TYPOLOGICAL RESIDENTIAL URBANISM: AN ALTERNATIVE ANALYSIS OF THE TOKİ HOUSING PRODUCTION AS A DOMINANT TYPE

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ABSTRACT

TYPOLOGICAL RESIDENTIAL URBANISM: AN ALTERNATIVE ANALYSIS OF THE TOKİ HOUSING PRODUCTION AS A DOMINANT TYPE

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Housing production in Turkey has increased enormously in recent years. Quality of the urban form as a result of this housing production is extremely significant since it directly affects the quality of Turkish cities. This thesis aims to draw attention to the potential of the concept of typology on evaluating the quality of urban form of housing environments. Thus, the thesis attempts to test the potential by carrying out a typological analysis of the housing production of TOKİ, which is one of the three main actors responsible for the increase housing production in Turkey. The first part of the thesis focuses on the fourth typology introduced by Christopher Lee, in addition to the three typologies defined by Anthony Vidler. In the second part, urban design guidelines are reviewed in order to define the characteristics of a desirable 21st century residential environments, which forms the basis of the evaluation criteria for the analysis of the TOKİ housing production. Furthermore, this part attempts to show how certain typological components affect these characteristics, as well as how certain building types have advantages or disadvantages to deliver these characteristics. In the last part, previously documented fourty TOKİ projects are analyzed with regard to building types and typological components introduced before. In conclusion, it is observed that TOKİ ignores the potentials of building types it utilized and does not benefit from the typological components in order to deliver residential environments suitable for 21st century requirements.

Keywords: typology, housing, urban form, TOKİ

ÖZ

TİPOLOJİK KONUT ŞEHİRCİLİĞİ: TOKİ KONUT ÜRETİMİNİN BİR "EGEMEN TİP" OLARAK ALTERNATİF ANALİZİ

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Türkiye'de konut üretimi son yıllarda oldukça artmıştır. Üretilen konut çevrelerinin kentsel formunun kalitesi, kent mekanının kalitesini doğrudan etkilediği için son derece önemlidir. Bu tezin amacı, konut çevrelerinin kentsel formunun kalitesini analiz etmede tipoloji kavramının potansiyeline dikkat çekmektir. Bu amaçla çalışma, sözkonusu konut üretiminden sorumlu üç ana aktörden biri olan Toplu Konut İdaresi (TOKİ)'nin ürettiği konut çevrelerini tipolojik olarak analiz ederek bu potansiyeli test etmeye çalışmaktadır. Çalışmanın ilk bölümü Anthony Vidler'ın üç tipolojisine ek olarak Christopher Lee'nin dördüncü tipolojisini ele alıp inceler. İkinci bölümde ise, son dönemde İngiltere'de yayınlanan kentsel tasarım kılavuzları incelenerek 21. Yüzyıl beklentilerine uygun konut çevrelerinin kentsel mekan özellikleri tanımlanmaya ve TOKİ konut üretiminin analizi için bir temel oluşturulmaya çalışılmıştır. Ek olarak bu bölüm, belirli tipolojik bileşenlerin kentsel mekan kalitesine nasıl etki ettiğini ve yapı tiplerinin iyi kentsel çevre üretmede ne gibi avantaj ve dezavantajları olduğunu tartışır. Son bölümde, daha önce belgelenmiş kırk TOKİ projesi, kullanılan yapı tipleri ve tipolojik bileşenleri üzerinden analiz edilmektedir. Sonuç olarak, TOKİ'nin konut üretiminde kullandığı yapı tiplerinin ve tipolojik bileşenlerinin potansiyelini başarılı konut çevreleri üretmek adına yeterince değerlendirmediği görülmektedir.

Anahtar Kelimeler: tipoloji, konut, kentsel form, TOKİ

This thesis is dedicated
to my mother, Fatma Parlak,
for her love, endless support
and encouragement.

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CHAPTER 1

INTRODUCTION

1.1. Aim of the Study

Housing production in Turkey has increased enormously especially in the recent years as revealed by the official statistics. Average annual housing construction rate throughout the 70s was approximately 100,000 units per year and this number increased steadily and reached to 260,000 units per year in the 2000s. However, it exhibited a sudden increase and reached to 600,000 units per year in the first half of the 2010s.[1] The total number of houses built solely in 2013 and 2014 (723,000 and 765,000, respectively) is actually more than the total number of houses in Ankara (the second largest city in the country) and equals to two-fifth of the number of houses in İstanbul, the largest city in Turkey (1.44 million and 3.7 millions, respectively).[2] This tremendous increase in quantity requires an in-depth study on the quality of the resultant residential environments.

The housing production is carried out by three main actors. The first one is the small contractors, who were more active in the large cities throughout the 70s and 90s. Their activity has shifted to the medium-sized cities for the last ten years. The apartment blocks produced by them, number of which has increased by the flat ownership law legislated in 1965, have been dominating the Turkish cityscapes since then. The second actor is the real estate investment trusts (REITs), which

[1] Turkish Statical Institute, "Completed or Partially Completed New Buildings and Additions by Use of Building" accessed August 3, 2015, http://www.tuik.gov.tr/PreTablo.do?alt_id=1055

[2] Turkish Statical Institute, "Nufüs ve Konut Araştırması, 2011", in *Haber Bülteni* 15843 (2013) accessed August 3, 2015, http://www.tuik.gov.tr/PreHaberBultenleri.do?id=15843

substituted for the small contractors in the 90s. The number of mixed-use housing projects, designed mostly in the form of gated communities by these large-scale investors, has increased remarkably in the relatively large cities in Turkey. Turkish Housing Administration (*Toplu Konut İdaresi*, abbreviated as *TOKİ* in Turkish), as the single most competent actor of the public sector, is responsible for the remaining bulk of the recently increased housing production activity. With the structural changes that took place in 2003 and 2004, the administration has transformed itself and produced an unprecedented number of public housing in the nation's history since 2003.

The question of housing is interwoven with the issues of urbanism, as housing is the predominant land use in each and every city. The quality of housing determines the quality of the urban areas. Consequently, the dialog between architecture of housing and urban design should be vigorous in order to deliver pleasant urban environments. The quality of the housing environments produced by the three actors, on the other hand, does not offer such sensitivity; and thus, it is perceived as controversial in some academic and professional circles.

The concept of typology has a potential to be instrumentalized in strengthening the dialog between housing and urbanism. Neo-rationalists drew attention to this potential of the concept in the 60s as a reaction to the failure of the Modern Movement to generate complex urban environments, unlike the historical city. They emphasized the multi-layered, sophisticated and vibrant character of the historical city as an alternative to the sterile housing environments with limited spatial variations, created as a result of the Modern Movement's fascination with technology and mass-production. According to them, there is continuity between architectural artifact and urban environment. In order to reveal this continuity, they utilized the concept of typology to explore the architectural artifacts. Moreover, as a reaction to the Modernist proliferation of function, they defended the idea of "typological determinacy" in combination with "functional distributive indifference" of the architectural artifacts in order to manifest the superiority of form over function. Recently, some contemporary theoreticians reiterate the potential of the concept of typology to understand not only the historical city but

also the contemporary one, which is unprecedentedly growing and deserves attention. Christopher Lee asserts that the contemporary cities "can be better understood, described, conceptualized and theorized through their own particular dominant types", which are prevailing building types having potential to effect change in these cities.

In the same line of thought with Christopher Lee, the constituent building types of the housing environments produced by the above-mentioned actors can be diagnosed as the dominant types of the largest Turkish cities. The apartment block produced by small contractors, the mixed-use podium block by REITs and single-use high-rise point block and linear block by TOKİ lead to three different, distinctive and idiosyncratic urban environments. Understanding their characteristics is key to understand Turkish cities.

Thus, in this study, TOKİ's single-use high-rise point block and linear block are analyzed and designated as a dominant type and the housing environments composed of them are studied in order to emphasize the potential of the concept of typology as an analytical device to evaluate urban characteristics of residential environments.

1.2. Method of the Study

In this work, the quality of the urban form of the housing environments produced by TOKİ is analyzed and evaluated through typology. The evaluation criteria are formed under the light of the urban design guidelines written as a part of the "Urban Renaissance" movement, the British reflection of the American "New Urbanism" movement rooted in the 80s. Certain urban design guidelines, notably "Towards an Urban Renaissance" published by the Department of the Environment, Transport and the Regions and "Building the 21st Century Home" published by the fourty-year old research collective, URBED, in the UK, have been reviewed. Five main points were selected for the formation of the evaluation criteria, namely the significance of the street, hierarchies, the urban block, urban placemaking and density.

This research is based on the student works produced in ARCH 713 and ARCH 714 “Housing Design and Research Studio I and II” course conducted in the fall semester of 2009 and spring semester of 2012 under the guidance of Professor Ali Cengizkan in the Department of Architecture, Middle East Technical University. In Fall’09, site plans and project information (total area, construction area, green area, density and number of car parks) of the fourty projects in the twenty-nine cities all over the country were compiled and presented (Appendix B). The scope of the research has been further extended by adding the same-scale satellite images and the supplementary information such as project categories, number of units, building types and blueprints, physical elements etc. (Appendix A, Appendix B). Lastly, nineteen blueprints, on which the entire TOKİ housing production is based, were studied as part of the research. The blueprints were obtained from the administration by a group of students including the author in Spring ’12 for the same course.

CHAPTER 2

TRANSFORMATION OF THE CONCEPT OF TYPE AND TYPOLOGY

The aim of this chapter is to present brief information on how the concept of typology emerged and transformed itself throughout the history of architectural theory. In this mostly informative historical reading, subchapters are organized according to guidelines proposed by Anthony Vidler in his seminal essay "The Third Typology"[3]. In the first subchapter "The First and The Second Typology", eighteenth- and nineteenth- century typologies and "prototype" introduced by the Modern Movement are presented in a comparative way. In the second subchapter "Neo-Rationalist Movement and the Concept of Type", The Neo-Rationalist's understanding of typology, which is named by Vidler as "the third typology", is presented. In the last subchapter "Christopher Lee and the Emergence of "Typological Urbanism", the methods to instrumentalize the concept of typology in a context that discipline of architecture is largely affected by both digital production and rapid urbanization are introduced via Christopher Lee's definition of "dominant type" and its relation to the city.

2.1. The First and The Second Typology

The idea of type was introduced to the architectural realm for the very first time in the seminal work *Dictionnaire Historique de l'Architecture* written in 1832 by Quatremère de Quincy (1755-1849). In the chapter, "Type", he defines the concept of type in contrast to the concept of model as such:

[3] Anthony Vidler, "The Third Typology" in *Architecture Theory Since 1968* ed. K. Michael Hays (New York: The MIT Press, 1998), 284.

> "The word 'type' represents not so much the image of a thing to be copied or perfectly imitated as the idea of an element that must itself serve as a rule for the model. […] The model, understood in terms of the practical execution of art, is an object that must be repeated such as it is; type, on the contrary, is an object according to which one can conceive works that do not resemble one another at all. Everything is precise and given in the model; everything is more or less vague in the type."[4]

According to Moneo's essay, "On Typology", Quatremère de Quincy asserts that type can be understood by looking at the very first moment in which an architectural object emerged.[5] The concept of type can be formulated only if the form and the nature of the architectural object is well-understood. To elaborate it further, Moneo cites the examples given by Quincy:

> "In spite of the industrious spirit which looks for innovation in objects, who does not prefer the circular form to the polygonal for a human face? Who does not believe that the shape of a man's back must provide the *type* of the back of a chair? That the round shape must itself be the only reasonable *type* for the head's coiffure?"[6]

In short, according to Quincy, type can be identified with the logic of form, which emerges whenever an architectural object was related to a certain form throughout the history.

Quatremère de Quincy's contemporary Jean-Nicholas-Louis Durand (1760-1834), on the other hand, focuses on the idea/concept of type with a completely different perspective. For Quincy, type is "the original reason of form in architecture" whereas for Durand, it is "a method of composition based on generic geometry of axis superimposed on the grid."[7]

Although Durand does not use the word "type" in his two books, the *Recueil et parallèle des edifices de tous genres, ancient et modernes* (Collection and Parallel of Edifices of All Kinds, Ancient and Modern, 1799-1801), and the *Prècis des leçons d'architecture données à l'École Polytechnique* (Précis of the Lectures on

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[4] Quatremère de Quincy, "Type" in *Encyclopédie Méthodique,* vol. 3, trans. Samir Younés, reprinted in *The Historical Dictionary of Architecture of Quatremère de Quincy* (London: Papadakis Publisher, 2000).
[5] Rafael Moneo, "On Typology", *Oppositions* 13 (1978), 28.
[6] Quatremère de Quincy, *Dictionnaire Historique de l'Architecture* (Paris, 1832), 630.

Architecture Given at the École Polytechnique, 1802-1805)[8], it can be claimed that he forms the basis of the concept of typology as a design method. According to Durand, the principal goal of architecture is no more "the imitation of nature or the search for pleasure and artistic satisfaction".[9] Instead, it is composition and disposition, which is "directly related to needs; its relevant criteria are, accordingly, convenience and economy. Convenience seek solidity, salubrity, and comfort; economy requires symmetry, regularity, and simplicity – all attributes to be achieved with composition."[10]

For Durand, architect's role is to compose architectural elements –columns, pillars, foundations, and vaults etc., disengaged from any stylistic concerns– in order to form a single building. Compiling element compositions in the existing buildings provides a useful repertoire to the composer-architects. "Thus, he offers a series of porches, vestibules, staircases, court etc. as part of future buildings."[11] Furthermore, he suggests two instruments in order to create a composition: the continuous, undifferentiated *grid*, and the use of the *axis* "as a support for the reversal of its parts".[12] Durand's main aim is "to formalize architecture's disciplinary knowledge to meet the rapid rise of other scientific disciplines of his time." He tries to build "a science of architecture" based on the idea of type.[13]

According to Vidler, the second typology became apparent after the Second Industrial Revolution towards the end of the nineteenth century. Its primary aim was to respond to the question of mass production and its implications in architecture.[14]

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[7] Moneo, *Op. cit.*, 29.
[8] Christopher C. M. Lee, "The Deep Structure of Type: The Construction of a Common Knowledge in Durand's Method" in *The City as a Project*, ed. Pier Vittorio Aureli, (Berlin: Rugby Press, 2013), 171-172.
[9] Moneo, *Op. cit.*, 28.
[10] Rafael Moneo, "On Typology", *Oppositions* 13 (1978), 28.
[11] Moneo, *Op. cit.*, 29.
[12] *Ibid.*
[13] Lee, "The Deep Structure of Type: The Construction of a Common Knowledge in Durand's Method", *Op. cit.,* 173.
[14] Anthony Vidler, "The Third Typology" in *Architecture Theory Since 1968* ed. K. Michael Hays (New York: The MIT Press, 1998), 290.

In order to draw parallel lines between the first and the second typology, Vidler benefits from the analogy of nature in the industrialized world. According to him, as an alternative to the nature referred by eighteenth- and nineteenth- century architects, the transformation of production created an illusion of nature, which is "the nature of the machine and its artificially reproduced world"[15]. Products of this nature, Vidler says, were ruled by "a quasi-Darwinian law of selection of the fittest"[16]. In such a world, buildings were inevitably perceived as machines mass-produced by machines, serving to the human needs.

Mass production requires repeatability and standardization. For Le Corbusier, standards for *the machines to live in* can be drawn from human as "complex form of a unique physical type"[17]. As *Le Modular* suggests, dimensions of doors, windows, stairs, the height of rooms etc. should be determined by the human scale.

Regardless of the roots of these standards, on the other hand, standardization entails typification. This sense of type radically differs from the concept of type referred before and has a lot in common with the concept of model. In this regard Moneo states that:

> "Industry required repetition, series; the new architecture could be pre-cast. Now the word type –in its primary and original sense of permitting the exact reproduction of model– was transformed form an abstraction to a reality in architecture, by virtue of industry; type had become prototype."[18]

At this point, it should be noted that the production method and the artifacts have a direct relationship. In order to be economic, mass production may dismiss architectural richness by minimizing variation. Mass production of social housing in Turkey is one such contemporary example, result of a limited budget and an ambitious quantitative goal with a strict schedule. Its production method and resultant housing environments are highly related to the discussion above, which will be largely covered in the third chapter of this thesis.

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[15] *Ibid.*, 291.
[16] *Ibid.*

Perceiving architectural object as "industrial prototype allowing for limitless repetition" becomes apparent in Le Corbusier's work: The *Dom-ino* House, *Plan Voisin* and *Ville Radiuse* are such examples. Although, in detail, from door to ceiling, all examples are well designed according to human standards, in larger scale they fail to deliver complex requirements of urban living. Principles like solar orientation of detached units, maximum amount of open green areas and separation of pedestrian and vehicular circulation remain insufficient to overcome mass-produced monotony. In short, there is a contradiction between detailed design of individual units and unarticulated combination and integration of the units in these projects. Vidler describes them as such:

> "The image of the city at this point changed radically: the forest/park of Laguier was made triumphant in the hygienist utopia of a city completely absorbed by its greenery. The natural analogy of the Enlightenment, originally brought forward to control the messy reality of the city, was now extended to refer to the control of entire nature. In the redeeming park, the silent building-machines of the new garden of production virtually disappeared behind the sea of verdure."[19]

Lastly, there is no explanation in Vidler's text on how architectural artifacts are categorized in the second typology. He uses the word typology with reference to the architectural discourse prevalent in the late nineteenth and the early twentieth century. Moneo, on the other hand, asserts that three dominant trends of the 20th century –in the Modern Movement, the one focusing on figurative space and the one proliferating mass production and functionalism– had in common "the rejection of the past as a form of knowledge in architecture" and the rejection of typology as an instrument to import architectural knowledge form the history. He says that all three have different reasons: "Functionalism was mainly concerns with method, while the other two dealt with figurative space and production. The unique qualities of each problem […] seemed to be posed against the idea of common structure that characterized type."[20]

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[17] *Ibid.*, 290.
[18] Moneo, *Op. cit.*, 35.
[19] Vidler, *Op. cit.*, 291.
[20] Moneo, *Op. cit.*, 35.

2.2. Neo-Rationalist Movement and The Concept of Type

According to Vidler, there are three moments in architecture that witnessed intensified typology discussions.[21] Firstly, typology is instrumentalized to return architecture to its natural origins and learn from its guiding principles by a group of architects leaded by Quatremère de Quincy and Jean-Nicholas-Louis Durand throughout the eighteenth and the nineteenth centuries. In the second moment, typology is again instrumentalized, yet this time for the engagement of architecture and the world of machine production. In both time periods, the issue of typology is raised with a need to search outside the practice (rational science in the former, technological production in the latter) for legitimation. On the contrary, in the third time period, unlike the first two, typology is used as a tool by architecture to understand nothing but itself. Vidler refers this period as such:

> "Once again the issue of typology raised in architecture, not this time with a need to search outside the practice for legitimation in science and technology, but this time with a sense that within architecture itself resides a unique and particular mode of production and explanation."[22]

Neo-Rationalists assert that architecture should focus on itself and objects created by it. In this way, they claim the autonomy of architecture. Architectural value system should be imported neither from nature and science as in the Enlightenment; nor from technology as in the Modern Period. The pivots of this value system can no more be cost-efficiency and manufacturability; certainly not the one-to-one relation with function of the building. Role of these qualities are reduced to supportive, to a far more complex value system, instead of regulative.

> "This does not, of course, necessarily mean that architecture in this sense no longer performs any function, no longer satisfies any need beyond the whim of an 'art for art's sake' designer, but simply that the principal conditions for the invention of objects and environments do not necessarily have to include a unitary statement of fit between form and use."[23]

Ethos of Neo-Rationalist architecture is derived via architectural production itself. There is no better study area or repository than the historical city, which

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[21] Vidler, *Op. cit.*, 288.
[22] *Ibid.*, 288.

accommodates countless number of artifacts, designed by countless number of architects and builders. It should be noted that the study is not limited to the investigation of the singular artifacts but their relations with the others. Vidler states that "Columns, houses, and urban spaces, while linked in an unbreakable chain of continuity, refer only to their own nature as architectural elements, and their geometries are neither naturalistic nor technical but essentially architectural."[24] At this point, the concept of continuity emerges as an essential keyword to understand the Neo-Rationalist vision. The regulators of the Neo-Rationalist value system are the relations among singular artifacts and relations and continuity between the new designs and the historical city. Multi-scalar dimension of architecture cannot be ignored. It is not a coincidence that the most outstanding book written in this time period is Rossi's "Architecture of the City", which aims to reveal the structure of the city by focusing not only on the architectural artifacts, but their interrelations and relation with the city.

On the other hand, it should not be concluded that the Modern Movement does not have any statement on the urban scale. The *Ville Contemporaine*, designed by Le Corbusier in order to accommodate the ever-increasing urban population at the turn of the twentieth century, presents upper scale solutions depending on the relations of its constituent architectural elements. However, these upper scale relations are the products of a single mind. The design suggests that architect as a mastermind is capable of solving complex social and urban problems of very large scale only by himself. Vidler emphasizes the opposite tendency of Neo-Rationalists: "No longer is architecture a realm that has to relate to a hypothesized 'society' in order to be conceived and understood; no longer does 'architecture write history' in the sense of particularizing a specific social condition in a specific time or place."[25]

Neo-rationalists utilize types and typology for two objectives. The first is to understand the historical city and its inner structures. The second is to improve

[23] *Ibid.*, 292.
[24] *Ibid.*, 291.
[25] *Ibid.*, 292.

design methodology in order to ensure continuity between new designs and the historical city. Vidler states that: "In the accumulated experiences of the city, its public spaces and institutional forms, a typology can be understood that defies a one-to-one reading of function, but which at the same time ensures a relation at another level to a continuing tradition of city life"[26] To Vidler, this new ontology focuses on "the city polis, as opposed to the single column, the hut-house, or the useful machine."[27] The locus of this third typology is the historical city, which is under thread due to intensive building activities conducted to meet housing demand. "The city, that is, provides the material for classification, and the forms of its artifacts over time provide the basis for recomposition."[28]

Another distinguishing characteristic of Neo-Rationalism/The Third Typology is the fact that it is inevitably social and political. It is impossible to select a typical form from the historical city, which is distilled/disinfected from its original political and social meaning. Neo-Rationalists' intention certainly does not conflict with this condition. Rather, they benefit from it in order to construct new meanings. Vidler states that "the technique or rather the fundamental compositional method suggested by the Rationalists is the transformation of selected types –partial or whole– into entirely new entities that draw their communicative power and potential criteria from the understanding of this transformation."[29]

Aldo Rossi is an important figure among Neo-Rationalists who emphasizes the concept of typology. One of his most significant contributions to the discipline of architecture is his critique of "naive functionalism"[30]. The Modern Movement stakes claims for the existence of undeniable relation between form and function, and claims that "the form can be arrived through a techno-specific determination"[31]. On the contrary, Rossi upraise the concept of "functional

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[26] *Ibid.*, 292.
[27] *Ibid.*, 292.
[28] *Ibid.*, 288.
[29] *Ibid.*, 293.
[30] Aldo Rossi, *Architecture of the City* (New York: The MIT Press, 1984), 46.
[31] Christopher C. M. Lee, "The Forth Typology: Dominant Type and The Idea of the City" (Phd

distributive indifference".

Functional distributive indifference, the term used by Christopher Lee to explain Rossi's approach, is that architectural form justifies itself without any dedication to its (initial) programme. Example of *Pallazzo della Ragione*, Padua is referred by Rossi many times in order to support his argument. The building accommodates many different functions and sustained its existence as an active extension of urban living since the day it had been built. In this respect, therefore, it "shows its indifference to distributive function and thus functions (building use or programme) are entirely independent of concrete and definitive form".[32]

Functional distributive indifference should not be confused with typological indifference. Lee mentions that Rossi sheds light on this in his article *"Due Progetti"*, published only in Italian.[33] By definition, type can accommodate distributive indifference. For Rossi, typological indifference is a support for disorder in architecture. It represents architectural indeterminacy. On the other hand, distributive indifference incorporates with architecture. "It shows a maximum degree of architectural definition whilst displaying distributive indifference."[34] Architectural definition is required in order to improve the quality of the city. Vidler explains the primary concerns of the Neo-Rationalist architects as such:

> "The heroes of this new typology are […] among those who, as the professional servants of urban life, have directed their design skills to solving the questions of avenue, arcade, street and square, park and house, institution and equipment in a continuous typology of elements that together coheres with past fabric and present intervention to make one comprehensible experience of the city."[35]

2.3. Christopher Lee and the Emergence of "Typological Urbanism"

In the book, Christopher Lee and Sam Jacoby compiled their three-year studio-work they conducted at the AA, Christopher Lee starts his impressive concluding

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diss., The Berlage Institute, 2012), 211.
[32] *Ibid.*, 210.
[33] *Ibid.*, 218.
[34] *Ibid.*, 224.

text by explaining why typology is still relevant in the contemporary architecture discussions.[36]

He indicates that the concept of type has not been profoundly investigated since post-modernism. The reason why the concept had been invoked at that time was the fact that the International Style was so fascinated with the union between abstract design and mechanical production; consequently, it failed to relate itself to "intricacy and complexity of urbanism and the historical city".[37] As a critique of this fascination, some theoreticians including Colin Rowe and Aldo Rossi introduced a new interpretation of type and context. After his brief historical summary, Lee suggests to replace 'mechanical production' with 'digital production' and he adds: "[…] it becomes clear that today's global proliferation of complex forms echoes the conditions of the recent past. A timely moment, then, to reinvoke type?"[38]

Christopher Lee's personal experiences can disclose the reason why he brings the typology discussions back to the architecture's agenda. In the years when the parametric digital experimentation started, Lee, first, received Bachelor of Architecture degree in Singapore; and then, went to diploma school at the AA. The year that Lee started diploma unit, was the same year when Brett Steele, now director of the AA and Patrick Schumacher, partner at Zaha Hadid Architects, launched the Design Research Lab (DRL), the influential master programme on parametric design, at the same school. After finishing his diploma school, he went back to his hometown and started teaching in National University of Singapore from where he graduated. During these years, he witnessed "at first hand the relentless growth of cities in China and India".[39] When he came back to the AA as unit master, digital research was continuing with its full pace, yet "in a shift towards a highly articulated, small-scale formal research driven by the prowess of

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[35] *Ibid.*, 293.
[36] Christopher C. M. Lee, "Projective Series" in *Typological Formations: Renewable Building Types and The City*, ed. Christopher Lee and Sam Jacoby (London: AA Publications, 2007), 136.
[37] *Ibid.*
[38] *Ibid.*
[39] Christopher C. M. Lee, Introduction to *Typological Formations: Renewable Building Types and*

modeling and scripting softwares".[40] On the other hand, regeneration discussions were going on in London. As a result of all these experiences, Lee decided to focus on the concept of type in order to "understand these new conditions better and find ways to re-engaging with the city."[41] According to him, the stable conception of type was to questioned and type was to be considered "as renewable, as the pliant and the contingent elemental part of the urban plan".[42] This was the starting point for him and his partner, Sam Jacoby, when they started to the thee-year studio-work at the AA. Their focus was on "relevance of a renewed interest in typology as a tool for reasoning and producing the urban plan".[43]

There are two messages that Lee wants to convey in his text: to reveal his standpoint on typology among all other definitions during architecture history and to re-establish link between type and urban plan.

For Lee, definition of type does not radically differ from that of Quatremère de Quincy. In order to unlock all potentials of typological thinking, he drops functional definitions of type: schools, offices, hospitals etc. He indicates that: "Type is an object or artifact that belongs to a class or group that brings together others with similar attributes. […] Types can be grouped according to shared attributes that are structural, organizational or formal in nature."[44] This form-oriented approach enables typology to be a generative tool in design process. According to Lee:

> "Typology can be seen as a method of reasoning and experimenting through type – through objects and artifacts considered within a particular group. It begins with precedents and proceeds via variation and differentiation in response to specific but shared demands and pressures. […] Precedents, repetition, differentiation and continuity are all crucial to typological

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The City, ed. Christopher Lee and Sam Jacoby, (London: AA Publications, 2007), 7.
[40] *Ibid.*
[41] *Ibid.*
[42] *Ibid.*
[43] *Ibid.*
[44] Lee, "Projective Series", *Op. cit.*, 136.

reasoning and experimentation."[45]

Additionally, he warns against "overreliance on precedents", which may "lead to repetition and imitation and rules out originality and invention"[46].

> "In order for typology to be a generative design process, it must exploit the potential of an accumulated intelligence of that type, as explored through the diagrammatic imprint of its structure. Such a process should allow for the emergence of unforeseen possibilities in the evolution from one type to another, and from type to city."[47]

The second point that Lee draws attention is to re-establish link between type and urban plan. Lee rightly points out that there is a direct correlation between the degree of spatial definition and the success of urban plan. "The more spatially and architecturally resolved an urban plan, the less receptive it is to change or to alternative visions." On the other hand, "an urban plan that is described only in terms of policy and land-use does not offer the spatial and architectural richness or allure that is necessary to shore up consensus and galvanize action on the urban plan."[48] To him, between these two extreme conditions is where the typological thinking stands. Types are significant for "its pliability as a constituent part of the urban context" and "its effectiveness as a medium for channelling the disciplinary knowledge of the architect."[49]

If it is considered that ever-increasingly more than half of the world population reside in urbanized areas[50], it is inevitable that architectural and urban design require better understanding of existing cities – the way they work, the structure they have. To improve their qualities, partially or holistically, or make any additions, on a single building scale or urban scale, necessitates good analysis of their contexts.

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[45] *Ibid.*
[46] *Ibid.*, 137.
[47] *Ibid.,* 139.
[48] *Ibid.,* 140.
[49] *Ibid.,* 140.
[50] World Heath Organization, "Urban Population Growth" accessed July 13, 2015, http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en/.

In his PhD dissertation titled "The Forth Typology: Dominant Type and The Idea of City", Lee provides his reader with the concept of dominant type as "an indispensible tool and conceptual framework (or topos) to understand, describe, and theorize the city and subsequently to produce an architecture that is relevant to the city".[51] Dominant type, for him, can be "identified and defined by their potential to effect change, they can range from collective types that agglomerate to form sizable fragments or districts, to singular types that are significant either on account of their iconic status, which allows them to act as anchors within their individual urban context, or their proliferation, where the sheer force of numbers substitutes for any discernible quality."[52]

In the chapter of his dissertation "Dominant Type and The Developmental City State", he sets up three propositions on the concept of dominant type. Firstly, he proposes that dominant type is both diagnostic and prognostic tool for the contemporary city, which is not finalized, still under construction. Precisely at this point, his understanding of typology differs from that of Rossi. Rossi mostly focuses on the historical city whereas Lee defines his study area as contemporary city in general, Singapore as his case study. Secondly, dominant types are the reification of "evolving political project", "manifestation of political might". Throughout the last chapter of his dissertation, he proves that how the city state of Singapore legitimizes its political hegemony via architecture of the city, which can be read in its dominant types. Lastly, he asserts that there is a reciprocal relationship between the idea and the deep structure of dominant type.[53]

2.4. Conclusion

Built environment is, as suggested by many architects and theoreticians since the eighteenth century, the primary resource for architectural knowledge which can be obtained by the utilization of typology. It is undeniable that constituent elements of built environment, namely architectural artefacts, are singular and have individual characteristics, which make any kind of classification difficult to

[51] Lee, "The Forth Typology: Dominant Type and The Idea of the City", *Op. cit.*, 188.
[52] Lee, "Projective Series", *Op. cit.*, 140.

justify. However, it is still possible to study architectural objects/buildings/artifacts by classifying them according to general types, which certainly saves time and effort when extracting architectural knowledge from details of architectural production. Similar to the natural sciences –like biology, anthropology etc.- system of classification facilitates the process of analyzing and understanding the object matter, and it reinforces the autonomy of the discipline.

Then, one may ask that to which extend classification should be made. As mentioned by many times by the members of the Italian School, function may remain too reductive if it is considered that many buildings last longer than their initial functions: A Georgian terrace can be turned into a school, a warehouse into apartments, a mosque into a museum, a cistern into a performance hall, so on so forth. Furthermore, it is reasonable to assert that the system of classification should be derived via spaces as the product of the discipline itself, which again reinforces the autonomy of the discipline. (In "The Architecture of the City", Aldo Rossi tries to understand and explain the structure of the city, and he uses some categories such as primary elements, monuments, residential districts etc. defined via their role in the urban structure by focusing mainly on their physical characteristics.) Consequently, it could be asserted that architectural artifacts can be classified according to their spatial characteristics rather than their functions. Nevertheless, it does not mean that social, economic and political processes, which give way to the existence of these buildings, should be entirely neglected. On the contrary, these processes as well as building programmes, have an important role in understanding certain types, as complimentary to the role of *spatial characteristics*. Then, it might be asserted that typology is an instrument engaging other body of knowledge to the discipline of architecture.

