Aydan ŞAHİN

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RE-THINKING URBAN VITALITY OF SUBURBAN SETTLEMENTS: A CASE OF KAYSERİ İLDEM

A THESIS
SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE
AND THE GRADUATE SCHOOL OF ENGINEERING AND
SCIENCE OF ABDULLAH GUL UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
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ABSTRACT
RE-THINKING URBAN VITALITY OF SUBURBAN SETTLEMENTS: A CASE OF KAYSERİ İLDEM

Aydan Şahin
MSc. İn Architecture
Advisor: Prof. Burak Asiliskender
January 2023

Urban vitality is a concept that represents urban life and encompasses many urban concepts such as sustainability, healthy cities, and quality-built environment that can be associated with every urban parameter related to humans. Although urban vitality is associated with the city center and historical areas, studies related to recent suburban are encountered in the literature. This study aims to fill the gap in the literature by addressing the development of suburbs, which have undeniable importance for the life of cities, and associating them with urban vitality.

In this thesis, four-building groups representing İldem, which are the dominant patterns in the İldem Suburb of Kayseri city, have been chosen as a case study. According to the suburban conditions, urban vitality conditions have been reconsidered. The new urban vitality conditions include the tools of the quality of the built environment practices and the human dimension, which is the focus of the concept of urban vitality. The urban vitality conditions created for İldem Suburb, these suburbs have been illustrated with maps and plans. Instead of expressing the urban vitality and the built environment with numerical data, have been aimed to describe the life and urban vitality in the suburbs by illustrated them. In this context, reconsidering the basic research problem examined through İldem Suburb. The concept of urban vitality should be addressed not only in city centers but also in suburbs, and urban spaces should support the quality-built environment and social interaction.

Keywords: Urban Vitality, Suburban, Quality of Built Environment, Kayseri, İldem

ÖZET

BANLİYÖ YERLEŞİMLERİNİN KENTSEL CANLILIĞINI YENİDEN DÜŞÜNMEK: KAYSERİ İLDEM ÖRNEĞİ

Aydan Şahin
Mimarlık Ana Bilim Dalı Yüksek Lisans
Tez Yöneticisi: Prof. Dr. Burak Asiliskender
Ocak 2023

Kentsel canlılık kavramı sürdürülebilirlik, sağlıklı kentler, kaliteli yapılı çevre gibi birçok kavramı kapsayan ve insanla ilgili olan her kent parametresiyle ilişkilendirilebilen yaşamı temsil eden bir kavramdır. Kentsel canlılık kavramı kent merkezi ve tarihi alanlarla ilişkilendirilse de literatürde yeni yeni banliyölerle ilişkili çalışmalara rastlanmaktadır. Bu çalışma kentlerin yaşamı için göz ardı edilemeyecek öneme sahip olan banliyölerin gelişimini ele alıp kentsel canlılıkla ilişkilendirilerek literatürdeki boşluğu tamamlamayı amaçlamıştır.

Bu tez Kayseri kentinin İldem Banliyösün ‘deki baskın doku olan ve İldem’i temsil eden dört yapı grubu örnek vaka olarak seçilmiştir. Banliyö koşulları göz önüne alınarak kentsel canlılık şartları yeniden düşünülmüştür. Yeni kentsel canlılık şartları yapılı çevrenin kalitesi uygulamalarının araçları ve kentsel canlılık kavramının ana odağı olan insan boyutunu içermektedir. İldem Banliyösü için oluşturulan kentsel canlılık koşulları haritalar ve planlar yardımıyla resmedilmiştir. Kentsel canlılığın ve yapılı çevreyi sayısal verilerle ifade etmek yerine resmederek banliyölerindeki hayat ve kentsel canlılık anlatılmak istenmiştir. Bu kapsamada İldem Banliyösü ile incelenen temel araştırma problemi göz önüne alındığında kentsel canlılık kavramı yalnızca kent merkezlerinde değil banliyölerde de ele alınmalı ve kaliteli fiziksel çevre ve sosyal etkileşimini destekleyen kent mekânları yaratılmalıdır.

Anahtar kelimeler: Kentsel Canlılık, Banliyö, Kaliteli Yapılı Çevre, Kayseri, İldem

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LIST OF ABBREVIATIONS

ACE	Architect Council Of Europe
BfL	Building For Life
UN	The United Nations
REITs	Real Estate Investment Trusts
THI	Townscape Heritage Initiative Movements
TOKİ	The Turkish Housing Administration

To *Arzu and Mehmet Alperen*

Chapter 1

Introduction

According to current data, the number of people living in the world has exceeded 8 billion. The United Nations (UN) has projected that the population will reach 9.7 billion in 2050 and 10.9 billion in 2100. In addition, The United Nations (UN) predicts that 6.3 billion people will live in the cities in 2050 (UN, 2019). These predictions show that cities will be under an enormous burden with the increasing population day by day. Cities tend to expand to make new areas for new populations and functions; thus, future cities will solve increasing population burdens by expanding again. Cities are expanding in two ways; horizontally (peripheral expansion) and/or vertically (up slopes). The horizontal and vertical expansion of cities could be described as the suburban character. The suburban character is the spatial expansion of cities while the density of people decreases. Many urban areas that consist of today's cities show the suburban characteristics, stated in other words cities increasingly turn into limitless suburbia.

The fact that suburbs are far from cities and have not connected to most urban references, history, and present, has led to the definition of suburbs as tabula rasa by journalist David Brooks (Brooks, 2004). Urban planners, designers, and architects could design the tabula rasa of cities (suburbs) in two scenarios. While the first scenario considers the suburbs as follows, away from the city transportation is dependent on cars, and serves the monotype income group, there is no diversity and high human interaction. The second scenario deals with the suburbs as urban spaces that need high vitality, sustainable, livable, healthy, and quality built environment.

Urban researchers, planners and architects leave the urban ideals of the first scenario in the 20th century and design suburbs with the second scenario approach. The effect of the second scenario has been observed in urban studies in recent years, Suburban design competitions and retrofitting the suburban concept have become center. Thus, the perception of a suburban that developed in the first scenario is destroyed and its definition changes for the residents of the cities.

These urban studies and second scenario approaches aim to design successful suburbs. Successful suburbs emerge with the existence of many concept parameters and relationships such as sustainability, livable, healthy, quality of the built environment, good urban form, etc. At this point, the urban vitality concept that emphasizes the importance of human existence in urban spaces ensures social cohesion and human interaction has gotten involved. Because the concept of urban vitality includes all the concepts suburbs need for success. Therefore, ensuring high urban vitality in the suburbs creates successful suburbs. Just as the city center's urban vitality affects the city's death and life, the vitality of the suburbs, which are part of the city, will affect this death and life.

The main objective of this study is to examine the concept of urban vitality in the suburbs, the impact of which is undeniable for cities, and to trace the human dimensions in urban spaces It has been analyzed in urban studies that examining vitality in suburbs provides an advantage for the city, and providing similar advantages is also among the objectives of the study. The first of these positive effects is to accept the suburban as a living organism with a symbiotic relationship with the city, not as a periphery area separate from the city; this would cause the perception of suburbs to change. The second is the urban vitality concept provides livable, healthy, sustainable, and quality built environments. Therefore, the İldem Suburb in Kayseri, Turkey's 8th largest city, which was established in the 1990s, has been examined. This study desired to be a guide for future studies by emphasizing the importance of urban vitality, quality-built environment, and human dimension in suburban. It will enable the existing built environment of the suburbs to be retrofitted and the areas open to development, called tabula rasa, to be designed with urban vitality design tools. Besides, it is anticipated that the study will contribute to the literature on urban vitality-suburban studies, which is recently focused on urban studies.

Table 1.1 The Structure of Research

Research Questions	Research Objectives	Research Assumptions
How does the concept of urban vitality change as the development of cities and the focus of urban studies move from urbanization to suburbanization?	Understand the scope of the concept of urban vitality includes not only city centers and urban commercial areas, but also suburbs.	Contrary to popular belief, suburbs are not urban parts without urban vitality. Living in the city turns into a culture, just as living in the suburbs turns into a culture. This living culture brings vitality with it. Today, cities cannot ignore the suburban vitality
Why have the tools and practices, as conditions of urban vitality that constitute the quality of the built environment been discussed?	Emphasize that urban vitality and quality-built environment are two intertwined urban concepts.	Urban vitality and the quality of the built environment, which have similar aims and focal points, have intertwined. Urban vitality positively affects the quality-built environment, and the quality-built environment creates high vitality urban spaces.
Why have urban vitality conditions been re-thinking in the İldem suburb of Kayseri, and how they have been evaluated?	Re-thinking urban vitality conditions in accordance with the suburban character and evaluate with methods such as data collection, site analysis, mapping, and classification.	All city decisions should support high urban vitality, and the human dimension should take place in urban design focus.

This study aims to answer the following questions: How the scope of urban vitality has changed from the 1960s to the present; How suburban is examined in urban vitality studies, and why quality-built environment tools are included in the evaluation while evaluating the concept of urban vitality; and with all these changes,How should urban vitality conditions be rethought and evaluated in the suburb of Kayseri İldem?. The above table includes the research questions, objectives, and assumptions based on these questions and the aim of the study (Table 1.1).

Examining the urban vitality concept, the development process, and the changing scope, which is at the center of the study, will provide an overview of urban developments in the 21st century. For this reason, the urban vitality has been examined in three main domains.

20th-century urban ideas and designs have ignored the human factor necessary for urban spaces with the developing construction, transportation, and communication systems. Thus, the historical development of urban vitality and the process of re-focusing the human factor have been examined in the first main domain that study urban vitality. At the beginning of the 1960s, urban researchers, urban planners, and architects observed that urban spaces, which were well-designed as statistically on paper, turned into where was not used by people urban areas where crime is committed. The main reason for these problematic urban areas is the establishment of spaces lacking human interaction by ignoring human existence in urban spaces.Counting statistical and probabilistic calculations in urban design, further developing construction technologies, and transportation networks, have been the new urban design focus, eliminating the human factor in the city.Therefore, urban planners, urban theorists, and architects have begun to emphasize the importance of the human factor and human interaction in urban space, in other sayings, urban vitality. Jane Jacobs (1961) emphasized urban vitality as the human interaction of urban spaces that produces diversity, providing access and opportunities for encounters to urban users. According to Whyte (1980), the urban vitality in small urban spaces depends on success parameters such as comfort, accessibility, image, usage, connection, and interaction. Like Jane Jacobs's urban vitality theory, Montgomery (1998) emphasized good designed urban form, the diversity which provides interaction and ensures urban vitality and livable cities. Jan Gehl (2010) defined the vitality of urban space as follows: recreational and social activities that require complex city life are mixed with necessary pedestrian traffic and could participate in urban life. Kevin Lynch (1981) discussed vitality ecologically and biologically, unlike other urban theories. Urban theorists and researchers have focused on strengthening the interaction between people and urban space, regardless of which parameter, and what scale of urban vitality have been evaluated.

The second domain aimed that examine the effect of urban vitality on urban studies, so urban studies that evaluate urban vitality with different urban parameters at different scales with different methods and which other studies frequently refer to are included in this title. Several urban studies have evaluated urban vitality using Jane Jacobs' consitions of urban vitality, (H. G. Sung et al., 2013; H. Sung et al.,2015; H. Sung & Lee, 2015; De Nadai et al., 2016; Delclòs-Alió & Miralles-Guasch,2018; Fuentes et al., 2020). Some researchers have analyzed urban vitality concepts concerning: landscape and public design vitality (Mehrbani et al., 2017; Eghdami et al., 2018), historical urban space (Oruc & Giritlioglu, 2008; Van Nes, 2014), quality of the built environment, (H. G. Sung et al., 2013; H. Sung & Lee, 2015; Ye et al., 2018; Wu & Niu, 2019; Kang, 2020; Mouratidis & Poortinga, 2020; Gan et al., 2021), urban form, (He et al., 2018; Xia et al., 2020; Yue et al., 2021, Zhang et al., 2020), social infrastructure (Lan et al., 2020), quantitative evaluation index system, (Liu et al., 2021), Visual Analytics System, (Zeng & Ye, 2018), Urban and Suburban Legacies, (Martino et al., 2019), identifying ghost cities, (Jin et al., 2017). In addition, the studies examined under this second title were tabulated under sections such as case study, methodology, and datasets, urban vitality parameters, urban vitality approaches, making it easier to examine and classify. The broad scope of the urban vitality concept ensures that vitality is associated with many different urban parameters, and the number of urban vitality studies is increasing day by day.

The third domain is urban practices about the quality of the built environment that positively affects urban vitality have been examined.Urban spaces with high urban vitality also create many opportunities for the citizens. Such as social interaction, social cohesion, a sense of safety, quality of public life, utilization of public space, diversity, and economic development. Nevertheless, all these opportunities are brought by the high urban vitality value, based on a well-designed quality-built environment. Therefore, urban vitality has been considered with the quality of the built environment. The quality of the built environment issue has become the focus of countries, councils, declarations, working groups, and urban theorists with the emergence of many problems such as rapidly growing cities, changing demography, decreasing biodiversity, damaging nature, disregarding context, and declining urban vitality value.

The quality of the built environment studies such as Jane Jacobs (1961), Urban Task Force (1999), Urban Design Compendium (2000), By Design (2000), Building For Life (2012), Townscape Heritage Initiative Movements (THI) (2007), High-Quality Baukultur (2018), Architect Council Of Europe (ACE) (2019), Jan Gehl, (2010), The Urban Space Framework (2016), David Sim (2019) have emphasized identifying and measuring quality criteria for a good urban space.Although these studies have approached different countries, regions, cities, and neighborhoods, they have a common purpose. Therefore, it is possible to encounter similar quality criteria in different studies. Therewithal, it is like the urban vitality condition and quality tools of the built environment. Considering these two intertwined concepts together and reconstructing their conditions in accordance with the case study enables the concept of urban vitality to be viewed from multiple perspectives.

Under the three titles described above, it is possible to see the historical process of urban vitality, its development in urban practices, and research. Urban vitality has been extracted from the city centers and evaluated using different methods with the developing technology in various parts of the city. When the urbanization process is examined, it shows that the concept of urban vitality developed through this process. benezer Howard (1902), came up with the idea of a garden city with the slogan of “Garden Cities of To-morrow”, believed that cities were unhealthy areas and emphasize that the problems brought about by the industrial revolution have been reflected in the city. Le Corbusier's “Radiant City”, and Frank Lloyd Wright's “Broadacre City”, were designed by utilizing the developing construction and transportation systems, and urban planners, influenced by the ideas of (Fishman, 1977), started to build their 20th-century cities on these urban ideals. Increasing crime in these urban spaces, which started to be built at the beginning of the 20th century, and desolation of the urban spaces that came with it began to cause. Voices emphasizing that this is due to the lack of human interaction began to emerge in the early 1960s. The concept of urban vitality, which advocated the importance of human interaction, started with Jane Jacobs in 1961 and continued with William Whyte (1980), Lynch (1981), and Jan Gehl (2011), has survived until today without losing its effect. Urban vitality theorists even Mumford, known for his opposition to Jane Jacobs, viewed the city as the curse of suburbs. But cities had to become suburban and grow with their suburban character to respond to the increasing population load in this way.

Therefore, living in the suburbs causes the suburbs to demand new and remarkable creative energy (Berger, Kotkin & Guzmán, 2017). Suburbs request vitality, and in the meantime need sustainable, healthy, and quality built environments has led urban studies to focus on the suburbs. To meet these demands and needs, design tools are developed for newly formed suburbs, while the concept of retrofitting old suburbs takes place in competitions and urban studies (Williamson, 2013). Features such as good transit, mixed-use, green space, and a highly vibrant built environment that encourages social interaction (Florida, 2013) are necessary to create a successful urban space. Therefore, while urbanization moves towards suburbanization, the conditions of urban vitality have begun to be sought and evaluated in the suburbs.

For this reason, this study evaluated the urban vitality in the still-developing suburb of İldem in Kayseri,3rd largest industrial city in Anatolia. The suburb of İldem, located on the eastern periphery of Kayseri, was established in the early nineties to meet the housing needs of middle and low-income families. Having been shaped and dominated by the pattern of the İldem suburb by small contractors, large and small cooperatives, real estate investment trusts (REITs), and the Turkish Housing Administration (TOKI), İldem has become suburban. At the beginning of the nineties, it was possible to define İldem as follows; far from the city center, where affordable houses form the dominant pattern and serve monotype income groups. However, this definition is changing day by day thanks to the development of the urban transportation system, investments for different users and income groups, increasing mixed-use initiatives, serving various groups, and many other factors. In this way *living in İldem* has been a new concept for Kayseri. The definition of *living in İldem* makes a positive call in the minds of the city dwellers. For the city of Kayseri, the suburban way of life has been referred to as *living in İldem*.

Urban vitality conditions and quality practices in the built environment, which have been discussed as the urban vitality condition in the study supporting the urban vitality conditions, have been re-thinking in the suburb of İldem. Jane Jacobs emphasizes that every city has a unique character and should evaluate in terms of conditions. Thus urban vitality conditions of İldem have been created according to İldem terms.

Re-thinking urban vitality conditions have been discussed through cooperatives, and the Turkish Housing Administration (TOKI) residences, which dominate İldem's pattern with 1000 or more housing units.These houses, which form the dominant pattern of the suburb of İldem, were built to meet the housing needs of middle- and low-income families. While evaluating the residences built by the state and private sector in the suburbs over three different building groups selected as the dominant pattern, the changing housing understanding over time with these building groups, which were built at different times, also has been observed. The smallest unit of the buildings affects the building pattern, and the building pattern affects the urban pattern, in short, it creates a butterfly effect in the city. For this reason, urban vitality conditions have been examined on different scales from housing units to streets, and urban scales. With this point of view, it affects the whole of urban life in the suburbs. This research has aimed to proving the existence of urban vitality in suburbs that are ignored but of great importance to the city. Thus, the research results would contribute to the changing suburban perception in the world.

Urban vitality conditions have been reconsidered by including the quality of the built environment practices .Re-thinking urban vitality conditions map has been created according to the characteristics of İldem including the following titles; making the connection, diversity, density, animating edge, improves the public realm and human dimension. Since İldem suburb does not need both urban vitality conditions and quality tools such as need for age building, protection of historical environment, need for small urban block. In other words, whatever the conditions of the suburb of İldem has been added to re-thinking urban vitality condition map, and the conditions that were meaningless to examine and evaluate have been removed from this map. The titles and sub-titles of the re-thinking urban vitality conditions have been analyzed with the help of architectural visualization, illustration and mapping methods. Except for the satellite images and street images added for the readers who are not familiar with the İldem suburb, photography did not used. Selected building groups which are İldem C, İldem D, and TOKİ 1 -2 were observed at 8.00-9.00, 10.00-11.00, 16.00-17.00, and 19.00-20.00 hours on weekdays and weekends in summer season (June –September). Since Kayseri has a continental climate in winter and its effects are seen in the spring, the study was conducted in the summer season, where the air temperature does not adversely affect the interaction of urban space and human.

People activities maps were created between the hours determined in the summer season. In the evaluation of these maps, which examine walking, sitting, shopping, waiting for public transportation, and social and sports activities, the following result was desired; to ensure the accuracy of the assumed effect of the analyzed urban vitality conditions in urban life.

The literature study of the thesis involves both the concept of urban vitality and significant of suburbs in urban development, the case study of the thesis, urban vitality conditions have been re-thinking while examining the science of the suburb of the city of Kayseri (Figure 1.1).The relation between the literature review and the case study described in the thesis scheme (Figure 1.1) has been explained in 5 chapters and formed the thesis structure. Introduction chapter has discussed the problem statement, the objective of the study, method of the study, and the structure of the study.

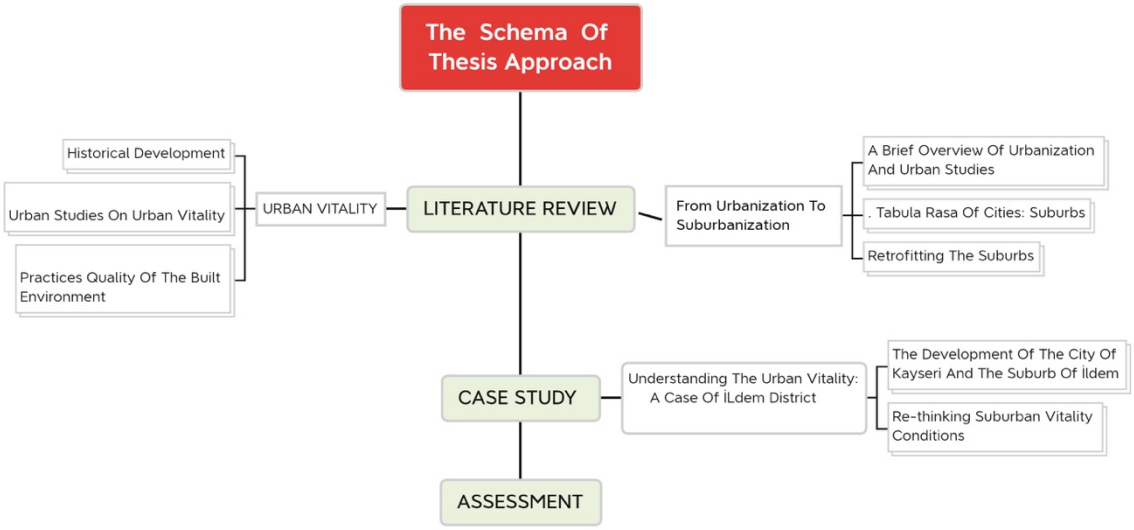


Figure 1.1 The Schema of Thesis Approach

The key aspects of the urban vitality chapter examined the concept of urban vitality in three stages theoretical, urban studies, and urban practice. This chapter aims to answer the following questions:

- Why is urban vitality important to cities?
- How have urban theorists and researchers dealt with urban vitality?
- What is the scope of urban vitality in today's urban studies?

- With which urban parameters and approaches urban vitality ,and by what methods and at what scale could be evaluated?
- What is the impact of quality-built environment on urban vitality, and why we should consider quality built environment as a condition for urban vitality?
- What are the similarities and differences between the tools of the practices that want to create the quality of the built environment and the conditions of urban vitality?

From urbanization to suburbanization chapter reviewed 20th-century and 21st-century urban developments, and the reasons that urbanization turned into suburbanization. This chapter has emphasized that suburbs that are defined tabula rasa (blank slate) of the city, should have good design city features such as sustainable, healthy, livable quality-built environments with high vitality. The concept of retrofitting suburban which rethink suburbs as needing vitality urban areas has been examined.

Understanding the urban vitality: A case of İldem suburb chapter examined the development of Kayseri city and the establishment and development process of the suburb of İldem. By understanding the relationship between the city and the suburb, the terms of the suburb of İldem have been found out. Considering the terms of the suburb of İldem and the conditions of urban vitality were reconsidered and evaluated in the building group of three different dominant patterns of the suburb of İldem.

Conclusion and future prospect chapter includes implications about urban vitality, and the quality of the built environment assessment and contributions to future studies have been explained. This thesis has emphasized to examine the vitality of the suburbs to contribute to the designing of livable, healthy, and sustainable urban spaces with high vitality in the future urban spaces. Therefore, in this chapter, it has been foreseen that understanding suburbs contribute to our understanding of cities that develop with suburban character.

Chapter 2

Key Aspects of Urban Vitality

Key aspects of urban vitality chapter have examined the vitality concept to develop a conceptual understanding through Urban vitality has associated with many urban concepts such as sustainability, livability, healthy urban spaces, the quality of the built environment, and the use of public realms. To better understand such a comprehensive urban concept, the urban vitality concept has been examined in three subtitles that seek to answer the following questions.

- How has the concept of vitality gained importance after the modernist urban theory?
- How has the concept of vitality maintained its importance until today?
- Why do cities need vitality?
- How is the concept of urban vitality discussed in urban studies?
- What is the quality-built environment practicing whose main aim is to increase urban vitality?

First, has been aimed to create an overview of the origin of vitality. The concept of urban vitality, which includes the correct relationship between humans and urban spaces, is ignored by the modernist urban theory but defended by urban theorist people such as Jane Jacobs, William H. Whyte, Kevin Lynch, and Jan Gehl.

Have been addressed the answers these urban researchers have to the question of why cities need urban spaces with high vitality and how the urban vitality concept gained significance against the modernist urban theory. The second aim of this chapter is to understand the reflection of urban vitality, which has taken its place in urban studies since the 1960s and continues to increase its impact in urban studies.

The concept of urban vitality, which generally has been studied in historical city centers and commercial centers of the city, changes in the scope of work and considers it not only in the center but also in different parts of the city, its importance for urban spaces, examining it at different scales and various urban parameters, with research methods developing with technology. The change of the urban vitality concept has been examined in the many cited urban studies.

This chapter intends to address quality-built environment practices, whose vitality is to create urban spaces. Urban studies that effect of the quality of the built environment on urban vitality has also been discussed, and in the results positive effect of the quality-built environment on urban vitality has been observed. High vitality conditions of urban researchers; Jane Jacobs, William H. Whyte, and Jan Gehl are associated with a quality-built environment. At the end of the chapter, the differences and similarities of quality-built environment practices' tools have been discussed in tables. Furthermore, urban vitality conditions have been included in these tables and have been aimed to show that the quality of the built environment and urban vitality are intertwined concepts.

2.1 Vitality as an Interaction Concept in the City

The word *vitality* originates from the Latin word "*Vitalis*" that means "*of or belonging to life*", based on vita "life in the late 14C (https://www.etymonline.com/word/vital). The concept of vitality, which has been used in the sense of "*vital force, life*", from Vitalis since the 1590s, (https://www.etymonline.com/word/vitalty) is used by urban researchers to explain the use of urban spaces by people, in other words, whether urban places live or not, and the concept of vitality has taken place as urban vitality in the urban literature.

Urban design ideas have been put forward for cities that couldn't cope with the rapidly increasing urban population and uncontrolled growth of the industrial revolution. Ebenezer Howard's the Garden city, Le Corbusier's Radiant City, and Frank Lloyd Wright's Broadacre city have influenced many architects and urban designers and built new cities with these urban concepts in many parts of the world. Urban ideas of Howard, Corbusier, and Wright not only shaped cities but also shaped social life by using newly developing building construction technologies and transportation technologies (Fishman,

1977). In addition, these urban ideas have changed the focus of urban design and urban understanding.

Although many factors cause the focal point to change in urban design, one of the most important factors is the rapidly increasing number of cars. The cars rapidly occupying the city have taken the human factor out of focus in urban design. Urban areas such as roads, houses, public space were designed according to the cars, the new rulers of the city. However, these urban spaces started to pose a problem for the city after a while. In the early 1960s, urban researchers began to emphasize the importance of the human factor in the city. In this period, the concept of urban vitality, which essentially represents the active use of urban spaces by people, but includes many urban concepts such as livability, sustainability, and healthy urban areas, gained importance.

Although the concept of vitality is expressed in different dictionaries by some researchers, it is basically to seek an answer to the following question, why are some urban areas used by people a lot and others are not? Researchers such as Jane Jacobs (1961), William H. Whyte (1980), Lynch (1981), and Jan Gehl (2011), who developed urban ideas with a focus on people, emphasized the necessity of people in urban areas by using the concept of vitality.

Jane Jacobs is one of the most significant names who shaped the concept of vitality. Jane Jacobs tried to examine how cities work in real life, because this is the only way to learn what principles of planning and what practices in rebuilding can promote social and economic vitality in cities, and what practices and principles will deaden these attributes (Jacobs, 1961). Jacobs has been extremely influenced to urban planners, urban designers, and architects all around the world. In her book "*The Death and Life of Great American Cities*" (1961) Jacobs' theory of the urban still provides vital knowledge on how to design vibrant cities today.

Jane Jacob's ideas about the city, not as an urban designer or architect, but as a city dweller, and his struggles with Robert Moses against the urban transformation of New York, the city where he lives, are the focus of architectural historians and critic Lewis Mumford. Lewis Mumford's article titled Mother Jacobs' Home Remedies for Urban Cancer likened Jane Jacob's ideas and methods about *the city to home remedies and criticized* it by emphasizing that these remedies cannot cure cities with cancer (Mumford, 1962). These criticisms of Mumford and Robert Moses's new urban construction initiatives could not prevent the spread of Jane Jacob's theory of the city, on

the contrary, her urban theory created a new perspective for urban planners, urban designers, and architects.

The urban perspective of Jane Jacobs opposed to treating the city as a simple two-variable problem, such as Ebenezer Howard's Garden City or Le Corbusier's Radiant City. According to Jacobs, cities must organize as complex interrelations and fully intelligible organisms (Jacobs, 1961). To understand this complex and organized organism, Jacobs considered the relationships and uses that compose it together, not separately. Therefore, in her study (Jacobs, 1961), the condition that affects the vitality concept in many ways has been discussed. The first of Jacobs' conditions for the vitality of urban areas is what she called "*a sufficient mix of primary uses, and preferably more than two*" (Jacobs, 1961). The second condition is *"The need for small blocks"* where many blocks should be short because it creates an opportunity to encounter. The third condition is the coming together of different buildings in terms of age and condition. Fourth condition *"The need for concentration*" district must have a sufficiently dense concentration of people Apart from these four conditions, Jane Jacobs mentioned two significant factors affecting urban vitality. Accessibility Jacobs advocated that the city be accessible on foot and by transportation systems, and urban vacuums occupying mass areas in the city, these urban areas that are not used by people significantly affect urban vitality, (Jacobs, 1961).

Another well-known name that has researched urban vitality is a Danish architect and urban designer Jan Gehl. Just as Jane Jacobs questioned the vitality of cities, Jan Gehl discussed the diminishing life between buildings with modernist urban planning and argues that human-oriented design in urban areas will increase the use of urban areas and conclusion increase vitality. Jan Gehl has developed Jane Jacobs' urban theory and examined it in out American cities, such as Denmark, England, and Australia that's why has been put in a prominent position in urban studies. Amanda Burden, Commissioner, (New York Department of Planning, 2002-2013) describes this prominent position of Jan Gehl's urban theory as follows: '*We used to say we plan at the scale of Robert Moses, but we judge ourselves by the standard of Jane Jacobs. That's not true anymore. We judge ourselves now by Jan Gehl's standards*." (Matan & Newman, 2016). Jan Gehl argues that the way to design healthy, livable, vibrant, and sustainable cities is to understand the human scale. The human body, senses, and mobility are key point to good city planning. The challenge in good city planning is to

design in accordance with the human scale in places where cars dominate the streets and buildings rise and break away from the city (Gehl, 2010). Jan Gehl explained the conditions necessary for the design of good urban spaces, the focal point of which is human scale in his books*, "Life between Buildings* (2011)" and "*Cities for People* (2010)".

Gehl defined the vibrant city as a place where recreational and social activities that require diverse and complex city life are combined with the necessary walking activities and the opportunity to participate in city life. Jan Gehl has liked urban spaces devoid of vitality to an empty theatre*. "The empty theater"* analogy used by Gehl for urban areas with low urban vitality on the contrary overfilling sidewalks and large crowds their way from place to place is not exactly evidence of urban areas with high urban vitality. In order to design vibrant cities, need a quality-built environment and enough people to perform in urban spaces. (Gehl, 2010)

William H. Whyte (1980), in his book "*The Social Life of Small Urban Spaces"*, sought an answer to the question of why some urban spaces are successful and have high vitality, while some urban spaces are unsuccessful and have low vitality. Whyte sought the answer to this question in small urban spaces because the reason for having the high vitality and success of large urban spaces is that they host small urban spaces. He observed all these works firsthand and factors such as sitting space, sun, wind, trees, water, food, effective capacity, indoor spaces, which he thought had a positive or negative effect on vitality through time-lapse cameras in plaza and its surroundings and small parks in New York City. According to Whyte, parameters such as comfort, accessibility, image, usage, connection, and interaction increase the success and vitality of small urban spaces (Whyte, 1980).

Kevin Lynch has discussed the good city form in five dimensions. Lynch listed these five dimensions as follows; vitality, sense, fit, access, and control. Unlike Jacob, Lynch considered vitality biological and ecological dimensions Lynch (1981). o provides the vitality dimension, we need to fulfill three basic factors. The first of which is sustenance: we must ensure that people reach enough food, clean air, energy; in short, it must be adequate to sustain life. The second is safety: the physical environment should control or destroy violence, natural disasters, poisons, and diseases that threaten health. The third factor is consonance: the physical environment must be compatible with human biology. The physical environment should neither over-stimulate people nor deprive them of stimulate and emotions (Lynch, 1981).

John Montgomery has argued that one indicator of the success of good urban places is urban vitality. Montgomery (1998) came up with similar thoughts to Jane Jacobs on vitality in his study making a city: “Urbanity, vitality, and urban design”, so according to Montgomery having enough mixed uses for the urban population, providing a diversity of activities that provide opportunities to meet people, and providing sufficient density increase vitality. Montgomery also prepared principles set about the urban form that affects urban vitality. This set of principles contains parameters that create the physical environment and increase vitality such as flexible building adaptability, human scale, city blocks and permeability, movement, street contact, fine grain, public realm, public green, and water space, and landmarks or visual stimulation. In short, as far as Montgomery's urban theory is concerned, good urban places are formed by providing many parameters. Good-designed urban form, the diversity that provides interaction, and the city image created by considering the human factor ensure urban vitality and livable cities (Montgomery, 1998).

2.2 Research Related to Urban Vitality

The concept of urban vitality is a broad concept that seeks answers to questions such as how to include people in urban life, and how can design living and vibrant urban spaces. Although many features of cities that as the rate of spread, population, construction, and transportation systems, have changed over time, the need for livable vibrant urban spaces and well-established human-urban spaces relationship has not changed.

Therefore, urban researchers have studied the concept of urban vitality in many cities of the world, using different scales and methods and examining various conditions that affect urban vitality. This chapter has examined urban vitality research all over the world to better understand the concept of urban vitality. The scope of study of urban vitality, which affects many factors in the urban space and urban life, is expanding day by day. Thus, it is possible to encounter many studies on urban vitality.

Urban vitality researches are handled together with many conditions such as social, cultural, and spatial. However, due to the scope of this study, urban vitality studies have been examined under sub-titles of urban vitality concept with Jane Jacobs’

conditions, built environment with urban vitality, human interaction with urban vitality, public and landscape design within urban vitality, and historical area and urban vitality, to address the issue from different perspectives and methods. The reason for presenting studies with different titles in this section is to show how urban vitality can be associated with broad urban issues.

First, these conditions, studies discussed that examined urban spaces by using Jane Jacobs' urban vitality conditions, is one of the pioneers of the vitality concept. They measured vitality by converting Jane Jacobs' urban vitality conditions to Jane Index (H. G. Sung et al., 2013; H. Sung et al.,2015; H. Sung & Lee, 2015; De Nadai et al., 2016; Delclòs-Alió & Miralles-Guasch, 2018; Fuentes et al., 2020). Jane Jacobs' urban vitality conditions went out of the cities of America and have been investigated in Europe and Asia by these studies. Especially examining Jacobs' urban idea in that chapter helps us understand the significant impact of the urban vitality concept on urban life, and urban space.

Maarouf & Abdel-Salam (2012) searched for the traces of Jane Jacobs in the city of Beirut Central District (BCD). Beirut started to resemble the Turkish port city of Istanbul with the Ottomans, and whose urban morphology and building types of major changes with the urban interventions made at the end of the 19th century, and the beginning of the 20th century. In this study, researchers thought that Jane's vitality city idea is still valid and investigated it in Beirut Central District (BCD). The study focused on two questions: How would the Beirut central district stay vital, and what would Jane say about Beirut? For this reason, they discussed the concept that Jane Jacobs emphasized for vitality, as *Support Diversity, Create Connectivity, Offer Variety* and improve clarity: *Revitalize*, but retain, in Beirut central district.

H. G. Sung et al. (2013) have proved whether true or not Jane Jacobs' idea that the urban vitality is a reason for its physical diversity. This study has analyzed Seoul's physical activity, in other words walking activity, on 9571 street using multiple linear regression models. Jane Jacobs vitality conditions have been used as variables (*mixed-use, small block, concentration, border vacuum, old building, and accessibility*). Additionally, to understand the effect of the physical environment on walkability, street variables such as sidewalk width, number of lanes on the street, street furniture, sidewalk type, nearby crosswalk, and street slope have been examined. Analysis results demonstrated that the physical-environment measures emphasized by Jane Jacobs increase urban vitality.

Proving the ideas of Jane Jacobs in Seoul, one of the capitals of the Asian continent apart from other major American cities highlights the idea that the physical environment of cities should be designed in a way that will increase vitality.

H. Sung & Lee (2015) have studied the bond between the residential built environment and walking activity. This study has been conducted in Seoul, which has a high population and density, and public transportation, just like the study of H. G. Sung et al., (2013). But as different H. G. Sung et al. (2013) this study used telephone survey data to measure-built environment factors based on the home addresses of the survey respondents. Study results have shown walking activity is associated with Jacobs' six conditions; *urban vitality, including land use mix, density, block size, building age, accessibility, border vacuums*, and *building environments*.

Sung et al. (2015) studied Jane Jacobs' vitality conditions in Seoul, which is a hub for neighboring countries in South Korea, has a large built environment, and has more developed public transportation than New York. The result of the study demonstrated that the built environment character adopted by Jane Jacobs and stipulated for vitality plays a significant role for urban vitality. They denoted that this study fills the gap between Jane Jacobs' theories of vital urban life, and testified that Jacobs' claims that mixed-use, old buildings, high building concentrations, and border vacuums support high urban vitality.

De Nadai et al. (2016) examined the conditions of Jane Jacobs from the perspective of mobile phone data as an alternative to the above-mentioned relatively expensive vitality studies in Seoul. Data such as land use and sociodemographic information have been collected from the Italian Census, and Open Street Map and Jane Jacobs' four conditions have been evaluated in six Italian cities. The study used mobile phone data to represent urban vitality and urban web data for urban diversity. The result shows that Jane Jacobs' vitality conditions have been also proven in Italian cities, and there was a relationship between urban vitality and diversity as foreseen by Jacobs.

Delclòs-Alió & Miralles-Guasch (2018) looked at Barcelona through Jane Jacobs' eyes; in the other saying they used Jane Jacobs' condition to understand the urban vitality of Barcelona city. The aim of examining urban vitality is two point-of-views: Firstly, to see the conflict of the Mediterranean city and modern city spaces in the city of Barcelona through systematically analyzing urban vitality. Secondly to understand how Jane Jacobs' quest for urban vitality worked in the Mediterranean city of Barcelona.

Delclòs-Alió & Miralles-Guasch (2018) turned Jane Jacobs' vitality conditions into *Jane index*. *Jane index* includes Jane Jacobs conditions such as *mixed uses, small block, needed old buildings, diversity*. In addition, they added two conditions that Jane addressed in her book *accessibility*, and *border vacuums*. They grouped similar areas divided Barcelona city into 19 sub-areas. Through systemized GIS-based process, *The Jane index* has been calculated the following have been used as data: population *density (PD), housing density (HD),* and *building density (BD) data,* and the urban vitality maps of Barcelona city have been created.

The study characterized and analyzed the modern built environment and the historical city area with the urban vitality map created with Jane Jacobs' conditions. In conclusion, they stated that a large part of Jane Jacobs' urban idea is valid and would be strengthened if connected with today's urban concepts. They study (Delclòs-Alió & Miralles-Guasch, 2018) inspired the work of Paköz et al. (2022). They mapped the urban vitality of Kayseri which a rapidly growing industrial city with a population of approximately 1.4 million, in the central part of Turkey, based on Jane Jacobs' criteria. Delclòs-Alió & Miralles-Guaschi's studies have affected Fuentes et al. (2020) study. It was an example of Delclòs-Alió & Miralles-Guaschi's work in Barcelona, done in Santiago de Chili, with similar methods used. Fuentes et al. (2020) have examined urban vitality in Santiago de Chile where is a city in Latin America using the Jane Index. Jane Index: concentration, diversity of uses, contact opportunity, and need for aged buildings accessibility and border vacuums has been used with the GIS program to create urban vitality maps of Santiago Chile. Addressing Jane Jacobs' theory in the Latin American Context has resulted in different results from vitality studies conducted in other countries. Santiago de Chile has an urban form characterized by a strong radial center-periphery dynamic and includes many sub-centers in rural areas with high vitality. This result has been affected by social housing in the urban periphery.

In addition to these studies that test and examine all of Jane Jacobs' vitality conditions in places such as Seoul, Italy, Barcelona, Beirut, Santiago de Chile, some studies examine urban vitality by considering one or both of Jane's vitality conditions. King's (2013) study name of *"Jane Jacobs and 'The Need for Aged Buildings': Neighborhood Historical Development Pace and Community Social Relations*" examined Jane Jacobs third vitality condition the coming together of different buildings

in terms of age and condition (Jacobs, 1961) in the other word the need for aged buildings.

Jacobs emphasized that preserving a certain mix of new and old buildings will increase both land use and social diversity and stabilize rent and house prices. The result of this study by King (2013) has shown that providing historical diversity leads to the development of social interaction. Sulis et al. (2018) examined the relationship between the concept of diversity and vitality, which is one of the Jane Jacobs vitality conditions, with qualitative results. The study, OpenStreetMap App, Twitter data, and Oyster card data were used to measure human flow diversity in London, and at the same time, examined built environment diversity conditions (age, density, mixed-use, and street intersection) emphasized by Jane Jacobs (1961). In conclusion, they revealed the related diversity and urban vitality.

Above mentioned urban studies use Jane Jacobs' urban vitality conditions, in other words, *"looking through the eyes of Jane Jacobs"*. With sections such as methodology/data sets, urban vitality parameters, and urban vitality approaches in the table, it is possible to see how these studies examining urban vitality have been evaluated in different scales and case studies. (Table 2.2.1)

Table 2.2.1 Studies that using Jane Jacobs' urban vitality conditions

Studies	Case Study	Methodology / Data sets	Urban Vitality Parameters	Urban Vitality Approaches
(H. Sung et al., 2015) Operationalizing Jane Jacobs's Urban Design Theory: Empirical Verification from the Great City of Seoul, Korea	Seoul, Korea	New Address Information Database, the Seoul Land Use Information Database, the Nationwide Firm Statistics Survey Data, the Population and Housing Census Data ArcGIS	Mixed Land Use, Block Size and Contact Opportunities, Aged Buildings and Small Enterprises, Density and Concentration, Border Vacuums,	This study aims to operationalize Jacobs's conditions for a vital urban life. These are (1) mixed use, (2) small blocks, (3) aged buildings, and (4) a sufficient concentration of buildings.
(De Nadai et al., 2016) The Death and Life of Great Italian Cities: A Mobile Phone Data Perspective	6 Italian cities - Bologna, Florence, Milan, Palermo, Rome, and Turin	Mobile Phone Activity, OpenStreetMap, Census Data, Land Use, Foursquare Data	Land use, Small blocks, Aged buildings, Concentration, Vacuums,	This study measured the vitality of the six cities of Italy by using mobile data and Jane Jacob's four conditions.
(Delclòs-Alió & Miralles-Guasch, 2018) Looking at Barcelona through Jane Jacobs's eyes: Mapping the basic conditions for urban vitality in a Mediterranean conurbation	The Barcelona Metropolitan Region	ESRI ArcGIS	Concentration, Diversity, Contact Opportunity, The Need For Aged Buildings, Accessibility And Border Vacuums	The study aimed to measure the vitality of the city of Barcelona using the parameters of Jane Jacobs' vitality concept.
(Delclòs-Alió et al., 2019) The urban vitality conditions of Jane Jacobs in Barcelona: Residential and smartphone-based tracking measurements of the built environment in a Mediterranean metropolis	The Barcelona Metropolitan Region	Smartphone tracking, GIS-based data,	Concentration, Diversity, Contact Opportunity, Building Age, Accessibility, Border Vacuums (JANE INDEX)	The study measures the vitality of metropolitan areas with the tracking system based on the smartphone using the parameters of Jane Jacob's vitality concept.

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Studies	Case Study	Methodology / Data sets	Urban Vitality Parameters	Urban Vitality Approaches
(Fuentes et al., 2020) Santiago de Chile through the Eyes of Jane Jacobs. Analysis of the Conditions for Urban Vitality in a Latin American Metropolis	Santiago de Chile	GIS	Concentration, Diversity, Contact Opportunity, The Need For Aged Buildings, Accessibility And Border Vacuums	The study measured the vitality of Santiago using the methodology jane index of the Barcelona study. Moreover, the study demolished the perception of low vitality in suburban and urban periphery.
(King, 2013) Jane Jacobs and 'The Need for Aged Buildings': Neighborhood Historical Development Pace and Community Social Relations	Chicago	Survey Data Perceived Neighborly Social Relations An Neighborhood Built Environment Housing	Building age, Social Composition,	The old building need and social interaction, which is one of the criteria that Jane Jacob has created for a healthy and vibrant city, was examined.
(Paköz et al., 2022) Paköz, M. Z., Yaratgan, D., & Şahin, A. (2022). Re-mapping urban vitality through Jane Jacobs' criteria: The case of Kayseri, Turkey	Kayseri, Turkey, 87 neighborhoods	ArcGIS, Kernel Density	Need for Concentration, Need for Primary Mixed Uses, Need for Small Blocks, Need for Small Buildings, Need for Aged Buildings	This paper examined the city of Kayseri using Jane Jacobs' criteria for that create high vitality urban space. They re-mapped 87 neighborhoods of the city.

Urban vitality can be associated with many economic, social, and cultural parameters in urban studies. Other parameters are the built environment and urban form in which the built environment is studied at large scales, especially recently, has been observed that urban researchers continue to work on the correlation between the built environment, the urban form that, and urban vitality. Jane Jacobs' book states that the city is not a simple equation but a complex multivariate whole (Jacobs, 1961). In this complex problem, the built environment is one of the variables that affect vitality.

Wu & Niu (2019) conducted with city-scale study in Shanghai, China. To evaluate the impact of the built environment features on urban vitality. They have emphasized that Shanghai, which has quite a developed built environment, has a universal feature that would be a reference to another study. Besides mobile phone location data would better understand the built environment and user profile Topographic Map, Land-Use Data National Population data have been used. Additionally, functional diversity, small street segment length, old buildings, density, traffic, and site design have been used as vitality conditions. According to this study, built environment features influences urban vitality value and can be analyzed from two dimensions: time dimension, and spatial dimension.

Kang (2020) examined the built environment and vitality at a neighborhood scale in Seoul using mobile phone data, due to the limited number of studies on the versatility between humans and the built environment. This study aims to enlighten the value of the built environment and people on neighborhood vitality. Multidimensional human and built environment models result demonstrated with this study that urban areas with high employment and intensive land use values have high weekend and weekday vitality rates.

Mouratidis & Poortinga (2020) have discussed urban vitality with the built environment and social cohesion. This study has been conducted in Oslo metropolitan areas with survey and geospatial data collected. Researchers created a framework that includes an urban vitality-built environment and social cohesion relationship, and they tested the relationships with different dimensions. The following three questions were asked as the aim of the study *"(1) How is the built environment linked to urban vitality; (2) What is the relationship between the built environment and social cohesion; and (3) What is the role of urban vitality in the link between the built environment and social cohesion?*" The results of the study revealed that while built environment and urban vitality affect each other positively, there is a negative effect between urban vitality and social cohesion. Parameters that increase urban vitality reduce social cohesion such as *density* and *urban land-use mix*, the other side *green space*, which contributes to social cohesion, has a negative effect on urban vitality. On the other side, the diversity of social activities increased in the city to increase urban vitality contributes to social cohesion.

Wu et al. (2018) conducted the study in China, Beijing Suburban, which is different from European and American cities but has high density and high mix-use value. The reason for the research on the Beijing suburban district is to change the urban form by making new urban decisions and opening gated residential communities that lower the vitality of the area. To understand the connection between the changing urban form, and urban vitality, the researchers measured the suburban neighborhoods with the urban form index and then compared them with the vitality index. The study result emphasized that even if the increase in gated neighborhoods, urban form in China may increase urban vitality.

Yue et al. (2021), tried to prove the urban form and urban vitality relationship in two big metropolitan areas Ho Chi Minh City in Vietnam and Shanghai in China. Answers were sought to the follows questions; *which urban form vitality differs, and what are similar vitality patterns by comparing urban vitality in metropolitan areas. Urban vitality in metropolitan areas has been evaluated in three different dimensions, built environment, human activity, and human-environment linkage.* It is possible to establish a connection between urban form and vitality with the results of the research. While the monocentric structure of Ho Chi Minh City causes high urban vitality from the urban core to urban peripheries, also Shanghai has similar vitality feature but thanks to polycentric urban form some sub-centers have high vitality.

He et al. (2018) studied the urban growth patterns and urban vitality relationship. Researchers examined Chinese cities' growth from 2005 to 2015. Chinese cities' urban growth patterns were divided into three groups: *infilling, edge, and outlying*. Five urban vitality indicators represented urban vitality in this study: *Density (POID), degree of urban function mixing (MIX), location check-in density (CIQD), housing prices (HP),* and *population change (POPC).* Urban vitality indicators were measured on urban growth pattern models that infilling, edge, and outlying, and the relationship between urban growth pattern and urban vitality has been revealed. They also emphasized that cities should apply growth models following their characteristics.

Ye et al. (2018) have approached the impact of urban morphology on vitality. The regression analysis was used to focus on two morphological factors, *density, and typology* while controlling for *the accessibility, functional mix,* and *size of individual blocks.* The following findings have been reached as a result of the analysis made for the study in Shenzhen which is a rapidly developing city of China.

Urban morphology has a notable impact on urban vitality, building typology play a more significant role than building density, and block typology tends to affect vitality positively. Like this study, Xia et al. (2020) emphasized that the strategy of creating mixed-use and high density in rapidly developing cities in China caused incompatibility over time. Therefore, urban land use intensity was analyzed based on *street block density* and *typology*. This study also measured night-time vitality, which is lacking in other studies. These studies examined the effect of *density* and *block typology* on urban vitality as well as Gan et al. (2021) studied the impact of block size on vitality. Although the result of the study shows that the maximum block size that limits the high urban vitality has a non-linear effect on the urban vitality value, the positive effect of a small block size on urban vitality has been proven. In addition, according to the results of the study, urban planning plans with smaller housing blocks under 0.06 km2 were proposed to city planners.

Li et al. (2022) have analyzed the effects of six dimensions of the built environment; *neighborhood attributes, urban form and function, landscape, location, and street configuration* on urban vitality. The results of the study show that *population density, community age, opens space, pavement rate, streetlights, shopping and entertainment density, integration, and proximity to transportation* positively affect urban vitality while *road density* and *proximity to parks and green areas* did not positively affect urban vitality.

Zhang et al. (2020) examined the relationship between urban landscape and urban vitality at the street block level in 15 different metropolises in China. In the study, urban vitality was considered as the determining factor, while the spatial effects of urban landscape effects were revealed and offers some suggestions for increasing the vitality of *low-vitality blocks*. The results of the study indicated that after measuring urban vitality in day and night, the results shown that the effects of the urban landscape and the distribution of urban vitality have spatial differences and certain inconsistencies.

Lunecke and Mora (2018) have researched the built environment of downtown Santiago and its impact on urban vitality with three layers; *pedestrian networks: streets, pedestrian zones,* and *commercial galleries*. Examining the three layers of urban vitality aimed that ensuring the gradual differentiation of pedestrian flows, low rents, facilitating the social diversity of service employers, and increasing vitality of Santiago's historic center.

Another study addressing the effect of street-built environment on urban vitality Y. Li et al. (2022). They analyzed street vitality using the deep learning model and compared with street-built environment variables. Study results have emphasized that street width and transparency have significant positive effects on street vitality. Jiang et al, (2022) have been examined that the relationship between the built environment and urban vitality by the *deep learning method*. The scale of this study is at the city scale instead of the street scale with case studies of 14 Chinese cities. To understand the built environment, morphological and functional features have been analyzed as well as the human scale. *Functional mixture* and *morphological features*, a *high-density the built-up environment* has the greatest impact on vitality in addition many *human-scale features* have positive effects on street vitality.

Finally, Gavrilidis et al.'s (2016) study has been added to the review of built environment and vitality studies. Although they did not directly address vitality, they provided the mapping of landscape quality in a city with the *Urban Landscape Quality Index (ULQI)*. *Urban Landscape Quality Index (ULQI)* is important in terms of understanding the relationship between vitality and the built environment, as it includes urban vitality conditions and built environment elements. The result revealed that the city needs qualified and quality landscapes to be livable and sustainable.

As can be seen from the above-mentioned studies, long-standing attention has been given to urban vitality and their associations with the built environment. They have been researching it at different scales in different cities (Table 2.2.2).

Table 2.2.2 Studies that examine the relationship between the built environment and urban vitality

Studies	Case Study	Methodology / Data sets	Urban Vitality Parameters	Urban Vitality Approaches
(He et al., 2018) The impact of urban growth patterns on urban vitality in newly built-up areas based on an association rules analysis using geographical 'big data'	363 Chinese cities	Geographical big data Association rules analysis,	Interest density (POID), Degree of urban function mixing (MIX) Location check-in density (CIQD), Housing prices (HP), Population change (POPC)	The study examines the impact of urban growth patterns on urban vitality. Examined urban growth patterns in 3 groups, infilling, edge, outlying.
(Ye et al., 2018) How block density and typology affect urban vitality: an exploratory analysis in Shenzhen, China	Shenzhen, China	Morphological categories, Open Street Network	Floor space index (FSI), ground space index (GSI) and height (L)	It examines the vitality effect of the typology of street blocks, which is divided into 9 different categories.
(Wu & Niu, 2019) Influence of Built Environment on Urban Vitality: Case Study of Shanghai Using Mobile Phone Location Data	Shanghai/ City scale	Mobile Phone Location Data Land-Use Data Topographic Map National Population Census Data kernel density estimation method	Mixed-Use and Diversity Dissimilarity Scale Block Area Aged Buildings Density Border Vacuums	They measured vitality using Mobile Phone Location Data in Shanghai, the city with the highest density and built environment in China, and compared the classical vitality theory parameters with the data obtained.
(Kang, 2020) Effects of the Human and Built Environment on Neighborhood Vitality: Evidence from Seoul, Korea, Using Mobile Phone Data	Seoul, South Korea/ Neighborhood Scale	De Facto Population Data Land-Use Data Built Environment and Transportation Data Population and Employment Data Land Value Data	Neighborhood vitality Built environment Human activities Neighborhood accessibility and centrality	The study examined the effects of people and the built environment on neighborhood vitality and the relationship between these three using mobile phone data.

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Studies	Case Study	Methodology / Data sets	Urban Vitality Parameters	Urban Vitality Approaches
(Xia et al., 2020) Analyzing spatial relationships between urban land use intensity and urban vitality at street block level: A case study of five Chinese megacities	Five megacities in China (Beijing, Changsha, Tianjin, Shenyang and Wuhan) City scale	Local Indicators of Spatial Association (LISA)	Floor area ratio Building coverage ratio Street blocks Building footprints Small catering business Nighttime light Floors	The study examined the effect of urban land use intensity and street block density on urban vitality.
(Mouratidis & Poortinga, 2020) Built environment, urban vitality and social cohesion: Do vibrant neighborhoods foster strong communities?	Oslo metropolitan area	Survey and geospatial data from the	Built environment Distance to city center Neighborhood density Local amenities public transport green space Urban vitality Life satisfaction	The study examines the relationship between the built environment, social cohesion and urban vitality and shows their effects on each other.
(Yue et al., 2021) Identifying urban vitality in metropolitan areas of developing countries from a comparative perspective: Ho Chi Minh City versus Shanghai	Ho Chi Minh City (Vietnam) Shanghai (China)	Land use map; Road network; Conservation list of historic building. POI data; Population census data. River maps, extracted from land use maps; Sub-district map.	Built environment Human activity Human-environment interaction	The study comparatively examined the impact of urban form on vitality in Vietnam and China cities.
(X. Li et al., 2022) The six dimensions of built environment on urban vitality: Fusion evidence from multi-source data	Wuhan/China	Street vitality, POI data, Weibo check-ins, Maps of urban administration, Community attributes, Landsat RS image, Population Data, GIS	Neighborhood attributes (NE), Urban form (FO), Facilities and land use (FA), Location (L), Landscape (LA), Accessibility(A)	With multi-source data from 1025 communities in Wuhan, China this study has aimed to explore the relationship between the built environment (BE) and urban vitality.
(Gan et al., 2021) Optimal Block Size for Improving Urban Vitality: An Exploratory Analysis with Multiple Vitality Indicators	Wuhan City City scale	OLS analysis Constraint line	Kernel density of small catering business POI density Check-in density Dianping comment density	The study aimed to understand the effect of block size on vitality

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Studies	Case Study	Methodology / Data sets	Urban Vitality Parameters	Urban Vitality Approaches
(Zhang et al., 2020) How can the urban landscape affect urban vitality at the street block level? A case study of 15 metropolises in China	15 Chinese metropolises street blocks levels	ordinary least squares (OLS) GWR model.	City plan pattern Building plan pattern, Land use function,	The study discusses the relationship between urban vitality and urban landscape on street block level as day and night urban vitality in 15 Chinese cities.
(Y. Li et al., 2022) Exploring the association between street-built environment and street vitality using deep learning methods	Osaka, Japan	Deep learning model for street vitality classification (DLM-SVC), GIS analysis, Analytic hierarchy process (AHP),	Street width, Transparency, Commercial density	This paper proposes an explore the association between the street-built environment and street vitality with the deep learning method.
(Jiang et al., 2022) Street vitality and built environment features: A data-informed approach from fourteen Chinese cities	14 Chinese cities	Deep learning model, Space syntax, Spatial analysis, Morphological analysis	Human-scale Morphological Features, Functional features	This study, analyzed street vitality using the deep learning model and compared it with street-built environment variables
(Gavrilidis et al., 2016) Urban Landscape Quality Index – Planning Tool for Evaluating Urban Landscapes and Improving the Quality of Life	Ploiești, Romania 36 neighborhoods	ArcGIS	The building assembly, Multi store residential buildings, Individual dwellings, Urban infrastructures, Green infrastructures, Other landscape elements,	This study provided the mapping of landscape quality in a city with the Urban Landscape Quality Index (ULQI)
(Lunecke & Mora, 2018) The layered city: pedestrian networks in downtown Santiago and their impact on urban vitality	Downtown, Santiago		Pedestrian flows Ground floor Retail uses along streets, Pedestrian zones and Commercial galleries	This study researched the built environment of downtown Santiago and its impact on urban vitality with three layered pedestrian networks: streets, pedestrian zones and commercial galleries.

Urban vitality has a significant consequence in historical city centers and historical squares. The concept of urban vitality has been used in research to revive these historical areas where interest lost over time and vitality has decreased. Urban vitality, which is handled in historical city spaces, causes interest in the historical region to be increased and affects the economic and social interaction positively. Oruc and Giritlioglu (2008) examined the historical peninsula-Eminönü district of Istanbul, whose attractiveness decreased over time. The study aimed to save the historical urban fabric, which is a vital part of the city, and to transform it into urban spaces with high vitality.

Another study that established the relationship between historical texture and vitality is the study of Van Nes, (2014) in the excavated historical town of Pompeii. The concept of urban vitality was measured through micro-and macro-spatial configurative analyses in excavated towns-built environments by the space syntax method. Spatial configuration and urban vitality measurements in the study showed that Pompeii is one of the well-preserved cities from the Roman period and is used as an example for deriving interpretations through spatial analysis. Mehrbani et al. (2017) examined Valiasr Avenue, which dates to 200 years in Iran. The decreasing vitality of Valiasr Avenue has been measured with the concept of a sense of place. The result of this study has shown that the concept of a sense of place and sense of belonging in such historical places increases the use of urban spaces and therefore increases the vitality of the city. In addition, the researchers emphasized that strengthening the identity and concept of a sense of place for users will positively affect urban vitality and create a continuous and sustainable use of urban space. Eghdami et al. (2018) have proposed design alternatives that increase the urban vitality of Palestine Square in Zahedan. Safety and security of the square, square attraction, citizen satisfaction, social interaction four criteria, and sub-criteria have been created to increase urban vitality. The questionnaire, field observation, and interviews by EXCEL software and SWOT technique were implemented for decision making. The Analytical Hierarchical Process technique was used for designing and evaluating the alternatives (Table 2.2.3)

Table 2.2.3 Studies that examine urban vitality in the historical city center and historical squares.

