

**MASS-HOUSING CONSENSUSES AND THEIR
EFFECTS ON DESIGN ORGANIZATIONS IN
TERMS OF QUALITY**

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ABSTRACT

MASS-HOUSING CONSENSUSES AND THEIR EFFECTS ON DESIGN ORGANIZATIONS IN TERMS OF QUALITY

There is an increasing acceleration in the production of mass-housing projects currently in Turkey. Alongside this increase, there is conspicuous diversity, as well. In most of the recent mass-housing projects, there are many alternatives concerning with the locations in the city, income groups, and characteristics of environmental design. Settlements of those projects with multi-storey blocks contain facilities in outer spaces, equipments, and services which vary according to the conditions of parcels and competition as well as inhabitants' expectations. Despite this variety in environmental equipments, landscape elements, and services, mass-housing units mostly repeat each other impressively. Almost all of the mass-housing projects implemented recently for low or high income-groups, in the periphery of the city-center, go into *uniformity* in terms of the spatial organizations of units. This situation has been criticized frequently in the related housing-literature which defines it as a *quality* problem of architecture.

In the current study examining the situation of uniformity in mass-housing units, relationship between the unit and quality of architectural design is undertaken. In this context, how the inhabitants perceive the spatial organization of mass-housing projects, and whether those units meet the expectations are probed. Regarding this aim, user-based quality approaches and measurement method called the Kano model are utilized. Thus, the study covers the examination of the selected mass-housing units in terms of their models of spatial organization with the evaluations by their inhabitants. Under the light of the survey results, whether this uniformity refers a problem or a consensus is discussed.

ÖZET

TOPLU KONUT UZLAŞILARI VE KALİTE BAĞLAMINDA TASARIM ÖRGÜTLENMESİNE ETKİLERİ

Günümüz Türkiye’inde toplu konut üretiminde büyük bir artış yaşanmaktadır. Üretimdeki bu artışın yanı sıra çarpıcı bir çeşitlenme de söz konusudur. Son dönemde gerçekleştirilen toplu konut projelerinde gerek kent içi konumlanma, gerek hitap ettikleri kullanıcı grubu ve gerekse de çevre tasarım nitelikleri açısından geniş seçenekler sunulmaktadır. Ağırlıklı olarak çok katlı bloklardan oluşan toplu konut yerleşkeleri arsa durumu, rekabet koşulları ve kullanıcı beklentilerine bağlı olarak farklılaşan ve çeşitlenen dış mekân, donatı ve hizmet olanakları içermektedir. Mimari özelliklerde, çevresel donatılarda, peyzaj ve hizmet alanlarında sergilenen çeşitlenmeye karşın konut birimleri şaşırtıcı şekilde çoğunlukla birbirini tekrar eder niteliktedir. Alt ya da üst gelir gruplarına, kent merkezinde ya da çeperinde üretilen günümüz toplu konutlarının neredeyse tamamı, konut birimlerinin mekânsal organizasyonu açısından *tek tipleşmektedir*. Konut literatüründe sıkça eleştirilen bu durum, bir mimari *kalite* sorunu olarak tanımlanmaktadır.

Toplu konut birimlerindeki tek tipleşme durumunun incelendiği bu çalışmada, konut birimi ve mimari tasarım kalitesi arasındaki ilişki ele alınmıştır. Bu bağlamda, günümüzde üretilen toplu konutların mekânsal organizasyonlarının kullanıcı açısından nasıl algılandığı, beklentileri karşılayıp karşılamadığı irdelenmiştir. Bu amaca yönelik olarak, çalışmada, kullanıcı odaklı kalite yaklaşımları ve Kano model olarak adlandırılan ölçme yöntemi kullanılmıştır. Çalışma, seçilen konut birimlerinin mekânsal organizasyon modeli açısından ve kullanıcı üzerinden incelenmesini içermektedir. Elde edilen sonuçlar ışığı altında toplu konut mekânlarında beliren tek tipleşmenin bir sorun mu ya da bir uzlaşımı olduğu konusu tartışılmıştır.

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CHAPTER 1

INTRODUCTION

Housing is one of the most important issues of life and architecture. Housing as a title of study is undertaken in a comprehensive way currently as well as in different periods of history. Housing discussions in Turkey especially focus on the mass-housing as widely implemented production-typology, and mass-housing implementations are criticized by those discussions in that they caused the emergence of unqualified and monotonous environments and spaces. If the housing literature is examined in this respect, it is seen that the uniformity in architectural design is perceived as the main problem of mass-housing, and it is reduced into the *quality problem of architectural design* by the housing researchers and scholars. Therefore, in the current study, the so-called quality-problem of architectural design in the recent mass-housing projects is undertaken, and the phenomenon of uniformity in the spatial organizations of mass-housing units is mainly examined. For this purpose, quality definitions and measurement methods of the discipline of Total Quality Management (TQM) are utilized.

As is known, especially after the 1980s, there has been acceleration in the production of mass-housing units in Turkey, and mass-housing became the dominant model of housing production by substituting the housing built by the property developers. Housing production in this period was adequately extensive to cause the restructure of cities in socio-spatial respect. Mass-housing implementations addressing all social segments have been produced by the private large-scale investors as well as the public sector. This situation that may be perceived as segregation in urban space caused diversity in mass-housing environments, at the same time. Especially mass-housing projects produced after 2000 provide different services and facilities according to the living conditions and income levels of people that they address. Common spaces, services, and facilities in mass-housing settlements diversify regarding the income levels. For example, in mass-housing implementations for high incomes, open and closed car-parks, play grounds, social centers, shopping centers, sport areas, cinemas, swimming pools, health centers, and education units may take place. In ones for middle

and low incomes, on the other hand, there are only necessary services like open car-parks, play grounds, and health centers. Similarly, construction materials and technical equipments as well as the project and construction processes also diversify according to income groups.

In contrast to this diversity in common spaces and services provided in mass-housing settlements, conspicuous *uniformity* is observed in spatial organizations in most of the mass-housing units. In other words, almost all of the mass-housing units have almost the *same* spatial characteristics. Apart from the uniformity in units, housing-block organizations do not vary, either. That the spatial characteristics of mass-housing design are recognized by the whole community without regarding income groups is also criticized in a negative way, and even, described as the main problem of mass-housing projects in the housing literature of Turkey, as already stated. Hence, in one sense, it is generally undertaken with prejudices.

On the other side, it is known that, like the other social products, mass-housing also refers the field of consensus¹ formed by the aims and activities of different actors from various professions and disciplines. Thus, any trend that appears in this field is an inevitable result of the broad-based social agreements. Considering this situation, the uniformity in spatial organization and block design of mass-housing projects is formed by the actors of building production (like the inhabitants, architects, authorized persons of the central and local governments, entrepreneurs, and contractors; for a list of actors also see Tekeli 1996) rather than the initiatives of private persons and institutions.

In this context, it may be suggested that the uniformity in mass-housing units does not indicate a problem, but a social consensus. Nevertheless, it may not be claimed that social consensuses are unproblematic or cannot be intervened. Any problem determined in conventional housing-production can be intervened by the changes in regulations and in professional education or organizations, by the subventions or opportunities provided for the building industry, or by the orientation of entrepreneurs. What is important here is the determination of whether there is a quality problem about the spatial organizations of mass-housing projects. Presence of this kind of problem can be primarily determined by the inhabitants. Thus, the inhabitant is the actor who

¹ The word of *consensus* is defined in Oxford English Dictionary as “Agreement in opinion; the collective unanimous opinion of a number of persons” (“Consensus” 2012). In the current study, it is used regarding this definition. Therefore, it refers to the agreement in inhabitants’ opinions about the characteristics of spatial organization of their units. This agreement in opinions is also related with the perceptions/expectations/preferences of the inhabitants, in the framework of the study.

experiences the architectural object primarily, and therefore, who is familiar with its quality, again, primarily. For this reason, investigation of the phenomenon of qualitative uniformity in mass-housing units *via the inhabitants* comprises the most important alternative in comparison to investigating it via the other actors. Interpretation of design quality also necessitates the examination of its various effects on the inhabitants representing different segments or of that how it is interpreted by those inhabitants. This kind of examination can help figure out the spatial qualities as well as question the current consensus between the inhabitants and intervene in case they need. Furthermore, this examination may also pave the way for inhabitant-participation in design process, comprise a guide for architects, and prevent inhabitant-dissatisfaction with the end-product.

Reasons of the consensuses, architectural-design qualities of the product formed by these consensuses, and sameness or similarities of these qualities necessitate questioning the described problem of uniformity via the concept of quality. Evaluation of quality, on the other hand, is systematized generally in industrial and serial productions. It is possible to adapt the approaches of TQM into the quality evaluation of mass-housing which refers the typology most proper to be produced serially, in architecture. In this respect, the method proposed by Noriaki Kano in 1984 for quality measurements in industrial production can also be adapted into the field of housing, since it defines quality by user satisfaction (based on users' perceptions, preferences, and expectations) as in the user-based philosophy. In the discipline of architecture, the Kano model is especially utilized in the field of building performance, and in these studies, quality is interpreted by the qualities of building components, and user satisfaction is measured by technical performance of the buildings or material qualities (for an example, see Vakili-Ardebili and Boussabaine 2005). Measurements realized in the current study are also designed regarding user satisfaction/preferences; however, quality is questioned in terms of spatial organizations and relationships.

1.1. Framework of the Study

Framework of the study is comprised the problem definition, objectives of the research, research questions, scope and focus of the study, methodological procedures, and importance of the study respectively. In this regard, the problem definition refers

the questioning of whether there is a quality problem in architectural design of the recent mass-housing projects. Settlements of the mass-produced housing projects provide various services and facilities according to income groups or life-styles of people that they address. Building materials, technical equipments, project and construction processes also vary regarding income groups. In contrast to these varieties, spatial organizations of housing units and blocks are mostly *uniformed*, and repeat each other without regarding even geographical differences. For this reason, mass-housing projects in Turkey are criticized in that they caused the emergence of unqualified and monotonous environments and spaces. If the housing literature is examined in this respect, it is seen that the uniformity in architectural design is perceived as the main problem of mass-housing, and it refers a *quality problem of architectural design* for the housing researchers and scholars. However, whether this situation refers a problem for the users or inhabitants is questionable, because the uniformity is defined as a problem only by the scholars of the housing literature. Inhabitants' satisfaction or dissatisfaction with the uniformed design of their units should be examined to figure out whether they are pleased or un-pleased to live in those units. Therefore, this research undertakes the quality perceptions of inhabitants about the architectural design of their housing (in terms of spatial organization of the units), and tries to uncover whether there is a quality problem for the inhabitants.

However, it is known that any conventional setting is a sign of social consensus which is formed by various actors. Therefore, mass-housing can also be considered as the product of social consensus formed by the actors of housing sector. Nevertheless, though the aspects of all actors should be taken into consideration in a research on the architectural-design quality of mass-housing projects, this study only focuses on the perspectives of inhabitants as the primary actors experiencing the housing as well as the uniformity. In this framework, the objective is examining the quality perceptions of inhabitants about their uniformed unit-design. For this purpose, firstly the uniformity is documented and examined comparatively by means of the spatial alignments of the mass-housing cases selected for this study. Secondly, inhabitants' perceptions about the uniformed design are analyzed and evaluated via the results obtained by the survey. By this way, at the end of the study, relationship between the uniformity in architectural design and inhabitants' demands can also be figured out together with the characteristics and probable reasons and effects of that uniformity.

In order to facilitate the comprehension about the relationships among the uniformity, inhabitants' perceptions/expectations, architectural design and housing quality, the current study sets some research questions. They can be listed as follows:

1. Does the uniformed design in mass-housing units point out a kind of consensus? If it does, then what kind of consensus is referred by this uniformity?
2. What are the effects of this consensus in the contexts of quality and architectural design quality?
3. What do the mass-housing quality and architectural-design quality for the inhabitants correspond to? And why do the inhabitants of the all income-groups pay different amounts for the same design?
4. Does the quality of architectural design refer a problem of mass-housing in Turkey?

Answers to these questions are undertaken in the Conclusion Chapter under the light of the survey findings with further discussions of the featured issues.

Furthermore, the study has some limitations to establish a more focused research. Therefore, the situation of uniformity and its effects on architectural-design quality of mass-housing projects are investigated,

- by *inhabitants'* perceptions,
- in terms of spatial alignments and relationships,
- by mainly considering the *functional* respects of spatial organization (for the list of other possible respects or variables in the evaluation of architectural design, see Appendix A),
- regarding the *user-based* quality approaches of TQM in theoretical framework—and thus, regarding “fitness for use” as stated by Joseph Moses Juran (1904-2008) (1988, 2) as the motto of user-based quality approaches,
- by utilizing the model for quality measurement offered by Noriaki Kano in 1984, in methodological framework.

Within this scope, the study focuses on,

- the mass-housing projects produced in the periphery of Izmir city-center after 1984 (that is, after the enactment of the Mass-Housing Law),

- Middle-income group: Mimkent 1 Mass-Housing in Esentepe-Karabağlar (1991-1992),
Ege-Koop Körfez Houses in Karşıyaka (2004-2008),
- Low-income group: Narbel Mass-Housing in Narlıdere (1997-1999),
2nd stage of TOKI Mass-Housing in Tınaztepe-Buca (2008-2010).

At this point, it is also important to mention the sample size calculations of the surveys for each case. Number of housing units was considered rather than the total population, in these calculations; since it was decided to conduct one questionnaire for each unit. By this way, the size became more controllable, as well. Besides, the confidence level corresponds to 95%, and the confidence interval is determined as 15. In this case, questionnaires needing to be applied in each case approximately correspond to 40 (for the exact numbers see Table 5.20, in Chapter 5). Though the interval may be found large for this kind of studies, limitations about the time and supply conditions cause the application of it; otherwise, the size of the survey would reach to an impractical scale. Furthermore, the housing units in which the survey conducted were selected randomly to increase the reliability as far as possible.

In methodological respect, on the other hand, because the research focuses on the quality of architectural design of the mass-housing projects, quality definitions and methods are borrowed from the discipline of TQM. As is known, measurement methods of quality in TQM are generally designed for the products which are mass-produced in industrial scale. Mass-housing, in this respect, corresponds to the architectural counterpart of the mass-produced industrial products, and thus, this typology constitutes the most convenient architectural-product of which quality can be measured by TQM methods. Besides, because there is not any comprehensive definition of quality in terms of architectural design in the housing literature of Turkey, quality definitions and approaches in TQM has generally served as a guide for the researchers of architecture.

Therefore, in the current research which is designed as a case study, the user-based quality approaches of TQM are utilized, in theoretical framework. Specifically, it refers to the motto by Juran, that is, “fitness for use” (1988, 2), and it utilizes the quality-measurement and categorization method offered by Kano, as already mentioned (see Chapter 4 for detailed discussions and explanations on quality approaches of TQM and the Kano model). Similarly, Kano model has been also used in industrial scale for

the mass-produced products. For this reason, the quality characteristics that this model considers generally depend on the ones which are measurable, repeat in all products, and even rigid features. Therefore, in the context of the current study, quality characteristics of a mass-housing unit in terms of its architectural design (and spatial organization, particularly) were tried to be limited with the ones which repeat in almost all mass-produced units, thus, which is more measurable by Kano's method.

On the other hand, the Kano model provides us with the flexibility of evaluation and interpretation in case of need. The study utilizes this advantage of the model, and even *suggests* some additional categories to extend this flexibility. Hence, by this way, it is also considered that the adaptability of method into the architectural cases is enhanced. Furthermore, because the Kano model also provides a set of tools comprising quality definition, questionnaire design, evaluation technique and interpretation method, this model is preferred in the current study to facilitate the phases of application and discussion. Moreover, by Kano's model, quality is not limited with the measurement of user satisfaction, but at the same time, it is *categorized*; and the user perceptions/preferences about the quality of unit-design are explored. Since the very aim of the Kano model is categorizing the user preferences about the product in terms of the perceived quality; the examinations can progress further by the hierarchical preference-list of the users about the questioned-characteristics.

Consequently, the user-based approaches and the Kano model of TQM are applied in the research to evaluate the characteristics of the uniformed spatial-design of the selected mass-housing units. In this respect, the study includes two steps of methodological procedures:

1. Documentation: it comprises the examination of six selected-cases in terms of the spatial alignments of the units (by the plans and abstracted diagrams),
2. Analysis: it covers the analyses, evaluation and interpretation of the results coming from the Kano questionnaire as well as the open-ended questions of the survey (for the original questionnaire applied in the main survey, see Appendix B; for its English translation, see Appendix C).

Considering this framework, furthermore, importance of the study lies in the following respects:

- It re-considers one of the major issues of housing literature, which is accepted as a problem by the housing researchers and scholars: it is the situation of uniformity in architectural design. Thus, the study tries to

explore whether this uniformity is a problem *according to* the inhabitants who are the ones primarily experiencing the spatial design of mass-housing units.

- It offers a new reading axis for the quality appraisals. Housing quality has been undertaken generally within two axes: one of them discusses the quality regarding the socio-economic dynamics with their effects on architectural context. These studies mainly undertake the architectural design characteristics of the mass-housing projects, and criticize uniformity in this respect. The second axis measures the quality by means of the costs, performance of the materials/buildings, and user-satisfaction in the construction and using phases. However, they do not consider design characteristics in their measurements. While the first axis misses the importance of inhabitant's perception, the second one misses the importance of design characteristics. Therefore, to compensate the missing parts in these two axes, the current study offers a new one based on the quality-measurement of architectural design characteristics of spatial organizations via inhabitants' perceptions. By this way, the study also offers a revision for the current literature of housing quality.
- It applies the Kano model firstly in the evaluation of architectural design. Therefore, critiques of the model are also undertaken by considering its adaptability or integration degree to architecture. With this purpose, furthermore, a new reading manner—based on new sub-categories—for evaluation of the Kano survey is also suggested to enhance the integration of the Kano model to the architectural cases, which can be considered as a contribution to the Kano literature.

In this respect, consequently, it is believed that the study contributes both the literature of mass-housing researches in Turkey as well as the researches related with quality approaches and measurement applications in TQM.

1.2. Structure of the Dissertation

The study undertakes the uniformity situation in architectural-design of the selected mass-housing cases produced after 1984 in Izmir. It questions the

characteristics of this situation via the inhabitants considering the concept of architectural-design quality which, in this research, covers mainly functional evaluations of the spatial alignments and relationships. While doing these examinations, the study mainly considers the *trans*-formative and *uni*-formative vectors in the production of mass-housing. For this reason, the retrospective and recent readings of mass-housing production in Turkey are primarily undertaken for especially national and local scales in order to infer the prospective readings.

In this framework, the first chapter below (Chapter 2), entitled “Retrospective Reading of Mass-Housing Projects in Turkey: A Story of *Transformation*,” addresses one of the vectors of past-day stories of mass-housing in Turkey and identifies it as a story of transformation in which the national and international dynamics can be followed by the breaking points and changes in the production and supply mechanisms as well as in the typologies of mass-housing. Since the approach of periodization paves the way for this kind of historical readings, the following periods are offered by also considering the periodization proposals of the previous studies in this field:

- 1.) End of the nineteenth century to 1923 (Proclamation of the Republic),
- 2.) 1923-1945 (Proclamation of the Republic - End of the World War II),
- 3.) 1945-1965 (End of the World War II - Enactment of the Law of Property Ownership),
- 4.) 1965-1984 (Enactments of the Law of Property Ownership - The Mass-Housing Law),
- 5.) 1984-2012 (Enactment of the Mass-Housing Law – Present Day).

Transformation story of the mass-housing is read with regard to the reflections of these dynamics on both national and local scales, that is, the same periodization manner is considered both for Turkey in general, and for Izmir in specific regards.

Similar with the logic of Chapter 2, Chapter 3, entitled “Reading of Recent Mass-Housing Projects in Turkey: A Story of *Uniformity*,” focuses on the other vector in present-day stories of mass-housing in Turkey and defines it as a story of uniformity in which standardization or similarities as well as the minor differences can be followed especially by the characteristics of architectural design such as the spatial alignments, and spatial relations of the mass-housing units. Therefore, this chapter primarily undertakes the examination of architectural-design characteristics of the recent mass-housing projects implemented in Istanbul and Ankara, with regard to three income groups (high, middle, and low), and demonstrates the uniformity in these examples.

Then, it considers the views about the situation of uniformity in the housing literature of Turkey.

At this point, Chapter 3 continues with the criticism emerging by the general agreement between the scholars and researchers of mass-housing: according to this criticism, uniformity in architectural-design characteristics of mass-housing results in a quality problem based on the issue of standardization. In this respect, two main axes emerge in the related literature: one of them *discusses* the quality issue and tries to explain it regarding the dynamics in national and international scales, but misses the individual point of view, that is, the views of users about the quality of space. The other axis focuses on the *measurements* of quality in terms of the technically-measurable features like building materials, building performance, or inputs of the production or construction processes, and realizes these measurements regarding the views of users as well as the other actors. However, these studies miss the points concerning architectural design, forms of spatial organization, and their effects on housing quality in general. Hence, a study considering the quality perception of users about architectural design of their units arises as a necessity, which this research tries to compensate.

Chapter 4, “Methodology under the Light of Quality Approaches,” undertakes the issue of quality with their counterparts in daily life and academic researches. Thus, it primarily considers the quality definitions, philosophies or approaches and measurement methods in TQM, focuses on the user-based approaches for the theoretical base, and uses Kano model with its specific questionnaire design and evaluation manner in methodological respect. The chapter also considers the relationship between the quality and architectural design, and examines Kano’s quality approach with his model-proposal by pointing out the flexibility provided by this method, which can also be relevant for the quality measurements of spatial-design characteristics. Critiques on the Kano model in the related literature are regarded, as well; and agreeing with some of these critiques, a new reading manner is suggested for a refined analysis, which covers some additions to the part of evaluation. By these additions, integration of the model into the study could be achieved more properly. Furthermore, additional questioning to enrich the interpretations about the results was also designed in the questionnaire, which is composed of the open-ended questions allowing the inhabitants to express the reasons of their judgments.

Chapter 5, concerning “A Study for Evaluating the Architectural-Design Quality,” proceeds to examine six mass-housing projects selected for the main study,

after examining the results of two cases selected for the pilot study, and after revising the questionnaire design according to the results of this study. Cases in the main study as well as in the pilot study are grouped regarding three income groups (high, middle, and low) in order to increase possible comparison and interpretations, and are examined within the textual structures parallel to each other which covers two main parts: 1.) project descriptions with design analyses, and 2.) survey results. In the former part, after giving introductory information about the project, spatial alignment(s) and relations are considered regarding the plan drawing(s) and abstracted plan diagram(s). Façade organizations of the blocks are also examined briefly, and repeating features in each project are figured out. In the latter part, results of the Kano survey are read regarding four sub-sections covering general information questions, conventional Kano questions, Kano-support questions, and contextual questions. Interpretive explanations about the uniformity figured out in both design-analyses and survey-results are undertaken for each case in this chapter. However, comparative evaluations are reserved for the next chapter.

Therefore, Chapter 6, “Comparison and Evaluation of the Results,” reflects on the uniformity situation under the light of the survey results and the reasons at the background with evaluative interpretations based on the comparison between the cases and income groups. The chapter weaves together the architectural-design characteristics and survey results, and demonstrates the uniformity in the *design characteristics* of units and blocks of the selected mass-housing projects as well as in the *perceptions* of their inhabitants. While the uniformity in architectural-design characteristics has already mentioned in the housing literature as a problem, the finding of that there is also uniformity in the perceptions of inhabitants can be considered as a new outcome, which, in turn, leads to the result of *uniformity in architectural-design quality*. Both of the uniformity-situation in mass-housing design and user-perceptions feed each other, actually. However, the important point is that this uniformity may not refer a problem of design, but a *consensus* demonstrating the demand-agreements between the inhabitants. The chapter concludes with the remarks drawn from these examinations.

Chapter 7, “Conclusion,” ends within two parts or perspectives: the first of them corresponds to the answers to the research questions based on the relationships between the uniformity in architectural design, consensus of inhabitants, housing quality, and architectural-design quality as set in the beginning of this study. The second part, furthermore, is related with three featured-issues to be discussed under the light of these

answers, which refers the following points: 1.) the *difference* between the assertions and arguments in the housing literature of Turkey and the current study, 2.) the *parallelism* between these assertions and arguments, and 3.) the necessity and importance of the *further studies*: the first issue covers different *perceptions* of uniformity between the literature and the current study. The second issue occurs in the *reasons* of the uniformity with special emphasis on the *process of modernity*. The third issue, on the other hand, is undertaken regarding two perspectives covering the *revisions* in the literature and in the role of the architect. Therefore, structure of this chapter is designed regarding two concluding parts interrelated with each other, because, as can be perceived above, the answers to the research questions in the former part lead to the discussions and remarks in the latter part.

As a conclusion, the thesis aims at revealing that there is not any *problem* about the uniformity in architectural-design of the selected mass-housing projects in terms of quality, but a *consensus* between their inhabitants, which results in uniformity, eventually.

CHAPTER 2

RETROSPECTIVE READING OF MASS-HOUSING PROJECTS IN TURKEY: A STORY OF *TRANSFORMATION*

2.1. Definitions of Mass-Housing

Mass-housing is a multi-dimensional concept of which use and meaning differ according to various purposes and perspectives. It may be defined by both physical and non-physical phenomena within the same structure, which makes it difficult to be clarified with certain and constant words: it may refer an architectural entity, a special form of habitation and dwelling, a reserved and planned building zone in the city, and further, it may also refer a supply form, an organizing act in social and cultural respects, a social and collective production manner as well as a kind of subsidy system provided by the public or private enterprises. This may be the reason of variety in the terminology, since the concept is also expressed by the terms of *social housing*, *public housing*, and *group housing* apart from the *mass-housing*. Although the terms correspond to the same or similar definitions, they cover a wide range of approaches from architecture- and urban-related ones to the ones related with the social sciences, commerce and economics. Among them, architectural, urban and socio-cultural perspectives are the most featured ones. For example, in academic edition of Encyclopedia Britannica, both terms of *mass-housing* and *group housing* are used under the title of *domestic architecture*, and the description focuses on its meaning as an architectural entity and dwelling form, and on its role as a socio-cultural organizer:

[The other] type of domestic architecture accommodates the group rather than the unit and is therefore public as well as private. It is familiar through the widespread development of mass housing in the modern world, in which individuals or families find living space either in multiple dwellings or in single units produced in quantity. Group housing is produced by many kinds of cultures: by communal states to equalize living standards, by tyrants to assure a docile labour force, and by feudal or caste systems to bring together members of a class (“Domestic architecture /Group Housing” 2011).

On the other hand, the term of *mass-housing* is used often in housing studies in the discipline of architecture and the related ones, though it is not preferred frequently in colloquial language. The term refers the meaning of *production* because the word of *mass* corresponds to the *serial* production-manner in industry: *mass-housing* is the reflection of the industrial *mass production* into the field of architecture. In this respect, because the first reflection of this system in the discipline of architecture comprised the *housing*, the terraced (row) houses produced in side-by-side manner in England, in the nineteenth century, constituted the primary examples.

Similar to the association of production in the term of mass-housing, especially in Turkey, definitions represent the mass-housing as a social product, and supply and subsidy mechanism, rather than an architectural entity. Thus the definitions in Turkish dictionaries, encyclopedias and related codes explain the *mass-housing* with a special emphasis on its *production process* which can be comprised by different supply forms, and by the concepts and actions related with different phases in this process. For instance, in the dictionary of Turkish Language Association, with an articulation on the subsidy mechanism, the term is defined as a “Building cluster constructed in a particular pre-planned residential area, with the credit supports and contributions subsidized by the state for citizens” (“Mass Housing” 2010).¹ Similarly, in the Glossary of Urbanology Terms, its character as a supply form is highlighted, as well: “Large housing and allocation enterprise which is realized by public or private foundations like housing cooperatives, housing production partnerships or housing banks, and provides the sheltering requirements of a large number of families” (Keleş 1998, 120).²

On the other hand, *social* character of mass-housing is mentioned in the Encyclopedic Dictionary of Architecture with a slight association to its architectural and urban dimension: “the term [of mass-housing] is used to explain a large number of housing units produced with the social and physical substructure” (Hasol 2008, 277).³

¹ The original phrase in Turkish is as follows: “Önceden planlanmış belli bir yerleşim bölgesinde, vatandaşa devletin açtığı kredi yardımları ve katkılarıyla oluşturulan yapılar bütünü.” Original versions of the quotations will be henceforward indicated only in quotation marks in the footnote sections.

² “Konut birleşkesi, konut yapım ortaklığı ya da konut bankaları gibi kamusal ya da özel kuruluşlarca gerçekleştirilen ve çok sayıda ailenin barınma gereksinmesini karşılayan büyük çaptaki konutlandırma ve yerleştirim girişimi.”

³ “Sosyal ve fiziksel altyapısıyla birlikte gerçekleştirilen çok sayıda konut birimini anlatmakta kullanılan terim.”

In a similar perspective, it is defined in Turkish edition of Britannica as follows: “the settlement cluster comprising the housing which is produced on a particular land within a plan comprising its environmental, physical and social substructures” (“Mass Housing” 1994).⁴ Furthermore, the term of *social housing* is also used in Turkish, but within a different perspective in comparison to the term of *mass-housing*: the *mass-housing* emerged as a *commercial* concept in the housing market, while the *social housing* corresponds to the *low-cost* housing production by *subsidies* of the state, local governments or social institutions (Tapan 1996, 366, 369). There are some other sharp aspects about this difference: for instance, in one of them, it is stated that a unit of a social housing cannot be over 100 square meters in surface area (Koç 2001, 272). Nevertheless, it is compromised that the *social housing* is a sort of housing which is affordable by low-income families: “[social housing is a] low-cost housing which is standardized regarding the least size and quality to meet the housing needs of the poor or low income families; hygienic, public housing” (Hasol 2008, 277).⁵ The concept of *low-cost housing*, on the other hand, was introduced to the architectural vocabulary of Turkey after the War of Independence (1919-1922) by the immigrants from the Balkans (Sey 1984, 158), which may also indicate that housing studies in Turkey has been acquainted to differentiation between the terms since the 1930s when the primary low-cost housing began to be emerged. Though in the course of time, these two terms have become associated with each other, the difference between their meanings still helps us comprehend different aspects of housing definitions.