At this point, in order to make the literature review within the scope of the thesis work more meaningful, it is important to draw attention to how the historical transformation of the concept of typology is related to the reasoning mentioned here.

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[53] Lee, "The Forth Typology: Dominant Type and The Idea of the City", *Op. cit.*, 263-264.

In the Enlightenment Period, Quincy introduced type to the realm of architecture as *a priori* idea inherent in an architectural object in contrast to model, which requires the exact reproduction of an object. Durand, on the other hand, who was influenced by the Enlightenment's fascination with science and scientific knowledge, categorized architectural objects according to their spatial configuration and composition. Although he never used the word type or typology in his works, his work exactly overlaps with the concept of typology, which basically means "study of or analysis or classification based on types or categories".[54] The architects and the theoreticians of the Modern Movement were more into the concept of *prototype* rather than that of *type*. Type, which is more to do with the past and related to the existing building forms, was perceived as unsuitable to the innovational spirit of the age, whereas prototype was necessary for mass-production. In the Neo-rationalist period, the architectural end products, subservient to the technological requirements of the Modern Period, were found insufficient to deliver vibrant environments, which were successfully provided by the historical city. More was found in the historical city than the functional-driven forms of the previous period and they needed to be explored further. The concept of typology was instrumentalized by the Neo-rationalist architects in order to understand the qualities of the historical city. The recent studies on typology focused on the contemporary city instead of the historical one. Christopher Lee introduced the concept of 'dominant type' in order to understand the relation between architecture and the contemporary city. Moreover, he suggested that types are pliable diagrams that can be used in urban design, since they provide spatial definitions to an urban plan more than setback distances and building heights, and enable architects to channel their disciplinary knowledge to the urban context.

Among all the concepts and definitions mentioned in this chapter, some of them are particularly significant to reinforce the dialog between architecture and the

[54] Merriam-Webster Online Dictionary, accessed August 19, 2015, http://www.merriam-webster.com/dictionary/typology

city: continuity between different scales, superiority of form over function and the concept of dominant type.

CHAPTER 3

BUILDING THE 21ST CENTURY RESIDENTIAL ENVIRONMENTS

The question of housing is interwoven with the issues of urbanism, as housing is the predominant urban land use in almost all of the cities. The quality of residential environment has a definitive role in the quality of urban land. Hence, one cannot think of the future of the urban areas without considering the issues of housing, and housing without contemplating its effect on the wider scale. Therefore, this thesis work does not focus on the individual home itself, yet on the housing layout, its relationship to urban environment, to open spaces, to different uses, to transport system, and community life it generates.

Housing production in Turkey is taking place in extensive numbers, even exceeding the housing demands. In the document "Real Estate Sector in the Vision for 2023" prepared by the Association of Real Estate Investment Companies (*Gayrimenkul Yatırım Ortaklığı*, abbreviated as *GYODER* in Turkish) in 2012, it was stated that the housing demand will be 7,56 millions in the years between 2011 and 2023 due to demographic changes, regeneration of the unlicensed residential stock and replacement of the over-aged buildings.[55] Urban population growth and decrease in household size present 4,84 million of the need, whereas urban regeneration and replacement of the old housing stock present 2.12 millions and 600 thousands, respectively.[56] If one considers the fact that, there are 3.7 million households in İstanbul and 1.44 million households in

[55] Can Fuat Gürlesel, "Resident Requirement Forecast in Turkey", in *Real Estat Sector in the Vision for 2023* (İstanbul: GYODER, 2012), 38-40, accessed August 3, 2015, http://www.gyoder.org.tr/img/mc-content/20131010161950_2950resectorinthevisionfor2023en.pdf

Ankara (2011), the scale of the need might be better understood.[57] On the other hand, the supply is no less than the extensive demand. The number of houses built is 2.6 millions between the years 2011 and 2014 according to the official statistics.[58] Moreover, the housing construction rate is increasing exponentially, which was 555,000 units in 2011 and 765,000 in 2014, and showed five-fold increase since 2003.[59] If this construction rate is maintained until 2023, Turkey will have 1,93 million houses more than the GYODER's estimation in 2023.

At this point, how and where the additional housing stock is being built becomes extremely significant since they have been affecting and will affect the character of Turkish cities in an irreversible way. The most of the additional housing stock is likely to be supplied in the largest cities according to current urbanization trends.[60] However, further expansion of the large cities in Turkey, namely İstanbul, Bursa, Ankara, İzmir and Antalya, unfortunately may lead to continuing and perhaps irreversible decline of urban areas, deterioration of peripheral agricultural and forest land and increase in car use.

Currently, housing production in Turkey is being conducted in three main channels. Small contractors are responsible for a substantial portion of the production in the form of apartment blocks. In his essay *"Türkiye'de 'Apartkent'lerin Oluşumu: Mülkiyet İlişkilerinin Dönüşümüne Dayalı Kentleşme"* Murat Balamir asserts that this type of housing provision emerged as a response to the limited capital accumulation in 1950s and 1960s, and its end products, namely apartment blocks, have been dominating Turkish cityscapes since then.[61]

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[56] *Ibid.*

[57] Turkish Statical Institute, "Nufüs ve Konut Araştırması, 2011", in *Haber Bülteni* 15843 (2013) accessed August 3, 2015, http://www.tuik.gov.tr/PreHaberBultenleri.do?id=15843

[58] Turkish Statical Institute, "Completed or Partially Completed New Buildings and Additions by Use of Building" accessed August 3, 2015, http://www.tuik.gov.tr/PreTablo.do?alt_id=1055

[59] *Ibid.*

[60] GYODER, *Op. cit*.

[61] Murat Balamir, "Türkiye'de 'Apartkent'lerin Oluşumu: Mülkiyet İlişkilerinin Dönüşümüne Dayalı Kentleşme" in *Tarihten Günümüze Anadolu'da Konut ve Yerleşme-Housing and Settlement in Anatolia A Historical Perspective,* ed. Haluk Abbasoğlu et al. (İstanbul: Tarih Vakfı Yayınları, 1996)

Secondly, Real Estate Investment Trusts (REITs) conduct the other bulk of the housing production mostly in the form of gated communities with additional uses such as shopping malls, fitness centres, office spaces etc.

Last but not least, Turkish Housing Administration (TOKİ) has become an important actor in housing production since 2003. The administration has built 500,000 houses in the years between 2003 and 2011 in the form of social housing projects and fund-raising projects, the ratios of which are 85% and 15% respectively. The construction of 500,000 additional housing units until 2023 is on administration's agenda. TOKİ has been providing houses not only for the economically disadvantaged population but for the middle- and high-income groups with relatively affordable prices, the end product of which is; single-use high-rise residential point blocks developed from 17 different plan types.

These three production methods create idiosyncratic and distinctive urban environments in the Turkish cities, the main components of which are three different building types: the apartment block (small contractors), the podium block (REITs), and the single-use high-rise point block and linear block (TOKİ). Each of them can be considered as a dominant type, the concept introduced by Christopher Lee, the architectural and urban qualities of which are key to understand the Turkish cities. This thesis work aims to analyse the third dominant type, single-use high-rise point block and linear block, produced by TOKİ and the urbanity created by it.

The third chapter of the thesis tries to formulate evaluation criteria to analyse the housing production of TOKİ, by focusing on the expectations from the 21st century residential environments and their relations with the city. The five subchapters; namely, the significance of the street, hierarchies, the urban block, urban placemaking, and density, are borrowed from the urban and residential design guides published in the UK since 1999.

3.1. Significance of the Street

In the book "Building the 21st Century Home: Sustainable Urban Neighbourhood" David Rudlin and Nicholas Falk draw their readers' attention to

the importance of the street in production of successful living environments.[62]

Street has a primary role in organizing and regulating the urban areas. However, it was condemned by the post-war planners, who were eager to follow and realize the Modern Movement ideals. Rudlin and Falk visit back the times before sterile high-rise council estates became widespread, when the word 'streetwalker' was used for prostitute and 'street-fighting' for gang violence.[63] The street was perceived as "cause of many urban evils" and it had to be swept away.[64] However, removal of the street in the council estates did not remove the criminal activities, it just "pushed them into the staircase, walkways and parking lots or into the generous areas of landscaping provided to 'humanise' new estates".[65]

According to Rudlin and Falk, street has two main functions. It provides space for movement through an area and reinforces interaction for a local community.[66] Street enables two kinds of movement: pedestrian and vehicular. Post-war planners advocated separation of these two types of circulation. In order to enhance free flow of pedestrian traffic, they suggested larger streets, which mainly served for vehicular traffic and isolated walkways inside the large housing estates served for pedestrian circulation. The housing blocks were set back from the vehicular roads in order to prevent housing units to be exposed to the noise caused by heavy traffic. This insight ended up with "blighted cities with vehicular roads and roundabouts bounded by green swathes of landscaping and shunned by the buildings which would traditionally have sustained them".[67] Additionally, commercial spaces could exist neither on vehicular ways –due to lack of critical mass of passers-by- nor on pedestrian walkways –since they were dedicated to the inhabitants and visitors, not to strangers-, which leads to deserted areas for long durations within the day and becomes less suitable for a vital and vibrant city.

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[62] David Rudlin and Nicholas Falk, "Urban Building Blocks" In *Building the 21st Century Home: Sustainable Urban Neighborhood,* (Oxford: Architectural Press, 1999), Kindle Edition.
[63] *Ibid.*
[64] *Ibid.*
[65] *Ibid.*
[66] *Ibid.*
[67] *Ibid.*

Figure 2.1 View from the 2432nd Street, Ümitköy
(Source: Personal archive)

Regarding the second function of the street, Rudlin and Falk states that: "A street is more than a road since, as well as being a route from A to B, it is a place where people meet and interact and hence where the public life of the town and or city is played out."[68] It is a place "defined and animated by its buildings".[69] As Colin Rowe and Fred Koetter (known as Contextualists) draw attention to this character of the street in their book "Collage City" by comparing "the traditional city, with its open spaces carved out of solids and Le Corbusier's utopian *tabula rasa* City in the Park, with its buildings standing isolated on open ground"[70].[71] City of Parma and Le Corbusier's project for Saint-Dié are the objects of this comparison. In the figure-ground plan of Parma, streets become figure defined by uniform buildings with the same height, which gives way to formation of "a space of social intercourse through congestion and friction".[72] On the other hand, in the figure-ground plan of Saint-Dié, the buildings themselves become figures leaving

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[68] *Ibid.*
[69] *Ibid.*
[70] Christopher C. M. Lee, "Projective Series" in *Typological Formations: Renewable Building Types and The City*, ed. Christopher Lee and Sam Jacoby (London: AA Publications, 2007), 140?.
[71] Colin Rowe and Fred Koetter, *Collage City*, (Cambridge, MA: MIT, 1978)
[72] Lee, *Op. Cit.*, 140.

ground plane undefined as a park by "destroying the textures and compressive valves that are so vital for spaces of social interaction".[73]

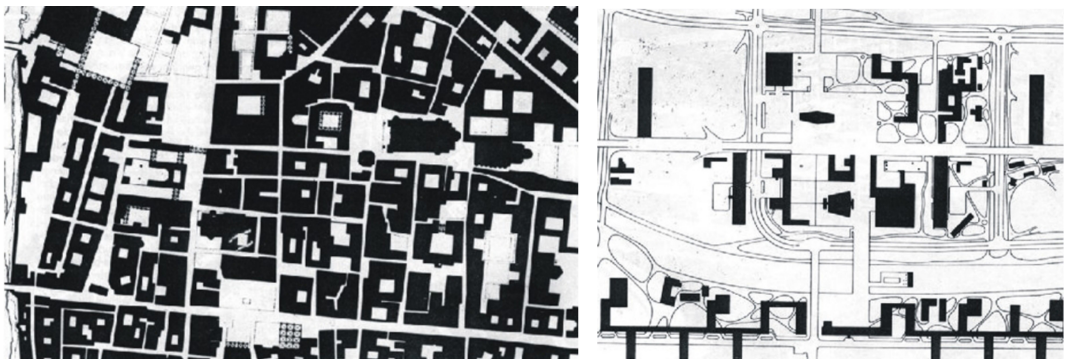

Figure 2.2 Figure-ground plans of Parma (left) and Saint-Dié Project by Le Corbusier (right) (Source: Colin Rowe and Fred Koetter, *Collage City*, Cambridge, MA: MIT, 1978)

Regarding the safety issues, it should be noted that there is a reciprocal relation between public and private realm in a street surrounded by buildings. The street becomes safer since it is activated by shop frontages and residential entrances during daytime and surveyed by the windows and passers-by during night-time, which ensures the protection of the private realm.

Permeability is an important quality, which further reinforces the role of the street as the central organizing element of the urban areas. The more permeable the street network is, the more walkable the neighbourhood becomes. Highly connected streets reduce walking distances and encourage walking; thus, support wider range of economic activity and ensure that the area is safer. However, large housing estates and retail parks disrupt this connectivity in the urban fabric and lead to less pedestrian activity and more vehicular traffic. As quoted by Rudlin and Falk, Bill Hillier proves that low levels of connectivity reduces encounter rates and causes higher rates of domestic burglary by using the Space Syntax technique.[74] [75]

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[73] *Ibid.*

[74] David Rudlin and Nicholas Falk, "Urban Building Blocks" in *Building the 21st Century Home: Sustainable Urban Neighborhood,* (Oxford: Architectural Press, 1999), Kindle Edition.

[75] Bill Hillier, "Against Enclosure" in *Rehumanising Housing*, ed. Necdet Teymur, Thomes A. Markus and Tom Wooley, (London: Butterworths, 1988), 63-88.

Coexistence of vehicular and pedestrian movement is another significant quality, which reinforces the role of the street as the central organizing element of the urban areas. As mentioned before, shops bring "a degree of vitality to provide surveillance" to the streets.[76] However, retailing activity requires vehicular movement to support services and bring pedestrian flow. Rudlin and Falk asserts that: "Excluding through traffic, or pedestrianizing the street runs the risk of cutting off its commercial life blood in all but the busiest streets."[77] Shop owners, most of the time, are reluctant to pedestrianize their shopping streets. For example, in 2014, local traders of Narrow Way and Mare Street in Hackney (London) protested the decision to pedestrianize these two shopping streets, which was taken by Hackney Council in association with Transport for London (TfL) and the Greater London Authority (GLA), after a trial period of six months starting in June 2013. The shop owners stated that the decision highly affected their shops' revenue, since the number of costumers was steadily declining and they were having trouble to receive services.[78] In order to achieve this coexistence, the streets should be designed accordingly. Widening pavements and reducing road widths enable pedestrians to move around the city/neighbourhood safely while maintaining the vehicular traffic. Pedestrian movement should be privileged instead of vehicular traffic.

Lastly, it should be mentioned that there is a clear distinction between the road and the street. In the book "Urban Streets and Urban Rituals", Adnan Barlas explains this distinction with reference to Joseph Rykwert.[79] Road is a surface on which "movement to destination and transportation of people and commodities" take place whereas street does not necessarily lead anywhere.[80] Street is more than a paved surface, it is "a three dimensional urban component together with artifices

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[76] David Rudlin and Nicholas Falk, *Op. cit.*
[77] *Ibid.*
[78] Giulia Sgarbi, "Angry Debate over Hackney Pedestrianisation", *East London Lines*, March 27, 2014, accessed August 7, 2015, http://www.eastlondonlines.co.uk/2014/03/pedestrianisation-on-hackney-high-street-causes-debate-among-retailers/
[79] Adnan Barlas, "The Street: A Definition" in *Urban Streets and Urban Rituals* (Ankara: METU Faculty of Architecture, 2014), 69-70.
[80] *Ibid.*

that delimit its surface".[81] The relation between the buildings and the surface is maintained by the intermediary spaces such as entrances and exits. Moreover, in comparison to road where the communication medium is limited to the transportation and the infrastructure, street is a public space where communication between individuals and groups takes place.[82]

3.2. Hierarchies

All urban areas consist of interconnected series of hierarchies. Uses, buildings, public areas, green spaces etc. are mostly structured –on purpose or by itself– according to this hierarchical order in order to give way to the liveable and legible urban environments. Among all the hierarchy of the streets is the most important since the street layout is the most permanent element of a given urban fabric than its uses, buildings and ownership pattern.

In their book "Building the 21st Century Home: Sustainable Urban Neighbourhood" Rudlin and Falk defines four different types of street part of this hierarchy: High streets, primary distributors, secondary streets and residential/tertiary streets, each of which is explained below.

High Streets: High streets are the busiest and the most urban streets in any city. Most of the time, they connect either central city to a subcentre or a subcentre to one another. High streets as linkers are important routes for cars, pedestrians, and public transport. Since they are experienced by many on daily basis, they become shopfronts of the city. In dense urban environments, they tend to be pedestrianized; elsewhere they are important routes for traffic. Trajectories of the functions they accommodate are well beyond their physical boundaries. The shops and services on such streets serve for surrounding communities as well as they attract people from all over the city. People come to such streets in order to do shopping, to visit a bank, to meet other people, to worship, so on so forth. They can also be considered as a focus for surrounding communities.

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[81] *Ibid.*
[82] *Ibid.*

Primary Distributors: They are designed to maintain vehicular traffic in the city, as products of the motor age. They have multiple lanes in both directions in order to provide free flow of traffic. Since they accommodate relatively faster and denser vehicular movement, they are kept free from frontage development in order to protect surrounding buildings from sound and noise pollution. They are certainly not desirable environments for pedestrians and Rudlin and Falk classify them as the least urban in character.[83] However, they may have an urban character in some instances as proven by boulevards of Paris. The Champs Élysées is one of the best-known examples. The boulevard is a primary distributor of the city of Paris owing to its continuity in the urban fabric and four lanes in both directions accommodating a serious volume of traffic. At the same time, it acts like a high street by virtue of its spatial assets. Its sidewalks are as wide as four carriageways, enabling crowds of people to have a pleasant pedestrian experience under the shade of two rows of trees. Surrounding buildings accommodate functions, which a high street offers such as cafes, restaurants, variety of shops etc. Thanks to their heights, they also give a strong sense of enclosure to the boulevard despite its width.

Secondary Streets: Secondary streets are quite similar to the high streets with a difference in scale. High street serves for wider community whereas secondary street serve for the neighbourhood it belongs to. It offers a mix of uses including local shops, small businesses and services –i.e. post office, mukhtar's office, tailor's shop, locksmith's shop, florist shop, hairdresser, supermarket, grocery store, little cafés and restaurants- in combination with open areas such as squares and parks. A secondary street provides main circulation route within the neighbourhood, which works as a spine, collects all other residential streets and establishes the neighbourhood centre.

Residential/Tertiary Streets: Residential Streets compose the bottom rung of the street hierarchy. They are experienced by less people yet they are dominant in quantity. The majority of the streets are indeed residential streets. They carry quite

[83] David Rudlin and Nicholas Falk, *Op. cit.*

small amount of traffic; thus, since they are visible to less people, they do not have much commercial potential. A residential street mostly serves to the people who reside on this street so it generates the sense of community. It tends to be a focus for the local community. Nurseries, playgrounds, and open areas accommodating community activities are likely to be on these streets. Since they carry a small amount of traffic, they are narrower. Permeability is important even for such streets due to security factors and services such as refuse collection etc.

Rudlin and Falk note that the frequency of high streets rises towards the centre whereas the frequency of residential streets increases towards the periphery. [84]

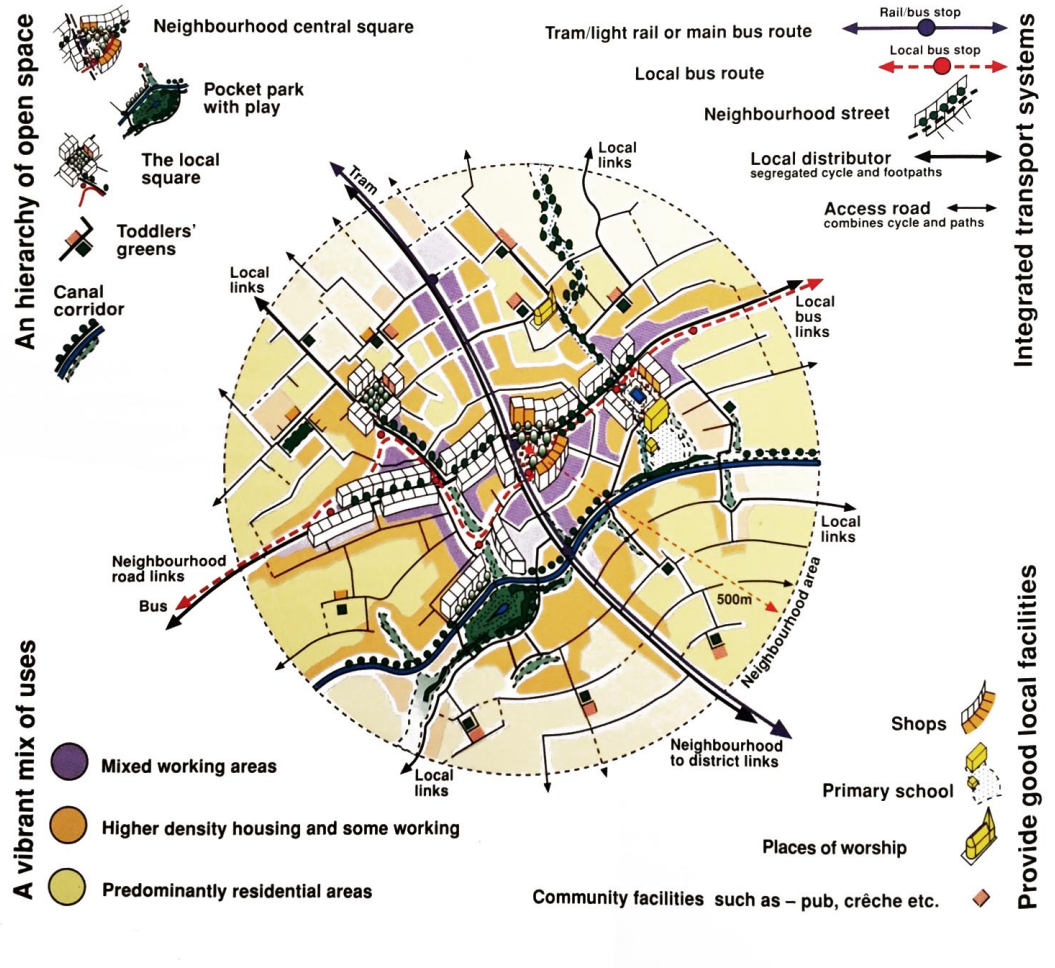

Figure 2.3 The key components of a mixed-use and integrated urban neighbourhood
(Source: Urban Task Force, *Towards an Urban Renaissance*, London: Crown Copyright, 1999)

[84] *Ibid.*

In the diagram above, taken from the book "Towards an Urban Renaissance" prepared by Urban Task Force in 1999, recommending practical solutions in order to bring people back into cities, towns and urban neighbourhoods in the age of suburbanization, the key components of a mixed-use and integrated urban neighbourhood are well-presented.[85] The secondary and the residential streets in the scale of a neighbourhood, the relationship between them, and the differences they have can easily be traced in the diagram.

The secondary street passing through the neighbourhood orchestrates the non-residential uses – local shops, school, health centre, public facilities etc. – as well as it accommodates bus stops, tram stations and public open spaces. Urbanity created diffuses and resolves from the secondary street towards the tertiary streets and residential environments. At the junctions of the residential streets, remaining public facilities such as religious buildings, nurseries, local squares and toddlers' greens find their spaces in the urban fabric. The hierarchy between the secondary and the tertiary streets can be observed in open spaces, mix of uses, public transportation nodes and public facilities. The hierarchy of the streets predefines the hierarchy of the urban structure.

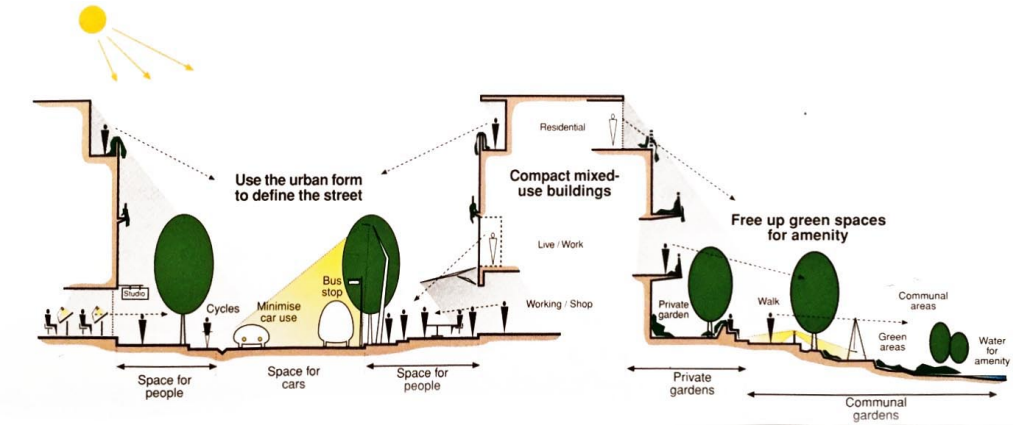

Figure 2.4 Cross-section through a residential district showing a tree-lined street enclosed by buildings with ground floor retail and commercial facilities and upper level apartments enjoying views in private and communal gardens
(Source: Urban Task Force, *Towards an Urban Renaissance*, London: Crown Copyright, 1999)

[85] Urban Task Force. "Designing the Urban Environment" in *Towards an Urban Renaissance*, (London: Crown Copyright, 1999), 66.

Each street type incorporates with different residential architectural qualities suitable to its character. On a high street, adjacent buildings with high eave levels are preferable in order to give a sense of enclosure and provide the density expected from such an urban setting, accommodating critical mass of uses, including housing, to create vibrancy. The ground floor of these buildings should accommodate activities serving to the high street and the upper floors should be resilient enough to withstand change in uses. Housing entrances should be placed according to security concerns. Since a high street contains a large volume of pedestrian and vehicular movement, sound protection should be provided for the residents of the buildings. On a secondary street, as a neighbourhood centre, should have the same qualities with a high street in a less dense way. Buildings are likely to have fewer floors. In the Figure 2.4, section of a secondary street is diagrammatized.

3.3. The Urban Block

Buildings can be configured in an urban block in different ways, all of which create different morphologies; yet, the principle function of them remains the same: to combine the private life of home and the public life of the street.

Figure 2.5 Alternative urban forms
(Source: David Rudlin and Nicholas Falk, *Building the 21st Century Home: The Sustainable Urban Neighbourhood*, Oxford: Architectural Press, 1999)

In the image above, Rudlin and Falk contrasted two different urban forms containing same mix of uses. The plan on the left illustrates a new urbanist approach, where urban perimeter blocks shelter different uses whereas the plan on the right represents an urban setting, which the same mix of uses is accommodated in isolated buildings connected via a distributor road. The latter development is quite common from the 20th century onwards.[86]

In the second organization, development sites belonging different developers are addressed as separate entities, as isolated archipelagos in the urban structure. A distributor road, lacking any kind of frontage development, is perceived as only means of gaining access to the site since buildings do not have direct relation with the street. The vehicular movement in the development sites with single access point brunches out into a series of dead-ends. Rudlin and Falk asserts that this kind of building organization give false sense of privacy and security. The access roads in such developments remain deserted for the most part of the day since they are not part of overall street structure of the city whereas the distributor road is obligated to accommodate large volume of traffic, making it more congested and dangerous. Furthermore, houses in these developments are prone to burglary since blank frontages of the main street make the main road less desirable for the pedestrian movement.[87]

The Urban Task Force prepared the diagram below, in which three different predominant housing types and their combinations on a one-hectare-wide urban block with same density levels, their potentials and deficiencies are depicted.

In the first type, high-rise point block, standing on a generous open space, there is no individual gardens or amenities serving to the inhabitants. The large area of open space might be perceived as a loosely defined communal garden, requiring relatively high maintenance costs. There is no direct relation between the building and the surrounding streets.

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[86] David Rudlin and Nicholas Falk, *Op. cit.*
[87] *Ibid.*

In the second type, linear block(s) composed of low-rise terraced houses; public space of the street is well defined by street frontages. Approximately half of the units have private gardens at the back. The deficiency of this type, on the other hand, is its high site coverage with demand for extra vehicular road(s) and the monotonous building organization which does not utilize the potential for the differentiation of the urban space.

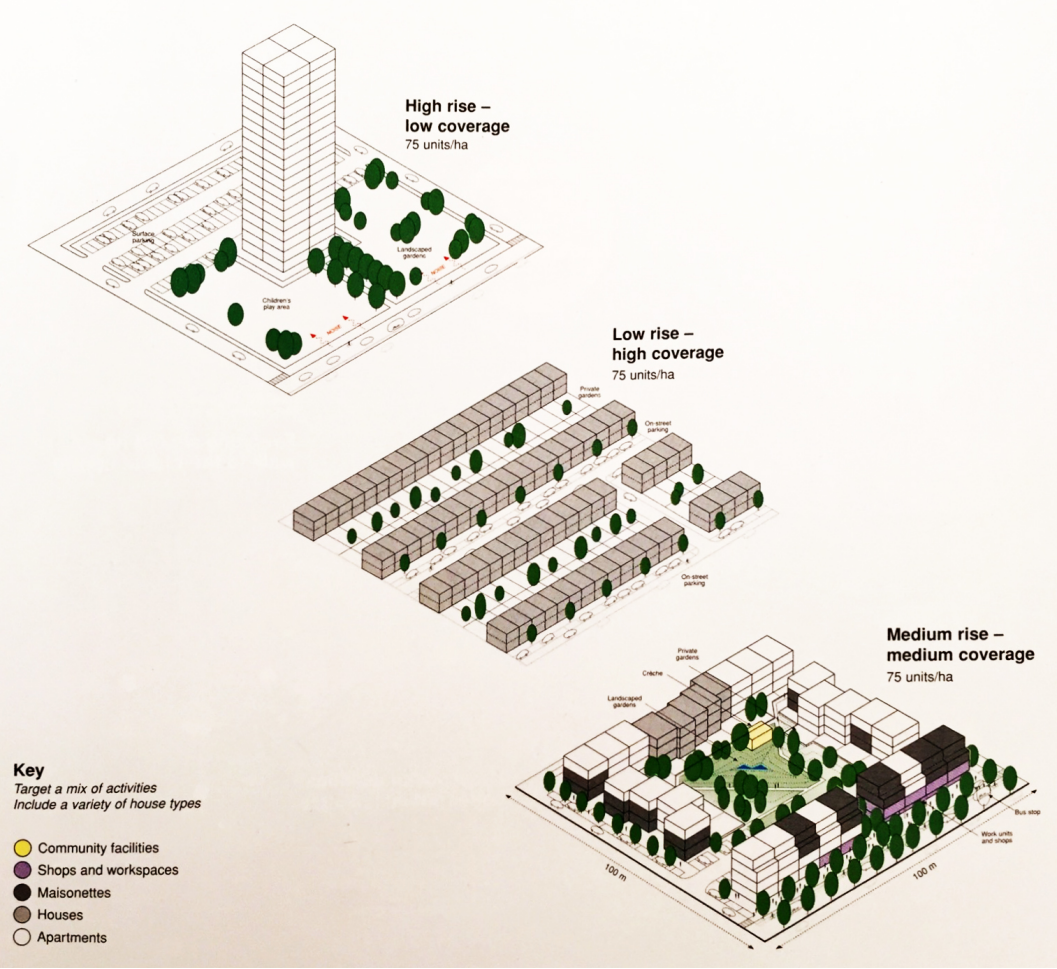


Figure 2.6 Relationship between density and urban form
(Source: Urban Task Force, *Towards an Urban Renaissance*, London: Crown Copyright, 1999)

In the last type, perimeter block composed of mid-rise terraced houses; housing units are organized around a communal garden, which "create a strong urban focus to a residential community".[88] The communal space in the middle has a

[88] The Urban Task Force, *Op. cit.*, 63.

potential to accommodate community-based facilities such as a community centre, a nursery or a playground besides individual gardens on its periphery and green area at the centre. This type of building organization has also potential to define the public space of the surrounding streets and activate them via commercial and public activities, which might be offered on the ground floor. Similar building organizations can be found in some Turkish housing examples.