Studies	Case Study	Methodology / Data sets	Urban Vitality Parameters	Urban Vitality Approaches
(Mehrbani et al., 2017) Landscape Approach in Creating Vitality in Valiasr Avenue An Emphasis on Creating the Sense of Place	Valiasr Avenue (Iran)	Friedman test formula SPSS software	Meaning Aesthetic physical and criteria Activity and function criteria	The study is on Valiasr Avenue in Iran While investigating urban vitality, you emphasize on the concept sense of place, because case study is an avenue that is losing its vitality and identity day by day and its history dates back to 200 years.
(Eghdami et al., 2018) Re-designing Urban Space to Enhance Vitality: A Case Study of the Palestine Square in Zahedan	Palestine Square in Zahedan (Iran)	SWOT technique	Accessibility Hard and soft space Public space Safety and security Urban Landscape Mixing and density Inclusive	The main aim of the study is to redesign the Palestine Square, as one of the oldest urban squares of Zahedan, in order to enhance vitality.
(Oruc & Giritlioglu, 2008) The evaluation of urban quality and vitality of the Istanbul historical peninsula-Eminönü district	Eminönü district	Benchmarked İndexation survey	Number of dwellings Population Trade area/ Quarters area rate Land Price per m²	The study examined the vitality of the Eminönü region between 1985 2004. The reason for choosing this area is to examine the current situation of the old city centers that lost their vitality over time and the factors that have positive or negative effects on the urban vitality.
(Van Nes, 2014) Indicating street vitality in excavated towns. Spatial configurative analyses applied to Pompeii	Pompeii	Space syntax GIS SPSS	Micro- and macro-spatial configurative analyses	The study examines the effect of spatial configuration of the historical Roman city of Pompeii on the impact of urban vitality, social interaction and human behavior.

This chapter intended to draw attention to that the concept of urban vitality being handled with many urban parameters in studies conducted in many cities around the world. A table has been prepared to better understand the method, scale vitality parameters, and urban vitality approaches of these studies. In addition to this table, have been added studies that offer different approaches and methods in urban vitality measurement. (Table 2.2.4).

Table 2.2.4 Additional studies on urban vitality through various methodologies

Studies	Case Study	Methodology / Data sets	Urban Vitality Parameters	Urban Vitality Approaches
(Lan et al., 2020) How do population inflow and social infrastructure affect urban vitality? Evidence from 35 large- and medium-sized cities in China	35 large- and medium-sized cities in China	NPP-VIIRS nighttime light data	FP Migrants, INF_1 Financial investment in social infrastructure, WAGE Per capita wage (yuan), PD Population density, TISI Proportion of tertiary industry/secondary industry, YP Percentage of young and middle-aged population,	How do population inflow and social infrastructure affect urban vitality?
(Liu et al., 2021) Quantitative Evaluation on Street Vitality: A Case Study of Zhoujiadu Community in Shanghai	Zhoujiadu Community in the southwestern Pudong New District of Shanghai	Open data of maps of road networks, pois, Baidu heat maps and Baidu panoramas as well as the adoption of the geo-information software of ArcMap® 10.2 and the programming language Python	Function density Function mixing Street length Bus station density Intersection density Distance from the nearest subway station Green view Sky view	This work constructed a quantitative evaluation index system for measuring street vitality

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Studies	Case Study	Methodology / Data sets	Urban Vitality Parameters	Urban Vitality Approaches
(Martino et al., 2019) Urban and Suburban Legacies: Space, Form and Urban Vitality in Two LEEDND Certified Olympic Villages	Rio de Janeiro (Ilha Pura Condominium, IPC, 2016) and Vancouver (Southeast False Creek, SFC, 2010)	Space syntax	*Accessibility* *Density* *Diversity* Spatial Configuration, Visibility, Infrastructure for Pedestrians and Land Use	The study discussed the vitality of the Olympic villages established on the edge of the cities of Vancouver in 2010 and Rio de Janeiro in 2016
(Jin et al., 2017) Evaluating cities' vitality and identifying ghost cities in China with emerging geographical data	China Residential scale (535,523 residential land transactions from 2002 to 2013	Kernel Density, ESRI ArcGIS	national-wide road junctions, points of interest, location based on service records	The study measured the vitality of ghost cities, which were made to reduce the urban burden after the 2000s, but whose vitality was very low, compared with the old city areas built before 2000s.
(Zeng & Ye, 2018) Vital Vizor: A Visual Analytics System for Studying Urban Vitality	Rotterdam, the Netherlands, with 319 km2 in area and 14 districts.	The Vital Vizor visual analytics system	Street accessibility Density and typology Function mixture Street network Block Building	The study has physical data in 14 regions in the Netherlands: street, building, block, and urban vitality parameters: Street accessibility Density and typology function mixture, when calculating vitality using its parameters In addition, spatial and non-spatial vitality measurement was made by Vital Vizor, and the values were compared.

In this part of the study, urban vitality studies are grouped and analyzed about the built environment, historical urban spaces, Jane Jacobs's vitality conditions, and other studies. Since the concept of urban vitality includes many urban concepts and focuses on urban spaces and human relations, it is possible to associate urban vitality with many urban parameters and discuss this in urban studies. The following studies could be given as examples of the urban parameters associated with urban vitality: Diversity (Talen, 2012, Mohareb et al., 2016), pedestrian activity and walkability (Sung, Go and Choi, 2013), mix-used (Bordoloi et al., 2013), public space (Nathiwutthikun, 2012). The concept of urban vitality, which has been emphasized since the 1960s, will take its place in urban studies as long as urban spaces need human interaction.

2.3 Quality of The Built Environment As Vitality Conditions

The previous sub-chapter has shown that urban vitality depends on many urban parameters which are part of the built environment. These urban studies (Ye et al., 2018, He et al., 2018 ,Wu & Niu, 2019 Xia et al., 2020, Kang, 2020, Mouratidis & Poortinga, 2020, Yue et al., 2021, Gan et al., 2021,Li et al.,2022,Zhang et al. ,2020,Lunecke and Mora,2018,Y. Li et al., 2022, Jiang et al., 2022have emphasized that a well-designed built environment that provides increases the values of urban vitality.

Quality of the built environment practices and studies aim and include these urban concepts: safe, healthy, sustainable, livable, high social interaction, spaces with high urban vitality, walkability, sense of place, sense of belonging, concepts, density, diversity, quality public spaces. The inclusion of similar goals and conditions,and the long-term attention on the relationship between quality built environment and urban vitality in urban studies has led to the consideration of quality built environment as a condition of urban vitality in this sub-chapter. Thus, has been discussed two aspects of the quality of the built environment. First, the definition of quality in the built environment has brief overviewed, and the second has examined the tools of practice created to control the quality of good urban place.The definition of *quality in the built environment* has turned into a challenge for urban designers and researchers. When researchers making quality in built environment definition, they faced many urban parameters in every scale of urban space which effect on perceptive of quality definition hence researchers defined quality in different aspects.

According to Alexander (1979), our entire daily life has surrounded by patterns. For example, walls, windows, buildings, streets, urban furniture. When they cease to be relationships and pattern loses their meaning quality decline that Alexander calls "*aliveness*". Therefore, Alexander et al. (1977) argued that designing a quality urban environment is significant that no pattern is isolated and multiple relationships are established between patterns.

Carmona and Sieh (2004) emphasized individual assessments in quality studies therefore, perceptive of aesthetic, individual background, knowledge and requests should not be ignored in quality measurement. Thomas (1997) discussed quality as fitness for purpose other hand Madanipour (2006) used three Vitruvian principles commoditas, firmitas and utilitas (convenience, stability, utility) in historical and rational approaches. Carmona et al. (2003) argued that quality should be reflected in public space. According to them, the poor quality of the urban environment emerges as a reaction to an individualistic understanding and economic, social and cultural decline.

Besides the definition of quality in the built environment, some studies try to determine and measure quality criteria for good urban places. Although these studies have approached different countries, regions, cities, and neighborhoods, they have served one common purpose, creating good urban places. For this reason, it is possible to encounter similar quality criteria in different studies.

Urban Task Force (1999), predicted that England would face urban problems in the future.Such as a growing population, needing house stock, declining biodiversity and natural sources, traffic, and crime. Behalf of preparing for England would face urban problems the study tried to understand English content through economic, social, and environmental approaches. The Task Force's also visited several US, Germany, the Netherlands, and Spain cities and created key design principles. With these key design principles, the urban task force aimed to enable more people to live in vibrant, successful, and enjoyable urban spaces with expanded options. The key design principles created aim to be basic principles that include high urban quality rather than guaranteeing good design or successful places. Whether it is an empty brown area or green space, the renewal of an existing urban area, or affordable housing, the principles created for design have led to thinking about high-quality urban areas. The key principles of urban design handled by The Urban Task Force are as follows (Urban Task Force,1999).

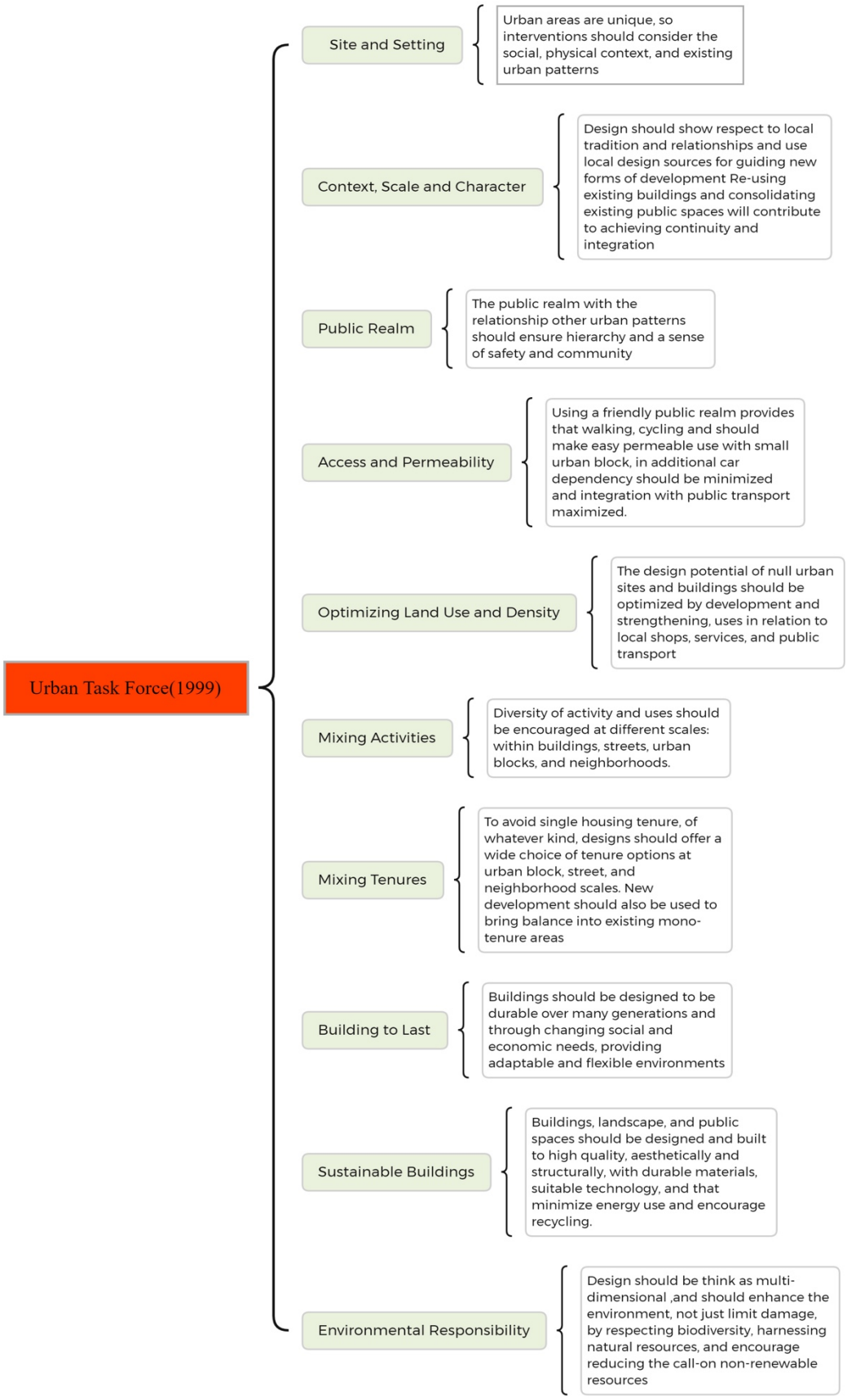


Figure 2.3.1 Urban Task Force, 1999, Quality Tools of the Built Environment. (This figure was created by reinterpreting Urban Task Force's quality-built environment tools.)

English Partnerships and the Housing Corporation (2000) created a study called that urban design compendium. The urban design compendium is an extended and following version of Urban Task Force (1999). Not only English Partnerships and the Housing Corporation previous urban and public studies emphasized the significance of quality in built environment, but also the compendium created quality with key urban design principles. "…*In other words, how do we change the urban landscape to create places where people want to live, work and socialize, from the street corner to the brand-new settlement*." (English Partnerships and the Housing Corporation, 2000) In the study, the key aspect of urban design has been grouped as in the figure. In the following sections of the study, these criteria have been explained in sub-titles.

Table 1.1 – Key Aspects of Urban Design
Places for People
For places to be well-used and well-loved, they must be safe, comfortable, varied and attractive. They also need to be distinctive, and offer variety, choice and fun. Vibrant places offer opportunities for meeting people, playing in the street and watching the world go by.
Enrich the Existing
New development should enrich the qualities of existing urban places. This means encouraging a distinctive response that arises from and complements its setting. This applies at every scale - the region, the city, the town, the neigbourhood, and the street.
Make Connections
Places need to be easy to get to and be integrated physically and visually with their surroundings. This requires attention to how to get around by foot, bicycle, public transport and the car - and in that order.
Work with the Landscape
Places that strike a balance between the natural and man made environment and utilise each site's intrinsic resources - the climate, landform, landscape and ecology - to maximise energy conservation and amenity.
Mix Uses and Forms
Stimulating, enjoyable and convenient places meet a variety of demands from the widest possible range of users, amenities and social groups. They also weave together different building forms, uses, tenures and densities.
Manage the Investment
For projects to be developable and well cared for they must be economically viable, well managed and maintained. This means understanding the market considerations of developers, ensuring long term commitment from the community and the local authority, defining appropriate delivery mechanisms and seeing this as part of the design process.
Design for Change
New development needs to be flexible enough to respond to future changes in use, lifestyle and demography. This means designing for energy and resource efficiency; creating flexibility in the use of property, public spaces and the service infrastructure and introducing new approaches to transportation, traffic management and parking.

Figure:2.3.2 Key Aspect of Urban Design (Source: English Partnerships and the Housing Corporation (2000) Urban Design Compendium 1, London)

The key aspect of urban design, which the Urban Design Compendium deals with and creates for a quality built environment, has been expanded and gathered under the following titles.

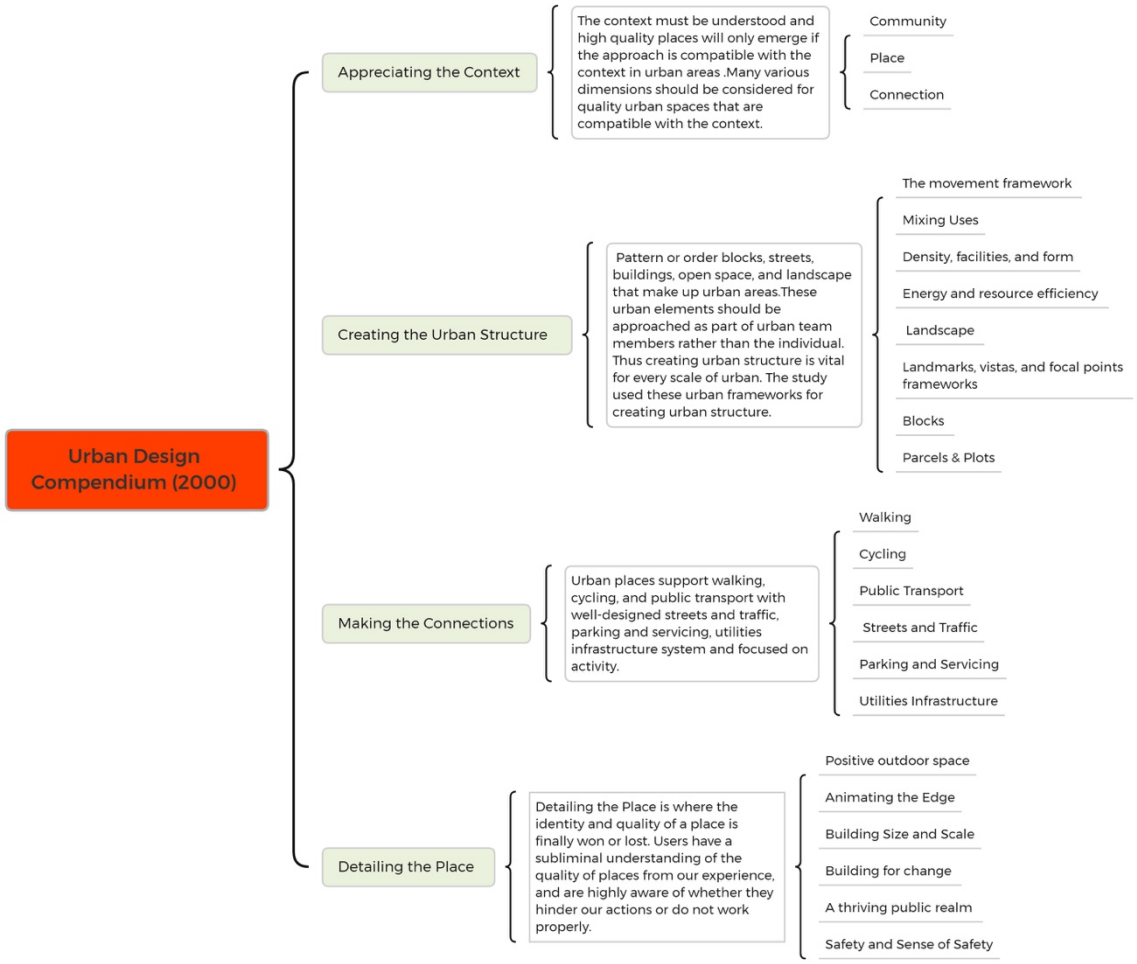


Figure 2.3.3 Urban Design Compendium, 2000, Quality Tools of the Built Environment. (This figure was created by reinterpreting Urban Design Compendium's quality-built environment tools).

Department of the Environment, Transport, and the Regions (DETR) and Commission for Architecture and the Built Environment (CABE), created design guidance for making quality UK built environment called '*by design'*. They defined the study aim as "Good urban design is essential if we are to produce attractive, high-quality, sustainable places in which people will want to live, work, and relax. We do not have to put up with shoddy, unimaginative, and second-rate buildings and urban areas'' (DETR and CABE, 2000). By Design has determined seven criteria for sustainable and livable urban spaces with high quality. These are shown in Figure 2.3.3

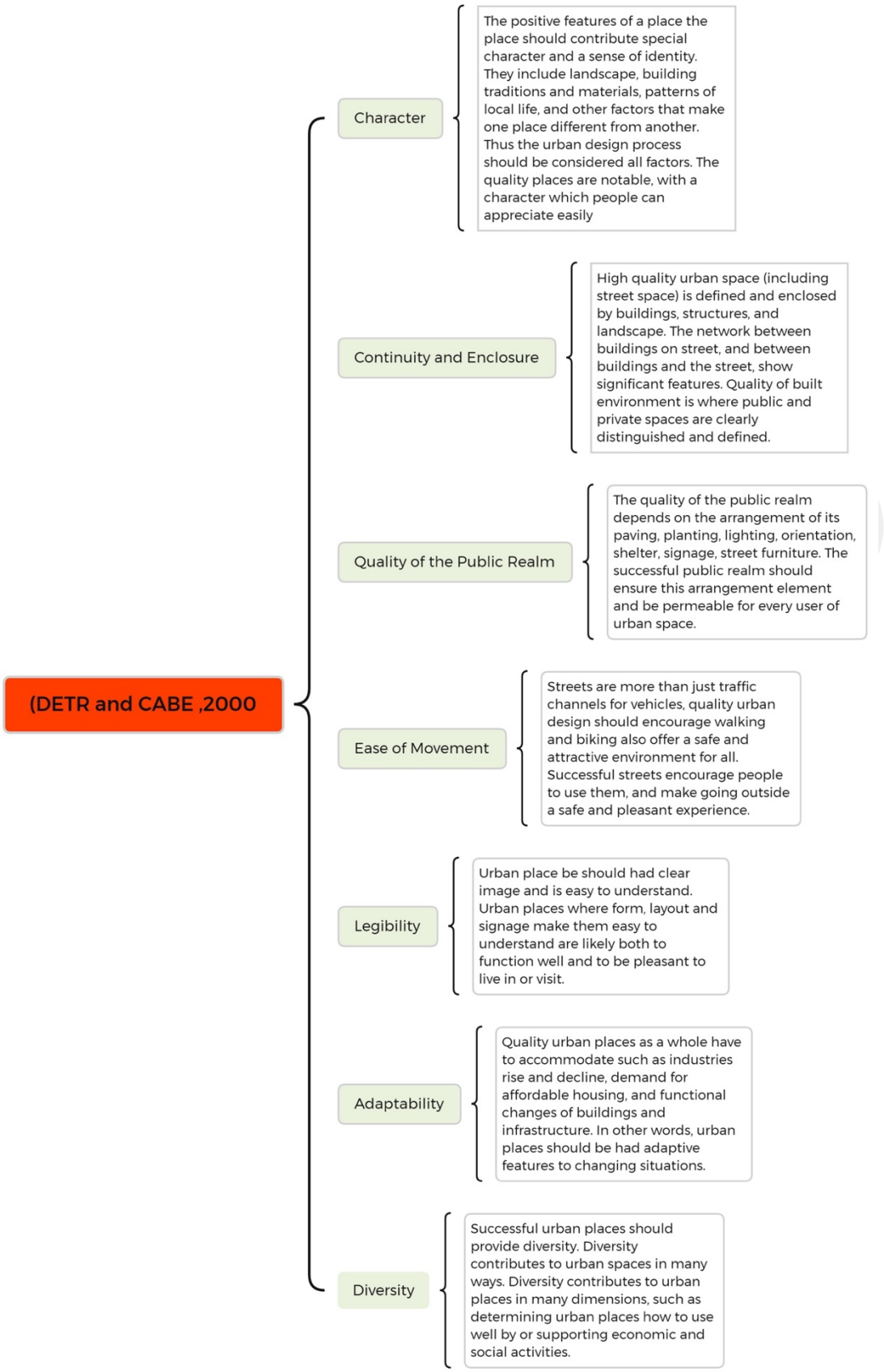


Figure 2.3.4 DETR and CABE, 2000, Quality Tools of the Built Environment. (This figure was created by reinterpreting DETR CABE's quality-built environment tools.)

Further, Commission for Architecture and the Built Environment (CABE) tried to design quality in the new suburbs of the UK. CABE has revealed two versions since 2001. There are Building for Life 20 (bfl20) has 20 points of design quality and Building for Life (bfl12) 12 has 12 points of design. (Figure 2.3.5) Bfl20 is a set of re-ordered questions that consist of 20 questions to measure the quality between 2001 and 2010, requiring at least 14 points to obtain the quality criterion. In 2012 Bfl12 unlike bfl20, was rearranged as a design tool list, not a question list, in a more understandable and accessible way(Kruczkowski,2018).

BfL20 [question reference in brackets]	**BfL12**
	Integrating into the neighbourhood
Does the scheme integrate with existing streets, paths and surrounding development? [1]	1. Connections
Does the development provide (or is it close to) community facilities? [1]	2. Facilities and services
Does the development have easy access to public transport? [4]	3. Public transport
Is there an accommodation mix that reflects the needs and aspirations of the local community? [2] Is there a tenure mix that reflects the needs of the local community? [3]	4. Meeting local housing requirements
	Creating a place
Is the design specific to the scheme? [6] Does the scheme feel like a place with distinctive character? [8]	5. Character
Is the design specific to the scheme? [6] Does the scheme exploit existing buildings, landscape or topography? [7]	6. Working with the site and its context
Are streets defined by a well-structured building layout? [10]	7. Creating well defined streets and spaces
Do the buildings and layout make it easy to find your way around? [9]	8. Easy to find your way around
	Street and home
Does the building layout take priority over the streets and car parking, so that the highways do not dominate? [11]	9. Streets for all
Is car parking well integrated and situated so it supports the street scene? [12] Are streets pedestrian, cycle and vehicle friendly? [13]	10. Car parking
Are public spaces and pedestrian routes overlooked and do they feel safe? [15] Is public space well designed and does it have suitable management arrangements in place? [16]	11. Public and private spaces
Do buildings exhibit architectural quality? [17 – part only]	12. External storage and amenity space
The following 4½ questions are not reflected in BfL12, as such 12 'greens' against BfL12 equates to a BfL score of 15.5 out of a possible 20, above the minimum 'good' score of 14.	
Do buildings exhibit architectural quality? [17 – part only]	
Does the development have any features that reduce its environmental impact? [5]	Not incorporated within BfL12.
Do internal spaces and layout allow for adaptation, conversion or extension? [18]	Not incorporated within BfL12.
Has the scheme made use of advances in construction or technology that enhance its performance, quality and attractiveness? [19]	Not incorporated within BfL12.
Do buildings outperform statutory minima, such as building regulations? [20]	Not incorporated within BfL12.

Figure 2.3.5 The relationship between BfL20 and BfL12. (Source: Kruczkowski, S., L., PhD thesis (2018). Exploring the effectiveness of Building for Life in raising residential suburban design quality. Nottingham Trent University, Nottingham, UK.)

Bfl12 has established its criteria under three main titles: *Integrating into the neighborhood, Creating a place, Street,* and *home*.

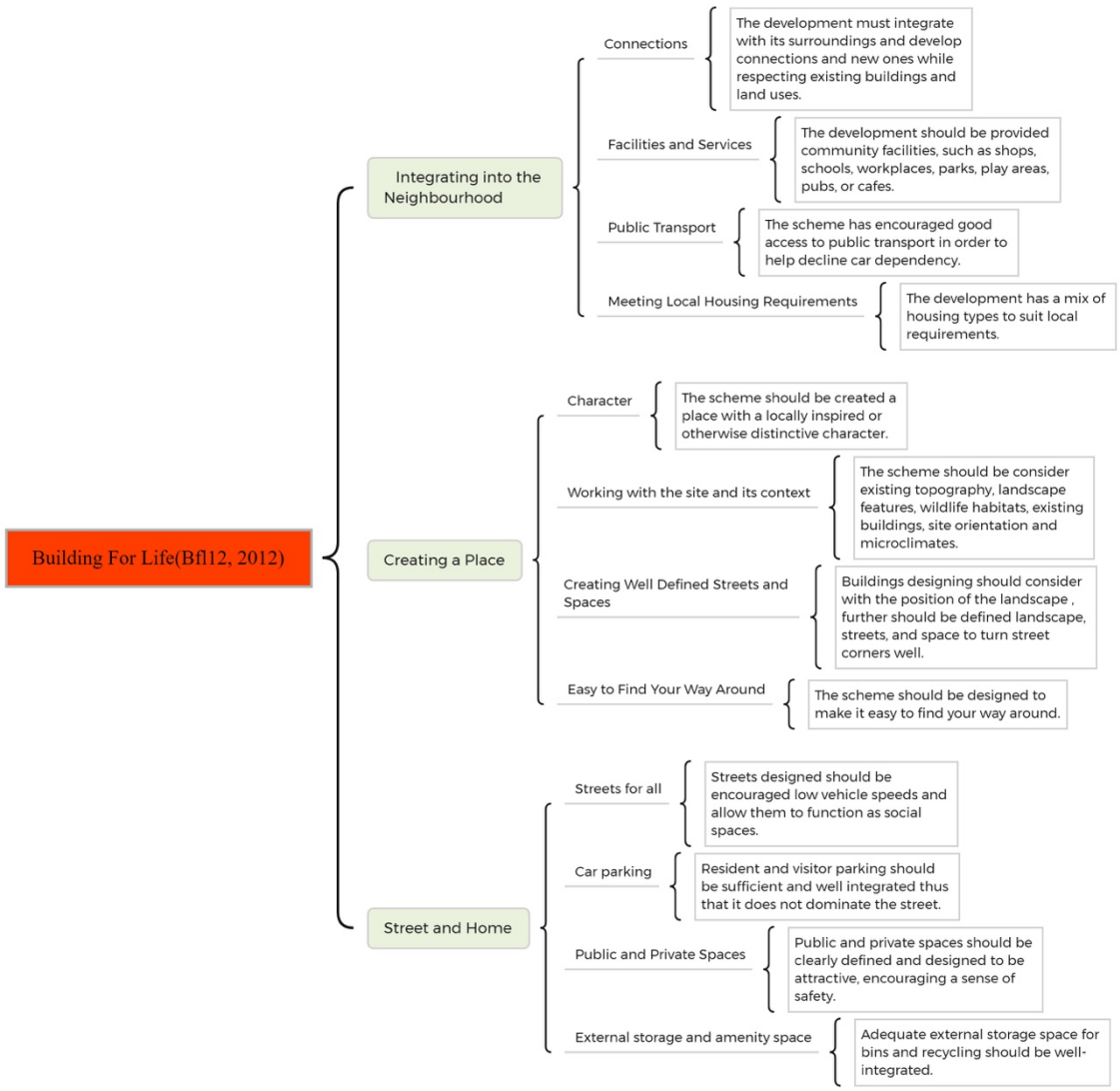


Figure 2.3.6 Bfl12,2012, quality tools of the built environment. (This figure was created by reinterpreting Bfl12's quality-built environment tools.)

Another study was conducted in England by Reeve et al. (2007). The study examined the Townscape Heritage Initiative Movements (THI) regeneration program in the UK, which is the modern urban movement that opposed car domination and the placeless-ness aftermath of the *Second World War*. This study presented the evolution of the Townscape movement and showed how it was implemented. Purpose of the study to create a discussion about the future built environment monitoring and evaluation. Within the scope of the THI movement has been created a scorecard to evaluate the quality of the built environment. The score is between 0 (absent) and 5 (excellent) for each factor on the scorecard. The factors of the score card is as in the figure.

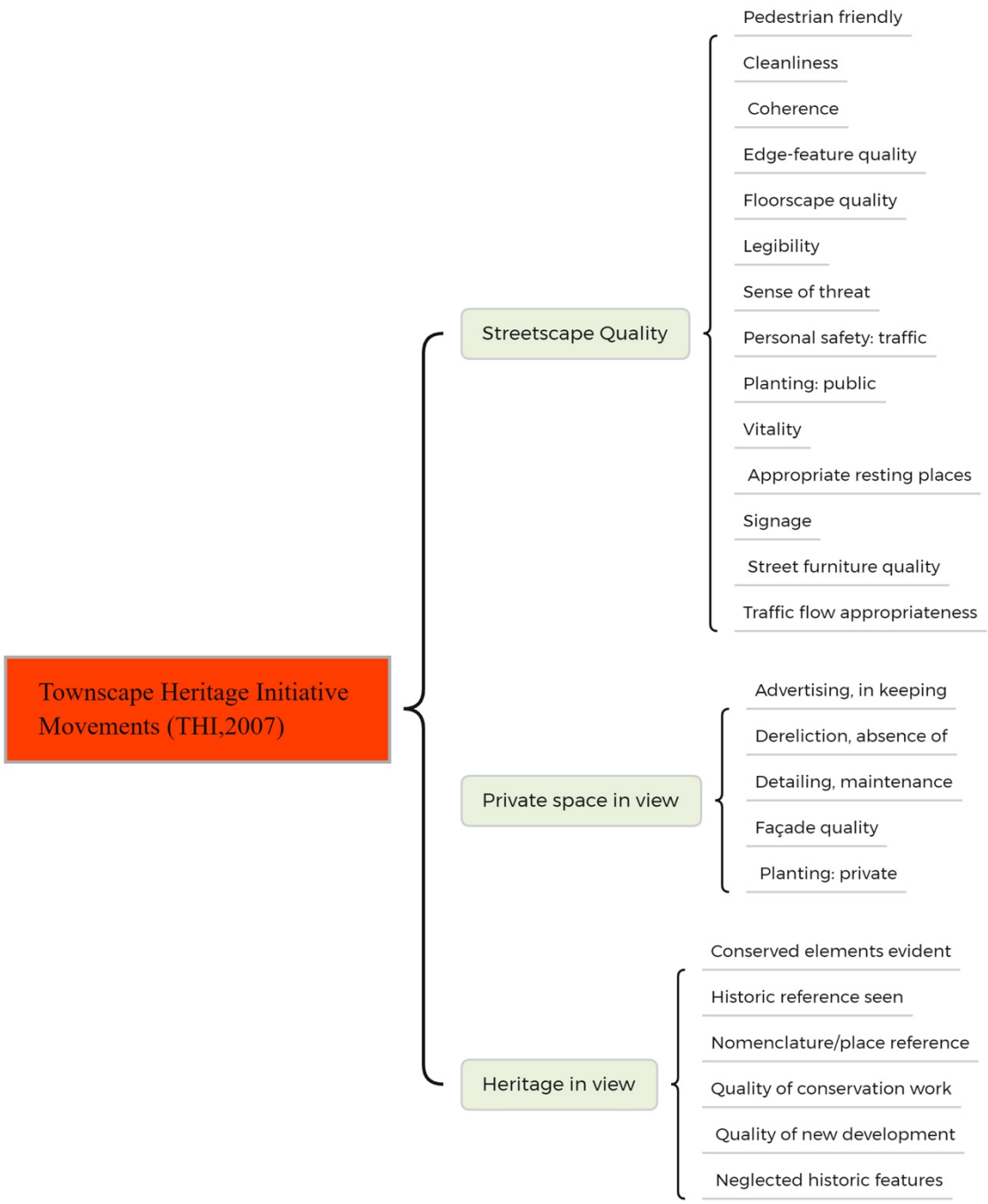


Figure 2.3.7 THI, 2007, quality tools of the built environment. (This figure was created by reinterpreting THI's quality-built environment tools.)

City of Vancouver Planning Department (CoVPD) Canada wanted to reach the targeted design quality with the design guidelines published in 2004(RS45 Design Guidelines). The criteria and sub-criteria of design guidelines were implemented in the designated areas that include single-family houses of Vancouver. The criteria specified in the design guidelines are as shown in the figure (CoVPD, 2004).

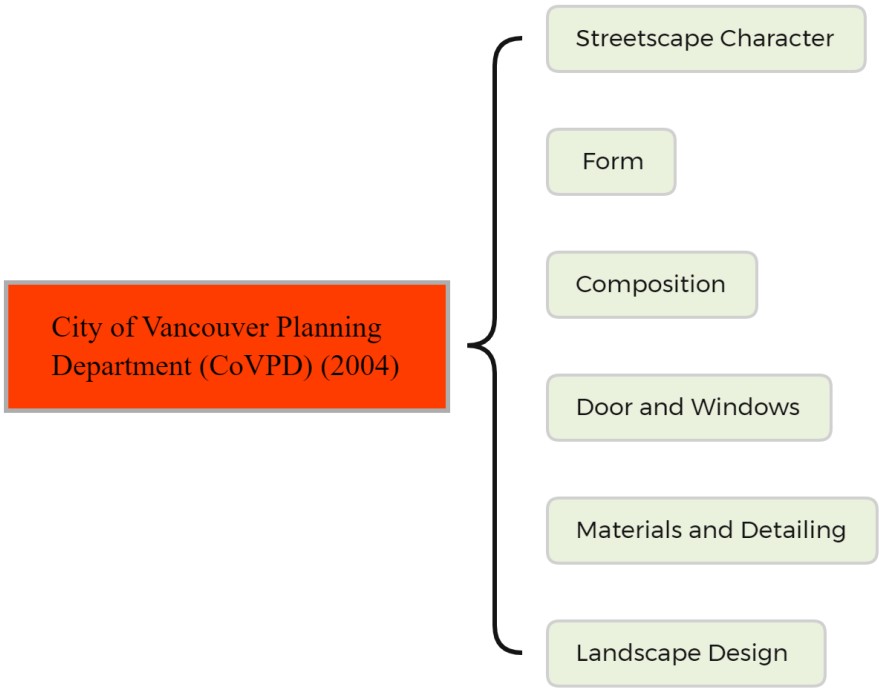


Figure 2.3.8 CoVPD, 2004, quality tools of the built environment. (This figure was created by reinterpreting CoVPD 's quality-built environment tools.)

The lack of quality in the built environment has been addressed in European cities besides the UK. Problems such as stereotyped urban sprawl, loss of importance of historical areas, and improper design of industrial, commercial, suburban, and residential areas with a lack of design inspiration are seen in many European cities today (Davos, 2018). Davos 2018 declaration has focused on this problem. The Davos Declaration aimed that reconstruct the quality-built environment in Europe, under the title of Towards a High-quality Baukultur for Europe.

The declaration refers specifically to the German term Baukultur. Baukultur is defined as follows: "*Baukultur, as an aspect of cultural identity and diversity, holistically embraces every human activity that changes the built environment, including every built and designed asset that is embedded in and relates to the natural environment. Baukultur calls for contemporary creation and the existing buildings, infrastructure, and public space, including, but not limited to, monuments of cultural heritage, to be understood as a single entity…"* (Davos, 2018). In other words, Baukultur is a large concept that approaches *architecture, heritage, public space, landscape,* and *culture of process* and among other things.

Davos 2018 declaration distilled the Baukultur concept to create a livable and high-quality built environment and created the high-quality Baukultur eight criteria.

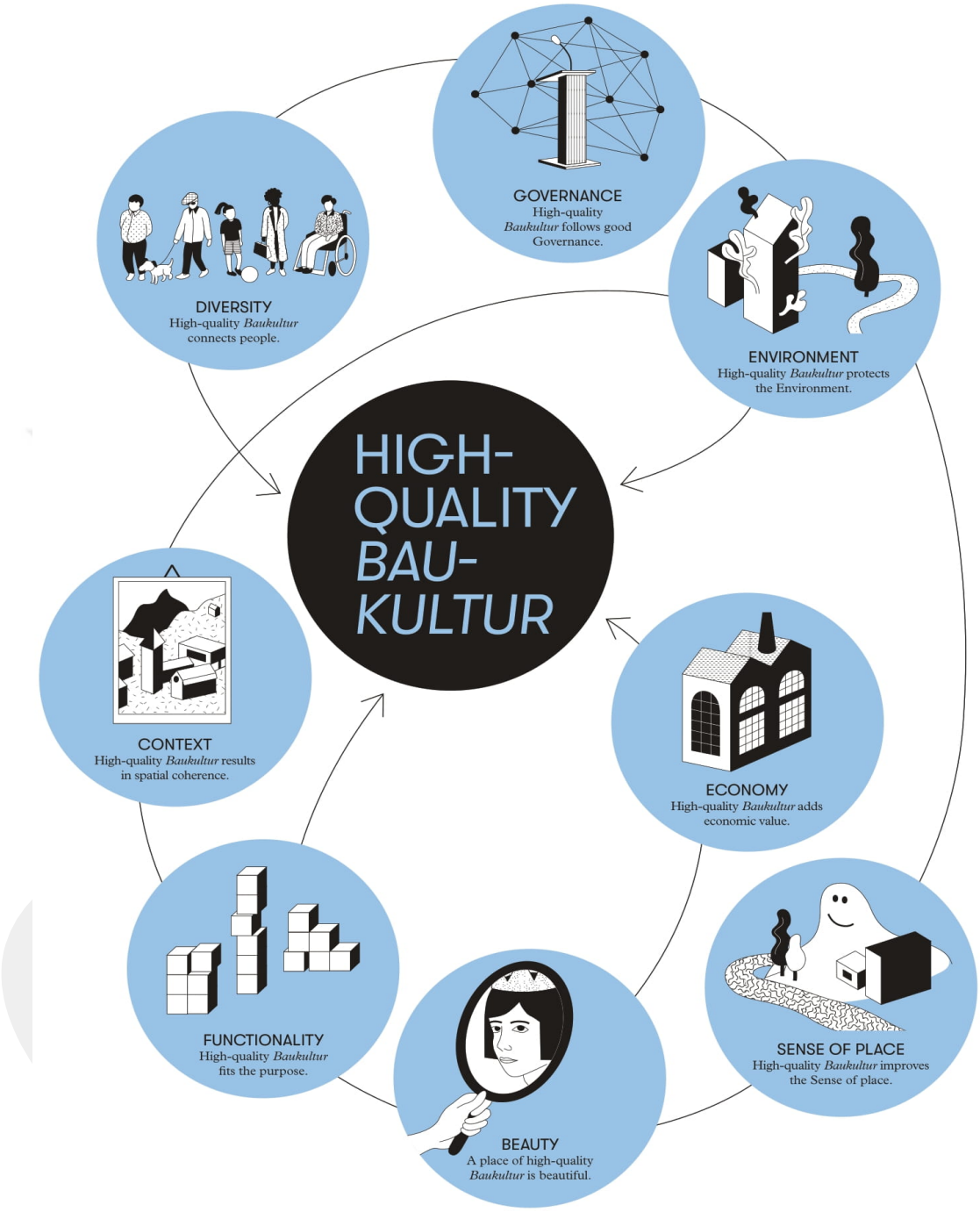


Figure 2.3.9 Baukultur Quality System, Eight criteria for a high-quality (Source: Davos Baukultur Quality System, Eight criteria for a high-quality Baukultur – the whole story, May 2021: http://www.davosdeclaration2018.ch/quality-system.)

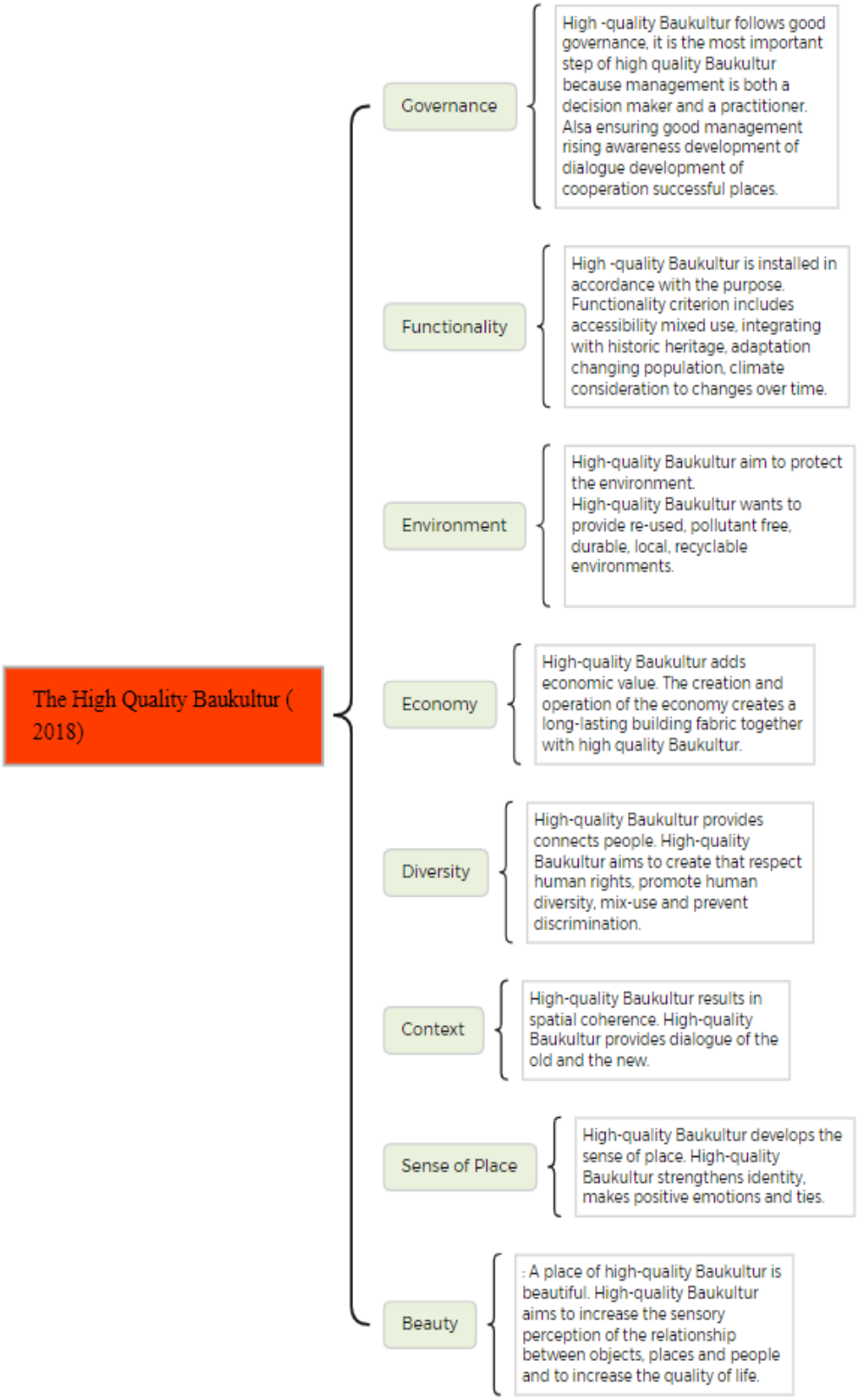


Figure 2.3.10 Eight criteria for a high-quality Baukultur, 2018. (This figure was created by reinterpreting Davos Baukultur Quality System's eight criteria for a high-quality.)

Reflections of the Davos declaration 2018 high-quality Baukultur concept have been seen in the European Union's *Work Plan For Culture 2019-2022* study. Council of the European Union's 2019-2022 work plan for culture focused on *"high-quality architecture and built environment for everyone*". Report of the OMC (open method of coordination) group of EU member state experts (2021) – "*towards a shared culture of architecture investing in a high-quality living environment for everyone study"*, with 39 experts from 23 countries, examined the eight high-quality criteria that determined in Davos declaration (2018) with case studies.

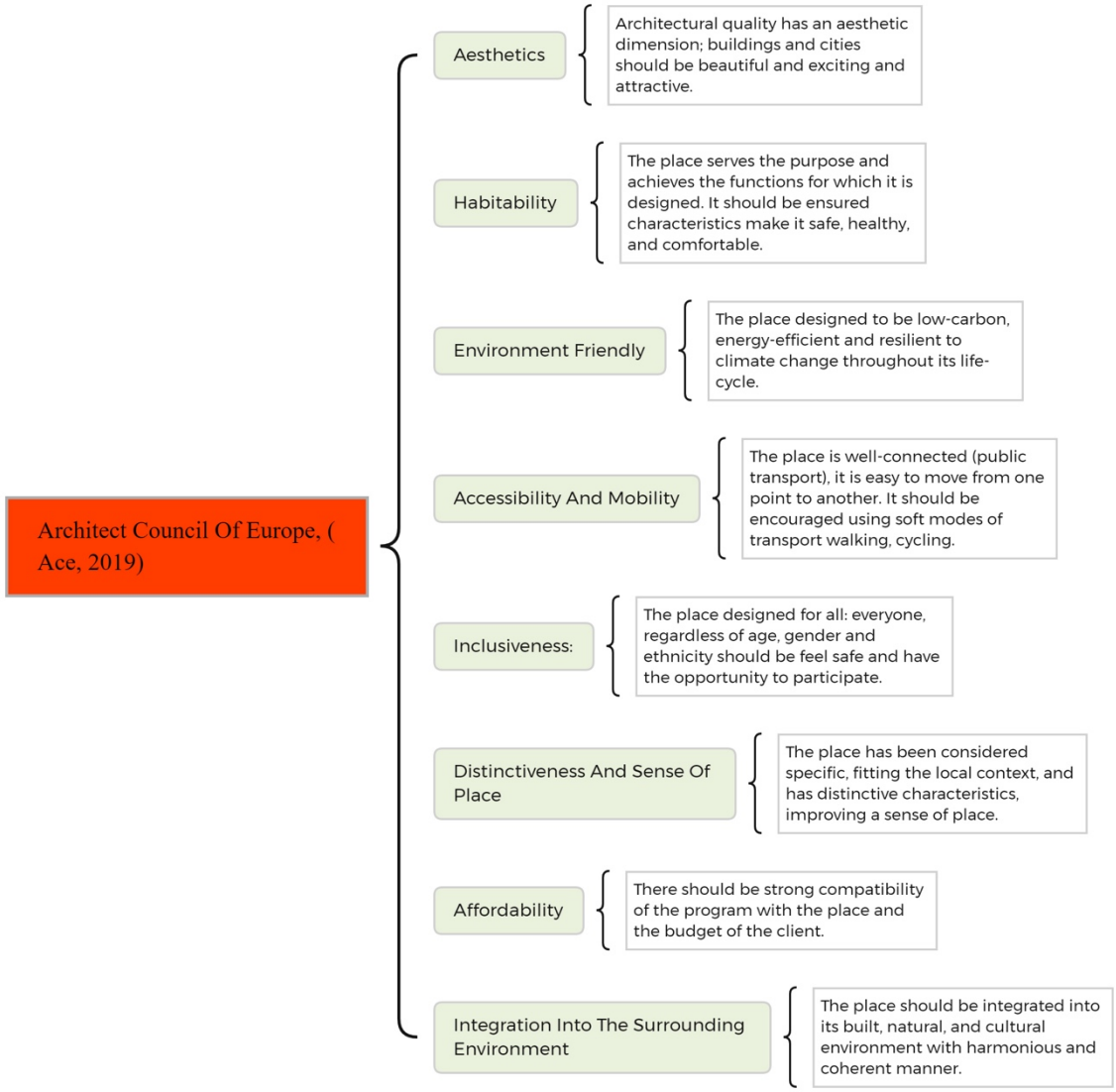


Figure 2.3.11 ACE ,2019, The quality assurance tools .(This figure was created by reinterpreting ACE's quality built environment tools.)

Architect Council Of Europe, 2019 conference in Innsbruck (Austria) examined these questions, *What does quality mean? What are quality places?* , The multiple benefits of high-quality architecture, and Good practices and general principles for assessing quality in the built environment under the title of *How to Achieve Quality in the Built Environment: Quality assurance tools and systems.* The quality assurance tools determined by the European Council of Architects (ACE, 2019) have been indicated in the figure.

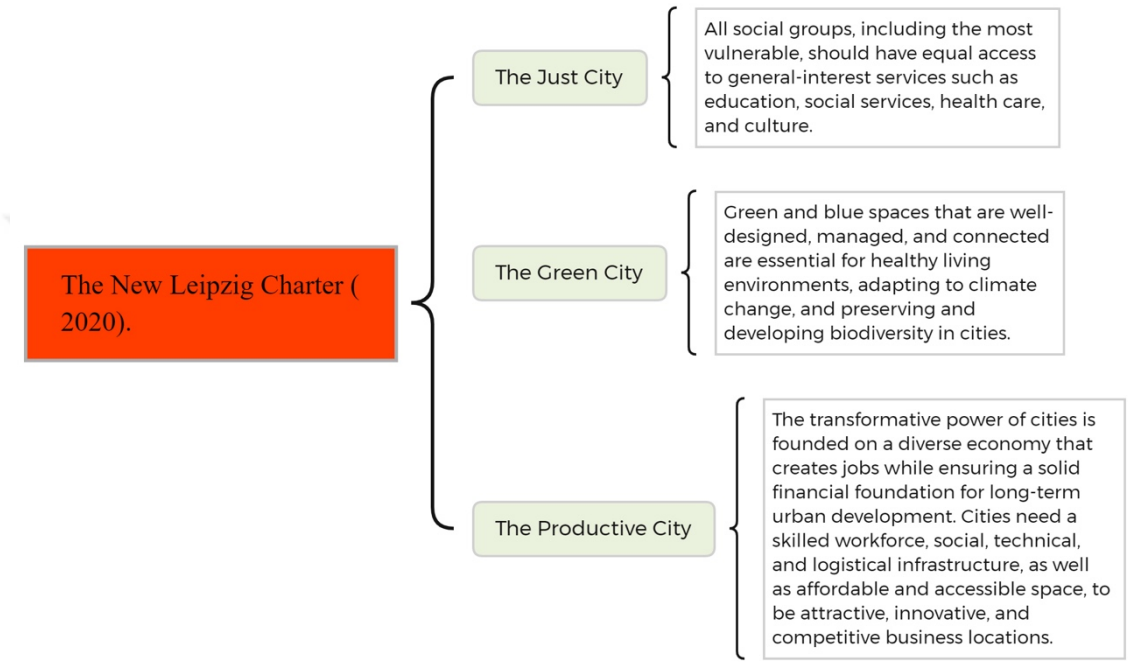


Figure 2.3.12 The New Leipzig Charter. (This figure was created by reinterpreting The New Leipzig Charter.)

Additional studies for the construction of sustainable quality built environment in Europe are as follows: The New Leipzig Charter "*The transformative power of cities for the common good*" meeting held on 30 November 2020 under *The German Presidency of the Council of the European Union*. The 2007 Leipzig Convention inspired urban policy in Europe and beyond. The message of Leipzig Character 2007 which promotes integrated and sustainable urban development is valid today. According to the New Leipzig's character dimensions of sustainable development of urban transformation are based on the integration of social, ecological, and economic elements. Thus cities are handled in the following three dimensions that aim to guarantee "*a high quality of life for everyone"* (The New Leipzig Charter,2020).

Although the importance of the quality of the built environment is still a controversial issue, it has been accepted by many declarations and urban studies that focus on the quality of the built environment. Bento and Laopoulou, (2019) in the Spatial design leadership study, the factors that play a role in creating a quality-built space creating a spatial culture, the influence of the state in supporting architectural teams have been examined in five European countries*;Denmark, Ireland, Scotland (United Kingdom), Vienna (Austria) and Flanders (Belgium)*. Thus, this study's main objective is to understand how spatial design leadership and spatial awareness create spatial quality.

Jan Gehl's emphasized toolbox includes five city principles to create a quality city with thinking human dimension in his book "*Cities for People"* (Gehl, 2010). The first four of these five city principles constitute the built environment and the last one improves the quality of the city spaces.

1. *"Carefully locate the city´s functions to ensure shorter distances between them and a critical mass of people and events.*
2. *İntegrate various functions in cities to ensure versatility, wealth of experience, social sustainability and a feeling of security in individual city districts.*
3. *Design city space so it is inviting and safe for pedestrian and bicycling.*
4. *Open up the edges between the city and buildings so that life inside buildings and outside in city spaces can work together.*
5. *Work to strengthen the invitations to invite longer stays in city space because a few people spending much time in a place provide the same sense of lively space as many people spending only a short time. Of all the principles and methods available for reinforcing life in cities, inviting people to spend more time is the simplest and most effective.*" (Gehl, 2010)

Gehl (2011) also established the five city principles '*The city at eye level: 12 quality criteria*'. Quality urban spaces have been designed at a human scale protecting people from risks, ensuring people activities that *walking, standing, sitting, seeing, talking, hearing and self-expression and enjoyment* of urban spaces.

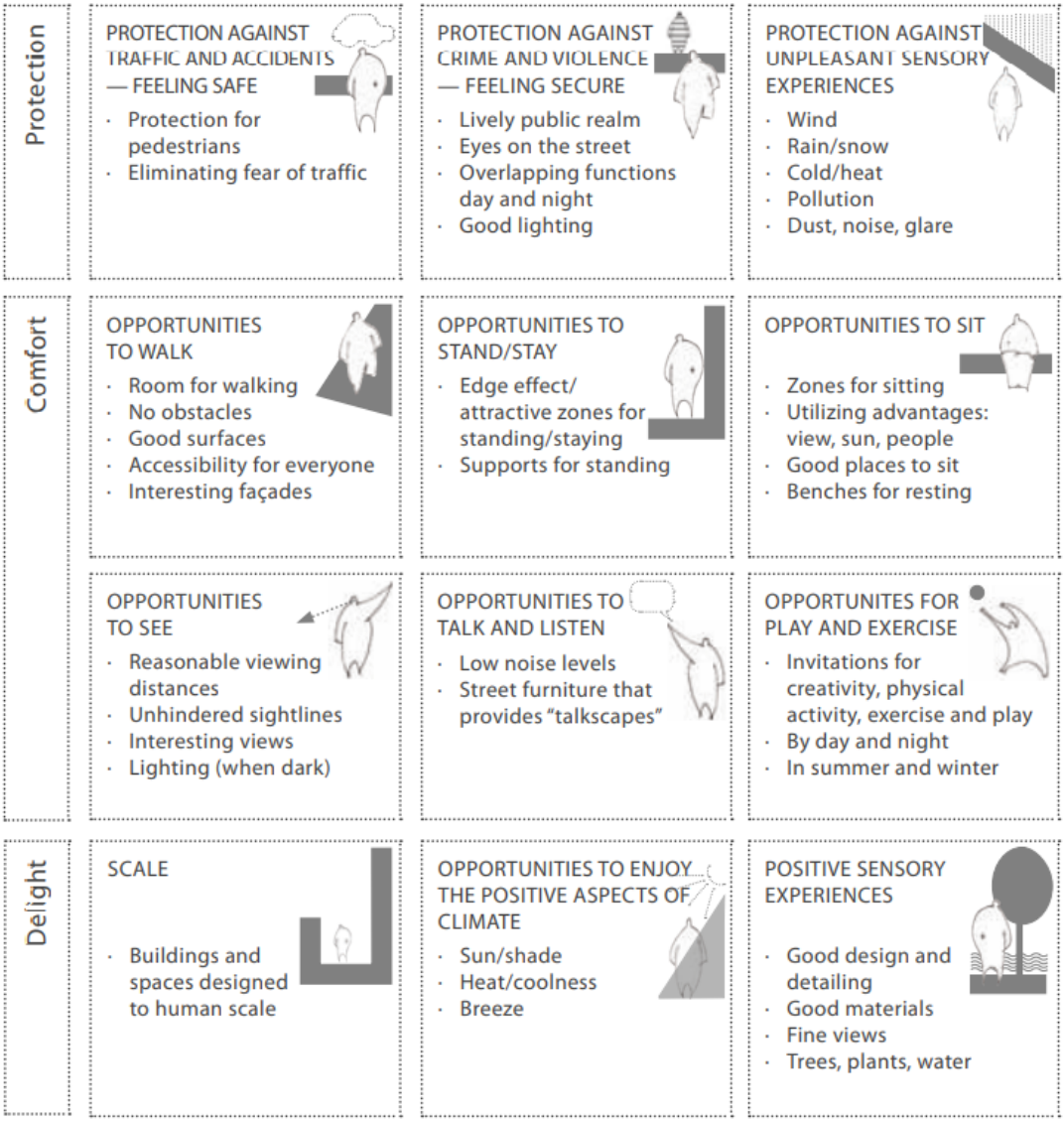


Figure 2.3.13 The city at eye level: 12 quality criteria (Source: Gehl, Jan, 2010 Cities for People, Washington: Island Press)

David Sim (2019) inspired by Jan Gehl's urban ideas has taken up the concept of *soft city* to create a quality of life for everyone by improving the built environment at human scale. According to David Sim Soft City is something to do with *responsiveness, ease, comfort, sharing, plurality, simplicity, smallness, appealing to the senses, calm, trust, consideration, ecology,*and *invitation*. In other words, Soft City provides ease, comfort in daily life, and care in a quality-built environment considering the human scale. Therefore, David Sim considered the potential of the quality-built environment, livability, and sustainability ,and Sim has come up with *nine criteria* to assess quality. These nine quality criteria and their explanations have been shown in Figure 2.3.14.