Regarding the elusive character of the descriptions and different terminologies, it may be claimed that there is not any clear compromise in the definition of *mass-housing*. As it is apparently seen in the definitions, use of the term in Turkish refers a production model and process rather than an architectural character. This situation is also the same for the definitions in legal regulations. Though the mass-housing is not defined in the current Mass-Housing Law, we can find a definition in zoning legislation before the enactment. This definition constitutes a proper example in this respect, because it points out the phases of site production and acquisition addressing the policy makers and entrepreneurs:

⁴ “Belli bir arazi parçası üstünde, çevresiyle, fiziksel ve toplumsal altyapısıyla birlikte planlanarak üretilen konutlardan oluşan yerleşim bütünü.”

⁵ “Yoksul veya dar gelirli ailelerin barınma gereksinmelerini karşılayabilecek biçimde standartlaştırılmış en az boyut ve nitelikte, sağlığa elverişli, ucuz konut, *halk konutu*.”

[Mass-housing] refers at least 200 dwellings in the lands of which development plan has been approved and ready for construction before the date of law enactment, and between 750 and 1000 dwellings in the new-produced lands with at least 15 hectares in surface area, and their common-use facilities and areas with the entire workplaces (Law No. 2487 dated 8.7.1981).⁶

Association of *production* inherent in this term also echoes in the literature of built environment of Turkey. For example, Ruşen Keleş denotes that mass-housing “refers the cluster of dwellings and related social facilities that meet the needs of people who settled in an area adequate in size to compose a unit of a neighborhood according to certain measures, or a part of such unit” (Keleş 1967).⁷ Furthermore, highlighting the importance of entrepreneurship for the process of mass-housing production, he continues as follows: “[mass-housing refers] the large enterprises that can provide some technical, social and economical benefits when they are built not as individual buildings but as large housing estates” (Keleş and Yavuz 1978, 108).⁸ According to İlhan Tekeli, during the pre-industrialization period, the dominant housing typology was individual houses, while it was substituted by the mass-housing typology in industrialized societies. In this regard, emphasizing the multi-dimensional character of the term of mass-housing, he defines it as follows:

Mass-housing refers the variety of meanings ranging from the housing built in a large number to the city-parts including social facilities, offices with a housing diversity in unity. But the common characteristic of all of them is that they are planned to mass-produce a large number of dwellings (Tekeli et al. 1976, 281).⁹

Regarding these definitions, finally, it can be claimed that the mass-housing is an object of industrial production. Furthermore, in Turkey, production process of mass-housing has many layers and actions taken by different actors, thus, the use of the term diversifies according to the purpose of the actor, though this is true for the current mass-

⁶ “Kanunun yürürlüğe girdiği tarihten önce imar planı tasdik edilmiş ve inşaaata hazır hale getirilmiş yerlerde en az 200, yeni açılacak ve yüzölçümü en az 15 hektar olan yerleşme alanlarında inşa edilecek 750 ile 1000 konut ve bunların ortak kullanma tesis ve alanları ile işyerlerinin bütünü[dür].”

⁷ “[Toplu konut] belli ölçülere göre bir komşuluk birimi ya da böyle bir birimin bir kesimini meydana getirebilecek büyüklükte bir alan üzerinde yerleşen insanların ihtiyaçlarını karşılayan ikametgâh topluluklarını ve ilgili sosyal tesisleri [ifade eder].”

⁸ “[Toplu konut] tek tek yapılar olarak değil, fakat büyük konut siteleri halinde yapıldıkları zaman teknik, toplumsal ve ekonomik kimi yararlar sağlayabilen büyük girişimlere [karşılık gelmektedir].”

⁹ “Toplu konutlar, topluca çok sayıda yapılan konutlardan, sosyal tesisleri, işyeri ve konut çeşitliliği ile bir bütünlük gösteren yeni şehir parçalarına kadar değişen anlamlar taşıyorlar. Ama hepsinin ortak özelliği, çok sayıda konutu topluca üretmeyi planlamış olmalarıdır.”

housing perception. In historical perspective, on the other hand, the term underwent obvious changes according to the dynamics of housing sector. As Tekeli asserts (1979), housing sector has always had a *context-based* character which means that it was affected from changing social, cultural and economic conditions of the country. Therefore, it was useful to look at the historical trajectory of these changes in order to comprehend the housing transformations that also determined the characteristics of mass-housing in the present day.

2.2. Introduction to the Transformation Story

The mass-housing phenomenon emerged in the middle of the nineteenth century as a result of the reflection of industrialization movement on the practice of architecture. It was primarily applied in England, and U.S.A., and then, it became widespread in the other European countries such as Belgium, Germany, and France to compensate the housing deficit aroused after the World War I (1914-1918) and World War II (1939-1945) (Rowe 1993). This mass-produced housing has varied according to the typological and morphological characters as well as the supply forms and ownership statuses. For example, while the terraced (row) houses, back to back housing, villas, single and twin houses, and apartment blocks designate the architectural typologies of mass-housing; building cooperatives and lodgings refer the supply and organization forms; and gated communities and garden-cities point out the features of the settlement. This wide variety in mass-housing formations provides them an omnipresent character, which provides the inhabitants affordability and accessibility: they can meet the requirements of all social, cultural and economic classes in *different* locations within *parallel* time zones.

Diversity and accessibility of mass-housing for everyone, therefore, caused parallel and synchronic effects in both international and national scales. Thus, the milieu of Ottoman architecture was also aware of the developments occurring in the field of mass-housing, and this may have been the reason of that the international examples, especially at the beginning of the twentieth century, bared similarities with the projects in the Empire (Figure 2.1, also see Figures 2.2.d, 2.3, 2.6, and 2.9). In this context, the reflections of European housing and mass-housing implementations on the pre-Republican period of Turkey can be observed especially in the respects of *typology*

(terraced/row houses, apartment blocks, villas, etc.) and *supply form* (building cooperatives, partnerships of the state and local governments, etc.) beside of the architectural styles (Modernism, Bauhaus, De Stijl, Cubism, Postmodernism, etc.).



Figure 2.1. Housing typologies in Europe at the beginning of the twentieth century: **a.** Apartments in Paris; **b.** Luttichen Strasse, Aachen, Belgium; **c.** Frankenberger Viertel, Aachen (Sources: **a.** Sey 1999, 286; **b., c.** Sey 1999, 285)

Furthermore, in Turkey, these reflections were not only seen in *national* scale, but also echoed in *local* scales by the spread of changing urban-dynamics. Therefore, it is also remarkable that these urban dynamics affecting the mass-housing evolution were generally the outcomes of some *turning points* in the history of the post-Republican period: at the very beginning of the story, the first turning point is certainly the proclamation of the Republic in 1923, since the end of the nineteenth century. The second one can be associated to the end of the World War II, that is, to 1945, when the deficit in the quantity of housing was the most common and dominant problem. The third turning point can be attributed to the Law of Property Ownership enacted in 1965, which also refers a housing boom especially by the effects of accelerating internal migration to the greater cities. And the fourth point is certainly the enactment of the Mass-Housing Law in 1984, which points out a more sharp division in the story of mass-housing in terms of the extensive transformation observed in both typology and supply form. Since 1984, the mass-housing phenomenon has continued to transform,

however, the dominant mass-housing typology and supply form of the 1980s did not change in major regard. Hence, it can be claimed that there has been observed *continuity* in the mass-housing character since 1984 until the present day.

On the other hand, these turning points do not designate introverted and impermeable periodic-templates; rather, there are continuing characteristics between them by means of both typology and supply form. Therefore, although the following examination undertakes the mass-housing story by the *periodization* approach, it actually aims at utilizing the legibility provided by the comparative logic of periodization; since the legibility based on comparison helps us comprehend such complex phenomena like the mass-housing and its evolution. Thus, the following part firstly divides the story into two parts regarding the transformations seen in *national* scale and *local* scale (Izmir). Then the periodization covering the *periods* of the end of the nineteenth century-1923, 1923-1945, 1945-1965, 1965-1984, and 1984-2012 are considered as the permeable and legible sub-stories of the evolution of mass-housing. Finally, the third criterion of the following examination is to undertake this evolution by means of the *supply forms* and *typologies*, because in the case of Turkey, mass-housing production models or supply forms have significant effects in the categorization of the mass-housing typologies. Besides, this kind of a reading-template (based on the typology and supply form) makes visible the parallelism and differences between the periods, and thus, also provides a comparative evaluation. The leading or typical samples of the dominant typology and supply form are also mentioned and—if possible—illustrated for each period.

2.2.1. Transformation in National Scale

2.2.1.1. End of the Nineteenth Century to 1923 (Proclamation of the Republic)

The leading examples of the Empire, in this period, were generally built in Istanbul (Figure 2.2). These mass-housing projects called *lodgings* were built especially for the officials of the palace, and thus, the supply was mainly provided by the hand of the *state*. In terms of the dominant housing-typology, on the other hand, these lodgings were generally designed as the mass-produced *terraced houses* on rows. Ground floor

of these houses was reserved for living, and the upper floor for sleeping, in general. They comprised residential units in large amounts. On the other hand, *apartment-block* typology can also be considered as the second main typology of the mass-housing prototypes of this period. They were also built by the hand of the *state*, and again for the officials as well as the disaster victims.

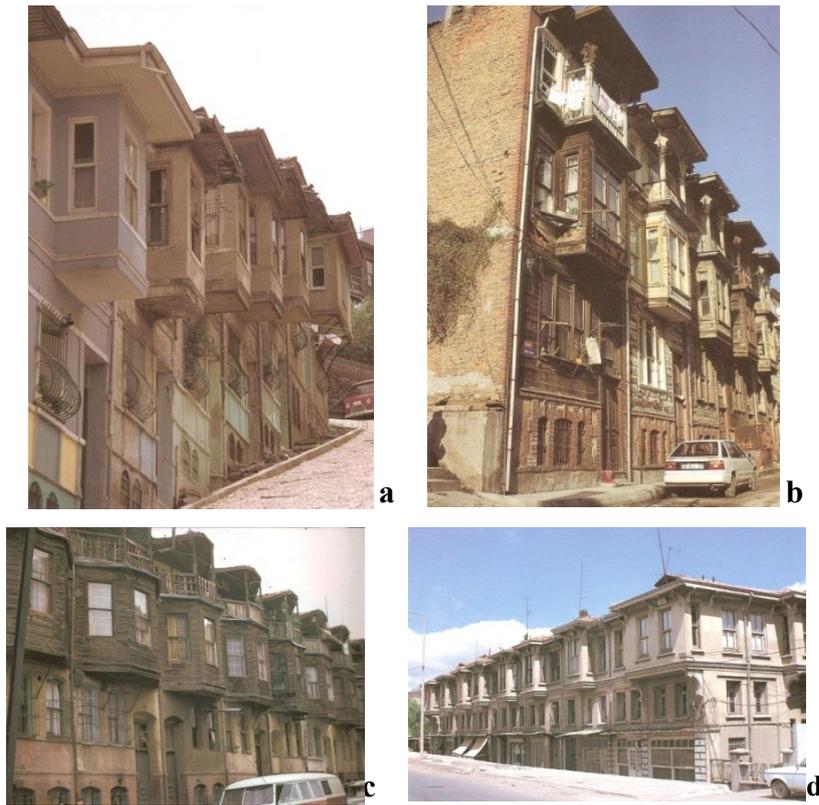


Figure 2.2. Views from some examples of the terraced houses in Istanbul: **a.** Fener; **b.** Arnavutköy; **c.** Onsekiz Akaretler for the Jewish community, Ortaköy; **d.** Sütlüce (Sources: **a.** Sey 1999, 251; **b.** Sey 1999, 255; **c.** Sey 1999, 258 [Yıldız Sey's archive]; **d.** Sey 1999, 259)

The Akaret Houses designed by the architect Sarkis Balyan comprised the primary mass-housing implementation (Figure 2.3). It was built in Beşiktaş in 1874, in the typology of terraced house consisting of 138 residential units (Figure 2.3.a), and as the lodgings for the employees of the palace by the orders of Sultan Abdulaziz. They were three-storey houses having semi-private spaces at the ground floor, and private ones at the upper floor (because this plan scheme is proper for today's hotel-plans, Akaret Houses were easily transformed into a hotel, and are utilized by this function currently). The Akaret Houses project was followed by the terraced houses built as the foundation of Surp Agop in Harbiye, in 1890 (Figure 2.4). They were also three-storey

buildings of which upper floors reserved for the private use like the Akaret Houses. The third important example was in the apartment typology, and named as Harikzedegân Blocks—also known as Tayyare Apartments—which was designed by the architect Mimar Kemaleddin in Laleli between the years of 1919-1922 (Figure 2.5) (Tapan 1996, 371). It was composed of four six-storey blocks of flats with inner courts surrounded by open corridors. This project is recognized as the first real mass-housing trial of Turkey, which was built for the families who lost their homes in the Fatih fire of 1918. The reason of this recognition depends on that the terraced-house plan was abandoned first time by this project due to the surplus problems by means of the cost and surface area, and a new plan-typology in a more proper cost and density—that is, the apartment—has been adopted to solve the sheltering problem of the people-mass.

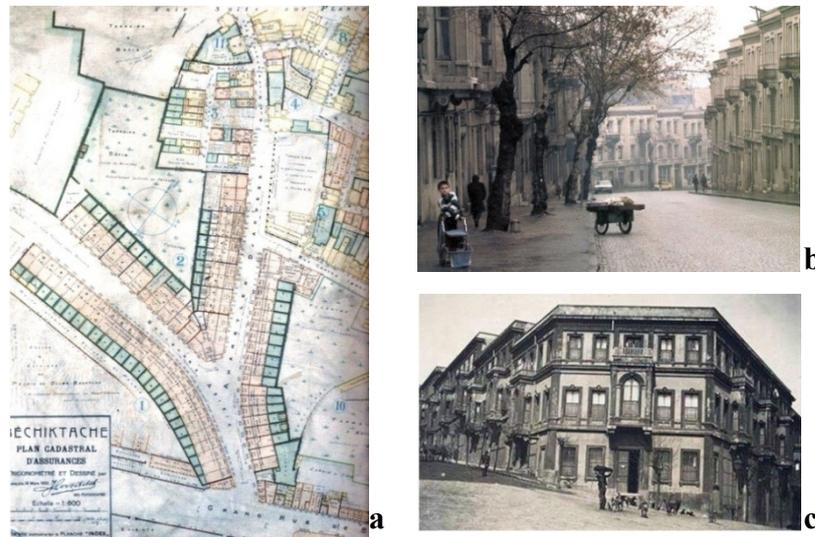


Figure 2.3. Akaret Houses designed by Sarkis Balyan, Beşiktaş, Istanbul, 1874: **a.** Plan of Insurance demonstrating the Houses; **b.** View from the street; **c.** An earlier photo of the Houses (Sources: **a.** Sey 1999, 252; **b.** Sey 1999, 253 [Atilla Yücel's archive]; **c.** Akaretler 2011)

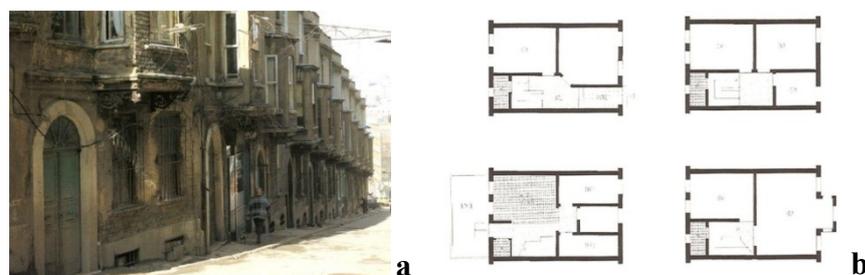


Figure 2.4. Surp Agop terraced houses, Harbiye, Istanbul, 1890: **a.** Outside view; **b.** Dwelling plans (Sources: **a.** Sey 1999, 259; **b.** Bilgin 1996, 474 [drawing by B. Uzun])

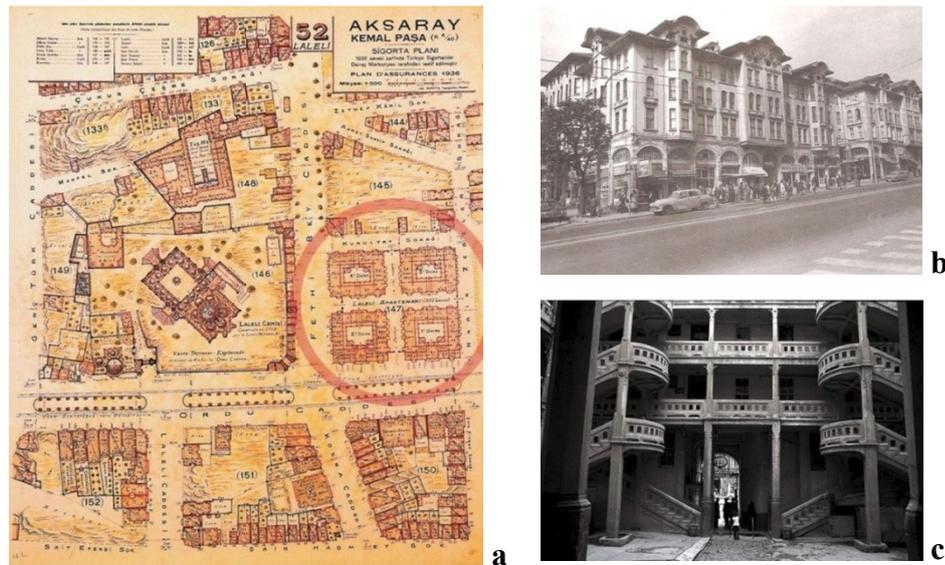


Figure 2.5. Harikizedegân Blocks designed by Mimar Kemalettin, Aksaray, Istanbul, 1919-1922: **a.** Plan of Insurance, red circle demonstrates the Blocks; **b.** Outside view; **c.** Inside view (Sources: **a.** Architecture Museum 2011a [photograph by Erdal Aksoy]; **b.** Sey 1999, 265; **c.** Architurk 2011)

2.2.1.2. 1923-1945 (Proclamation of the Republic - End of the World War II)

By the proclamation of the Republic, Ankara became the capital city, and mass-housing implementations have spread to this city within the framework of attempts to establish the city from scratch. These mass-housing samples of the early Republican era of the 1930s have parallel formations with the international examples, thus, the new state began to construct a new modern identity for the country parallel to Europe's, especially. At this point, architecture was one of the practices making this construction possible by modern housing-designs, and therefore, modern livings. In this context, many firsts in terms of the housing typology and supply form were observed especially in Ankara. The leading examples comprised the *lodgings* again, and built by the *state* for the new officials coming from the other cities of Anatolia. To facilitate the housing production, in this regard, the Housing and Orphan Bank was founded in 1926 as the first institution financing the housing. As a new organization model, on the other hand, *building cooperatives* were emerged in this period. These cooperatives built *terraced houses* within the gardens, in general. As a new settlement typology, the *garden city* was implemented in one of the cooperative settlements in Ankara, as well. Besides, by the economical developments through the 1930s, some dwellings were also built by the

state for the employees of Ereğli, Karabük, Hereke and Izmit factories. These *lodgings* again consisted of the *terraced houses*.

In this respect, the 1st and 2nd Vakıf Blocks designed by Mimar Kemaleddin (in 1926 and 1928 respectively) were among the primary mass-housing examples in Ankara (Figure 2.6). However, they were not preferred as much as the Official Housing built with gardens for one-families at the end of the 1920s in Kızılay. By the establishment of Bahçelievler Building Cooperative (1935), the most extensive housing-production was realized with the Bahçelievler project in Ankara, which was built as a garden-city in terms of the settlement typology, and consisted of detached, twin or row houses arranged in a layout with low concentration (Tekeli and İlkin 1984; Bilgin 1992, 97) (Figure 2.7).



Figure 2.6. Vakıf Blocks designed by Mimar Kemaleddin, Ankara: **a.** 1st Vakıf Block, 1926; **b.** 2nd Vakıf Block, 1928 (Source: Sey 1999, 296)

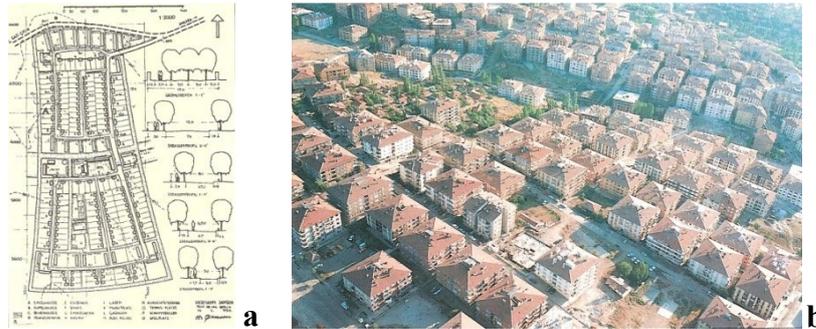


Figure 2.7. Bahçelievler Housing Cooperative, Ankara, 1935-1958: **a.** Site plan and some sketches; **b.** Aerial view (Sources: **a.** Şenyapılı 1985, 160; **b.** Özüerken 1996, 356 [photo by G. Çizgen])

On the other hand, the Kozlu Coal Workers' Neighborhood in Zonguldak (1935-1936) designed by the architect Seyfi Arkan were among the examples of lodgings built in the other cities of Anatolia (Tapan 1996, 374) (Figure 2.8). Here, the use of the *sofa* as a *transition* space rather than a *gathering/living* space is also significant (Figure 2.8.e),

because the *corridor* has been reserved for the function of transition in the latter examples of mass-housing projects.

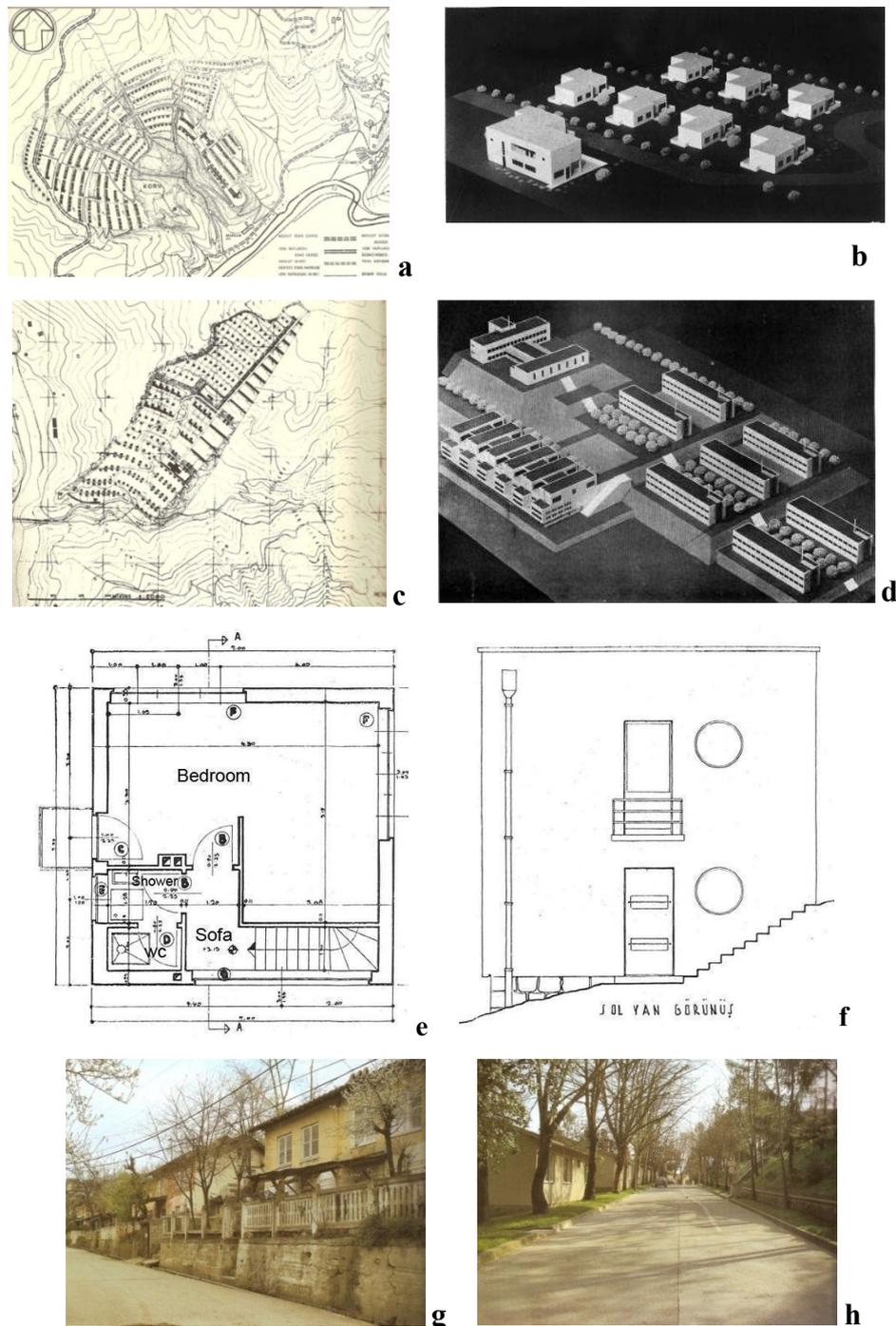


Figure 2.8. Kozlu Coal Workers' Neighborhood designed by Seyfi Arkan, Zonguldak, 1935-1936: **a.** Site plan; **b.** Model view demonstrating the detached houses; **c.** Detail from the site plan; **d.** Model view demonstrating the blocks; **e.** A typical plan for the units in factory lodgings; **f.** Elevation from the left side of a unit in factory lodgings; **g.** View from the civil servant lodgings; **h.** View from the factory lodgings (Sources: **a., d., e., f.** Arkan 1935, 253, 257, 254; **b., c.** Arkan 1936, 10, 9; **g., h.** Sey 1999, 302)

2.2.1.3. 1945-1965 (End of the World War II - Enactment of the Law of Property Ownership)

This period can also be considered as the new term containing the *first sparks* of the apartment-period. Though the one- or two-storey *terraced houses* (or villas) continued to determine the main housing-typology of this period, the leading examples in the *apartment* typology became widespread in Istanbul and Ankara, again in this period. Besides, as another first, the *local government* also participated in the construction of these apartments designed as *lodgings*. In 1946, the Housing and Orphan Bank was renamed as the *Housing and Credit Bank*, and has continued to serve in housing production until 1980. Thus, large programs for mass-housing production (for *public* in general) could be realized by the hand of the *state* (by the Housing and Credit Bank, and *Social Security Administration*). The projects generally consisted of both two and multi-storey buildings, that is, both *villas* and *apartment-blocks*. *Building cooperatives* took active role in the housing production, as well. Furthermore, it should also be noted that beside of the mass-housing implementations, especially in greater cities, *single apartment-blocks* comprised the dominant housing typology of which ownership belonged to one family, because this period coincides the time before the enactment of the Law of Property Ownership (1965). Each floor of them was engaged by the members of the same family, thus, they were called *family apartments*.¹⁰

Saraçoğlu District in Ankara consisting of lodgings designed by the architect Paul Bonatz in 1946 constituted one of the first mass-housing examples built by the local government (Figure 2.9). Subsidized by the Housing and Credit Bank, Ataköy mass-housing project (1955-1990), on the other hand, is the most extensive housing program produced by the state (Figure 2.10). By inspiring from the Western examples, mixed typologies (two and multi-storey buildings) were built side by side in Ataköy project as well as in the 4th Levent mass-housing project (1956-1957) (Figure 2.11) (Tapan 1996, 375; TMH 2006, 61). Furthermore, the 1st Levent mass-housing project (1947-1957) designed by the architect Kemal Ahmet Arû was, again, among the primary examples of the mass-housing projects financed by the Housing and Credit Bank (Figure 2.12). This project and the project of Koşuyolu mass-housing (1951,

¹⁰ Although the family apartments covered a large part of housing production in this period, these examples are not examined here, because they did not constitute the samples for mass-produced housing.

financed by the Housing and Credit Bank) refer the most important mass-housing projects of Turkey, as well (Tapan 1996, 375).