Figure 2.7 A courtyard in Eryaman Housing Project (3rd phase) designed by Ahmet Gülgönen (Source: Personal archive)

3.4. Urban Placemaking

One cannot think of streets as the backbone of the urban structure without considering buildings defining them. Buildings are the artefacts, which give three-dimensionality to the streets and turn them into *places* rather than *spaces*. Public realm is composed of the street network of a city in combination with its squares, parks and public spaces. According to Rudlin and Falk, to frame and define public realm is the most significant role of buildings.[89] Buildings are the backdrop of urban life. In order to guarantee the quality of the public realm, Rudlin and Falk

suggest five ground rules to follow: building line, enclosure, the junction between the building and the street, scale and proportion, active frontages.[90]

First of all, buildings should be aligned along a building line, composed of the front façades of the buildings, ignoring any projections and setbacks. The alignment of the buildings gives the sense of directionality and depth to the street. The width of the street is defined by the distance between the building lines, which determine the scale, proportion and character of the street. Semi-detached buildings do not undermine the integrity of the street as long as the distance between the buildings is less than their width. In some exceptional cases, buildings can be set back from the building line to emphasize their exceptionality – religious buildings, schools etc.; however, if it happens too frequently, it may erode the integrity of the street.

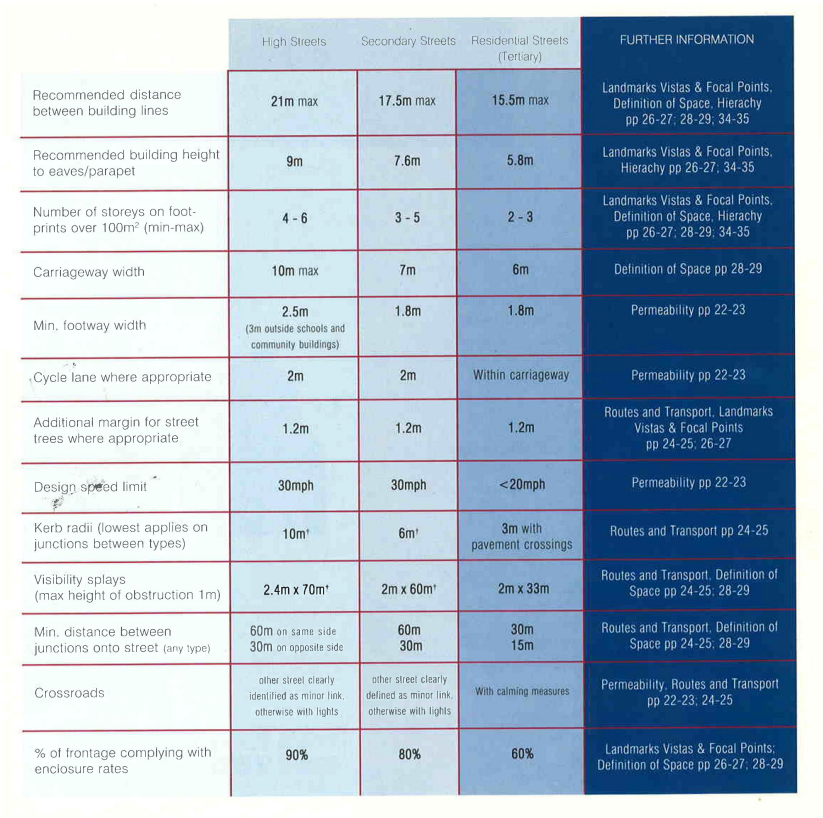
The second rule for successful urban landscapes is enclosure. Streets and squares should be enclosed by their buildings in order to turn them into *place*s. Building heights, incorporating with building line, draw the boundaries of public spaces.

Thirdly, the junction between the building and the street is significant as they represent the transition from the private life of home to the public life of the street. This transition might be addressed in many ways. Commercial spaces on ground floor of residential buildings both provide privacy to houses above and activate the street. In a fully residential building, on the other hand, architectural details such as doorsteps, recessed doorways, half-basements with railings may relieve the tension between public and private spaces as in Victorian, Georgian terraces and American brownstone tenements, which are examples given by the authors.

Fourthly, Rudlin and Falk advocate that there is an ideal enclosure ratio, the rate between the heights of the buildings to the width of the street, for different types of streets. In central commercial and retail areas as in medieval cities, New York, Victorian Manchester etc. the enclosure ratio is higher than 1:1 whereas it might

[89] *Ibid.*
[90] *Ibid.*

be 1:3 on residential streets and 1:10 around parks and along boulevards. In a document "Rebuilding the City: A Guide to Development in Hulme" prepared by Charlie Baker and David Rudlin for the Manchester City Council, a technical guidance is provided for the dimensioning the different types of streets.[91]



	High Streets	Secondary Streets	Residential Streets (Tertiary)	FURTHER INFORMATION
Recommended distance between building lines	21m max	17.5m max	15.5m max	Landmarks Vistas & Focal Points, Definition of Space, Hierachy pp 26-27; 28-29; 34-35
Recommended building height to eaves/parapet	9m	7.6m	5.8m	Landmarks Vistas & Focal Points, Hierachy pp 26-27; 34-35
Number of storeys on foot-prints over 100m² (min-max)	4 - 6	3 - 5	2 - 3	Landmarks Vistas & Focal Points, Definition of Space, Hierachy pp 26-27; 28-29; 34-35
Carriageway width	10m max	7m	6m	Definition of Space pp 28-29
Min. footway width	2.5m (3m outside schools and community buildings)	1.8m	1.8m	Permeability pp 22-23
Cycle lane where appropriate	2m	2m	Within carriageway	Permeability pp 22-23
Additional margin for street trees where appropriate	1.2m	1.2m	1.2m	Routes and Transport, Landmarks Vistas & Focal Points pp 24-25; 26-27
Design speed limit	30mph	30mph	<20mph	Permeability pp 22-23
Kerb radii (lowest applies on junctions between types)	10m†	6m†	3m with pavement crossings	Routes and Transport pp 24-25
Visibility splays (max height of obstruction 1m)	2.4m x 70m†	2m x 60m†	2m x 33m	Routes and Transport, Definition of Space pp 24-25; 28-29
Min. distance between junctions onto street (any type)	60m on same side 30m on opposite side	60m 30m	30m 15m	Routes and Transport, Definition of Space pp 24-25; 28-29
Crossroads	other street clearly identified as minor link, otherwise with lights	other street clearly defined as minor link, otherwise with lights	With calming measures	Permeability, Routes and Transport pp 22-23; 24-25
% of frontage complying with enclosure rates	90%	80%	60%	Landmarks Vistas & Focal Points; Definition of Space pp 26-27; 28-29

Figure 2.8 The Technical Guidance from the Hulme Guide to Development which sets down some basic rules for street width and enclosure
(Source: Charlie Baker and David Rudlin. *Rebuilding the City: A Guide to Development in Hulme*. Manchester: Hulme Regeneration, 1994)

Last but not least, active frontages are essential typological components of the urban buildings. Buildings should interact with streets in different ways according to the type of street they rest on. If it is a high street or a secondary street, ground floors can accommodate retail and commercial development. On the other hand, single-use residential buildings can contribute to the tertiary street life by taking main access from the street and keeping 'eyes onto the street' via windows

[91] Charlie Baker and David Rudlin, *Rebuilding the City: A Guide to Development in Hulme*, (Manchester: Hulme Regeneration, 1994)

overlooking them, creating a sense of surveillance to make the street safer for the passers-by.

3.5. Density

Although high urban density carries negative connotations like congestion and disorder, certain level of density should be achieved by sustainable and liveable cities, as indicated in the book "Towards an Urban Renaissance".[92]

Urban densities differ from city to city and from neighbourhood to another. Urban Task Force indicates that: "The most compact and vibrant European city, Barcelona, has an average density of about 400 dwellings per hectare."[93] In order to give scale, it is mentioned that the density of the liveliest parts of London, Bloomsbury and Islington, is between 100 and 200 dwelling per hectare. The density levels of the dispersed suburban developments, on the other hand, or high-rise blocks surrounded by extensive open areas are only 10 dwellings per hectare.[94] It is the case for Ümitköy in Ankara, where the density level is as few as 15 dwellings per hectare.[95] However, it should be mentioned that Ümitköy represents one of the lowest density levels in the capital city, sub-centres of which exhibit densities ranging from 10 to more than 150 dwellings per hectare.[96]

The correlation between density and design was revealed as a result of a study conducted by the Urban Task Force. Three hypothetical neighbourhoods of 7,500 people with density levels of 20, 40 and 60 dwellings per hectare were analysed in terms of land use (Figure 2.9). According to the study, the low-density levels result in vast expanses of areas occupied by buildings, roads and open spaces. Moreover, lower densities promote higher range of car use. A neighbourhood with 20 dwellings per hectare (relatively low density) pushes over 60% of the

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[92] Urban Task Force. "Density and Intensification" in *Towards an Urban Renaissance*, (London: Crown Copyright, 1999), 59.
[93] *Ibid.*
[94] *Ibid.*
[95] Olgu Çalışkan, "Urban Compactedness: A Study of Urban Form" (PhD diss., Middle East Technical University, 2004), 206.
[96] Metin Topçu, "Spatial Variation of Apartment Housing in Ankara" (Master Thesis, METU, 2004), 93.

population beyond the acceptable five-minute walking limit; thus, promotes excessive car use and cannot justify a bus route. On the contrary, a neighbourhood with a density level of 60 dwellings per hectare occupies less amount of land, accommodates more people in walking distance to communal facilities and justifies a bus route. Furthermore, the critical mass of activity in a dense neighbourhood creates "the informal vitality of the streets and public spaces that attracts people to city centres and urban neighbourhoods, as well as it contributes to energy efficiency".[97]

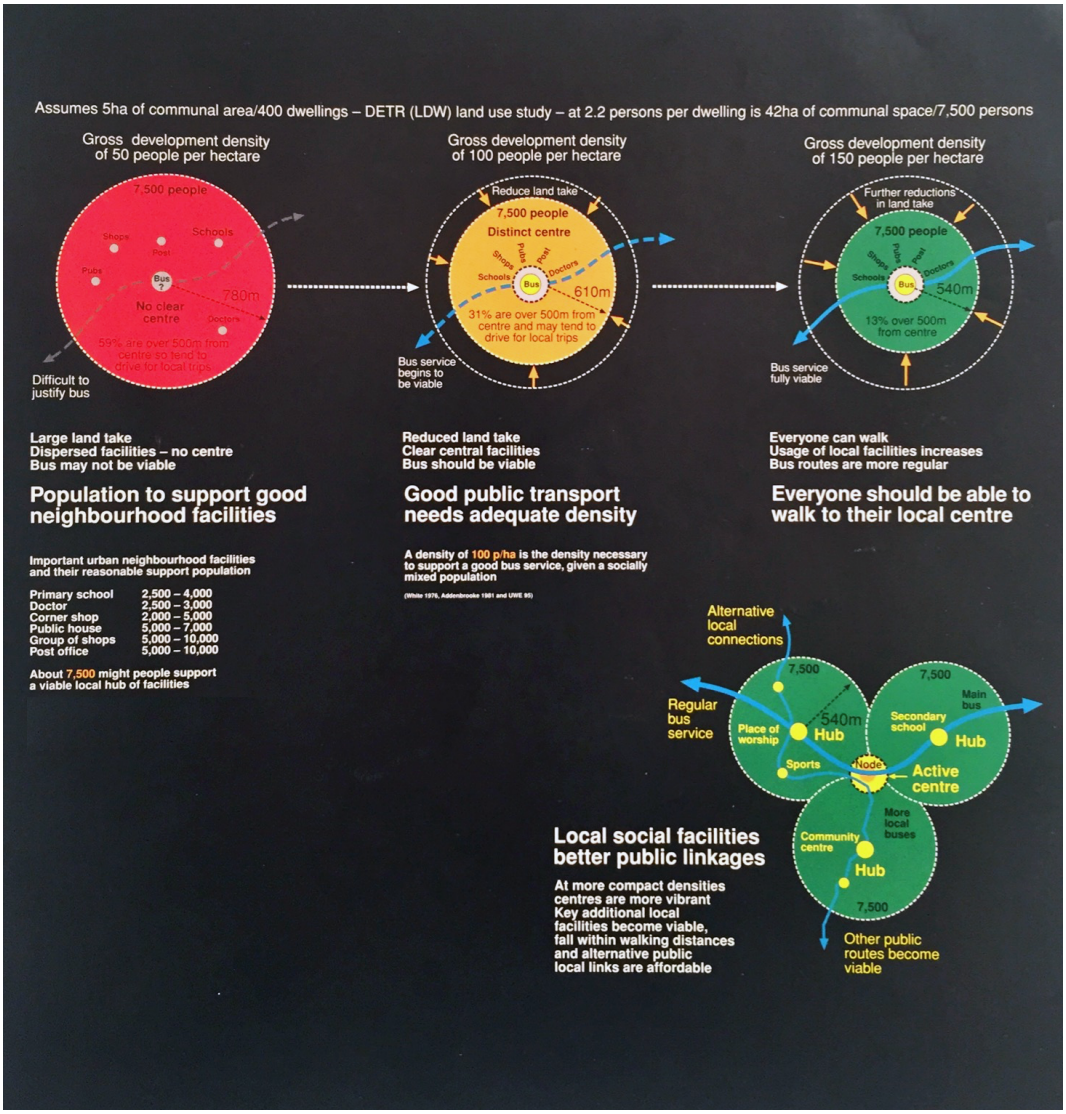

Figure 2.9 Models of urban capacity
(Source: Urban Task Force, *Towards an Urban Renaissance*, London: Crown Copyright, 1999)

[97] *Ibid.*

3.6. Conclusion

In this chapter, evaluation criteria are tried to establish in order to analyze the quality of the urban form of housing environments through typology. Certain urban design guidelines have been reviewed and five issues were highlighted: the significance of the street, hierarchies, the urban block, urban placemaking and density.

The values described in this chapter actually define some ground rules to follow for the architecture of the housing environments. Firstly, the circulation pattern in the housing projects larger than an urban block (approximately 1 Ha) should be designed in such a way that it incorporates with the surrounding street network in order to maintain the permeability in the urban fabric. Secondly, the location of the housing with reference to the street hierarchy predefines certain spatial qualities of the housing. For instance, housing on a high street should be dense and high enough to give a sense of enclosure. Floor plans, especially ground plan, should be resilient to withstand changes in uses. Building entrance of a housing block on a high street can be placed backwards for security concerns, whereas it can be oriented to the street if the housing block rests on a tertiary street in order to activate it. Thirdly, in order to provide sense of enclosure to the streets, housing blocks should be aligned along a building line, and height of them should be proportional to the street widths. Lastly, housing projects resting on the urban land should contain enough building masses to accommodate certain amount of population according to the density requirements of the urban structure (approximately 60 dwelling per hectare).

Two conclusions can be drawn from these rules related to typology. First, three typological components can be defined which have an effect on the urban environment, namely ground plan organization (including the building entrance), street frontage and position of the building with reference to the street. The numbers of these elements can increase, as long as new concepts related to the urban form are introduced. Furthermore, these typological components can be utilized in both analysis and design processes. They can be the architectural elements to first look at when evaluating the quality of the urban from of an

existing housing project. Additionally, they can be the architectural elements defined in an urban plan as a medium for channeling disciplinary knowledge of the architect to the urban design process.

Secondly, there are advantages or disadvantages of certain building types in fulfilling the rules mentioned above. For example, simple form and repeated, constant qualities of a point block can be considered as advantages of the type, whereas limited footprint for other uses, lack of definition of public and private boundaries at the street edge, minimal street frontage, and the inability to form clearly defined communal areas at ground floor are the disadvantages of the type, which have a wider effect on the surrounding environment. Linear block, on the other hand, clearly defines street edge, have ability to differentiate its front and back, and to form an urban block. Hence, when a certain building type is selected and used in project, it is important to consider its inherent qualities and to benefit from its advantages.

CHAPTER 4

ANALYSIS OF A DOMINANT TYPE: HOUSING PRODUCTION OF TOKİ

The forth chapter of this thesis work aims to analyse the housing production of Turkish Housing Administration, perceived as one of the three dominant types in Turkey. Selection of the object matter depends on two main criteria: increasing production capacity and ever-expanding authorization limits of the administration; and thus, its capacity to test alternative ways of housing production.

To start with, TOKİ has become an important actor in the construction sector after the Justice and Development Party (*Adalet ve Kalkınma Partisi*, abbreviated as *AKP* in Turkish) came to power in 2002. In contrast to 43,000 housing units constructed in the years between 1984, the year the administration was established, and 2002, the year AKP came to power; the administration directly provided 500,000 housing units in the years between 2002 and 2011, within the scope of "Planned Urbanization and Housing Production Campaign" which is part of the government's political agenda.[98] Following the achievement of the initial quantitative goal of 500,000 units, Turkish government commissioned the administration to produce 500,000 units more until 2023.[99] Increasing activity of TOKİ in the construction scene can be traced back in the statistical data on annual numbers of occupancy permit obtained by different sectors (Table 4.1). The average annual numbers of occupancy permits obtained by the public sector between 1964 and 2001 was representing 2% of the total number, whereas it

[98] Ahmet Haluk Karabel, Introduction to *Hedef 1 Milyon Konut*, (Ankara: TOKİ, 2012), 7.
[99] *Ibid.*

showed a two-fold increase in the years between 2002 and 2014 and reached 4% of the overall annual production. On the other hand, the role of the construction cooperatives is decreasing steadily. Their share in the average annual numbers of construction permits was 11% in the years before TOKİ became a dominant builder in construction scene, and decreased to 9% in the years between 2002 and 2014.[100]

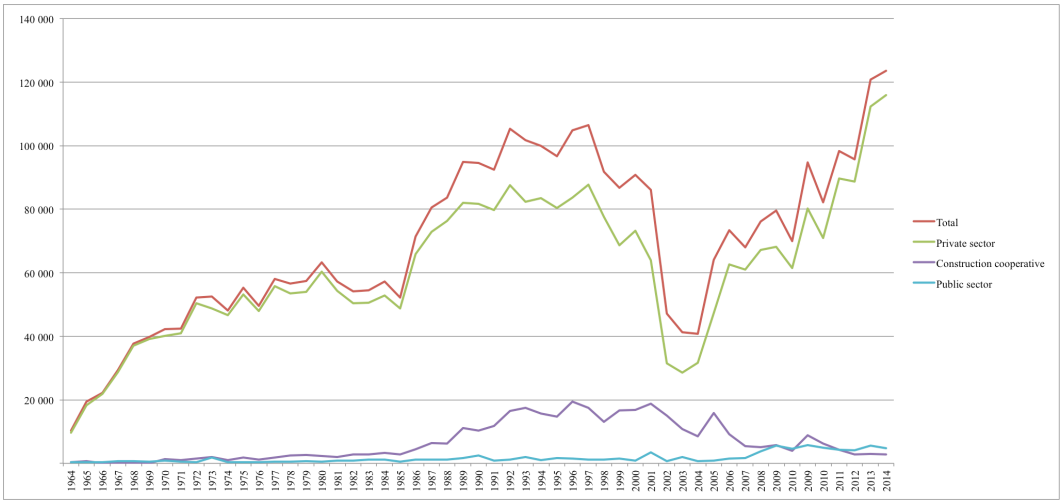

Figure 4.1 Occupancy permit for completed or partially completed new buildings and additions by type of investor (Source: Turkish Statistical Institute)

In addition to, the authorization and competence of Turkish Housing Administration, which had been established in order to provide low-interest credits to economically disadvantaged population to build houses, has been expanded dramatically since 2002, resulting in a fundamental change in administration's initial structure and functioning. Legislative amendments that led to this situation can be traced to the finest detail in the works of Feridun Duyguluer.[101] [102] [103] With the competence obtained since AKP government came

[100] Turkish Statical Institute, "Occupancy permit for completed or partially completed new buildings and additions by type of investor", accessed July 19, 2015, http://www.tuik.gov.tr/PreTablo.do?alt_id=1055

[101] Feridun Duyguluer, "2014 Yerel Seçimlerine Doğru", *Mimarlık* 375 (2014), accessed August 19, 2015, http://www.mimarlikdergisi.com/index.cfm?sayfa=mimarlik&DergiSayi=389&RecID=3295

[102] Feridun Duyguluer, "TOKİ'nin yeni edinilmiş yetkilerine ilişkin görüşler", unpublished speech in "Konut Sorunu Paneli" organized by Chamber of Architects, Ankara Branch (2008)

[103] TMMOB Genel Merkezi, *TOKİ Çalışmaları Üzerine Değerlendirmeler* (Ankara: TMMOB Genel Merkezi Yayınları, 2009), 5-44.

to power –direct provision of housing (2003), control and development of public land (2004), ability to conduct urban renewal projects (2004), construction of public buildings (2004), development of joint projects with local authorities (municipalities) (2004), collaboration with private companies (2004)- TOKİ has become the most significant actor with the largest authorization limits in the construction industry. One of the most notable authorizations is the ability to produce development plans of all sorts and in various scales regardless to existing regulations and building codes, which was attained via an amendment in Housing Law in 2004. This freedom has been utilized by the administration to expedite and accelerate the construction process in order to reach the quantitative goals mentioned above, instead of compensating the pitfalls and deficiencies of the building codes and regulations. This situation can be observed in the exceptional spatial characteristics of housing projects realized by TOKİ in relation to existing urban fabric.

From another point of view, administration's competence may be utilized to regenerate alternative housing environments, which would not exist within the framework of existing building codes and regulations. The administration can test different alternatives to prevailing residential/urban environments in Turkish cities, partially covered in the third chapter of this thesis work. In this sense, Eryaman III and IV Social Housing Projects, designed by the renowned architects at that time and realized by TOKİ in 1993, are meaningful examples.[104] Furthermore, these alternatives might be set as an example for the housing production of the private sector.

In the final chapter of the thesis work, the housing environments produced by TOKİ and single-use high-rise point block which emerged as a dominant type as a result of this production will be investigated according to the spatial criteria covered in the third chapter. The first part of the chapter aims to provide background knowledge on Turkish social housing policy in comparison to policies

[104] Ali Cengizkan, "Bir Tasarım Deneyi: TOKİ Eryaman", *XXI Mimarlık Kültürü Dergisi* 4 (2000): 136-143.

in other developing countries, depending on my previous thesis study.[105] In the second part of the chapter, spatial analysis of TOKİ's housing production will be presented as based on the work produced by the students under the guidance of Professor Ali Cengizkan within the scope of ARCH 713 and 714 "Housing Design and Research Studio I and II" course conducted in the spring semester of 2010-2011 in the Department of Architecture, METU.

4.1. "Placing Housing at the Center of our Thinking, Policy and the City"[106]

Economic transformation that Turkey is witnessing today as a developing country is also transforming the cities in an irreversible way. Turkish government tries to respond to the welfare needs of the nation in a neo-liberal way no matter how contradictive it sounds. Moreover, this situation is no exception for other developing countries like Brazil, Mexico, and Thailand etc. Social housing is the most controversial issue among others. Turkish Housing Administration achieved to build more than 500,000 units within a period of ten years for the first time in the nation's history. However, such production seems to lead Turkish cities irreversibly to a more problematic state, which is a result of the neo-liberal policies adopted.

David Harvey argues in his book "Rebel Cities" that neo-liberal policies create social segregation in cities.[107] Due to high land prices, economically weak section of the society is pushed to peripheral lands whereas high-income groups dominantly inhabit and enjoy the central city and its advantages. This is the result of the construction activity carried out by the private sector. In other words, private sector creates social segregation and increases the tension between income groups in cities. Most governments took an action to accommodate economically weak section of the society in proper living environments, who cannot afford to

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[105] Neris Parlak, "Rethinking Social Housing Policies: The Case of TOKİ" (Master Thesis, Architectural Association School of Architecture, 2013).

[106] Motto used by UN-Habitat in order to promote its recent document "Global Housing Strategy" during the international architectural competition "Urban Revitalization of Mass Housing", accessed June 31, 2014, http://www.masshousingcompetition.org

[107] David Harvey, *Rebel Cities: From the Right to the City to the Urban Revolution*, (New York: Verso, 2012).

buy a house in current market conditions due to unjust wealth distribution. TOKİ is one such example. Although it is expected from a government to bring social justice, TOKİ deepens the social segregation by adopting neo-liberal policies in production of social housing. The process can be summarized as such: TOKİ does not receive any payment from the central budget[108]; instead it finances itself via selling public land to private sector. The profit gained by these land-sells is used to finance social housing production.[109] Since the central lands are more profitable, central public lands are being sold to finance social housing production on peripheral public lands. This strategy can be observed clearly in the large cities like Istanbul and Ankara.

The question of land is neither new nor specific to Turkey in social housing production. Since 1960s, developing countries tried different ways to deliver housing needs for the economically weak section of the society. Roughly, one can diagnose four different phases of social housing production:

PHASE#1: Direct provision of social housing throughout 60s and 70s
PHASE#2: Bottom-up practices in the 70s
PHASE#3: Enablement approach in the 80s
PHASE#4: Contemporary practice started in the mid 90s

Defining the role of the state and the private sector to maximize the production, truly reaching the most disadvantaged population groups, scaling-up the production to the scale of needs and the question of land are the four main factors for delivering healthy social housing. Emphasis on each factor has changed phase by phase. One can see that during 60s and 70s, most governments directly provided social housing to urban poor yet they failed to reach the scale. The number of units that they produced remained far below of what was needed. It also remained as a problem during 70s. In 1980s, it was thought that the number could increase if governments withdrew their roles as providers. Instead, governments should provide financial means to people who want to buy or build a

[108] Karabel, *op. cit.*
[109] *Ibid.*

house (enablement approach). Although many citizens had the chance to benefit from the credits given throughout the 80s, truly disadvantaged population groups failed to receive payments since they had no money to pay back. Contemporary practices since mid-90s in countries like Brazil, Mexico and Thailand have the ability to reach the urban poor, to reach the scale of needs and to successfully integrate private sector to the production process. However, the question of land remains as a problem. For example, Brazil contracted for a million social housing units within only two years to be given to the most economically fragile section of the nation, built by the private sector, yet most of the production was built on the de-urbanized land lacking sufficient infrastructure, social services and job opportunities and which was far from the central city. Mexico is another similar instance. Consequently, the question is how to produce sufficient number of housing for the real economically disadvantaged population via private sector on urbanized land.

Although it has a significant role in the 60s and 70s' social housing discussions, the question of land has lost its importance in time. In the first phase of social housing production, which was mostly carried out by the state, the problem was a rather spatial one. Designers worked on creating ideal healthy housing environments for those who lived in precarious conditions in informal settlements. In 70s John Turner and a group of intellectuals following his path, introduced the concept of what housing *does* in one's life replacing what it *is*.[110] Many decision-makers were affected by this line of thought including the World Bank; therefore, spatial strategy and design thinking started to loose its influence gradually in the social housing discussions whereas economical, sociological and administrative dimensions gained more importance. The fourty years, which have passed since then, witnessed the sound developments in financing the production and introducing new more-efficient administrative models. However, lack of emphasis on spatial thinking affected qualities of social housing produced in relatively very large numbers in a negative way. Quality has been renounced for the sake of quantity.

With economical, sociological and administrative improvements, contemporary social housing policies and practices need to pause for a moment and refocus on the spatial dimension of the production achieved. If one thinks of how much space the large numbers of housing produced occupies in the cities -especially one thinks of the necessity that these housing stocks should be placed on central urban lands- special quality of these housing cannot be ignored. Architects and urban planners are urged to raise their game in the field and to contribute to the spatial dimension of the discussions.

In Turkey, although the state has a strong presence on social housing production (as a decision-maker) and has a better control over land, Turkey is wasting its opportunity to built social housing on urban land since it perceives public lands as a resource to finance its housing production. The social housing production can be achieved by receiving payments from the central budget. It does not mean that the money spent is expenditure rather than an investment. Brazil government asserts that social housing production is rewarding because of several reasons.[111] Firstly, social housing production stimulates national economy especially when the scale is large. It offers jobs, increases tax revenues paid by both the construction companies and the employed people whose income level had increased and are likely to spend more.[112] Secondly, increasing number of house owners also promises more tax revenue.[113] It might be asserted that receiving payments from the central budget is a better choice for TOKİ instead of selling public lands to finance social housing production.

Consequently, availability of publicly owned central lands becomes a significant issue in order to provide healthy social housing environments. According to Çaglar Keyder, Turkey has outstanding amount of public land due to the land ownership patterns adopted in Ottoman period. He asserts that "[until very

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[110] John Turner, *Housing by People*, (New York: Pantheon Books, 1977)
[111] UN-Habitat, *Scaling up Affordable Housing Supply in Brazil: The 'My House My Life' Programme*, (Nairobi, 2013), 1.
[112] *Ibid.*
[113] *Ibid.*

recently] two-thirds of the surface area of Turkey is under state ownership."[114] This situation, however, is now changing with the new economic structure.

It is extremely significant to conduct a comprehensive research on publicly owned centrally located available lands in Turkey, which are suitable to social housing production in order to develop alternatives to TOKİ's social housing production. However, such investigation is left outside the scope of this thesis work due to the limitations of a master thesis. Instead, it aims to focus on spatial qualities of the ideal residential environments suitable for central locations and compare these ideals with the existing qualities of TOKİ's housing production.

4.2. Type, Model, Prototype and TOKİ

If one looks at spatial quality of social housing production in Turkey, it can be easily perceived that TOKİ's housing production is largely constituted by repetition of the same housing blocks regardless of their physical context. Therefore, the administration is frequently condemned by the intellectuals for the production of typ(e)ical projects. In the workshop that took place in 2009 to evaluate TOKİ practice, disturbances on TOKİ's typ(e)ical way of production were expressed by many scholars.[115] Nevertheless, such an interpretation of type threatens the productive potential of the concept by simply reducing it to model. As Quincy defines, different from model, type does not require a repetition of the same form; instead, it requires spatial formation derived via abstract concepts and rules.

It can be asserted that TOKİ prefers models in order to achieve time and cost efficiency, which immediately brings to mind the Modern Movement's ideals. Rafael Moneo indicates in his essay "On Typology", which he covers typological approaches chronologically, that:

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[114] Çaglar Keyder, "The Housing Market From Informal to Global", in *Istanbul: Between the Global and the Local* ed. Çaglar Keyder, (Lanham, MD: Rowman & Littlefield, 1999), 145.

[115] TMMOB Mimarlar Odasi Genel Merkezi, "TOKİ Calismlari Uzerine Degerlendirmeler", (Ankara, 2009)

> "Industry required repetition, series; the new architecture could be pre-cast. Now the word type – in its primary and original sense of permitting the exact reproduction of a model – was transformed from an abstraction to a reality in architecture, by virtue of industry; type had become prototype."[116]

The principle that "same constructions for the same requirements" requires the object which is mass produced to be analyzed profoundly and designed thoroughly. In TOKİ's case, such comprehensive approach is missing in the design process of the models. TOKİ blocks are actually 19 different floor plans extruded in relation to the number of housing units needed, which are placed regardless to its urban and regional context. In this respect, it can be asserted that TOKİ blocks are neither types, nor prototypes, but context-free simple models.

4.3. Spatial Analysis of TOKİ Housing Production

In this part of the thesis, spatial (architectural and urban) characteristics of residential environments produced by TOKİ will be examined according to spatial criteria presented in the second chapter. The analysis is based on the student works produced in ARCH 713 and 714 "Housing Design and Research Studio I and II" course conducted in the fall semester of 2009 and spring semester of 2012 under the guidance of Professor Ali Cengizkan in METU. In Fall'09, site plans and project information (total area, construction area, green area, density and number of car parks) of the fourty selected TOKİ projects were compiled and presented.[117] In Spring'12, floor plans and unit information of the same projects were compiled and presented.[118]

The selection was formed in order to sample the overall TOKİ production by scanning a wide range of projects with different characteristics. The sampled fourty projects reside in twenty-nine cities from seven different regions of Turkey. In this respect, they reveal the design approach of the administration under

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[116] Rafael Moneo, "On Typology", Oppositions, 13, (1978), p.31.