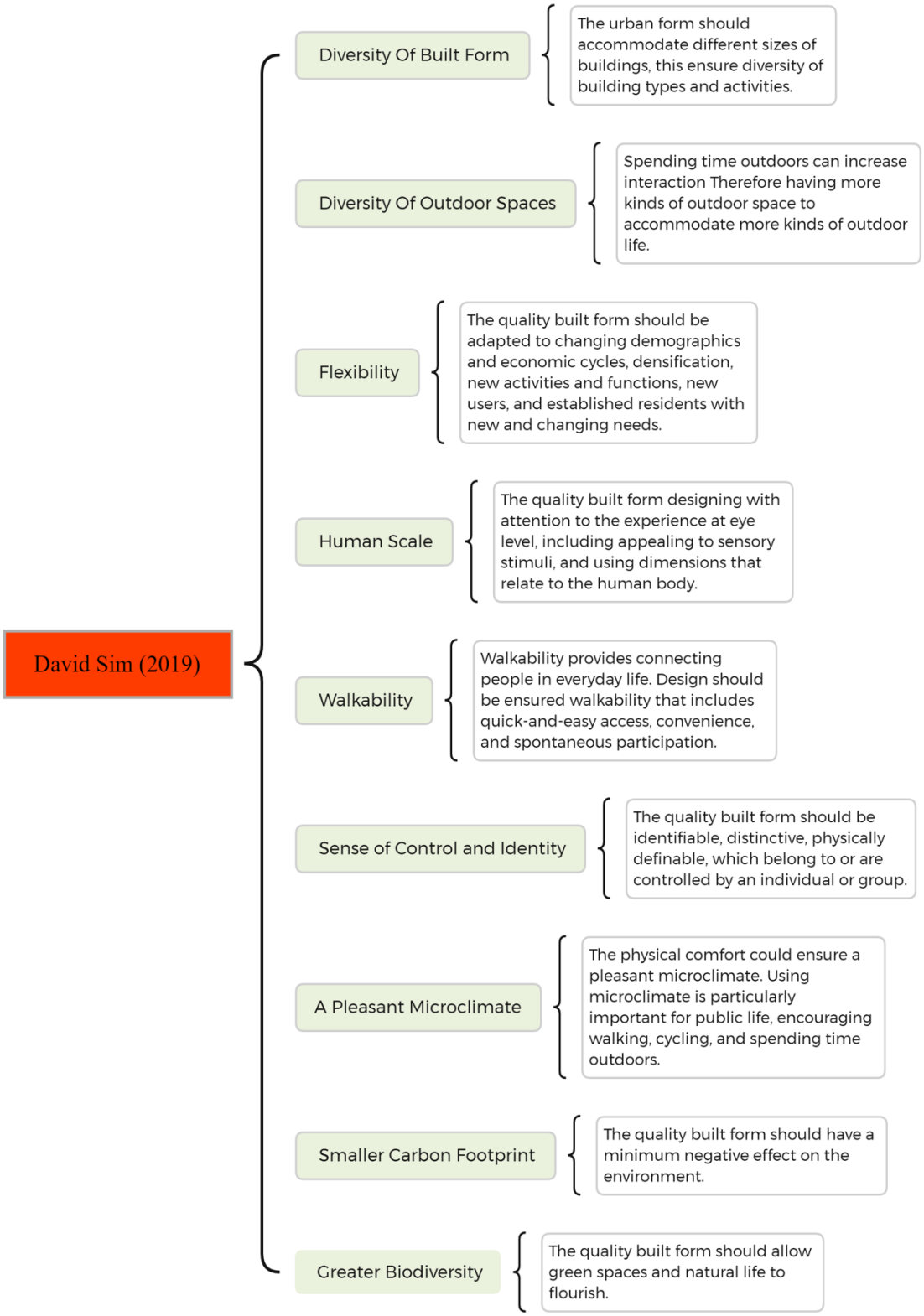


Figure 2.3.14: David Sim,2019, nine criteria to assess quality.(This figure was created by reinterpreting Soft City Sim nine criteria to assess quality.)

Cho et al. (2016) evaluated quality urban spaces and design principles in Asian countries in their Re-Framing Urban Space study. They have examined the urban space framework in three urban framework components allocated as spatial, functional, and operational after an extensive literature review.The Urban Space Framework recognizes three equally important and interdependent components that influence and shape urban space typology and performance, namely *HARDware, SOFTware,* and *ORGware. "HARDware refers to physical and geometrical properties, i.e., design values of space. SOFTware involves the uses, social and perceptual values of urban space. Finally, ORGware relates to the operational and management aspects of public space".* These three components are intertwined, and each affecs the quality of urban space. As a synthesis of urban space qualities and principles, each urban space components HARDware, SOFTware, and ORGware have been studied in Asian countries such as Japan, Singapore, and China (Cho, et al., 2016).

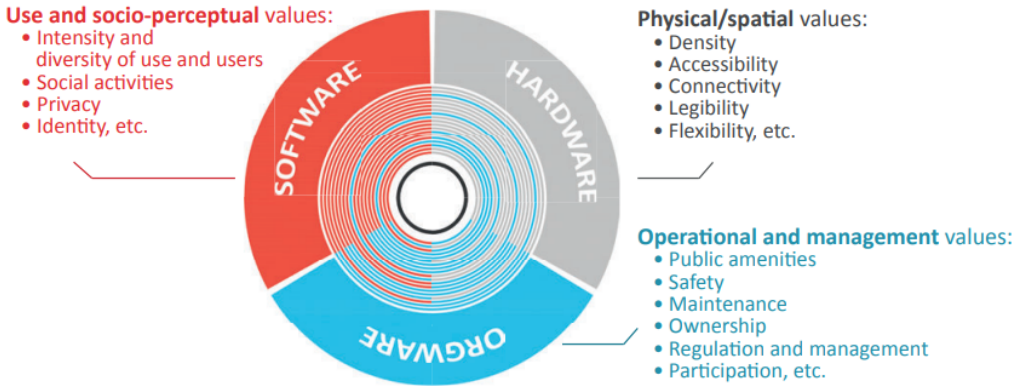


Figure 2.3.15 The Urban Space Framework: HARDware, SOFTware and ORGware components (Source: Cho, I.S., Heng, C.-K., & Trivic, Z. (2016). Re-Framing Urban Space: Urban Design for Emerging Hybrid and High-Density Conditions Routledge. https://doi.org/10.4324/9781315725147.)

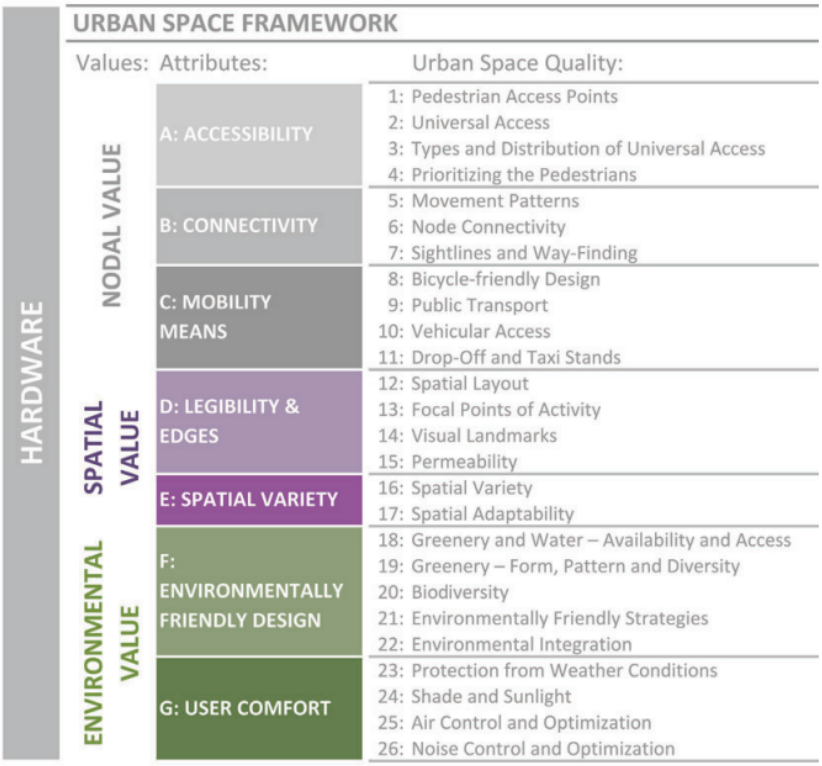


Figure 2.3.16 HARDware components (Source: Cho, I.S., Heng, C.-K., & Trivic, Z. (2016). Re-Framing Urban Space: Urban Design for Emerging Hybrid and High-Density Conditions Routledge. https://doi.org/10.4324/9781315725147.)

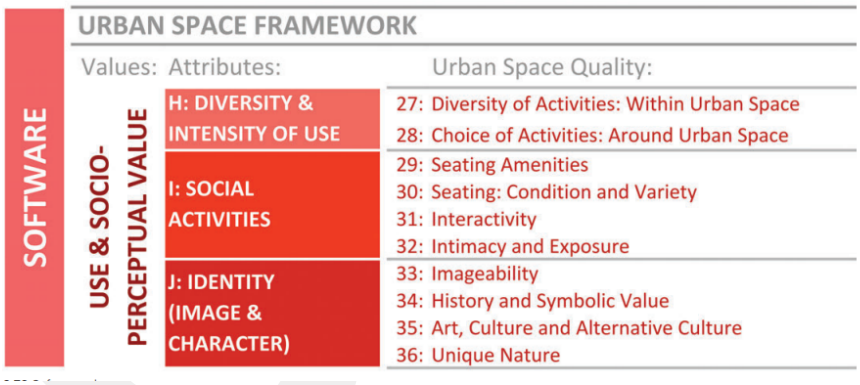


Figure 2.3.17 SOFTware components (Source: Cho, I.S., Heng, C.-K., & Trivic, Z. (2016). Re-Framing Urban Space: Urban Design for Emerging Hybrid and High-Density Conditions Routledge. https://doi.org/10.4324/9781315725147.)

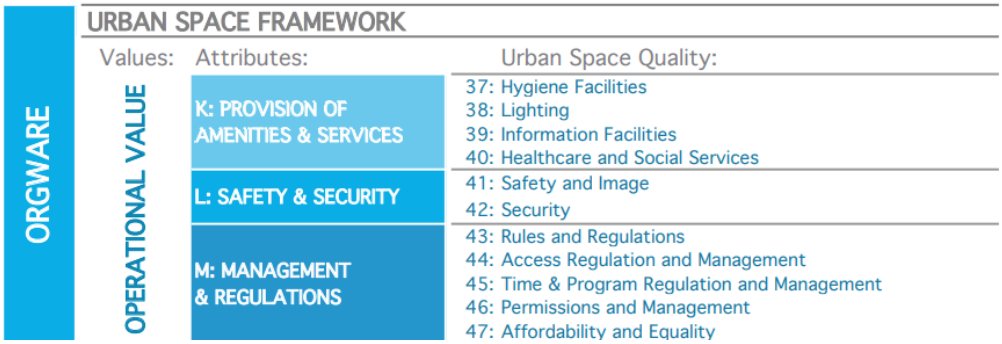


Figure 2.3.18 ORGware components (Source: Cho, I.S., Heng, C.-K., & Trivic, Z. (2016). Re-Framing Urban Space: Urban Design for Emerging Hybrid and High-Density Conditions Routledge. https://doi.org/10.4324/9781315725147.)

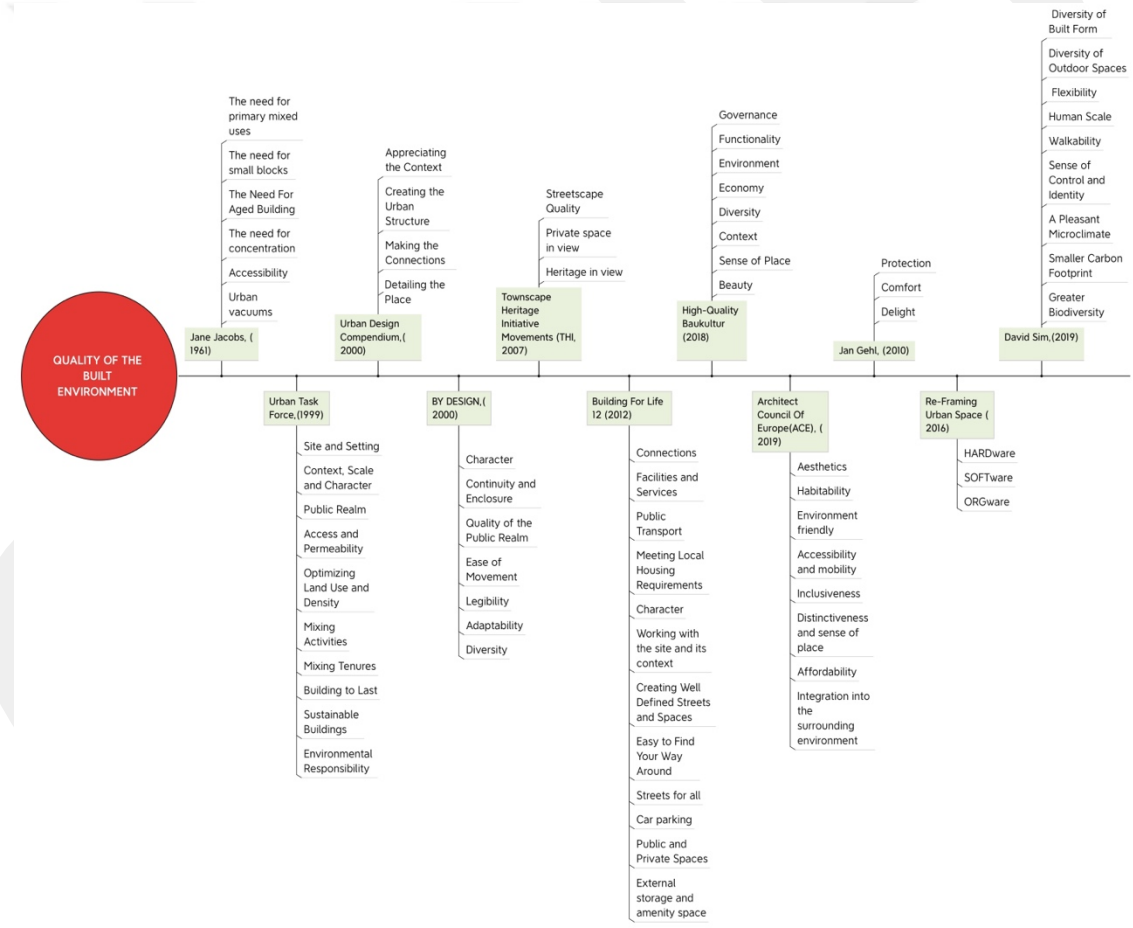


Figure 2.3.19 Tools for quality of the built environment and conditions of urban vitality

Quality of the built environment practices from different parts of the world such as North America, Europe, Asia, and have been studied in this sub-chapter. The tools of these practices have been shown in Figure 2.3.19, and urban vitality conditions have been included.

Jane Jacobs, (1961)	Urban Task Force,(1999)	Urban Design Compendium (2000)	By Design (2000)	Building For Life (2012)	Townscape Heritage Initiative Movements (THI) (2007)	High-Quality Baukultur (2018)	Architect Council Of Europe(ACE), (2019)	Jan Gehl, (2010)	The Urban Space Framework (2016)	David Sim (2019)
	Site and Setting Context, Scale and Character	Appreciating the Context	Character	Character	Heritage In View	Context, Sense of place	Distinctiveness and sense of place		Identity (image & character)	Sense of Control and Identity
Contact opportunity, Accessibility	Access and Permeability	Making the Connections, The Movement Framework	Ease of Movement	Connections Public Transport, Car parking, Streets for all	Pedestrian friendly Personal safety: traffic Traffic flow appropriateness		Accessibility and mobility	Opportunities to walk, Protection against traffic and accidents feeling safe	Accessibility, Connectivity, Mobility means,	Walkability
Diversity, Need for aged buildings	Mixing activities, Mixing tenures	Mixing Uses	Diversity	Meeting local housing requirements		Diversity	Inclusiveness	Opportunities for play and exercise	Diversity & intensity of use, Spatial variety, Social activities	Diversity of built form, Diversity of outdoor spaces
Border vacuums	Public realm	A Thriving Public Realm	Quality of the public realm	Public and Private Spaces, Streets for all	Appropriate resting places, Planting, Public Planting: private,			Positive sensory experiences, Opportunities to enjoy the positive aspects of climate	User comfort	A Pleasant Micro climate
	Environ mental responsibility Energy and Resource Efficiency,	Landscape				Environ ment	Environment friendly		Environment friendly design	Smaller Carbon Footprint, Greater Biodiversity.
	Building To Last, Sustainable Buildings	Feasibility, Building for Change	Adapta-bility		Coherence	Function ality	Affordability		Management & regulations	Flexibility
Eyes on the street		Landmarks, Vistas and Focal Points, Safety and Sense of Safety	Legibility, Continuity and enclosure	Public and private spaces	Cleanliness, Sense of threat, Legibility	Sense Of Place	Distinctiveness and sense of place, Habitability	Protection against crime and violence — feeling secure	Safety &security	
						Beauty	Aesthetics			
Concent-ration	Optimizing land use and density	Density, Facilities and Form								
The Need for Small Blocks		Building Size and Scale						Scale		Human Scale
The Need for Small Blocks		Animating the Edge			Edge-feature quality, Floor-scape quality, Detailing, maintenance ,Façade quality			Good design and detailing ,Good materials, Edge effect	Legibility& Edges	

Figure 2.3.20 The comparison that tools for quality of the built environment and conditions of urban vitality.

Quality of the built environment tools and urban vitality conditions have been examined and similar conditions and tools have been grouped, conditions and tools such as context, character, identity, sense of safety, diversity, accessibility, adaptivity, walkability, and quality of public space have been stood out as common features(Figure 2.3.20).Environmental awareness, the use and quality of edges, buildings, and human scales have been the focus of many if not all, quality and vitality studies. Since beauty, aesthetics, and density tools address more specific areas for urban studies, they have been not considered a quality tool or vitality condition in many studies.

Studies and tools aimed at a quality built environment. The similarities of these studies with each other and with urban vitality conditions have been examined in sub-chapter (Figures 2.3.19 and 2.3.20).Urban vitality and quality of the built environment practices, which have similar goals and focal points, have intertwined. Urban vitality positively affects the quality built environment, and the quality built environment creates high vitality urban spaces. As a result, the quality of the built environment has not been considered separately from urban vitality and has been considered as a condition of urban vitality.

Chapter 3

From Urbanization to Suburbanization

Associated with the development process of the cities, the meaning attributed to the suburbs has changed over time. While this meaning is the areas that provide cheap housing used by low-income people in some cities, in other cities, there are areas where high-income groups escape the disadvantage of the cities. But these meanings attributed to Suburbans lost their importance as cities turned into endless suburbs. The greatest problem that cities now have to face is how to deal with these endless suburbs. It is not entirely sufficient to transform only the centers of cities into lively, livable, and sustainable urban spaces. endless suburbs also need livable, sustainable, vibrant and quality urban spaces. Therefore, previously unspoken concepts such as vitality, sustainability, quality of the built environment have taken their place as research topics of suburbans. This chapter's purpose is to take a brief overview of the changing meaning and importance of suburbans for the city, which are included in the scope of this thesis.

The first part of this chapter has approached urbanization from the 20th century to the present and current tendencies in urban development. Urban developments, urban theories, and urban studies that contribute to the process of returning from urbanization to suburbanization have been examined. In other words, this process could be defined as the transformation of the monocentric structure of the cities into a polycentric structure and their expansion with the suburban character.

In the second part of this chapter, how the process from urbanization to suburbanization is interpreted by urban theorists and researchers and the meaning of suburbs for the city is addressed, and answers are sought to the question of how we can transform suburbs, which cannot be ignored for urban life, into more livable, healthy, sustainable and human interaction urban spaces. In addition, in the second chapter, which has discussed under the tabula rasa definition used by journalist David Brooks for suburbs, the importance of transforming these urban spaces, which have no past and future, into good urban spaces has been emphasized.

3.1 A Brief Overview of Urbanization and Urban Studies

Industrialization began to show its effect seriously in urban spaces in the middle of the 19th century. The rural population has started to move to the cities with the opportunities brought by industrialization, and the increasing urban population has created a mass burden for the old city spacesTo reduce this burden, new urban spaces have been built faster, larger and higher against the old city pattern.This period has created radical spatial changes in urban spaces with the opportunities provided by developing technology.The constructions of railways, roads, and large boulevards that provide communication between urban spaces have contributed to these radical spatial changes (Yırtıcı, 2005). Towards the end of the 19th century, rapid growth and expansion created lower-middle-class suburbs. These suburbs have become one of the most striking changes in the city (Ward, 2004). At the end of the 19th century, the common ideas of the period was modernism through intense migration, mechanization, and rapid industrialization affected architecture. It has come into existence as an urban phenomenon in relation to the massive change in the environment (Harvey, 1990).

Since the beginning of the 20th century, cities have responded to the problems caused by the dense population with two models. The first model is based on classical urban forms and construction typologies of traditional. The second model is a radical break with the construction tradition of the past, which, after its overmodest beginnings in the interwar years, strengthened in the 1960s. (Gehl & Svarre, 2013).

The production and marketing understanding of the Fordist system at the beginning of the 20th century considered the space as an interventional and homogeneous whole, this production concept has caused urban spaces to be considered functionally fragmented machines (Yırtici, 2005).

"To-morrow: A Peaceful Path to Real Reform", namely under its better-known title, *Garden Cities of To-morrow* (Howard, 1902). Howard's idea of *Garden City* envisioned a social city that took the form of a decentralized network of individual garden cities to avoid the evils of existing urban spaces that he saw as a disease.

The Garden City concept has each of them surrounding a larger central city with a population of 30,000 - 58,000 and consists of high-quality residences produced by planned development, urban areas with shanty-free and smoke-free urban open spaces, and green belts (Fishman, 1977). With the rapid spread of the garden city trend, Unwin and Parker set new standards and implemented the garden city concept such as Letchworth in low-cost housing design and planning, Bournville, and Port Sunlight. Garden City and Town Planning Association, The National Housing and Town Planning Council, and Town Planning institutes are the institutions that play significant roles in this period (Ward, 2004).

After World War I, many manifestos, and practices related to the city and housing came to the fore. The Bauhaus (1919) is one of the examples of manifestos that emphasized that standardization of housing is significant in terms of meeting social needs (Gropius, 1965). Le Corbusier emphasized breaking away from traditional cities with planned, functional cities, which were designed appropriately with developments of the 20th century. In 1923, Le Corbusier published a collection of essays under the title "*Towards a New Architecture"*, which included rational modern city ideas with these elements; *straight lines, tall buildings, highways,* and *large green spaces* (Le Corbusier, 1986).

Le Corbusier's ideas gained ground in the Athens Chater, a manifesto of modernist urban planning at the *Congrès International d'Architecture Moderne (CIAM)* in Athens in 1933. The ideology of urban spaces built with new technologies against dense, disease-provoking urban spaces emphasized by modernism and the mid-1900s dominated cities. Despite the slogan of "*form following function"*, which takes people's lives as its focal point, the vast majority of modernism's projects focus on form rather than life. (Gehl & Svarre, 2013).The post-war reconstruction in Europe, the clearing of slums, and the emergence of modernist ideas in practice took place after 1945.

The post-war period has seen a dramatic acceleration in the speed and physical scale of the cycle of destruction and regeneration .The redevelopment process was fatally flawed while damaging the economic and social infrastructure: The large blocks made easy the land use model, eliminating *nooks and crannies* that could accommodate (Carmona et al., 2003).

Technologies and tools used effectively have had a significant impact on the nature and form of the settlement. Canals, railways, roads, automobiles, etc., through innovations in transportation, have been significant elements in the changing sharing of activities in urban space, and the evolution of spatial form (Carmona et al., 2003). Throughout the 20th century especially from the 1950s onwards, automobiles became an integral part of urban life and became inseparable from the streets. The economic rising and cheap, effective production with new production technologies have led people to buy more cars. The dominance of cars in city life has begun to contradict the prerequisites of pedestrian life. These technological and economic developments caused the cities to expand by breaking the medieval city shell. The new physical environments, functions, and mobility brought by cars have enabled the newly formed neighborhoods to expand towards the city periphery and have shaped suburban areas (Gehl & Svarre, 2013). Suburban population faced with accessibility problems to the city center. In the 1950s and 1960s were started road construction programs that addressed the growing need for access from suburbs to city centers were supported by ring roads, bypasses, and connections.

Although no one took responsibility for life between buildings in the 20th century, 20th-century planners and architects focused on improving living conditions and solving the housing problem. Thus, new urban spaces have been shaped. However, it has often been difficult to experience "*the city at eye level"* in these large-scale projects (Gehl & Svarre, 2013). City life of new urban areas in the 20th century could not follow the pace of urban development. New urban spaces had difficulties providing urban vitality and could not face the problems brought by the lack of city life. Therefore, in 1960, urban ideas emerged that would increase city life.Jane Jacobs, Jan Gehl, Christopher Alexander, and William H. Whyte emphasized the importance of human existence in urban spaces. They conducted studies to increase urban vitality. These urban thinkers influenced architects, urban designers, and urban planners. Urban life, urban vitality, human-scale began to take place in urban studies.

Marshall Aid had a significant impact on the economic growth after the war years in the European country. After the *Great Depression* and the *Second World War*, there was a restructuring, especially in the suburbs. But the oil crisis in the fall of 1973 slowed the construction boom in cities. The oil crisis has increased awareness about the use and limitedness of resources. The new product types and more cars have resulted in products that harm and kill the environment a significant increase was achieved in the

number of polluting and environmentally damaging substances and noise sources. Environmental awareness has begun to develop since 1960 (Gehl & Svarre, 2013).

Movements against authority in the 1960s and 1970s, such as anti-war protests, youth revolutions, and campaigns for women's rights have been carried out in public spaces. Thus public spaces were handled in political dimension. Gender equality, educational opportunities, women's rights movements have directed women to work life. In this period, the criticisms made with a Marxist understanding emerged as a reflection of this political attitude. The thoughts of David Harvey and Henri Lefebvre on the city sought the rights of social classes and tried to define the limits of the role of the state in the public space. Especially in the suburbs that have been renewed after the Second World War, the social structure where women do housework and take care of children has turned into a new-society structure where women take part in daytime business life. The fact that suburban users were not at home for work during the day and not using suburban streets generated the concept of the bedroom committee.

In the 1960s and early 1970s, physical planning was political. By the late 1970s and 1980s, the politicization of planning became fully apparent, but it was not the only source of change. Governance, the emergence of monetarism, the increasingly sharp political effects such as polarization and Keynesian economic management have caused significant changes in urban planning (Ward, 2004). In other words, neoliberalism, which was effective in the 1980s, highlighted the market forces in the city with a privatized and unregulated urban planning approach. The change in this balance of power has caused changes in urban planning and roles in the city. Changing the urban roles in the 1980s increased globalization. The effect of the growing economy in the 1990s showed itself in the city with starchitect and iconic architectural structures.

The idea of the city, which started in the 1960s and 1970s, showed its effects in the city in the 1980s. These urban ideas focused on increasing diversity, walkability, and accessibility in cities and reorganizing public space and human relations. Also, at the end of the 80s, awareness of sustainability and social responsibility increased. In the 1980s and 1990s, the relationship between public life and public space in urban design has taken place in urban design. Demand for healthy, sustainable, livable, and safe cities with social interaction increased (Gehl & Svarre, 2013).

The new urbanism movement started in 1993 and focused on the structuring of existing city centers and suburbs. The new urbanism movement advocated diversity in the use and population of cities and suburban neighborhoods, incorporating public transport

into the design, making cities, towns, and suburbs identifiable and accessible, and considering local such as climate, architecture, ecology, landscape, and construction practices. In the new urbanism congress held in 2001, the new urbanism criteria movement region, neighborhood, street, and building scale have been determined (Cnu, 2001). The new urbanism movement reflects the urban thought that started in the 1960s and focused on public life. Besides taking public life as the focus, it also gave importance to design.

According to United Nations (UN) "*the population living in the city exceeded the population living in rural areas for the first time in 2009"*, the number of people living in cities is increasing day by day, for that current data, the number of people living in the world 8 billion (UN, 2019). These numbers bring many problems for cities. With the increasing population, it has become difficult to provide public space life and human interaction, that is, to provide urban vitality. Therefore, in the 21st century, it has become widespread to include public life in projects, policies, and urban studies. Urban vitality, livable, sustainable, and healthy concepts, which gained importance in the 2000s, has been discussed together and on many scales in urban studies. Although these urban studies emphasize the quality of the built environment for the provision of public life, numerous projects have been implemented that ignore the interaction of people and urban space. Studies have been carried out in many countries to improve the quality of the built environment. Such as the Department of the Environment, Transport, and the Regions (DETR) and Commission for Architecture and the Built Environment (CABE), and Urban Task Force (1999) studied in the UK. The Davos Declaration 2018 emphasized the quality of the built environment with the concept of *Baukultur.*

Thus, urban studies have focused on the quality of the built environment. Architect Council of Europe (ACE, 2019) and The New Leipzig Charter (2020), Council of the European Union's 2019-2022 Work Plan studies are examples of urban studies that focus on the quality of the built environment.

21st Century-developing technologies have contributed to studies examining public life and public space-human interaction. New technologies have opened a different perspective on urban studies. Mobile phones, internet data, and Global Positioning System (GPS) tracking systems have increased access by providing information about the city.

Technologies such as Google Street View allow us to observe many urban spaces at eye level, with free applications such as Google Street View and developing technologies that have taken their place in urban studies (Gehl & Svarre, 2013).

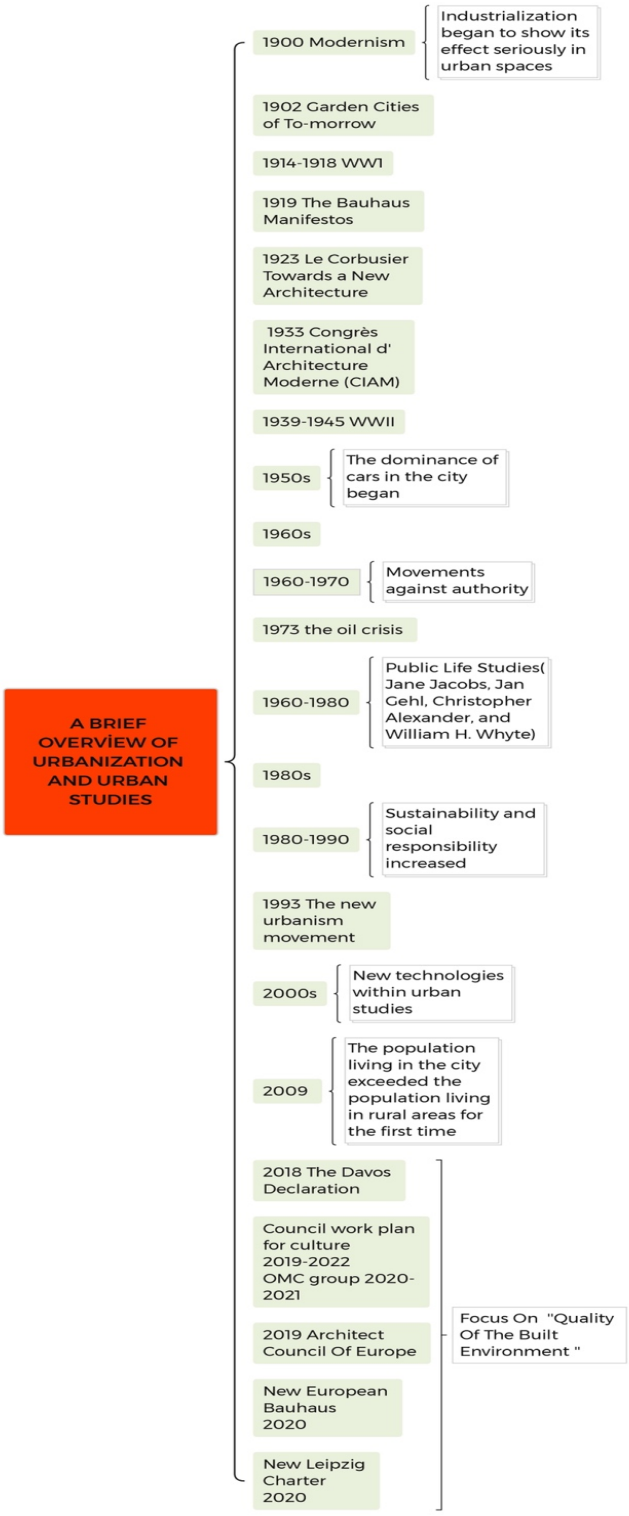


Figure 3.1.1 A brief overview of urbanization and urban studies.

3.2 Tabula Rasa of Cities: Suburbs

Technological developments, increasing population with improving living conditions, migrations, etc. factors have provided an explosion of the urbanization in global dimensions. In the global urbanization explosion, the areas growing in the city periphery have reached a more significant point than the city core. Close enough to the city center to contribute to the urban economy, relatively cheap, and open to expansion with fast construction, its suburbs have become key strategic areas for the "big city age" (Fishman,2017). Journalist David Brooks noted suburbs, which have important strategic points for cities, as follows; they represent a tabula rasa with "*no past, no precedent, and no settled conventions"* (Brooks, 2004). In other worlds suburbs have no ties with references that contribute to urban design such as urban character, historical structure, squares, and roads. Although the correct design of urban tabula rasa, which develops independently of most urban references, is complex, it has undeniable effect on the development of cities. The meaning of the suburbs, which are defined as cities of tabula rasa, has changed over time by being affected by parameters such as economic, social, political, and technological.

Contrary to popular belief, suburbs are not an American invention that appeared after the First World War, they emerged in London from the 18th century to the present and spread to the whole globe. Robert Fishman analyzed the evolution of the modern suburbs in three stages and expressed them with the contrasts of each stage. The first stage is between the 19th century Anglo-American suburbs and Baron Haussmann's Paris. The Anglo-American suburbs express the utopia of the bourgeoisie, while in Europe they are areas where the poor and working-class have been pushed out of the city center. The second stage emerged after 1945 between northern Europe and Western America. During this period, the North American suburbs sought a new model of mass welfare, while the Northern European suburbs adopted a more socialist model of high-rise, cooperative, and townhouse style. In the third and last part, Fishman mentioned that with the development of cities, suburbs have reached their climax today. On the one hand, informal suburbs formed around cities that could not handle immigration; on the other hand, there are suburbs that are rigid and ordered as well as anarchic and unmanaged such as East Asian metropolises and new towns (Fishman, 2017).

The influence of the suburbs on the city took its place in urban debates among urban thoughts. The suburbs have become the focus of criticism of Mumford, as the suburbs have become massive expansion out of the city instead of the favorite minority structure of the suburbs, and there are common patterns on many issues such as same age, same income, and same house typology (Mumford, 1961). Mumford, Jacobs, and Whyte were horrified by suburbs, the new urban patterns seen in American cities. Although Mumford and Jacobs' ideas about the city conflict, their opposition to the suburbs are common. Whyte expressed his criticism of the suburbs as follows: *"Huge patches of once green countryside have been turned into vast, smog-filled deserts that are neither city, suburb, nor country"* (Whyte, 1958). Urban thinkers argued that the spread of suburbanization was due to the increase in the number of car owners, federal taxes, government policies, and the effect of the American suburban system, such as highway construction. Mass suburbanization has been spreading around the world since 19th-century London. Therefore, they argued that with the oil crisis in 1970, people would return to the city. In the 1980s, a middle class was born that would dare to move to the suburbs, and suburban settlements exploded (Bruegmann, 2017)

In the 21st century, urban planners, urban researchers, and architects who oppose suburbanization observe the transformation of cities into endless suburbs. Today, 69 percent of the population of the United States lives in the suburbs. Estimates show that this rate will reach 45 percent in developed countries.The population and urban population projections of the United Nations for the future, the size of the expanding urban land, mixed with the data that the great majority of the world's population already lives in the suburbs, results in the suburbs demanding new and remarkable, creative energy (Berger& Kotkin& Guzmán, 2017).

While it causes cities to produce suburbs in countless forms, urban researchers' research on suburbs includes one hand question of whether we can talk specifically about suburban ways of life, and on the other hand, neglected settlements on the periphery of the city. The formation of global suburbs is reshaping and transforming cities from the inside out. If suburbs are different from the city core and if urban areas expanding are created by suburbs of various models, we can talk about *"suburban ways of life"*(Hamel, 2013).

Alongside the suburbs that create their character and way of life, there is suburban form defined as a lost view that the threading criminal, overlooked and the increasingly isolated of its dwellers. The lost views settlement are named differently because of various geographical, social, and cultural reasons, (Favela, Barria, Kampong, etc.) and are ignored by the rest of the cities. This fact should be matters that suburban dwellers' views of themselves, their daily practices, and their interactions with the rest of the city and the outdoors. Thus the lost view, suburban way of life concept, dystopian clichés and even utopia clichés, will require attention social interaction and practice across the spectrum of suburban places and forms. (Drummond& Labbé).

Many features come to mind about the difference between suburban forms and urban forms, for example, suburban building designs and shaping relationships with their surroundings, suburbs are less prone to mixed-use, consist of dead-end streets, low density, dependence on car use, the dominant patterns of suburbs are specific buildings and urban, these buildings are not common as in urban patterns. Today, it is meaningless to talk about the differences between suburban forms vs. urban forms, because suburbs are behavior like city centers and cities embrace them as we become multi-centralized. We should no longer view suburbs as cursed, game-winning spaces (Dunham & Williamson, 2009). As cities grow daily, categorizing their growth as suburban or urban is becoming more outmoded. Cities and suburbs are being to more alike, although cities do not turn into suburbs, suburbs become cities, and successful suburbs have the same characteristics as successful urban spaces. The most successful suburbs have good transit, mixed-use, green space, and last but not least, a highly vibrant built environment that encourages social interaction (Florida, 2013).

The concept of retrofitting, which has an important role in the creation of successful suburbs, should be mentioned at this point.The Retrofitting suburban concept has started to take place in urban studies through competitions, articles, books, and policies since 2009.

Williamson defined the purpose of the retrofitting suburban concept as follows;*"We have spent decades building and living in the suburbs. Now the suburbs need to be retrofitted in the 21st century and beyond. We must build quality environmental and sustainable living suburbs with features such as environmental and climate-sensitive, healthy, pedestrian, and bicycle-friendly. While the first generation of suburban retrofit applications were generally single-plot examples implemented by developers, after the 2008 economic crisis, applications have been managed by the*

public sector.Many municipalities have taken advantage of the recession to allow activities to update their regulations and tools for public-private partnerships to better position themselves for a renewed future. Suburban retrofitting projects have been developed, whether in the form of new master plans to revitalize suburban city centers *or extensions of dying commercial strip corridors"* (Williamson, 2013).

According to Dunham & Williamson the retrofitting of suburbs aims at three main principles : *Re-inhabitation , Re-development,*and *Re-greening*.

- *Re-inhabitation* refers providing services to the society and social relations of the structures, often as "third places" for social interaction.
- *Re-development* refers that existing structures or parking areas that are directed towards walkability to social life and are less automobile-dependent and redevelopment in this way in public buildings.
- *Re-greening* refers to the re-arrangement and re-greening strategy of existing buildings and lands according to parks and community gardens.Even though suburbs need more green spaces and parks to develop, renovate and beautify they need two retrofitting key factors: walkability and density. When sufficient density is provided, it transforms into suburbs with high vitality, where economic assets and activities are gathered, encouraging new initiatives and social interaction (Dunham & Williamson, 2009).

The main principles of the projects designed competition to retrofitting suburban include urban vitality conditions. Therefore, providing urban vitality conditions in suburbs means providing retrofitting principles. Conditions that increase urban vitality, such as mixed use, walkability, block size, accessibility, diversity, density, need for aged buildings, and increase vitality by encouraging social interaction in suburbs.

The retrofitting of suburban concept id aimed to design a quality-built environment that is livable, sensitive to the global climate and nature, and good for physical and psychological health. It causes a change in the definition of the suburb, which is the home of evil in some cities that are often ignored and considered separately from the city. Although urban studies have not adequately theorized suburban development with the sociological or urbanism concept, the design of livable suburban projects, competition, and positively changing the perception of suburbs has increased academic interest in suburban studies (Williamson, 2013).

In addition, with the development of transportation and communication networks, the change in the meaning of office and work environments, and the spread of home office work patterns, people began to give different meanings to Suburban such as livable and secure places, home office, where they belong, home. Studies in the USA show that generations of millennials who grew up in the suburbs prefer to move back and forth to the suburbs, no matter how bad the suburb they were born in and how the city tempts them. (Winograd &Hais, 2017)

"...These "supernovas" of urban explosions have certainly drawn social attention, but it appears that the scientific community is waiting for "the dust to settle" (sometimes literally) before talk a closer look at this new phenomenon." (Stanilov, 2004).

Suburban, like supernovas, contain a lot of energy, but the part of investigating supernovae is a late idea, as the dust collapses Stanilov mentioned. The faster the supernovae (suburbs) that occur today are investigated, the more they transform into lively and livable sustainable urban areas and can adapt to star systems (i.e., cities).

Just as the idea of opposing planning urban spaces with probabilities and statistics, which Jane Jacobs emphasized in the 1960s and inspired urban researchers, was vital for urban spaces and human interaction, establishing a suburban-human relationship is just as important today. Jane Jacobs defined Suburbans as parts of cities whose transportation is dependent on cars, and have no density and diversity, in short, human interaction could not even be observed.It was possible to verify this idea in the 1960s, but this sub-chapter has emphasized the development of suburbans and the focus of urban studies shifted from the urban centers to the suburbs. As cities expand and grow with the suburban character, it is vital for cities that suburbs have high vitality and quality in the built environment because urban vitality includes not only urban spaces but also suburbans. Therefore, urban studies develop new urban design tools in the design of new suburbs while transforming old Suburbans into urban spaces with high vitality.The power of transforming the blank slate, namely tabula rasas, that we have in cities into livable, sustainable, and healthy urban spaces is greater than in the city center transform. This power should be used for urban vitality, quality, and sustainable built environment.

Chapter 4

Understanding The Urban Vitality:A

Case of İldem Suburb

The evaluation and observation of the literature reviews in the 2nd and 3rd chapters were carried out in Kayseri, which is the 8th largest city in Turkey, and the 3rd largest city in Anatolia. Kayseri has always maintained its interest with significant trade routes that have hosted many civilizations throughout history. However, to understand the current urban structure and what the suburb means for the city that continues to grow with the suburban character, the important highlights that have affected the development of the city structure from the period of industrial investments after the proclamation of the republic period to the present were briefly overviewed.

The suburb of İldem, which has been developing and transforming since the beginning of the 1990s, the urban vitality and quality built environment have been evaluated with three different housing groups, two of which are building groups built by cooperatives and the other is the building group built by Turkish Housing Administration (Toplu Konut İdaresi, abbreviated as TOKİ in Turkish). These building groups stand out as the dominant pattern in İldem. It would be more accurate to understand the suburb of İldem not with a single building but with such large building groups.

Therefore, urban vitality conditions in the suburb of İldem have been re-thought with the quality of the built environment. For example, it would not be right to talk about small blocks, whose dominant pattern consists of point blocks, or to evaluate the need for age-building requirements in ildem, which started to be built in the early 90s.

In the second part of this chapter, the re-thinking map of urban vitality conditions created by considering the conditions of the İldem suburb and the ideas of urban researchers and urban theories that refer to these conditions have been included.In conclusion, the last part of the chapter, evaluations re-thinking urban vitality conditions. Along with mapping and illustrations, the quality and human dimension of the built environment have been interpreted within the framework of the urban vitality concept of the suburb of İldem.

Kayseri, whose contribution to the commercial, industry and science has been emphasized by researchers and travelers from various periods in history, is today the 3rd largest industrial and commercial city of Central Anatolia. Kayseri was important in terms of being on significant trade routes and establishing the network within the Anatolian geography (Faroqhi, 2007). Kayseri's urban space foundation belongs to the Middle Ages. Even if there are changes in Kayseri's urban pattern over time, it is possible to observe this urban pattern in the city in the Ottoman period and even in the post-republic period. The differentiation in the physical space of the city showed itself in the city at the end of the 19th century. The commercial areas of the city were changed and developed within the castle walls, and thus the castle walls, which were used for defense purposes, changed their function. (Eravşar, 2000).

At the beginning of the 20th century, the technological developments of the century were also seen in Kayseri. With the arrival of the first car in the city in 1910, many traditional streets were demolished to meet the need for wide streets (Karatepe, 2001). The city square was started to be organized in 1915. The moats in and around the castle were filled, and the houses in the castle were emptied and restored (Çalışkan, 1995).

Kayseri has been the focal point of the spatial and social reconstructions that followed the proclamation of the Turkish Republic in 1923. In 1926, the first heavy industry investments of the country were Aircraft (Tayyare) and Tank Factories were established. In the same year, a Hydro-Electric Power Plant was also used. In 1927, with the connection of the train route to the city of Kayseri, an area close to the train station, the country's first industrial investment Sümerbank Kayseri Textile Factory was established in 1935. Along with the Sümerbank textile factory, especially the factory housing established by the state, cultural and social facilities with different functions have shaped the city of Kayseri. Another example that shaped the city like the Sümerbank Textile Factory is the Kayseri Sugar Factory, which was established in the

west of Kayseri with the suggestion of the local government in 1955 (Asiliskender, 2008)

The first planning activities in the city started in 1939 at Istasyon Street, Meydan, and Talas. The first planning activities in the city started in 1939 at Istasyon Street, Meydan, and Talas. While the city center continues to exist with its organic texture, buildings following the modern architectural understanding of the period began to form in line with this planning work carried out on both sides of Istasyon Street, which developed on the axis of the Sümerbank textile factory and city Centre. Girls' Institute-1939, Governor's Mansion and Community Center (City Theater)-1942 are important public buildings built on Istasyon Street (Karatepe,2001). İlhan Tekeli stated that İstasyon street has been designed as a part and main line of the city's expansion plan (Tekeli,1980).

İstasyon and Sivas boulevards are significant axes for Kayseri, and these streets leading city center to Talas and Ankara, have been determined by the Gabriel master plan of 1931. Organic urban patterns have been also determined by the Gabriel plan (Sönmez,2012). In 1945 the master plan prepared by Kemal Ahmet Aru led by German Urban Planner Gustav Oelsner revolutionized the change. This master plan was based on the grid road system in the city. It was significant turning point in the establishment of Kayseri and the radial growth. Urban transformation in Kayseri gained momentum in the 1950s with the development of the understanding of the municipality. Destructions in the old urban fabric of the 1960s speed up the implementation of the 1945 development plan, besides during this period, some of the residences belonging to the minority population and most of the religious buildings, which had been abandoned due to reasons such as the Capital Tax (1942), and population exchange were inactive. It has been demolished assuming that they have turned into a crime bed because of this (Asiliskender, 2006).

Master Planning studies, which started in 1973 to meet the needs of the increasing population with the developing industry of Kayseri in the 1970s, were carried out by Yavuz Taşçı and it was completed in 1975. Taşçı plan report aimed that the fact that the development direction of the city is pulled to the east and west will increase the growth rate, effects, the central density of the preferred linear growth method, it is to provide transfer by distributing to city Centre. 1975 master plan effect in Kayseri is that it creates a city texture

consisting of high blocks and wide streets. This approach still leads the urban development of Kayseri (Asiliskender, 2008). From the 1990s onwards, suburbs started to be created to solve the problems that came with the increasing urban population. With the Beyazşehir suburb and the İldem suburb which followed, the development of the city of Kayseri began to be made through the suburban character.

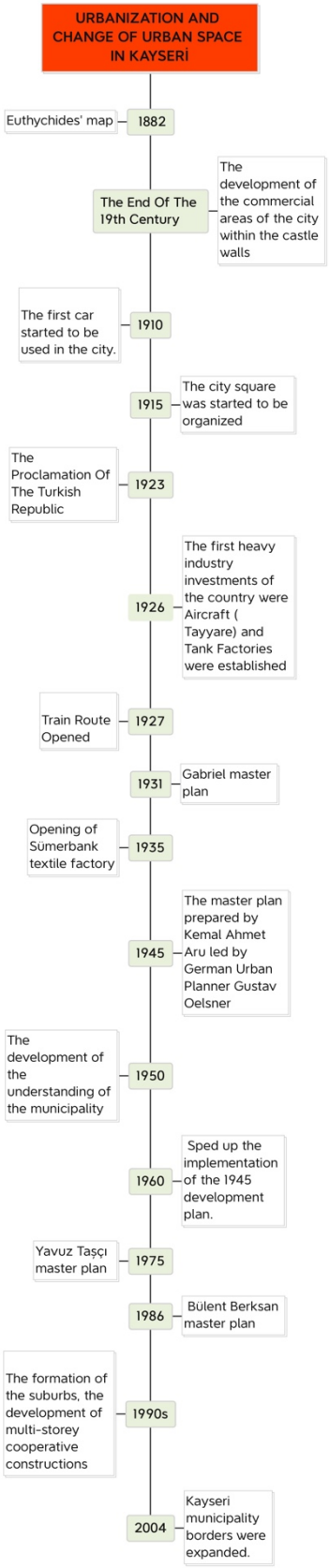


Figure 4.1 Urbanization and change of urban space in Kayseri

4.1 Re-Thinking Urban Vitality Conditions According to the Suburban of İldem

The buildings constructed in İldem to solve the housing problem of the city of Kayseri and to provide cheap housing are mostly have been built by cooperatives and Turkish Housing Administration. Today, many construction companies realize the potential of İldem. Even many construction companies whose customer targets are high-income groups carry out projects similar to those in İldem. Suburban of İldem, which hosts housing enterprises such as small contractors, large and small cooperatives, real estate investment trusts (REIT), and Turkish Housing Administration (TOKİ) urban vitality conditions have been examined in three different housing groups. Two of them are İldem Mass Housing Building Society, which is one of the large cooperatives of İldem and has been producing mass housing in İldem since 1996, and the other is Turkish Housing Administration, which produces mass housing throughout the country with the support of the state. There are a few reasons why these three building groups were chosen. Firstly, they formed the dominant housing pattern of İldem with more than 1000 housing units; secondly, they included different initiatives in the construction of these buildings' groups; finally, the aim is to compare the mass housing approach of the cooperatives that have been operating since the establishment of İldem and the Turkish Housing Administration which operates almost all over the country with the support of the state.

The first of this group of buildings is the last phase of the İldem C project, which was completed in 2014, covering 1140 of 5195 houses built by the İldem Mass Housing Building Society. In particular, the selection of the last phase of the İldem C building group is to take place in the shopping mall project, which was completed and put into service in 2017, and transforming the area where the buildings are located into İldem center owing to the shopping mall project. İldem C has located approximately 14 km from the city center of Kayseri and is a group of buildings that have easy access to transportation by bus and vehicle, as well as being close to the İldem tram line, which was put into service in 2009 (Figure 4.1.1,4.1.2,4.1.3).

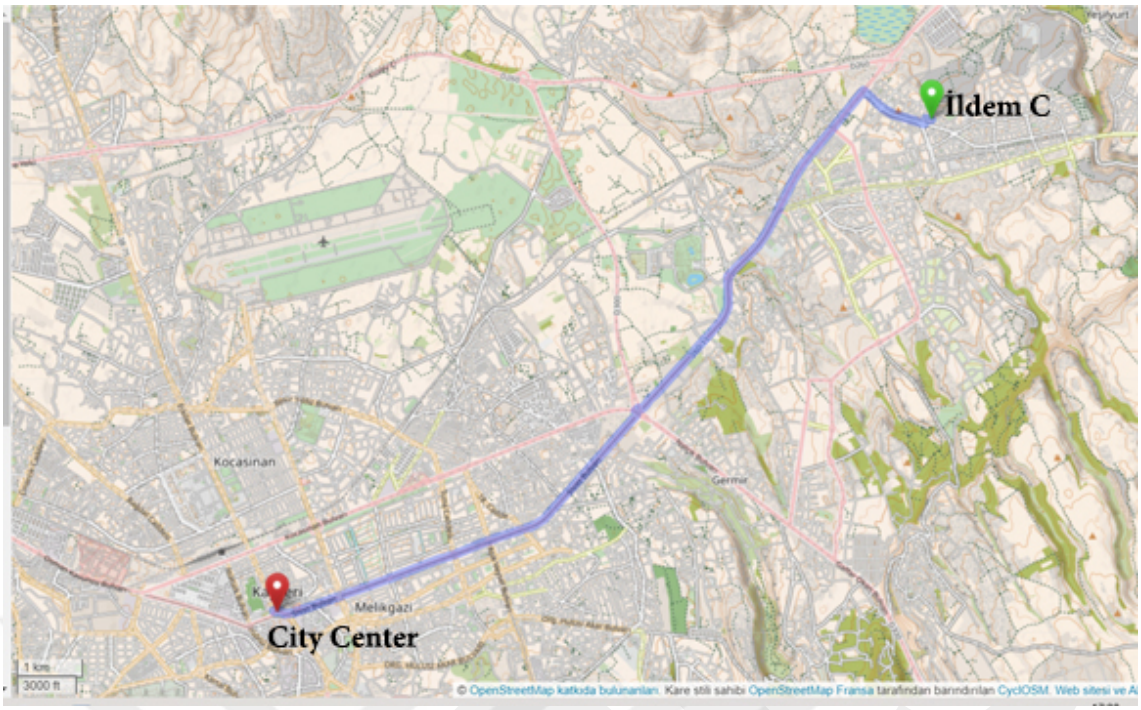


Figure 4.1.1 The Location of the İldem C in Kayseri (Source :Url 1)

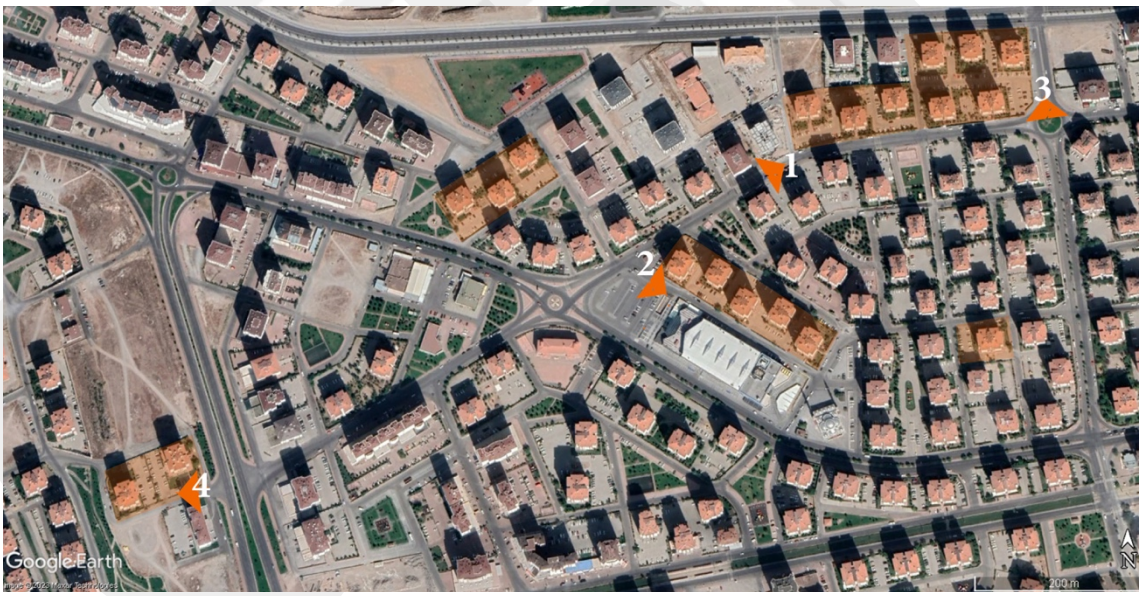


Figure 4.1.2 İldem C satellite image and street images (Source: Prepared by the author based on Google Earth satellite image, 2023, Google Earth)



Figure 4.1.3 İldem C street images (Source: Prepared by the author based on Google Earth street image, 2023, Google Earth)

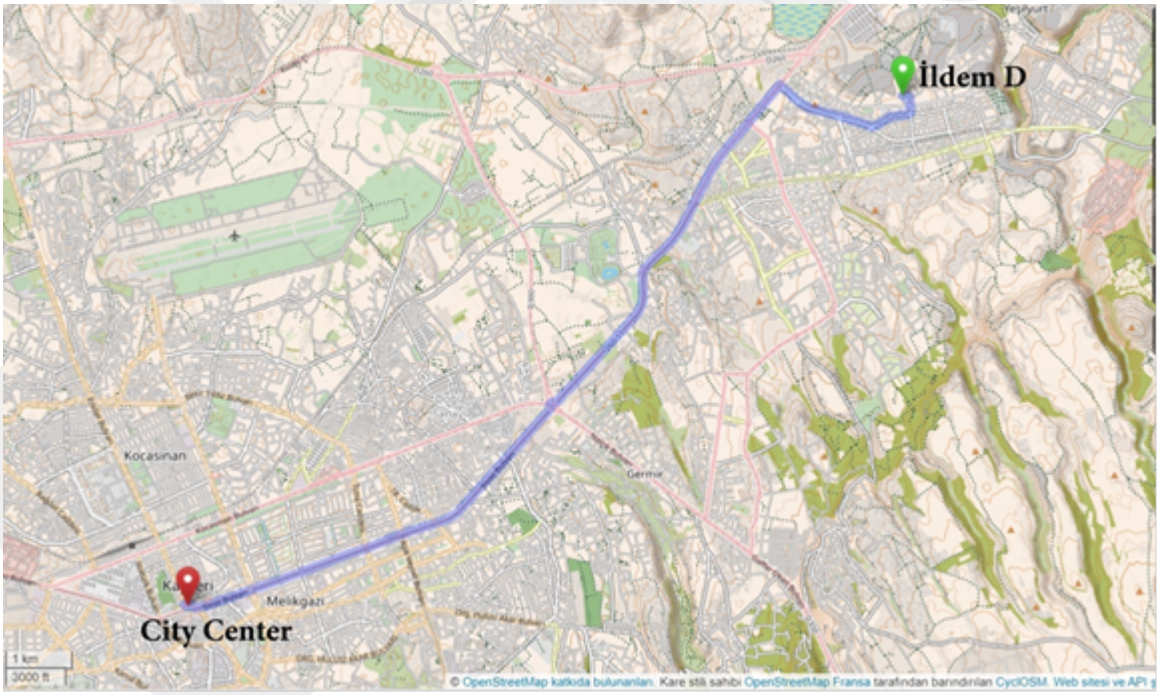


Figure 4.1.4 The Location of the İldem D in Kayseri (Url 3)

The second building group is the İldem D project, which has 2068 housing units, the construction of which was completed in 2020 by the İldem Mass Housing Building Society, the same cooperative group as İldem C. The İldem Mass Housing Building Society website describes the İldem D project as follows.

They aim to be an exemplary project in İldem with not only interior space but also exterior and landscaping. Also, we decided to go beyond the traditional cooperative understanding and produce different types of housing. Considering that the population structure of families also changes with the developing population; Housing types have been designed in 2+1 (100 mt2), 2+1 (117mt2), 3+1, 4+1, and villa categories (Url 2). The İldem D project, which is approximately 16 km away from the city center of Kayseri, benefits from the advantages of the İldem tram line, just like the İldem C project(Figure 4.1.4,4.1.5,4.1.6).



