

URBAN-SPATIAL ANALYSIS OF MASS HOUSING ENVIRONMENTS:
MAPPING BATIKENT IN SEARCH OF ALTERNATIVES TO GENERIC
HOUSING

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ABSTRACT

URBAN-SPATIAL ANALYSIS OF MASS HOUSING ENVIRONMENTS: MAPPING BATIKENT IN SEARCH OF ALTERNATIVES TO GENERIC HOUSING

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Living environments in Turkey are shaped with generic housing blocks implemented by public and private actors operating in the mass housing production. Despite the relative diversification and pluralism that started in the 1980s, mainstream housing practice has given rise to the spread of stereotypical patterns and types forming the morphology of cities over time. Nevertheless, alternative searches for the architecture and planning of mass housing have managed to find little gaps for realization. Batikent stands out as a striking model for being the largest project realized by cooperatives and an alternative solution against the increasing housing shortage in Ankara. The lack of space and place qualities in today's residential environments has created a research axis where Batikent can be examined as a benchmark.

The current study aims to analyze Batikent with maps and diagrams prepared on the scales of city, neighborhood, urban block, and building block and to assess housing environments that are alternative in terms of the spatial organization and urban image characteristics. Therefore, it establishes a conceptual framework that

primarily examines three urban design theories (i.e. figure-ground, linkage, and place) compiled by Roger Trancik to develop fundamental approaches to the formal analysis of urban space. The study develops a set of elements defined for the architecture of mass housing, which are (i) dimensional properties, (ii) building typologies and collective forms, and (iii) urban image experienced at different scales. The applications of this integrated approach are initially examined through prominent mass housing experiments in Europe, built between the 1960 and 1980s. The integration of these elements with three theories of urban design is implemented in Batıkent as an analysis method via mapping. The resulting series of maps show four generations of spatial organization in the housing environments, a mainstream point block typology, besides a number of cooperatives that cannot be considered in this prevalent solution. Among alternative settlements, “Batıkent City Center Housing Area A” project is analyzed and presented as to its unique qualities of scale, collective form, and powerful urban image.

The study discusses the results of a functionalist zoning program that originally pre-determined the cooperative settlements in terms of density and typology. It states that a great variety of environmental images reflect a non-holistic urban design that resulted in each cooperative settlement having different characteristics only perceived within the urban block. The analysis maps visualize some mass housing cases as non-prevalent formal solutions as well as strong elements of the urban image of Batıkent. With all these findings obtained from the research, the study concludes that the settlement lags behind the leading approaches of its period in terms of spatial continuity and legibility despite its achievement as a mass housing experiment that also included alternative approaches.

Keywords: Mass Housing, Spatial Analysis, Batıkent, Mapping, Alternatives to Generic Housing

ÖZ

TOPLU KONUT ÇEVRELERİNİN KENTSEL-MEKANSAL ANALİZİ: JENERİK KONUTA ALTERNATİFLER ARAYIŞINDA BİR BATİKENT HARİTALAMASI

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Türkiye'de yaşam ortamları, toplu konut üretiminde faaliyet gösteren kamu ve özel sektör aktörlerinin uyguladığı jenerik konut blokları ile şekillenmektedir. 1980'lerde başlayan göreceli çeşitlenme ve çoğulculuğa rağmen, ana akım konut üretimi, zamanla şehirlerin morfolojisini oluşturan stereotipik kalıpların ve tiplerin yayılmasını hızlandırmıştır. Bununla birlikte, toplu konut mimarisi ve planlamasına yönelik alternatif arayışlar, gerçekleşmek için küçük boşluklar bulabilmiştir. Batıkent, artan konut sıkıntısına karşı kooperatiflerin gerçekleştirdiği en büyük proje olmasıyla çarpıcı bir model olarak öne çıkmaktadır. Günümüz konut çevrelerinin mekâna ve yere ilişkin nitelikler bakımından yoksunluğu, Batıkent'in karşılaştırma zemini olarak incelenebileceği bir araştırma eksenini oluşturmuştur.

Bu bağlamda çalışma, Batıkent'i şehir, mahalle, kentsel blok ve yapı bloğu ölçeğinde hazırlanan harita ve şemalarla analiz etmeyi ve mekânsal organizasyon ve kentsel imge özellikleri açısından alternatif olan konut ortamlarını değerlendirmeyi amaçlamaktadır. Bu nedenle, kentsel ölçekte biçimsel analizin temel yaklaşımlarını geliştirmek için Roger Trancik tarafından derlenen üç teoriyi

(şekil-zemin, bağlantı ve yer) inceleyen kavramsal bir çerçeve oluşturmuştur. Çalışma, toplu konut mimarisinde biçimsel analizi (i) boyutsal özellikler, (ii) bina tipolojileri ve kolektif biçimleri ve (iii) farklı ölçeklerde deneyimlenen kentsel imgeler aracılığıyla okunabilen unsurlar ile beraber tanımlamaktadır. Bu entegre yaklaşımın uygulamaları ilk olarak 1960'lar ve 1980'ler arasında Avrupa'da öne çıkan toplu konut deneyleri aracılığıyla incelenmektedir. Bu unsurların üç kentsel tasarım teorisi ile bütünleştirilmesi, haritalama yoluyla bir analiz yöntemi olarak Batıkent'te uygulanmaktadır. Ortaya çıkan haritalar dizisi, konut ortamlarındaki dört nesil mekansal örgütlenme aşamasını, ana akım nokta blok tipolojisi ve bu yaygın tipten uzaklaşan bir dizi kooperatifi göstermektedir. Alternatif yerleşim yerleri arasında yer alan “Batıkent Kent Merkezi Konut Alanı A” projesi, kendine özgü ölçeği, kolektif formu ve güçlü kentsel imaj özellikleri açısından analiz edilmektedir.

Çalışma, kooperatif yerleşimlerini yoğunluk ve tipoloji açısından önceden belirleyen işlevselci bir imar programının sonuçlarını tartışmaktadır. Çok çeşitli çevresel imgelerin, her bir kooperatif yerleşimine yalnızca kendi yapı adası içerisinde algılanabilen özellikler veren ve bütüncül olmayan bir kentsel tasarımı yansıttığı gösterilmektedir. Analiz haritaları, mekansal organizasyon yaklaşımı ile yaygın tipe uymayan çözümler oldukları kadar Batıkent'in kentsel imajının güçlü unsurları da olduğu tartışılan bazı toplu konut örneklerini görselleştirir. Araştırmadan elde edilen tüm bu bulgularla, alternatif yaklaşımları da içeren bir toplu konut deneyi olarak başarısına rağmen, Batıkent'in mekansal süreklilik ve okunabilirlik açısından döneminin önde gelen yaklaşımlarının gerisinde kaldığı tartışılmaktadır.

Anahtar Kelimeler: Toplu Konut, Mekansal Analiz, Batıkent, Haritalama, Jenerik Konuta Alternatifler



To my family

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CHAPTER 1

INTRODUCTION

1.1 Problem Definition

Housing poses a significant issue for urbanization as it raises the question of meeting a tremendous quantitative need as well as providing new urban forms with enhanced spatial quality. Strategic urbanism acquires cultural, environmental, and economical views that emerge from the public and private agents of the society and links these with suitable layouts to promote qualities of the urban environment. However, there is a thin line between taking quick and effective action and giving a comprehensive and considerate response for the benefit of the city. Owing to a complex set of information, the design and organization of mass housing can cover a versatile and integrated approach in creating vibrant built environments as well-functioning components of urban form. This process can require meticulous work to the extent, which might challenge the immediate modes of mass production, the quality of urban housing environments, can entail generic interpretations of practice & planning.

In a short article published in the Financial Times, architect Edwin Heathcote (2015) mentions the emergence of a “generic architecture” that alters London’s eccentric and exciting urban character. With the recent additions of high-rise residences, Heathcote sees “a blanket of lookalike apartment blocks is smothering the rich mix on which the city thrives”. He regards them as “predictable empty shells tailored to fit generic chain stores” hence “indistinguishable”. To him, the danger of this generic architecture is so alarming that the city slowly loses its lively and diverse street fronts for the sake of dense and high-rise apartment blocks. Their stereotypical layouts utterly neglect the street factor and make them isolated from the surrounding. As a result, London’s urban fabric becomes devoid of what the

urban blocks of Paris, Barcelona, or Budapest have: the flexibility to accommodate a rich (and changing) mix of social and commercial needs (Heathcote 2015). The generic residential architecture has become a concerning issue for major cities in Europe and the US, which accommodates more and more copycatted buildings to cope with the changing costs and codes of housing also triggered by the premade models in Asia (Fox 2019; Sisson 2018). Such issues about contemporary housing make the well-known texts by Jane Jacobs (1961), Kevin Lynch (1990), Aldo Rossi (1982) and Philippe Panerai et. al. (2004), a current issue again. The ongoing discontent about this kind of residential estates makes one think about the authors' observations on the values of urban diversity and complexity and on the building typologies that slowly distanced from the urban form after modern architecture and planning.

The term 'generic' is defined in the dictionaries as "(formal) shared by, typical of, or relating to a whole group of similar things, rather than to any particular thing" and "having no particularly distinctive quality or application".¹ In the field of architecture and urbanism, it perfectly fits itself into various theoretical concepts that could contribute to its explicit meaning as in Rem Koolhaas' (1998) essay "The Generic City", which depicts a global city without qualities while advocating for the loss of any kind of prior identity (Koolhaas and Mau 1998, p. 1248-1294).² The term is also used to describe various design algorithms that illustrate procedures by which space can be parametrically generated as interchangeable,

¹ *Cambridge International Dictionary of English* (1995). Bath: Cambridge University Press. p. 587-588.

² To quote Esra Akcan (2008): "The Generic City was a testimony to the contemporary loss of identity as long as identity is created by the past. [...] Koolhaas theorized the contemporary city, the one created by us in the present moment, as the city which is emancipated from an identity that imprisons...resists expansion, interpretation, renewal, contradiction, an identity that centralizes (and) insists on an essence. The generic city is the city without history." (Akcan 2008, p. 146).

adaptable, and independent schemes (Gu & Behbahani 2018).³ On the other hand (as the prior discussions have implied), there is also criticism for the urban conditions that are being characterized by stereotypical buildings that have become instruments for multiplying standard a unit without contemplating any spatial characteristics. This last approach provides an opportunity to reconsider to what extent architecture relates to those characteristics that incorporate with the urban form and identity through housing environments.

It can be argued that housing environments under the influence of generic architecture create stereotypes based on a piece of prior knowledge on spatial and demographic characteristics. The term stereotype stems from shortcut ideas about a widely recognized phenomenon that is put in a simpler and fixed form. Various studies show that the concept of stereotypes in housing represents biased societal perceptions in state-subsidized settlements, especially for gendered and marginalized groups such as the poor, laborer, immigrant, or refugee (Roberts 1990; Motley & Perry 2013; Salzer 2000). Though sociological, such an outcome also hints at the risk of oversimplified mass housing strategies that adopt preset solutions for the urban image and morphology. Together with the generic architecture, such a housing provision method can configure any plan layout and easily forge stereotypical environments where rapid urbanization is taking place.

To discuss the non-generic characteristics of housing environments, one of the extreme points in the architectural history where housing practice reached in the process of meeting urgent accommodation needs of the society, leading the way for a new urban morphology has to be understood. This coincides with the second half

³ In scope of housing studies or urban geography and design, for instance, the term is used with geometric patterns that create and/or classify particular 'design language grammars' of 'shape grammars' as rule-based system tools (Benros 2018; Lehner & Blaschke 2019; Beirão et. al. 2009; Mendes et. al. 2013).

of the twentieth century (the 1960s-1970s) when European cities were under a major influence of dense housing projects coping with a huge post-war housing crisis. Sparked with CIAM⁴ urbanism in the 1920s, a modernist and unifying culture carried out a mission to achieve a welfare state identified by functionalist buildings including large mass housing estates. At the center of the urban reconstruction of Europe, visions of functional city like Ludwig Karl Hilberseimer's High-Rise City (1924) and Le Corbusier's Radiant City (1930) imposed models for future housing as essential components of the modern urbanism. Eventually, single or large-scale housing projects like Cité de la Muette (Drancy, 1929-36) and Bergpolderflat (Rotterdam, 1933-34) led the way to high-rise solitaire linear structures or superblocks to be the ultimate solution to the ongoing shortage and a dominant housing typology that is independent of the urban block. Depending on the need to renew cities with improvements in the construction of housing, modernist architecture produced alternative settlements that became the 'mainstream' in a short time. Because of a great commitment to these models that were standardized and prefabricated, the mainstream ceaselessly continued to produce the generic that eventually turn into the stereotypical.

In the '60s and '70s, a wave of criticism of modernist urban planning and architecture raised in both the architectural literature and the practice. As the intensification of the CIAM type housing blocks soon created a negative image of generic machine aesthetics, the utopian vision fell from grace greatly and literally fell apart as a mainstream building type. The case of the emblematic Pruitt-Igoe

⁴ Abbreviation of *Congrès Internationaux d'Architecture Moderne*, International Congresses of Modern Architecture. The organization founded in 1928 arranged a series of congresses and exhibitions for many decades. The most prominent architects of the time were the members of CIAM and aimed spreading the principles of the Modern Movement in architecture and its related disciplines. Members included Le Corbusier, Sigfried Giedion, Gerrit Rietveld, Alvar Aalto, and Walter Gropius.

(St. Louis, 1955) gained its notoriety owing to the outcomes of such reaction.⁵ Resultantly, authors, architects and planners, who were already disturbed by the loss of urban values and the dehumanized architecture, questioned the consequences of modernism and developed counter-arguments and alternative oppositions. Furthermore, the massive building stock loss in the Western Europe had already reopened the question of memory and identity with a sense of historicism identifying the built environment.

To Kenneth Frampton (2007), it reached to a point where the professionals departed from traditional practice and found motivation in pursuing architectural projection as part of social actions or art. Futurist images of the projects like the Walking City (1964) or plug-in megastructures of Japanese metabolists, praised technological utopias. Furthermore, there was a growing awareness towards environmental and societal issues that questioned responsibilities of architect and limits of user participation to build residential stock that could meet variable needs of its residents as experienced in the examples of PREVI competition (Lima, 1967) in Peru or the Byker housing (Newcastle, 1969-82) in England (Frampton 2007, p. 280-282). Architects' recognition of loss of cultural identity and a negative commentary on the consumerist practice of modernism abandoned the realms of generic architecture. Like the figures like Aldo Rossi and Giorgio Grassi, they saw "building types determining the morphological structure of the urban form" and formulated compositional rules brought by typologies rather than the generic design. Frampton mentions the works of Mathias Ungers, Jürgen Sawade and Josef

⁵ It was realized to clear slums and to avoid racial segregation in St. Louis, Missouri. Mostly due to financial and management problems a decline in the occupancy rate of white residents caused to extreme vandalism and violent crime. The settlement eventually turned into a ghetto for the black society. Charles Jencks (1977) called the moment, when the apartment blocks were being exploded as it was televised, "the death of modern architecture" and an icon of the failed utopia in *The Language of Post-Modern Architecture*. As a typical solution to post-war urbanization, the project was the first (and the last as it was demolished years after) settlement in the US that followed CIAM principles.

Paul Kleihues, Leon Krier who contributed to the revival of typology in the center of architecture's relationship to spatial organization and morphological transformation in the 1970s (Frampton 2007, p. 294-297). The postmodern agenda challenged architecture's former mode of prototypical production and tried to expand its limits in parallel to the city's growth. Thus, the housing was no longer isolated and pre-arranged in rows on the plot. It was re-imagined as part of cultural heterogeneity making way to less dense settlements and more integrated with the complexity of urban form rather than the generic solutions. It was enriching with classical forms and cultural artifacts as opposed to the modern stereotypes. At the turn of 1980s, examples like French *ville nouvelle* Les Espaces d'Abbraxas (near Paris, 1983) by Ricardo Bofill, or Aldo Rossi's urban infill Friedrichstadt Block 10 (Berlin, 1981) in scope of the IBA'84/87⁶ reflected the alternative approaches to mass housing as the new monuments of the city.

As this brief historical background has shown, the architectural models of 'ideal' housing, especially in the modernist approach, are related to various conditions of their period. Although some resulted in an autonomous spatial practice, in one way or another, they were avant-garde experiments that changed the urban environment. With these discussions and cases in the given timeline, it can be understood that housing environments that are different from what is generic, or divergent within the mainstream, have a great potential to offer alternative options to progress for the better. However, given the earlier observation of Heathcote (2015) regarding the generic architecture of residential buildings, it can be said that the current architectural practice partially fails to cope with the spatial patterns of the mainstream resulted from the national or global trends. As overpopulation is

⁶ The exhibition *Internationale Bauausstellung* (IBA) was a globally well-known urban renewal project that aimed to rejuvenate the post-WWII (West) Berlin in the 80s. Its general theme covered a comprehensive urban redevelopment plan integrated with the designs of famous architects and planners of the time.

continuing to force cities, urban areas get more fragmented with generic accommodation solutions and leave less and less room for alternative approaches.

As the most important part of the built-environments, housing environments bear a link to the location-based and community-oriented planning strategies that can contribute to the versatility of spatial organization as well as go beyond generic solutions. However, living environments in Turkey are being shaped by generic blocks that mostly lack distinctive qualities. Regardless of whether the context is urban, suburban, or rural, these blocks are produced alike by the public and private sectors in mass housing production, with the same understanding everywhere. They do not relate to conditions such as climate, topography, culture, and household characteristics, but reproduce ceaselessly with stereotypical settlement patterns and housing types (Figure 1.1).



Figure 1.1. Three mass housing from Turkey in the urban, suburban, and rural contexts.

Source: “National Geographic MapMaker Interactive”. Retrieved from <https://mapmaker.nationalgeographic.org/>

Despite the uniformity of this mainstream production, which can be dated back to the post-1980 period, it is possible to talk about the existence of alternative searches via housing experiments. This specific time frame marks between the enactment of the Mass Housing Law and the foundation of TOKI in 1984 and the

expansion of its authorities around the 2000s.⁷ The Administration was mostly involved with subcontracting construction firms to work on new housing settlements but also partnered up with architects with a quality-oriented approach that aimed to make progress in designing housing surroundings. Eryaman settlement, which is a western development corridor in the capital Ankara, can be mentioned as an example of this collaboration. In the scope of the 3rd and 4th stages of the project, different architects developed high-quality neighborhood units, in which diverse and innovative solutions were built with many facilities. Thus these projects became alternative cases of state-subsidized mass housing settlements with unique solutions (Cengizkan 2000, p. 137-138; Cengizkan 2005, p. 45-55).⁸

As just implied, Ankara hosted a particular public initiative project that is striking in terms of experimenting with new models of mass housing. Not surprisingly, the city has been a hub of other bold attempts in establishing new settlements that define its urban morphology since becoming the capital. The precedents of Eryaman started with Bahçelievler cooperative (the first garden city settlement of Turkey) and continued with Saraçoğlu neighborhood (the first mass housing project in Turkey), Yenimahalle (the first affordable housing settlement implemented by central and local governments together), and Batıkent. Among them, Batıkent is strikingly important for its organization and stock of residential buildings. As drastic population growth in the 1960s gave rise to squatters, an alarming lack of collective housing in Ankara was unveiled. In addition to state-subsidized projects, housing cooperatives took part as a subsidiary formal

⁷ When the Justice and Development Party (AKP) came to the regime in 2002 and declared an initiation of planned urbanization and mobilization for housing. Especially in the turmoil of the 1999 earthquake and the fiscal crisis in 2008, AKP gave TOKI extraordinary authorities to cope with the aftermaths on the housing sector. This resulted in singlehanded regulations on housing standards & production as well as outsourcing more luxurious projects rather than any other experiments (Çoban 2012, p. 117; Cantürk 2016).

⁸ More information about the 3rd and 4th stages of Eryaman project can be found in the following graduate studies: Kavas 2016; Albostan 2009; Özer 1999; Alpan 1999.

organization in order to bring a boost in the rate of housing production in new settlements. Aiming to orient the urbanization towards a western corridor, Batikent (1979) is a long-necessitated and vast housing development project undertaken by a number of cooperatives. In an area of 1034 hectares, with approximately 53.000 residences and 213.000 inhabitants, there is an experience in itself.⁹

Batikent Project started in 1974 with a municipal vision that undertakes the problems of the city as a civil institution and realizes mass housing projects with co-operative unions. Sources explain that the project is the largest cooperative settlement in the country and a national model (Karayalçın 1987, p. 292; Keskinok 2005, p. 121; Çoban 2012, p. 75-108).¹⁰ One of the distinctive features of the project is its organization model that bridged between a civic society union representing future residents and the central and local governments. Major stakeholders of this project were the central government, the Municipality of Ankara and the Union of Housing Cooperatives in Batikent (Kent-Koop)¹¹ and civil organizations alike; who were respectively in charge of financial support and privatization, project design, and implementation. As the major undertaker of the project, Kent-Koop aimed to (1) organize low and middle incomer with housing problems around a project and create democratic participation, (2) to consider cooperatives as an urban movement, which includes social and economic dimensions, rather than a single building scale, and (3) to ensure effective and rapid use of investments by collaborating between public institutions, especially local

⁹ Local data retrieved from www.batikent.org/site and www.kent-koop.org.tr/detay_proje/batikent/2 (Accessed on November 2019).

¹⁰ Also appears in: Türel, A. (2002). The Contribution of Housing Co-operatives to Housing Provision in Turkey. *Report of Colloquium on Contribution of the Co-operative Sector to Housing Development*. Nairobi, Geneva and Ankara: UN-HABITAT, UNECE, ICA, HDA and TÜRKONUT. ; “Co-operative Housing International (CHI)” www.housinginternational.coop/co-ops/turkey/.

¹¹ (tr.) Batikent Konut Üretim Yapı Kooperatifleri Birliği.

government units and non-governmental organizations (Eryıldız 2003, p. 58-59). Despite being the subject of multi-faceted studies that generally focus on these foundational aspects, Batıkent has not been sufficiently studied in terms of its urbanism and the living environment it creates. Given the current circumstances about the housing environments in Turkey, a research axis where Batıkent can be examined as a benchmark raises.

In a 2019 workshop, a team of researchers examined Ankara to reveal the distribution of different housing typologies and to visualize the results on an online interactive map. The outcomes of the study give preliminary insights about the generic building types in mainstream housing, despite the city's experience in producing typological variations that have been abandoned for almost three decades (Figure 1.2 and Figure 1.3). The map has also marked the existence of alternative forms in the settlement, which are not visible at the overall context scale since their number is relatively scarce (Balamir et. al. 2019).¹² Via this first glimpse of the map sections provided above, it is once again understood that Batıkent is an extremely large residential district in the peripheries city. The cooperative settlement launched in 1979 is the centerpiece of its morphological development. Considering the question of generic architecture, the maps illustrate that this settlement largely consists of point block typology. Balamir et. al. (2009) assess this result as the unconditional implementation of the point block typology, which seems rather obsolete for the contemporary west. Because the experience of the western cities with the over-accumulation of these blocks especially during the first half of the 20th century has shown that built environments quickly turned into generic construction sites and slowly drifted away from meticulously processed experiments of housing. The period corresponding to Batıkent project is the years

¹² Workshop participants: Sercihan Maden, Tuğba Ünlü, Yüksel Madenoğlu, Ezgi Barin, Büşra Aşçı, Recep Selim Yarbaşı, Nehir Bera Biçer. Resultant map of the workshop can be accessed on https://maphub.net/atolye8/atolye8_map_2304_1728.

when the western architectural and planning practice recalled the necessity of producing alternatives to qualify the space and place better.

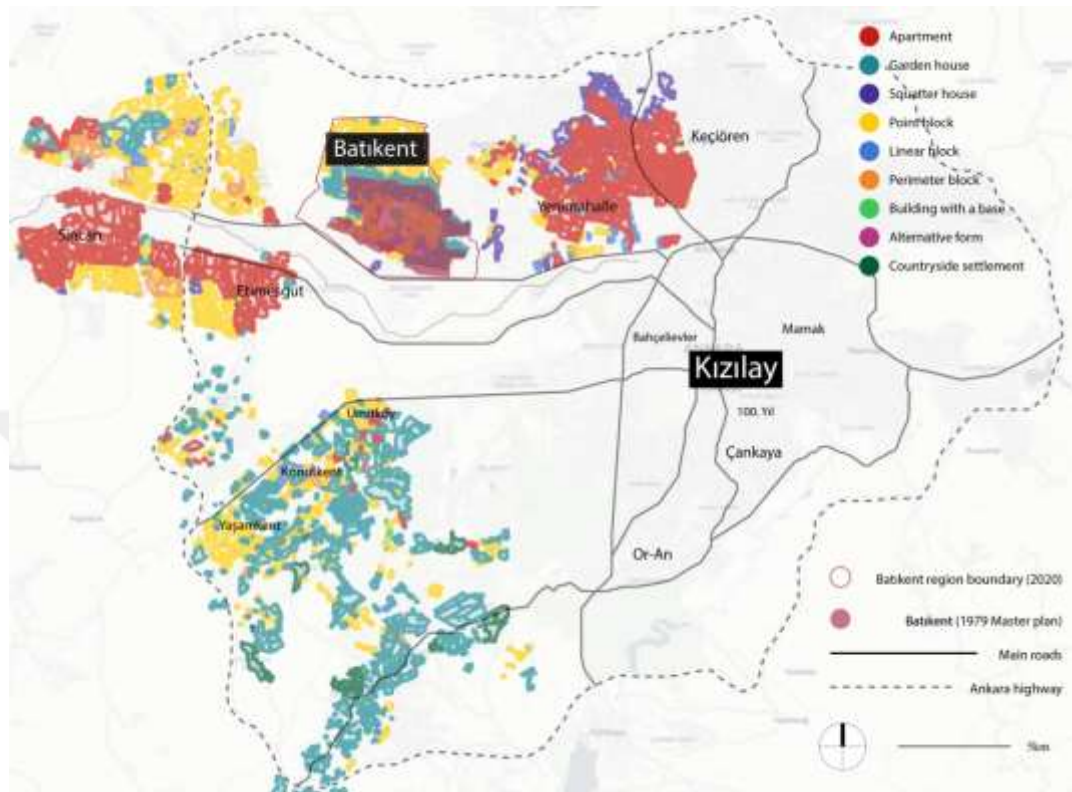


Figure 1.2. Distribution of major housing typologies in Ankara

Source: https://maphub.net/atolye8/atolye8_map_2304_1728 (Accessed on January 2020)

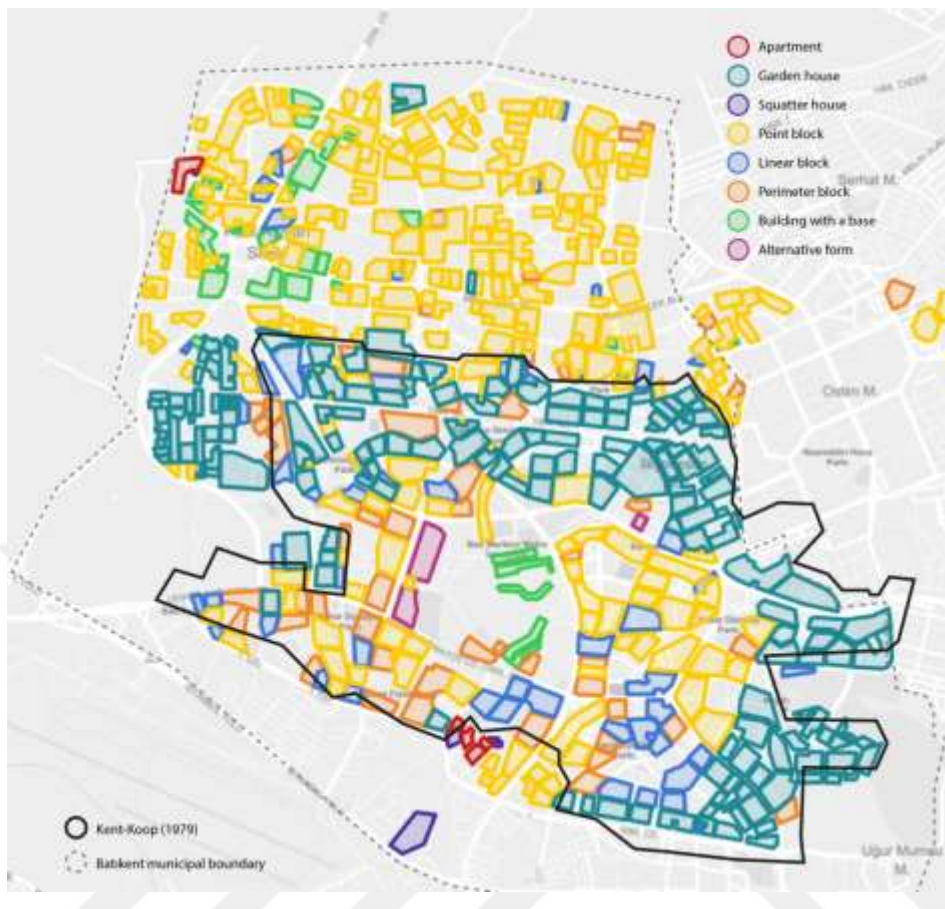


Figure 1.3. A close-up look at the major housing types in Batıkent.

Source: https://maphub.net/atolye8/atolye8_map_2304_1728 (Accessed on January 2020).

Indeed, a trip to Batıkent shows the reflections of the mainstream despite the architectural variety. The resultant maps of the workshop have proven that the problem of the dominance of prevalent housing typologies is valid for Batıkent. Though each cooperative has a separate plot allocated to housing, and independent in terms of its design, the point blocks are the most common typology among the high-rise group. This finding shows the necessity of revisiting Batıkent to examine the settlement as part of an integrated spatial analysis approach. By identifying the cooperative mass housing as elements of the urban pattern, aspects that denote alternative approaches can be better defined with regard to spatial organization and place characteristics. In this regard, the features that make a housing environment alternative also need to be explained with the examples from the western world epitomizing an architectural *zeitgeist* for Batıkent.

1.2 Aim and Objectives

This study has two research questions that set the major issues of inquiry: *Which aspects of urban-spatial analysis are relevant in defining alternatives to generic housing? Where does the Batikent experience stand when compared to the world examples accepted as paradigmatic in the mass housing experience of the period??*

As the research progresses, the characteristics of generic housing in general and in Batikent and the extent of alternatives to generic housing are going to be defined for urban-spatial analysis. With regard to Batikent's position within the mainstream housing provision in Turkey and the western experience, the dominant architectural and urban design paradigms in mass housing provision in the second half of the twentieth century will be explored to understand their possible impacts on the planning of Batikent in the 1970s and its development today. For this purpose, pioneers of mass housing from Europe that can be considered as alternatives within the dominant paradigms will be inquired in parallel to Batikent's overall timeline. According to these, the objectives of urban-spatial analysis will be (1) to analyze housing settlements in Batikent through morphological mapping (2) to assess the urban macroform with regard to dimensional, typological, and urban image aspects of the settlements as part of a mainstream spatial organization practice.

As the building stock in this area is a result of a united implementation by many cooperatives, housing environments in Batikent cover a group of characteristics that can be easily recognized via elements of urban form (i.e. the streets, plots and buildings). With mapping, settlements that reflect tangible aspects (i.g. shapes, sizes, typologies) of spatial characteristics of the mainstream architecture or the alternatives are aimed to be presented in the interplay of different types of mass housing schemes. Aspects relating to intangible, e.g. emotional identity are omitted from the scope of this study.

In evaluating the physical entities and spatial experiences of the cities, basic types of structural form and components that create a sense of place are divided into

categories. Among the theoretical and analytical approaches, the spatial analysis of urban morphology gives a view of the physical form and functionality. However, this approach does not fully elaborate on the conditions in which built environments are perceived and used. Therefore, it is necessary to synthesize various ideas in order to create a framework for understanding living environments. In this regard, Roger Trancik (1986) stands out as guidance to describe the scopes of spatial organization and place characteristics for this dissertation. His book *Finding Lost Spaces* provides three theories of urban design, which help navigating through a conceptual framework and morphological analysis. Trancik's study analyzes cities with an integrated approach towards figure-ground, linkage, and place theories as opposed to the lost spaces that arose from functional urbanism of modernism. The pillars of this three-footed analysis are based on a number of key references including Fumihiko Maki's *Investigations in Collective Form* (1964) and Kevin Lynch's *The Image of the City* (1990); each of which provides a visual approach to urban form. As the conceptual framework of the analysis will be based on Trancik's categorization of urban design theories which are (1) Figure-ground, (2) Linkage, and (3) Place, each of which is considered as a critical response to the problems brought with the modern city. His approach towards integrating the basic approaches of each theory to develop an effective urban design is the fundamental guideline for this study. These elements will be defined as qualitative and quantitative aspects that will be used for spatial analysis with maps. In the broadest sense, they will be identified in three groups corresponding to:

- (1) "Dimension" defines housing environments through sizes, heights, and distances observed at the same relative scale.
- (2) "Typo-Morphology" classifies urban elements by morphological characteristics
- (3) "Urban Image" defines properties that are perceived visually

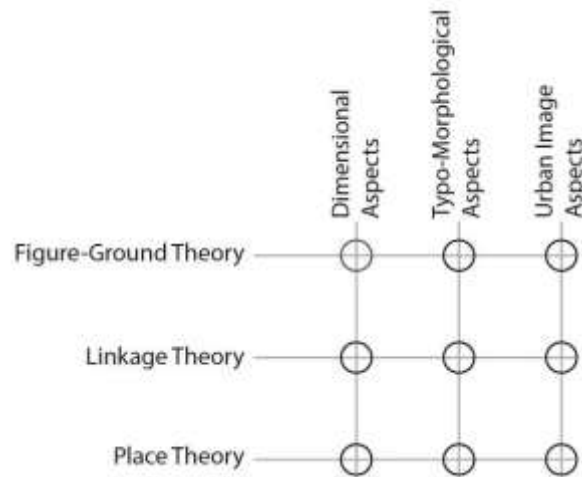


Figure 1.4. Conceptual matrix
Source: Author

A conceptual matrix will be used to explain the sub-concepts that intersect both with urban design theories (i.e. figure-ground, linkage, and place) and elements of spatial organization and place characteristics (i.e. the dimensional, typo-morphological and urban image aspects). These concepts will be introduced to define every aspect that will help to analyze urban macroform and describe physical and observable characteristics of built environments with housing typologies. Reflections from the conceptual matrix will be first explored via housing cases based on two overlapping criteria. First is their experimental value in bringing an alternative approach to the architecture of mass housing despite a given dominant paradigm(s). Second is the parallel timeline they share with Trancik's book and the precedent urban design theories. Hence the three decades between the 1960s and the 1980s will be presented not only a world-wide agenda for residential architecture but also the spatial design strategies implied by Trancik for better analyzing the urban macroform.

Finally, the housing environments in Batıkent will be analyzed by means of the tools and elements examined throughout the research. The entire settlement will be expressed in maps that visualize the urban form and overall (residential and non-residential) building collection. By zooming in the settlement at the scales of neighborhoods and urban blocks, it will be possible to understand the extents of

spatial legibility and place experience via charting. Furthermore, it is aimed to elaborate the properties that separate alternative approaches from the mainstream also with the cooperative and non-cooperative settlement cases located in Batikent.

1.3 Research Method

1.3.1 Approaches in urban-spatial analysis

Urban-spatial analysis to be referred to in this study indicate visual methods to analyze via mapping the spatial and morphological structure of mass housing environments in cities. Key components of the urban-spatial design are based on qualitative and quantitative notions about space and urban form. Nina Baur et. al. (2014) states that although space was an analytical category largely attributed to disciplines like geography, regional and urban planning and it has limited interest in the disciplines like sociology and cultural studies, three decades ago all disciplines rediscovered it as an analytical category. In the absence of a coherent framework of spatial analysis methods for social sciences and humanities, the authors mention three major methodological approaches, namely quantitative, qualitative, and cartographic approaches. The first is generally associated with surveys or field reports. The second approach mixes observation with ethnographic and empirical studies. The last approach uses maps as an analysis method. By referring to Heinz Heineberg's book *Stadtgeographie* (2006), the authors explain that geographers generally use the cartographic approach method to analyze:

- a. The physical structure of space and buildings (*morphogenetic analysis*)
- b. The symbolic meaning of space (*symbolic analysis*)
- c. Images and representations of space (*cognitive maps or mental maps*)
- d. The ways space is used (*functional analysis*), the way people act or distributed within a specific spatial unit (*analysis of social space or social reporting*)
- e. The way people and goods move within and between space (*analysis of action spaces*)
- f. How these dimensions of analysis interact (Baur et. al. 2014, p. 8-9).

The authors strongly believe that social sciences have no comprehensive framework that helps researchers link and compare different theories as a research practice, hence they offer a five-dimension framework that integrate qualitative, quantitative and cartographic approaches with strategies of data sampling and analysis. To quote; “[u]sing such a framework, researchers can classify their theoretical and research goals, determine the appropriate data and methodologies for answering their question” (Baur et. al. 2014, p. 10). This classification is summarized in Table 1.1 showing each dimension’s corresponding approach in the cartographic, qualitative and quantitative methods.

Table 1.1. The summary of five dimensions of Nina Baur et. al.’s framework for spatial analysis in cartographic, qualitative, quantitative approaches
Source: Charted by the author based on the work of Nina Baur et. al. 2014

Dimensions of the framework	Corresponding results		
	Cartographic approach	Qualitative approach	Quantitative approach
Imagining Space <i>How people imagine, think about and remember space?</i>	Symbolic analysis and cognitive/mental maps	Maps, artifacts, buildings landscapes supplemented by documents interview	Using surveys as data base and condensing them using correspondence analysis
Creating Space <i>How people construct, create and change space?</i>	Morphogenetic analysis, physical structure of space and buildings)	Case study using documents and interviews, ethnography and video analysis	
Experiencing and Appropriating Space <i>How people experience, orient within and appropriate space?</i>	Functional analysis, the ways space is used)	Social group experience space. Synthesizing time-space-coordinates for wayfinding, interviews, photo & video documentation, mental maps	Mixing qualitative methods with survey data and mental maps
(Inter)Action in Space <i>How people act or interact with people and artifacts in this space?</i> <i>How they are distributed within different spatial arrangements?</i>	Analysis of social space and social reporting	Combining ethnography with maps, documents, surveys, etc. and comparing with multiple cases	Opinion polls, surveys on citizens of a nation state, population analysis, comparison and classification
Relations and Movements between Spaces <i>How do people move within and between spaces?</i>	Analysis of action spheres	Analysis of interconnectedness of spaces of the same/different aggregate level	

Considering Baur et. al.'s classification above, it can be said that the scope of the study stands in the combination of cartographic approach and qualitative approach and asks questions about creating, imagining, and experiencing space in mass housing environments. It mainly focuses on the descriptive data obtained from buildings and urban form and sorts in the format of morphological mapping. It also integrates an infographic language to the maps to visualize the relationship between space and place identity by means of a symbolic depiction.

The potential in investigating urban forms is the opportunity to focus on a framework of understanding a given spatial condition with the existing urban elements. Mapping, in this regard, plays a role in understanding built environments with an emphasis given on the hierarchy on different scales that vary from buildings to plots, urban blocks streets, neighborhoods, urban regions, districts and quarters. Through this process, various aspects regarding the spatial organization of built environments and their image for the urban are discovered with the elements that form the city.

According to Karl Kropf (2014), there is a general consensus on three basic elements that define the urban (built) form, namely patterns of building, plot, and street, although urban morphologists¹³ explain the relationship between them differently. Combined together, they define the hierarchical structure that is based on the balance between open space and the built form. This is defined as the “urban grain”, referring to patterns of streets, plots and buildings all together (Kropf 2014, p. 42). The extent of subdividing an area into smaller or bigger parcels and blocks identifies the complexity of compositional hierarchy. For instance, a fine urban grain might be found in built environments with a large number of buildings and

¹³ In addition to Castex, Panerai and Mudon, he mentions M. R. G. Conzen, Saverio Muratori, Gianfranco Caniggia and Gian Luigi Maffei and their classical works on the typological and historico-geographical approaches to urban morphology.

dense streetscapes accompanied by great architectural variety. With mapping, separate layers that include plots with building footprints and open spaces, as well as street structures can be used to explore the relationship between the residential typologies and urban form.

Investigating the urban fabric through its change in the spatial organization is an approach followed by Philippe Panerai, Jean Castex, Jean–Charles Depaule and Ivor Smith in their work *Urban Forms: The Death and Life of the Urban Block*¹⁴ (2004). This study is about the slow erosion of the typical properties of European cities. In this regard, they take the urban block as a system of organization of buildings and plots, supported by streets. In a way, the book presents a morphogenetic analysis in terms of the creation and change of the space in the urban form. As they analyze related case studies from Europe within a historical context, the change in the heterogeneous structure of the traditional city patterns to the rationalist organization is illustrated in both plan and sectional expressions of the urban block (Figure 1.5). Although the book's investigation favors a continuous urban fabric with corresponding hierarchical linkages, its method implies a way to analyze the physical structure of the city at an intermediate scale. Throughout the study, the authors rarely focus on the size of the overall urban plan; rather they zoom in until the variations in urban grain become legible in the scale of a neighborhood or a group of buildings. Hence, this method presents a relatively small-scale morphogenetic analysis that can be carried out from the city to a particular built environment.

¹⁴ Original title is *Formes urbaines: de l'îlot à la barre*, which was written by Castex, Depaule and Panerai in 1977. The English translation, which was published in 2004, is an extended version of the original study with additional texts written by Panerai and Smiths.

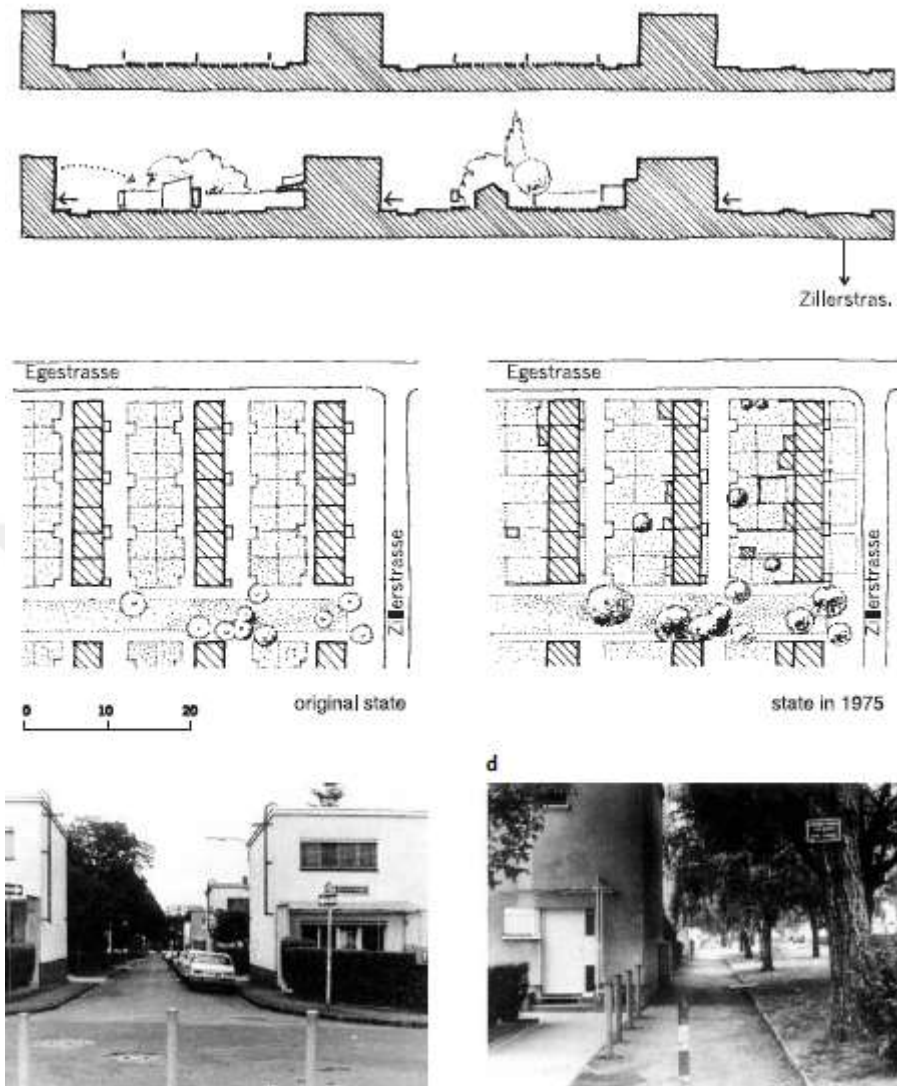


Figure 1.5. Analysis of a row housing block in Siedlung Westhausen by Panerai et. al. (2004)

Source: Panerai et. al. 2004, p. 105

As Vitor Oliveira (2016) states, the urban fabric can be considered with “different levels of resolution”. In a general sense, these levels are constituted by a set of elements of the urban fabric. Namely, streets, street blocks/plots, and buildings are present in each city reflecting specific ways of creating different types of fabrics. As the level of resolution goes from low (streets and street blocks) to high (e.g. construction materials of a building), details about a building or an urban space can

be obtained (Oliviera 2016, p.8). From a macro to micro-level, these depict the elements of urban form.

Within the scope of this dissertation, the aspects of spatial analysis will be partially conducted for Batıkent through the cartographic approach supported with qualitative or quantitative data. The analytical views correspond to two-dimensional plan and section views, showing the spatial structure of the entire master plan as well as various housing settlements in diagrams. These diagrams are prepared as single or combined projections of urban form elements defining the generic or alternative structure of a given mass housing settlement in the research area.

Graduate studies in Turkey that used maps or charts as a method, present different themes, such as the spatial analysis of cultural activities, (Sevil 2019) cognitive experiences (Yalçın 2017), historical artifacts (Heyik 2019), or city as a design strategy (Kozar 2009). Concerning the cartographic approaches applied in Ankara, there are graduate studies that used mapping as a method to represent industrial heritage artifacts in the urban form (Kürelî, 2013) and subjective urban imagery (Balkanay 2014). The most significant study in terms of mapping various dimensions of the city is the book *Ankara Kent Atlası*, which is a product of a graduate research studio conducted in Middle East Technical University. The book provides a set of themes¹⁵, by which Ankara is visually understood with current data about city, space and ideology (Sargın 2012). The importance of this study is evident in different interpretations and illustrations of ‘the mapmaker’ about reading Ankara as an urban object. The resultant maps and charts of each chapter reflect a different corresponding tool (for instance statistical, topographic, morphologic, cognitive or functional) for the cartographic approach (Figure 1.6).

¹⁵ (.tr/) “leke”, “dönüşüm”, “ekoform”, “kent odakları”, and “menzil”.

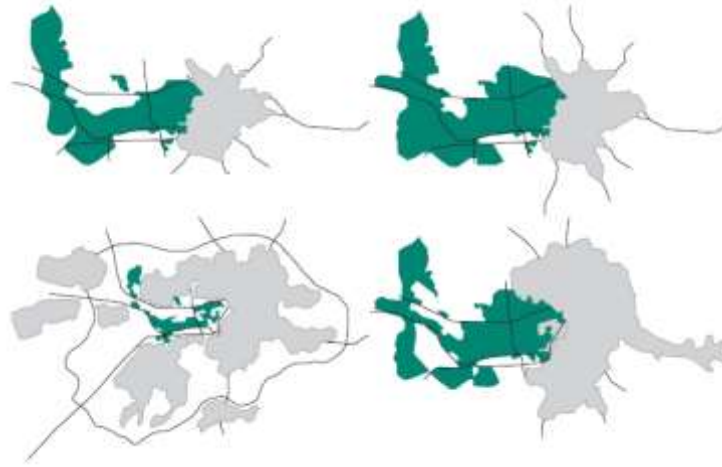


Figure 1.6. A morphological analysis of the changes in the surface area of Atatürk Forest Farm in Ankara

Source: Sargin 2012, p. 94

1.3.2 Mapping as part of urban-spatial analysis

This dissertation analyzes Batıkent and its urban form by mapping the spatial organization and urban image characteristics of mass housing environments. The spatial analysis is based on the dimensional, typo-morphological and place aspects explained with the urban design theories.

As an important part of urban-related studies, mapping is a tool that explains the components of urban form at various levels. By establishing diverse data set for spatial analysis; mapping provides versatile information about the spatial characteristics of housing settlements, in neighborhoods or in the city-wide districts. The role of mapping for spatial analysis has a relationship with the spatial patterns and networks applied in urban schemes.

To support the exploration of mass housing environments in Batıkent and to discuss their characteristics in the urban setting, the existing spatial data needs

visualization. For this purpose, a base map with two layers is prepared. Owing to the CAD format drawings obtained from Yenimahalle Municipality¹⁶ and satellite images¹⁷, the first layer shows the urban macroform that is illustrated by outlining the urban blocks. The second layer is the footprints of buildings in the settlement that are hatched in black and shows the structural stock of the settlement. The aspects regarding the spatial organization and place characteristics are presented in separate analysis maps. The resulting analysis maps use the layers of the base map combined or interchangeably according to the need of inquiry. Given the size of the settlement and quantity of mass housing blocks, maps fit an A4 page with a scale bar. All maps and figures in the dissertation are vector-based drawings that are made via Adobe® Illustrator software.

Once a set of mapping is prepared and discussed, the study focuses on the housing settlements. A set of mass housing sites, whose number does not exceed 20, are selected to proceed with the analysis at the housing block scale. This selection is done based on charts in a matrix format that sort, organize, and compare various housing blocks according to the scale, typology, and collective form aspects. These charts are the synoptic overview of the housing blocks, which are parallel with the prevalent and non-prevalent typologies described in the problem statement. As the final step, one the cases in Batıkent that stands out with the particular spatial form and dimensional properties is analyzed as the concluding part of the research.

¹⁶ “Yenimahalle Belediyesi Kent Rehberi”. Accessible on ekentrehberi.yenimahalle.bel.tr.

¹⁷ The most used sites are yandex.com.tr/harita; maps.google.com, and mapmaker.nationalgeographic.org.

1.4 Significance of the Study and Literature Review

The study contributes to the studies about Batıkent on two levels. Firstly, it conducts a spatial analysis that integrates a conceptual matrix with the mass housing environments in the area. In this regard, it correlates Trancik's three urban approaches (figure-ground, linkage and place) that provide potential strategies for integrated urban design, with living environments and their spatial qualities. It reveals the formal and perceivable impacts of dimensions, typologies, spatial connections, and urban image aspects. Secondly, the study contributes to housing studies in Turkey, by bringing Batıkent on the agenda as a case that contains non-standard experiments of residential architecture. The analysis of the settlement in terms of spatial organization and place characteristics frames this dissertation as an original study.

The housing studies in Turkey need more focus on the spatial analysis of experimental mass housing environments other than TOKI and mixed-use groups. Although there is a line of research that has been especially carried out under the topics of space syntax, urban morphology and urban design, each of which illuminates different methods of urban spatial analysis¹⁸, the architectural contribution of living environments as the substantial actors of diversified space and place qualities are rarely studied.

The studies that concentrated on the issue of stereotypical environments associate the problem largely with TOKI and real-estate developers (Erman 2016; Denenç 2014; Uğur & Aliğaoğlu 2018; Gür & Dostoğlu 2011). The former, which is the leading figure in the public sector, use the single apartments arranged in similar site organization. The latter erect high-rise mixed-use residential towers to maximize

¹⁸ Works include Nasar & Çubukçu (2011), Marshall & Çalışkan (2011), Németh & Schmidt (2011), Gürbüz Yıldırım (2018) and Kubat et. al. (2005).

space usage and provide facilities (shopping malls, for instance) compacted on the ground floors with sole commercial functions thus mostly create a socio-spatial contradiction for their immediate surroundings. In the light of such a building culture, graduate researches in the field of architecture and urbanism have given particular attention to investigating the matter with the user satisfaction and interior spatial quality they offer (Yılmaz 2019; Tutkun 2018; Aysu 2011; Yıldırım 2011).

The graduate studies that are completed in Turkey also display such a conclusion. It is observed that they mostly cover issues like user satisfaction or space quality in interiors in scope of housing environments.¹⁹ Nevertheless, there are exceptional examples that can be mentioned. One of the studies focuses on urban morphology theories to analyze social spaces constructed in the physical spaces by referring to Trancik's outline (Şahin 2014). The other study evaluates home as a place, where the concepts of place identity and sense of belonging are shared. It aims to consider home's "place-specific qualities and the experience of its users" without putting it "into classifications of size, location, cost, or generalized user profile" (Çapoğlu 2008). The final example concentrates on defining various design problems in mass housing areas "to create better neighborhood spaces with the public realm, livable streets and identified character for housing quarters" (Oylum 2010).

Regarding the Batıkent settlement, there are a noticeable number of studies that are about user satisfaction and environmental quality. Their research perspective is generally related to the issue of urban planning, urban politics, urban transformation as well as the history of housing and city building. In the tables below, references are summarized according to their key research themes.

¹⁹ Via the YOK (Turkish Higher Education Institute) database retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/giris.jsp>

Table 1.2. Books about Batıkent cooperative housing region

KEY THEME(S)	TITLE
N/A	Dağlı, N. (2005). <i>Batıkent 25 Yaşında</i>
Evaluation new settlement models around the world and in Turkey, and history and eco-renewal of Batıkent	Eryıldız, S. (2003). <i>Batıkent</i>
Evaluation of mass housing production models around the world and in Turkey	Sayın, E. (1984). <i>New Settlement Projects with Special Emphasis on Turkey</i>
Evaluation of selected mass housing production models in Turkey	Gürel, S. (Ed.) (1984). <i>Türkiye'den Toplu Konut Örnekleri: İzmir Dokuz Eylül Üniversitesi Şehir ve Bölge Planlama Bölümü Öğrenci Çalışmaları 1982/83 Öğretim Yılı</i>
Promotional report of Batıkent cooperative housing region	Kent-Koop (1983). <i>Batıkent: New Settlement Project</i>

The studies by Erol Sayın (1984) and Kent-Koop (1983) are among the key sources that not only narrate the story of project, planning principles and try to find a position among the significant new settlements in Europe and the US directly from the undertakers of Batıkent, but also provide information for non-Turkish readers. Eryıldız (2003)'s study has a similar approach; however, the author presents his point of view of as a planner who took part since early stages of the project. What separates Eryıldız's book from others is a brief research on eco-renewal and its possible implementation at Batıkent. Gürel (1984)'s study presents a spectrum of similar projects realized in Turkey around the '80s.

Table 1.3. Articles about / referring to Batıkent cooperative housing region

KEY THEME(S)	TITLE
Batıkent as a model (planning aspect)	Atıcı, M. (2017). <i>Alternative Solutions for Urban Housing: The case of Batıkent settlement, Ankara, Turkey</i>
Evaluation of open plan interiors	Yıldırım, K., Ünlü, F., and Aydın, M. (2017). <i>Üst Sosyo Ekonomik Düzeye Sahip Apartman Konutların Açık Yaşama Mekânlarının Kullanım Sürecinde Değerlendirilmesi.</i>
Gated communities, socio-economic evaluation	Akalın, M. (2016). <i>Mekansal Ayrışmanın Bir Yeni Biçimi Olarak Kapalıkapılı Siteler Akkent Konutları Örneği</i>
User satisfaction / Environmental quality	Bayraktar, N. and Girgin, Ç. (2010). <i>Kooperatif Üst Birlikleri Tarafından Gerçekleştirilen Konut Yaşam Çevrelerinde Kentsel Yaşam Kalitesi Açısından Bir Değerlendirme/Batıkent Örneği</i>
Comparison of grid and organic patterns	Özcan, Z. (2007). <i>Anadolu Konut Yerleşim Deseninde İkili Oluşum Ankara Batıkent-Ergazi Örneği</i>

Table 1.3 (Continued)

Batıkent as a model (political aspect)	Karasu, M. A. (2005). <i>Türkiye’de Konut Sorununun Çözümünde Farklı Bir Yaklaşım; Belediye-Toplu Konut İdaresi-Konut Kooperatifleri İşbirliği Modeli</i>
Batıkent as a model (planning and implementation aspect)	Pamir, H. (1988). <i>Batı-Kent Mew Town, Ankara</i>
Batıkent as a model (political aspect)	Karayalçın, M. (1987). <i>Batıkent: A new settlement project in Ankara, Turkey</i>

The studies published in journals that are or mention about Batıkent, gives valuable information regarding the implantation of the cooperative model. Among them, however, Kent-Koop’s then-president Murat Karayalçın (1987)’s presentation notes from an international assembly are the only in-house resource that has been published in an international journal. Other sources present different approaches to Batıkent that range from planning to political sciences.

Table 1.4. Conference proceedings referring to Batıkent cooperative housing region

KEY THEME(S)	TITLE
Open building, multi-unit design, pedagogical approach	Pecar, M. and Turan, C. (2004). <i>Integration of Multi-Family Housing Using Open Building Methods in Turkey</i>
Environmental quality, residential identity	Bilsel, F. C. (2000). <i>Three Residential Settlements in Ankara: What Strategies for An Environment Sensitive Sustainable Urbanization?</i>

Within the reach of this study, two proceedings are obtained. The first example on the list is a study that presents Open Building concept proposing a strategy for development of multi-unit housing types (Pecar and Turan, 2004). Batıkent is mentioned as successful example of sustainable environment as opposed to the gecekondu developments. The second example refers to Batıkent as a case study on the quality of environment and the question of residential identities (Bilsel, 2000).

Table 1.5. Dissertations about Batıkent cooperative housing region

KEY THEME(S)	TITLE
Environmental quality	Celep, S. (2009). <i>Assessment of Sub-Center Development: Batıkent, Ankara</i> . Middle East Technical University, Department of City and Regional Planning (MSc Thesis).
	Püskülcü, A. (2001). <i>An Inquiry Into the Environmental Qualities of Neighbourhoods in Planned New Settlements: The Case of Batıkent</i> . Middle East Technical University, Department of Architecture (MSc Thesis).

Table 1.5 (Continued)

Environmental quality	Özcan, H. (1999). <i>A Holistic Approach to Evaluate the Neighborhood Concept</i> . Middle East Technical University, Department of City and Regional Planning (MSc Thesis).
	Çil, A. (1990). Batıkent Toplu Konut Alanında Açık ve Yeşil Alanların İrdelenmesi Üzerine Bir Araştırma [A Research on Evaluation of Open Spaces in the 'Batıkent' Residential Area]. Ankara University, Department of Landscape Architecture (MSc Thesis).
	Bozkurt, N. (1986). <i>An Open Space Design Proposal in Batıkent with Reference to the Context of Townscape Design</i> . Middle East Technical University, Department of Architecture (MSc Thesis).
Quality of urban/social life	Beşpınar Ekici, F. U. (2001). <i>The Lower Middle Class Neighborhood in the Metropolitan Context: The Case of Batıkent (Ankara)</i> . Middle East Technical University, Department of Sociology (MSc Thesis).
	Gündüz, M. (1998). 'Konut ve Yaşam' Batıkent örneği ['Housing and Life' A Case Study in Batıkent]. Gazi University, Department of Architecture (MSc Thesis).
User satisfaction / Environmental quality	Sezer, E. (1998). <i>Peculiarities of Turkish Planning History, FIS Quality and Problems, Regarding Planning-User Equilibrium Case Study; Batıkent, Ankara</i> . Middle East Technical University, Department of City and Regional Planning (MSc Thesis).
User satisfaction	Aydın, M. (2015). Üst Sosyo Ekonomik Düzeye Sahip Apartman Konutların Açık Tip Yaşama Mekânlarının Kullanım Sürecinde Değerlendirmesi [Evaluations in Usage Process of Living Rooms of Housing Have Upper Socio-Economic Status] Gazi University, Department of Interior Design and Decoration (MSc Thesis).
	Girgin, Ç. (2007). Kooperatif Üst Birlikleri Tarafından Gerçekleştirilen Konut Yaşam Çevrelerinde Kullanıcı Memnuniyeti Açısından Bir Değerlendirme: Batıkent Örneği [An Evolution with the respect of User Pleasure Realised By Upper Unity of Cooperative: Batıkent Sample]. Gazi University, Department of City and Regional Planning (MSc Thesis).
Participatory design	Berk, M. G. (1997). <i>Social Housing and Evaluation of Participatory Approaches: A Case Study on Detça Housing Cooperative in Batıkent</i> . Middle East Technical University, Department of Architecture (MArch Thesis).
Transportation	Demir, E. (2007). Metro Duraklarının Mekansal Özellikleri ve Kent İmajı Üzerindeki Etkileri, Ankara Kızılay-Batıkent Metro Hattı Analizi [Spatial Characteristics of Metro Stations and Their Effects on the Image of the City, A Case Study of Ankara Kızılay-Batıkent Metro Line] Gazi University, Department of Architecture (MSc Thesis).
	Kaçıral, S. (2007). Ankara Ulaşım Politikalarında Sürdürülebilirlik: Batıkent-Kızılay Metrosunun Sosyal Boyutuyla Değerlendirilmesi [Sustainability on Transportation Policy Ankara: Evaluation of Batıkent-Kızılay Subway on the Point of Social Sustainable Transportation Policies]. Gazi University, Department of City and Regional Planning (MSc Thesis).
	Kırsakal, F. (2002). <i>City Image and Metro; Case Study: Batıkent Metro</i> . Middle East Technical University, Department of City and Regional Planning (MSc Thesis).
Eco cities	Eryıldız, H. S. (2018). <i>Sustainability Effects of Eco Cities: An Evaluation in the Scope of Batıkent and Eco Vickian Samples</i> . Doğuş University, Department of Architecture (MSc Thesis).

Table 1.5 (Continued)

Planning Politics	Ateş, T. (1979). <i>Konut Sorunu Karşısında Yerel Yönetimler (Ankara Akkundu-Batıkent Örneği)</i> - English translation is not available for this title. Middle East Technical University Department of City and Regional Planning (MSc Thesis).

Based on the tables, it can be argued that this dissertation will bring a different discussion for the researchers who are interested in spatial analysis methods and mass housing environments.

1.5 Thesis Structure

As previously stated, this dissertation assesses by analyzing the spatial organization and urban image characteristics of mass housing environments in Batıkent and discusses alternative approaches within the mainstream spatial patterns that are identified with point block apartment in the given urban form. The content of the study is structured around the conceptual matrix that is constituted by two major themes and the sub-themes that intersect with those. As the reader progresses through the chapters of the study, the scope of the issues about the built environment diminishes from urban design to the scale of a housing environment.

The second chapter introduces Trancik's text on "Three Theories of Urban Spatial Design". This is a chapter in the book where he addresses the analysis and spatial design of the city in finding "lost spaces". Three major theories contributing to the issue of the crisis of the modern city, which are figure-ground theory inspired after Nolli and first appeared as comparison of modern and historical towns by the study of Colin Rowe and Fred Koetter (1978), linkage theory by Maki, and place theory, are presented from the perspectives of various authors including Christian Norberg-Schulz, Ralph Erskine, Leon Krier, Gordon Cullen, Donald Appleyard, and Kevin Lynch. His concluding remarks and design principles regarding an integrated urban design approach are phrased. This chapter establishes the first part of the conceptual matrix of the spatial analysis.

The third chapter elaborates on the aspects of spatial organization and urban image characteristics. Three elements are introduced as the second part of the conceptual matrix: dimensional, typo-morphological and urban image. Accordingly, the chapter sets up the definitions of each concept and articulates on different qualities of housing environments with corresponding sub-themes that occurred with the interaction of three urban design theories.

The fourth chapter conducts a ‘precedent study’, in which six paradigmatic mass housing experiments are examined. Their particular responses to the emergent housing crises in different cities in Europe are investigated with respect to the urban design theories as well as architectural properties. The investigation starts with a synoptic background regarding the dominant paradigms in the architecture of housing mostly defined by CIAM, Team X, and Interbau (1957) Exhibition in Berlin. Then the Bijlmermeer (Amsterdam), Park Hill (Sheffield), Toulouse-Le Mirail housing development, Byker Estate (Newcastle upon Tyne), The Barbican Estate (London), Gallarate 2 (Milan) housing projects and the Block 10 in the southern Friedrichstadt district as part of the return to the urban block of IBA’84/87 (Berlin) are examined with their strengths and weaknesses in presenting various sets of elements of spatial organization and place characteristics developed under different urban contexts and architectural ideals.

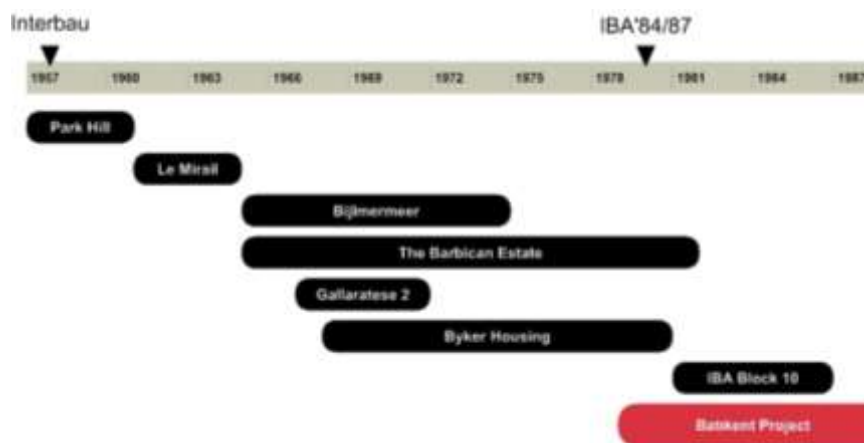


Figure 1.7. Chronological timeline of the selected mass housing cases in Europe in comparison with Batikent project
Source: Author

In the fifth chapter, dimensional, typo-morphological and urban image aspects are analyzed in the housing settlements of Batıkent. After introducing the settlement's master planning strategies and spatial hierarchy, the theoretical arguments examined in the previous chapters are brought together to provide a data source for the morphological mapping. By means of various analysis maps and diagrams that are applied on a range of scales from urban form to the urban block, street, plot and building block, different dimensions of spatial analysis are applied in Batıkent. The results of these analysis maps are used to determine the characteristics of urban morphology and spatial patterns. "Batıkent City Center Housing Area A" project by Merih Karaaslan, Yurdanur Sepkin and Coşkun Erkal project is selected for conducting a further investigation on the building block scale and discuss its potential to manifest as an alternative experiment in Batıkent.

The sixth chapter summarizes the results of spatial analysis both on settlement and housing levels and discusses the spatial legibility and connectivity constituted by housing environments in Batıkent at the urban scale. The analysis maps and the Housing Area A project are argued in their role in interpreting the conceptual framework. All the findings are in the direction of visualizing and determining the standard and non-standard applications offered by Batıkent. The stereotype solutions of the mainstream housing production in terms of space and location characteristics are compared and the strengths and weaknesses of the settlement are discussed with regard to Batıkent cooperative housing settlement's experience on hosting alternative approaches.

CHAPTER 2

CONCEPTUALIZING URBAN-SPATIAL ANALYSIS: THREE THEORIES OF URBAN DESIGN

This chapter builds up the conceptual framework to prepare the theoretical background for the urban-spatial analysis and review of selected case studies. Roger Trancik's approach synthesizes the aspects of spatial experience and form with three theories of urban-design theory: the figure-ground, linkage, and place. He states that "these theories differ significantly from each other, but taken together can provide us with potential strategies for integrated urban design" (Trancik 1986, p. 97). In this study, they will be considered as the guidelines to establish an integrated conceptual framework for analyzing urban morphology to evaluate the qualities that Batikent cooperative settlements present.

Trancik's attention to these three urban theories is originated in the intention to correct problems about spatial structure in the city and to bring back values about urban space. According to him, two-dimensional land-use patterns of contemporary cities have shaped the built-environment so artificially that the third dimension of design, which is the spaces in large and complex social patterns, is overlooked. Today, the modern cities deteriorated the traditional urban fabric with viable open spaces and created "unshaped anti spaces" that are isolated and lack of human connection. Because the usual processes in today's cities often fail to think urban spaces as "exterior volumes with properties of shape and scale and with connections to other spaces". Therefore, Trancik regards the anti spaces (or lost spaces) as the undesirable and unused are which make contributions neither to the user nor to the surrounding (Trancik 1986, p.1).

To him, the traditional city form has an urban spatial structure that gives a sense of direction into an organic network of streets fed by squares and plazas, while the

modern form's free composition creates disorientation and confusion. Not only the functionalist zoning approaches of modernism, but also "the ideals of social hygiene through the abandonment of the city –the garden city/new town/suburban concepts"²⁰, urban renewal projects of the 1960s²¹ and the zoning ordinances are the reasons why today's contemporary cities have ended up with lost spaces. The major causes to lost spaces are; "an increased dependence on automobile, the attitude of architects of the Modern Movement toward open space, zoning and land-use policies of the urban-renewal period that divided the city, an unwillingness on the part of contemporary institutions –public and private- to assume responsibility for the public urban environment, and an abandonment of industrial, military, or transportation sites in the inner core of the city" (Trancik 1986, p. 4, 39).

The lost spaces are at the ground levels of high-rise buildings whose landscape is a residue because of the sunken plazas devoid of pedestrian connection, vast parking lots situated in-between the residential and commercial districts. They are missed opportunities for better environments. But they still have a potential for to be assessed and re-designed to become "figural volumes", not "structureless voids" (Trancik 1986, p. 18). After Rowe and Koetter (1978), Trancik considers the traditional and modern forms to learn valuable lessons prior to an expertise in urban design and to redesign the lost space. He gives three approaches to the spatial analysis of city whose combination identifies "the evolution of modern space and the analysis of historic precedents" (Trancik 1986, p. 97).

²⁰ Inspired after Ebenezer Howard's *Garden Cities of To-morrow* (1898), garden suburbs got popular in Europe and North America with settlements like Letchworth (England 1905), Forest Hill Gardens (New York, 1910) and gave rise to suburban 'green belt' settlements like Radburn (New Jersey, 1928).

²¹ National programs for urban renewal aimed to recover the destruction after WWII and/or slum clearance. Germany, United Kingdom, France taking the lead, European countries and later the United States designated predominantly residential areas to reconstruct urban life.

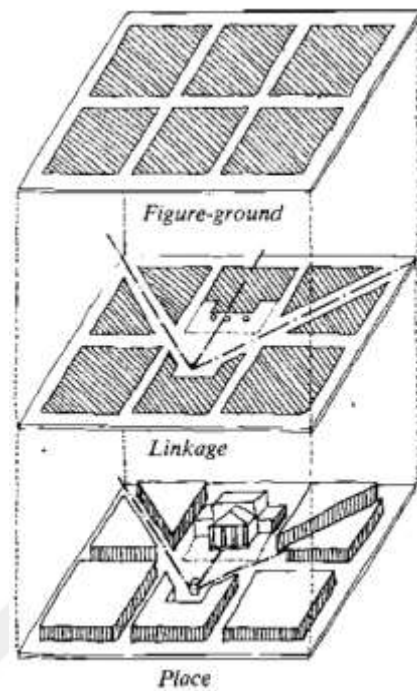


Figure 2.1. Trancik's diagram of three urban design theories
Source: Trancik 1986, p. 98

2.1 Figure-Ground Theory

The first approach is understood by means of analyzing the solid masses and the open voids situated in the urban form. Trancik considers this approach as a powerful tool for illustrating the urban patterns and textures that can be achieved via manipulations on the geometry of urban form. As he states; “the objective of these manipulations is to clarify the structure of urban spaces in a city or district by establishing a hierarchy of spaces in different sizes that are individually enclosed but ordered directionally in relation to each other” (Trancik 1986, p. 97).