[117] The name of the students who participated to the course are Eda Selin Akyol, Sibel Baş, Rashela Dyca, Parisa Ghadimkhani, Deniz Özçelik, İlknur Sudaş, Mine Serap Yılmaz.

[118] The name of the students who participated to the course are Selçuk Köse, Mehmet Albayrak, Deniz Arıkan, Erkut Sancar, Burak Bican and Neris Parlak.

different geographic and climatic conditions. Among the six project categories constituting the overall TOKİ production –lower- and upper-middle-income group (40%), low-income group (25%), urban transformation (12%), disaster applications (7%), agriculture and village projects (1%) and fund-raising projects (15%)- sample projects cover the three most common categories excluding the fund-raising projects: lower- and upper-middle income group (23 projects), low-income group (15 projects) and urban transformation (2 projects). The sampled group consists of projects in various scales. The number of units in projects ranges between 1260 and 60 with the average of 448, whereas the project areas range between 0.7 Ha and 20 Ha with the average of 6 Ha. The density level of the sample projects varies between 130 dwellings per hectare and 30 dwellings per hectare. (The information of each project can be found in the Appendix A.)

4.3.1. Circulation Mediums: Streets vs. Vehicular and Pedestrian Roads

In the third chapter of the thesis, it is mentioned that the street has a primary role in organizing and regulating the urban areas by accommodating two types of function: provision of space for movement through an area and reinforcement of interaction for a local community. Among the fourty TOKİ projects which have been reviewed, thirty-eight of which are larger than the size of an urban block (1 Ha)[119], primary mode of circulation is independent ring roads branching into series of dead-ends and car parks, rather than streets connecting to the project with the surrounding urban fabric. The majority of the projects have single or two access point(s), in some cases combined with a security control as in Zincirlibağlar Housing Project I and II in Adana (Project#1 and Project#2). Furthermore, nine out of twelve projects are surrounded by territory markers such as walls, fences or plantation.[120]

The fact that the circulation within the projects is provided via introverted inner roads independent from the surrounding street network, causes double-sided

[119] For the full list of projects and their project areas, please see Appendix A.
[120] All projects were visited by using Yandex Street View, which was available in the twelve of the forty projects.

negative effects on both the housing environment inside and the urban setting outside. Since these roads are used only by the inhabitants and inevitably remain deserted for the most part of the day, they are under the risk of being desolate and insecure. On the other hand, the project areas, most of which are larger than an urban block, undermine the permeability of the street network. They disrupt the connectivity within the urban fabric and turn into ruptures in the continuity of the urban environment. As previously mentioned, low levels of connectivity in the urban fabric reduces encounter rates and causes higher rates of domestic burglary.

Yüreğir Housing Project in Adana, the largest project analyzed, contrasts this situation very well (Figure 4.2). Although the project rests on the central city, the circulation roads were designed regardless of the surrounding street network. The rectangular project site –approximately 500 meters by 400 meters, 20 Ha- is divided into four sub-areas, the largest of which occupies an area equal to the total area of the fifteen surrounding urban blocks.

Figure 4.2 Areal view of Yüreğir Housing Project, Adana
(Source: Yandex Maps)

In addition, the spatial treatment on the periphery of the projects does not contribute to the vibrancy of the surrounding streets. Blank frontages of the buildings, which are set back from the streets and surrounded by fences, miss the opportunity to accommodate any kind of commercial and public activity. Zincirlibağlar Housing Project exemplifies this typical situation, common for the

majority of the projects. The view from the 46214th Street – a street name incapable of offering any kind of sense of attachment – exhibits the tension between the project and the existing urban fabric (Figure 4.3). The two floor-high buildings on the right side activate the street by accommodating commercial activities serving to local people, whereas the buildings on the left side are unable to unlock the potential to contribute to the street by positioning the entrances behind the fences. Moreover, a vehicular road oddly rests behind the fence and uneconomically runs parallel to the existing street, which separates not only the street network of the city and vehicular circulation of the project but also the social groups who experience these two different residential environments. By doing so, it inevitably defies any possible interaction in between.

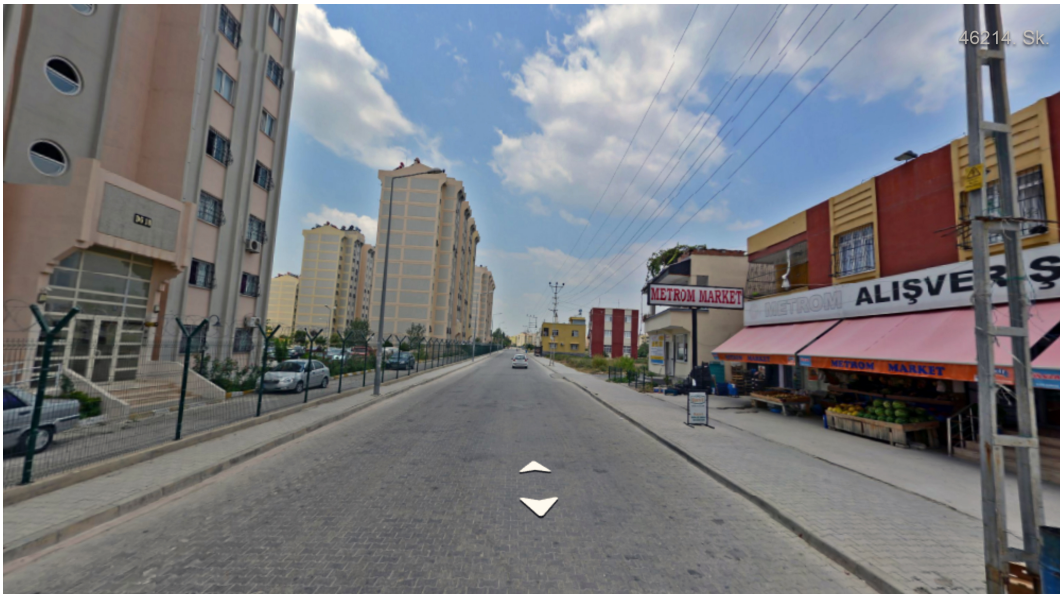

Figure 4.3 View from 46214th Street, Zincirlibağlar, Adana
(Source: Yandex Maps)

The projects might have been considered more successful, if the vehicular and pedestrian circulation within the projects were organized with reference to the surrounding street network in a more permeable way and the spatial treatment on the periphery of the projects reconciled with the surrounding streets, even if the building types and their configuration remain the same. Little adjustments might have given way to bigger changes.

It should be stated that there are two relatively more successful examples within the sampled projects: Afyonkarahisar and Yalova Hacımehmet Housing Projects (Project#5 and Project#40). The vehicular circulation within the projects is provided via roads open to public, by dividing projects into relatively small portions of sub-areas creating more permeable urban structures (For further information, please check Appendix A).

4.3.2. Building Configuration

A different configuration of the building types on the urban land defined and restricted by a street pattern and a plot layout leads to different urban forms. In the previous subchapter, general characteristics of the road (street) patterns in the sampled housing projects were discussed. This subchapter aims to focus on the configuration of the building types with reference to the road patterns in these projects.

It is possible to distinguish two main building types in the administration's overall production: point block and linear block. Due to the fact that the design repertoire of the administration is limited to nineteen blueprints with just a few exceptions, defining the main building types is relatively easy and hardly disputable. The blueprints named B, B1, B2, BK, C, C1, C2, CK, E, K1, K2, K6 and L5 by the administration can be considered as point blocks, whereas blueprints designated with D, DG, F, F1, FG and Y1 have the potential to form a linear block. Details of these blueprints will be further investigated in an architectural scale in the next subchapter.

Seventeen out of fourty projects consist of solely point blocks, whereas linear blocks are used in thirteen projects. Remaining ten projects are composed of the combination of the two. The urban forms created by the point blocks can be roughly described as isolated buildings in an open ground, failing to define effective communal environments and streets.

There are two types of relations between the point blocks and the road pattern: blocks placed in an angular way to the road layout and blocks running parallel

with the road layout. The former organization can be observed in the Project#5, 7, 10, 11, 12, 14, 18, 26, 27, 33, 36 and 37; whereas the latter organization is utilized in the Project#6, 8, 9, 13, 15, 16, 17, 19, 20, 22, 23, 26, 28, 29 and 35. Angular placement of the blocks maximizes the view and solar gain of the corner units. However, such organization loosens the definition of the street frontage. On the other hand, the buildings blocking other's view and light and units facing each other from an undesirable distance are two problems caused by parallel placement of the buildings. It is observed from the sampled projects that there is no lower limit for regulating the distance between the blocks. The distance between the blocks of the same height is 27 meters in Üçkuyular Housing Project in Diyarbakır, whereas it decreases to 8 meters in Mihmandarlı Housing Project in Konya (Project#14 and 28, respectively).

Due to its inherent characteristics, point block is unable to differentiate the ground floor, define spaces like communal areas and provide proper street frontages. However, when the type is used in combination with a podium or a linear block, these shortcomings can be easily eliminated. It is easily observable that no effort is put to eliminate these shortcomings in the majority of the sampled project group. Graphical analysis of the project plans reveals that eleven out of twenty-seven projects that contain point blocks have graphically well-defined communal areas. However, this graphic definition cannot reach a three-dimensional level since it primarily designates landscaping elements, vehicular and pedestrian roads, not the building masses like podiums or linear blocks. Palandöken Housing Project (Project#16) stands as an exceptional example and can be considered as the most successful project in terms of communal space definition among the others. Blocks are placed around a series of rectilinear communal areas, giving sense of enclosure. Building entrances oriented towards these areas add on the communal character of the central open spaces (Figure 4.4).

Figure 4.4 Areal view and site plan of Palandöken Housing Project, Erzurum
(Source: Yandex Maps and student works produced in "Housing Design and Research Studio I", Department of Architecture, METU, Fall 2009)

Linear block is a building type which has much potential to deliver desirable residential environments: it can differentiate its front and back, define strong street edges and form communal spaces. One third of the sampled projects consists solely of linear blocks. However, instead of taking advantage of the type to nurture pleasing living environments, the administration preferred to use this building type in a quite monotonous way. There are two main rules regulating the usage of this type. If the project rests on a rather flat land, the blocks are placed in the east-west direction to provide maximum solar gain to the living areas of the double-aspect units by facing them to south. Housing projects in Zincirlibağlar (Adana), Yüreğir (Adana), and Kadirli (Osmaniye) are such examples (Project#1, 2, 4 and 34). On the other hand, when the topographical conditions become a challenge to apply this kind of layout, buildings are aligned along the vehicular roads, directions of which are determined by the topography. In this type of layout, the living areas of the double aspect units face the view. Seven out of thirteen projects composed of linear blocks have this building configuration (Projects#3, 21, 24, 30, 31, 32 and 38). Zincirlibağlar I and Midyat Housing

Projects exemplify these two layouts, differentiated by the topographical conditions. Both projects consist of four-to-six-floor-high housing blocks generated via multiplication of the blueprint DG. It is clear from the Figure 4.5 that both of the projects fail to produce three-dimensionally and geometrically well-defined communal areas, which can contribute to the everyday life of the inhabitants.

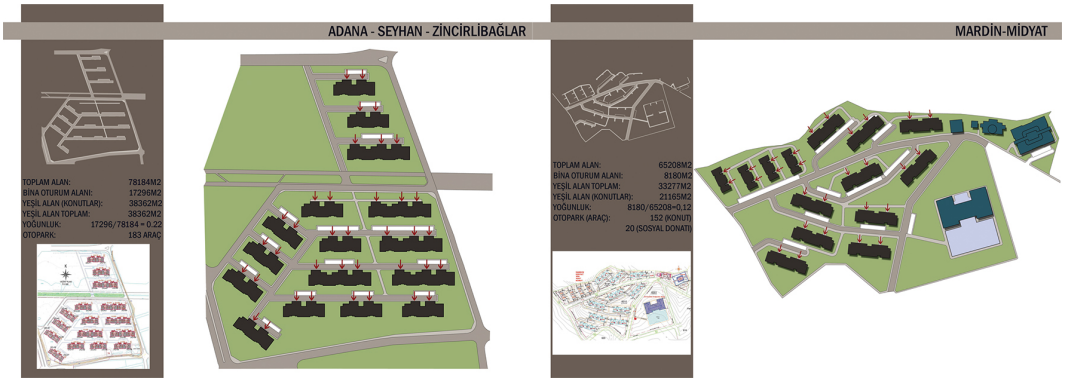

Figure 4.5 Two typical building configurations on two different topographies: Zincirlibağlar Housing Project I in Adana (left), and Midyat Housing Project in Mardin
(Source: Students works produced in "Housing Design and Research Studio I", Department of Architecture, METU, Fall 2009)

There are only two projects among all thirteen projects composed of linear block concerning about creation of quality communal areas by taking advantage of the potentials of the linear block type (Project#25 and 40). Especially, Hacımehmetli Housing Project in Yalova (Project#40) deserves special attention (Figure 4.6). In this project, slabs are carefully placed to create a series of communal spaces. No vehicular roads transgress the semi-public life of the central open areas, which are well isolated from the public life of the street by the four-storey-high linear blocks surrounding them.[121] Although the entire block entrances face the streets and miss the opportunity to contribute to the communal life of the inhabitants, playgrounds partially activate these semi-public spaces. The housing units on the ground floor are elevated one or two meters to provide privacy to these units.

[121] The Word 'street' is used on purpose to emphasize the different character of the vehicuar roads in this project. They are well-integrated with the surrounding street pattern and open to public unlike other sampled projects.

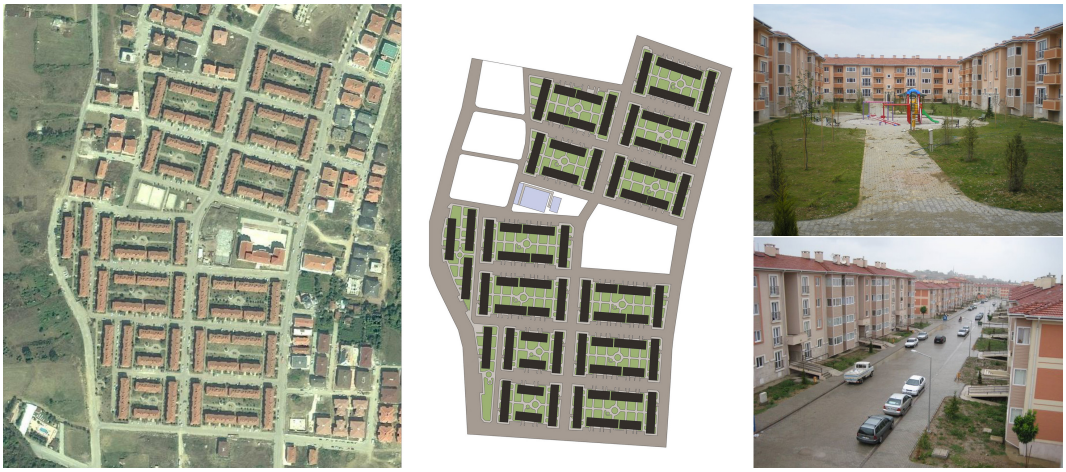

Figure 4.6 An exceptional TOKİ project utilized the slab typology: Hacımehmetli Housing Project in Yalova
(Source: Yandex Maps (1), students works produced in "Housing Design and Research Studio I", Department of Architecture, METU, Fall 2009 (2), and photos retrieved from http://tr.worldmapz.com/photo/114885_en.htm (3))

4.3.3. Floor Plans and Circulation

All fourty projects which are reviewed are composed of only nineteen blueprints, as the rest of the TOKİ projects, accommodating over 500,000 households all around Turkey. Within the scope of this subchapter, floor plans and circulation patterns will be investigated in order to decipher the inner structure of these building types. In the previous subchapter, the blueprints were divided into two groups according to their potentials to form two different types: point block and linear block.

Quantitatively speaking, the blueprints designed as point blocks are more common in the sampled project group. The blueprints B, B1, B2, BK, C, C1, C2, CK, E, K1, K2, K6 and L5 might be divided into two subgroups: the ones with two elevators, which can be extruded up to seventeen floors, and the ones without elevators, the block height of which is limited to three storeys. Although the three dimensional qualities change immensely depending on the number of storeys, the plan layouts of the two subgroups are quite similar to each other (Figure 4.7).

The main components of the two floor plans are the corner units and the circulation area. Living areas of the corner units face two opposite directions, which presuppose that if two corner units face to an ideal direction in terms of sun

or view, the other two have to face an undesirable direction. The circulation areas are minimized and do not encourage social interaction. However, almost all circulation cores have a window on one side and thus they receive daylight throughout the day in contrast to the ones in the conventional apartment block.

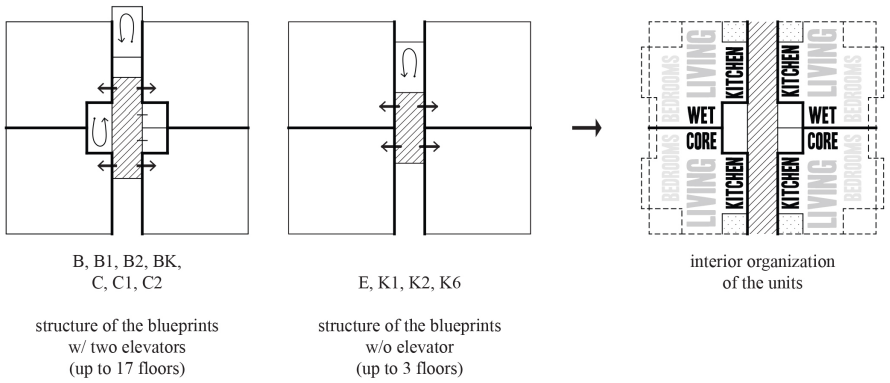

Figure 4.7 Diagrams presenting the inner structure of the point-block blueprints (Source: Produced by the author)

Six blueprints are utilized by the administration to form linear blocks (D, DG, F, F1, FG and Y). These blueprints can be divided into three subgroups: the ones with two elevators (which can be multiplied up to 17 floors), the ones with a single elevator (7 floors), and the ones without an elevator (3 floors).

Spatial variation in the linear block blueprints/models (configuration of the living spaces, wet spaces, rooms and balconies) is richer than that of point block blueprints (Figure 4.8). Hence, it is hard to combine and designate them in a single diagram. However, they have some commonalities. First of all, circulation areas are vertically organized in a spatially economic way as in the point blocks. In this regard, the administration ignores the potentials of the linear block typology to generate architecturally diverse circulation patterns, which contributes to the interaction between residents. Secondly, all linear block blueprints are composed of double-aspect units, which can be cross-ventilated. In a typical unit, living area, kitchen and balcony face one side of the building whereas the bedrooms face the other. This kind of organization contributes to the potential of differentiating front and back in a linear block. For instance, living areas overlooking them throughout the day can provide surveillance on the streets or

communal gardens. Unfortunately, as mentioned in the previous subchapter, existing monotonous building layout of linear blocks is unable to unlock such potential.

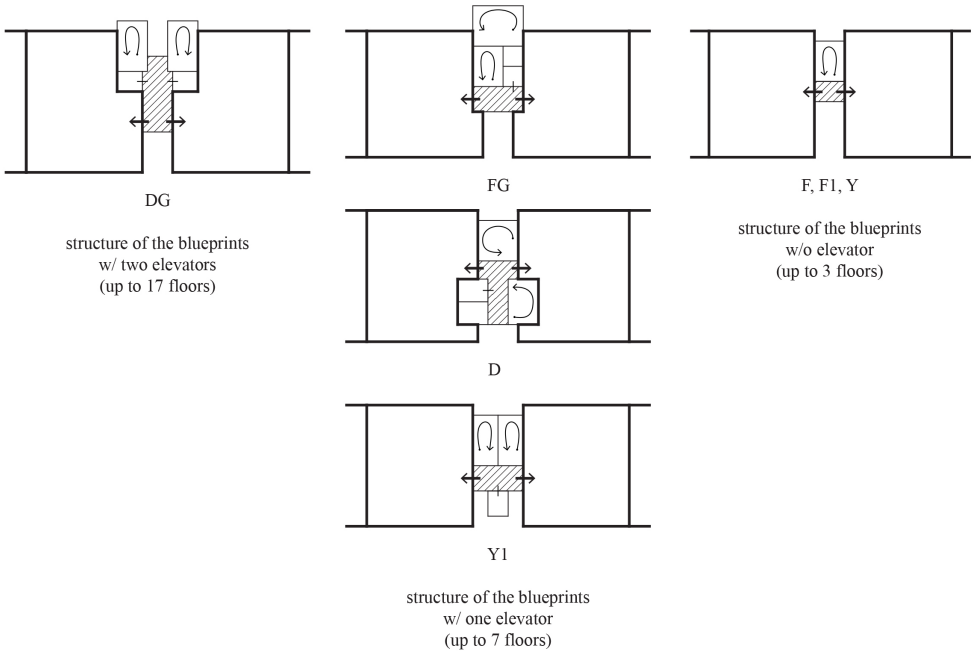

Figure 4.8 Diagrams presenting the inner structure of the linear-block blueprints
(Source: Produced by the author)

All of the blueprints mentioned until now (point block or linear block) are designed to be produced via tunnel formwork. This manufacturing method is preferred by the administration since it is time and cost-efficient. However, there are some weaknesses. This mode of production infers with unit diversification on different floors. Moreover, the ground floors of the blocks produced with this method suffer from spatial inflexibility, and thus, inability to accommodate various functions, which can serve to the community. Ground floor, which is an intermediary space between the public life of the street and the private life of the home, is treated no different from the fourth or the tenth floor of the housing blocks by the administration: it accommodates only housing units and building entrances. The privacy issues arising from this situation are likely to be solved via formation of gated communities surrounded and protected by the walls or fences, which mark the end of the public realm, forming ruptures in the urban continuity and creating isolated dormitory wastelands.

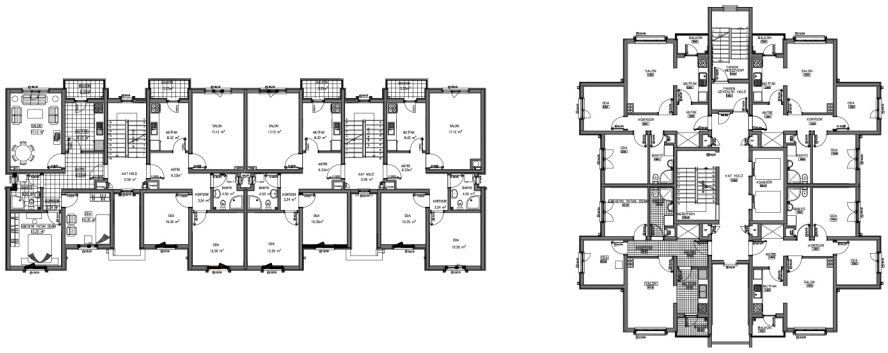

Figure 4.9 1/500 plans of the most common two blueprints in sampled projects: F and B (Source: TOKİ)

Each TOKİ blueprint suggests unit types ranging from 2+1s to 4+1s. As revealed from the sampled projects, the majority of the TOKİ housing projects are composed of one or two blueprints and sometimes three or four. (In the sampled project group, twelve projects contain one blueprint and twenty-one projects contain two blueprints, whereas four projects contain three blueprints and four projects contain four blueprints or more.) This situation, unfortunately, cannot provide enough flexibility to the households to stay within the community throughout different stages of their lives. For instance, an expanding family can struggle to find a larger house without leaving the community that they have been part of for many years or vice versa. As mentioned in the previous chapter, the exceptional TOKİ project, Eryaman Housing Project III designed by Ahmet Gülgönen, provides variety of unit types within the same residential environment.

CHAPTER 5

CONCLUSION

In this thesis work, the quality of the urban form of the housing environments produced by TOKİ has been analyzed through their typologies and typological components. In this manner, the relevance of 'a typological approach to the housing environments' and the concept of 'typological residential urbanism' has been explored via this typological inquiry into the urban form.

In the second chapter of the thesis, the different approaches to the concept of type and typology have been reviewed by focusing on the four periods: Enlightenment, Modern, Neo-rationalist and contemporary period. It has been observed that the discussions especially in the Neo-rationalist Period and afterwards offered valuable insights on how these concepts can be utilized to relate architectural artefacts to the urban form. It is seen that typological thinking has the potential to categorize singular architectural artifacts according to their spatial characteristics -on an abstract level- with the elimination of unnecessary details. It is thought that such categorization provides great convenience when approaching the housing question considering that housing is the prevailing land use in all cities.

If typology is considered as an interface between the two domains, namely architecture (of housing) and urban form, what one expects from the 21st century urban environments becomes an unavoidable question. Thus, in the third chapter of the thesis, the urban design guidelines written in the last sixteen years, as a part of the Urban Renaissance Movement in the UK has been reviewed. Five issues in

these texts have been highlighted to concretize these expectations (to say the least): the significance of the street, hierarchies, the urban block, urban placemaking, and density. It has been observed that the values described in this chapter intersect with the housing architecture in four points (again, to say the least), which leads to the identification of four typological components: ground floor organization (including building entrance), street frontage, floor plans, and circulation. One can comment on the quality of the urban form of a given housing project with regard to its typological components. Furthermore, on another level of typological thinking, it can be asserted that certain building types –point block, linear block, peripheral block etc.- have certain advantages and disadvantages to deliver the values as described in the third chapter. Therefore, one can evaluate the quality of the urban form of a housing project by inquiring whether these advantages are benefitted from, in order to deliver desirable living environments.

The reason behind the selection of the TOKİ projects as the object matter of the thesis study is the fact that TOKİ is one of the three main actors in housing production in Turkey, and its increasing production capacity and ever-expanding authorization limits have potential to test alternative ways of housing production. To this end, in the forth chapter of the thesis, first, the social housing policy of the administration was briefly summarized in comparison to other developing countries. Then, the urban form of the housing environments produced by TOKİ has been analyzed according to the values described in the third chapter, through its single-use high-rise point block and linear block types.

The analysis was carried out under three main subtitles: circulation mediums, building configuration, and floor plan and circulation, with an increase in scale. It is possible to draw five major conclusions from the analysis. First of all, it is observed that the administration uses pre-designed blueprints in a context-free way, which is indifferent to the geographical conditions of the project site. Same point-block with a certain blueprint (i.e. C1) is used on a central location in a western city (Manisa), as well as it is used on a peripheral land in an eastern city with completely different geographical conditions (Erzurum).

Secondly, a closer view on the blueprints reveals that architectural richness and quality are compromised in order to maximize time and cost-efficiency. The circulatory spaces, which might be considered as primary spaces for social interaction in residential buildings, are designed in a minimal way and fail to contribute to communal life of the residents. Moreover, unit organizations, especially in the point-blocks, are problematic. Units are placed at the corners of a block without differentiation in their inner spatial organization. Hence, living area of a unit faces south direction whereas that of adjacent unit inevitably faces north direction and cannot receive direct sunlight. Lastly, ground floor of each housing block accommodates solely building entrance without any kind of commercial or public function even if the block rests on an active street.

Thirdly, majority of the sampled projects are built on peripheral land. In the remaining projects, no effort has been spent to integrate the projects to the surrounding urban fabric with a few exceptions. The surrounding street pattern cannot penetrate into the projects. The building blocks are organized around the inner ring roads isolated from their immediate environment, forming easily recognizable archipelagos in the fabric.

As mentioned in the third chapter, building types certain advantages and disadvantages to deliver desirable residential environments. In the reviewed TOKİ projects, it can be observed that there is no effort has been spent to benefit from the advantages of the linear block type or to eliminate the shortcomings of the point block type. The block configurations are determined mostly by the topography and solar orientation in a monotonous way. Such approach to site planning remains incapable to generate successful housing environments with necessary spatial diversification.

In residential projects, the circulation should be designed as a part of the overall circulation pattern of the city. Only in this way, the circulatory roads in the housing projects have potential to transform themselves into the streets. In such a setting, ground floor organization, building frontages and building circulation become important typological components, which can contribute to the quality of

the residential environment. Building frontages should define the streets and the communal areas and give three dimensionality to these places. Ground floors should be designed to activate the streets and the communal areas. Building circulations should form a base for social interaction and provide surveillance to open spaces. In the TOKİ projects, it is observed that these typological components are underutilized in this respect. In all projects, ground floors accommodate solely block entrances, building frontages are not designed to define urban spaces, and circulation are designed in a minimal way. Consequently, it can be asserted that TOKİ does not benefit from the typological components, which have potential to improve the quality of residential environments.

It can be concluded that, TOKİ can deliver higher quality housing environments, which fulfill the requirements of the 21st century living, if the administration develops a deeper and truthful understanding of the typologies that it has been using and their inherent qualities in order to benefit from their advantages to create well-integrated residential and urban environments. Moreover, typological components, which are capable of affecting urban environments, should be carefully studied thoroughly and designed accordingly. In doing so, TOKİ would both provide desirable living environments to the inhabitants and serve as an example to the other actors in the housing construction sector as a public administration with increasing production capacity and ever-expanding authorization limits.

Typological residential urbanism as a particular way of approaching the housing question opens up new discussions, which can be studied in future studies. Firstly, the other two dominant types, the apartment block produced by the small contractors and the podium block produced by the REITs, should be investigated according to their spatial characteristics and the resulting housing environments along with their social and economic processes, which give way to the existence of these types. Such inquiry incorporates with the work have been done in this thesis and completes the tripartite study. Secondly, more research into major building types (point block, linear block, peripheral block etc.) and their variations

according to their typological components is still necessary before obtaining a definitive answer to how these building types perform and are utilized in an urban setting. Such formal study can be conducted via formation of a catalog of major building types and their variations according to typological components effecting the urban environment (ground floor organization, frontage, eave level, floor plan, circulation, so on so forth) in order to form a base for designing urban residential environments.

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APPENDIX A

GENERAL INFORMATION ON SAMPLED TOKİ PROJECTS

The analysis of the TOKİ housing production in the thesis is based on the previous studies produced in ARCH 713 and 714 "Housing Design and Research Studio I and II" that conducted in the fall semester of 2009 and the spring semester of 2012. In ARCH 713 course given by Professor Ali Cengizkan, the fourty TOKİ projects were selected from all over Turkey and documented via project posters, which contain site plans and project information.

In this appendix, general information on the fourty TOKİ projects is exhibited in the form of a table. The table provides information on locations, number of projects reviewed in the same city, target groups, project areas and densities. Moreover, the information on blueprints and building types in each project can be found in the table. All the information in this table is produced by the author with the exception of the data on the project area which is obtained from previous studies.