Figure 2.9. Saraçoğlu District designed by Paul Bonatz, Ankara, 1946: **a.** Outside view; **b.** Elevation and floor plan; **c.** Site plan (Sources: **a.** Sey 1999, 295; **b.** Architecture Museum 2011b; **c.** Tapan 1996, 367)



Figure 2.10. Ataköy mass-housing implementations, Istanbul: **a.** A view from the villas in the 1st settlement; **b.** An aerial view; **c.** 1st, 2nd, and 5th Ataköy settlements; **d.** Site plan; **e.** An aerial view; **f.** View of the recent examples (Sources: **a.** TMH 2006, 61; **b.** TMH 2006, 60; **c.** Sey 1999, 329; **d.** Tapan 1996, 372; **e.** Sey 1999, 343; **f.** Tapan 1996, 369)

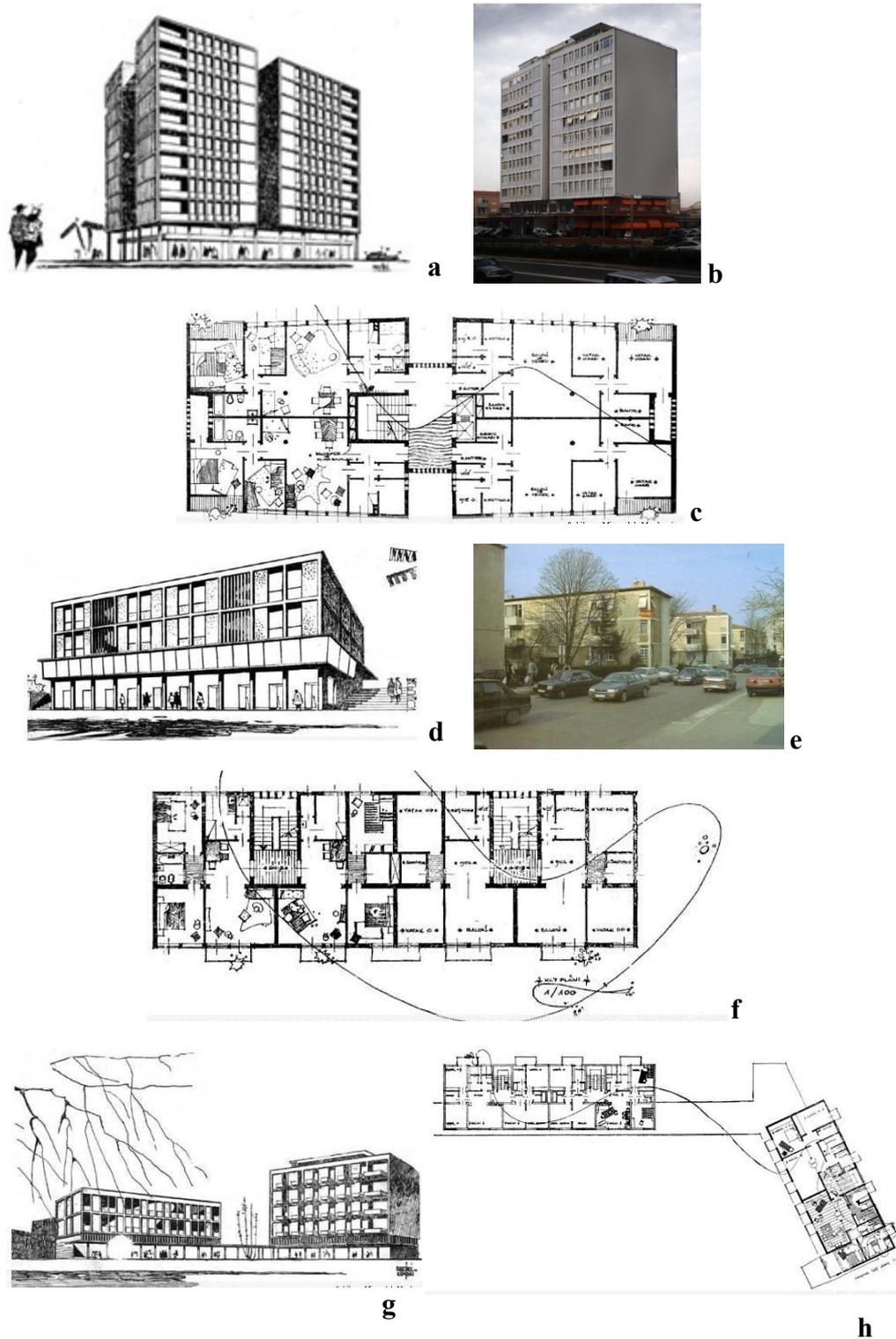


Figure 2.11. The 4th Levent settlement designed by Kemal Ahmet Arû, Istanbul, 1956-1957: **a.** Elevation of A Block; **b.** View from A Block; **c.** Floor plan of A Block; **d.** Elevation of B Block; **e.** View from B Block; **f.** Floor plan of B Block; **g.** Elevations of P and R Blocks; **h.** Floor plans of P and R Blocks (Sources: **a., c., d., f., g., h.** Arû 1956, 145, 147, 142, 143; **b.** Arkiv 2011 [photo by Ali Taptık, 2006]; **e.** Sey 1999, 329)

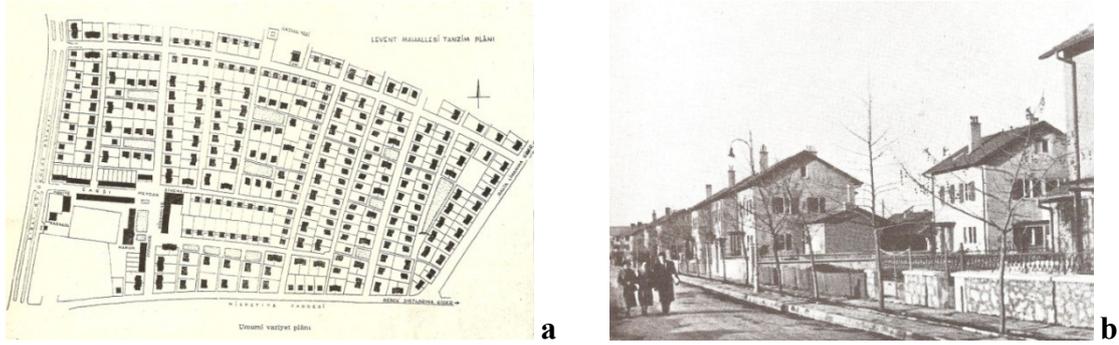


Figure 2.12. The 1st Levent settlement designed by Kemal Ahmet Arû, Istanbul, 1947-1957: **a.** Site plan; **b.** A view from the settlement (Source: Sey 1999, 297)

2.2.1.4. 1965-1984 (Enactments of the Law of Property Ownership - The Mass-Housing Law)

This period can also be named as the *apartment-period*, because, as the main housing-typology, construction of the apartments increased sharply in this period (Özüerken 1996, 355-56). This increase owes to the emergence of *property developers* in the housing production, which constituted the main supply-form of the term. The reason of the emergence of *property developers* was the enactment of the Law of Property Ownership in 1965, by which apartments started to be owned by different families (their floors began to be divided into the flats for this purpose).¹¹ On the other hand, *building cooperatives* comprised the main canal in *mass-housing production*. After the enactment of the Housing Cooperatives Law in 1969, the first *cooperative association* was also established in this period by the enterprises of the *municipalities*, which has spread as an organization model to the other cities later. However, the building cooperatives of which aim, when it emerged in abroad, was to create a social environment and solidarity system for the participants for the lifelong, has morphed into a construction system in Turkey, which only aims at providing consumers with property in profitable ways (Özüerken 1996; Bilgin 2002b). As another canal, *building companies* founded by the *local governments* also constituted a wide production model.

In this respect, one of the firsts was the Batıkent mass-housing settlement in Ankara of which construction began in the middle of the 1970s (Figure 2.13): it is the

¹¹ Although the single apartments built by the property developers constituted the dominant manner of housing production in this period, these examples are excluded here, because they did not constitute the samples for mass-produced housing.

primary example realized by a cooperative association established with a large contribution of the municipalities. Hence, this project was adopted as a model for the other cities after the establishment of the Fund of Housing Development Administration (Fund of TOKI¹²) in 1984. Another first comprised the mass-housing constructions realized by the companies founded by the municipalities in Adana Çukurova, which was later adopted by TOKI as the model of housing production, as well.

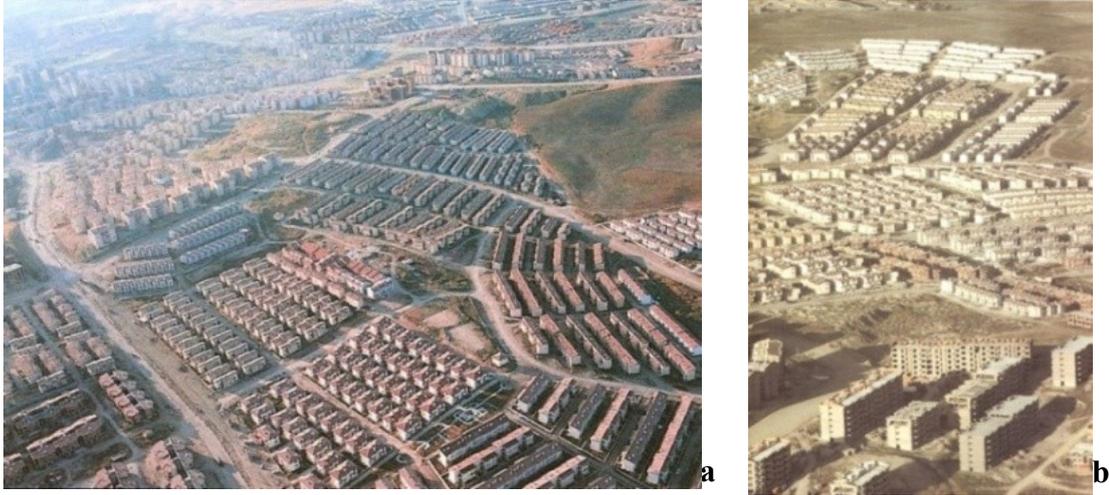


Figure 2.13. **a.**, **b.** Aerial views of the Batıkent settlement, Ankara, 1970 (Sources: **a.** Özürken 1996, 362 [photo by G. Çizgen]; **b.** Sey 1999, 337)

2.2.1.5. 1984-2012 (Enactment of the Mass-Housing Law – Present Day)

The supply forms of mass-housing projects have started containing four basic types in this period (Görgülü 2003, 52-54), and it may be useful to look at them in detail in order to understand the current situation, as well:

- 1) Building cooperatives established by the small-scale consumer associations: they are usually located in the city peripheries, and organized by taking into consideration the economic objectives and interests of the consumer associations. Consumers aim at lowering the cost of construction by taking

¹² TOKI is the usual abbreviation of *Türkiye Cumhuriyeti Başbakanlık Toplu Konut İdaresi* in Turkish, which corresponds to Republic of Turkey Prime Ministry Housing Development Administration in English. Though it is in Turkish, Housing Development Administration will be henceforward indicated with the abbreviation of TOKI in the text because of its extensive usage in the related literature as well as in daily life.

loans, and using standard building materials in the construction process. These associations generally produced *apartment blocks*.

2) Mass-housing companies established by the private sector: these companies produce mass-housing projects in two types: a) housing units to accommodate large number of families (*apartment blocks*); b) housing units to accommodate single families (*detached houses, villas*). Both types can be found in the urban periphery, however, the first typology is often built in the city-center. These examples have variety of social facilities, and are built by utilizing the advantages of the construction technology.

3) Building cooperatives allied to local governments (municipalities): in this mechanism, site acquisition and design phases are executed by local governments, and then, the project is passed on to the cooperatives for the construction phase. By this production style, quality and duration of the constructions are guaranteed by local governments—and thus, by this assurance, this type is distinguished from the first-type cooperatives. The *apartment block*, again, constitutes the main typology.

4) TOKI serving by the support of the state, or local governments: this production manner depends on the subsidies of the state. This kind of financing is provided by two mechanisms: TOKI, and local governments (municipalities). In the case of TOKI, consumer obtains the ownership of a single housing-unit within the framework of a specific payment-plan of which details and rules are set by the state. In addition, local governments, as noted earlier, may apply the cooperative companies or similar organizations (for the design and construction phases) to produce mass-housing projects. The dominant typology invariably consisted of the mass-produced *apartment blocks*.

Besides, TOKI could also *associate* the private companies (since 1987, by adopting the model in Adana Çukurova, as mentioned in the previous section) or its subsidiary Emlak Konut Real Estate Investment Trust Inc. (Emlak Konut REIT) could associate these companies, as well. In this context, while the former kind of partnership produced the housing projects for middle and low incomes, the latter produced for high incomes. Here, it is remarkable that, especially by high-income-projects realized by the partnership between Emlak Konut REIT and private companies, the housing projects having at least twenty-storey and designed as a *gated community* have emerged as the new typology in the housing production of Turkey. They are constituted different

formation in comparison with the apartments because of their larger sizes; and thus, single-produced versions of them began to be called *residence* which has extra services and commercial facilities for their inhabitants.¹³ Moreover, again in this period, the Housing and Credit Bank was transformed to the Public Economic Enterprise of the State in 1984, and renamed as the *Housing Bank* in 1988. After this date, it only produced housing projects by commercial aims rather than the social ones (Kara and Palabıyık 2009).

The most important examples built in national scale by the private companies were OR-AN housing project (Ankara, 1970) designed by the architect Şevki Vanlı, and Batı and Kuru housing projects constructed by the MESA Company (Istanbul, 1985-2004) (Figure 2.14). Bahçeşehir housing (1989-2001) is among the most known projects realized by the Housing Bank. Both of the apartment-block and villa (in twin-house style) in terms of the housing typology were applied in this project (Figure 2.15). Implementation of the apartment blocks was realized again by the MESA. Ataköy was the other important and continuing project financed by the Housing Bank, as already mentioned (see Figure 2.10). Although the planning phase of this project began in 1955, construction phases of the neighborhoods (which are ten in number) cover a wide period extending to the 1990s, and even to the present day (besides, some of the contractor and designer firms were the same with Bahçeşehir project like the MESA and Vural Architecture Company). On the other hand, Kayabaşı mass-housing project (2008-2012) in Kayaşehir-Istanbul is among the recent examples realized by TOKI (Figure 2.16). It is a tripartite project (TOKI 2011a): the first one is titled the “earthquake transformation” project, the second one is titled “low-income-group” project (especially built for the veterans, the families of the martyrs, and handicapped people), and the third is titled “social housing” project. TOKI Kayabaşı consists of the apartment blocks in which the settlement began in 2009. Finally, for the partnership model between Emlak Konut REIT and private companies, the gated community of Ataşehir My Towerland in Istanbul can be exemplified as a very recent project of which selling process was still continuing at the end of 2011 (Figure 2.17).

¹³ Although the *residences* shelter large number of families, they are single-produced housing; therefore, their examples are excluded here.



Figure 2.14. **a.** OR-AN settlement designed by Şevki Vanlı, Ankara, 1970; **b.** MESA Koru settlement, Yeşilköy, Istanbul, 1984-2004 (Sources: **a.** Sey 1999, 331; **b.** Sey 1999, 332)



Figure 2.15. The Housing Bank's Bahçeşehir project, Istanbul: **a., b.** Aerial views of the MESA Bahçeşehir Satellite-City project, 1st and 2nd stages, 1989-2001; **c.** A view from the project including villas designed by Oral Vural, 1991-1996; **d.** Ground floor plan of the project with villas (Sources: **a., b.** MESA Group 2011; **c., d.** Arkiv 2011)



Figure 2.16. TOKI Kayabaşı project, Kayaşehir, Istanbul, 2008-2012: **a.** A view from the settlement; **b.** A view from the construction phase; **c.** Floor plan of B Block; **d.** 3D-render view from B Block; **e.** 3D-render view from C Block; **f.** Floor plan of C Block (Sources: **a.** İnşaat Dergisi 2009; **b.** Panoramio 2012 [photo by Seyid Can, 2010]; **c., d., e., f.** TOKI 2011a)



Figure 2.17. My Towerland (gated community), Ataşehir, Istanbul, 2011: **a.** 3D-render view of the settlement; **b.** 3D-render view of a block; **c.** Plan of a unit in the C-type building; **d.** Plan of a unit in the D-type building (Source: Ağaoğlu 2011)

2.2.2. Transformation in Izmir

2.2.2.1. End of the Nineteenth Century to 1923 (Proclamation of the Republic)

As in the cases of national scale, mass-housing movement also echoed in Izmir with similar reflections. However, after the Ottoman-Russian War in 1877, and the Ottoman-Greek War in 1897, Izmir has taken a mass migration from the Balkans and Greece. Therefore, especially by the participations of *local authorities* (and especially by the personal efforts of the governors) of the period, many houses were built to shelter the citizens returning the homeland as well as the new-comers. Donations of the local people were also utilized in the constructions. These houses comprised the *terraced houses* in terms of the typology, and some of them were planned on attached-layout. Furthermore, the buildings called *family houses* (for poor or low-income Turkish families) or *Yahuthane* (family houses for poor or low-income Sephardic families) can be exemplified for this period. Thus in 1908, there were already 141 family houses for Greeks and Jews (Baykara 1974, 42). These dwellings placed in Karataş, Tepecik, İkiçeşmelik, Keçeciler, and Tilkilik districts later reached around 220 in number (Sarioğlu and Gönenç 1967, 219). They were the same by means of architectural typology which can be described as a *block with a courtyard* briefly. Hence, the *Yahuthanes* consisted of the houses arranged around a courtyard called *Kortejo* in Spanish (which means *courtyard* in English) with one or two rooms (Üzmez 2011; Sarioğlu and Gönenç 1969, 219). Kitchens, laundries, bathrooms and toilets were used commonly. There was only one entrance to the *Kortejo* to provide control of access. While the daily activities have taken place in the *Kortejo*, the upper floors have been reserved for the privacy of the families.

For the pre-Republican period of Izmir, one of the primary examples was mass-produced housing built in Aziziye Neighborhood (at the east of Kadifekale) for the migrants of Dobruca after the Ottoman-Russian War (1877). They were constructed by the donations of the local people apart from the personal efforts of the Governor Halil Rıfat Pasha (Göktaş 1974, 77). Similarly, by the efforts of the Governor Kamil Pasha, housing over 40 in number were built in Kamil Pasha Avenue for Turks migrated from Crete after the Ottoman-Greek War (1897). Besides, for the widows of Crete migrants,

housing called *Dulhane* ('house for widows' in English) were also built in Katipoğlu district, again by the efforts of Kamil Pasha. Each of these houses had two rooms, and was planned on attached-layout (Göktaş 1974, 78). On the other hand, Sephardic families left *Yahuthanes* in 1948, and then, they continued to be occupied by Turkish low-income families (Figure 2.18) (Üzmez 2011). Like *Dulhanes*, most of *Yahuthanes* unfortunately collapsed before reaching the present day (Sarioğlu and Gönenç 1969).

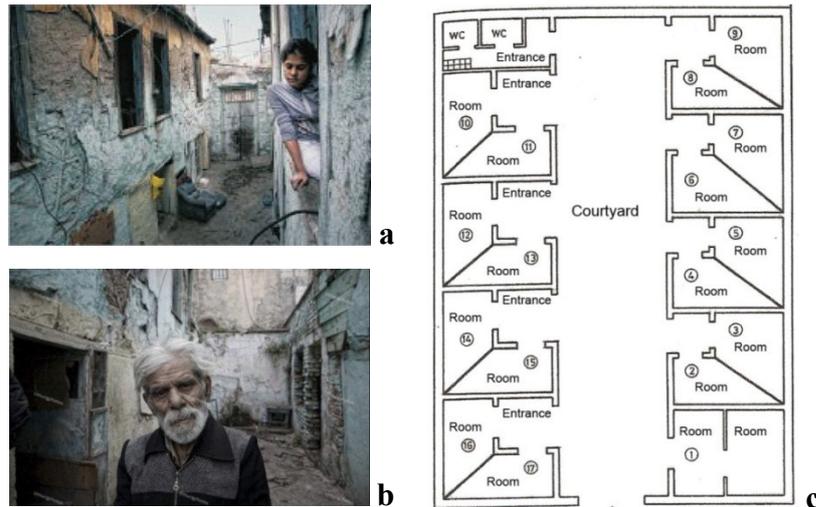


Figure 2.18. Family houses, Izmir: **a.**, **b.** Recent views from an un-destroyed family house; **c.** Plan of another family-house example (Sources: **a.**, **b.** Üzmez 2011 [Biol Üzmez's archive]; **c.** Izmir Konak Municipality)

2.2.2.2. 1923-1945 (Proclamation of the Republic - End of the World War II)

After the proclamation of the Republic, it may be claimed that, because the new-ended wars caused budget-deficit in local governments, the housing-supply forms in Izmir have been mostly conducted by the private enterprises, and in this context, public sector could only orient these practices (Koç 2001, 79). However, the primary examples were generally built by the initiatives of the *local government*. These examples comprised the *lodgings* built for the workers, which points out a synchronic effect in both local and national scales, because there were parallel lodging constructions for the workers of the new established factories in, for example, Zonguldak and Izmit. The dominant typology applied in these lodgings was the *terraced house*.

The workers' houses (in the Workers' Quarters) can be considered as one of the primary mass-housing projects in Izmir, which have been built by the municipality's efforts within the context of social housing in the 1930s (Figure 2.19). Building purpose of them was mainly to improve health conditions. A part comprising 400 units was built in Çayırlihahçe and Kahramanlar, and delivered in 1933 (CAMLIN 1934, 198; see also Koç 2001, 82, 86, 119-20). The other workers' housing consisting of one- or two-storey buildings occupied two settlements around Tepecik and its upper neighborhoods (Say 1941, 109). Nevertheless, the construction activities, and thus, the examples of mass-housing projects decreased in this period because of the limited budget.



Figure 2.19. A view from one of the workers' houses in the Workers' Quarters, Izmir, end of the 1930s (Source: "İzmir'de Ucuz ve Sıhhiğ Otrular, 1383 liraya İşçi Evleri")

2.2.2.3. 1945-1965 (End of the World War II - Enactment of the Law of Property Ownership)

Mass-housing practices in Izmir increased by the acceleration in the rate of urbanization and land speculation after the World War II (Koç 2001, 91). Parallel to the dynamics in national scale, that was the housing-production increasing principally, and the first signals of the increase in *apartment* typology were also received in this period of Izmir. By the effects of the acceleration in apartment production, after the 1950s, *one-block* examples called public apartments (produced by the hand of local government) emerged as a new typology.¹⁴ Until the 1960s, however, mass-housing

¹⁴ Although the *public apartments* sheltered large number of families, they were single-produced housing; therefore, their examples are excluded here. However, it should be noted that they had parallel characteristics with their contemporaries in Europe, which were called *super-block* projects (like Unité d'Habitation designed by Le Corbusier between the years of 1946-1952 in Marseilles, France).

projects—as both *lodgings* and for *public*—have been built mostly by the *building cooperatives*. The cooperative-housing were maximum three-storey buildings (villas) surrounded by gardens, and detached in layout. In multi-storey versions of them (apartments), there was only one housing-unit in each floor (Koç 2001, 96). These cooperatives were financed by the *Housing and Credit Bank* of which capital was increased in 1946 especially for this purpose. After the 1950s, on the other hand, the Housing and Credit Bank also constructed mass-housing projects, apart from its subsidies for individuals and cooperatives. However, generally high-income families could afford these housing projects because of the high construction costs. Moreover, *Social Security Administration* (SSK in Turkish) also participated in the production of mass-housing projects especially in the 1960s.

The primary examples realized by the building cooperatives were especially built for the civil servants in the districts around Kültürpark. Building Cooperative of the Central Bank Members (1947), Building Cooperative of the Municipality Officials (designed by Harbi Hotan in 1949) (Figure 2.20), Railways Cooperative, Gündoğdu Bahçelievler Building Cooperative, Güzel İzmir Bahçelievler Building Cooperative were among these primary examples of the cooperative organizations in Alsancak (Sayar and Gökmen 2008, 22-23; Koç 1981, 162). Karşıyaka Bahçelievler Cooperative, Güzelevler, Modernevler, Bostanlı Subay Housing, Çağlar Building Cooperative were some of the other examples in Bostanlı region (Koç 1981, 163). The plans of these housing projects depended on similar spatial principles: the living room and the guest room were separated from each other, the balconies were drawn inside, and the bedrooms were more spacious than the following examples. A small number of these housing projects in Alsancak and Bostanlı could reach the present day.

On the other hand, Health Building Cooperative, Bahçelievler Cooperative of İzmir Municipality Eshot Workers (Figure 2.21), and İzmir Jurists Cooperative were the ones locating in Üçkuyular and Güzelyalı districts. These housing projects built after 1950 were again for the civil servants. Only after the 1960s, the first cooperative housing for the workers was built (Koç 2001, 99). Primary examples of these cooperatives—of which partner numbers were 20 at most—contained maximum three apartment-blocks. On the other hand, İzmir Block Apartments in Alsancak with 99 units (1956-1959), Bostanlı Mass-Housing Area with 1413 units (1969-1983) (Figure 2.22) can be mentioned as the examples subsidized by the Housing and Credit Bank (HCBIRHC 1987). The primary examples subsidized by SSK, on the other hand,

comprised 214 units in Şirinyer (1960), and 64 units in Karantina. Bahçelievler Cooperative of İzmir Municipality Eshot Workers, Workers' Building Cooperative of the Workers and Servers of Turyağ, Workers' Building Cooperative of the Petrol Workers, Workers' Building Cooperative of the Sümerbank Print Industry, and Workers' Building Cooperative of the Kula Textiles Factory refer the cooperative examples subsidized by SSK (Koç 2001, 143).

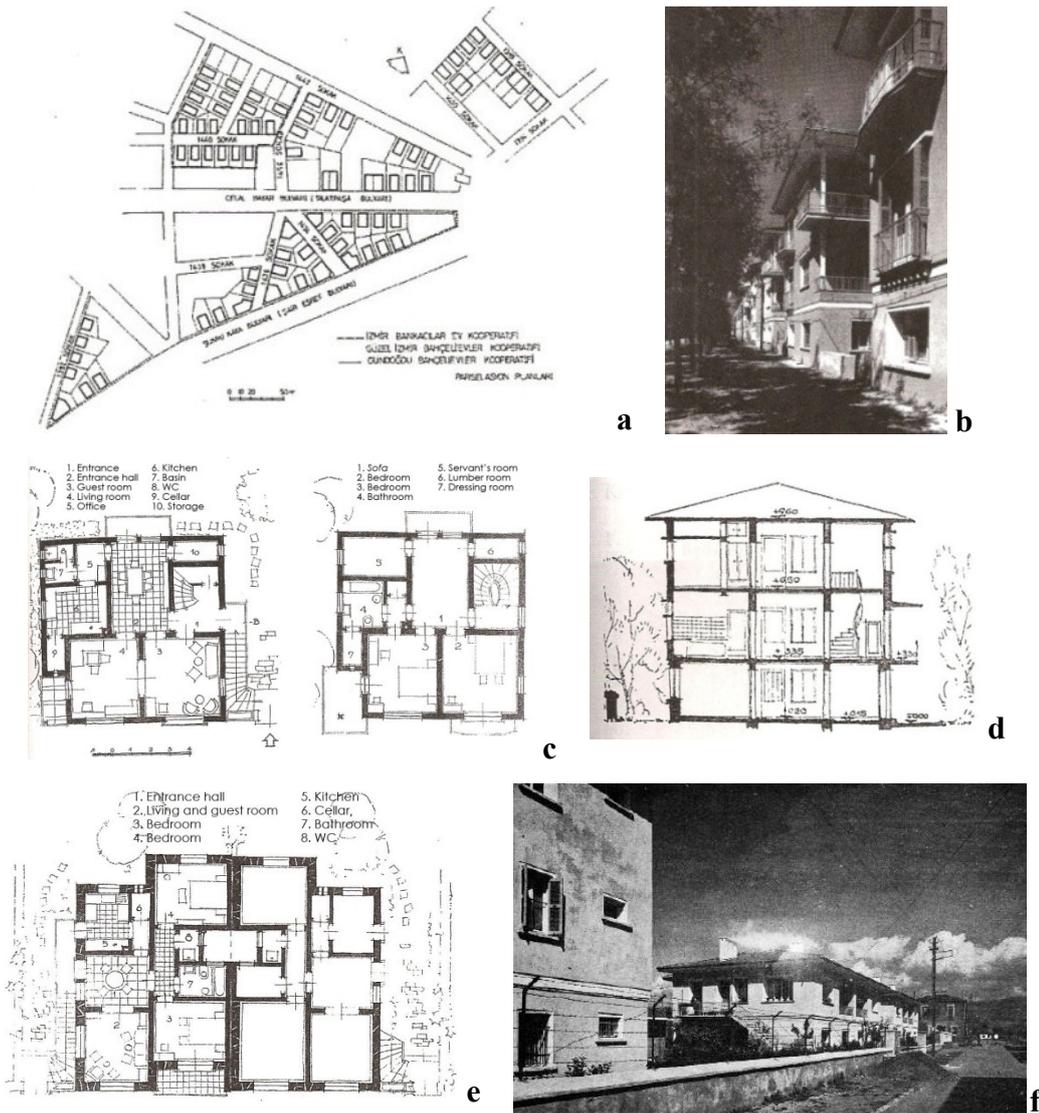


Figure 2.20. Building Cooperative of the Municipality Officials designed by Harbi Hotan, İzmir, 1949: **a.** Site plan; **b.** A view of the A-type house; **c.** Ground- and first-floor plans of the A-type house; **d.** Section of the A-type house; **e.** Plan of the B-type house; **f.** A view of the B-type house (Sources: **a.** Koç 1981; **b.** Hotan 1952, 228 [Harbi Hotan's archive]; **c., d.** Hotan 1952, 229; **e.** Hotan 1952, 231; **f.** Hotan 1952, 230)

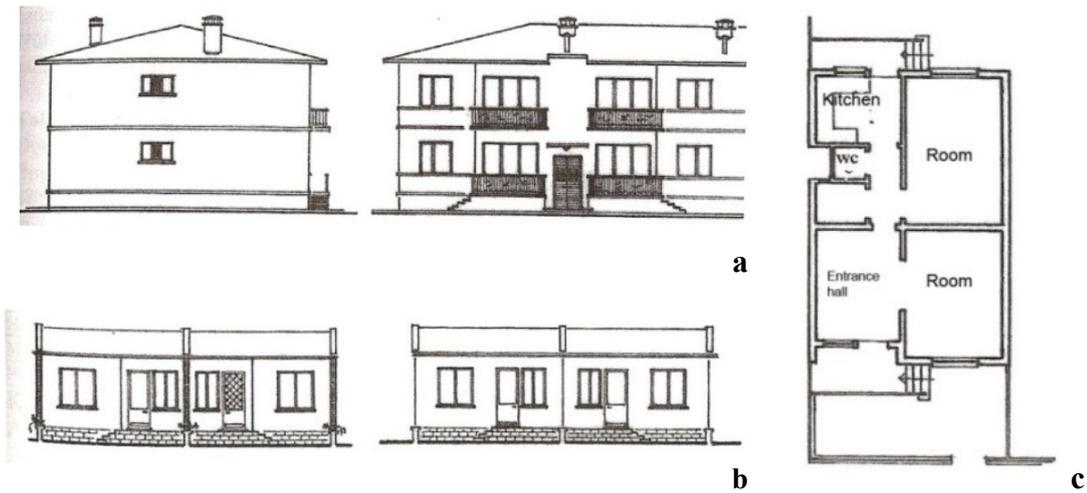


Figure 2.21. Bahçelievler Cooperative of Izmir Municipality Eshot Workers, Izmir: **a.**, **b.** Elevations; **c.** Plan (Source: Koç 2001, 100)

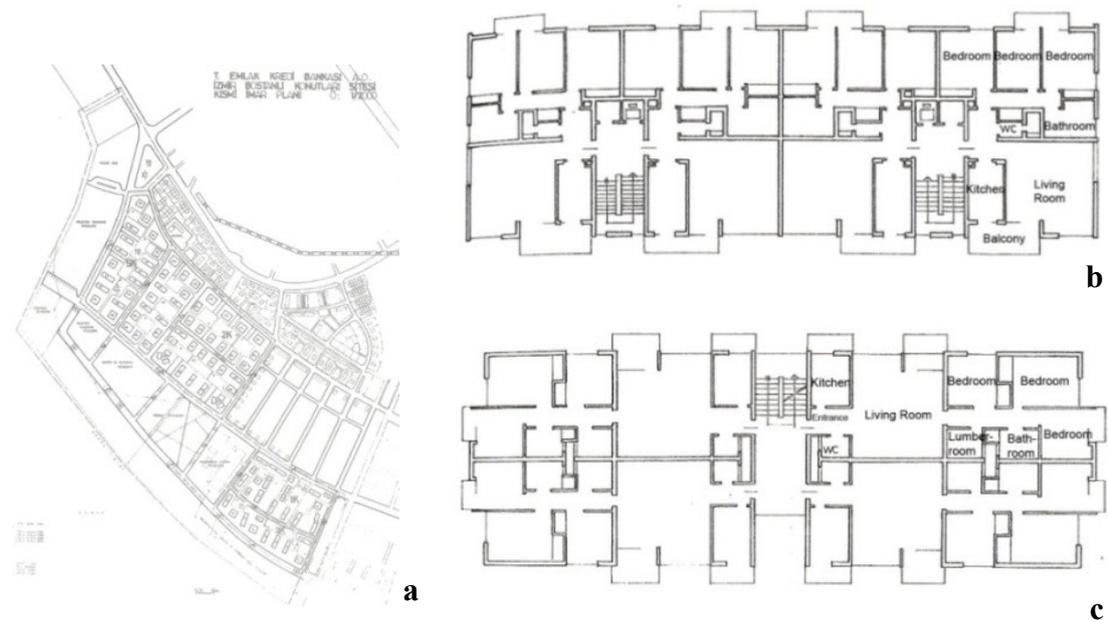


Figure 2.22. Bostanlı Mass-Housing, Izmir, 1956: **a.** Site plan; **b.** P2-type floor plan; **c.** P3-type floor plan (Sources: **a.** Koç 2001, 137; **b.**, **c.** Koç 2001, 136)

2.2.2.4. 1965-1984 (Enactments of the Law of Property Ownership - The Mass-Housing Law)

As also mentioned in the section of national scale, this period can be named as the *apartment-period* because of the apparent increase in the production of this typology by the emergence of the *property developers*. Though they produced only single-apartments, large number of mass-housing projects especially for low incomes was also

built in this period, and they were also in *apartment* typology. The *Housing and Credit Bank*, again, played the role of subsidy hand. Furthermore, the *Ministry of Development and Housing* also participated in the very important part of housing production in this period. Most of the examples realized by the Ministry comprised the housing projects built for low incomes, or the disaster homes. Besides, in the period after the 1970s, in some of the projects, the Ministry also cooperated with the Municipality: although low-income families could afford the housing projects produced by this system, the most criticized feature of the projects is that design of the units is the same with each other, which limits the flexibility of addressing to different kind of families (Koç 2001, 131). After 1975, the *Social Security Organization for Artisans and the Self-Employed* (Bağ-Kur in Turkish) could finance the building cooperatives, as well. Moreover, *Turkish Armed Forces Assistance (and Pension) Fund* (OYAK in Turkish) was also active in the mass-housing production of this period. On the other hand, one of the main canals in housing supply after the 1980s, again, corresponds to the *building cooperatives* established by the *small-scale consumer associations*, of which aim was to produce mass-housing projects. These associations generally produced *detached houses* in city-peripheries to be used in summer months.