The projection of urban patterns as solids and voids decodes the complex structure of cities by revealing the parts that are added to or subtracted from the form. As Trancik underlines, the most well-known implementation of this approach is the Nolli Map (Figure 2.2). Giambattista Nolli used the figure-ground representation to illustrate the built-environment of the 18th century Rome. The black masses (figure)

meant spaces that are not accessible by the public. The squares, plazas, colonnades, and even the interiors of holy spaces were in white voids. Trancik notes that the Nolli Map reveals the traditional city form in which public spaces are extracted from private blocks as the separation between the private and public uses. Public monuments and institutions as the predominant figures in urban form, define edges and boundaries as solids. Urban residential blocks establish constant volumes that define forms of surrounding. Whereas entry foyers, inner courtyards, streets and squares, parks, gardens are urban voids, which make way to linear open space systems. Trancik argues that an ineffective combination of urban solids and voids results in lost spaces (Trancik 1986, p. 98-106).



Figure 2.2. A fragment from Nolli Map of Rome 1748

Source: Mapping Cultural Space Across Eurasia. Retrieved from <http://dighist.fas.harvard.edu/projects/eurasia/items/show/206> (Accessed on November, 2019)

Trancik's consideration for figure-ground studies that reveal the solid-void combinations in the collective urban form is a pre-recognized concern for Colin Rowe and Fred Koetter (1978), who reappraise the total utopia of contemporary city planning and propose a fragmented urban structure with miniature utopias. Rowe and Koetter use figure-ground analysis to underline two distinct conditions of urban design, as Trancik does. Traditional and modern cities are also admitted by the authors as significant examples of integrated and diagrammatic morphologies. The authors present the figure-ground mapping as the "alternative readings of solid-void

relationship [...]”. These two terms indicate the contrast between urban spaces in the compact traditional city and modern city. While the former’s expression is almost black, the latter’s is almost white. This reflection discloses two legible structures: “an accumulation of voids in largely unmanipulated solids” and “an accumulation of solids in largely unmanipulated voids”. They state “[...] in both cases, the fundamental ground promotes an entirely different category of figure –in the one *object*, in the other *space*” (Rowe & Koetter 1978, p. 62-63; Rowe & Koetter 1980, p. 109). The authors elaborate their argument in the examples of two cities (Figure 2.3).

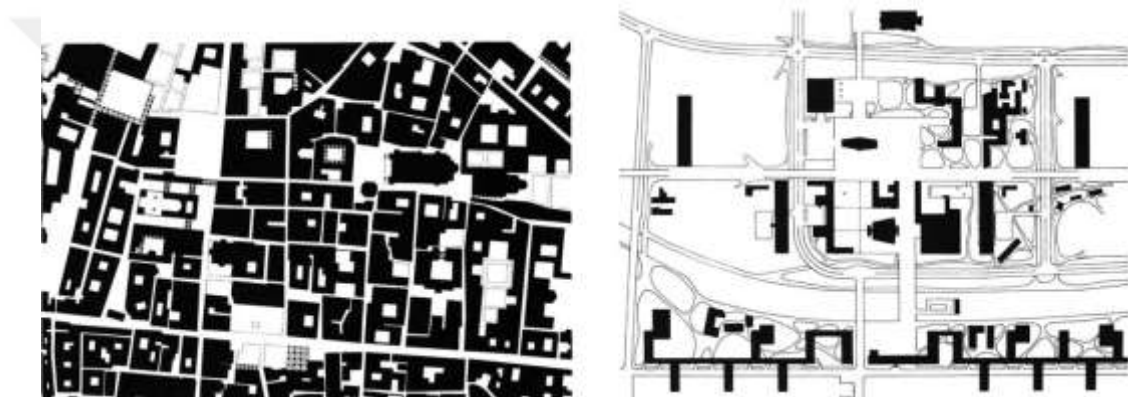


Figure 2.3. Figure-ground map comparison of a traditional and a modern city
Map on the left-hand side is Parma, the map on the right is Le Corbusier’s project for St. Dié
Source: Rowe & Koetter 1978, p. 62-63

As the images illustrate, the figure-ground theory articulates the urban morphology and spatial organization via the similarities and disconnections of urban form. Wayne Copper (1983) and Steven Hurr (1983) separately acknowledge characterizing an urban context by means of reducing it into two-dimensional black and white solids and voids is emergent in the Gestalt theory²² (Copper 1983; Hurr

²² Gestalt principles are a set of laws stemming from a concept in psychology that describe how people usually see objects by grouping similar elements, recognizing patterns, and simplifying complex images. The Gestalt theory has seven principles of visual perception. Principles include figure-ground, similarity, closure, continuation, proximity, familiarity, regularity, and symmetry.

1983). This vocabulary and graphic tradition of figure-ground maps and the abstraction of urban spatial form are preferred by theoretician architects and planners like Rowe and Koetter. Hurtt respectfully refers to Rowe, who uses this method in his academic studies at Cornell University and in the renowned book *Collage City* as follows:

[...] [Rowe] always encouraged the studio to consider the city as a holistic perceptual entity [...] as a whole, a gestalt. [...]. [Figure-ground] drawings derive from the principles of Gestalt psychology. They polarize space and mass, alternatively emphasizing the shape of each, drawing attention to reciprocity and, at an urban scale, the structural relations of figure, field, texture, pattern, edge, axis and so on. [They] also allow for morphological comparison of cities, building groupings, and other form orders (Hurtt 1983, p. 56).

In a similar vein, Trancik sees the spatial forms of modern landscapes as the impossible cases in tracing a coherent urban morphology. As the predominance of vertical buildings (towers, point block typologies, skyscrapers) surpasses the horizontal forms, connective block patterns disappear. Because of inadequate ground coverage, the horizontal elements of the modern high-rise blocks become vast and vacant voids. He states that to achieve well-used voids connecting the urban form, the structure of the building should have relatively larger coverage. Therefore, he advocates for a horizontal mass development where open spaces should be extracted from the form and provide a collective continuation. In the figure-ground theory, the spatial organization of urban form uses public and private domains as visual intermediations of a collective neighborhood and district form. He sees patterns of solids and voids as typological aspects of this analysis. According to the shape and location of buildings, or building groups, the voids connecting site elements have six typological patterns. These patterns reveal the formal character of urban solids and voids that aggregate the urban form by articulating the boundaries between the path networks and buildings. In the planned living environments, this relationship is directional and repetitive, yet for the traditional cities, the configuration of paths is more complex.

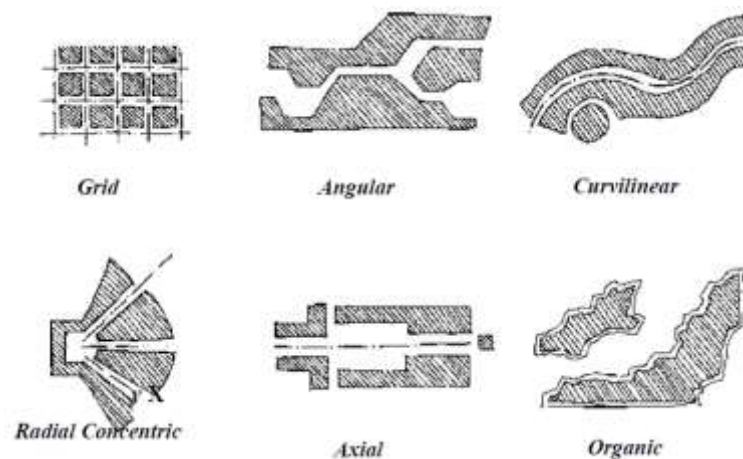


Figure 2.4. Trancik's six typological patterns of solids and voids on the figure-ground representation

Source: Trancik 1986, p. 101

The manipulation of solids and voids as part of the figure-ground theory can be done in various methods. The analysis of the formal or social structure of urban morphology reveals a dialog between building blocks and public open spaces. According to Trancik, standardized and prefabricated boxes of the Modern Movement were the isolated objects of non-city –the usual suspects of lost spaces and failures of non-working voids around the solids.

No project is more famous than Pruitt-Igoe (1955) with the solitaire blocks on undefined voids. As a typical modern solution to post-war urbanization, the project was realized to clear slums and to avoid racial segregation in St. Louis, Missouri. Being one of the leading non-European initiatives that applied the principles of the CIAM, the housing blocks of the Pruitt-Igoe were identical multi-story slabs showing strict uniformity and regularity. 13.000 white and black Americans were inhabited in 33 blocks equipped with elevators, interior corridors and semi-private spaces.



Figure 2.5. Aerial view and figure-ground expression of the site plan of Pruitt-Igoe
 Source: www.theguardian.com/cities/2015/apr/22/pruitt-igoe-high-rise-urban-america-history-cities and www.archdaily.com/870685/ad-classics-pruitt-igoe-housing-project-minoru-yamasaki-st-louis-usa-modernism (Accessed on December 2019)

Due to socio-economic outcomes of the post-war conditions and a lack of maintenance, the Pruitt-Igoe became a crime-ridden place²³ and was torn down between 1972 and 1976 (Heathcott 2012). In his book *The Language of Post-Modern Architecture* (1977), Charles Jencks iconized the fall of the settlement as “the death” of modern architecture and announced the end of the “impoverished” level of form, content and social goals (Jencks 1977).²⁴ From an alternative point of view, Oscar Newman (1972) took the Pruitt-Igoe and other American examples alike as the cases of how some formal and organizational attributions caused urban crime. As he notes, the free and isolated composition of such superblocks accommodating a thousand families in seven or more storey, are vulnerable to increasing crime rates. In the case of Pruitt-Igoe, he states, closing existing streets for the sake of the free

²³ The main mission of the Pruitt-Igoe was providing social justice and livable environments to its occupants. However due to financial and institutional restrictions and poor quality of materials were used in the construction, four years after the opening area became degenerated. Once the white (relatively wealthier) section moved from the region in search for better employment and housing, a decline in the occupancy rate occurred leaving more vacancy houses for the poorest segments of the community. Not long after, poverty and neglect caused for extreme vandalism and violent crime.

²⁴ According to Katharine Bristol, however, the failure of the project was not resulted from its architectural paradigm, but from various political-economic and social circumstances. In her interpretation, the architects of the Pruitt-Igoe had to follow the strategies of a system they belonged to; the strategies of, in her words, “ghetto containment and inner city revitalization” (Bristol 1991).

ground plan and facilitating off-street parking and free positioning undermined the relationship between the ground activities and buildings (Newman 1972). Even though his method is entirely associated with design strategies for ‘defensible spaces’ in residential neighborhoods and settlements, the underlying idea tries to eliminate the extreme difference between the solid and void and find a balance towards the manipulation of semi-private and semi-public areas.

2.2 Linkage Theory and Collective Form

Trancik defines the second theory of urban spatial form as the organization of lines connecting parts of the city and “spatial datum”, which indicates a system of linkages that can be “a site line, directional flow of movement, and organizational axis, or a building edge”. Either as streets, pedestrian ways, and alleys or as extensions of buildings, the linkage theory defines interconnecting lines by which the urban form is shaped in consecutiveness. In this approach, the components of urban morphology are the spatial form connections that tie spaces together. The concept of spatial linkages is correlated by Trancik with the lack of alternatives of visual and physical character in cities. The absence of a coherent theory beyond single buildings dominates the city and results in a heterogeneous urban form. (Trancik 1986, p. 106).

The underlying idea of the linkage theory roots from Fumihiko Maki’s book *Investigations on Collective Form* (1964). To Maki, the occurrence of heterogeneous form indicates “an inadequacy of spatial languages to make meaningful environment” and the possibilities inherited in “collective form”, which represents “groups of buildings and quasi-buildings –the segment of our cities [...] however, [it is] not a collection of unrelated, separate buildings, but of buildings that have reasons to be together” (Maki 1964, p. 5). Having stressed the characteristics of the linkage theory, Maki defines three urban space types, which are compositional, mega and group form (Figure 2.6). Then he continues on defining each in relation to its linkage elements.

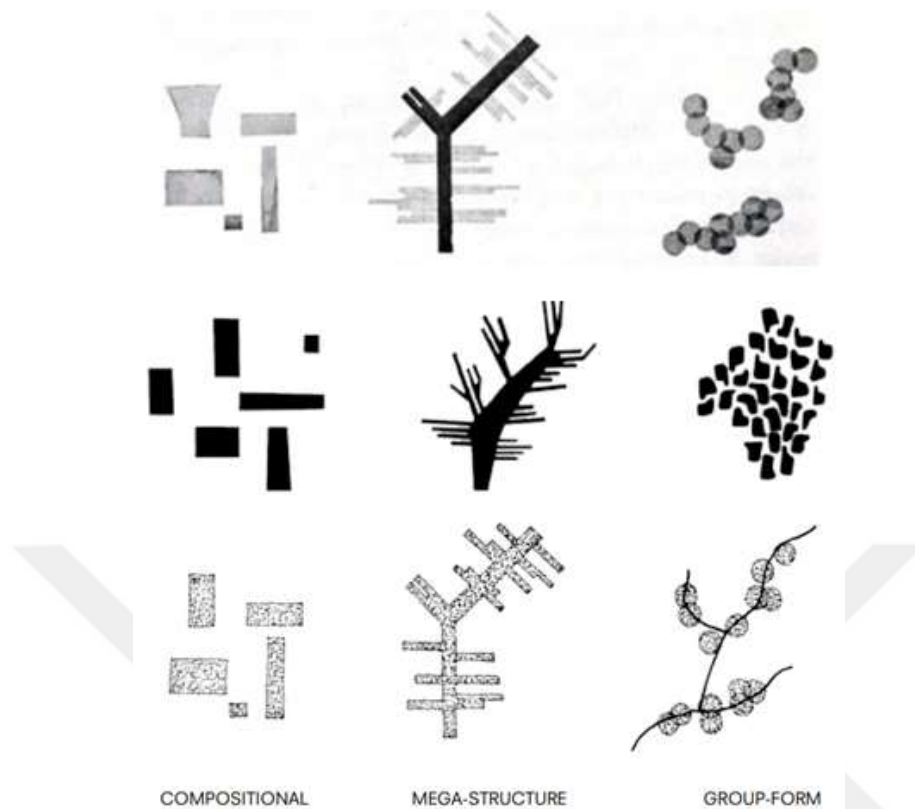


Figure 2.6. Maki's three approaches to collective form

The figures on top and in the middle appear in other versions of Maki's text, whereas the figure on the bottom is from Trancik's book. Despite the slight differences in the illustrations, each version expresses the same idea.

Source: Maki 1964, p. 6 (above); Maki & Ohtaka 1965, p. 118 (middle); Trancik 1986, p. 107 (bottom)

In the first part of the book, Maki analyses three approaches to understand the development of collective form. In the second part, where he introduces the linkage theory, the implications to achieve a homogenous urban form by means of architecture and urban design are discussed. Therefore, the conceptualization of the collective form is essential in order to stress the importance of linkage as a physical unity that makes a contribution to the form of the city hence the human experience.

Maki's study discusses morphologies that link urban components together as collective forms. It is an investigation for a methodology that utilizes his observations during the 1960s and criticisms towards the period's cities in order to make progress in urban design. The investigation of collective form is handled

through the approaches that explain the structural principles involved in the making:

Compositional approach	-	Compositional Form
Structural approach	-	Megastructure (Form)
Sequential approach	-	Group Form

To quote Maki, “the three patterns or modes are not mutually exclusive but can coexist in one configuration; they define the three basic relationships that always exist between individual elements and the whole” (Maki 2008, p. 41). The first, the compositional approach, is an outcome of a conceived formal statement whose design process has two stages: a functional diagram (usually two-dimensional, rarely three-dimensional) and buildings in composition following the diagram with/without linkage. As Maki tells, this category was applied in contemporary housing schemes and urban renewal projects extensively. The second, the mega form approach, represents a concentrated design approach owing to “present-day technology” in order to express a large frame that contains diverse functions of a city. “In a sense”, he states, “it is a man-made feature of the landscape. It is like the great hill on which Italian towns were built” (Maki 1964, p. 8). In the mega form, there is a great potential to offer a new type of physical structure, and a multi-functional environmental building. The third, the group form approach, shows generative and sequential development as in traditional/vernacular settlements. “Group form is an effort to create a new total image in order to express the vitality of our society [...] It is the village, the dwelling group and the bazaar [...] not the palace complex” (Maki & Ohtaka 1965, p. 120). Therefore, the linkage of group form is implied with these “prototype spaces” (Maki 2008, p. 19). With this brief introduction to the general definitions of the concepts, each of the collective forms can be discussed with their implementations in their linkages to relate spaces to buildings and the buildings to the parts of the city.

Compositional form

Maki mentions that the compositional approach is a common approach seen in the past and the present. It is based on a two-dimensional projection of visual, functional and spatial relationship of separate buildings. The compositional form has elements that are preconceived and “individually tailored”. Architects make the collective form by establishing a functional, visual or spatial relationship with these elements. To Maki, this process is a natural extension of design yet indicates a static approach. “Because, the act of making a composition itself has a tendency to complete a formal statement (Maki 1964, p. 6)”. It has limitations to evolve as a social organism.

Trancik explains that the linkage in the compositional form is not overt but implied in the freestanding objects (Trancik 1986, p. 107). The rules of compositional urban design are exemplified in the cases Le Corbusier’s Chandigarh Government Center (1951) (Figure 2.7) or Oscar Neimeyer’s buildings in Brasilia (1960) Both cases are discussed as the examples suit to this approach the best. They show well-known strategies to achieve a formal configuration where descriptive attributions of urban design, i.e. edges, boundaries or perimeter, are not as significant as the architecture of the object itself.

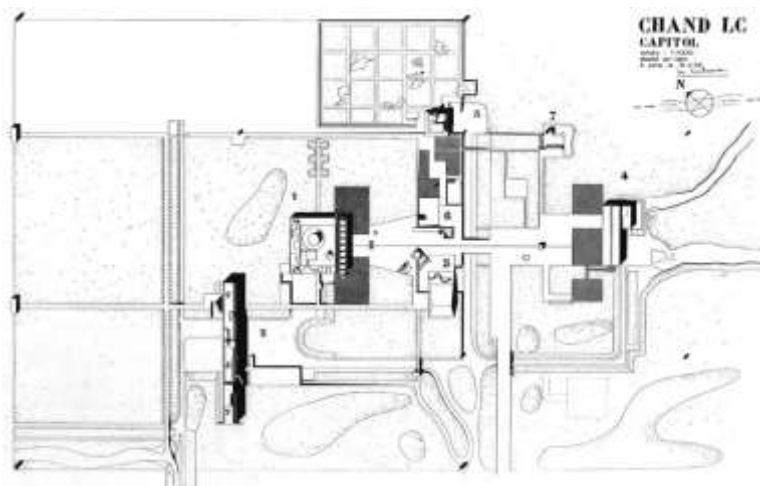


Figure 2.7. Le Corbusier’s plan of the Capitol in Chandigarh as a compositional form
Source: Bharne 2011, p. 104

Mega form (The Megastructure)

Before beginning to elaborate on Maki's arguments on the mega form, it should be noted that he uses both 'megastructure' and 'mega form' in the book but their difference is elusive.²⁵ Except for the quotations from Maki, the term will be referred henceforth as mega form to avoid any misconception.

The attributions of the mega form are defined by Maki as follows:

Inherent in the megastructure concept, along with a certain static nature, is the suggestion that many and diverse functions may beneficially be concentrated in one place. A large frame implies some utility in combination and concentration of function (Maki 1964, p. 8).

Maki states that achievements in technology and engineering allowed building mega forms as an extension of urban form. Owing to these advantages of the 'contemporary' day, mega form became a utilizing tool in urban planning and in architecture. As there are multiple (city) functions, there are multiple independent systems, which are engaged to work together but also have the ability to maintain their identity without getting affected. To achieve an efficient and flexible structure, Maki offers two operations to control independent parts: "one is to select proper independent functional systems and [the other is] to give them optimum interdependency through the provision of physical joints at critical points (Maki 1964, p. 12)". As a result, the linkage in mega form appears where a hierarchical structure or an open-ended structure is connected to a framework (Figure 2.8).

²⁵ Kenneth Frampton explains the terms as follows: For me the main difference between the two resides in the emphasis placed on the overall form and its intrinsic spatial order as opposed to the expressivity of the structure so that while the mega form may display certain megastructural characteristics, the large scale manifestation and expression of its intrinsic structure is not its primary significance. What is much more pertinent in the case of the mega form is the topographic, horizontal thrust of its overall profile together with the programmatic place-creating character of its intrinsic program (Frampton 2010, p. 11).

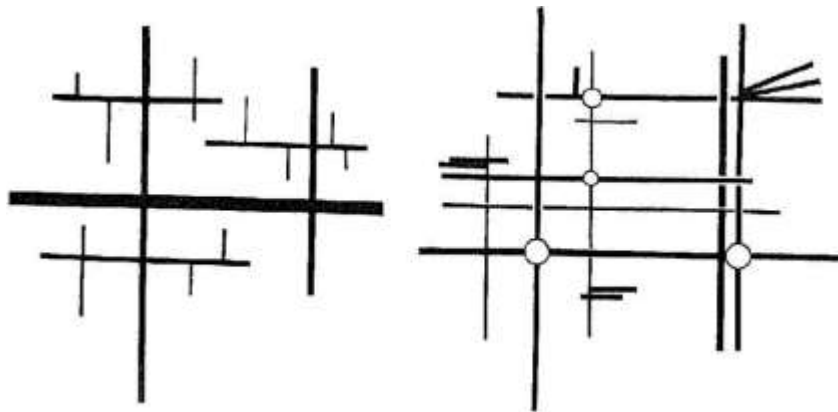


Figure 2.8. Hierarchical and open-ended structures of mega form
Source: Maki 1964, p. 12

With its large structural articulation, the linkage of mega form is physically imposed. Concerning the structural attributions of the mega form, Trancik gives a very fundamental note:

The tight structure of mega form encloses the internally covered space and the perimeter is formally defined, but the structure is indifferent to exterior space. It tends to turn its back on the physical context and creates its own milieu by embracing a very large room without specific reference to human scale. In such examples the form generator is often the high-speed road network (Trancik 1986, p. 107).

Group form

The final paradigm, Group Form “evolves from a system of generative elements in space”. It can fit itself into certain needs of any topography or context without getting effected from any addition or subtraction of a building unit. Therefore, the spatial organization of group form is considered as regional and sequential which can be observed in the organic development of most of the housing patterns in pre-industrial societies (Figure 2.9) like “medieval cities in Europe, towns in Greek islands, villages in Northern Africa”, Japanese villages as well as 16th century Dutch housing (Maki 1964, p. 14). As Maki lists, the determinative factors in the spatial organization of the group form are consistent use of basic materials and

construction techniques, wise use of the geography, preserved human scale, and sequential development of basic elements like walls, towers, or gates (Maki 1964, p. 14-16).



Figure 2.9. A Japanese village as an example to sequential generation of group form
Source: Maki 1964, p. 17

The group form evolves from the unifying craftsmanship of a community that generates units through a linked accumulation. It is crucial to Maki to underline that, the units of group form is not a result of a design process. For this reason, he notes that any geometric invention of form is meaningless unless it is derived from the environmental (or regional) needs. Hence pure geometry becomes an ill-founded concept for the group form. The characteristics of group form go as follows:

Forms in group-form have their own built-in link, whether expressed or latent, so that they may grow in a system. They define basic environmental space, which also partakes of the quality of systematic linkage. Group-form and its space are indeed

proto-type elements, and they are prototypes because of implied system and linkage (Maki 1964, p. 19).

As Trancik concludes, the linkage in group form is neither implied as in the collective form, nor imposed as in the mega form; but is evolved naturally.

In this type of organization the house generates village form, the village generates house form, and individual buildings can be added or subtracted without changing the basic structure. In group form urban spaces are derived from the interior, and the rural space outside imposes limitations and conditions that define the place of the community within the landscape (Trancik 1986, p. 108).

Operational Categories of Linkage

To quote Maki, “linking, or disclosing linkage (articulating the large entity), are invariant activities in making collective form”. “Linkage is simply the glue of the city” (Maki 1964, p. 29, 35). The linkage theory, in this regard, is the physical or implicative elements (and in buildings if necessary) that function as the binding component of the collective form (Maki 2008, p. 57). Via linkage, the spatial order and juncture among elements generate urban form.

Maki asserts five “operational categories” to explain all patterns of experience in the urban context that is a result of a kind of linkage. They can be physical operations with walls or bridges; or can be implications with carefully balanced buildings (Maki 1964, p. 36).

1. **“To mediate”** is in-between different elements, which are parts of the collective form. They are not repetitive entities of a static network therefore; there can be no singular purpose/function for them. The meaning and function of a mediating linkage can vary and depend on different needs offered by space and urban context. It can be a crossroads, corridors, or thresholds (Maki 1964, p. 37-38).
2. **“To define”** is to give a limit to the building site. Its role and meaning are dependent on the purpose or location. It can be used for protection, oppression, or separation (Maki 1964, p. 38-39).

3. **“To repeat”** is to link clusters of building with a common element that makes the group identified with an order. Repetition of building size, the amount of space between them, the material or the style can link these elements as part of the same unity (Maki 1964, p. 39-40).
4. **“To make a sequential path”** is to connect separate elements of the group in a cohesive and designed way. Buildings or their parts are arranged “in a useful activity”. Alternatively, to make way, lead to a new development within its natural context (Maki 1964, p. 39-40).

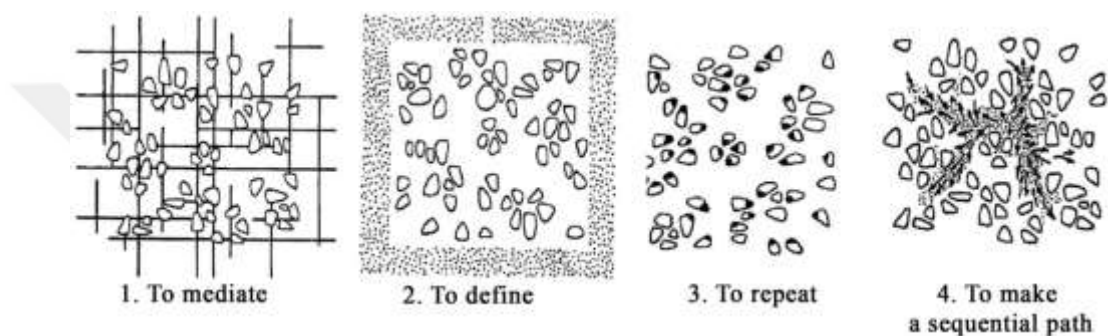


Figure 2.10. Four of the operational categories of linkage theory
From left to right; to mediate, to define, to repeat, and to make path.
Source: Maki 1964, p. 37-41

5. **“To select”** is to designate a certain area where collective forms or clusters of buildings will disclose a functional or urban meaning within a designated path and route. This link can be achieved through a site selection or program distribution prior to design. (Maki 1964, p. 36-42).

To conclude Trancik explains linkage as “the controlling idea of ordering buildings and spaces in design”, which results in placing public space as a prior design element before the others (Trancik 1986, p. 108). As a popular concept in the 60s, the linkage theory is applied by many architects to horizontally link high-rise building blocks with circulation systems (mostly in the air). However, to Trancik, the organization of this diagrammatic movement system is nonspatial. They represent “utopian ideals for community regeneration but do not address the need for traditional urban spaces formed by solids and voids” (Trancik 1986, p. 110). One of the prominent examples that are discussed in this regard is Le-Mirail

housing settlement. The project is part of an urban development plan that aimed to provide an alternative experience of community detached from the functionalist town planning thorough an open ended systematical growth. As Inderbir Riar (2011) states, the architects Georges Candilis, Alexis Josic and Shadrach Woods, who were former colleagues of Le Corbusier and core members of the Team X, were interested in “growth and change”. Their sensitivity was explicitly related to “social identity” which, they believed was hidden in the details of everyday life (Riar 2011, p. 75). To quote from Riar “the result was the equally celebrated and maligned *rue dale* (slab street), a continuous elevated pedestrian platform which housing blocks and ancillary services attached (seemingly at random) and on which the social life of the new city was to take place” (Riar 2011, p. 75).

2.3 Place Theory and the Image of the City

Trancik explains the last category of urban design theories as follows:

The essence of place theory in spatial design lies in understanding the cultural and human characteristics of physical space. If in abstract, physical terms, *space* is a bounded or purposeful void with the potential of physically linking things, it only becomes place when it is given a contextual meaning derived from cultural or regional context (Trancik 1986, p. 112).

In scope of this theory, Trancik correlates tangible (materials, textures, shapes, colors, sizes, and typologies, etc.) and intangible (emotional or cultural associations and environmental identity) aspects of space as inseparable, thus stresses the concept of place as a unique property that cannot be categorized with types. He argues the place identity from the perspectives of spatial experiences, cognitive meanings, events, social and cultural exchanges, and seeks for illustrating the design response to these values with various implications. In the urban designs and works of Ralph Erskine, Leon Krier, Gordon Cullen, Donald Appleyard, and Kevin Lynch, Trancik finds spatial designs that take both new and old spaces into consideration as successful. Erskine’s new neoclassic work is associated with

organic systems that connect new to the vernacular (Trancik 1986, p. 116). Krier is mentioned with his response to public space to revive streets and squares by means of traditional urban blocks (Trancik 1986, p. 116-117). The contextual approaches of Cullen and Appleyard are referred to as the sequential experience of public spaces and streets as indicators of social life (Trancik 1986, p. 122-123). And last but not least, Lynch is stated with the French contextualist tradition that creates “nostalgic collages to emulate the evolution of the city”. In this regard, Lynch is looked at with his attempt to direct elements of mind mapping as part of an urban design theory (Trancik 1986, p. 118-120).

Kim Dovey explains that the field of architecture and urban design ‘frame’ space and place both in a literal and discursive sense. In the literal sense everyday life ‘takes place’ within the clusters of rooms, buildings, streets and cities that we inhabit (Dovey 1999). In the discursive sense, place is constructed by the ones who interpret the space. Philosophy, humanities and social sciences comprehend space as cognitive, existential, or abstract places. This variety creates many arguments shared by different disciplinary focuses with regard to the construction of place via space.

Space, in its most general definition, refers to an abstract point in an abstract location hence independent of any social, historical or cultural values. Becoming a place is relevant to some sets of identification that are associated with the experience of space as a locale. Fred Lukermann, see the most important difference between the concepts of space and place in the essence of place knowledge, which is widely used in the field of geography to recognize symbolized recordings of human experience. To him, space can be defined with categories based on physical features, whereas the place is open to different interpretations and gains meaning with its environment, therefore it cannot be put into a classification. The elements of human experience and place analysis are both internal and external (real); they are bound to nature, culture, and history of a location (Lukermann 1964).

As place is in the middle of the physical and experiential realms, understanding the city and place character needs a sort of mediation between the two. The comparison mentioned by Ulusu Uraz and Balamir, “analysis (of spatial form) vs. reading (of place’s meanings)”, can be considered. They state:

The town planning discipline placed emphasis on the logical positivist notion of analysis, while interpretive notions of ‘reading’ found followers in cultural studies on towns and places. It is held that spatial structure of a town can be subject to systematic analysis, while reading of its place characteristics requires the responsibility of an interpreter. Place is said to be opaque to positive analysis, requiring foremost, a reading of its textual entities: its material substance, character and emotional presence” (Ulusu Uraz & Balamir 2006, p. 4).

Ali Madanipour states that cities can be seen as a collection of artifacts of buildings and material structures. To understand the urban space these structures would be classified into groups based on one's relationship with them. These can be existential, morphological, functional classifications; the intensity of uses, structures of movements/transportation or consumerism. One way to look at the urban space is seeing it as an agglomeration of people in terms of individual viewpoints that make to understand cities differently (Madanipour 1996). As an overarching idea for understanding spatial qualities in settlements, neighborhoods, or cities, the place identity evokes a collective sense to imagine or apprehend the elements of urban form as the heart of their experience. Strengthening the connection between observers of the city and places, the place identity approach refers to various intangible qualities, images, links, or activities, even smells, by which the public realm shape the shared value of living environments. Thus this element facilitates physical and social identities that define the attachment of people on various levels in the city; i.e. streets, urban blocks, or neighborhoods. In the case of public spaces, for instance, community-oriented attributions of place are essential.

Understanding place identity may sound a difficult task for its definition arises many debates due to different perspectives and disciplines. Tim Cresswell (2004)

looks back to the history of the idea of place and sees a set of three approaches; descriptive, social constructionist, and phenomenological. In the broadest sense, each approach indicates a level of correspondence. The first is about a particular location and its distinctive attributions described from the eyes of its observer. By referring to a fixed location, which can be a settlement, a city, a region, or a country, the descriptive approach identifies concrete and tangible characteristics. The second approach's objective is attached to the description of particular places with an emphasis on social events and processes. The social constructionist approach seeks the place identity that is (being) created concurrent or fragmented societal relations. The third approach is in pursuit of finding the very essence of place for a human's existence. Humanistic geographers, neo-humanists, and phenomenologist philosophers follow this path to find the meaning of "Place" (Cresswell 2004, p. 51).

To quote Cresswell;

These three levels should not be seen as discrete sets as there is clearly some overlap between them. Broadly speaking they represent three levels of 'depth' in approaches to place with the level one representing a concern with the surface of the world as we see it and level three representing a deep universal sense of what place means to humanity. It would be wrong however to think that these correspond in some easy way to 'importance'. Research at all three levels (and the ones in between) are important and necessary to understand the full complexity of the role of place in human life (Cresswell 2004, p 51).

By briefly covering each particular approach to place idea, the importance of understanding context and its physical, cultural, historical, social or symbolic meanings to urban spaces can be elaborated for urban-spatial design concepts.

Descriptive Approach

This approach addresses the depiction of place under categorical schemes, which are investigated by observing, recording, and classifying and with supplementary visualization techniques that illustrate the significant aspects of a space. Graphics,

charts or maps help to image how residents and components of a physical settlement are connected as part of one place's network.

As mentioned, this dissertation uses maps and charts as the major agencies to analyze living environments. As one example of this approach will elaborate soon, maps and drawings are 'ideographs' of a particular location representing facts and circumstances, creating comprehensible linkages between a community and place. Any suggestion simply attempts to determine, or identify a spatial setting through processing visual and observed data that enable the researcher/observer to describe the place characteristics holistically. For example, Bill Hillier and Julienne Hanson see their study *The Social Logic of Space* as part of a descriptive theory that emphasizes the potential of spatial patterns in carrying social information and content. Their book identifies types of networks that constitute social and spatial relations through various patterns that foster a sense of place by means of environmental order qualities, e.g. pedestrian movement, informal sociability, and formal social structures (Hillier & Hanson 1984).

Social Constructionist Approach

Social constructionism is a theory of knowledge that examines the social and interpersonal influences constructing the understanding of the world. The social constructionist approach to the idea of place explains the diverse characteristics of particular places as examples of wide and overarching social processes occurred under structural factors, e.g. capitalism, patriarchy, feminism, racism, postcolonialism, gender inequality, etc. Researchers from the field of humanities like critical human geography or sociology focus on the events, people, groups, cults, objects, and ideas, and question how the meaning and identity of place is implied via the agents of societal issues.

To simply clarify, some key constructionist approaches can be examined. For example, within a Marxist outlook, David Harvey examines space and place with regard to the issues of time, globalization, and consumerism. Harvey argues that the experience of space and time are the consequences of changing political,

economic, cultural and technological practices and correlates the relationship of space and time with the changing dynamics of capitalist organizations of postmodernity (Harvey 1989). Place is defined as a deceptive notion that is constrained within the borders of repetitive time patterns (festivals, holidays, etc.) and their spatial representations (theme parks, shopping malls, etc.).

Another example to social constructionist approach can be the issue of house as a domestic place providing a way to understand the different dynamics of urbanized society. For example, through feminist theory, Gülsüm Baydar considers house and city as sexualized places. She argues that the concept of place is in the conflict between the feminine and masculine figures who are the embodiments of the private and the public spaces. Baydar's inference points out that the feminine home is depoliticized by the male. The irony she underlines is the Western world itself caused this contradiction since it publicized them as inseparable notions. She states that if the house has been advertised as the foundational piece of the city and "if the feminine house structures the city, the repetitive use of the house has ethical implication in theorizing the city" (Baydar 2003). As a result, place is the metaphor of male-dominant oppression which shapes domestic spaces as part of the critical discourse of the feminist constructivist epistemology.

Another approach to the social construction of place is Stavros Stavrides' studies on the relationship between urban ordering and appropriation of urban enclosures as common spaces:

In an effort to describe urban space as a process rather than a series of physical entities, we can discover practices that oppose a dominant will to fix spatial meanings and uses. These practices mold space and create new spatial articulations since they tend to produce threshold spaces, those in-between areas that relate rather than separate. Urban porosity may be the result of such practices that perforate a secluding perimeter, providing us with an alternative model to the modern city of urban enclaves. A city of thresholds could thus concretize the spatiality of a public culture of mutually aware, interdependent and involved identities (Stavrides 2006, p. 174).

Stavrides see the urban experience from the notion of otherness, by which new forms of urban life can be integrated with the help of Foucault's heterotopia²⁶ concept. Aiming to locate the 'moments' of social experiences as threshold spaces, he sees heterotopias (places where differences meet) as otherness; a different form of habitation. According to that he examines a social housing in Greece, which stands as the emancipation of otherness caused by wars, as a place of misplacement, poverty and marginalization. The informal use of the public spaces in between the buildings of the housing, are exemplified with this example as unplanned spaces that created an informal sociality. Thus they become thresholds where they become alternative places of collectiveness; containing a micro-society that creates various permeable spaces on the spatial form by means of social struggles and movements.²⁷

Phenomenological Approach

This approach is dedicated to explaining the interwoven qualities of the natural and physical environments with regard to self's psychological conditions. This approach is not interested in either describing the unique attributions or interpreting the social forces that shape places; but it describes and investigates the construction of 'the place' bound to a human's existence (Coates and Seamon 1984; Creswell

²⁶ Heterotopia, which is originated as a medical term, is used to define the presence of a particular tissue type at a non-physiological site. Since 1967, when Michel Foucault paraphrased the term for the first time in a lecture for architects, heterotopia has been an explicit focus and everlasting debates. Foucault's explanation is that heterotopic spaces are counter, external, and real spaces, which contest with others alike, so that they represent a simultaneous spatial culture by means of institutional occurrences. He presents six types of heterotopias, which have dual meanings through the development of the cities (Foucault 1986). The original text entitled "Des Espace Autres" was published by Architecture /Mouvement/ Continuit  in October 1984 as a transcription of a lecture given by Michel Foucault on March, 1967.

²⁷ See also Stavrides, S. (2010). *Towards the City of Thresholds*. Trento: Professionaldreamers and Stavrides, S. (2016) *Kentsel Heterotopyalar*, İstanbul: Sel Yayıncılık.

2004, p. 51). The phenomenological approaches in architecture or urban design search for sensory experiences by which an idea of place is disclosed.

As David Seamon argues, buildings are the inseparable partners of the environment, which constitute features that forge the human existence in cities. The definition of architectural phenomenology is implicit in how those built-environments create a sense of place, which Seamon examines in three ways: as lifeworlds, as architectural atmospheres, and as environmental and place wholeness. Within the realm of everyday experiences, they are the starting point of imagining buildings that evoke particular sensations about a space. Respectively, the lifeworlds are the bond between the person and the world. It is based on the typologies that help to sustain a building's function as a place. These are users (inhabitants, guests or strangers), modes of place (insideness/outsideness), and the lifespan of a building (its temporal components, e.g. space plan, exterior, structure). The architectural atmosphere is the invisible and unique character of a building that is awakened by user experience. It is the *genius loci*²⁸ that make a user mindful about the agencies that constitute the comprehension of a building's unique character. Finally, environmental and place wholeness, is explained via spatial and physical parts of the architecture. Methods like space-syntax and Christopher Alexander's pattern language are introduced as to their roles in gathering information about the buildings and places that complete viable qualities of place as a whole (Seamon 2017).

As discussed, the construction of a sense of place is originated in the existential questions about the self's experience in spaces. Place, therefore, stands on a critical position that cannot be fully understood without space. In architectural literature,

²⁸ Seamon (2017) uses the term to underline how Edward Relph differentiates the terms 'spirit of place' and 'sense of place'. Former is the singular quality of the unique ambiance of environment. Its existence is concluded in "experienter". Latter is the unselfconscious awareness toward experience of a particular environment. It radiates from the experienter towards the space.

most authors use the *genius loci* to cite this indescribable and highly personal experience, which transcendent the concrete presence of space. Christian Norberg-Schulz is one of the most important authors with reference to this big term, who defines place as “the concrete manifestation of man’s dwelling”. In other words, the place identity depends on the extent of the belonging of the observer. To Norberg-Schulz, the meaning of architecture lays behind the social construction of space. Therefore, place is interpreted as a socio-spatial object. Space can be a place only when it evokes the feeling of attachment. All the environmental characters of space and significance of the experience disclose the *genius loci* (Norberg-Schulz 1980).

As the most signified space of everyday life, home as a place idea is another important big concern in the phenomenological studies. As a result of settling in a domestic environment, self’s social, cultural and spatial inscriptions transform the space into a personal place. This transformation has been studied by Susan Saegert, who believes that a person’s place attachment can be defined under different meanings. The notion of place, in her regard, finds alternative meaning as a concept of dwelling, home or house depending on the physical, social, or psychological transactions (Saegert 1985). Mary Douglas regards “home as an embryonic community” where domestic space is defined by user without having a fixed order. In other words, any space can be a home for one as long as it is dedicated to the purpose of belonging to a community. In this regard, home becomes a medium in constructing a time based structure which also means the institution of collective memory (Douglas 1991). Likewise, for some authors house is a social architecture which uses domestic space as an agent of commemoration.²⁹

²⁹ See Bahloul, J. (1996). *The Architecture of Memory: A Jewish-Muslim Household in Colonial Algeria, 1937-1962*. Cambridge: Cambridge University Press.

As seen, the phenomenological approach in humanistic geography tends to see the place as the form of personal expression. An eminent author of the field, Yi-Fu Tuan (2001) stresses that place is meaningless unless it is experienced and cared personally. Tuan considers the sense of place as the collection of emotional values. The sense of “topophilia”³⁰ is the outcome of this sentimental link between the self and the environment. According to Tuan, architectural space is an artifact that reflects images and thoughts about abstract experiences. That is why the place is the object that defines such experiences in space and gives them “a geometric personality”. This identification is the result of the link between space and humans which varies from a personal to a public scale. Tuan exemplifies his argument as follows:

The triangle is at first ‘space,’ a blurred image. Recognizing the triangle requires the prior identification of corners—that is, places. A neighborhood is at first a confusion of images to the new resident; it is blurred space ‘out there.’ Learning to know the neighborhood requires the identification of significant localities, such as street corners and architectural landmarks, within the neighborhood space (Tuan 2001, p. 17).

The phenomenological approach in place studies investigates a profound meaning for the spaces. This place identity is the most unique character of space that creates a sense of attraction. Therefore, reading place character requires qualities that are sensory and visual; giving an existential meaning to a specific location.

Edward Relph examines types of spaces, such as pragmatic/primitive, perceptual, or existential in constructing the diverse meanings of space and place because he

³⁰ *Topos* (place) + *-philia* (love of): a strong love/sense of place. Duncan and Duncan (2001) regards that Tuan’s Topophilia is an attachment to home places, which can vary in private room to a country. The term also appears in Bachelard’s *The Poetics of Space*. James W. Gibson’s *A Reenchanted World* and is discussed closely with cultural connections of place.

sees a necessity to examine their relationship to unite the “conceptual and existential context”. In the creation of existential space, culture, maps, myths or rituals define places where human activities are involved in houses, towns, villages, or cities. Relph interprets several components of the existential space and underlines that place can be meaningful as long as its function and intention is set by a conceptual definition of space and geography (Relph 1976, p. 20-21).

Relph illustrates various levels and components of existential space based on their scale and complexity. Starting from the smallest to the largest, he gradually unfolds the degrees of human interaction at each new level & component. As the scale enlarges, the “humanization of space” escalates; as they get sophisticated, human encounters expand the definition of place and make it more public. Therefore, personal relations constitute the most private places.

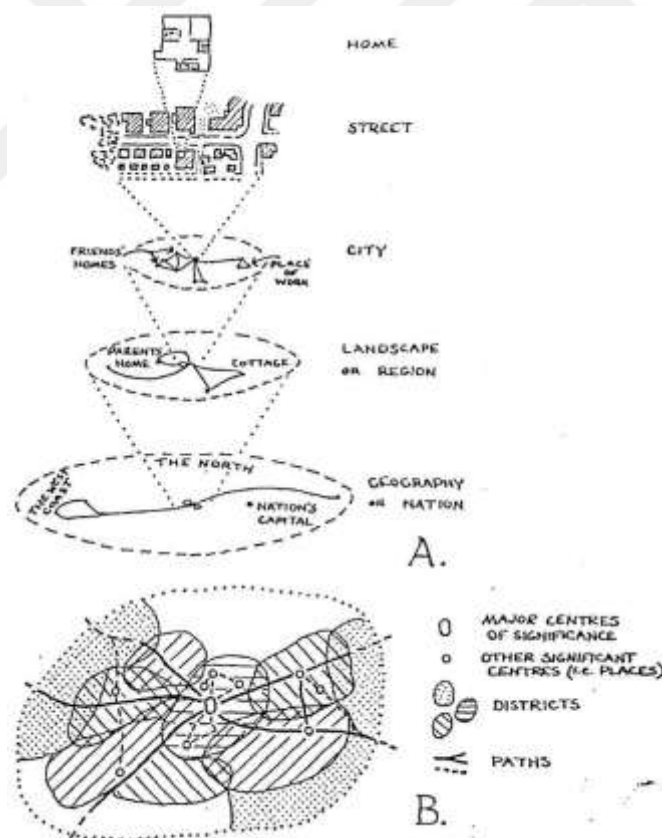


Figure 2.11. Relph’s vertical and horizontal structures of existential space.
Source: Relph 1976, p.21

Relph's horizontal and vertical levels exemplify a close-knit relationship between micro and macrocosms by making invisible boundaries of geography comprehensible. Understanding components of place within the city acquire a similar approach. In order to imbue space with a meaning; individuals, groups or societies give their unconscious experiences a meaning resulting an authentic place identity. Thus he stresses a lack of formal knowledge of place by saying:

If places [...] are sources of security and identity for individuals and for groups of people, then it is important that the means of experiencing, creating, and maintaining significant places are not lost. Moreover there are many signs that these very means are disappearing and that 'placelessness' –the weakening of distinct and diverse experiences and identities of places- is now a dominant force. [...] It will be of no small importance to know what are the distinctive and essential features of place and of our experiences of place, for without such knowledge it will not be possible to create and preserve the places that are significant contexts of our lives (Relph 1976, p. 6).

To him, architectural space is founded on deliberate actions resulted from "unselfconscious spatial experiences" but the planning of the city is quite different than architecture, for it sets any experience aside and downsizes the complexity of the world into two-dimensionality. In an attempt to detect particular characteristics of place, there is a particular attention given to self's perception regarding experiencing the built environment (Relph 1976, p. 22).

Moving back to Trancik; he finds the essence of place theory in the cultural and human characteristics of spatial design and regards space as "a bounded or purposeful void with the potential or physically linking things, it only becomes place when it is given a contextual meaning derived from cultural or regional context". As mentioned, he traces the sense of place in the urban form in the works of Krier, Cullen, Lynch and Appleyard. These authors' studies contribute to the place identity of mostly local or small-scale spaces. Thus, Lynch's theory of urban form becomes an instrumental visualization and mapping reference for cities which

principal urban elements that give a place experience at a larger scale are presented from the users' perceptual experiences.

The Image of the City

In the *Image of the City*, Lynch investigates the role of environmental images in urban lives by means of three cities in America (Boston, Jersey City, and Los Angeles). However, the key argument of the book is based on the idea that people orient themselves in the city by means of mental maps that are the outcomes of a coherent pattern organization. There are three principal rules to (re)design city spaces: legibility, structure and identity, and imageability. The term "legibility" is a visual quality that enables one to recognize or illustrate the image elements of a city pattern. As the legibility allows people to an extent which the city can be 'read' and identified visually, certain environmental images becomes agents of way finding. They are mental maps used on streets (Lynch 1990, p. 2-4). "Structure and identity" are perceivable distinction of spaces from other things (urban image). This separation can be done thanks to coherent patterns (structure) (Lynch 1990, p. 8). Finally, "imageability" is the quality of physical objects that most likely to stimulate any observer's senses with its strong visual image (Lynch 1990, p. 9). Trancik defines the term as "user perception in motion and how people experience the spaces of the city" (Trancik, 1986, p. 120). An interaction between the observer and built environment that has these components indicates a highly imageable city. Thus the success in the design of urban spaces lies in the extent of overlapping the structures of physical and psychological orientation with the mental maps of individuals.

To Lynch, this process is an individual connection evoked by past experiences and current senses. A collection of overlapping individual connections constructs a city image. Urban spaces should be legible, recognizable and perceptible by users on the city and designed around "the elements of urban form". To analyze the spatial structure of a city, five elements are necessary. *Paths* are streets, alleys or

sidewalks, routes and channels by which people can move in the city; *Edges* are boundaries that cause to breakpoints in the urban pattern; *Districts* are large scale yet identifiable settlements with common attributions; *Nodes* are strategic and fixed points for way-finding and orienting; and *Landmarks*, which are also fixed points of orientation, are easily distinguishable, almost symbol like objects of the urban landscape (Lynch 1990).

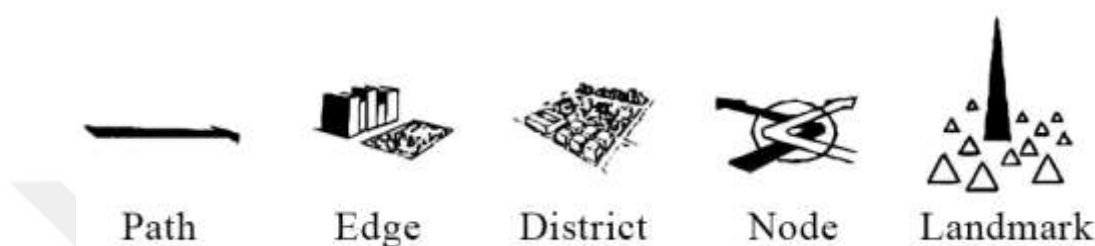


Figure 2.12. Five elements of legible city image

Source: Lynch 1990, p. 47-48

Path

The paths are described as networks of movement in the urban context. Streets, canals, walkways, railroads, and other elements that are encountered in the city for movement, create linear images for observers and arrange other environmental elements (Lynch 1990, p. 47). The characteristics of paths are perceived with visual hierarchy and consistent direction. Lynch imagines paths as linear mediums to understand the relations of typical network systems. A clear organization of path structures is strongly recommended for promoting spatial legibility. When anchored with local landmarks or nodes, paths provide subtle interventions such as the concentration of functions or significant façade elements (Lynch 1990, p. 96).

Edge

The edges are also linear elements yet they are not perceived as paths; they define a sense of enclosure and limit. They present “lateral references rather than coordinate axes” (Lynch 1990, p. 47). Lynch describes various methods to receive such a visual and spatial impression. For instance, two sides of an edge can be differentiated by means of contrasting materials or design elements. An edge can

have a distinctive orientation towards an end or the end can have a distinctive character so that the edge becomes a gradient element. Finally, he argues that the edge can be a penetrative line, where two urban objects are connected by means of allowed permeability (Lynch 1990, p. 100).

District

Districts in a city are recognized by common attributions observed on a larger scale. These attributions can be formations caused by the topography, a building typology of building, a unifying appearance in materials and textures, or quarters circumscribed by the urban plan. According to Lynch, a district should be penetrable and connective with the other elements of the city as it “may join to [another] district by juxtaposition, intervisibility, relation to a line, or by some link such as a mediating node, path or small district” (Lynch 1990, p. 104).

Node

Lynch defines nodes as “points, the strategic spots in a city into which an observer can enter, and which are the intensive foci to and from which he is travelling” (Lynch 1990, p. 47). Gathering points like squares or stations, and junctions at street intersections are considered as nodes. With respect to the level of the observation and physical form, an intersection, a square, a district or even a city can act as a node for the environment (Lynch 1990, p. 72). The stronger gets the form, the more memorable it becomes for the visual impact (Lynch 1990, p. 76).

Landmark

Landmark holds no resemblance or homogeneity composed to the other elements as it should be exclusive and even symbolic. Lynch underlines that a landmark should be distinguished easily in the urban context. Either as a large dome that can be seen from anywhere in the city, or as a small object which draws all the attention at the eye level of the observer, the landscapes contrast with built environments to create a strong image. Although they are the types of reference in the city as well, they do not have a direct interaction with the observer in terms of

reference/strategy. Rather they define external associations in the form of a building, like the sun. Because, “a landmark is stronger [...] and more useful [...] if identifiable from near and far [...], by night or day, it then becomes a stable anchor for the perception of the complex and shifting urban world” (Lynch 1990, p. 101).

As Lynch argues, by the help of these elements the city becomes an image, provided if they are considered together as a total form. This clear organization helps people to bond with the environment and attribute meaning. Only “then”, as he indicates, “it will become a true *place* remarkable and unmistakable” (Lynch 1990, p. 92).

As a further note, Lynch states ten form qualities as a direct interest in urban design. They are listed as “singularity, form simplicity, continuity, dominance, clarity of joints, directional differentiation, visual scope, motion awareness, time series”, and “names and meanings” (Figure 2.13). He explains them as the clues of general physical characteristics, which integrate the five legible elements to create successful places. The first seven elements can be explained briefly for further explanation. Because, the last three are non-physical and provide kinesthetic, temporal and cognitive senses in the creation of places, which are out of scope of this study.

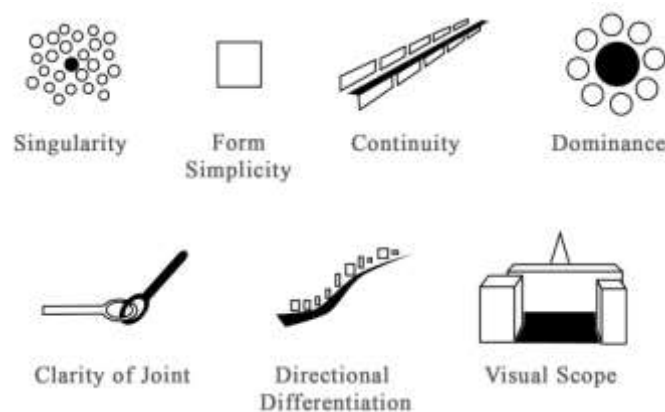


Figure 2.13. Seven elements of urban design qualifications
Source: Lynch 1990, p. 105-106

Singularity is a sharp figure-ground composition which also qualifies recognizable urban elements. Form simplicity is the clarity of geometric form. Continuity is the consistence of boundaries or surfaces, the qualities which suggest single identity. Dominance is related with an object's preeminence in size or interest. Clarity of joint is a clear combination and seamless interaction between strategic locations and spaces in the city. Directional differentiation is the spatial differences in between both ends of a path. Lynch describes that it is highlighted by asymmetries or radial references which are used on a large scale, Visual scope is panoramic scenes where a wide outlook towards the city or a district can be obtained. Owing to this collection of elements, Lynch's the image of the city becomes unmistakable.

2.4 An Integrated Approach to Urban Design

Having stated that the modern city has lost urban spaces and traditional values about it, Trancik presents the three theories of urban design in order to guide the reader (i.e. designers, architects, planners) into an integrated design approach, which would restore these values. The lesson to learn from the three theories of urban design is the critical integration of different elements of space to gain an indigenous urban form devoid of lost spaces. Once the elements of the figure-ground, linkage, and place theories are combined, a multi-layered structure of urban life can be achieved. Because, Trancik explains, focusing on one and setting the other aside is an inadequate approach since each has its own weakness. The figure-ground theory tends to be too autonomous and unrealistic about user need and experience. A total concentration on place theory may fall short in connecting the design area to outside and finding new spatial opportunities. Finally, an exclusive linkage theory has the peril of being "non-spatial and non-experiential" (Trancik 1986, p. 124).

With these potential problems in mind, Trancik summarizes specific design principles to achieve a design quality via the integrated approach. There are five principles that a designer should follow:

1. Linking sequential movement: Connecting existing structures to a unified space by stressing a series of movement and transition. Applying the linkage principles “to knit together discontinuities by infilling directional pedestrian space” (Trancik 1986, p. 220).
2. Lateral enclosure and edge continuity: Creating new frontages by filling the gaps around the public space to continue the wall image and create an enclosure. Articulating the wall via materials, ornamentations, or openings which responds to the needs of interior and exterior spaces (Trancik 1986, p. 222).
3. Integrated bridging: Having two functions in one form to overcome the physical barriers in the city fabric or to retain spatial continuity via elevated bridges and platforms (Trancik 1986, p. 222).
4. Axis and perspective: Having symmetrical hierarchy of urban spaces that follow an axis thus creating a visual orientation (Trancik 1986, p. 225).
5. Indoor/outdoor fusion: Combining indoor and outdoor spaces to increase an interior-exterior interest and year-round usage of urban space (Trancik 1986, p. 225).

Together with the three theories, and the principles listed above, Trancik presents an integrated design approach that looks buildings and sites as collective spaces and cares for the city’s memory and history to adapt its formal vocabulary for a contemporary language of urban space (Trancik 1986, p. 225).

Since this dissertation considers housing environments, the only housing project from Trancik’s four case studies can be mentioned to conclude this chapter. In the book, he presents four case studies between the three theories and the integrated design approach argument. Via these cases, he aims not only to illustrate the principles of the theories but also to underline the necessity to have design qualities applied to achieve an integrated design. With the fourth case, which is Byker council housing in Newcastle, England, he focuses on the ways of preserving a settlement’s identity while building a new community.

To Trancik, Ralph Erskine's community housing project stands out from the wholesale renewal projects of the 60s with its attention to keep the scale, density and local landmarks of an existing settlement and to respond to the needs of users. In the excellence of integrating existing and new structures as a context-driven design approach, the project is mentioned with using different housing typologies as a bridge between the old urban fabric and contemporary architecture (Trancik 1986, p. 208). The details of Byker Housing will be examined as a precedent case in the following chapter.



CHAPTER 3

ASPECTS OF MASS HOUSING: DEFINING URBAN-SPATIAL ANALYSIS ELEMENTS

In the book *Urban Forms*, Panerai et. al. (2004) inquires the role of the urban block as a spatial practice in the urban tissue. As they believe that it is necessary to consider “the spatial characteristics of the block and the ways these linked with other possibilities at different morphological scales”, they take into account everything in the range of spatial scales of the urban block as the part of the larger urban system (Panerai et. al. 2004, p.124). As one of the most basic parts of the urban fabric, areas dedicated to dwellings are at the interplay of different spatial design aspects that are part of an entire urban system as well.

Through studies on the cities like Paris, London, Amsterdam, and Frankfurt, Panerai and Castex, the transition of the traditional urban fabric to the modernist design are examined for housing environments. Between private, public and collective spaces, the levels of urban space are mentioned in relation to the typological forms and social practices in the urban block. For mass housing environments, in particular, the authors consider the block as collection of plots and buildings arranged interdependently. Thus, *Urban Form*’s investigation on housing environments mediates between the architectural and the urban scales via three components of urban tissue: roads, plot subdivisions, and buildings (Panerai et. al. 2004, p.158).

The urban design theories in Chapter 2 have presented a preliminary understanding of the patterns of street-plot-building, of open and closed spaces and related functions, land use patterns and environmental images. By identifying these patterns as the design variables of the urban block, the elements that can be used for housing settlements can be represented with the spatial organization and urban

image characteristics described by the given urban block. With this framework, this chapter introduces a particular set of notions that can be utilized for a morphological study in order to depict a hierarchical structure from the parts of a housing environment to the whole of the urban system it belongs to. It elaborates on the elements of spatial organization and urban image characteristics of housing environments that will help to identify various relationships between the objects and the parts of mass housing environments at the urban scale. Based on the matrix below, it illustrates a range of spatial aspects that are explained with the three urban design theories.

Table 3.1. Aspects of urban-spatial analysis defined under the conceptual matrix

	Dimensional Aspects	Typo-morphological Aspects	Urban Image Aspects
Figure-Ground Theory	Planimetrics	Typological Patterns	Public vs Private Space
Linkage Theory	Distance	Urban Structure	Patterns of Experience
Place Theory	Silhouette	Urban Grain	Urban Elements

3.1 Dimensional Aspects: Planimetrics, Distance, Silhouette

The dimensional aspects indicate lateral size, height, and distance-related attributions. They are the perceived greatness or smallness of things, buildings, which can be quantitatively determined by methods and tools of measurement. They can be represented via architectural conventions, e.g. plans, sections, diagrams, that give a sense of scale/proportion related to an experience of magnitude. As the dimension is related to the volumetric properties of the built form, its impact on the urban fabric can be observed relative to the context. Therefore, this item should be considered as a feature that is inherent in any tangible or intangible characteristics. When applied at the same scale on plan and elevation views, footprint area, length/width/height ratio, and the interval of

building blocks function as the relativity in comparing spatial forms with each other. In this regard, dimension also gives various opportunities to discuss the aspects of spatial form and place identity. For instance, it may make one reflect on how size affects the place experience and spatial perception of the user (which was not a primary issue for Lynch). Alternatively, it may reveal how dimensional parameters can structure an entire urban form.

Dimension + Figure-Ground: Planimetrics

The most basic geometric expression of the spatial form is horizontal representation. Via this mode of expression, geometries of buildings are shown as relatively comparable planimetric objects. Thus, the planimetric feature of a built form combines the links between the interior and exterior spaces whose relative magnitudes are shown on the urban form without topographic or any third-dimensional property. It reveals similar and different programmatic uses that can be observed within the macroform, determining types of spatial patterns via figures and grounds.

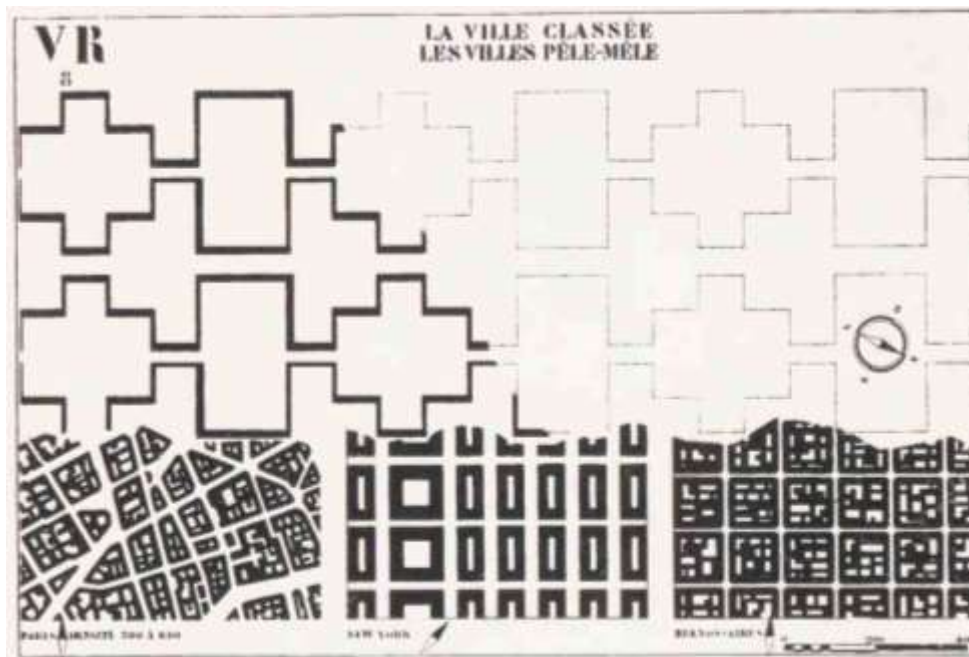


Figure 3.1. Le Corbusier's planimetric comparison of the Radiant City (1930) with Paris, New York and Buenos Aires

The figure-ground representation not only allows a relative comparison on the magnitude of the buildings but on the extent of solid masses and open voids situated in the urban form.

Source: Evenson 1969, p. 50

Dimension + Linkage: Distance

The relationship between the interiors and the exteriors of built environments involves the organization of linkages that connect elements of the urban grain. A fine level of urban grain encompasses a complex system of streets and pedestrian links that separate or combine buildings based on dimensional attributions that are available for users. In this regard, the shape of these linkages also determines the lengths and durations of pedestrian and/or vehicle movements. The difference between the straightforwardly linear and organic street patterns defines different types of spatial forms hence the relative distances between buildings.

The idea of setting distances as a fundamental aspect for living environments is found in the plan of the Garden City. Ebenezer Howard envisioned this utopian town plan for having facilities that can be reached by each resident within a few minutes

either by walking or cycling. Residential zones in-between public facilities, i.e. schools, park and factories, were planned to be 240 yards (approximately 219 meters) apart so that each resident can access the facilities on foot (Howard 1902).

Keeping spaces of daily activities at compact distances was a concern for other planners and architects of Howard's era. Configuring ideal neighborhoods in order to organize the functions and communicate to the public required a universal decision of the duration of walking. The 'five-minute walk' is the concept that was developed to determine an ideal distance between spaces. The idea is based on urban planner Clarence Perry's "neighborhood unit" concept. In 1929, Perry published a regional planning report of New York³¹, and as Robert Steuteville underlines, idealized a self-contained neighborhood where a community center should be accessible at the core by five minutes of walking (Figure 3.2).

³¹ Published as Perry, C. A. (1929). *Regional Survey of New York and Its Environs: Neighborhood and community planning (Volume VII)*. New York, NY.



Figure 3.2. Clarence Perry's neighborhood unit
Source: Perry 1939, p. 75

Today this method is adopted by the new urbanists³² and called “pedestrian sheds” to define a quarter-mile (400-meter) radius circle for determining a convenient distance which pedestrians could walk from a community center (e.g. workplace, shopping mall, school) to their houses and also catch public transportation within their neighborhoods (Steuteville & Langdon 2009; Steuteville 2019). The pedestrian shed method provides insights into the underlying structure of linkages that are bound to the urban form. Consistencies or inconsistencies along the streets can be understood

³² As Congress for the New Urbanism (CNU) defines “New Urbanism is a planning and development approach based on the principles of how cities and towns had been built for the last several centuries: walkable blocks and streets, housing and shopping in close proximity, and accessible public spaces. The principles, articulated in the Charter of the New Urbanism, were developed to offer alternatives to the sprawling, single-use, low-density patterns typical of post-WWII development, which have been shown to inflict negative economic, health, and environmental impacts on communities”. Quotation from <https://www.cnu.org/resources/what-new-urbanism> (Accessed on September 2019).

via locations of pedestrian sheds as parts of a master plan that organizes elements of urban spaces.

Dimension + Place: Silhouette

One of the responses of contemporary cities to the growing spatial needs in limited areas has been escalating the building heights. In terms of distributing user density at the upper levels and providing a sense of vertical dimension, building heights have become the morphological components of the city silhouette. It is an indication of various sets the limits of vertical development and patterns of building density. A typical differentiation on the heights of residential blocks is based on three basic height groups: low-, mid-, and high-rise. Various guidelines and regulations occasionally propose that the low-rise buildings are the ones up to six stories, mid-rise are up to twelve stories, and high-rise are thirteen stories and more.³³



Figure 3.3. Diagram by New South Wales (NSW) Ministry of Planning and Public Spaces illustrating various housing types concerning height

Source: NSW Department of Planning, Industry and Environment (2016)

³³ Retrieved from the documents provided by New South Wales (NSW), Australia Department of Planning, Industry and Environment at <https://www.planning.nsw.gov.au/Plans-for-your-area/Priority-Growth-Areas-and-Precincts/Sydenham-to-Bankstown-Urban-Renewal-Corridor/> Portland, Oregon Bureau of Planning and Sustainability at <https://www.portlandoregon.gov/bps/article/564018> (Accessed on September, 2019).

Today, crowded cities have become dependent on high-rise residential buildings to cope with the accommodation need. This ascent from low and medium heights to higher levels dates back to the 1920s when functionalism was dominating the architectural practice. One of the most influential strategies in modernization of cities was utilizing new residential blocks that were practical, maintainable and affordable. Thus the functionalist agenda shaped residential environments by means of these independent residential blocks, which offered equal access, sunlight and ventilation for every unit. Especially, the concept of *Zeilenbau*³⁴ played a determinative role in calculating the optimum heights of modern residential blocks and hence defining the morphological character of residential neighborhoods in the city.

The *Zeilenbau* organizes residential blocks based on a distance/height ratio so that users can have enough space in between the blocks for recreational open spaces. As Peter Rowe indicates, Walter Gropius developed the details of *Zeilenbau* as a hierarchy of open spaces responding to user needs, and the dimensional measurements of the organization. He made a number of studies about the future modern housing and decided that (in the case of Germany) ten to twelve-story high blocks would be rational, flexible, and economic. The rationale for this calculation is given by Gropius with various drawings: the wider the distances, the higher the building (Figure 3.4). Today, reflections of this principle can be seen in the mass housing projects like in Weissenhofseidlung, Stuttgart, or Siemensstadt, Berlin (Rowe 1993; Mumford 2019).

³⁴ The term has different interpretations; it basically refers to the arrangement of long, narrow residential buildings. While Peter Rowe uses the term with superblocks (Rowe 1993, p. 162), Trancik uses with linear blocks (Trancik 1986, p. 26). Some sources also refer to term as the block row. The term also covers mid-rise and high-rise slab blocks and low-rise row buildings. Further reading:

Henderson, S. Z. (2013). *Building Culture: Ernst May and the Frankfurt Initiative, 1926-1931*. Bern, Frankfurt, London, New York: Peter Lang.

Urban, F. (2012). *Tower and Slab: Histories of global mass housing*. London and New York, NY: Routledge.