Table A.1 General information on sampled TOKİ projects

PROJECTS	# OF PROJECTS IN SAME CTY	TARGET GROUP	# OF UNITS	PROJECT AREA (m2)	DENSITY (dwelling/Ha)	BUILDING MODELS	BUILDING TYPES	TERRITORY MARKERS (Fences, Walls, Plantation)
ADANA - SEYHAN - ZINCIRLIBAGLAR	4	Lower- and Upper-Middle-Income Group	370	78184	47.32	DG	linear block	+
ADANA - SEYHAN - ZINCIRLIBAGLAR		Lower- and Upper-Middle-Income Group	714	113086	63.14	DG	linear block	+
ADANA - SEYHAN - SARIHULAR		Low-Income Group	860	124887	68.86	DG, FG	linear block	-
ADANA - YUREGIR - AKSANTAS		Low-Income Group	888	205308	43.25	DG, FG, Y	linear block	+
AFYONKARAHISAR - MERKEZ (TELSIZ - 2. ETAP)	1	Lower- and Upper-Middle-Income Group	352	55484	63.44	K2	point block	+
AGRI - PATNOS	1	Lower- and Upper-Middle-Income Group	224	45755	48.96	K1	point block	NA
AKSARAY - MERKEZ - 4. ETAP (ZAFER MAH.)	1	Low-Income Group	522	72727	71.78	B1, C, C1	point block	NA
ANKARA - ELMADAĞ	3	Low-Income Group	528	55372	95.36	B1, C1	point block	+
ANKARA - KAZAN		Low-Income Group	504	76368	66.00	B, C	point block	NA
ANKARA - YENIMAHALLE		Lower- and Upper-Middle-Income Group	960	107473	89.32	BK, CK	point block	+
BALIKESIR - MERKEZ (YENIMAHALLE 2. ETAP)	1	Low-Income Group	480	63399	75.71	A, B1, F	linear block, point block	NA
BARTIN - MERKEZ (KAYNARCA 2. ETAP)	1	Lower- and Upper-Middle-Income Group	206	68080	30.26	C, F	point block	NA

Table A.1 (continued)

PROJECTS	# OF PROJECTS IN SAME CTY	TARGET GROUP	# OF UNITS	PROJECT AREA (m2)	DENSITY (dwelling/Ha)	BUILDING MODELS	BUILDING TYPES	TERRITORY MARKERS (Fences, Walls, Plantation)
BITLIS - RAHVA	1	Lower- and Upper-Middle-Income Group	288	54318	53.02	F, K1	linear block, point block	NA
DIYARBAKIR - UCKUYULAR - 4. ETAP		Lower- and Upper-Middle-Income Group	484	126630	38.22	CG1, F	linear block, point block	+
EDIRNE - IPSALA	1	Low-Income Group	304	100340	30.30	F, K2	linear block, point block	NA
ERZURUM - PALANDOKEN	1	Low-Income Group	816	85838	95.06	B1, C1	point block	NA
ESKISEHIR - VADISEHIR - 2. ETAP	2	Lower- and Upper-Middle-Income Group	400	54371	73.57	D, E, F, K2	linear block, point block	-
ESKISEHIR - VADISEHIR - 3. ETAP		Low-Income Group	400	52248	76.56	D, K2	linear block, point block	-
GAZIANTEP - SAHINBEY	1	Urban Transformation	1260	144421	87.24	B1, BY, C, DG	point block	NA
GUMUSHANE - MERKEZ - 2. ETAP	2	Lower- and Upper-Middle-Income Group	250	65149	38.37	C1, Y1	linear block, point block	NA
GUMUSHANE - TORUL		Lower- and Upper-Middle-Income Group	88	23746	37.06	Y	linear block	NA
ISTANBUL - KAYABASI - 2. ETAP	2	Low-Income Group	348	29355	118.55	B1, C	point block	+
ISTANBUL - KAYABASI - 9. ETAP		Low-Income Group	888	73024	121.60	B1, C	point block	+
IZMIR - MENEMEN	1	Lower- and Upper-Middle-Income Group	208	31651	65.72	F, Y	linear block	NA

Table A.1 (continued)

PROJECTS	# OF PROJECTS IN SAME CTY	TARGET GROUP	# OF UNITS	PROJECT AREA (m2)	DENSITY (dwelling/Ha)	BUILDING MODELS	BUILDING TYPES	TERRITORY MARKERS (Fences, Walls, Plantation)
KARABUK - ESENTEPE	1	Lower- and Upper-Middle-Income Group	180	34181	52.66	D	linear block	NA
KONYA - EREGLI	3	Lower- and Upper-Middle-Income Group	588	45535	129.13	B1	point block	NA
KONYA - CUMRA		Low-Income Group	144	16710	86.18	B1, C1	point block	NA
KONYA - MIHMANDARLI		Lower- and Upper-Middle-Income Group	60	7848	76.45	C2	point block	NA
MANISA - TURGUTLU	1	Lower- and Upper-Middle-Income Group	384	38491	99.76	B2, C1	point block	NA
MARDIN - MIDYAT	1	Low-Income Group	304	65208	46.62	DG, FG	linear block	NA
MERSIN - ANAMUR	2	Lower- and Upper-Middle-Income Group	340	42257	80.46	DG, FG, Y	linear block	NA
MERSIN - ERDEMLI (2. BOLGE)		Urban Transformation	160	28927	55.31	Y1	linear block	NA
NIGDE - ALTINHISAR	1	Lower- and Upper-Middle-Income Group	96	13346	71.93	K1	point block	NA
OSMANIYE - KADIRLI (2. ETAP)	1	Lower- and Upper-Middle-Income Group	160	38580	41.47	DG	linear block	NA
SAMSUN - CARSAMBA	1	Lower- and Upper-Middle-Income Group	672	106116	63.33	C3	point block	NA
SINOP - MERKEZ	1	Lower- and Upper-Middle-Income Group	272	41159	66.09	F, K1	linear block, point block	NA

Table A.1 (continued)

PROJECTS	# OF PROJECTS IN SAME CTY	TARGET GROUP	# OF UNITS	PROJECT AREA (m2)	DENSITY (dwelling/Ha)	BUILDING MODELS	BUILDING TYPES	TERRITORY MARKERS (Fences, Walls, Plantation)
SIVAS - SUSEHRI	1	Lower- and Upper-Middle-Income Group	304	65141	46.67	C1, F	linear block, point block	NA
SANLIURFA - SIVEREK	1	Lower- and Upper-Middle-Income Group	392	123179	31.82	DG, FG	linear block	NA
VAN - KEVENLI (1. ETAP)	1	Low-Income Group	368	77292	47.61	F, K1	linear block, point block	NA
YALOVA - HACIMEHMET	1	Low-Income Group	1152	122497	94.04	ABA, CD, DD, DCD, DDD, DCDD	linear block	NA

APPENDIX B

SITE PLANS AND ARIAL VIEWS OF SAMPLED TOKİ PROJECTS

This appendix exhibits the project posters prepared by the students - Eda Selin Akyol, Sibel Baş, Rashela Dyca, Parisa Ghadimkhani, Deniz Özçelik, İlknur Sudaş, Mine Serap Yılmaz- who took the ARCH 713 "Housing Design and Reseach Studio I" in Fall'09. The posters present site plans, circulation patterns and basic information on each project. The same-scale satellite images (retrieved from Yandex Maps) of each project are placed under the posters in order to give a better understanding of the context by the thesis author.

PROJECT#1 ZİNCİRLİBAĞLAR HOUSING PROJECT I, ADANA

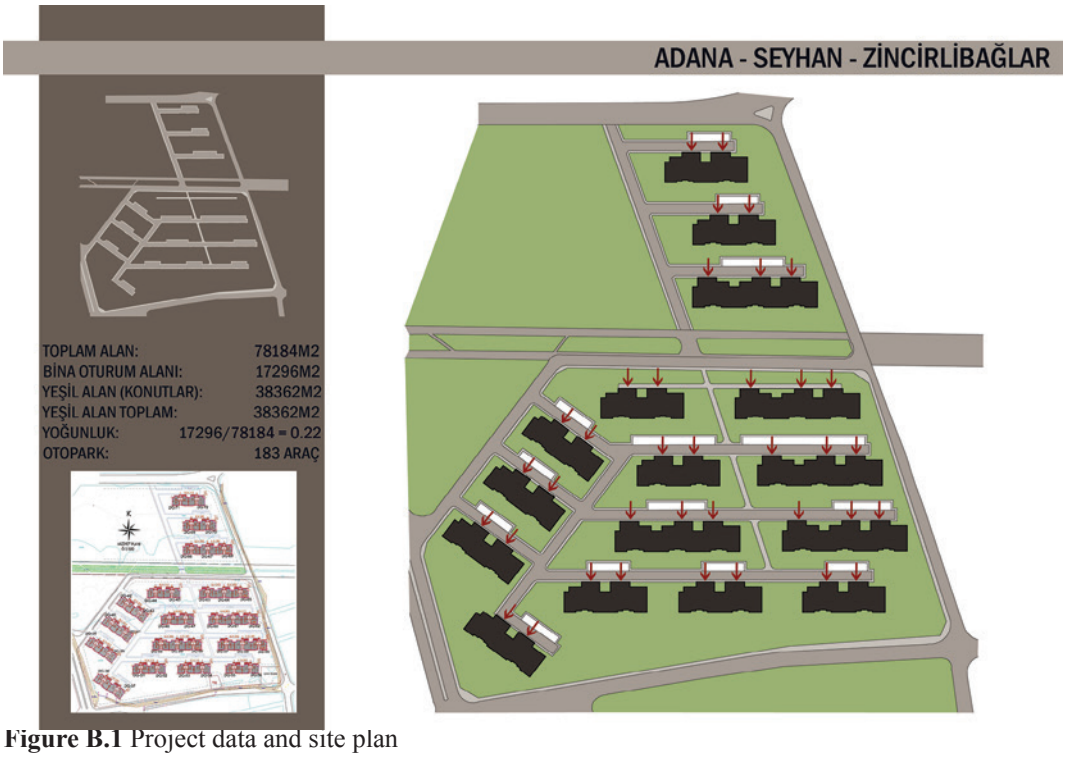


Figure B.1 Project data and site plan

Figure B.2 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#2 ZİNCİRLİBAĞLAR HOUSING PROJECT II, ADANA

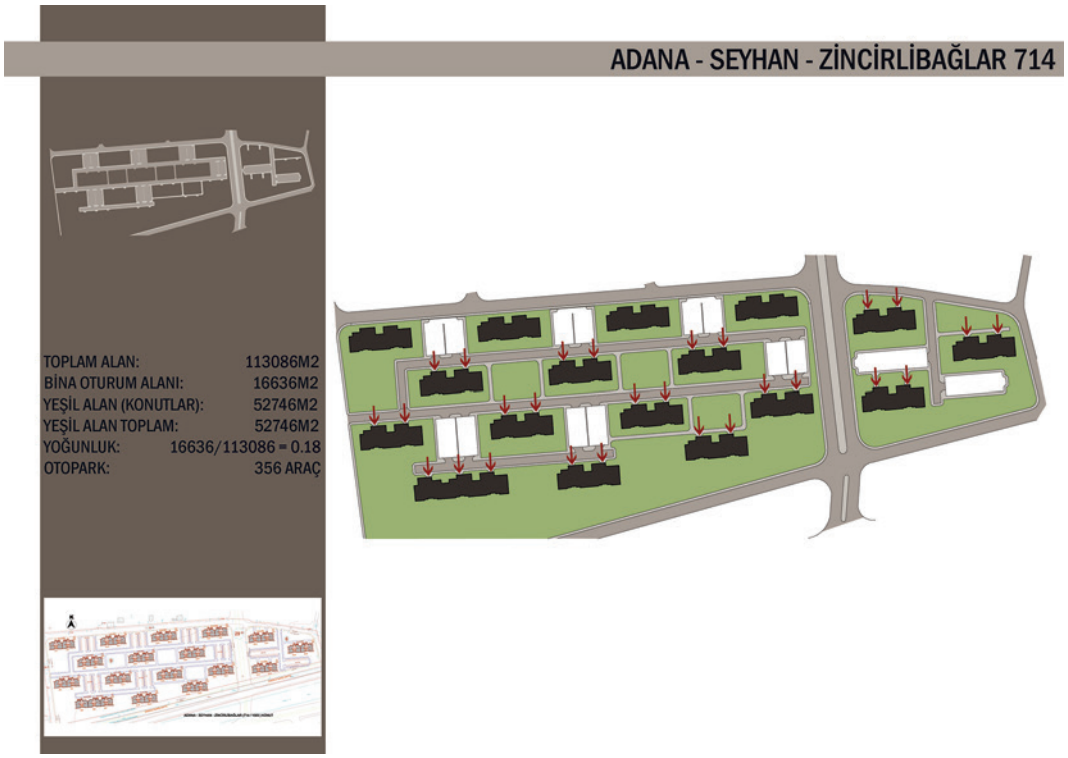


Figure B.3 Project data and site plan

Figure B.4 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#3 SARIHUĞLAR HOUSING PROJECT, ADANA

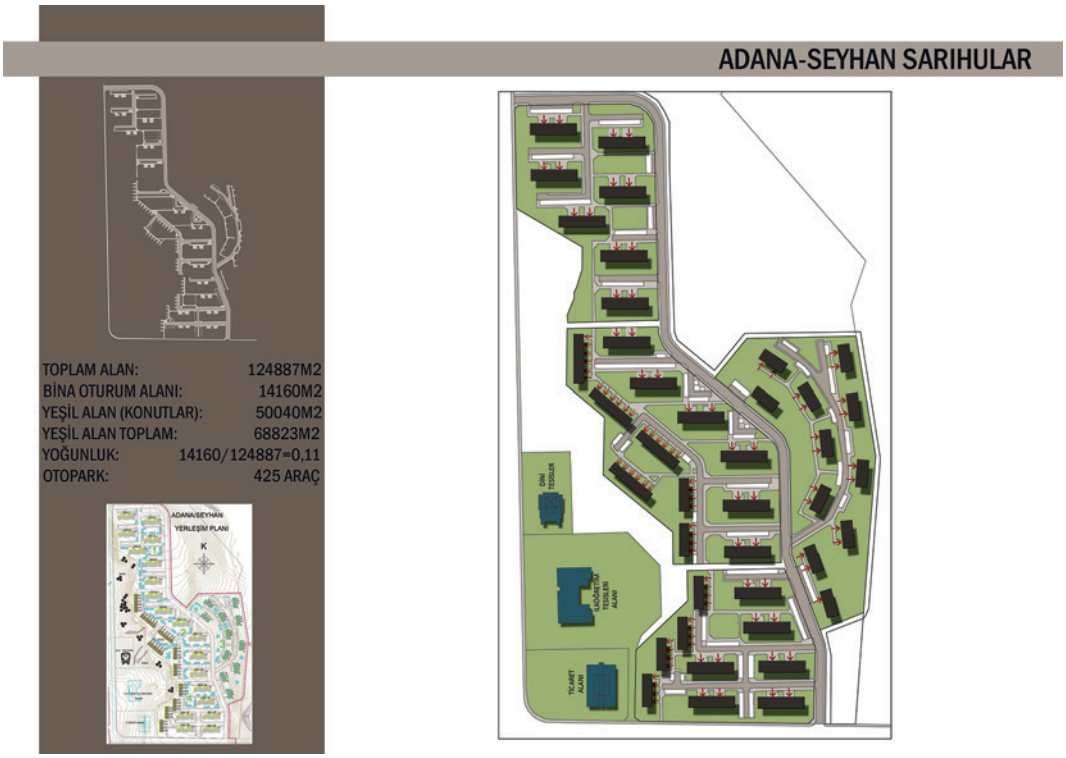


Figure B.5 Project data and site plan

Figure B.6 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#4 YÜREĞİR HOUSING PROJECT, ADANA

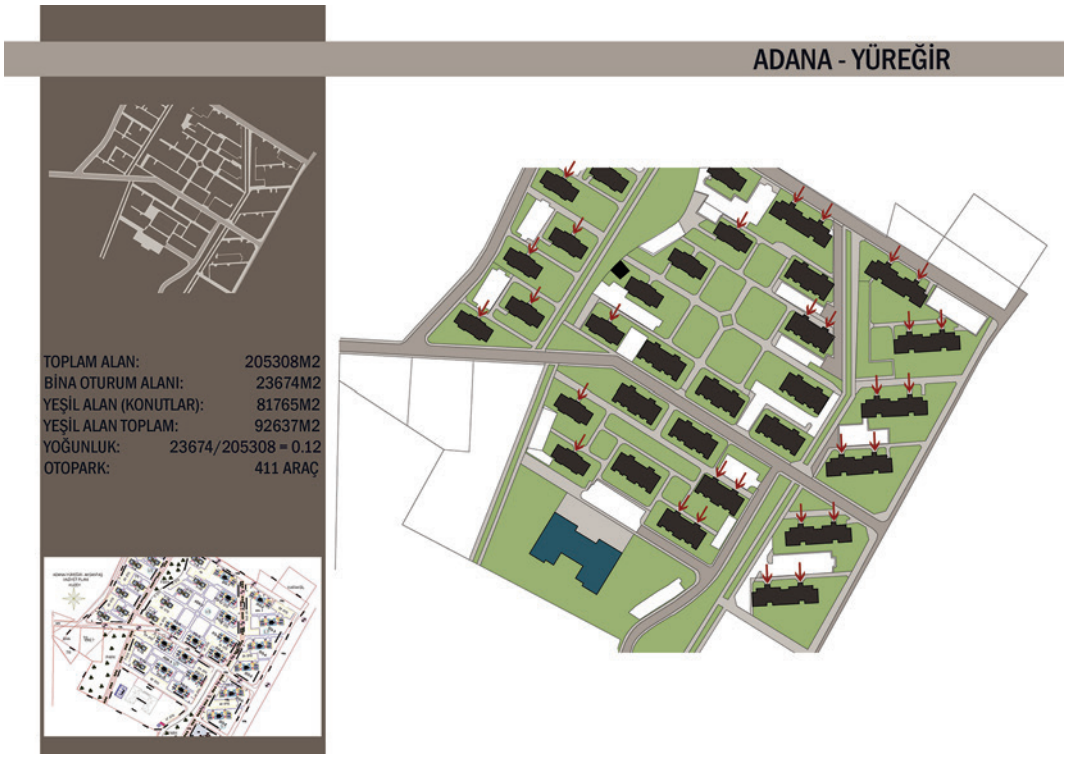


Figure B.7 Project data and site plan

Figure B.8 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#5 AFYONKARAHİSAR HOUSING PROJECT

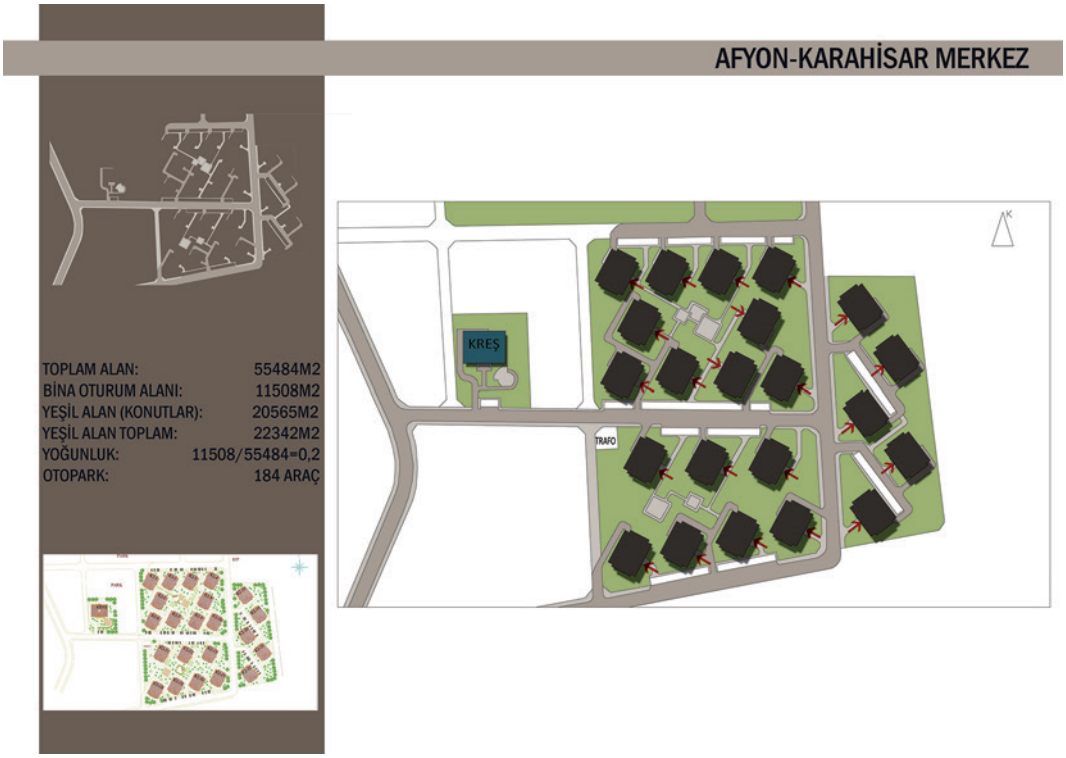


Figure B.9 Project data and site plan

Figure B.10 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#6 PATNOS HOUSING PROJECT, AĞRI

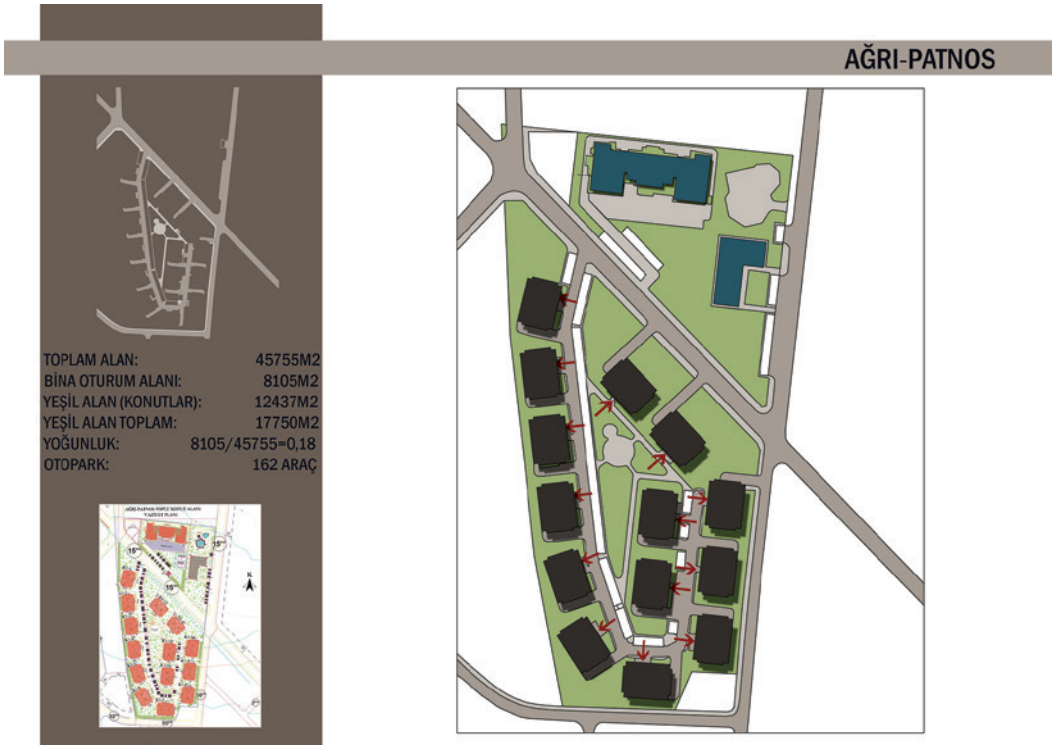


Figure B.11 Project data and site plan

Figure B.12 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#7 AKSARAY HOUSING PROJECT IV

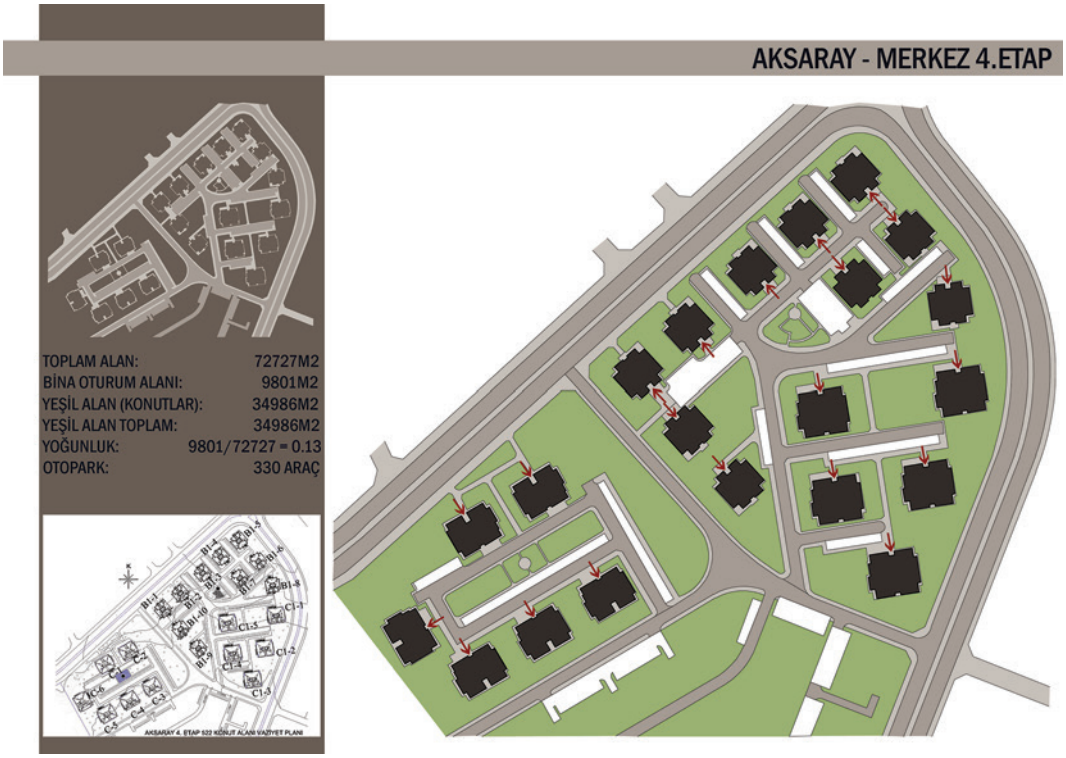


Figure B.13 Project data and site plan

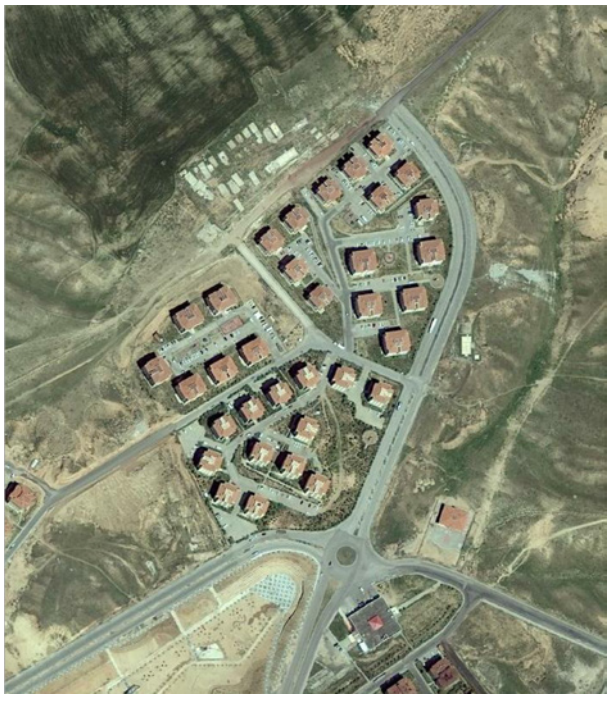


Figure B.14 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#8 ELMADAĞ HOUSING PROJECT, ANKARA

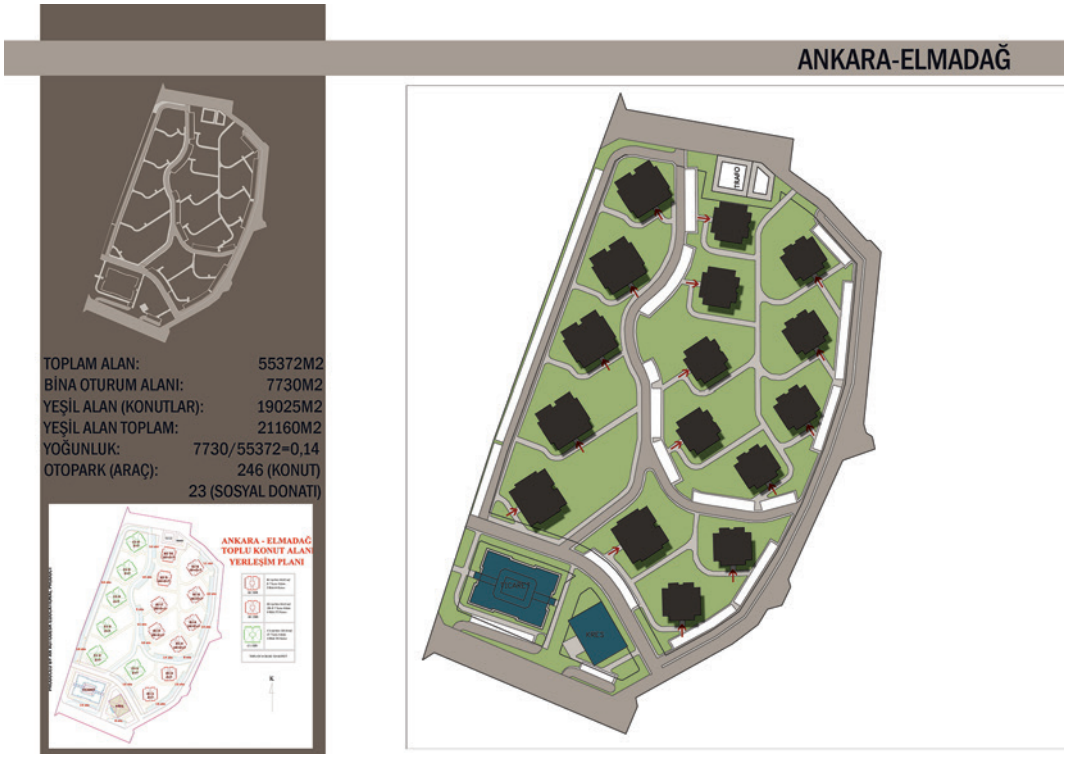


Figure B.15 Project data and site plan

Figure B.16 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#9 KAZAN HOUSING PROJECT, ANKARA

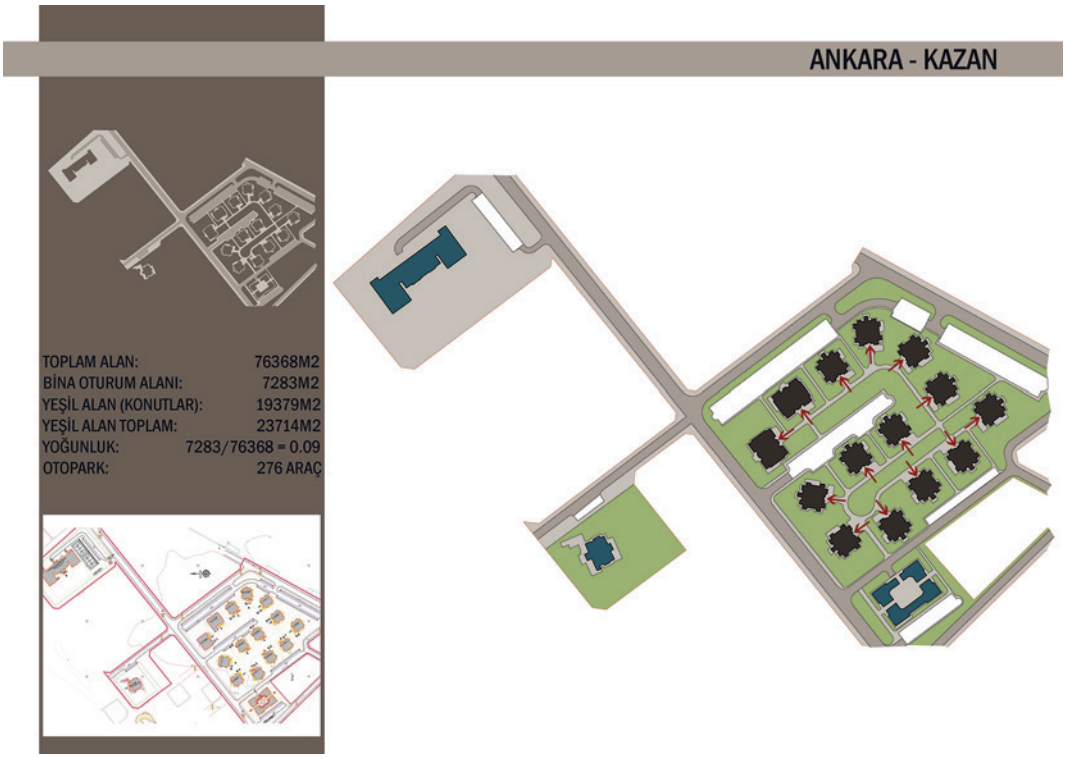


Figure B.17 Project data and site plan

Figure B.18 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#10 YENİMAHALLE HOUSING PROJECT, ANKARA