Figure 4.1.5 İldem D satellite image (Source:Prepared by the author based on Google Earth satellite image, 2023, Google Earth)



Figure 4.1.6 İldem D street images (Source: Prepared by the author based on Google Earth street images, 2023, Google Earth

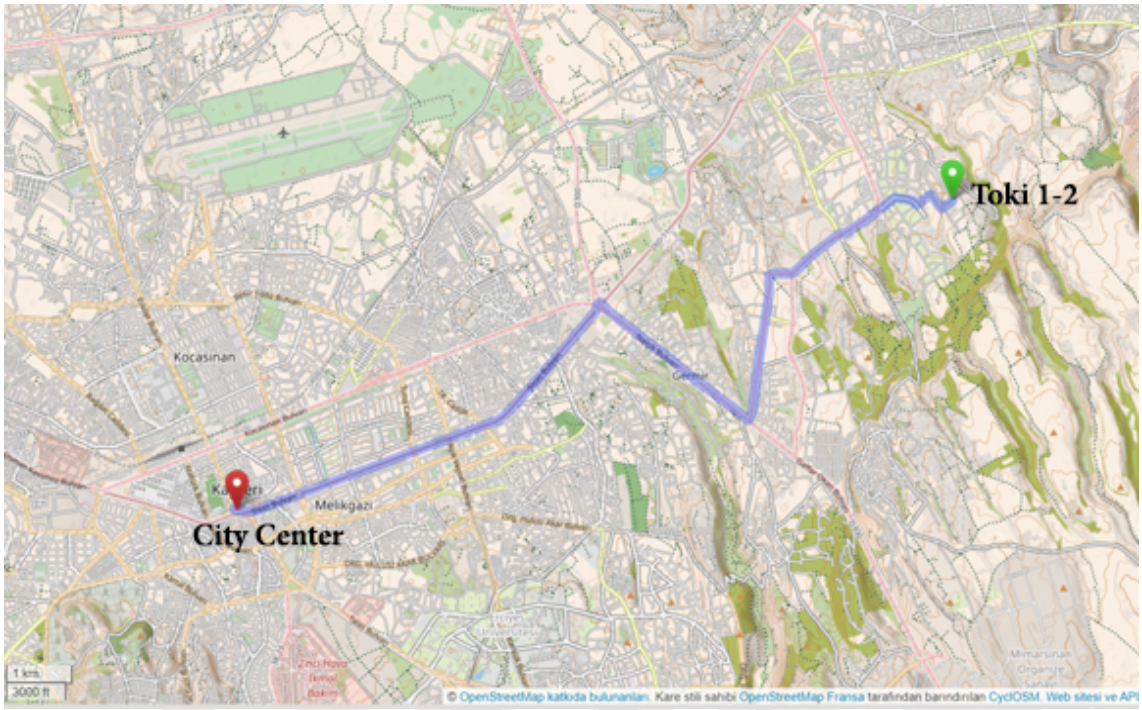


Figure 4.1.7 The Location of the TOKİ 1-2 in Kayseri (Url 4)

The third and last group building groups are called TOKİ-1 and TOKİ-2 in the continuation of the thesis. It was completed in 2013(TOKİ 2) and 2014(TOKİ 1), this building group has been built by the Turkish Housing Administration (TOKİ). As mentioned above, it is possible to come across many housing initiatives of TOKİ in İldem, as well as many initiatives that provide cheap housing. However, the reason for examining TOKİ 1 and TOKİ 2 in this thesis is to build low-rise houses (3-6 floors). TOKİ created a debate in the field of architecture and urban design with their high-rise housing typologies throughout Turkey. After the completed TOKİ 1-2 projects in this part of İldem, low-rise houses have been started to be built. It would be more beneficial to consider these two building groups, which are located close to understand this part of the suburb of İldem. This building group has a total of 1072 housing units, 278 of TOKİ 1 and 794 are TOKİ 2. TOKİ 1 and 2, which are approximately 15 km away from the city center, do not benefit from the İldem tram line, unlike in İldem C and D building groups, and transportation has been provided by public transport and cars (Figure 4.1.3).



Figure 4.1.8 TOKİ 1-TOKİ 2 satellite image (Source: Prepared by the author based on Google Earth satellite image, 2023 Google Earth)



Figure 4.1.9 TOKİ 1-TOKİ 2 street images (Source: Prepared by the author based on Google Earth street images, 2023, Google Earth)

As these three building groups have been examined, it becomes clear that there is an organism with complex relationships in the suburb of İldem. Reducing the complex relationships of these organisms to simpler and more understandable relationships will provide a better understanding of organisms. When the complex relations between the city and the suburbs are simplified, the following result emerges, just like anywhere else in the city center, these organisms in the suburbs need urban vitality to survive.

The following question about the concept of urban vitality, which has such a strong effect on survival and death, was the focus of the study; how should the concept of urban vitality, which is frequently spoken in urban centers, and historical and commercial urban spaces, be examined in the suburbs? As complex relations are simplified, the answer to this question is reduced to two answers:

The first answer is that every city is unique. Urban vitality conditions put forward according to New York conditions in the book *The Death and Life of Great American Cities*, written by Jane Jacobs, the pioneer of the idea of urban vitality, or in metropolitan cities and suburbs such as Spain and China, will not yield correct results. Therefore, in the second chapter of the thesis, urban vitality studies applied in different parts of the world have been included. The methods of these studies, urban vitality parameters, and the scale of the study area change according to the location.

The second answer is to evaluate the built environment's quality tools and urban vitality conditions together. The broad approach to the concept of urban vitality includes the quality of studies of the built environment. For this reason, many urban vitality studies examine the effects of the quality of the built environment on vitality. Studies that examine the quality of the built environment and put it into practice in some urban spaces have similar aims to the concept of urban vitality. These goals are livability, sustainability, use of urban spaces, human interaction and quality of public space, and compatibility with the built and natural environment. These two intertwined concepts with similar purposes will be evaluated together and will complement each other's shortcomings and increase the impact of the conditions in the research. Thus, considering the uniqueness and conditions of the suburb of İldem, quality-built environment tools that support urban vitality and urban vitality conditions are discussed with the 're-thinking urban vitality condition' map. In addition, the human dimension section on the map has brought the forgotten human factor into focus for most cities.

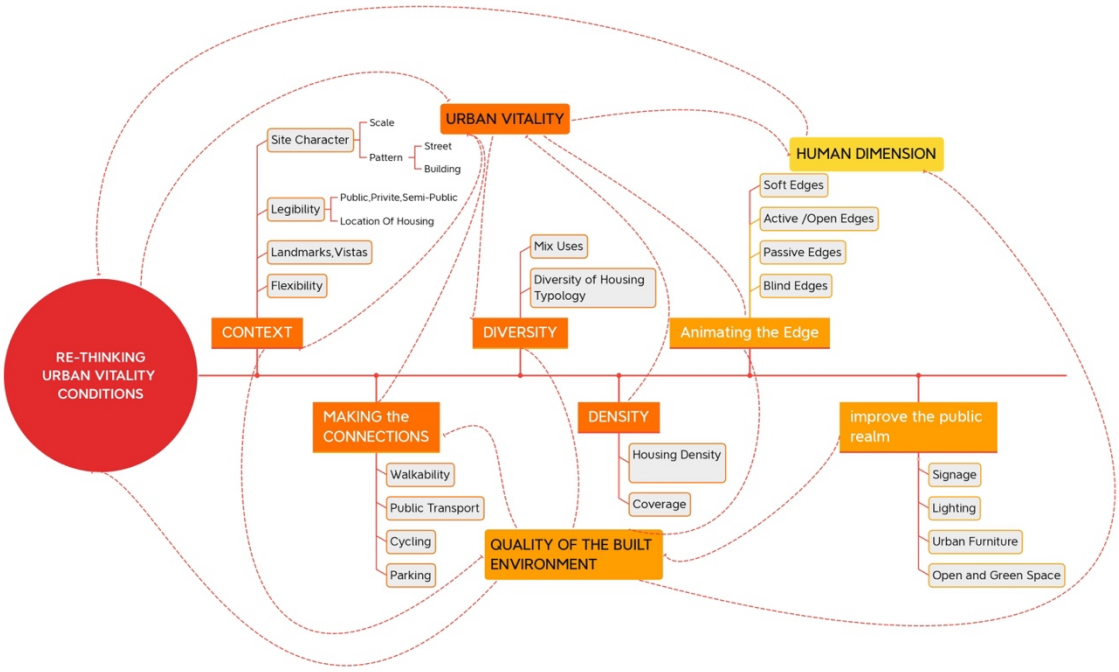


Figure 4.1.10 Re-Thinking Urban Vitality Conditions Map

The *re-thinking urban vitality conditions* map has shown that increasing urban vitality conditions such as density, diversity, accessibility, and legibility, animating the edge, and improving the public quality realm tools which positively affect the quality of the built environment (Figure 4.1.10). However, urban vitality conditions and quality of built environment conditions have not separated certainly. Urban vitality conditions also increase the quality of the built environment, and the tools that affect the quality of the built environment increase urban vitality. Thus, the intertwining of these two concepts, whose boundaries and conditions cannot be separated, is clearly seen on this map.

Re-Thinking Urban Vitality conditions, which will be given under sub-titles, have been explained in detail later in this chapter. The importance of these conditions has been discussed with the references of urban theorists, urban practices, and urban studies. These subtitles will serve as a guide in the evaluation of the three building groups, which are the case studies of the thesis.

4.1.1 Context

Context is a framework that contains the character and settings of the urban area. Context provides awareness of the environment from the smallest city scale to the largest scale urban design.

Context provides an understanding of the character, scale, pattern, legibility, landscape, landmarks of the existing built environment and enhances or emphasizes the quality of the built environment. Additionally, understanding the context has a positive impact on a sense of control and identity.

- ***Site Character:*** Street and building patterns form the built environment, and the height and scale of these patterns reflect site character. The contribution of the individual buildings to the character of the site could not be ignored. The pattern and scale of individual buildings are associated with other buildings to reach a harmonious whole and the urban form. This harmonious whole and urban form contribute to the development of the sense of place.
- ***Legibility:*** Kevin Lynch emphasized that the importance of the legibility of the city in his book *Image of the city*, the city can create a pattern with identifiable symbols if legibility, powerful and complex symbol of city that takes meaning with strong images and legibility (Lynch, 1960).Jane Jacobs emphasized that illuminating the functional order and increasing the legibility are among the goals of urban vitality at this point Kevin Lynch's *image of the city* gets involved (Jacobs 1961).

  Successful urban spaces should be functional, legible, and defined. The location of the buildings and their relationship with the street define public, private semi-public areas. The decrees of publicness are experiential problems for the city (Madanipour 2003; Alexander et al. 1977).
- ***Landmarks, Vistas:*** Landmarks, vistas, and focal points are urban elements that make city spaces easier to read and define. Landmarks have been defined by Kevin Lynch as follows: they are point references that can be seen as external elements their physical character is the one and the only item that is easily remembered in context. View from many different points and their features of contrast with the elements around it remain unique (Lynch, 1960). Kim Dovey emphasized that symbols in cities are not elements to be worshiped alone, but rather elements that represent transcendence and have a meaning within the city as a whole (Dovey,2016).
- ***Flexibility***: Flexibility is the response of the built environment to changing conditions. The built environment must respond changing such as demographic and economic cycles, concentration, new activities and functions, new people,

and residents according to human health, comfort and accessibility (DETR and CABE ,2000; Davos, 2018; Sim, 2019).

4.1.2 Making the Connections

In today's cities, where cars dominate the urban form, accessibility and making connections should be provided in a balanced way between cars, public transportation, walkability, and cycling. Ignoring pedestrians in urban transportation or creating pedestrianized traffic-free roads reduces urban vitality rather than being a solution to transportation or traffic problems. The establishment of urban connection should not be merely functional also should serve urban vitality. Urban connections, which include high-vitality, quality, and functionality, have the following features.

- Urban connection should be established as identifiable and legible. Old and new urban connections should be integrated with harmony.
- Urban connections should be ensured diversity. Urban connections dominated by cars will also bring problems. Public transportation, walkability, and bicycle transportation options should be accessible to city users.
- Urban connections should be provided security for all transportation options.
- Urban connections should be thought about parking as much thought transportation.

- ***Walkability:*** Jane Jacobs emphasized that walkability and the use of sidewalks safely are essential conditions of urban vitality. The association of pedestrian ways as a circulation element carrying pedestrians only from place to a place is not correct, it is more than circulation. As the sidewalks connect with the built environment and other street, they gain meaning and attract people in use. The pedestrian ways that people use 24 hours a day are naturally observed by the eye of the street, thus creating urban spaces with high vitality that provide a sense of security (Jacobs 1961). The need for short city blocks that increase the opportunity to meet, the existence of primary and secondary use, creating density all these urban vitality conditions serve to provide walkability.

  Kim Dovey described walkability as the big design challenge. Because walkability depends on parameters such as *topography, climate, culture, safety and season, time of day, design quality, health,* and *competition for transportation*. (Dovey, 2016). The city needs to provide walkability, which positively affects urban vitality and depends on many parameters. Walkability has

a positive effect on the vitality of urban spaces that connect people in daily life. (Montgomery, 1998; Gehl, 2010) Quality-built environments should provide safe, fast, easy, comfort walkability that includes self-involvement (DETR and CABE, 2000; Urban Task Force 1999; Sim, 2019).

- ***Public Transport:*** Public transportation, walking and biking, called green mobility, provides economic and environmental benefits for cities. Jan Gehl emphasized the importance of public transport that Good public space and a good public transport system are simply two sides of the same coin (Gehl, 2010,). Public transport that diversifies the urban connections should be accessible and functional. Considering the people's walking distance of 400m radius (5 minutes walking), the ideal collection area per stop shown in the figure for different types of public transport (Figure 4.1.11).

	Minibus	Bus	Guided bus	Light rail	Rail
Stop interval	200m	200m	300m	600m	1,000m+
Corridor width / area served	800m	800m	800m	1,000m	2,000m+
Catchment per stop	320 – 640	480 – 1,760	1,680 – 3,120	4,800 – 9,000	24,000 – 24,000

Figure 4.1.11 Catchment areas for public transport (Source: English Partnerships and the Housing Corporation (2000) Urban Design Compendium 1, London)

- ***Cycling:*** Walking and cycling are a natural part of people's daily activities. Therefore, the arrangement of these daily activities provides positive effects on urban welfare and quality of life. Jan Gehl emphasizes the importance of arranging cities following the use of bicycles, giving priority to traffic, and meeting the conditions such as ensuring the safety of cyclists. Providing all these conditions in the city does not guarantee that the use of bicycles will increase. There must be a bicycle culture that means the numbers of bicyclists do not change much in cold weather during the winter months shows the cycling culture. Cycling brings chaos in cities such as Dhaka, where there is a bicycle culture but the traffic and environment are not regulated accordingly. Gehl also referred to the efforts of countries such as Germany, The Netherlands, and England to increase bicycle use (Gehl, 2010). City design should define clean cycle paths, create mixed-use intertwined with pedestrian paths and vehicles,

and ensure the safety of cyclists (English Partnerships and the Housing Corporation, 2000).

- ***Parking:*** Parking is one of the key factors to consider in urban connections. Parking areas should be designed to be sufficient for visitors and residents, well-integrated, and not dominated the street (Birkbeck, Kruczkowski, 2012). The way of parking arranges the quality of the built environment. The parking position of cars affects walking, cycling, and people's interaction with the first floor of buildings (English Partnerships and the Housing Corporation, 2000).

David Sim, in his book Soft City, explained how cities handle and regulate parameters such as walkability, cycling, public transport, traffic, and public space-building relationships (Figure 4.1.12, Figure 4.1.13, Figure 4.1.14, Figure 4.1.15, Figure 4.1.16, Figure 4.1.17). Sim has illustrated some streets in Denmark, England, Germany, and Japan (Sim, 2019)

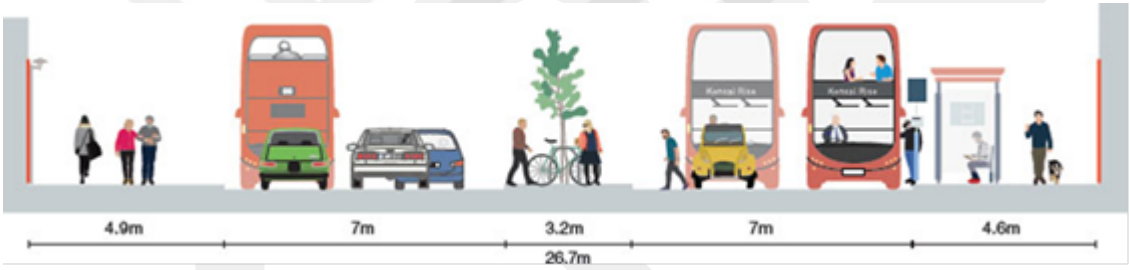


Figure 4.1.12 Vesterbrogade, Copenhagen, Denmark (Source: Sim,D.(2019).Soft City: Building Density for Everyday Life. , Island Press, Washington, DC)

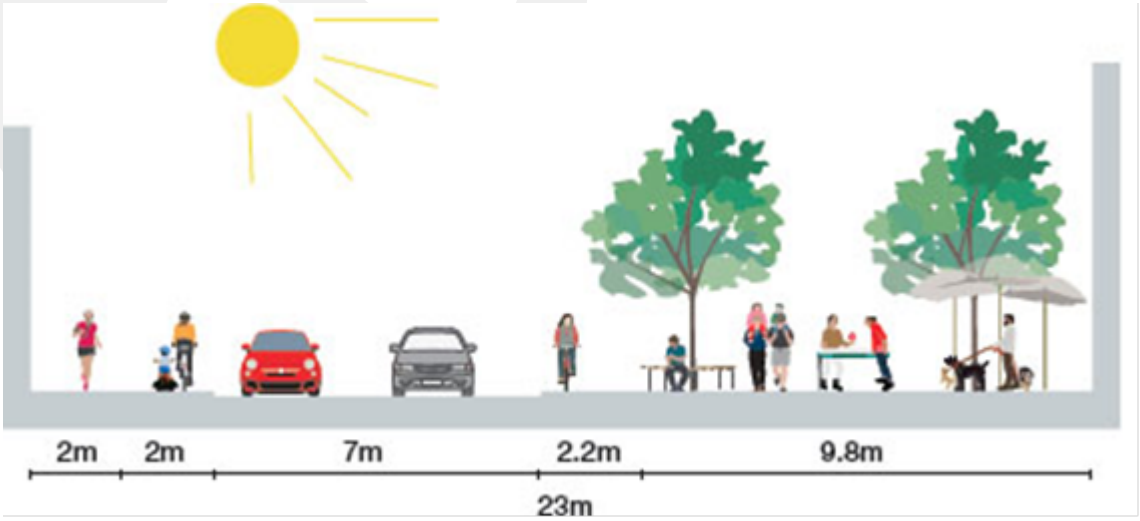


Figure4.1.13 Kaiser-Joseph-Straße, Central Freiburg, Germany (Source: Sim,D. (2019).Soft City: Building Density for Everyday Life. , Island Press, Washington, DC)

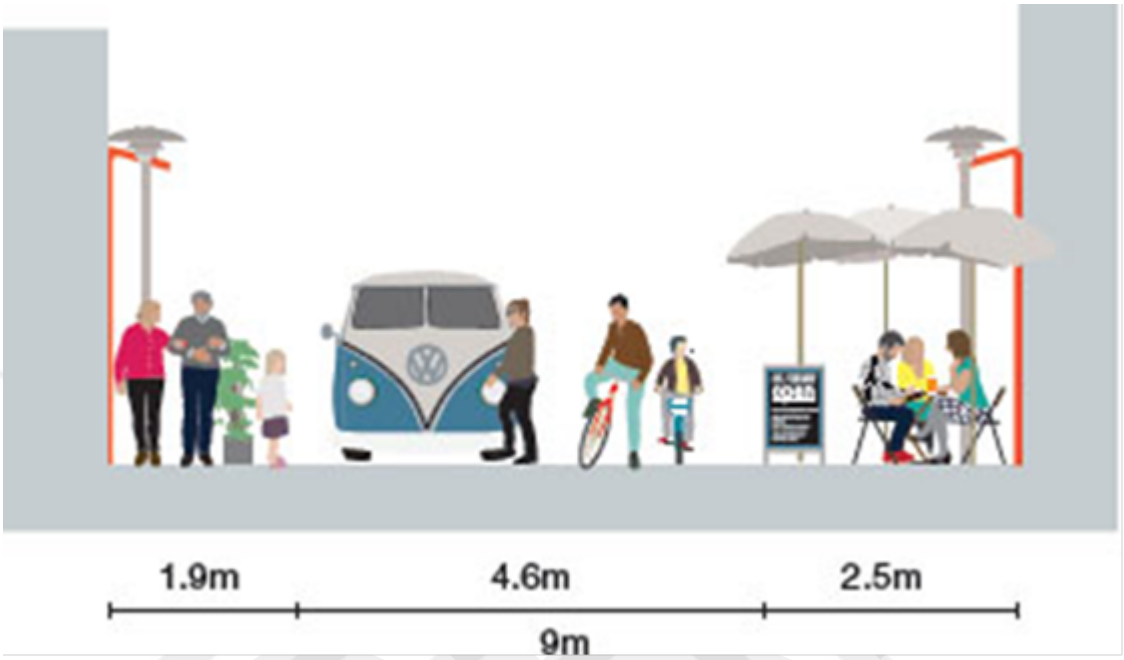


Figure 4.1.14 A neighborhood street in Daikenyama, Tokyo, Japan (Source: Sim,D.(2019).Soft City: Building Density for Everyday Life. , Island Press, Washington, DC)

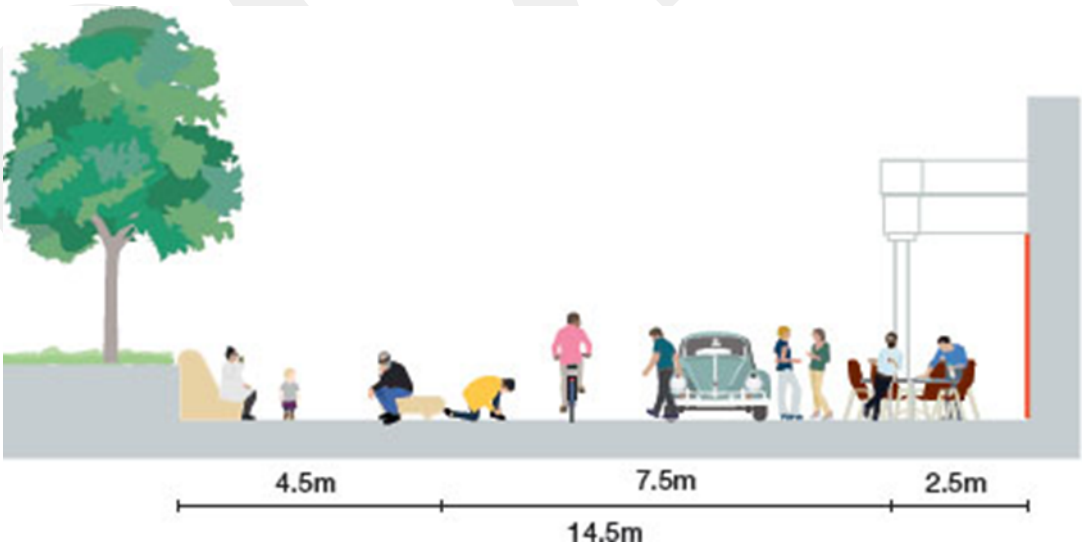


Figure 4.1.15 Strædet, Copenhagen, Denmark (Source: Sim,D.(2019).Soft City: Building Density for Everyday Life. , Island Press, Washington, DC)

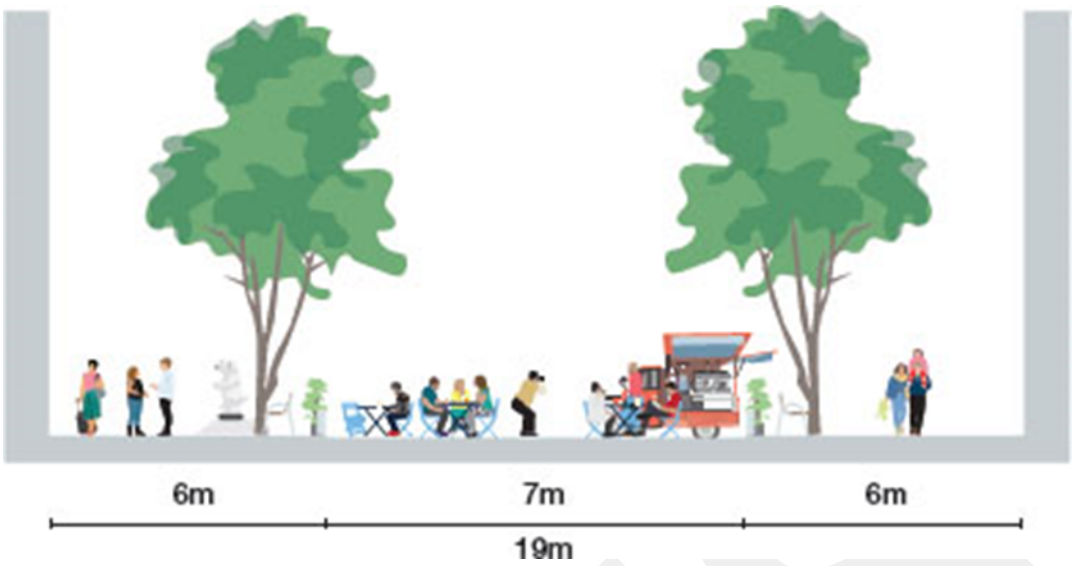


Figure 4.1.16 New Road, Brighton, England In the middle of the day (Source: Sim,D.(2019).Soft City: Building Density for Everyday Life. , Island Press, Washington, DC)

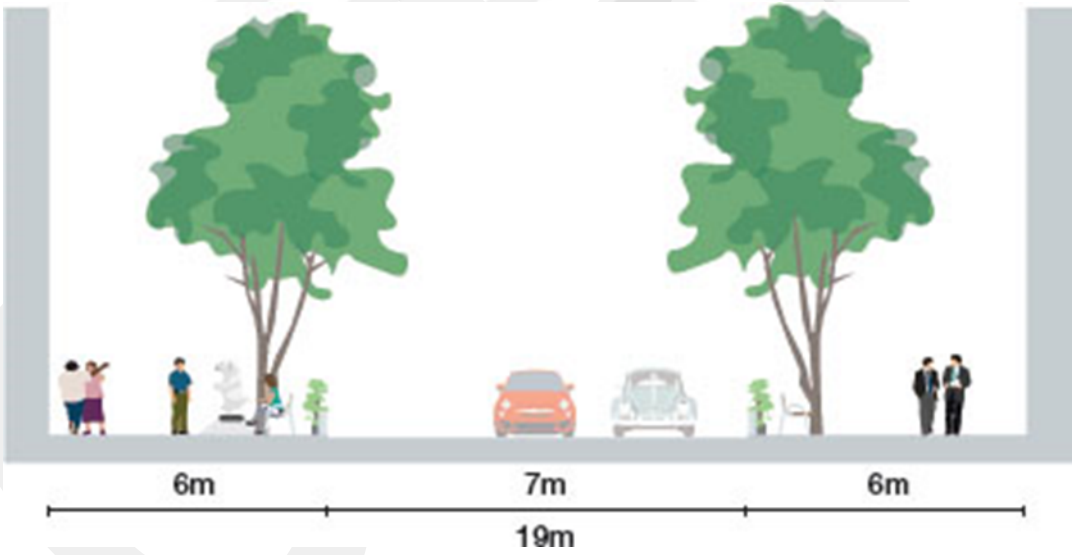


Figure 4.1.17 New Road, Brighton, England Mornings and evenings (Source: Sim,D.(2019).Soft City: Building Density for Everyday Life. , Island Press, Washington, DC)

4.1.3 Diversity

"*What is an assemblage? It is a multiplicity which is made up of many heterogeneous terms and which establishes liaisons, relations between them ... Thus, the assemblage's only unity is that of co-functioning".* (Gille Deleuze in Deleuze and Parnet, 2007) Kim Dovey has examined diversity with the definition of Gille Deleuze in Deleuze and Parnet in assemblage cities creation of *multiplicity* rather than *singularity* by bringing together different kinds of people, activities, and buildings within the framework of walkability of. Dovey has divided the multi-functionality in this assemblage into three groups; *mix of functional, formal,* and *social mix* (Dovey, 2016).

"Diversity *is natural for big cities" …* "*To understand cities; we need to examine combinations or mixtures of uses, not separate uses*" (Jacobs 1961). According to Jacobs, four conditions are indispensable for generating diversity of cities. The first is the district should serve more primary functions, preferably secondary functions should be created to support these primary functions. The second is urban blocks must be short thus create corners that ensure opportunities for people. The third is the district should mix buildings that differ in age and condition to vary in economic efficiency. And lastly, it is the provision of sufficient human density no matter what conditions are provided. (Jacobs 1961). Diversity of use and users can contribute to a sense of community and provide a sense of safety. The mix of residences, businesses, businesses, and services will attract people to the block every hour. Different types of residents are at home and awake at various times in a day, which is especially essential for crime prevention (Jacobs 1961; Sim, 2019).

- ***Mix Uses:*** Even though cities are perfectly calculated with one function it cannot provide it cannot really provide what is required for the city unless it is limited to a single function. Therefore, cities functionally produce two different variations. The first are the primary uses, they are bringing people to a place in themselves, offices, housing, factory areas and certain places of entertainment, education, and recreation are primarily uses. Primary uses also do not provide vitality, even if it combines with another primary use, taking people to the streets at the same time and distributed at the same time, it cannot work. Thus, there is a need for secondary uses that will support primary use and transform into primary use over time. Consequently, mixed-use is one of the essentials of vitality, so cities should include primary and secondary uses (Jacobs 1961).

Mixed-function urban spaces provide round-the-clock activities in and near buildings (Gehl, 2010).

When its functions are distributed equally like a cake slice, it is thought that this will work but this is not valid for the city. Economy, production, reproduction, should be considered for the distribution of functions (Dovey, 2016).

- ***Diversity of Housing Typology:*** "*Since usefulness in everyday life comes from the proximity of different activities to each other"*, for this reason, the urban form includes different volumes, shapes, and typologies of buildings (Sim, 2019). Urban space should ensure different typologies of buildings. The diversity in typology increases the variety of users. Urban spaces, where a charming variety of users increase urban vitality when sufficient density is provided. Urban spaces should avoid spatial separation. Ethnicity, gender, age, or the ability of different social classes and their more marginalized members should find a place in the cities without discrimination. The range of different functions and the range of different sizes are associated with user diversity. (Dovey, 2016). In other words, the diversity of the built environment embraces human diversity. The fact that the built environment embraces human diversity, that is, being inclusive, positively affects urban vitality and the quality of the built environment (English Partnerships and the Housing Corporation, 2000; DETR and CABE, 2000; The New Leipzig Charter ,2020; ACE, 2019; Davos ,2018).

4.1.4 Density

"In Scandinavia an old proverb tells it all' "people come where people are" (Gehl, 2011).

The difference between density and diversity is ignored in cities. Density is what provides diversity. Density is both the condition that provides vitality and the result of vitality.

Density is both the condition that provides vitality and the result of urban vitality. The density that provides diversity increases the urban vitality and attracts more people. When urban density is distributed in a way that supports urban vitality, it turns into wealth for the city. At the same time, the in-between density brings disaster for the city. How high the housing density is, this density will not be enough if they suppress diversity (Jacobs 1961). "*Densities can be too low where they fail to generate vitality,*

and too high where they produce standardized buildings …" (Montgomery, 1998). Density alone does not guarantee life on the street. There are urban areas with high density and poor urban and social life (Gehl, 2010).

- ***Housing Density:*** This density symbolizes the number of housing units per hectare. These numbers vary from city to city and from district to district. "*The most compact and vibrant European city, Barcelona, has an average density of about 400 dwellings per hectare" …* "*Dispersed suburban developments or high-rise blocks surrounded by vast expanses of open space have low densities (5 to 10 dwellings per hectare)"* (Urban Task Force, 1999). Montgomery stated to generate vitality dwellings densities should be over 125 per hectare (50 per acre) (Montgomery, 1998). On the other hand, to avoid the density that Jane Jacobs calls in-between density (25-50 per acre), the density of the dwellings must be more than 175 per hectare. Jane Jacobs argued that Suburban were less dense than in-between density (Jacobs 1961). However, a density matrix has been created from the examined suburbs, which argued that today's suburbs are different from the garden city suburbs and have a substantial density.

The value of the density matrix changed according to parameters such as location, re-dominant housing type, car provision. (Llewelyn-Davies for LPAC, DETR, GOL, LAT, and HC (2000)). For example, of the suburban, which consists mostly of flats, the habitable room density value per hectare is 300-450 hr/ha, while the unit density value per hectare is 100-150 u / ha (Figure 4.1.18).

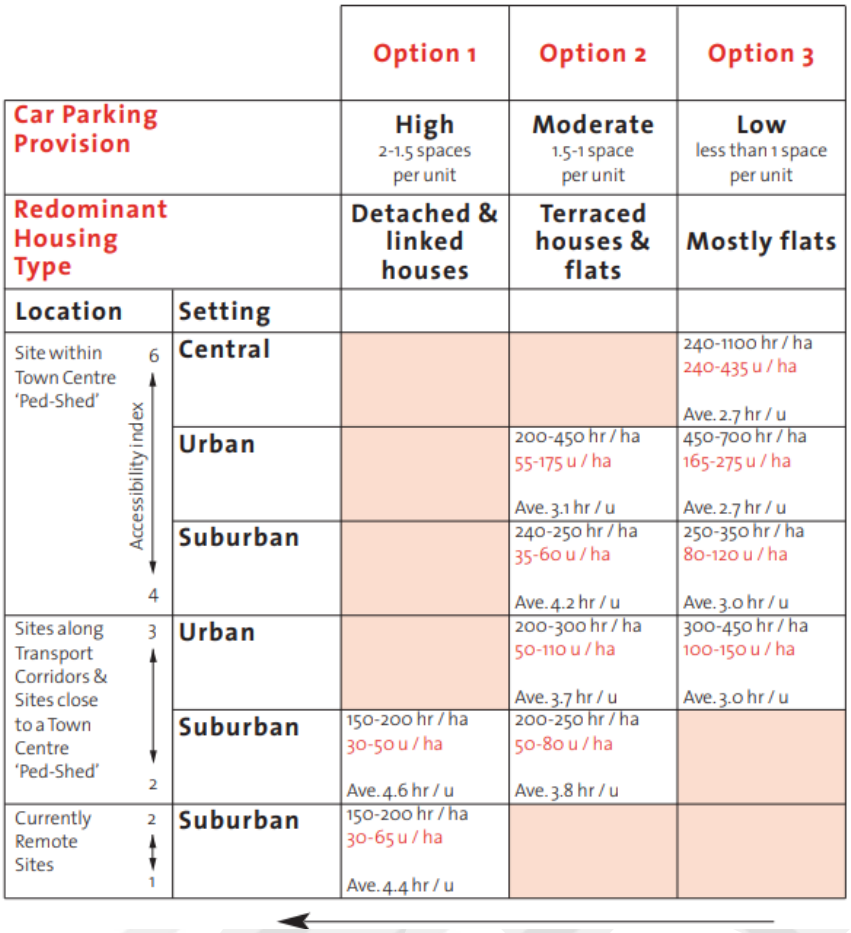


Figure 4.1.18 Density matrix Average densities are based on case studies analyzed as part of the Sustainable Residential Quality: Exploring the housing potential of large sites research (LPAC, DETR, GOL, LT and HC, 2000).(Source: English Partnerships and the Housing Corporation (2000) Urban Design Compendium 1, London).

- ***Coverage:*** "*In general terms on any area of urban land buildings occupy a certain 'footprint' with a particular height and percentage of 'coverage' across that site. The most common measure of building density is the total built floor area as a proportion of the site area – variously termed 'Floor Area Ratio' (FAR), 'Plot Ratio' or 'Floor Space Index (FSI)*" (Dovey, 2016).

The coverage of the buildings directly affects the use of public space. Urban blocks with medium coverage define the public-private area clearly, the front facades of urban blocks usually connect with the public space, but all four facades

of high-rise point blocks with low coverage should establish the right connection with the public space (Figure 4.1.19).

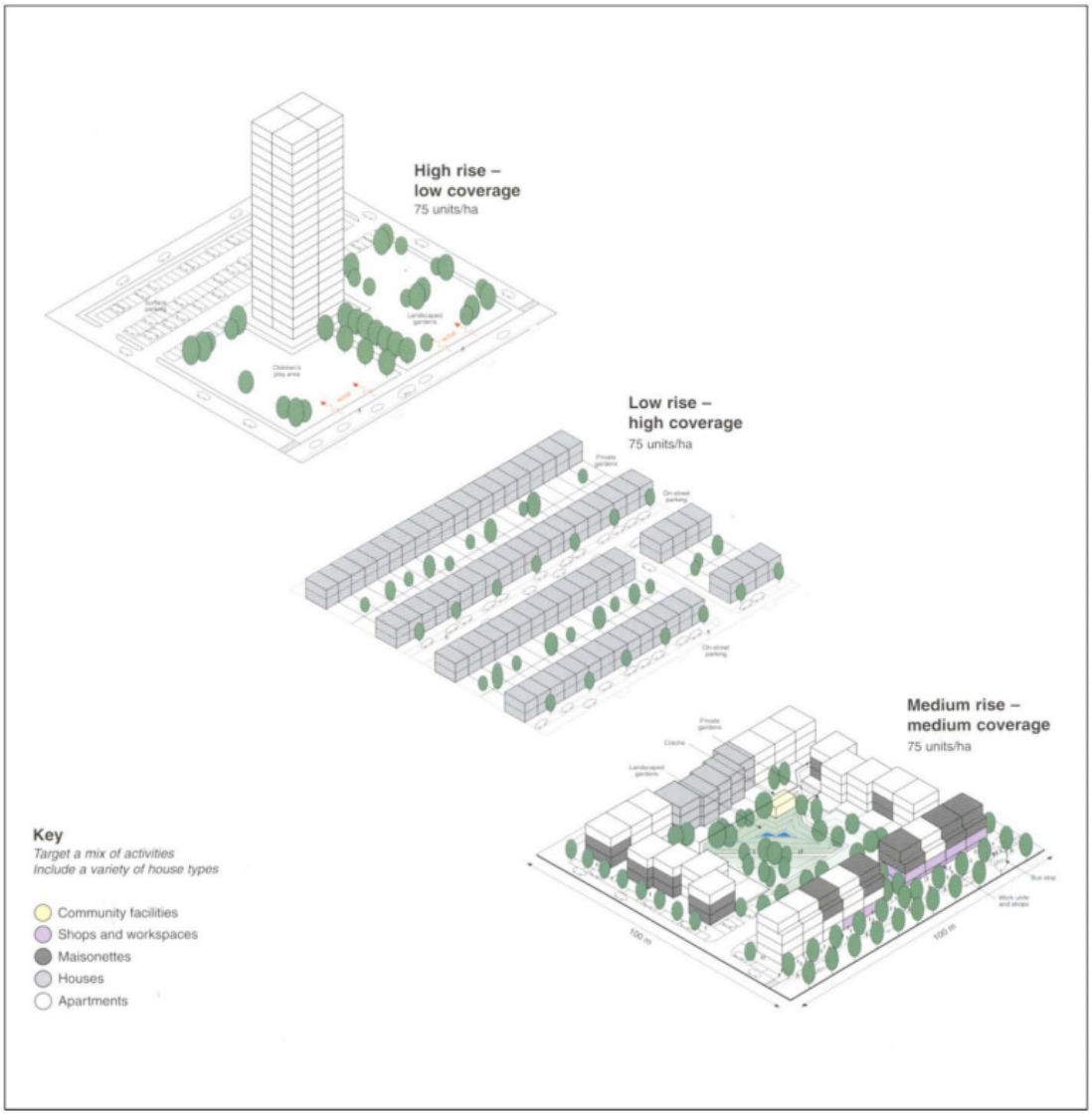


Figure 4.1.19 Relationship between density and urban form (Source: Urban Task Force, Towards an Urban Renaissance, London: Crown Copyright, 1999)

The coverage rate, which affects the public space and building relationships, is also directly related to urban vitality. Jane Jacobs emphasized that the coverage ratio should be between 60 and 80 percent (Jacobs 1961).

4.1.5 Animating the Edges

The pulling of human movement towards edges is defined as the edge effect. Active edges and revitalization of edges have been the proposed city movements to increase urban vitality and provide security. Jane Jacobs emphasized active edges with the need for small blocks conditions. Short blocks are not a purpose; they are tools that serve a particular purpose.

The purpose is to break this monotonicity by including people in the plans. Short city blocks offer benefits to people for streets and corner turns (Jacobs 1961). The Edges have a decisive influence on life in city space. The Edges should make a vital contribution to spatial experience and awareness while offering a sense of organization, comfort, and security. Edges provide interaction between buildings and people, and edges provide opportunities for human activities such as sitting and standing (Gehl, 2010). Public spaces and edges have togetherness. If there are active public spaces, they have active edges. (Dovey, 2016).

- ***Active Edge:*** Kim Dovey emphasized the definition of active edges in terms of the frequency and transparency of entrances. The frequency of different entries and the multiplicity of entries produce a flow. A high level of transparency ensures across borders from public to private and vice versa. (Dovey, 2016). Jan Gehl described an active edge as a soft edge; the soft edge should have the following features: *transparent, welcoming, and active façades that give the city space a fine human scale just where it means most: up close and at eye level* (Gehl, 2010).

Making edges ‘active’ or 'soft' this means (Figure 4.1.20, Figure 4.1.21):

- *Getting the right scale and rhythm by frequent doors and windows, with few blank walls.*
- *Providing transparency through lively internal uses visible from the outside or spilling onto the street.*
- *Appealing to many senses.*
- *Having rich textures and details.*
- *Creating narrow units with mixed-use*. (English Partnerships and the Housing Corporation 2000; Gehl, 2010).



Figure 4.1.20 Soft edges and hard (Source: Gehl, Jan 2010 Cities for People, Washington: Island Press)



Quincy Market, Boston, USA: A 100% active location



Poundbury, Dorset: Frequent doors and windows onto the street



Exposing blank walls to the public realm should be avoided

Table 5.3 Active frontage guidelines	
Grade A frontage	
• More than 15 premises every 100m	• No blind facades and few passive ones
• More than 25 doors and windows every 100m	• Much depth and relief in the building surface
• A large range of functions	• High quality materials and refined details
Grade B frontage	
• 10 to 15 premises every 100m	• A few blind or passive facades
• More than 15 doors and windows every 100m	• Some depth and modelling in the building surface
• A moderate range of functions	• Good quality materials and refined details
Grade C frontage	
• 6 to 10 premises every 100m	• Very little depth and modelling in the building surface
• Some range of functions	• Standard materials and few details
• Less than half blind or passive facades	
Grade D frontage	
• 3 to 5 premises every 100m	• Flat building surfaces
• Little or no range of functions	• Few or no details
• Predominantly blind or passive facades	
Grade E frontage	
• 1 or 2 premises every 100m	• Flat building surfaces
• No range of functions	• No details and nothing to look at
• Predominantly blind or passive facades	

Adapted from Gehl, 1994

Figure 4.1.21 Active frontage guidelines (Source: English Partnerships and the Housing Corporation (2000) Urban Design Compendium 1, London)

4.1.6 Improve the Public Realm

Improve the public space means achieving urban integration. The public realm is considered as comfortable, accessible, safe, and interacting with people, buildings, and another public realm. The public space is an exterior living room for enjoying the urban experience, for a range of different activities from outdoor dining to street entertainment, for civic or political functions, and above all for walking or sitting (Urban Task Force, 1999). Therefore, it is essential to develop public spaces that provide social interaction and urban vitality. In addition, the issues of improving public space require public art, street furniture, lighting, and signage, a well-designed landscape (English Partnerships and the Housing Corporation, 2000).

- ***Signage:*** Signage makes public space legible but if signage is not well designed, can be a clutter problem, and can often be misleading. Signage should help find not only cars but also strangers who find them walking around one-way systems. It should have a consistent and coordinated design that legible the structure of the space.

- ***Lighting:*** Public spaces that make users feel comfortable and safe with good visibility and useful lighting, especially paying attention to vehicle/pedestrian intersections (English Partnerships and the Housing Corporation, 2000). It helps the eyes that watch the street, which is vital for the vitality and crime prevention stressed by Jane Jacobs (Jacobs 1961).
- ***Urban Furniture:*** In all open spaces of the city, for various open space functions where the user is uncertain, mostly fixed service sets and structures are called urban furniture. Urban furniture, together with the concept of the city, meets the evolving needs of users because of certain processes (Haris, 1988). Urban furniture should be a part of the city. It should ensure the environment is lively, dynamically, according to needs and location relaxing or should be entertaining and informative, reflect an inviting quality to be used, should create safe, healthy, protective environments.

Urban furniture includes *seats, fences, shelters, boxes, posts, lights, posts, or signs*. All of this should be handled with care, and design features include:

- Removing the surplus and obsolete; to create visual logic that pedestrians, cyclists, and drivers will understand easy.
- Designing urban space elements in such a way that their functions are clear
- Certain elements, such as service control boxes, are in places. It should be best hidden in the landscape or on the edge of a building.
- Producing a comprehensive and coordinated strategy of urban elements for each space, according to the context of the *landscape, buildings, and flooring*. (English Partnerships and the Housing Corporation, 2000).

- ***Open and Green Space:*** People make them successful by using the parks or doom them to extinction by not using them. Successful parks do not hinder the complex functioning of the city; they help to connect different functions. Parks should be prevented from being massive single uses and creating borders. Because parks that turn into border vacuums cause destructive neighborhoods. Parks should be prevented from being massive single uses and creating borders. Because parks create border vacuums effect causes destructive neighborhoods. The border vacuum effect means that massive areas such as railways, water coasts, campuses, highways, parks attract people for single-use and reduce the vitality of areas adjacent to these borders (Jacobs 1961).

Accessibility to parks and open spaces are significant. They are offered within walking distance. *"Local parks are ideally placed within 3-5 minutes' walk (250 - 400m) of the majority of homes"* (English Partnerships and the Housing Corporation, 2000).

4.1.7 Human Dimension

While *the human dimension* is overlooked and haphazard in the design of dozens of cities, many other issues, such as adapting to the rapidly increasing car traffic, have come into the focal point. Realizing the vision of *vibrant, safe, sustainable,* and *healthy cities* of the 21st century has become a general and urgent need. To meet this need, the human dimension should be considered in cities. Urban vitality, safety, sustainability, and health are four desires for cities the realization of the desires can be possible with the strong reinforcement of walking and cycling, in connection with the daily activities that attract people to urban spaces (Gehl, 2010). How urban spaces handle the human dimension has a positive or negative impact on the vitality of urban spaces. Urban spaces that focus on the human dimension also positively affect urban vitality. Focusing on the human dimension means designing cities according to human mobility and human scale (Figure 4.1.22). They ensure the biological basis for activities, behaviors, and communication in urban spaces.

The human scale is generally a dimension rooted in human senses and behavior, resulting in a smaller and lower height of the constructed components. It is designed based on experience at eye level, such as coping with *sensory stimuli and using dimensions related to the human body*. The Walk-up height building helps maintain the connection between the first and upper floors. This is the distance at which the eyes can focus and collect useful information, the voice can be heard, and the hearing can distinguish between different sounds. Buildings up to 5 stories usually meet these criteria (Figure 4.1.23). A small space is a safe and comfortable place to spend time and meet people. There is a kind of psychological coziness that accompanies a particularly small space, the comfort, and soothing that promotes intimacy and cheerfulness. Humans have the best ability to walk and interpret the environment at eye level, interact with and react to the environment. The face is the place where human senses are concentrated, where we communicate and express most of our emotions (Gehl, 2010).

What happens at eye level is of utmost importance when we enter the room and when we encounter the surroundings. Therefore, the urban type should work best at the ground floor level. What happens at the first 3 meters of altitude connects us with that place. It provides interaction people to the buildings with the windows and doors, building materials, patterns, and colors, but also to the people, "*the quality of human-scale elements such as smaller dimensions, sensory experiences, and care at eye level, should be consistent through a neighborhood and not just exist in isolated spots"* (Sim, 2019). Consequently, not ignoring the human scale in cities that develop disconnected from human scale helps to create healthy, sustainable, and safe urban spaces with high vitality.

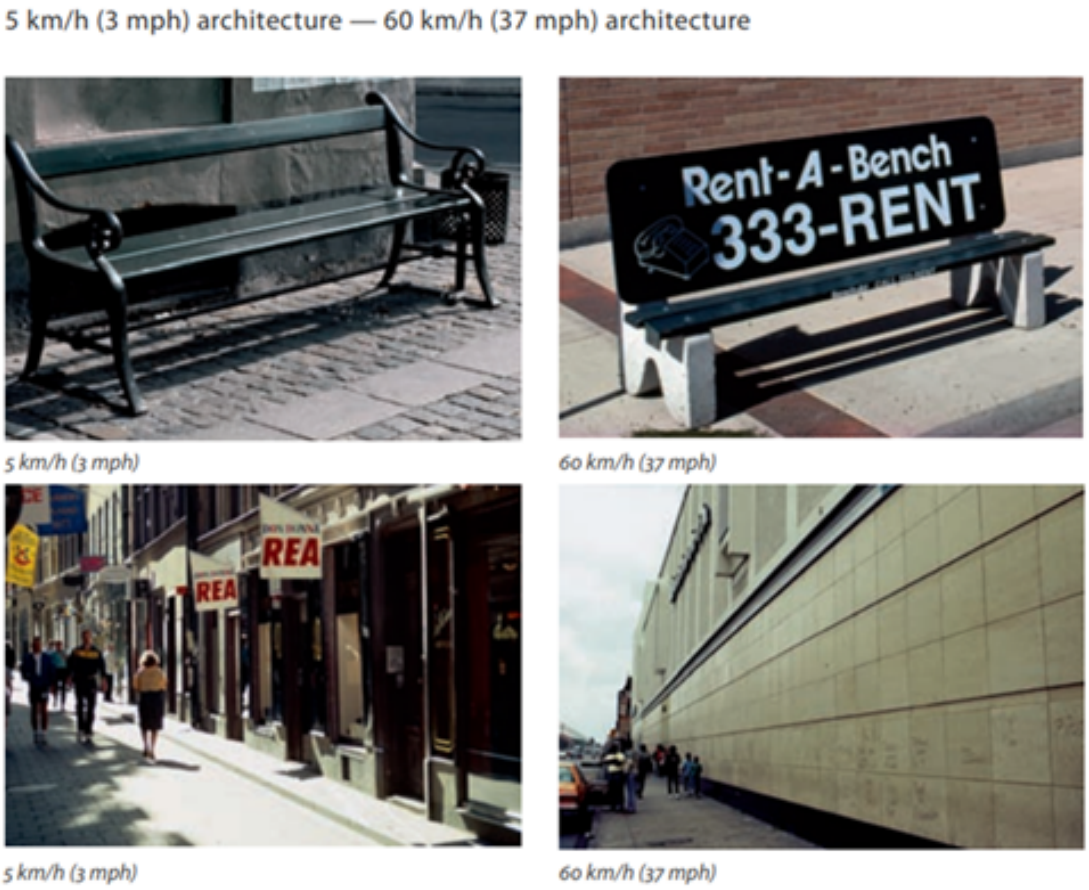


Figure 4.1.22 Human and car scale (Source: Gehl, Jan, 2010 Cities for People, Washington: Island Press)

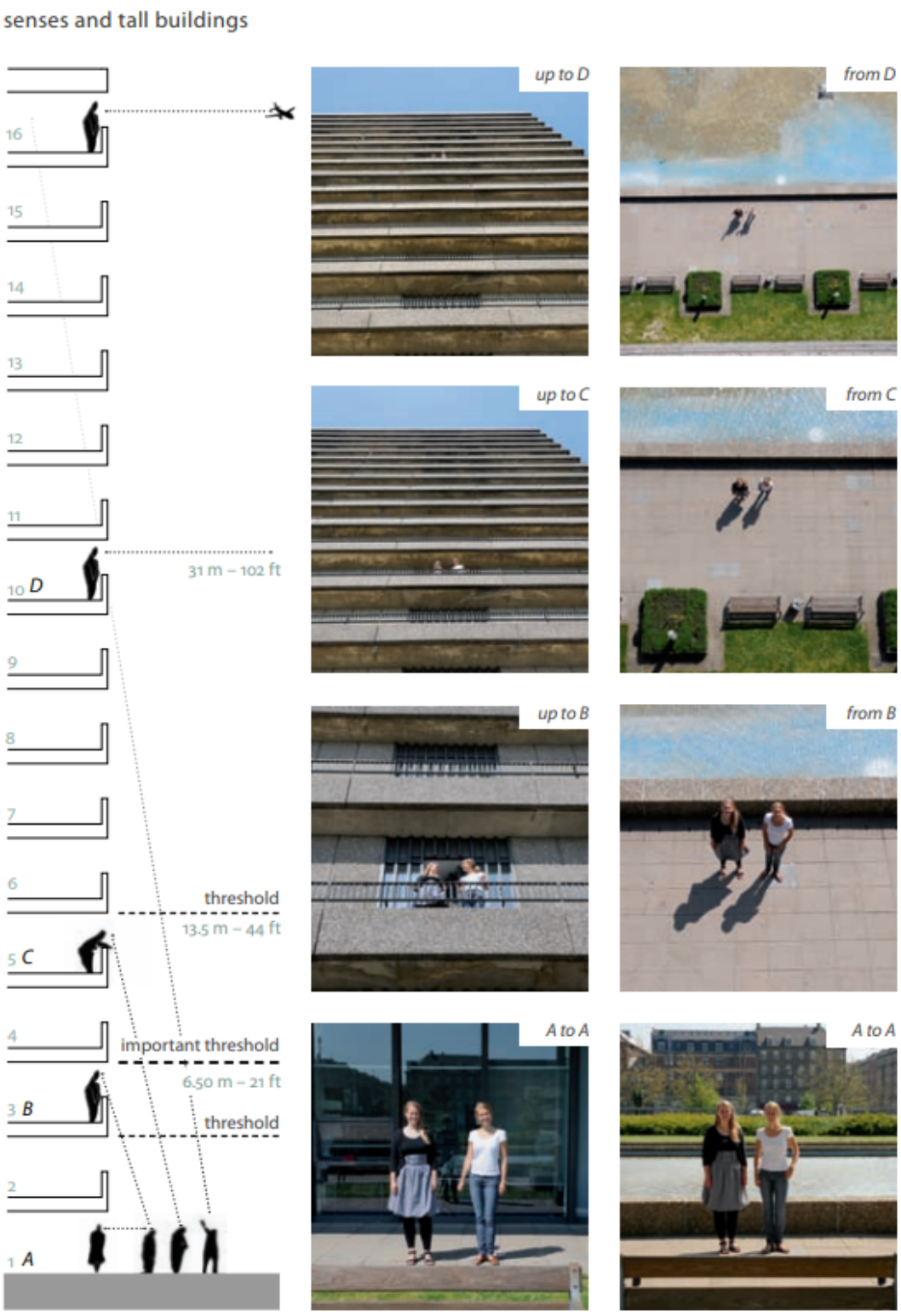


Figure 4.1.23 Sense and tall building (Source: Gehl, Jan, 2010 Cities for People, Washington: Island Press)

4.2 Analysis of Urban Vitality in Suburban of İldem

The built environment of three building groups determined in the suburb of İldem has been illustrated, and the urban vitality has been evaluated by using maps. The numerical data seen in the conclusion part of most of the urban vitality studies will not be included in this chapter. Because expressing the human factor in urban vitality research with only numerical values will contribute to cities created that design only statistics and probability calculations. The results that we illustrated and mapped instead of the numerical values resulting from the case study will contribute to a better understanding of the subject of the thesis. In this subtitle, since many urban vitality conditions have been described in a single illustration and map, some urban vitality conditions are explained together.

4.2.1 Context

Every pattern tells a story about its relationship with its environments whether at the scale of large neighborhoods and cities or small urban furniture. People can experience and read these stories on a human scale, sometimes as horror, romance, or even science fiction genre in urban spaces. While patterns that tell urban spaces with a high crime rate and low urban vitality create horror stories, patterns that activate human emotions tell romantic stories, and due to the smart city concept, urban spaces surrounded by technology tell science fiction stories. The story of the three building groups discussed within the scope of the thesis will be looked at, starting with the context condition, and continuing with other urban vitality conditions. For sure, as the people living in these three building groups will define, their stories may not be divided into genres. Still, by looking at the story structure, some inferences can be made about their effects on humans and contributions to the stories to be created in the future. If each building group has been likened to the main character in the story, the context conditions would be the sections that introduce us to the main character in the story. These main characters have been introduced with urban concepts such as site characters, flexibility, legibility, and landmarks. This title aimed to understand the context with the maps created for each building group, the illustrations of the buildings, in conclusion, the road and building patterns of the building groups.



Figure 4.2.1 İldem C Context Map

İldem C building group and its built environment consist of high-rise point blocks (Figure 4.2.2). They created semi-public spaces by surrounding the area where they were located with different types of edges. These semi-public spaces can be described as permeable due to multiple pedestrian and vehicle entrances and the absence of elements that limit these entrances. Another example of permeability is seen in the building typologies of İldem C. The fact that this building has two separate entrances and special ramps for the disabled facilitates permeability. Since İldem C buildings were built in similar high-rise point blocks areas, it will be difficult to distinguish the İldem C buildings from the others. However, with the landmarks, İldem C has become a well-known building group in the suburb of İldem. Two landmarks stand out for İldem C. The first is the İldem tram line and stops, which can change the transportation system of the suburb of İldem, and the second is the shopping center that turns İldem C and its built environment into the center of İldem suburban. İldem C buildings are composed of buildings with a uniform function. It inhibits the possible functional, activity, and demographic changes that will occur in the buildings. Although the demographic characteristics of the people who will live here in the future may change, it includes people of similar social status. The following illustrations show the building belonging to the İldem C building group (Figure 4.2.1).



Figure 4.2.2 İldem C Building Type

While İldem C buildings were built in the area where the point blocks are dense, İldem D buildings were built behind this density (Figure 4.2.4). The fact that the area where İldem D was built is mostly empty caused İldem to be the dominant pattern. The areas around İldem D buildings were limited by various edges and semi-public areas were created. Playgrounds, sitting, and parking areas were designed in this semi-public area. However, the permeability of the semi-public areas was limited by controlling the pedestrian and vehicle entrance from semi-public to public or vice versa. If there are shops on the ground floors of the buildings, their entrance is provided from the front of the buildings, and the entrances to the residences are provided from the rear. The buildings have two entrances, one of which is actively used and the other is a fire exit connected to the escape ladder in case of danger. İldem D has created an architectural style with factors such as the location of the buildings, housing typology, and mixed-use, and this style has become distinctive from its built environment. Especially since the villas in the İldem D project are the first villa typologies of the İldem suburb, they have become the landmarks of İldem D and its built environment (Figure 4.2.5).

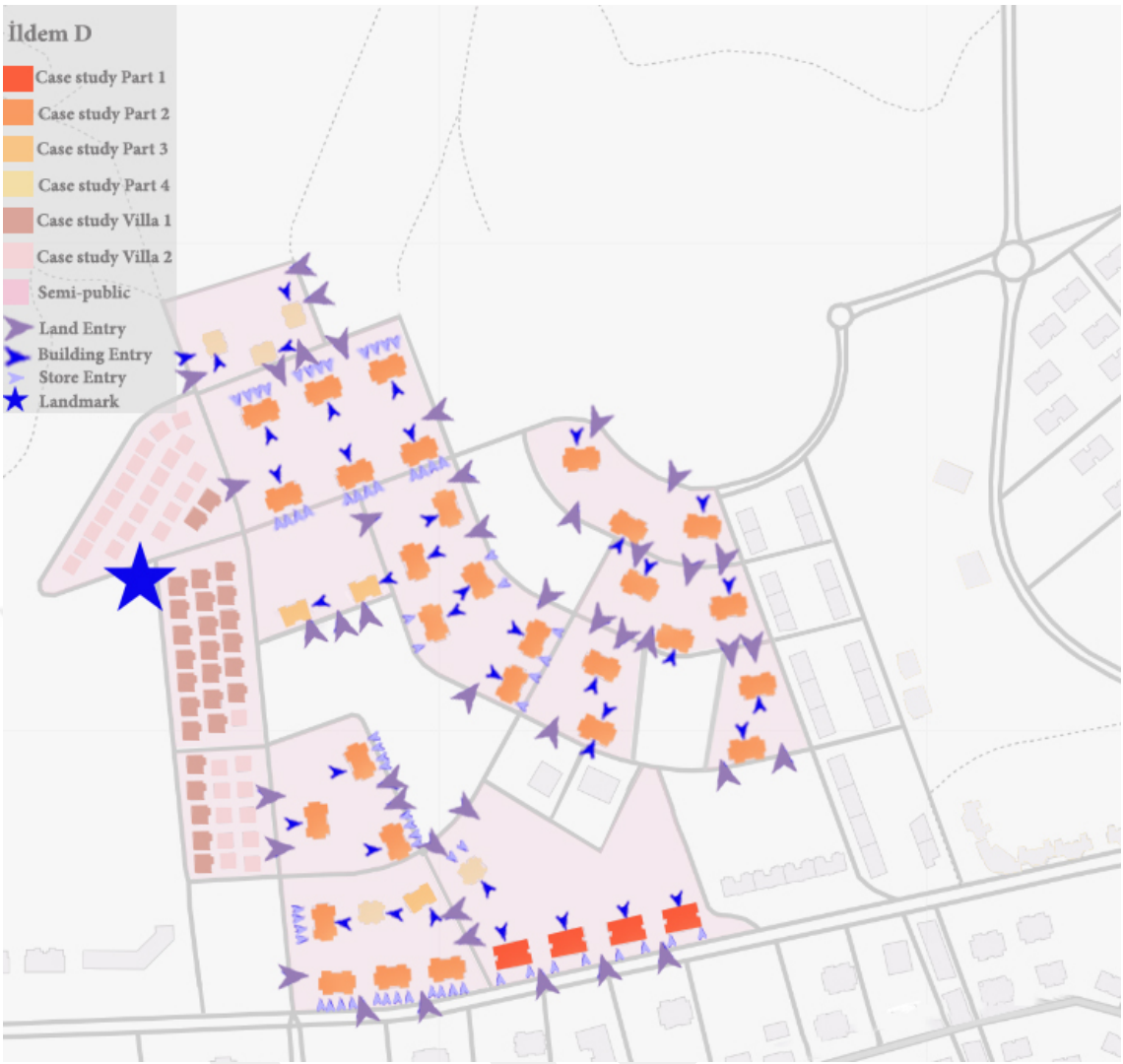


Figure 4.2.3 İldem D Context Map

İldem D provides flexibility by creating diversity such as housing typology and mixed-use. From this aspect, the İldem D project embraces population, function, and activity change. The fact that İldem D has been hosted by many people from different demographics, and income groups and its shops have been used in many functions up to the present is proof of flexibility (Figure 4.2.3).