30 housing-units in Esentepe, 38 housing-units in Mersinli, 45 housing-units in Eşrefpaşa, 59 housing-units in Karşıyaka Cumhuriyet Neighbourhood (1972), and 118 housing-units in Kahramanlar (1961-1970) were among the examples built for low incomes (Koç 2001, 123-125). The housing projects in Kahramanlar Ege Neighborhood—which are also known as Tenekeli Neighborhood—were subsidized by the Housing and Credit Bank, and built in the period of the Mayor Osman Kibar. These housing projects consist of seven blocks, and were designed with outside corridors (Izmir Municipality 1972, 110; Izmir Municipality 1973, 40; see also Koç 2001, 124). They could reach to the present day, and are still used by low-income families. Besides, the housing projects of Esentepe I and Esentepe II in Üçkuyular (Figure 2.23), and Karşıyaka Cumhuriyet Neighbourhood were among these examples realized by the cooperation between the Ministry and the Municipality (Koç 2001, 126). Esentepe I Social Housing (1972) contain 550 units which built by EV-YAP financing system of the Ministry. Esentepe II Social Housing (1976-1979), on the other hand, contain 190 units in 19 blocks each of which has 10 units with five-storey; the typical plan of the units is composed of two rooms, a living room, a kitchen, a bathroom, and a WC (Koç 1981, 138). And Cumhuriyet Neighbourhood housing (1976-1979) contain 530 units in

53 blocks each of which has 10 units with five-storey; the typical plan of the units is similarly composed of two rooms, a living room, a kitchen, a bathroom, and a WC (Koç 1981, 140). Social housing in Buca, Bornova, Çiğli, Aliğa, and Gaziemir were the other examples produced by the cooperation between the Ministry and the Municipality. Moreover, Building Cooperative of the Artisan Villages was the first example subsidized by Bağ-Kur (Koç 2001, 106, 141). OYAK also constructed 1000 housing-units in Üçkuyular between the years of 1979-1987 (Figure 2.24). *Tunnel formwork* construction system as a new technology was primarily used in this project (Koç 2001, 139-140). In addition, for summer use, the mass-housing projects containing detached houses were built in Sahilevleri, Narlıdere and Güzelbahçe—that is, in city's new peripheries enlarged especially by the post-migration—by the building cooperatives of small-scale consumer associations.

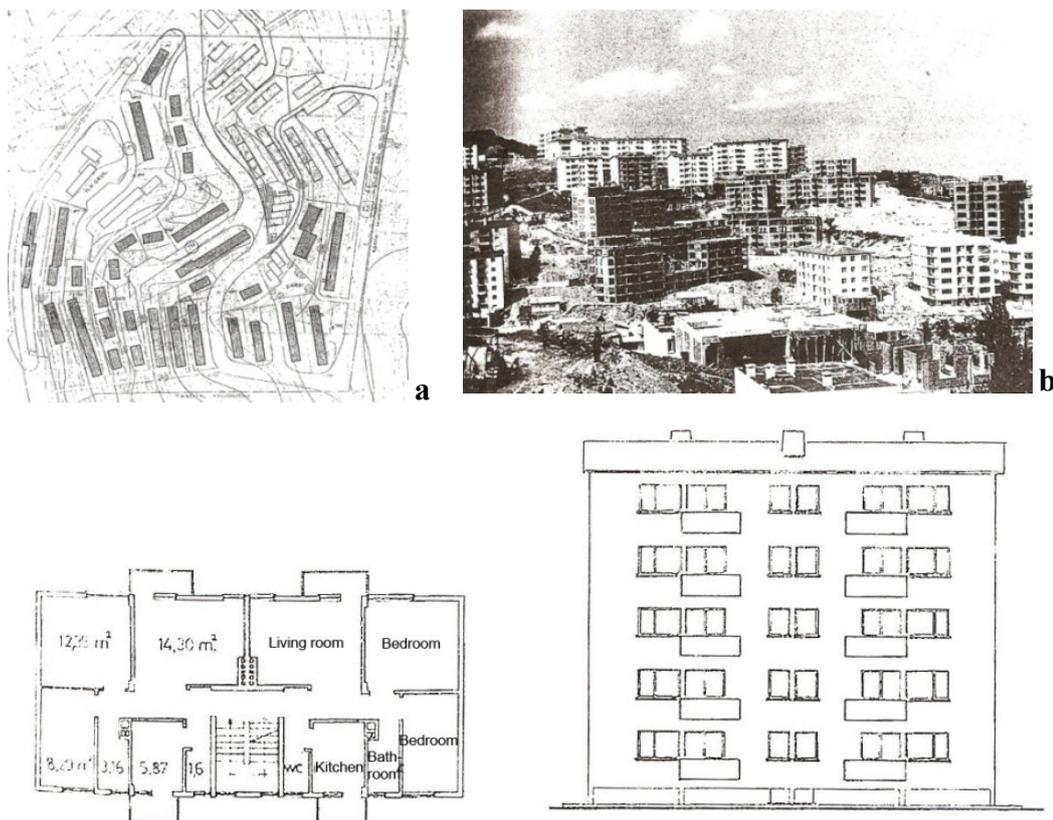


Figure 2.23. Esentepe Mass-Housing, Izmir, 1972-1979: **a.** Site plan; **b.** A view from the settlement; **c.** Floor plan and elevation (Sources: **a.** Directorate of Public Works and Settlement; **b.** Izmir Municipality Works 1976, 54; **c.** Koç 1981)

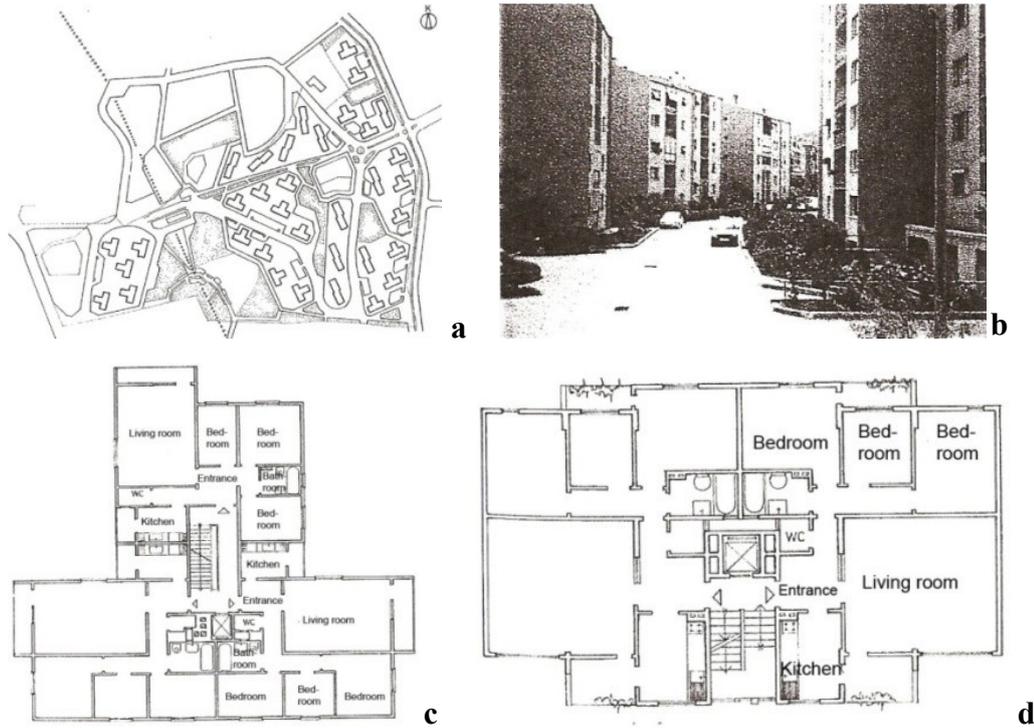


Figure 2.24. OYAK Mass-Housing, Izmir, 1979-1987: **a.** Site plan; **b.** A view from the street; **c.** Floor plan of the A-type housing; **d.** Floor plan of the B-type housing (Source: Koç 2001, 139, 140)

As it is perceived from the above sections telling the stories of mass-housing production until 1984, complicated production-manners have been emerged gradually by the time. Consequently, to summarize the mass-housing history in Izmir until 1984, we may utilize the table below (Table 2.1):

Table 2.1. Trajectory of the mass-housing production until 1984
(Source: Koç 2001, 156)

Financing Institutions	Number of Units	Duration of Constructions	Locations
Housing and Credit Bank	99	1956-1959	Alsancak
	150	1969-1972	Bostanlı
	1149	1974-1983	Bostanlı
	200	1981-1982	Bostanlı
	372	1982-1983	Bostanlı
Ministry of Development and Housing	550	1975-1977	Buca
	300	1968-1970	Üçkuyular
	190	1976-79	Esentepe
	560	1976-1979	Cumhuriyet Neighborhood
Turkish Armed Forces Assistance (and Pension) Fund (OYAK)	1005	1979-1987	Üçkuyular
Large scale cooperatives	484	1970-1975	Üçkuyular
	707	1974-1977	Bornova
	450	1977-1988	Bornova

2.2.2.5. 1984-2012 (Enactment of the Mass-Housing Law – Present Day)

After 1984, in both national and local scales, the main production manner of mass-housing projects has been constituted by TOKI since the enactment of the Mass-Housing Law. However, TOKI took role in housing production within different *partnerships* (with private companies or Emlak Konut REIT), as mentioned earlier. Apart from TOKI, the other subsidy mechanism of the state was the *Housing Bank*, which also realized large-scale mass-housing implementations. The remarkable point here is that, these mass-housing practices supported by the government also constitute a component of urban regeneration initiatives. On the other hand, in Izmir, another prolific mass-housing production model has been provided by the cooperation between the *cooperative associations* and the *Metropolitan Municipality*—which was copied from the model of Batıkent, in Ankara. Furthermore, *county municipalities* also produced mass-housing projects by the model of *cooperative associations*. This kind of production model was preferred because they provide advantages in especially site acquisition phase which is allocated by the Municipality. Another production model comprised a *single large cooperative* (or a few cooperatives) which is *founded* by the *Metropolitan Municipality*. In this model, fast production is also important, thus, the advantages of construction technology had to be utilized by the contractor firms (Gürel 1987, 1). Nevertheless, the time spent by the bureaucratic procedures was also shorted by the participation of the Municipality as the coordinator. The other production model, on the other hand, was the *cooperation* between the *Municipality* and its allied *company*. Furthermore, as another model, the cooperation between the *companies allied to the municipalities* and the *private enterprises* should also be considered. In this model, the private companies are generally responsible for the design and construction phases of the projects. Besides, the companies established by the *private sector* played a significant role in the mass-housing production, as well. Nevertheless, although there are various production models, the *apartment-block* typology continued to serve as the main mass-housing typology in this period.

The mass-housing projects produced by the subsidies of TOKI in Izmir are divided into two, in terms of the production models: the first one includes the projects that are built by the partnership of TOKI with private companies, and appeal rather to low- and middle-income groups. They include TOKI Uzundere Housing (3080 units,

2004-2007, with a large number of private companies) (Figure 2.25), TOKI Çiğli Housing (2010, with Siyah Kalem Construction Company), and TOKI Buca Tınaztepe Housing (986 units, 2008-2010, with Siyah Kalem Construction Company). The second one contains the projects that were built by the partnership of TOKI's subsidiary Emlak Konut REIT with private companies, and address rather to high-income groups: Soyak Mavişehir (2007) and Mavişehir Albayrak (2010) housing projects are among the important and large scale examples completed in the recent years. On the other hand, the projects realized by the subsidy of the Housing Bank comprise Atakent Mass-Housing (1072 units in villa and apartment typologies, Bostanlı, 1986-1989), Gaziemir Mass-Housing (5242 units, 1989-1995) (Figure 2.26), and Mavişehir Mass-Housing (6318 units in villa and apartment typologies, 1995-1997) (Koç 2001, 363-75).



b



c

Figure 2.25. TOKI Uzundere Mass-Housing, Izmir, 2004-2007: **a.** Site plan; **b., c.** Views from the settlement (Sources: **a.** Izmir Metropolitan Municipality 2005; **b.** Mimdap 2010; **c.** Emlak Kulisi 2008)

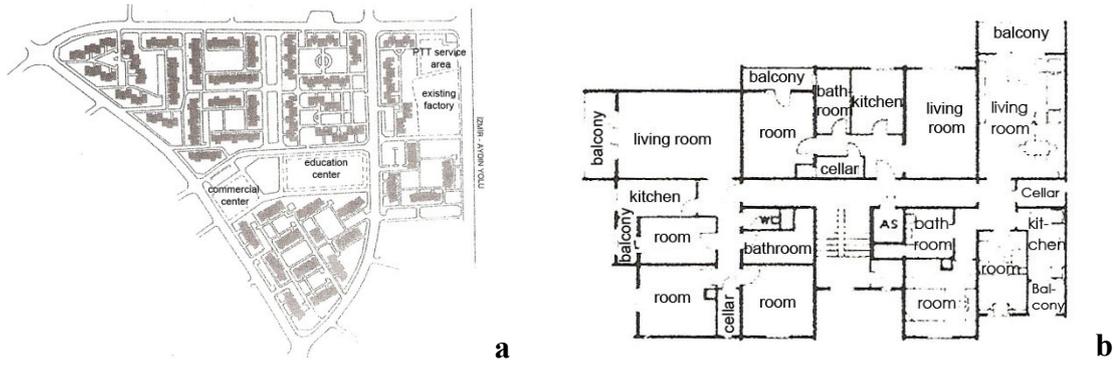


Figure 2.26. Gaziemir Mass-Housing, Izmir, 1989-1995: **a.** Site plan; **b.** The typical plan of a floor (Source: Koç 2001, 365, 368)

For Izmir examples of the model based on the partnership between the cooperative associations and the Metropolitan Municipality, the projects of Egekent-1 (9448 units, Çiğli, 1985-1989) (Figure 2.27), Egekent-2 (1417 units, Menemen, 1992-1995), Egekent-3 (4035 units, Buca, 1993-1996) and Egekent-4 (1600 units, Torbalı, 1997-2000) can be mentioned. Egekent projects were produced by the partnership between Ege-Koop and Izmir Metropolitan Municipality (Ege-Koop 2006; Koç 2001, 178-235). And for the model based on the partnership between the cooperative associations and county municipalities, Uzundere Konkent Social Housing (2070 units) (Figure 2.28), Buca-Koop (3337 units, 1992-2000), Bor-Koop's Yenikent projects (2948 units in villa, and apartment typologies, 1991-1998), Çiğli-Koop (5105 units, 1994-2001), and Narkent Mass-Housing (1174 units, 1997-2000) can be considered (Koç 2001, 332-50). Among them Narkent project was planned to prevent the shanty towns and renew the settlement. Thus, in the mass-housing productions, it may also be claimed that the role of the building cooperatives allied to the local governments makes them a component of urban renewal projects.

By the production model consisting of a single large cooperative founded by the Metropolitan Municipality, Ev-Ka-1 (5850 units, Buca, 1985-1988) (Figure 2.29), Ev-Ka-2 (3120 units in villa, terraced house, and apartment typologies, Maltepe, 1986-1990) and Ev-Ka-3 (1408 units in villa, and apartment typologies, Bornova, 1987-1989) projects were realized (Koç 2001, 245, 256, 271-97). İzbevka Building Cooperative was the name of the cooperative founded by the Municipality (IMM 1988, 144), and the projects were subsidized by TOKI, as well. *User participation* was also achieved in this project with that the users could determine how many units should be produced in each plan typology (Gürel 1987, 1). Repeating the same model, İzkent-1 (3010 units Buca,

1990-1993), and İzkent-2 (960 units, Çiğli, 1991-1996) projects were also realized by İzkent Building Cooperative and İzkonut Building Cooperative founded by the Municipality (IMM 1997, 17, 25).

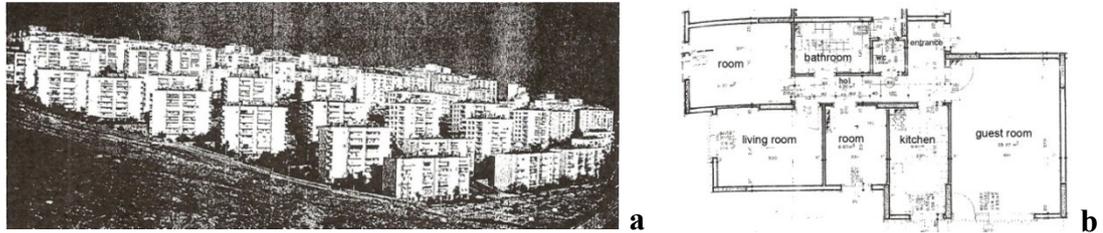


Figure 2.27. Cumhuriyet Neighborhood in Egekent-1 Mass-Housing, Çiğli, Izmir, 1985-1989: **a.** A view from the settlement; **b.** The typical plan of a unit (Source: Koç 2001, 210)



Figure 2.28. Konkent Social Housing, Uzundere, Izmir: **a.** A view from the settlement [Hülya Koç's archive]; **b.** The typical plan of a floor (Source: Koç 2001, 336, 339)



Figure 2.29. Ev-Ka-1 Mass-Housing, Buca, Izmir, 1985-1988: **a.** Site plan; **b.** Unit plan of the C3-type housing (Source: Koç 2001, 248, 252)

For the model depending on the partnership between the Municipality and its allied company, projects of Ev-Ka-4 (5410 units, Bornova, 1994-1997) (Figure 2.30), Ev-Ka-5 (3471 units, Çiğli, 1994-1997), Ev-Ka-6 (1027 units, Çiğli, 1996-1999), and Ev-Ka-7 (993 units, Gaziemir, 1996-1999) can be exemplified (Koç 2001, 310-331). Besides, for the model based on the partnership between the companies allied to the municipalities and the private enterprises, Narbel Mass-Housing project (850 units, Narlıdere, 1997-1999) can be mentioned. It was realized by the cooperation of Nar-Bel Company established by the Municipality of Narlıdere, and the private company of Demirer Construction Inc. (Koç 2001, 352). For the mass-housing projects produced by the private companies, on the other hand, Mimkent 1-2 and 3 Housing (1566 units, 1988-1996, by the Demirer Construction Inc.) (Figure 2.31) can be mentioned among the large scale projects (Koç 2001, 378). Furthermore, the private companies may have been the organizations working in both the national and international scales (for instance, TreInvestment-Netherlands, Dromaco, and 3XN-Denmark are among the examples of the foreign financier-companies; Soyak, Folk Art and Bozoğlu are among the companies in national-scale). Folk Art Narlıdere (2009), Bozoğlu Mavişehir (2009), and Soyak Siesta (2012) projects are among the most recent examples produced as the gated communities for especially high incomes by the private enterprise.

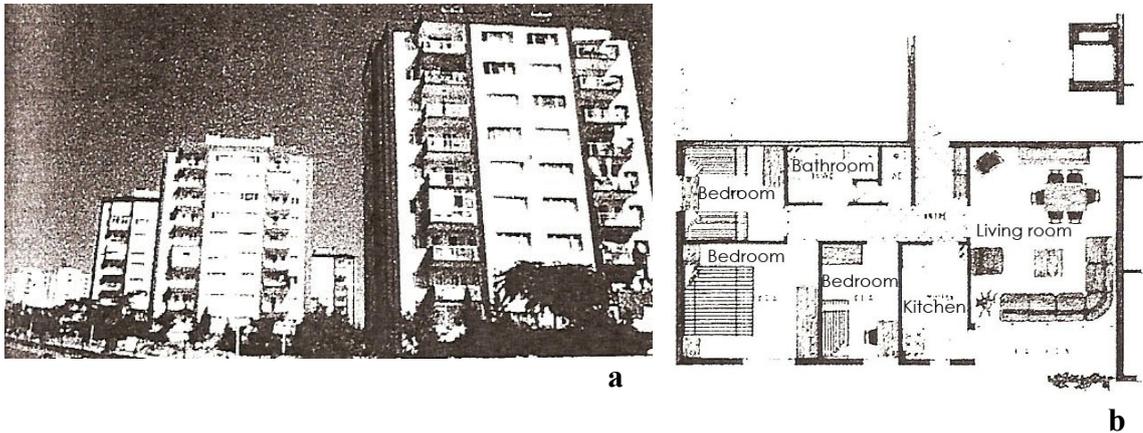


Figure 2.30. Ev-Ka-4 Mass-Housing, Bornova, Izmir, 1994-1997: **a.** A view from the settlement [Hülya Koç's archive]; **b.** The typical plan of a unit (Source: Koç 2001, 313, 316)

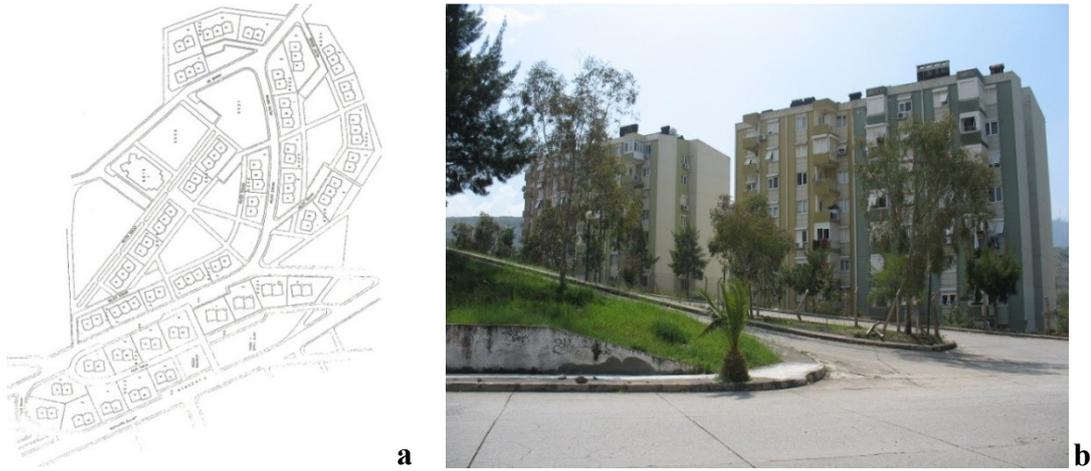


Figure 2.31. Mimkent Mass-Housing, Esentepe, Izmir, 1988-1996: **a.** Site plan; **b.** A view from the settlement (Sources: **a.** Koç 2001, 378; **b.** Photograph by İpek Ek)

As it is perceived from the above transformation stories in national and local scales, mass-housing projects have always played active role in the housing market especially since the proclamation of the Republic. In summary, it may be claimed that the concept of mass-housing has been affected the housing production in both Turkey and Izmir, mainly in the following manners: 1) housing cooperatives; 2) lodgings (Bilgin 1992, Tekeli 2008) social housing for low incomes; 4) gated communities for high incomes. These manners demonstrate that the mass-housing system corresponds to a sociological and economic phenomenon as well as an architectural and urban one. The most distinctive feature of the mass-housing projects, in this respect, is that they have a strong public image arising from their socio-economic character integrating or discriminating all social classes (Gür 2000). The integration can occur both between the classes having homogeneous character in terms of economic and social features, and between the classes having heterogeneous character in some cultural respects. Hence, it may be claimed that the importance of mass-housing typology, in general, depends on its social and economic image created by itself.

Consequently, architectural and urban design practices have played/play a role concretizing the public goals of the social layers through the above-mentioned mass-housing typologies. The multi-layered character of the concept of mass-housing, its diversity and flexibility, its degree of accessibility for each user profile, its application density and frequency are sufficient to keep this typology in the current agenda of the architectural practices in both Turkey and Izmir. However, it may also be claimed that while the power of the concept of mass-housing has been in its *transformation* ability

throughout the periods, today, this concept also becomes the tool to observe the *uniformity* in spatial organizations of the mass-housing projects. Thus, it can be claimed that the survival of the concept of mass-housing is based on its transformation ability as well as its ability of uniformity, which is also parallel with the interpretation undertaking this concept as a *context-based* phenomenon (Tekeli 1979).

CHAPTER 3

READING OF THE RECENT MASS-HOUSING PROJECTS IN TURKEY: A STORY OF *UNIFORMITY*

3.1. Introduction to the Uniformity Issue

The approach claiming that the concept of mass-housing is *context-based* in Turkey (Tekeli 1979) constitutes a way of analysis to understand such multi-layered concept. As it is perceived in the section of “Typological and Conceptual Transformation,” concept and typologies of mass-housing in Turkey have been influenced from the social and economic transformations of which effects could be followed by the enactments of the laws. However, while the enactments of those laws indicate that the needs of the society and the limits of the context cause *transformations* in mass-housing concept and production typologies, they can also cause the emergence of *uniformed* design principles especially in the plan types. Though the uniformity can be clearly read in the unit-plans of housing projects produced since 1950 in Izmir, today, almost all of these plan types became similar to each other without regarding the income groups, geographical locations, and construction qualities. That is, the uniformity is concretized by the potato-print-like plan types—as well as the façade organizations—of recently produced mass-housing projects.

Nevertheless, despite the uniformity by means of the architectural design principles, a limited variety can also be observed in some regards in the mass-housing examples produced after the 1980s. However, the main variations have been related with the *settlement features* and the *services*. Only these features and services change according to income groups; and thus, the selling-price of the housing-unit is also determined according to environmental equipments, social services, and construction qualities provided for these income groups. In this context, for example, the housing settlements of high-income groups are arranged as gated communities, and they have some facilities, services and features which make the inhabitants feel privileged: the gated settlement; security guarantee for 24 hours (by the security teams and cameras); location close to the activities like the market, café, restaurant, cinema, and shopping

centers (or even having these activities in the settlement); accessibility by many vehicles; school, health center, and commercial center in the settlement; landscape qualities; play grounds; electric generators and water tanks; swimming pools; open and closed sport areas; open and closed car parks; and post-purchase customer services are among the advantages. Similarly, again for high-income housing-units, there are more advantages inside of the unit: modern system-kitchen and bathroom designs (kitchen with built-in white goods, etc.); technological equipments (smart building systems); air-conditioning systems (air-conditioners, double-glazing for conditioning, etc.); fire alarm systems; earthquake resistance; high-quality insulation, high-quality doors, windows, wall paintings, and floor coverings; disposal unit; built-in wardrobes; chimney; barbecue; parents' bathroom; and dressing room can be considered among the interior services with their additional spaces. In middle-income housing, on the other hand, these kinds of advantages are limited with a swimming pool, open and closed sport areas, open car parks, and play grounds; and in low-income groups, they are limited with a few compulsory services like the open sport areas, play grounds, and open car parks. In the most inclusive examples of low-income settlements, there are additional facilities like schools, a mosque/prayer room, and a health center. Besides, interior services and features of low-income housing-units mostly consist of the standard-quality system-kitchen and bathroom designs, standard-quality insulation, earthquake resistance; and air-conditioning system.

The variations ranged in the promotional brochures and films include the services and features of the housing settlements as well as the housing units. The equipments promised for the settlement and housing-units can be clearly followed by these brochures including the 3D site modelings, models, and the photographs of a flat furnished as a model for the customers. When the housing units are considered, in this respect, it is seen that the quality is only limited with the materials used in the finishing, and the characteristics of the technical equipments and services. On the other hand, in terms of housing settlements, while the variety in environmental and social respects is obviously read in the site modelings and models of especially high-income and partially middle-income groups' housing, it is remarkable that only a few of the social services or equipments can be seen in the settlement photographs of low-income groups. Nevertheless, the sharp similarity between the settlements of each income-group refers the uniformity in designs of the apartment blocks.