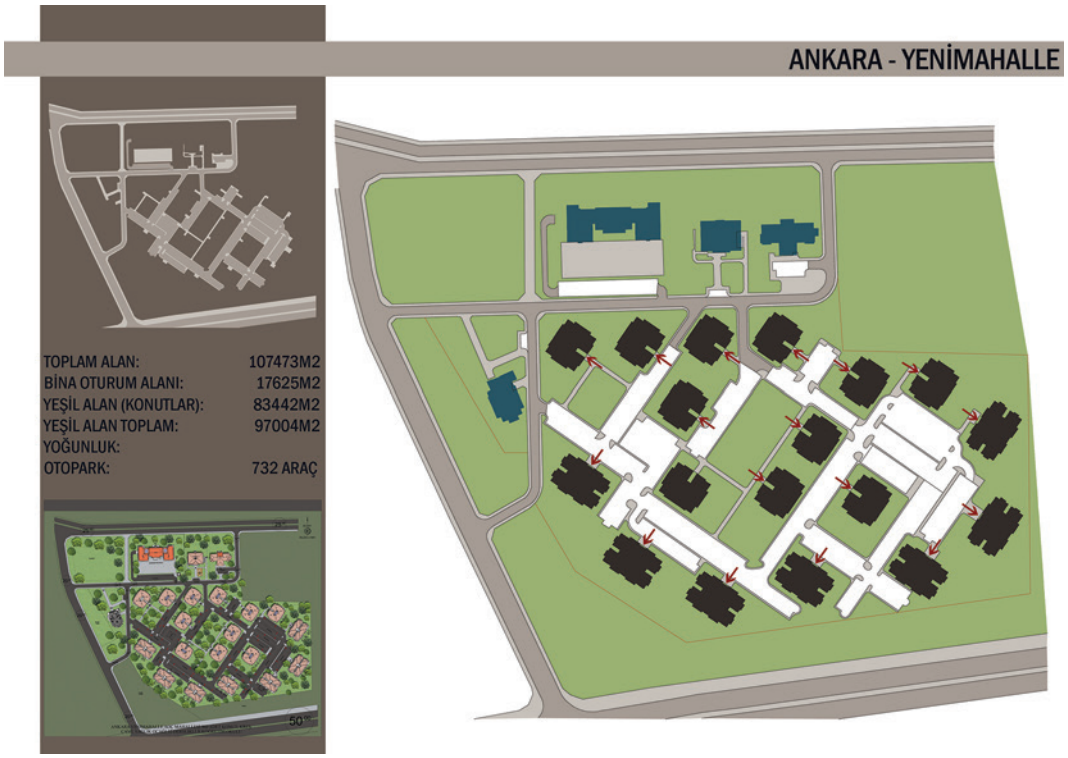


Figure B.19 Project data and site plan

Figure B.20 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#11 BALIKESİR HOUSING PROJECT

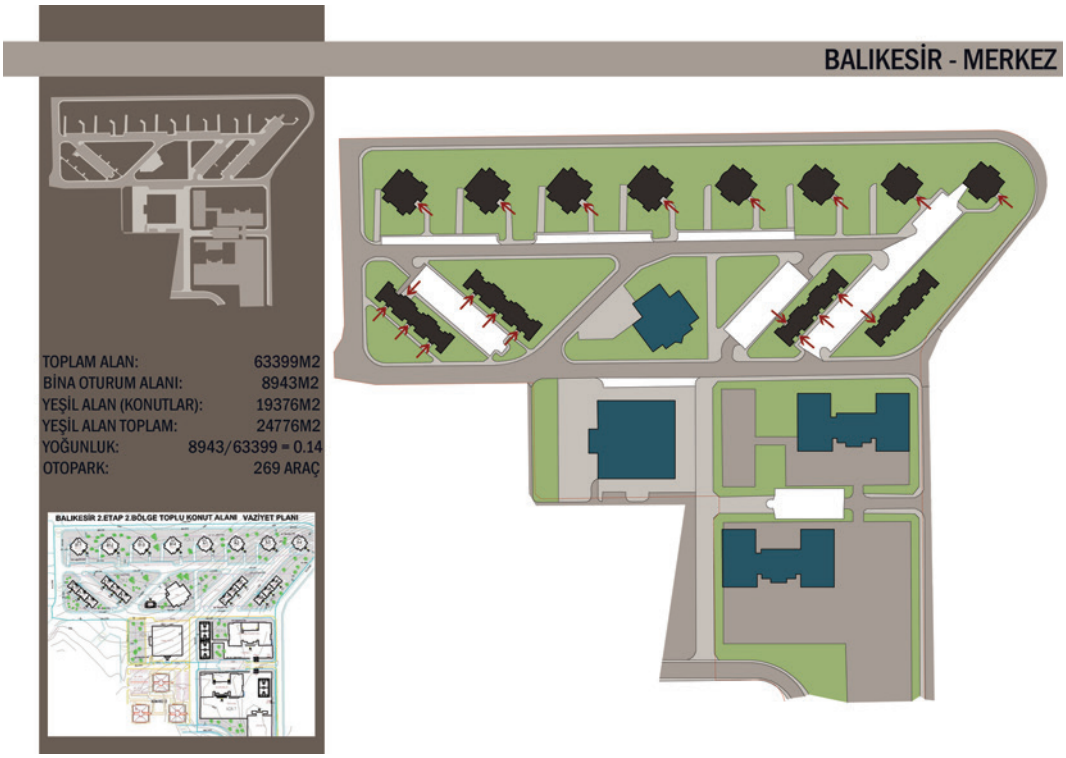


Figure B.21 Project data and site plan

Figure B.22 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#12 BARTIN HOUSING PROJECT

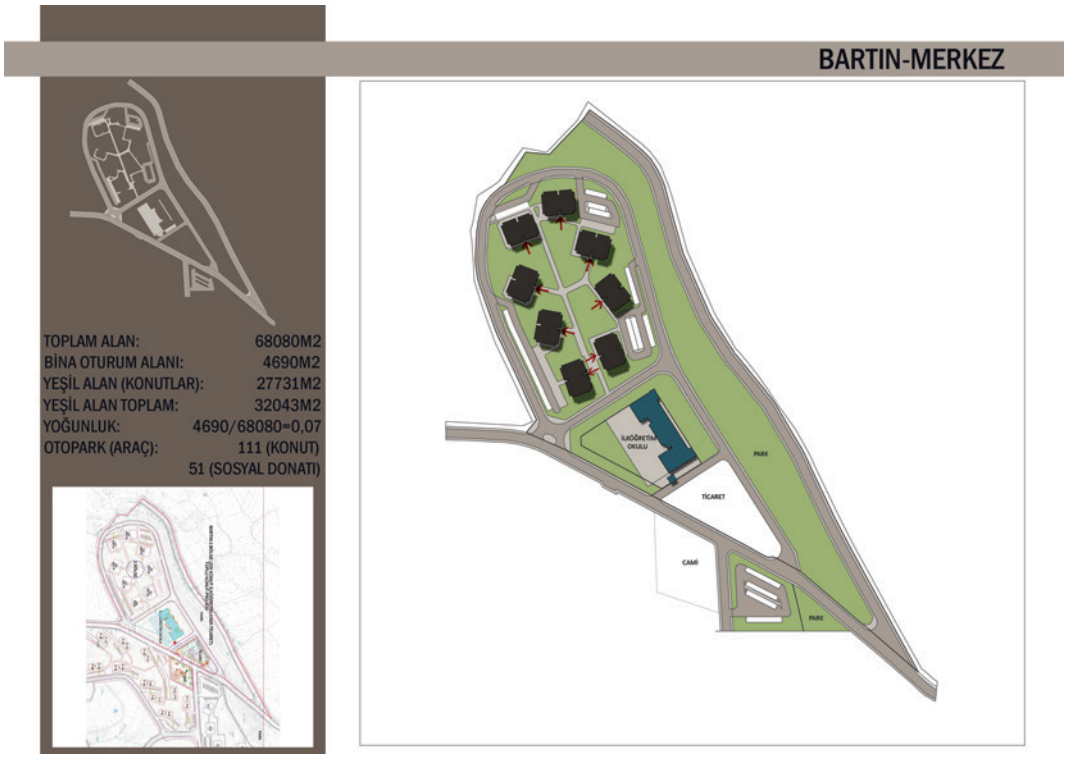


Figure B.23 Project data and site plan

Figure B.24 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#13 RAHVA HOUSING PROJECT, BİTLİS

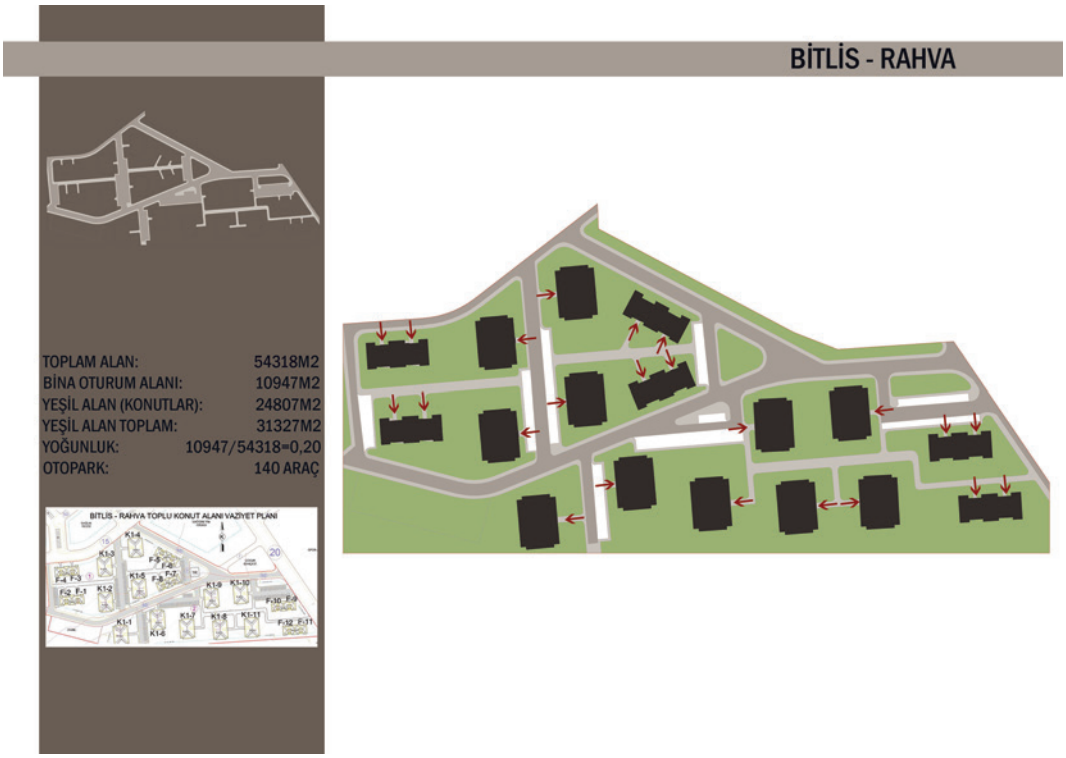


Figure B.25 Project data and site plan

Figure B.26 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#14 ÜÇKUYULAR HOUSING PROJECT, DİYARBAKIR

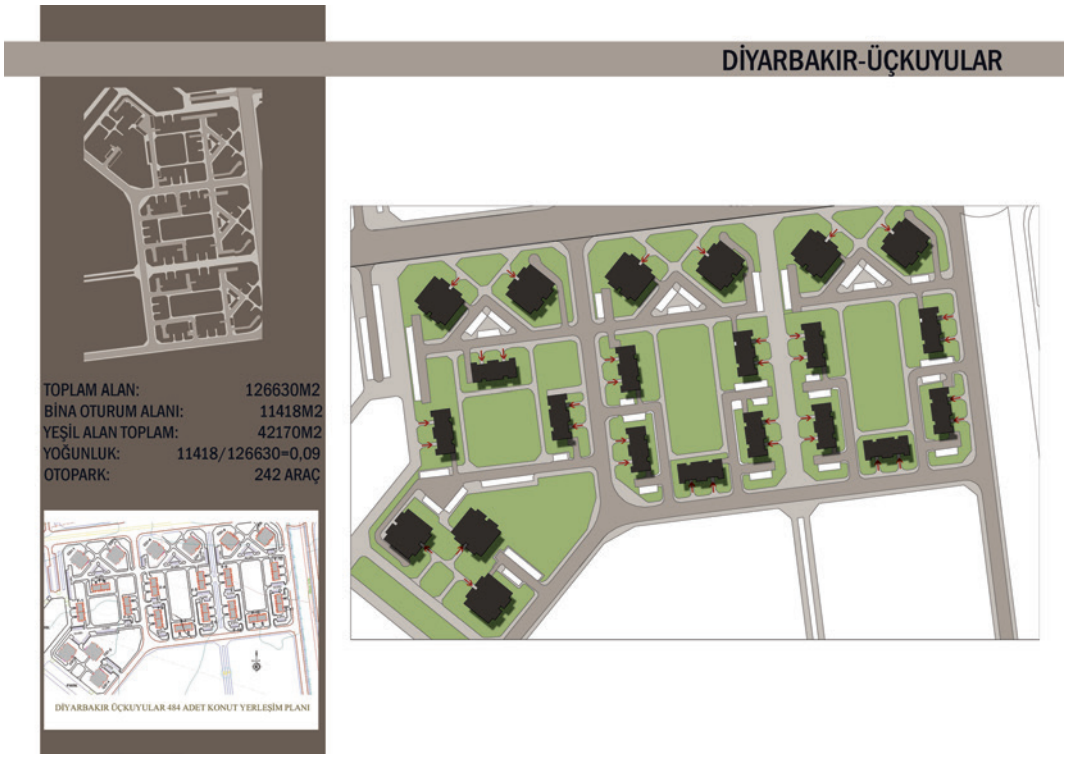


Figure B.27 Project data and site plan

Figure B.28 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#15 İPSALA HOUSING PROJECT, EDİRNE

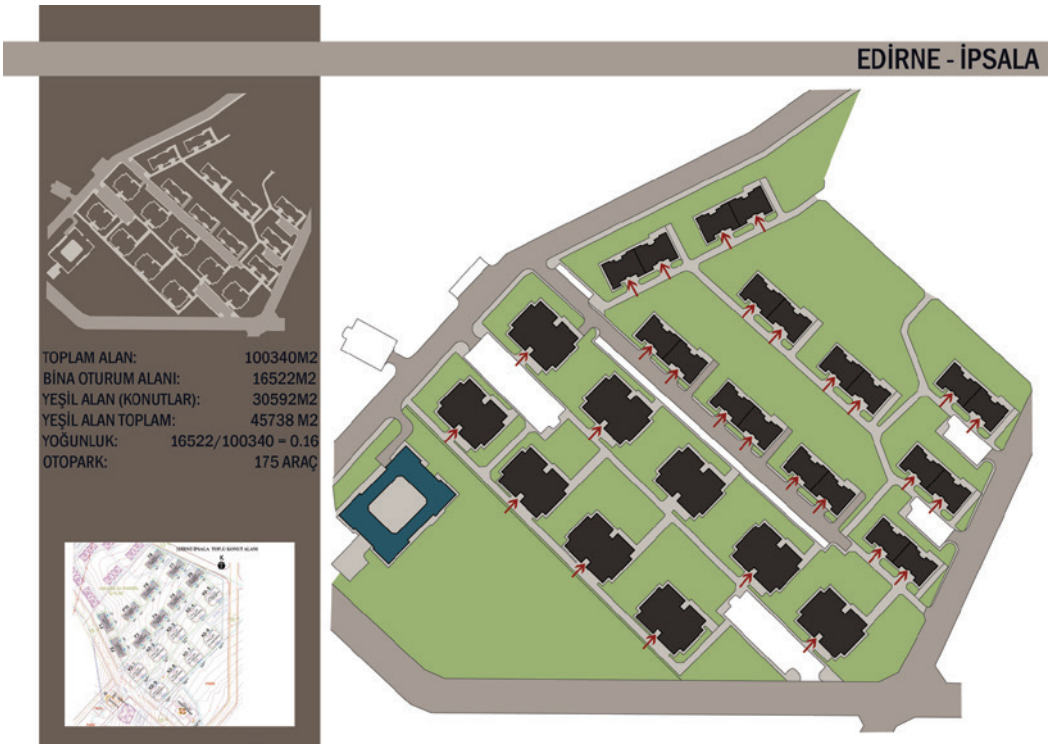


Figure B.29 Project data and site plan

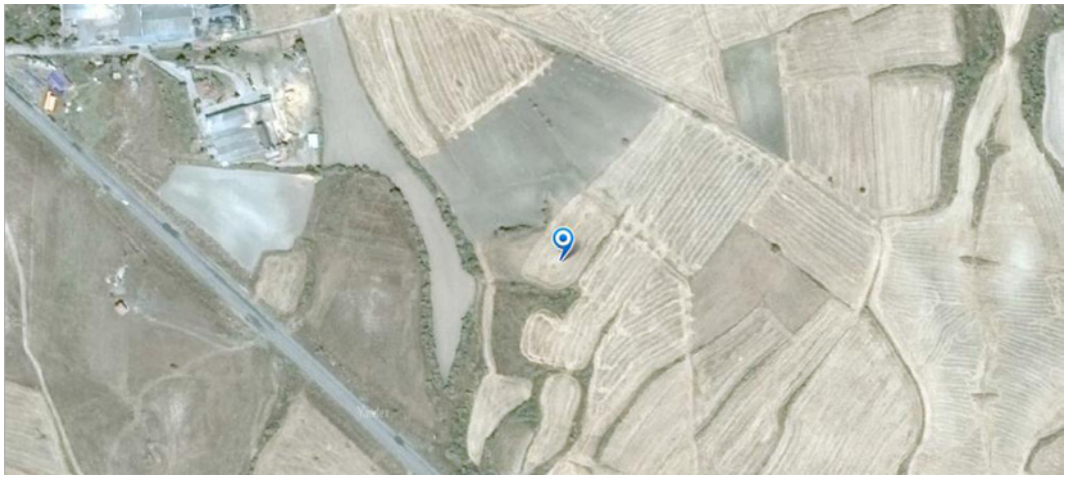


Figure B.30 Arial view of the intended project site

PROJECT#16 PALANDÖKEN HOUSING PROJECT, ERZURUM

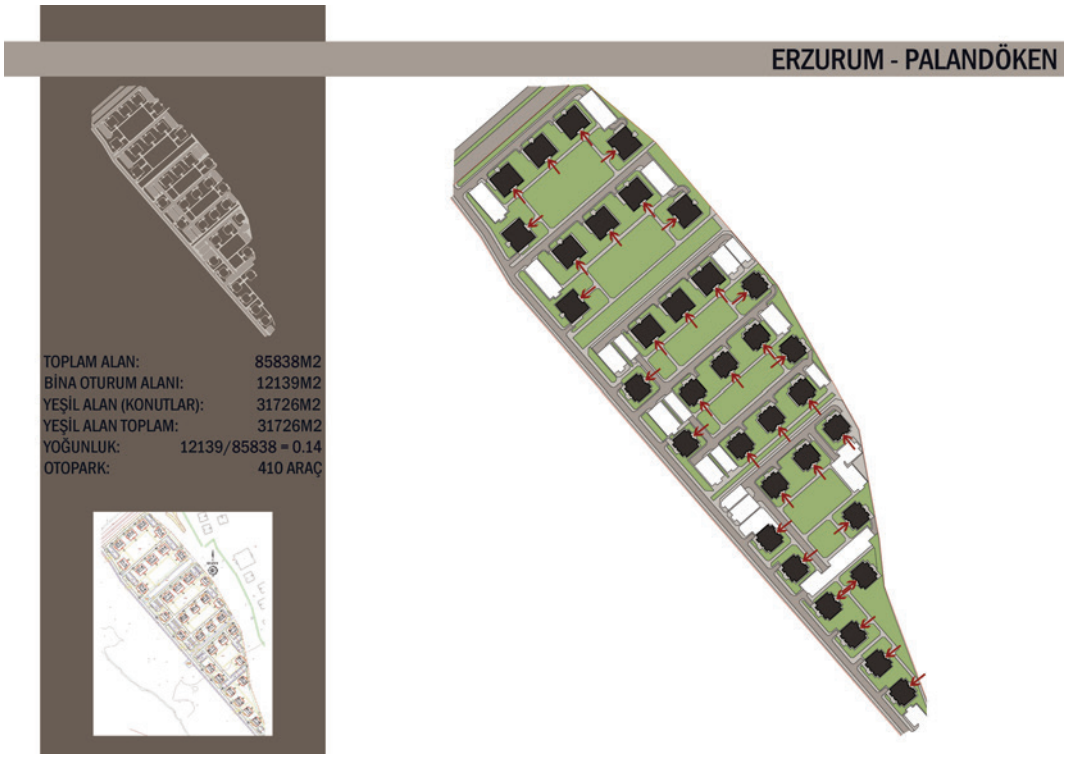


Figure B.31 Project data and site plan

Figure B.32 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#17 VADİŞEHİR HOUSING PROJECT III, ESKİŞEHİR

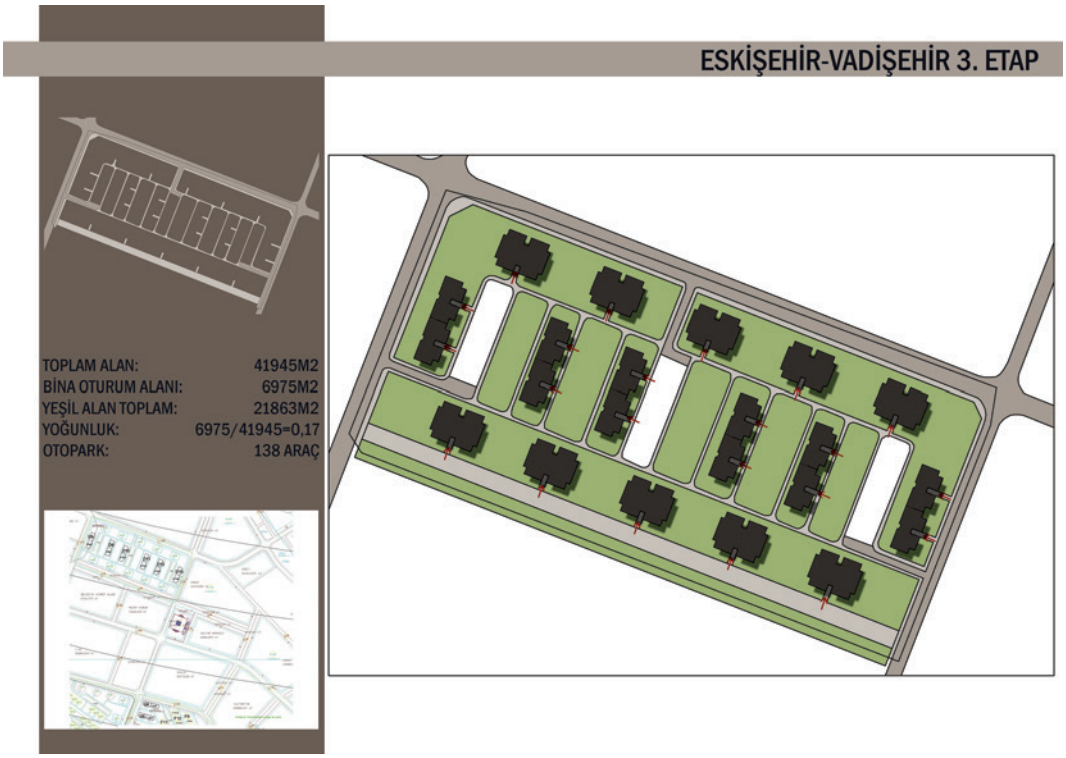


Figure B.33 Project data and site plan

Figure B.34 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#18 VADİŞEHİR HOUSING PROJECT II, ESKİŞEHİR

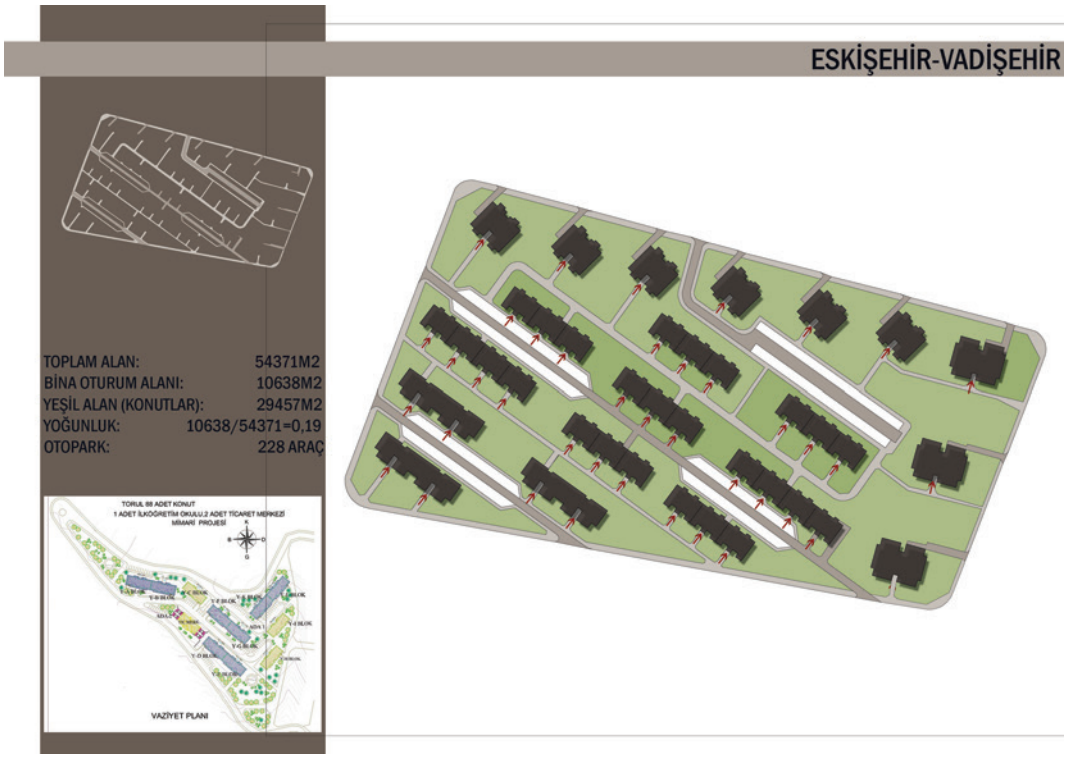


Figure B.35 Project data and site plan

Figure B.36 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#19 ŞAHİNBEY HOUSING PROJECT, GAZİANTEP

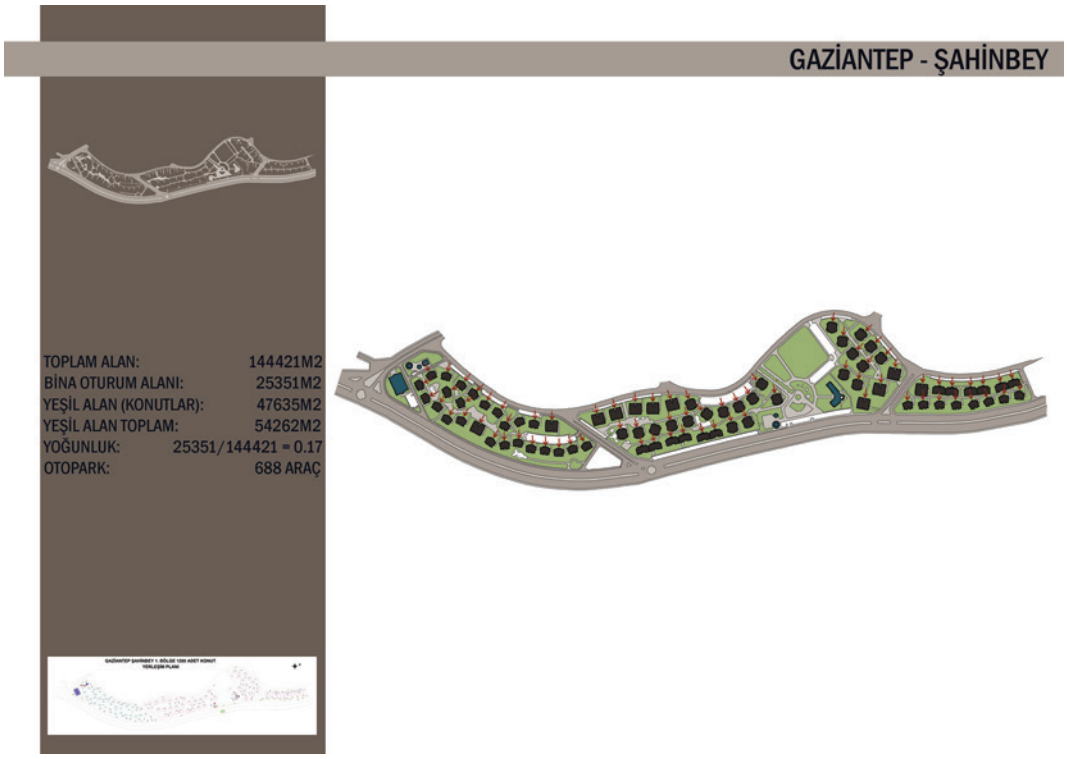


Figure B.37 Project data and site plan

Figure B.38 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#20 GÜMÜŞHANE HOUSING PROJECT

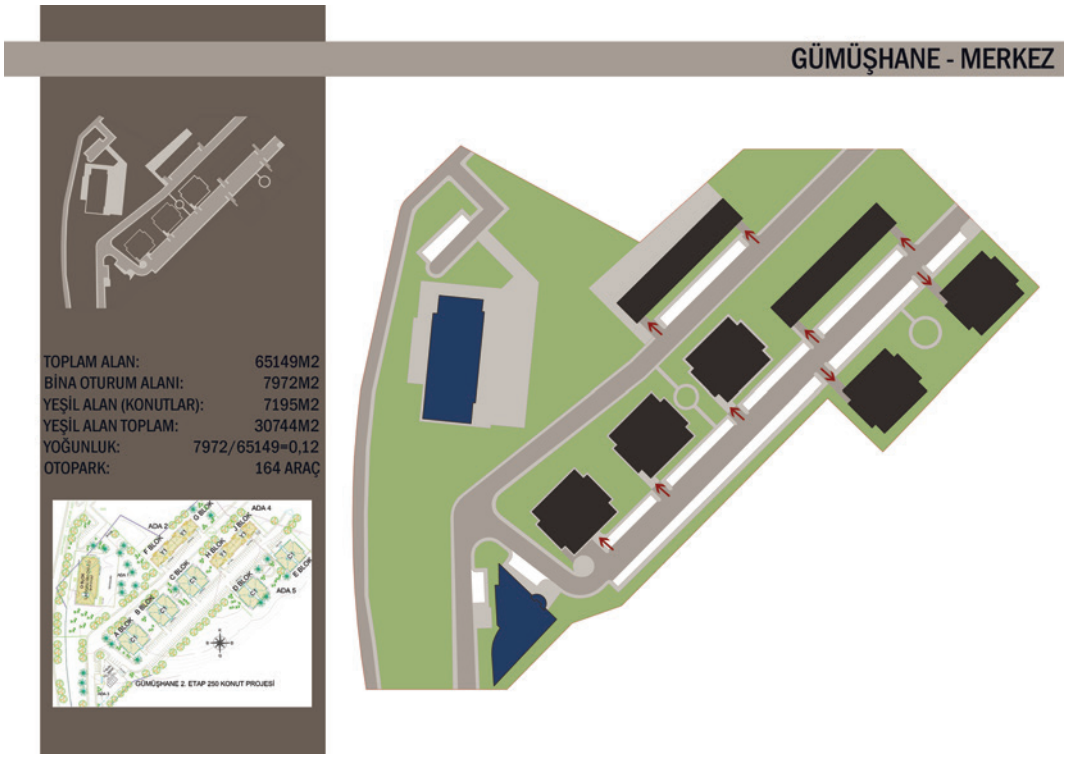


Figure B.39 Project data and site plan

Figure B.40 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#21 TORUL HOUSING PROJECT, GÜMÜŞHANE