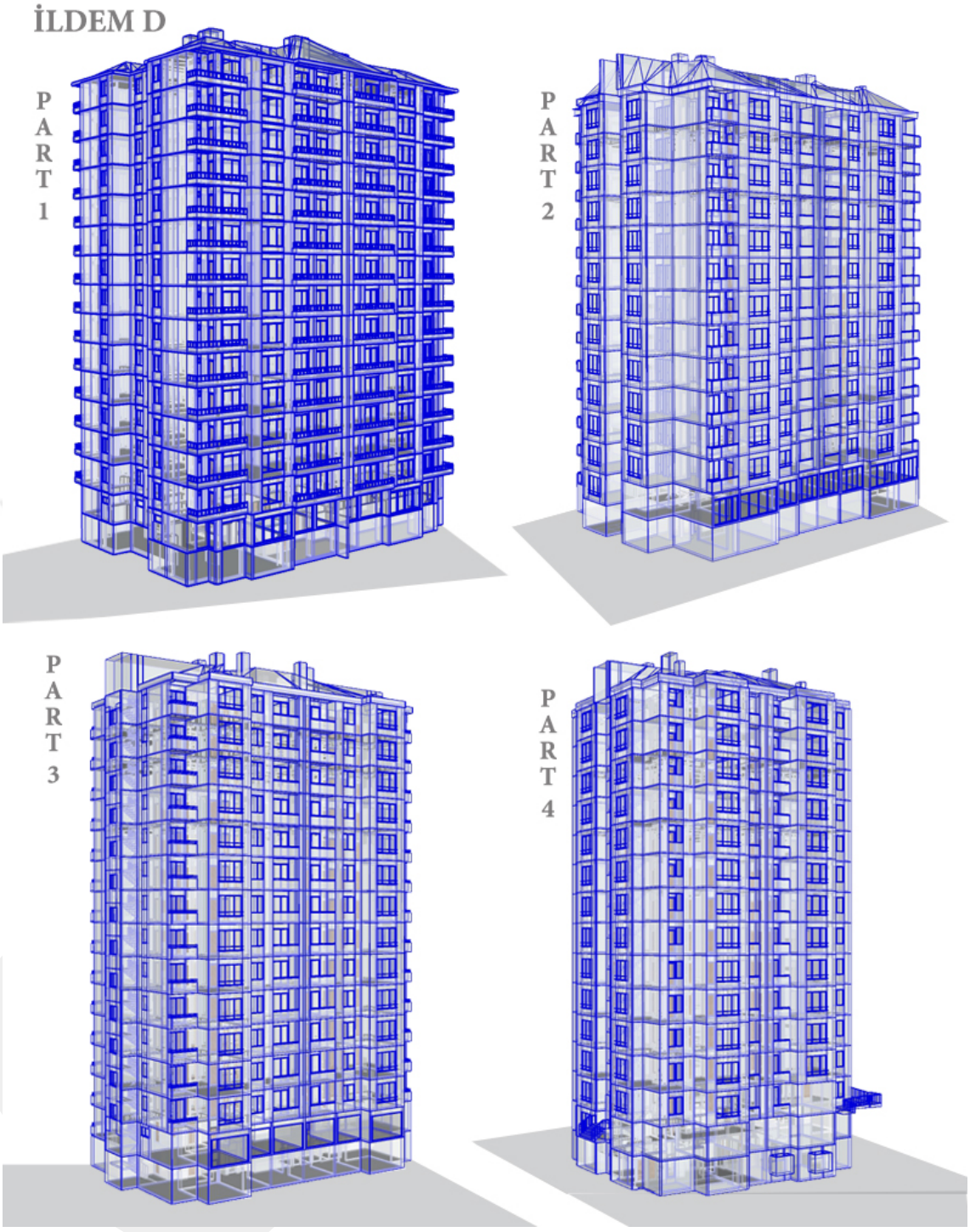


Figure 4.2.4 İldem D Building Types

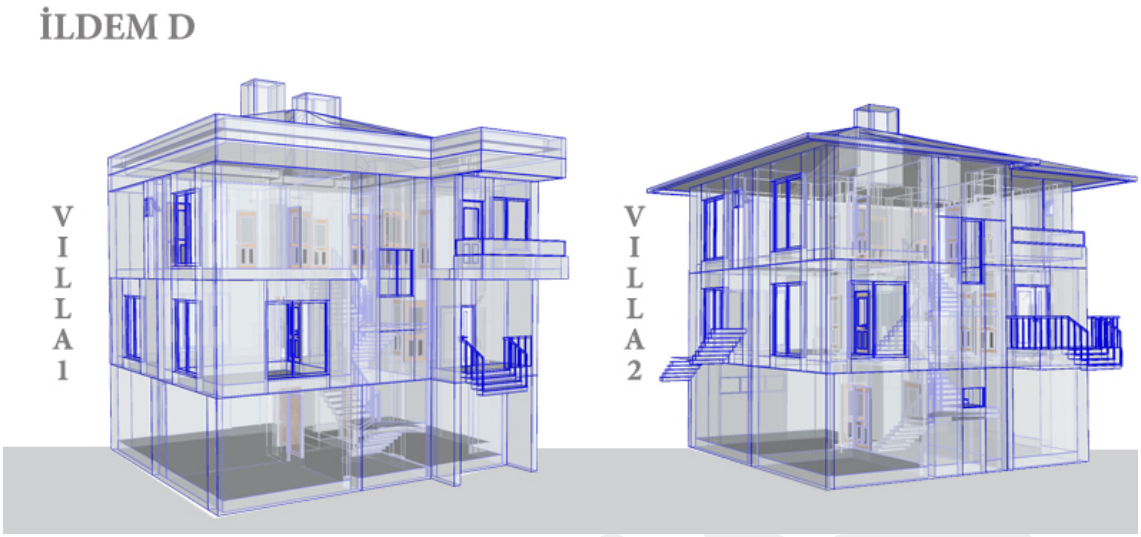


Figure 4.2.5 İldem D Villa Types

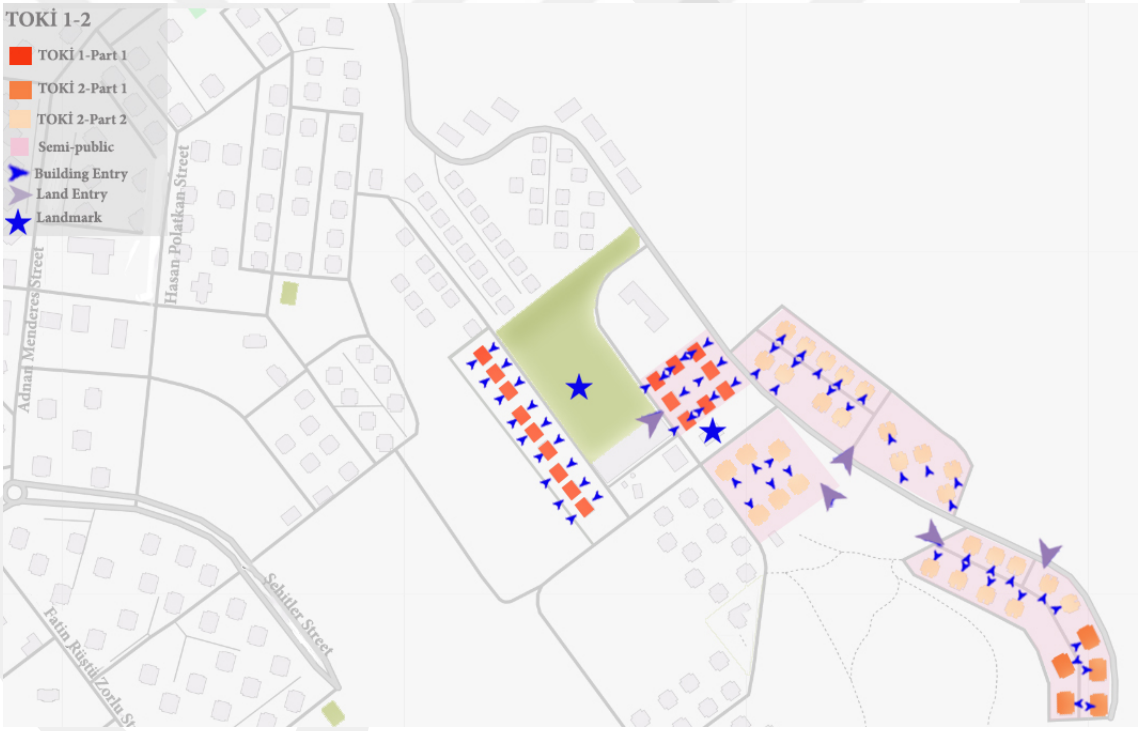


Figure 4.2.6 TOKİ 1-2 Context Map

TOKİ 1 and TOKİ 2 are low-rise building groups in the suburb of İldem, whose dominant pattern consists of high-rise point blocks (Figure 4.2.7). These two building groups, located on lands close to each other, tell two different stories about their relationship with the city. With its location and 4-story housing typology, TOKİ 1 building group establishes an extroverted relationship with the city.

The entrances provided from two different levels in the TOKİ 1 building group ensure the permeability of the buildings. TOKİ 2 has been built beside a 15 m wide roadside

with a slope; this has caused TOKİ 2 building groups to establish introverted relationship with the city. The semi-public areas in the middle of TOKİ 2 buildings serve as courtyards. These courtyards, which not facing the street, are the meeting and interaction places of the residents. TOKİ 1-2buildings were easily distinguishable from their surroundings in the first years after they were built with low-rise and different plan typologies. However, after they have been surrounded by low-rise buildings, they became difficult to distinguish. The park and public health center building in TOKİ 1-2 center are landmarks, increasing the legibility of these building groups (Figure 4.2.6).

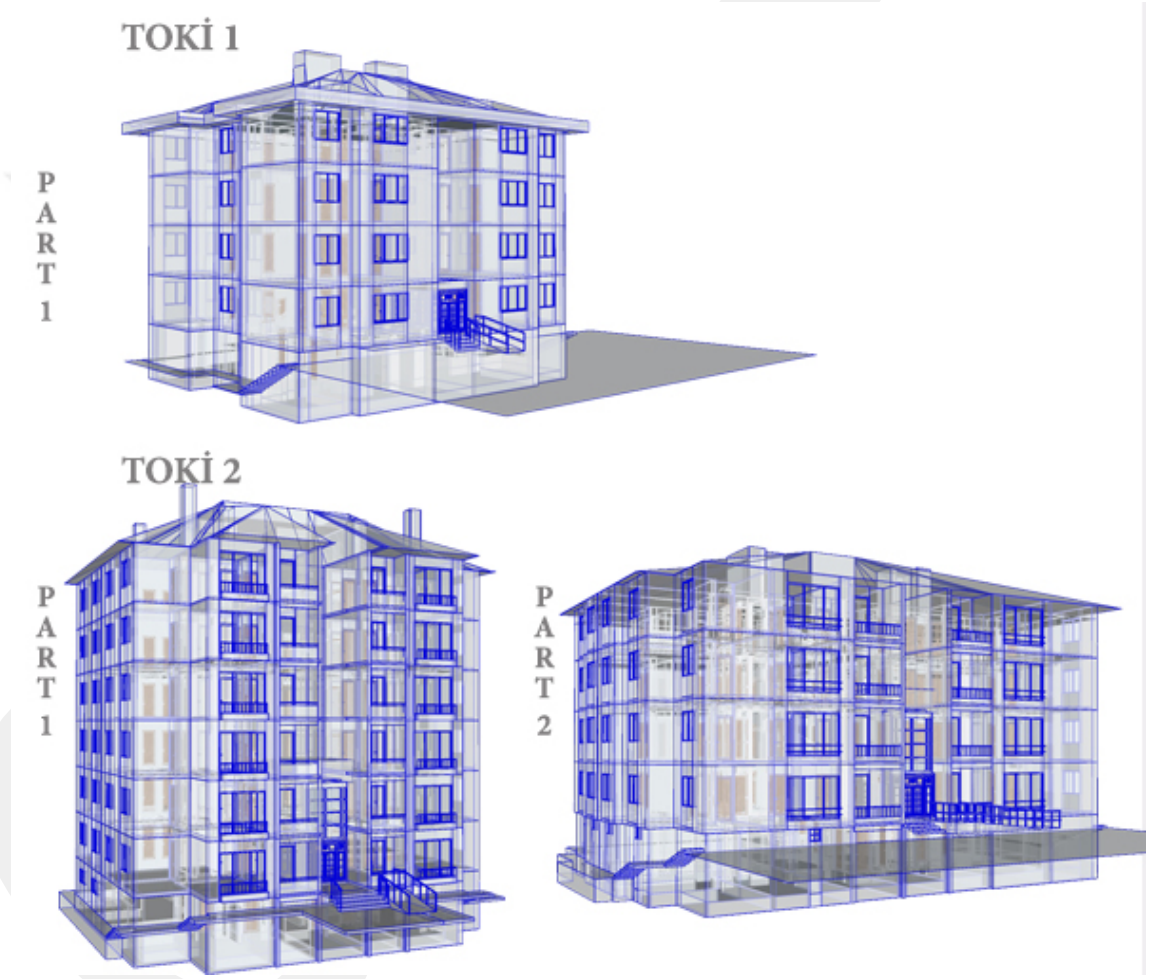


Figure 4.2.7 TOKİ 1-2 Building Types

The plan typology of the TOKİ 1 and TOKİ 2 buildings was built with a different perspective for the suburb of İldem. This perspective attracted people with different type of users to the region, but they were not designed to be flexible enough to keep up with the population structure, function, and activity changes.

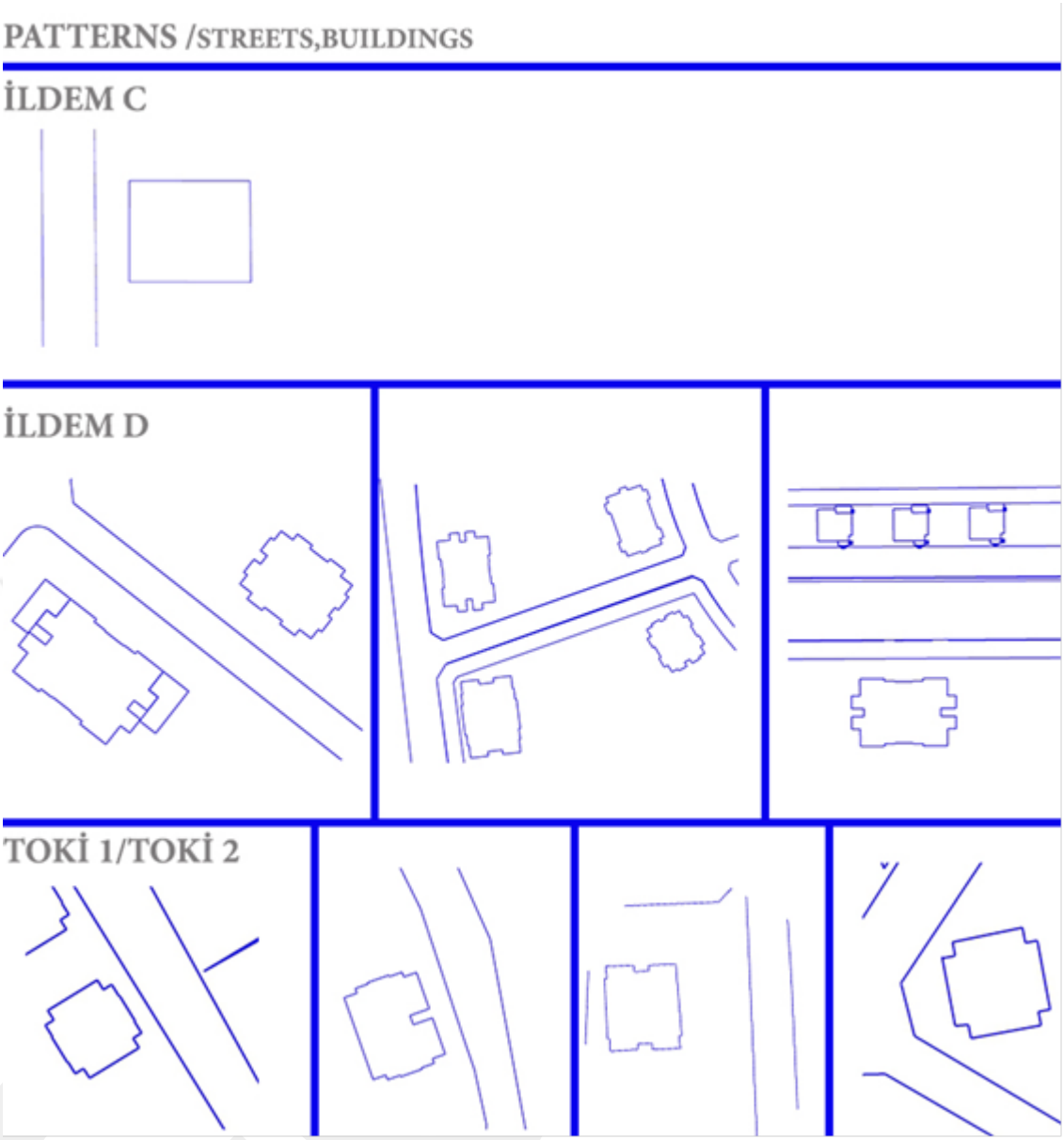


Figure 4.2.8 İldem C, İldem D TOKİ 1-2 Streets and Building Patterns

The buildings and street patterns of İldem C, İldem D, TOKİ 1 and TOKİ 2 building groups have been shown in Figure 4.2.8 the relationship between the buildings and the street and how they affect city patterns has been aimed to be shown (Figure 4.3.8).

4.2.2 Diversity

Urban spaces must create diversity by destroying monotony and boringness. Because the diversity provides variety of user, pedestrian, and activities, and increases urban vitality. The diversity of the three building groups examined within the scope of the thesis has been discussed in two sections. The first is mapped mix-uses in building groups. The uses surrounding the building groups and their diversity have been

determined on the maps. The second is the housing typologies that provide user diversity. To understand the typologies of the building groups, the plans have been illustrated with the furnishings in the projects. In addition, it was aimed to show the human dimension which is the urban vitality conditions in the typologies of the building groups by illustrating the plans in three dimensions. Thus, these detailed illustrations allowed comparing the plans of the building groups within themselves and with others.



Figure 4.2.9 İldem C diversity analysis map

When these two diversity sections have been mapped and illustrated in three buildings groups, the following results emerged. İldem C building group does not offer mix-uses. However, the mixed uses that serve with the buildings around İldem C disrupt the uniformity formed around this building group. Parks, schools, small and large-scale commercial areas, and public buildings, which find a place among the many high-rise buildings around İldem C, destroy the atmosphere of the concrete jungle created by high-rise buildings. Mix uses that create diversity have been shown in the İldem C diversity analysis map (Figure 4.2.9). When examining diversity of the housing typology building group, it is encountered in the uniformity of the housing typologies as in the mix- uses. All the buildings in the İldem C have the same plan, only the length of the ramps at the entrance and the shape and number of the stairs were shaped according to the building site. As a result, it has been observed that there is a relationship between İldem diversity conditions: Although İldem C does not produce diversity, it benefits from the diversity of the built environment.

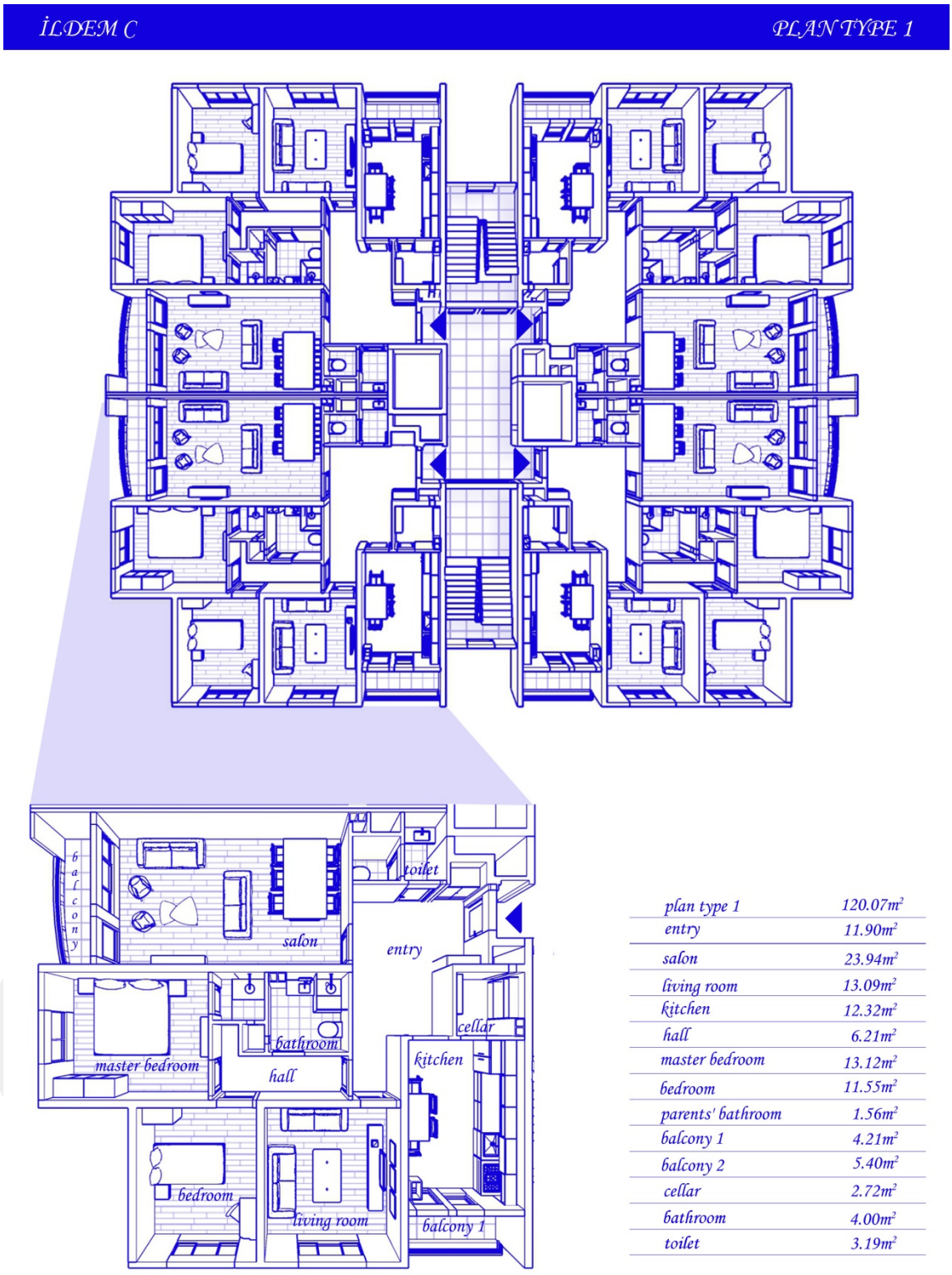


Figure 4.2.10 İldem C Plan Type 1

Plan type 1, the only plan type of the İldem C building group, consists of two bedrooms, a living room, a salon, and a kitchen. In addition to İldem C housing units, a cellar, a parents' bathroom, and toilet units were added.

By separating the two bedrooms and bathroom from the other parts of the house with a hall, privacy is ensured, while connection to the city is established through the balconies in the kitchen and salon (Figure 4.2.10, Figure 4.2.11).

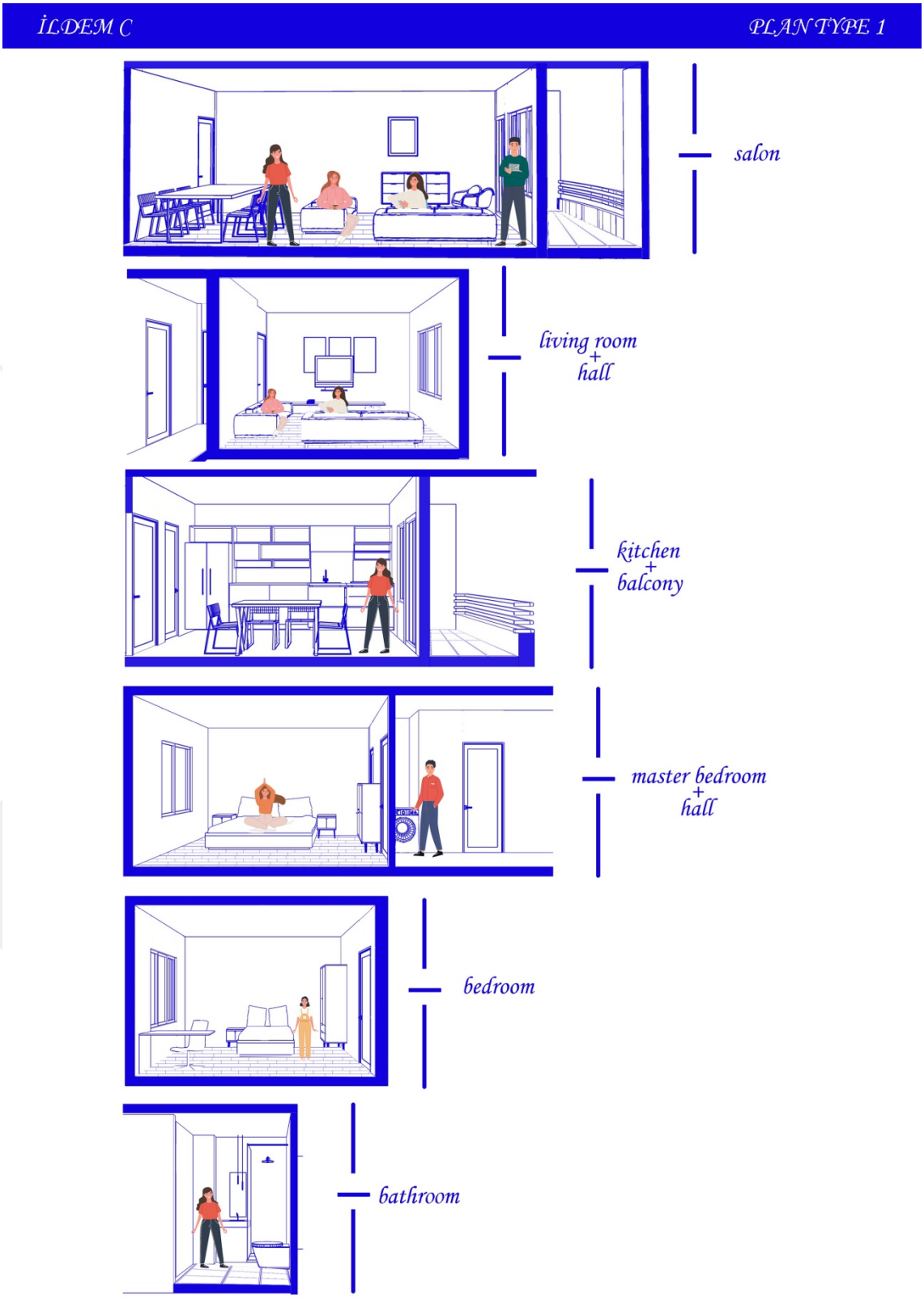


Figure 4.2.11 İldem Type 1 Section Illustrations

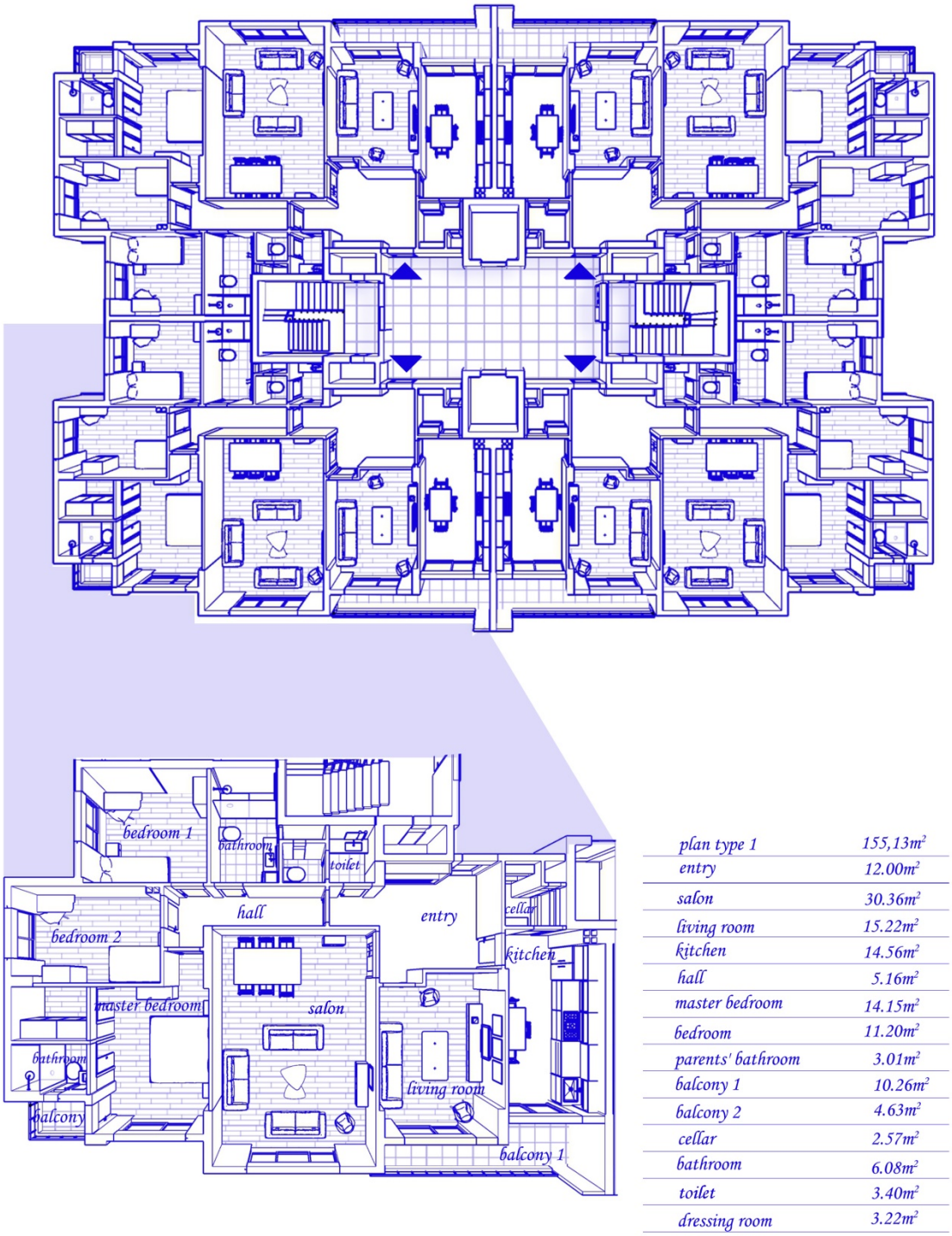
After the İldem C project, the İldem Mass Housing Building Society achieved its goal of going beyond the standardized housing typology of the İldem suburb with the İldem D project. With the large and small-scale shops in some of the İldem D buildings, it contributes to ensuring diversity. These shops serve as markets, greengrocers, barber shops, and clothes shops. The commercial areas shown in the İldem D diversity analysis map are two-story building groups built to serve surrounding buildings and İldem although some of these commercial buildings, which have just started to serve, are empty, they help to break the monotony (Figure 4.2.12).



Figure 4.2.12 İldem D Diversity Analysis Map

İldem D produced the first villa typology of the suburb of İldem as well as four different housing typologies. Consisting of a series of buildings of different sizes, İldem D provides mixed use with a different range of functions, while attracting users of various ages, genders, abilities, and social classes with its different housing typology. İldem D housing typology plans and illustrations of housing units have been shown as follows.

Plan type 1 is the largest building typology of the İldem D building group. It consists of 3 bedrooms, a living room, and a salon, in addition to a cellar, parents' bathroom, dressing room, and toilet units. The continuation entrance is separated by a door, and bedrooms and bathrooms are separated from the other housing units (Figure 4.2.13, Figure 4.2.14).



plan type 1	155,13m²
entry	12.00m²
salon	30.36m²
living room	15.22m²
kitchen	14.56m²
hall	5.16m²
master bedroom	14.15m²
bedroom	11.20m²
parents' bathroom	3.01m²
balcony 1	10.26m²
balcony 2	4.63m²
cellar	2.57m²
bathroom	6.08m²
toilet	3.40m²
dressing room	3.22m²

Figure 4.2.13 İldem D Plan Type 1

Although Plan Type 1 offers comfortable living space with its large units, the balconies opening from the kitchen and master bedroom do not offer a comfortable space due to their shape.

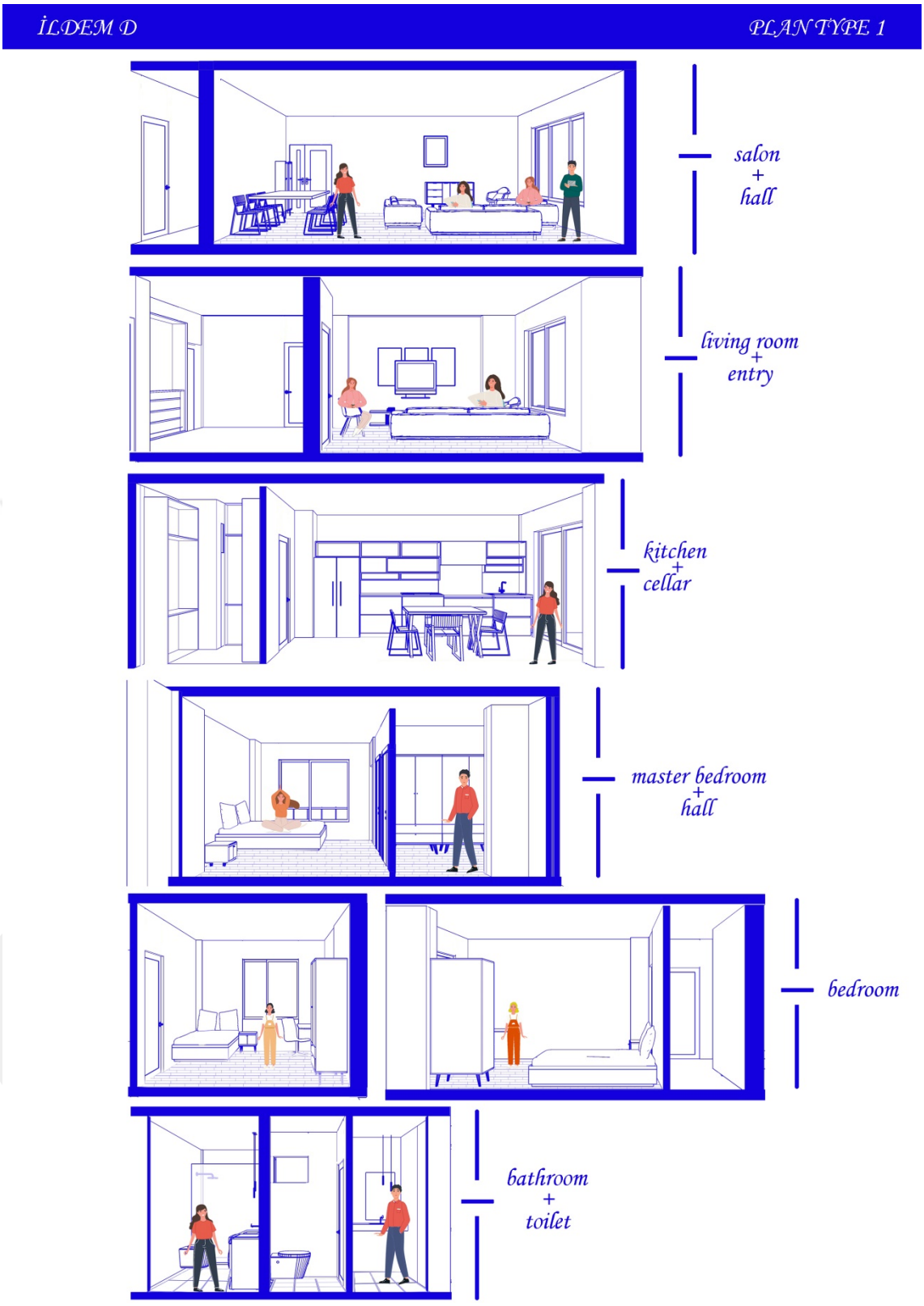
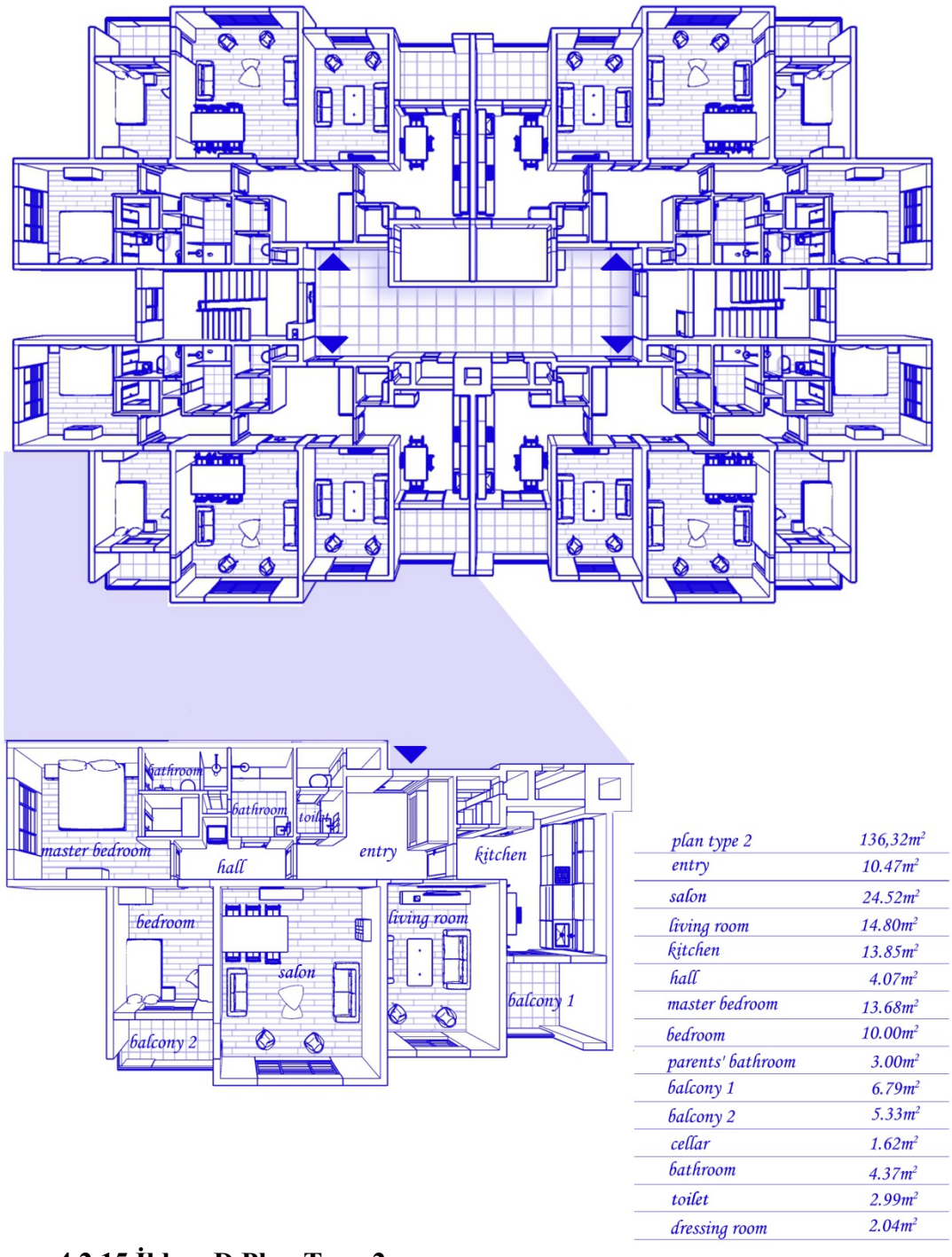


Figure 4.2.14 İldem D Type 1 Section Illustrations



plan type 2	136,32m²
entry	10.47m²
salon	24.52m²
living room	14.80m²
kitchen	13.85m²
hall	4.07m²
master bedroom	13.68m²
bedroom	10.00m²
parents' bathroom	3.00m²
balcony 1	6.79m²
balcony 2	5.33m²
cellar	1.62m²
bathroom	4.37m²
toilet	2.99m²
dressing room	2.04m²

Figure 4.2.15 İldem D Plan Type 2

Plan Type 2 has been designed in smaller square meters than Plan Type 1, it consists of two bedrooms, a living room, a salon, and a kitchen.

Although the balconies, which provide the relationship of the housing units with the city, are fewer in square meters than plan type 1, the plan has been designed more useful (Figure 4.2.15, Figure 4.2.16).

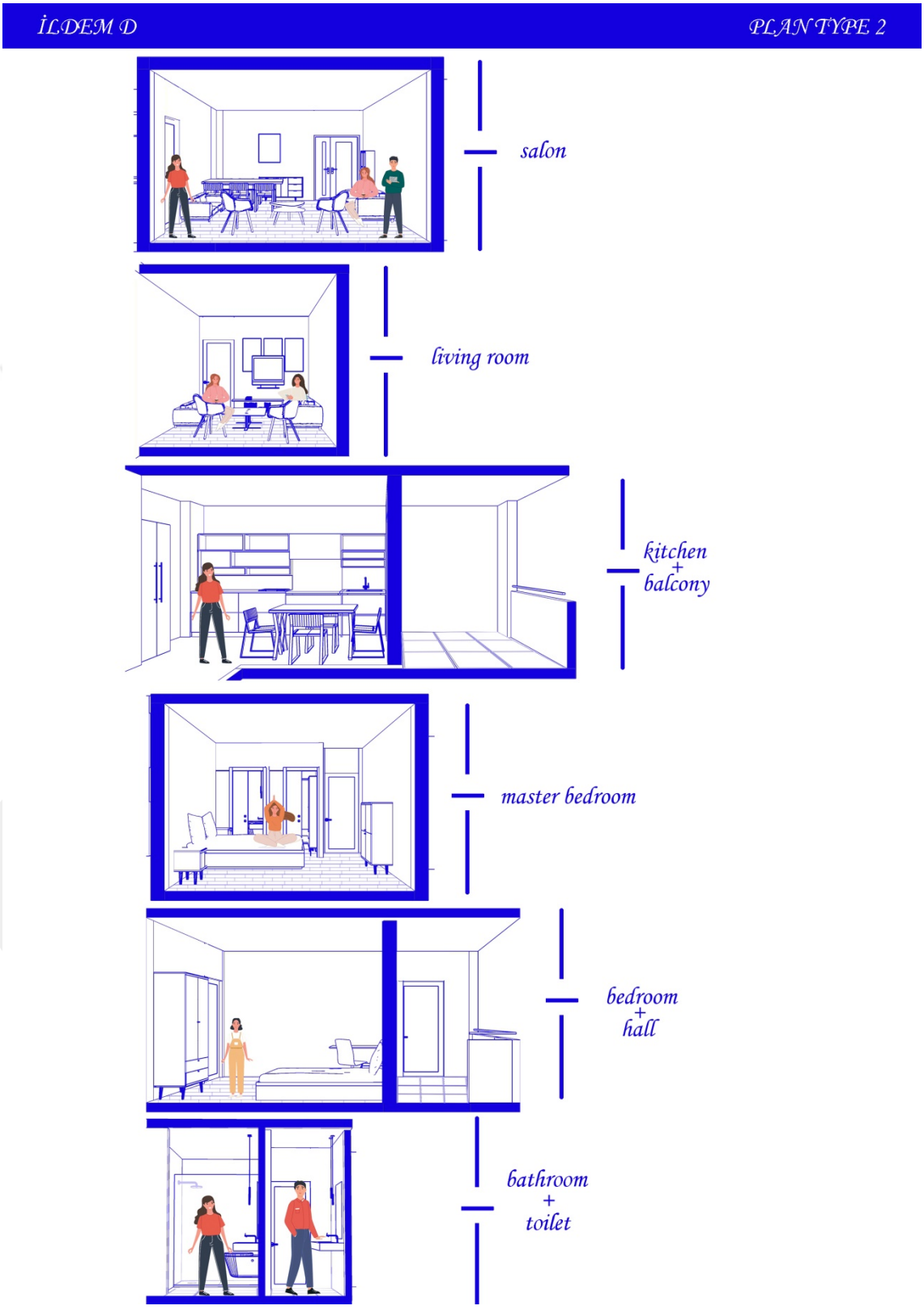
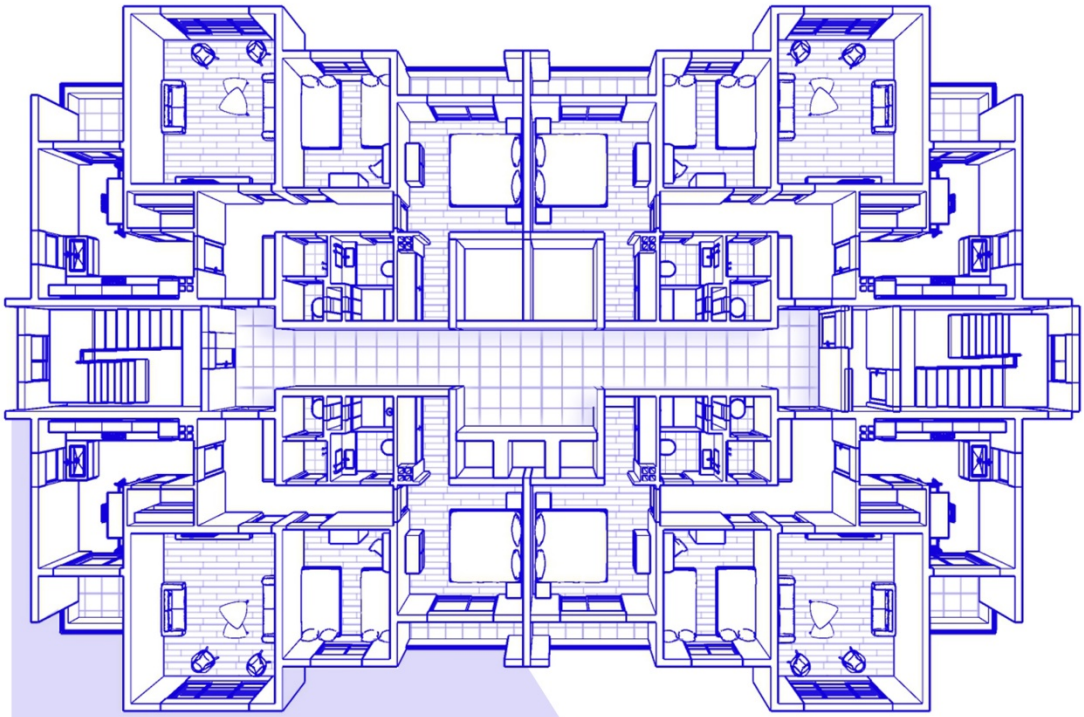
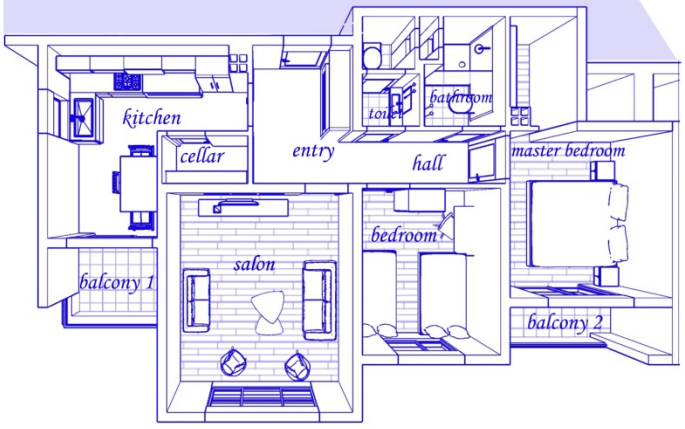


Figure 4.2.16 İldem D Type 2 Section Illustrations





plan type 3	96,60m²
entry	6.00m²
salon	18.33m²
kitchen	15.17m²
hall	3.50m²
master bedroom	11.90m²
bedroom	10.15m²
balcony 1	4.50m²
balcony 2	4.00m²
cellar	1.80m²
bathroom	3.50m²
toilet	2.64m²
dressing room	3.40m²

Figure 4.2.17 İldem D Type 3 Plan

Plan Type 3 has been designed as two bedrooms, a salon, and a kitchen unit. The hall, that connects the bedrooms and bathroom, has not been separated by the door, and permeability has been provided to the bedroom units from the entrance. The master bedroom and kitchen have been designed differently from other plan types due to the added cellar and dressing room units(Figure 4.2.17, Figure 4.2.18).

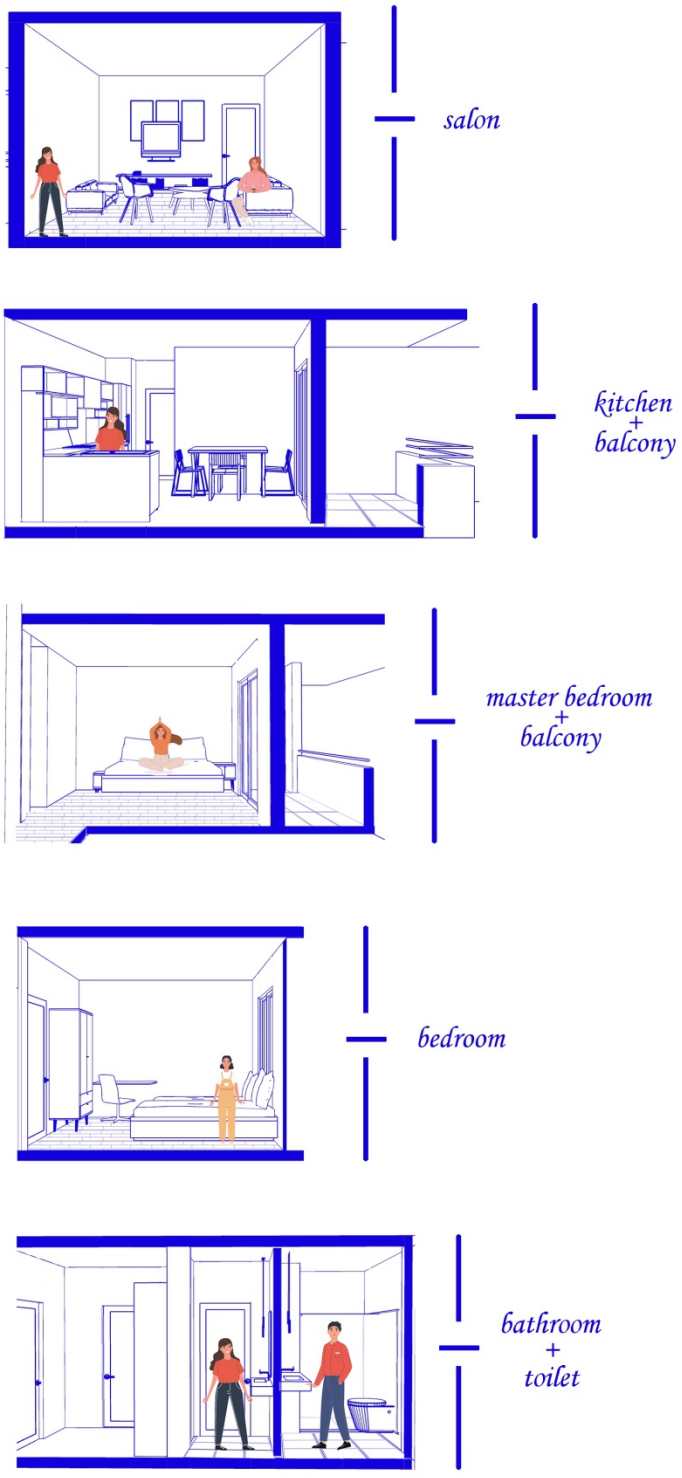


Figure 4.2.18 İldem D Type 3 Section Illustrations

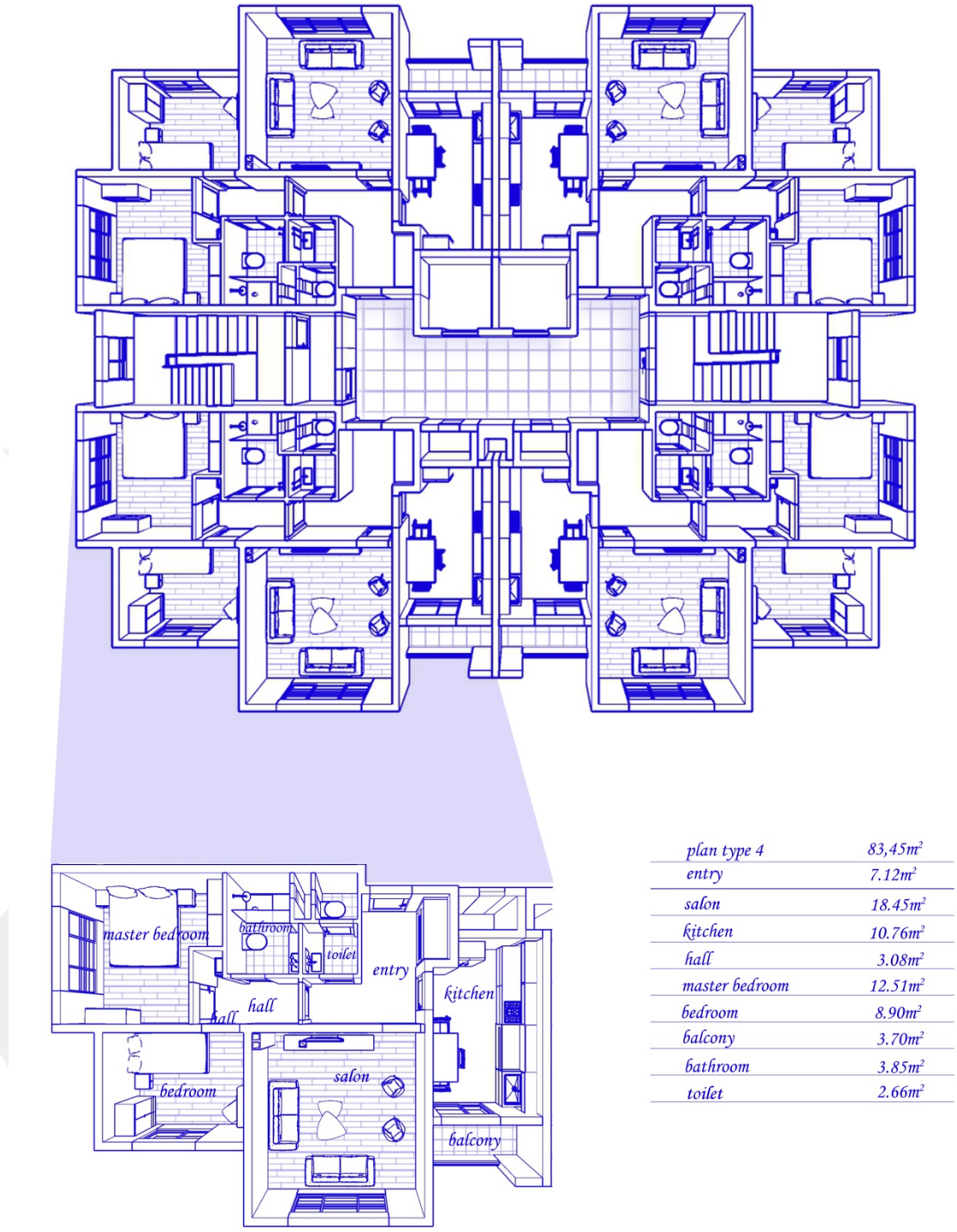


Figure 4.2.19 İldem D Plan Type 4

Plan Type 4 is the smallest square meter plan type of the İldem D building group. Plan Type 4 has been designed with bedrooms, a living room, and a kitchen, while the dressing room, parent's bedroom, and the killer have not been included in the design (Figure 4.2.19, Figure 4.2.20).

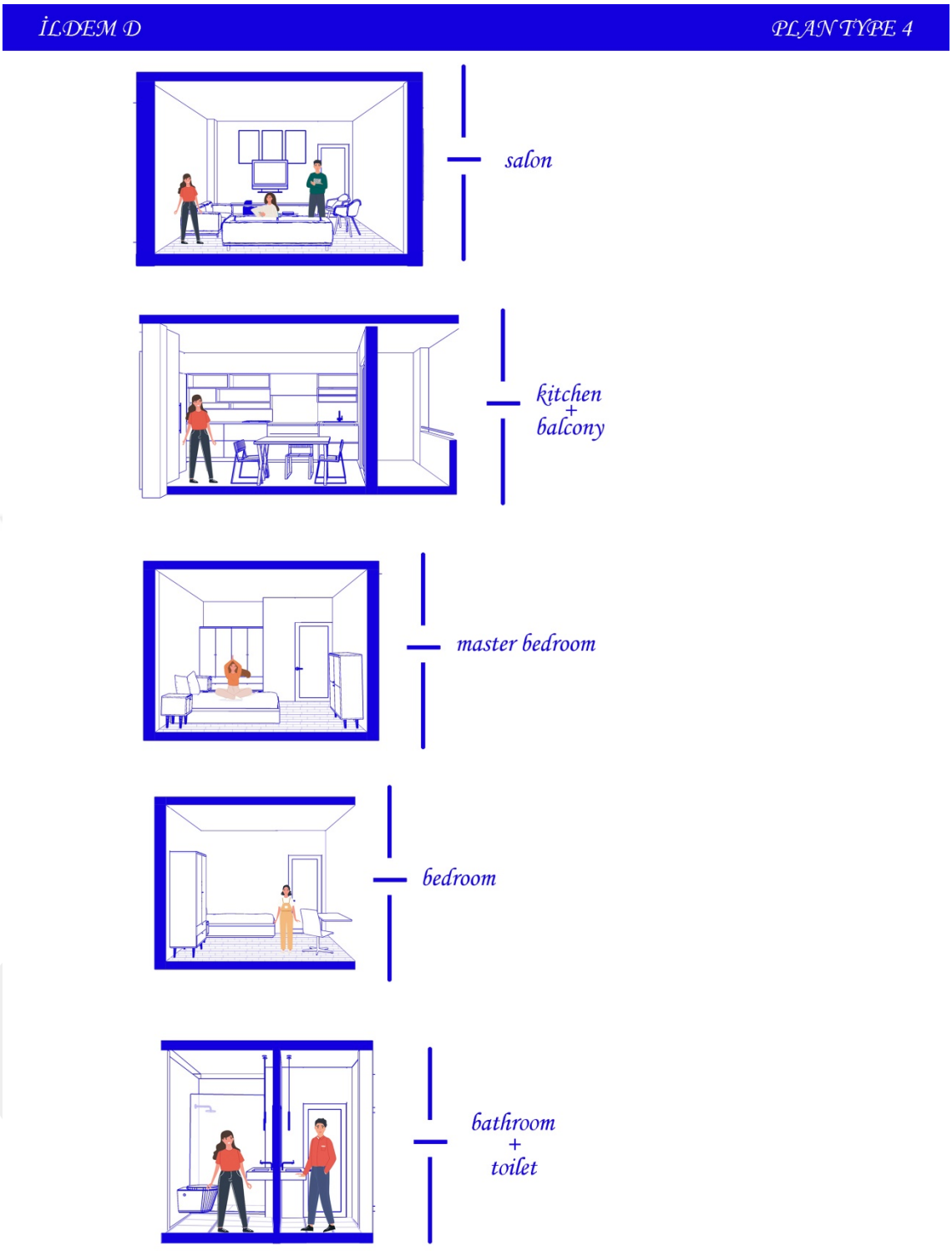


Figure 4.2.20 İldem D Type 4 Section Illustrations

Villa typology, one of the plan types of İldem D, is the first villa typology of the İldem suburb. Although the İldem D building group includes two different villa typologies, these villas have the same typology except for the square meters and the added units.