Furthermore, while the social services and construction quality vary according to income groups, unit-plan types are produced almost within the same template without considering any socio-cultural, economic or psychological factor. This plan-template remains constant generally in terms of spatial organization and relations, however, some examples are distinguished from the others by means of some subtle distinctions. Similarly, when the mass-housing is examined in terms of the blocks, it is observed that the dominant typology is the high-rise single-blocks. In some cases, this typology yields another one having horizontal mass rather than the vertical, though the horizontal one also corresponds to multi-storey building. Window openings, joint gaps, partial color differentiations between these gaps, balconies drawn inside, and symmetrical mass-organization refer the same stylistic language in almost all of the facades; even they seem as if they had been designed by the same architect. Hence, when the block facades are compared with each other, the uniformity is again figured out obviously. Besides, even the differentiations in facade organizations cannot change the plan template, in general. Thus, at this point, it is useful to examine the architectural designs (plans and facades) of some of the recent mass-housing examples of each income-group. The following text undertakes this examination by the cases from Istanbul and Ankara—excluding the ones from Izmir, which are already examined in Chapter 5 and 6 in detail.

3.2. Examination of the Uniformity in the Recent Cases

For a comparative examination of the uniformity issue in the mass-housing projects produced recently, two mass-housing cases are selected for each income group, and one of them selected from the examples in Istanbul, and the other is from the examples in Ankara. In this respect, high-income examples comprise KentPlus Mimarsinan in Istanbul, and 312 Ulusoy City in Ankara; middle-income examples consist of Metrokent in Istanbul, and Turkuaz Vadisi Houses in Ankara; and low-income examples include TOKI Kayabaşı in Istanbul, and TOKI Yapracık in Ankara. The selection criteria of these cases comprise the random selection, constructional progress (most recent examples are preferred), and availability of the data: randomization is utilized to increase the reliability, the recent cases provide a clear understanding about the current situation as well as the probable tendencies in the future, and availability of the data (plans, 3D modeling, and photographs) assured

parallel analyses. Furthermore, to make parallel analyses, only 3+1 plan types of housing units are examined, which also provide a comparison and compliance with the examination of the main cases from Izmir, in this dissertation.

In this respect, the argument of the examination is that 3+1 units have the following spatial organization aligned beginning from the entrance through clockwise as follows:

- 1.) Entrance, [2.) Additional space,] 3.) Bathroom (and/or WC), 4.) Three bedrooms (with a parents' bathroom), 5.) Living room, 6.) Kitchen, [7.) Additional space].

This examination also asserts that, because of its intense application frequency in the recent mass-housing examples, this spatial alignment became a *fixed template*. It will be also revealed at the end of this examination that the block facades are also designed regarding a *template* formed by the same principles of color differentiation and mass fragmentation. Examination of these cases also provides a base for the assertion of this dissertation which claims that there is uniformity in the architectural design in most of the mass-housing units. Thus, the following sections comprise the analyses applied in regards of spatial alignment and façade organizations of the cases selected from Istanbul and Ankara, and their examination via the plans, 3D modeling, and photographs.

3.2.1. High-Income Cases

The first example, KentPlus Mimarsinan project was realized in Ataşehir Istanbul between the years of 2005 and 2007 (the sale process of some units was still continuing at the end of 2011). The project was realized by the cooperation between Emlak Konut REIT and a private company (Emay Construction Inc.), and designed by the architect Erol Kuzubaşioğlu. There are 660 units in 19 blocks of which storey-numbers are 10. Regarding the unit prices of square meter, which change between 2200 TL and 2600 TL, it can be claimed that the project mostly addresses to high incomes. The word of “plus” in the name of the project refers its concept, according to which it corresponds to B+ income-group covering middle-high and high income people together (KentPlus 2011). In this respect, for the project, it is claimed that the “standards of high incomes are provided for B+ group (middle and middle-high

incomes) in KentPlus Mimarsinan” (KentPlus 2011).¹ That is, the project has an *income-based* concept and slogan. Therefore, other services for the B+ group are ranged as follows: a shopping center consisting of a café, restaurant, market, pharmacy, and dry cleaning stores; open swimming pools (for adults and children) with resting and sunbathing terraces; recreation areas; open and closed play grounds; open and closed car parks; and security for 24 hours (it is a gated settlement) (KentPlus 2011).

There is only one type of 3+1 plan, and all of 3+1 units are in B Blocks. If this plan type is examined, the mentioned *alignment-template* is almost completely figured out in the spatial alignment of KentPlus Mimarsinan (Figure 3.1). Thus, beginning from the entrance through clockwise, this alignment is as follows:

- 1.) Entrance, 2.) Bathroom, 3.) Additional spaces (*cellar* and *dressing room*), 4.) Three bedrooms (with a parents’ bathroom), 5.) Living room, 6.) Kitchen.

As it will also be demonstrated in the following examinations, the main difference of this plan from the others is the place of the additional space, that is, the cellar which is after the bathroom, and the existence of a dressing room (opening to the parents’ bedroom). Besides, as another difference, the balcony opens to one of the bedrooms—which is exceptional, because, as it will be seen in the following projects again, it breaks the rule of opening of the balcony to the living room or kitchen or both of them.

In terms of the block-façade organizations, it is observed that the façades are vertically fragmented into sub-masses some of which are divided and emphasized by colored surfaces to provide dynamism (Figure 3.2). This kind of façade treatment also refers a kind of template, as it will also be demonstrated in the following examples.



Figure 3.1. 3+1 plan type in B Blocks, KentPlus Mimarsinan, Ataşehir, Istanbul, 2005-2007 (Source: KentPlus 2011)

¹ “[...] KentPlus Mimarsinan, üst gelir düzeyinin standartlarını B+ (Orta ve Orta üstü) gelir grubuna sunuyor.”



Figure 3.2. Views from the settlement, KentPlus Mimarsinan, Ataşehir, Istanbul, 2005-2007 (Source: KentPlus 2011)

Another example for high-income mass-housing is 312 Ulusoy City project realized in Ümitköy, Ankara, between the years of 2007 and 2008 (the inhabitation started at the beginning of 2011). The project was designed by the designer-team of Opan Investment Company which was the contractor firm, as well. In the project, there are 160 housing-units in three blocks one of which is six-, other two are 13-storey. The project offers seven different unit-options including 2+1, 3+1, 4+1, 5+1, 6+1, 7+1, and 9+1 plans. The price list reveals that even 2+1 versions address only high-incomes, since the unit price of square meter changes between 2.600 TL and 3.000 TL. In this respect, the slogan of the project consists of that “312 City offers different solutions for ‘those who seek high standards of life’”² (Opan Investment 2011). Among these “high standards,” “security,” “landscape,” and a “sport center” are the highlighted services in the promotional website (Opan Investment 2011). Closeness to the shopping centers, mass transportation, and hospitals, semi-olympic swimming pool, swimming pool for children, fitness center, sauna, SPA center, and steam baths comprise the other advantages of the project (Opan Investment 2011). It is a gated community, as well; thus, the security team supported by the intercom system serving for 24 hours, and the entrances and exits are controlled by the encrypted card keys. Besides, ponds, basketball

² “312 City ‘yaşamın yüksek standartlarını arayanlara’ farklı çözümler sunuyor.”

area, walking and bicycle paths, and the landscape design are mentioned within the outdoor services (Opan Investment 2011). Closed car parks and underground storages are the other common advantages. It is also stated that the handicapped people and their requirements were also considered in the design of the project (Opan Investment 2011). Built-in products, waste disposal unit, air-conditioning, hidden safe, cable TV, satellite antenna, and wireless internet refer the indoor services. That the glazing with the joineries having sound and heat insulation continues along with the whole living room to provide a wide angle of view is also mentioned as a privilege (Opan Investment 2011).

As a different point, it is also claimed that the project provides the inhabitants a kind of freedom to *organize* the plan of their unit: “The ones, who want to combine their rooms as they wish, have the privilege of freedom to practice it in 11 versions with architecturally excellent plans, by the industrial formwork technology”³ (Opan Investment 2011). However, when the plan types are examined, there cannot be observed any implication of *freedom* to combine the rooms, on the contrary, the plans are rather *conventional* regarding the mentioned alignment-template of 3+1 units (Figure 3.3):

1.) Entrance, 2.) Bathroom, 3.) Additional space (*laundry room*), 4.) Three bedrooms (with a parents’ bathroom), 5.) Living room, 6.) Kitchen.



Figure 3.3. 3+1 plan type in 312 Ulusoy City, Ümitköy, Ankara, 2007-2008
(Source: Opan Investment 2011)

³ “Odalarını dilediği gibi birleştirmek isteyenler endüstriyel kalıp teknolojisinin getirdiği bu özgürlüğü, 11 farklı tipteki mükemmel mimari planda uygulama ayrıcalığına sahip oluyor.”

The only difference between 312 Ulusoy City and KentPlus Mimarsinan is the function of the main additional space which corresponds to the laundry room in 312 Ulusoy City, and the cellar in KentPlus Mimarsinan. Besides, in 312 Ulusoy City, both balconies open to the living room, and one of them also opens to the kitchen, which also complies with the uniformed plan-template.

Façade organizations of the blocks do not differ from the other examples, either. Horizontal fragmentation, emphasis on the corners by color differentiation, and different treatment of the attic storey are all similar with most of the treatments in recently-built mass-housing projects (Figure 3.4). These similarities can be read more obviously in the photographs of the project (Figure 3.4.c, d, e).



Figure 3.4. 312 Ulusoy City, Ümitköy, Ankara, 2007-2008: **a.**, **b.** 3D modeling; **c.**, **d.**, **e.** Views from the blocks (Sources: **a.**, **b.** Opan Investment 2011; **c.**, **e.** Turyap 2011; **d.** Ensa 2008)

3.2.2. Middle-Income Cases

For middle incomes, the example from Istanbul is Metrokent project realized in Başakşehir between the years of 2009 and 2011. The housing units of the project, however, have continued to be sold until the beginning of 2012, therefore, inhabitation in the housing could begin gradually since the beginning of 2011. The project was

designed by Kiptaş⁴ (the company allied to the Metropolitan Municipality), by a team consisting of three architects whom head were the architect Şule Öztürk. There are nearly 1000 housing-units in 16 blocks of which storey-numbers change between 20 and 24. Regarding their unit prices of which square meter change between 1400 TL and 2200 TL, it can be claimed that the project also addresses to middle-high incomes. As it can be perceived by the name of the project, the main claim about the advantages is that it provides the inhabitants accessibility by metro. This aim is also observable in the selection of the slogan of “metro-front”⁵ to introduce the project, in the promotional web page (Kiptaş 2011). Besides, a shopping center, a closed swimming pool, recreation areas, play grounds, social facilities, fitness center, a massage hall, sauna, open and closed car parks, and security for 24 hours are among the listed services (Kiptaş 2011). In the web page, it is also remarkable that one of the promotional questions is ‘what kind of home, do you want to live in’. The answer-text is as follows: “Başakşehir Metrokent offers the inhabitants a wide range of housing options according to their preferences. From 1+1 to 5+1, select one of 5 different housing options; color your life in your new home” (Kiptaş 2011).⁶ However, by the word of “options,” the units differing regarding the number of rooms are referred. Thus, the plans have the same spatial organization.

When 3+1 plan-types (six different types were determined) are examined, the uniformed alignment-template can be perceived obviously (Figure 3.5). Either beginning from the entrance through clockwise or counter clockwise (in symmetrical plans), this template consists of the following spatial-alignment:

- 1.) Entrance, 2.) Bathroom (with parents’ bathroom and/or WC), 3.) Three bedrooms, 4.) Living room, 5.) Kitchen.

However, among these 3+1 plans, there are some nuances, as well. For example, while the plan in Figure 3.5.a has a cellar as an additional space near the entrance, there are additional dressing rooms opening to the bedrooms in the plans in Figure 3.5.e and Figure 3.5.f. Besides, again, in the plan drawing in Figure 3.5.a, one of the bedrooms is furnished as a living room, and larger room is reserved as the guest room. Balconies

⁴ Kiptaş is the abbreviation of *İstanbul Konut İmar Plan Sanayi ve Ticaret A.Ş.* in Turkish, which corresponds to Istanbul Housing-Development and Plan Industry and Trade Inc. in English.

⁵ “Metroya Sıfır.”

⁶ “Başakşehir Metrokent, sakinlerine, tercihlerine göre geniş bir yelpazede konut seçenekleri sunuyor. 1+1’den 5+1’e kadar 5 farklı konut seçeneğinden birini seçin; yeni evinizde hayatınızı renklendirin.”

open either the kitchen (Figure 3.5.e, f) or living room (Figure 3.5.a) or both of them (Figure 3.5.b, c). There is *not* any balcony in the plan in Figure 3.5.d. Moreover, this plan also destroys the uniformed-template of spatial-alignment, and kitchen yield the living room; thus, the alignment becomes the following one:

1. Entrance, 2. Bathroom, 3. Three bedrooms (with a parents' bathroom), 4. *Kitchen*, 5. *Living room*.

In façade organizations of the blocks, it is observed that the first seven-storey of them are emphasized with a different color. And at their corners, linear colorings are applied vertically from top to bottom. As it can be perceived in Figure 3.6, these blocks seem like the hormone-injected versions of the smaller mass-housing implementations surrounding the background and sides of them in the modeling.



Figure 3.5. 3+1 plan types in Metrokent Mass-Housing, Başakşehir, Istanbul, 2009-2011: **a.** Plan-type in A Block; **b.** 1st plan-type in B Block; **c.** 2nd plan-type in B Block; **d.** Plan-type in C Block; **e.** 1st plan-type in E Block; **f.** 2nd plan-type in E Block (Source: Kiptaş 2011)



Figure 3.6. Block views in 3D modeling, Metrokent Mass-Housing, Başakşehir, Istanbul, 2009-2011 (Source: Kiptaş 2011)

Ankara example for middle incomes is the project of Turkuaz Vadisi Houses realized near Eskişehir road between the years of 2007 and 2011. At the beginning of 2011, sale process was still continuing. The project was realized by the cooperation between TOKI and several private companies (companies of Ayhan Demirci, Kalyon, and Öz-kar). There are 4430 housing-units in 16 blocks six of which are four-storey, and 10 of them are 11-, 13- and 15-storey. It is not a gated community. It can be claimed that the project addresses to middle incomes, since the unit price of square meter changes between 1200 TL and 1700 TL. Within the social facilities, open sport areas, open and closed cafes, animation ponds, play grounds, walking and bicycle paths, and landscape design are mentioned (TOKI 2011b). Besides, the settlement also contains a mosque, primary and high schools as well as a nursery. The project has not any promotional slogan, which may also indicate that the housing is for middle incomes, and even, for middle-low incomes. However, it is remarkable that there is a management system in the settlement, and the activities can be followed by everyone from the website of the management (Turkuaz Vadisi 2011). Furthermore, there is a civil society organization named as Turkuaz Vadisi Development and Solidarity Association founded by the inhabitants, as well (Turkuaz Vadisi 2011).

There are two types of 3+1 plans in the project. The mentioned template is observed again in these plans (Figure 3.7); however, one of them has a nuance: like in Metrokent case, in the plan in Figure 3.7.b, the kitchen yields the living room; thus, the alignment becomes the following one:

1. Entrance, 2. Bathroom, 3. Three bedrooms (with a parents' bathroom), 4. *Kitchen*, 5. *Living room*.

For this reason, while the kitchen and the living room in Figure 3.7.a open to the entrance, the kitchen in Figure 3.7.b opens to the corridor. In both plans, there is a door separating the entrance hall from the corridor. Other difference between two plans is that the plan in Figure 3.7.b has three WCs (bathroom, parents' bathroom, and WC). Finally, while the balcony in Figure 3.7.a is connected to the kitchen, the balcony in Figure 3.7.b is connected to the living room.



Figure 3.7. 3+1 plan types in Turkuaz Vadisi Mass-Housing, Turkuaz Vadisi, Ankara, 2007-2011: **a.** Plan in A Block; **b.** Plan in C Block (Source: İnşaat Dergisi 2011)

Facades of the high-rise blocks of Turkuaz Vadisi (with 11-, 13-, and 15-storey) are organized conventionally, as well (Figure 3.8.b, c, e, and f). They have the similar principles especially with the facades of KentPlus Mimarsinan and Metrokent. Color differentiations by the joint gaps, emphasis by color on the bottom and top parts of the facades, vertical fragmentation of the masses are the most salient characteristics. However, though the horizontal block with four-storey in Figure 3.8.d resembles to the others by means of the color emphasis with joint gaps and vertical fragmentation of the mass, it has a nuance, as well: the eave-dimension of its roof refers the dimensions and style of the traditional Turkish houses.



Figure 3.8. Turkuaz Vadisi Mass-Housing, Turkuaz Vadisi, Ankara, 2007-2011: **a.**, **b.**, **c.**, **d.**, **e.** 3D modelings; **f.** View from the settlement (Sources: **a.**, **b.**, **c.**, **d.**, **e.** İnşaat Dergisi 2011; **f.** Panoramio 2008)

3.2.3. Low-Income Cases

TOKI Kayabaşı mass-housing in Kayaşehir constitute low-income example from Istanbul. As also stated previously in Chapter 2, the section titled “Transformation in National Scale,” TOKI Kayabaşı is a tripartite project: the first one is the “earthquake transformation” project, the second one is “low-income-group” project (especially built for the veterans, the families of the martyrs, and handicapped people), and the third one is the “social housing” project. Furthermore, it is a continuing project of which construction began in 2008. The reason of the continuation is that the project consists of

17 stages of construction, and these stages have been and are realized gradually. In this respect, the first stage began in 2008 and ended in 2010, while the 17th stage began in 2010 and will end in 2012. In corporation with TOKI, there are 12 different contractor firms undertaking the construction of the stages. The typical housing-unit plans of TOKI were applied in Kayabaşı, as well; thus, the designers remain anonymous. It is a large scale project by means of the unit-number which corresponds to 16.672 units distributed in 339 blocks. The most extensive stage is the fifth one including 1814 units in 34 blocks. The most applied storey-number for the blocks is 13. The unit price of square meter is minimum 863 TL and maximum 1.050 TL. Regarding these prices, it is obviously conceived that Kayabaşı is a social housing project addressing especially low-incomes. Thus, needy people could also possess unit by special banking advances. The distinguishing features of the project in comparison with the other similar kind of social housing projects are listed by TOKI as follows (Emlak Kulisi 2010):

- There is a green area of 36 square meters per capita in Kayabaşı,
- It was built with tunnel-formwork system and on raft foundation for earthquake resistance,
- A large part of the daily energy for heating is supplied by the solar energy,
- The use of rainwater for irrigation of the gardens is planned.

There is not any further promotion slogan except from the above mentioned features.

Recreation areas, government agencies, cultural facilities and public education centers, nurseries, primary and secondary schools, vocational high schools, and health centers are among the social equipments of the project (Emlak Kulisi 2009). Though the outdoor areas are large, facilities are extensive, and the project reminds a city-like structure, it is not promising by means of the variety of housing-unit-plans. The housing units are constituted with the typical plans applied in every social housing project by TOKI. Therefore, the uniformed template of spatial alignment for 3+1 units remains the same with the others (Figure 3.9):

- 1.) Entrance, 2.) Bathroom (WC and bathroom), 3.) Three bedrooms, 4.) Living room, 5.) Kitchen.

It is noteworthy that, especially in low-income housing, a WC apart from the bathroom yields the parents' bathroom. And thus, both the WC and bathroom open to the corridor. Kayabaşı mass-housing also obey this rule. There are not any additional spaces like a cellar or laundry room. Besides, the balcony in Kayabaşı units is connected only to the kitchen.



Figure 3.9. 3+1 plan type in C Block, Kayabaşı Mass-Housing, Kayaşehir, Istanbul, 2008-2012 (Source: Kayaşehir News 2010)

By means of the façade organizations, on the other hand, it is firstly remarkable that the top parts of most of the blocks were finished with a triangular pediment-like structure (Figure 3.10.c, and d). However, there are many types of blocks having different façade organizations: for example, while the ones in Figure 3.10.a have vertical fragmentations in terms of their masses and colors, the ones in Figure 3.10.b have characterized window shapes and vertical color-emphasis without any fragmentation in their masses. Nevertheless, the common characteristic of them is that the first few-storey is colored differently from the rest upper-part of the buildings.



Figure 3.10. Kayabaşı Mass-Housing, Kayaşehir, Istanbul, 2008-2012: **a.**, **b.** Views from different blocks in the settlement; **c.** 3D-render view from B Block; **d.** 3D-render view from C Block (Sources: **a.** Haberkulesi 2009; **b.** TOKI Housing 2009; **c.**, **d.** TOKI 2011a)

The other low-income example is also selected from TOKI cases: TOKI Yapracık mass-housing in Yapracık, Ankara, comprise 14 stages, and the first construction-stage started in 2009. Most of the stages were completed in 2011. In corporation with TOKI, 10 different contractor firms participated to the construction of the stages. The typical housing-unit plans—and housing designs—of TOKI were applied in Yapracık, which were designed by a team in TOKI, as mentioned earlier. The number of housing units reaching to 9224 indicates the size of the project. The unit price of square meter is approximately 920 TL. Thus, the project generally addresses to low and middle-low incomes; and considering the average price, it is a social housing project. The social services provided in this large settlement cover five primary schools, and two high schools (TOKI Yapracık 2011). Resistance to earthquake is also considered. In this respect, raft foundation and tunnel formwork system are mentioned among the constructional features of the buildings (TOKI Yapracık 2011).

In Yapracık project, two kinds of 3+1 plans were applied (in C and Y Blocks) (Figure 3.11). However, two points are noteworthy here: the first is that the spatial alignment in 3+1 plan of Y Blocks breaks the alignment-template in two important respects. The second is that the C Blocks are the exact copies of Kayabaşı project in Istanbul, not only in terms of their spatial alignments but also façade organizations (see Figures 3.9 and 3.10.d). Firstly, examining the plan of Y Blocks (Figure 3.11.a), it is observed that the place of the bathroom is moved *between* the bedrooms, and at the end of the corridor; and secondly, the alignment of the spaces through clockwise begin respectively with the WC and kitchen, and end with the living room. Though the place of the WC corresponds to the same line with the bathroom in the uniformed alignment-template, and though the kitchen and living room again open to the entrance hall like in the previously-examined projects, this model differs from the uniformed template. Therefore, as it is indicated in Table 3.1 below, the conventional spatial-alignment template in the first row differs from the alignment of Y-type in the second row. On the other hand, the plan in C Block (Figure 3.11.b) is exactly the same with the one in Kayabaşı project (see Figure 3.9). The spatial alignment is fixed to the one stated in the first row of Table 3.1. In both plans, the balcony opens only the living room. Furthermore, the plan in Y Block has nearly I-shaped corridor, while the plan in C Block has an L-shaped one like the other 3+1 plan types examined previously.

Table 3.1. Comparison of the spatial alignments (the first row indicates the conventional/uniformed alignment-template, and the second refers the difference in Y Blocks)

The conventional spatial-alignment:	1.) Entrance, 2.) Bathroom (WC and bathroom), 3.) Three bedrooms, 4.) Living room, 5.) Kitchen.
The different model (Y Blocks):	1.) Entrance, 2.) WC, 3.) <i>Kitchen</i> , 4.) Two bedrooms, 5.) <i>Bathroom</i> , 6.) A bedroom, 7.) Living room.



Figure 3.11. Yapratic Mass-Housing, Yapratic, Ankara, 2009-2011: **a.** 3+1 plan type in Y Block; **b.** 3+1 plan type in C Block (Source: TOKI Yapratic 2011)

Another remarkable point is about the façade organizations. The C Blocks (having the C type 3+1 plans) in Yaprıcık project (Figure 3.12.b), again, have the same facades with the ones in the C Blocks of Kayabaşı project (see Figure 3.10.d). The distinguishing feature of these C Blocks from the other blocks in the settlement is that the top parts of them are finished with a triangular pediment-like structure. The facades of Y and C-K Blocks have vertical fragmentation by means of their masses which are also emphasized by color differentiation. For the examples in Figure 3.12.b and 3.12.d, on the other hand, the common characteristic is that the first few-storey is specially emphasized by a different color which can be seen in most of the recent mass-housing implementations (see Figures 3.6, 3.8, and 3.10).



Figure 3.12. Yaprıcık Mass-Housing, Yaprıcık, Ankara, 2009-2011: **a.** Elevation of Y Block; **b.** 3D-render view from C Block; **c.** 3D-render view from C-K Block; **d.** View from the settlement (photograph by Kalse Kal) (Source: TOKI Yaprıcık 2011)

As it can be perceived from the above examinations, the current situation refers that there is not any significant differentiation or variation between the selected mass-housing projects of different income groups; on the contrary, a typological *uniformity* in terms of their plans and facades becomes legible clearly. Therefore, looking for the answers to the following research questions—as also set in the Introduction Chapter—becomes seminal in this dissertation: Does the uniformed design in mass-housing units point out a kind of consensus? If it does, then what kind of consensus is referred by this uniformity? What are the effects of this consensus in the contexts of quality and architectural design quality? In other words, what do the mass-housing quality and architectural-design quality for the inhabitants correspond to? Why do the inhabitants pay different prices for the same design? And, after all, does the quality of architectural design refer a problem of mass-housing in Turkey? As a matter of fact, it is the problematic side of the mass-housing which keeps it in the current agenda of the housing literature. And this problematic side principally begins with the *discussions* and questioning whether this very problem is related with the *quantity* or *quality* of the mass-housing, and then, it continues with the *measurements* trying to set the problem and searching for the solutions. Following sections undertake these attempts.

3.3. Housing Problem in Turkey: Quantity or Quality?

Housing problem in Turkey has been recognized as a problem based on the quantitative insufficiency of the number of produced housing projects since the end of the World War II (1945) until the increase in the production by property developers by the enactment of the Law of Property Ownership in 1965. However, after this period, a new term began, and the housing problem definitions have changed their directions: production of mass-housing was increased in this term respectively by the enactments of the Housing Cooperatives Law in 1969 and the Mass-Housing Law in 1984, and the *quantity* problem in housing was transformed into the *quality* problem (Tekeli 1979, Tekeli 1982, Sey 1984, Sey 1994).

In this respect, mass-housing in Turkey refer an architectural product having the strongest criticism in terms of the quality problem. Housing, which is perceived as a *product* by housing literature, also becomes a tool to comprehend the quality issues in the hands of the same literature, and the researchers discussed the quality problem in

mass-housing via two main axes in general: the first axis focuses on the *standardization* or *uniformity* problem in architectural design, and on the built environment in poor quality as a result of this problem. The second axis refers the quality problems resulting from the economy in constructional materials and technical equipments of the mass-housing projects. The first sort of literature examined the causes and effects of the *uniformity problem* in plan schemes, and commented on them regarding the social transformations in international and national scales (for some examples, see Tekeli 1979; Bilgin 1994; Bilgin 1998; Cengizkan 2002; Tanyeli 2004). In this context, uniformity in design has been explained firstly within the social framework of local-scale transformations caused by the dynamics in global scale like capitalism, industrialization, Fordism, post-Fordism, and the transition to consumer society. Therefore, these studies can be recognized as the *context-based* approaches of which aim is to *discuss* quality; their definitions are often up to the changes in local and global scales, and do not aim at reaching the *user perception* which corresponds to the actual answerer of the quality problems in mass-housing.

In the second type of literature which addresses the quality of housing materials and technical equipment, and of which large part constitutes the “studies on building performance,” architectural design, forms of spatial organization and their effects on housing quality have been ignored in general, and housing quality has been measured in terms of the quality of processes and the elements creating them. They aim at *measuring* housing quality, and thus, the definitions of quality in this kind of studies are mostly borrowed from the discipline of *Total Quality Management (TQM)*. On the other hand, these studies reach the *individual scale*; measurements and evaluations are conducted with the designers and the users themselves (for some examples, see Altaş 1994, Dülgeroğlu Yüksel et al. 1996, Altaş and Özsoy 1998, Gültekin 2002). Thus while the first-type studies are valuable because of their wide context-based reviews on the relationships between the architectural design and quality of mass-housing, the second type of studies are significant and useful in terms of their quality-assessments in individual scale. Nevertheless, the first sort of studies can be criticized because of their looking at the problem mostly in global scale—with its effects in local scale—and their miss of the individual point of view about quality, while the second sort of studies can be criticized because of their omission of the concepts such as architectural design and spatial organization in the quality assessments.

Despite all these efforts, however, it is difficult to say that the quality of an architectural product expected by the user has been examined sufficiently. Thus, while the concepts of *user* and *quality expectation* have been generally recognized in the field of industry, quality-measurement studies in the field of architecture stood out in recent years. A reason for this situation is that though there are conventional quality-definitions in the field of industry, there is not any certain definition agreed upon in the field of built environment, yet. Multi-dimensionality of both quality concept and built environment lead to diversification in the definitions of the quality in architecture, as well. However, discussions generally focus on some certain axes; critiques, emphases and answers for the current situation of quality problems in housing correspond to each other. Even the methods, techniques and approaches applied in those studies have a limited perspective, and thus, repeat each other in a rather historicist aspect. Quality problems of housing have been mostly considered in the perspective of materialistic and constructional problems, which is the reason of the restriction of quality-appraisals within the same techniques of evaluation and methods of analyses. Another problem is the absence of quality-appraisals on architectural design of housing projects. This fact can also be problematized regarding the limits of approaches and methods of historiography of housing in Turkey (Tekeli 1996). Though the scholars' critiques majorly focus on the quantity side of the problem, problem of quality related with architectural design was also implied and sometimes clearly declared between the lines of the related literature. Therefore, it will be useful to look at the mentioned two-sided quality-perspective in the housing literature of Turkey, which also provides us a wider comprehension about the differences in quality perceptions and definitions, and about the quality of architectural design.

3.3.1. *Discussion of Quality in Housing Studies*

The problem of quality in housing has been undertaken within different perspectives in the literature of housing research of Turkey. Lots of scholars advocated that the main problem of housing in Turkey is about their quality, but not quantity. Problem of architectural-design quality, in this sense, was also frequently implied. However, the fundamental problem of these scholars' studies is the absence of quality-appraisals on architectural design of the housing, and yet, their common point is their

retrospective and *context-based* aspect—which provides them a limited perspective—proposing that the problems of quality were also changed, while the social, cultural, economic, politic, and architectural contexts of Turkey—as well as the world—were changing throughout the history (Tekeli 1979, Sey 1984, Bilgin 1996, Bilgin 1998, Tekeli 1998b, Tekeli 2008). In this sense, the studies by Tekeli, Sey, and Bilgin have dominantly led the related discussions in the housing literature of Turkey. And in a *similar manner* with each other, their arguments about the housing problem focused on the very issue of quality. Therefore, in this section, quality discussions in the literature are examined by regarding these authors' studies.