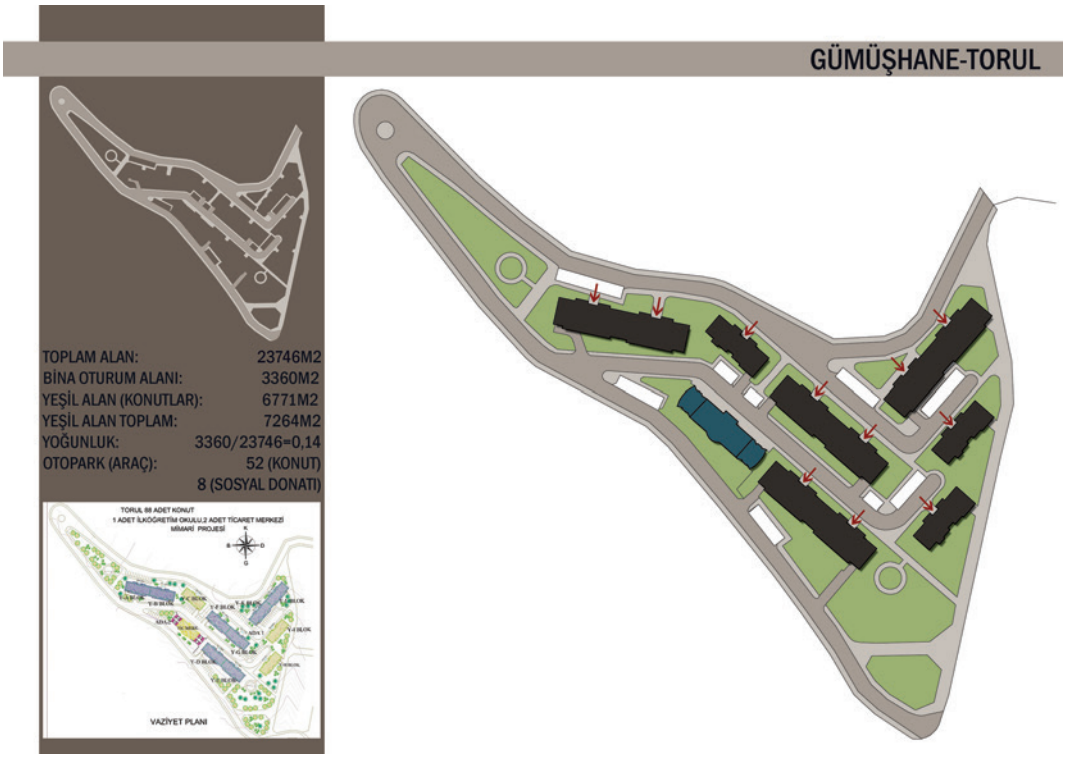


Figure B.41 Project data and site plan

Figure B.42 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#22 KAYABAŞI HOUSING PROJECT II, İSTANBUL

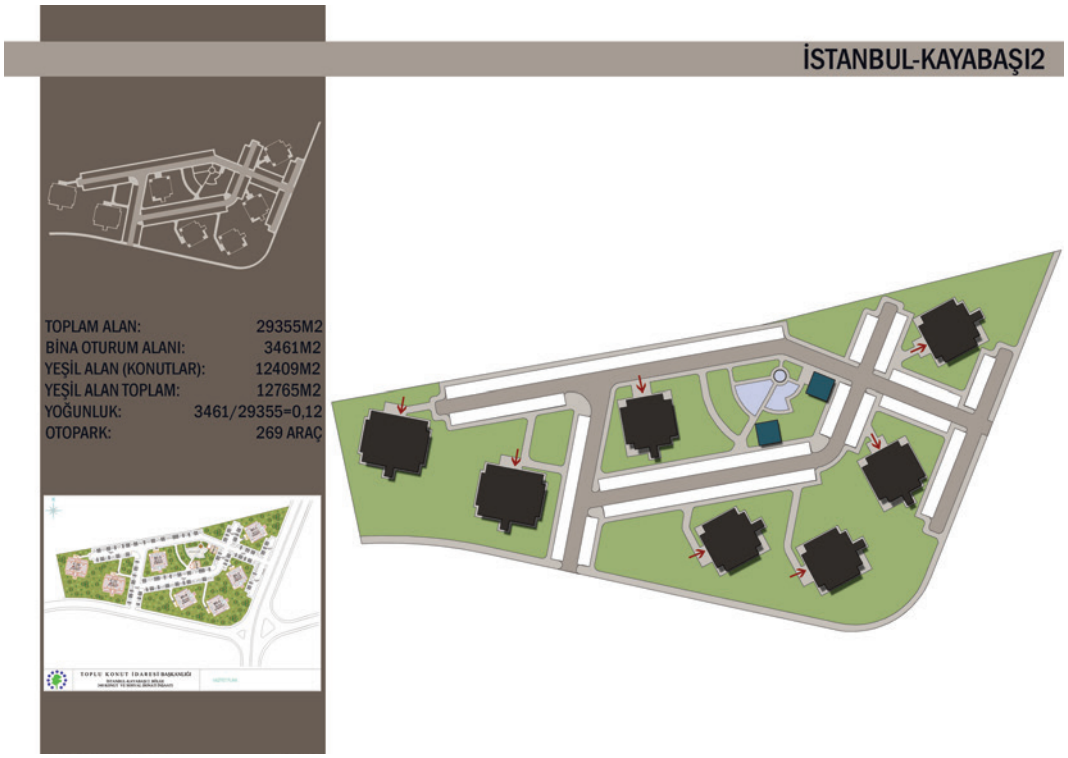


Figure B.43 Project data and site plan

Figure B.44 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#23 KAYABAŞI HOUSING PROJECT IX, İSTANBUL

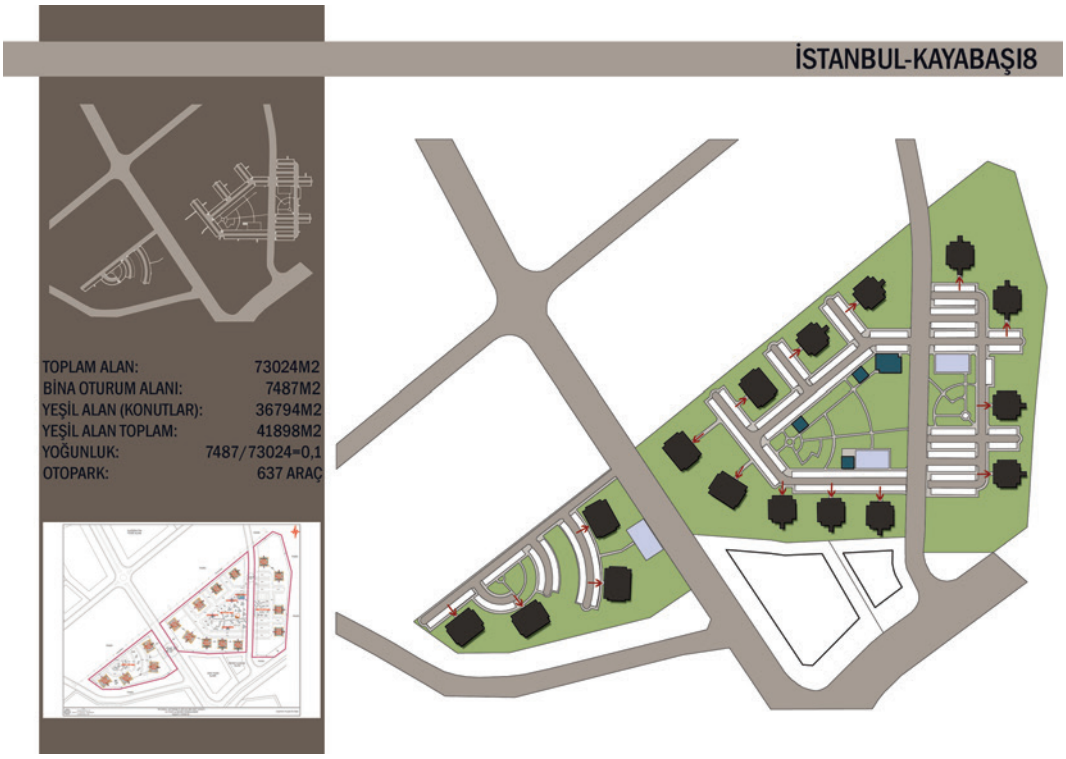


Figure B.45 Project data and site plan

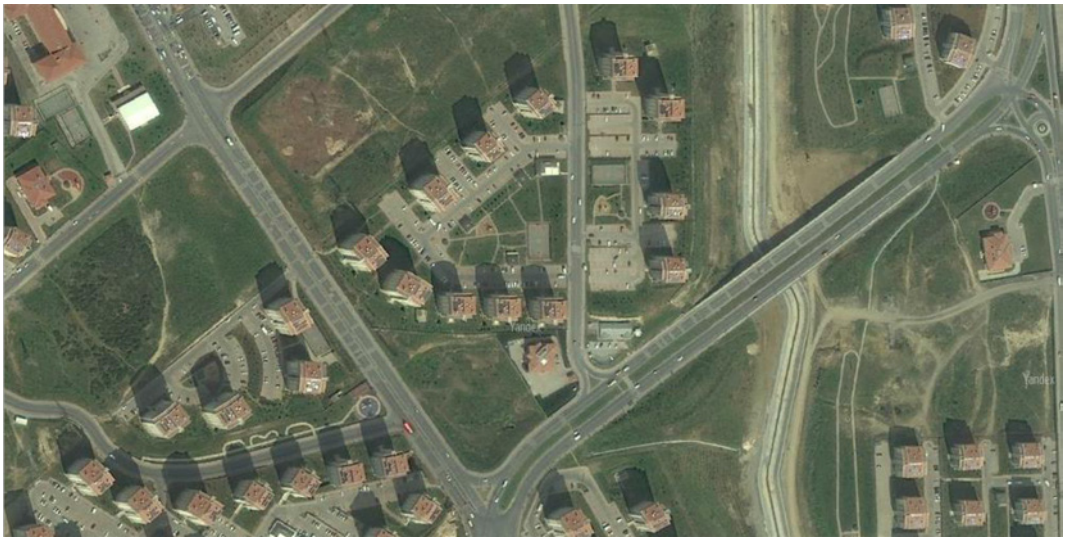


Figure B.46 Arial view showing the relationship between the project and surrounding urban fabric

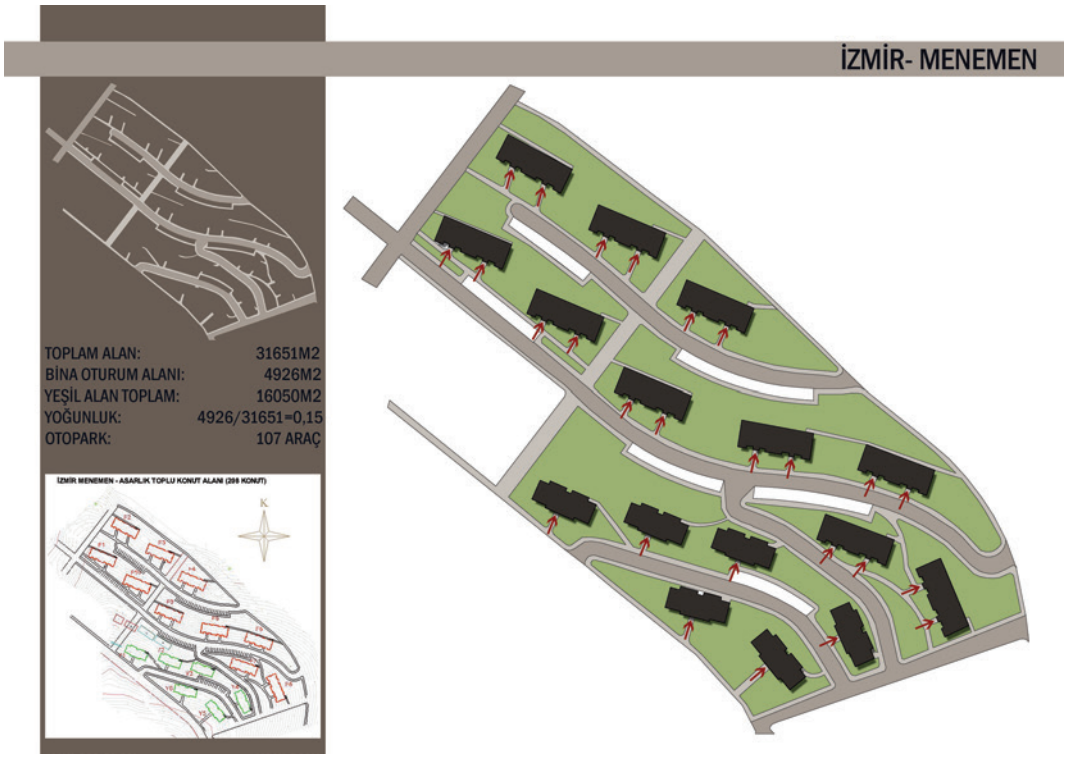


Figure B.47 Project data and site plan

Figure B.48 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#25 KARABÜK HOUSING PROJECT

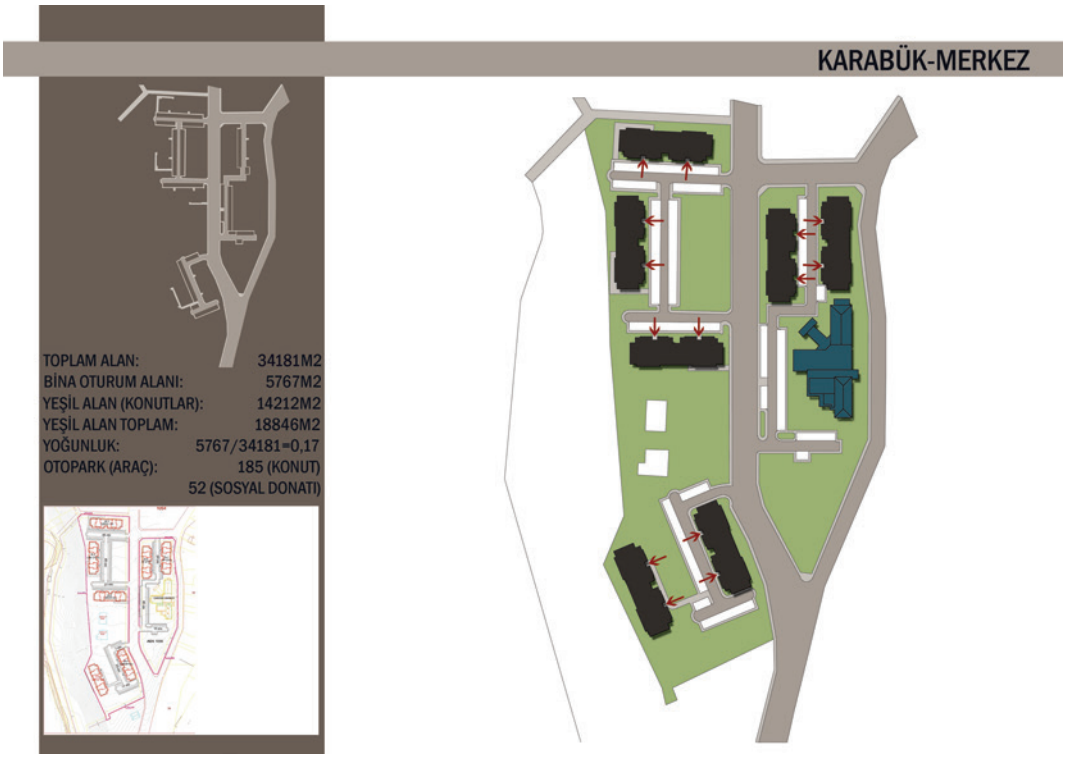


Figure B.49 Project data and site plan

Figure B.50 Arial view showing the relationship between the project and surrounding urban fabric

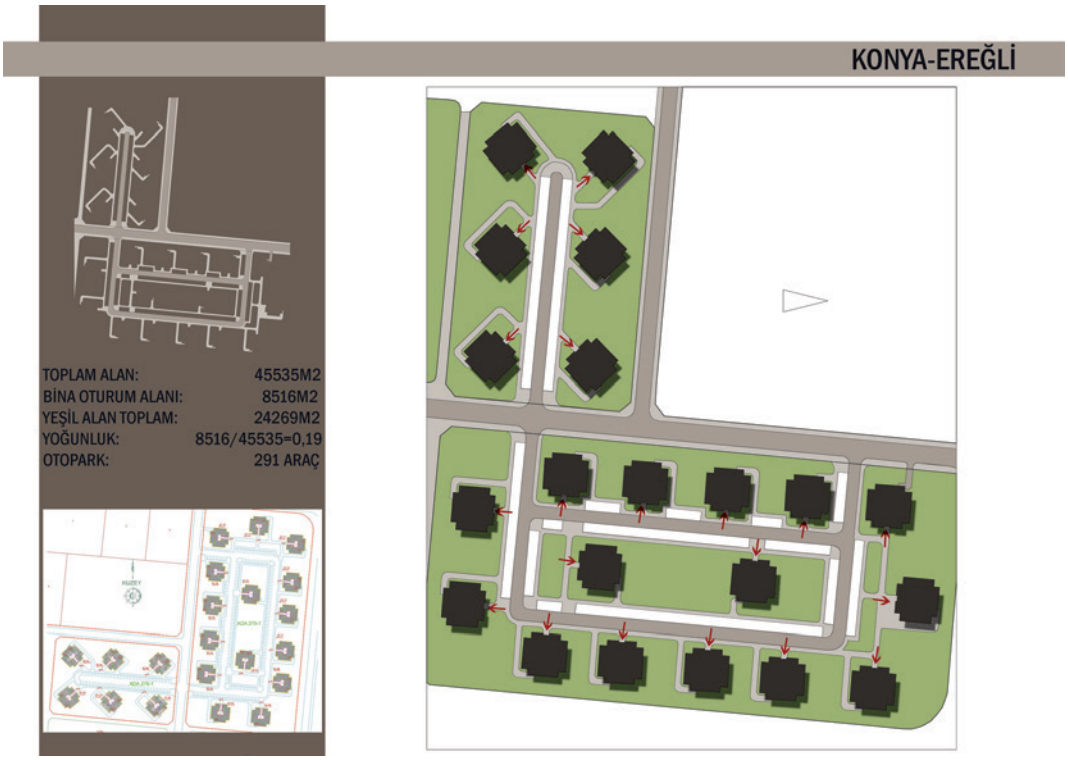


Figure B.51 Project data and site plan

Figure B.52 Arial view showing the relationship between the project and surrounding urban fabric

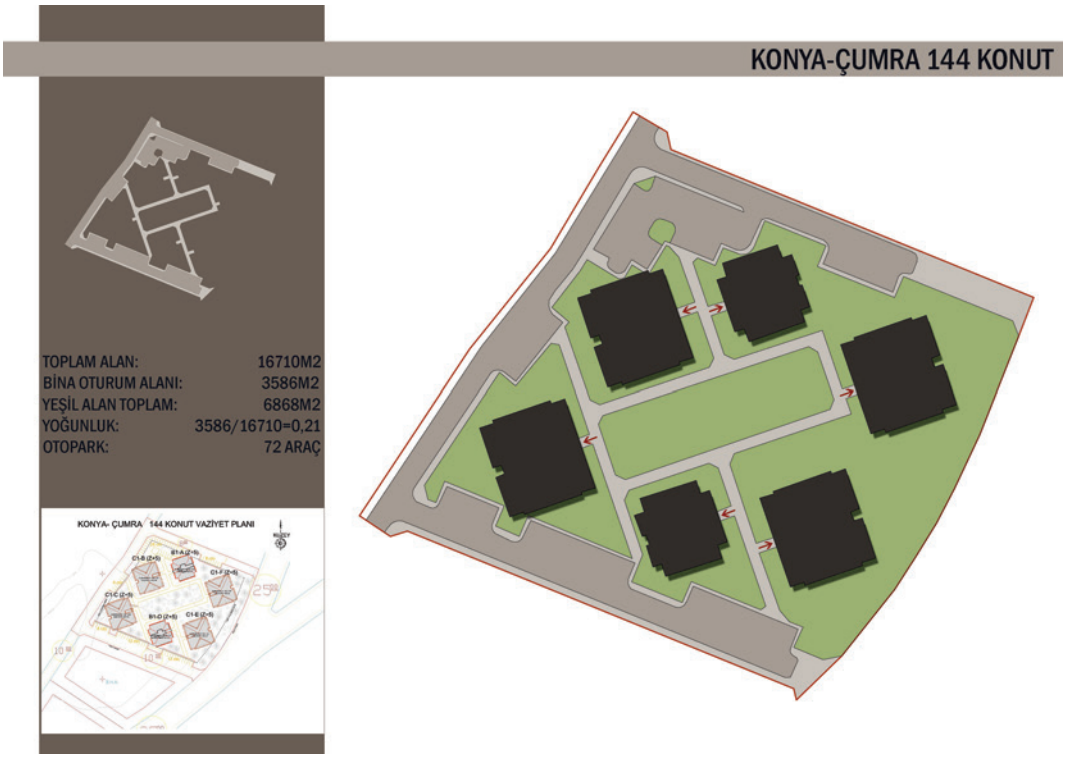


Figure B.53 Project data and site plan

Figure B.54 Arial view showing the relationship between the project and surrounding urban fabric

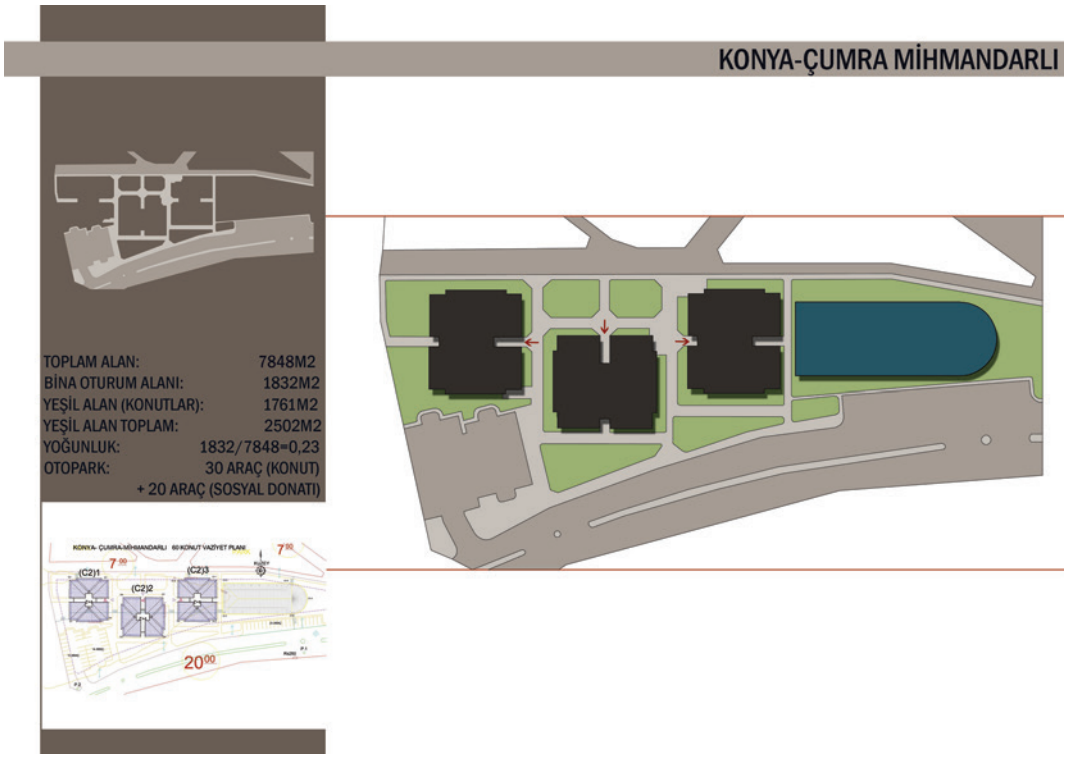


Figure B.55 Project data and site plan

Figure B.56 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#29 TURGUTLU HOUSING PROJECT, MANİSA

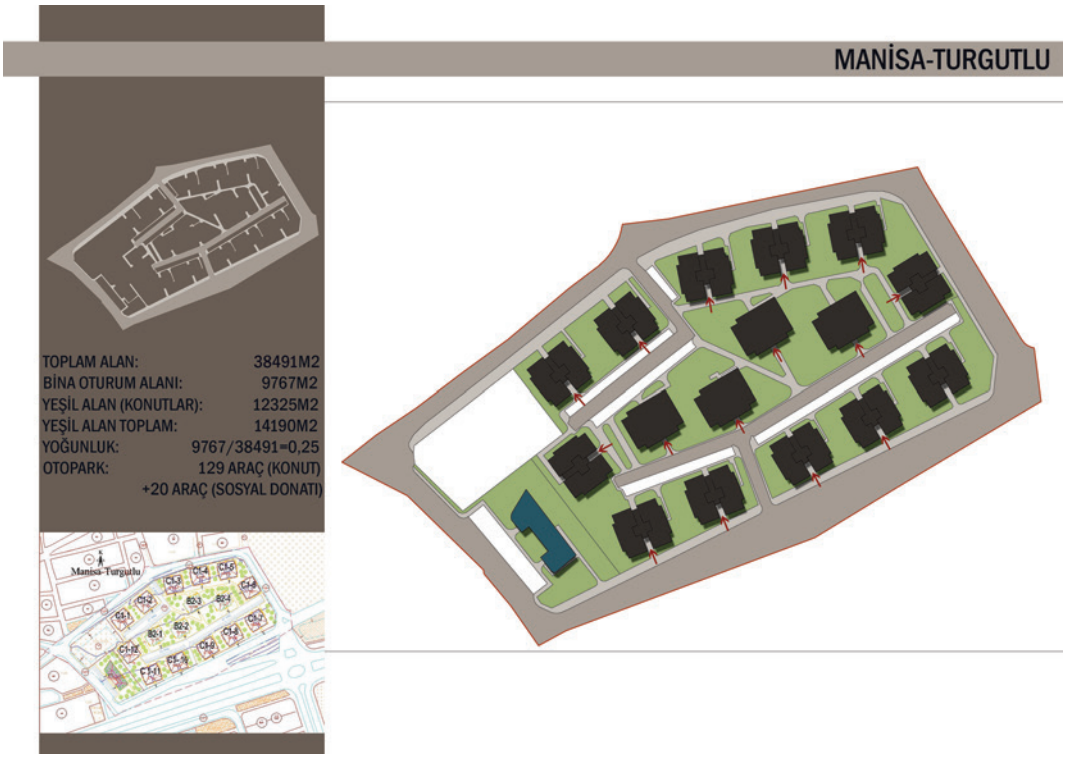


Figure B.57 Project data and site plan

Figure B.58 Arial view showing the relationship between the project and surrounding urban fabric

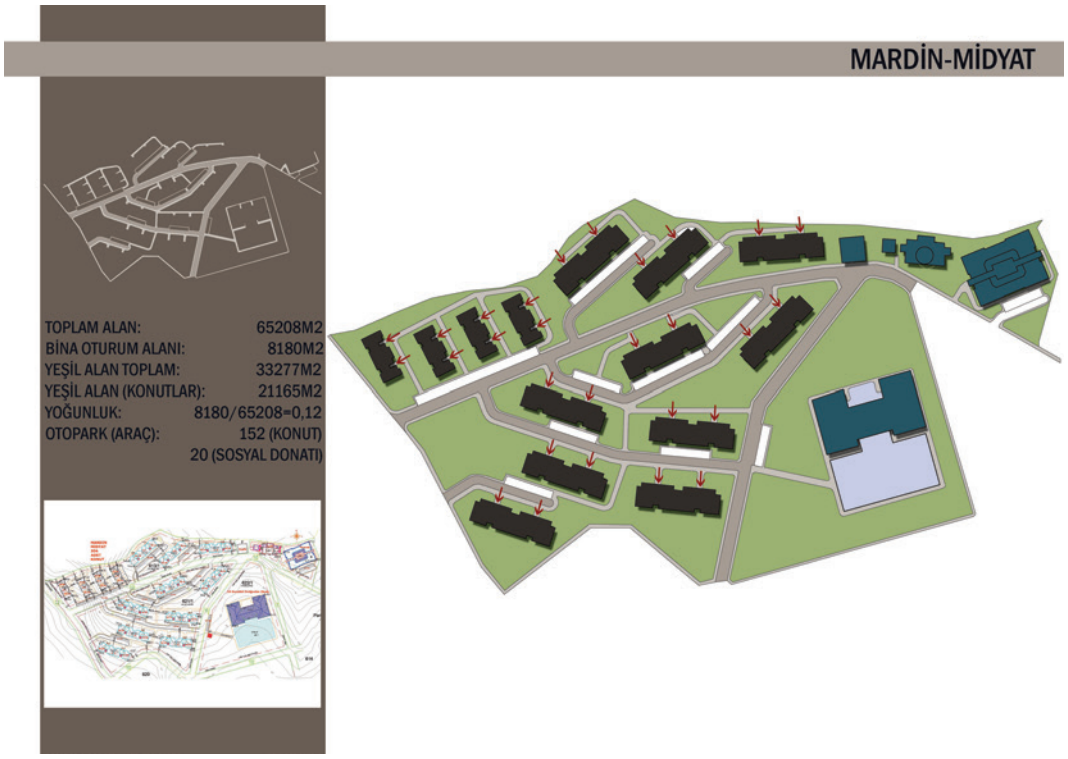


Figure B.59 Project data and site plan

Figure B.60 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#31 ANAMUR HOUSING PROJECT, MERSİN

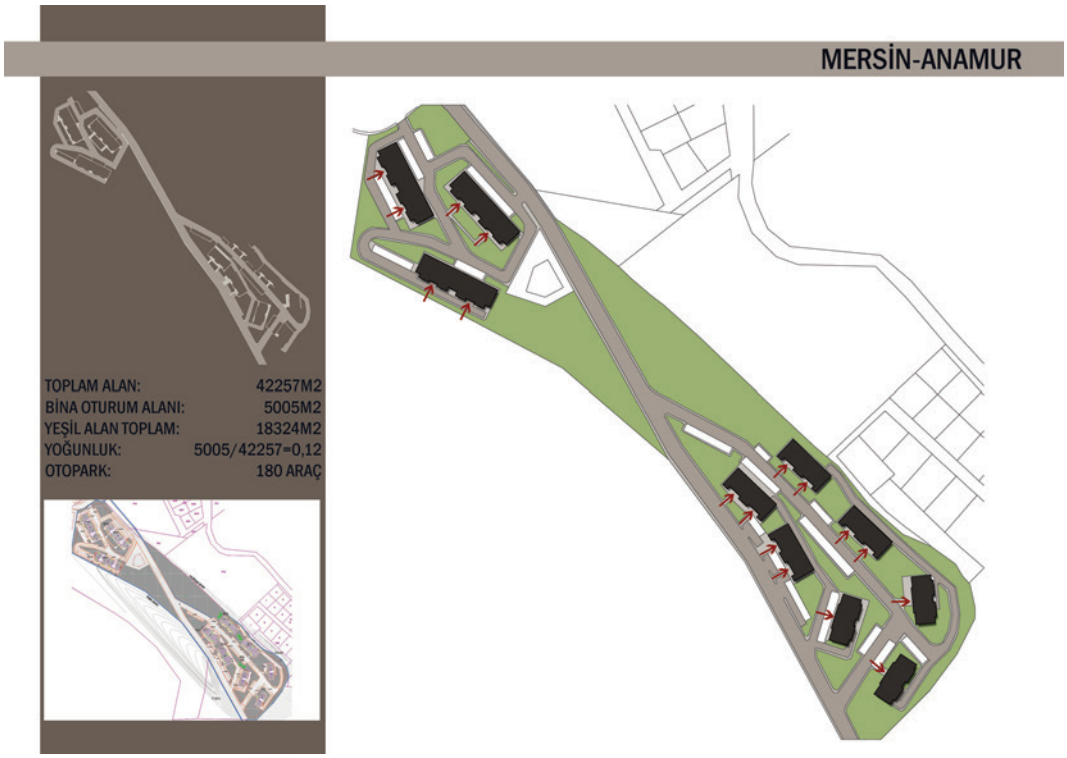


Figure B.61 Project data and site plan

Figure B.62 Arial view showing the relationship between the project and surrounding urban fabric