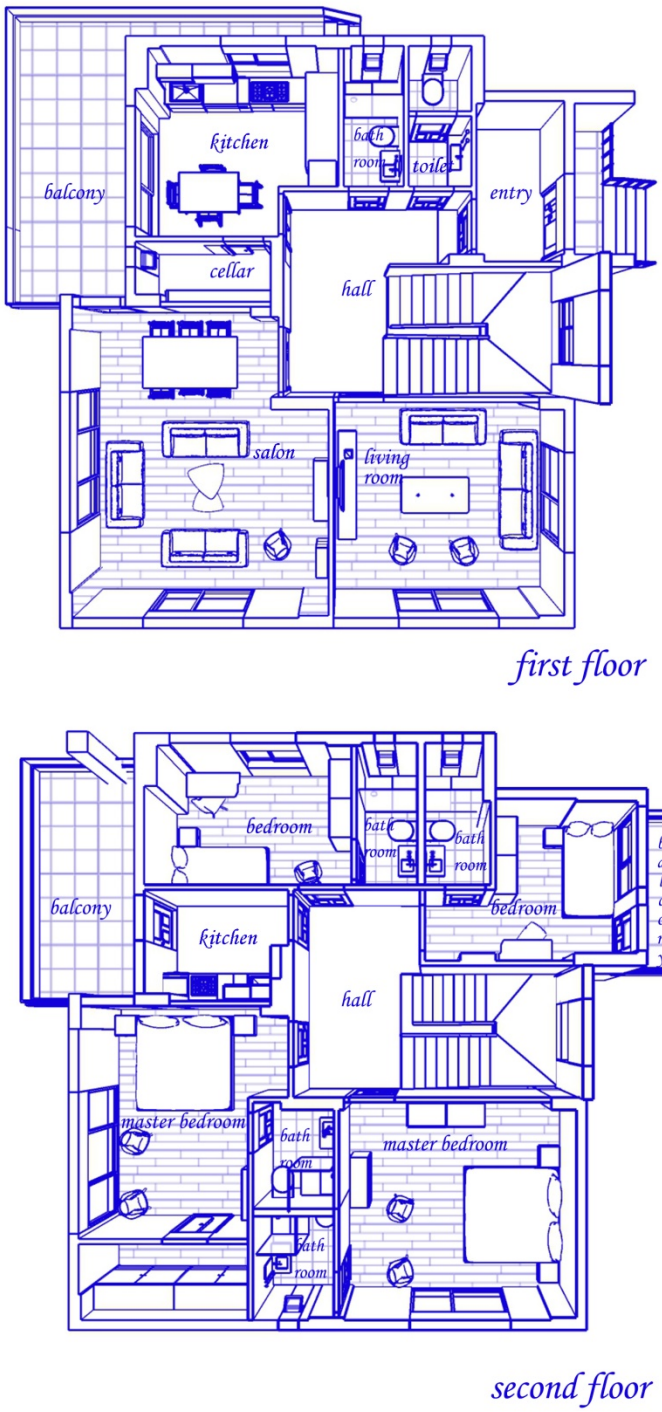
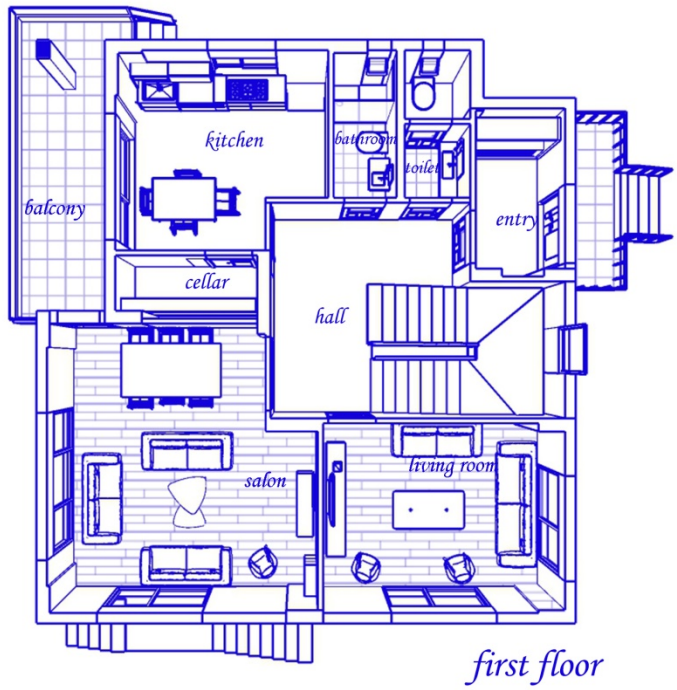


Figure 4.2.21 İldem D Villa Plan Type 1

The Villa Plan Type 1 ,and Type 2 first floors have a similar plan type including a kitchen, living room, living room, bathroom, and toilet. On the second floor, a bathroom for each bedroom was added in Villa Plan Type 1, while a dressing room and bathroom have been added only to the master bedroom in villa plan type 2 (Figure 4.2.21).



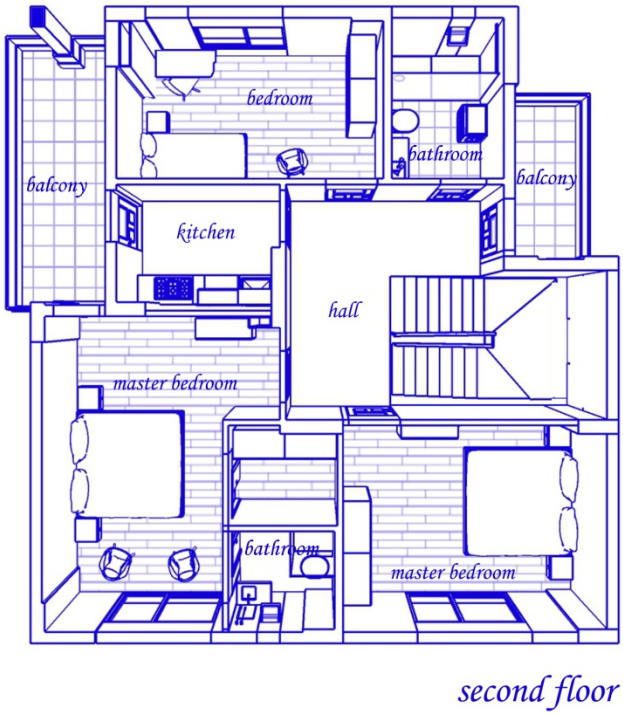


Figure 4.2.22 İldem D Villa Plan Type 1

Since the villas are located in a closed site system, they do not directly connect with the surrounding streets, so Villa Type 1, and 2 balconies connect with the garden instead of connecting with the city (Figure 4.2.22).

TOKİ 1 and TOKİ 2 are building groups built to provide cheap housing and not for mixed-use. İnstead of producing their diversity like İldem D, these building groups benefit from the diversity created by the built environment around them, like İldem C. As indicated in the diversity analysis map of TOKİ 1-2, the parks, educational buildings, prayer hall, recreation facilities, and public buildings where between TOKİ 1 and TOKİ provide diversity, while these mixed uses draw attention to TOKİ 1-2(Figure 4.2.23).

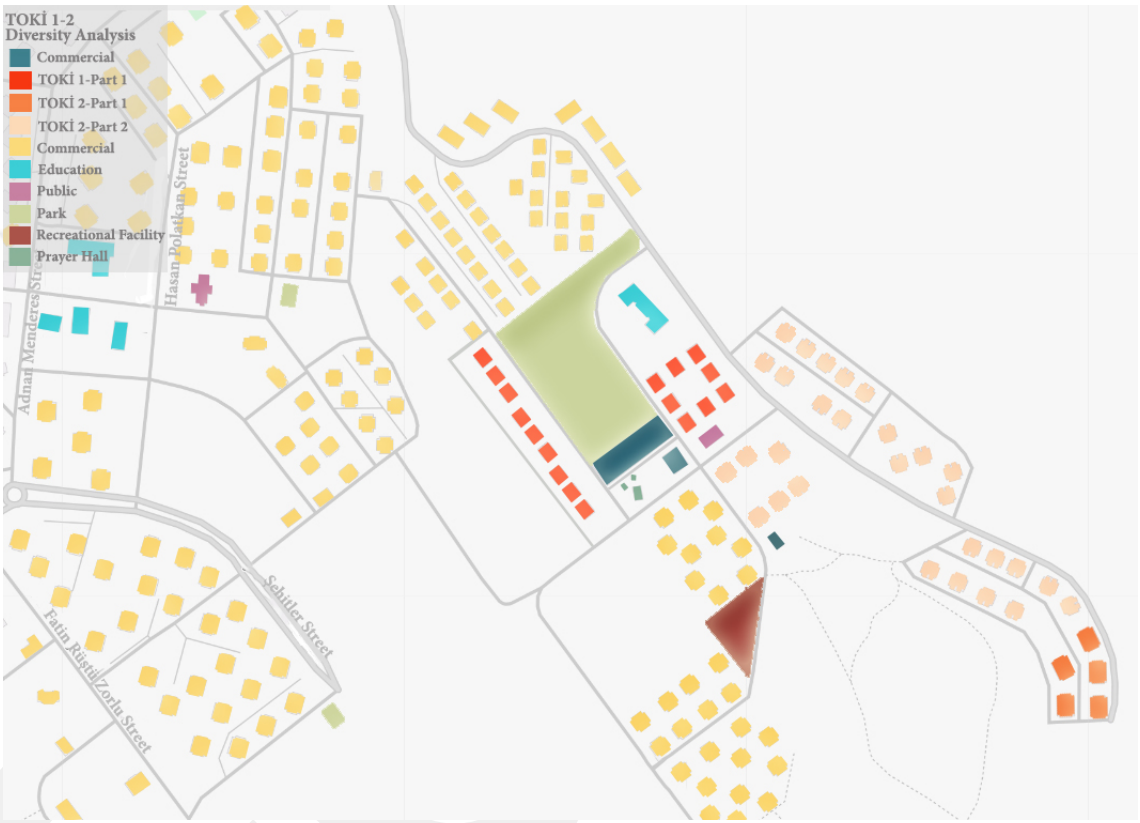


Figure 4.2.23 TOKİ 1-2 Diversity Analysis Map

When the housing typology diversity of TOKİ 1 and TOKİ 2 have been examined. Has been seen that while TOKİ 1 produces a single type of house typology, TOKİ 2 produces two different house typologies. Although it does not offer Six different housing typologies as in the İldem D project, TOKİ 1 and 2 created diversity not at the scale of houses, but the urban scale. The low-rise construction of TOKİ 1 and 2 enabled the surrounding building groups to be low-rise. Thus, diversity has been provided in the suburb of İldem, which mostly consists of multi-story point blocks.

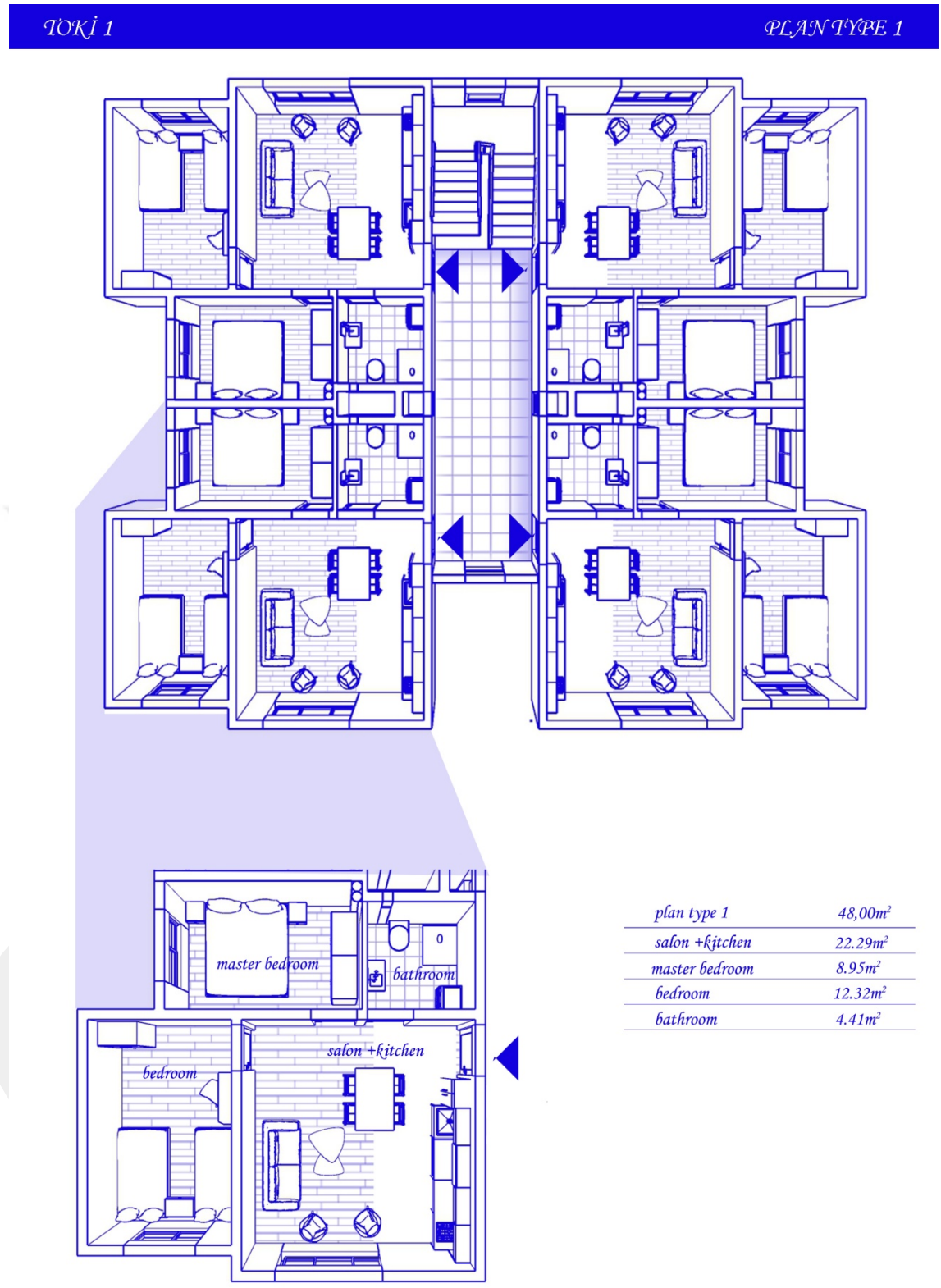


Figure 4.2.24 TOKİ 1 Plan Type 1

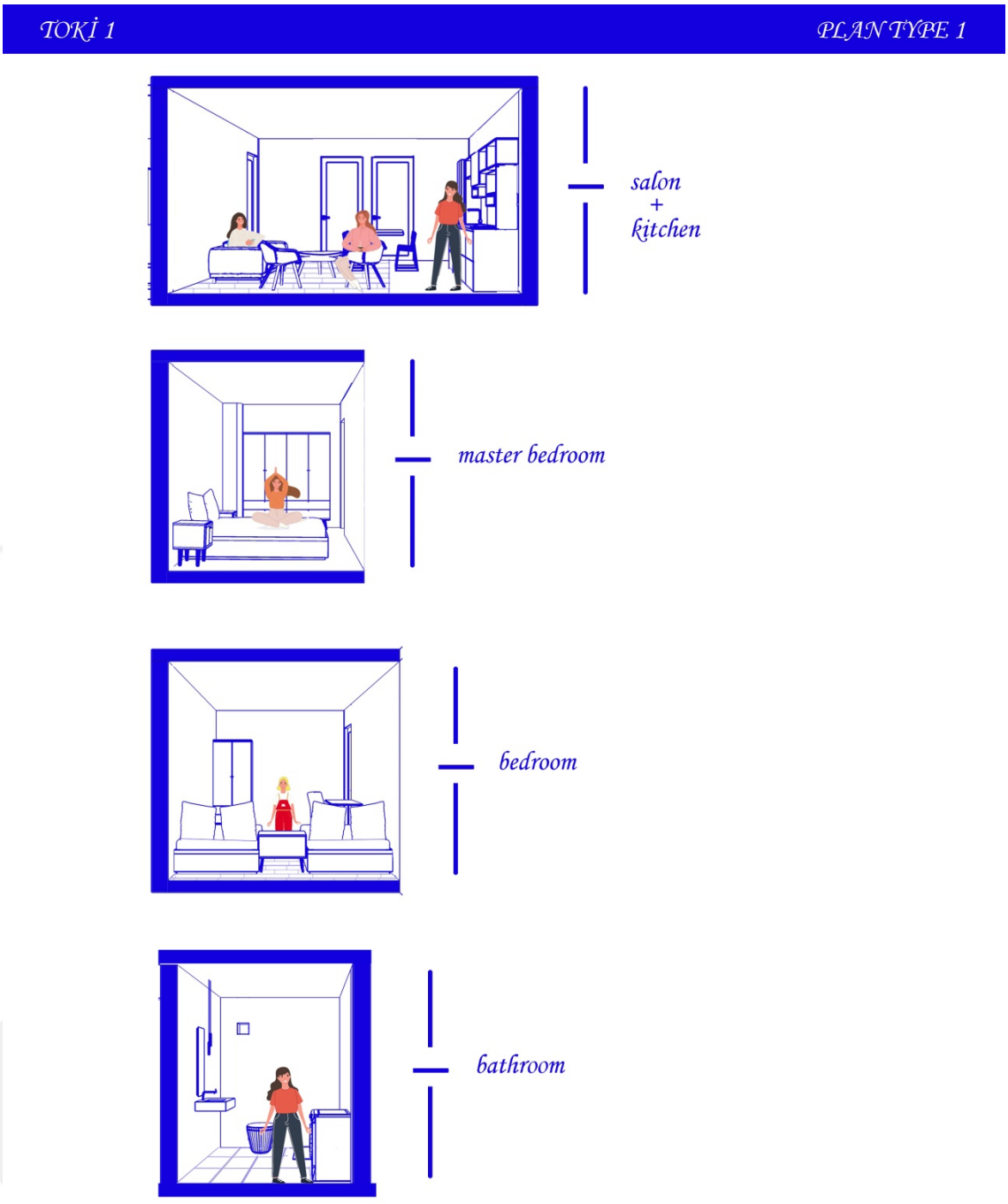


Figure 4.2.25 TOKİ 1 Type 1 Section Illustrations

Plan 1, which is the only plan type of the TOKİ 1 building group, has a different typology in the suburb of İldem. The entrance opens to the hall, the salon provides access to the bedroom, bathroom, and open kitchen. While it is possible to come across this typology in today's studio apartments, it is also possible to compare the sofa that opens to other room units in old Turkish houses typology (Figure 4.2.24, Figure 4.2.25).

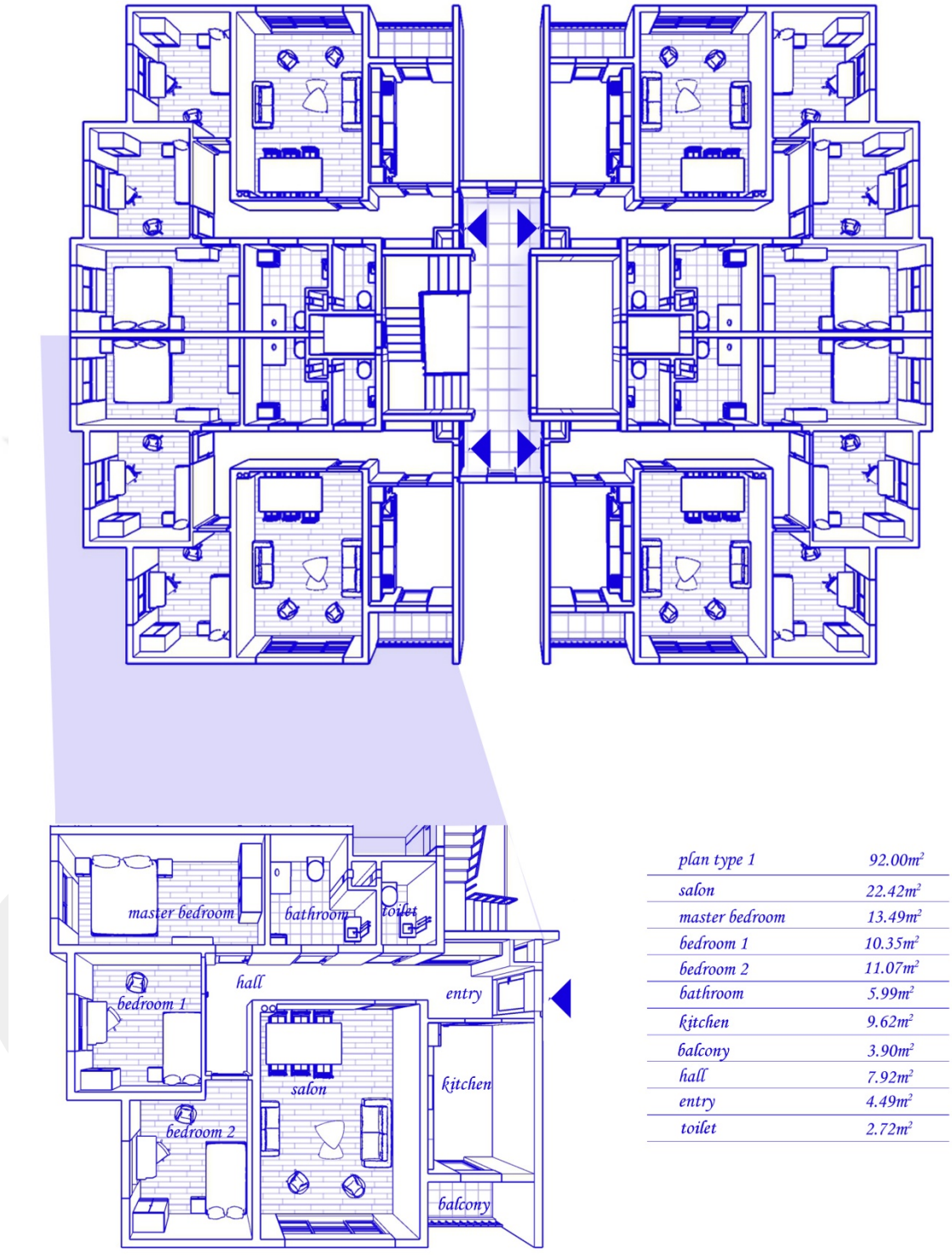


Figure 4.2.26 TOKİ 2 Plan Type 1

Plan type 1 is the first of 2 different plan types of TOKİ 2 building groups, includes three bedrooms, a living room ,and kitchen units. Unlike İldem C and İldem D building groups' typology, the hall, which is the continuation of the entrance, is not separated by a door (Figure 4.2.26, Figure 4.2.27).

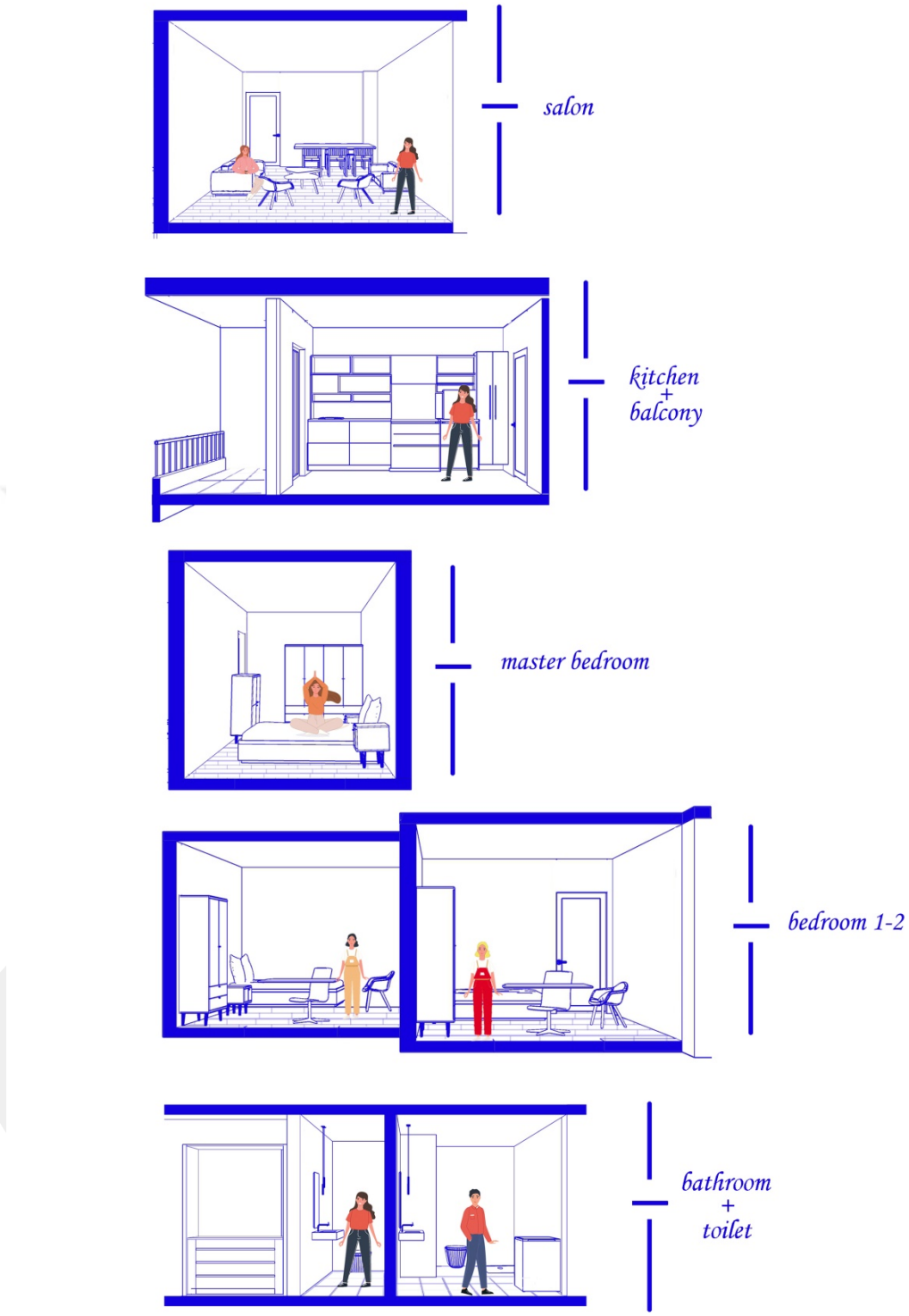
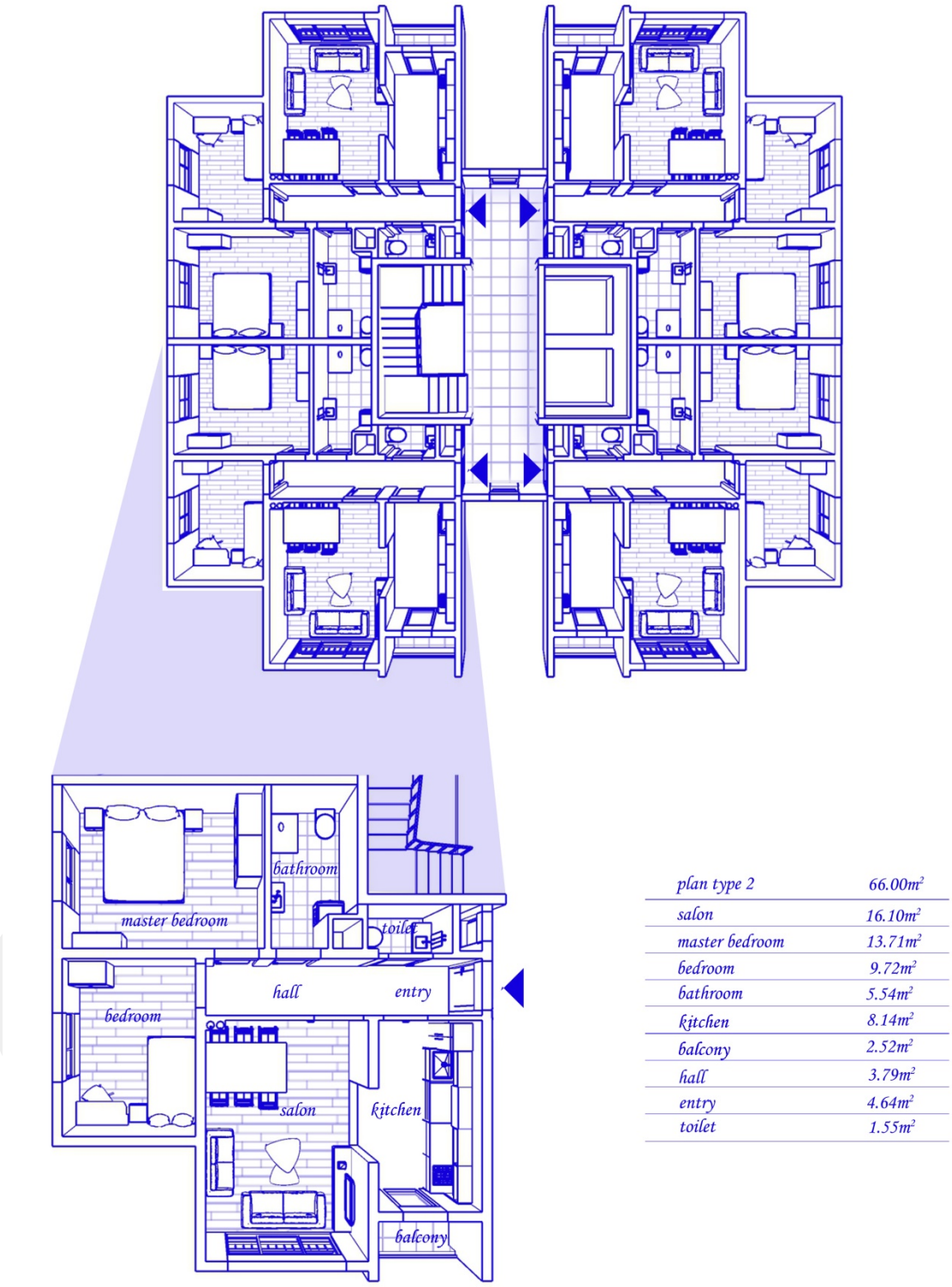


Figure 4.2..27 TOKİ Type 1 Section Illustrations



plan type 2	66.00m²
salon	16.10m²
master bedroom	13.71m²
bedroom	9.72m²
bathroom	5.54m²
kitchen	8.14m²
balcony	2.52m²
hall	3.79m²
entry	4.64m²
toilet	1.55m²

Figure 4.2.28 TOKİ 2 Plan Type 2

Plan Type 2 was designed with two bedrooms, a salon, a bathroom, and kitchen units. Permeability to the housing units has been provided from the hall following the entry, and an open kitchen system has been created by providing access to the salon from the kitchen (Figure 4.2.28, Figure 4.2.29).

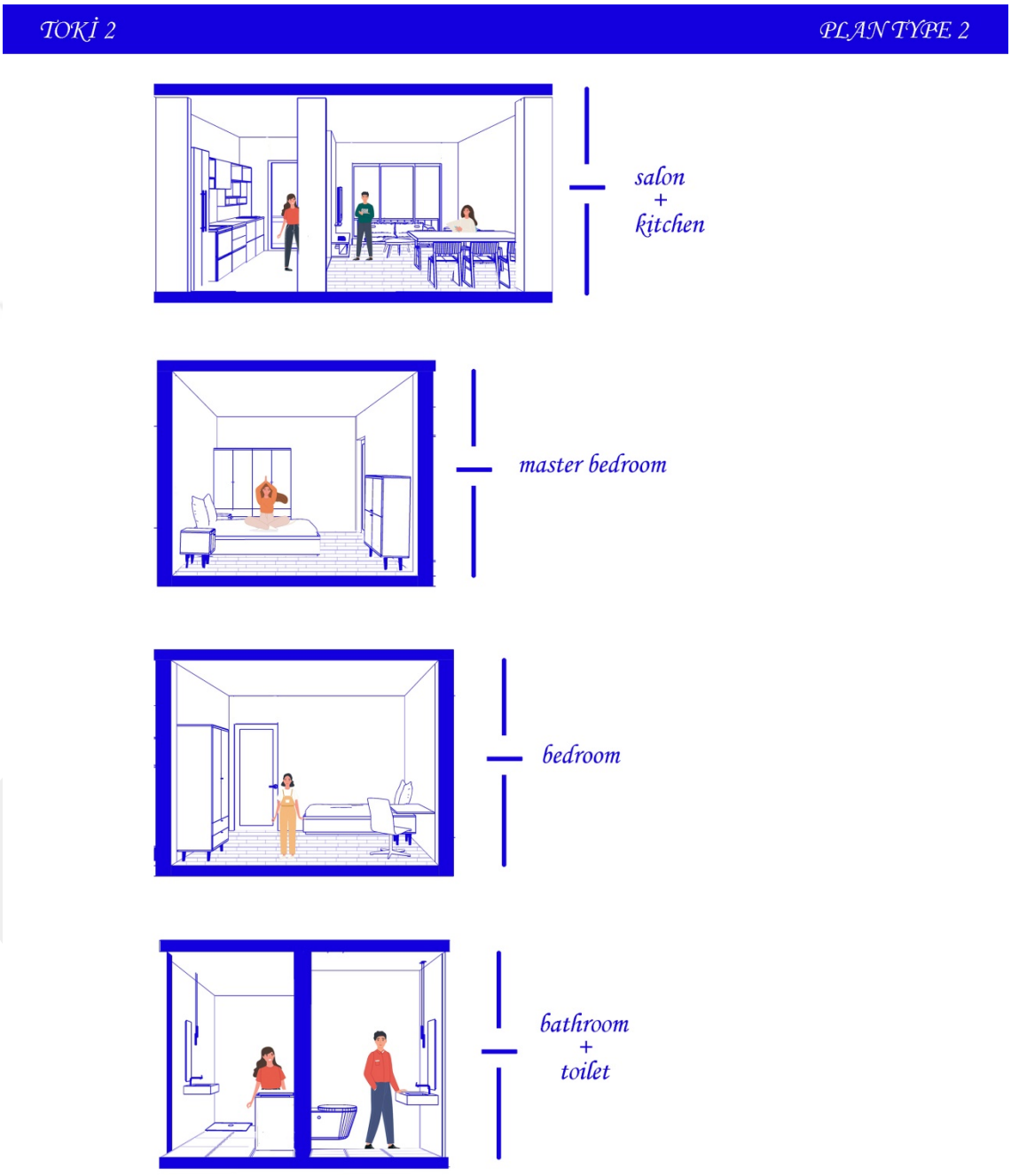


Figure 4.2.29 TOKİ 2 Type 2 Section Illustrations

4.2.3 Making the Connection and Animating the Edge

The public transportation and parking titles of the making the connection condition are discussed in the improve public realm condition and in the introduction of the building groups. Cycling that another title of the making the connection condition, the following draw attention. It is possible to see people cycling in the suburb of İldem and the City of Kayseri. However, the city and suburbs of İldem do not offer specific bike paths for cyclists. Although it is not possible to say that the bicycle culture seen in countries such as Denmark, the Netherlands, and Germany is also here, the bicycle lanes to be built in the city and the suburbs will encourage cyclists to use bicycles while ensuring their safety. In addition, attaching importance to bicycle transportation would contribute to the environment and human health by creating a cycling culture in the city and suburbs. That's why the title of cycling has taken place in the title of making the connection to draw attention to cycling.

Nonetheless, the reason why the making the connection condition is handled with the animating edge condition is the walkability header. Walkability and edges affect each other. How does the walkability around the three building groups? How are building edges classified?, How do the edges of the buildings affect walkability? These questions attempt have been made to answer with mapping illustrations. Building edges have been classified into four groups.

The first is the soft edge, which supports urban vitality, walkability, and human interaction, and appeal to many sense with scale, detail, and rhythm. The second is the active/open edges where the entrances and exits are made that connect the two spaces. The third is passive edges that allow people to hear and see each other, although they do not allow entrances and exits. And finally, the fourth is the blind edges that do not allow senses such as seeing and hearing between two spaces. These four classified edges in the figure below are illustrated (Figure 4.2.30).

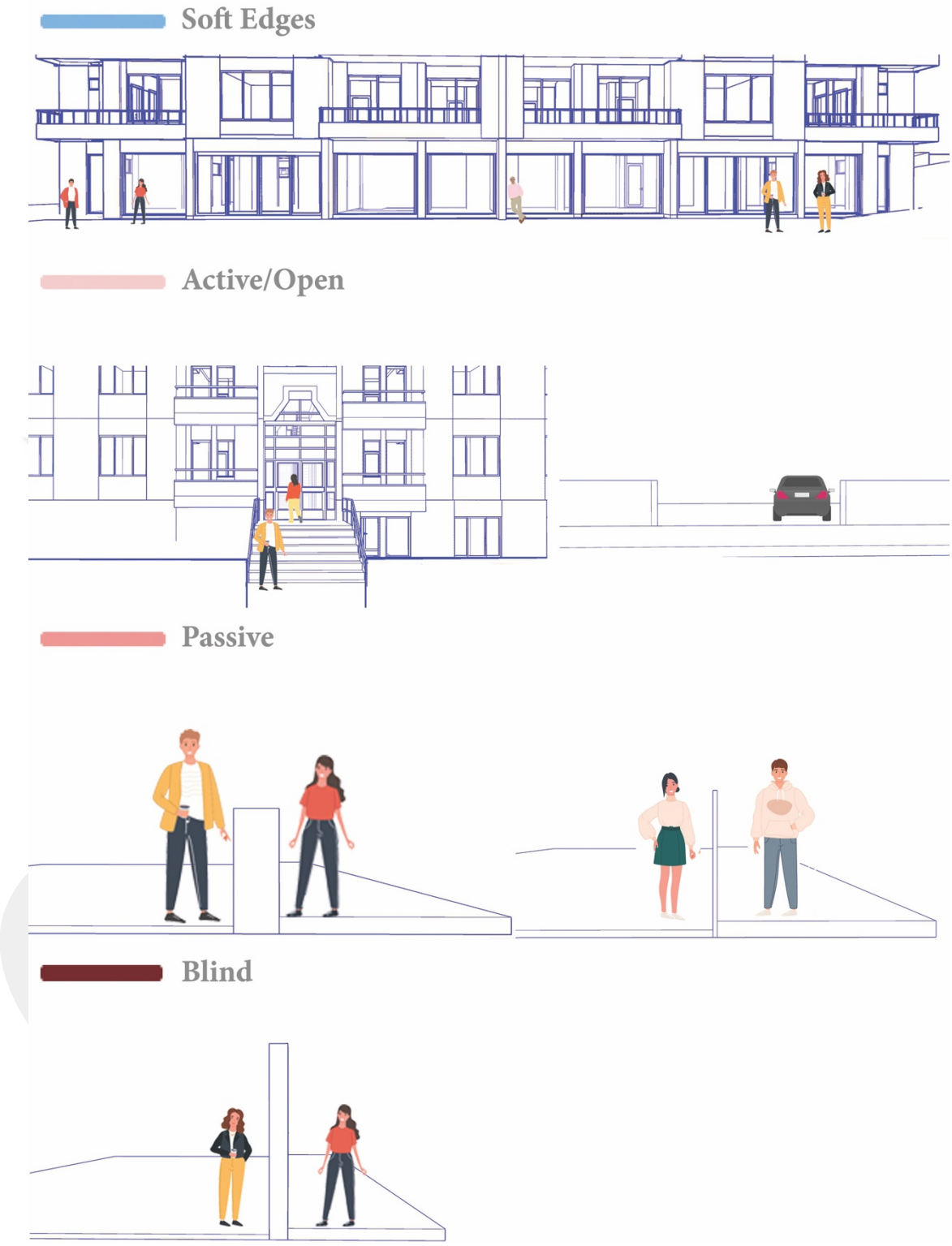


Figure 4.2.30 Soft, Active/Open, Passive, Blind Edges Illustrations



Figure 4.2.31 İldem C Edges Analysis Map

İldem C building group is surrounded by passive edges, except for the active/open edges that provide car and human entrance and exit(Figure 4.2.31). The passive edges of İldem C have been formed by the landscape, approximately 120 cm high shrubs have been used for these edges. Although passive edges do not provide permeability between two spaces, they allow senses such as sight and hearing to appear. Active/open and passive edges have been shown on the map, and numbered streets have been illustrated. By illustrating the İldem C building group, it is aimed to show the effect of passive and active/open edges, and the relationship of pedestrian and car roads with these edges (Figure 4.2.32, Figure 4.2.33, Figure 4.2.34, Figure 4.2.35, Figure 4.2.36, Figure 4.2.37).



Figure 4.2.32 İldem C Edges Analysis Map Street View Numbered 1

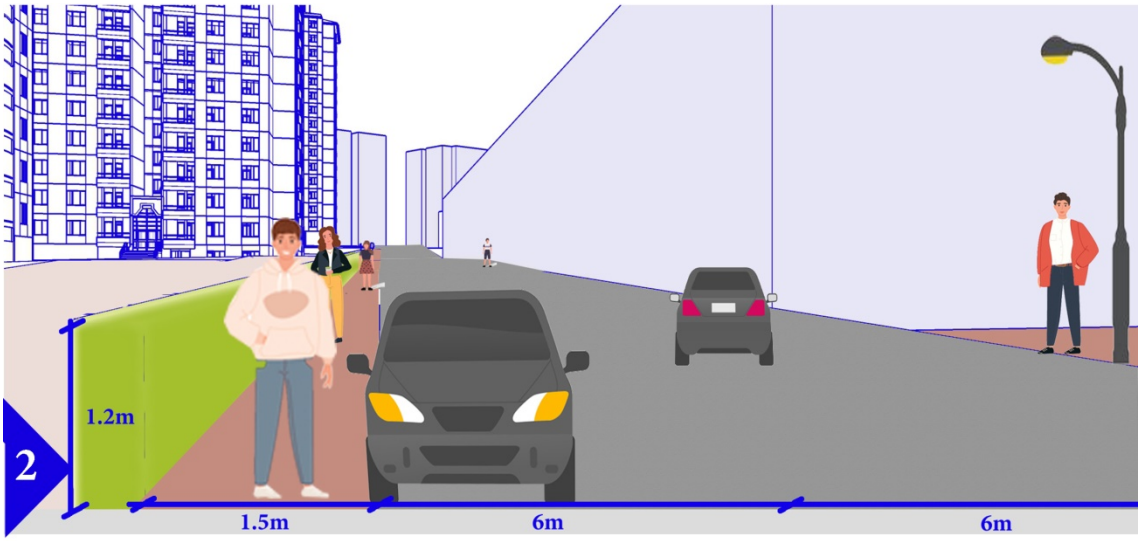


Figure 4.2.33 İldem C Edges Analysis Map Street View Numbered 2

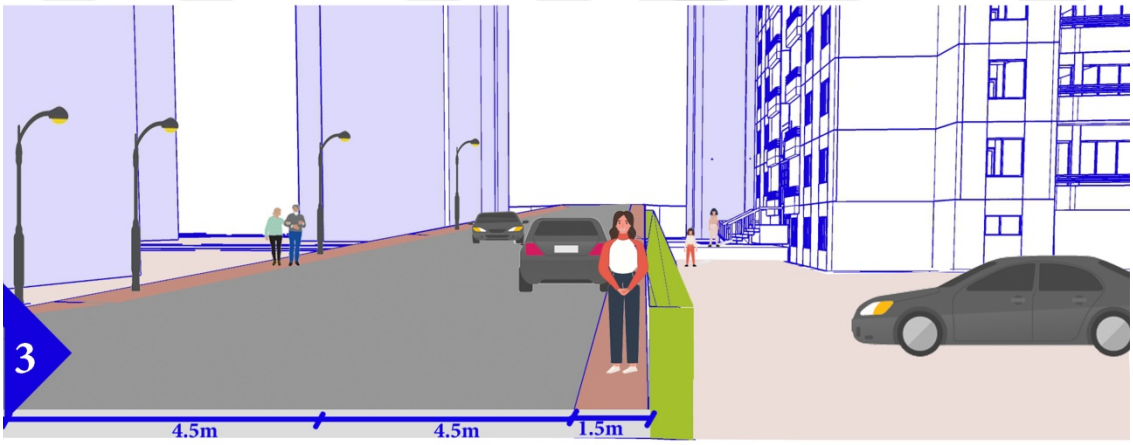


Figure 4.2.34 İldem C Edges Analysis Map Street View Numbered 3

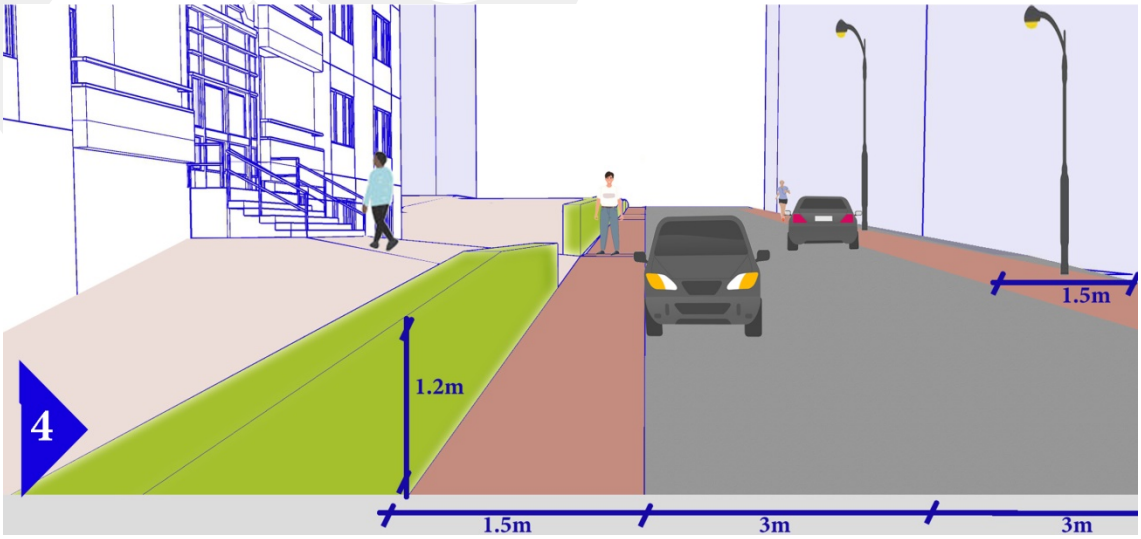


Figure 4.2.35 İldem C Edges Analysis Map Street View Numbered 4

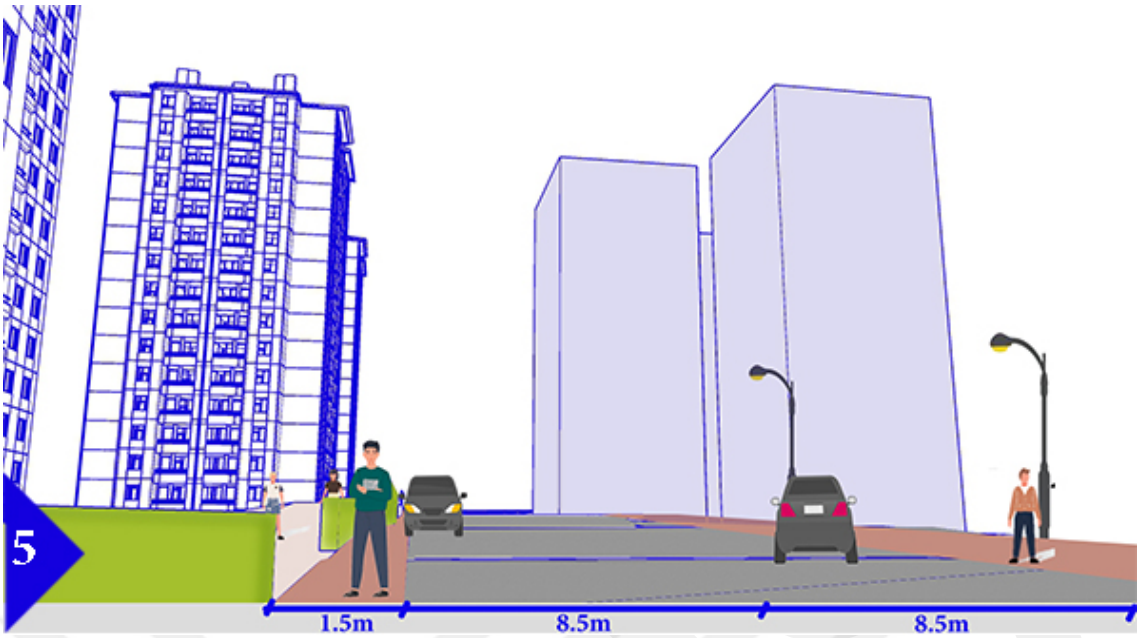


Figure 4.2.36 İldem C Edges Analysis Map Street View Numbered 5

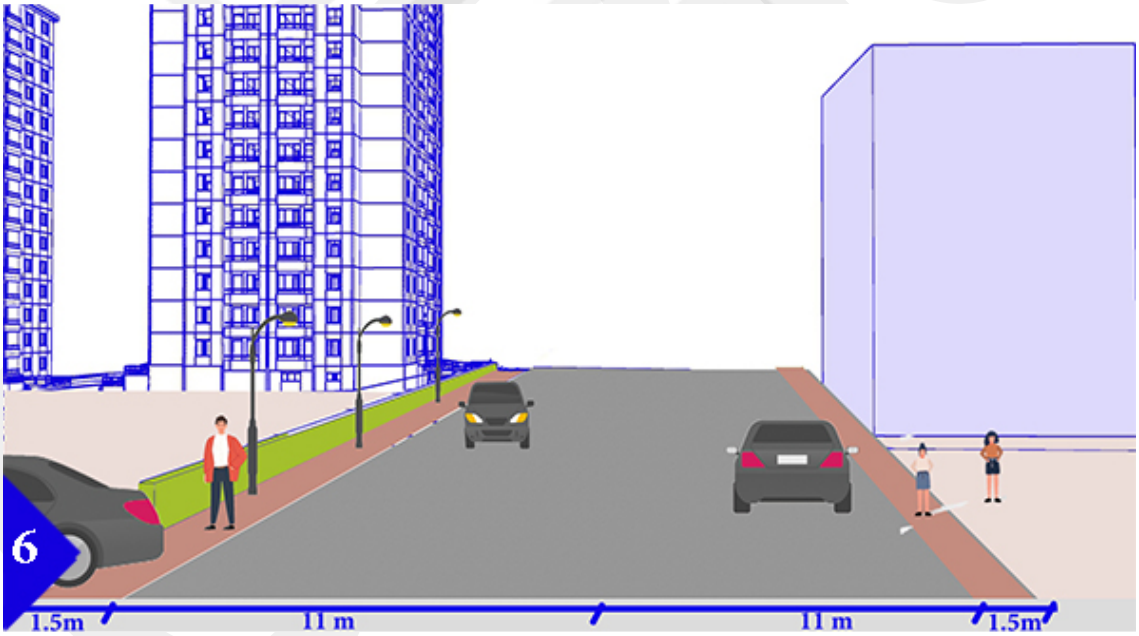


Figure 4.2.37 İldem C Edges Analysis Map Street View Numbered 6



Figure 4.2.38 İldem D Edges Analysis Map

All edges that have been classified into four groups in the İldem D building group have been shown on the map (Figure 4.2.38). Soft edges that increase urban vitality and human interaction have been created with the shops located under the İldem D buildings Passive edges are provided not by the landscape but by fences and these edges also allow seeing and hearing. İldem D building group built on sloping lands, so this situation created blind edges between the road and buildings. Blind edges make walkability boring as well as hinder urban vitality and human interaction. The effect of these four different edges has shown by illustrating the numbered streets on the map (Figure 4.2.39, Figure 4.2.40 Figure 4.2.41, Figure 4.2.42, and Figure 4.2.43).

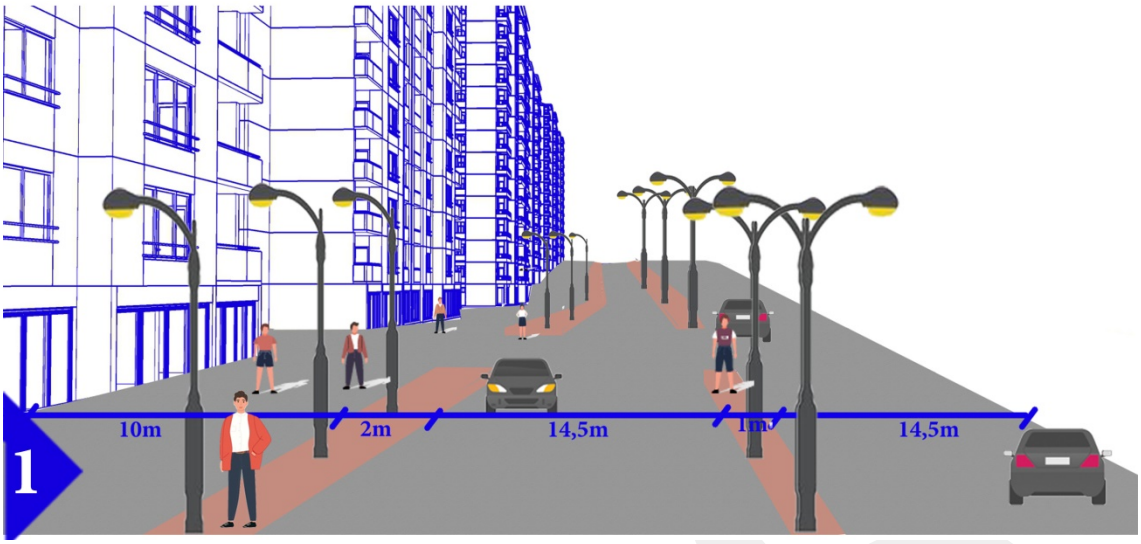


Figure 4.2.39 İldem D Edges Analysis Map Street View Numbered 1



Figure 4.2.40 İldem D Edges Analysis Map Street View Numbered 2

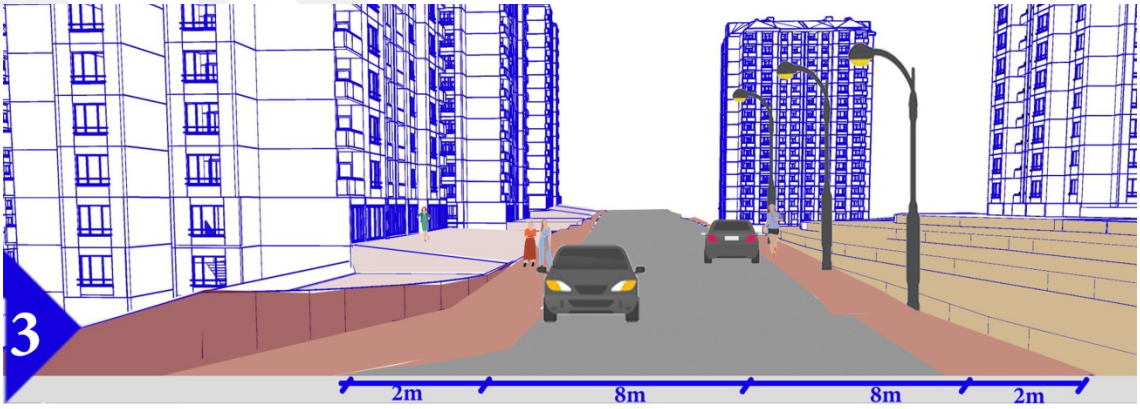


Figure 4.2.41 İldem D Edges Analysis Map Street View Numbered 3

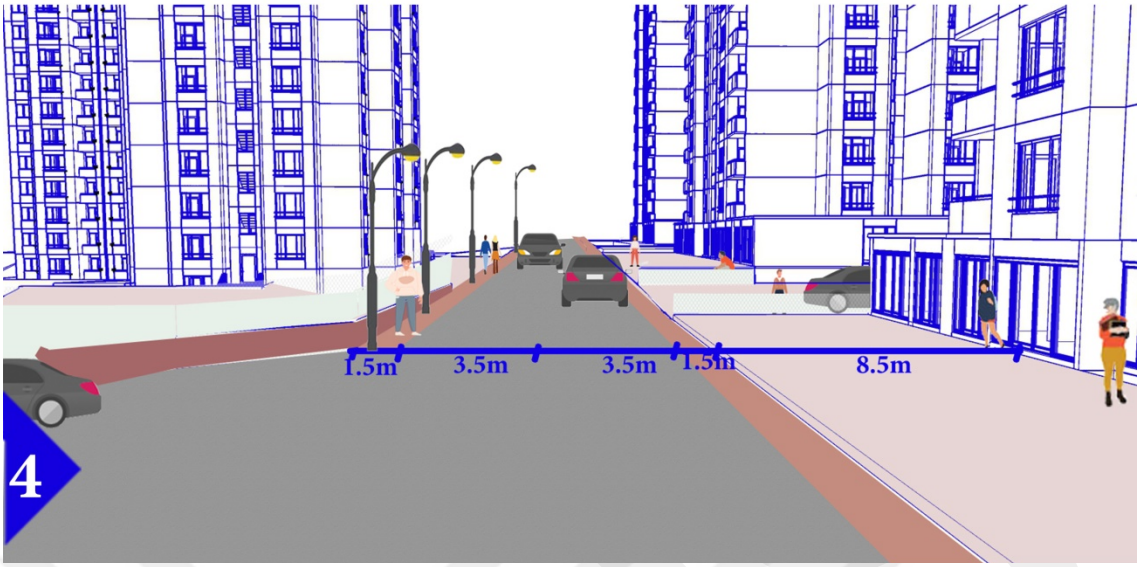


Figure 4.2.42 İldem D Edges Analysis Map Street View Numbered 4

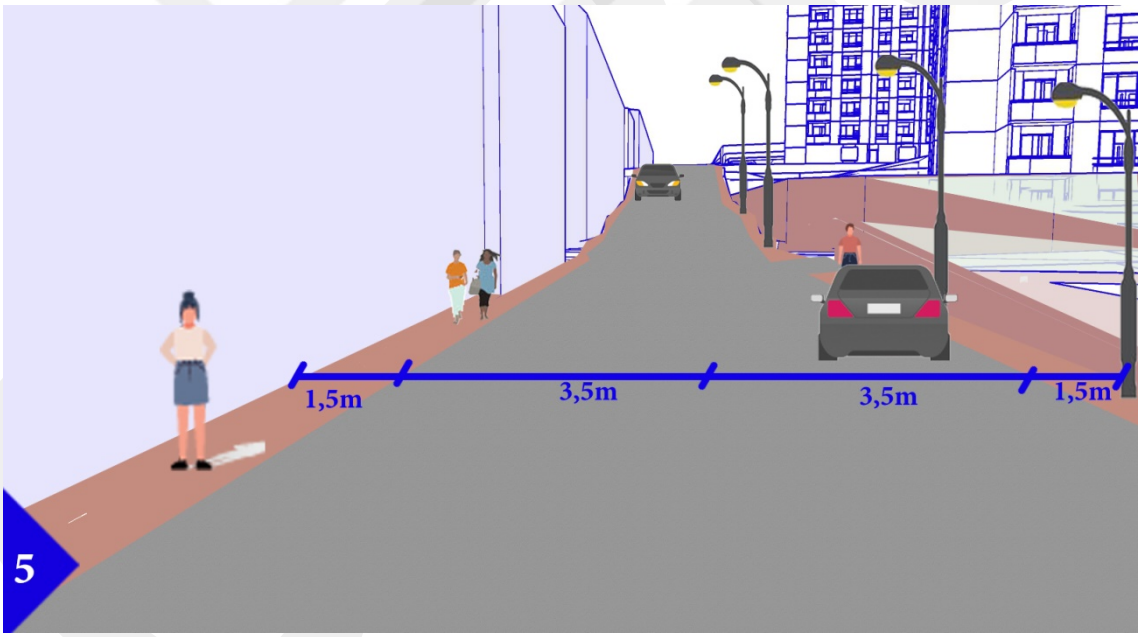


Figure 4.2.43 İldem D Edges Analysis Map Street View Numbered 5

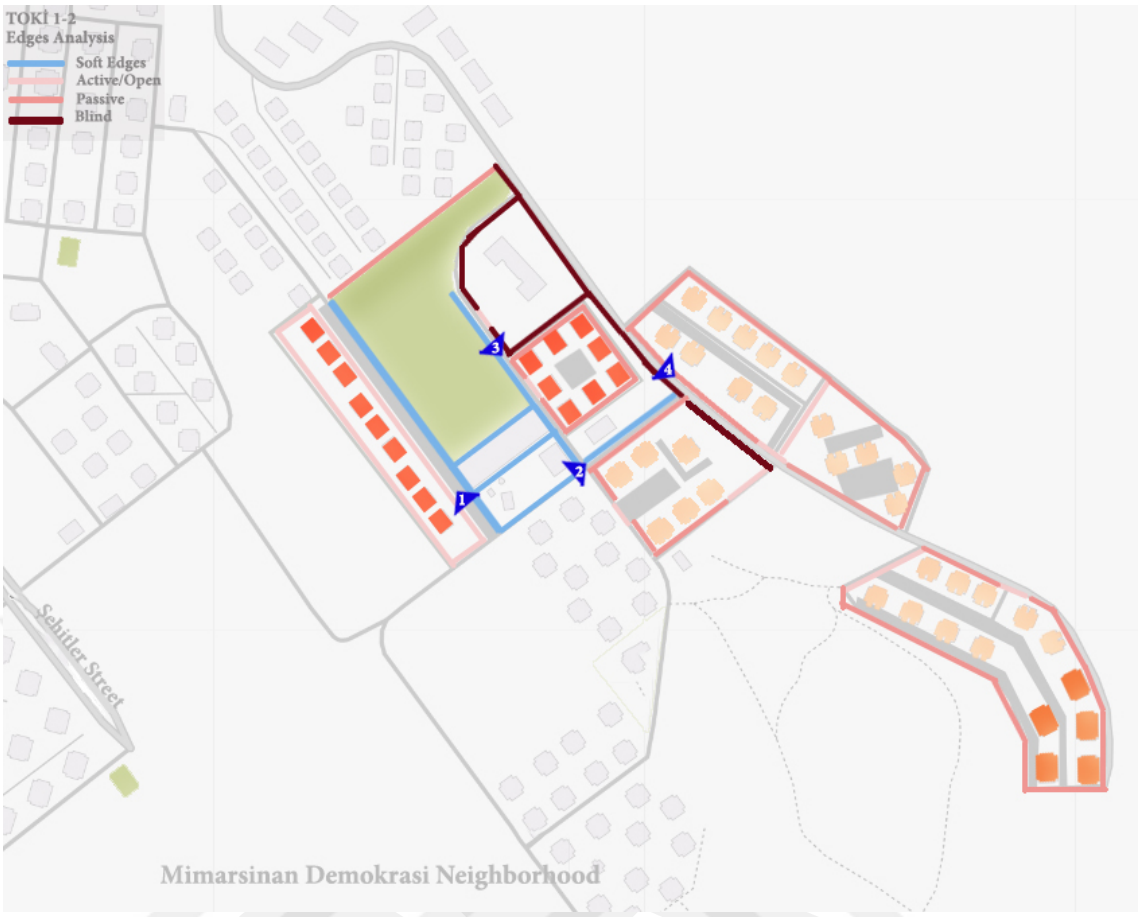


Figure 4.2.44 TOKİ 1-2 Edges Analysis Map

The edge analysis map shows that edge effect should be considered two group as TOKİ 1 and a part of TOKİ 2 from ,and other TOKİ 2 buildings that built on the wide roadside (Figure 4.2.44). Although TOKİ 1 -2 building groups have active/open and passive edges on the streets numbered 1,2 and 3 on the map, park, public and commercial buildings where located in the middle of these streets have created soft edges, increasing human interaction and vitality. In other words, these building groups benefit from the soft edges around them. Passive and active/open edges have been created on the street number 4 on the map of the part of TOKİ 2 built on the wide roadside. There is a weak relationship between the wide road and the buildings, except for the active/open edges that provide vehicle and human entrance and exit. The blind edges on the street number 3 have been created to ensure the safety of the school environment while the blind edges on the street number 4 have been formed due to the slope (Figure 4.2.45, Figure 4.2.46, Figure 4.2.47, Figure 4.2.48).