Among these authors, Tekeli has frequently emphasized the problem of quality as well as the problem of architectural-design quality via the discussions of housing problem in Turkey. Tekeli's main argument about the housing problem is that it is mainly about the *quality* of housing in Turkey, but not about a quantitative deficiency (Tekeli 1982). In order to find coherent explanations to his argument, Tekeli, therefore, examined the changing character of the quality problem of housing by dividing the housing history of Turkey into successive periods (Tekeli 1979): the first period covers the years between 1930 (early period of the Republic) and 1955 (primary signals of the change in housing regulations), and the second one covers 1965 (enactment of the Law of Property Ownership) and the end of the 1970s (publication date of *ibid*). Regarding this division, the only quantitative-deficiency occurred after the World War II (1945), which was caused by the migrations to greater cities, and which was solved after 1965 by the supply-forms like property developers and housing cooperatives in legal, and squatter housing in illegal respects (Tekeli 1979). Namely, the society did not create a housing deficiency in quantitative regard, but on the contrary, could develop flexibilities to string along with the changing context. Therefore, the housing-supply forms in Turkey are dependent to the *context*, according to Tekeli (1998b); they have sufficient flexibility to adapt and re-structure themselves regarding the consequent changes in local and global scales.

Tekeli (1979) further designated that before the Law of Property Ownership (1965), the main problem about design quality was related with the political strategies of the new Republic. These strategies offered a modern life-style by new housing and settlement typologies. In this period (pre-1965), only high-income people could build apartments. They had the total property of the building, and thus, they were renting the units to middle-income group. High-income families had the eminent architects design

these apartments; therefore, their design quality and usage values were to be at high level. However, Tekeli (1979) claimed that these apartments were not formed regarding the profiles and demands of the inhabitants, but by the impositions of state to extend and establish the conditions of modern life-style.

Nevertheless, until the end of the 1970s, single apartment-blocks began to be substituted by the massed blocks of apartments. Since the enactment of the Law of Property Ownership (1965), property-developers as the new supply-form have emerged, increased, and played dominant role in housing production near the housing cooperatives. Regarding the change by this Law, middle incomes (and also middle-low incomes) could also possess their own houses. However, these contractor firms aimed only the increased prices in housing, and thus, design quality was ignored again, and conceded for the sake of economic disposals (Tekeli 1979). Besides, they could not produce housing projects in quality due to their lack of organization models or deficient organization cultures (Tekeli 1979). By the 1980s, on the other hand, increasing population, economic problems, and adoption of neo-liberal economy caused the emergence of a new kind of housing-supply form by a new legal structure (Tekeli 1996): foundation of the TOKI in 1984, enactment of the Mass Housing Law, and constitution of the Fund of TOKI (Tekeli 1996). Also today, according to Tekeli (2008), because any systematic solutions (in political or architectural respects) could not be offered hitherto, the dominant problem of housing is still about its *quality* which also affects the living standards of the society.

Sey also undertakes the problem of housing in Turkey by offering a periodization similar to Tekeli's. However, differing from Tekeli's aspect at one but a fundamental point, she mainly states that the housing problem in Turkey until the 1970s is a *quantity* problem rather than quality. She undertakes the housing process in Turkey by dividing it into the periods of 1923-1933, 1933-1946, 1946-1960 and post-1960 (Sey 1984). According to Sey, between the years of 1923-1933, the lack of capital and construction materials was included in the problem list; the period covering the years of 1933-1946 was oriented and formed by the modern ideals and principles of the new Republic; and the quantitative deficiency in housing production constituted the fundamental problem of the period between the years of 1946-1960 (Sey 1984). Multi-block complexes (which are closer to be defined as mass-housing, according to Sey) have emerged since the beginning of the 1970s (Sey 1984). Thus, it can be claimed that the production after 1970s paved the way of today's housing typologies. However, for

those housing projects produced after the 1970s, Sey also denoted that the *qualitative* regard of the problem, then, comprised the major part: “With some exceptions, these buildings [mass-housing blocks] have no significant architectural characteristics” (Sey 1984, 175). Namely, the problem of quantity was transformed into the problem of *architectural-design quality* by the emergence of the mass-housing blocks after the 1970s. Besides, another threshold is the 1990s, according to Sey: it refers the period in which the expression of “living quality” gained a special priority (Sey 1994, 165).

Another kind of periodization was also proposed by Bilgin (1996; also see Bilgin 1992, Bilgin 2002b), which corresponds to the periodization in Tekeli’s later article (1998a): 1) 1839-1920 (relative modernity—the apartments, row houses, and suburban houses); 2) 1920-1946 (radical modernity—the lodgings and building cooperatives); 3) 1945-1980 (populist modernity—property developers, squatters, and building cooperatives); 4) 1980-hitherto (crisis of modernity—mass-housing production by TOKI, building cooperatives, and local administrations). Bilgin’s emphasis was on the modernization in Anatolia and its interrelations with the transformations in global scale. Thus, he cited Anthony Giddens (1938 -) and his tripartite classification of modernity (Bilgin 1996): discontinuity, decontextualization, and reflexivity (Giddens 1992). In this respect, Bilgin (1996) denoted that though the housing-supply forms changed with regard to the developments in economical, political, and social structures, it is interesting that some of them also reappeared and gained currency in different contexts. For example, property developers and cooperative organizations still continue to produce housing; and even, cooperatives have very active role in the current mass-housing production of Izmir (as in the case of Ege-Koop), while the property-developers produce in very small amounts. On the other hand, changes in the quality expectations of the users can cause changes in the supply forms, as well. Thus Giddens’ tripartite classification of modernity provides us understanding for this kind of changes in the current situation of the housing-supply as well as the housing quality (Bilgin 1996).

Bilgin also undertook the problem of design-quality in Turkey by criticizing the repetition of the *ordinary* designs in housing—which may be associated with the concept of uniformity—and by questioning how they can be designed in an acceptable and quality manner (Bilgin 1994). There is a lack of quality in design; however, it is because of modernization; since all of the qualitative references were reduced into the quantitative ones after modernization (Bilgin 1994). Namely, the comfort, conditions, or quality of the houses were substituted by their costs or measures of the areas, according

to Bilgin (1994). Besides, by the modernization process, the architect began to design ordinary buildings (that is, housing), which leads to a paradox, because the ordinary cannot be designed. Thus, Bilgin (1994) denoted that the role of the architect was redefined in this respect, and he was *limited* with the design of the ordinary. By this way, housing settlements in Turkey began to be produced by the norms, standards, and typologies formed by the reflexes of different agents. The norms, standards, and typologies offered by the formation of architecture were disregarded, which caused to the problems in architectural-design quality (Bilgin 1994). This ignorance of quality accelerated in the 1980s by the transition from the small-scale to larger-scale housing-production. Within an opposite view to Tekeli (1998b), who claimed that housing production in Turkey is flexible to adapt itself to the new conditions, Bilgin (2000) attributes the problem to the fact that the relevant housing mechanisms have not reformed themselves after 1980s, though the production accelerated. However, according to Bilgin (2002a), the reformation itself is not adequate to solve the problem, but there should be *variations* in housing design, like the examples in Europe, especially to improve the *living quality* in social housing. Therefore, in the sense of the above perspectives, it can be claimed that Bilgin is a critic who based his arguments mainly on the *uniformity as a problem* as well as the importance of *architectural-design quality*.

As comprehended from the assertions and aspects of all three authors, they examine the housing problem with a special emphasis on quality. Though their studies led the discussions in Turkey, they are lack of clear definitions answering to the questions of what quality corresponds to for an architectural product, which criteria constitute the architectural-design quality, how they can be explored, and whether this quality is measurable. Therefore, the definitions on quality in housing studies are generally borrowed from the discipline of TQM, although they are not always integrated properly to the cases of architectural design. However, because the purpose of the TQM-based studies is to *measure* quality of housing—but not the quality of *architectural design*—approaches and methodologies in TQM easily serve for this purpose. Besides, another advantage of utilizing TQM is the very purpose of it, namely, *managing* the quality to improve products, which also serves for the construction responsible to improve the future implementations. However, apart from these construction-oriented studies, housing quality was often measured by some other methods based on measuring the *user-satisfaction* about the *house itself* within a holistic view—such as the Post Occupancy Evaluation (POE) model. In this sense, it is worth

looking at the methodologies of both TQM and the other frequently-used ones in the literature, which aim at *measuring* the quality of housing.

3.3.2. Measurement of Quality in Housing Studies

As stated in the previous sections, methods for *measuring* quality in architecture are borrowed generally from the discipline of TQM. In those studies, quality of construction process is generally undertaken. The production of architectural project as the main component of architectural-design quality has been generally underestimated. Nevertheless, housing projects constitute the most important cases available for quality-appraisals in architecture. Apart from the researches on housing quality in TQM, some independent and institutional researches were also conducted in diverse scales in order to measure the quality of housing. Those measurement models, however, either compensate the deficiencies of each other or are lack of conceiving some parts of the quality problem. The most important problem about the models is the fact that almost all of them measure the quality either by utilizing the *cost* calculations or *user satisfaction* about an *existing object*—that is, about the housing that the users have *already* lived in. However, the former technique deduces the data of quality into the data of quantity in total sense, while the latter one ignores the imagination and expectations of the user from a non-existing object—that is, from the housing that they *prefer* to live in.

Some of the TQM models measure the housing quality by focusing on the quantitative side of the quality concept, that is, the *cost of quality*. These models are applicable, and thus, were applied to measure the construction quality in housing studies of architecture and civil engineering. Among them, the Prevention, Appraisal, Failure (PAF) model is one of the early models emerged in the 1950s to measure quality in manufacturing industry. It was also applied with some modifications in the construction industry (Aoieong, Tang and Ahmed 2002; Porter and Rayner 1992). The Prevention, Appraisal, Failure model undertakes the quality measurement by dividing it into the phases of before, during, and after production (Oberlender 1993, Crosby 1979, Feigenbaum 1956). Although it is recognized universally for measuring the cost of quality, some disadvantages of this model were also highlighted by Leslie J. Porter and Paul Rayner (1992): the Prevention, Appraisal, Failure model does not consider the

costs of process. On the other hand, the Critical Path Method (CPM) was also utilized with the aim of quality measurement of constructions. According to the Critical Path Method, production/execution process of the construction can be divided into three parts as the *cost of project*, *measurement of quality*, and the *duration of the construction* (Khang and Myint 1999). Here the aim is to measure how one of these groups is affected if the other is changed. However, in this respect, the measurement of quality becomes a *tool* rather than the aim.

For the Quality Performance Management System (QPMS), nonetheless, the measurement of quality is the *departure point*. It was developed in 1987 as a management tool which provides measurement for the quality-costs emerging during the design and construction processes; and it is claimed as one of the most successful models (Aoieong, Tang and Ahmed 2002). The main reason of this claim is that this model measures both of the costs of execution and using processes of the construction. It considers the sources or agents of the processes such as the user, designer, producer, contractor, and transporter as well as their activities. However, it ignores the failure concerning *users' dissatisfaction* that affects the quality. The Quality Performance Management System collects and analyses the data concerning the cost of quality by utilizing a quantitative method in order to facilitate the determination of problems. The cost of the activities peculiar to the quality management and the cost of improvement, together, constitute the description of the cost of quality, in this model. However, it was criticized with its ignorance of the specific source of the problems, since it only considers the five agents as the sources in general (Aoieong, Tang and Ahmed 2002). The Quality Performance Tracking System (QPTS) was developed by Kent Davis (1987) as an updated version of the Quality Performance Management System. It offered to track the deviations caused by the sources, however, it does not determine the specific source of deviation (Aoieong, Tang and Ahmed 2002).

Furthermore, the *quality cost matrix* was developed by Abdul-Rahman (1993) in order to capture the *cost of failure*. However, it was also criticized, because it does not consider the costs of prevention and appraisal. Similar to the quality cost matrix, the Construction Quality Cost Quantifying System (CQCQS), which was proposed by Sui Pheng Low and Henson K. C. Yeo (1998), also offered a matrix of documentation which records the costs of prevention, appraisal, and failure. And more recently, the Process Cost Model (PCM) was developed by R. Aoieong, S. L. Tang and S. Ahmed (2002) within a different conception. It offers to concentrate on a *smaller part of the*

process—for example, on one specific activity in the construction—rather than measuring all of the activities in the whole process like in the Prevention, Appraisal, Failure model. By this way, the number of the parties involved and their activities can be decreased, and measurement can be simplified and managed. The *process cost*, *cost of conformance*, and *cost of non-conformance* comprise the categories of this model (Aoieong, Tang and Ahmed 2002). Crosby’s phrase of “Quality means conformance. Nonquality is non-conformance” (1979, 45) seems the departure point of Aoieong, Tang and Ahmed (2002). Thus, though the Process Cost Model structures its argument about that all of the activities of production are related with the sub-processes, it also considers the product near the process by the concepts of conformance and non-conformance.

In the measurement studies of housing quality in Turkey, on the other hand, there are researches in various scales. Aynur Kazaz’s, Talat Birgönül’s and Serdar Ulubeyli’s studies constitute the examples in large scale, in this respect. They applied the Prevention, Appraisal, Failure model to measure the qualities of the mass-housing projects in Bursa (Kazaz 2000), Elazığ (Kazaz and Birgönül 2005a; Kazaz, Birgönül and Ulubeyli 2005), and Antalya (Kazaz and Birgönül 2005b). The problem of those studies is that the term of *design of housing* is considered as a *component* of their criteria to measure housing quality—they determined seventeen criteria, sixteen of which are related with the materialistic and constructional properties of the housing projects (Kazaz and Birgönül 2005a, 199; Kazaz and Birgönül 2005b, 1550). These studies, therefore, similarly measure the quality regarding the costs arising before, during, and after phases of the production of the selected mass-housing projects. Though they are wide and seminal studies trying to pave the way of new perspectives to measure and evaluate the quality of all phases of the very object of the mass-housing, examination on users’ expectations and preferences about their *ideal homes* remains as the missing part of them.

Apart from the ones in TQM, the other large-scale studies comprise the ones measuring the user-satisfaction in *using-phase* of the housing, which were conducted by TOKI especially in greater cities. One of these studies was also financed by TOKI to measure the housing quality in five different mass-housing regions of Istanbul in 1993 (Dülgeroğlu Yüksel et al. 1996). The Post Occupancy Evaluation (POE) method was utilized in the measurement part of the study. This study is rather valuable in terms of its aim and assertion of measuring the *quality of spatial-design*—though it is not

explicitly stated in the final report—as well as the quality of materials. The measurement criteria, therefore, comprise mainly the following ones: 1) Physical parameters (dimensions of the housing, user-perceptions in the spaces, and physical conditions of the environment, etc.), 2) Visual (aesthetical) parameters (organization of the environmental location, façade and volumetric organizations, etc.), 3) Parameters of social interaction (convenience of the housing for encouraging the neighborhood relationships, etc.) (Dülgeroğlu Yüksel et al. 1996). Furthermore, this measurement-study is also worth to consider, because it was realized in the housing projects of different income groups and settlements, and by considering the perceptions of both architects and users. However, the problem may be about the very character of the Post Occupancy Evaluation method, since it permits the researchers to focus only on the process of use, and omits the processes of design and construction.

Another method was applied by Tanju Gültekin (2002) in the mass-housing examples of Ankara to measure their quality. The method is described as the *determination of the situation by sample survey* in the brief report (Gültekin 2002, 139). It also depends on the measurement via *user-satisfaction* (Gültekin 2002). Therefore, because it only focuses on the using process of housing, it also closes to the Post Occupancy Evaluation method. Although it is claimed in the study that the qualities of design, construction and use were all measured via the user-satisfaction, the determined measurement-criteria and collected data denote only the measurement of quality of *constructional elements*. Nevertheless, the fact that the study contains different mass-housing examples produced by different sectoral partnerships for different income groups enriched the results and permitted a comparative interpretation.

All of the studies mentioned in the above sections differ from each other according to their application sites, focuses, considerations about design and relationships mainly between the process and product, agent and activity (Table 3.2 compares the mentioned models in these regards; also see Aoieong, Tang and Ahmed 2002, for a similar comparison-manner between the models). Despite the differences, a general result can, however, be drawn from this table that these studies indicate us that the quality of housing is generally measured by its cost or the users' satisfaction-levels. One of the reasons of this situation is providing easiness in analyzing and measuring the complex value such as quality, by reducing it into the quantifiable, objective, and computable data. Table 3.2 also demonstrates that the major deficiency is about the *consideration of the use of design* of which sub-category, *design as the main dimension*,

has not been considered, yet, through the examined studies. Thus, it is the aim of this dissertation to assess the architectural-design quality of the mass-housing projects by regarding inhabitants' perceptions about where they live and would like to live in.

Table 3.2. Comparison of the methods for measuring the quality

Methods	Applicability on constructions	The ones tried on housing cases before	<u>Focusing on the cost of quality</u>	<u>Focusing on the user satisfaction</u>	Consideration of the process of design as an activity	Consideration of the specific activities in the construction	Consideration of the whole process of construction	Consideration of the related agents			Consideration of the constructional product	Consideration of the process of use (in terms of materialistic considerations)	Design as a component	Consideration of the use of design
							Project owner, vendor, transporter, constructor	Designer	User	<u>Design as the main dimension</u>				
PAF	+	+	+	-	+	-	+	-	-	+	+	-	+	-
CPM	+	-	+	-	-	+	+	+	-	-	+	-	-	-
QPMS	+	-	+	-	+	-	+	+	+	-	-	-	-	-
QPTS	+	-	+	-	+	-	+	+	+	-	-	-	-	-
The quality cost matrix	+	-	+	-	-	+	+	-	-	-	-	-	-	-
CQCQS	+	-	+	-	+	+	+	-	-	-	+	-	-	-
PCM	+	+	+	-	+	+	+	+	+	+	+	-	-	-
POE	+	+	-	+	-	-	-	-	-	+	+	+	+	-

However, the “quality is the concept that combines the function and aesthetics” in architectural regard, and thus, is a kind of “compromise” (Sey 1994, 166, 168). Thus, this compromise, this un-measurable part of the quality concept is thoroughly related with the *perception of the subject*, rather than the characteristics of the object (Shewhart 1931). Different perceptions of users even about the same object cause many difficulties in the said kind of measurements. That the homes of the users also differ from each other doubles these difficulties. At this point, a model giving the option of *categorizing* the user preferences about the quality of an ideal object rather than *ranking* the user-satisfaction with the existing object can help us understand both of the measurable and un-measurable parts of architectural-design quality of the mass-housing: in this respect, Chapter 4 focuses on the quality approach by Noriaki Kano (1940-) and his related model (developed in 1984; see Kano et al. 1984) in the light of the quality philosophies in TQM, and also clarifies the adaptation procedures of this model into the research conducted in this dissertation.

CHAPTER 4

METHODOLOGY UNDER THE LIGHT OF QUALITY APPROACHES

4.1. Definitions and Discussions about the Meanings and Characteristics of Quality

The word *quality* is a word of French origin, and its various meanings appear in scientific studies as well as in everyday language. There are lots of quality-definitions which point different specialties. In Webster's Online Dictionary, for instance, as the expressions like "An essential and distinguishing attribute of something or someone," "A degree or grade of excellence or worth," "A characteristic property that defines the apparent individual nature of something," and "The condition of being of such and such a sort as distinguished from others; nature or character relatively considered, as of goods; character; sort; rank" ("Quality" 2011) describe the word regarding its meaning in everyday language, meanings of quality have sufficient flexibility to be multiplied according to the use in different disciplines and fields. In some other examples again from Webster, these meanings even involve inconsistent conceptions: while "The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs. Not to be mistaken for 'degree of excellence' or 'fitness for use' which meets only part of the definition" ("Quality" 2011) corresponds to its use in the field of computing, "The degree of excellence possessed by a product, service, or other output of a business activity or business process (traditional definition)" ("Quality" 2011) may refer to its use in the field of TQM with the emphasis by the following sentence: "The Total Quality Management definition of quality is conformance to the customers' requirement" ("Quality" 2011). However, it may be asserted that the concept of quality can be analyzed regarding the keywords of attribute, characteristic, circumstance; peculiarity, property, complexion; superiority; kind, type, class; virtue and environment (Redhouse 1982)¹.

¹ The original phrase in the English-Turkish edition of Redhouse is as follows: "1. nitelik, vasıf. 2. kalite, nitelik. 3. özellik. 4. üstünlük. 5. meziyet."

On the other hand, various sources generated on product standards also include the definitions of quality. Among them, the ISO 9000 Handbook (International Organization for Standardization) defines the quality as “the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs” (Peach 2003), while the ISO 9000: 2005 states that the quality refers to “the degree to which a set of inherent characteristics fulfills requirements.” Another reference source on the standards, American National Standards Institute/American Society of Quality Control (ANSI/ASQC) makes a similar definition: “The totality of features and characteristics of a product or service that bears on its ability to satisfy given needs” (1978). In American Society for Quality (ASQ), the description echoes in a similar perspective: “Quality denotes an excellence in goods and services, especially to the degree they conform to requirements and satisfy customers” (1997). All of these definitions in the dictionaries and sources are probative in that the concept of quality is multi-dimensional in nature.

The quality perception of TQM, furthermore, can be summarized with the aim of the research on quality in this discipline; that is, *managing* the quality to *improve* the process and products. This aim also echoes conspicuously in the statement by Armand Vallin Feigenbaum (1922-): “[the quality is] the single most important force leading to the economic growth of companies in international markets” (1982, 22). However, it only points to the general conception of quality in the discipline of TQM. Yet, the multi-dimensional character of the concept of quality paves the way of different interpretations in the same discipline (Reeves and Bednar 1994): for instance, it can be defined as a *value* (Abbott 1955, Feigenbaum 1951), as “conformance to requirements” (Crosby 1979, 17) as well as *conformance to specifications* (Gilmore 1974, Levitt 1972), as “fitness for use” (Juran 1988, 2) as well as *fulfilling or missing customers’ expectations* (Grönroos 1983; Parasuraman, Zeithaml and Berry 1985), and as a management approach aiming at *avoiding the loss* (Taguchi 1986, 1). Thus, it is perceived that the quality in TQM is undertaken within different philosophies covering the parameters of measurement. Accordingly, the quality is defined in TQM regarding five different philosophies or approaches (Garvin 1987):

1. Product-based,
2. Manufacturing-based,
3. Value-based,
4. Transcendent / relative,

5. User-based.

Regarding this distinction, the product-based approach handles the quality as a precise and measurable variable, and suggests that differentiations in quality reflect quantitative differences in some of the characteristics of the product: in this regard, while Lawrence Abbott states that the “differences in quality amount to differences in the quality of some desired ingredient or attribute” (1955, 126-27), Keith B. Leifler denotes that the “quality refers to the amounts of the un-priced attributes contained in each unit of the priced attribute” (1982, 956). In the manufacturing-based approach, on the other hand, the quality is summarized with the motto of “conformance to requirements” as stated by Philip Bayard Crosby (1926-2001) (1979, 17). In a broader sense, it is described as “the degree to which a specific product conforms to a design or specification” (Gilmore 1974, 16). The value-based approach defines the quality via *costs* and *prices*; therefore, a quality product serves in an affordable way or corresponds to an acceptable cost: “Quality means best for certain customer conditions. These conditions are (a) the actual use and (b) the selling price of the product” (Feigenbaum 1956, 1). Another view again repeats Feigenbaum’s sentence: “Quality is the degree of excellence at an acceptable price and the control of variability at an acceptable cost” (Broh 1982, 3). Transcendent or relative quality descriptions undertake the quality as a universally recognizable phenomenon; and suggest that it is related with the comparison between the characteristics of the products. Accordingly, “Quality is neither mind nor matter, but a third entity independent of the two, even though Quality cannot be defined, you know what it is” (Pirsig 1974, 185-213); and it is “...a condition of excellence implying fine quality as distinct from poor quality ... Quality is achieving or reaching for the highest standard as against being satisfied with the sloppy or fraudulent.” (Tuchman 1980, 38).

In the user-based quality approach—which is also utilized within the theoretical background of this dissertation—as already mentioned, “quality means fitness for use” (Juran 1988, 2), and “can be defined only in terms of the agent” (Deming 1993, 168), that is, the *user*. Though the views on quality in this approach intersect at one point corresponding the *user*, the user and his/her demands are expressed in different ways: for example, Robert Dorfman and Peter O. Steiner asserts that “Quality is any aspect of a product, including the services included in the contract of sales, which influences the demand curve” (1954, 831), and thus, they take attention to the *demand* of the users. E. Scott Maynes also points out the factor of *desire*: “Quality consists of the extent to

which a specimen possesses the service characteristics you desire” (1976, 542). On the other hand, Alfred A. Keuhn and Ralph L. Day emphasize the *consumer’s preferences* which are to be satisfied by the quality product: “In the final analysis of the marketplace, the quality of a product depends on how well it fits patterns of consumer preferences” (1954, 831). In a similar manner, following expressions summarizes the previous phrase: “Quality consists of the capacity to satisfy wants” (Edwards 1968, 37), or more precisely “Quality is the degree to which a specific product satisfies the wants of a specific consumer” (Gilmore 1974, 16). The words in the definitions differ in some respects; however, because the aim does not change, they can be synthesized in a single phrase in the user-based approach: the quality is fitting/satisfying the preferences/demands/desires/wants of the user/agent/consumer.

Although the definitions of the quality approaches differ from each other, it cannot be claimed that there is an impermeable layer between them. Thus the quality of definitions of the theorists can generally refer various approaches at the same time. For example, according to Walter Andrew Shewhart (1891-1967)—who is recognized as one of the pioneering theorists of quality in the discipline of TQM—“quality is variability,” and it can be undertaken within two perspectives: In the first one, quality is an *objective* reality independent of the individual. The second approach is based on that quality is related with individual’s intellectual, emotional and sensory response to this objective reality; in other words, quality has also a *subjective* part (Shewhart 1931). Shewhart described his argument as follows:

There are two common aspects of quality: One of them has to do with the consideration of the quality of a thing as an objective reality independent of the existence of man. The other has to do with what we think, feel or sense as a result of the objective reality. In other word, there is a subjective side of quality (1931).

In this respect, it may be claimed that the description by Shewhart is close to both of the product-based and user-based approaches.

Another important theorist of quality in TQM is Feigenbaum, as already cited. He asserted that “Quality is the customer’s opinion.” In other words, quality does not depend on the determinations of engineers, market or management:

Quality is a customer determination, not an engineer’s determination, not a marketing determination, nor a general management determination. It is based upon a customer’s actual experience with a product or service, measured against his or her requirements-stated or unstated,

conscious or merely sensed, technically operational or entirely subjective -and always representing a moving target in a competitive market (Feigenbaum 1983, 7).

Continuing with similar explanations, Feigenbaum also stated that “Product and service quality can be defined as: The total composite product and service characteristics of marketing, engineering, manufacturing, and maintenance through which the product and service in use will meet the expectations of the customer” (1983, 7). In addition to these user-based definitions, because he also pointed out that “Quality means best for certain customer conditions,” and “These conditions are (a) the actual use and (b) the selling price of the product” (Feigenbaum 1956, 1), it can be asserted that his quality aspect also refers the value-based philosophy. Thus, Feigenbaum’s definitions indicate us that the manufacturing and selling price of the product is also important in quality conception. However, the emphasis in his description concentrates on that the main purpose in quality management is to meet customers’ expectations, and thus, the quality can only be measured by the *users* of the product. Therefore, his user-based approach can be figured out clearly.

William Edwards Deming (1900-1993) is the other quality-theorist who highlights the *user* and *selling price* of the product. According to him, “Quality is predictability,” and it “can be defined only in terms of the agent” (Deming 1993, 168). “The difficulty in defining quality is to translate future needs of the user into measurable characteristics, so that a product can be designed and turned out to give satisfaction at a price that the user will pay” (Deming 1993, 169). Though Deming’s emphasis about the expectations and selling price of the product is clearly legible here, it may be claimed that there is the *user* at the focus of his quality-aspect:

What is quality? What would someone mean by the quality of a shoe? Let us suppose that it is a man’s shoe that he is asking about. Does he mean by good quality that it wears a long time? Or that it takes a shine well? That it feels comfortable? That it is waterproof? That the price is right in consideration of whatever he considers quality? Put another way, what quality-characteristics are important to the customer? (1993, 169).

Hence, along with Deming’s emphasis on the manufacturing features and price of the product, it can be asserted, again, that his approach of quality is user-based.

On the other hand, Crosby may be among the theorists that the permeability between the philosophies of quality is observed at the minimum degree. Thus, Crosby defined quality as “conformance to requirements” (1979, 17), which became the motto

of the manufacturing-based studies in quality. In detail, Crosby's quality aspect is as follows:

The first erroneous assumption is that quality means goodness, or luxury or shininess. The word "quality" is often used to signify the relative worth of something in such phrases as "good quality," "bad quality" and "quality of life" - which means different things to each and every person. As follows quality must be defined as "conformance to requirements" if we are to manage it. Consequently, the nonconformance detected is the absence of quality, quality problems become nonconformance problems, and quality becomes definable (1979, 17).

Though Crosby criticized the subjective definitions of the quality, the reason of this critique is that the subjective values make the quality un-measurable. Therefore, his expressions also imply that if our purpose is not to measure or manage quality, we can use the subjective values to define it. This kind of implication refers the transcendent/relative approach of quality. Besides, despite his criticism, Crosby's clear emphasis on the use of the word of quality with subjective values points out the importance of the user, as well.

In contrast to the views perceiving quality as a superior characteristic, being the best, and excellence, there is also an aspect interpreting quality via the concept of *loss*: according to Gen'ichi Taguchi (1924-), "Quality is the loss a product causes to society after being shipped, other than losses caused by its intrinsic functions" (1986, 1), and this losses "should be restricted to two categories: 1) loss caused by variability of function, and 2) loss caused by harmful side effects" (1986, 1). In other words, it can also be defined as that "expected loss is due either to process variation or to being off target (called 'bias'), or both" (Webb 2010). Hence regarding Taguchi's aspect, the way to increase the quality is to decrease the losses; namely, good-quality product or service can be explained as that it "performs its intended functions without variability, and causes little loss through harmful side effects, including the cost of using it" (1986, 1). Furthermore, about Taguchi's approach, it can also be claimed that "any deviation from the target (based on customers' desires and needs) will diminish customer satisfaction. This is in contrast to the traditional definition of quality that states that quality is conformance to specifications" (Webb 2010). In this respect, quality aspect of Taguchi is based on obtaining robust design by decreasing the variation, and by this way, increasing the quality by decreasing the costs and losses. Because this approach emphasizes the concepts of *loss* and *cost*, it can be asserted that Taguchi's aspect is

value-based. However, since his target is the customer satisfaction, his views recall the user-based ones, as well.