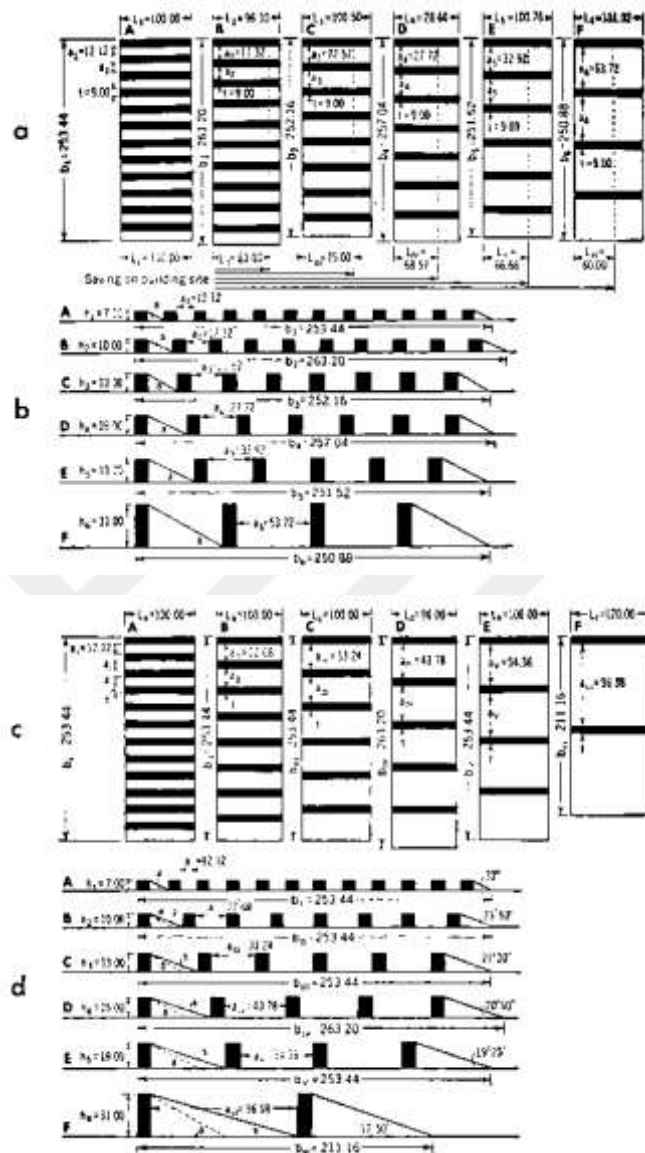


Figure 3.4. Walter Gropius' study on determining the optimum distances and heights for high-rise urban residential blocks of the future
Source: Gropius 1955, p. 122-123

Height aspect of housing environments has a twofold meaning. It indicates the density/size ratio of a building with height, and explains the optimum gaps between the blocks. By this way, both give a sense of volume on a sectional/elevation-based expression. Furthermore, it also helps describing the building's effect on the urban

section, presenting the stark differences or similarities in the built form silhouette. It also gives an image of settlement in terms of structural identity.

3.2 Typo-Morphological Aspects: Pattern, Urban Grain, and Structure

Typo-morphology is a design approach that classifies buildings and all other urban elements (streets, plots, landscaping, transportation, landscaping, etc.) according to their typical characteristics derived from the urban morphology³⁵. Their variations in organization and mutations over time can be recognized via urban elements and patterns. This presents another aspect to analyze mass housing environments with regard to the typologies of housing and their characteristics on the urban morphology. Via this investigation, the emphasis can be given from the built forms and external envelopes of houses to the details of internal planning.

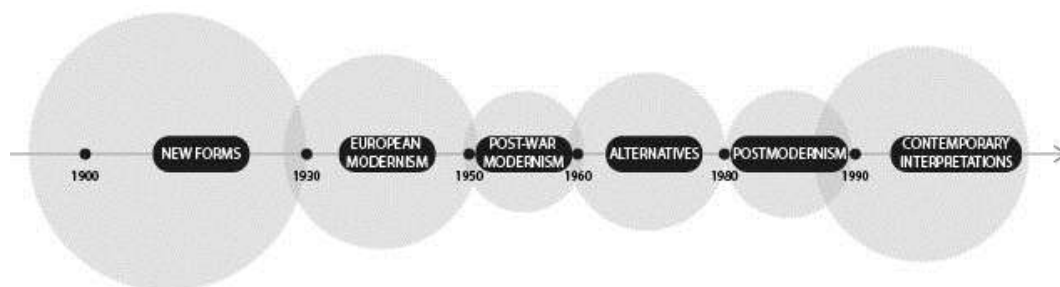
Anne Vernez Moudon defines typo-morphology as the combination of typological and morphological characteristics of urban form that “reveals the physical and spatial structure of cities”. Its systemic classification records the components of a city in large areas and also considers types of buildings with various details. Moudon thinks that this method is “unusual” because it considers each building at various scales such as rooms, or outdoor spaces, and constructs a dynamic and constantly changing image of the city. She also tells that typo-morphology provides a variety of fields to understand architecture’s role in relation to urban form.

³⁵ Urban morphology is a field of study that is concerned with the formation of cities. It deals with particular shape and dimensions of the built environment and with aggregations of building types. Owing to cartographic images on the evolution or growth of the urban form, the analytical deconstruction of urban formation can be traced back to the history of the city. The contemporary studies in urban morphology present two figures as the eminent schools of analysis; Michael Robert Günter Robert Conzen and Gianfranco Caniggia, who are known as the founders of Anglo-German and Italian approaches to the development of built environments.

Buildings and their related open spaces, plots or lots, and streets are understood at different levels of resolution: building/lot, the street/block, the city and the region (Moudon 1994; Moudon 1997). They are the physical characteristics of typomorphology that function as a mechanism to analyze urban visual references of different building forms. Using typomorphological analysis, more specifically building typologies on morphology analysis, the relationship between housing types and the urban fabric can be explored.

Mass housing settlements, whether they are built by a charity, developer, government, or cooperative, are essentially a collection of individual units disposed of in multiple spaces. From single houses to houses in high-rise buildings, mass housing settlements can be categorized in basic types. These can be based on unit types or formal typologies. Significant variables include the horizontal and vertical distribution of the units as well as the spatial form of the housing block. These determine the spatial composition of the housing and configuration possibilities of urban form.

20th-century urban housing typologies can be differentiated on various parameters. It is possible to group them based on the phases of a historical or contemporary period. For instance, Hillary French divides the century's housing into six architectural contexts in a chronological order: “new urban forms”, “European modernism”, “post-war modernism”, “alternatives”, “post-modernism” and “contemporary interpretations” (French 2008).



Roger Sherwood asserts six “analogous prototypes”: detached and semi-detached housing, row housing, party-wall housing, (urban or perimeter) block, slab, and

towers (Sherwood 1978). Oscar Newman categorizes three basic types of housing (single, walk-up, high-rise) according to their ability to create safe environments (Newman 1996) (Figure 3.5).

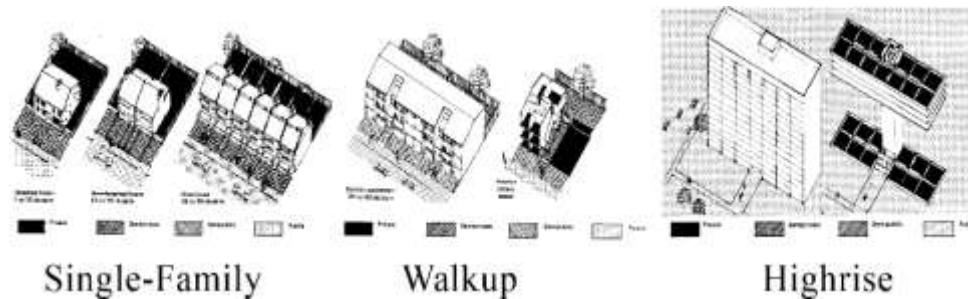


Figure 3.5. Oscar Newman's three categories of housing
Source: Newman 1996, p. 15-17

Finally, *Floor Plan Manual Housing*, which is another primary work in the genealogy of housing, adds terraced, slab block/linear/super block, and tower block/point block to the major mass housing types based on their formal role within the given boundary of the urban plot series or block (Heckmann & Schneider 2018). Over the course different editions of the book, housing projects are grouped by building type. Initially divided as multi-story and low-rise, the book's latest edition (2018) categorizes the projects in three urban and morphological building types.

As this comprehensive introduction shows, categorization of housing blocks is bound to the research's axis. The selection of examples can be contextualized through historical and paradigmatic developments, attributions of the dwelling unit or urban morphological variations. In the lineage of Heckmann & Schneider, the basic categorizations of housing blocks as urban types can be summarized as in the chart below:

Table 3.2. Three categories of urban types for housing blocks

Urban Type 1:	Urban Type 2:	Urban Type 3:
• Block Edge • Urban Infill • Firewall Building	• Solitaire • Linear Block/Superblock • Apartment Tower • Terraced Complex • Residential Complex/Housing Estate • Low Rise High Density	• Detached House • Duplex • Row House
* Multiple dwelling units (that are defined by the urban block)		* Low-rise or walkups with single dwelling units

*** Multiple dwelling units (that define the urban block)**

Detached and row housing typologies are seen in the non-urban areas where each unit could be distributed freely devoid of any constraints from the built environment. These single unit houses are flexible and adaptable in terms of plan layout; however, their development is achieved via through a linear or non-linear unit replication. Their size and spatial organization are mostly based on the functionality and economical costs of one prototypal design.

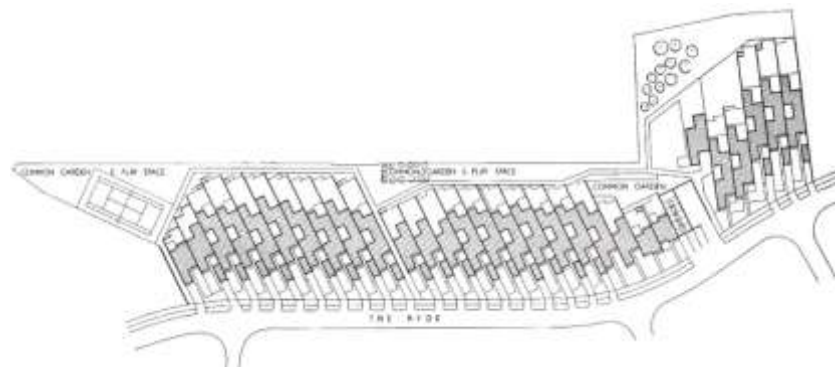


Figure 3.6. The Ryde by Phippen, Randall, Parkes as row housing
Source: Heckmann & Schneider 2011, p. 312

Perimeter blocks are the most common typology of the multi-story urban blocks. They define a massive wall image with usually a private back. Either used as communal courtyards or interlocking gardens, the residential units of perimeter

blocks are laid around a central void. Floor Plan Manual defines block edge, urban infill, corner, or firewall blocks as the urban multi-level forms that enclose, fill-in, or extract the urban morphology. The layout, orientation, height, or size of these blocks are mostly pre-specified due to the existing context, but it is possible to say that they concentrate a large population inside an urban block. Therefore, the dimensional aspects of this typology indicate the elements of a massive building form.

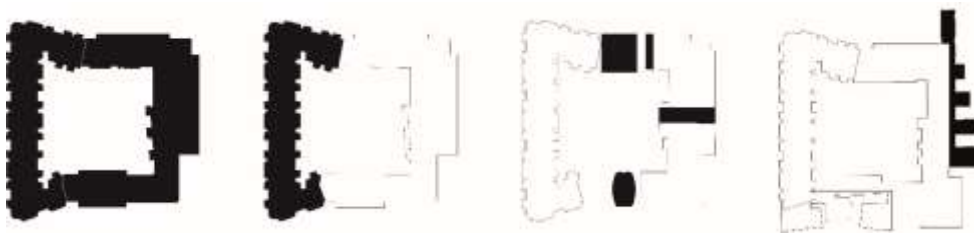


Figure 3.7. Diagrammatic examples to perimeter, edge, infill, and firewall blocks
Source: Heckmann & Schneider 2011, p. 50, 78, 108 (left to right)

The perimeter blocks are basic yet also very critical in spatial organization because they create inner cores while forming a large-scale development of high-density floor plans. Among the many well-known examples of this type especially in Europe, Climat de France project can be mentioned as an example to understand the scale of urban multistory blocks and their contribution/worsening roles in the spatial organization and place character of an urban setting. The project's site plan shows an orthogonal grid, which follows the existing slope on the terrain. Within a variety of residential blocks in different sizes, the centerpiece of this settlement is a rectangular colossal perimeter block (Celik 1997; Avermaete 2007). The project shows a contrasting character compared to the organic development in the traditional cities of Algeria. Its size and unconventional mass overpasses the human scale for a monumental awe feeling, which is in the form of a domestic purpose. Nevertheless, it is also possible to say that the relationship between privacy and community is too problematic as its relationship with an existing urban context is weak.

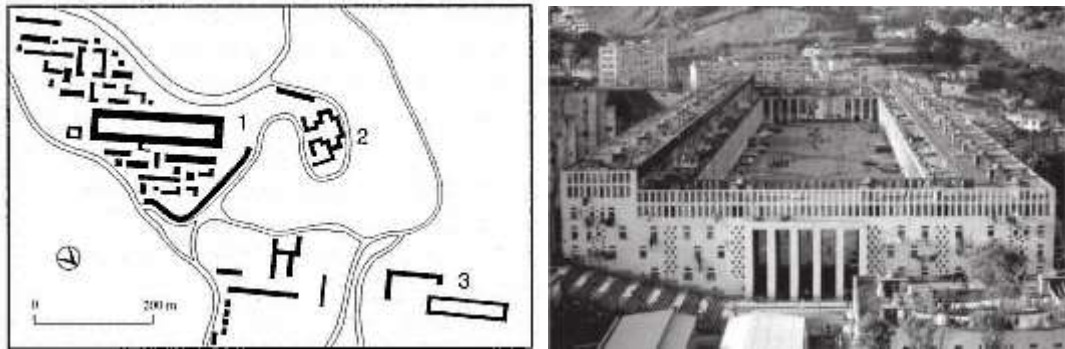


Figure 3.8. Climat de France as a perimeter block (Algeria, 1957)
Sources: Celik 1997, p. 151 (left); Avermaete 2007, p. 105 (right)

Other groups of multi-level typology, ‘solitaire/point/tower blocks’, ‘linear/slab/superblocks’, ‘terraced blocks’, and ‘residential complexes’ are the independent blocks that do not necessarily infill the urban block yet appear as detached and semi-detached objects integrated into their immediate surroundings. Tower blocks stack identical or similar floor plans one above the other. In most cases, the blocks are in order to form a pattern on the site organization. Linear slab blocks are characterized by horizontal development. They occupy a large portion of the land and structure a massive formal expression. Superblocks are large and massive blocks that situate in urban land like a sculpture. The most significant feature of superblocks is their versatility in creating common areas to be positioned within the building so that all communal activities (e.g. leisure and commercial) can be preserved inside. These typologies are defined as the free standing solids on the open areas acting as voids.

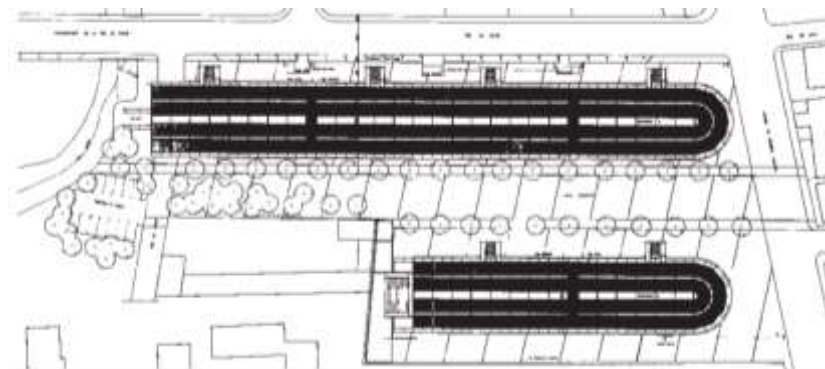


Figure 3.9. NEMAUSUS I by Jean Nouvel as a linear slab block (Nîmes, 1987)
Source: Heckmann & Schneider 2011, p. 160

The slab/linear block and superblock typologies are typical examples of European modernism, which promoted abundant light, air, and sun by freeing the ground floor from over accumulation of low-rise blocks. For a long time, they were used as the ideal solutions for a pressing need for affordable housing on a large scale. They occupy tailor-made forms with dedicated areas for vehicles and green spaces. Superblocks are larger in scale and more complex in terms of functionality. Their multi-layered floor hierarchy provides different unit types and size accompanied by integral facilities. Therefore, a majority of this typology has elevated decks, bridges, interior streets and passages as the elements of internal linkage. Narkomfin Apartments in Moscow, Unité Habitation by Le Corbusier, Robin Hood Gardens by the Smithsons are well-recognized examples of this typology.

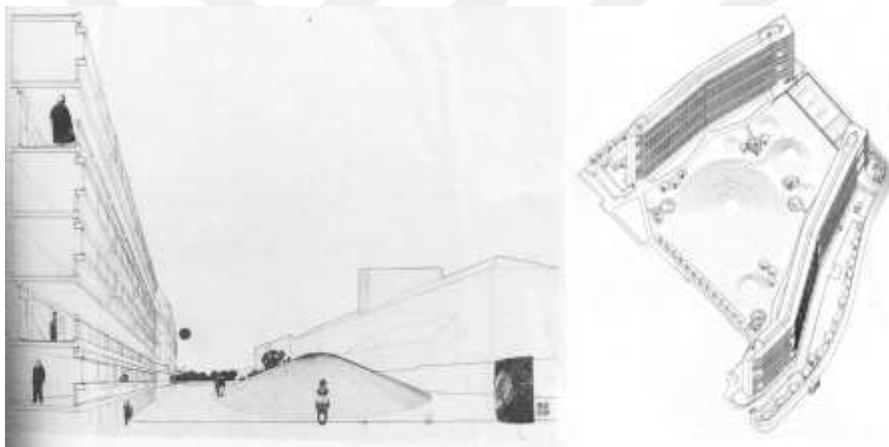


Figure 3.10. Robin Hood Gardens by Alison and Peter Smithson as a linear slab block
Source: Smithson & Smithson 1970, p. 188, 192

Terraced composition integrates open spaces as private gardens or balconies. Its formal characteristics either fit a certain natural topography or create an artificial building cluster. Last type, the residential complexes, the Barbican Estate as a pioneering and prominent case, are explained by Heckmann and Schenider as “all high-density types that are not urban: patchwork developments with courtyard houses, row developments with single-family terraced housing, multistory conglomerates with interlaced and stacked apartment components, and finally the self-sufficient urban development, the housing estate” (Heckmann & Schneider 2011, p. 245). In other words, they are heterogeneous buildings addressing many

kinds of accommodation needs and estate solutions. Although residential complexes are planned to have mixed-use activities like shopping, restaurants or entertainment and fully open to public use; the authors also make clear that they aim to provide private access for each user so that a sense of place could be created in these “self-contained islands”.

To conclude this part, the necessity of schematic representations of basic building typologies can be underlined. As they involve typical spatial patterns and their variations that can be observed with urban form, mainstream or alternative qualities are illustrated through typo-morphological analysis reflecting the consistencies or inconsistency on the urban form.

Typo-morphology + Figure-Ground: Typological Patterns

As stated, the typo-morphological aspects of housing environments can reflect different methods of inquiry. This study’s method of inquiry concentrates on basic building typologies that identify the spatial organization patterns, particularly for the housing environments. Here, it should be noted that this inquiry interprets Maki’s approaches to collective form with so consideration of a total architectural form within the urban block rather than the layout of each residential block. It provides a meta-classification via the urban form, which leads to implications on housing typologies in relation to the levels of urban morphology. However, the components of this collective form are based on the agglomeration of individual buildings inside the urban block. The spatial continuity/discontinuity of a given housing typology as to its role in structuring a morphological pattern can be decoded via the figure-ground which expresses its most predominant spatial character within the urban form.

Stacking and sorting multiple housing units into urban blocks results in vertical and horizontal orders creating a total urban form. Especially, the multi-layered housing typologies operate on a vertical hierarchy where the relationship with the ground is

distant. Though the author's key intention is different, two studies by Oscar Newman (1972; 1996) present guidance regarding the spatial organization of the single and multi-level residential areas and the difference between the public and private interactions once they are arranged in micro settlements.³⁶ According to him, there is a contrast with the spatial/formal organization between the types of residential blocks for they differ in the population that accommodates in single or multiple layers. Newman tests these types by creating small scale settlements organized on the same generic urban block. The aim is to learn "how grouping units in different types of building configurations creates indoor and outdoor 'nonunit' spaces of different character". As a result, he sets three groups, which are "Single-Family", "Walkup", and "High-rise" housing and examines them according to residents' ability to maintain better interactions with the environment.

The Single-Family houses are examined in three sub-categories which are "detached", "semi-detached" and "row houses". Detached houses locate the units freely on the site. Semi-detached houses are double (twin) units, which share a common wall and row houses share two walls on either side. As the interior and exterior of the Single-Family houses belong to one family, they enclose the most within their plot. The Walkups are three to four-story mid-rise housings with no lift. Since more than a family shares the walk-up; the spatial interaction with their surrounding is more permeable. Finally, the High-rise buildings, which are up to thirty-stories, are either fully public or semi-public, due to a large number of residents. In comparison with the others, this typology is very faulty because of the poor association between streets and building blocks (Newman 1972; Newman

³⁶ Actually, Newman conceptualizes the content of his books as "a study of the forms of our residential areas and how they contribute to our victimization by criminals". His theory evolves with the concept of defensible space, which is "a model for residential environments which inhibits crime by creating the physical expression of a social fabric that defends itself" (Newman 1972, pp. xiii).

1996). He acknowledges this result as the social indicators of safe or unsafe neighborhoods.³⁷

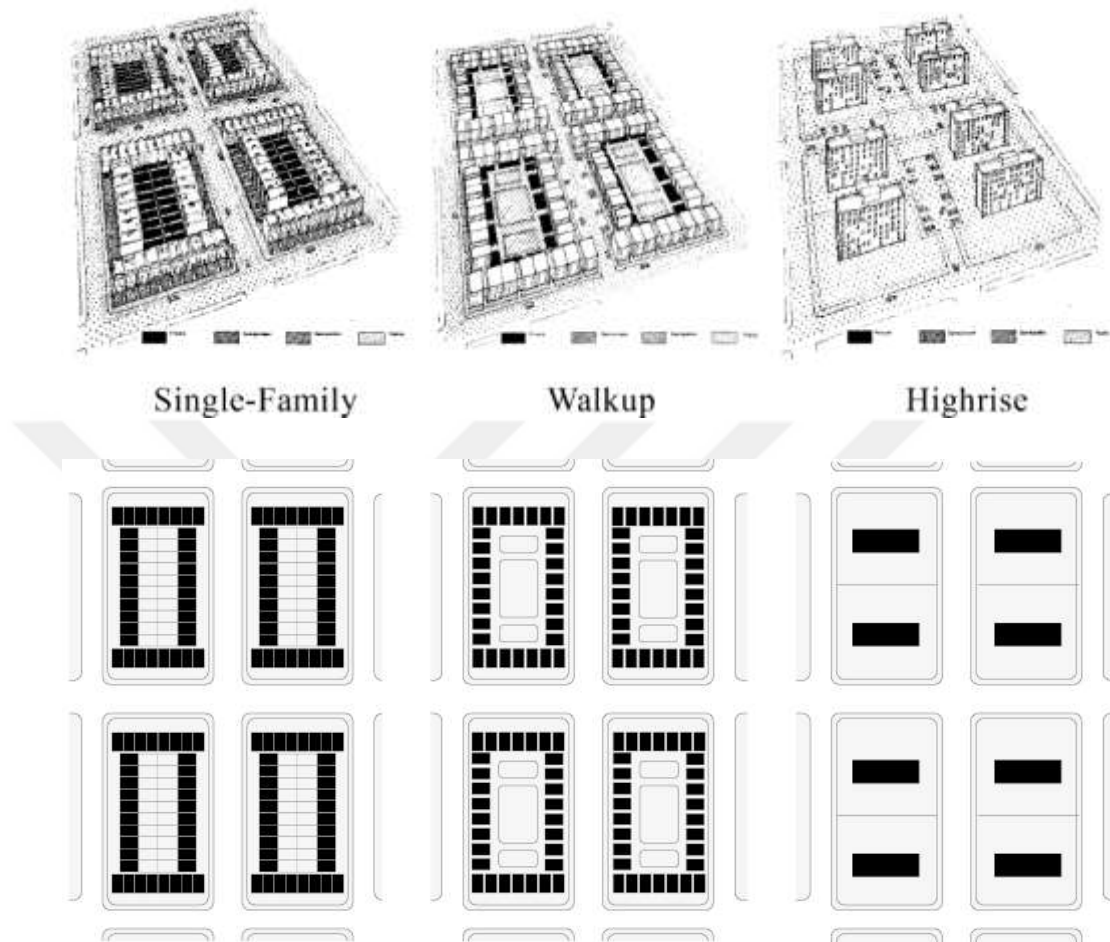


Figure 3.11. Oscar Newman's three categories of housing settled in mini-neighborhoods. Each housing group is in array from the most private to the most public and illustrated in figure-ground to show typical organization pattern on the urban context.

Source: Newman 1996, p. 18-20 (above), Author (below)

³⁷ At the end of the survey, Newman concludes the most problematic attributions of mass housing as two parameters: "project size" and "sharing common entries". He indicates that as the number of families who share the same environment increases, a family's dedication to adopt that environment decreases. Residents, who are in a similar socio-economic class and share the same mass-housing block, feel isolated and stigmatized. Also, Newman's results show that the larger building's size is the less social control it gets. As the number of entries increases, intruders are less detected by residents, because as density per plot increases, users' interaction with the environment by means of public and threshold spaces disappears (Newman 1996).

As seen, Newman's study gives brief and clear definitions regarding organizational attributions of single-family, walk-up, and high-rises. Furthermore, the schemes of mini neighborhoods that are occurred by those reveal typical block patterns that can be recognized as part of the urban form.

Based on the arguments examined above, the typo-morphological aspect of the analysis simply categorizes basic housing typologies based on their tasks describing the spatial organization characteristics. Each typological organization can have a corresponding collective form that is expressed in figure-ground. For instance, if a set of point (tower) blocks are arranged side-by-side constituting a string-like development; they will be considered as linear blocks. Owing to this approach, the typological classifications of a mass housing environment could be examined as an analytical interpretation of urban morphologies and configurations incorporated with Maki's collective forms. Below, three examples are given to illustrate this basic approach.

Example 1: Perimeter blocks in compositional form:

KCAP's *Stadstuinen* project completed in Rotterdam consists of eight sets of perimeter blocks, each of which has 4 linear blocks located in perpendicular directions so that a grid pattern is created. The housing settlement forms a ground-accessed garden district, which accompanies free pedestrian linkages from outside to the inside. The development of free solid forms situated on vast voids reflects a functionalist approach that seems to be in accordance with CIAM principles. Each block is simple and clear in design and programmatically zoned. Their height and distance ratio is tailored for the site, which is not opting for any growth.

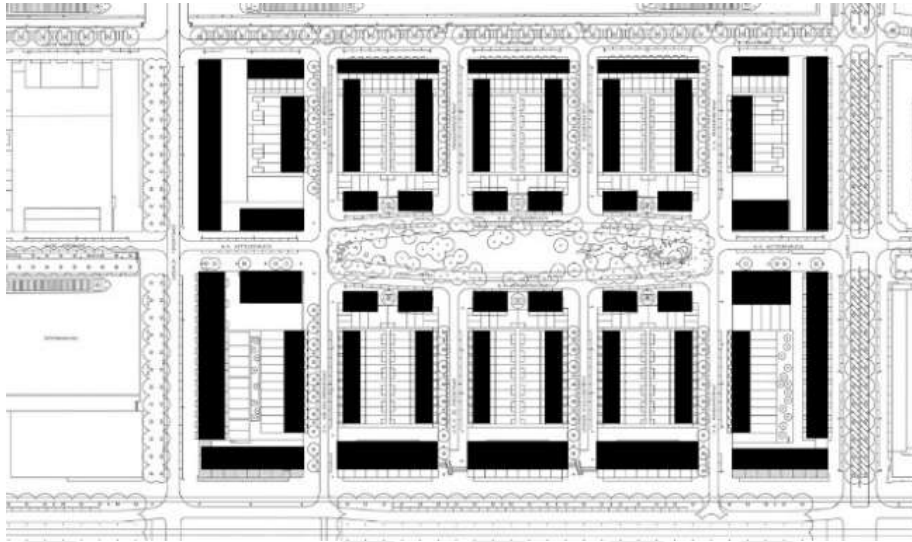


Figure 3.12. Stadstuinen by KCAP (2002) in compositional form

Black hatching added on plan for emphasis.

Source: www.kcap.eu/en/projects/v/stadstuinen/ (Accessed on July 2019)

Example 2: Point blocks in mega form:

The Linked Hybrid by Steven Holl has 8 high-rise point blocks that are linked by aerial passages/bridges. The project promotes “open city within a city” experience which encounters in various commercial, educational, cultural and recreational spaces solved within the building complex. Thus provides three-dimensional linkages at various levels of upper blocks and ground floor. This social condenser aims to function as a pedestrian-oriented porous urban space on the ground, and interactive relations in the air.

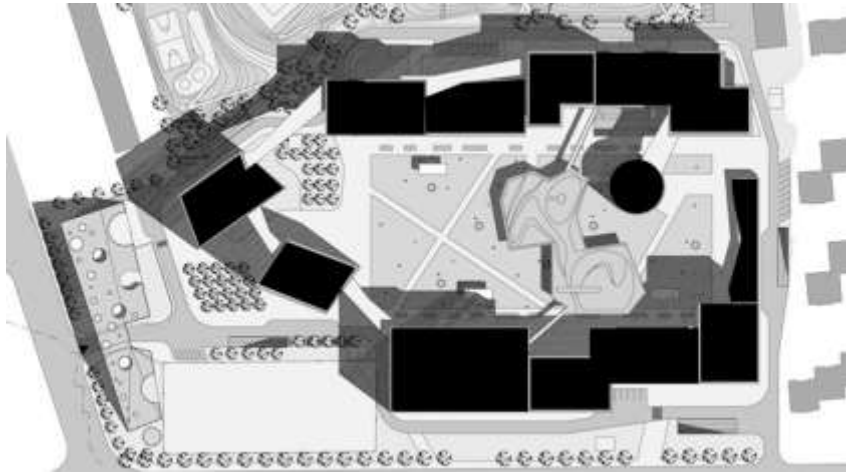


Figure 3.13. The Linked Hybrid by Steven Holl (2009) in megaform
Black hatching added on site plan for emphasis.

Source: <https://www.archdaily.com/34302/linked-hybrid-steven-holl-architects> (Accessed on July 2020)

Example 3: Row houses in group form:

Jørn Utzon's Kingo & Bakkedraet Housing projects can be the examples to illustrate the row house typology lined up along an organic axis. Although each unit is a reflection of Utzon's courtyard house typology, their sequential composition creates a continuous row. Each unit is replicated or multiplied with subtle variations of the same prototype. The linkage between each unit is neither concretely obvious nor indirectly felt; it is part of a non-linear and generative structure with a natural growth on topography (Maki 1964, p. 14). Both housing schemes have residential units responding to the surrounding landscape and context with vernacular material and construction methods. By a series of sequential clusters, the projects present an organic link that allows an interaction on the human scale with open spaces and common spatial elements (partition walls, etc.).

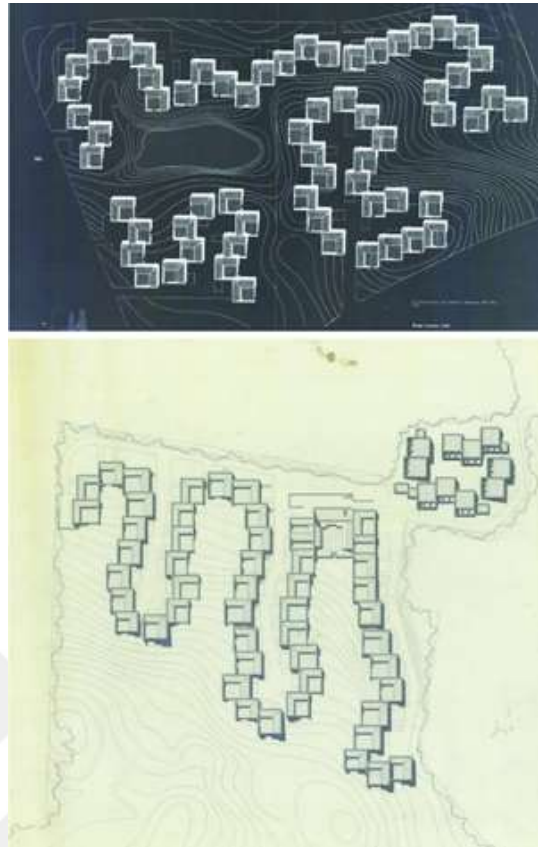


Figure 3.14. Kingo & Bakkedraet Housing by Jørn Utzon (1956 and 1963) in group form
Source: Chen-Yu et. al. 2020, p. 47

Typo-morphology+ Linkage: Urban Structure

How cities spread or transform are explained by urban geographers bound to a variety of patterns and regularities, which present the overarching framework of the urban structure concept. Richard Shearmur (2013) explains that the researchers of this field acknowledge different patterns through the consistencies or inconsistencies in the spatial structures of cities, the extent of similarities in spatial modifications on different cities, or the contextual effects that are the outcomes of these patterns (Shearmur 2013, p. 95). Though Shearmur finds it difficult to agree on a singular definition of the term because of the numerous sets of actors and elements that attract researchers, in the scope of this research it is adequate to dwell

on a common approach: typical arrangements of land use that can be observed in the urban macroform through levels of connectivity, in other word, linkages.

In scope of urban studies, there are basic models that are used to explain the growth patterns of cities. For example, the “zonal/concentric ring”, “sectoral” or “multiple nuclei” models³⁸ suggest different sets of growth and land use application for the urban areas in the US. These models imply not only a general form of growth from the center to the outwards but also the locations of different types of activities across the urban space. Alternatively, these activity-based investigations can be used to identify the links that structure the built environments in-and-around residential areas. As essential components of the urban macroform, housing environments can describe different activity patterns of a city when considered with current and (even future) spatial organizations also based on architectural typologies.

³⁸ Also known as Burgess (1925), Hoyt (1939) and Harris & Ullman (1945) models developed in the Chicago School.

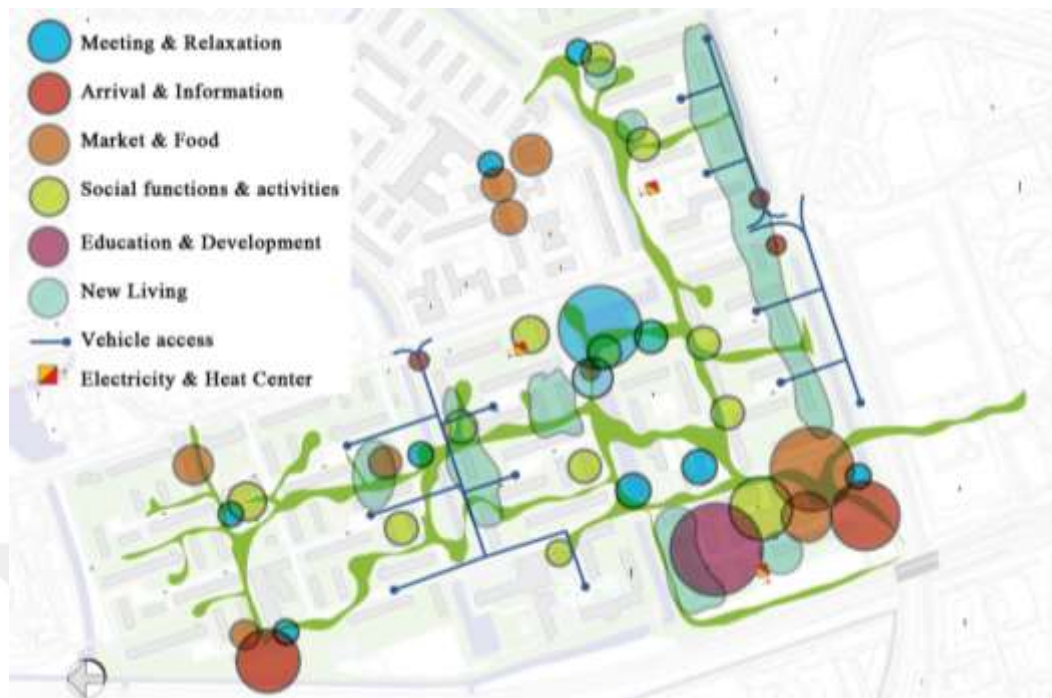


Figure 3.15. An urban structure map

The sustainability and energy-efficient strategies of this project aside, the space map designates new linkages between existing urban form and future development in a post-war social housing area in the Netherlands.

The original legend is translated.

Source: Retrieved from <http://www.except.nl/en/projects/56-mooi-en-duurzaam-schiebroek-zuid> (Accessed on January 2021)

Typo-morphology Aspects + Place: Urban Grain

The last of the typo-morphological aspects can be asserted as the levels of urban grain. Qualified as “fine” or “coarse”, the granularity of urban space is characterized by the fundamental elements of urban form and the spatial qualities of building typologies. The difference from the other typomorphological aspects is in the purposeful deployment of a sense of place.

The urban grain concept is one of the approaches to distinguish features of urban morphology based on a type idea. It acknowledges that the city is formed by types of generic elements, which are buildings, plots and streets. As mentioned previously, buildings are based on housing typologies that can be detached, row,

tower/point block, etc. Plots are defined with cadastral zones that employ one or more buildings. Finally, the street is the limiting element of groups of plots, which are also called urban blocks.

Typo-morphological organizations can be examined through the aforementioned elements that combine residential settlements into urban patterns. In conjunction with place theory, however, it can be expected to project a reciprocal relationship between these environments and their inhabitants. This approach is one of the key aspects of the work of Christopher Alexander (1977), which advocates for rule-based design solutions for complex socio-spatial problems. Via a design language, Alexander examines a list of patterns that vary from materials to large settlements as a guide to architectural elements derived from experience and traditions into a design logic of spatial patterns. He states:

Each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice (Alexander et al. 1977, p. X).

The motivation of the book is inherent in the lack of identity and variety in living environments with dense accommodation purposes. Therefore, it considers and synthesizes all local circumstances to ensure a timeless spatial quality. For example, it advises a row housing typology in order to have neighborly connections that form a level of “cluster” within better-defined territories of private and public realms. The housing unit is offered with a terrace on the street level to provide an intermediate space added to this hierarchy (Alexander et. al. 1977, p. 201-204, 665-667).

To Kropf (2011), the relative position or configuration of urban elements is the characteristics that give cities their own identities as they contain many examples of different combinations. Depending on the complexity and coarseness of these combinations, the quality of the balance between open space and built form; which eventually give an extent of subdivision of an area into larger or smaller pieces, can

be described. Accordingly, the fine-grained urban form constitutes smaller detailed spaces with complex spatial interactions. The coarse-grained urban form has larger building blocks with little architectural variety and complexity. So the combination of the street, plot, and building patterns are indicators of the urban grain. As Kropf states, “the most recognizable expressions of [this] hierarchy is a series of plans illustrating an urban area at different levels of resolution corresponding to the main elements” (Kropf 2011, p. 394).

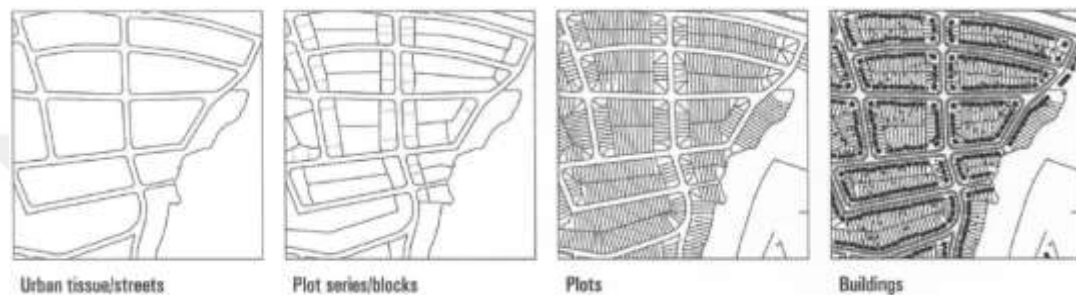


Figure 3.16. Plans showing an urban area at different levels of typo-morphological resolution

Source: Kropf 2011, p. 395

Within this context, a series of plans taken from different parts of a settlement can show types of organization with different place characteristics and the diversity of the urban form. Such investigation constructs an explanation regarding the formation of non-physical content in the built environment. The outcomes of such an approach can be observed in the article by Todor Stojanovski (2019) which illustrates several neighborhood types in the cities of Stockholm and Malmö. Each of the segments shows a transition in the degrees of granularity and a glimpse of the varieties in their place character which are defined within the physical expressions of the streets, plots, buildings, and their interrelations with each other.

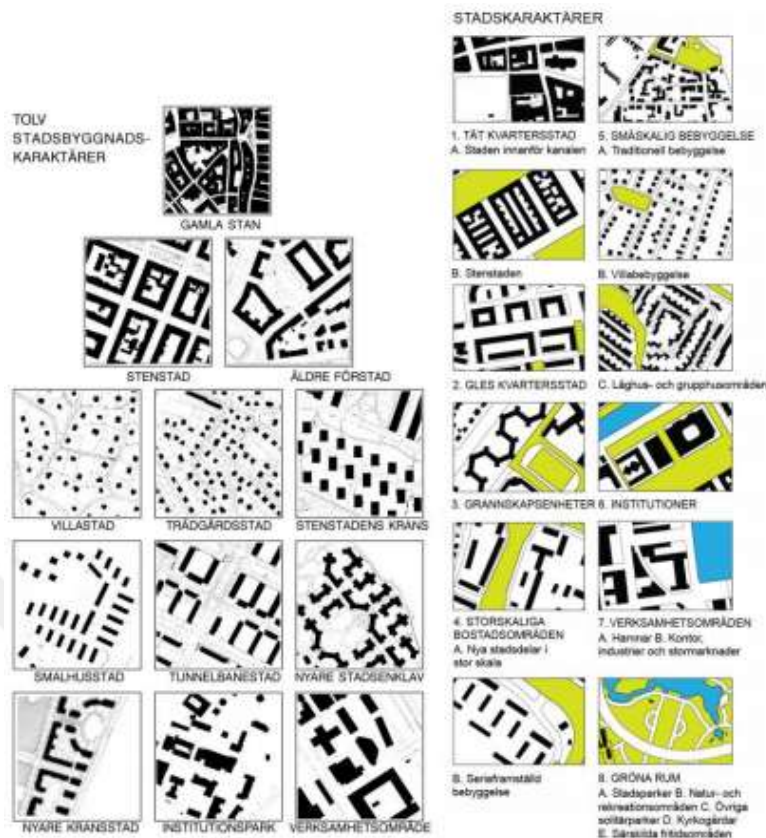


Figure 3.17. Different neighborhood types illustrated with the elements of urban grain
Source: Stojanovski 2019, p. 148

3.3 Urban Image as an Aspect of Place

The urban image is the last of the aspects that will be examined in conjunction with urban theories. It is about sets of values that are the results of physical, social, or psychological interactions. It can be shared collectively or experienced individually but is implicit in a visual quality corresponding to the components of urban form.

Between buildings, plots, and the streets, the residents of a housing environment establish a sense of place thanks to their perceptions regarding the physical surrounding. Identified with environmental characteristics that trigger the significance of the urban to its experiencers, the image of housing environments is inquired via imageability.

Urban Image + Figure-Ground: Public vs. Private Space

The figure-ground theory facilitates a simple and clean look at the urban context, however; it does not fully reflect the contrasting interrelations between public and private spaces. Nolli map, on the contrary, is the inception of graphic illustrations showing the transition from the public towards the private realms on the ground floor level. As a result, not only the squares and streets but also the interiors of various building typologies could be visualized as part of schemes of a complex urban pattern. A more contemporary conceptual approach, in this regard, can have the role of figure-ground theory expressing an urban image the relative legibility of public and private enclosures. Owing to these graphic depictions of the built environment, sequences of experience are created as identifiable or memorable spaces.

In addition to Colin Rowe and Fred Koetter, who reacted to the modernist urban design/renewal with a concern for the erosion of quality space, there are arguments on the importance of social environment molded by various aesthetic qualities. As Rob Krier (1979) states, in city activities, take place between the public and private spaces. On the design of residential spaces, which are the most private of them all, the public realm had a major influence and a determination on its organization (Krier 1979). Within this relative relation between the public vs private, Léon Krier (2009) sees an essential proportion that ensures an optimum urban comfort quality. Such an exercise can also contribute to assessing the quality of urban image via figure-ground theory once it is applied to mass housing settlements.

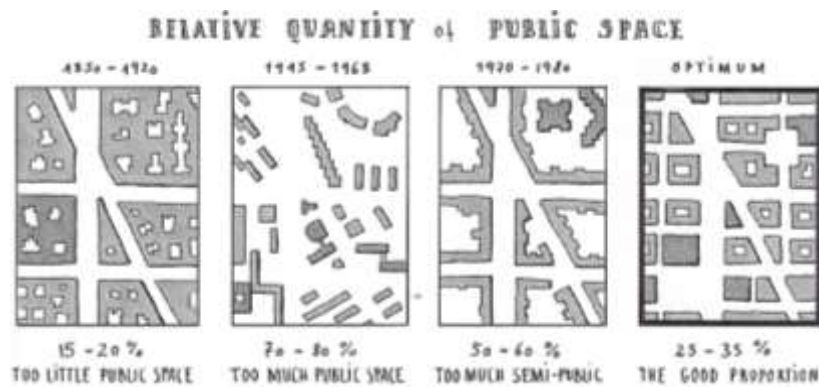


Figure 3.18. Relative quantity of public space by Leon Krier
Source: Krier 2009, p. 169

It can be stated that finding such quality in urban form is important to describe the special limits and potentials of public and private spaces housing environments that can impose an urban image. To some authors like Charles Correa (1989) and Serge Chermayeff & Christopher Alexander (1966), the integration of the public spaces to the privacy of residential blocks is not less important than the social purpose of a city, which is preferred to be a local attribution giving a unique identity. For example, to Charles Correa, the privacy of a single unit housing can be defined by threshold spaces open to the community, like patios, courtyards, back and front lawns. These threshold spaces are enough to conduct a living in the urban environment (Correa 1989). Given the fact that in India, Correa's homeland, the room is considered as the sole dwelling unit, its organization as a mass-formation device is achieved via surrounding spaces that support the spatial interaction. Therefore, Correa formulates a spatial hierarchy organization based on the single unit typology. The elements of residential (private) and social (public) spaces are organized in four levels (Figure 3.19), each of which is in the open air and surrounded by a semi or fully closed areas. Due to the climate, the open-air facilitates intermediate spaces, such as pergolas, and decks, to act as places of support, passage, and sharing as well as to insert interdependent spaces into urban life. These spaces create shared voids in-between or around the repeating solid pattern (Correa 1989, p. 31-36).

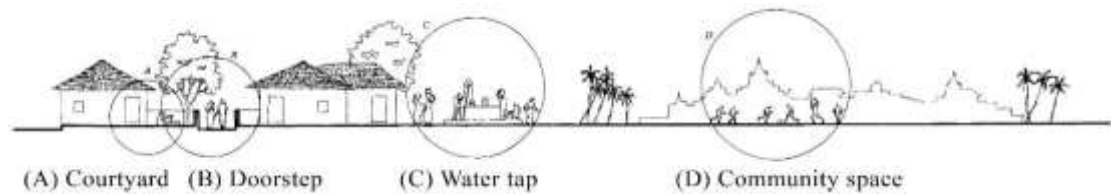


Figure 3.19. Charles Correa's hierarchy of spaces in residential environments

A.) Spaces for family's private use for cooking, sleeping and storage. These are inner courtyards of the houses. B.) Spaces for intimate interaction. These are doorsteps where children of the household play at and neighbors chat with each other. C.) Gathering spaces of the neighborhood where people becomes part of a community, e.g. fountains. D.) Basic urban spaces such as squares.

Source: Correa 1989, p. 32-33

Moving from the local scale to a larger context, where the urban-dwelling is in amid the pressures of the modern city, a similar spatial order is required. By thus, human needs and related activities could be structured within the clear reconciliation of the public and private, because as Chermayeff and Alexander see it, the bearing between an urban form and dwelling blocks needs to achieve a more 'human' environment for a new urban order. Via this "new anatomy of urbanism", uncountable kinds of experiences could be translated into physical zones, which should be organized in relation to their effect on each other (Chermayeff & Alexander 1966, p.36, 118).

Chermayeff and Alexander's study gives a detailed account of expressions about private and public interactions that create different place characteristics in designing ideal housing districts.³⁹ The examination searches for specific

³⁹ The most public level in their consideration, are the streets where social relations and a communal meaning could be shared as an urban character. The semi-public spaces provide a broader meaning of reflecting residents' daily actions. Social facilities like cafes, theaters or governmental buildings have limited access yet collect common spatial permeability. Shops can be given as an example. The semi-public permeability of the shops becomes an intermediate built environment where anybody is allowed to enter but activities other than the shop offers are not. On the semi-private places, on the other hand, utility spaces in-and-around a building are created by a definitive purpose. Therefore, their permeability is limited with a built environment surrounded by entrances, circulation cores, or front gardens. Finally, the private places, is the central reference of residents and the basis of their daily experiences in the residential district.

components of urban form and is called “composite cluster” (Chermayeff & Alexander 1966, p. 174). The general qualities and patterns of everyday urban experience are counted as the qualities of built environments that contribute to the order and refinement of a space. For this purpose, they present six domains, namely urban-public, urban-semi-public, group-public, group-private, family-private, and individual-private, and give a spectrum of spaces. From the most communal to the most private, these become intermediate spaces that set the needs of housing districts. Owing to these domains, a general framework on the spatial organization of modern (Western) housings is asserted for the “social, functionally comprehensible, and easily visualized places”.⁴⁰ This principle translates the physical implications of private spaces (housing block) as solids and public spaces (street or utilities) as voids into visual diagrams.

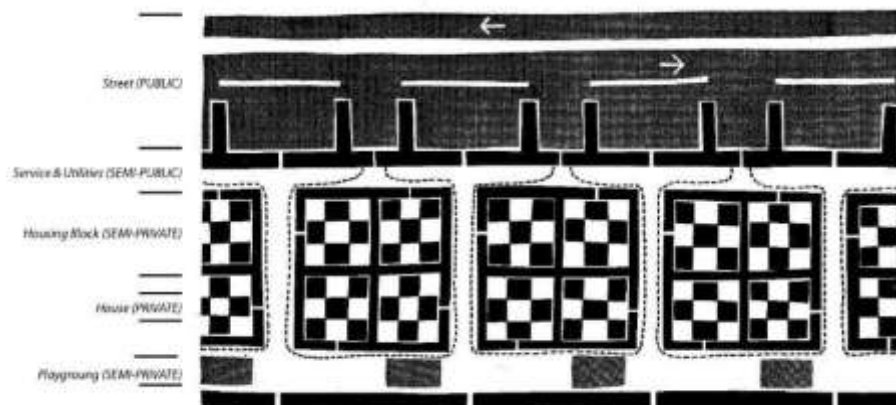


Figure 3.20. Chermayeff and Alexander's composite cluster
Labels added.

Source: Chermayeff & Alexander 1966, p. 181

⁴⁰ The domains are explained as follows: Urban-Public: places, utilities, facilities and paths belong to public; Urban-Semi-public: special places belong to public under a little control of governmental or other institutions; Group-Public: common places between public services, utilities and private properties; Group-Private: places under the control of residential use or management for the benefits of private and public interests and occupants; Family-Private: places used and controlled by a single family; Individual-Private: places that are only belong to nobody but the person (Chermayeff, S. & Alexander 1966, p. 121).

Their study analyses the limits of spatial boundaries between the community and the privacy of a family. The hierarchy between the private and public domains employs sorts of transitions and thresholds so that spaces in residential units, blocks, neighborhoods, and even cities could be organized in gradients of social or functional encounters. In this model, the private and public are considered as independent cells, which are isolated with transitions and thresholds.

To sum up what is mentioned so far, spatial characteristics of private vs public domains help to illustrate the status of place idea via interpreting the anatomy of a housing settlement within the urban context as figures and grounds.

Urban Image + Linkage: Patterns of Experience

The urban experience is a dynamic notion because of the diverse effects that are brought by not only its residents but also daily activities taking place in contact with a variety of people and environmental conditions. As Jan Gehl (2011) states, cities that are rich in experience are stimulating through “the life between buildings”, which is a concept he strongly argues to spare the cities and housing areas from “many costly and often stilted and strained attempts to make buildings ‘interesting’ and rich” (Gehl, 2011, p. 21-23). A little sense of dimension helps to contribute activity-based qualities that stimulate the urban experience in terms of public spaces. The role of activities in assembling and dispersing people and events augments a concept of design of buildings in relation to relevant human dimensions and senses. Not only by talking but even by hearing and smelling people get attracted from many tangible and intangible aspects of spatial characteristics in a shared environment. Hence activities in public spaces that trigger people’s interaction are an important indicator of an urban image.

Key studies like Georg Simmel’s *The Metropolis and Mental Life* (1903), Walter Benjamin’s *Paris, Capital of the Nineteenth Century* (1938), Michel de Certeau’s *Walking in the City* (1984), or Jane Jacob’s *The Uses of Sidewalks: Contact* (1961)

have found their own ways to comment about the diverse effect of social, political or material properties on the urban experience. These authors' experience of the city is implicit in their sensing and observing of the streets while walking. So it can be stated that there is a line of studies that support the idea of linking streets to environmental conditions and people's comfort/discomfort as a notable part of the urban experience while transporting or strolling around.

As Ann Forsyth and Michael Southworth (2008) underline, modernist planning adopted automobile-oriented values and codified optimum distances between urban functions and street design that still affects today's cities. As a result, isolated streets devoid of public interaction showed the need for special attention to walkable distances between buildings and urban centers. In the academic literature, the term is generally associated with an urban design criterion that improves and sustains public health by means of allowing pedestrian activities. According to Forsyth and Southworth, this focus is a deflection that misleads the term's genuine meaning. Therefore, the authors give various definitions of walkability that are suitable for describing close, accessible, and safe, designated or upscale environments (Forsyth & Southworth 2008).

Forsyth states that there are three approaches of walkability: as means of closeness and safety, as the outcome of livable environments, and as "a proxy for better urban places" by which various problems can be measured multi-dimensionally and examined holistically (Forsyth 2015, p. 276). This concept generally gives a general idea of the principle decisions on locating residential blocks in proximity to the community centers. Because, walkable distances from important nodes like stores, work, school and facilities, to residential blocks also visualize the levels of social cohesion. As Ria Hutabarat Lo informs, this approach is used by regional agencies in order to develop multimodal transportation planning, yet it is also possible to combine it with a sense of place and aesthetics-related perspective (Lo 2009). In a similar vein, there are studies that measure walkability by combining metrics and various intangible design qualities like imageability, enclosure, human scale, transparency and complexity (Ewing & Handy 2009). To explain and clarify this

issue, Lo suggests some physical features that influence walkable environments (Lo 2009, p. 163).⁴¹

To incorporate the urban image with the linkage theory for this study, it is necessary to demonstrate the connections between the physical setting of a residential area and its place identity, which simply can be defined with patterns of experiences that indicate types of uses. How people perceive and experience the urban environment can be tracked down with the help of clusters of activities that affect what they do within it and how they experience a place. Via activity mapping, such data can be visualized as a descriptive part of environmental psychology studies. As it involves the movements and activities of urbanites within a given space, this method can be re-interpreted as an urban analysis model that shows the connections of urban links juxtaposed with movements of residents and components of housing environments. Particularly physical attributions of the built form and the locations of planned or resultant public uses can be visualized through the act of walking.

Such an approach is the essential attribution of the “Livable Streets Project” by Donald Appleyard, whose work is –quoting Trancik- “critical to our understanding of the street in context as a spatial entity for mixed-use and social discourse” (Trancik 1986, p. 123). With an intention to save streets from traffic, noise, and pollution and to re-consider them as humanist enclaves, streets are studied as the linkages that mediate daily activities within and between neighborhoods. Particularly his diagrams about daily cross-interactions of residents under light, moderate and heavy traffic, demonstrated different patterns of experience that are in relation to the activities along the streets (Appleyard 1970 and 1980). Thus the combination of

⁴¹ (1) presence of continuous and well-maintained sidewalks, (2) universal access characteristics, (3) path directness and street network connectivity, (4) safety of at-grade crossing treatments, (5) absence of heavy and high-speed traffic, (6) pedestrian separation or buffering from traffic, (7) land-use density, (8) building and land-use diversity or mix, (9) street trees and landscaping, (10) visual interest and a sense of place as defined under local conditions, (11) perceived or actual security.

activities and streets becomes applicable to convey a simple analysis of the mass housing settlements as microcosms of urban linkages and place images.

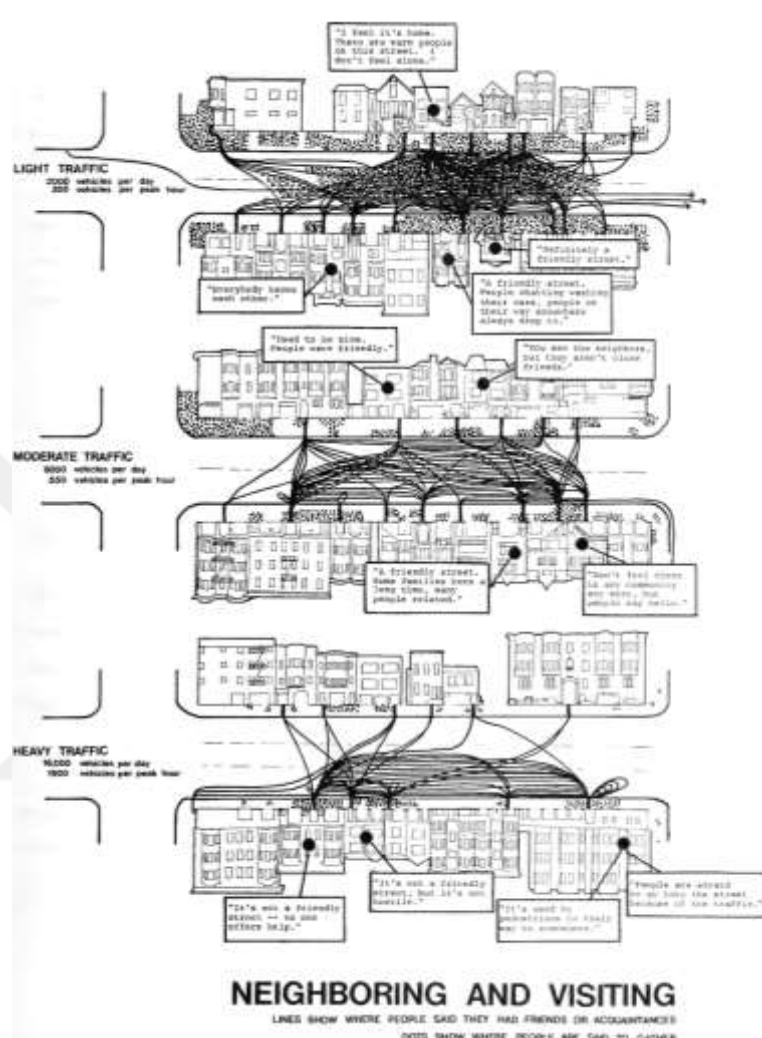


Figure 3.21. Donald Appleyard's activity diagram on neighboring and visiting
The illustration shows three levels of gathering spots on the streets and the friendships made
amongst neighbors.
Source: Appleyard 1970, p. 26

Urban Image + Place: Urban Elements

attachment, familiarity, or sanctuary can be provided with the help of the built environment as well as the architectural properties that encourage more depth in understanding and recognizing the elements of urban form through human scale and perception. The perceived image of a residential settlement and its interrelation with the morphological characteristics of the urban form has its own particular impact on representing this image. It may not be as simple as being 'good' or 'bad, but from the front door of residential blocks to streets, urban blocks, and neighborhoods, an idea of the sense of place is reflected by various urban elements that add meaning to the perceptual of the city.

As previously examined in the place theory approach, Lynch's elements of city image provide a descriptive system that visually organizes the urban elements that are recognized as legible spatial patterns as to the residents'/observers' ability to 'read' the significance of the urban form. Thus these elements present a relevant perspective in analyzing housing environments via coherent patterns of housing and urban blocks, also leaves room for recalling each item with qualities that could be equally important for the urban place identity. It is worth re-mentioning Lynchian urban elements and their meanings to mass housing settlements.

Paths

Paths define the routes of pedestrian movement in-and-around the housing settlement. The organization of paths designates connections or separations between different spaces by surrounding, or dividing them; thus creating reference elements for environmental orientation. As Lynch suggests they should be imaged as unified elements, constituting a visual hierarchy and direction (Lynch 1990, p. 96-99).

Various indicators help to perceive paths in urban form. For example, activities gathered along a road collect pedestrians who followed others. The use of materials on the building exteriors also gives a sense of continuation as an architectural character that strengthens the place identity. Even the narrowness or deepness of the paths can attract or repel users. As Gehl explains, in the situations where the

crowding can be determined based on degrees of pedestrian density, street/path width corresponds to the level of attractiveness. To him, the lesser the pedestrian flow is, the narrower the streets are; creating freedom of movement (Gehl 2011). On the other hand, the wider the streets, the more grandeur can be the spatial effect they give. Furthermore, distances from the buildings and activities are also other determining factors in connecting pedestrian paths to vehicle routes.

Edges

Edges are the elements that employ physical limitations on urban form. They are the physical 'lines' that create a visual enclosure or limit and mark a sharp difference between different zones of the settlement. They block, separate, or break two areas by obstructing the pedestrian or visual penetration. In housing environments, edges are elements like walls, fences, or landscaping between different blocks and public spaces but the architecture itself can make the building an entire edge. Based on the general silhouette of the built-environment, the resident's contact with the building as a continuing boundary translates the difference between different height levels and appropriates its length as the dominant image character.

Districts

Districts are recognized by the common physical attributions that differentiate the living environments. Each district unifies a spatial character that enables users to conceive a sense of proximity and similarity in the environment. The physical characteristics of districts can be recognized in the similarities of materials, textures, heights, functions, or building types.

Nodes

Nodes are the elements that are positioned as strategic points for the housing environment. Utilities like bus stops, subway stations, small gathering spaces like alcoves, patios, squares in parks and facilities are such spaces that create reference

points. They are the most distinguishable and memorable points in moving around the housing blocks.

Landmarks

Landmarks define a symbolic or monumental presence. A specific building or a structure that is visible from every corner of the living environment is a medium of reference and a symbol for collective perception. Regardless of the form, size, and function, the landmarks affect orienting and spatial appropriation. Therefore, they bear a collective meaning for the residents of a large community.

Thresholds

Thresholds are irregular daily gathering places on the streets, in front of building façades, or elements like urban furniture, retaining walls, and stairs. They are the encounters of permeable places that require no preparation, separation or differentiation. The experience of the threshold is momentary therefore the way the pedestrian captures its invisible and porous capsule is not strategic but event and activity-oriented. The thresholds in living environments also might be ‘occasional’ places (weekly bazaars, party rallies, concerts, demonstrations, ceremonies, weddings) that redefine the meaning of public and private and give the members of micro-societies a collective purpose. They are the usual spaces where an event takes place for the interest of members of the community. Entrances, courtyards, squares, empty parcels, or pavements can highlight the presence of varied uses of the thresholds.

CHAPTER 4

MASS HOUSING EXPERIMENTS IN EUROPE BETWEEN 1960S AND 1980S

This chapter now gives its attention to key examples of mass housing experiments realized in Europe between the 1960s and 1980 and for illustrating the theories and the aspects outlined in the previous chapters. This exercise not only would coincide with the practices that contributed to Trancik's approach but also will be a guide for their possible influences on Batikent later. As the construction of cooperative housing started in 1979 and continued until the beginning of the '90s in different stages, mass housing projects that are going to be presented in this chapter have been considered as the paradigmatic cases of the architectural and urban planning agendas of the period. Although these examples do not cover the entire western practice between the said years, they present an outlook towards cases that became pioneers.

Representing idealization and social responsibility in pursuit of providing houses for a fair and prosperous society, Modernism and Post-Modernism have highly dominated the residential architecture of their respective eras and tried to cope with the housing shortages mostly triggered by the aftermath of WWII. Park Hill (1957-61), Toulouse-Le Mirail (1961-65), Bijlmermeer (1965-75), the Barbican Estate, (1965-82), Gallarate 2 Housing (1967-72), Byker Housing (1968-82), and Friedrichstadt Block 10 (1981-87) are among the pioneers of mass housing experiments in this period. All projects are located in Europe and reflecting the characteristics of the two aforementioned movements. While the key actors of the former are CIAM and Team X, the latter is associated with the new rationalists who dealt with urban reconstruction projects. Their ambitions in forging the built form can be interpreted as the relative achievements or failures of mass housing,

which vary from the scale of a single building to a city-size housing development district.

Within this framework, the cases to be examined will also briefly elaborate on the attempts to bring different housing typologies side by side. Thus, it is expected to position Batikent project as to the world experience of paradigmatic mass housing during the relatively same period.

Background

A century of modernization in architecture and urbanism started with the reconstruction of post-WWI cities of Europe. As the housing shortage had become an intense problem, maximum efficiency with minimum requirements was to be provided by means of rational and standardized housing planning. Thus, the mass production of housing became a cohesive part of the urban growth under the influence of the Modern Movement and CIAM. The most frequently used method to increase more interest in their approach was, as Rowe (1993) indicates, showcasing the prototypes of modern houses at international building exhibitions like the Weissenhofsiedlung in Stuttgart, Werkbundsiedlung in Vienna and the Britz/Hufeisensiedlung in Berlin. These exhibitions had affordable models that were mostly low-rise and strip developed. Built environments applying these models would intimately round-up with dense housing blocks with facilities (Rowe 1993).

Having witnessed its effectiveness as a rapid and profitable solution, architects, urban planners and respective authorities continued to apply the mainstream even in the aftermath of the War. Many projects that include large residential settlements like Sarcelles near Paris (1958) and the Märkisches Viertel near Berlin (1963-75) were realized according to the principles of functionalist framework but alternatives continued to emerge within the mainstream (Mumford 2019; Medina & Monclús 2018, p. 70). More experiments gave attention to balancing individual and collective needs and reconciling public space with residential architecture. Le

Corbusier's Unité d'Habitation (Marseille, 1945-52) became a prototype of 'vertical town' and brutalist mass housing in Europe.

As the members of CIAM and Le Corbusier regarded, mass production of housing was "an appeal for scientific certainty to overcome customs of tradition" embodied in the minimum standards of dwelling units (Rowe 1993, p. 57). Le Corbusier's ideas about housing were based on the belief that all classes of the society were poorly housed; therefore, he created various prototypes that were not only architectural solutions to an emergent problem but also fundamental pieces of the future urban planning. For example, Corbusier's well-known urban proposals (*La Ville Contemporaine* and *La Ville Radieuse*) portray the compositions of single high-rise and dense apartment blocks called the "*Unités*", whose point of attraction is on "the collective services provided to all the residents" (Curtis 1996, p. 324). Norma Evenson explains that the apartment block has two types of configuration: affordable periphery cellular blocks (freehold *maisonnettes*) and luxurious setback superblocks with facilities solved on the ground floor or on the roof. Built by industrialized methods, both are linear and high-rise slabs positioned on the free ground (Evenson 1969). To Corbusier, these were the examples of the mastery in solving the problem of housing via universally applicable standardized prototypes. The dimensional aspects of the prototypes also reflect this strategy, as well. Evenson mentions that *La Ville Radieuse* proposal had 400x400 meter grids, which can be argued that defines a periphery of a pedestrian shed. The block patterns were 200x400 meters for the cellular blocks and 400x600 meters for the setback blocks. Each dwelling unit had 14 sqm living area per resident, which is a concept referred by Corbusier as the biological unit.⁴²

⁴² The minimum standards of the biological unit are set for a family with two children of different sexes or three or four children of both sexes (Le Corbusier 1987; Evenson 1969).

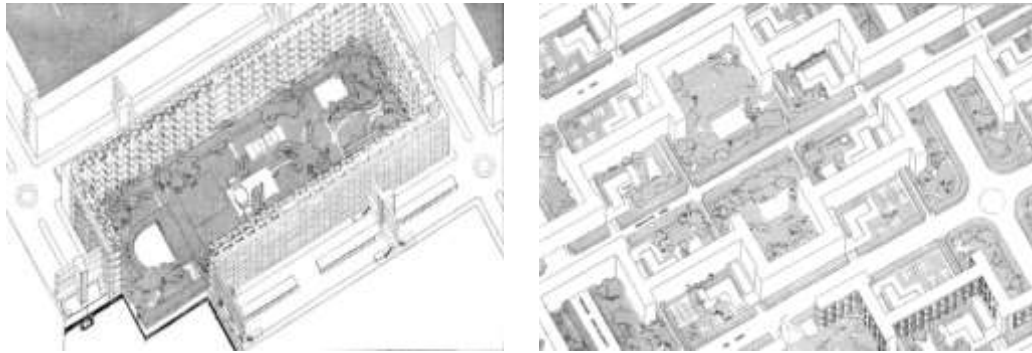


Figure 4.1. The freehold cellular and setback superblocks as illustrated by Le Corbusier
Source: Le Corbusier 1987, p 221-233

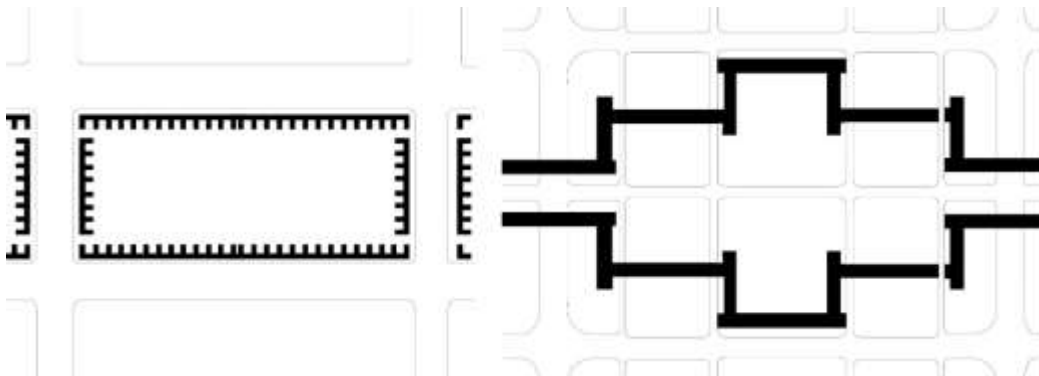


Figure 4.2. Figure-ground expression of the cellular and superblocks
Source: Author

As Trancik argued these modern landscapes with the orderly and uniform organization of housing blocks leave sole geometric imprints on its envisioned context. The continuous configurations of the blocks within a grid create massive edges within their peripheries. The strong compositional form utilizes the urban life. Thus the geometry and dimension of the blocks redefine the human scale on an open urban fabric and widen the experience of streets, boulevards and pedestrian paths. The density of the blocks offers an outlook to the community living, which is a conception later realized in the *Unité d'Habitation*.