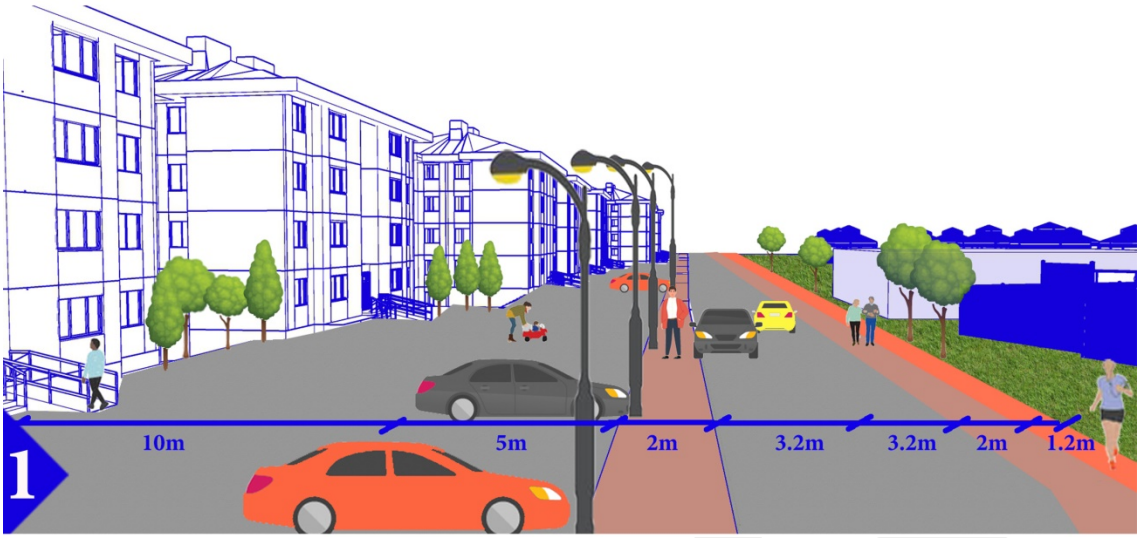


Figure 4.2.45 TOKİ 1-2 Edges Analysis Map Street View Numbered 1

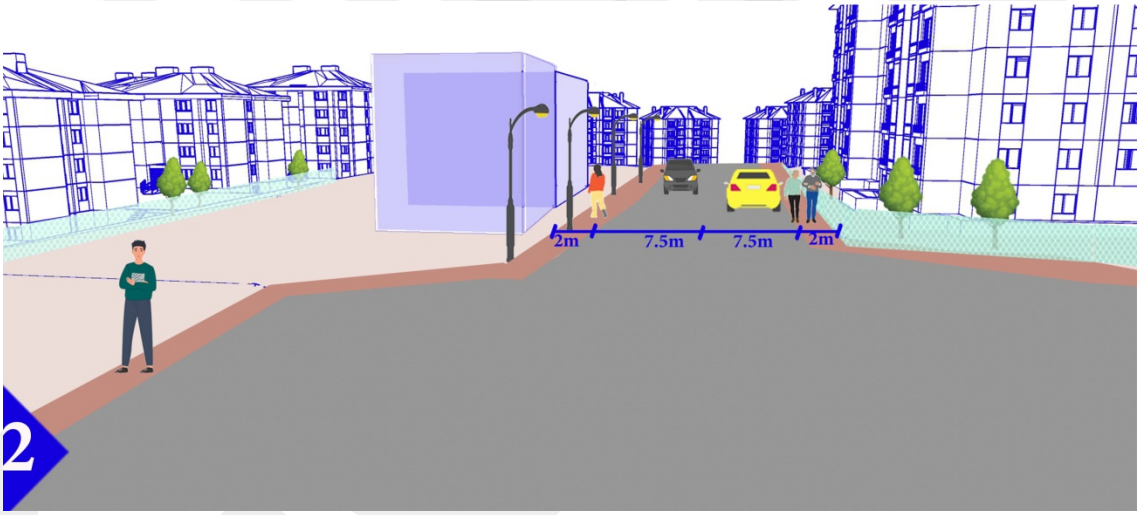


Figure 4.2.46 TOKİ 1-2 Edges Analysis Map Street View Numbered 2



Figure 4.2.47 TOKİ 1-2 Edges Analysis Map Street View Numbered 3

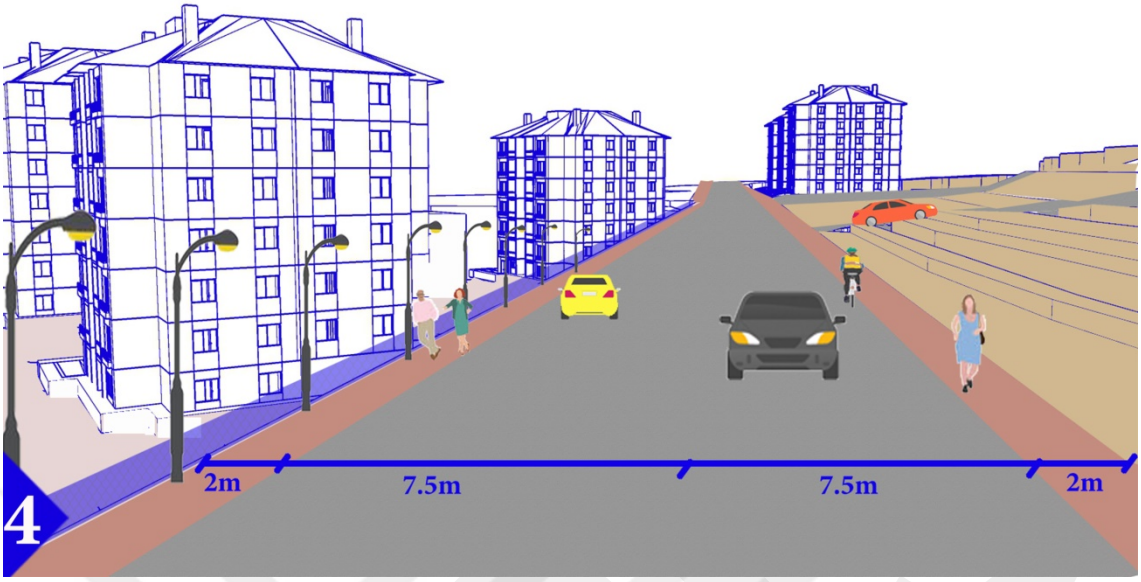


Figure 4.2.48 TOKİ 1-2 Edges Analysis Map Street View Numbered 4

4.2.4 Density

The approach that density is both a condition and a result of urban vitality is the focus of the density title. The numbers given under this title aimed that understand how the building groups use the land. The density analysis maps have shown the number of floors and housing unit numbers of İldem C, İldem D, and TOKİ 1-2 building groups. Since the coverage area of the buildings directly affects the use of public space, coverage percentages of the buildings have been shown on maps. These percentages give clues about the use of public-semi-public space. Jane Jacobs argues that the coverage percentage is between 60 and 80% (Jacobs, 1961), it is possible to find these percentages in cities with a dominant pattern of urban blocks, but high-rise point blocks in the suburb of İldem cannot provide them. Another value shown on the maps is the density value per hectare. The value given for this density varies changing according to the researcher and the region, with 100 –200 dwellings per (Urban Task Force, 1999), over 125 dwellings per hectare (50 per acre) (Montgomery, 1998), and more than 175 dwellings per hectare (Jacobs 1961). With these figures, the density range of 125-200 units per hectare has been considered sufficient density in this study.

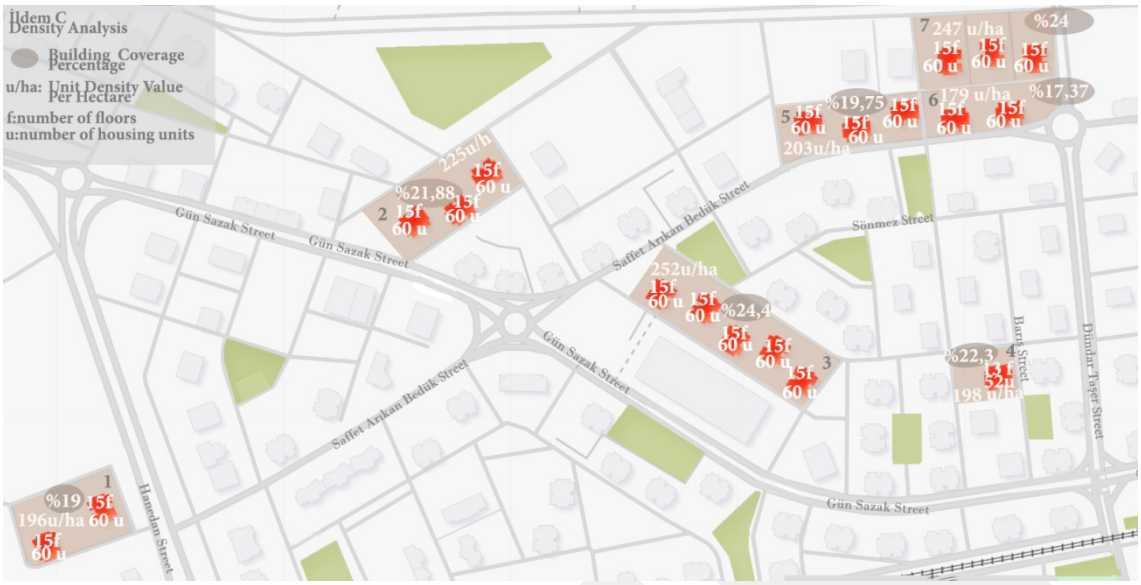


Figure 4.2.49 İldem C Density Analysis Map

İldem C consists of residences with 15 floors and 60 housing units, except for the building on land number 2, which has 52 housing units with 13 floors. The building coverage percentages vary between 17.37-24.40% by area size. The reason for these percentages is that the İldem C buildings consist of the high-rise point block typology. The remaining 75.6-82.63% of the areas should be used correctly for public and semi-public spaces. The housing unit per hectare of İldem C varies between 179-252 u/ha. These values have demonstrated the dense housing structure of İldem C (Figure 4.2.49, Table 4.2.1).

Table 4.2.1 İldem C Density Analysis Table

İLDEM C						
	Land Area	Total Building Coverage Area	Building Coverage Percentage	Number of Floors	Total Housing Units	Unit Density Value Per Hectare
1	6113.94m^2	1.166m^2	%19	15	120	196 u/ha
2	7995.66m^2	1.749 m^2	%22,88	15	180	225u/ha
3	11.944,00m^2	2.915 m^2	%24,40	15	300	252u/ha
4	2.614,34 m^2	583 m^2	%22,30	13	52	198u/ha
5	8.885,49 m^2	1.749 m^2	%19,75	15	180	203u/ha
6	6.709,38 m^2	1.166 m^2	%17,37	15	120	179u/ha
7	7.284,20 m^2	1.749 m^2	%24	15	180	247u/ha

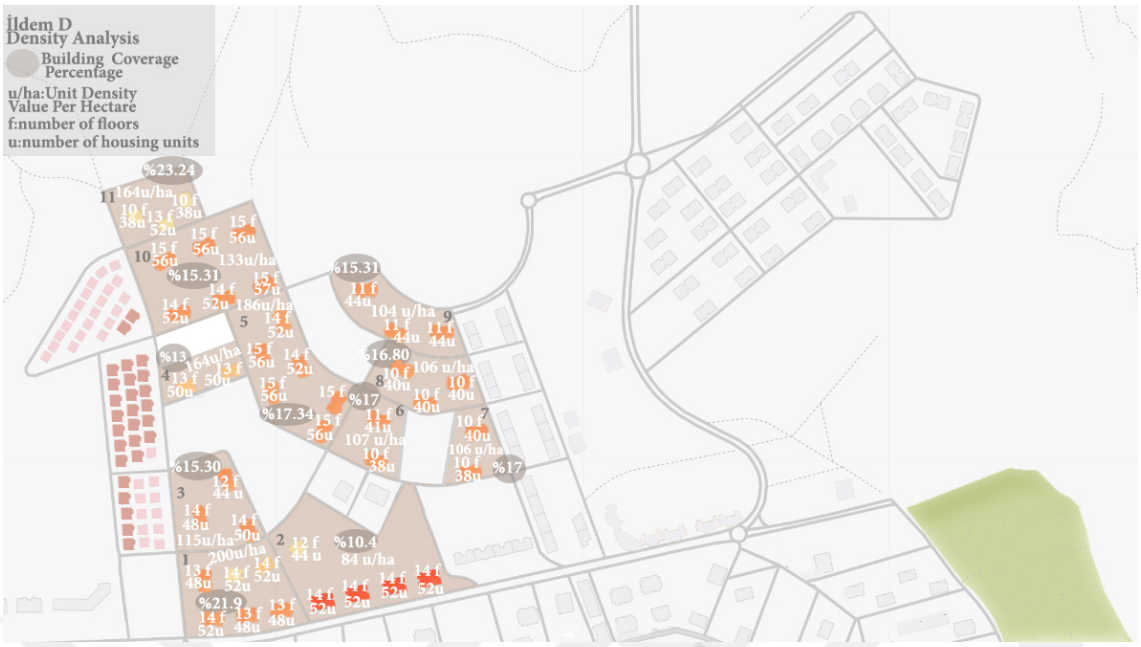


Figure 4.2.50 İldem D Density Analysis Map

İldem D building group consists of buildings where the number of floors varies between 10-15, and the number of housing unit varies between 38-52. The percentage of building coverage varies between 10.40-23.34%. There are two reasons for these percentages: the first is the point block typologies of the buildings, and the second is the construction of buildings in large areas for the use of landscape and public space, which is one of the main goals of the İldem D project. The housing unit values per hectare of the İldem D project are in the range of 84-200 u/ha. The reason for the density value in this range is the construction of low housing units in large-scale areas(Figure 4.2.50, Table 4.2.2).

Table 4.2.2 İldem D Density Analysis

İLDEM D						
	Land Area	Total Building Coverage Area	Building Coverage Percentage	Number of Floors	Total Housing Units	Unit Density Value Per Hectare
1	15.618,57m^2	3.421,36m^2	%21,90	13-14	300	200u/ha
2	30.489,80m^2	3.169,84 m^2	%10,40	12-14	252	84u/ha
3	12.489,79m^2	1.912,08 m^2	%15,30	12-14	142	115u/ha
4	6.153,18 m^2	937,27 m^2	%13,00	13	100	164u/ha
5	22.053,94m^2	3.824,16 m^2	%17,34	14,15	328	186u/ha
6	7.417,90 m^2	1.274,72 m^2	%17,00	10-11	79	107u/ha
7	7.422,55 m^2	1.274,72 m^2	%17,00	10	78	106u/ha
8	11.326,59m^2	1.912,08 m^2	%16,80	10	120	106u/ha
9	12.489,79m^2	1.912,08 m^2	%15,31	11	132	104u/ha
10	24.888,38m^2	3.824,16 m^2	%15,31	15	329	133u/ha
11	7.808,00 m^2	1.209,84 m^2	%23,24	10-3	128	164u/ha

TOKİ 1 consists of buildings with 4 floors and 16 housing units, while TOKİ 2 consists of buildings with 4, 6, and 7 floors and 16, 24, and 26 housing units. Since TOKİ 1 and 2 have low-rise housing typologies different from İldem C and İldem D, the percentage of building coverage varies between 15.63-22.46%, and the number of housing units per hectare is between 89-135 u/h(Figure 4.2.51).



Figure 4.2.51 TOKİ 1-2 Density Analysis Map

Table 4.2.3 TOKİ 1-2 Density Analysis

TOKİ 1-2						
	Land Area	Total Building Coverage Area	Building Coverage Percentage	Number of Floors	Total Housing Units	Unit Density Value Per Hectare
1	27.069,09m^2	3.762m^2	%15,63	4	144	89 u/ha
2	14.888,69m^2	3.344 m^2	%22,46	4-5	134	135u/ha
3	11.981,18m^2	22745 m^2	%19,55	6	144	120u/ha
4	19.168,04m^2	3.411 m^2	%18,45	6-7	222	117u/ha
5	10.526,31m^2	1.895 m^2	%18,60	6	120	114u/ha
6	29.808,77m^2	5.911 m^2	%19,82	4-6-7	308	103u/ha

Table 4.2.3, building coverage percentage and unit density value per hectare of İldem C, İldem D, and TOKİ 1-2 building groups have been shown. All areas of the İldem C project, numbered areas 1, 4,5,10, and 11 of İldem D, and areas numbered 2 and 3 of TOKİ 1-2 have high density.

Table 4.2.4 Building Coverage Percentage and Unit Density Value

Building Coverage Percentage- Unit Density Value Per Hectare											
	1	2	3	4	5	6	7	8	9	10	11
İLDEM C	%19 196 u/ha	%22,88 225u/ha	%24,4 252u/ha	%22,3 198u/ha	%19,75 203u/ha	%17,37 179u/ha	%24 247 u/ha	X	X	X	X
İLDEM D	%21,9 200u/ha	%10,4 84u/ha	%15,30 115u/ha	%13 164u/ha	%17,34 186u/ha	%17 107u/ha	%17 106u/ha	%16,80 106u/ha	%15,31 104u/ha	%15,31 133u/ha	%23,24 164u/ha
TOKİ 1-2	%15,63 89u/ha	%22,46 135u/ha	%19,55 120u/ha	%18,45 117u/ha	%18,60 114u/ha	%16,24 84u/ha	X	X	X	X	X

4.2.5 Improve the Public Realm

The urban parameters, which generally have been seen in detail at the urban scale, significantly contribute to the urban vitality and the production of a quality-built environment. The following details that develop the public space in the three building groups that examined in this chapter have been mapped: parking, playgrounds, urban furniture, bus stops, garbage cans, lighting, and approximately distances to other public transportation.

While parking and public transportation increase accessibility, urban furniture and playgrounds increase human interaction. Lighting provides a safe environment for the night use of building groups, and bins contribute to the healthy and quality-built environment.

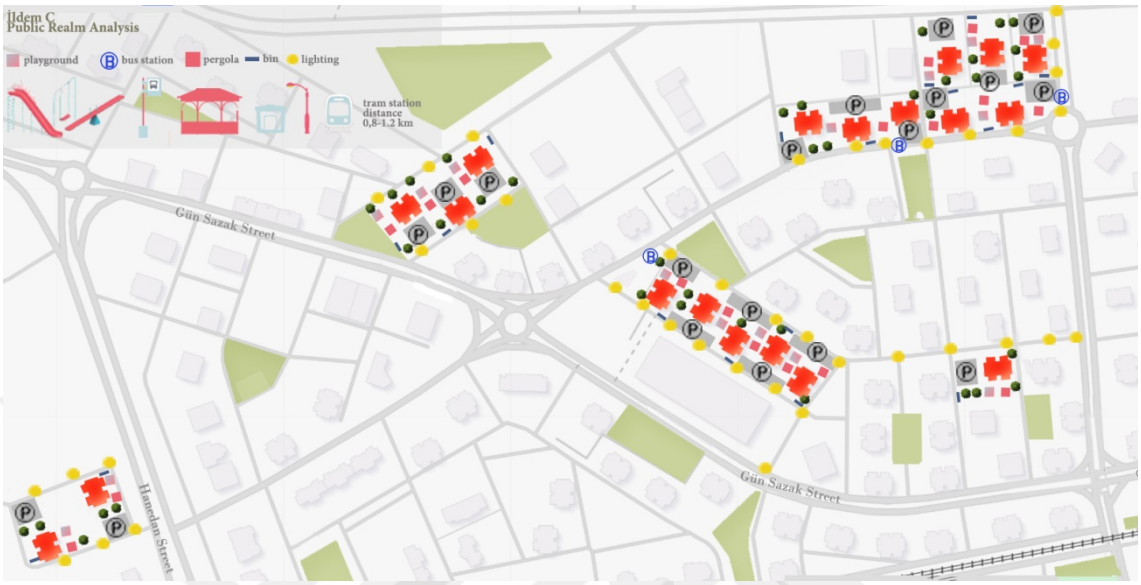


Figure 4.2.52 İldem C Public Realm Analysis

İldem C public space analysis map shows that the İldem C building group is surrounded by parks. Urban furniture, playgrounds, basketball, and tennis courts in these parks are actively used. Besides, every building in İldem C has a pergola and playground These pergolas and playgrounds, which were added after the completion of the İldem C project, became the meeting point of the residents of İldem C, who use them both summer and winter.Thus, have become contributed to neighborhood relations and human interaction. The proximity of İldem C buildings to bus stops and İldem tram stop increases their accessibility. especially after the construction of the İldem tram stop, İldem C and other building groups in this region provide an advantage in accessibility. But the car park areas that contribute to accessibility are not sufficient for the İldem C project.During the period of this project, the number of car parks was included in the project to be half the number of housing units in each building.

These numbers do not work for today, so many cars are parked around the İldem C building group.İldem C lightings provide sufficient illumination for night use. and bins are hidden on the sides of the buildings, they are collected by the municipality on everydays. Also, as shown on the map, pine trees are grown around buildings and the surrounding of these trees can be considered passive green space(Figure 4.2.52).



Figure 4.2.53 İldem D Public Realm Analysis

In spite of the fact that it does not have the advantage of parks and green spaces as much as İldem C, one of the focal points of the İldem D project is landscape areas, urban furniture, and playgrounds. Pergolas, playgrounds, and ornamental pools have been specially designed for this project but, as in the İldem C project, these landscape elements are not actively used. Instead of creating a meeting point and human interaction, these elements have been used by several people at different times.

İldem D accessibility can be provided by the bus line passing around the building group, and İldem D residents can reach the İldem tram stop within 12-15 minute walking distance. In addition, although the number of car parks designed for each building is sufficient at İldem D, extra car parking areas have been designed considering the shops and customers in the buildings. This building group illuminates with the sufficient number of urban lighting elements around it, and for environmental health, the bins are positioned in the garden of the building groups, with one bin for each building.

Many saplings were planted around the İldem D buildings, but since the project is new, İldem D residents cannot use the sapling areas as passive or active green spaces(Figure 4.2.53).



Figure 4.2.54 TOKİ 1-2 Public Realm Analysis

TOKİ 1 and TOKİ 2 building groups provide most of the public realm details from the park, which is at the center of these building groups and is actively used. There are enough urban furniture, playgrounds, and football and basketball courts in this park, so the TOKİ 1 and 2 project has not focused on landscaping and urban furniture other than a few pergolas and playgrounds.

However, the lack of urban furniture and landscaping is noticeable in the 1st and 2nd parts of the TOKİ 2 project, which are far from this park.Residents who live in this part of TOKİ 2 use the exterior of the buildings. However, due to the lack of urban furniture, residents bring their portable seating or sit on the pavement around the building. In addition, although there are no special playgrounds, the surroundings of the buildings have been frequently used by children and playgrounds. TOKİ 1 and 2 have sufficient parking space as seen in the public realm analysis map.

As can be seen in the public realm analysis map of TOKİ 1 and 2, it has sufficient parking space and the accessibility of these building groups is provided by car and bus. It is not preferred by the residents of buildings groups due to the distance of the İldem tram stops. TOKİ 1-2 and the surrounding building groups do not have private bins for each building. They use big bins that are placed by the municipality. Although these big bins harm the health of the environment, they also disrupt the aesthetics of the streets(Figure 4.2.54).

4.2.6 Human Dimension

The mapping and illustrating methods of concepts such as edge analysis, context, connection, density, public realm, how the building groups relate to the city, and how they affect the built environment have been examined.This study, which discusses the quality built environment and the conditions of urban vitality, it is necessary to consider the human factor, which is the focal point of the concept of urban vitality.The concept of human dimension takes the human as the focal point and describes the place of the human in the urban space. Therefore, the concept of the human dimension which takes the human as the focal point and defines the place of the human in the urban space has been discussed with urban vitality and the quality of the built environment.

While examining the human dimension in building groups, it has been addressed with two different questions. First question of how the human dimension is in these building units such as the kitchen, living room, bedroom, and bathroom has been examined with the plans in the condition of diversity by illustrating the interiors for this question. The second question addressed is what is the relationship between people and the built environment? The human dimension chapter has been intended to answer the second question by illustrating how people living in İldem C, İldem D, and TOKİ 1- 2 building groups perceive their environment from different floors of the buildings.

Human figures have placed in different floors of the determined building in these building groups. At the eye level of these human figures, two different perspectives have tried to be explained. The first is the view around the building, and the second is the view on the building' ground floor. The floors where the human figures have been placed and the lines of view have been shown, with the sections of the buildings where the human dimension is examined. The E-e, D-d, C-c, and B-b lines show the view of the environment, and the A-F, B-F, C-F, D-F, and E-F lines show the view of the building floor.

What the human eye sees in the directions indicated by these lines has been illustrated. Different floor heights and built environments of buildings change the image in the direction of the shown view lines.

Even those living on different floors of the same building experience and perceive the relationship between buildings and the city differently. Thus, the sections, maps, and illustrations created in this chapter aimed to show these different perceptions and experiences.



Figure 4.2.55 İldem C Human Dimension View Map

The built environment of the İldem C housing group consists of high-rise point blocks with high housing density. The selected İldem C buildings which Figure 4.2.55 shows aimed to reflect the impact of this environment through the human dimension. İldem C buildings numbered on the map have been illustrated to understand how the built environment perceives from the 1, 3,5,10 and the last floor.

The 1st, 3rd, and 5th floors of building that numbered 1 connect with the building floor, but the influence of the large-scale shopping mall next to this building is visible. The deaf and billboard-clad façade of the shopping center dominates the appearance of these floors. From the 10th floor to the last floor, although the connection with the ground is cut off, the effect of the shopping center decreases, and the dominance of the view increases. In buildings that numbered 2 and 3, the effect of high-rise point blocks is seen from the 1st floor to the last floor. Surrounding views from buildings 2 and 3 include illustrations that best describe the built environment of İldem C (Figure 4.2.56, Figure 4.2.57, and Figure 4.2.58).

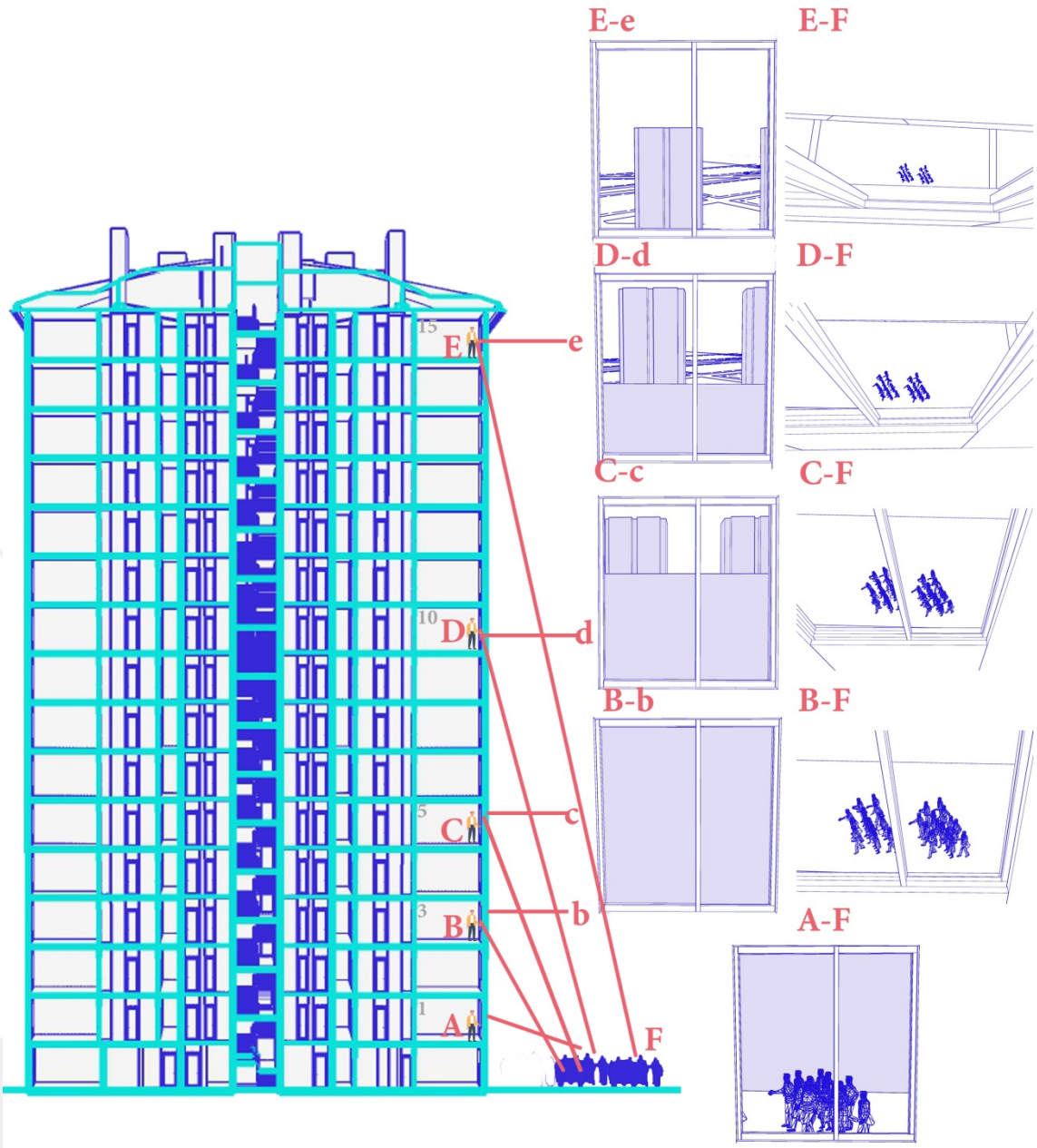


Figure 4.2.56 İldem C Human Dimension View Numbered 1

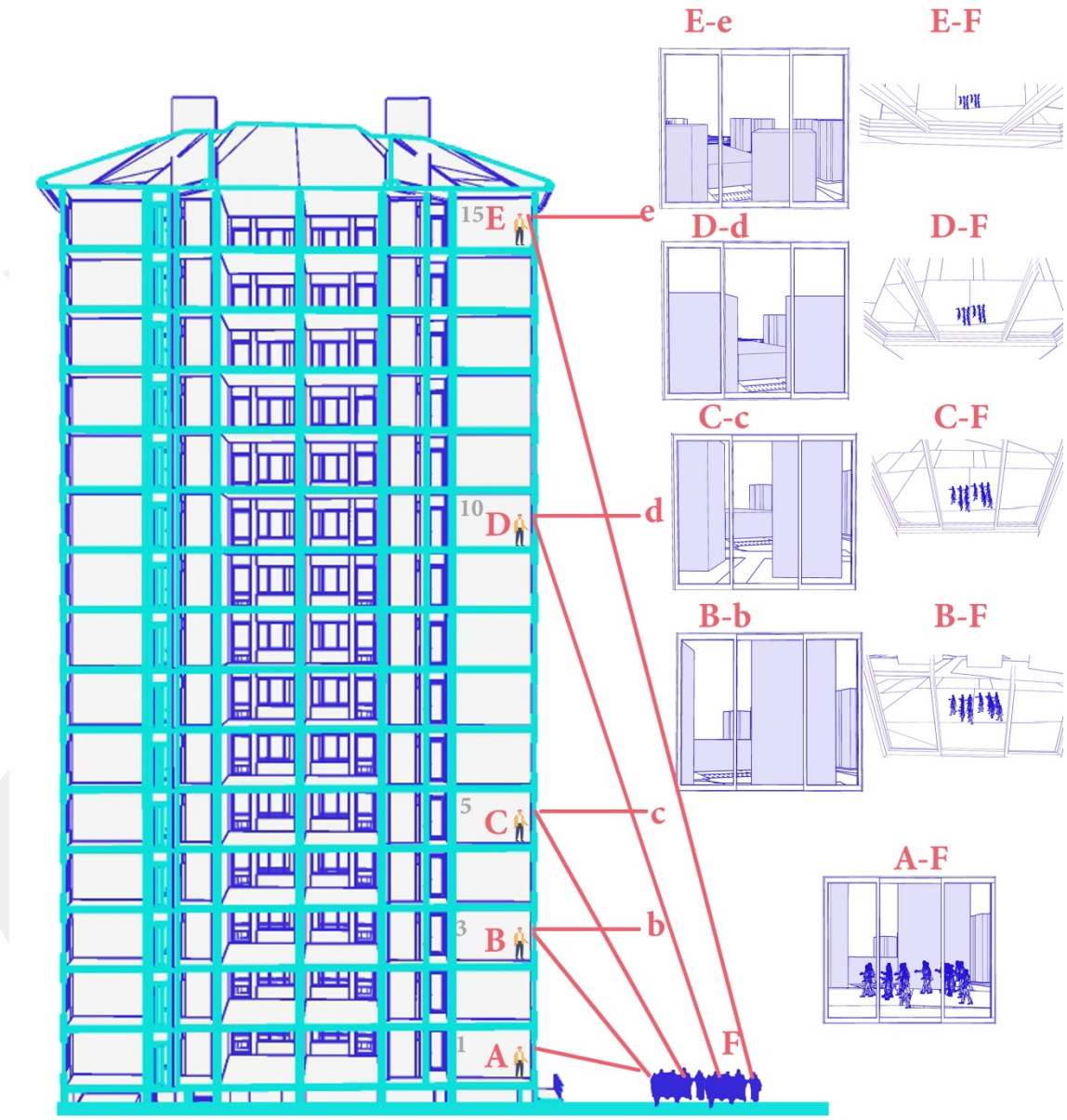


Figure 4.2.57 İldem C Human Dimension View Numbered 2

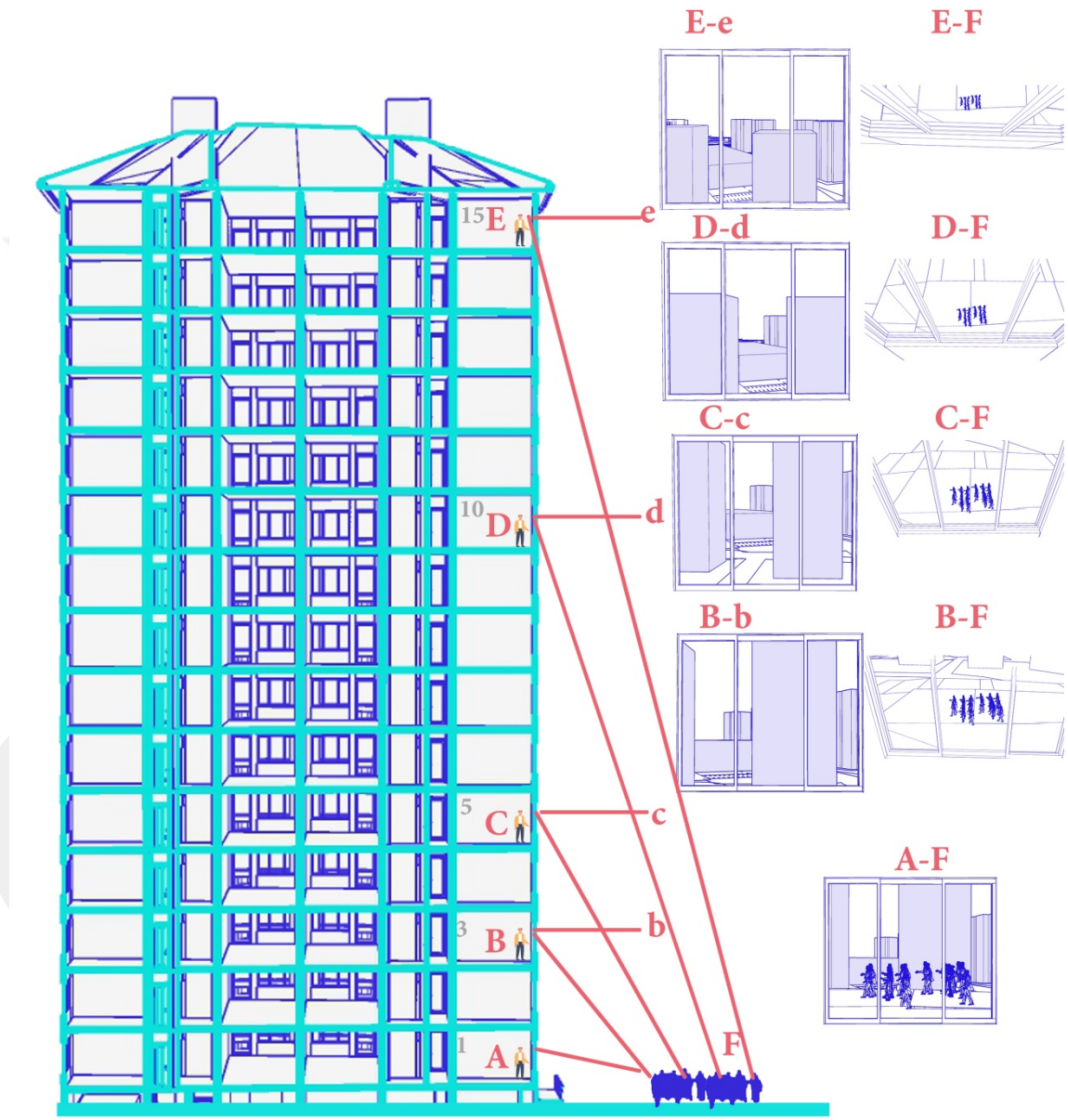


Figure 4.2.58 İldem C Human Dimension View Numbered 3

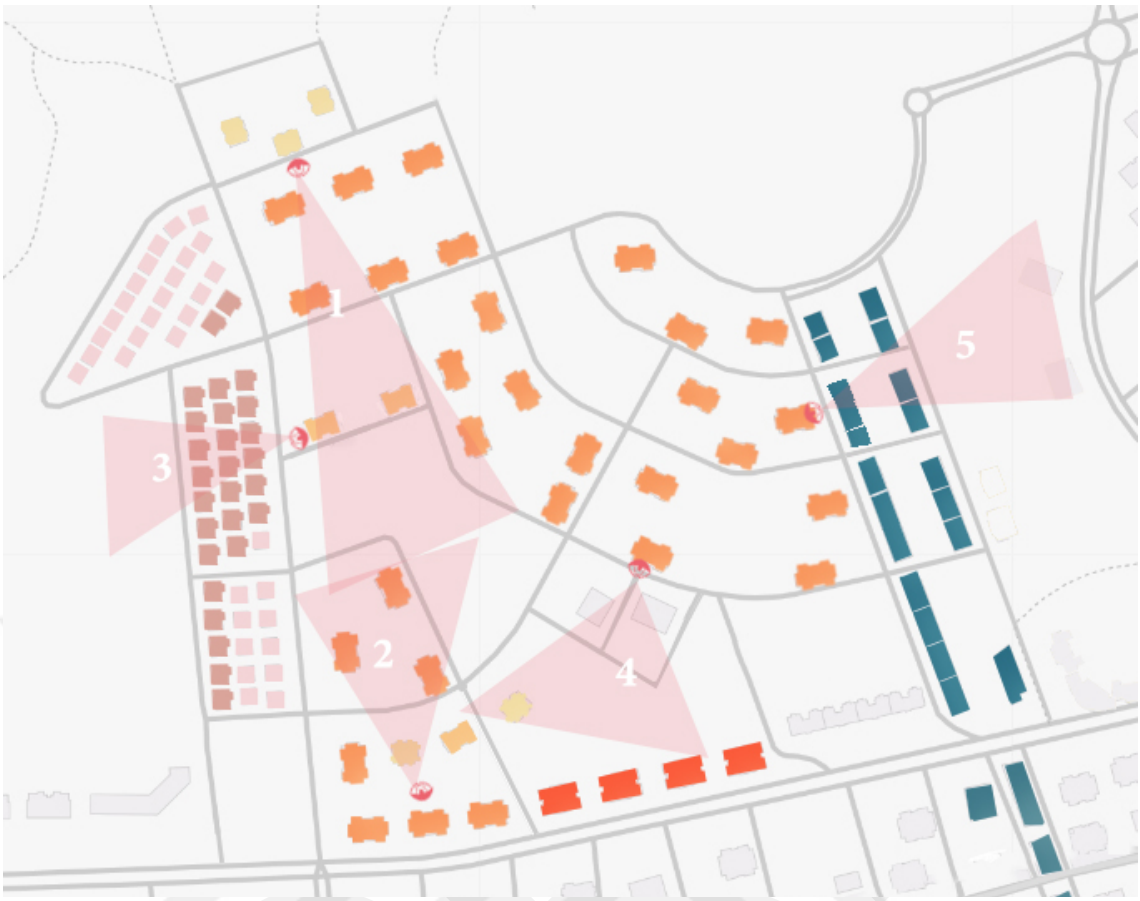


Figure 4.2.59 İldem D human dimension view map

Unlike İldem C, İldem D has not been built between the concrete jungle. Most of the density of the built is composed of İldem D buildings. The design and layout of İldem D buildings have shaped the environmental perception of the people living there. The human dimesion of İldem D's built environment has been examined through five building numbered on the map (Figure 4.2.59). These selected buildings change as 10, 12, and 13 floors and offer a view of the environment from four sides of this building groups.

The view from the 1,3,5,10, and 12th floors of the building that numbered 1 on the map to the built environment, and the building's ground floor has been illustrated. Viewing from the 3rd and 5th floors in the direction of the B-b and C-c lines, the sloping land landscape of the other ildem D buildings dominates the view. Looking at the surroundings from the 10th and 12th floors in the direction of D-d and E-e, it cannot provide all the ildem D views due to the fact that the building is at a lower elevation than its surroundings (Figure 4.2.60).

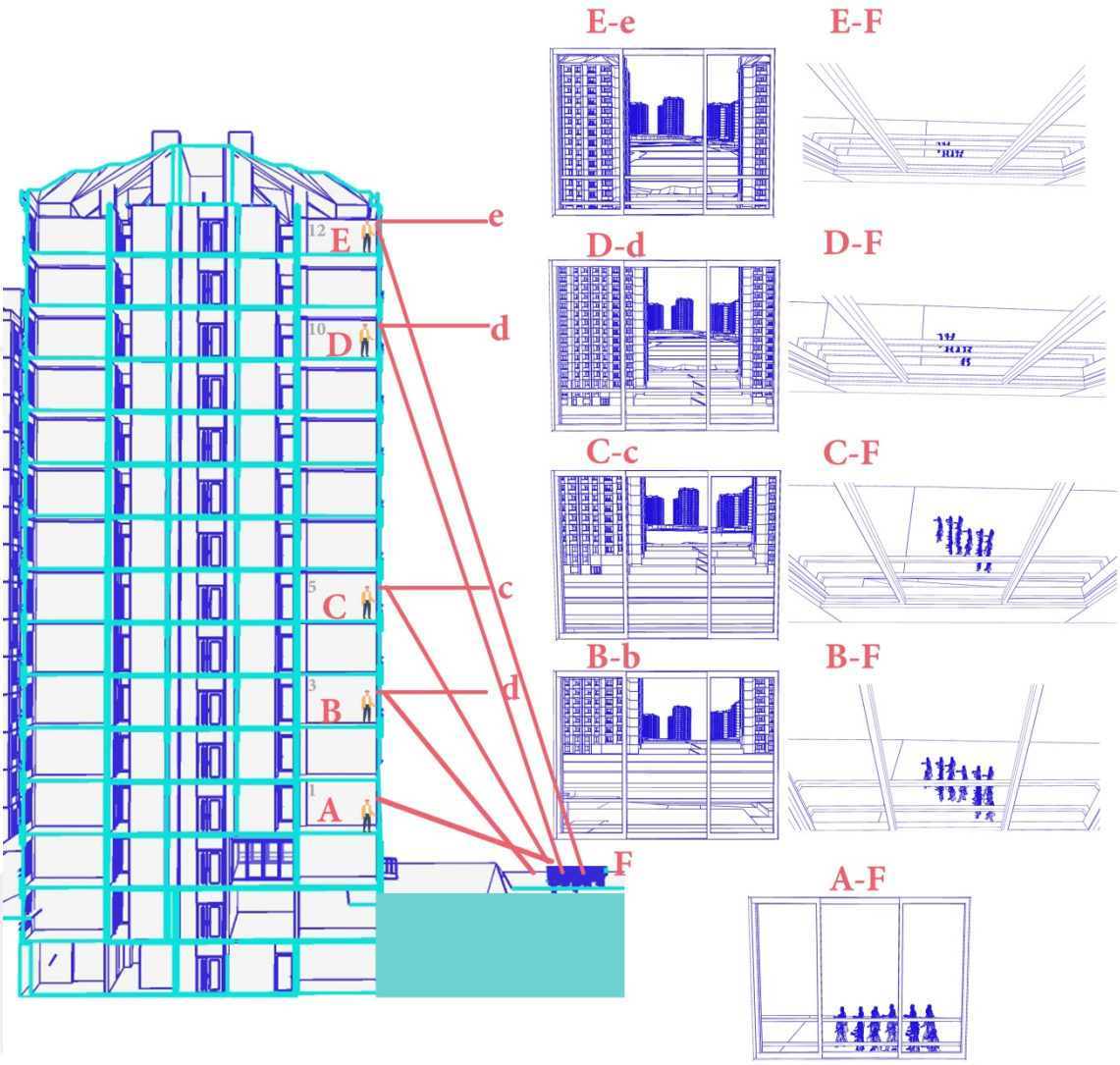


Figure 4.2.60 İldem D Human Dimension View Numbered 1

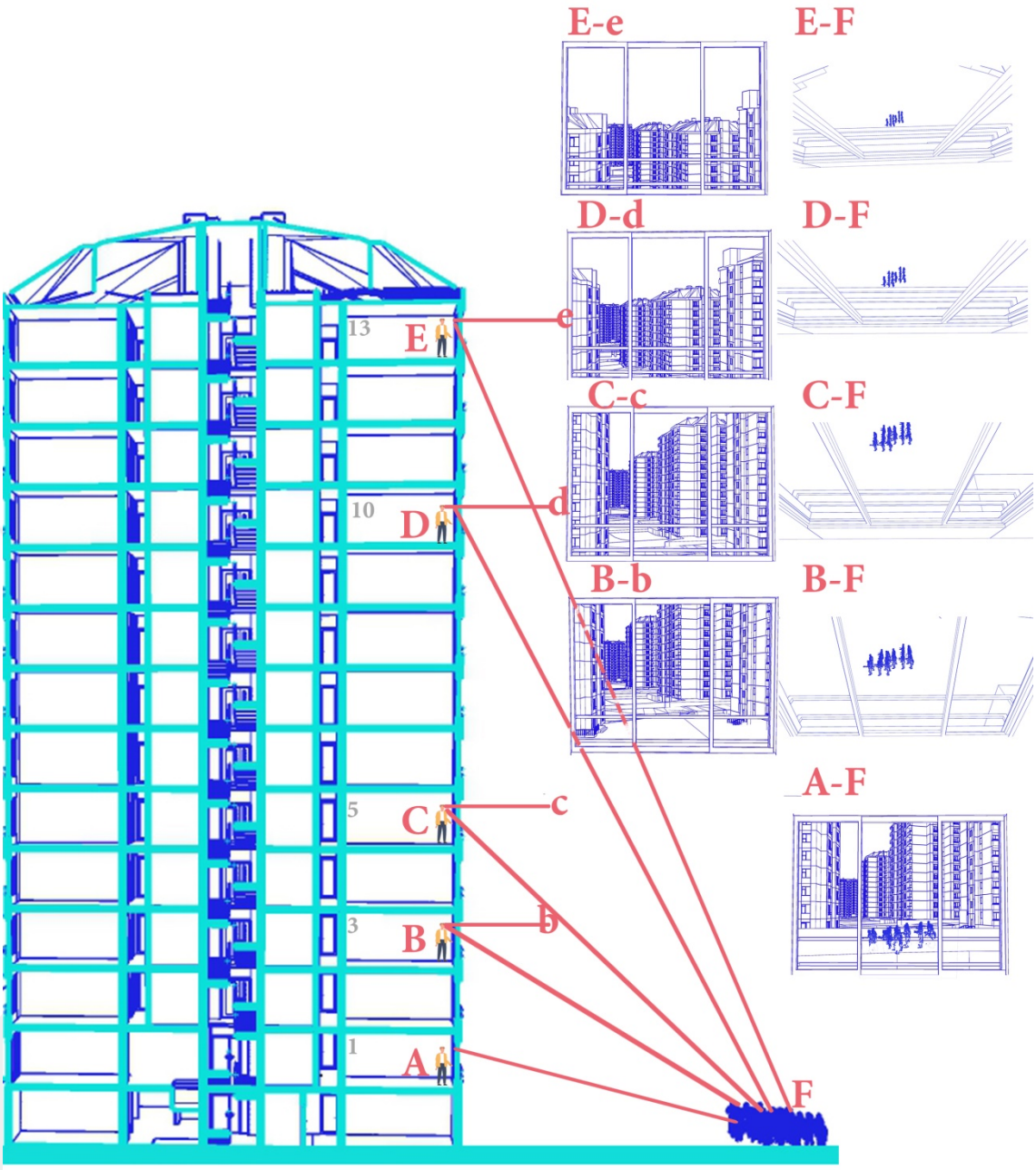


Figure 4.2.61 İldem D Human Dimension View Numbered 2

The built environment and the ground floor of building 2 have been viewed from the 1,3,5,10 and 13 floors. The view in the A-F, B-b, C-c, and D-d directions draws attention to the building density around building number 2.While, the view from the last floor in the E-e direction effect of the building density on the view has decreased, but in the E-F direction, that is, the relationship with the building ground has been broken (Figure 4.2.61).

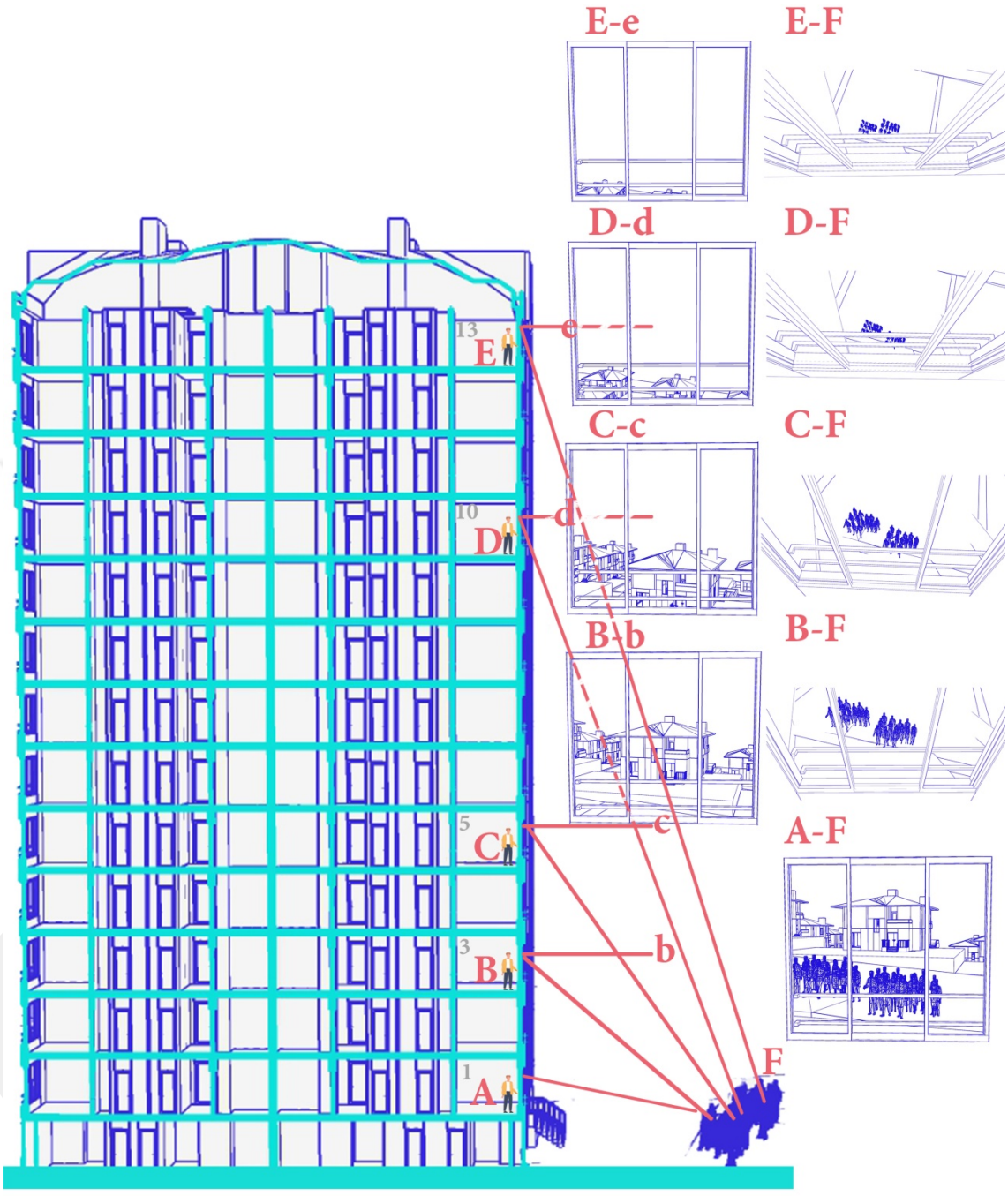


Figure 4.2.62 İldem D Human Dimension View Numbered 3

Having been viewed from the 1st,3rd, and 5th floors of building number 3 in A-F, B-b, and C-c directions, the villas of the İldem d project form the dominant view. Since the İldem D surrounding areas are developing, there is no built environment behind İldem D villas, but the landscape in D-d and E-e directions will probably change in the coming years(Figure 4.2.62).