According to Kaoru Ishikawa (1915-1989), on the other hand, the important thing about quality is how to interpret this word and how to control it by this interpretation; and “There can be no quality control which ignores price, profit, and cost control” (1985, 45). Ishikawa followed his argument with a broader explanation:

We engage in quality control in order to manufacture products with the quality which can satisfy the requirements of consumers. The mere fact of meeting national standards or specifications is not the answer, it is simply insufficient. [...] We must also keep in mind that consumer requirements change from year to year and even frequently updated standards cannot keep the pace with consumer requirements. How one interprets the term “quality” is important. Narrowly interpreted, quality means quality of product. Broadly interpreted, quality means quality of work, quality of service, quality of information, quality of process, quality of division, quality of people, including workers, engineers, managers, and executives, quality of system, quality of company, quality of objectives, etc. To control quality in its every manifestation is our basic approach (1985, 45).

As it is understood, though there is the aim of *controlling* quality at the focus of Ishikawa’s aspect, he also took attention to the consumer requirements. In fact, according to him, the main objective of companies’ existence is to satisfy the society (Ishikawa 1985). Within this perspective, Ishikawa’s definition of quality conforms to the user-based definitions. Nevertheless, the quality conception in Ishikawa is very dynamic, and in this respect, it also covers the features belonging to the value-based definitions.

Along with these aspects which interpret the customer satisfaction as the target to be reached, the user-based quality approach corresponds to a separate branch in the philosophy of quality. There are many studies in this field (for some of them, see Dorfman and Steiner 1954, Keuhn and Day 1954, Edwards 1968, Juran and Gyrna 1970, Gilmore 1974, Maynes 1976, Juran 1988, Deming 1993); however, as already mentioned, the leading motto of the user-based quality approach is Juran’s: “quality means fitness for use” (1988, 2). In a broader sense, quality is “a degree to which a specific product or service satisfied the wants of a specific user” (Juran and Gyrna 1970, 3). Accordingly, “An essential requirement of [...] products is that they meet the needs of those members of society who will actually use them. This concept of fitness for use is universal [...]” (Juran 1988, 2). Juran also stated that the meanings of the word of quality should be considered primarily, before reaching the concept of *fitness for use* which has become very popular in the user-based researches. According to Juran,

The word quality has multiple meanings. Two of those meanings dominate the use of the word: 1) Quality consists of those product features which meet the need of customers and thereby provide product satisfaction. 2) Quality consists of freedom from deficiencies. Nevertheless, in a handbook such as this it is most convenient to standardize on a short definition of the word quality as “fitness for use” (1988, 20-21).

Though, in this context, quality can be read as a concept consisting of the characteristics of the product, there are the aims of *customer satisfaction* and *its measurability to control quality* at the target, as it is also perceived via the explanations of the other theorists. Hence, the reason for choosing such salient phrase as the *fitness for use* may depend on that it reduces the quality concept into a measurable level by simplifying it.

As it is conceived from all definitions and approaches, in the quality issues, *meeting the customer requirements* is the main target to be arrived. Therefore, though the philosophical approaches in quality branch into five-axis, especially in terms of the emphasis on customer satisfaction, they converge at a common denominator. The point distinguishing the user-based approach from the other four is that, in the user-based approach, customer satisfaction is not only a target, but also a *tool* in the measurement of quality.

4.2. Relationship between Quality and Architectural Design

It is very difficult to find a clear definition of quality in the literature of architectural design, though it is explicitly defined in dictionaries and encyclopedias in general sense. For this reason, TQM serves as a discipline providing quality definitions for constructions, and thus, the lack of definitions in architecture are compensated by the studies utilizing TQM. In the discipline of TQM, as mentioned in the previous section, quality refers to “fitness for use” or for purpose (Juran and Gyrya 1970, 3), “conformance to requirements” (Crosby 1979, 17), and the situation of uniformity with the aimed and true purpose (Deming 1993). Among them, “fitness for use” was also used in ancient markets within a narrower sense designating “a degree to which a specific product or service satisfied the wants of a specific user” (Juran and Gyrya 1970, 3). However, by the developments in commerce, four parameters were added later to the definitions: quality of *design* (or *grade*), quality of *conformance*, *availability*, and *customer service* (Juran and Gyrya 1970).

Here the term, *quality of design*, as the focus of this study, has special importance by means of its use. It designates the *difference* between the quality-characteristics of the products having the same function. And again in the sense of Juran and Gyra, the quality characteristics, in turn, refer distinguishing features of a design, which may cover the “appearance, dimension, performance, length of life, dependability, reliability, durability, maintainability, taste, odor, etc.” (1970, 4). With regard to the architectural design, the definitions of *design quality* and *quality characteristics* also lead to the possibility of determining the *design criteria* in the mind of an architect, which correspond, indeed, for example, to the *design characteristics* of housing in the mind of an inhabitant. Furthermore, in this respect, the character of quality can be described regarding two fundamental dimensions: 1) the requirements that the product must fulfill, and are set by the producer; and 2) the expectations of the users from that product. The level of quality can be determined by the coherence degree between these two dimensions. Thus, this study considers this coherence degree by focusing on the *design characteristics* in the mind of the user.

Though these definitions signify similar dimensions of quality, there are variations in the paraphrases of those meanings in terms of the agent’s point of view. For example, for a worker, quality refers the opportunity for promotion; for a manager it means to meet specifications and improvement of the production process as well as his/her leadership (Deming 1993). For a client it refers his/her satisfaction level from the product, or the degree of living up to his/her expectations, or of fulfilling the expected functions. However, the customer-*satisfaction*-oriented definitions cover a comprehensive part in the discourses of quality: the quality of a product or service refers to “the total composite product and service characteristics of marketing, engineering manufacture, and maintenance through which the product and service in use will meet the expectations of the customer” (Feigenbaum 1991, 7). According to this kind of definitions, the product should fulfill the functions intended by the designer, and satisfy the needs of the customer. This point of view also makes possible the division of quality into its specific characteristics which facilitate its measurement. In this respect, reliability, serviceability, maintainability, and attractability were mentioned as the characteristics of quality by Feigenbaum (1991)—that is, as some of the intentions of producer and needs of user.

Although for the cases of architecture, we can speak of both measurable and incommensurable quality-characteristics, the customer-satisfaction-oriented definitions

are important for the quality descriptions of housing. Regarding the housing practices, an inhabitant is a customer. In parallel with the above definitions, for an inhabitant the quality may refer his/her standards of living provided by his/her home. In this way, the factors affecting his/her living quality in his/her home are to be related with the quality characteristics of his/her housing-design, which may cover the items like the services, functions, durability, aesthetics, security, economy, sociality etc. These quality characteristics, in turn, determine the comfort of living, and satisfaction levels of the inhabitants. Moreover, these characteristics—without considering that they have positive or negative connotations in inhabitant's mind—may also form the features of their *ideal home* that the inhabitant wants to live in. That is, inhabitant's experiences of the design of his/her existing housing determine his/her expectations, and thus, form his/her ideal home.

Consequently, though the definitions about the quality and its probable components in TQM are rather clear, their counterparts cannot be traced easily in the literature of architecture. Thus, one of the criticisms may be that the critiques or appraisals on housing quality are lack of the very definition of the quality in terms of architectural design. Similarly, in order to speak of architectural-design quality, we also have to define the characteristics or components of it (for a trial, see Appendix A). The components of quality, on the other hand, sometimes privileged the definition of quality, or the concept of quality is described only by paraphrasing its components. Sometimes design was undertaken only as a *component* of housing quality in the researches on mass-housing in Turkey (see Chapter 3, pp. 77-81). Therefore, the lack of definition must also be the reason of the exclusion or inconsideration of *design* in the measurements of housing quality in Turkey. Because the methodologies used in the studies on housing quality mostly depend on the quality definitions in TQM, a criticism may arise at this point with a claim of that these definitions cannot be sufficient to explain the quality of each architectural-space by means of its design, since they are devised for especially manufacturing industries. Because there are serial products in manufacturing industries, the quality is guaranteed by the minimum variability in the products (Deming 1993). On the contrary, an architectural product is unique, and thus, the quality is based on and has to be sought in the variations; and by means of architectural design, the quality is more than its components. Though this claim is partially true, mass-housing design and production manners in Turkey annihilate the *uniqueness* of architectural design, and convert it into the *uniformity* (see Chapter 3).

Moreover, it is not only the unit which is mass-produced in the mass-housing projects, but also the mass-housing itself which is mass-produced in every geography of Turkey. This uniformity—or minimum variability—in the mass-housing design, however, provides us *measurability* of user-expectations about the design of their houses. At this point, the Kano model (1984) invented by Noriaki Kano (1940-) can help us establish this kind of measurement system for mass-housing design in Izmir, under the light of his new dimension of quality.

4.3. Introduction to the Applied Methodology

4.3.1. A New Dimension in Quality: Kano's Model

Noriaki Kano as one of the important theorists of quality in TQM is known with the model which was invented by him in 1984 to measure and control quality. This model, however, was not only limited with *measuring* quality, but it also suggested a different point of view and a new dimension in quality descriptions (Kano et al. 1984). Thus, before Kano, the definitions of quality had one-dimensional and linear view of quality. According to this linear perspective, the perceived quality of the product is directly proportional to the customer satisfaction; the higher the perceived quality, the higher the customer's satisfaction, and vice versa. Kano, on the other hand, undertook the quality issue within a two-dimensional perspective (Walden 1993):

1. The degree of fulfilling the function for a product or service (objective),
2. The degree of customer satisfaction (subjective).

Kano also visualized his two-dimensional perspective of quality by a graphical demonstration called Kano diagram. Regarding this diagram, the *degree of fulfilling the function for a product or service* corresponds to the horizontal axis, and the *degree of customer satisfaction* corresponds to the vertical axis (Figure 4.1).

Nevertheless, Kano's quality definition is not limited with the linear movement between these two axes. Thus, by utilizing from the studies on the "Motivator-Hygiene Theory" by Frederick Herzberg, Kano also maintained that the customer satisfaction and dissatisfaction are not in a linear relationship in all circumstances (Ungvari 2008). Accordingly, the reasons forming the satisfaction and dissatisfaction are different from each other:

1. Must-be/basic/dissatisfiers: while the existence of certain features in the product does not affect satisfaction, their lack increases dissatisfaction,
2. Attractive/excitement/delighters: similarly, while the existence of certain features in the product increases satisfaction, their lack does not cause to dissatisfaction.

Along with these two perspectives, another set of product-characteristics, which are in a linear relationship with satisfaction, are also added to the model:

3. One-dimensional/performance/satisfiers: while the existence of certain features in the product increases satisfaction, their lack increases dissatisfaction.

Hence, there are three sorts of quality (Walden 1993, 26):

1. Must-be quality: basic requirements (they are “implied, self-evident, not mentioned, taken for granted”),
2. Performance (one-dimensional) quality: expected requirements (they are “stated, specified, measurable, technical”),
3. Attractive quality: exciting requirements (they are “not expressed, customer tailored, transcendent”).

While the *performance* quality is demonstrated with a linear line, *must-be* and *attractive* qualities correspond to the parabolic lines. It is noteworthy here that the parabola showing the main features is limited with the sub-part of the diagram, and the parabola showing the features above expectation remains limited with the top-part of the diagram (Figure 4.2).

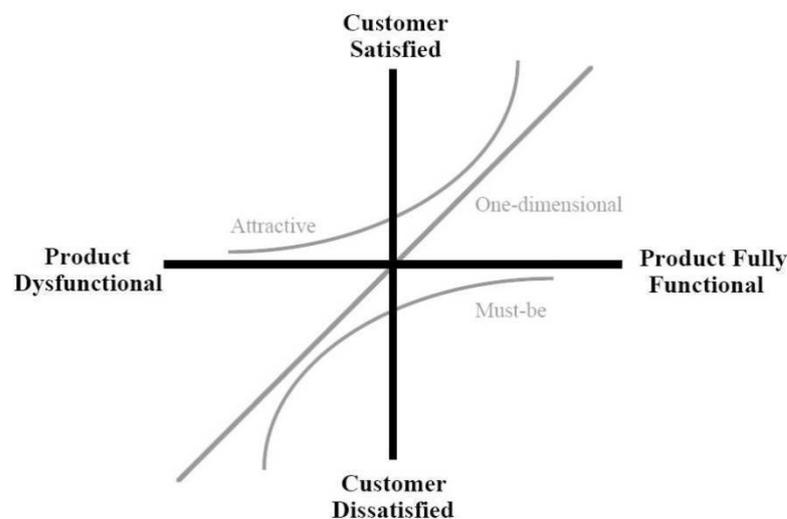


Figure 4.1. Kano diagram by Noriaki Kano (the axes demonstrating the product performance and customer satisfaction are highlighted with bold) (Source: Walden 1993, 4)

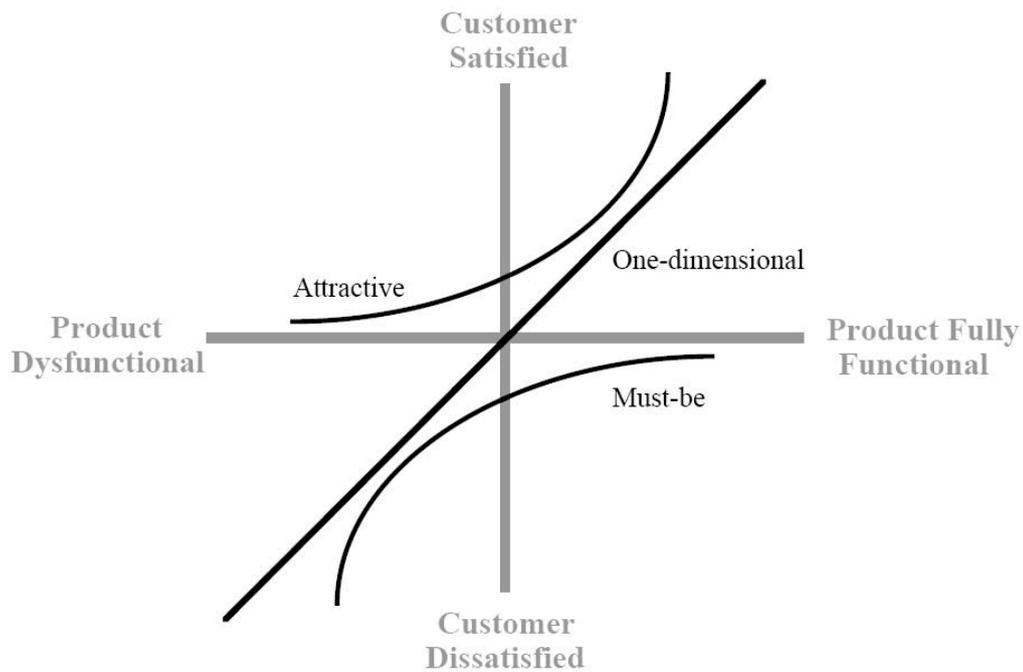


Figure 4.2. Kano diagram by Noriaki Kano (the straight line demonstrating one-dimensional quality, and the parabolas of attractive and must-be qualities are highlighted with bold) (Source: Walden 1993, 4)

Consequently, though the quality measurement in Kano is interpreted via a biaxial diagram comprised by the product performance/function and customer delight/satisfaction (Tontini 2007), it may be claimed that what measured essentially in Kano is user's *perception* about product's performance rather than the *actual* performance of the product. Thus, all measurements and interpretations in Kano's model are carried out through a special survey consisting of the questionnaires applied to the users of the product of which quality will be measured. In this context, Kano's quality-measurement model focuses on the users, and therefore, it is proper for the *user-based* approach. Following sections examine this model in detail; thus, beside the fact that it was utilized as the quality-measurement model in this dissertation, it will also be seminal to comprehend the model in order to understand different perspectives of quality.

4.3.2. Aim of the Model, and Method for Designing the Questionnaire

The aims of the Kano model are to determine the features which should be in the product as well as the desired or unexpected features through user surveys, and to

categorize the user expectations through responses of the survey on the basis of the perceived quality (Walden 1993; Sauerwein et al. 1996; Sauerwein 1999; Tan and Shen 2000; Lai, Xie and Tan 2004; Tontini 2007; Chen and Lin 2007; Chen and Lee 2009; Hutahaean 2009; Mean-Shen 2009). Thus, above mentioned tripartite quality-approach is also conveyed to the design of the questionnaire. On the basis of Kano's model, there is the query of users' expectations of the product, and this query is carried out by the questionnaires designed in accordance with Kano's quality-definition. As a result of this query, users' expectations about product features are categorized in six groups (Walden 1993; Sauerwein et al. 1996; Sauerwein 1999; Tan and Shen 2000; Lai, Xie and Tan 2004; Tontini 2007; Chen and Lee 2009):

1. Must-be,
2. One-dimensional,
3. Attractive,
4. Indifferent,
5. Reverse,
6. Questionable.

Accordingly, the *must-be* are the *basic* features which do not lead to significant satisfaction in users. These are vital features which have already required in the products. For this reason, in case of their *absence* in the product, it will cause to high *dissatisfaction*. For instance, while the walls made of durable materials in housing do not affect satisfaction, their in-durability greatly increases dissatisfaction.

The presence or surplus of the *one-dimensional (expected)* features in the product, on the other hand, increases the user *satisfaction*, while their absence or rareness increases *dissatisfaction*. Therefore, the expected features in the product and user satisfaction are directly proportional, and the increase or decrease in the satisfaction is followed by a linear line. For example, while a heat-insulation system which was resolved better than it should be increases satisfaction from the housing, its worse solution increases dissatisfaction.

The *attractive (exciting)* features are at the opposite side of the basic features; they are not expected to be in the product by the user, but their *presence* in a large proportion leads to *satisfaction*. For example, in a middle-income housing, while the absence of a separate dressing-room connected to the bedroom does not cause to dissatisfaction, the presence of such space can lead to an increased satisfaction.

On the other hand, availability of the *indifferent (ordinary)* features in a product does not make sense for the user. In the Kano diagram, these features are indicated by a straight line corresponding to the horizontal axis. For example, in a housing of which ventilation system was already solved technologically, the presence or absence of a ventiduct does not affect satisfaction.

The presence of the *reverse (opposite)* features in a product can lead to both satisfaction and dissatisfaction of the user: while their presence increase satisfaction, their absence can also increase satisfaction. It can be enlightened by an example again from housing spaces: large windows may be preferable to increase the amount of light in a housing-unit, and thus, when this expectation of the users is met, satisfaction increases. However, in order to save energy, in some cases, large windows may not be preferred, and then, the presence of these windows may lead to dissatisfaction of the users, as well.

Finally, the features called *questionable (suspicious)* mainly indicate that the question about the product/service was either hard to understand, or incorrectly stated, or the answer is contradictory. In case this kind of responses is intense in the survey, there emerges a need to cancel or re-design the related question.

Dividing the answers of the survey into six groups in this way also requires a special design for the method of asking questions. In this respect, questions in the Kano survey consist of two types (Walden 1993; Sauerwein et al. 1996; Sauerwein 1999; Tan and Shen 2000; Lai, Xie and Tan 2004; Tontini 2007; Chen and Lee 2009):

1. *Functional* questions (the users are asked how they would feel if a feature is *present* in the product),
2. *Dysfunctional* questions (the users are asked how they would feel if a feature is *absent* in the product).

The user can answer to these questions in five different ways:

1. I like it that way,
2. It must be that way,
3. I am neutral,
4. I can live with it that way,
5. I dislike it that way.

Accordingly, the binary-questions in the survey are designed as indicated by an example in Table 4.1 below:

Table 4.1. Binary-question example for a Kano survey

<u>Functional question:</u>	What do you think about living in a house <i>with</i> a balcony?	<ol style="list-style-type: none"> 1. I like it that way, 2. It must be that way, 3. I am neutral, 4. I can live with it that way, 5. I dislike it that way.
<u>Dysfunctional question:</u>	What do you think about living in a house <i>without</i> a balcony?	<ol style="list-style-type: none"> 1. I like it that way, 2. It must be that way, 3. I am neutral, 4. I can live with it that way, 5. I dislike it that way.

4.3.3. Evaluation of the Kano Survey

Evaluation of the Kano survey is carried out by combining the answers of the binary-questions. Accordingly, the requirement/expectation category corresponding to each question-combination is determined. In this respect, the user-requirement categories consist of six kinds, as already stated in the previous section (Walden 1993; Sauerwein et al. 1996; Sauerwein 1999; Hsu, Hsu and Bing 2007; Chen and Lee 2009):

1. Must-be (M),
2. One-dimensional (O),
3. Attractive (A),
4. Indifferent (I),
5. Reverse (R),
6. Questionable (Q).

Kano has developed a special rubric called *Kano Evaluation Table* to facilitate, and thus, to interpret the combinations of these six kinds of answers to the binary-questions (Table 4.2) (Walden 1993; Sauerwein et al. 1996; Sauerwein 1999; Lai, Xie and Tan 2004; Hsu, Hsu and Bing 2007; Chen and Lee 2009). The answer for the question of how the related-feature in the product is perceived by the user is calculated by the combinations of the answers for each binary-question in Table 4.2.

Table 4.2. Kano Evaluation Table
(Source: Walden 1993)

Customer requirements		Dysfunctional				
		1. I like it that way	2. It must be that way	3. I am neutral	4. I can live with it that way	5. I dislike it that way
Functional	1. I like it that way	Q	A	A	A	O
	2. It must be that way	R	I	I	I	M
	3. I am neutral	R	I	I	I	M
	4. I can live with it that way	R	I	I	I	M
	5. I dislike it that way	R	R	R	R	Q

For example, let the user-Y answers the questions in Table 4.1 as indicated in Table 4.3:

Table 4.3. Pair of answers of the user-Y to the Kano-questions

<u>Functional question:</u>	What do you think about living in a house <i>with</i> a balcony?	<u>X</u> 1. I like it that way, 2. It must be that way, 3. I am neutral, 4. I can live with it that way, 5. I dislike it that way.
<u>Dysfunctional question:</u>	What do you think about living in a house <i>without</i> a balcony?	1. I like it that way, 2. It must be that way, 3. I am neutral, 4. I can live with it that way, <u>X</u> 5. I dislike it that way.

By combining the answer of “I like it that way” to the functional question, and the answer of “I dislike it that way” to the dysfunctional question in the Kano Evaluation Table (see Table 4.2), we reach the output of O (*One-dimensional*). Hence, the feature of “living in a house *with* a balcony” is in the category of the *expected requirements* for the user-Y (Table 4.4):

Table 4.4. Combination of the answer-pair of the user-Y in the Kano Evaluation Table

Customer requirements		Dysfunctional				
		1. I like it that way	2. It must be that way	3. I am neutral	4. I can live with it that way	5. I dislike it that way
Functional	1. I like it that way	Q	A	A	A	O
	2. It must be that way	R	I	I	I	M
	3. I am neutral	R	I	I	I	M
	4. I can live with it that way	R	I	I	I	M
	5. I dislike it that way	R	R	R	R	Q

As it is observed by the example, the aim of the Kano survey is to *question* the user expectations for each product-feature. And the aim of the Kano Evaluation Table is to *categorize* these expectations according to the answer-pairs. The categorization of the expectations is separately applied for each user and each binary-question. Then the total numbers of each category-type corresponding to each user-expectation (each binary-question) are calculated. By following the users' answer-pairs for the same product-feature, for example, it is determined how many users fall into the category of the expected requirements (*One-dimensional*). This calculation (in case it is applied for the same product-feature) is repeated for each category. The results can be listed, for instance in Table 4.5, as follows (Walden 1993; Sauerwein et al. 1996; Sauerwein 1999; Lai, Xie and Tan 2004; Hsu, Hsu and Bing 2007; Chen and Lee 2009):

Table 4.5. A sample categorization of the users' different expectations from the same product-features (the most frequent answers are highlighted with light grey, and the dominant category/grade column is highlighted with darker grey)

Customer requirements	A	O	M	I	R	Q	Dominant category/Grade
Balcony	7	8	12	2	1	0	M
Open kitchen	1	15	11	3	0	0	O
Spacious entrance	5	14	8	3	0	0	O
Disposal unit	4	8	8	10	0	0	I
Cellar	6	11	8	5	0	0	O

As it is seen in Table 4.5, the most frequent answers are determined for each requirement, which reveal the category-type of that requirement. Then, the dominant categories are written on the category/grade column. The information in this column is utilized to understand how many and what kind of characteristics of a product are important for the user, and in which respect.

Nevertheless, in many cases, these main results need to be read and analyzed in detail. For example, if the *Reverse* (R) score is dense in a query, it needs to counterchange the functional and dysfunctional questions, and determine the scores for that binary-question-set again. In order to interpret the scores in a more accurate sense, after determining the densest category for each requirement, secondary and tertiary categories can also be determined for each. Especially in the cases that the frequencies of the answers (of a requirement) are dense in more than one category—and thus, the score cannot be designated exactly—then, some other principles are utilized, as well. One of these principles is demonstrated with the following inequality (Walden 1993, Sauerwein et al. 1996, Sauerwein 1999): $M > O > A > I$. According to this principle, the most important characteristics of the product for the user are assumed to be ranged as follows:

M (*must-be* / basic requirements) > O (*one-dimensional* / expected requirements)
 > A (*attractive* / exciting requirements) > I (*indifferent* - ordinary requirements)

And then, the main category is re-determined according to this principle.

In a similar way, if the frequencies of the answers of a requirement are dense in more than one category, in order to decide which category is dominant appropriately, two more principles are utilized, as well. Accordingly, let the answer-categorization is as follows:

- 19 answers → A (*Attractive*),
- 18 answers → O (*One-dimensional*),
- 18 answers → M (*Must-be*),
- **20 answers → I (*Indifferent*)**,
- 2 answers → R (*Reverse*),
- 3 answers → Q (*Questionable*).

In this case, as it is revealed by the list, the densest category is *Indifferent* (I). However, because the frequencies of the answers in A, O and M categories are also close to the density of I category, the total number of the users who think that the questioned-characteristic is important for that product (answer-pairs falling into the categories of A, O, M) needs to be calculated as well as the total number of the users who think that the questioned-characteristic is *not* important or reversely important for that product (answer-pairs falling into the categories of I and R; and Q can also be added to this group).

$$\begin{aligned} A + O + M &= 18 + 19 + 18 && = 55 \\ I + R + Q &= 20 + 2 + 3 && = 25 \end{aligned}$$

Though the main category of the questioned-characteristic seems as *Indifferent* (I) (with 20 answers)—namely, at the first glance, it seems that this characteristic is *not* important for the user—55 of 80 users (approximately 68%) think that *it is important*. Hence, claiming that the main category is I (in other words, claiming that this characteristic is not important for the user) leads us to an incorrect interpretation. In this kind of cases, the following principle is utilized for the purpose of control:

If the case corresponds to the following inequality,
 then, the category having the most frequent answers
 in the *left side* refers the main category. } $A+O+M > I+R+Q$

If the case corresponds to the following inequality, then, the category having the most frequent answers in the *left side*, again, refers the main category. } $I+R+Q > A+O+M$

In the above example, because there is an inequality of $55 > 25$ —that is, because there is an inequality of $A+O+M > I+R+Q$ —the category of A (*Attractive*) should be designated as the main category, since it has the most frequent answers in the group of A+O+M. By this way, it can be revealed that the questioned-characteristic is generally found *attractive* by the users.

Apart from all these calculations, it can also be determined that the *improvement* of which characteristic can cause to the maximum raise in user *satisfaction* as well as that the *removal* of which characteristic can cause to the maximum raise in user *dissatisfaction*. In principle, it is accepted that the *improvement* of the characteristics in both A (*Attractive*) and O (*One-dimensional*) categories causes to the maximum raise in user *satisfaction*. This kind of calculation is conducted by the following formula (Sauerwein et al. 1996, Sauerwein 1999, Kuo 2004):

$$\frac{A + O}{A + O + M + I}$$

If the percentage obtained by this formula is close to 1, then it reveals that this characteristic is *very* important for the user; and if this percentage is close to 0, then it reveals that this characteristic is *not* important for the user. On the other hand, in principle, again, it is accepted that the *removal/deterioration* of the characteristics in both O (*One-dimensional*) and M (*Must-be*) categories causes to the maximum raise in user *dissatisfaction*. The formula utilized in this kind of calculation is as follows (Sauerwein et al. 1996, Sauerwein 1999):

$$(-) \frac{O + M}{A + O + M + I}$$

Similarly, if the percentage obtained by this formula is close to -1, then it reveals that this characteristic is *very* important for the user; and if this percentage is close to 0, then it reveals that this characteristic is *not* important for the user.

As it is seen from the above examinations and additional principles, the Kano model provides the researchers flexibility of interpretation. However, in some cases, this flexibility may need to be extended. The cases of architecture, and especially the cases undertaking the quality of architectural design in mass-housing, may need much

flexibility as well as legibility in detail. Besides, the Kano model is also criticized especially in regards of the wording and evaluation of the survey. Thus, for the research conducted in this dissertation, some new techniques are suggested to make a more refined analysis, and hence, to understand the *actual* requirements of the inhabitants. Therefore, in the following sections, firstly the critiques on the Kano model in literature are examined, and then, under the light of these examinations, the suggestions of the current study are undertaken.

4.3.4. Critiques on the Kano Model in Literature

The Kano model has been applied in many cases; it was adopted by many researchers, but also criticized by them. Its advantages for the markets and companies, on the other hand, cannot be underestimated: according to some scholars (for example, see Chen and Lee 2009, Matzler and Hinterhuber 1998), the model is especially proper for managers to understand the market needs and customer perceptions, and thus, to improve the product qualities. Certainly, it has also advantages for researchers in the academic studies. First of all, the Kano model has a degree of *reliability* as well as *flexibility* for the interpretation of results obtained from questionnaire: it is conducted with pairs of questions, and by this way, the researcher can check the consistency between the answers; and these answers are matched in an evaluation table providing 25 possible combinations. Furthermore, as it is perceived in the above section, there are additional formulas for that the combinations fall into a more realistic category, and therefore, in order to reach an accurate determination and detailed interpretation about users' perceptions for each questioned-quality of that product. Consideringly, it can be claimed that, in general, the most realistic perspective about user-perceptions of quality is obtained by the Kano model. However, in some cases, the mentioned flexibility and reliability may not be sufficient, and thus, the model needs to be applied with some additional operations covering the suggestions for both the questioning and evaluation phases of the survey. Hence, it can also be asserted that the model has flexibility of *working with* the additional questioning and evaluations.