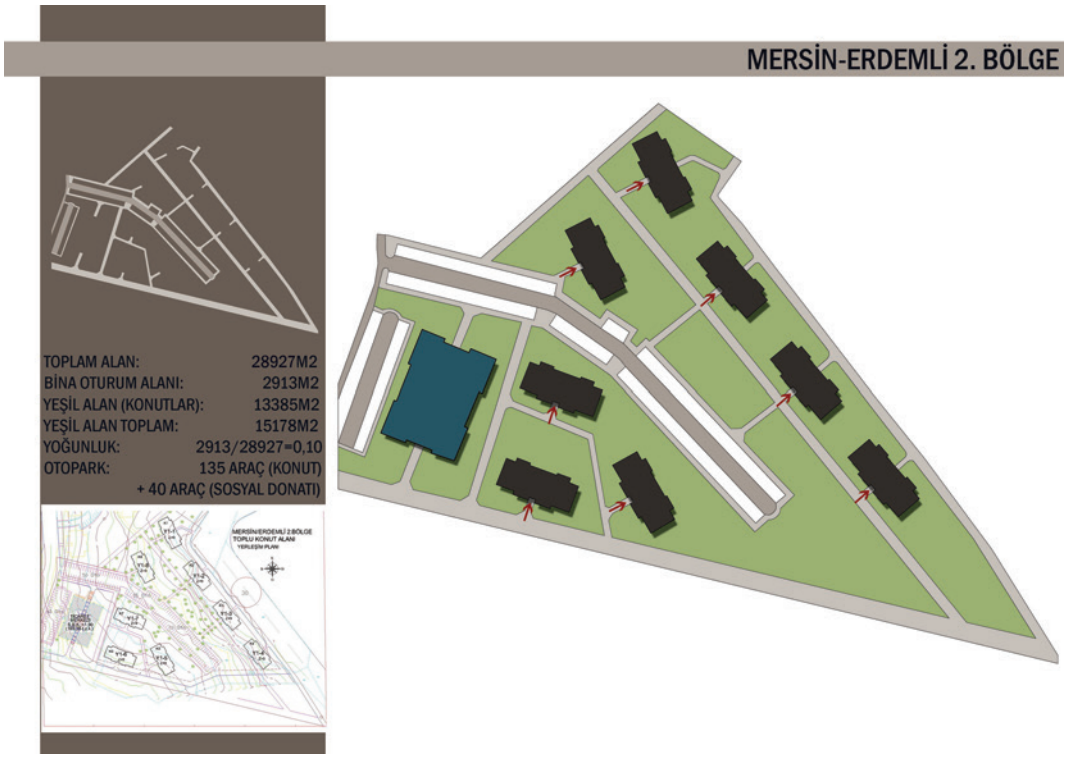


Figure B.63 Project data and site plan

Figure B.64 Arial view showing the relationship between the project and surrounding urban fabric

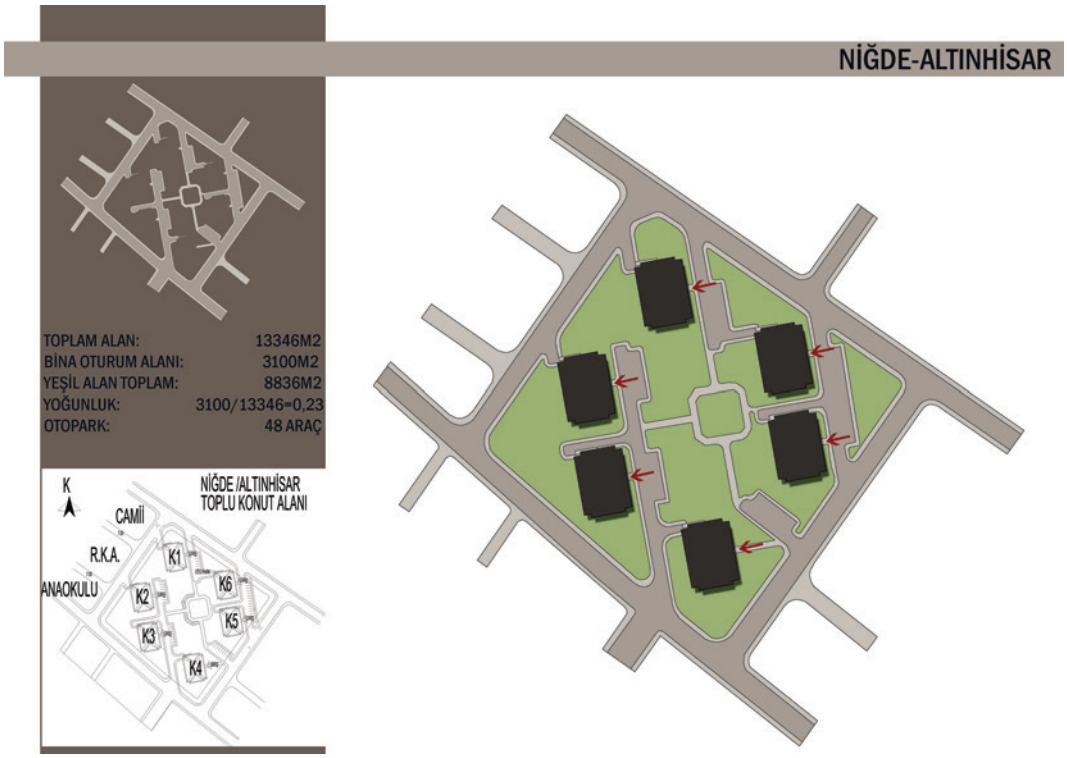


Figure B.65 Project data and site plan

Figure B.66 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#34 KADİRLİ HOUSING PROJECT, OSMANİYE

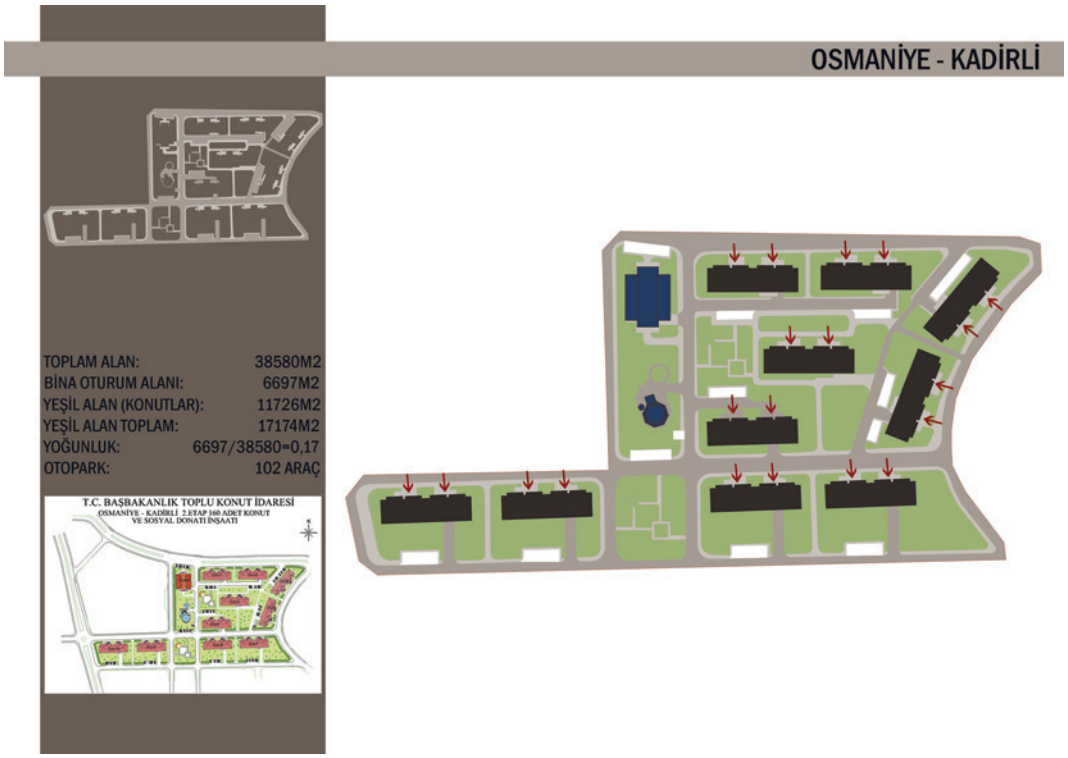


Figure B.67 Project data and site plan

Figure B.68 Arial view showing the relationship between the project and surrounding urban fabric

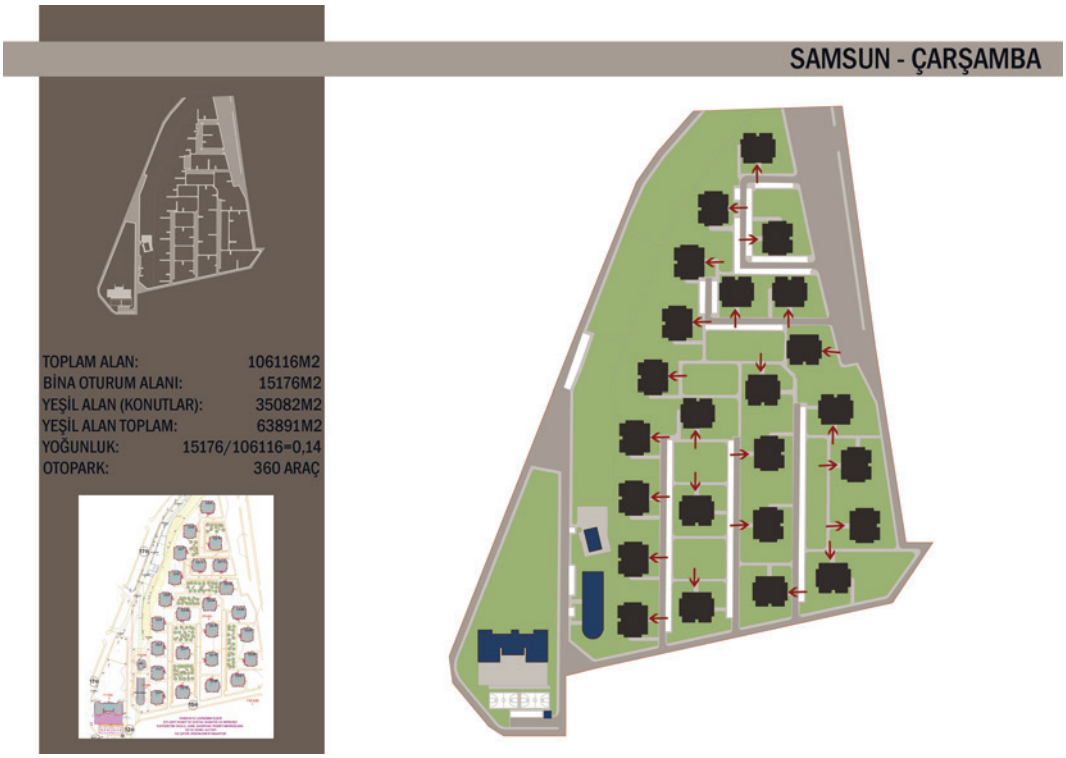


Figure B.69 Project data and site plan

Figure B.70 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#36 SİNOP HOUSING PROJECT

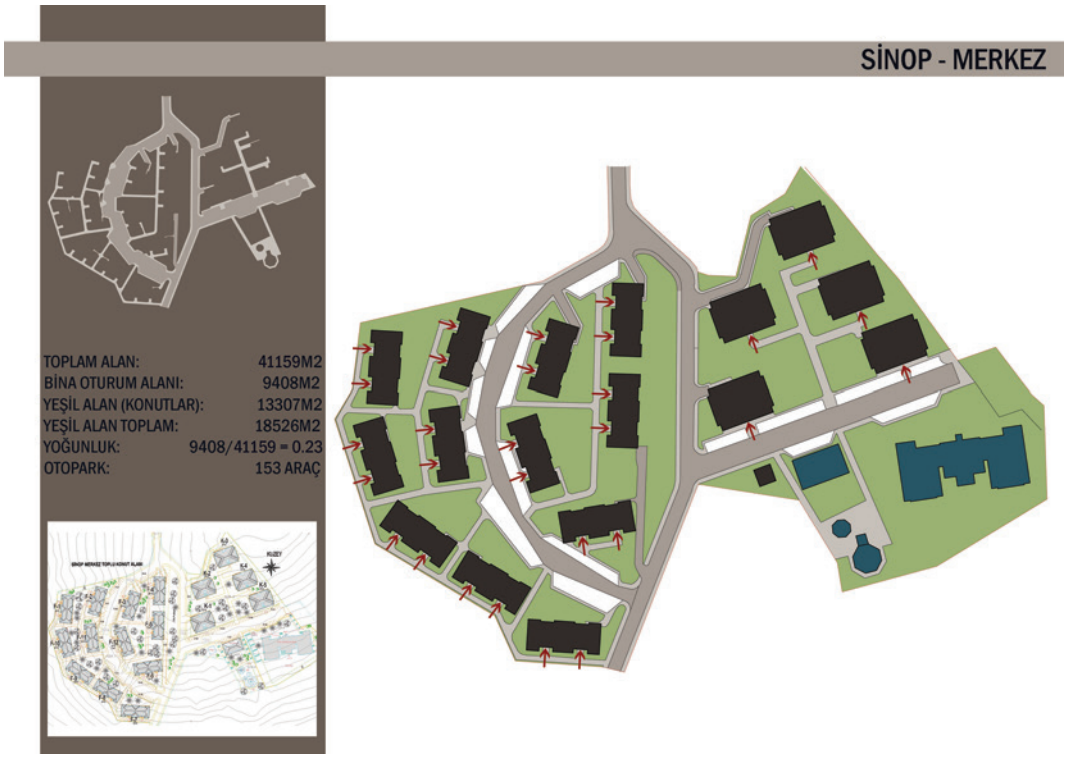


Figure B.71 Project data and site plan

Figure B.72 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#37 SUŞEHRİ HOUSING PROJECT, SİVAS

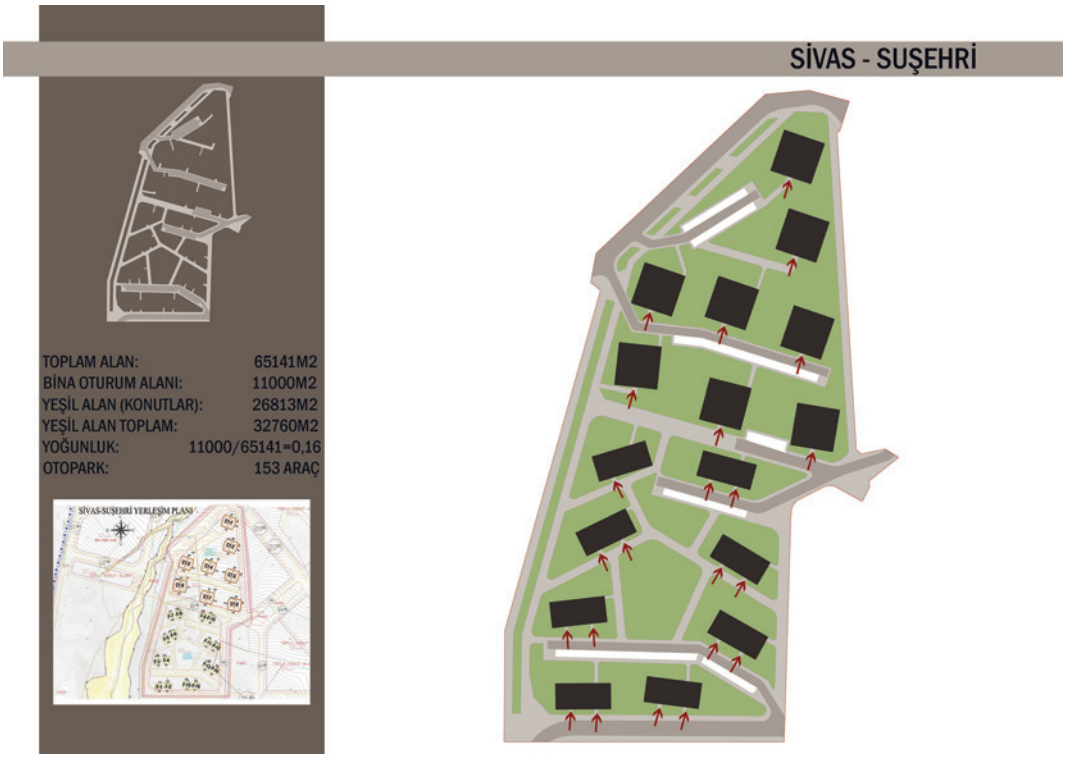


Figure B.73 Project data and site plan

Figure B.74 Arial view showing the relationship between the project and surrounding urban fabric

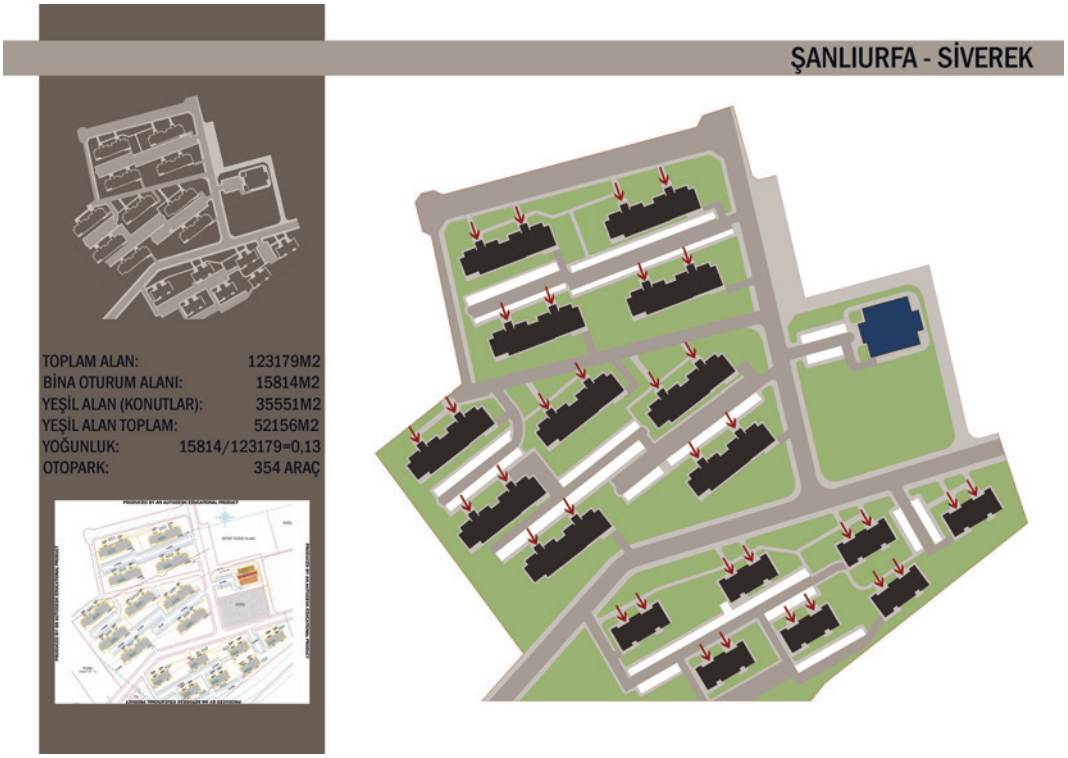


Figure B.75 Project data and site plan

Figure B.76 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#39 KEVENLİ HOUSING PROJECT, VAN

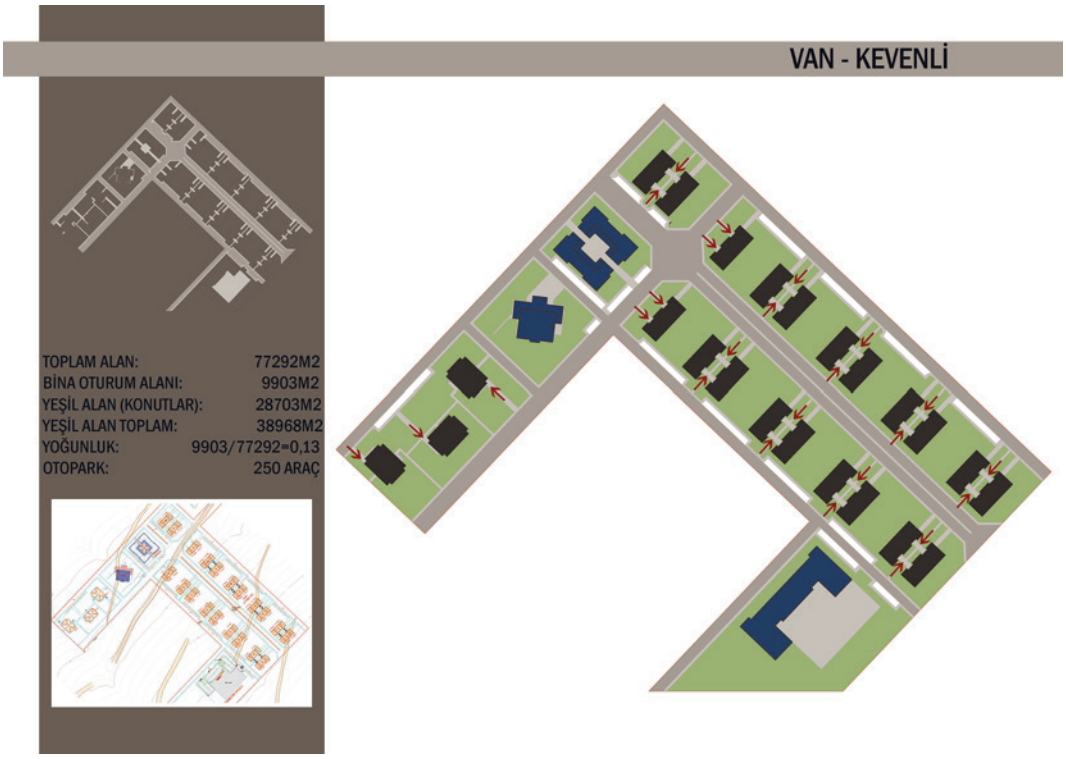


Figure 77 Project data and site plan

Figure B.78 Arial view showing the relationship between the project and surrounding urban fabric

PROJECT#40 YALOVAHOUSING PROJECT II

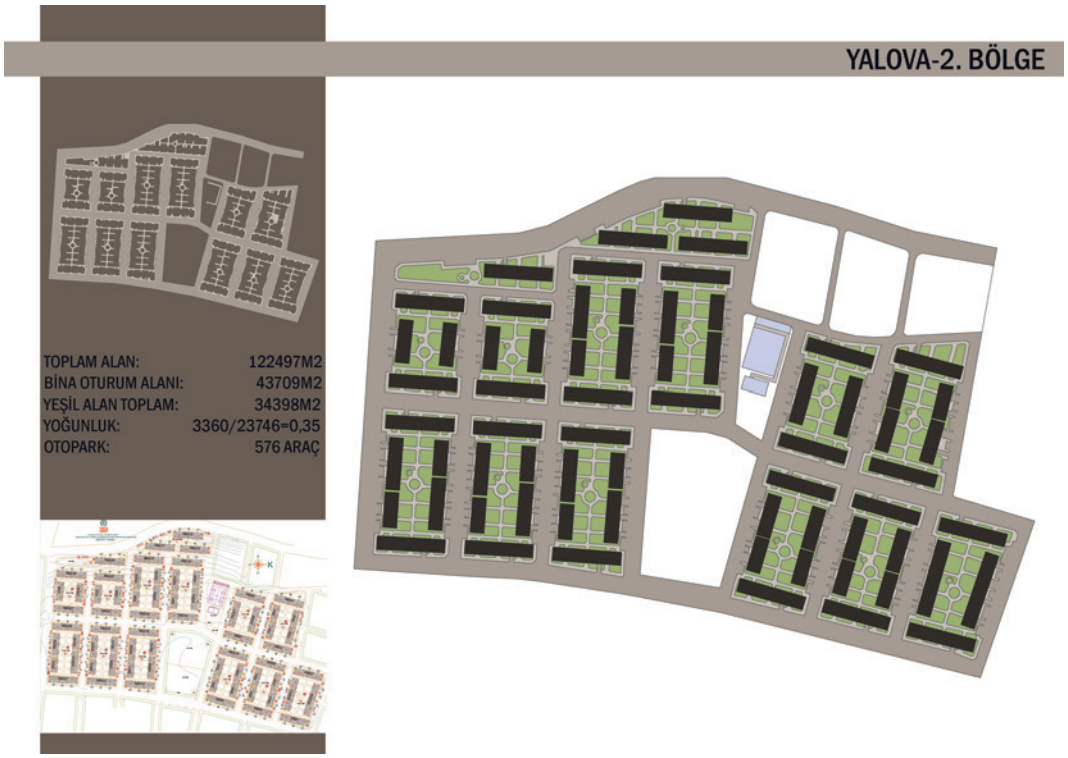


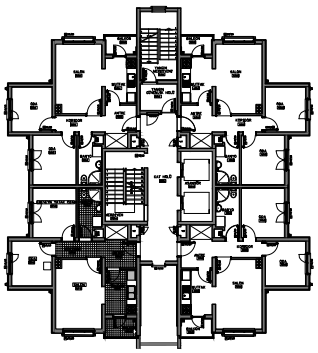
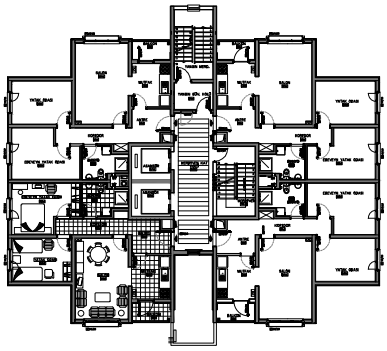
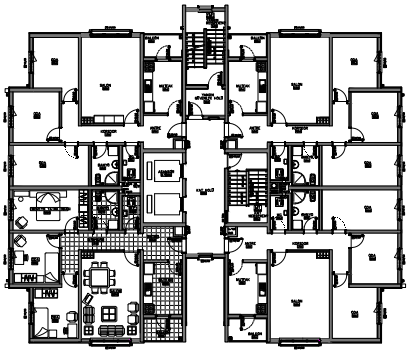
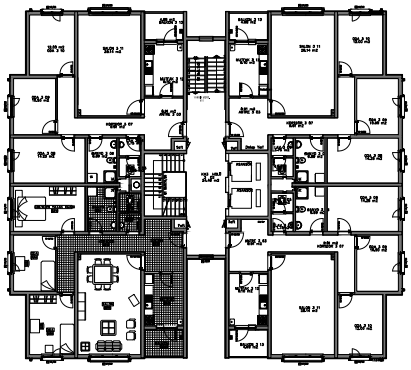
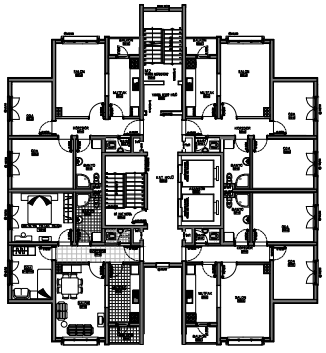
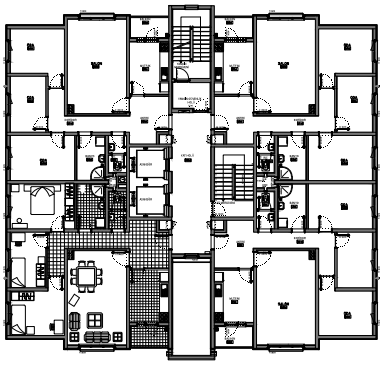
Figure B.79 Project data and site plan

Figure B.80 Arial view showing the relationship between the project and surrounding urban fabric

APPENDIX C

FLOOR PLANS OF THE TOKİ BLUEPRINTS (1/500)

Table C.1 Floor plans of the TOKİ blueprints (1/500)

B 	B1 
B2 	BK 
C 	C1 

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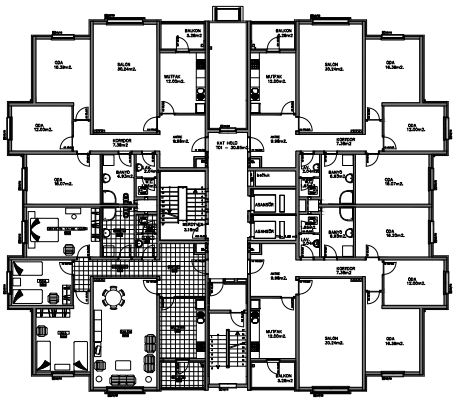
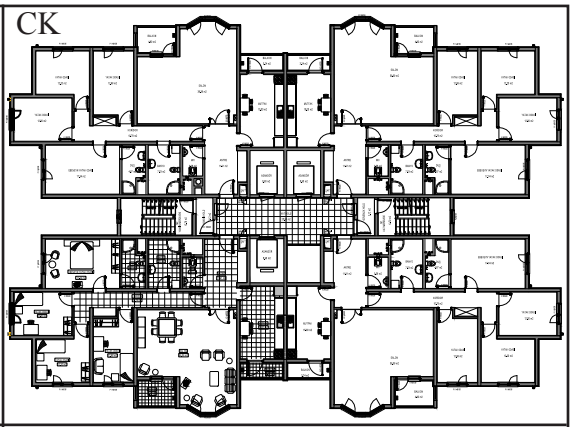
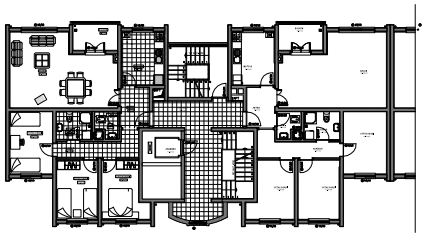
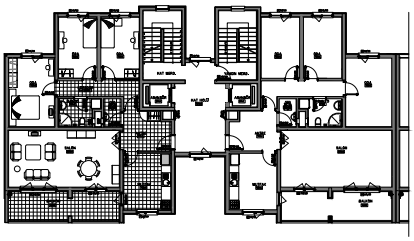
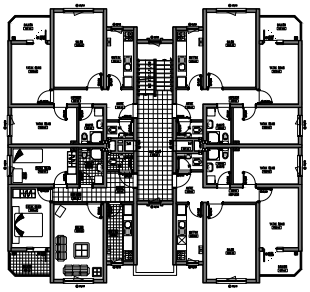
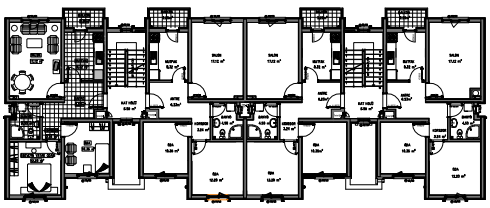
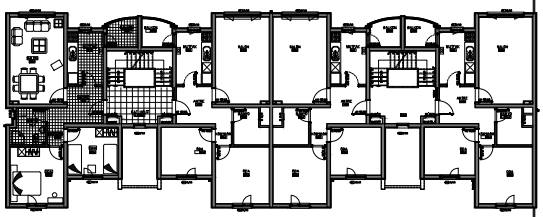
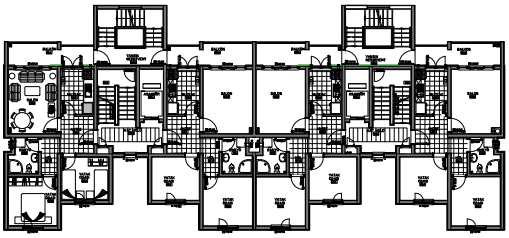
C2 	CK 
D 	DG 
E 	F 
F1 	FG 

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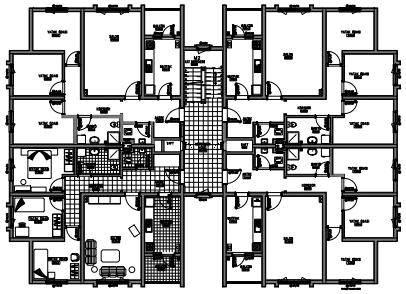
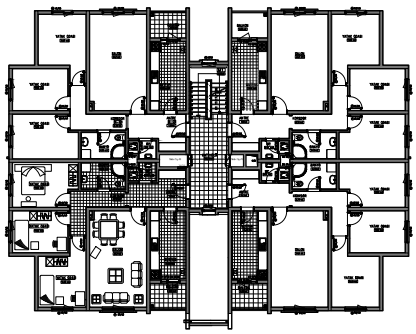
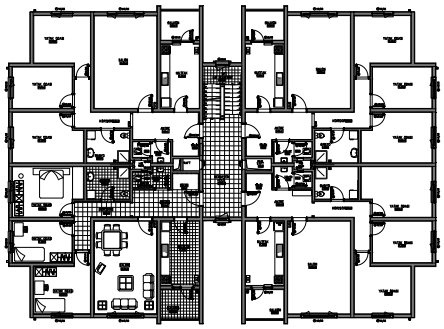
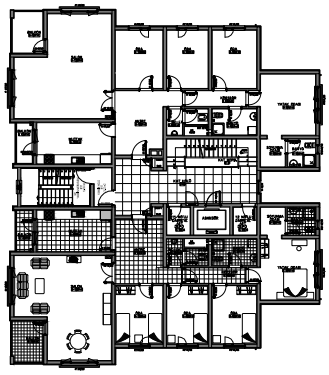
K1 	K2 
K6 	L5 
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