In the 40s, Le Corbusier was commissioned to build a unit of housing. As he envisioned in the previous prototypes, the project should compact enough to accommodate a large population and various facilities structured inside the *Unité*. According to William Curtis, this housing solution represents a milestone for systematic orders in residential architecture and the beginning of modern mass

housing typologies (Curtis 1996, p. 438-441). In this *béton-brut* superblock, a high concentration of residents was settled in interlocking two-story dwelling units. In total, 1800 people were inhabited in 337 units (with 23 different plan types). With elevated interior streets and the communal services located inside, the social and networking elements of a city were connected. Hoped to be an ideal model for the reconstruction of French cities after the WWI, the *Unité* offered a modern mode of communal living. Therefore, the scholars like Kenneth Frampton, von Moos, and Rowe associate the building with the Soviet commune blocks of the 1920s and the 19th century utopian socialist⁴³ settlements (Van Moos 2009; Rowe 1993; Fishman 1982; Frampton 2007).

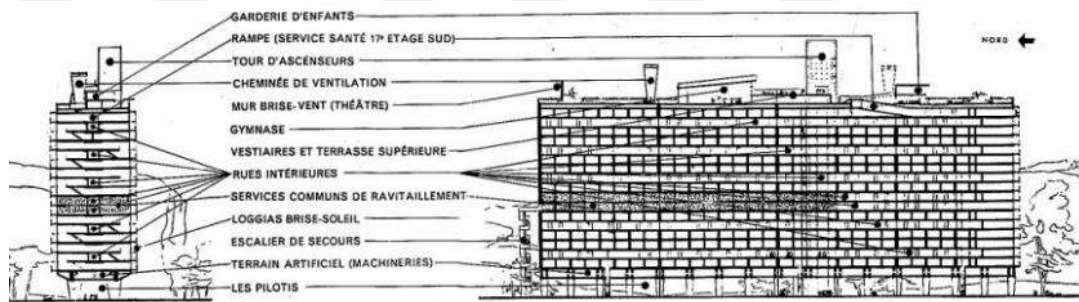


Figure 4.3. Sections of the Unité d'Habitation Marseille illustrating the building program in levels

Source: Bill 1999, p. 194

⁴³ The founders of the utopian post-industrial socialist settlements are Charles Fourier (1772-1837), Henri de Saint-Simon (1760-1825) and Robert Owen (1771-1858). Fourier's blueprints are considered as the pioneer of the twentieth century mass housing models in the literature. The Fourierist city, phalanstery, is based on a socio-spatial structure defined by the division of work and leisure. Meeting places, raised street galleries, and covered passageways are the key elements of the design. Familistère de Guise built by Jean-Baptiste André Godin (1817-1888) is a realization Fourierist settlement. Godin's version is based on pragmatist design rules. Three of those were *espace*, *air pur*, and *lumière* (space, pure air, and light), which is the same concept used in the Ville Radieuse. Therefore it can be claimed that the roots of Corbusier universal framework could had been nurtured from the utopian socialism. This link between Fourier, Godin and Le Corbusier is covered in Serenyi, P. (1967). Le Corbusier, Fourier and the Monastery of Ema. *The Art Bulletin* 49(4) 277-286.

The culmination of Corbusier's idealism and determinism on the aspects of the functional city gave a new direction to the architecture of mass housing. It is unnecessary to repeat the importance of the *Unité* on the emergence of the linear and superblock as becoming mainstream typologies for a time, but it is worth mentioning that also drew a lot of attention about the controversies on what Rowe and Koetter mentioned –making the form an object isolated from the context (Rowe 1993).

After the WWII, a major break with the ongoing architectural agenda was seen around the world. Both the CIAM and other associations and actors of architecture, started to consider new themes of building making. Moving from a mere functionalist framework, a new tendency was developing: the combination of scientific planning and thinking with consideration of spatial qualities, social idealism, urbanism and reconstruction of post-war cities (Günay 1988; Mallgrave 2005). During CIAM's most influential years, the functionalist paradigm dominated the world with its visions for architecture and urban planning. Although the idea of solving the housing shortage and starting rapid urbanism had promised a utopia, ambitious implementations of the organization's principles gradually falsified its ultimate missions in the eye of those who saw a slow destruction of urban environments. Well-known advocates of this criticism were the Team X⁴⁴ (or referred as Team 10), who challenged CIAM and its canonical principles at various levels that can re-identify the architectural agenda. Their opinions and ideas sought for alternatives of the period's mainstream and aimed to bring new meanings to mass housing and urbanism under the concepts of "identity" and "association" (Medina & Monclús 2018, p. 40). The leading actors of this

⁴⁴ A group of architects who objected to the core principles of the CIAM and produced schism. Members included Jaap Bakema, Georges Candilis, Giancarlo De Carlo, Aldo van Eyck, Alison and Peter Smithson, and Shadrach Woods.

paradigmatic break declared their protest in Doorn Manifesto in 1954. The most important statement of this manifesto was replacing the functional division of the city (dwelling, work, recreation, transportation) as defined by CIAM in the Charter of Athens with a new “hierarchy of association” that is “house”, “street”, “district”, and “city”. The group’s theoretical framework was a utopian one whose aim was not to theorize, but to build in the present with new keywords such as “identity”, “association”, and “mobility” (Smithson 1968; Lewis 1967). Projects proposed or realized by various members of the Team X expanded the limits of the city; they lifted the streets to the air and knitted networks of residential structures there. The Golden Lane proposal (London, 1952), Toulouse Le Mirail (Toulouse, 1961) or Robin Hood Gardens estate (London, 1972) can be stated as three key examples of the alternative approaches that questioned orthodox modernism.

Particularly the English members of Team X, Alison and Peter Smithson found the association in the integration of streets and residential clusters. Their proposals for urban planning were based on “specific patterns of association” of people: house, street, district, and city. As a result, housing was the fundamental unit of society that is linked through streets (not sole greenery); gathered in districts, and bonded by a city. Their mass housing proposals elevated streets to the air and linked members of the community via open-air walkways invalidating the vehicle traffic on the ground. Similarly, they used slab blocks as the prevailing typology, yet their creation grew as a trans-functional network (Lewis 1967; Smithson 1968; Highmore 2010). The combination of linear blocks and streets-in-the-air was to enrich the residents’ experience the street as a place. Linkages between floors and through streets formed “a multi-level city” whose spatial form was based on movement and human association.

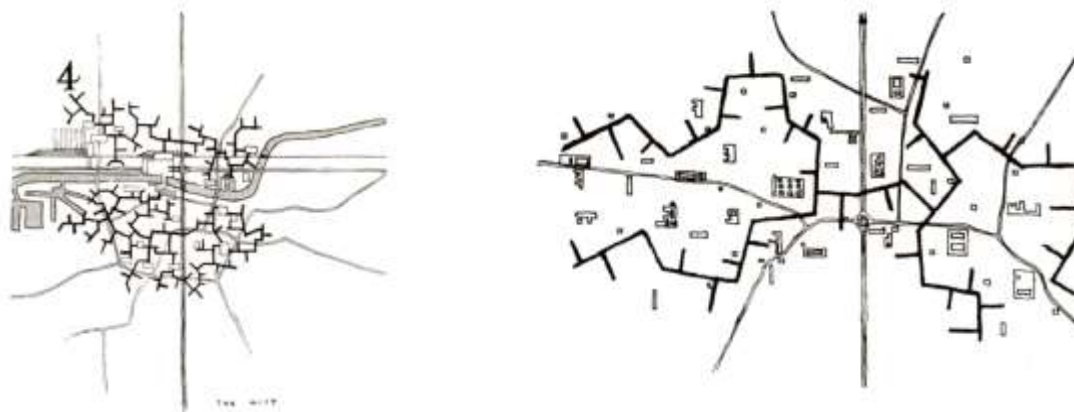


Figure 4.4. The Smithsons' linkage proposal of multi-level city with residential streets-in-the-air for Golden Lane Project (1952)

Source: Lewis 1967, p. 26-27

In the early 1950s, the Smithsons published an entry for a competition organized to redevelop a bombsite in London. Although it did not win an award, the Golden Lane proposal aroused a great interest. According to the Smithsons using the traditional forms of house-groupings with streets, squares, greenery was obsolete in the modern world (Lewis 1967, p. 22). Instead, the essential principles of the new urbanism were bound to the concept of streets-in-the-air. The image of Golden Lane city indicated a utopian side for re-invention of the concept of family and neighborliness with the help of a new association of house and street. As Dirk van den Heuvel illustrates, the pedestrian decks and house units were examples of a collection of different spatial and territorial qualities “in the sense of ‘patterns’” (van de Heuvel 2013, p. 98, 364). The decks stood out as extra spaces experienced and defined collectively by residents who could also establish a personal association. As Nicholas Bullock explains, the intend of re-shaping traditional street to a modern format was facilitated by “a system of pedestrian decks that crossed the site at various levels and linked at ground level to surrounding streets” (Bullock 2010, p. 325).

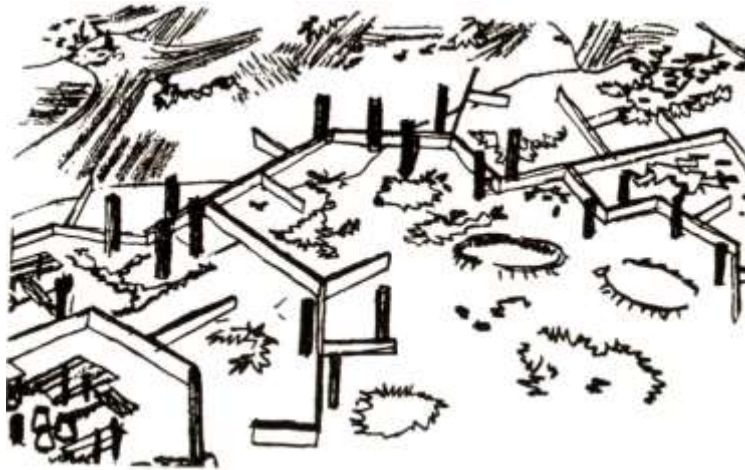


Figure 4.5. Sketch of Golden Lane showing the multi-level growth at urban scale
Source: Lewis 1967, p. 27

The second half of the 1950s indicates two different milestones for CIAM and Team X, for the former was dissolved in 1956 and the latter made their debut in the 10th CIAM meeting, which was held in 1959. In other words, the paradigmatic shift from modernism towards the questioning of modernism, and even post-modernism started at the end of the 1950s.

In 1957, the architecture and planning community had the opportunity to experience one of the most important events of the post-war years in Berlin. The government of the West-Berlin organized an open-air international architectural exhibition as a response to the housing shortage as well as to the construction projects rising in the East sector. As a result, Interbau (*Internationale Bauausstellung*) was decided to be realized in Hansaviertel district, a former bombsite, in order to promote the democratic and free spirit of West Germany. Interbau aimed to display the superlatives of architectural production and advancements in urban planning as a source of inspiration for the future reconstruction of post-war German cities. The exhibition hosted 50 architects, including names like Walter Gropius, Alvar Aalto, Jacob Berend Bakema, Arne Jacobsen, Max Taut, Oscar Niemeyer and Le Corbusier, who were considered to be the most eminent figures of modernism (Wagner-Conzelmann 2021).

Hansaviertel became the venue of the city of tomorrow in response to the urban development of Stalinallee in the East sector where the rival built workers' housing districts as the new monuments and the backbone of Berlin. Interbau presented a mixture of high and low-rise buildings loosely positioned in the heart of a large landscape. The functionalist zoning principles were applied as proposed in the Charter of Athens. Social facilities like a library, schools, churches, a congress hall, the Berlin pavilion, a kindergarten, and a shopping mall were included within and outside of Hansaviertel (Internationale Bauausstellung 2021).



Figure 4.6. Model of Hansaviertel district showing housing blocks from the south (c.1955)
Source: Hansviertel Berlin. Retrieved from hansaviertel.berlin/en/interbau-1957/geschichte-der-interbau-1957 (Accessed on April 2021).

Approximately 1.300 residential units were provisioned inside of around 30 buildings, whose typologies vary from point and linear blocks to bungalows. Farshchi (2019) states that the housings in the district were grouped as 5 areas that roughly correspond to the positioning of the typologies. In each project, the eminent of modernism turned their visions to the international style living and housing. Examples include Le Corbusier's housing units built outside of the

district, linear blocks by Gropius, Aalto, and Taut, a point block by Bakema, bungalows by Jacobsen, and a slab block by Oscar Niemeyer. The Haus Niemeyer at Altonaer Straße 4-14, is the housing No.19 of the exhibition program. 8 storeys and 78 units of this building sit on V-shaped concrete pillars. Niemeyer's design was influenced by Corbusian principles of modern living and embraced the idea of living together on the contrary to living in individual units. Residential units of the building were designed to be elongated to two communal corridors, which are accessible only via a triangular sculpture-like elevator shaft positioned out of the main structure. Inside, there are 6 interior staircases that allow for access to the units only in the vertical direction (Internationale Bauausstellung 2021; Hansaviertel Berlin 2021).



Figure 4.7. Niemeyer Haus by Oscar Niemeyer built in Hansaviertel, Berlin for Interbau (1957)

Source: Hansaviertel Berlin. Retrieved from hansaviertel.berlin/en/bauwerke/altonaer-strasse-4-14-oscar-niemeyer (Accessed on April 2021).

As presented in this brief synopsis, the international agenda prior to the turn of the 1960s was in pursuit of the city of tomorrow by which modernism could build the urban fabric anew. In the turmoil of the war and the crisis in accommodation, the dominant paradigms of this period tried to find the means of the modernist culture

that embody the future of cities via new residential settlements. Experiments of mass housing integrated with an urban configuration started to emerge for a new chance to shape the cities. The following cases are pioneers of this spirit.

4.1 Park Hill: The First Streets-in-the-Sky Estate

Architects : Jack Lynn and Ivor Smith
Construction : 1957-1961
Project Area : 13 hectares
Unit Quantity : 1.000 dwelling (appx.)
Location : Sheffield, England

The combination of deck access and streets-in-the-air is the hallmark of Park Hill Housing Project completed in 1961 as a slum clearance area. It was located on a sloping site with four to thirteen-storey high, 10 m wide linear concrete blocks connected to each other by narrow pedestrian streets (Bacon 1982; Brierley 1996; Powers 2007).

Christopher Bacon notes that the design idea reflects Le Corbusier's intentions to create form a modern community with the street decks of the *Unité*. The Smithsons' streets-in-the-air idea also serves as the main access system between other blocks and became "street decks" where even milk trucks could travel through and children could play games at their doorsteps. Bacon states "[...] Park Hill was intended to be a 'close-knit, complicated, often moving aggregation, but an aggregation with a distinct structure'; in the same way the Smithsons described their 'cluster city'" (Bacon 1982, p. 113-114, 121; Frearson 2014; Highmore 2010, p. 97)

Indeed, Ivor Smith admits that both had a major influence on the project. Le Corbusier's schemes for Algiers and Ville Radieuse and the robustness of the *Unité* have reflected the long continuous blocks with decks. Smith also tells that he and Lynn had both academic and professional interests in the Golden Lane competition

therefore the idea of streets-in-the-air and facilitating a close-knit working-class life became another key aspect of Park Hill's design concept (Smith 2008).⁴⁵

Once the architects later realized that inner decks would create isolated spaces in between the open air and residents' door, they sought for more proper pedestrian circulation system both in the buildings and on the ground floor. They also focused on the human movement whose multiple relationships could generate intersectional spaces of communal life. Therefore they added circulation towers and bridges organized to serve as the nodes of movement and joints of angular development.⁴⁶ As Peter Jones explains, the blocks meet at these nodes at the multiples of 22.5°, which are very unorthodox for the modernist principles, especially the parallel organization of the *Zeilenbau*. But this solution was found necessary to deal with the irregularities of the terrain and to take the best advantage of it (Jones 2011, p. 90)

⁴⁵ Lecture notes given in April, 15 as part of the centenary celebrations of the School of Architecture in the University of Sheffield. Retrieved from http://www.urbansplash.co.uk/documents/080424_Ivor_lecture.pdf (Accessed on November 2016).

⁴⁶ Although the decks worked as intended by the architects, Ivor Smith acknowledges that a poor management and a changing society that grows more interest in drugs and violence caused the building fabric to deteriorate and to be used as a place to dump difficult tenants. Because of a financial collapse, the residents of Park Hill had to move out from their street decks that had been contaminated by the increasing rate of vandalism and crime. In 1997, the English Heritage listed the complex as Grade II as part of the official listing system of the British architectural and historical heritage. With this mark, the project gained back a public attention and became Europe's largest listed building. British property owner companies renovated some parts of the estate (Smith 2008, p. 9; Frearson 2014).



Figure 4.8. Aerial view of Park Hill-Sheffield

Source: www.dezeen.com/2014/09/10/brutalist-buildings-park-hill-jack-lynn-ivor-smith/
(Accessed on December 2018)

Park Hill reflects the most characteristics attributions of modernist mass housing environment in terms of spatial development, use of infrastructural (circulation) elements as formal exposure, and social zoning. The free-standing monumental slabs employ their dominating form with this chain-like organization. They join end-to-end hence give an impression of an endless continuous structure.

Streets offer unity in binding dwelling units together with streets and stair cores. Much like the multi-level city proposal of Golden Lane, Park Hill's spatial development acts as a megaform with interdependent components matched with physical joints.

Management of heights is an interesting design attribution which keeps the roofline aligned to the sky while drawing the ground line altering at many levels. Owing to this creation, the streets-in-the-air can continue uninterruptedly from the beginning to the end. However, the ground breaks this monotony and plays with the observer's perception of height with ascending and descending levels.

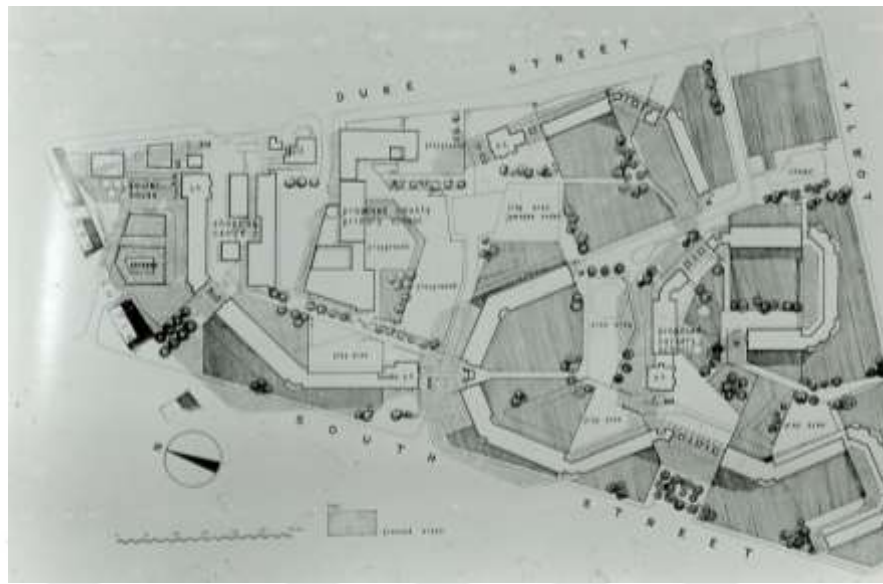


Figure 4.9. Site plan of Park Hill showing the relationship between landscape and social facilities

Source: © The JR James Archive. Retrieved from www.flickr.com/people/jrjamesarchive (Accessed in September 2020)

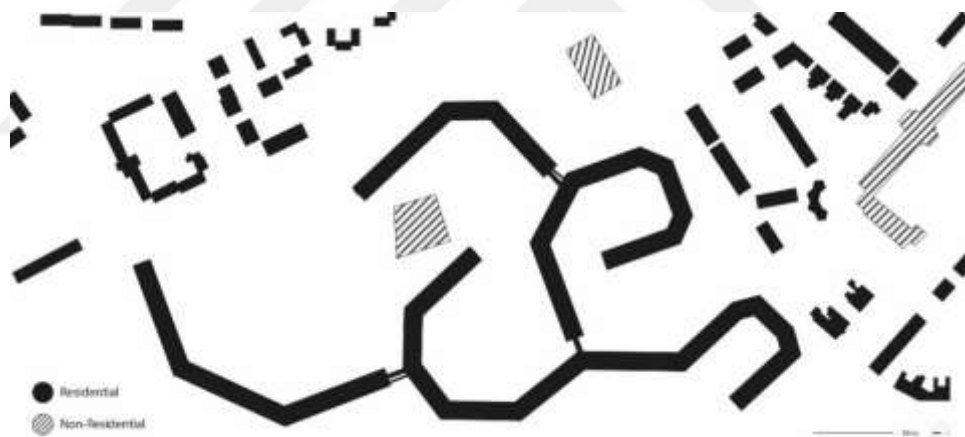


Figure 4.10. Figure-ground expression of Park Hill blocks illustrating its size in comparison with the buildings nearby

Source: Author

As in the Bijlmermeer, the edges defined by the strong structural manifestation of linear blocks are the first place elements observed on the site. The blocks that only have two facades apply a sharp separation between the inside (estate) and the outside (city). This edges also a response to the intention of building a sense of community. On the southern part of the settlement, for instance, there are three

blocks that almost form half perimeters which enclose semi-isolated gardens. The geometry of the block located on the northern part is more open as it faces multiple facilities that are even more public. Thus spatial form acts in response to dispersing or surrounding social activity centers. Either independently positioned or attached to a residential block (as in the nursery school), these buildings are in communication with the community living in the edging blocks.

Various communal facilities like shopping, laundry, worship, education, and administration in the design pin the places of social interaction that are in walkable distances with the paths mostly dedicated to pedestrian traffic (currently some of them are open to vehicle access for parking). As previously mentioned, paths are the spatial aspects that cannot escape from the daily experience of the residents. They are streets for children to play in front of their houses, passages to visit neighbors who live in the opposite block, and urban elements that are major arteries working as a street pattern.

4.2 Toulouse-Le Mirail: A Progressive Experiment of the New Town

Architects	:	Georges Candilis, Alexis Josic and Shadrach Woods
Construction	:	1961-1965
Target Project Area	:	809 hectares (appx.)
Unit Quantity	:	25.000 dwelling
Target Population	:	100.000 people
Location	:	Toulouse, France

Toulouse-Le Mirail is a housing development project whose master plan is based on a competition held in the early 1960s. In the scope of a national building program, Candilis, Josic and Woods, who are former colleagues of Le Corbusier and the founding members of the Team X, proposed a new type of mass-living against CIAM. Inderbir Riar (2011) indicates that the creation of this “modern urban utopia” was highly controversial in terms of its scale and density,

considering it was planned to supplant CIAM. This comment aside, the architects' sensitivity was explicitly related to a concept of "social identity" which, they believed, was hidden in the details of everyday life and lacking in the functionalist principles (Riar 2011, p. 75). As a result, the overall spatial organization was based on potential activities in the project site. The structural articulation of residential and non-residential buildings and their relation to each other aimed to reflect a heterogeneous and dense town planning as well as the activities inside and in-between spaces.



Figure 4.11. General plan proposal of Toulouse-Le Mirail
Source: Sluiter 2016, p. 136.

The architects' this interest in change and human growth was stemmed from, as Tom Avermaete asserts, a remarkably distinct view of the post-war architectural and urban planning models and of humanistic factors (Avermaete 2003). Rather than isolated residential monuments in the city, they were after creating of macroforms that are generated by continuous elements that were designed for

particular necessities and places. According to that conceptual idea, residential blocks and social facilities (commercial, cultural, and educational) accompanying them were affiliated by continuous *rue dale* (slab streets) and elevated platforms that separate pedestrians from the traffic. In conjunction with the platforms, the dwelling blocks were also designed with connecting corridors.

Riar states that le Mirail was a *Zone à Urbaniser en Priorité* (ZUP),⁴⁷ which indicates a planning formula for developing urban infrastructure. Given the large span of the new town planning, the architects deployed a fractal macroform, which enabled subsequent building blocks repeated in a variety of scales and orientations. This principle was derived from a stem and web analogy, which promised a new type of mass living achieved by organic development. Candilis-Josic-Woods regarded the concept of the family unit as the base for society, which in the end made them observe it as a disorganized autonomous association. The elements of their urban planning proposal, thus, were in favor of an ever-growing and changing community. Thus, Wood incorporated the concepts of stem and web into the project's central argument. According to that, cities and residential buildings were conceived as comprehensive networks reflecting megastructure aesthetics. By means of the “from stem to cluster” principle, functions in relation to each other, organization of private areas (dwelling units) with varied public areas, hence the exchange between the street and residential units were assured by means of high-density megastructures (Sluither 2016; González & del Real 2010; Vianna 2018).

⁴⁷ (en.) Zone to Urbanize in Priority

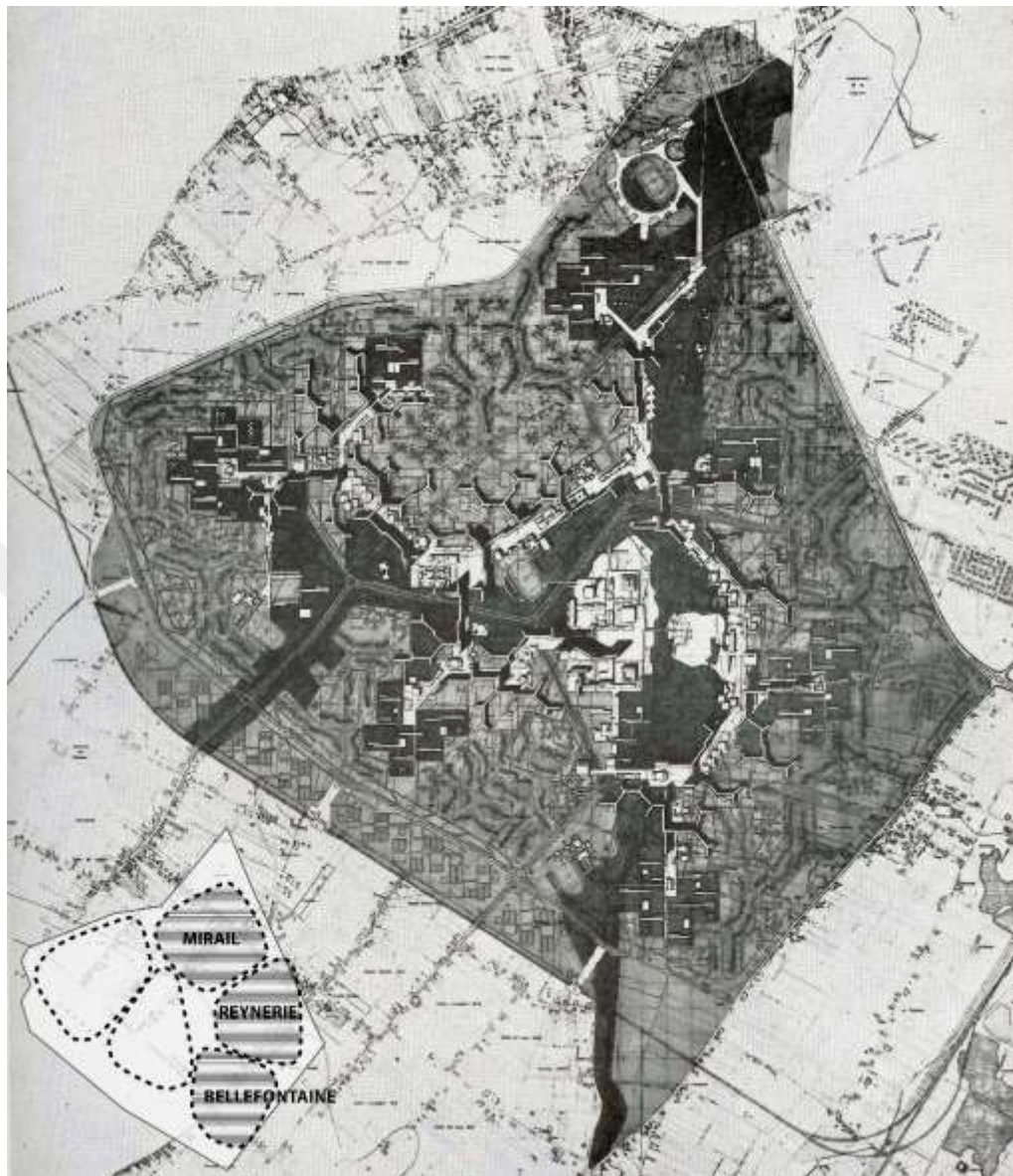


Figure 4.12. Proposed development plan of Toulouse-Le Mirail
Development stages are added on the bottom left of the image, where the three
neighborhoods are also marked.
Source: Joedicke 1968, p. 185

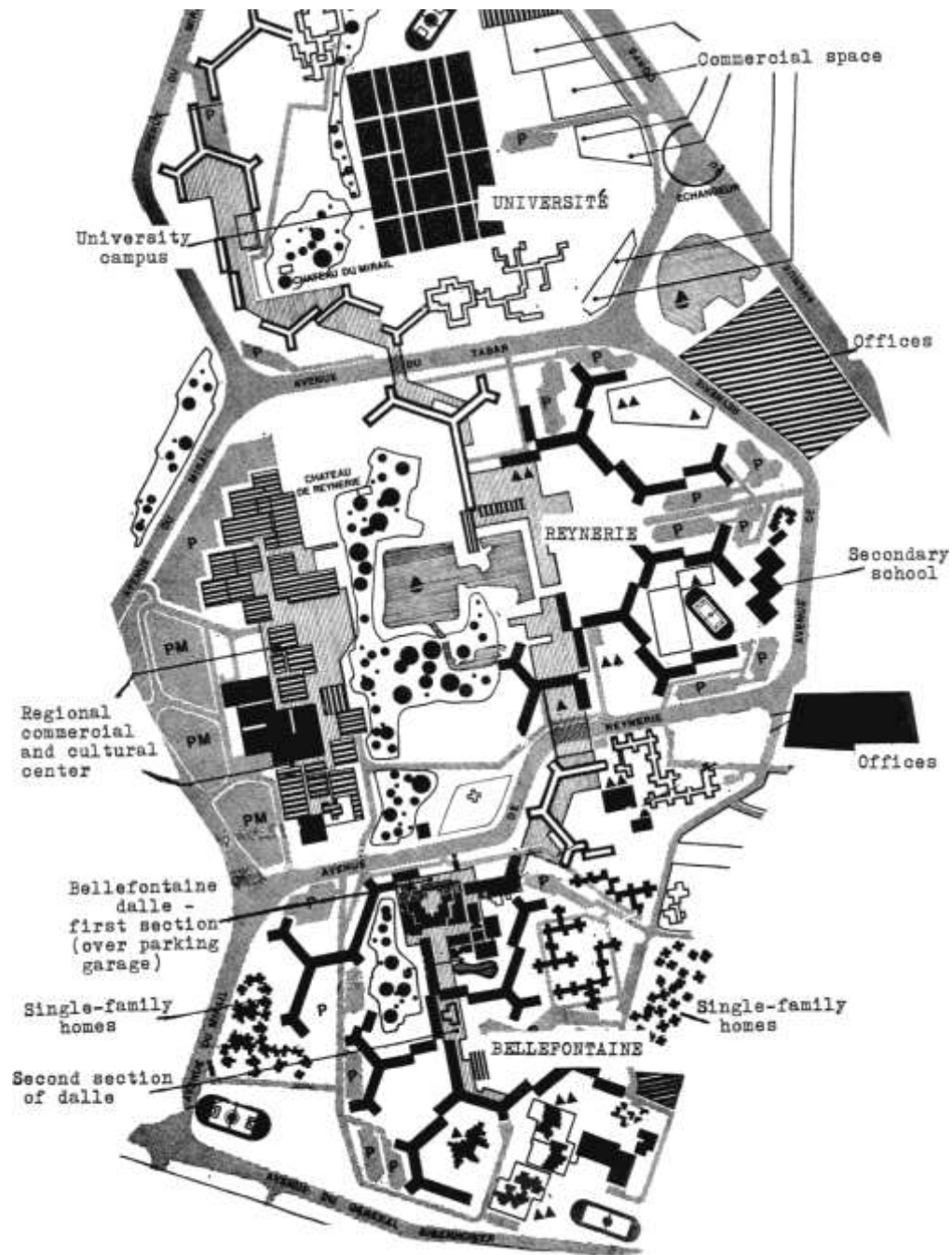


Figure 4.13. Site plan of the three neighborhoods in Toulouse-Le Mirail
 From south to north, the diminishing of the stem idea can be observed as the residential land use is replaced by public buildings. The figures with white fill and black strokes represent the unrealized parts of the original plan.
 Source: ©1972 Leonard Downie, Jr. Retrieved from “Le Mirail: A Study in Concrete” <https://aliciapatterson.org/stories/le-mirail-study-concrete> (Accessed on February 2021)

The project was planned to be happened in five districts, yet only the three of them, which are Mirail to the north, Reynerie in the middle, and Bellefontaine to the south, were realized. Riar states that only the Bellefontaine neighborhoods achieved the architects' intentions as drafted in the master plan since the remaining two neighborhoods had to make room for different public investments⁴⁸. In this neighborhood, three types of housing are noticeable: high-rise slab blocks (up to 13 storeys), walk-up apartments (4-5 storeys), and low rise housing in pinwheel form (Riar 2011). Although the initial proposal did not include a low-rise housing, it is possible that this typology was implemented because of an additional policy of habiting migrants and low-income families in the area.⁴⁹

Given one-third portion of the realized parts of the project is the closest to Candilis, Josic and Woods' stem and cluster idea, the Bellefontaine neighborhood could be assessed as a sole residential district that could fulfill its initial purpose. The microform of this housing settlement has developed attached to a public center, which accommodate a cultural complex with shopping facilities. Within the range of this urban center, the residential clusters grow throughout the site.

⁴⁸ Such as a university campus in Mirail, and a park with a lake in Reynerie.

⁴⁹ "Projet architectural et construction". Retrieved from fr.wikipedia.org/wiki/Mirail#Projet_architectural_et_construction (Accessed in February 2021).



Figure 4.14. Aerial view of three housing types in the Bellefontaine neighborhood in Toulouse

Source: Van der Drift 2013, p. 35.

As the growth pattern of the overall settlement illustrates, multiple linear elements are spread in various directions with secondary parts growing towards the surrounding. Elevated decks for walking, on which commercial properties were placed, foster a complex network of linkages that both function in horizontal and vertical directions. In conjunction with the decks, residential towers include corridors on every 4 floors and an access pattern of vertical circulation only. These stair towers led to decks at the base of each building.

Considering the operational categories of collective form, Toulouse-Le Mirail's spatial development mediates linkages with autonomous formations and non-repetitive elements that enclose various urban spaces of a complex structure, especially at the Bellefontaine. As Trancik underlines, the project does not reflect a traditional city structure of solids and voids and there is a configuration developed particularly around horizontal platforms for movements. He sees a lack of

circulating and connecting the urban structure that was resulted in exchange for “the machine aesthetic” (Trancik 1986, p. 108-110). Therefore, it is possible to argue the lack of elements of an urban image, too. The interaction between public and private spaces seem limited to the buildings alone, which can be considered as a symptom of the separation of residential from non-residential programs. To elaborate, each district that designates a major program or a housing type has its own internal organization. Because of that, the macroform does not benefit from secondary paths that contribute to these urban structures and activity patterns. The Reyneire and Mirail neighborhoods need a separate examination as they hardly have any accommodation purpose. However, it worth noting that the master plan of the university campus in Mirail shows a mat-building plan, which is a concept that was in the interest of Candilis and others including Alison Smithson and Kisho Kurokawa.⁵⁰

⁵⁰ The mat-building is a term coined by Alison Smithson that refers to the Metabolists projects. She defines the term as follows: “Mat-building can be said to epitomize the anonymous collective; where the functions come to enrich the fabric, and the individual gains new freedoms of action through a new and shuffled order, based on interconnection, close-knit patterns of association, and possibilities for growth, diminution, and change” (Smithson 1974, p.573). Alison and Peter Smithson developed this concept after the Berlin Free University competition, which, in their regard, enabled reading the mat-building as a type of building. Owing to the works Toulouse University (Candilis-Josic-Woods), Children’s House (Aldo van Eyck) and Venice Hospital (Le Corbusier). Alison Smithson reviews the mat-buildings as agencies of mainstream architecture. The most basic characteristic of this building type is their interchangeable cell structure occurred by cube cells resemble to grid place mats (Sarkis 2001; Avermaete 2005).

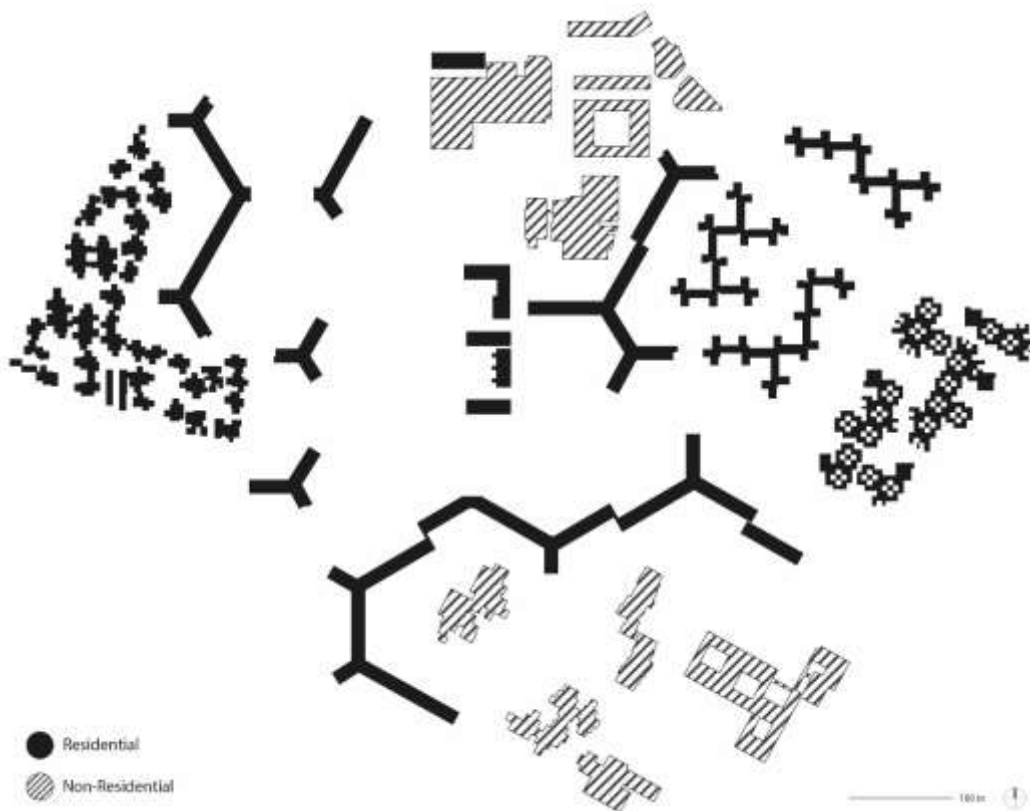


Figure 4.15. Figure-ground expression of the current residential blocks in Bellefontaine
 Particularly, the west part of the site shows three types of housing pattern.
 Source: Author

Toulouse Le-Mirail is a canonical example of post-WWI urbanism because of its articulated mass housing scheme integrated with urban morphology and power to invent a new typology of collective spaces that aimed to replace traditional streets and squares. Similar to the examples examined with Bijlmermeer and Sheffield, Le Mirail is known for upbringing a modernist and innovative outlook towards residential architecture however it stands out as a particular case because of its size. Because it presents not only a conceptual but a formal agenda for a self-sufficient city built with mass housing. Furthermore, Candilis-Josic-Woods' critical approach to CIAM and its 4 functions in a city (dwelling, work, recreation and transportation), emerged notions like identification, association and participation, which were in favor of embracing a more democratic sense of public space.

4.3 Bijlmermeer: The Corbusian Prototypes

Architects	:	Siegfried Nassuth and Pi de Bruijn
Construction	:	1965-1975
Project Area	:	2.210 hectares
Unit Quantity	:	13.000 dwelling
Location	:	Amsterdam, the Netherlands

Bijlmermeer (Bijlmer in short) is part of an urban development project. Maarten Mentzel and Frank Wassenberg note that the project was the actual realization of Le Corbusier's unrealized city plans. In respect to the tenets of modernism, the project contained large free-standing linear blocks composed in a hexagonal grid. Communal facilities were distributed a large landscape within the zones defined by the high-rise blocks. Principles like regularity, symmetry and uniformity, which were rather “young” ideas of its time, played a central role in its development (Helleman & Wassenberg 2004; Mentzel 1990; Wassenberg 2013).



Figure 4.16. Partial aerial view of the blocks of Bijlmermeer (Amsterdam, 1968)
Source: Gemeente Amsterdam “Erfgoed van de Week” (Municipality of Amsterdam
“Heritage of the Week”) Retrieved from <https://www.amsterdam.nl/kunst-cultuur/monumenten/erfgoed-week/bijlmermuseum-stadsgezicht/> (Accessed on September 2020)

The beginning of the Bijlmermeer as a project of new collective housing is based on a planning strategy regarding how cities should provide housing for people. Though it is uniquely massive in terms of its scale and density, ideal dwelling units with

greenery, public facilities and easy access on foot or via cars, were the statements of a new term of collectivity for housing development planning.

In the settlement, there were 31 10-story high blocks containing nearly 13,000 dwelling units. Each block was 200-300 meters long (Helleman & Wassenberg 2004). The hexagonal morphology developed to present sculpture-like objects and to define an independent urban context. By thus, each linear block could be tailored freely in order to obtain direct sunlight or scenery. As stated, one of the essential goals of Bijlmer was separating vehicle and pedestrian traffic. Therefore the internal network of the blocks and the overall estate had various levels by which residents, bicycle riders, cars and metro had designated lines and tracks. This separation was meant to attract apartment living. The decks- and streets-in-the-air offered alternative horizontal and vertical linkages within the same building –a feature that could not be found in the traditional housing. The ground-level was freed for recreation and social spaces to “live in the sky, play on the ground”.⁵¹

However, when Bijlmer is examined on the plan, these elements had little effect on the ground level in terms of legibility and maybe the experience. Paths and nodes for pedestrians had no visible effect over the urban form. On the contrary, blocks and roads ensured continuity of the grid form. As a result, the form quality is based on a visual scope composed of identical slab monuments/landmarks.

Although the Bijlmer was planned as an attraction to high- and middle-income families with comfort equipments like central heating, the area gradually became isolated and famous for vandalism, crime, and unemployment. The links between residential blocks and the city center – the walkable distances- were so far from each other that the spaces between public transformation and other facilities were

⁵¹ Mingle, K. (Producer). (2018, February 20). *Bijlmer (City of the Future, Part 1)* [Audio podcast]. <https://99percentinvisible.org/episode/bijlmer-city-future-part-1/>

unsafe at night. Such problems seen in the Bijlmermeer are grouped by Wassenberg in three categories: (1) incomplete construction due to financial issues, (2) uncontrollable spaces like common entrances and corridors (as Oscar Newman considered), and (3) poor marketing. Discouraged by all those problems, most of the residents abandoned the settlement in ten years. Between 1992 and 2008, one-quarter of the flats were demolished, the rest was renovated in scope of a large rehabilitation project (Projectbureau Vernieuwing Bijlmermeer 2008; van Kempen 1986; Wassenberg 2006).

Architect Rem Koolhaas, whose firm OMA is involved in the project, has insights about spatial quality of the remaining blocks. The “omni-visibility” of the blocks and the incapability of the ground level activities are illustrated in a juxtaposition of the traditional urban form and the scale of the blocks. Almost covering the central Amsterdam, the areas in between the blocks have exposed a missed opportunity to enhance the urban quality by means of built structures. Between two extremes of the fine grain of the old city and the coarse grain of Bijlmer, the firm considered settlement within the patterns of a grid. Their solution, thus, starts from this level to reconcile the urban form with new urban activities.

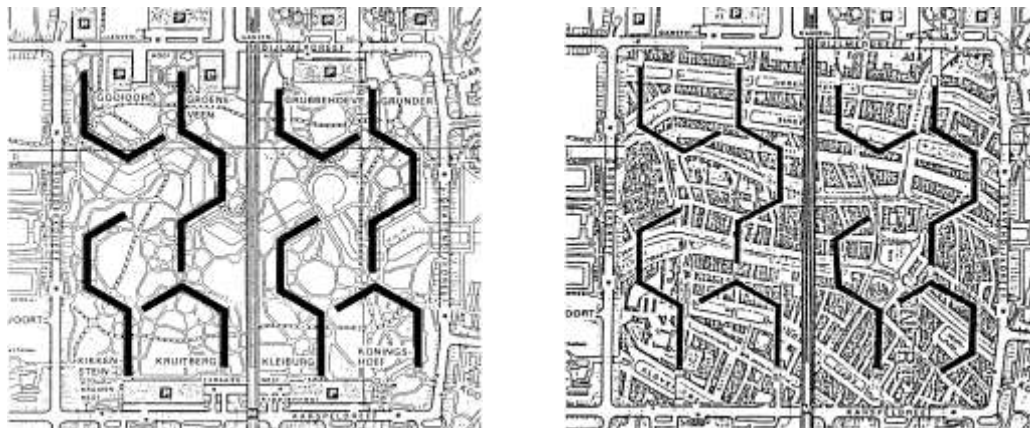


Figure 4.17. A part of Bijlmermeer slabs on-site and projected on central Amsterdam
Emphasis added to left image.

Source: OMA, Koolhaas and Mau 1998, p. 882



Figure 4.18. Site plan of Bijlmermeer
Blocks highlighted in red show demolished blocks.
Source: PVB 2008



Figure 4.19. Figure-ground expression of the current condition of blocks (in partial)
As seen on the west side of the site, which is gained after demolition, the linear
block has been replaced by perimeter block typology.
Source: Author

4.4 The Barbican Estate: The Last of the Brutalist Utopias

Architects	:	Peter “Joe” Chamberlin, Geoffry Powell and Christoph Bon
Construction	:	1965-1982
Project Area	:	16 hectares
Unit Quantity	:	2.000 dwelling
Population	:	4.000 people (appx.)
Location	:	London, England

The Barbican Estate is a large brutalist housing complex located on a vast bomb site in central London. Like other examples that have been introduced so far, the story of Barbican complex starts with various attempts⁵² taken by local councils to rebuild the city in the aftermath of WWII. When much of the city was flattened by the bombs of the war, authorities in London found an opportunity to rebuild with radical ideas. Today, in the heart of financial and business districts and amid London’s historical layers, the Barbican Estate is a significantly important project.

With the housing shortage worsening in the 1950s, the Corporation of the City of London decided to renew the site and to fund a development plan. Among various proposals, Chamberlin, Powell and Bon (CP & B), who have established their reputation by winning the competition for adjacent Golden Lane Estate, were commissioned. After the designs were finalized in 1959 and the first residents moved in 1969, the Barbican Estate bit by bit emerged as an ambitious housing complex and culture center until it was officially opened in 1982.⁵³

⁵² Examples include The Spa Green Estate (1950) by Berthold Lubetkin, The Alexandra Road Estate (1968-78) by Neave Brown, and Brownfield Estate (1963-67) by Ernő Goldfinger.

⁵³ Various proposals and revisions regarding the development of the project, as well as further details on the construction of the blocks, and flat modules can be found on www.barbicanliving.co.uk website, which is a 20-year-old blog page voluntarily run by one of the residents of the estate (Accessed in December 2020).

The project is accepted as one of the most renowned projects of Brutalist housing architecture and a good example by the proponents of post-WWII modernism (Frearson 2014). Furthermore, it is also considered a representation of a utopian ideal for inner-city living, not only in the sense of an alternative accommodation model but also in the potent mix of social vision and historical layering. Unlike usual tenants of the council estates (the British social housing program), the Barbican Estate was aimed at middle-to-higher professionals, who were also to be the end-users. As inner-city living was not a prevailing option for housing after the war, the architects also introduced a rich cultural program, which would make the project an exclusive enclave with a high-quality development along with multi-storey flats (Sandes 2015). In scope of this metropolitan vision, the architects managed to merge a concert hall, a theatre, two schools (one is adjacent to the culture center), exhibition halls, a botanical garden, an existing historical church and the remains of the city's old walls into a mixed-use building program.



Figure 4.20. Site plan of the Barbican Estate

Source: Frearson 2014. Retrieved from <https://www.dezeen.com/2014/09/13/brutalist-buildings-barbican-estate-chamberlin-powell-bon/> (Accessed on December 2020).

The scheme of the estate comprises a great variety of residential types with around a hundred different modules: 13 terrace blocks (up to 13 storeys), 3 tower blocks (43 storeys), 3 “courts” (up to 7 storeys) and 2 linear slab blocks. Roughly summed up to two-thousand dwelling units, each block has a different spatial layout. Given

the size and density of the project, it can be imagined that site development required a complex circulation functioning on multiple levels and creating connections both vertically and horizontally. Resultantly, residential realms and social facilities are connected via a pedestrian precinct. Per et. al. (2013) explain that there are five strategies of mixing residential uses with other functions for the layout:

The first was direction-related, mixing long blocks with towers. The second was typology-related, combining high-rise access shafts with interior passageways, with communal staircases for two dwellings per floor, and terraced houses. Thirdly, the option of the semi-open block aligned to the road in some cases and in other cases integrated into the network of pedestrian walkways. Fourthly, mixing private, semi-public, and public open spaces with water features, vegetation and hard pavements. Finally, mixing education and culture-related uses into the residential programme with a drawing power which reached far beyond the sphere of the local area (Per et. al. 2013, p. 216).

Ravetz notes a dominant feature of the British council housing is their geographic isolation. Although Barbican is not a council project, she sees a similar approach in the Estate in its *bruté* exterior which makes it difficult to find the cultural facilities without the guidance of a yellow line painted on the ground (Ravetz 2001, p. 178). As its name implies⁵⁴, the Barbican estate resembles a fortress within the city. Since the project site was an entirely wiped out area, it was a tabula rasa for an entirely new urban plot with intended recreational facilities and protected artifacts. With this freedom, CP & B could create a sound urban design concept that defines the public, private and communal areas and a vision that separates the vehicle traffic from pedestrians. This key strategy is not only an exact reflection of the

⁵⁴ The *Wordsworth Dictionary of Phrase and Fable* defines the barbican as follows: “the outwork intended to defend the drawbridge in a fortified town or castle. Also an opening or loophole in the wall of a fortress, through which guns may be fired” (Brewer 2001, p. 94).

CIAM principle but also an alternative approach to creating a sense of exclusive community inside of the walls of the estate. Having removed the traffic out of the picture, the architects created a safe environment with a building image that is impenetrable on the outside. With the solid exteriors of the estate, they discouraged wanderers to get to the inside and presented rich landscapes and plazas that can be purposefully discovered on foot (Frearson 2014).



Figure 4.21. Bird's-eye view of the Barbican Estate in 1974

Source: ©Historic England Archive (Aerofilms Collection). Retrieved from www.standard.co.uk/news/uk/stunning-archive-images-show-the-changing-face-of-britain-from-the-sky-a4138291.html (Accessed in December 2020).

This idea of pedestrian realms was mostly based on a “podium” concept, which raises walkable paths and creates fully open *pilotis* that unify this modernist aesthetic through the estate. The estate is run by these podiums at multiple levels and directions. Acting ramps, highwalks or bridges, they connect different zones to each other. Above the podiums there are platforms by two oblong ponds and private gardens. Given the necessity of integrating housing with a cultural center, the architects of the Estate had to develop a fine-tuned solution on section of the site as well. To elaborate, the large volume underneath the terraced blocks could be utilized by the help of structural elements that can be also the rear wall of the

concert hall. This attribution alone shows its success in integrating different uses on a vertical dimension. These unique features make the Barbican far from a complex project that cannot be comprehended at a single glance.

As the planning strategies and spatial organization show, the grouping of the blocks creates a sculptural megastructure and “a city within city” approach (Branscome 2020, p. 223). Given a two decades’ time span between the beginning and the end of the project, it can be argued that the Team X influenced CP & B in terms of a high density of residential blocks and intermediate spaces engaging at different levels. These pedestrian, public and private realms within this vast residential complex are the mediums of a new way of inner-city living that engage with elements of urban form, i.e. streets, squares, districts. However, it also gives architectural storytelling with historical references associated with the plan and façade design, which is closer to the postmodern discourse. For example, the semi-circular turrets of the old wall can be seen on the roofline or at the Frobisher Crescent as a visual motif. The balustrades of the high walks impersonate the medieval castles. There is also an effort to develop a novel solution to modern isolated blocks with other references driven from historic public space typologies, like Italian piazzas. For instance, the site plan indicates the proximity of the residential blocks defining various courtyard-like areas. This image is strengthened either with lush greenery or with the historical landmark.

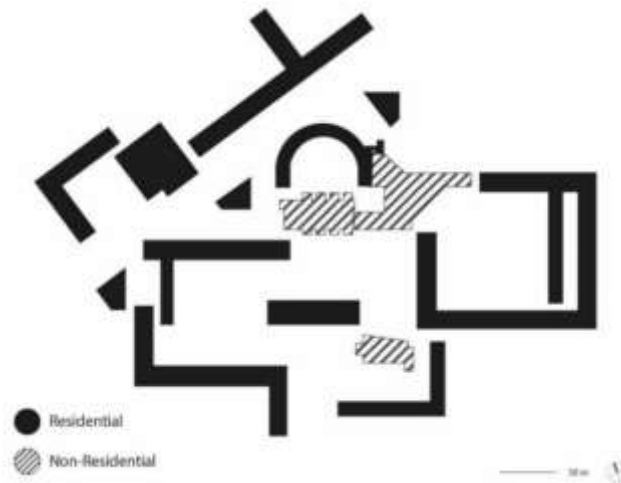


Figure 4.22. Figure-ground expression of the Barbican Estate blocks

Source: Author

The Barbican Estate is the pinnacle of the British version of post-war modernism, which also brought estates like Park Hill (Sheffield) and Robin Hood Gardens (London) to life. Although this particular example did not serve the poor as its contemporaries, it is well recognized that its architectural vision is no less than the others. During a massive housing boom in the country, the plot of the estate became a real estate value. Its unique approach to mass housing could manage to mediate between the existing silhouette of the surrounding and the tallest residential point blocks, manifest as a landmark for the city silhouette. Furthermore, it can be argued that within its 20 years in construction, ideas that influenced the architecture of the Barbican Estate also indicate the paradigm shifts that happened in the housing discourse and architectural theory.

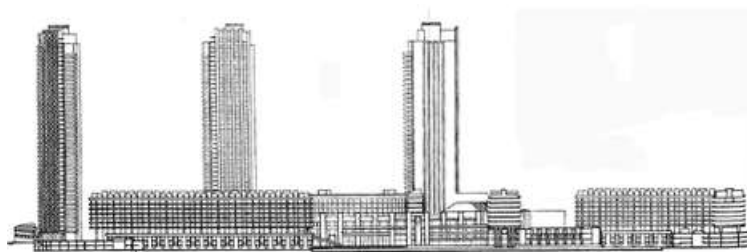


Figure 4.23. East-west elevation of the Barbican Estate

Source: Frearson 2014. Retrieved from <https://www.dezeen.com/2014/09/13/brutalist-buildings-barbican-estate-chamberlin-powell-bon/> (Accessed on December 2020).

4.5 Gallarate 2: A Microcosmic Community Ideal

Architects	:	Carlo Aymonino and Aldo Rossi
Construction	:	1967-1972
Unit Quantity	:	440 dwelling
Population	:	2,400 people
Location	:	Milan, Italy

The Gallarate 2 (officially titled Monte Amiata Housing) residential complex is a satellite development quarter that aimed to ease the post-WWII housing shortage in the country. The residential complex consists of five buildings. Four of them were designed by Aymonino and one by Rossi. There are two eight-story blocks, a long three-story block and a much shorter three-story block that are all connected by a fifth structure. Aymonino's dwelling units have various typological models. The units are aggregated horizontally and stacked upon at various recessions. Thus floor plans transcend any standardization. Out of 100 models, there are 440 units in total, which shape the buildings' façade as dynamic as possible with this richness within. It can be regarded that the most important element of Aymonino's design is this articulation in heights and depths, form and elevation, and volume and circulation. With his part, Aymonino broke the prevailing expectations about social housing and employed an idea of a small city to a much smaller scale. As the city has a wide spectrum of buildings with different styles, typologies and sizes; his units held a similar approach. Rossi's part, on the contrary, opts for uniformity and singularity. The façade is composed of the repetition of the same oblong window frames aligned on the same flat surface area. The units with mirror reverse plan are strung on the longest block of the estate.

Luca Molinari states that the architects' proposals represent a design approach that looks for "the autonomy of architecture as a plastic, ideological, contemporary monument which could 'save' Italy's peripheral areas" (Molinari 2014, p. 270). Such a strong mission indicates full expression of the elements involved with architecture, theory, and city, which are the subjects both architects are renowned

for. As known, Aymonino and Rossi are among the renowned figures of the Neo-Rationalist approach, which advocates for tracking the history to find a monumental expression of architecture molded by the collective memory of the city. This project was gained world-wide fame regarding the architects' experiments in finding alternative ways of designing housing for a microcosmic community and also taking precedents from the elements of classical architecture and planning. Furthermore, Rossi and Aymonino are architectural figures whose studies on type and urban morphology are well recognized. The co-impact of *Unité* and Team X is argued in various sources with regard to their eclectic approach where the elements of housing and public activities are mingled together to reflect a total urban infrastructure. Therefore, the built environment is assessed as a result of a unified, self-preserved and independent community design overlapping architectural functions as part of an urban structure (Tzonis & Lefaivre 1997; Molinari 2014; Thorp 2017).

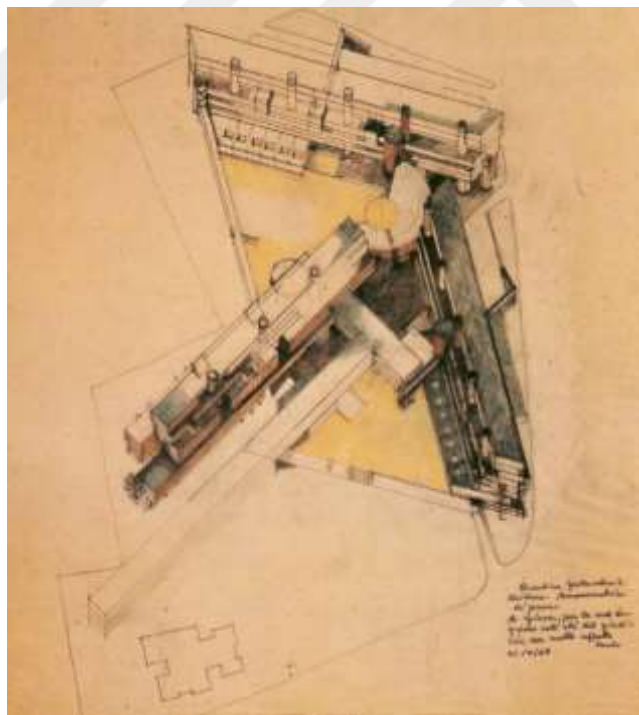


Figure 4.24. Isometric drawing of Gallarate 2 by Carlo Aymonino and Aldo Rossi
Source: *Carlo Aymonino* 1996, p. 22.

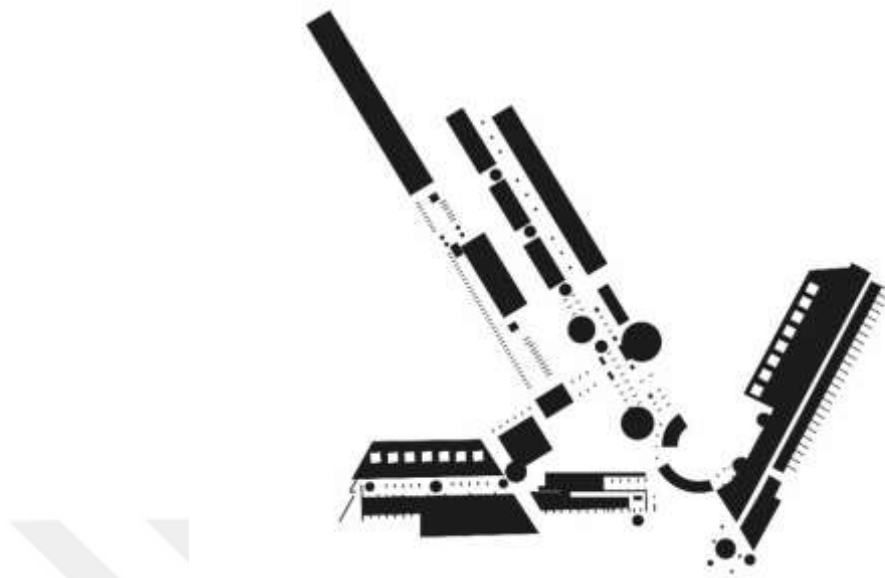


Figure 4.25. Figure ground expression of Gallaretese 2 ground floor plan
Source: Author

Spatial elements of this urban structure are sensed at the ground level the most. A large diamond-shaped plaza lies under the buildings. One the most notable design aspect of its layout is the geometrical homage to the planning of a Greek or Roman city. To name some: colonnades, cylindrical posts/columns, triangular ‘agoras’, an amphitheater, ‘stoas’ (cellular retail shops). Covered, semi-covered and open walkways with colonnades cuts, divides or extends the boundaries of the plaza; orients residents to the public spaces. Especially the colonnade that supports some portion of Rossi’s block acts as a single interior corridor which gives reference to a simpler rational architecture. Spaces like loggias and balconies become the thresholds of outdoor to the indoor. Internal corridors, pedestrian paths, and small squares serve as activity places too and the amphitheater becomes a central reference for the overall image of the buildings. Although not comprehensible on plan, colors accompany the spaces; yellow, blues, and reds adorn the walls colonnade paths.

In the last section of the estate, Aymonino's vivid blocks are contrasted by the pure geometric block of Rossi. In this single and linear housing extension, a simple and repetitive design approach is followed by which rigid and basic geometries

embodied a sense of modern monument (Molinari 2014). On the upper levels, the corridor/street layout puts dwelling units on a narrow row. In a sense, the blocks of the two architects of Gallarate 2 show contrast and duality; the white block demands order and rhythm whereas the rusty red block juxtaposes typologies and formal alterations.

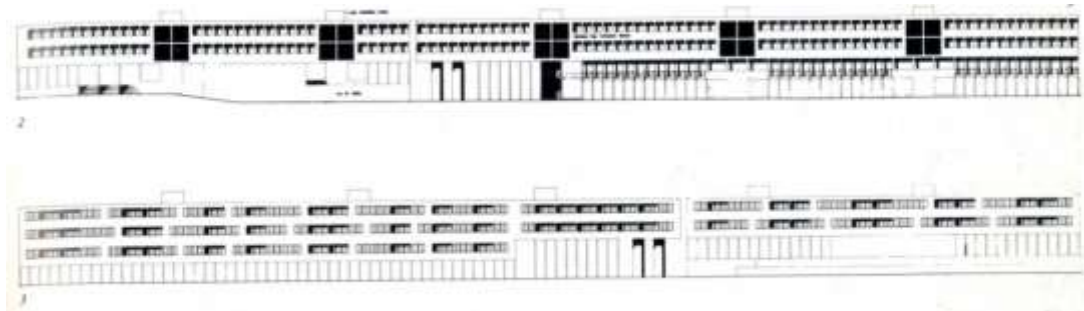


Figure 4.26. Elevations of Aldo Rossi's block
Source: Aldo Rossi 1991, p. 77

The place characteristics of the Gallarate 2 have differences that cannot be comprehended on the master plan. To Manfredo Tafuri, Alexandra Brown and Andrew Leach state, the two blocks are the noise and the silence; a code for pure architectural autonomy and diversity of earthly reality. This interplay between both parts is called “a form of *modus vivendi*” –a way of living (Brown & Leach 2012, p. 172-174).

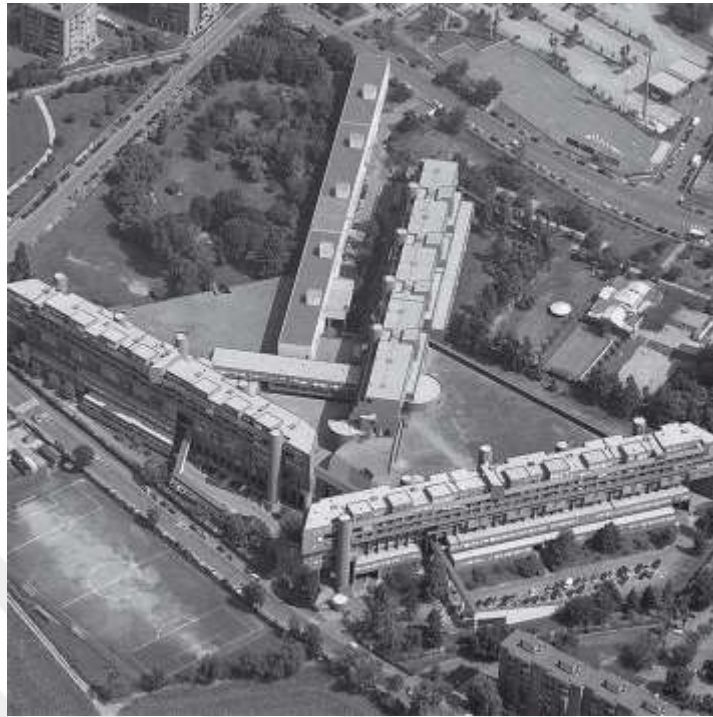


Figure 4.27. Aerial view of Gallarate 2 (1960)
Source: Fernández Per (2014)

The Gallarate 2 is a reference model for interfering with the aggregative processes of the suburban community residence and leading them to urban recognition. Overall, there is the idea of a programmatic disorder; even the vivid use of colors is expedient to insert variations in a landscape that is uniform and devoid of attraction. Its mega form presents complex and typologically diverse residential slabs. The ground level acts as linkage medium between the dwellings and other facilities of ‘the city’. The richness in the attempts to create places of interaction and movement fails to mingle with the rest of Gallarate district (as architects anticipated). The autonomous presence exemplifies the limitations in imitating the complexities of urban conditions. Yet the same autonomous architecture promotes a sense of community by means of strong symbolic elements that evoke an attachment and orientation. The estate encloses the members of the community and keeps the serenity of non-urban character with its monumental presence.

4.6 Byker Housing: A Participatory Alternative to Modernist Paradigm

Architect	:	Ralph Erskine
Construction	:	1968-1982
Project Area	:	80 hectares
Unit Quantity	:	1.200 dwelling (appx.)
Population	:	9.500 people (appx.)
Location	:	Newcastle, England

Newcastle upon Tyne (Newcastle for short) is a city that is known as “the powerhouse of the Industrial Revolution” due to the heavy-engineering and shipping facilities that started in the 19th century. Byker project is situated on the east side of this industrial city where mineworkers were residing in. The condition of dilapidated dwellings caused a series of municipal actions that aimed for a ‘slum clearance’ yet the strong sense of community of the residents resulted in the commencement of a participatory process.⁵⁵

⁵⁵ To quote Trancik, “The existing neighborhood consisted of rows [...] appealing condition, without indoor bathrooms, hot water, trees, or outdoor space. Living conditions were extremely congested, but high density and economic hardship had developed a strong community feeling and close personal relationships. Over the years, Byker had become virtually a self-contained enclave within the larger city (Trancik 1986, p. 209)”.



Figure 4.28. The Byker Wall in construction next to the old Byker housing
Source: Abrams 2003, p. 121

The 1960s, the years when the demolishment started, also indicate an emerging sensitivity towards the variety of lifestyles as opposed to the ongoing modernist paradigms. Therefore, as Robin Abrams (2003) states, the story of the project is based on a debate about the necessities to rebuild former housing in the city and concerns regarding the results of Neo-Brutalist housing projects both in England and the US so far. To Abrams, knowing the attention that the project might draw, the decision-makers were in favor of expanding the confines of the mainstream architecture and responding to a crowded group of residents who have requested to continue to live there. Thus they commissioned architect Ralph Erskine who had a prior experience working on master plans and similar residential projects with desired features in Sweden (Abrams 2003, p. 117).

Peter Blundell Jones and Eamonn Canniffe (2007) note that before Erskine's involvement to the project there were principal decisions regarding the key attributions and the process of the project. Firstly, given the anxiety of the community in Byker, public participation was an agreed concept even though it was not that common for council housing. Secondly, developments plan for Byker included a motorway (which was never built) meant less of the existing land for

relocating the residents. Therefore, stacking more people on the given site and making a kind of a barrier against the motorway was a design priority. This requirement suited well with Erskine's architectural vocabulary that is inspired by Swedish modernism and Arctic architecture. Thus the famous Byker Wall block emerged as a clear edge that acts as a climatic shield; protecting the inland from the cold hence the noise of the motorway (Blundell Jones & Canniffe 2007, p. 142). Definitely, the focal point of the estate is 'the Wall', a high-rise megastructure with streets-in-the-air type along with low-rise row houses built to its south. Its dramatic gesture is not only the most notable part of the estate but also the city. The Wall has a terraced development varying from three to eight storeys. The brick exterior of the wall, which is facing to the north, has small windows and openings. Whereas the other façade, facing to the downhill on the south, is colorful and has large windows and indigenous design solutions with inexpensive materials; such as corrugated sheet covered porches, metal panels, wooden banisters, timber cladding.



Figure 4.29. Aerial view of Byker housing by Ralph Erskine
Source: © Jonathan C.K.Webb. Retrieved from www.webbaviation.co.uk

The Wall contains hundreds of units but the overall settlement has approximately 2000 units designed as interlinking communities. These communities and the Wall building are in touch via intermediate spaces that can be found both in the galleries of the high-rise block and also in the small courts and gardens of the low-rise part.

Apart from its alternative approach to uniformity in mass housing design, the concern for connecting between different parts of the community is another important characteristic of the Byker estate. While it follows the contours of the local topography in the general scheme of housing groups, it creates a network of local linkages that tie up different resident groups within small walkable neighborhoods. Furthermore, the linkages are also intact with the existing and new landmarks, i.e. churches, schools, an old bath, greengrocer, etc. This priority is considered by Blundell Jones & Caniffe as a result of the widespread post-war politics that separates the traffic from the pedestrian (Blundell Jones & Canniffe 2007, p. 149-150). With such attention to context as well as to the integration of public and private realms via varying types of mass housing, the Byker development represents an intended break from the orthodox Modernism towards a more democratic and pluralist approach.

Trancik mentions Byker as a case study in the scope of the spatial urban design theories. Unlike the large scale of the other cities he examines, the case of Byker is important for its challenge of preserving particular qualities of small community in the scale of a neighborhood. He notes that as Erskine had preferred to save the identity of the neighborhood, the resulting design had no particular interest in a homogenous spatial organization but retaining the sense of place with its existing density, scale and landmarks (Trancik 1986, p. 208-211). This decision was not a surprise as the community in Byker strongly resisted leaving their roots. Therefore, the project was conducted with a “plan of intent” rather than a master plan, which guaranteed the residents to maintain the characteristics of the neighborhood without sacrificing the local identity of housing groups and ties of the families (Blundell Jones & Canniffe 2007, p. 142). As a well-known “socially responsive architect”, Erskine’s success with Byker Wall is explained by Alison Ravetz (2001) as follows:

One of the things that made Byker outstanding when it was designed for a huge site cleared in the 1970s was the architects’ insistence on retaining a church ruin and bath house, relics of the old working-class neighborhood that had been

condemned before they arrived on the scene. Features of their design were deliberately open-ended and flexible, to accommodate a future evolution that might go in various different ways. Open spaces were designed to be suitable for a number of uses and could be changed to suit residents' patterns of living, and a number of scattered 'corner shops' evocative of the past were intended to add life and identity (Ravetz 2001, p. 180).

