58.21	4.1						
3131	4480	5	344.42	1722.09	613.48	5	344.42	1722.09	56.14	2.8						
3132					5681.19	0	0.00	0.00	0.00	0.0						
3133	4484	9	311.92	2807.30	845.91	9	311.92	2807.30	36.87	3.3						
3134	4483	4	219.21	876.84	706.56	4	219.21	876.84	31.02	1.2						
3135	4482	16	295.53	4728.54	465.12	16	295.53	4728.54	63.54	10.2						
3136	4481	10	853.81	8538.07	1299.01	10	853.81	8538.07	65.73	6.6						
3137	4486	3	73.53	220.59	1129.96	12	622.63	5162.48	55.10	4.6						
	4485	9	549.10	4941.89												
3138	1218	1	651.49	651.49	2712.52	1	651.49	651.49	24.02	0.2						
3139	4495	1	36.35	36.35	497.37	10	183.35	1359.34	36.86	2.7						
	4494	9	147.00	1322.99												
3140	4493	9	248.68	2238.08	543.21	9	248.68	2238.08	45.78	4.1						
3141	4492	6	327.16	1962.93	496.58	6	327.16	1962.93	65.62	3.9						
3142	4489	6	187.13	1122.76	277.16	6	187.13	1122.76	67.52	4.1						
3143	4488	8	162.26	1298.08	291.94	8	162.26	1298.08	55.58	4.4						
3144	4491	8	315.97	2527.75	508.42	8	315.97	2527.75	62.15	5.0						
3145	4487	5	119.99	599.97	251.13	5	119.99	599.97	47.78	2.4						
3146	4490	6	130.50	783.02	211.30	6	130.50	783.02	61.76	3.7						
3147	4496	3	198.86	596.59	467.68	3	198.86	596.59	42.52	1.3						
3148	4497	6	216.93	1301.58	330.02	6	216.93	1301.58	65.73	3.9						
3149	4498	6	133.00	797.98	297.67	6	133.00	797.98	44.68	2.7						
3150	4499	6	226.40	1358.41	419.08	6	226.40	1358.41	54.02	3.2						
3151	4501	2	406.21	812.42	728.08	2	406.21	812.42	55.79	1.1						
3152	4500	2	208.95	417.89	603.96	2	208.95	417.89	34.60	0.7						
3153	4504	4	112.26	449.03	618.83	6	346.61	917.72	56.01	1.5						
	4505	2	234.35	468.70												
	4502	4	232.49	929.95												
3154	4503	2	151.29	302.58	551.80	6	383.78	1232.53	69.55	2.2						
	4509	4	180.25	720.98												
3155	4510	1	12.38	12.38	377.73	5	192.63	733.36	51.00	1.9						
	4511	8	361.91	2895.26												
3156	4506	6	208.22	1249.33	597.19	8	361.91	2895.26	60.60	4.8						
	4507	7	135.72	950.05												
3157	4512	8	312.97	2503.80	1418.43	27	784.61	5469.35	55.32	3.9						
	4508	6	127.70	766.18												
	4513	2	103.84	207.68												
	4514	2	56.95	113.90												
3158	4523	2	28.40	56.80	1029.60	6	189.19	378.38	18.38	0.4						
	4515	3	143.93	431.78												
3159	4520	6	488.24	2929.43	747.34	6	488.24	2929.43	65.33	3.9						
3161	4516	6	583.06	3498.36	721.49	6	583.06	3498.36	80.81	4.8						
3162	4517</															