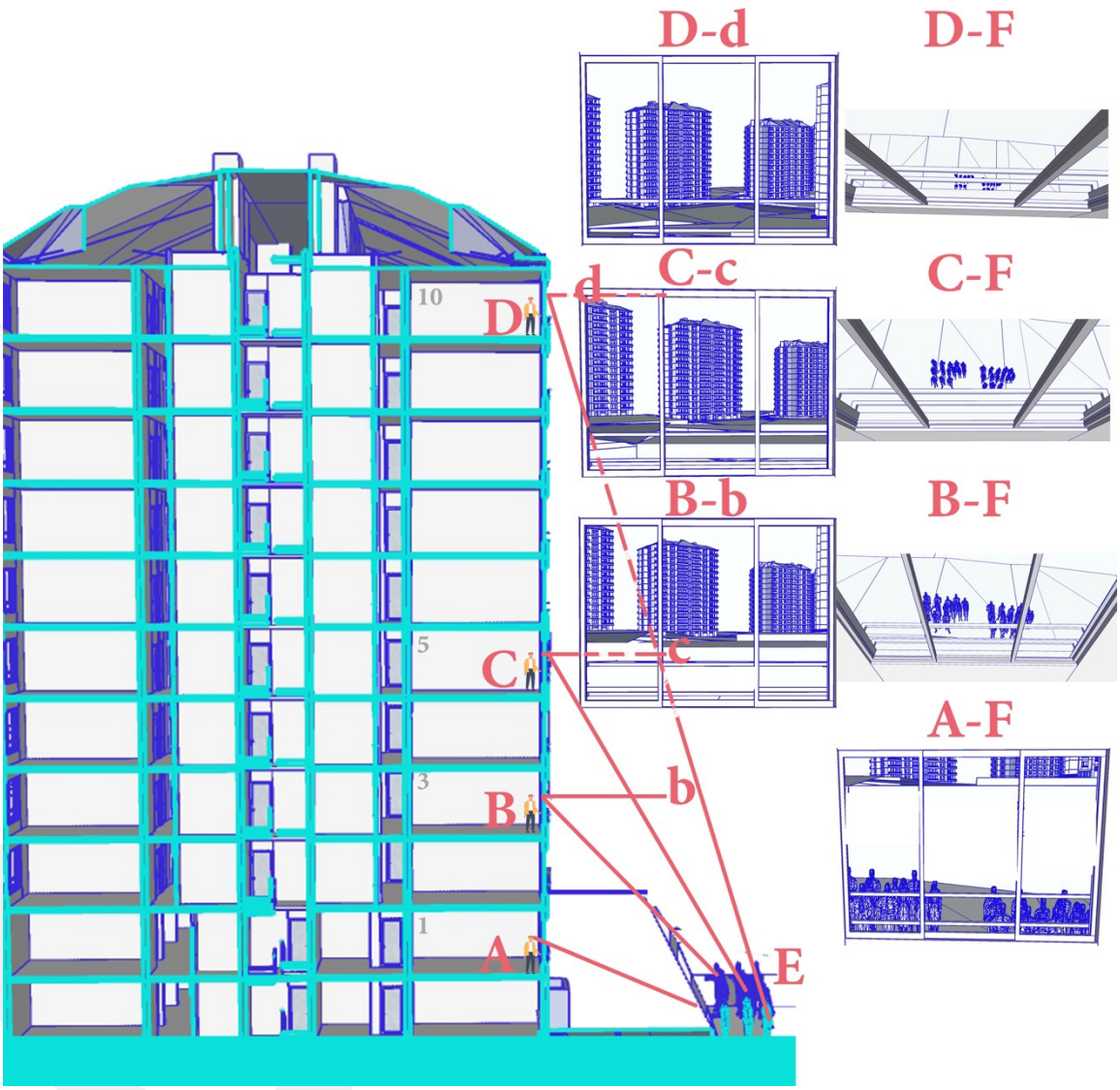


Figure 4.2.63 İldem D Human Dimension View Numbered 4

Have been viewing from the 1,3,5 and 10th floors of building number 4, İldem D's largest and different typology buildings have dominated the view. With the view in the directions A-E, B-E, C-E, and D-E, it has been illustrated how the building's ground floor is perceived by the human sense (Figure 4.2.63).

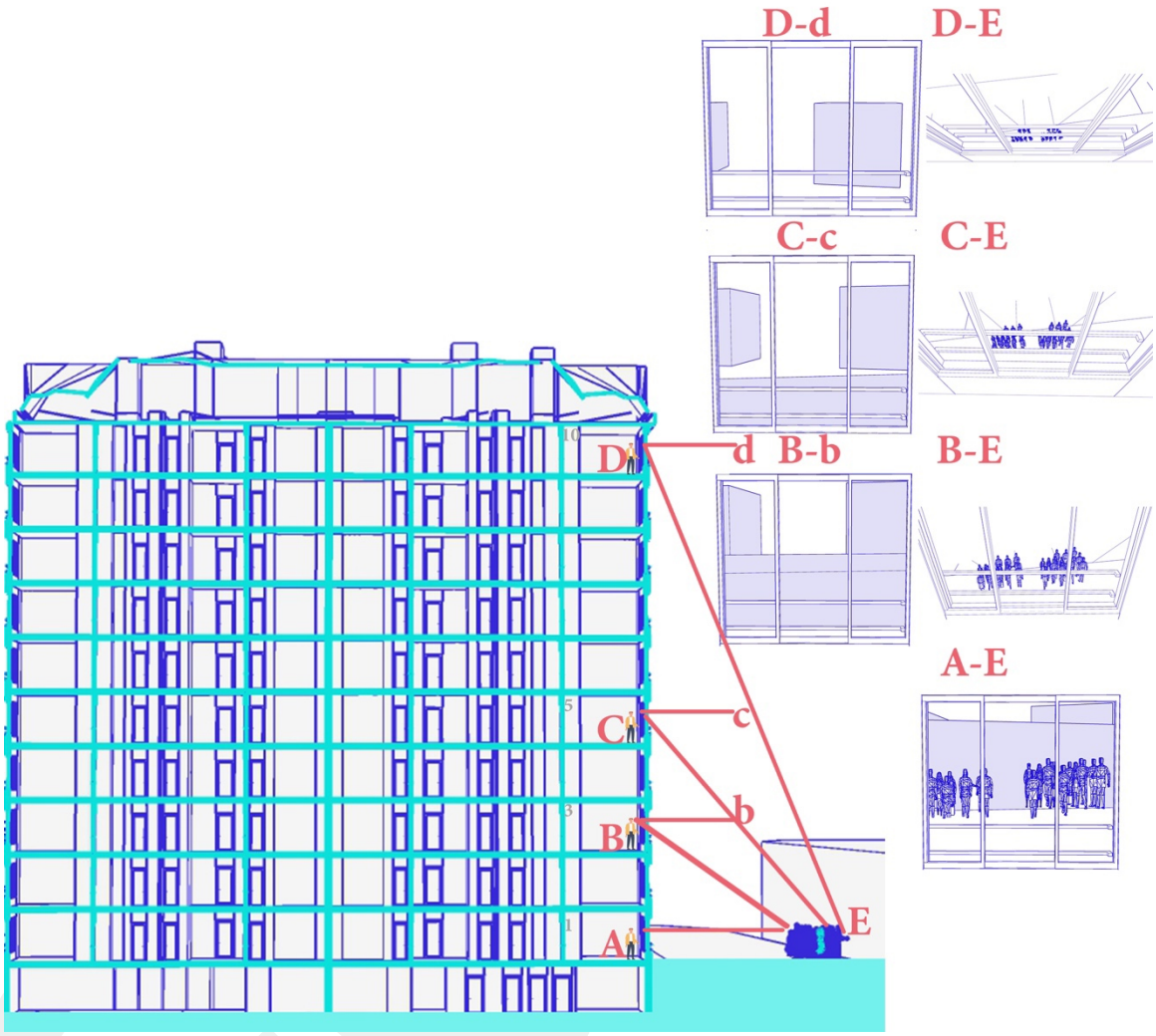


Figure 4.2.64 İldem D Human Dimension View Numbered 5

The two-story commercial buildings built next to the İldem D building group and supporting the mixed-use affect the view from the first, third, and fifth floors of building number 5 in the direction A-E, B-b, and C-c. Since the areas behind these two-story buildings are open to development, the view on the last floor of building number 5 will likely change over time (Figure 4.2.64).

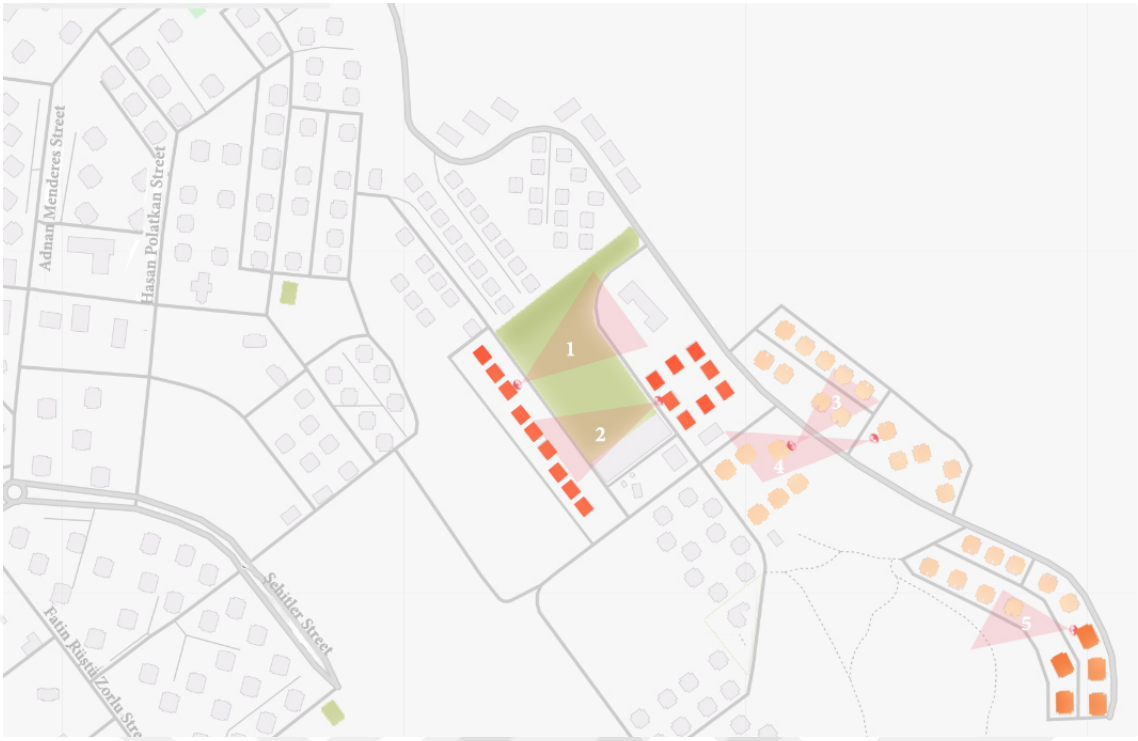


Figure 4.2.65 TOKİ 1-2 Human Dimension View Map

When the human dimension is discussed and illustrated in TOKİ 1 and TOKİ 2 building groups, a different view emerges from İldem C and İldem D illustrations of the human dimension. The fact that TOKİ 1 and TOKİ 2 building groups are composed of low-rise buildings does not break the relationship between humans and the buildings' ground floor. In other words, the residents of these buildings are in control of what is on the ground floor of the building, no matter what floor they are on. In addition, the high-rise building density is not dominant in the views of these building groups, as in İldem C and D. The human dimension concept has been illustrated in TOKİ 1 and TOKİ 2 with the five buildings shown on the map (Figure 4.2.65).

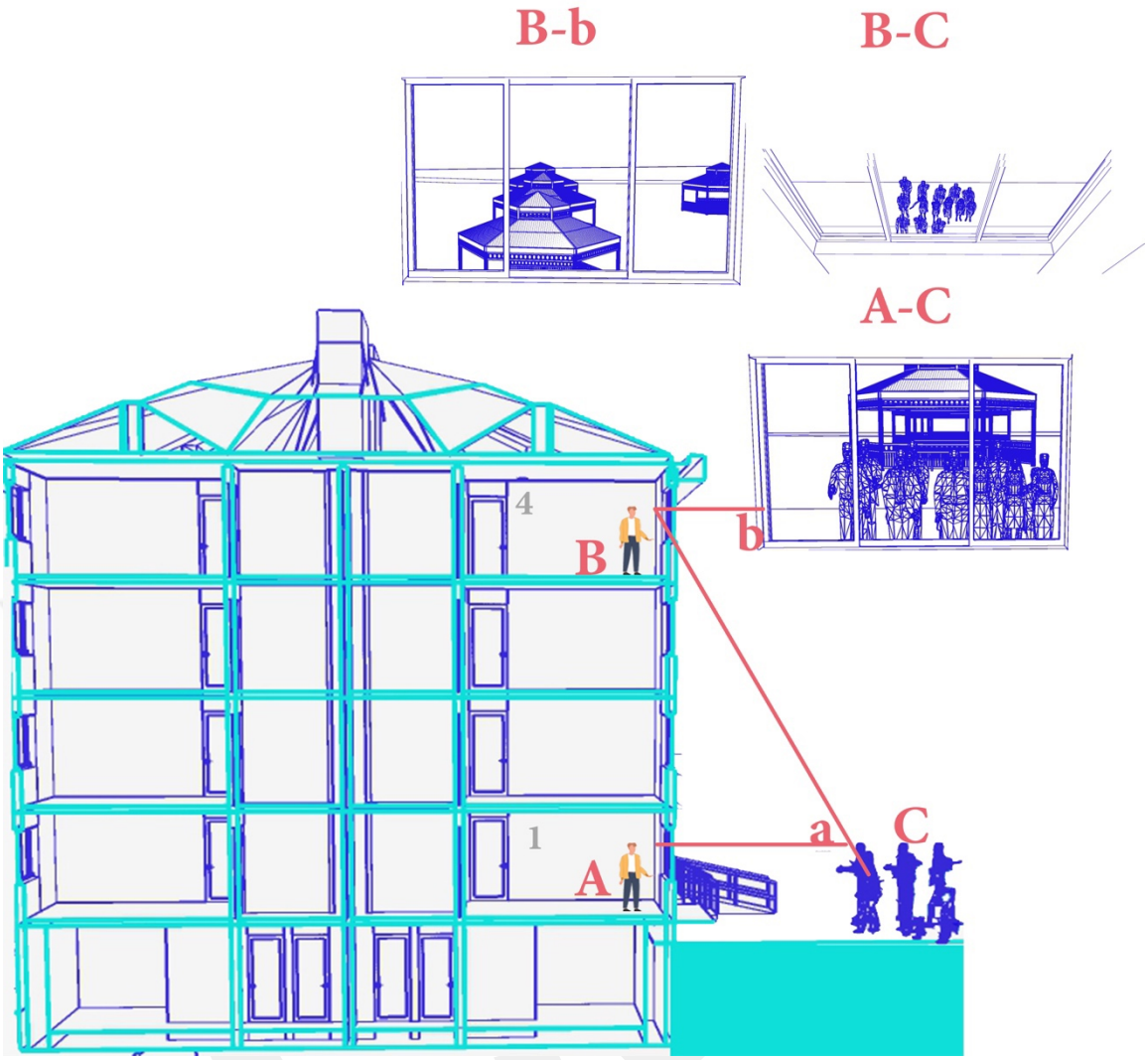


Figure 4.2.66 TOKİ 1-2 Human Dimension View Numbered 1

Views in the direction of A-C, B-b, and B-c have been illustrated from the first floor and the fourth floor, which is the last floor, of buildings 1 and 2, which are the buildings of the TOKİ 1 building group. The park and urban furniture in the middle of these buildings became the focus of the view (Figure 4.2.66, Figure 4.2.67).

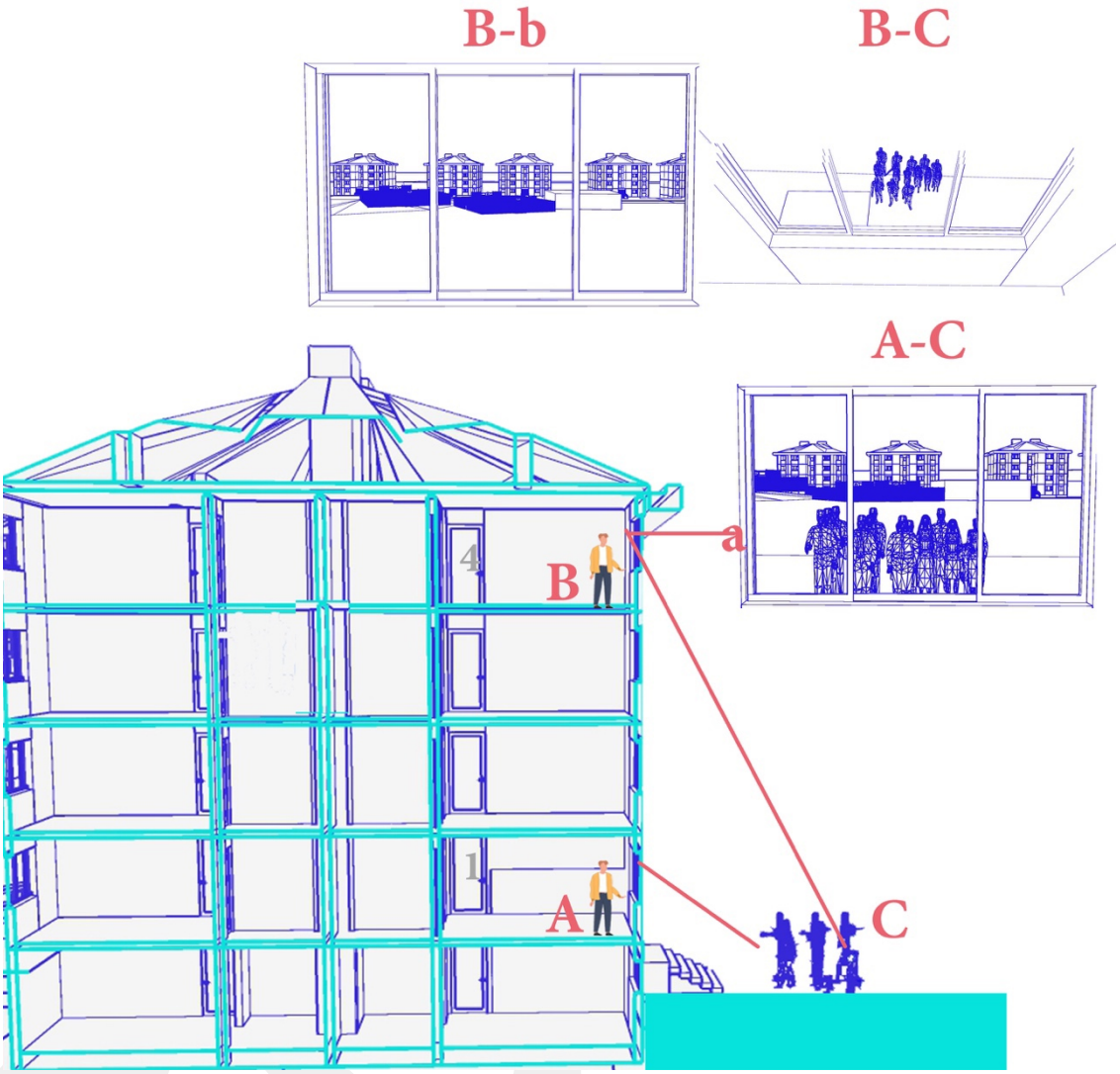


Figure 4.2.67 TOKİ 1-2 Human Dimension View Numbered 2

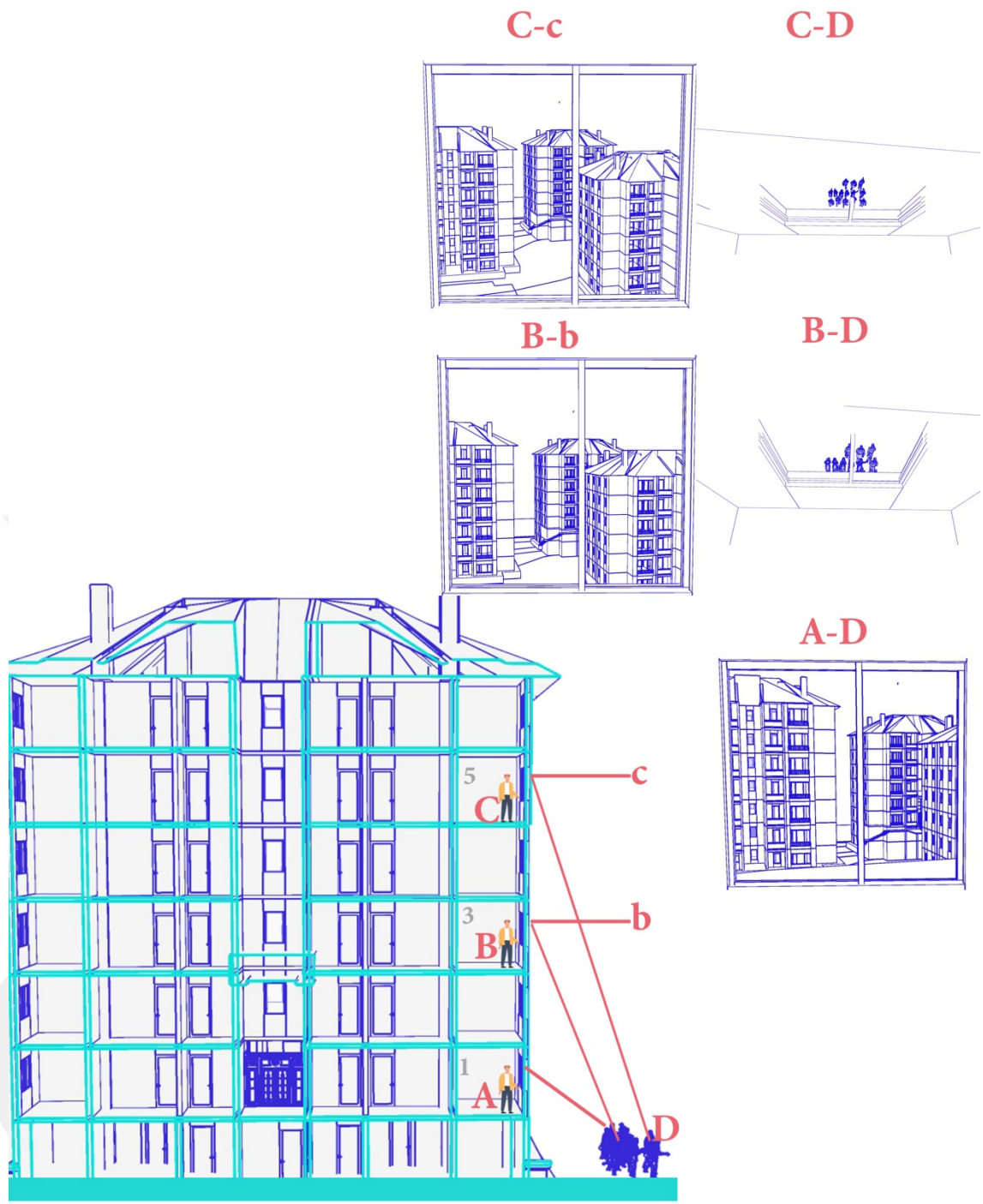


Figure 4.2.68 TOKİ 1-2 Human Dimension View Numbered 3

Buildings 3 and 4 belong to building group TOKİ 2 and face each other. Although these 6 and 7-story buildings are high-rises compared to the surrounding buildings due to their location on the slope, this high-rise effect has not dominated the view in B-b, C-c, and D-d directions (Figure 4.2.68, Figure 4.2.69).

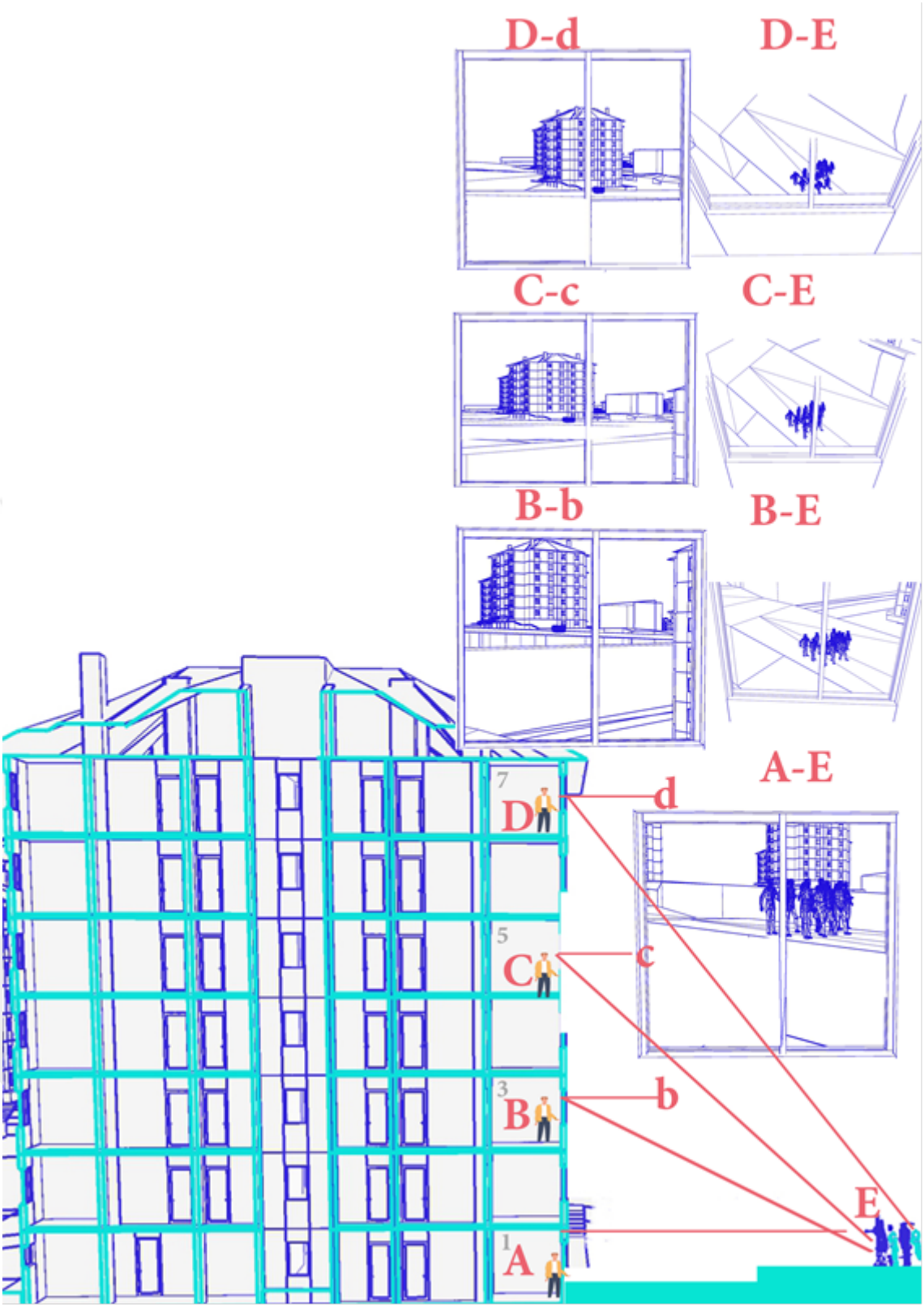


Figure 4.2.69 TOKİ 1-2 Human Dimension View Numbered 4

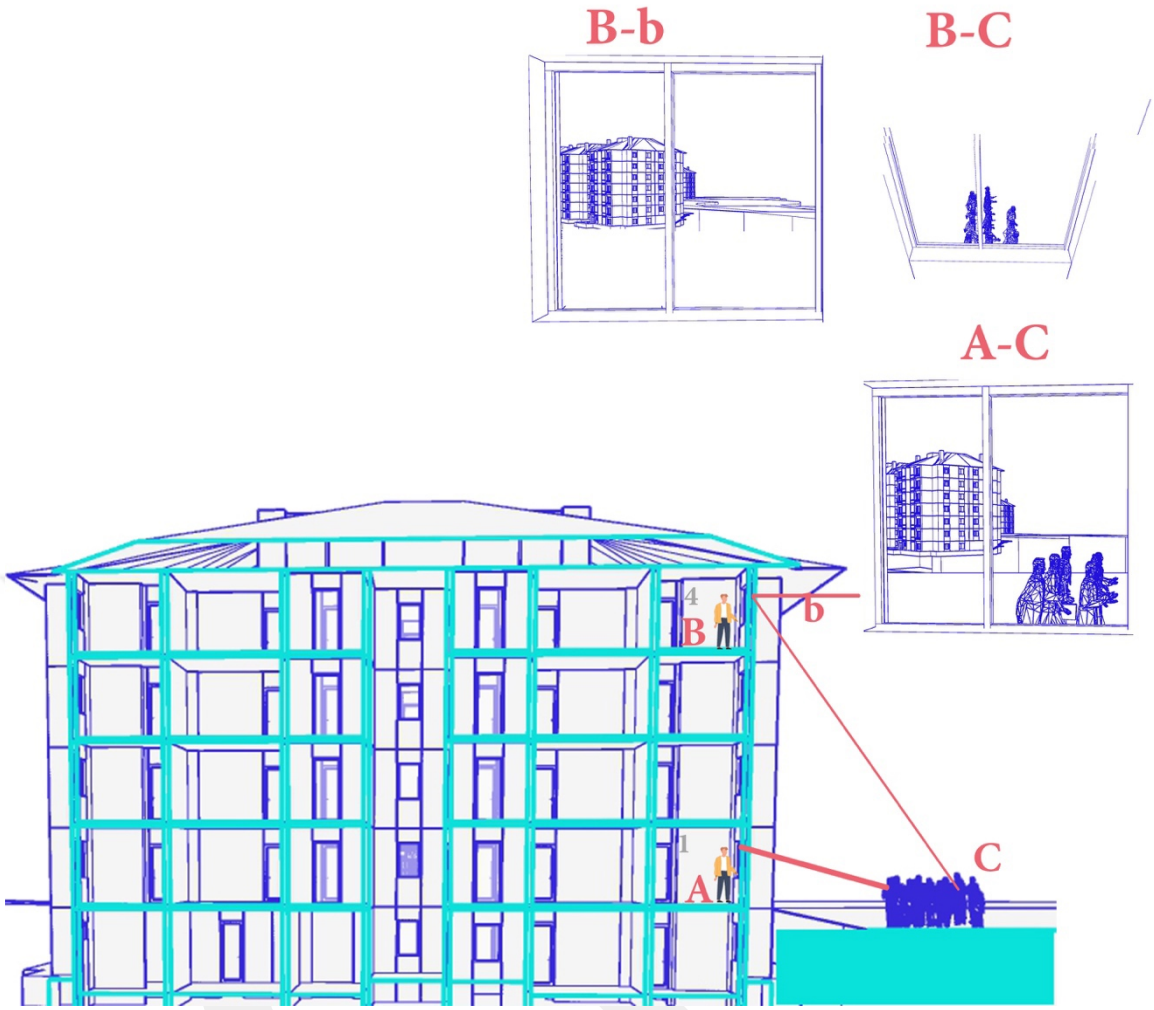


Figure 4.2.70 TOKİ 1-2 Human Dimension View Numbered 5

4.3 Evaluation of Urban Vitality in Suburban of İldem

Urban vitality conditions, which were reconsidered according to the İldem suburb conditions in the previous title, have been analyzed with maps and illustrations in İldem C, İldem D, and TOKİ 1-2 building groups. Evaluation of urban vitality in suburban of İldem title aimed that crosscheck the analyzed urban vitality conditions by observing these three building groups. In other words, this title wanted to prove whether the spaces that provide urban vitality conditions or do not provide urban vitality conditions in theory, are used by people or not in urban life. İldem C, İldem D, and TOKİ 1 -2 building groups were observed at 8.00-9.00, 10.00-11.00, 16.00-17.00, and 19.00-20.00 hours on weekdays and weekends in summer season (June –September). Since Kayseri has a continental climate in winter and effects are seen in spring, the summer season, where the air temperature is ineffective in urban space and human interaction, has been chosen for the study. Moreover, to understand and compare the changing human behavior and usage intensity on weekdays and weekends, observations have been made at the same time intervals on weekdays and weekends. The activities of the observed people have been defined under the titles of walking, sitting, shopping, standing for public transport, and social and sport.

Most urban studies dealing with urban vitality, which we examined within the scope of this thesis, urban vitality conditions have been translated into numerical data in a result the urban vitality with number ranges expressing high and low vitality values has been classified. In this title, urban vitality has been examined not with numerical values, but with inferences made from observations, and maps that have been made because of inferences. The reason why urban vitality has been studied in this way is that this thesis adopts Jane Jacobs's understanding of the urban, who argues that the city cannot be understood with numerical data, probabilities, and statistics, as a legacy and it is desired to adapt it to today's urban conditions. The maps prepared at different time intervals on weekdays and weekends are interpreted together with the urban vitality conditions that were examined in the previous title, and a crosscheck has been made that the effect of urban vitality conditions in urban life.

The density of people and the diversity of activities change at the selected time intervals on the İldem C people activities maps. The built environment parameters that caused these changes have been explained with the numbered streets in the maps.

The housing density of İldem C and its built environment has brought along the density of people, therefore has been observed that the streets numbered on the map have been always used within the specified time intervals. In İldem C's weekday map between 8.00 and 9.00 people's activity density has been generally composed of people waiting for public transport and walking. The density of people on streets 1,2 and 3, which are located at the center of İldem C building groups and are connected to each other, draws attention on the map. These streets are mainly used for social and sports activities, public transportation, walking and shopping (Figure 4.3.1).



Figure 4.3.1 İldem C People Activities Map Weekday (08.00-09.00)

An increase has been observed in the density of people on the numbered 5, 6, 7, and 8 streets between 10:00 and 11:00 on weekdays. At the same time It was observed that the İldem Mall located on the numbered 1 street attracted people to this street and accordingly, it was observed that the density of people increased on numbered 1, 2 and 3 streets. Since there are commuting time between 10:00 and 11:00, the number of people standing for public transport on street numbered 3 has decreased. Has been observed increasing in the number of people engaged in social and sports activities in the parks located on the 2, 3 and 8 streets (Figure 4.3.2).



Figure 4.3.2 İldem C People Activities Map Weekday (10.00-11.00)

According to the weekday map between 16.00-17.00 hours, human density and interaction continue in İldem C center 1,2,and 3 streets,also,it is possible to say that density of people has increased on the 4,8 and 10 streets. The increase in the density of people that engaged in social and sports activities in the parks on the 2, 3, and 8 streets supported the urban vitality on weekdays between 16.00-17.00 hours (Figure 4.3.3).



Figure 4.3.3 İldem C People Activities Map Weekday (16.00-17.00)

According to the people activities map on weekdays between 19.00 -20.00 hours have been observed that the density of people increased on all the numbered streets. The use of İldem C and its built environment by people in the evening highlights that the suburb of İldem is a part of the city with a high urban vitality that goes beyond being a bedroom committee.

The shopping center is an urban space that attracts people throughout the day from the opening time, and this effect increases again between 19.00 -20.00 hours. In addition, the urban furniture, and social and sports activity diversity of the parks increase human interaction by encouraging the use of the parks.Thus, the parks have turned into safe urban spaces and are used by people instead of being border vacuums (Figure 4.3.4).



Figure 4.3.4 İldem C People Activities Map Weekday (19.00-20.00)

According to observations at the same time intervals as the weekdays on the weekend, the hours between 8.00-9.00 on the weekend is the time that human interaction is the least in İldem C and its built environment compared to all time intervals. Although the people standing for public transportation stops the people shopping from small businesses on numbered street 3 and the people doing social and sports activities in the parks on the numbered street 2 contribute to the density of people between 8.00-9.00, the urban vitality of İldem C is not high (Figure 4.3.5).



Figure 4.3.5 İldem C People Activities Map Weekend (08.00-09.00)

On the human activities map, it has been observed that the density of people increased in all the streets between 10:00 -11:00 hours. The most important reason why the interaction of İldem C residents on the weekend start to increase between these hours is the leisure time outside of working hours. Apart from obligatory entertainment such as going to work or school, people interact with urban places such as shopping, sports, and social activities, or use public transportation to carry out these activities by going to the city center. The intensity and variety of activities on streets 1,2,3,4, and 8 contribute to human interaction between 10.00-11.00 hours (Figure 4.3.6).



Figure 4.3.6 İldem C People Activities Map Weekend (10.00-11.00)



Figure 4.3.7 İldem C People Activities Map Weekend (16.00-17.00)

In the human activity maps between 16.00-17.00 and 19.00-20.00 on weekends, the urban vitality and the built environment with high human interaction draw attention. Although the reasons for this are the same as the conditions that increase the urban vitality of İldem C on weekdays, the shopping mall in the center of İldem C and the weekend events and concerts held here,and the tendency of people living in and around İldem C to use public spaces such as parks and courtyards of buildings, supports the increase of urban vitality (Figure 4.3.7, Figure 4.3.8).



Figure 4.3.8 İldem C People Activities Map Weekend (19.00-20.00)

According to the İldem C people activities maps, the İldem c building group produces urban vitality with its urban vitality conditions and the quality built environment elements surrounding it. However, unlike İldem C, the İldem D building group has a more introverted way of producing urban vitality. The İldem building group provides urban vitality in a more independent and introverted way, with factors such as housing and human density, mixed-use user diversity, the elements that develop the public space, and its distance from the surrounding built environment. The urban vitality production way of the İldem D building group, which was observed at the specified hours on weekends and weekdays, has been also shown on the people activities maps.



Figure 4.3.9 İldem D People Activities Map Weekday (08.00-09.00)

The density of people in İldem D between 8.00-9.00 on weekdays is due to commuting time. People standing at public transportation stops on streets 1, 2, 7, and 11, with people shopping at the shops on streets 3, 7, 8, 9, and 11 support the density of people between these hours (Figure 4.3.9). Increasing human density has been observed in all the streets numbered on the map between 10.00-11.00 on weekdays and even in the shortcut connecting the 4th and 8th streets. One of the most significant factors of the urban vitality provided by the İldem D building group is the mixed-uses that are located under the İldem D buildings. The density of people has been encountered from the opening time to the closing time of these mixed uses. The positive effect of mixed uses on urban vitality and human interaction has started to come out on the map on weekdays between 10.00-11.00 hours (Figure 4.3.10).



Figure 4.3.10 İldem D People Activities Map Weekday (10.00-11.00)



Figure 4.3.11 İldem D People Activities Map Weekday (16.00-17.00)

The positive effect of mixed-use between 16.00-17.00 on weekdays continues between these hours. Also, rush hour increases human density. As can be seen on the people activities map, where soft edges were with the seating furniture placed on the fronts of İldem D mix use, people use these facades as park sitting areas. But it is not enough to have mixed-use or create soft edges on the facades, the type of mixed-use is also significant. The facades of the buildings on 6th street on the map have soft edge and mixed uses, However, these mixed uses are not actively used by people such as hairdressers and haberdasheries at all hours of the day, so the density and interaction of 6th street are low. The 2-story mixed-use buildings on numbered street 11 have the potential to increase urban vitality for İldem D buildings.However, the fact that most of these mixed uses are empty negatively affects the vitality of 11th Street.In the future, with the opening of all mixed uses, will attract people and change İldem D's production of urban vitality (Figure 4.3.11).



Figure 4.3.12 İldem D People Activities Map Weekday (19.00-20.00)

The decrease in human density observed in the human activity map of İldem D between 19.00 and 20.00 hours on weekdays is an example of the inward-oriented urban vitality production style of the İldem D building group. When the mixed-uses, which are the most essential of İldem D building group's urban vitality, is closed, İldem reduces its urban vitality. Therefore, there is a need for secondary uses that support the urban vitality of İldem D outside of mixed use working hours(Figure 4.3.12).



Figure 4.3.13 İldem D People Activities Map Weekend (08.00-09.00)

Just like İldem C on the weekend 08.00-09.00 map, it has been observed that İldem D has the least human density and interaction between 08.00-09.00 on the weekend human activities map. The reason for this low human density and interaction is the weekend holiday and mixed-use being out of use during this time. Even though the mixed-use on street numbered 11 provides service between these hours, it is not enough on its own (Figure 4.3.13). With the opening time of mixed uses on 1,2,3,7, and 8 numbered streets, the density of people and human interaction have increased according to the weekend human activity map between 10.00-11.00 hours. Of course, between 10:00 and 11:00 on weekdays, the density of people has not been observed on the weekend. However, the increasing density of people between 10.00-11.00 is evidence that mixed uses attract people to use the urban area (Figure 4.3.14).



Figure 4.3.14 İldem D People Activities Map Weekend (10.00-11.00)

According to the map of people activities on weekends between 16.00-17.00 hours, İldem D has the highest people density. İldem D's activities consist of compulsory human activities such as shopping, walking from one place to another, and standing for public transport. Sport and social activities with urban furniture and playgrounds in the courtyards of the buildings have not contributed to the urban vitality of the streets The activities of İldem D, which provides human interaction and density with its own built environment elements and urban vitality conditions, in isolation in the building courtyards have been the result of introverted urban vitality(Figure 4.3.15). These introverted urban vitality are fragile and unsustainable. An example of fragile and unsustainable urban vitality has been observed when the density of people between 16.00-17.00 decreased between 19.00-20.00.



Figure 4.3.15 İldem D People Activities Map Weekend (16.00-17.00)

The closure of some of the mixed uses that provide compulsory human activities and the fact that some are not used at 19.00-20.00 hours reduces the urban vitality of İldem D. That's why İldem D needs urban spaces, including social and sportive activities, accessible to everyone, that can be converted to secondary use outside of working hours. Designing parks around İldem D that not creating a border vacuum or link the social interaction in the courtyards of the buildings with the streets provides the complex and diverse urban vitality that İldem D needs (Figure 4.3.16).



Figure 4.3.16 İldem D People Activities Map Weekend (19.00-20.00)

TOKİ 1 and TOKİ 2 building groups that built side by side have been considered together in the human activity map. This way has enabled the opportunity to observe the different urban vitality and human interactions that TOKİ 1 and TOKİ 2 produced. Along with the maps designed as a result of observations at the determined hours on weekdays and weekends, urban vitality conditions and quality built environmental elements that contribute to the production of different urban vitality have been discussed. The notable factors of this difference in the TOKİ 1 and TOKİ 2 building groups, which are close to each other but with different levels of urban vitality and human interaction, are the land conditions and building locations. On maps, streets 1, 2, and 3 have been in contact with people and buildings, while street 4 has a highway feature due to its width, land slope, and location of the buildings. Therefore, its contact with buildings and people has been broken.

According to the human activities map between 8.00 - 9.00 hours on weekdays, most of the density of streets 1,2 ,and 3 is commuting hours, except for public transportation, shopping and sports activities. The people density on 4th street consists of residents of TOKİ 2, who are far from the public transport on the 1st street and standing for the public transport (Figure 4.3.17).



Figure 4.3.17 TOKİ 1-2 People Activities Map Weekday (08.00-09.00)

On weekdays between 10:00-11:00 have been observed that the people density increased on streets 1,2, and 3. The reason for this increased people density in this interval, unlike the morning commute, is that the urban spaces between 1,2, and 3 streets have the characteristic of a square. Since the surroundings of TOKİ 1 TOKİ 2 building groups consist of residences, these urban spaces, which include public buildings, parks, mixed-use, market place, sports fields, and public transport stops surrounded by streets 1,2 and 3, have become the square of the region and have the monotony that gets by the dense housing pattern have broken (Figure 4.3.18).



Figure 4.3.18 TOKİ 1-2 People Activities Map Weekday (10.00-11.00)

According to the people activities map between 16.00-17.00 on weekdays, has been observed that human density and human interaction continue to increase. Although rush hour influences this increase in density and interaction, this is not the only factor that ensures the high urban vitality of TOKİ 1 and 2. In the middle of TOKİ 1 and TOKİ 2, urban spaces that show the characteristics of a square became a factor, especially a park contributing to the urban vitality of this region. Parameters such as urban furniture, sports fields, playgrounds, and walking tracks in the park attract people and thus increase the urban vitality of streets 1, 2, and 3. On the one hand, when the street numbered 4 and the TOKİ 2 building groups on this street are examined, has been observed that there is a different people density and human interaction than the streets 1,2,3. According to all the people activities maps on weekdays and weekends has been observed that the human density and human interaction on 4th street are low and secluded. But in the inner streets formed by the TOKİ 2 building group on 4th street, TOKİ 2 residents meet in these streets to socialize. Although a similar situation has been experienced in the courtyard of TOKİ 1 building group located on 3rd street, TOKİ 2 residents interact with these streets even though the inner streets have not the parameters that attract people to socialize (Figure 4.3.19).



Figure 4.3.19 TOKİ 1-2 People Activities Map Weekday (16.00-17.00)

Though the density of people decreases between 19.00-20.00 hours compared to 16.00-17.00 hours, has been observed that high urban vitality has been preserved due to the park which supports human density and interaction. In the summer season, with the evening hours, this park has become the meeting point for the region. Even late at midnight, this park, which has a high density of people, offers primary use in the morning, turns into a secondary use in the evening and makes the urban vitality of streets 1,2 and 3 sustainable. Has been observed that the density increased in the inner streets of the TOKİ 2 building group, while the street 4th has been low in human density and interaction (Figure 4.3.20).



Figure 4.3.20 TOKİ 1-2 People Activities Map Weekday (19.00-20.00)



Figure 4.3.21 TOKİ 1-2 People Activities Map Weekend (08.00-09.00)

Even though the human activity map is the least crowded hours due to the weekend, between 08.00 and 09.00, it has been observed that the human density has been supported by the social and sportive activities and mixed uses in the park (Figure 4.3.21). According to the weekend human activity map ,between 10:00 -11:00, the density of people has increased in streets 1 and 3 and in the park between these streets(Figure 4.3.22).



Figure 4.3.22 TOKİ 1-2 People Activities Map Weekend (10.00-11.00)

On weekends it has been observed that the density of people and human interaction have been highest between 16.00-17.00. An example of the square feature of the urban space between 1,2,and 3 streets can be seen on the weekend human activity map. This map shows that people use TOKİ 1 and 2 streets for their socialization activities apart from their compulsory activities such as walking, shopping, waiting for public transportation (Figure 4.4.23). TOKİ 1-2 urban vitality, in which urban spaces and building facades interact with people, is the opposite of the fragile and unsustainable urban vitality production mentioned in the map interpretations of İldem D above. Urban vitality conditions support each other, non-fragile urban vitality, for example; Although the use of mix used decreased on the 19.00-20.00 map, the secondary use of the park supported people density and human interaction. Thus, the

density and interaction of the people at 16.00-17.00 are sustainable during the hours of 19.00-20.00 (Figure 4.3.24).



Figure 4.3.23 TOKİ 1-2 People Activities Map Weekend (16.00-17.00)



Figure 4.3.24 TOKİ 1-2 People Activities Map Weekend (19.00-20.00)

Table 4.3.1 Evaluation of Urban Vitality in Suburban of İldem Table

EVALUATION OF URBAN VITALITY IN SUBURBAN OF İLDEM				
	İLDEM C	İLDEM D	TOKİ 1-2 (On 1,2, and 3 streets)	TOKİ 2 (On 4th street)
CONTEXT				
Site Character	+	+	+	+
Legibility	+	+	+	+
Landmarks, Vistas	+	+	+	_
Flexibility	_	+	_	_
MAKING THE CONNECTIONS				
Walkability	+	+	+	_
Public Transport	+	+	+	+
Cycling	_	_	_	_
Parking	_	+	+	+
DIVERSITY				
Mix Uses	+	+	_	_
Diversity of Housing Typology	_	+	+	+
DENSITY				
Housing Density	+	+	_	_
Coverage	_	_	_	_
ANIMATING THE EDGES				
Active Edge	_	+	+	_
IMPROVE THE PUBLIC REALM				
Signage	+	+	+	+
Lighting	+	+	+	+
Urban Furniture	+	+	+	_
Open and Green Space	+	_	+	_

Urban vitality conditions affecting human density and interaction on maps have been marked for all building groups in Table 4.3.1 The reason for examining the TOKİ building groups in a separate section is that they give two different results on the maps. Table 4.3.1, which is obtained as a result of weekday and weekend maps, aimed to indicate the missing urban vitality condition of the building groups.

Chapter 5

Conclusions and Future Prospects

Phenomena such as rapid industrialization, mechanization, intensive migration, and increasing population, had a deep impact on urban spaces and architecture. Urban spaces designed with developing construction technology, transportation systems, statistics, and probability sciences have increased the burden of cities with other problems after a while. The most important reason for these problems is that people are not the focal point of urban design. In many parts of the world, cities have been designed which cars, highways, non-human scale buildings, and urban spaces are occupied, and people's needs are thrown aside. In the beginning of the 1960s, the concept of urban vitality emerged with the contributions of many urban designers, researchers, and architects, who advocated the necessity of people in the urban space. Urban vitality is a concept that is still popular in urban studies from the 60s to today. There may be many reasons for this in urban theory and studies, but the most important reasons can be listed as the fact that the need for people to exist in urban spaces advocated by urban vitality has not changed, and that urban vitality is a comprehensive concept that involved many urban concepts. The concept of urban vitality is associated and examined with most parameters related to the city because these parameters of the city are related to people, and urban vitality supports the correct establishment and strengthening of this relationship. Within the scope of this thesis, the concept of urban vitality associated with suburbs has often been overlooked in the history of urbanization but has become a significant phenomenon today.

Urban vitality and suburbs have begun to be addressed in urban studies in the last decade. To examine these two concepts together, as a beginning they have been discussed separately in the thesis.

Urban vitality has been approached in three scopes, the first is scope of historical development; how the concept of urban vitality emerged and how it was discussed by urban theorists, researchers and architects have been examined. The second is the scope of urban studies; Studies examining the concept of urban vitality in different scales, parameters and methods are included. As a result of this scope, the inclusiveness of the concept of urban vitality has been proven once again, and it has been emphasized that it should be evaluated together with the built environment, which has a positive effect on urban vitality. The third and last is the scope of urban practice, which has emerged as a result of urban studies, which is the second scope. Many studies on urban vitality have been examined that the effect of the quality of the built environment on urban vitality. The issue of creating a quality-built environment, which has such a huge impact, has dealt with urban vitality. Some countries, cities, and local governments have many attempts to find solutions too many problems such as increasing migration, lost historical texture, changing population, and disappearing natural resources. Eight criteria for a high-quality, which was the main topic at the 2018 Davos Declaration, led to an increase in studies on the quality of the built environment. In this scope of urban practice, quality-built environmental practices have been researched and compared with urban vitality conditions. As a result, it revealed that quality-built environmental tools and urban vitality conditions have been intertwined and support each other. Therefore, urban vitality conditions could be encountered in the practices examined.

After examining the historical development, urban studies, practices, and scope of urban vitality, the answer has been sought to the question of why we should investigate urban vitality in suburbs, which are seen as bedroom committees on the periphery of cities. Suburban scope of this study has been emphasized that the urbanization, which has been examined since the end of the 19th Century, has turned into suburbanization. The dominance of suburban and suburban character growth in the city has revealed the conclusion that the suburbs could no longer be ignored. Suburban studies, suburban practices, and suburban concepts and competitions have been attended that suburb with a livable, sustainable, healthy, quality-built environment and human interaction are the essential needs for cities.

As a result of the change in the development, needs, and focus of the cities, urban vitality, which is studied in urban centers and historical regions, should also be researched, and developed in the suburbs. By following the scope of this thesis, urban vitality has been evaluated in the suburb the new focal point of urban studies.

5.1 Conclusions

The concept of urban vitality has been evaluated in the Kayseri suburb of İldem, this evaluation has been carried out with the building groups İldem C, İldem D TOKİ 1, and TOKİ 2. These building groups of İldem suburban with 1000 or more housing units constitute the dominant pattern of the suburb. These dominant patterns provide information about the suburb of İldem and suburban development. They also have provided a comparison of state-sported construction (TOKİ 1-2) and cooperative (İldem C-D) construction. For the suburb of İldem, the vitality conditions of Jane Jacobs, which is referred to as the Jane index tool in most urban studies, were inadequate. This inadequacy situation could be exemplified as follows; examining the need for short blocks and the need for aged building conditions in İldem which has high-rise point blocks and new structures would be useless for the study, and at the same time, the development of public space, active edges that support urban vitality would not be included. Thus, urban vitality conditions have been rethinking with the quality-built environment tools that support urban vitality. The human dimension title has been added to the new urban vitality conditions created according to the characteristics of the İldem suburb. The human scale and perception, which is the focal point of the concept of urban vitality, have been examined in the urban vitality study.

The re-thinking urban vitality conditions according to the suburb of İldem include the following conditions and their sub-conditions; *context, making the connection, diversity, density, animating the edge, improve the public realm, and human dimension.* Illustrations and maps have been created for each urban vitality condition. What it is like to live in İldem C-D and TOKİ 1-2 buildings, and their built environment have been illustrated. The illustrations have been created from the eyes of someone living in these building groups, these eyes, which we can define as eyes of İldem. Life on the street, interactions at the edges of the buildings, life in the interior, the environment from the interior and the street view are depicted.

Thus, has been aimed to depict living in İldem through these building groups which is the micro-scale state of the suburb of İldem. One of the aims of the thesis has been achieved with the illustration and map method because as result didn't aim to obtain numerical data. Urban vitality has not been measured; it has been evaluated according to observations.

According to the obtained findings of the thesis, the effect of re-thinking urban vitality conditions has been listed as follows:

- **Context:** The patterns created by the buildings and their size determine their relationship with the public space and their legibility. The smallest scale unit of the buildings affects life in the public space in a way that would not be underestimated. While the flexibility of buildings supports different uses, landmarks and vistas increase interaction in public life.
- **Making the connection:** To make a connection is the accessibility of buildings, streets, and public areas. Accessibility is essential to enable human interaction and urban vitality. Walkability should be ensured, and the use of public transportation and bicycles, which are sustainable and healthy transportation systems, should be supported, without denying the existence of cars in the city.
- **Diversity:** The production of diversity is one of the crucial conditions of urban vitality. The diversity of housing typology and mix-uses attract different types of users, breaking the monotony that the concept of urban vitality opposes.
- **Density:** The coverage density of buildings determines the use of public space and plays a role in human interaction, while enough housing units and human density increase urban vitality.
- **Animating the edge:** The street-related ground floors of the building, called the edges, should be designed to increase human interaction. These edges should allow people to do essential activities such as walking, sitting, and standing, and stimulate the senses.
- **Improve the public realm:** Details such as the signage, lighting, urban furniture, and the existence and design of open and open and green spaces, which are often ignored at the urban scale, but they play significant role in the improve of the public realm, and therefore in the development of the relationship between human and public space.
- **Human dimension:** The relationship that people establish with the city should not be limited to streets and public spaces, this relationship continues in housing

units. People's view of the environment built and street from different floors shows their relationship with the city. The examining of the human dimension, which is the focal point of urban vitality, from the housing units will provide a top view of the built environment and include the human perception and scale in the urban design.

The building groups examined as case studies contributed to urban vitality by providing some of the above-mentioned urban vitality conditions. İldem C, İldem D, TOKİ 1, and TOKİ 2 produce vitality in different ways according to their urban vitality conditions. Urban vitality production of İldem C, TOKİ 1, and TOKİ 2 building groups occurs with their relationship with their built environment. Although these building groups do not meet the conditions such as mixed-use, improve the public realm, landmarks, flexibility, and diversity, they have benefited from the mixed uses, landmarks, diversity, flexibility, and quality public spaces in their surroundings. This urban vitality production creates a complex system because it depends not only on the urban vitality conditions of the building groups but also on the parameters of the built environment. This situation ensures that urban vitality is sustainable and not fragile. For İldem D, this is the opposite. Urban vitality production happens with the conditions of urban vitality it has. Since İldem D does not establish a relationship to support urban vitality in its built environment, the urban vitality it produces is unsustainable and fragile.

Consequently, the following research assumptions have been confirmed in line with the research question and objectives of the thesis. Every city and urban space are unique as well as its production of urban vitality. Therefore, this uniqueness and conditions should be considered while evaluating urban vitality and urban vitality conditions specific to these urban spaces and cities should be considered. The built environment has a positive impact on urban vitality and makes urban vitality sustainable. Building groups are not enough to meet all the urban vitality conditions; they should establish relationship with the built environment. Therefore, tools and practices that provide a quality-built environment should be carried out together with urban vitality research. Finally, urban vitality should be discussed and explored in urban centers, commercial and historical areas as well as suburban, because Suburbs have urban vitality.

5.2 Contribution to Global Sustainability

Cities are in constant change and transformation for many reasons such as increasing population, migration waves due to wars, economic and social reasons, and natural disasters. When the future climate crisis and the human population, which will be approximately 10 billion (UN, 2019) according to the predictions, are included in this change and transformation, it is an inevitable fact that cities will be slide into chaos in the future if they are not planned correctly. Urban theorists and researchers have argued that this change and transformation of cities has a suburban character. Cities have left their mono-centered structure to polycentric structures that expand horizontally and vertically. In other words, cities turn into structures formed by the gathering of many suburbs, and this transformation is so effective that it is predicted that cities will be defined as infinite suburbs in the future. Therefore, researching suburbs and creating good-designed sustainability urban spaces for suburbs will ensure that cities are getting ready for the problems that await them.

As the suburbs gained importance for cities, the concept of retrofitting suburbs, which redesigned the old suburbs, competitions for the design of new suburbs, and quality-built environment practices implemented by cities, and local governments began to take place in urban studies. These developments regarding the suburbs are not limited to urban studies. Most people whose working systems have changed with the Covid 19 pandemic and the generation that grew up in the suburbs are moving from the city center to the suburbs. Examining the suburbs, which take place in many areas such as urban studies, social and economic, with an inclusive concept of urban vitality, is the most practical way of life in the suburbs and that should be given importance. Because the concept of urban vitality includes concepts that safety, livable, sustainable, and healthy and it is associated with many social, cultural, and economic city parameters.

Contribution to suburban studies has been made by emphasizing the following aims in the relationship between urban vitality and suburb, examined in this thesis.

- Affordable and cooperative houses should be designed flexibly and in harmony with the built environment.
- Women, children, the disabled, and other disadvantaged groups should be inclusive and support different initiatives by providing mixed-use.

- Accessibility should be ensured by sustainable public transport, bicycle use, and walkable urban spaces.
- The relationship of people with buildings, streets and the city should be strengthened, and human scale and senses should be considered in designs.
- The economic and social relationship of the suburbs with the city and the surrounding rural areas should be strengthened and sustainable.
- Sustainable cities and communities can be created by designing safe, healthy, livable, sustainable suburbs with the above-mentioned goals.

5.3. Future Prospects

The concept of urban vitality has been studied in many parts of the world with different scales, a variety of urban parameters, and urban methods. But urban vitality and the suburbs have only recently begun to be associated with the suburbs as they come into prominence for the city. By examining the İldem suburb, which has the grand potential of the city of Kayseri, and continues to grow with its suburban character, it aimed to fill the urban vitality gap in the suburb that still exists in urban studies.

For most cities of the world, suburbs are predicted to be the dominant pattern, with the character of urban development. Therefore, suburbs will be mentioned frequently in urban studies in the future. Although these suburban areas are considered as tabula rasa of the city, which are easy to design because they do not depend on references such as roads, historical buildings, or public areas, the reality is that these tabula rasas are not easy to design and develop, because it takes effort to design and adapt it to other urban spaces. There is a need for design guides for governments, local administrations, urban designers, and architects to correctly fill in the blank slabs (tabula rasa), namely tabula rasas, in the city.

It suggested that the urban vitality conditions created within the scope of this thesis will lead to the design guides required for the suburbs. Since the design guide is a patterned and complex process, it is necessary to work with different disciplines and to be created by considering the characteristics of the suburbs. Thus, the suburbs of the city, which are the blank slabs, will be designed with a better urban scheme and strategy.

In addition, the fact that the İldem suburb is surrounded by the historical Ağırnas neighborhood and valleys provides an opportunity. The connection roads to be created with the historical Ağırnas neighborhood and the surrounding valleys will turn the suburb of İldem into a hub. Open spaces, mixed uses, and bicycle and pedestrian paths to be designed for these connections in İldem will make urban vitality sustainable. Thus, the suburb of İldem will become a suburb that is in contact with phenomena such as the city, nature, and history and that people visit for many reasons.

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2011 – 2016 B.Sc., Architecture, Balıkesir University,

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2019- Participant design team leader, ITÜ Faculty of Business Architectural

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SELECTED PUBLICATIONS AND PRESENTATIONS

J1) Paköz, M. Z. Yaratgan, D., & Şahin, A. Re-mapping urban vitality through Jane Jacobs' criteria: The case of Kayseri, Turkey. Land Use Policy, vol.114 C (January, 2022). https://doi.org/10.1016/j.landusepol.2022.105985