In the light of all these information, a figure-ground expression of the site plan (Figure 4.30) gives a clear definition of directional blocks setting up a harmonious morphological vocabulary. As seen, the grandeur of the wall not only puts a clear "banner" image but also a structure that links different parts of the estate to the remaining component of the settlement. The continuous edge is multifunctional: it captures the north wind and blocks the noise of a highway and railway, and defines the exit from and arrival to the site. Underneath the wall edge, there is a dense housing texture which replaced the former row houses. As Trancik indicates, these blocks have different layouts that respond to the topography and existing street network by linking spatial paths and visual orientation (Trancik 1986, p. 216).



Figure 4.30. Figure-ground expression of Byker Housing
Source: Author

Considering the rational order of the previous decades' mainstream architecture, it can be claimed that the spatial organization of Byker aimed to respond to its new environment in an alternative way coupled with the complex forces obtained from the histories of its people. This intention is also explicit in the uneven outline of the Wall building in its variety in different levels along with different sized decks and balconies. On the contrary to the monumental and rigid geometry of modernist high-rises, parts of the slab block gradually descend towards the low-rises and subtly empower the wall image in the overall silhouette. In a sense, it fulfills its task as a protective barrier.

4.7 Friedrichstadt Block 10: Return of the Perimeter Block with the IBA

Architect	:	Aldo Rossi
Construction	:	1981-1987
Unit Quantity	:	83 dwelling
Location	:	Berlin, Germany

A decade after Gallarate 2, Aldo Rossi won the 1st prize of a closed competition which had been organized in scope of a city-wide architectural exhibition in Berlin in 1981. The exhibition was *Internationale Bauausstellung* (IBA), a globally acclaimed urban renewal project that aimed to rejuvenate the post-WWII West Berlin. Its general theme covered a comprehensive urban redevelopment plan integrated with the designs of famous architects and planners of the time. IBA'84/87⁵⁶ is the occasion by which Aldo Rossi has concerted his design philosophy of collective memory, critical reconstruction, and form making through

⁵⁶ Originally planned to be held in 1984 but postponed until 1987. Retrieved from architectureinberlin.wordpress.com/2008/04/12/the-berlin-iba-1987/ (Accessed on September 2020).

two housing projects. According to Morris Adjmi, who is a former colleague of Rossi, this prize made Rossi's career take a turn to wider international recognition (Adjmi 1991).

The beginning of the post-war years constitutes a milestone for the foundations of contemporary Berlin. Started with *Interbau 57*, the international building exhibitions started to be organized by architectural and planning organizations about the future of urban planning and the contemporary forms of housing. The main inspiration to IBAs was to be an open-air show-off of a collection of new buildings from the minds of 'high-modernists as opposed to the conservatism of East Berlin.⁵⁷

Decades after a successful start with the vision of a new western future, a new generation of architects came into the opinion that the international modernism the functionally zoned districts dominated by roads and urban blocks were doomed. One of the main reasons for this ideological change is Berlin's political division that became more concrete with the construction of the Berlin Wall after the *Interbau '57*. Not only did this outcome cut the city into two distinct parts; but also sparked the desire for an idea of a unified Berlin by means of rehabilitation of the city. Hence, the building program of the IBA departed from integrating the city and its social and historical features and inserted these concentration fields into two construction groups namely *Neubau* (construction of new) and *Altbau* (rehabilitation of old). In favor of returning to traditional architecture and city planning, the directorate of the IBA aimed to contribute to the city's building stock and renew the social infrastructure by keeping Berlin's prosperity as a principle (Miller 2008; Hohensee 2010; von Petz 2010).

⁵⁷ "IBA meets IBA: An Exhibition of the 100 year-old history of International Building Exhibitions" *IBA Hamburg*. Retrieved from http://www.iba-hamburg.de/fileadmin/Mediathek/00_allgemein/IBAmeeetsIBA_en.pdf (Accessed in June 2015).



Figure 4.31. The urban development plan of the IBA superimposed on the existing urban fabric

The borderline that delineates the rendered West and the undisclosed East is the Berlin Wall

Source: Kleihues & Klotz 1986

As Karl Friedhelm Fischer (2014) states, the agenda of the IBA coined two key concepts in the scope of the *Altbau* and the *Neubau*, which involved “careful urban renewal” and “critical reconstruction”, respectively. Each term was the result of activism against modernism and considered the mainstream mass production of housing as threatening to diminish much of the traditional stock while demolishing the old tenements’ house and displacing the residents. So new rules of the architecture and planning went back to the principles of before the war and aimed for restoring “the historic pattern of streets and public spaces, parcels, building

lines and heights, urban density, social mix, as well as a mix of actors and architects” (Fischer 2014, p. 268-269).

The *Neubau*’s experiments with new forms of architecture without losing the connection with the past meant retaining the fine-grain of the old Berlin but also required a critical approach in order not to replicate the destroyed buildings on the vacant areas. Rediscovery of the city with the traditional forms of social housing and its planning presented a sense of urban identity, which the IBA strongly advocated for, and manifested in the residential buildings that would characterize an open-air laboratory of new building culture.

The goal of creating an ideal laboratory that would confront Berlin’s past and urban problems was aimed to be achieved by the aid of architects like Aldo Rossi, Robert Venturi, Carlo Aymonino and James Stirling. Their consultancy framed a very clear principle idea: “the anonymous towers of Modernist inspiration and the notorious *Mietskasernen*⁵⁸ of the late 19th century were both rejected, even though the decision to retain the existing street pattern heavily conditioned the possible options for new solutions” (Ghirardo 1996, p. 110-112). Within this framework, Aldo Rossi and his team developed a design proposal for a specific site in the *Südliche Friedrichstadt* (southern Friedrichstadt) region where an apartment block numbered 10 is integrated with the emerging urban context. The project’s main intention was to showcase the lessons learned from the mistakes of the Modern Movement and to reinstate the block periphery (Kleihues & Klotz 1986). Like many other destroyed districts in Berlin, the southern Friedrichstadt was an important part of the center of the city. The reconstruction of this area had the goal of increasing the population and keeping the region available for central business, cultural and administrative functions. With the help of new building complexes,

⁵⁸ (gr.) *Mietskasernen*: rental barracks; a nickname for five-story apartment blocks with courtyards.

which had commercial uses on the ground floor, the infrastructure facilities would be centralized onto the street level.

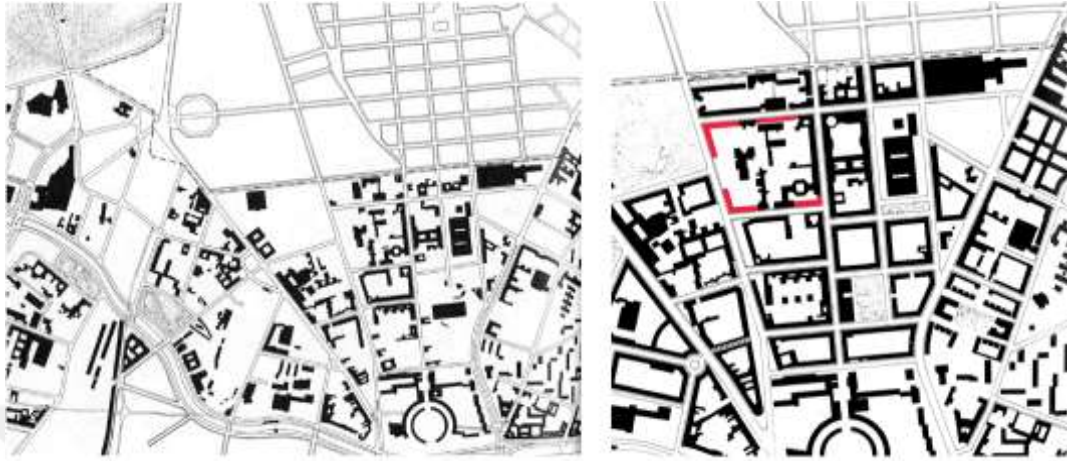


Figure 4.32. The urban pattern in the *Südliche Friedrichstadt* (before and after)
Emphasis added to the image on right to highlight the Block 10 and other building
additions within the perimeter block

Source: Bodenschatz & Polinna 2010, p. 82-83

Rossi's housing project Friedrichstadt Block 10 is a 7-storey high, *Neubau* housing. It is a corner block attached to the existing buildings and takes its part as the closure of the existing perimeter. It shares the urban block with residential and non-residential buildings on the edge, and a school campus in the courtyard. In similar to the traditional multi-storey perimeter housing typology in the district, the Block 10 has a gate entrance that invites residents/visitors to a courtyard. The L-shaped block is divided by rhythmical circulation towers with glass-steel triangular roof coverings and square openings on the façade. The strict composition of the floor plans is connected to the ground utilizing separate vertical circulation cores. In the settlement, there are commercial spaces solved on the ground floor, where colonnades designate a path alongside the street. Most importantly, there is a massive nodal white column on the corner of two major streets, making the spot recognizable (Hohensee 2010; Ghirardo 1996; Miller 2008).

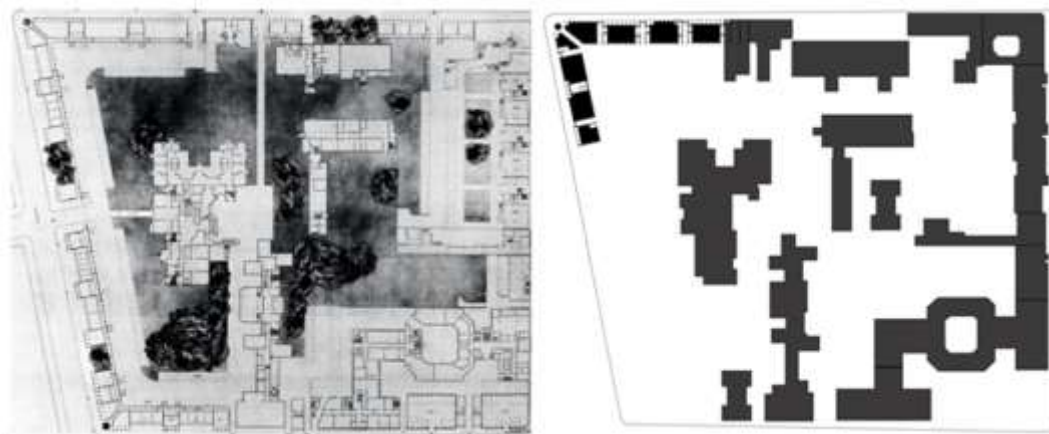


Figure 4.33. Restoration of the block edge towards new construction
The image on the left shows the intended plan whereas the image on the right illustrates the current condition with the solid-void expression of Aldo Rossi's corner block.

Source: Arnell & Bickford 1985, p. 253 (left); Author (right)

As previously seen in the Gallarate 2, Rossi's focus on an autonomous form approach collects artifacts from history. A tension between space and time is generated by the memory in his search for finding a 'type' in similar, universal and permanent characteristics of the city. Since he acknowledges his perception regarding typology as "the analytical moment of architecture", the geometry and formal references become key elements of the design.⁵⁹ The corner block embodies systematic repetitions of masses and spatial components on both sides. The simplicity in order of how the programmatic units on plan repeats, is easy to follow and not repressive as modernism once asserted. Triangles, squares, cubes and cylinders of the building form, provide unity in geometry as consistent and stark attributions of the architecture of the project.

⁵⁹ In *A Scientific Autobiography*, Rossi explains this as "unfolding life" within the space by trying "to stop the event just before it occurs". In the traces in his memory he binds an individual identity by which a city would be remembered through its architecture. The white column implies the Filarete's column in Venice –a symbol of an architecture that had been exhausted by the life surrounding it (Rossi 1981, p. 6; Rossi 1982, p. 41).

Within the case of Block 10, it can be stated that the IBA '84/87 set standards that were recognized worldwide for a renewal of inner-city residential areas. With the new buildings incorporated into the historically evolved urban morphology urgently needed living, recreation and workspaces were carefully integrated. The streets were revived as an important aspect of urban living. Open spaces, public, semi-public and private green spaces were developed to match the context of the buildings and to offer a wide range of uses in urban density.

4.8 Scalar Comparison of the Selected Examples

This chapter aimed to examine a selection of key mass housing experiments displaying emblematic solutions that marked new paradigms on the urban morphology of various European cities. The precedents re-captured within this objective provided a palette of typological variations throughout a timeline that coincided particularly with the turmoil of post-WWII in terms of the challenges in designing new settlements as well as the spatial practice of urban housing. Although their paradigmatic impacts on the architectural theory and urban design have been stated in each example, it would be highly informative to bring them together and concretize their unique spatial organization characteristics via a scalar comparison. As mentioned each case has its individual attributions in terms of design and sense of place but a visual juxtaposition would stimulate perceiving these mass housing designs regarding their relative magnitudes and spatial composition.

With this motivation, Figure 4.34 below presents all cases at the same scale. The figure succeeds in illustrating their dimensions in the urban form by collecting them at the same canvas. The figure suggests the similarities or contrasts between the typological characteristics of low-rise and high-rise housing resulting in different urban patterns.

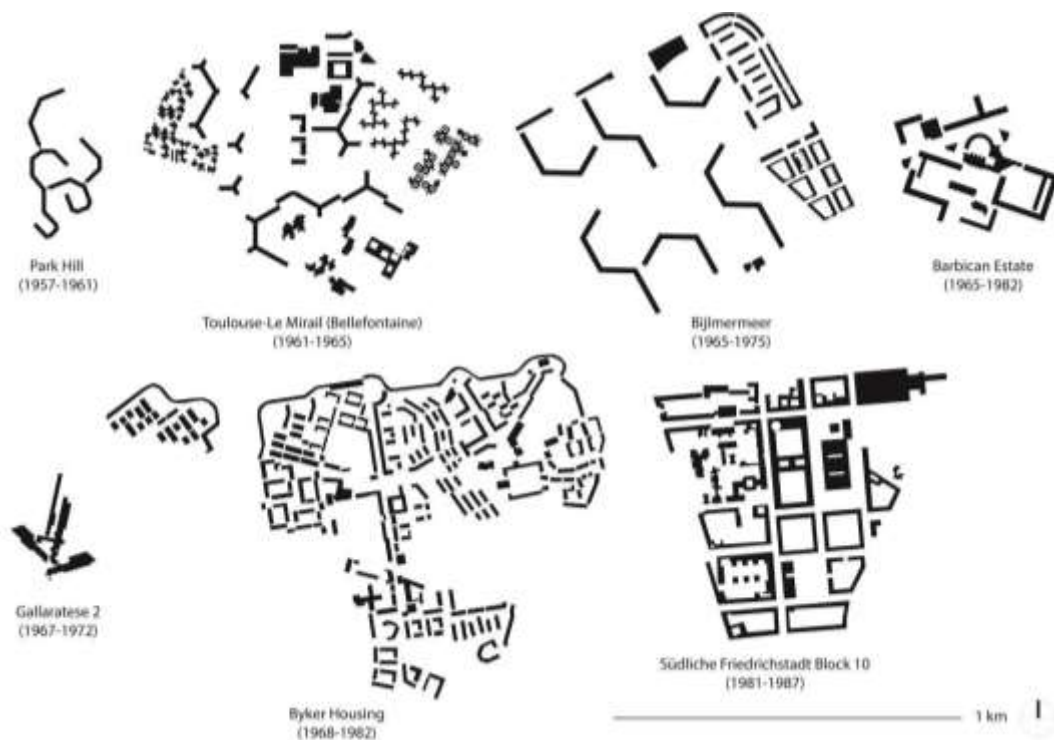


Figure 4.34. Scalar comparison of the pioneers

Source: Author

The second figure compares the relative heights of the precedent cases (Figure 4.35). The resulting image stresses the linear block/superblock typology as a dominant paradigm and as a concrete wall image in the urban silhouette. Both in terms of the brutalist aesthetic on the façade design and the maximum number of floors (which varies from 7 to 13), the cases of Bellefontaine, Park Hill, and Bijlmermeer show their typical characteristics. Although the Barbican Estate shares this image with its linear blocks, it easily separates itself from the others with three skyscrapers that have 43 floors. The Byker Wall (the rest of the settlement has been purposefully discarded from the figure), Gallarate II, and Block 10 manifest their individual approaches that aim to respect human scale within this comparison.

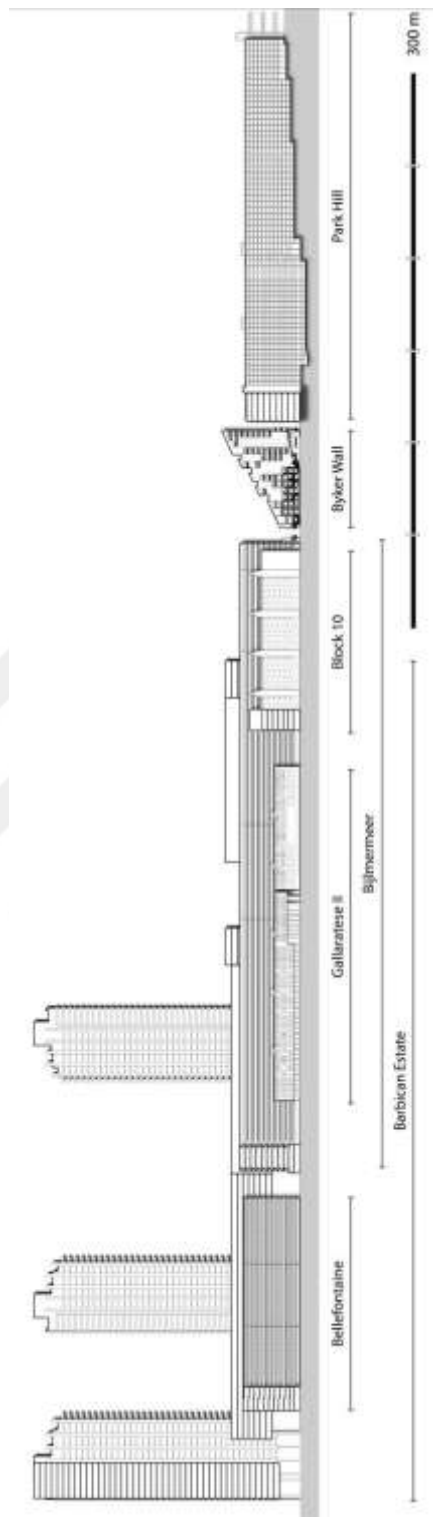


Figure 4.35. Scalar comparison of the precedent cases (height)
Source: Author

Owing to these precedent cases, now it is possible to follow an integrated approach regards to three urban design theories and to examine mass housing environments further with a piece of prior knowledge on the mainstream architectural paradigms that have contact with them.



CHAPTER 5

BATIKENT AS A COLLECTION OF MASS HOUSING EXPERIMENTS: A SPATIAL ANALYSIS BY MAPPING

With the conceptual framework and the precedent cases examined in the previous chapters, the dissertation moves forward to the analysis of Batıkent cooperative housing settlement with this chapter; in order to chart and map the spatial organization and urban image elements of the cooperative housing environments. The analysis elaborates on the aspects at various scales and illustrates the urban design theories that are brought together by Trancik through an architectural lens.

5.1 A Cooperative Experiment as a New City

The commencement of Cooperative Law in Turkey marks the beginning of numerous collaborations between local governments and private occupational organizations to meet the housing demand of the related parties as part of a nationwide housing program. With this governing model that was initiated in 1969, cooperatives emerged as the alternative undertakers of mass housing settlements.

The year 1969 marks the start of the Ankara Municipality's studies for 1990 Master Plan that gave importance to orient the urban macro form towards new sub-centers.⁶⁰ As Baykan Günay (2005) explains, the consequences of the urbanization

⁶⁰ As defined by Daniel P. McMillen (2001): "a reasonable working definition of a subcenter is a site (1) with significantly larger employment density than nearby locations that has (2) a significant effect on the overall employment density function" (McMillen 2001, p. 448-449). Apart from the employment parameter, subcenters can be regarded as the urban areas that bear a central quality for major socio-cultural facilities.

observed during the 1970s, triggered the plan for two reasons: (1) the increase in population reaching the geomorphologic limits of regular development and (2) the overgrowth of the squatters in the north, east, and south of the city. Consequently, the west of Ankara had to be the new development corridor.⁶¹ First called “Akkondu”⁶², later Batıkent, the project became the first of the intended satellite towns⁶³ that would comprise regular housing settlements on the west and a course of action against squatters (Günay 2005, p. 87-88, 100).

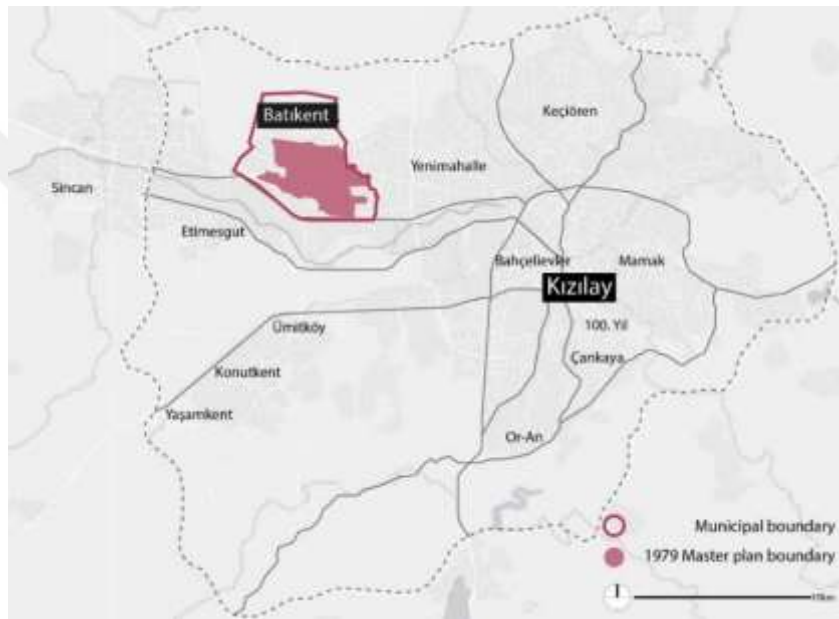


Figure 5.1. Location of Batıkent in Ankara
Source: Author

⁶¹ According to Günay: “the intention of the plan was to create new residential and employment possibilities at the fringe of the city in favor of the middle classes [...]. The plan foresaw a mono-directional growth along the western corridor and initiated the expropriation of large tracts of land in this direction. The plan initiated the growth of the city towards the fringe, leaving the core to the power of the previous [master] plans [of Ankara] (Günay 2012, p. 8).

⁶² The name Akkondu was suggested as an alternative to slums (gecekondus) but later abandoned because a project that aimed to create a healthy living environment and a qualified city part was found to be inconvenient to remind shantytowns (Bayraktar & Girgin, p. 202).

⁶³ ... followed by Sincan, Eryaman, Elvankent, Çayyolu.

Under the circumstances of the alarming need for accommodation and the increase in squatters, Ankara Municipality followed a new understanding that urged collaboration between local administrations and civil institutions, and dwellers. The realization and success of Batıkent as a new settlement project, therefore, relied on the financial support as well as the management of public properties, social and technical infrastructure, and of course construction. The project had main principles that have shaped its planning, organizational model, and implementation which also included financial sustainability program. After the necessary funds were accumulated via various sources including the government allowance and a European grant, a central union would be able to manage the savings of associate members, organize the settlement, construct, deliver, sell off the housing units, in order not only to invest for more but also initiate new housing projects elsewhere. Since such a complex set of operations required efficient cooperation between the governments, the civic society, and residents, a group of cooperatives based on the professional unions (engineers, workers, and civil servants, etc.) established Kent-Koop with 13 founding cooperative members (Sayın 1984, p. 50-51).

As stated by Erol Sayın (1984) from Kent-Koop, the overall provision model was innovative for it was based on replicability. This was an important aspect because such an approach to housing did not require any unique solution that was bespoke for a particular location. Indeed, Batıkent became an inspirational scheme for building new settlements via different unions of housing cooperatives located elsewhere. Examples include İzmit, Antalya, and Edirne (Sayın 1984). Targeted to cope with rapid urbanization and housing acquisition shortage for low and mid-income groups, soon this model became the largest cooperative mass housing project built in Turkey (Keskinok 2005; Çoban 2012).

5.1.1 Batıkent Master Plan

The site of the project was planned to be a populous (over 200 thousand people) settlement on a vast (1034 hectare) expropriated land. Çağatay Keskinok (2005)

mentions three master plan designs prepared by different teams, which were led by Bülent Berksan, Turgay Ateş and Suavi Akansel, for different stages of the process. He explains that Berksan's plan (Figure 5.2) was prepared to initiate the expropriation of the land. It proposed general land use zones and an urban center without specifying any housing types or principles of spatial organization (Keskinok 2005, p. 127). Kadri Atabaş (personal communication, March 3, 2021), who is the former general coordinator of Batıkent project, notes that this version was a tentative solution caused by immediate actions to start official processes with Ankara Municipality and underlines that it did not function as a base map for the final master plan.



Figure 5.2. The tentative master plan drafted by Bülent Berksan and his team
Source: Keskinok 2005, p. 127

An earlier version of the plan (Figure 5.3) gives more details regarding the blueprints of the macroform. As stated by Keskinok, Ateş's development plan adopted the advocacy planning, which prioritized the low-income housing and three different housing types: planned/regular housing (*derli konut/gündüzkondu*), credit housing (*kredili konutlar*), and rental housing (*kiralık konutlar*). He also

explains that the plan is based on the neighborhood unit (*komşuluk birimi*) concept, which was planned to accommodate 5000-7000 people. The smallest unit of this organization is the residential environments with 1000 people accommodating in a cooperative block. Within the range of 100 meters distance, groups of cooperatives were planned to be in proximity to social and recreational facilities. Since this version of the master plan defined the urban structure for residential and non-residential areas, the transportation and linkage systems were also more or less pinned. Each housing type had its own growth scheme and was put in stages based on the principle decisions regarding their types of users, financial/construction implementation models and strategic locations (Keskinok 2005, p. 130-135).

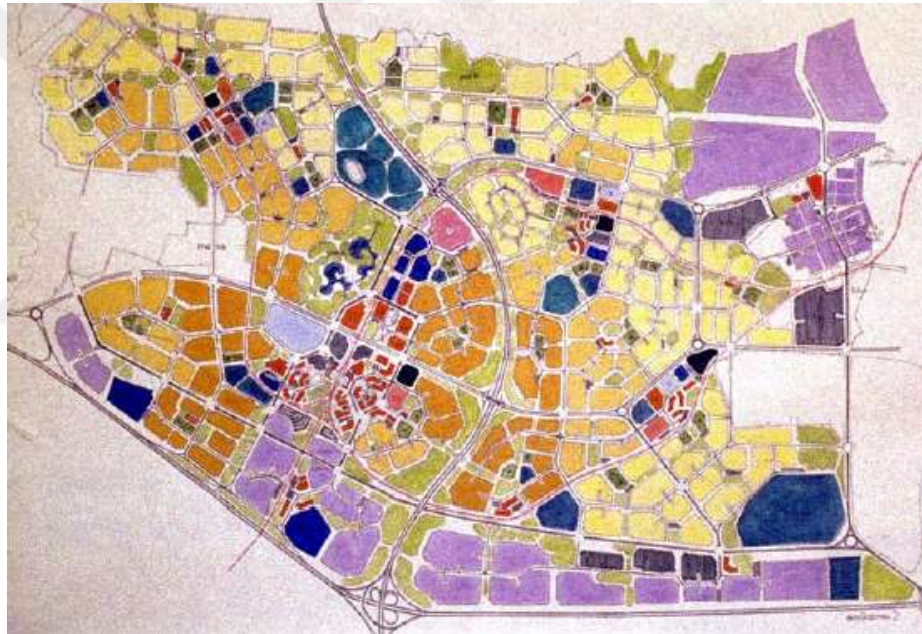


Figure 5.3. The earlier version of Batıkent master plan drafted by Turgay Ateş and his team

Source: Keskinok 2005, p. 127

The approved master plan (Figure 5.4) determined Batıkent's urban macroform of today. Decisions regarding the zoning, housing densities and their distribution are relatively similar to Ateş plan. According to Keskinok, however, this version created an eclectic environment rather than a coherent one that manages the spatial organization of the cooperative settlements with the urban form. He mentions that

the magnitudes of cooperatives were the major agents that shaped the spatial organization and design. As a result, each cooperative settlement had its own particular design and planning decision (Keskinok 2005, p. 138).

Here it should be emphasized that the planning teams commissioned within the Ankara Municipality conducted the preparation process of the 1979 Master Plan. In this regard, Ateş and Akansel teams correspond to two teams that took part in the process successively. Atabaş states that the major turn from Ateş plan to Akansel plan is the differences in the zoning decisions regarding the housing density areas and public service areas.



Figure 5.4. Batikent 1979 master plan drafted by Suavi Akansel and his team
Source: Kent-Koop 1979^a

After the master plan got approval and expropriations were commenced, Kent-Koop's operations started as an umbrella establishment, which was responsible to finance all technical, architectural, and planning articles of the new settlement together with associate cooperatives and the municipality. The plurality and affordability in housing options, by which workers, officers, tradesmen, and other social classes with fixed incomes could be served by their needs, were the central idea.

The Union (1979^b) states that the motivation for this policy was implicit in the urbanization process of post-WWII Turkey when the urban population was used to be half of the total population. Ankara's urban development was failing because seventy percent of the population was still living in squatters. Furthermore, issues like land speculation and inadequacy of central construction organizations curbed the development of housing projects in better quality. Thus, the Batıkent project held the opportunity to experiment with creating healthy and organized living environments from scratch by envisioning an entirely new urbanized settlement. The planning, design, and construction of cooperative houses resulted from a participatory process where the representatives of residents decided on the types, sizes, and numbers of dwelling units projected in 4 stages to be completed in 8 years (Kent-Koop 1979^b; Kent-Koop 1979^c). Particularly the first stage aimed at urgent prevention of the foreseeable growth of OSTİM industrial zone on the north-east via the first groups of easy-to-build housings and at financial sustainability via the credit and rental housings (K. Atabaş, personal communication, March 3, 2021). In other words, each implementation stage indicates pieces of the ongoing progress of financially and spatially sustainable urbanization (Figure 5.5).

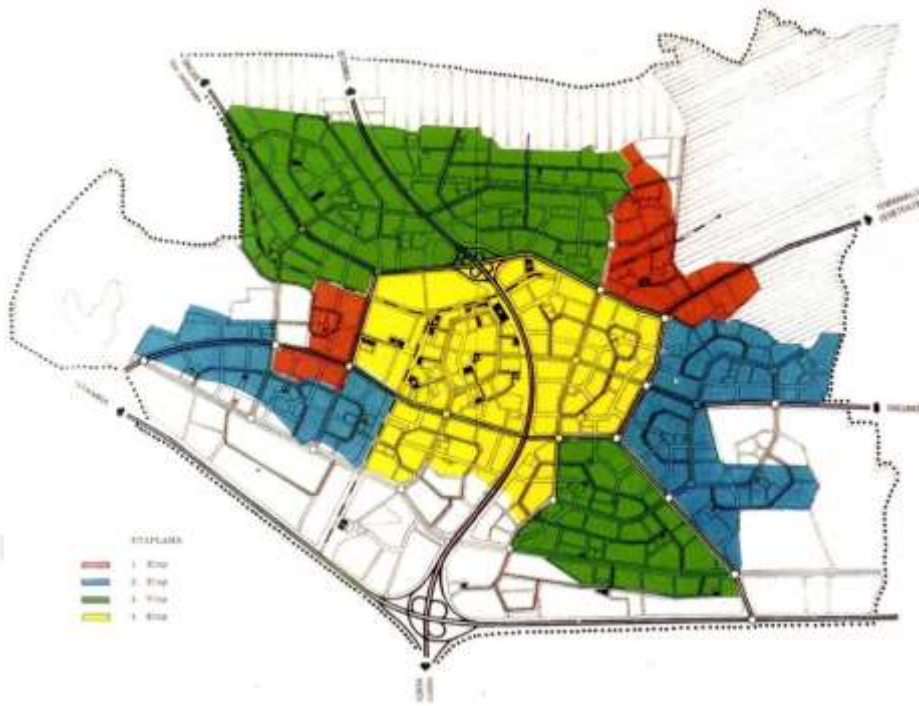


Figure 5.5. Construction stages of cooperative housing settlements
From the first to the last: Red (1st), Blue (2nd), Green (3rd) and Yellow (4th)
Source: Kent-Koop 1979^a

5.1.2 Urban Structure

The master plan of the cooperative settlement sets a hierarchical organization centered on various settlement units that range from “housing surroundings”, “neighborhood”, to “districts” and “centers”.⁶⁴ As Erol Sayın (1984) explains the principal design, the smallest settlement unit around a cooperative block is the housing surroundings (*konut çevreleri*) that have a population of 5.000 within 5

⁶⁴ Cross research between different publications by Kent-Koop has shown that there is inconsistency in terminology regards naming the elements of the organization. Some sources use ‘neighborhood’ for ‘housing surrounding’ (5.000 people) and ‘quarter’ for a ‘neighborhood unit’ (10.000 people) (Kent-Koop 1979a, p. 151; Sayın 1984, p. 50). To avoid confusion, the dissertation has simplified these terms and changed the quotations when necessary.

cooperative blocks and must include a basis school.⁶⁵ When two surroundings combined, a neighborhood (*mahalle birimi*) occurs with a population of 10.000 and includes shopping centers and schools. Five quarters make a district (*semt*) which has a market place, medical center, maternity center, high-school, post-office, and a police station. The quarters also have cultural, commercial and recreation facilities that serve to a population of 50.000 (Kent-Koop 1979^a; Sayın 1984). Finally, there is a Central Business District (*Batıkent Kent Merkezi*) (CBD) serving to the entire community at the heart of Batıkent.⁶⁶ It should be noted that as the location of CBD is a dry riverbed, the master plan envisioned a low-rise development in order to prevent dense construction and urban rent and to protect the area as a recreational zone.

Figure 5.6 below shows the distribution of some of the aforementioned types of uses as planned in 1979. In the following, an article presented in 1985 and published by Murat Karayalçın (1987), who is the founder associate and former president of Kent-Koop, summarizes the functional hierarchy of centers (Table 5.1), quantitative distribution of the settlement units (Table 5.2) and the hierarchy of uses (Table 5.3).

⁶⁵ *Temel eğitim okulları* that combined elementary and middle schools, kindergardens, and nurseries (Sayın 1984, p. 154).

⁶⁶ The total programmatic distribution of the CBD and the settlement included “commercial areas, offices, schools of primary and secondary education, sport centers with an Olympic swimming pool, sport areas, a hospital of 600 beds, cinema, theater, opera and concert halls and an Islamic Culture Center. The city center further includes recreation areas with a small artificial lake and the conjunction of the subway and the suburban train.” (Kent-Koop 1994, p.14).

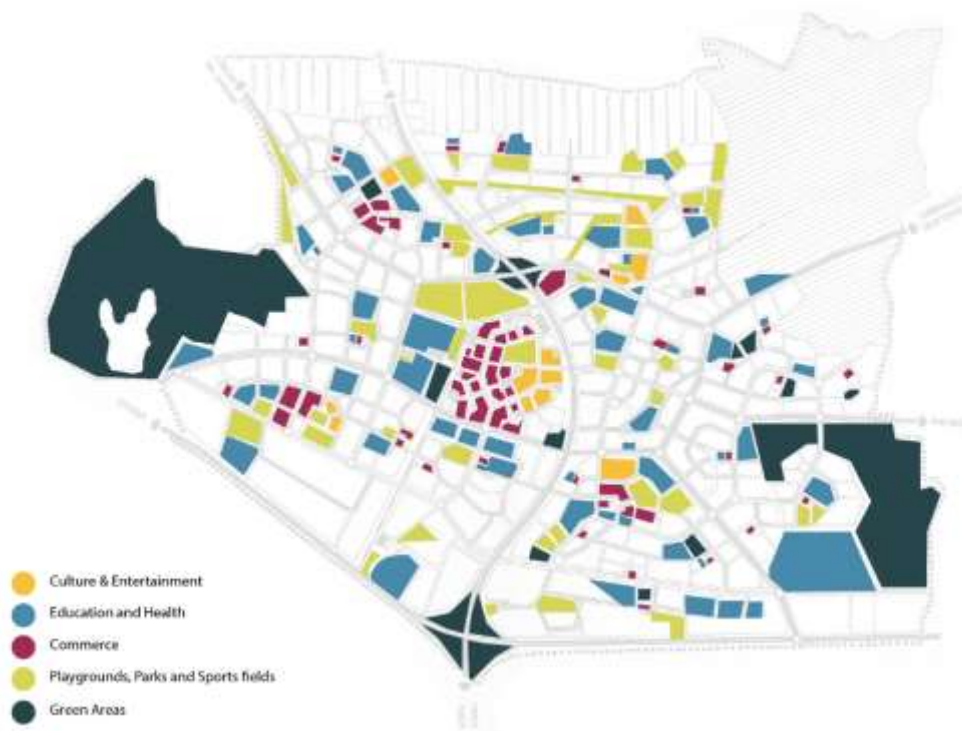


Figure 5.6. Batikent's land use map (1979)

This map is a superimposition of a series of maps whose originals can be found in Appendix A

Source: Redrawn by the author after Kent-Koop (1979^a).

Table 5.1. Functional hierarchy of centers in Batıkent (1987)

Source: Karayalçın 1987, p. 296

Unit	Cooperative Center	Housing surrounding center	District Center	Batıkent Center
Main Function	Urgent, daily shopping	Daily shopping, individual needs	Shopping center, administrative or private offices	Commercial, socio-cultural and administrative function
Number of Stores	2-4	10-15	50 +	100 +
Other Functions	-Social facilities, -Children's parks	-Nurseries, -Cultural-recreational facilities, -Playgrounds	-Lycée, Adm. -Services, -Health facilities, -Mosque	-Trade school -Center of Islamic Culture, -Planetarium -Hospital, -Recreational areas, sports fields
Population Served	1.500-2.000	5.000	50.000	250.000
Diameter of the area served (m)	100-150	500-750	1.000	2.000

Table 5.2. Distribution of settlement units according to quantity, total area, and population (1979)

Source: Kent-Koop (1979^a)

	Quantity	Area (m2)	Population
Housing Surrounding	40	12.750	5.000
Neighborhood	20	58.000	10.000
District	4	141.500	50.000

Table 5.3. Hierarchy of uses in Batikent (1987)

Source: Karayağın 1987, p. 296

Unit	Population served	Type of use				
		Education	Health	Culture Recreation	Public	Commerce and services
Batikent	250.000	-Trade Lycée -Private Lycée	-Hospital	-Islamic Culture -Planetarium -Sports fields -Recreational areas	-Municipal Service Bldgs -Terminal -Fire-House -Transportation center	-Small-Scale Industry -Main Center: Wholesalers Stores, Banks, Hotels, Restaurant
District	50.000	-Lycée	-Health Home -Maternity Center	-Mosque -Cinema -Theater -Children' s park	-Municipal Service Bldgs -Post Office -Police Station	-District Center: Shops, Wholesalers Marketplace, Office Buildings, Eating Places
Neighborhood unit	10.000	-Fundamental schools		-Children' s park -Parks -Playgrounds		
Housing surrounding	5.000	-Nursery	-Polyclinics	-Cultural and recreational facilities -Playgrounds -Children' s parks		-Neighborhood Center Shops Supermarkets
Cooperative block	1.000			-Social services areas		-Cooperative Center: Newspaper stall Grocery Greengrocery

5.1.3 Housing Types

Concerning the housing types, two categories imply different approaches. The first category considers housing as an economic issue and groups them according to the residents' purchasing power value. One of Kent-Koop's design reports states that a major portion of the housing stock is allocated for privately owned houses, and rest is spared for rentals. The privately owned group has two sub-types; "*gündüzkondus*"⁶⁷ and credit-houses. The *gündüzkondus* are targeted for low-income users who are poor, migrant, or displaced from squatters. They are two-story and 100 sq. m large units; whose total quantity is 18.000. The credit houses are targeted for middle-income users. They are five to ten story and 85-100 sq. m large units, whose total quantity is 28.000. The rental houses are built for high-income residents and investors, who might be interested in renting the houses out in longer-terms. They are 4.000 in total and located in the sub-centers and the city center (Kent-Koop 1979^a, p. 96-97).

The second category is based on three groups of dwelling unit density. The density types are associated with specific housing typologies; matching each user group to an affordable model thus providing a social homogeneity (Atıcı 2017; Bayraktar & Girgin 2010). Ali Cengizkan considers this as a "utopian vision" by which Batıkent facilitates affordable property ownership and a collective movement (Cengizkan 2005). The typical attributions of this category are summarized best in an article compiled by Semih Eryıldız (1995), where Kent-Koop provides further information about the housing types in Batıkent. Accordingly, the dimensional and typological specifications of the housing groups are:

⁶⁷ The term seems implying a counter-argument to *gecekondus*, whose literal meaning is 'built overnight'. The *gecekondus* are alternative "irregular" housing solutions built the poor in the outskirts of the city. In common usage, they are low cost garden type houses that were constructed before dawn without having been noticed by the authorities next day. It can be considered that with the *gündüzkondus*, it was aimed to promote a regular housing development for the target group.

- Low-density housing areas (350 people/ha): Two-story duplex blocks (which are the *gündüzkondu*s) located in the North, North-East and South-East of Batıkent. These cover a 230 ha area in the “row”, “twin”, and “group” (courtyard) typologies.
- Medium-density housing areas (425 people/ha): Five-story blocks (which are the credit houses) located in the North-West of Batıkent. These cover a 165 ha area.
- High-density housing areas (600 people/ha): Ten-story blocks (which are the rentals) located in the center of Batıkent. These cover 102 ha area.⁶⁸

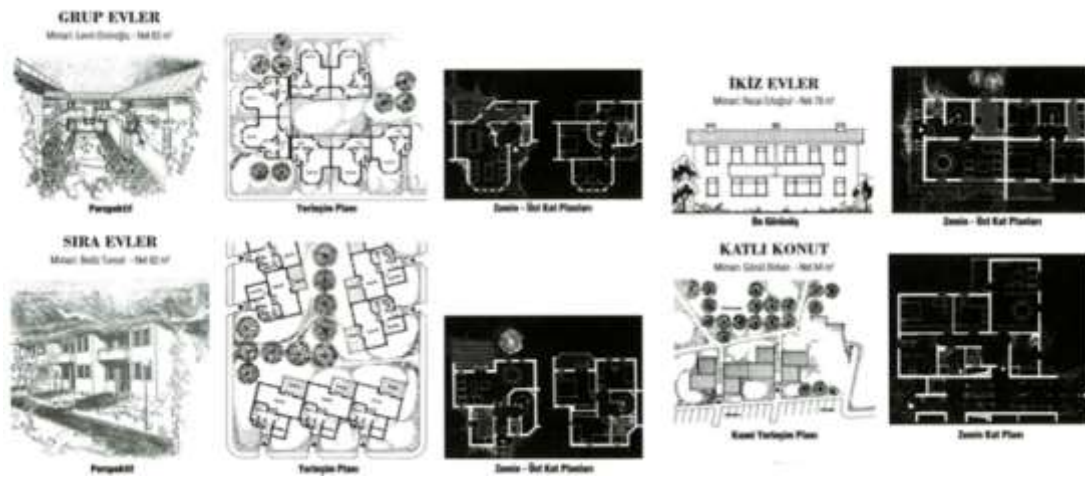


Figure 5.7. Four examples from the type housings in Batıkent
Source: Eryıldız 1995, p.27

Figure 5.8 below shows the distribution of some of the aforementioned housing types with different density groups as planned in 1979. The low-density housing is grouped on the north, north-east, east, and south-east directions, which define the geological limit and the growth periphery of Batıkent (Kent-Koop 1979^a, p. 155). The high-density group is concentrated around the CBD, where a small number of low-density housing is planned.

⁶⁸ Various samples covering different density group and typologies are provided in Appendix C.



Figure 5.8. Batıkent's three groups of housing density (1979)
 The original of this map is provided in Appendix A
 Source: Redrawn by the author after Kent-Koop (1979^a)

In an interview conducted by architects Hasan Özbay and Merih Karaaslan, Murat Karayağın states that over the course of the first construction stages, Ankara municipality had given single plots for attached buildings (i.e. rows, or zero lot-lines) for these areas, which forced Kent-Koop's architectural office⁶⁹ to develop model houses as practical solutions (Karayağın 1988, p. 72). Acknowledged as the 'first-generation projects' of Batıkent, these were urged to meet the quantitative goals, therefore the qualitative aspects were not a priority. However, the second-generation projects coincide with a change in the municipality's decision that

⁶⁹ That included between 1979-1984; architects Füsün Ökse, Orhan Aydemir, Kemal Kurtul, Osman Uluer, Bülent Hatipoğlu, Engin İlgün, Recai Ertuğrul, Levin Emiroğlu, Nevbahar Bozkurt, Nihat Külahlı, Gönül Birkan, and Bediz Tuncel and draftsmen Satılmış Özkılıç, Hüseyin Bağcı, Eser Budak, Mehmet Yıldırım, Fikret Üzgün, and Zerrin Şenol (Kent-Koop 1984).

allowed Kent-Koop to allocate an entire urban block per cooperative. In other words, small blocks comprising several parcels and mostly planned for low-density housing, were later combined allowing for larger planned area developments. To Karayalçın, this decision gave the office an architectural flexibility and an opportunity to conceive and to plan not only the house alone but also the needs of its users. At the end of these two generations of projects that covered the years 1979-1984, a third-generation of projects that would finally prioritize the urban and environmental design are mentioned as a future objective (Karayalçın 1988, p. 72; Kent-Koop 1984).

According to Özbay, the housing settlements (which now can be considered with the second generation) enlarged the scale of architectural design from the plot scale (i.e. conventionally the smallest unit of the urban residential planning) to the urban block scale however, the housing densities were very high when compared to the gross density of Batıkent, which was 242 people/ha then. With the extremely tall and high-density blocks and the aforementioned house types, he states, the result was “an unhealthy physical environment consisting of fifty-five thousand repetitions of very congested and several residential types” (Özbay 1988, p. 69-70).

5.1.4 Plan Revisions

Within the reach of this study, three master plans have been obtained from publications affiliated with Kent-Koop. The first, which is Akansel plan, is found in many of the Union’s early publications (Figure 5.4). Owing to Karayalçın’s aforecited article, a master plan revision has been attributed to the 1980s (Figure 5.9). And the latest revision from a book (1994), which was published by Kent-Koop, shows another revised version of the original plan (Figure 5.10). Seemingly, some principal decisions on the functions did not remain the same as Batıkent continued to grow.



Figure 5.9. Batikent master plan (c.1980s)
Source: Karayalçın 1987, p. 295

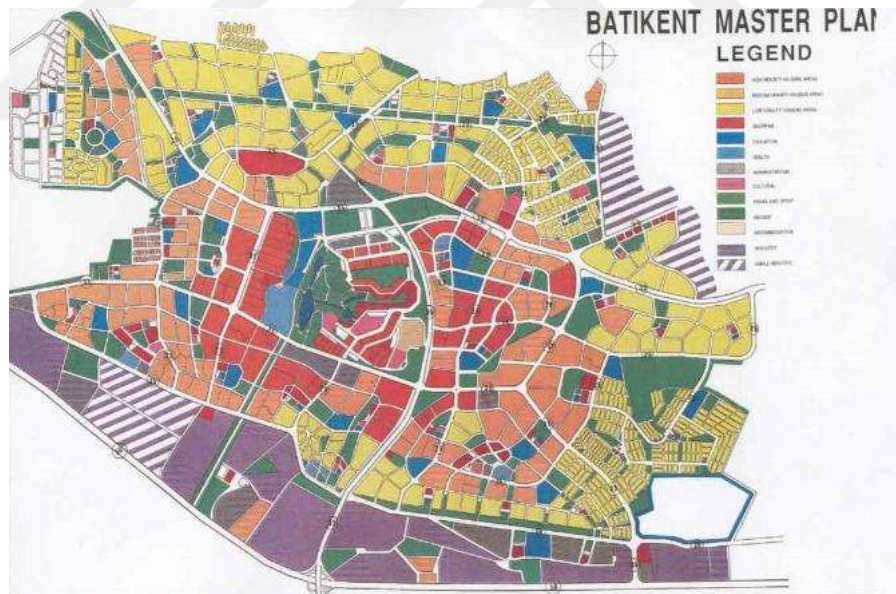


Figure 5.10. Batikent master plan (c.1990s)
Source: Kent-Koop 1994

When these three versions superimposed and changes marked on the 1990s version, the major differences are in the layouts of various urban block layouts (Figure 5.11). The areas surrounded by dash lines show the parts where urban

block and plot organization changed entirely. The parts hatched with diagonal lines show enlarged areas that designated the new residential plots and commercial and recreational areas. This tells that the principle decisions regarding the hierarchical structure have been modified to make room for more accommodation with mid-and especially high-density blocks and large-scale commercial activities. It can be also seen that the low- and medium-density areas have grown in number and spread over the fringes. The high-density not only increased in number but also overflowed towards the region. Although the majority of the residential character seems reflecting the known low, medium, and high-density areas; the central area has become a high-rise zone on the contrary of what was intended. Finally, the lateral axis with the solid coloring is a new green belt that divides the entire settlement horizontally and alters the main artery, i.e. Batikent Boulevard, which has been also altered with the opening of new arteries.

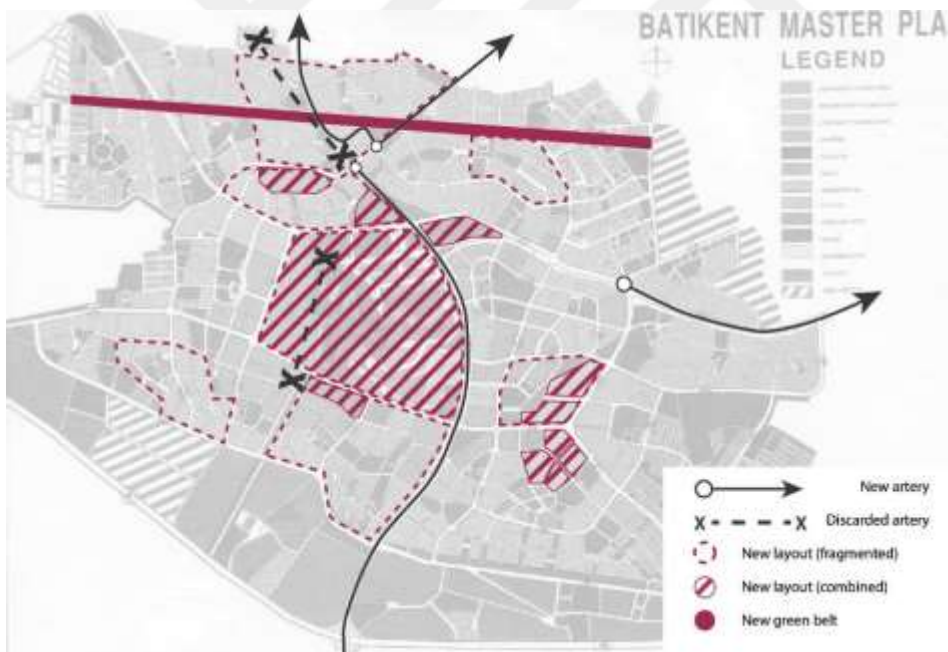


Figure 5.11. Major differences in the last master plan
Source: Redrawn by the author on the master plan (c.1990s)

The most striking difference among the three master plan drawings is the change in the planning of the CBD. As originally stated in official briefs, the center had both commercial and business, and residential units. To “save the center from being a

dead center”, a housing proposal for around 10.000 people was brought up above the first two floors of these blocks (Kent-Koop 1979^a, p. 155-156). However, the plans show that the commercial units have gradually diminished over the years. By the comparison of these plans, it can be also stated that a new silhouette raised the urban center over the years. It has persistently kept the hospital but discarded an Islamic Center (marked as C in the middle graphic) from the last map with other social facilities (e.g. the planetarium). Concerning this change, Karayalçın mentions that the rationale behind leaving the CBD’s design to the very last stage of the project was the aspiration to organize a competition⁷⁰, by which architects could assess this area as an urban problem after Batıkent’s character as a residential environment unveiled (Karayalçın 1988, p. 73). Owing to the last draft of the master plan, however, it can be observed that the business and commercial functions are eliminated from Batıkent center, which has made the idea of CBD more and more irrelevant to the original zoning. As the number of high-density housing settlements gradually increased over the revisions, the center rather has become a residential district. Starting with the second revision recreational functions (facilities around a large park and artificial water elements) have been integrated into the land in-between of these settlements.⁷¹

⁷⁰ Although relatively limited to a building scale, an architectural competition for the Islamic Center was organized in 1985. This competition will be briefly mentioned again in the upcoming part.

⁷¹ A massive central urban park project that includes an amusement park, artificial lakes, recreational and sports facilities in the area has been announced. Until very recently, the current state of this project was unknown in spite of the press release of the conceptual design and renderings (Sözcü, 2021). The conceptual design and video presentation prepared by the commissioned landscape design firm can be viewed at <http://studiobems.com/portfolio/mirsa/> and https://www.youtube.com/watch?v=on0Z_jx7OkE (Accessed on January 2021).

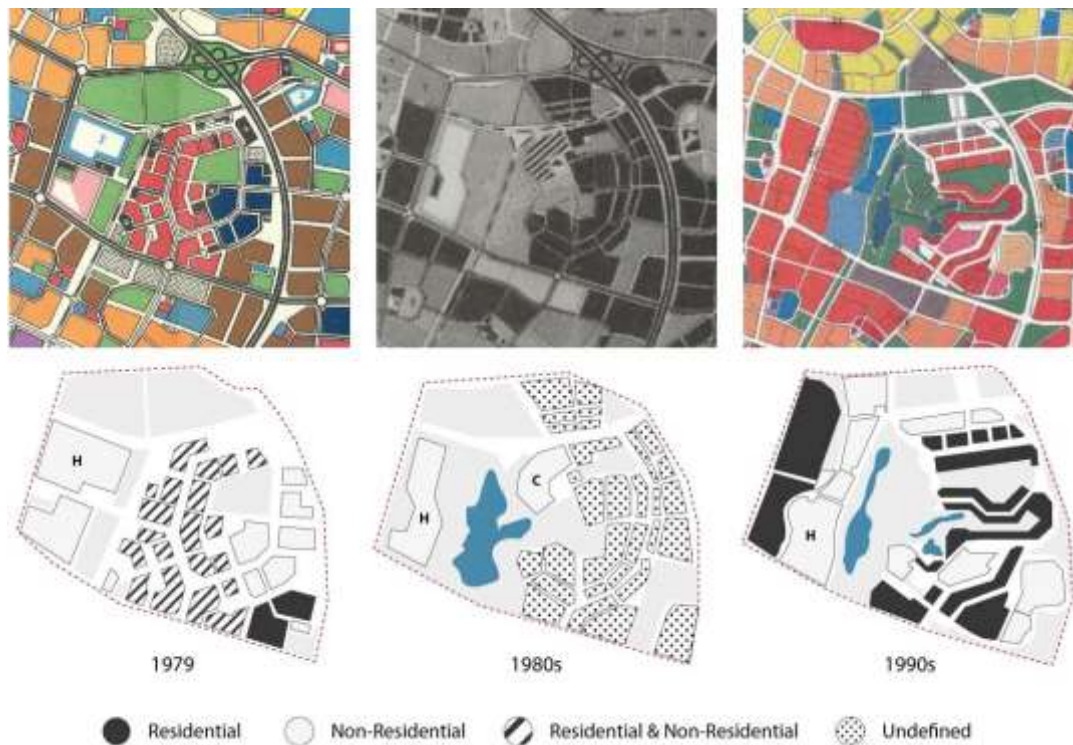


Figure 5.12. Three planning phases of Batıkent center (1979-1990s)
Source: Author

The process between 1979 and 1990 plans has roughly illuminated the fundamental conditions regarding the hierarchy and spatial organization of the cooperative settlements within the urban blocks. To sum, they explain the relationship between the residential and non-residential parts of the urban form but fail to reveal the spatial organization of cooperative settlements with regard to their architectural properties and environmental planning. Having prepared to reflect the zonification, the plans do not present a comprehensible explanation regarding the characteristics of the buildings as the elements of urban form and its identity. Therefore, an up-to-date glance at the current condition of the urban morphology of Batıkent and its relationship with the housing environments is needed.



Figure 5.13. Current land use map of Batikent
Source: Author

5.2 Spatial Mapping of Batikent

This part presents a spatial mapping of Batikent. The prior and current outcomes of the mainstream and alternative approaches of the housing practice in Batikent are discussed through the conceptual matrix. A base map has been prepared as shown on Figure 5.14.⁷² Here it should be mentioned that all analysis maps have two boundaries. The first is the cooperative boundary, which is based on the 1979 plan. The second is the municipal boundary, which is based on the Yenimahalle Municipality responsibility area as of the year 2021. This information has been added due to the necessity to differentiate the physical limit of the 1979 plan from the recently developed areas.

⁷² Larger versions of all analysis maps are provided in Appendix B.



Figure 5.14. Batıkent's urban macroform
Source: Author

As an expected outcome of urbanization, the morphology has changed, however; the traces of the original master plan are still recognizable. For instance, there is a difference between the 'first' and 'second' generation projects in terms of the magnitudes of lands reserved for the blocks. Especially newer blocks to the north are relatively smaller in gross areas and more fragmented. This inference can be visually expressed in an alternative way. Figure 5.15 below has been prepared in order to sort and range the fragments of the plan according to the relative geometries and sizes of urban blocks and plots. This illustration method is inspired after *Les Villes Rangées*, which is an art project that proposes an imaginary and random restructuring of a given urban space, according to the fragmentary order of urban plots as micro-units.⁷³ This study's version represents the urban blocks in Batıkent as micro-units consisting of residential and non-residential building islets.

⁷³ The works of the artist can be found on www.armellecaron.fr/works/les-villes-rangees/ (accessed on February 2021).

With this manipulative intervention on the urban morphology, it can be observed that the low-density housing plots outnumber the rest of the area. Yet the general building character is constituted by the linear and point block apartments, which are in the mid-and high-density groups. It also indicates the dominance of a grid organization except for a number of stretched forms, which belong to the recent housings from the center area.

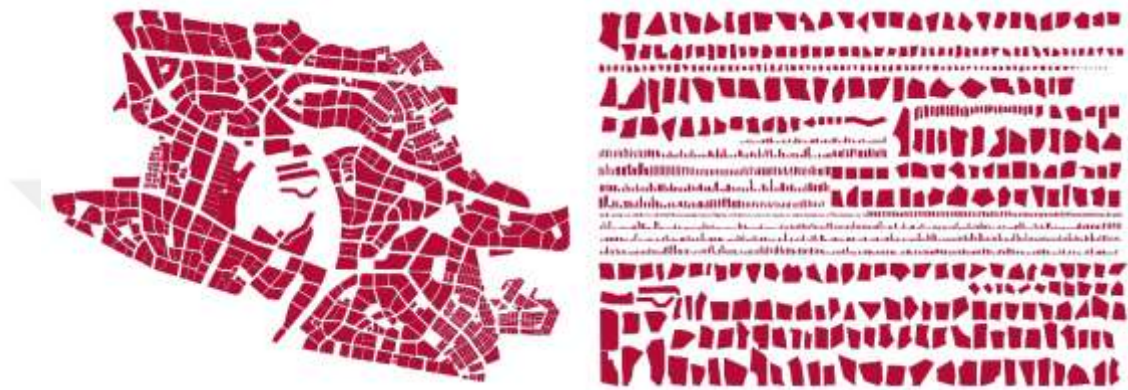


Figure 5.15. Batikent's urban blocks sorted
Inspired after *Les Villes Rangées* by Armelle Caron (2005-continues)

Source: Author

The next map is a figure-ground map expressing all residential and non-residential buildings within the boundary of the '79 plan (Figure 5.16) and features the footprints of buildings blocks to show the spatial relationship of housing clusters with the urban form. Owing to this analysis, the figures reveal the size of the residential district and the void left by the former CBD, which interrupts the continuity of spatial forms.

The map also reveals that the boundaries of the urban blocks define the cooperative blocks. It can be stated that almost every cooperative has an exclusive pattern as they were designed independently in terms of spatial organization. Furthermore, the Gestalten perceptions help to make this differentiation according to the proximity, similarity, continuation, or symmetry of the housing blocks. Thus it can be observed that the outer rings in Batikent have a denser texture compared to the

inner rings. The south-eastern part, which covers the second and the third of the construction stages, has the densest texture of residential buildings.

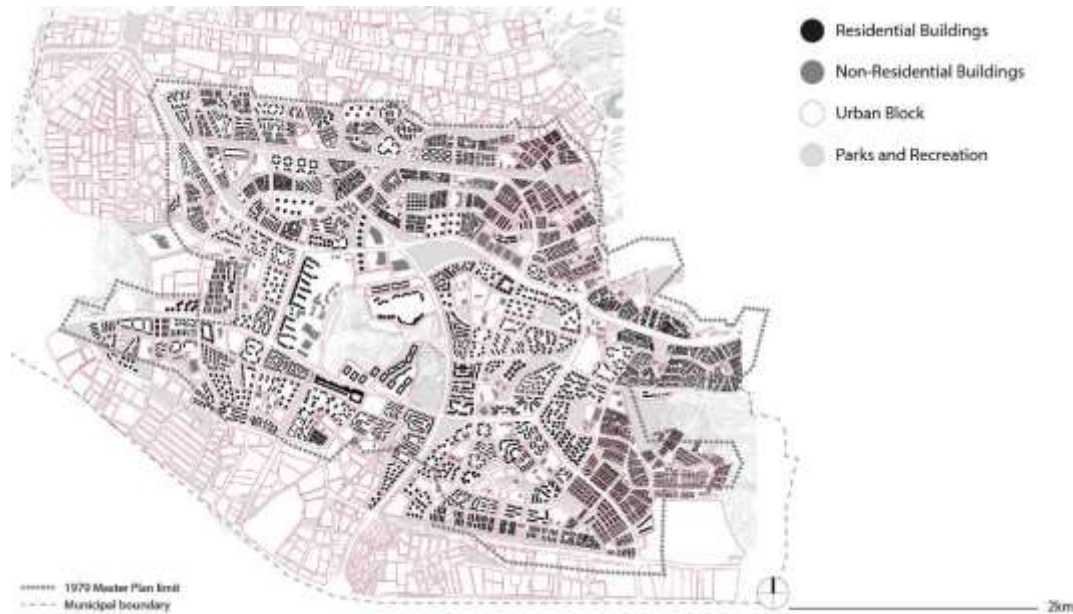


Figure 5.16. Batikent's figure-ground map showing footprints of buildings and the voids in-between
Source: Author

5.2.1 Dimensional Analysis

In Batikent, the neighborhoods, quarters, and districts are the agencies that categorize the essential functions around these settlements and partially determine their magnitudes within the proximity of a certain number of units. The standardization in typical densities and unit sizes for cooperative settlements are presented in Table 5.4, which shows the quantitative data regarding the major housings, and the CBD. The low and medium density housings are the most common type in the region. Although less in number, the high-density housings are the most populous and the largest in terms of unit area.

Table 5.4. Distribution of housing density according to user and function organization (1979)

Source: Kent-Koop (1979^a)

	Quantity	Unit Area (m ²)	Density (person/ha)	Total Area (ha)	Total Population
Low	18.000	100	350	230-260	80.500
Medium	28.000	85-100	425	135-165	57.000-70.125
High	4.000	120-150	600	102	31.200
CBD			350	30	10.500
Bağ-Bahçe	200		25	165	4.125

Planimetrics

With this quantitative information applied to the morphological mapping, a planimetric expression with related infographics is obtained (Figure 5.17). According to this, the low-density housings are concentrated in the areas where the *gündüzkondus* and credit houses are present. As the region grows and populated since the first stages of the project, the medium and high-density housings have increased in number and occupied less area coverage with more populous settlements. It is important to note here that currently there are more settlements in Batıkent with high-density housing than the situation anticipated in 1979. Although they are limited in number, it can be considered that they might have changed the standards of unit sizes and densities of the housing blocks. However, this information is not entered on the map because of the lack of detailed data.



Figure 5.17. Morphological mapping of three types of housing density in Batikent
Source: Author

The figure-ground expression of the existing building stock helps to provide more insights regarding the magnitudes of the mass housing settlements in Batikent. Figure 5.18 shows not only the footprints of residential and non-residential buildings in the urban block but also a scalar comparison with the precedent cases examined in Chapter 4. With this small addition to the map, the gigantic size of Batikent as a new urban settlement is revealed. Despite the smaller overall size of Bijlmermeer and Toulouse-Le Mirail illustrated, the massiveness of their linear blocks compared to Batikent's residential blocks demonstrate their powerful compositional forms. Furthermore, large settlements with different collective forms are perceived by this scalar comparison. However, Batikent's urban form is highly different than these superblocks as the coops are handled one by one; not as a total composition. Due to its piecemeal development, the humanistic scale of the Byker estate appears in proximity to the parts, especially where the low-density housing is concentrated.

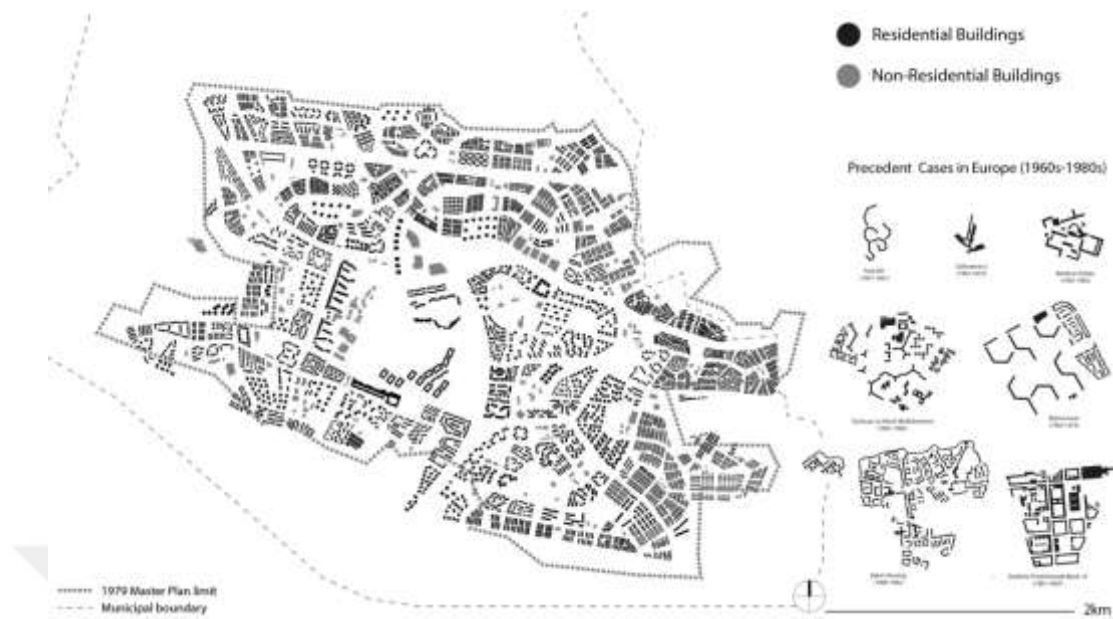


Figure 5.18. Housing blocks in figure-ground in comparison with the precedent projects
Source: Author

Distance

Batikent's morphological mapping has shown that the urban blocks are formed after transportation arteries. In this organization linkages have two types: the ones that surround urban blocks via streets and boulevards and create links that exclusively function for the internal of a cooperative settlement. Therefore, the distance analysis is considered with the first type of linkages that also define different functions within the blocks (Figure 5.19).

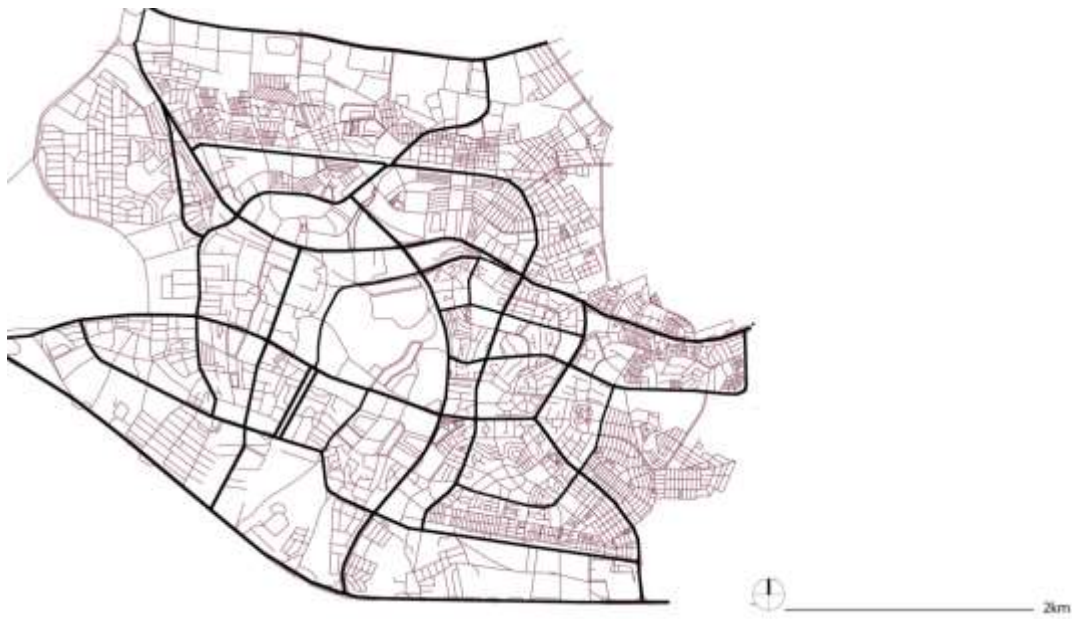


Figure 5.19. Streets network in Batikent
Source: Author

As planned in the original master plan, Batikent has a number of district centers that contain different groups of functions combining health clinics, mosques, culture centers or sports fields with at least one kind of a school (i.e. kindergarden, elementary or high school). Given this property, a series of pedestrian sheds have been placed on the spots where an educational facility defines an 800-meter radius for a 10-minute walk distance. The center of each pedestrian shed relatively indicates the distances between different schools. Figure 5.20 shows that each pedestrian shed creates a sort of continuation on the urban form however they do not present a system of linkages that can tie housing environments together through a fine level. Rather they are distant and only connected via major arteries. Furthermore, the former CBD breaks this continuation and expands even further from the 10-minute walk distance. Since this area's programmatic planning evolved late and still developing, it is only recently that the typical functional hierarchy of social facilities, e.g. a hospital, public buildings, small commercial units, and public and private schools, could be implemented. This situation shows a missing piece in the urban morphology that fails to tie the linkages in a coherent composition.

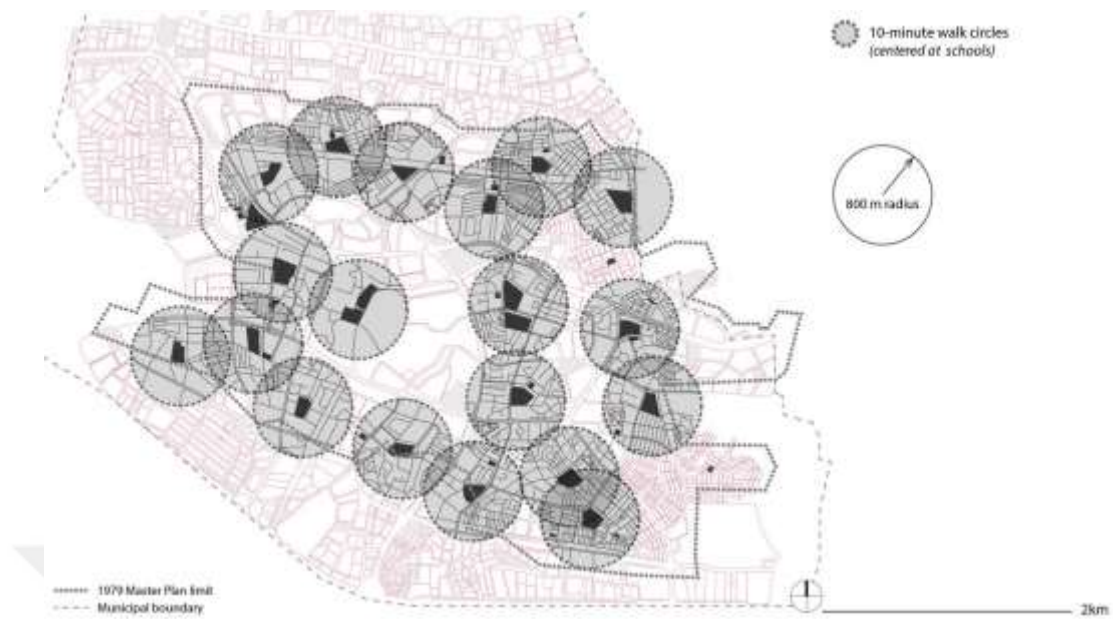


Figure 5.20. Pedestrian sheds in Batikent
Source: Author

Silhouette

The morphological mapping also helps to elaborate on the spatial systems that structure the urban form yet it fully represents the topography and its effect on the urban silhouette. Via a basic graphic that illustrates the heights of the terrain, it is possible to observe that Batikent does not have a flat surface (Figure 5.21). From the east to the west, the overall silhouette changes about 80 meters, and the lowest point of the area is the central part.

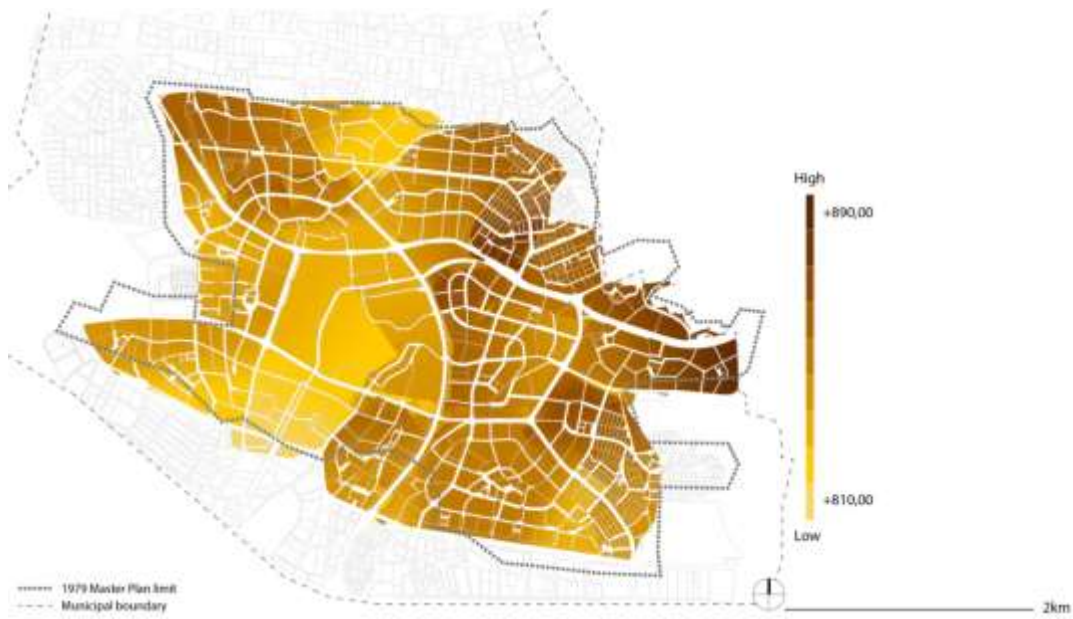


Figure 5.21. Topographic map of Batıkent
Source: Author

Once the residential buildings are examined with regard to their number of storeys, it is justified that the housing densities have been planned with respect to the topographic characteristics of the area. As stated, the density groups in Batıkent roughly classify three height groups whose calculations are based on the distribution of population per unit area and minimum plot area. According to that, the low-density housings are 2-story (low-rise). Medium-density housings are 5-9-story (mid-rise), and high-density housings are 10+ (high-rise) story buildings. As the master plan was concerned with keeping a regular order in development, it aimed to prevent unsupervised and irregular constructions on the periphery of Batıkent. Figure 5.22 reveals that a majority of low-density settlements are concentrated on the areas where the highest while the high-density settlements are mostly located on the lowest parts. In other words, the urban view shows a gradient of building silhouettes which also indicates Batıkent's growth.

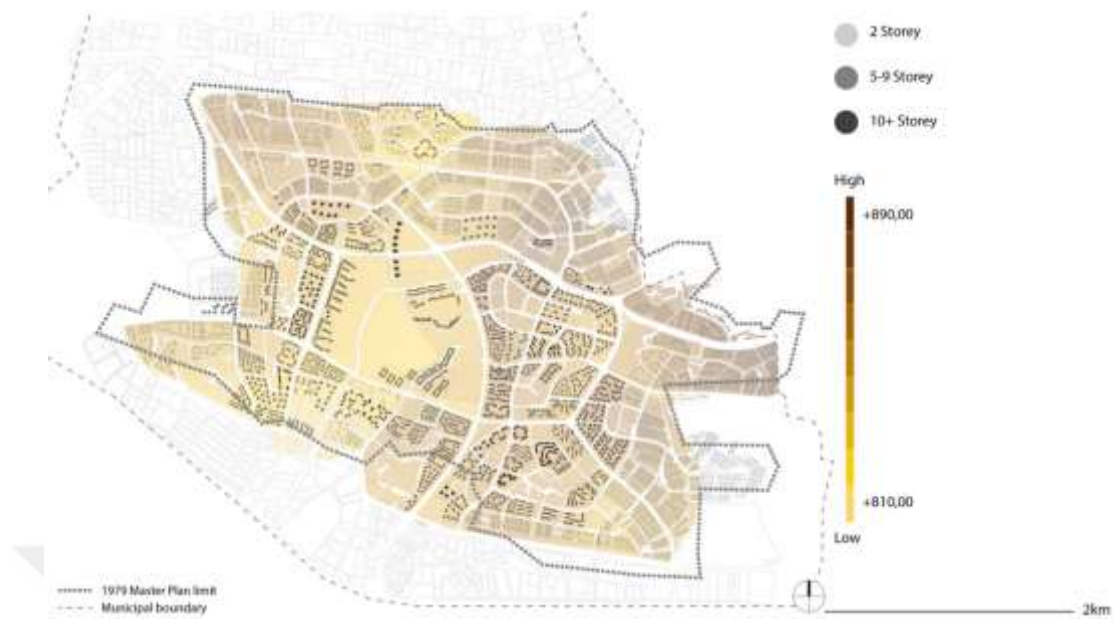


Figure 5.22. Building heights on superimposed on the topographic map
Source: Author

The map above also shows that the principal implementation regarding the housing densities are still in majority; however, there are also non-cooperative additions to the building stock that alter the urban image on the section level. Since the '79 master plan predicted the north part of the region would be prone to speculation due to Batikent's growth, it designated this area as "vineyards and orchards" and set an agricultural function with minimum density and plot size. It can be argued that there was an expectation of a gradual decrease in the maximum heights from the urban center to the periphery that distributes the density equally, however; this map shows that the maximum heights both in the center and in the periphery are increased with the newly constructed high-rise residences (Figure 5.23).

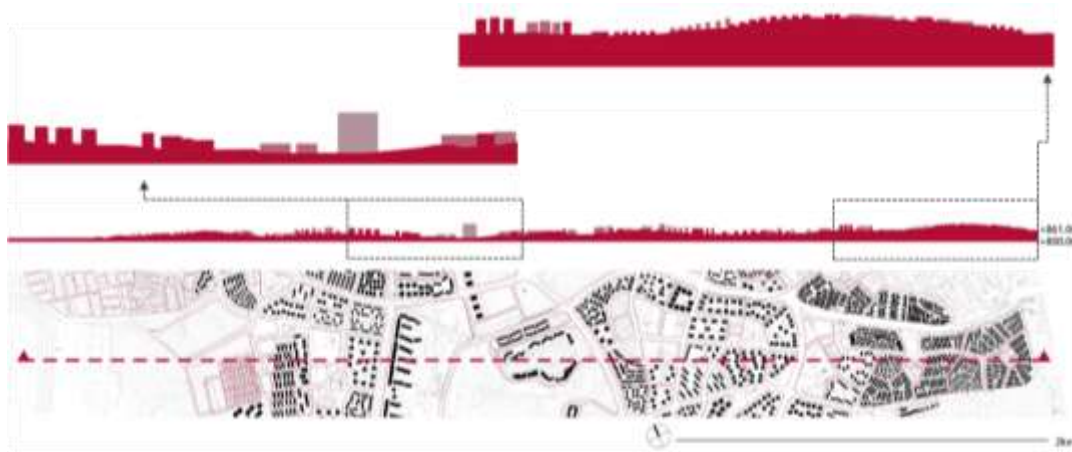


Figure 5.23. Batıkent's urban silhouette
Source: Author

5.2.2 Typo-Morphological Analysis

Typological patterns

The typo-morphological mapping shows that there are five typologies used in the spatial organization of cooperative housing blocks. The point, linear, perimeter, row and courtyard typologies have been marked on Figure 5.24 according to the corresponding plot/urban block. According to the map, the housing density types have a relative impact on the typologies as well. In the low-density areas, there are 1 to 3 storey garden houses, which are composed in rows or courtyards. Apart from the first generation of houses that were planned plot-by-plot, all of the row and courtyard typologies are organized within the urban block (Housing Typology 1). The mid-and high-density types are organized as either point, linear, or perimeter blocks. Particularly the point blocks are the dominant typology in Batıkent. Although linear blocks are the second most used typology, it should be mentioned that this typology is in fact the combination of two or three point blocks (Housing Typology 2). The examples of perimeter blocks consist of two U-shaped buildings that create private gardens within their public edges (Housing Typology 3).

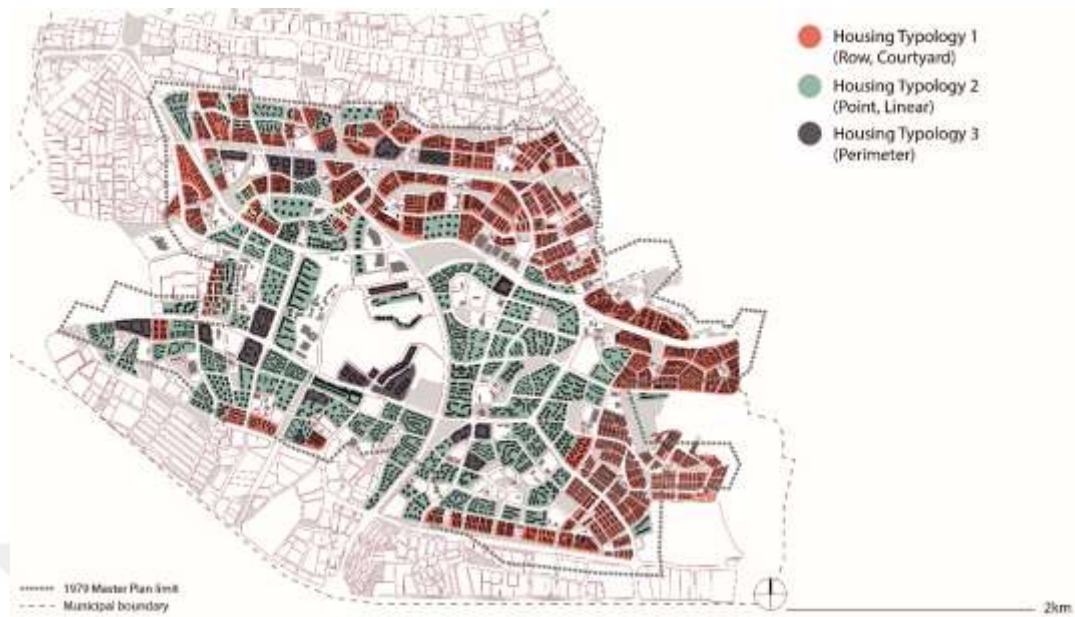


Figure 5.24. Morphological expression of housing typologies in Batıkent
Source: Author

In the light of the typo-morphological map, it can be assumed that the point block typology has been a generic layout for the case of Batıkent. The spatial distribution of this type has resulted in a compositional form that mostly sorts the building blocks in as rows or as a grid. Limited in number, there are also some examples of perimeter blocks having relatively private inner cores within the urban block. Their spatial organization allows them either to create the perimeter along the edges of the urban block or to generate a number of small perimeter blocks within the same urban block. However, these do not have similarities with the traditional European typology in terms of the interior planning of the dwelling units. Figure 5.25 shows diagrams of three housing surroundings where the major typo-morphological patterns can be observed through the spatial organization of the cooperative blocks.



Figure 5.25. Different typological patterns found in three housing surroundings
Source: Author

The analysis shows that the majority of the cooperative housings are in line with the '79 master plan but there are noticeable examples with regards to interpreting the mainstream forms in the typo-morphology and presenting alternative approaches. Particularly, the center has housing clusters that deviate from the prevalent block organization by re-defining the boundaries of the generic layouts and inserting megaforms into the urban form. These settlements coincide with the areas where the third generation of housing settlements was planned.



Figure 5.26. Mega forms observed in the central area
Source: Author

Urban structure

The typological patterns observed for the non-residential areas are mostly bound to land use. Figure 5.27 illustrates 7 different building programs found in Batikent. The commercial, educational, cultural & sports facilities, hospitals, mosques, and administrative and public work offices are marked so that their locations can be associated with the urban structure. These programmatic clusters, especially district centers, help understand the linkages that define the overall urban spatial system.

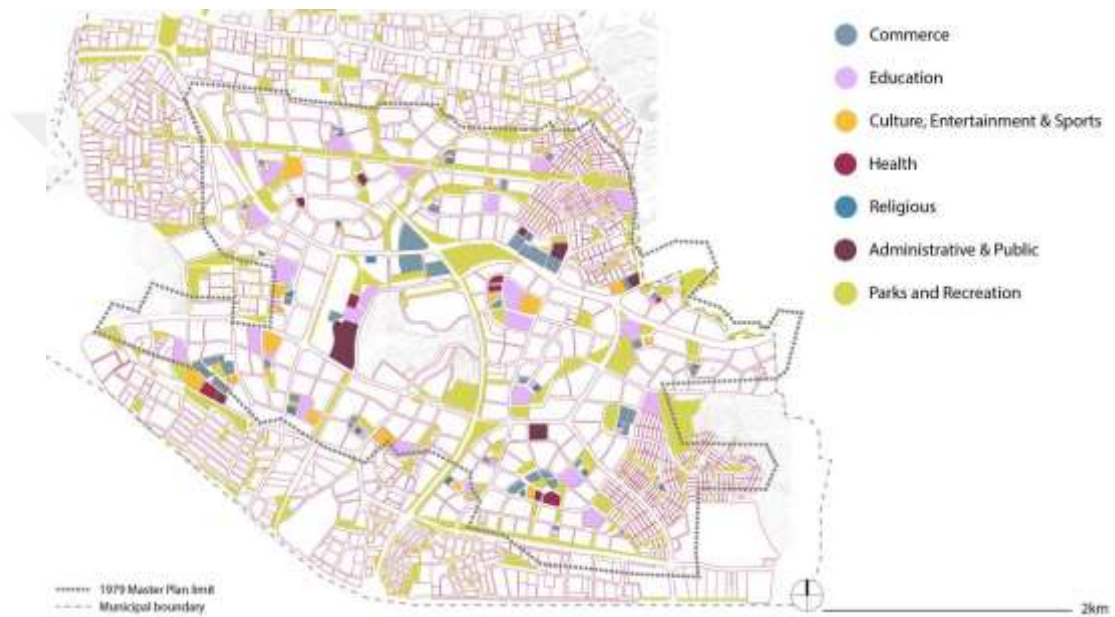


Figure 5.27. Land use of social facilities
Source: Author

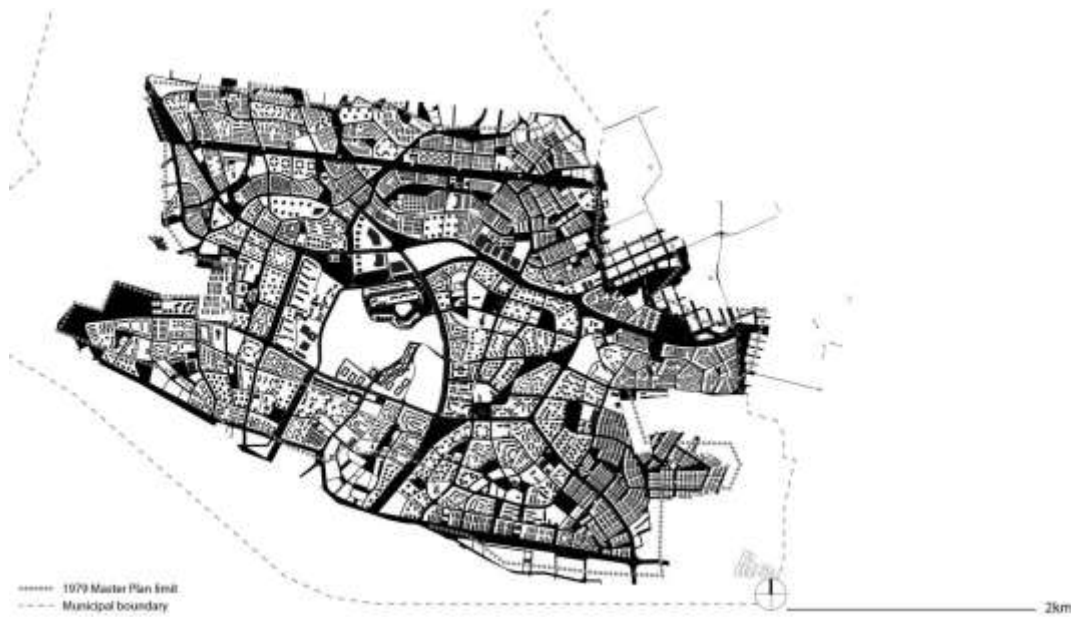


Figure 5.28. Urban structure
Source: Author

The analysis map shows that a majority of the district centers stayed as planned in 1979. However, some of the medium- and high-density housing areas have turned into commercial areas. One of the well-recognized examples of this is the current ‘business district’ of Batıkent, where a series of commercial buildings consisting of a shopping mall, office block, and a bazaar are located. This particular location is a hub that functionally gathers different types of uses. However, it does not embody the same meaning as the other district centers. The other example is a former park area, where more than one shopping malls stand. The selection for these functions indicates a strategic intention to be at the node of major arteries of Batıkent (Figure 5.29).



Figure 5.29. A partial plan showing the urban structure and levels of urban grain in-between two centers

Source: Author

Urban grain

The figure above also shows different typological formations of the buildings, streets, plots and urban blocks. From the viewpoint of urban grain levels, there is a coarse-grain pattern of streets and linkages that indicate the rapid development of the urban form, which seems to be structured around streets and boulevards that serve as traffic arteries. Spatial organizations of both residential and non-residential buildings are dependent on the urban block and its typical oblong form. As a result, centers of housing surroundings and districts generally share a similar level of coarseness, which also reflects the typical agglomeration of buildings around public areas.

5.2.3 Urban Image Analysis

Public vs private

Batkent has a coarse-grain, which is mostly resulted from the functional zoning. It is possible to claim that the simultaneous development of housing environments as the sole catalyst of this experiment has left little room for the creation of adequate

public areas within them. Therefore, the relative quantity between the public and private spaces is in favor of “too much public space”. As Figure 5.30 illustrates, the zoning of Batikent does not allow for a rich depiction of the urban fabric due to individual and internal organization of cooperative housing blocks. The strict separation of the cooperatives from public spaces and streets prevents permeable micro formations between different housing settlements. The lack of spatial continuity and interaction between the public and private spaces eliminates any threshold spaces.



Figure 5.30. Private realms compared to urban public space
Source: Author

Patterns of experience

It seems like one of the most recognizable indicators of this inference is the patterns of experience that can be tracked down via linkages. The major activity centers are also social clusters that are surrounded by the cooperatives. Figure 5.31 shows various activity clusters based on the most frequently used linkages. Based on this analysis, it can be argued that the typical district centers and their functions have a lesser impact than the aforementioned irregular centers. Boulevards

undertake the mediation of functional patterns, rather than these small centers. Furthermore, it can be said that they generally coincide with the high-density housing areas.

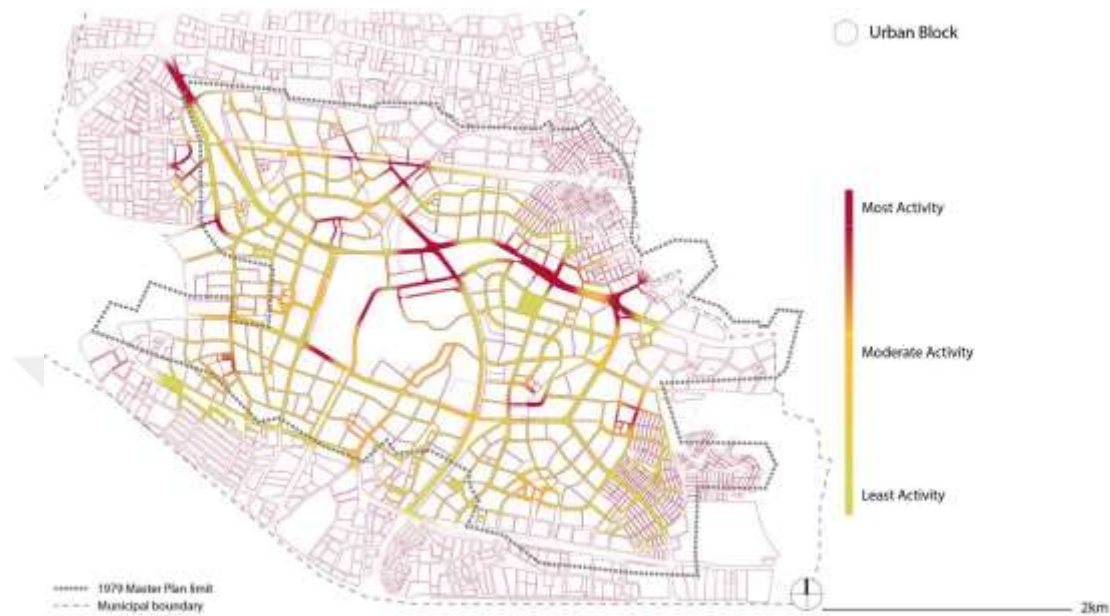


Figure 5.31. Patterns of activity clusters
Source: Author

Urban elements

As part of the final assessment, an urban elements map has been prepared. As suggested by Lynch, paths, edges, districts, nodes, and landmarks are illustrated as to their strengths in the legibility of elements of an urban image (Figure 5.32).

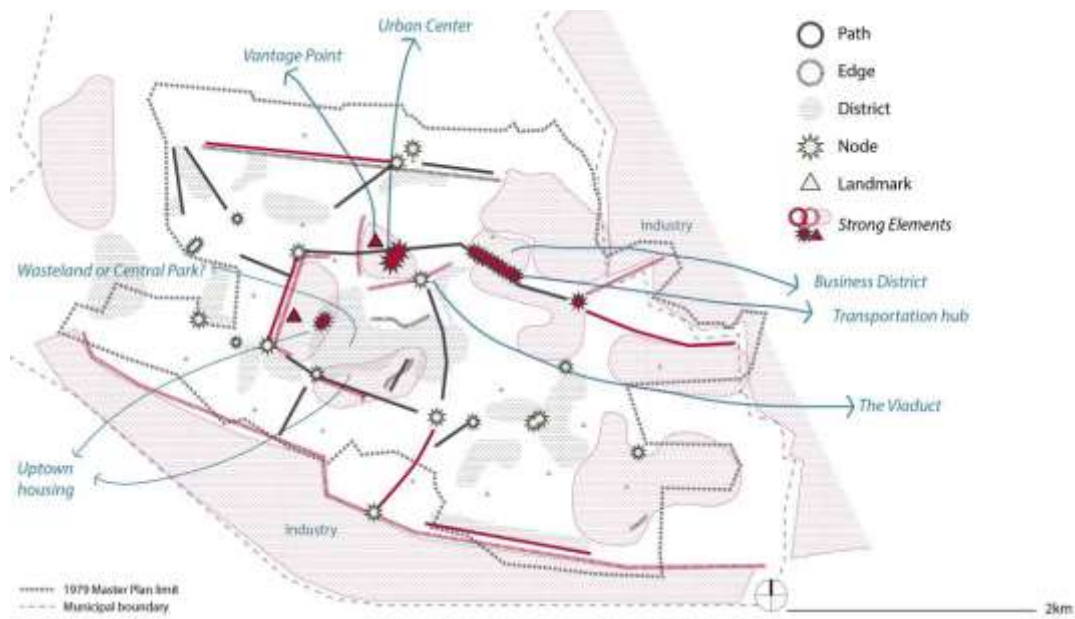


Figure 5.32. Urban elements of Batıkent
Source: Author

The paths are found along the boulevards, busy streets and other arteries with moderate traffic. Although these paths dominate a sense of orientation thanks to vehicle routes, stronger elements are found with the pedestrian paths that foster the experience of walking via trees and foliage. However single pedestrian paths are less found; only can be experienced in the parks or walking tracks. It can be argued that the visual and spatial connection between the housings is achieved mostly with the vehicle routes, which also elongates pavements.



Figure 5.33.A strong path towards Batıkent
Source: Author

Edges define the actual and perceptual boundaries. The strongest edges in Batıkent are created by three mass housing settlements around the former CBD which are extremely effective with their ‘wall’ images. Another is the subway line whose overhang structure creating a viaduct. There is one final element that defines an edge on the physical level. A green belt on the north of Batıkent, which is aligned with the longest street in Ankara⁷⁴, creates an absolute separation between the lower neighborhoods and upper neighborhoods. A similar element is strongly experienced on the south end of Batıkent, where is a highway that defines the end of the cooperative zone.



Figure 5.34. A strong edge formed by a linear mass housing block
Source: Author

Districts have also two levels. The biggest districts are the industrial regions in the east and south parts of Batıkent. The transition from these districts towards Batıkent gives a strong sense of change from a great density of business areas into a living environment. Others are housing clusters/quarters that can be perceived at a distance owing to their architectural properties. They are observed as building clusters. Districts that have common attributions or sudden alteration among these patterns give a sense of a particular location.

⁷⁴ As declared by Ankara Metropolitan Municipality in 2018. Retrieved from <https://www.ankara.bel.tr/haberler/ankaranin-yollardaki-enleri> (Accessed on March 2021).



Figure 5.35. A strong image of residential district
Source: Author

Nodes are strategic spots that are taken as a reference while traveling. Junctions and transportation stations are the primary nodes. Exceptions aside, most of the junctions give a sense of confusion because the large span of boulevards and streets create brief moments of disorientation. Other nodes gain their importance thanks to the nearby functions/activities. According to this observation, the strongest nodes in Batıkent are the currently used business and commercial areas.



Figure 5.36. Transportation hub as a strong node in Batıkent
Source: Author

Landmarks are pinned according to the symbolic magnitude of their spatial recognition. The common attributes of these landmarks are their great visible/recognizable structures in the built environment. Due to their distinctive appearances, functions, or sizes, they set a major spatial reference in the urban context. According to this definition; the strongest landmark of Batıkent is Atlantis City residence. The seven high-rise towers of this settlement can be seen from

everywhere in Batikent. Similarly, twin cylindrical towers of one of the “wall” housings are also considered as a landmark. Mosques the districts are found as the typical landmarks for the immediate surroundings.



Figure 5.37. Atlantis City residences and the shopping mall as the strongest landmark of Batikent
Source: Author

5.3 Comparative Analysis of a Selection of Alternatives

With this inquiry on the spatial organization and place identity qualities of mass housing environments in Batikent, it has become clear that the great number of cooperative and non-cooperative housings can be brought together via the characteristics related to the dimensional, typo-morphological and urban image aspects investigated on the urban form. This brings this part of the dissertation to a further step where various cooperative and non-cooperative housing settlements are investigated at the housing blocks scale. As seen in Figure 5.38, 18 settlements have been initially located and categorized in three matrices based on their significant qualities of typologies, collective forms, and heights (Figure 5.39, Figure 5.40 and Figure 5.41).

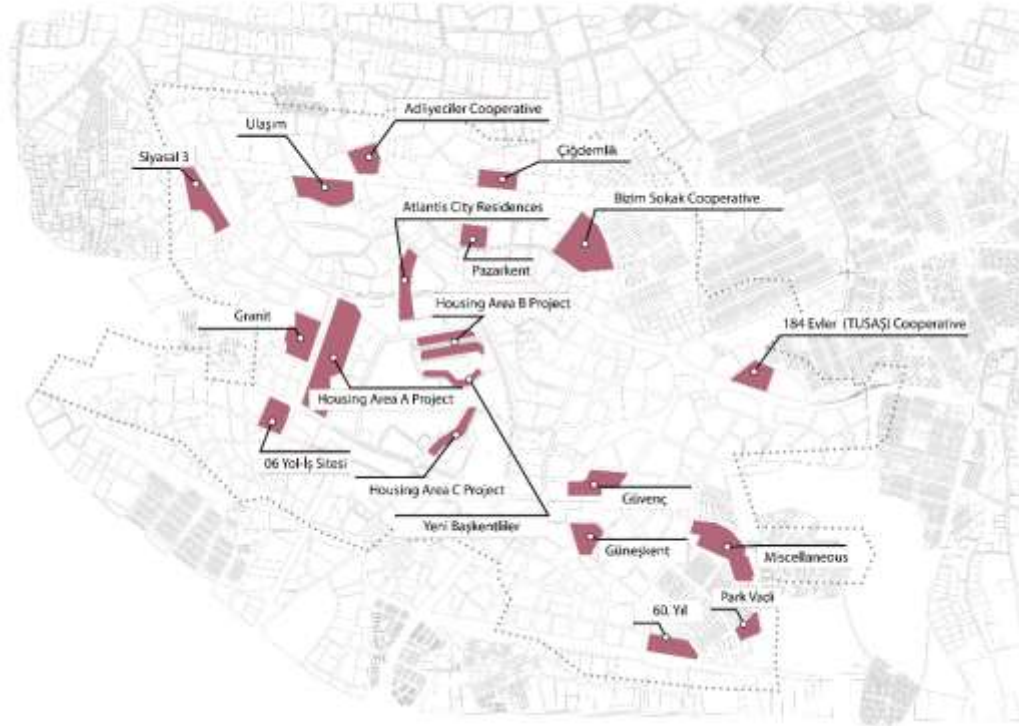


Figure 5.38. Locations and names of cooperative and non-cooperative housing blocks with significant qualities
Source: Author

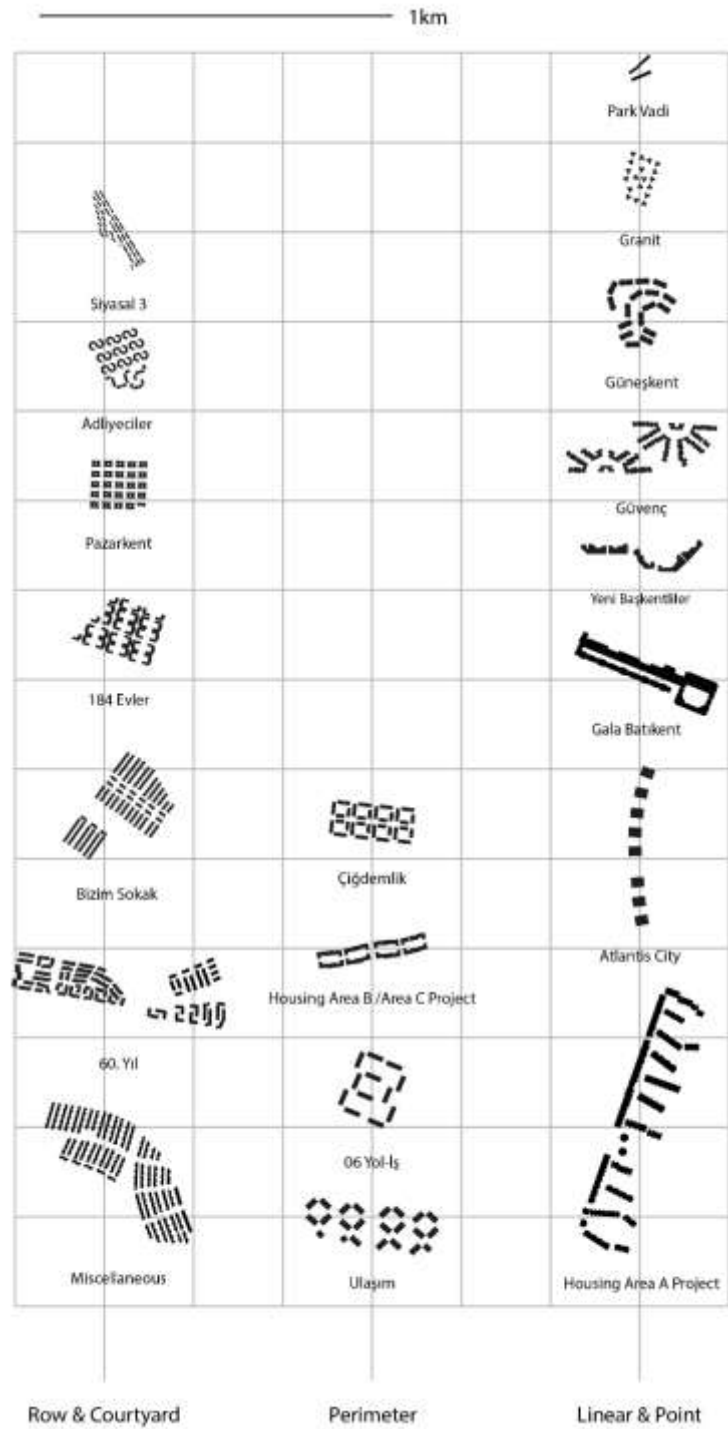


Figure 5.39. Typology matrix
Source: Author

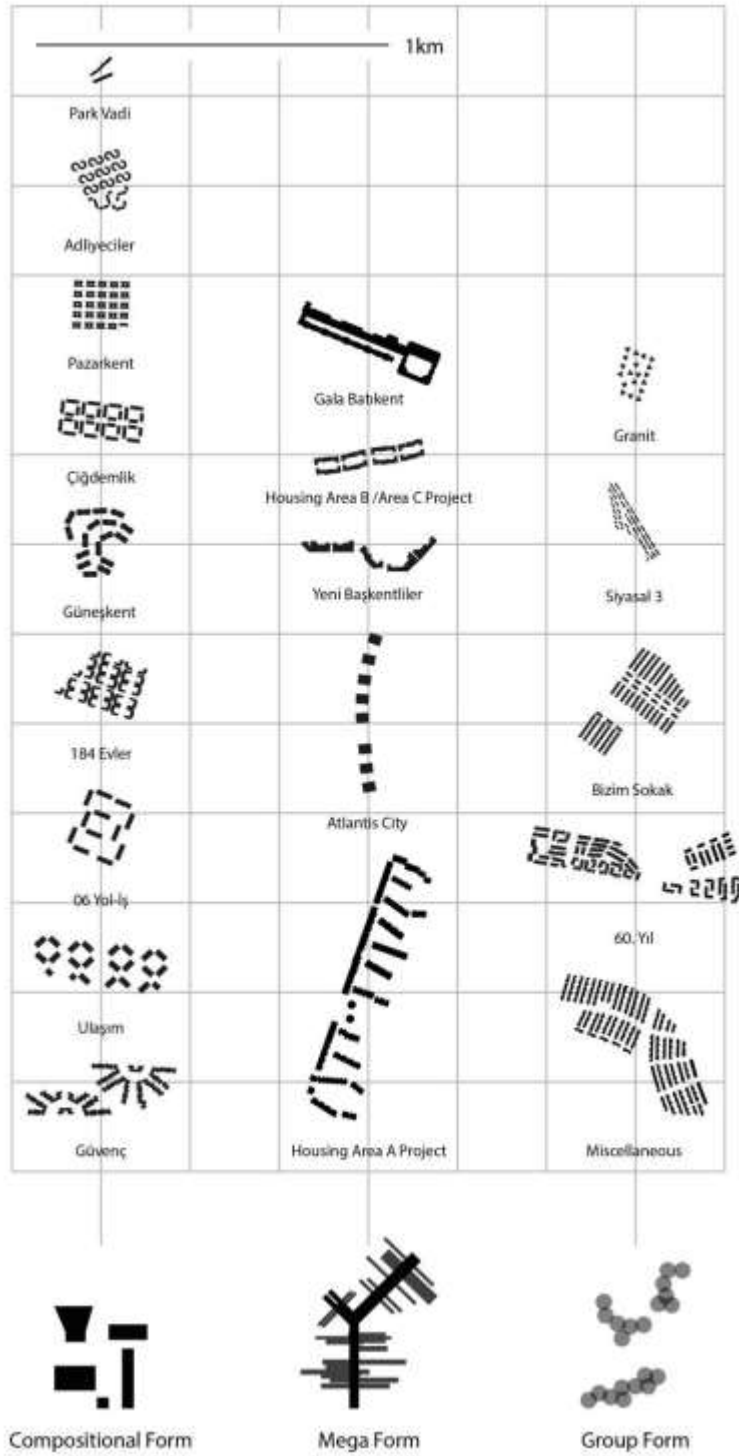


Figure 5.40. Collective form matrix
Source: Author

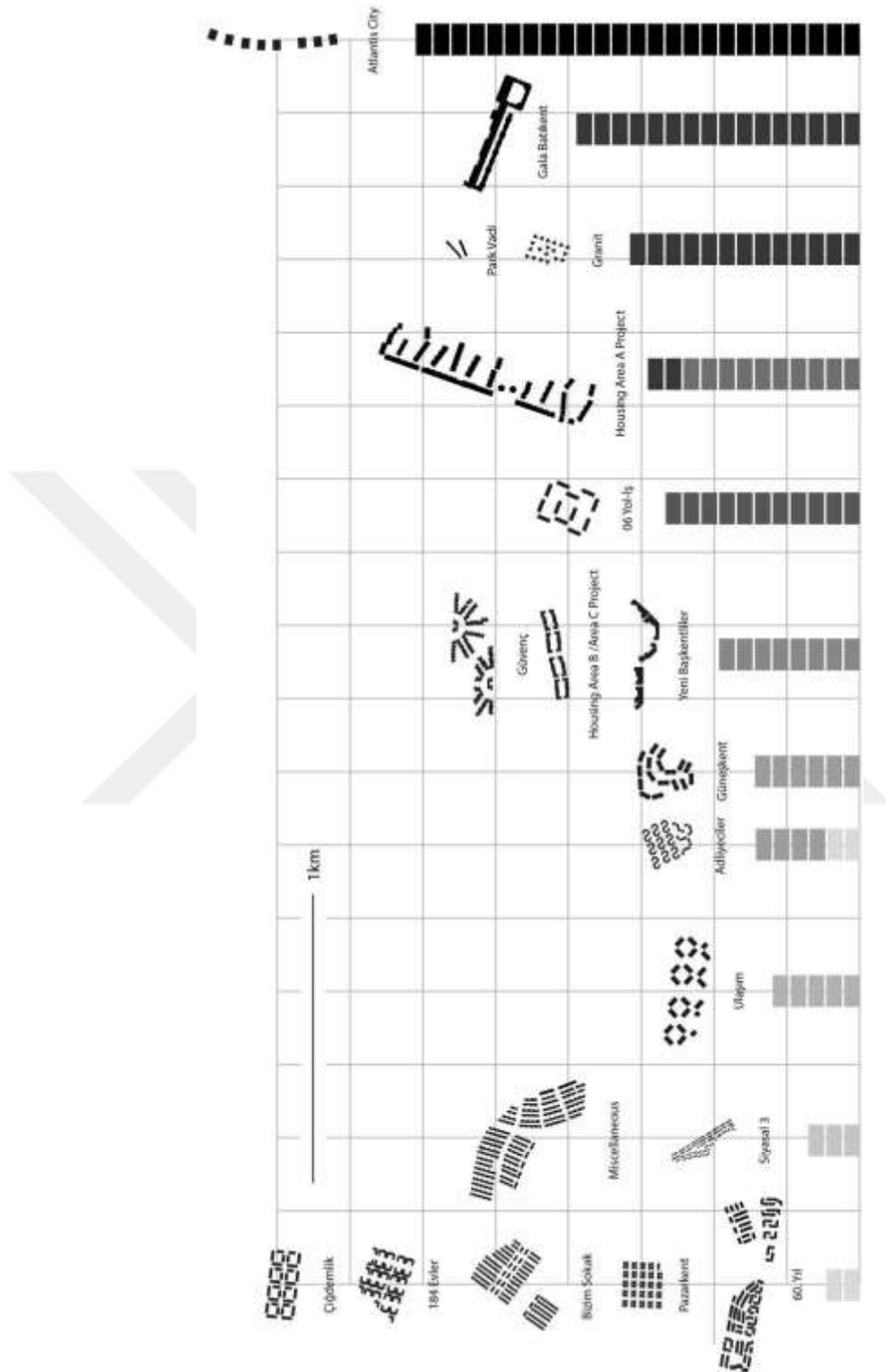


Figure 5.41. Height matrix
Source: Author

In the light of this comparative study, 4 settlements have been selected for a closer look, each corresponding to 4 different generations of housing production in Batıkent. The first three generations correspond to Karayağın's aforesaid definition. To summarize, the first-generation projects are the ones that organized the housing blocks per individual low-density units. The second-generation projects are the ones that are planned as collective forms. The third generation is the latest of the cooperative housing settlements that consider its spatial organization as part of the urban design approaches. Given a notable rise of a new typological group of housing in Batıkent, which is high-rise mixed-use residences, it is believed that a fourth-generation can be suggested. Figure 5.42 shows cases from each generation presented with their morphological and land use attributions.

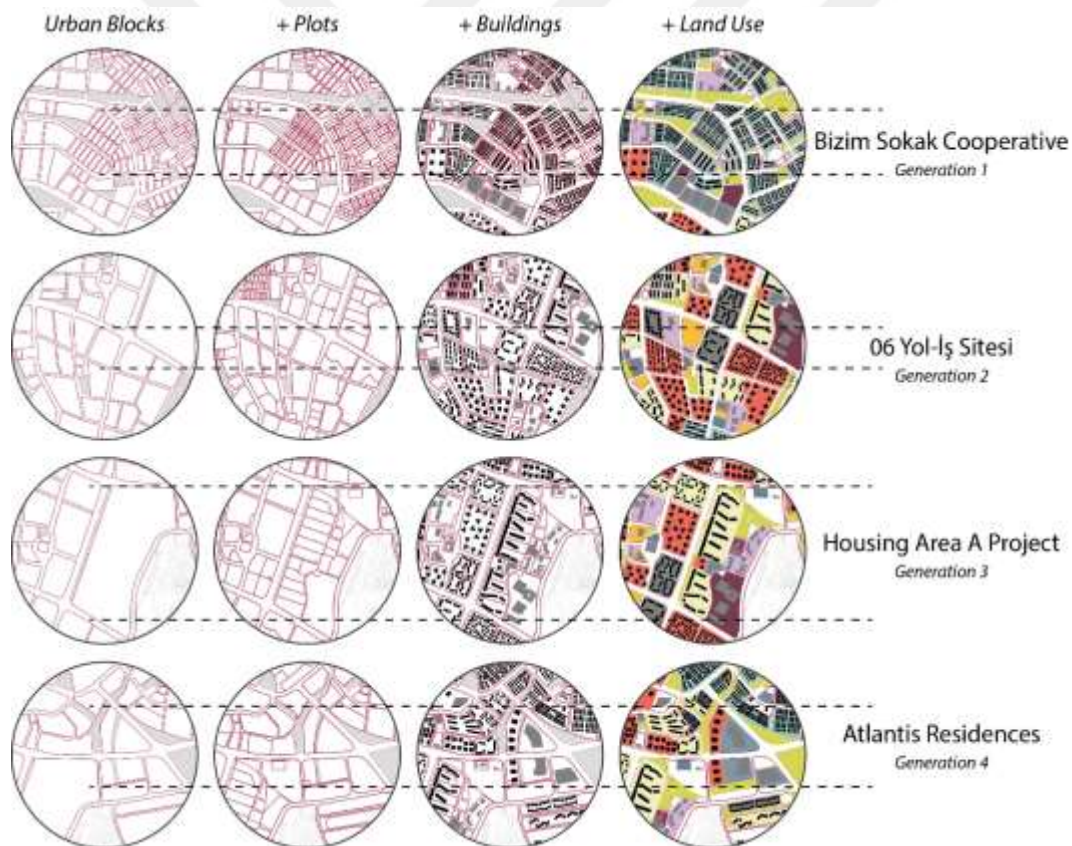


Figure 5.42. 4 generations of housing in Batıkent
Source: Author

Although the image suggests that each case has its particular attributions with regard to the collective form and organization of residential units, the Housing Area A project requires a further examination due to its alternative form and alternative approach to residential architecture integrated with an intention to urban design. Therefore, this case will be assessed as a dedicated sub-chapter. The remaining cases are presented below as a graphical summary to highlight the spatial characteristics of each generation with the urban form by illustrating; the levels of urban form and figure-ground expression and section of typical block organization.

Generation 1: Bizim Sokak Sitesi

This is a typical low-density settlement with a row housing typology. Series of dwelling units are combined in line with plots that enclose the urban block. Located in the 1st stage, the housing surrounding of this settlement consists of similar low-density and row housing groups. The sequential order indicates group form. It mediates small streets in-between each block and creates an oblong morphology that allows close associations via the sense of paths found there. Owing to row typology each dwelling unit has a semi-public front yard and a private back yard.



Figure 5.43. Low-density row housing units of Bizim Sokak Sitesi
Source: Author

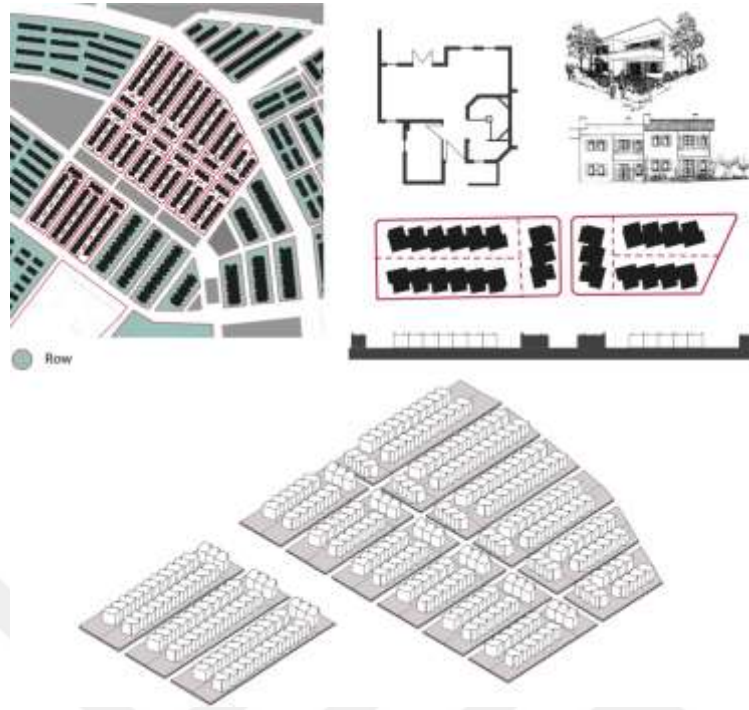


Figure 5.44. Bizim Sokak Sitesi as an example of the first generation settlement
(Kent-Koop 1979-1984)

Source: Author; Sayın 1984, p. 59

Generation 2: 06 Yol-İş Sitesi

This example is a high-density project with typical 10 storey blocks. The compositional form of the settlement is observed as a prevailing spatial organization layout for the second generation. On the contrary to a majority of high-density settlements, which align point block apartments in a grid, this example belongs to a small group of settlements resembling with a perimeter block typology. There are 24 blocks that are combined in pairs in the settlement. As seen in the CIAM type organizations, these pairs compose vertical high-rise blocks and leave the ground level free for open-air activities. In similar to the other urban blocks around the 06 Yol-İş, inner courtyards of the urban block are reserved as a public area.



Figure 5.45. High-density apartment blocks of 06 Yol-İş Sitesi
Source: Author

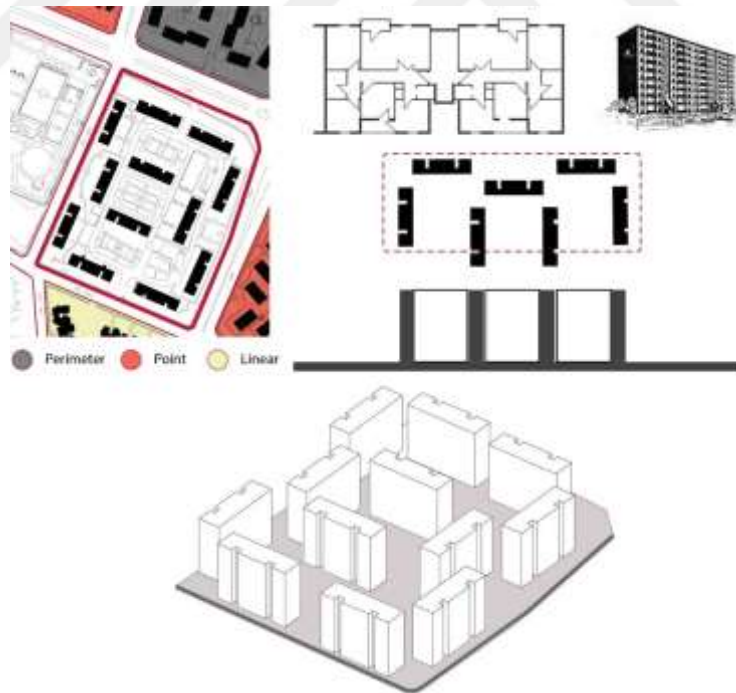


Figure 5.46. 06 Yol-İş Sitesi as an example of the second generation settlement
(Kent-Koop 1979-1984)
Source: Author; Sayın 1984, p. 62

Generation 4: Atlantis City Residences

The last example represents the next generation of mass housing production in Batikent. Located in a former recreational area, which has gained a great urban land rent value, the Atlantis City project is emblematic of a new mainstream housing typology of the century: mixed-use high-rise residence. The project has eight towers posing a mega form which defines its independent structure. Although the typology of this example does not present an alternative approach at all, its magnitude and spatial organization constitute a megastructure on the urban form. Furthermore, its height alters the city silhouette and creates an important landmark for Batikent. Here it should be stressed that the location of Atlantis City is a former recreational area where the dry riverbed passes underneath. The realization of this project can be considered as a shift in the principle decisions of the original master plan and a milestone for high-rise mixed-use housing blocks changing the urban structure and causing urban rent.



Figure 5.47. Mixed-use high-rise blocks of Atlantis City Residences
Source: Author

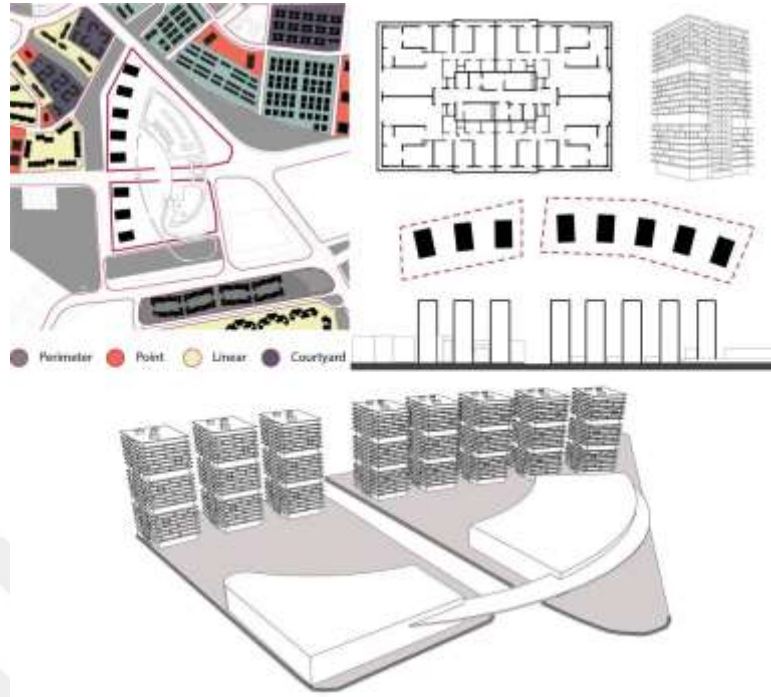


Figure 5.48. Atlantis City Residences as an example of the fourth generation
(Gordion Grup, 2009)
Source: Author

5.4 Housing Area A Project as an Alternative

“Batıkent City Center Housing Area A Project” (Area A)⁷⁵ was constructed within the scope of the fourth and the last stage of the cooperative housing development. The project is a 1200-unit settlement designed and implemented by a joint consortium of the architects Coşkun Erkal, Yurdanur Sepkin and Merih Karaaslan. It stands on a large rectangular urban block which is combined by 12 adjacent plots reserved for 12 associate cooperatives.

⁷⁵ (tr.) Batıkent Kent Merkezi A Konut Alanı Projesi



Figure 5.49. Satellite view of the Area A Housing Project
(Coşkun Erkal, Yurdanur Sepkin and Merih Karaaslan, 1994)
Source: yandex.com.tr

A working report⁷⁶ published by Kent-Koop in 1993 notes that the project is originally based on a master plan drafted by Özgür Ecevit in 1988 for the CBD (Kent-Koop 1993^a). Ecevit's proposal for the Batıkent's urban center dates back to 1985 when he won the first prize at "Batıkent Genç ve Toplum Merkezi ile İslam Kültür Merkezi" Competition⁷⁷. As Murat Karayalçın (1988) notes, the competition was intended to be the concluding step of the '79 master plan. The idea of an

⁷⁶ Provided in Appendix D.

⁷⁷ 1st Prize: Özgür Ecevit, Ekrem Gürenli, Azize Ecevit, Hayri Kalıpçioğlu, Ruşen Sarıkaya, Şükrü Atacan, 2nd Prize: Baran İdil, Hasan Özbay, A. Tamer Başbuğ, Aslı İdil, Figen Özbay, Mehtap Susmazer, Arife Çelik, Menşüre Işık, 3rd Prize: Aynur Gençata, Cengiz Gençata. 1st Honorable Mention: Edip Önder Us, Nuran Karaaslan, Merih Karaaslan, İlker Aksu, İsmail Erdoğan, Oğuzhan Özturan, Okan Erdal, Kutgün Eyüpgiller, Semanur Koç, 2nd Honorable Mention: Ergun Aksel Source: <http://www.mimarlarodasiankara.org/yarismalardizini/> (Accessed on September, 2019).

Islamic culture center with many social facilities aimed to “contribute to meeting the religious, cultural and social needs of those who will live in Batıkent” (Kent-Koop 1985). Although the center and the master plan was never realized, Ecevit’s principle planning decisions regarding the cultural core and zoning remained. Eryıldız states that the original design kept the CBD as an independent urban hub to ease Batıkent’s needs and to make the district independent from the city center (Eryıldız 1995). Furthermore, Atabaş (personal communication, December 2019) notes that this area was specifically reserved for social and recreational facilities with a low construction ratio due to the aforementioned riverbed. Given its location at the heart of the city, it can be discussed that the area became more appealing as a housing area as Batıkent had continued to grow. As a result of a final revision on the plan, the area is divided into three residential areas titled Area A, Area B and Area C, with a recreational area remained in the middle of the new settlements. The 1993 report states that shortly after his cultural center proposal had halted, Ecevit left the process. Later, Erkal-Sepkin-Karaaslan consortium was commissioned and given full authority to complete the housing projects (Kent-Koop 1993^a, p. 84-87).⁷⁸

As the Area A was planned to cover an urban block gained from the revised zoning and to be shared of a dozen of cooperatives, the consortium followed a holistic approach that would create a single building image and “a prestigious [...] landmark”. Another working report (1996) explains that the consortium aligned the housing blocks facing the boulevard, thus a cohesive structure could be achieved through every housing block standing side by side. This silhouette was a result of a metaphor of “the walls (*sur*) and the forts (*hisar*) of a castle/citadel”. The continuity of the wall is interrupted by two residential towers in cylindrical form,

⁷⁸ Provided in Appendix D.

which act as the ‘watchtowers’ of the so-called citadel (Figure 5.50) (Kent-Koop 1996, p 60). When the site plan examined, the wall metaphor is recognized easily. Behind the frontier blocks, there are private gardens accompanied by the rear blocks. Area A has a long and linear cluster of buildings, which made the architects give a little interest in altering the heights of the blocks in order to break “the monotony” of the 700-meter long urban façade. Especially differences in the plans of some dwelling units within the same block allowed architects to expose the building elevations hence highlighting this break as an aesthetic value as well.



Figure 5.50. Model views of Area A
Source: Kent-Koop (1993^b)

The aspirations regarding the integration of the third-generation projects with urban-spatial design have a place in the infrastructure of the project, too. For example, the original plan opted for omitting any separating walls or fences between the cooperative parcels. In addition to a front path aligned with the blocks facing the street, another pedestrian path that provides a continuous movement across the site was offered. The vehicle traffic was prevented within the area via underground car parking which is used to connect every block on the basement

level (Kent-Koop 1993^a, p. 85-86). Such considerations show a sensibility towards the integration of building- and landscapes and present a new way of responding to the urban form.



Figure 5.51. Views from the façades facing the boulevard (on left) and inner landscaping
Source: Kadri Atabaş archive (left); Author (right)

The settlement consists of 82 apartment blocks that are either 8 or 15 stories standing on 12 adjacent plots (Figure 5.52). 10 of them have a T-shaped organization (1-3 buildings parallel, 3-6 buildings perpendicular to the street). The 8th plot has two cylindrical blocks that also accommodate a small shopping mall as a sunken building. The 11th plot has 7 blocks that are all perpendicular to the street. Each block has a relatively similar footprint layout except for the 8th plot, which has circular layouts. As stated in the '96 activity report, the settlement covers around 16 ha area with dwelling units whose net floor area ranges from 115-145 m². This information indicates that the total density of Housing Area A is highly different than the original densities of the 1979 master plan. Furthermore, the settlement is a neighborhood unit by itself, with multiple non-residential buildings in proximity to the site. These non-residential buildings are relatively concentrated at the backside of the settlement constituting a variety of building types. Currently there are private and state schools, a hospital, a mosque, a government institution, and a shopping mall.



Figure 5.52. Urban structure of Area A
Source: Author

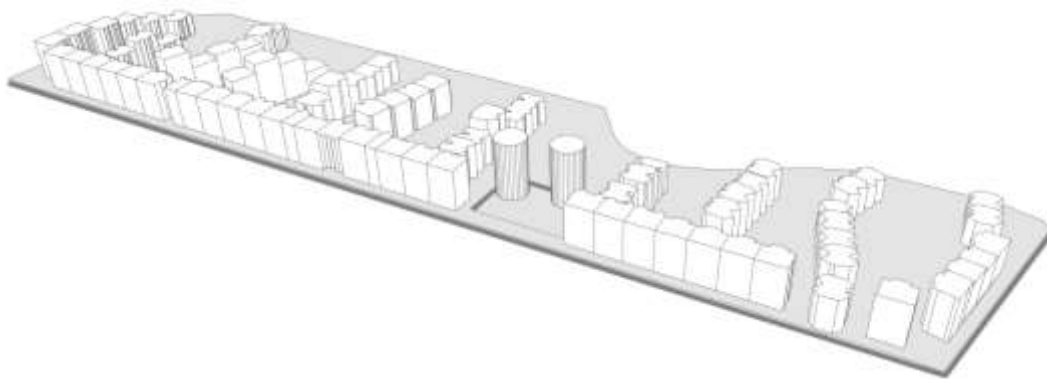


Figure 5.53. Simplified 3D Model view of Area A
Source: Author

The Area A justifies its unique magnitude when compared with the other cooperatives in the environment. The footprint calculations show that it is not only the largest (and maybe one of the most populous) building in Batikent, but also the longest. The overall settlement runs along an edge that is also a nearly 700 meter-long. This can be calculated as approximately 10-minute walk long distance. The silhouette of the building fits the 10-storey housing type, yet the twin towers differ from the rest with their 15-storey height round blocks. After the Atlantis City and

Park Vadi residences, the Area A project has the tallest residential blocks in Batıkent.

The Area A is easily recognizable in the urban form thanks to its comb-like spatial organization. According to this analogy, the frontier buildings along with the street form ‘the shaft’, while ‘the teeth’ are the blocks that are hidden behind them and amid private gardens. In a sense, the overall building mass shows a sharp image of a difference between public and private spaces. This is highly experienced via passages on the ground of some apartment blocks. They subtly pierce the integrity of the wall and allow the resident to an enclave. This unique attribution of the Area A is a result of its mega form, which demonstrates threshold spaces between the urban scale and the building scale. The geometry of each apartment block resembles each other yet they differ in unit plans. The architects have used symmetrical floor plans⁷⁹ yet they are not repeated on each floor. However the plot number 8, which is İkiz Kent Sitesi⁸⁰, is the breakpoint of this continued spatial pattern. It is also a precedent of the mixed-use high-rise typology as it has a shopping mall base.

In the design of the urban block, it is possible to mention four types of spatial organization patterns conceived within the plots (Figure 5.54). The first type is a ‘corner plot’, which is found at either end of Area A. At the corners of these plots, there is a relatively wide gap that allows for walking to the inside. In this pattern, each apartment block faces the street (Figure 5.55). The second is ‘the passage’ pattern. It opens up a half size of an apartment block on the front line and creates a pedestrian path that leads towards another path, which enables the connection to

⁷⁹ Selected blueprints from various dwelling units are presented in Appendix E.

⁸⁰ İkiz Kent Sitesi’s floor plans are not available in a scanned format in the archive of Yenimahalle Municipality.

two groups of apartment blocks, each of which has opposite orientations of entryways (Figure 5.56). The third type is the most used layout therefore it indicates the typical organization pattern. Here, a group of three front blocks is connected by a second group of blocks that create the T-shape (Figure 5.57). Lastly, there is an ‘open plot’ pattern that has a linear organization and allows resident access on either side. It also has two more paths, one of which pierces one of the apartments and allows the pedestrian path, which is an important element that connects all plots together (Figure 5.58).

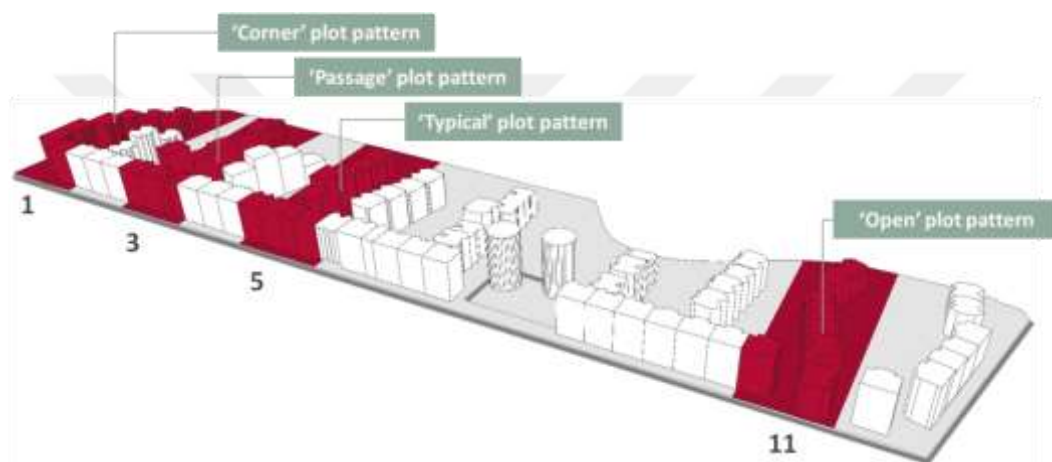


Figure 5.54. Four types of spatial organization patterns shown on the 3D model
Source: Author

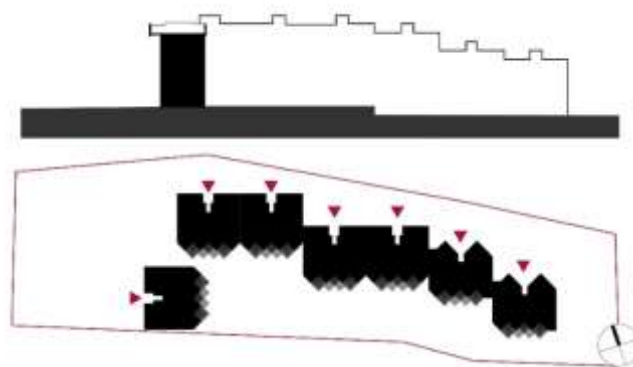


Figure 5.55. ‘Corner’ plot pattern on Plot #1
Source: Author

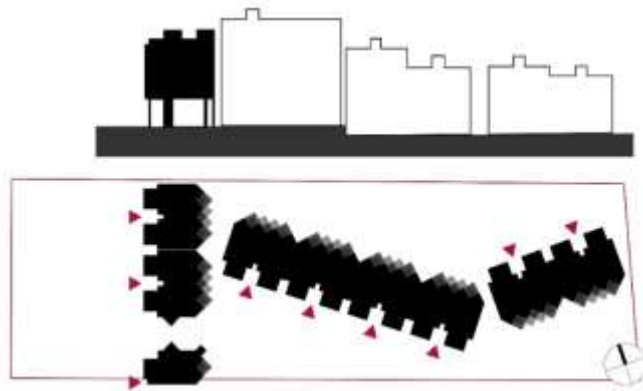


Figure 5.56. 'Passage' plot pattern on Plot #3
Source: Author

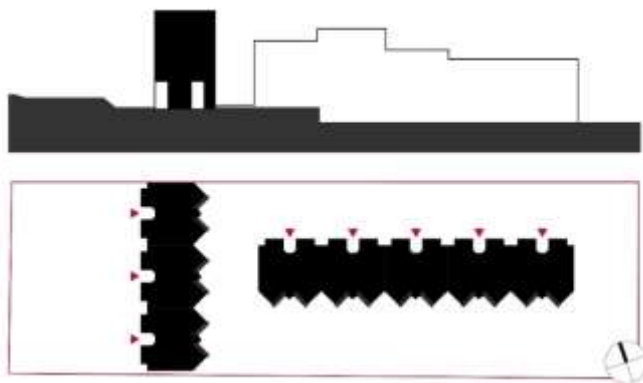


Figure 5.57. 'Typical' plot pattern on Plot #5
Source: Author



Figure 5.58. 'Open' plot pattern on Plot #11
Source: Author

The story of Area A project coincides with the paradigm shift that started in Europe during the 1960s and increased its effect in the 1980s. The precedents started from

the CIAM type architecture and ended with the post-modern approaches to urban form, the functionalist zoning was questioned with the re-introduction of notions like streets, association and identity. Not surprisingly, this particular project shows the signs of an alternative approach to mass housing architecture and its role in urban morphology. As a result of another scalar comparison presented in Figure 5.59, it can be argued that Area A project is a massive case that has a place next to the projects like Bijlmermeer, Le Mirail, and Park Hill in terms of its magnitude and linear block typology. Furthermore, its system of linkages demonstrates a similar architectural quality that is seen in Gallarate II or Barbican Estate; however, it is not as successful as Barbican or Byker Housing in terms of the integration of social spaces as part of the building program.

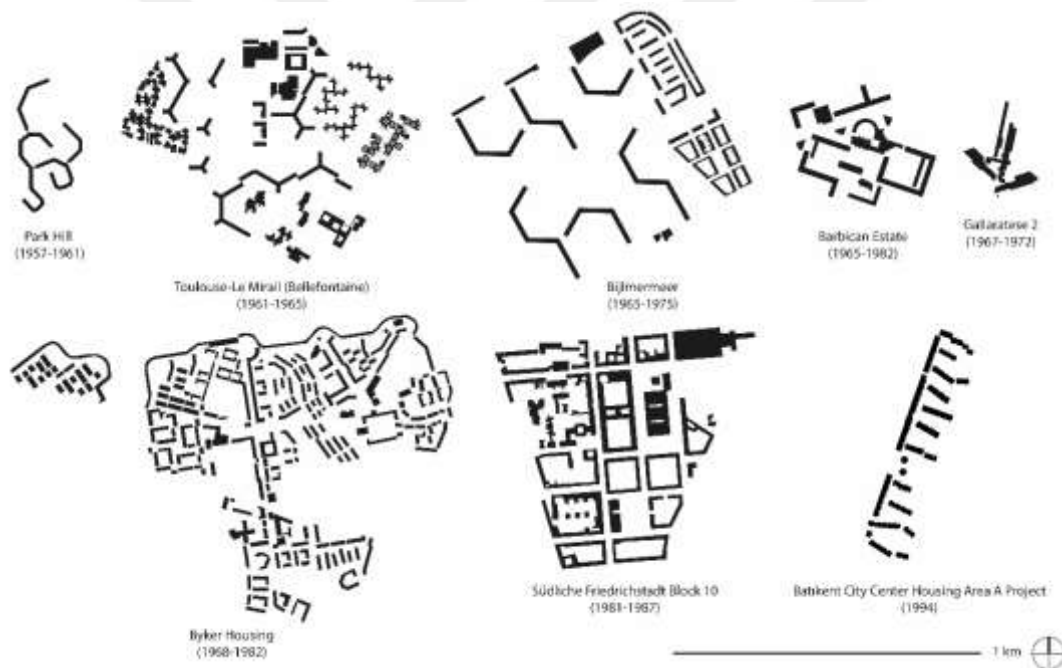


Figure 5.59. Scalar comparison of the Area A with the precedent cases
Source: Author

The urban image of Area A is unified and self-regulating, it situates for its own structural continuity. The comb analogy also defines a network structure, which mediates and connects its immediate elements in a mega form. The grandeur of the building mass functions as one single hierarchical system. Pieces of the comb are

connected by horizontal and vertical networks by which Area A dominates its surrounding in every direction. Components of the mega form constitute multi-level linkages at each plot. Though designed as point blocks, each building is combined as part of a linear grouping. Although the project manifests a single unified mass in its context, only one plot block (the watchtower) is easily separated from the others due to its differences in the plan layout, building program and height. Remaining buildings have a cohesive architectural language in terms of form and height, yet each building block has its own structural and spatial details. The wall image is also visible in the immediate surroundings of Area A. The frontier blocks of the settlement are encountered to other cooperative settlements on three sides. Generally, the settlements on the west are high-rise single blocks showing compositional forms.

The primary path is the boulevard, which is defined by rows of trees on both sides of the road. The secondary paths are pedestrian passages that are not necessarily defined by the route but by the buildings or other urban elements (stairs for instance). Especially the paths that enable pedestrians to stroll through and along with the settlement, pierce the metaphorical wall, connect every end of the area to each other and create a porous environment. Yet the analysis shows that only the northern parts of the housing block allow public access. As mentioned before, the one and only edge element in the site, is the building itself. It orients, limits and covers the entire frontier. A secondary edge is a wall that is observed along the rear entrance (on the southeast end) to the site. Based on the size & height of residential and non-residential clusters two districts are observed. The signs that mark the names of these 12 cooperatives are the most frequently seen elements while travelling hence the nodes of strategic spots. Landmarks are buildings that are identified easily from a distance. The primary landmark is the twin towers, which is visible from a far distance. A private hospital, the social security institution, a mosque and the Ferris wheel of the amusement park nearby are the other landmarks for this neighborhood (Figure 5.60).

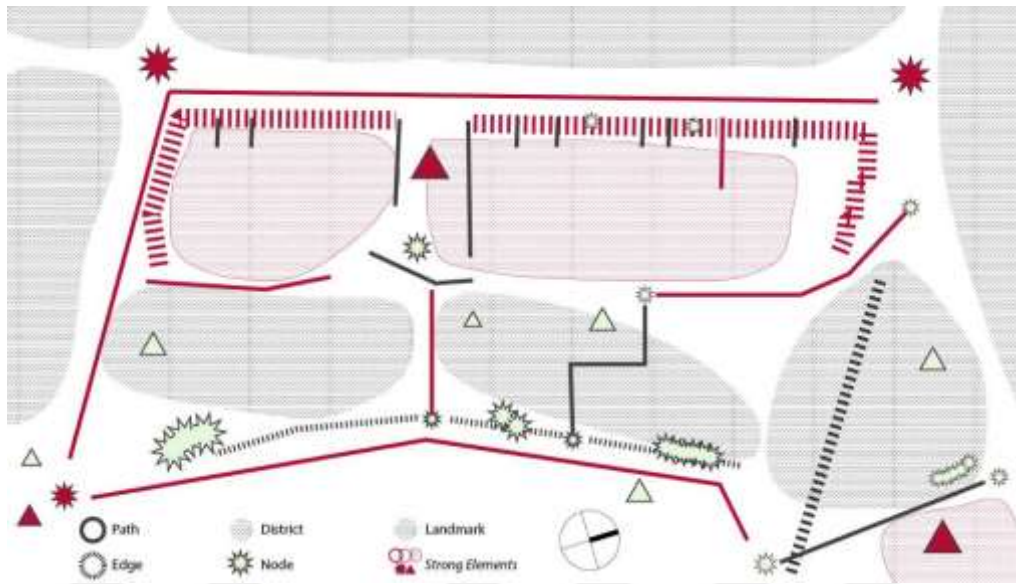


Figure 5.60. Urban image analysis
Source: Author



Figure 5.61. Views from Housing Area A Project
Source: Author

CHAPTER 6

CONCLUSION

This dissertation is based on an observation about the mass housing environments in Turkey where a generic architecture has become the mainstream mode of production. Acknowledging this as a spreading problem in the urban, suburban even rural areas, the study conceptualized a framework in which the spatial organization and urban image characteristics of mass housing environments are integrated with urban design theories through urban-spatial analysis. The necessity of such an approach was asserted with a non-generic architecture that offers alternatives to an autonomous spatial practice, which is witnessed in TOKİ-type settlements. It was noted that such settlements in Turkey were the results of typological presets (i.e. mostly the point block apartments), which gave rise to spatial patterns disconnected from indigenous contexts and were the agglomerations of identical settlements triggering a sense of placelessness.

From this perspective, the problem definition underlined the significance of Batıkent cooperative housing settlement in Ankara as a unique attempt and an experiment that offered an alternative housing provision model and underwent the creation of a new settlement dedicated to mass housing from scratch. The experience in Batıkent got under the spotlight of the study in order to investigate the spatial organization and urban image characteristics of housing settlements from the urban scale by mapping the overall macroform and analyzing its components at the urban block, plot and building scales. Because it can be asserted that such an extensive mode of production actually was a manufacture of ready-made housing blocks to meet yearly goals for producing ten thousands of units in a very short time period. There was a very intensive scale of urbanism that characterized the urban culture and the architectural attributions of the housings in Batıkent.

Batıkent is referred to as a leading model for other cooperative settlements that came after it. Throughout the project, not only essential requirements for effective implementation of the residential development and activities but also the strategic urban growth were planned as an emerging part of Ankara's macroform. Therefore, it can be stated that there was an opportunity to conduct an integrated approach between the structuring of an entirely new urban area and housing models based on density, settlement, morphology, and typological structures. Therefore, the interest in the case of Batıkent was in analyzing the urban form and assessing these subjects of an experimental project in terms of the prevalent architectural practice in Turkey.

The elements to understand an existing urban form and spatial qualities of housing environments required defining various aspects that can overarch both theories about urban design and the architecture of mass housing. This was necessary to determine the tools and variables of an urban-spatial analysis method, as well. Within the scope of this dissertation, Roger Trancik's approach on three urban design theories that are essential for an integrated spatial quality and the aspects of dimension, typo-morphology, and urban image were studied. In the intersection of these two theoretical groupings, nine sub-concepts, the planimetrics, distance, silhouette, typological patterns, urban structure, urban grain, public vs. private space, patterns of experience and urban elements were introduced and applied as the variables of the analysis. Each theoretical approach and aspect was studied relatively as notions considered with the spatial experience in an urban setting. They were also considered as strong visual agencies to express the typical layouts of cooperative blocks and alternative approaches via maps supported by orthographic drawings and conceptual 3D model-views.

These inferences brought the necessity to conduct a precedent case study at the time that coincides with the implementations taking shape in Batıkent. In the third chapter, these two themes guided through a timeline starting from the 1960s to the 1980s, which implied Batıkent as a coinciding case with the dominant paradigms in architecture.

The fourth chapter described the elements of spatial organization and place characteristics that pertain to the design and experience of urban mass housing environments. Distances between community centers and living areas, elements that create a sense of association for the users. For instance, it became clear that the problems or potentials of the overall silhouette of a housing environment can be understood with the relative images of a landmark for the neighborhood. Alternatively, it can be considered with an optimum walking distance that ties places of communal activities or other housing blocks together along a path.

In the fifth chapter, Batikent's experience in mass housing was explored. In between the dominant architectural paradigms in Europe, a "tabula rasa" urbanism provided areas for associate cooperatives and activity centers within defined zones. The urban morphology took shape with predetermined types of housing classified within urban blocks defined by a network of roads. According to the precedent cases, the planning of Batikent can be acknowledged as a modernist approach that prioritized functional zoning at the urban scale, anchored a geometric center (the CBD) as the urban center, and distributed residential areas within determined zones. The overall practice in Batikent also summarized the conventional planning practice in Turkey, which uses the predetermined norms of a master plan, and handles mass housing environments one by one rather than as pieces of a whole. At this point, Haluk Pamir's (1988) opinions should be mentioned briefly before beginning to evaluate Batikent and the results of mapping. Because, in an article dedicated to explaining various dimensions (operational, architectural, political, etc.) of the project, Pamir gives fundamental insights concerning the physical structure of the master plan, more specifically an interim evaluation as the project was still under development then. Several problems that came into the light are unresponsive physical structure, undistinguished architecture due to the independence of cooperatives in design, and problems of social mix. Pamir stresses that the policies and construction technologies eased to ignore architecture hence "a visual and physical chaos that obstructs the creation of a sense of identity with the new environment" could be expected (Pamir 1988, p. 50-53). This

important inference points out the perils of “universalist ‘functionalist’ principles” creating monotonous spatial characteristics. It is also a spot-on identification about the generic housing production culture in Turkey.

Being the largest cooperative project ever realized in Turkey, the Batikent settlement provided an adequate and even overwhelming research area owing to the existing building stock presenting a wide range of diversity and differentiation in the schematic layout and organization types. The 1979 master plan was a primary reference to comprehend the underlying urban structure of the cooperative housing areas and decode the attributions of new settlements built afterward. In addition, the hierarchical structure of the entire planning could be traced through many publications by Kent-Koop.

The original land use maps of Batikent showed that the settlement is based on a concentric development plan by which functions of the hierarchical structure become sub-centers around the cooperatives organized according to user densities. Since providing regular houses for low and middle-income residents who were living in uncontrollably growing squatter houses was a priority in the ‘70s; the low- and medium-density houses were planned to be built more (in terms of the area they covered). Having the high-density blocks in the middle and the other two density groups around them, it was aimed to create a gradient that designates the settlement’s silhouette rising at the center.

Undeniably, the master plan aimed at utilizing functions rather than giving an architectural image. The socio-economic status of residents was a priority in distributing and balancing the densities of housing types. The high-density areas were positioned to reduce horizontal distances to shorten the commuting for mobile residents; while the low-density areas aimed to replicate a country life but had farther distances from the center. Despite the central decisions in terms of type, density, heights, and location of housing, the only binding urban structure that would blend cooperatives in design, form, or spatial layout was dependent on district centers.

After summarizing this piece of information learned from the '79 master plan, now the analysis of the current situation of the settlement and several cases of cooperative housing environments can be discussed with the guidance of the conceptual framework. This discussion will be held in two parts: on the scale of Batikent and on the scale of the Housing Area A case.

On the urban scale

The assessment of Batikent started with the figure-ground analysis. As previously states, the residential figures dominate the figure-ground mapping and put forward the magnitude and intensity of Batikent as an extensive housing settlement. The figure-ground expression of the building footprints shows that the predominant typology for housing settlements is the point blocks and linear slabs formed by the point blocks. Although they are not completely generic in terms of the unit plan, they are stereotypical apartment blocks that entail quick and uncomplex design solutions that can be tailored with simple adjustments for the site. Therefore, the overall picture illustrates the majority of vast voids grouping singular solid objects and a problem of non-compact public spaces. There are no exterior spaces around the cooperatives to establish a physical and/or visual continuation of the solids. Rather, there are sorts of inner voids inside of the cooperatives that are either attained for social functions or gardens and car parking.

The figure-ground study reveals a dominance of the collective form as a combination of patterns of solids and voids within the settlements. As the master plan intended, the existing physical form allows distinguishing residential buildings as block patterns from social facilities and recreational areas. In this regard, the figure-ground map visualized this basic separation and justified that the residential buildings are the most dominating components of the urban form. Beyond revealing the aggregate, the morphological mapping articulated that the countless numbers of cooperatives could be classified by a variety of the solid-void patterns. The building clusters of cooperatives generally have a grid pattern. In some cases, radial or axial patterns are also observed.

The size and shape of housing figures indicated the parcels formed by the housing surroundings and quarters. Few exceptions that are edge defining and specialized in the form aside, almost all cooperatives are organized within pre-defined parcels at relatively similar scales. The dimension maps reflected the pervasiveness of the pre-defined standards affecting the size and heights as well. Today, the low-rise development in low-density areas, mid/high-rise development in the medium-density area and high-rise development in high-density areas are still persistent. However, in the northern, central and southern parts, it is possible to mention that there is an emerging change in the density/height ratio of residential buildings starting from the former CBD towards the outer (new development) parts. There is a drastic increase in the number of gated high-rise non-cooperative settlements (a.k.a. the fourth generation) built on the areas reserved for social/recreational purposes. Their locations indicated that the principal decisions on density distribution have been abandoned in favor of private investments. Atlantis City Residences⁸¹, Park Vadi Batı Evleri⁸², and Gala Batıkent⁸³ projects are the causes of this observation.

⁸¹ Details of the project can be found at Arkitera via <https://v3.arkitera.com/p395-atlantis-city-konut-ve-alisveris-merkezi.html?year=&aID=2697>

⁸² Details of the project can be found at <https://www.kuzugrup.com/proje/park-vadi-batievleri/>

⁸³ Details of the project can be found at Arkiv via <http://www.arkiv.com.tr/proje/gala-batikent3/10967>



Figure 6.1. Gala Batıkent project as a result of a newly emerging typology
Source: Author

The recent additions of major projects with education, health, and social facilities are very effective in creating activity centers. Especially newly built private and public hospitals and private schools built in the center and the west of the city are the areas that attract most of the interaction in the settlement. Although mosques, parks, football fields, markets, elementary and high schools, and small health clinics are the typical nodes that are possible to come across within 5 to 10 minutes of walking, they are not effectively used. A diversity of buildings and land-use in terms of the variety of these facilities is present, but the street network connectivity is insufficient. To elaborate, there are not enough buffer zones to create safe and walkable paths in the neighborhoods because of the streets with heavy traffic and pedestrian sidewalks. Furthermore, the optimum distances that can be reached on foot are now even longer due to the singular centralization of public infrastructure.

Analysis maps showed that the dominant building typologies in Batıkent are the point and linear blocks followed by single houses with gardens. Despite the differences from the '79 plan in terms of the areal distributions of the density groups, examples of each can be somewhat found in each district. As Batıkent's development progressed from the east to west and north, in other words from the first settlers of the first stage to the latest stages, the typological heterogeneity increased. Consistency in the typo-morphological landscape can be seen with the

independent blocks alone, yet they do not present a coherent bridging in the urban structuring.

As mentioned, several urban blocks create the edge continuity for the immediate surrounding but this effort is limited within their perimeters. They serve as compositional forms creating oblong patterns. Similarly, the low-density group housing has compositional articulations. Although Batikent's topography is not flat, the spatial organization is not widely considered to use existing topography as a means of the spontaneous growth of a group form. The low-density housings, which are the most suitable typology for this, mostly go with the compositional form, too. Mega forms are also a rare find. In pursuit of creating neighborhood units surrounding various social facilities serving a community, massive buildings that combine a multi-level linkage and include utilities as part of the design are not very usual. After the revisions of the 1979 plan that changed the CBD and its vicinity into a residential area, however, the high-density housings built in the area revised Batikent's high-rise typologies into integrated housing blocks. As a result, the only mega forms detected in the analysis maps are located in the former CBD. These are the Housing Area A, B and C projects, and Atlantis Residences. There is also a recently finished project, Gala Batikent, on the southern part of Batikent. This project merged two urban blocks for a mixed typology that allows both point blocks and a massive perimeter block. The most common characteristics of these complexes are that they have a major enclosure effect. The overall height of the mega forms is ranging from 9 to 25 stories by which a large span of tall buildings forms juxtapositions of linear and perimeter blocks. This strategy creates linkage in three-dimension that gives an independent functionality. It has been observed that they have a linear development with commercial functions combined. For example, Atlantis Residences and Housing Area A have strategically positioned with shopping malls nearby, Housing Area B, Area C, and Batikent Gala projects have shops underneath the blocks. In a sense, these settlements provide an option for independence in terms of social facilities and functions. Despite the differences in their typologies, they dictate high-density urban 'walls'.

From the perspective of a pedestrian, the first impression about Batıkent is the sense of stepping into an absolute residential district provided for a large community. Surrounded by groups of cooperative sites, one can feel being in an exaggerated neighborhood that downsizes the human scale. For this reason, it is accurate to call Batıkent a new town because of this excessive development. As the names of the cooperatives indicate (e.g. 06 Yol-İş, Tes-İş, Siyasal, Akademikiler, Esnaf Sitesi, or DETÇA Devlet Tiyatrosu Çalışanları Sitesi) this town has originated in the idea of a social mix that will provide homes to many workers, civil servants, and staffs hence their own ways of living. The independence of the residential complexes in terms of design makes it difficult to comprehend a place identity in the living environments.

As mentioned in the place analysis, there are elements that open this argument to the discussion. To begin with, vehicle routes have shaped the boundaries of housing environments. For a pedestrian, there are no other versions of the appropriation of a movement. Paths are either the roads or the private driveways in the gated housings. The primary and secondary roads define a network of streets that give each cooperative a designated site. By separating and distributing various blocks; the observer is channeled to main boulevards and crossroads to walk on the sidewalks. The linear structure of the roads helps the experienter to see the settlement, yet public paths have little effect on this. They are found as walking and running tracks in the parks. Paths also define districts, not in the same sense as the master plan offers but of the identifiable character of the large sections of it. As the place map has shown, the major indicator of such an experience is the difference between the industrial and residential parts on the east and south of Batıkent. With regard to the housing environments, however, this difference is not sharp. The mixed-use high-rise residential and stores underneath give a secondary sense of entering a particular district. Furthermore, they act as the activity centers of the entire settlement; they collect and distribute masses of users for the collective experience of public spaces. Therefore, an ‘actual’ center of Batıkent is GİMSA

and shopping malls on the same axis where commercial facilities are aligned. The thresholds in front of these facilities create daily ‘irregular’ gatherings.



Figure 6.2. GİMSA as the center and threshold of societal events and daily purposes
Source: www.halkevleri.org.tr (Accessed on August 2020) ; Author

Although the traditional meaning of landmark is physical (sometimes symbolic) objects visible at a distance, for Batıkent it is large and small size buildings that indicate the location of mosques, and social, commercial and health facilities. The towers of Atlantis residences are the most easily recognizable landmarks. As the highest structures in the whole area, they fulfill the task of way-finding, but also giving proof that the spatial continuity of Batıkent is altered.

Based on the analysis maps and evaluation of the spatial organization and place character, it can be concluded that Batıkent’s spatial quality is based on the pre-conceived building standards, which set the norms of a prototypical development. An overarching architectural identity in terms of housing is not comprehensible. Each cooperative is fragmented and independent. This argument can be observed in the lack of aesthetic values of the settlements as well, which makes it difficult to tell immediately one housing site from another. The unwitting response to that problem is the differences in coloring the façades.



Figure 6.3. Two looks towards different cooperative and non-cooperative blocks
Source: Author

The spatial values that contribute to public life heavily relied on the community centers in the districts, yet their connection with residential environments is undefined. Having planned as a new residential district on the outskirts of the city, the macroform of the cooperative settlement has grown free from a context. Since the expropriation of the site and implementation of the urbanization plan, Batıkent's residential areas have been shaped to provide social homogeneity (that mixes and matches similar social classes), affordability (that offers different models of ownership), accessibility (that defines the optimum distances between community centers and residential buildings) within its centers and sub-centers.

Batıkent offers a wide range of organization types for the density groups yet, it is difficult to read the spatial order in which the low, medium and high-density housings are connected on the maps. Lastly, the center envisaged in the plan did not attain the central place quality due to design and planning problems. Thus, the core of Batıkent center has become dysfunctional and shifted to another location, which is actually a transportation node.

The districts in Batıkent were planned from scratch to serve a mixed user profile with varied activities. However, the analysis results showed that the spatial organization has a one-dimensional profile, which indicates a rather refined spatial culture. Because of the gated settlements, the urban image is not comprehended as a collective entity. Separations in-between living environments are reinforced by urban elements like streets and boulevards, leading to figurative autonomous places. This conclusion points out that each housing environment has a different condition of 'placement' defined within its premises.

To sum, Batıkent settlement was succeeded in allocating areas to various cooperatives and providing houses for 300.000 people yet its mission of a new settlement as a self-sufficient ideal living environment could not achieve a level of quality in the organization of spaces. Although the plan types are different depending on the housing generation, population and density type, interactions with common and intermediate spaces like streets, gardens or courtyards do not have flexibility as parts of the spatial organization principles and the urban macroform.

On the scale of Housing Area A

The Housing Area A project by the Karaaslan, Sepkin and Erkal consortium was examined as an alternative housing environment within the mainstream cooperative patterns. As its significant size and form illustrated on the maps and comparative matrices, the project is one of the most substantial housing settlements. Its physical quality stands out with a great spatial form on the plan level, while its elongated magnitude evoked interest as a genuinely urban character. The combination of

series of apartment blocks as a part of a coherent structural expression made this project unique than the sum of other cooperatives in the settlement for the scope of the examination.

As stated, Batikent's urban form occurred from agglomerating urban blocks that also shaped the limits of the spatial organization of residential buildings within each of them. However, in the case of Area A, this relation is reversed, by which a series of plots form the entire spine of its colossal architecture. The linear frontier of the entire block is rhythmically pierced by pedestrian openings thus, separation between plots (and the cooperatives distributed in these plots) is granted. These openings are also the main linkages between the buildings at the front and the back. The secondary rows at the back are attached to the main spine and create a comb-like pattern whose tips penetrate through the far end of the site. The figure-ground relationship of the buildings discloses the role of public and private spaces as part of an urban character as well. While the figures define a continuous and dense block pattern, the ground underneath and around the blocks show the interim spaces where the residents and curious pedestrians are allowed to enter. As they are physically surrounded by blocks, there is no gap to visually connect these gardens up one side and down the other. Therefore, each garden is secluded and open for a different experience.

The urban-spatial analysis showed that Area A hardly fits any generalization. Neither the size nor the typology and spatial form adjust to the prevalent. Therefore, it can be asserted that the architects' approach to the design of the buildings advocated for a unique urban solution that offered an environment in which a pluralistic society could be connected via architecture. Considering its large and colossal structure, the dissertation classified the project's typology as a linear block. Therefore, the continuous slab image, which is observed as an exterior shell, is in fact concealment for a series of independent point blocks aligned side by side. In other words, the formal pattern does not characterize the interior layout of the blocks. Except for the underground parking and paths in front of the entryways, there is no horizontal linkage in circulation. Other cases have the same effect in

achieving a linear block look, but the combinations of single blocks range from two to four blocks. With this attribution alone, it can be claimed that Area A project proposes an alternative approach to the point blocks and reconsiders their singularity as the pieces of an edge-defining specialized form.

Housing Area A is also distinguished by the care with which it varies interior planning in its dwelling units, in addition to its volume. As the architects explain, the needs of the residences vary according to each cooperative. Different requests from the sizes of units and halls to the number of rooms and bathrooms have been resolved within the general planning principles. The most essential preference of the architects has been positioning the living rooms looking to the gardens, and bedrooms to the boulevard. Furthermore, each block has its own plan solution, which even alters in between floors. As shown in Appendix E, there are slight differences in terms of the size and orientations of some particular spaces. While this might be the size of balconies of the different levels, it can also be the locations of the rooms.

In this populous settlement, the case of Housing Area A offers its tributes for a social life within an urban network as the final generation of the original cooperative settlements. The association of 1200 dwelling units builds a horizontal community. However, in finding ways in which people can be together, it is devoid of shared spaces or thresholds evoking a collective meaning and use. It maintains the street image and respects the existing silhouette of buildings, but the patterns of public space usage are not enhanced. The interim spaces that are gardens adorned with landscaping elements (bridges, pools, waterfalls, benches, etc.) and playgrounds create temporary nodes for daily experiences.

Another important factor affecting the enhancement of public use is the commercial base supporting the twin round point blocks. Although the architects' intention was clear in locating the two landmark towers to create an urban link, this idea is not valid (and not applicable) anymore. With the absence of the business district, subway station, and the central recreation project (whose design is

complete but unlikely to start to date); and the piling of non-residential functions in-between, the initial mission of the watchtowers has become obsolete. Thus, there is a sudden change in building typology and geometry. This not only interrupts the unity of the residential blocks; but also perplexes the appropriation of space. It can be questioned if the vision becomes a superficial prestige image that lacks places of social cohesion.

This inference is somewhat implicit in the place analysis of Area A. As previously illustrated, the first and the most important impression about experiencing the site is the magnitude of the building frontier. A massive edge that continues for hundreds of meters successfully concretize the wall image hence forms an enclosed district. The ramps/roads of the underground parking and especially the pedestrian passages create nodes to break the edge via paths. Furthermore, they become essential elements in way finding as they situate as the main gates of the gardens and other buildings behind. It exhibits itself as a major reference to the city but preserves less of the same quality for the community inside. Nevertheless, its attributions as a place are exceptional compared to any other cooperatives in Batikent. Area A constitutes an interesting example within the specified framework of cooperative housing. Taking a stand against the stereotypical solutions, it also emphasizes the reality of history in the way it uses traditional elements of cities in a modern housing solution.

The findings obtained from the maps and charts showed that Batikent cooperative housing settlement has been an immense experiment that included an extent of alternative living environments in addition to the stereotype solutions that are over normalized by the mainstream housing production. There is success in utilizing new technologies to provide a large span of housing types and attempting to address as many diverse users as possible. On the other hand, it stands behind the pioneering approaches of its period in terms of spatial continuity and legibility throughout the settlement. The influx of people and housing congestion in central Ankara was tried to be eased with a self-sufficient new town development. However, the western experience in building new neighborhoods with high

densities had shown that they were costly and could provoke social problems. Instead of recognizing these aspects as the essential problems in planning a human-scaled landscape, Batıkent's zoning created districts that surpass that limit in multiple places. Without similar building groups oriented inwards to lead a network of paths and nodes, social facilities and recreational areas became inefficient in binding cooperatives with distinct qualities. Although half of the area was supposedly devoted to recreation and transportation, today this is hardly the case. On the contrary, central park and lake projects are remaining unresolved, and more recreational areas are becoming prone to private investments. The edge-defining mid and high-rise buildings and the vehicle traffic on boulevards show an extensive network that overwhelms the neighborhoods by leaving no spaces between cooperatives to communicate.

As addresses many authors who contributed to this dissertation argue, these can be considered as the indicators of the problem with creating a modern and attractive settlement from nothing but contradicting with the complexity of urban life. Kevin Hetherington says that “modern social practices, modern institutions, and modern social identities could all be described as some of the effects that emerge from the alternative modes of ordering found in heterotopic sites” (Hetherington 2003, p. 70). This reminder about the concept of heterotopia and modern city planning brings out that well-organized environments that are set to cope with the undesired complexity of the ‘unplanned’ counterpart tend to misplace its place character while attempting to create an ideal solution. In the case of Batıkent's spatial organization and place character, the experienter falls into such confusion. On the one hand, it is one of the most extensive mass housing projects in Turkey, which succeeded in planning and implementing a healthy living environment. On the other hand, this pre-planned city still needs the extent of public engagement. Relatively walkable blocks and streets, or shopping in proximity needs transitional spaces between the cooperatives. Tools to reform these aspects and to develop underutilized neighborhood units could contribute to a more diverse settlement.

The elements articulated throughout the study should the guidelines to offer alternatives to the stereotypical patterns of mass housing environments.



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APPENDICES

A. MAPS FROM BATIKENT MASTER PLAN (1979)



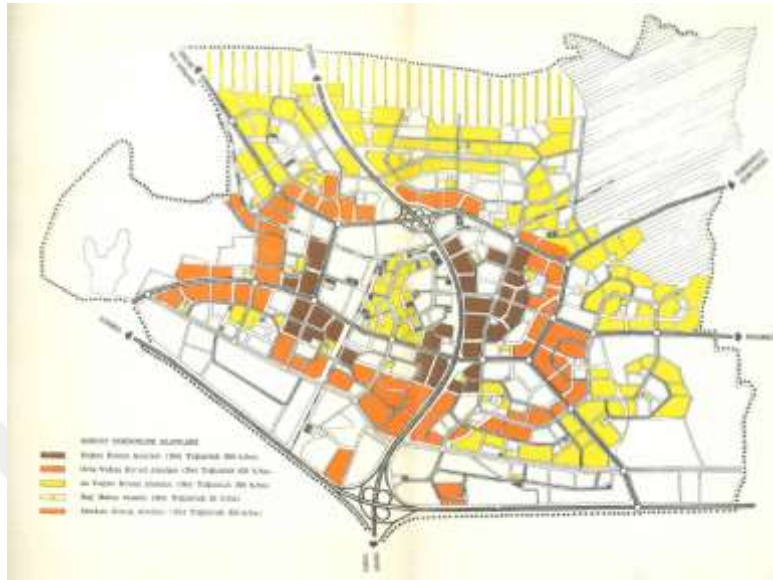
Map A.1. Transportation

Source: Kent-Koop (1979^a)



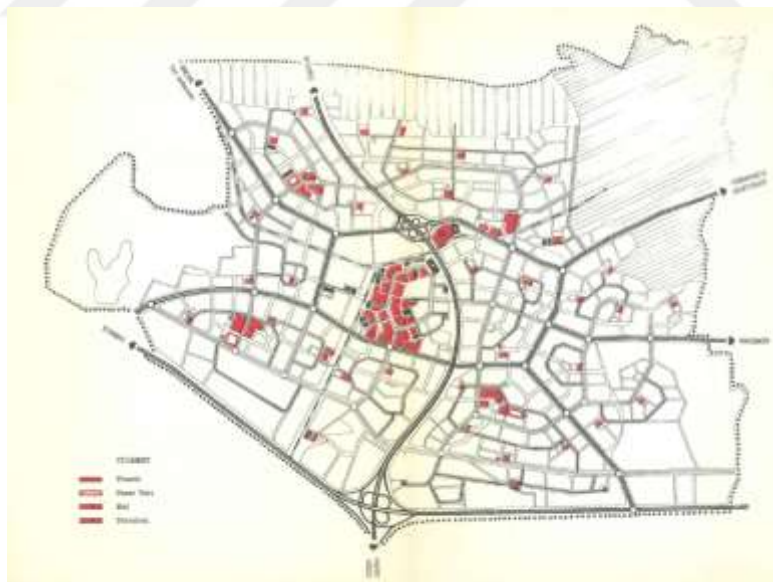
Map A.2. Main Pedestrian Axis

Source: Kent-Koop (1979^a)



Map A.3. Housing Density Areas

Source: Kent-Koop (1979^a)



Map A.4. Commerce

Source: Kent-Koop (1979^a)



Map A.5. Green Areas

Source: Kent-Koop (1979^a)



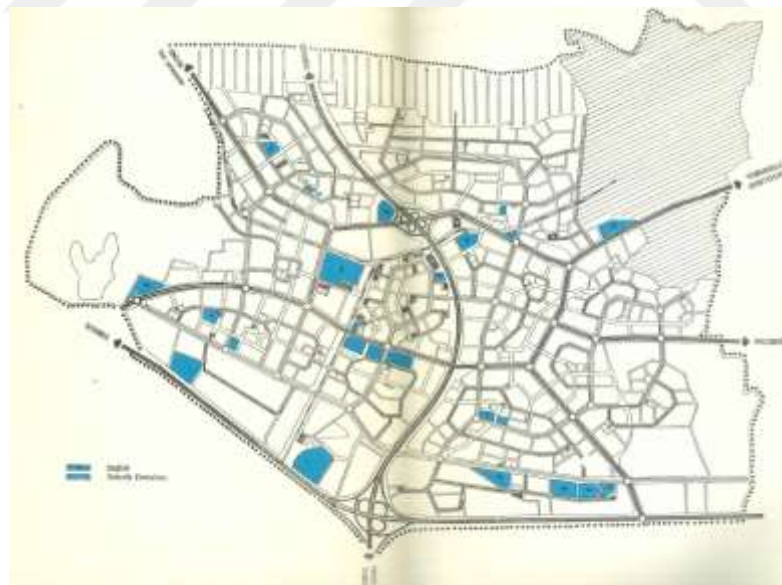
Map A.6. Parks-Playgrounds and Sports Fields

Source: Kent-Koop (1979^a)



Map A.7. Education (Kindergardens and Elementary Schools)

Source: Kent-Koop (1979^a)



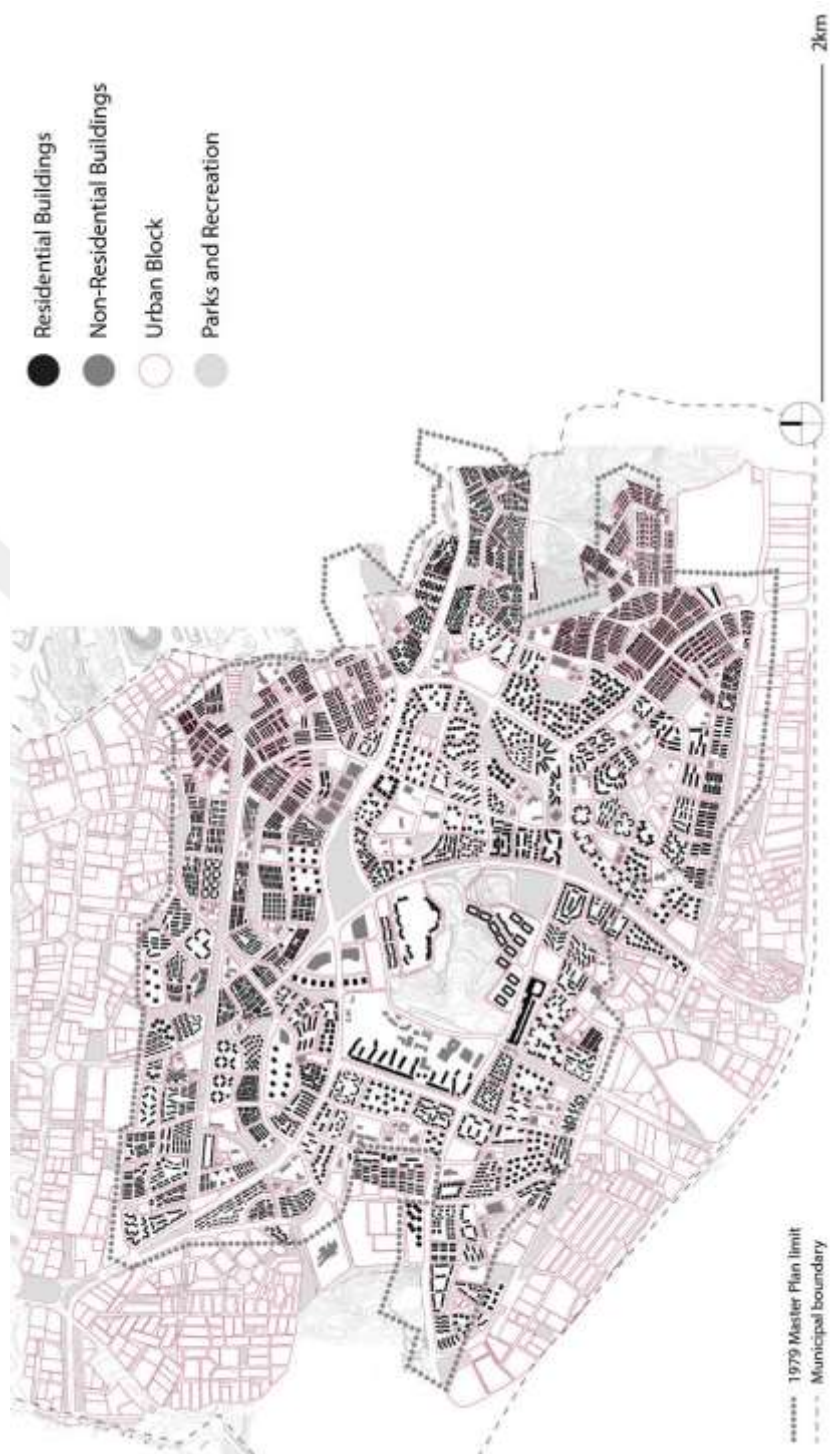
Map A.8. Health and Technical Facilities

Source: Kent-Koop (1979^a)

B. LARGER VERSIONS OF THE ANALYSIS MAPS



Map B.1. Batikent's urban macroform



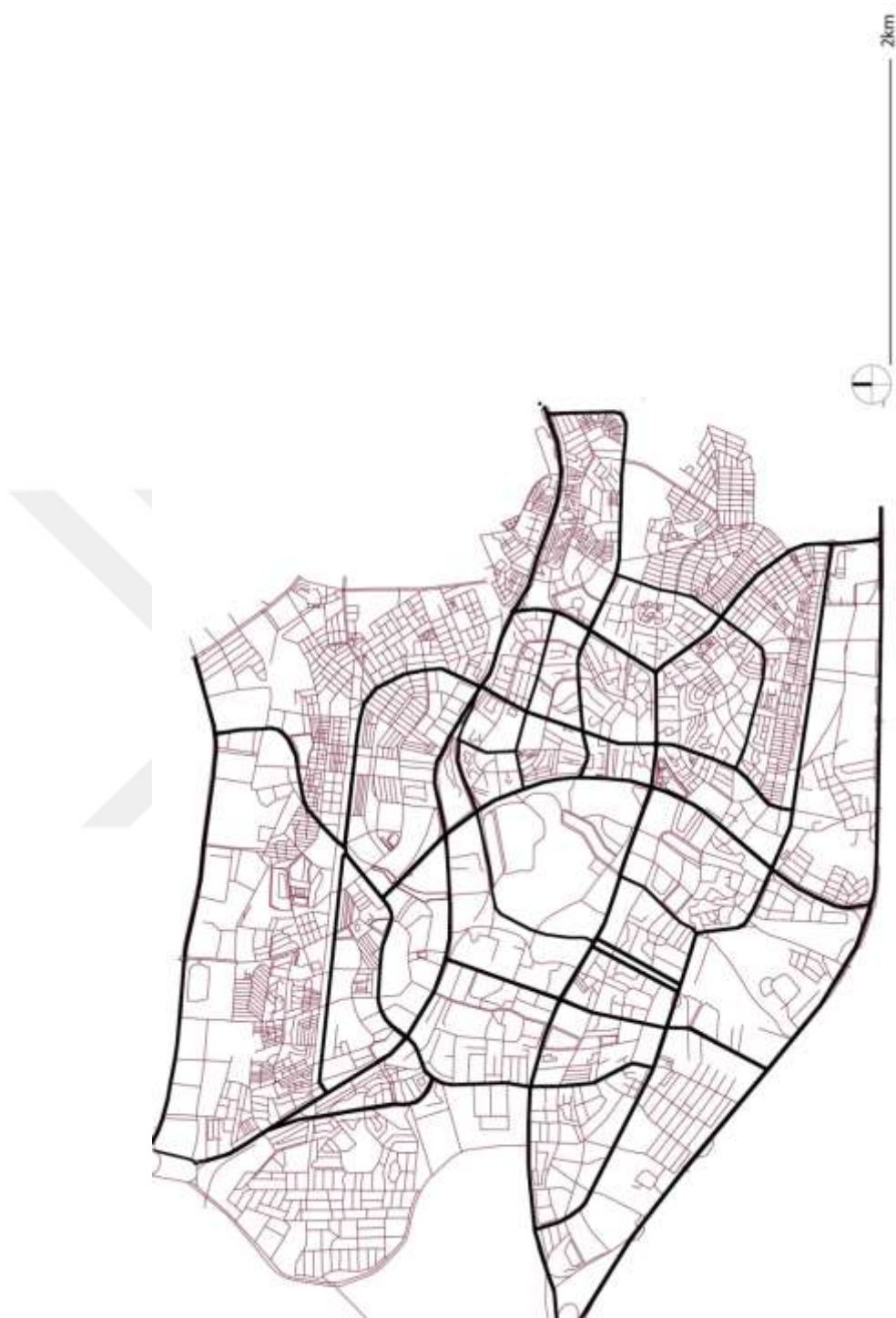
Map B.2. Batikent's figure-ground map showing footprints of buildings and the voids in-between



Map B.3. Morphological mapping of three types of housing density in Batkent



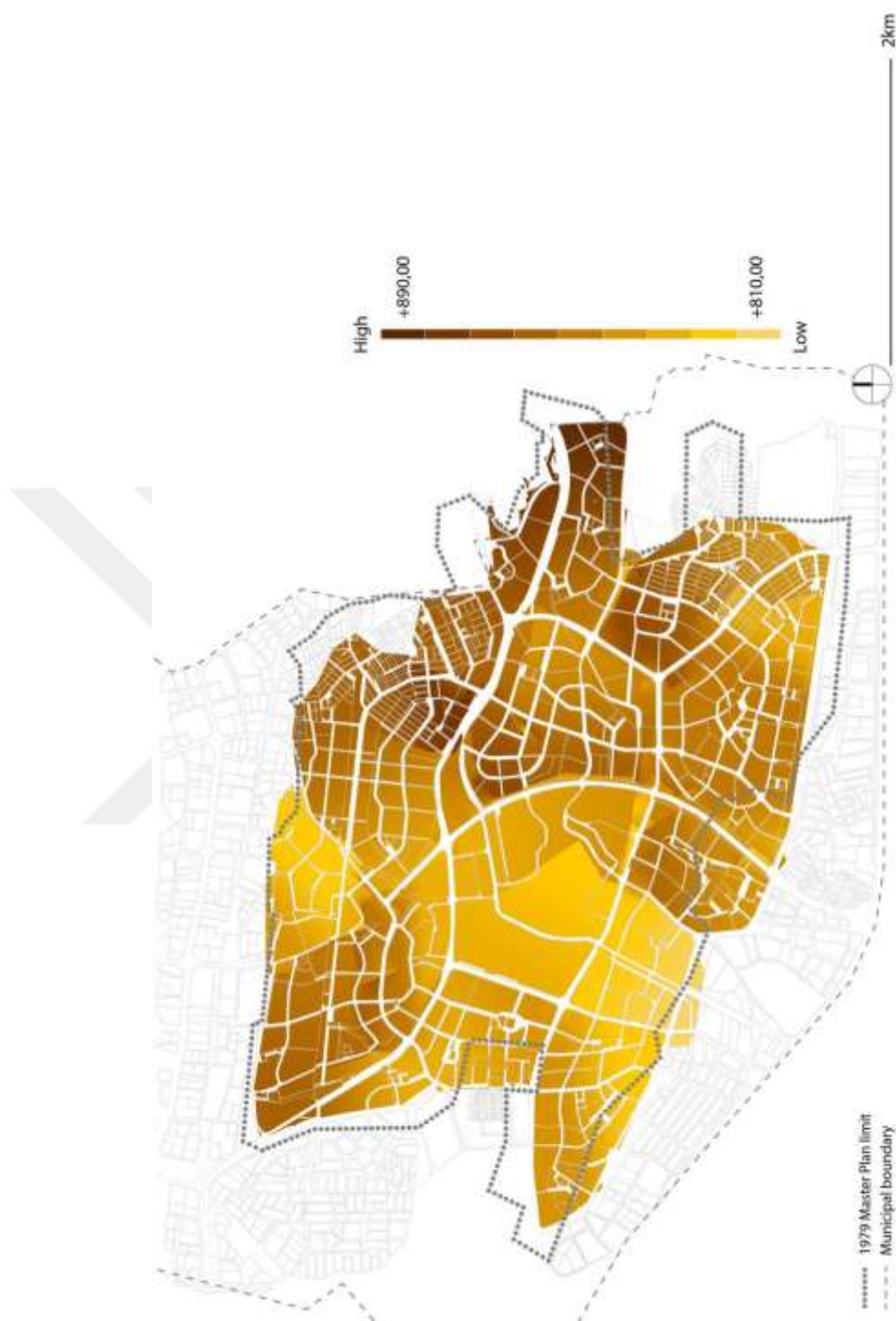
Map B.4. Housing blocks in figure-ground in comparison with the precedent projects



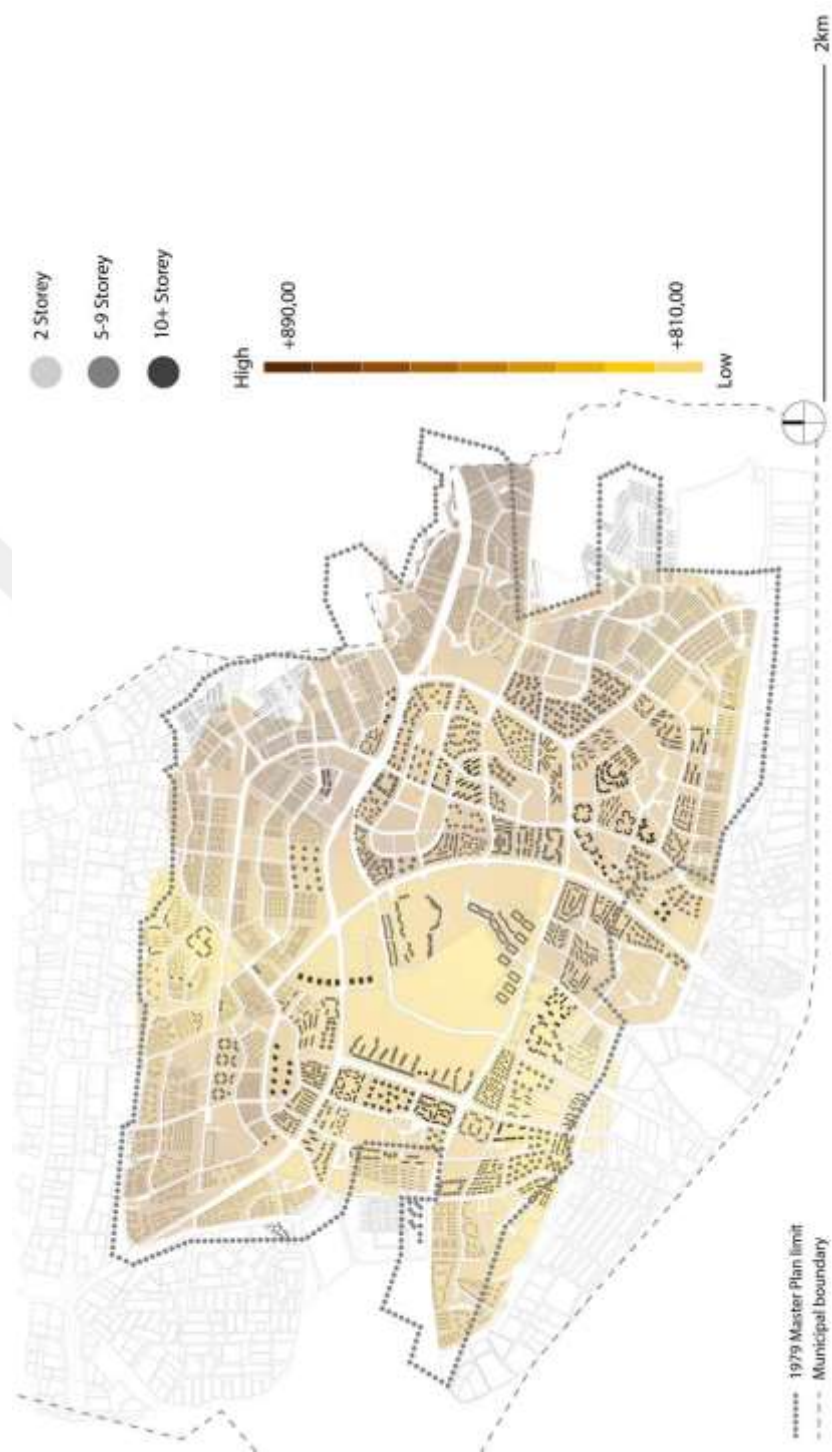
Map B.5. Streets network in Batkent



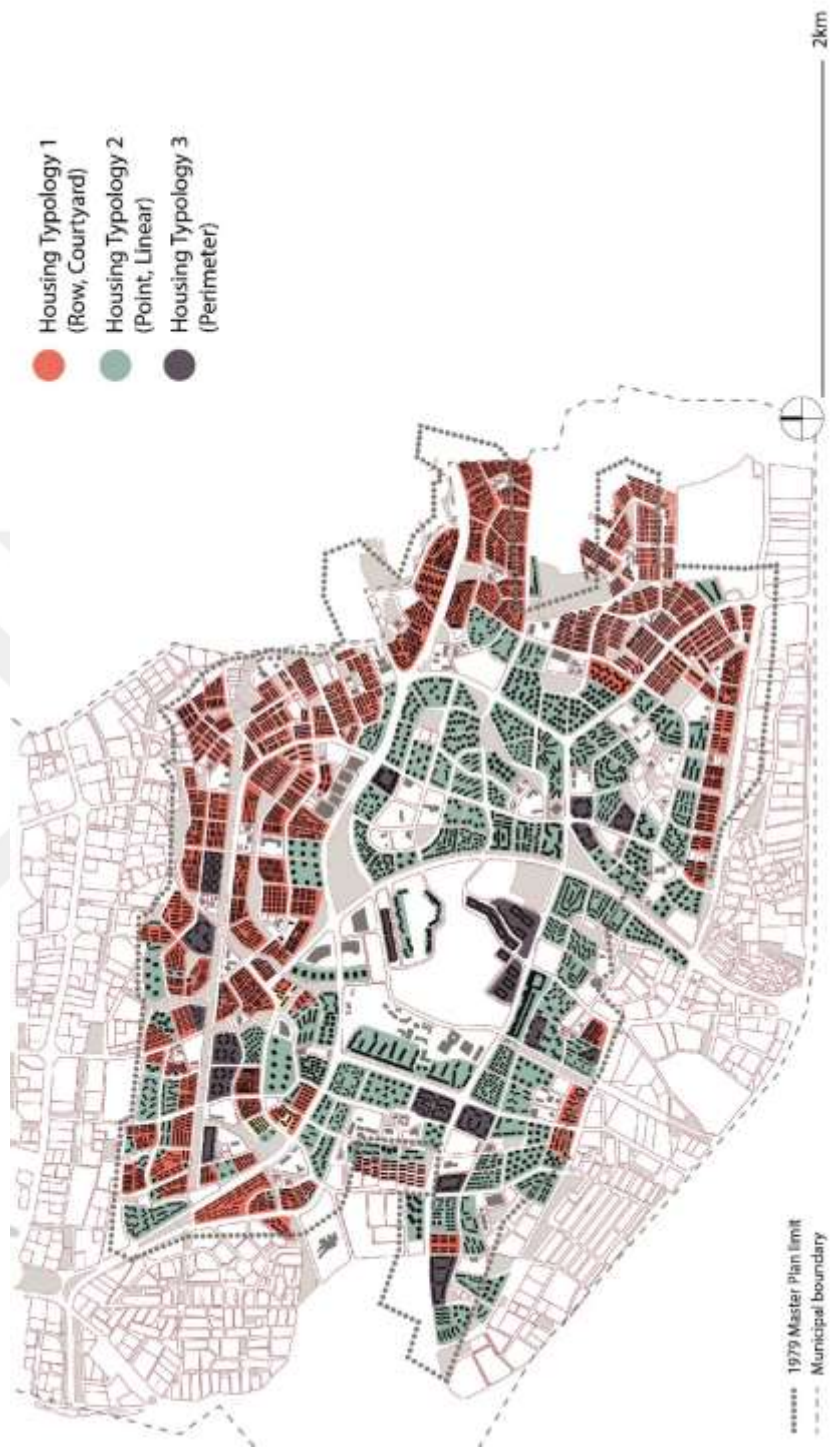
Map B.6. Pedestrian sheds in Batıkent



Map B.7. Topographic map of Batikent



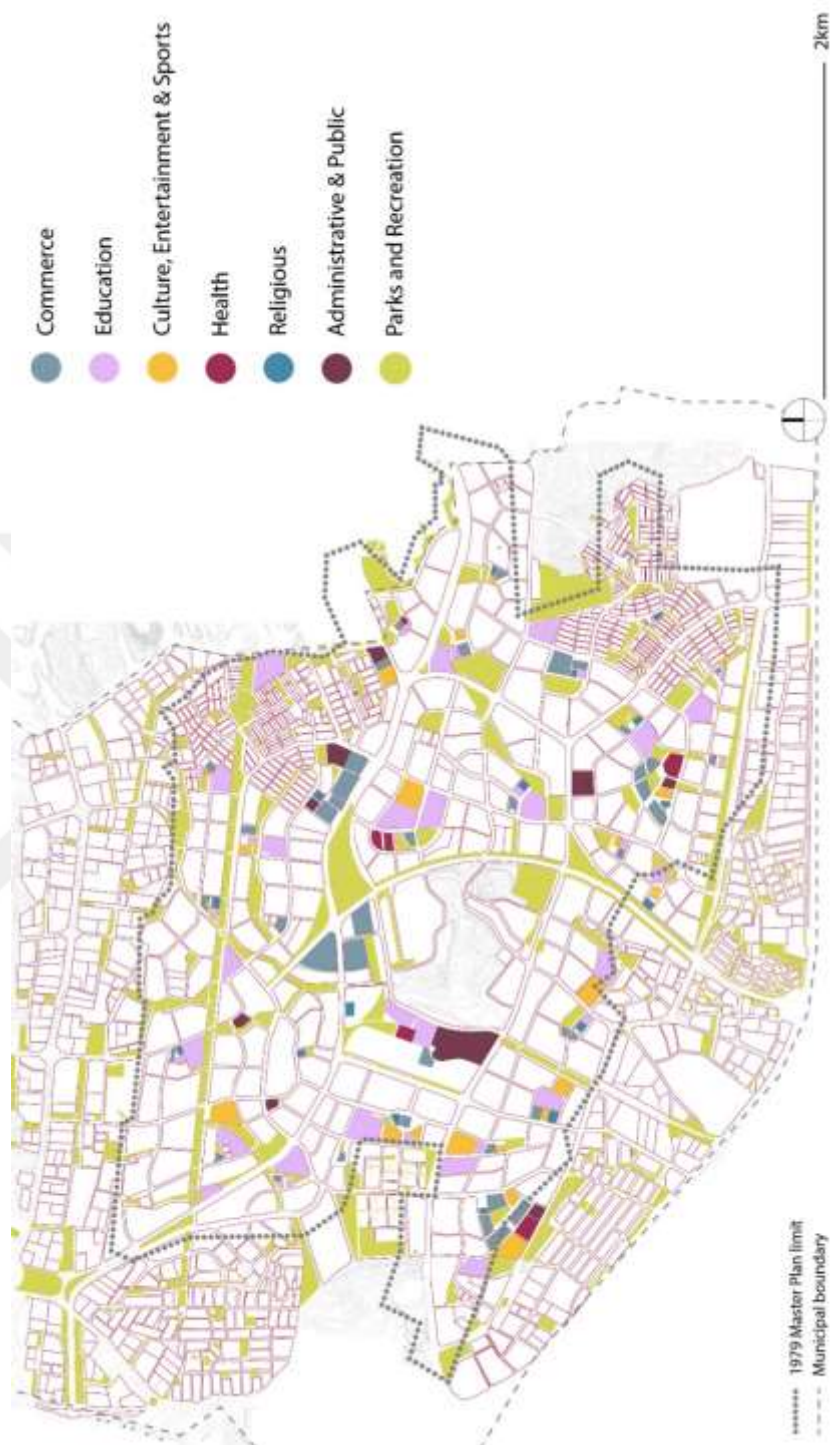
Map B.8. Building heights on superimposed on the topographic map



Map B.9. Morphological expression of housing typologies in Batıkent



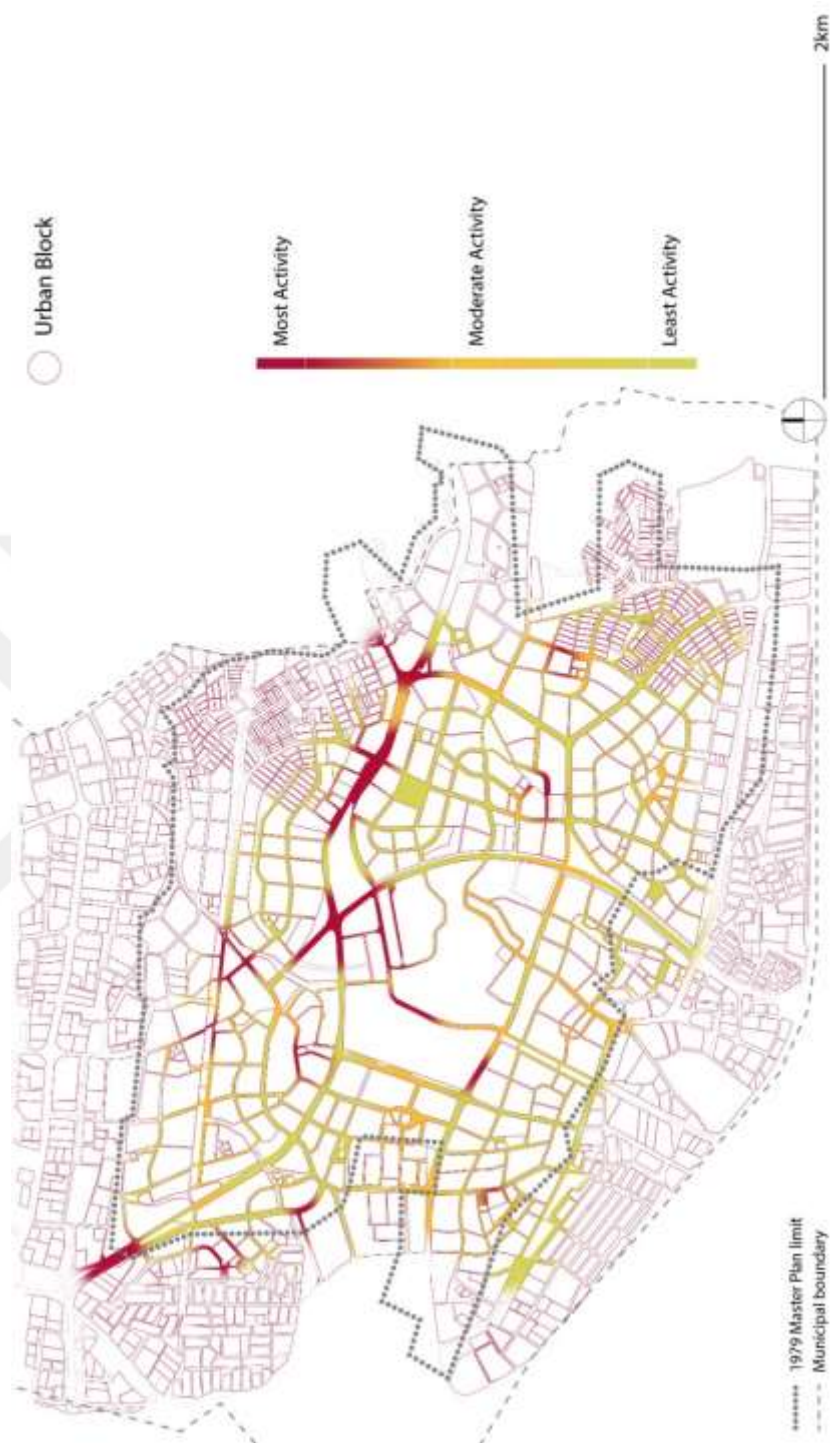
Map B.10. Urban structure



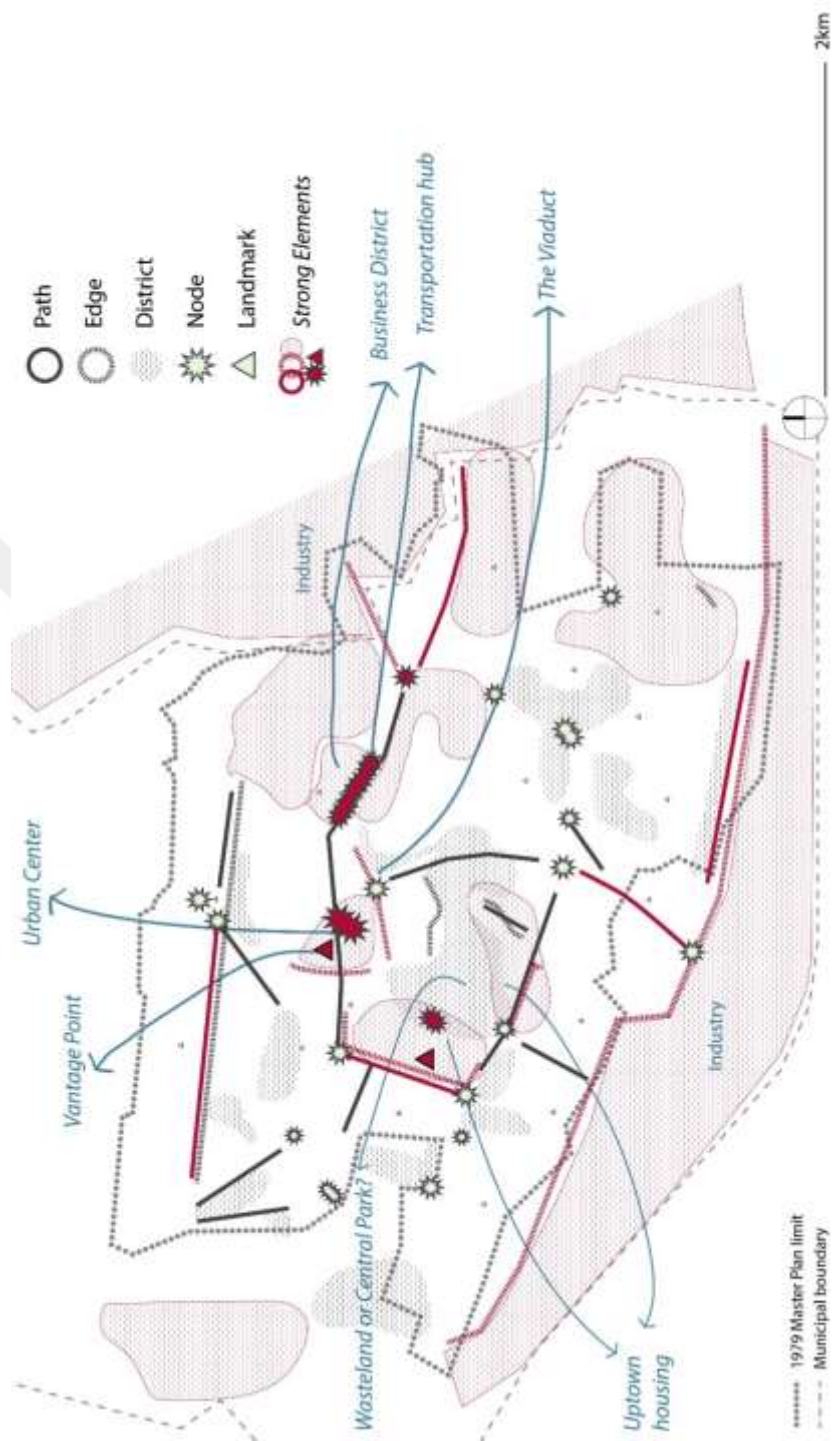
Map B.11. Land use of social facilities



Map B.12. Private realms compared to urban public space



Map B.13. Patterns of activity clusters



Map B.14. Urban elements of Batıkent

C. SAMPLES OF THE HOUSING TYPES IN BATIKENT (1979-1984)

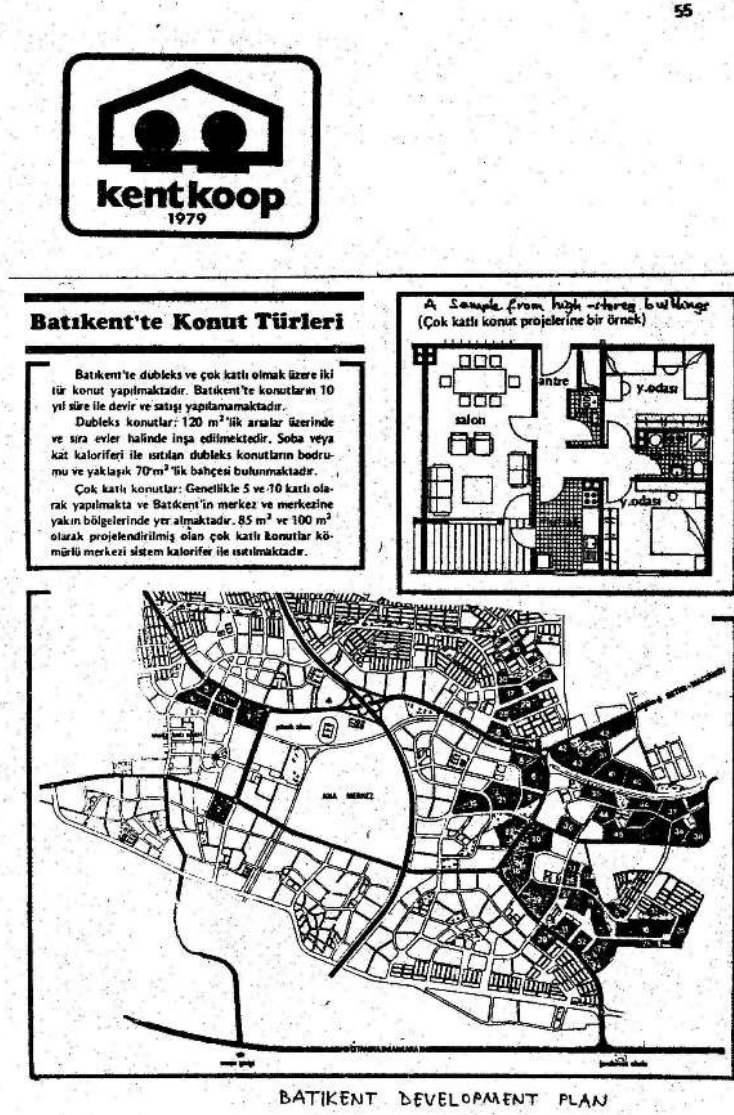


Figure C.1. Housing types in Batıkent

Source: Sayın 1984, p.55

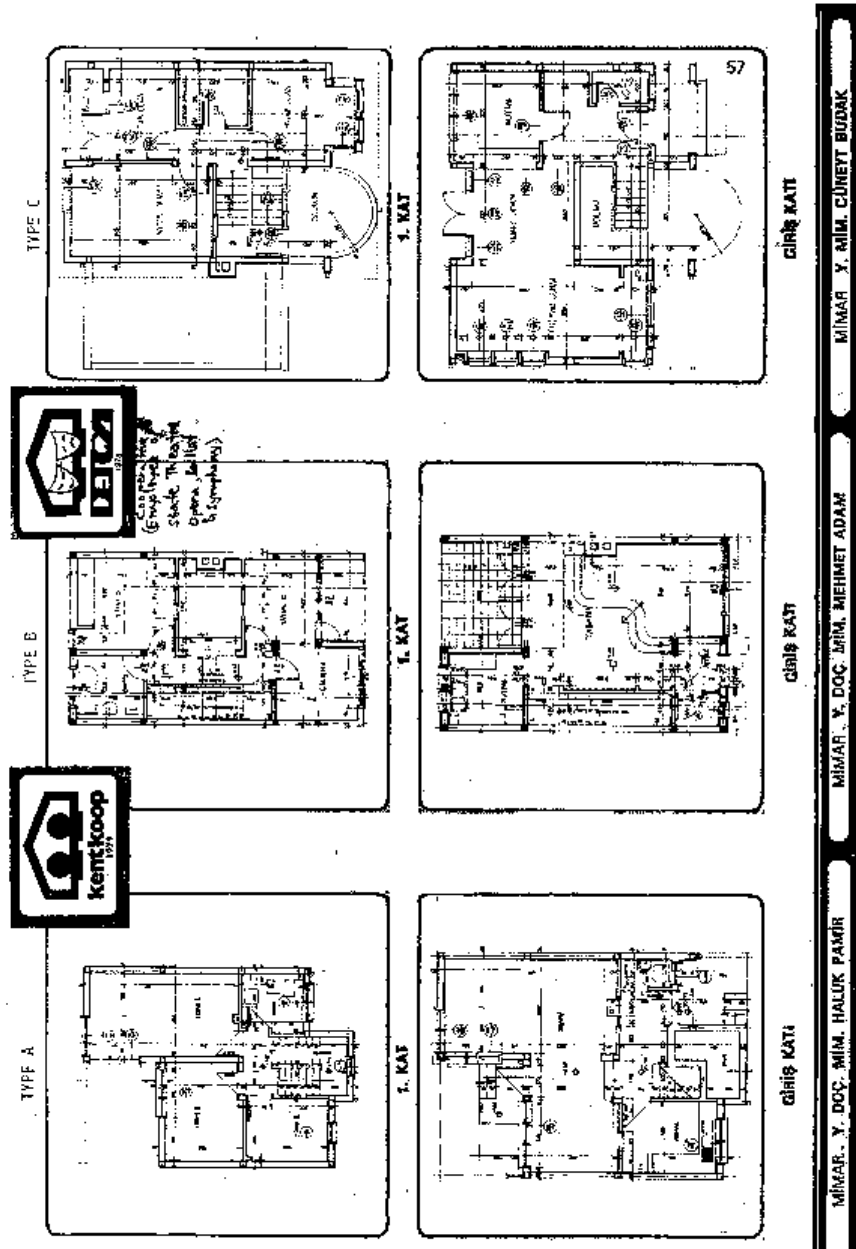


Figure C.2. Housing types in Batıkent (Continued)

Source: Sayın 1984, p.57

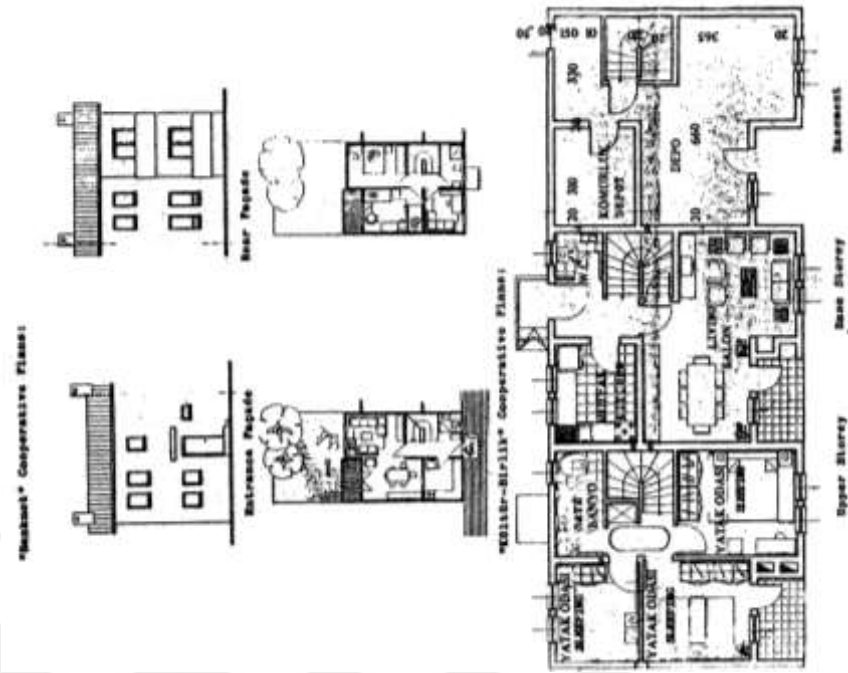


Figure C.3. "Banknot" Cooperative

Source: Sayın 1984, p.58



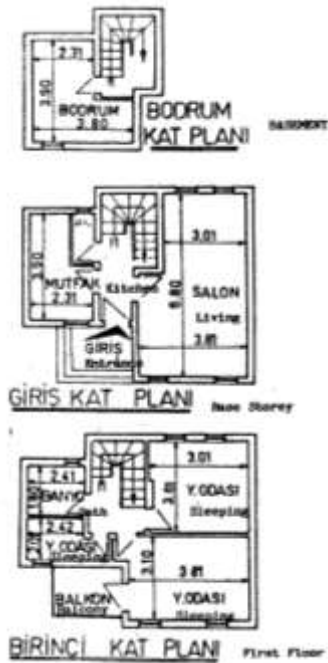
Figure C.4. "Bizim Sokak" Cooperative

Source: Sayın 1984, p.59



Figure C.5. “Bizim Sokak” Cooperative (continued)

Source: Sayın 1984, p.60



S.S TUSAŞ MENSUPLARI ÇATI YAPI KOOPERATİFİ
BATIKENT-YERLEŞİM ALANI MAKETİ
ÜST GÖRÜNÜŞÜ

Figure C.6. “TUSAŞ” Cooperative

Source: Sayın 1984, p.61

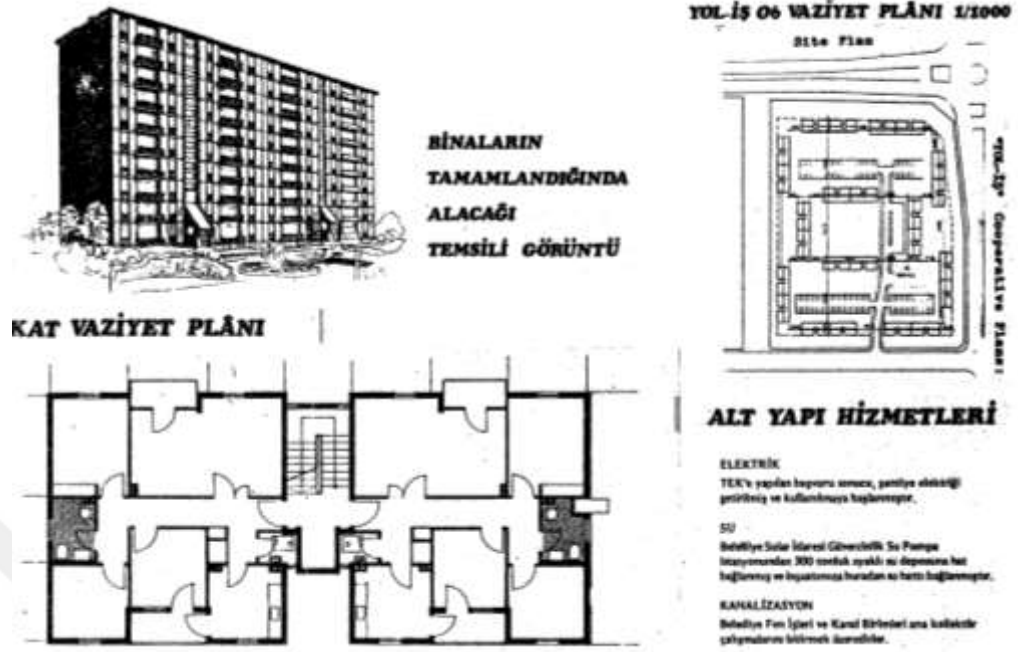


Figure C.7. “YOL-İŞ” Cooperative

Source: Sayın 1984, p.62

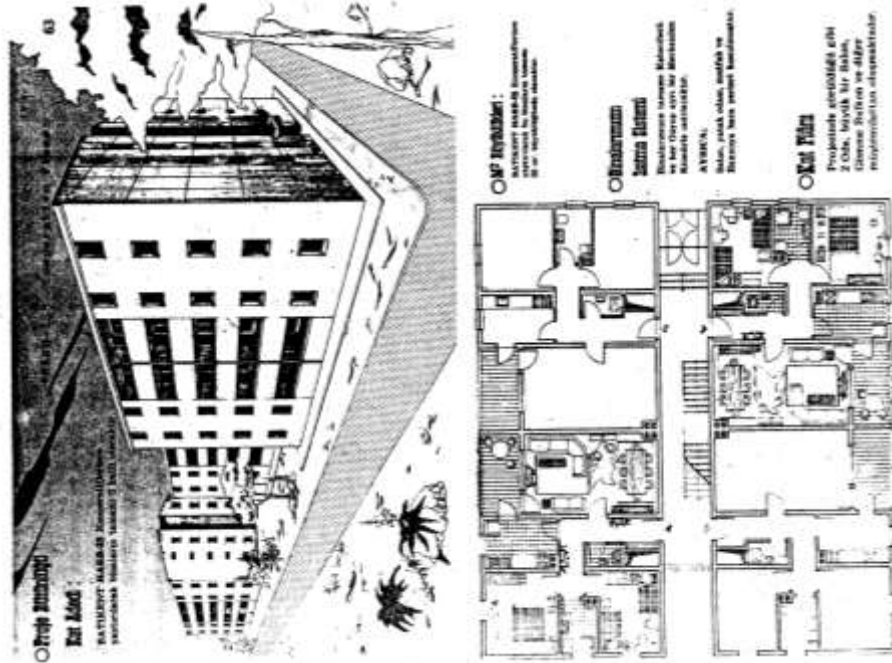


Figure C.8. “HARB-İŞ” Cooperative

Source: Sayın 1984, p.63

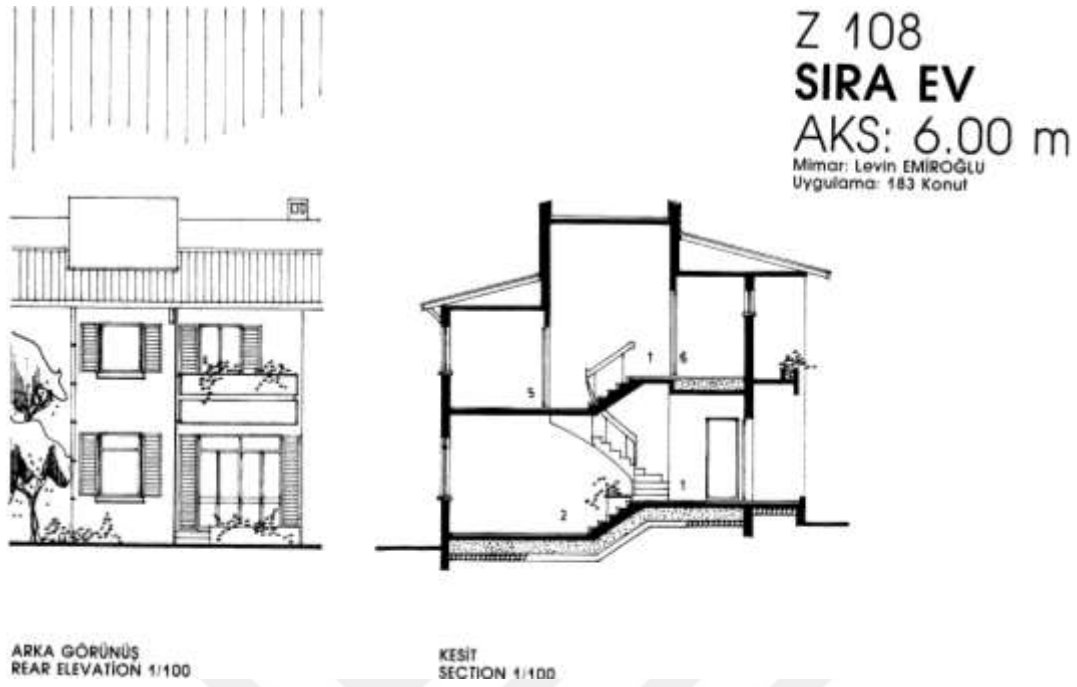


Figure C.9. Sample Z-108, Row Type

Source: Kent-Koop 1984



Figure C.10. Sample Z-108, Row Type (Continued)

Source: Kent-Koop 1984

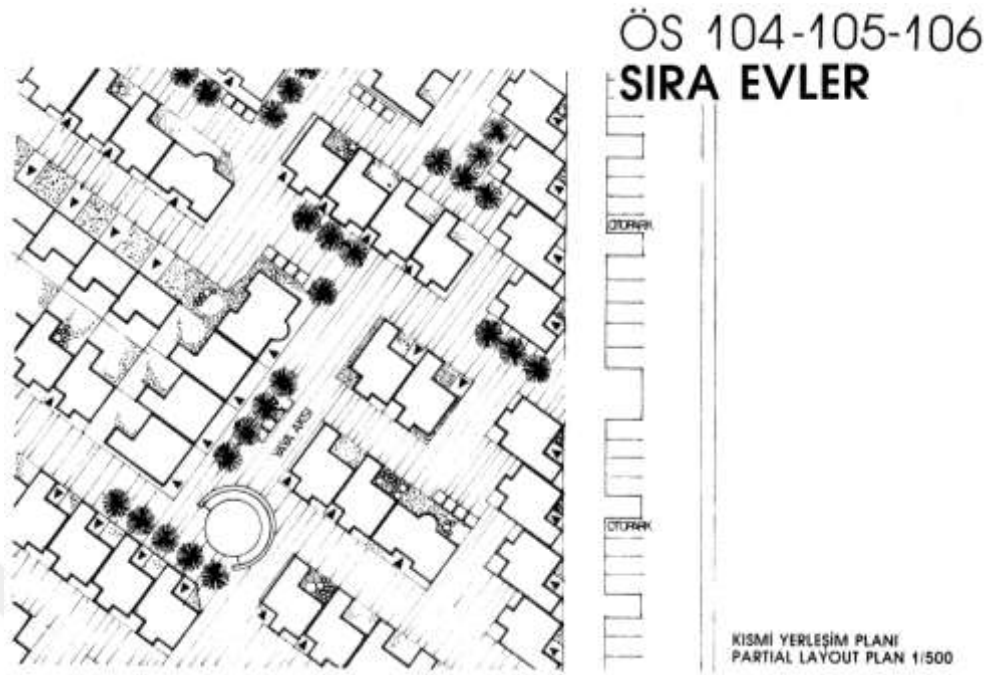


Figure C.11. Sample ÖS-104, Row Type

Source: Kent-Koop 1984



Figure C.12. Sample ÖS-104, Row Type (Continued)

Source: Kent-Koop 1984

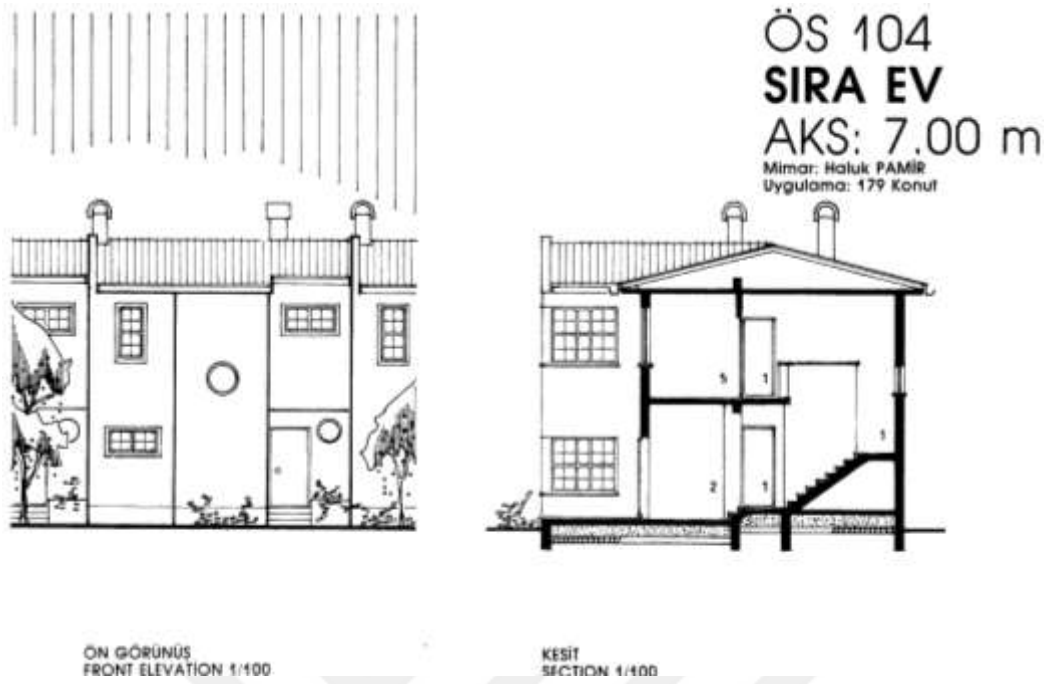


Figure C.13. Sample ÖS-104, Row Type (Continued)

Source: Kent-Koop 1984



Figure C.14. Sample ÖS-104, Row Type (Continued)

Source: Kent-Koop 1984

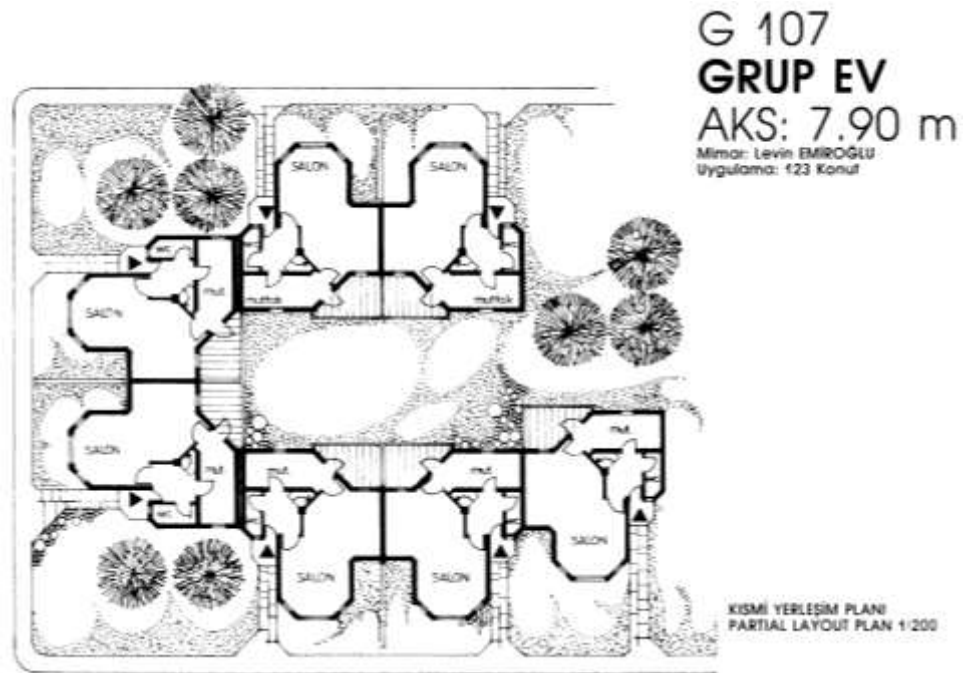


Figure C.15. Sample G-107, Group Type

Source: Kent-Koop 1984

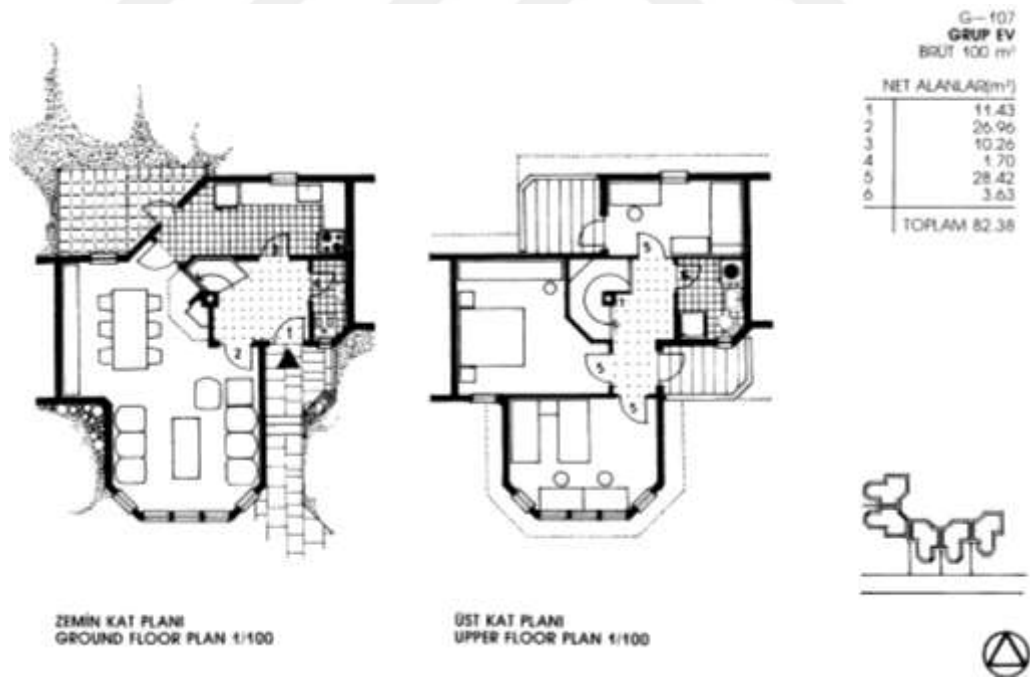


Figure C.16. Sample G-107, Group Type (Continued)

Source: Kent-Koop 1984



ÖN GÖRÜNÜŞ
FRONT ELEVATION 1/100

Figure C.17. Sample G-107, Group Type (Continued)

Source: Kent-Koop 1984

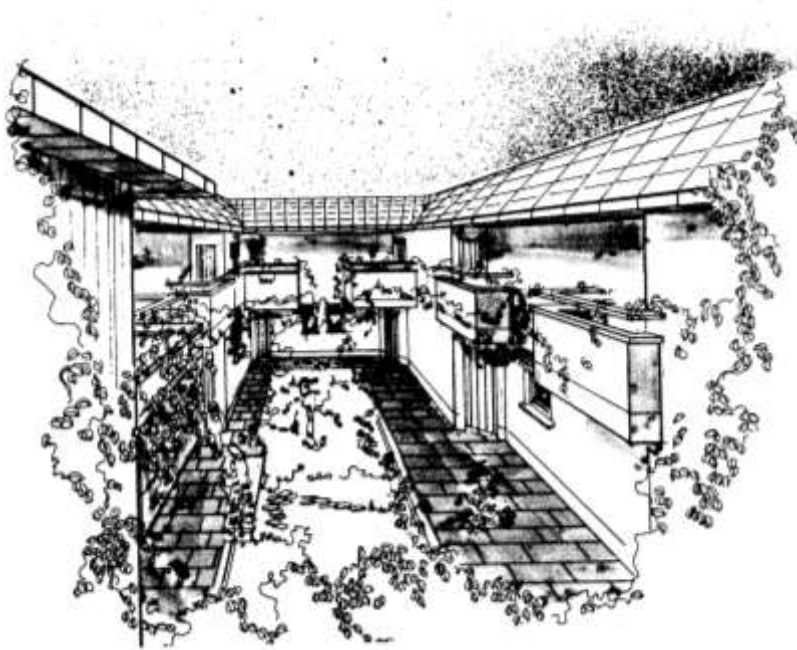


Figure C.18. Sample G-107, Group Type (Continued)

Source: Kent-Koop 1984



Figure C.19. Sample KT-102, Multi-Storey Type

Source: Kent-Koop 1984

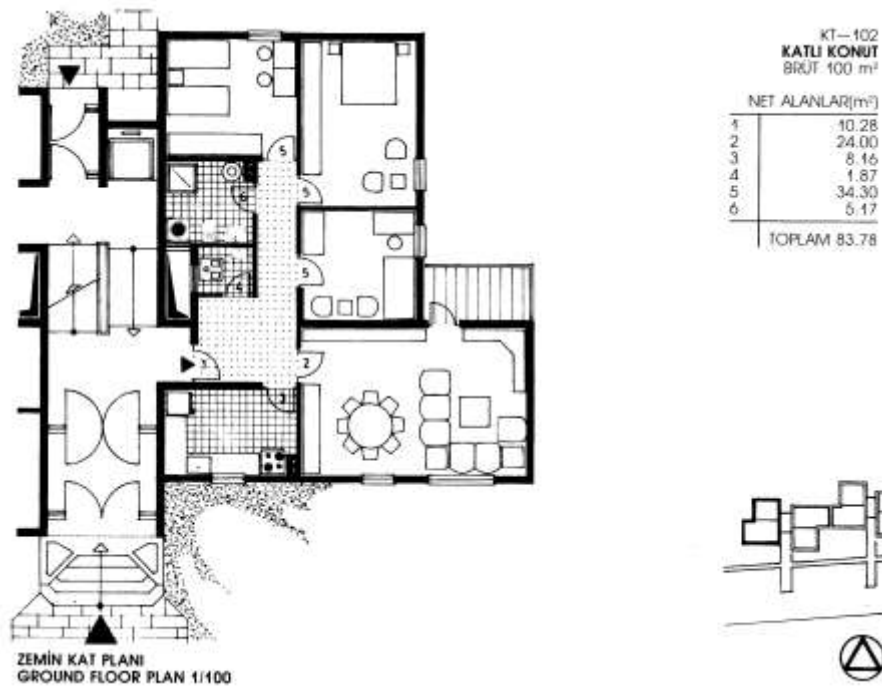


Figure C.20. Sample KT-102, Multi-Storey Type (Continued)

Source: Kent-Koop 1984

D. PASSAGES FROM KENT-KOOP ANNUAL ACTIVITY REPORTS (1993 AND 1996)

1993 Çalışma Raporu – 1993 Denetleme Kurulu Raporu – 1994 Programı ve Bütçesi

Batıkent Kent Merkezi

107. Tablo’da görüleceği gibi 1988 tarihli Özgür Ecevit Planına göre Kent Merkezi’nde toplam 4.266 konut ünitesi tasarlanmıştır. Bu konutlarda yaklaşık 20.000 kişinin yaşayacağı tahmin edilmektedir. Konut alanları için A Konut alanı (batı), B Konut alanı (güneydoğu), C Konut alanı (doğu) olmak üzere, üç gruba ayrılmıştır. [...]

Tablo. Batıkent Kent Merkezi Alan Kullanımları, Nitelikleri ve Brüt İnşaat Alanları (1988 Tarihli Özgür Ecevit planına göre)

TESİS NİTELİĞİ	BÖLGE	AÇIKLAMA	ALAN (ha)	BRÜT İNŞAAT ALANI (m ²)
KONUT	BATI	A Konut Alanı, 15 katlı 10 bloktan oluşan 1470 konut	16	205.800
	GÜNEY DOĞU	B Konut Alanı, 7 katlı 12 bloktan oluşan 830 konut	5	96.000
KONUT (altta ticaret)	KUZEY DOĞU	C Konut ve Ticaret Alanı, 7 katlı 14 bloktan oluşan 876 konut (zemininde 10.000 m ² tic.)	9.5	114.000
	GÜNEY DOĞU	C Konut ve Ticaret Alanı, 7 katlı 14 bloktan oluşan 840 konut (zeminde 10.000 m ² tic.)		109.200
	DOĞU	C Konut ve Ticaret Alanı, 7 katlı 5 bloktan oluşan 250 konut (1. ve zemin katlarda 10.000 m ² tic.)		37.500
TİCARET	DOĞU	Ana ticaret merkezi (konut ve kamu kuruluşları altlarındaki ticaret alanları ile birlikte toplam inşaat alanı 158.000 m ² olmaktadır.	7	120.000

Tablo (Continued)

EĞİTİM	BATI	Eğitim tesisleri (Lise 12.000 m ² , Meslek Lisesi 7.000 m ² , İlkokul 3.000 m ² , kreş anaokulu 2.000 m ²)	6.5	24.000
YOLLAR	GENEL	Yaya ve trafik yolları	10	0
SAĞLIK	BATI	600 Yataklı hastane ve poliklinik 30.000 m ² , lojmanlar 3.000 m ²	6	33.000
RESMÎ KURUM	KUZHEY DOĞU	9 katlı 6 blok ve 1 katlı 3 blok (blok zemin katları ve blok araları 8.000 m ² ticaret)	2.5	88.000
KÜLTÜR	GÜNEY DOĞU	Bilim Müzesi		3.000
	DOĞU	Opera-tiyatro-konser salonu 30.000 m ² , sergi müze 5.000 m ²	5.5	35.000
	GÜNEY	Gençlik Toplum Merkezi		6.000
KONAKLAMA	GÜNEY DOĞU	Turistik Tesisler, toplam 1.000 yatak kapasiteli 2 otel	5.5.	50.000
CAMİ	ORTA	Cami, İslam Kültür Merkezi	1.5	7.000
SPOR	KUZHEY DOĞU	Kapalı Spor Salonu 2.500 m ² , kapalı yüzme havuzu 5.500 m ²	7	8.000
YEŞİL ALANLAR	GENEL	Gölet, yaya yolları, oturma, açık spor tesisleri	28	350.000
KAPALI OTOPARKLAR	GENEL	Camide: 10.000 m ² , Opera, tiyatro ve konser salonunda: 15.000 m ² , Gençlik toplum merkezinde: 7.000 m ² , Güneydoğuda: 7.000 m ² , kuzeydoğuda: 16.800 m ² (Kapalı otoparklar ve diğer kullanım alanlarının içinde veya bodrum katlarında olduklarından yalnız inşaat alanları verilmiştir.)	0	55.800
TOPLAM	AÇIK ALANLAR		38	350.000
	KAPALI ALANLAR		72	992.300
	GENEL TOPLAM		110	1.342.300

109. Kent Merkezi A Konut Alanı projesinin uygulamaya konmasıyla birlikte Batıkent’te ilk kez;

- Konut kooperatifleri için kentsel tasarım projesinden yola çıkılarak uygulama imar planı hazırlanmıştır.
- 11 kooperatifin tüm mimarlık ve mühendislik projeleri bir konsorsiyum sorumluluğundan birlikte hazırlanmıştır.
- Ada içine taşıt trafiği sokulmaması amacıyla binaların bodrum katlarında otopark düzenlemesi yapılmış, bu otoparklar ada ölçeğinde ve yer altından birbirine bağlanmıştır.
- Tasarımda bir prestij projesi ve land-mark yaratma kaygı güdülmüştür.
- Projelendirilecek tüm parseller için ayrı ayrı olmak üzere zemin etüdü yapılmıştır.
- Peyzaj ve altyapı projeleri parsel sınırları dikkate alınmadan ada ölçeğinde çözümlenerek ortak kullanımlar öngörülmüştür.
- Parsel sınırlarını belirleyici duvar, çit, vb. elemanlar kullanılmamıştır.
- Parseller içerisinde monotonluğu kırmak için farklı yükseklikte bloklar ve aynı blok içerisinde farklı kat planları uygulanmıştır.
- Ada bütünü için ortak renklerde cephe kaplaması tasarımı yapılmıştır.
- İnşaat alanında proje müellifleri tarafından sözleşme ile mesleki denetim çalışmasına başlanmıştır.

İmar Planı Revizyonu

[...]. Bu imar planı revizyonu ile blok yükseklikleri 15 kattan ortalama 8 kata düşürülmüş, konut sayısı 1470 iken %22 azaltılarak 1151’e düşürülmüş, yeşil alanlar ise yaklaşık %47 arttırılarak 20.555 m²den 30.230 m²ye çıkarılmıştır. [...]

Kentsel Tasarım Projesi

İmar planının onaylanmasından sonra Erkal-Orhun-Karaaslan Konsorsiyumu tarafından son şekline getirilerek [...] 1/500 ölçekli kentsel tasarım projesi 08.11.1993 tarihinde onaylanmıştır.

1996 Çalışma Raporu – 1996 Denetleme Kurulu Raporu – 1997 Programı ve Bütçesi

[...]

Tablo. Batıkent Kent Merkezi'nde Yer alan Kooperatifler

SIRA NO	KOOPERATİF ADI	KONUT SAYISI
1	S.S. Kent-92 Konut Yapı Koop.	112
2	S.S. Emekevler 92 Konut Yapı Koop.	106
3	S.S. Tes İş Konut Yapı Koop.	217
4	S.S. Metropol Konut Yapı Koop.	99
5	S.S. Final Konut Yapı Koop.	83
6	S.S. Ortadoğulular Kent Merkezi Konut Yapı Koop.	107
7	S.S. Arzum Yuva Konut Yapı Koop.	88
8	S. S. Güneyce Merkez Konut Yapı Koop.	97
9	S.S. Yenibatı 72 Konut Yapı Koop.	82
10	S.S. Hanem 91 Konut Yapı Koop.	96
11	S.S. Hamle Kent Konut Yapı Koop.	96
12	S.S. Yeşimcan Konut Yapı Koop.	96
13	S.S. Barış Sinan Konut Yapı Koop.	96
14	S.S. Şafak 91 Konut Yapı Koop.	96
15	S.S. Ak Akçe Konut Yapı Koop.	125
16	S.S. İlk Umut Konut Yapı Koop.	102
17	S.S. Özyurt 92 Konut Yapı Koop.	96
18	S.S. Düşler Konut Yapı Koop.	104
19	S.S. Bizim Çınar Konut Yapı Koop.	116
20	S.S. Yeni Umutlar Konut Yapı Koop.	100
21	S.S. Yol İş Konut Yapı Koop.	114
22	S.S. Mimarlar Konut Yapı Koop.	96
23	S.S. Bizim Çizgi Konut Yapı Koop.	96
24	S.S. İkiz Kent Konut Yapı Koop.	52

[...]

105. Batıkent Kent Merkezi uygulama imar planı Ankara Belediyesi Planlama Birimince 1979 yılında hazırlanan nazım planda belirtilen ihtiyaç programı ve alan kullanımları esas alınarak yüksek mühendis-mimar Özgür Ecevit tarafından hazırlanmış ve 1988 yılında da onaylanmıştır.

106. 110ha'lık alan içeren bu planın en önemli özelliği kentsel tasarım tekniği ile yapılması nedeniyle kütleleşmeyi ve mimariyi de belirlemiş olmasıdır.

107. Bu plana göre Kent Merkezi'nde konut, ticareti eğitim, sağlık, resmi kurum, kültürel tesisler, konaklama tesisleri, cami, spor alanları, yeşil alanlar, yaya ve trafik yolları ile kapalı otoparklar gibi fonksiyonlar bulunmaktadır.

[...]

A Konut Alanı İmar Planı Revizyonu ile İlgili Aşamalar

110. Tatbikat projelerinin Özgür Ecevit, Merih Karaaslan, Yurdanur Sepkin ve Coşkun Erkal'dan oluşan gruba yaptırılmasına, ayrıca bu grubun plan revizyon çalışmalarına katılmalarına ve grubun görüşleri doğrultusunda plan revizyonu önerisine son şeklinin verilmesi 10.03.1993.

[...]

Uygulama

127. Kent Merkezi A Konut Alanı'nda yapılaşmanın yüksek standartlı olmasına yönelik olarak tatbikat projelerini yapan konsorsiyum üyeleri ile ikinci bir sözleşme imzalanmış, inşaat ruhsatlarının alınmasından başlayarak yapı kullanma izin belgeleri alınana kadar mesleki danışmanlık yapmaları ve bunun için de en az haftada bir gün inşaat mahallinde bulunmaları taahhüt altına alınmıştır.

Batıkent Kent Merkezi A Konut Alanı Proje Açıklama Raporu

128. 1. Batıkent Kent Merkezi'nin planlanması fiziksel boyutu açısından normal bir proje sınırını aşmakta ve günümüz terminolojisinde yer alan kentsel tasarım konusuna girmektedir. Öncelikle bir kent oluşumu dikkate alındığında:

- Belirli bir tarihsel süreç yaşayan kentlerin hemen tümünün merkezlerinde de bu sürece uygun gelişimin gözlemlendiği,
- Bu gelişim içinde temel ögenin genellikle kale olduğu,
- Başkent Ankara ele alındığında Hisar Senti'nin bütün korunamamışlığına rağmen bu yaklaşıma güzel örnek oluşturduğu,
- Barındırdığı nüfus açısından Anadolu Kentleri'ne yakın büyüklüğe sahip Batıkent'in de böylesi bir çekirdek merkeze bir ucundan sur duvarı ile başlayan anlatıma sahip olmasının, çağdaş yaklaşıma uygun düşeceği,
- Tıpkı Hisar'da olduğu gibi; bu sur duvarı arkasında farkı yüksekli ve sürprizli mekanlara sahip bahçeli evlerin oluşturduğu organik bir atmosferin yaratılabileceği düşüncesi,

planlamanın temelini oluşturmuştur.

129. 2. Batıkent Kent Merkezi'nin teşekkülü A Konut Adası ile prensibe bağlanmış olmaktadır. A Konut Adası, gölet ve diğer rekreasyon alanları ile bu bölümde gerçekleştirilecek metro ve banliyö ortak istasyonunun batıdaki yerleşimlere bağlantı aksında yer almaktadır.

130. 3. Bu bağlantı aksı, vadi düzenindeki çarşı içinden ve sonra da merkezin batı kapısını simgeleyen iki kule blok arasından geçerek 11.cadde altında düzenlenecek yaya geçidi ile konut birimlerine ulaşmaktadır.

131. 4. Merkezin batısı 8 katlı düz, ancak yer yer parçalanmış ve delinerek etkisini hafifleten (kale) duvar blok ile çevrilmiş, bu duvar kuzey ve güneye sarkara merkezin diğer yönlerinin biçimlenmesine referans vermiştir.

132. 5. Sur gerisi ya da merkez çeperi, farklı biçim, şekil ve disiplinlerin oluşturduğu bir kale içi olarak planlanmıştır. Bir gezi yolu (promenad), yapı dizelerinin altlarından ve yeşil iç bahçelerden geçerek doğudaki yeşil yol ile birleşip güzel bir yaşamsal aktivite ortamı sağlamaktadır.

133. 6. A konut Adasını görsel kirlilikten korumak için otopark ihtiyacının olabildiğinde 1/1 oranında kapalı garajla giderilmesi istenmiştir. Getirilen planlamanın tüm yapıların altına garaj tertibine uygun olduğu belirlenmiş ve konu otoları ile garajlarda karşılanan %50 dışındaki otopark gereksinimi 11. Cadde ile yapı dizisi arasında (40 m²lik yeşil bant) düzenlenen otoparkla (%100) oranında

giderilmiş bulunmaktadır. Bu şekilde batıda düzenlenen açık otopark dışında A Konut Adası yüzeydeki oto yolundan tamamen arındırılmıştır.

134. 7. Kapalı garajlar hem geçit hem de tesisat galerisi görevini sığınak fonksiyonu ile birleştirerek yerine getirmektedir.

135. 8. Parsellerin zorunlu gereksinimleri (yangın, cankurtaran ve taşınma) iç bahçede düzenlenecek çimle kapatılmış taşıyıcı tabakalardan oluşan özel servis yolundan sağlanacaktır.

136. 9. Konutların fiziksel ihtiyaç programları her kooperatife göre değişmektedir. Daire ve salon büyüklüklerinden oda ve banyo sayılarındaki değişik istekler genel planlama prensipleri içinde çözümlenmiştir.

137. 10. Konutların faydalı alanları 115 ile 145 m² arasında değişmektedir. 10 ve 12 parsellere oturma odaları diğerlerinde salonlar (cadde bloklarında) doğaya (iç bahçeye) yönelmiştir. Toplam konut sayısı 1.187 olarak belirlenmiştir.

E. LIST OF “AREA A” BLOCKS BLUEPRINTS

Table E.1. List of “Area A” Blocks Blueprints

Name of Document	Year	Scale	Source/Archive	Inventory/ Folder Number	Date Achieved/C btained	Expalanatory Notes	Format
13369 ada ve çevresi.dwg	-	-	Yenimahalle Municipality	-	6/17/2019		CAD
13369 ada halihazır.dwg	-	-	Yenimahalle Municipality	-	6/17/2019		CAD
SS Metropol Konut Koop Vaziyet Planı ve A-A ve B-B Kesiti	N/A	1:200	Yenimahalle Municipality		10/22/2019	13369/1 Ada Parsel	JPG
SS Metropol Konut Koop 1.A Blok 7. Kat Planı	N/A	N/A				13369/1 Ada Parsel	
SS Metropol Konut Koop 1.F Blok 2. Kat Planı	N/A	N/A				13369/1 Ada Parsel	
SS Oleyİs-92 Konut Koop Vaziyet Planı ve A-A ve B-B Kesiti	N/A	1:200	Yenimahalle Municipality		10/22/2019	13369/2 Ada Parsel	JPG
SS Oleyİs-92 Konut Koop 2.A Blok 3. Kat Planı	N/A	N/A				Notes signed by M. Karaaslan	
SS Oleyİs-92 Konut Koop 2.E Blok 6. Kat Planı	N/A	N/A					
SS Siyasal Konut Koop Vaziyet Planı ve A-A Kesiti	N/A	1:200	Yenimahalle Municipality		6/17/2019	13369/3 Ada Parsel	JPG
SS Siyasal Konut Koop 3.A Blok 3. Kat Planı	N/A	N/A				13369/3 Ada Parsel	
SS Siyasal Konut Koop 3.A Blok 6. Kat Planı	N/A	N/A				13369/3 Ada Parsel	
SS Ortadoğulular Kent Merkezi Konut Koop Vaziyet Planı ve A-A Kesiti	N/A	1:200	Yenimahalle Municipality		10/22/2019	13369/4 Ada Parsel	JPG
SS Ortadoğulular Kent Merkezi Konut Koop 4.A Blok 2. Kat Planı	N/A	N/A				13369/4 Ada Parsel	
SS Ortadoğulular Kent Merkezi Konut Koop 4.C Blok 7. Kat Planı	N/A	N/A				13369/4 Ada Parsel	

Table E.1. (Continued)

SS Güneyce Merkez Konut Koop	1993	1:500; 1:20	Yenimahalle Municipality	34980	6/17/2019	13369/5 Ada Parsel	PDF
5. A+B+C Blok 1-6. Kat Planı		N/A				Drawn by Deniz Vardar Coşkun	
5. A+B Blok 7. Kat Planı		N/A					
5. D+E+F+G+H Blok 1-2 Kat Planı		N/A					
5. D+E+F Blok 3. Kat Planı		N/A					
5. D+E Blok 4. Kat Planı		N/A					
5. E Blok 5. Kat Planı		N/A					
SS Arzum Yuva Konut Koop 6.A Blok Mimari Uygulama Projesi	1993	1:500; 1:50; 1:20	Yenimahalle Municipality	34927	6/17/2019	13369/6 Ada Parsel	PDF
SS Arzum Yuva Konut Koop 6.B Blok Mimari Uygulama Projesi							
SS Arzum Yuva Konut Koop 6.C Blok Mimari Uygulama Projesi							
SS Arzum Yuva Konut Koop 6.D Blok Mimari Uygulama Projesi							
SS Arzum Yuva Konut Koop 6.E Blok Mimari Uygulama Projesi							
SS Arzum Yuva Konut Koop 6.F Blok Mimari Uygulama Projesi							
SS Arzum Yuva Konut Koop 6.G Blok Mimari Uygulama Projesi							
SS Güneyce Merkez Konut Koop	1993	1:500; 1:20	Yenimahalle Municipality	721938	6/17/2019	13369/9 Ada Parsel	PDF
9. A+B+C Blok 1-7. Kat Planı		N/A				Drawn by Deniz Vardar Coşkun	
9. D Blok ZA2. Kat Planı		N/A					
9. E+F Blok ZA2. Kat Planı		N/A					
9. F Blok ZA3. Kat Planı		N/A					
9. D+E+F Blok ZA1-2. Kat Planı		N/A					
9. D+E Blok 3-5. Kat Planı		N/A					

Table E.1. (Continued)

SS Tes-İş (2) Konut Koop 10.A Blok Mimari Uygulama Projesi	199?	1:500; 1:50; 1:20	Yenimahalle Municipality	35081	6/17/2019	13369/10 Ada Parsel	PDF
SS Tes-İş (2) Konut Koop 10.B Blok Mimari Uygulama Projesi	1999						
SS Tes-İş (2) Konut Koop 10.C Blok Mimari Uygulama Projesi	1999						
SS Tes-İş (2) Konut Koop 10.D Blok Mimari Uygulama Projesi	199?						
SS Tes-İş (2) Konut Koop 10.E Blok Mimari Uygulama Projesi	1999						
SS Tes-İş (2) Konut Koop 10.F Blok Mimari Uygulama Projesi	199?						
SS Tes-İş (2) Konut Koop 10.G Blok Mimari Uygulama Projesi	1999						
SS Kent'92 Konut Koop 11.A Blok Mimari Uygulama Projesi	1994	N/A	Yenimahalle Municipality	34913	6/17/2019	13369/11 Ada Parsel	PDF
SS Kent'92 Konut Koop 11.B Blok Mimari Uygulama Projesi							
SS Kent'92 Konut Koop 11.C Blok Mimari Uygulama Projesi							
SS Tes-İş (1) Konut Koop 12.A Blok Mimari Uygulama Projesi	1999	1:500; 1:50; 1:20	Yenimahalle Municipality	34993	6/17/2019	13369/12 Ada Parsel	PDF
SS Tes-İş (1) Konut Koop 12.B Blok Mimari Uygulama Projesi							
SS Tes-İş (1) Konut Koop 12.C Blok Mimari Uygulama Projesi							
SS Tes-İş (1) Konut Koop 12.D Blok Mimari Uygulama Projesi							

Table E.1. (Continued)

SS Tes-İş (1) Konut Koop 12.E Blok Mimari Uygulama Projesi	1999	1:500; 1:50; 1:20	Yenimahalle Municipality	34993	6/17/2019	13369/12 Ada Parsel	PDF
SS Tes-İş (1) Konut Koop 12.F Blok Mimari Uygulama Projesi							
SS Tes-İş (1) Konut Koop 12.G Blok Mimari Uygulama Projesi							

F. SELECTED BLUEPRINTS FROM AREA A PROJECT

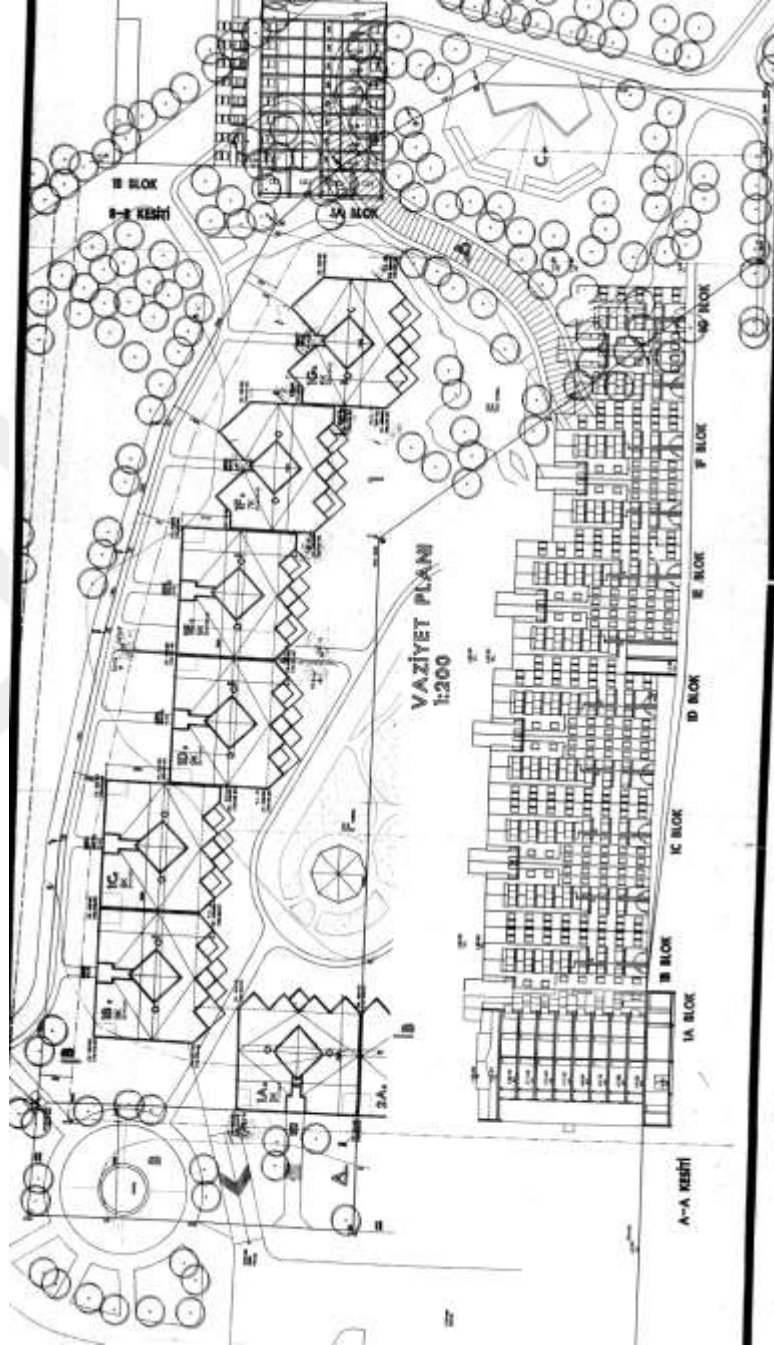


Figure F.1. Plot No 1 site plan and site section

Source: Yenimahalle Belediyesi, Kentsel Dönüşüm Müdürlüğü

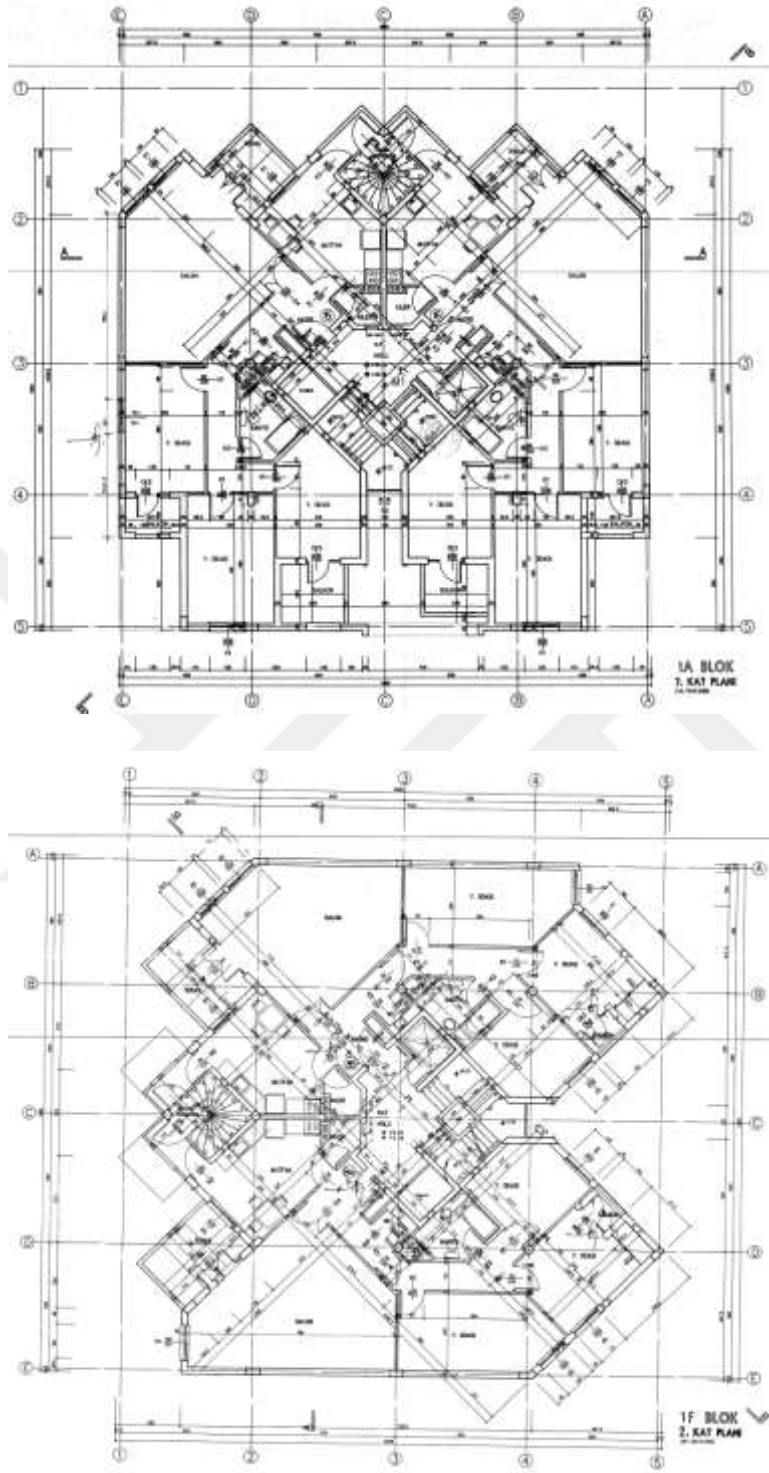


Figure F.2. Floor plans of Block 1A and 1F

Source: Yenimahalle Belediyesi, Kentsel Dönüşüm Müdürlüğü

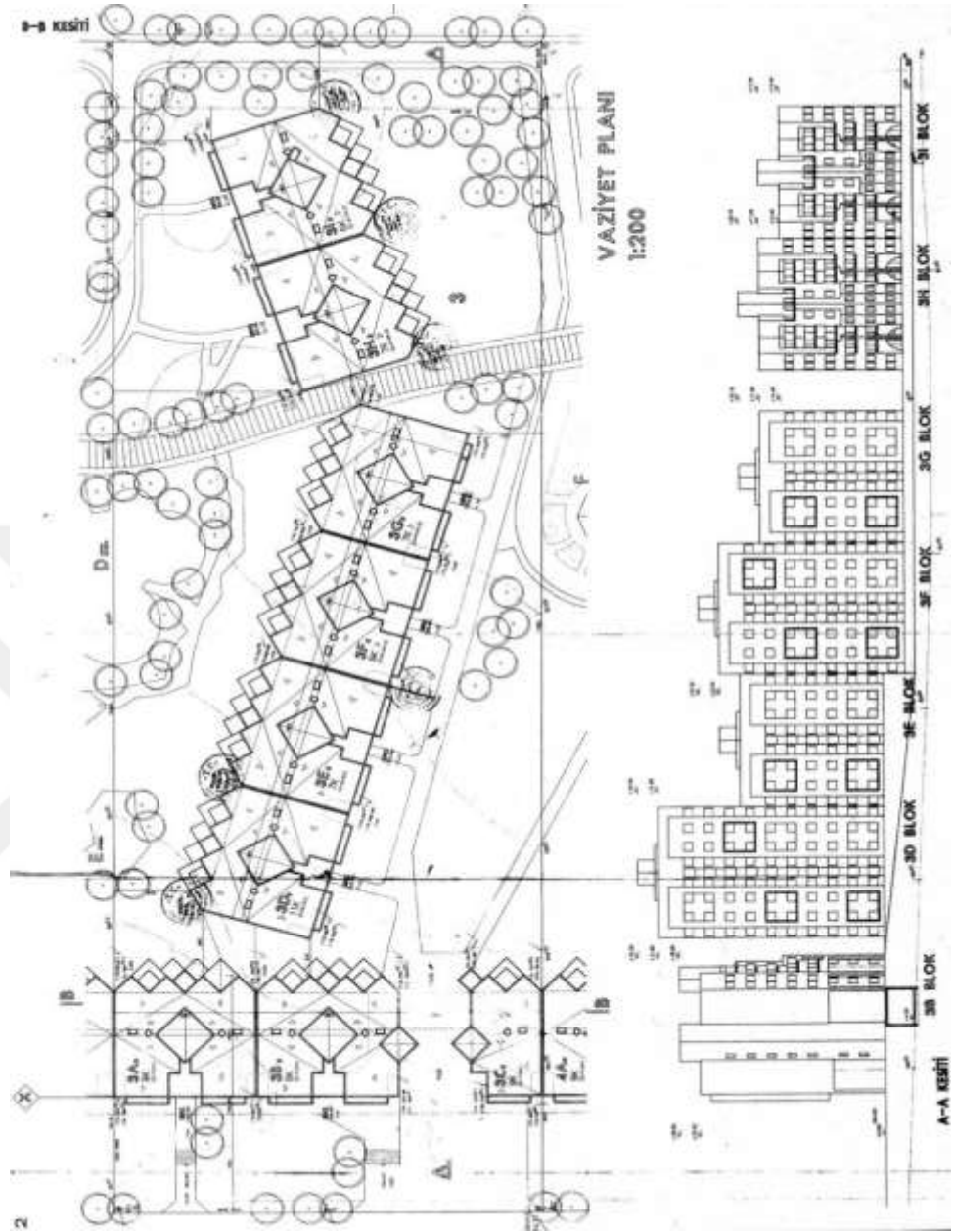


Figure F.3. Plot No 3 site plan and site section

Source: Yenimahalle Belediyesi, Kentsel Dönüşüm Müdürlüğü

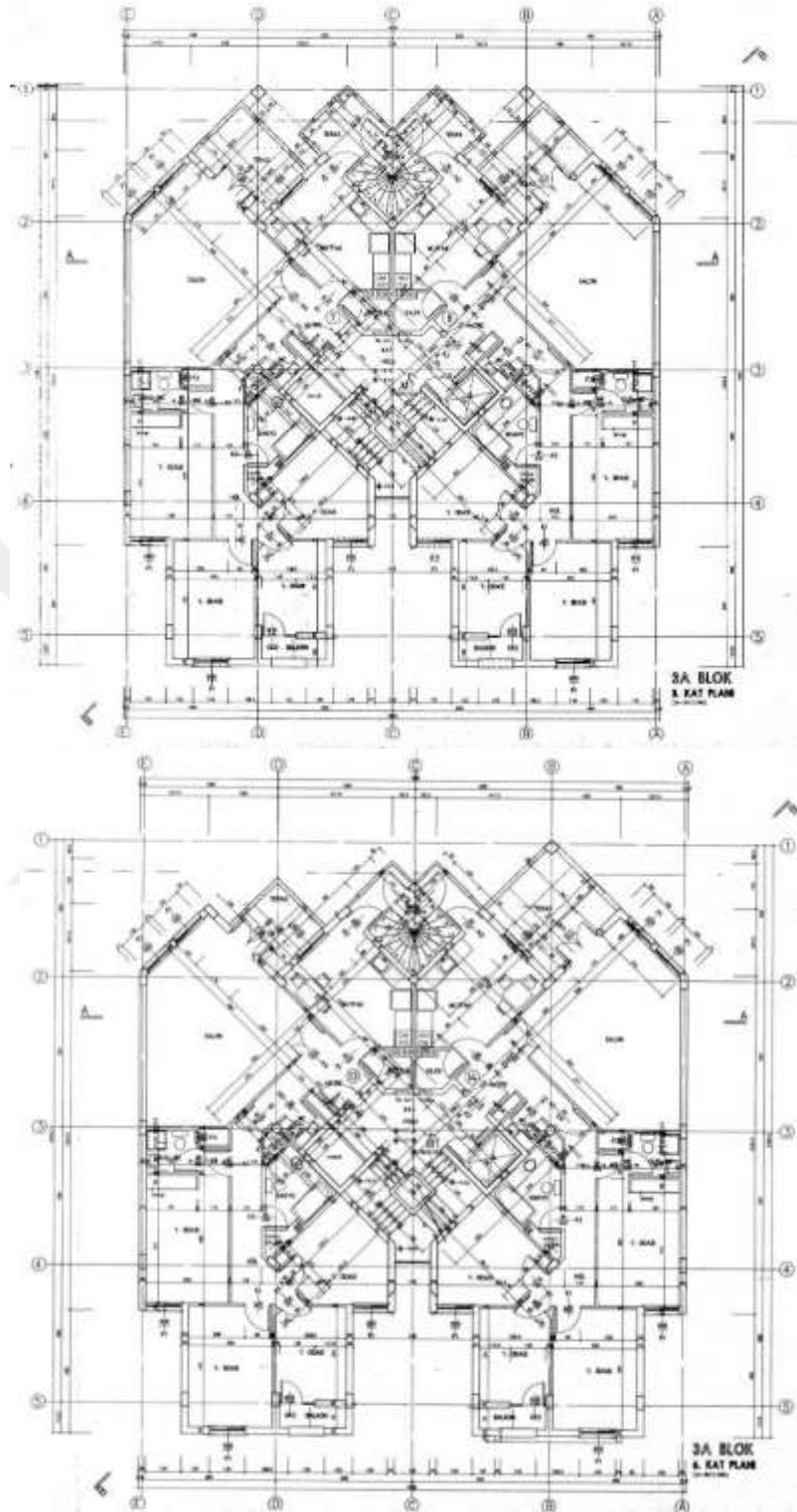


Figure F.4. Floor plans of Block 3A

Source: Yenimahalle Belediyesi, Kentsel Dönüşüm Müdürlüğü

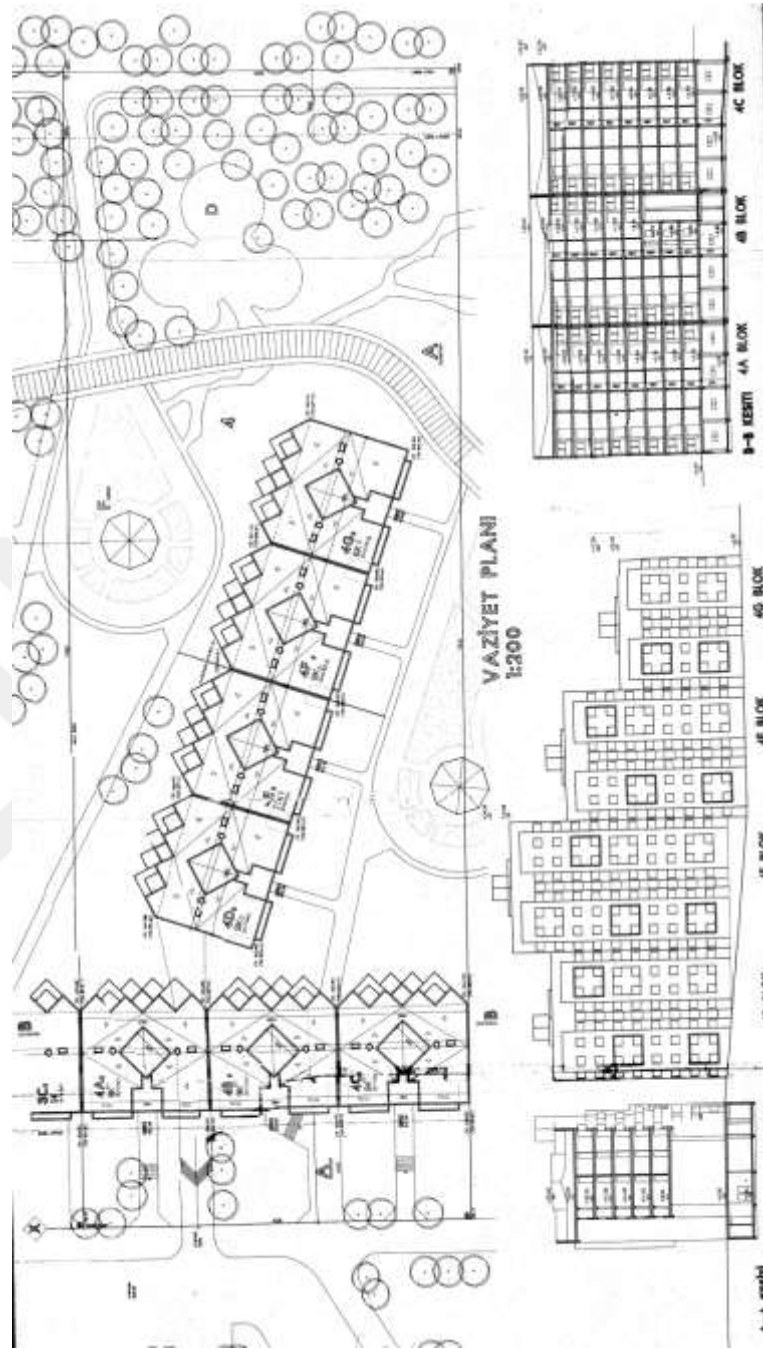


Figure F.5. Plot No 4 site plan and site section

Source: Yenimahalle Belediyesi, Kentsel Dönüşüm Müdürlüğü

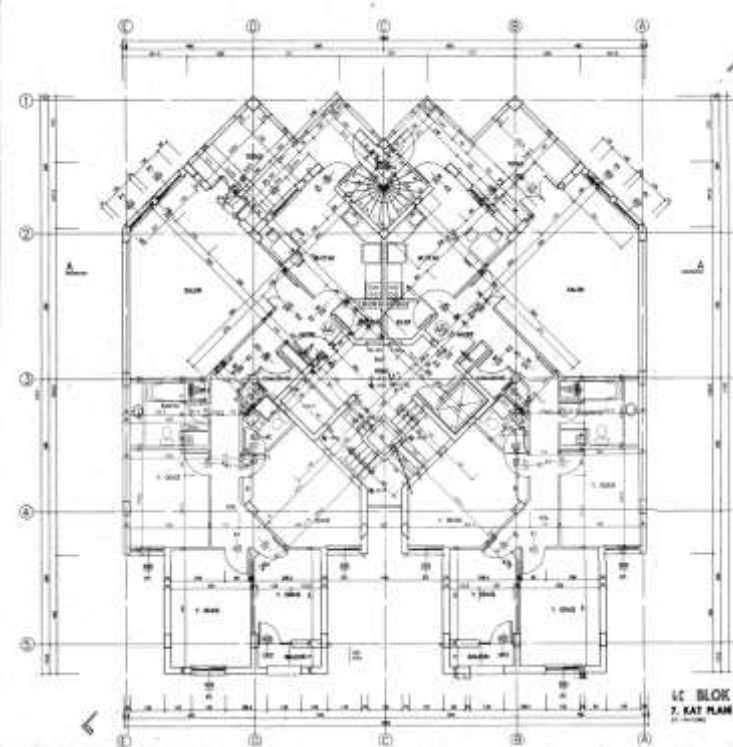
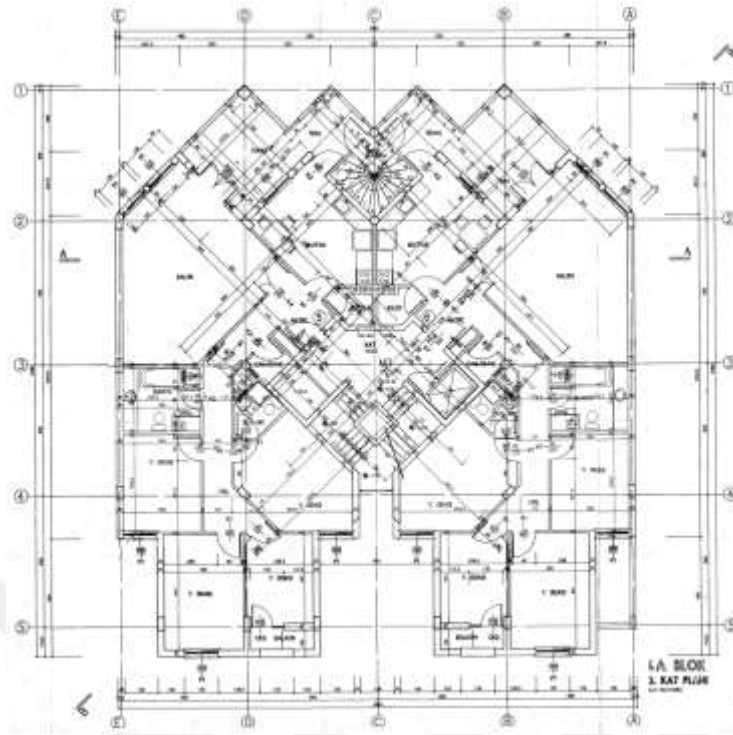


Figure F.6. Floor plans of Block 4A and 4C

Source: Yenimahalle Belediyesi, Kentsel Dönüşüm Müdürlüğü

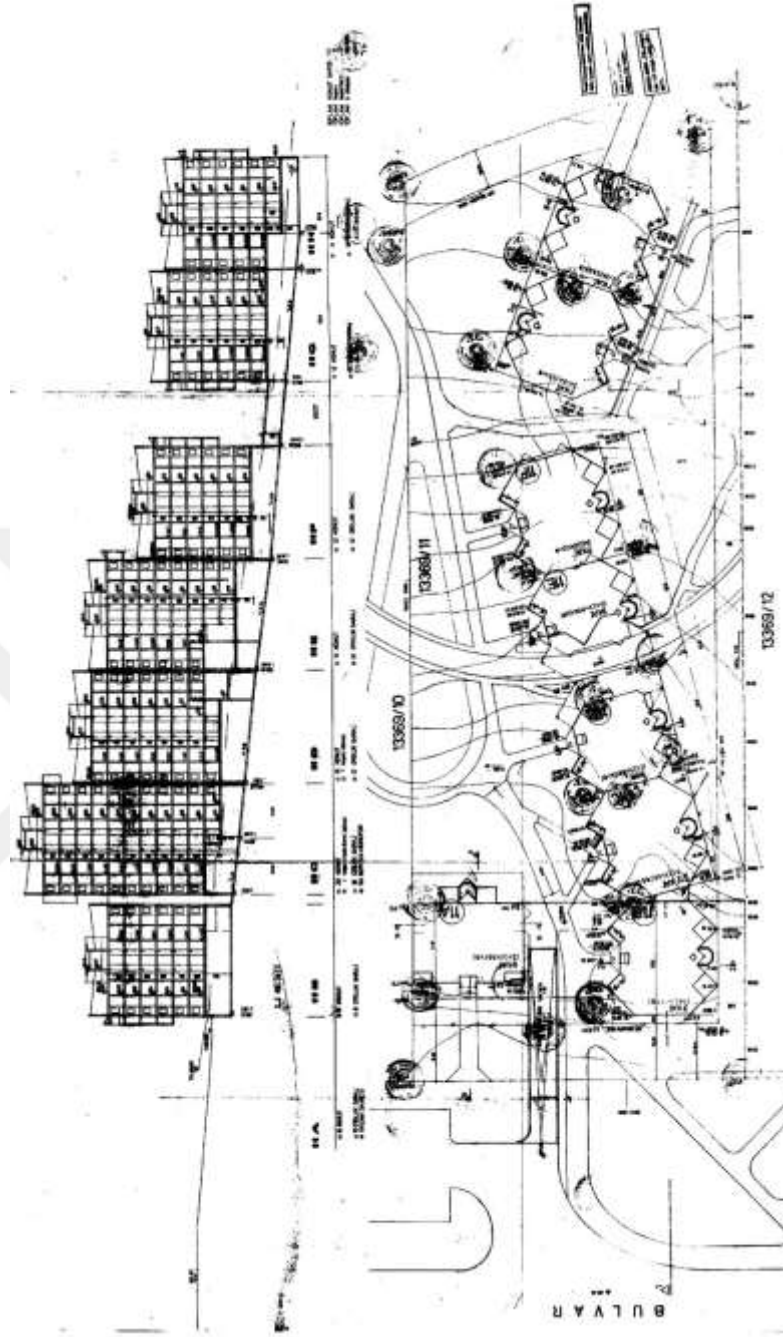


Figure F.7. Plot No 11 site plan and site section

Source: Yenimahalle Belediyesi, Kentsel Dönüşüm Müdürlüğü

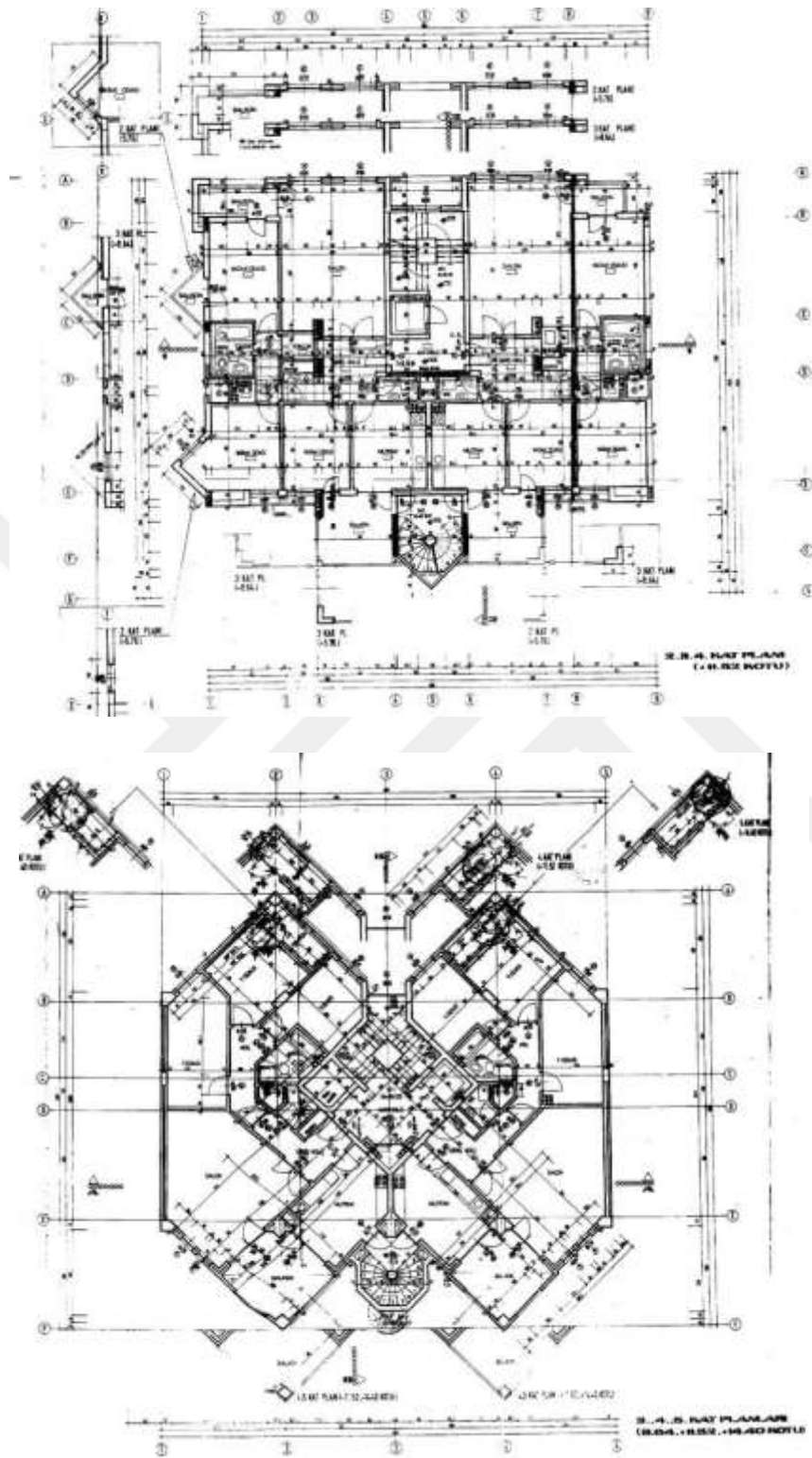


Figure F.8. Floor plans of Block 11

Source: Yenimahalle Belediyesi, Kentsel Dönüşüm Müdürlüğü