Though these additional operations vary according to the characteristics of the cases and survey approaches, it can be clearly observed in the related literature that the Kano model is criticized generally in three perspectives: 1.) *wording* manner, 2.) *limited*

possibilities of answer-combinations (there are only 25 possibilities), and 3.) some categories recognized as *unnecessary*. Among those, the first criticism (i.e. wording manner) is emerged within two common respects: 1.) wording of the five optional *answers* in the questionnaire, and 2.) wording of the *categorization* (by this way, the logic behind the identification of quality attributes as well as the interpretation of results are also criticized). Accordingly, it may be claimed that because the wording of answers in the Kano questionnaire can be changed to be adapted into different researches, the wording of evaluation tables also varies. Furthermore, the change in the language of questionnaires may cause to different determinations about the same questioned-characteristic of the same survey conducted in, for example, two different languages. While there is a difference between the choices of “I like it that way” and “it must be that way” in English (while the former refers the mode of *satisfaction*, the latter corresponds to the mode of *expectation*), their direct translations into Turkish (“*o şekilde severim/öyle olursa severim*” and “*öyle olmalı*”) do not designate such kind of difference; rather, the meanings are consistent with and complete each other, even the latter one is pre-requisite of the former (while the former refers *satisfaction*, the latter corresponds to *necessity*). Thus, in English version, the user may think that “I will be satisfied, if the product has this attribute; hence, I *expect* that this attribute is available in the product.” On the other hand, in Turkish version, the user may think that “I will be satisfied, if the product has this attribute; hence, its availability is *necessary* for my satisfaction.” This kind of double-barreled expressions lead to an ambiguity between the choices, and then, one of the answers may be chosen randomly, which misleads or complicates the categorization. To impede such misunderstandings and complications, the wording of the answers in Turkish should be revised regarding the categorization logic of the Kano model.

Ambiguities in the wording of questionnaire also cause to some problems in the wording of the evaluation table, that is, in the identification of the quality attributes. For this reason, some of the critics changed the wording of categories in the Kano Evaluation Table as well as the answer-choices in the questionnaire (for some examples see Schvaneveldts, Takao and Masami 1991; Tontini 2000; Jane and Dominguez 2003; Chen and Lee 2009). Among the related studies, a significant one by Shane J. Schvaneveldts, Enkawa Takao, and Miyakawa Masami (1991) can be mentioned for that they changed the wording of the answers in questionnaire. The new wording

offered by them is demonstrated in a comparison with Kano’s conventional wording in Table 4.6:

Table 4.6. Comparison between the conventional Kano-wording in questionnaire and the new wording offered by Schvaneveldts, Takao and Masami (1991)

Conventional wording in the Kano :	New wording offered by Schvaneveldts, Takao and Masami:
(It) must be (that way)	As expected
(I am) neutral	No influence
(I can) live with it (that way)	Useless

However, the wording-changes applied by Schvaneveldts, Takao and Masami (1991) are not limited with the answers in the questionnaire, but also cover Kano’s Evaluation Table (see Table 4.2). They defined a new category with a new title of “Else” (E) which substitutes the first four letters (that is, the categories of Q, R, R, R) in the first column, and the last four letters (that is, the categories of R, R, R, Q) in the last row of Kano’s conventional table (see Table 4.2). Rest of the categories is the same with the conventional one. In this respect, the new table suggested by Schvaneveldts, Takao and Masami (1991) is as follows (Table 4.7):

Table 4.7. Schvaneveldts, Takao and Masami’s (1991) evaluation table (the cells with grey demonstrate the changed categories)

Customer requirements		Dysfunctional				
		1. Like	2. As expected	3. No influence	4. Useless	5. Dislike
Functional	1. Like	E	A	A	A	O
	2. As expected	E	I	I	I	M
	3. No influence	E	I	I	I	M
	4. Useless	E	I	I	I	M
	5. Dislike	R	E	E	E	E

The other significant suggestion belongs to Gerson Tontini (2000), and it is mainly related with the second criticism, that is, the *limited* number of possibilities in the answer sheet. In this respect, Tontini (2000) increased the number of answer-choices

from five to seven by adding new categories of “very attractive” and “very must-be.” Besides, considering the wording manner, all of the categories were also revised and renamed with the titles of “very satisfactory,” “satisfactory,” “must-be,” “no influence,” “acceptable,” “dissatisfied,” “very dissatisfied” (Tontini 2000). By this way, Tontini tried to provide the researchers more flexibility as well as possibility of detailed interpretations. However, in contrast to Tontini, A. Corbella Jane and S. Maturana Dominguez (2003) decreased the number of categories into three with the ones titled “attractive,” “no influence,” and “not attractive,” and by this way, they offered a new 3x3 evaluation table. Confirming the third criticism (i.e. unnecessary categories), their aim was to simplify the method by eliminating some categories which were marked by them as *unnecessary*.

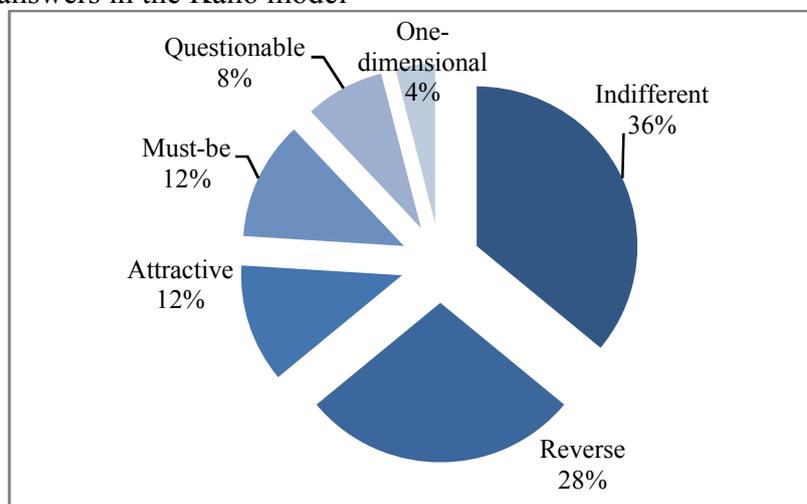
Considering this study by Jane and Dominguez (2003), Jih-Kuang Chen and Yu-Cheng Lee (2009) also developed a new evaluation-perspective which interferes in the conventional system in few important respects. First of all, considering the third criticism (i.e. unnecessary categories), they took the 3x3 table from the study by Jane and Dominguez (2003), and then, considering the first criticism (i.e. wording manner), applied it in the cases by substituting the concepts of “functional” and “dysfunctional” with the ones titled “increasing” and “decreasing” (Chen and Lee 2009). By this way, in the coordinate system, satisfaction degrees of the user from the product are marked on x- and y-axis, and the *angle* coming from their combination is utilized for discussing the attribute-classification. Furthermore, they also criticized the *logic* of the model: they claimed that the Kano survey is “unable to sufficiently reflect the complex thought of an individual” (Chen and Lee 2009, 1144), and thus, in order to obtain more accurate results, they rejected to be based on the true-false system (nominal order) in the conventional Kano evaluation, and utilized the *fuzzy* concept and its logic suggesting gradation (ordinal order) for users’ feelings for each attribute. Therefore, they could also define *priorities* for each category (A, O, M), and mark them with some kind of identity numbers (A1, A2, O1, O2, O3, O4, M1, M2) demonstrating their importance degrees (Chen and Lee 2009). In this respect, while the availability of the attribute of A2 is more important than A1 for the user, the lack of M2 is more important than M1 for increasing satisfaction. Similarly, there are relationships between the O’s, as well: $O4 > O2$, and $O3 > O1$ in terms of increasing and decreasing satisfaction degrees. To make the system more legible, this new table developed by Chen and Lee (2009) is demonstrated in Table 4.8 below:

Table 4.8. Chen and Lee's (2009) 3x3 evaluation table

Customer requirements		Decreasing		
		1. Neutral	2. Satisfaction debating	3. Satisfaction debating greatly
Increasing	1. Neutral	I	M1	M2
	2. Satisfaction raising	A1	O1	O2
	3. Satisfaction raising greatly	A2	O3	O4

It is also worth mentioning here that, behind the logic of Chen and Lee's (2009) interventions to the conventional model, mainly, there is the second criticism (i.e. limited possibilities) which is also agreed in this dissertation. In detail, this criticism points out the fact that there is only *one* possibility (one answer-combination) for the category of *One-dimensional* in totally 25 possible answer-combinations to the binary-questions. Moreover, the dispersion of the other categories seems un-balanced more or less: accordingly, three of the answer-combination possibilities (12%) go to *Attractive*, and another three (12%) go to *Must-be*, seven of them (28%) go to *Reverse*, two of them (8%) go to *Questionable*, while nine of them (36%) correspond to *Indifferent* category, and as mentioned, only one of them (4%) goes to *One-dimensional* (for some further critics focused on this issue, see Walden 1993; Lee, Lin and Wang 2011). Thus, the greatest part corresponds to *Indifferent* category with the judgment of that “the users are *not* interested in those characteristics.” The chart demonstrating the dispersion of these combinations is demonstrated in Table 4.9:

Table 4.9. The chart demonstrating the dispersion of combination-percentages of the answers in the Kano model



In the dissertation, by recognizing that the second criticism (i.e. limited possibilities) is the most crucial one in the conventional evaluation logic of Kano, as already mentioned, the following section is focused on a new perspective suggesting a more flexible reading for Kano's classical evaluation logic, and thus, aiming at overcoming the possible handicaps that may emerge from the inflexible evaluation. This flexibility of reading, on the other hand, is designed specifically for this study concerning with the architectural-design quality of the mass-housing units in Izmir. Thus, the suggestion is assumed to be proper for this study covering the users who may have ambiguous or complex thoughts about their homes—accepting Chen's and Lee's (2009, 1144) assertion related with the complex thoughts of individuals—and even about the meaning of space itself which is an ambiguous and complex phenomenon, as well.

4.4. Adaptation of Kano's Model into the Study

4.4.1. A Technical Suggestion for a Refined Analysis

The cases depending on the researches on quality in the field of architecture may sometimes need additional interpretation to figure out and comprehend the different views of the users about the product. Furthermore, because this product is a space, and a space is a multi-layered concept having subjective side as well as the objective one, it is difficult to assess the qualities of such complex phenomenon. For example, the qualifications of a user about a space cannot exactly correspond to the qualifications of another user about the same space. In some cases, a user can judge that the space is large and sufficiently lighted, while the other one thinks that the same space is a little narrow and dim. Moreover, because the design of a space is generally evaluated by this kind of personal judgments, it may not be possible always to reach the objective qualities of that space. However, though the subjective judgments seem as if they cause to the problem of assessment by means of quality, they, indeed, *enrich* the perception about that space and its quality.

As already stated, the user-based quality approaches, and thus, the Kano model, as well, may provide flexibility to quality-researchers in the field of architecture, and make possible the evaluation of spatial-quality by increasing the number of possible

judgments (answer-combinations) about a characteristic—though they are limited with 25. Nevertheless, as it is also mentioned in the above section, the most problematic side of the model is the high frequency of the possibilities of answers falling into *Indifferent* category (36%) (see Table 4.9). Therefore, in the quality evaluations of the research conducted in this dissertation, the fact that the majority of the answers correspond to *Indifferent* category in the Kano Evaluation Table causes to the problem of limited interpretation. Since, if the questioned-characteristic is about the architectural-design quality of a housing-unit (for example, having a corridor in the plan, as questioned in the current research), then the pair combining the answers of “It must be that way” for *functional* and “I can live with it that way” for *dysfunctional* should not be considered within the same category (i.e., I) of the pair combining the answers of “I can live with it that way” for *functional* and “It must be that way” for *dysfunctional*. Besides, actually, these pairs cannot be considered as *Indifferent*, since there is a *polarization* in the feelings of the inhabitant about the related-characteristic of that space. In order to solve these problems, a detailed reading-manner is suggested and applied in the evaluations of the research of this dissertation.

It may be elucidative to examine the possible situations by comparing the results in the conventional Kano-evaluation method with the results in the suggested method. A part of the survey of the current research was applied to 40 inhabitants living in the same unit-plan type. And one of the binary-questions in this survey covered the following example (Table 4.10) (for the original questionnaire applied in the main survey, see Appendix B; for its English translation, see Appendix C):

Table 4.10. Example of the binary-question applied in the survey of the current research

<u>Functional question:</u>	What do you think if you have a separate living room apart from the guest room?
<u>Dysfunctional question:</u>	What do you think if you do not have a separate living room apart from the guest room?

According to the conventional reading by the Kano Evaluation Table, distribution of the answer-combinations (categories) to this binary-question is demonstrated in Table 4.11 (the numbers refers the scores obtained by the survey conducted in Albayrak Housing). As it is seen from this table, almost all of the answer-combinations fall into the category of *Indifferent*, and it is impossible to make further interpretation apart from saying that “the inhabitants of those housing-units are *not* interested in having a separate living

room apart from the guest room.” However, if all combinations could be demonstrated in a table, it is seen that the inhabitants *are* interested in this issue. By the simplest explanation, the user answering the functional question as “It must be that way” and the dysfunctional question as “I can live with it that way” is closer to *One-dimensional* or positive side rather than *Indifferent* or totally neutral one.

Table 4.11. Conventional distribution of the answer-combinations to the binary-question in Table 4.10 (it refers the Kano scores of Albayrak Housing)

Customer requirement	A	O	M	I	R	Q	Dominant category/ Grade
Having a separate living room apart from the guest room	0	2	2	35	1	0	I

Therefore, it is suggested that, in a detailed reading of the Kano evaluation, there should be *sub-categories* to reach more realistic perception of the user. And in this respect, it is also suggested for these sub-categories that the answer-combinations can be re-distributed according to the *functional* regard or *dysfunctional* regard. Thus, the sub-category having the most *positive* connotation for *functional* question, and the most *negative* connotation for *dysfunctional* question can be marked with (+). Similarly, the sub-category having the most *negative* connotation for *functional* question, and the most *positive* connotation for *dysfunctional* question can be marked with (-). On the other hand, the answers having the most neutral character can be marked with (0). By this way, for example, a characteristic of the product falling into I (*Indifferent*) category in the conventional Kano evaluation manner can go to positive (+) side of this category (I) with the suggested manner. This situation provides us additional information concerning the user perception about that characteristic. Thus, according to the conventional reading, while the judgment is that “the user is *not interested* in the existence of that characteristic in the product”; according to the suggested reading, it covers that “the user *prefers* the existence of that characteristic in the product.”

In order to clarify these suggestions, Table 4.12 demonstrating the *conventional* Kano-evaluation manner, and Table 4.13 demonstrating the *suggested* Kano-evaluation manner can be examined. Accordingly, in the given example, by conventional reading, we obtain the main category of I (*Indifferent*) with the densest frequency of scores reaching to 35 (highlighted with bold italic in Table 4.12) in totally 40 scores.

Table 4.12. The *conventional* Kano-evaluation manner for the questioned-characteristic of “having a separate living room apart from the guest room” (the row with light grey demonstrates the conventional reading manner) (the numbers refer the scores obtained by the Kano survey conducted in Albayrak Housing)

Categories:	A			O	M			I						R						Q				
Functional question:	I like it that way			I like it that way	It must be that way	I am neutral	I can live with it that way	It must be that way			I am neutral			I can live with it that way			It must be that way	I am neutral	I can live with it that way	I dislike it that way			I like it that way	I dislike it that way
Dysfunctional question:	It must be that way	I am neutral	I can live with it that way	I dislike it that way	I dislike it that way			It must be that way	I am neutral	I can live with it that way	It must be that way	I am neutral	I can live with it that way	It must be that way	I am neutral	I can live with it that way	I like it that way			It must be that way	I am neutral	I can live with it that way	I like it that way	I dislike it that way
Conventional reading:	0			2	2			35						1						0				

Table 4.13. The *suggested* Kano-evaluation manner for the questioned-characteristic of “having a separate living room apart from the guest room” (the row with light grey demonstrates the additional sub-categories, and the row with darker grey demonstrates the suggested detailed-reading) (the numbers refer the scores obtained by the Kano survey conducted in Albayrak Housing)

Conventional categories:	A			O	M			I						R						Q				
Suggested categories:	A(-)	A(0)	A(+)		M(+)	M(0)	M(-)	I(+)			I(0)			I(-)										
Functional question:	I like it that way			I like it that way	It must be that way	I am neutral	I can live with it that way	It must be that way			I am neutral			I can live with it that way			It must be that way	I am neutral	I can live with it that way	I dislike it that way			I like it that way	I dislike it that way
Dysfunctional question:	It must be that way	I am neutral	I can live with it that way	I dislike it that way	I dislike it that way			It must be that way	I am neutral	I can live with it that way	It must be that way	I am neutral	I can live with it that way	It must be that way	I am neutral	I can live with it that way	I like it that way			It must be that way	I am neutral	I can live with it that way	I like it that way	I dislike it that way
Suggested reading:	0	0	0	2	2	0	0	0	0	32	0	2	0	1	0	0	0	0	0	1	0	0	0	0

On the other hand, this category gains a more precise character with the suggested reading, and the main category becomes I(+) (*Indifferent* +) with the densest frequency of scores reaching to 32 (highlighted with bold italic in Table 4.13) in totally 40 scores. Thus, while conventional reading gives us the result covering the judgment of that “the user is *not interested* in having a separate living room apart from the guest room,” suggested reading provides the judgment of that “the user *prefers* having a separate living room apart from the guest room.” Though this flexibility is especially important for further evaluation of I (*Indifferent*) category—which has the most possibilities with nine answer-combinations—the system can also be applied to A (*Attractive*), and M (*Must-be*) categories. Accordingly, we reach the following logic of sub-categorization (it should also be noted here that, for the categories of A and M, the mark of ‘+’ refers the *most expected* combination regarding the *character* of the category, and the mark of ‘-’ refers the *least expected* version among the combinations. However, for the category of I, the marking logic differs, and thus, while the mark of ‘+’ only refers *positive connotation* about the existence of that characteristic, the mark of ‘-’ only refers *negative connotation* about the existence of that characteristic):

- A (*Attractive*): it is divided into its sub-categories regarding the answers to *dysfunctional* question. Thus, the combination having the answer with *positive* connotation (in dysfunctional side) is demonstrated with A(-) (for it is the least expected combination in the category of A). The combination having the answer with *neutral* character (in dysfunctional side) is demonstrated with A(0). And the combination having the answer with *negative* connotation (in dysfunctional side) is demonstrated with A(+) (for it is the most expected combination in the category of A) (see Table 4.13).
- O (*One-dimensional*): it is not divided into sub-categories, because it has only one possibility of answer-combination. (However, it can be claimed that the suggested sub-categories—for example, I[+]—may support the character of One-dimensional category, as well.)
- M (*Must-be*): it is divided into its sub-categories regarding the answers to *functional* question. Thus, the combination having the answer with *positive* connotation (in functional side) is demonstrated with M(+) (for it is the most expected combination in the category of M). The combination having the answer with *neutral* character (in functional side) is demonstrated with M(0). And the combination having the answer with *negative* connotation (in

functional side) is demonstrated with M(-) (for it is the least expected combination in the category of M) (see Table 4.13).

- I (Indifferent): it is also divided into sub-categories regarding the answers to *functional* question. Thus, the combinations having the answer with *positive* connotation (in functional side) are demonstrated with I(+). The combinations having the answer with *neutral* character (in functional side) are demonstrated with I(0). And the combinations having the answer with *negative* connotation (in functional side) are demonstrated with I(-) (see Table 4.13).² Furthermore, a *secondary* sub-categorization can also be suggested regarding the divisions in *dysfunctional* question, and here, the most and the least expected combinations may also be considered. However, it is decided that the character of the current research does not necessitate this kind of more detailed-reading, and thus, it is limited with the primary division.
- R (Reverse): because the scores falling into this category are reversed and replaced into the other categories covering A, O, and M, a sub-categorization is not necessary to interpret the results.
- Q (Questionable): because the scores falling into this category (or the questions leading to this category) are cancelled, a sub-categorization is not necessary, either.

Beside of the suggested sub-categories, some further calculations are also possible with this reading manner. In this respect, there are three kinds of main classifications in the suggested manner; and they comprise,

1. the ones that the user is either fully satisfied or closer to be satisfied because of having that characteristic: A, O, M, I(+)
2. the ones that the user is either fully dissatisfied or closer to be dissatisfied because of having that characteristic: I(-), R
3. the one that the user is not interested in having that characteristic: I(0).

² In the framework of this study, these three sub-categories of Indifferent are defined as follows: **Indifferent (+)**: the existence of certain features in the product affects satisfaction in minor respect, thus, the user *prefers* to have the questioned characteristic in the product. **Indifferent (0)**: the existence of certain features in the product does not affect satisfaction or dissatisfaction, thus, the user is *not* interested in having that characteristic in the product. **Indifferent (-)**: the existence of certain features in the product affects dissatisfaction in minor respect, thus, the user does *not prefer* to have the questioned characteristic in the product.

Therefore, Kano's conventional rule offering to check the scores regarding the inequalities of $A+O+M > I+R+Q$ or $I+R+Q > A+O+M$ can be changed. Because these conventional inequalities refer the same logic with the above tripartite categorization—that is, the logic of *positive*, *neutral*, and *negative* grouping of the answers—they can be revised as follows:

$$A+O+M+I(+)> I(0)+I(-)+R+Q \quad \text{or} \quad I(0)+I(-)+R+Q > A+O+M+I(+)$$

Thus, by adding $I(+)$ to O , A and M , and $I(0)$ and $I(-)$ to R and Q , we decrease the possibility of mathematical closeness between the scores of the parts of $A+O+M$ and $I+R+Q$. By this way, necessity of applying these further rules also decreases—of which correctness is confirmed in the examination of the survey results in Chapter 5—while the flexibility of categorical determination and interpretation increases.

In this respect, flexibility of interpretation is important to understand the perception of the inhabitants more accurately, and thus, is important for the evaluation of the architectural-design quality of mass-housing units. However, because the aim of the Kano model does not cover *learning the reasons* of the users' preferences, in some cases there may also need to search for these reasons to have a deeper understanding about the quality expectations, and to enrich the interpretation.³ Preferences and expectations of the inhabitants about the architectural-design quality of their housing can be exemplified for this kind of cases, as well. Thus, in the current research, some more questions in *parallel* with the Kano questions, and some *contextual* questions are added to the survey. In this respect, the following section undertakes these additional open-ended questions in the survey of this research, with their advantages for the interpretation of results.

4.4.2. Additional Questioning to Enrich the Interpretation

In the research of this dissertation, three sorts of question-groups were added to the Kano questions (for the original questionnaire applied in the main survey, see Appendix B; for its English translation, see Appendix C). The first sort corresponds to the open-ended *Kano-support* questions asking for the *reasons* of the users' preferences, thus, these questions were designed in *parallel* with the Kano questions. The second

³ For this purpose, some additional questions can also be added to the Kano questionnaire. In this respect, the Self-Styled Importance Survey is the most applied one in the researches, in addition to the Kano questions: for some examples, see Walden 1993, Sauerwein et al. 1996, Sauerwein 1999.

sort refers the open-ended *contextual* questions of which aim is to understand the *context* that the inhabitant lives in as well as his/her thoughts and preferences about the spaces that he/she lives in. Apart from those, some introductory questions were also designed to have *general information* about the *profile* of the inhabitant participating in the survey. Therefore, there are totally four groups of questions in the survey: (in the questionnaire, respectively) general information questions, conventional Kano questions, Kano-support questions, and contextual questions.

It is noteworthy here to make some brief explanations especially about the Kano-support and contextual questions. Regarding the character of the study, in the design of the conventional Kano questions, because it is not possible to decide which characteristic of the space is positive and which is negative, the *current* characteristics of the housing-unit that the inhabitant has already lived in is placed in the *functional* side of the Kano. Thus, by the Kano-support questions, positive or negative *experiences* and *judgments* of the inhabitants about the spaces were also searched, beside of the *reasons* of their judgments. For example, in the Kano-support part, the inhabitant is asked that “whether it is nice to have a living room close to the kitchen, and why,” or “why the corridor is important or not important.” Thus, by this way, the positive or negative perception of the inhabitant about a characteristic of the housing-unit can be figured out with the reasons, and positioning of the questions (functional or dysfunctional) in the Kano survey can also be checked. The Kano-support questions also provide reliability for the Kano questionnaire, since the answers of the users can be checked comparatively for the same questioning.

The contextual questions, on the other hand, include the ones undertaking the issues within a larger perspective. For example, among these questions, there are the ones asking the inhabitant “whether he/she is pleased to live in his/her current home, and why”; and “which kind of house he/she would prefer to live in.” Besides, the adjectives that the inhabitant utilizes to describe his/her home are also asked in the contextual questions. Therefore, both of the Kano-support and contextual sections are composed of the open-ended questions providing flexibility and richness to the results obtained by the conventional Kano questions. In this respect, Chapter 5 undertakes all of the survey results of the selected mass-housing cases in Izmir, after the introductions to these cases. By this way, the suggested evaluation-manner for the Kano survey as well as the advantages of additional questions can be examined in detail.

CHAPTER 5

A STUDY FOR EVALUATING THE ARCHITECTURAL- DESIGN QUALITY

5.1. Criteria in the Selection of Cases

In the extent of the study—which is also mentioned briefly in Chapter 1—the dissertation examines the issue of *quality of architectural design* in some of the current mass-housing examples of Izmir, and undertakes it as the conceptual basis in theoretical framework. Whether there is a *perception* of quality of architectural design for the users of the selected cases is among the primary concerns. Therefore, the said quality was examined via the *users* of the related cases, and thus, the user-based quality approaches of TQM were considered, as already mentioned in Chapter 4. In parallel with the motto of “fitness for use” (Juran 1988, 2), *experiences* of the users about those spaces were selected as the *tool* for reading this quality; and these experiences pointed out the functionality and feasibility of spatial organizations. In order to comprehend pros and cons of the functions and uses of spaces, the study specifically focused on the *plans* of mass-housing units; and by a further limitation, only *3+1 plan types* were examined because of the large extent of materials. Besides, the *duration of use*—that is, the duration of inhabitation—as the other important criterion was also regarded, and the cases which have been in use over one year were selected.

Considering these respects, mass-housing cases produced *after* the enactment of the Mass Housing Law in *1984*, in Izmir, were examined in the main study. In this framework, firstly these examples were divided into three groups in terms of *income segments*: high-income, middle-income, and low-income. Secondly, two examples for each income-group were selected for detailed examination. Therefore, totally six mass-housing cases (two for each income-group) were determined:

1. High-income group: Albayrak Housing in Mavişehir-Karşıyaka (2006-2010),
Soyak Housing in Mavişehir-Karşıyaka (2006-2008),
2. Middle-income group: Mimkent 1 Mass-Housing in Esentepe-Karabağlar (1991-1992),

Ege-Koop Körfez Houses in Karşıyaka (2004-2008),

3. Low-income group: Narbel Mass-Housing in Narlıdere (1997-1999),
2nd stage of TOKI Mass-Housing in Tınaztepe-Buca (2008-2010),

By this way, differentiations and similarities between the examples in different income-groups as well as the same income-group could be examined comparatively. That the *production models* of the projects differ from each other also provides variation for comparison. In typological regard, the selected examples consist of *multi-storey apartment blocks*, and high income examples refer the settlements which are called gated community. *Locations* of the cases, on the other hand, are all in the periphery of the city-center, which is because of the strategies determined by the local authorities for urban sprawl. Finally, in the selection of cases, *number of housing-units* closer to each other—or at least, proportional with each other (but minimum 500 in number)—was preferred in order to study on the projects having similar scales. To summarize, Table 5.1 provides further comparison for the projects in terms of the mentioned criteria.

Table 5.1. Selected projects and their features

	Name of the project	Production model	Location	Number of housing units	Start of the construction	Start of the inhabitation
High-income	Albayrak Mavişehir Housing	Emlak Konut REIT and private company (Albayrak Inc.)	Periphery of the city-center (Mavişehir-Karşıyaka)	536	2006	2010
	Soyak Mavişehir Housing	Emlak Konut REIT and private company (Soyak Inc.)	Periphery of the city-center (Mavişehir-Karşıyaka)	1568	2006	2008
Middle-income	Mimkent 1 Mass-Housing	Private building cooperative (Demirer Construction Inc.)	Periphery of the city-center (Esentepe-Karabağlar)	1200	1991	1992
	Ege-Koop Körfez Houses	Private building cooperative (Ege-Koop)	Periphery of the city-center (Karşıyaka)	696	2004	2008
Low-income	Narbel Mass-Housing	Narlıdere Municipality (Nar-Bel co. Ltd.) and private company (Demirer Inc.)	Periphery of the city-center (Narlıdere)	850	1997	1999
	TOKI Buca Mass-Housing (2nd stage)	TOKI and private company (Siyah Kalem Inc.)	Periphery of the city-center (Buca-Tınaztepe)	986	2008	2010

Following sections describe the cases and examine the application and outcomes of Kano's model. As an introduction to the application of model, descriptions of the *pilot study* with its cases (conducted in TİBAŞ Houses, Basinsitesi-Karabağlar, and Mimkent 1 Mass-Housing, Esentepe-Karabağlar) applied before the main ones, their Kano results, and changes in the questionnaire-design regarding these results are also included in this examination.

5.2. Application of Kano's Model

5.2.1. The Pilot Study: TİBAŞ Houses and Mimkent 1 Mass-Housing

The pilot study was arranged to test the *legibility* of the conventional Kano questions, the *reliability* of the general information questions, and *flexibility* of the Kano-support and contextual questions.¹ However, the most important part is the conventional Kano questions. Thus, by the pilot study, this part was especially tested in terms of legibility. In the pilot study (as well as in the main study), there are 18 different spatial-organization characteristics/requirements questioned in the part of the conventional Kano questions. These characteristics are listed in Table 5.2 according to the functional and dysfunctional sides (for the original questionnaire applied in the pilot survey see Appendix D; for its English translation, see Appendix E). Functional/dysfunctional division, on the other hand, was made regarding the *current* plans of the cases; thus, the current living manners of the inhabitants were reserved for the functional side, as discussed in Chapter 4. Besides, in the pilot study, functional and dysfunctional questions are designed as *opposite* to each other as far as possible. For example, if in the functional side it is asked that what they would feel if they live in a house *with* a corridor, then, in the dysfunctional side, it is asked that what they would feel if they live in a house *without* a corridor. Similar kind of matching can be followed further in Table 5.2.

¹ These primary questions of the pilot study were initially controlled, in the said respects, via the specialists (from the Departments of Architecture, and City and Regional Planning) in the Faculty of Architecture in Izmir Institute of Technology. Besides, especially to test their legibility, these questions were also applied some other people with different professions, educations, ages, and sexes. Though the results substantially affected the design of the questionnaire, they are not examined in this dissertation, because the houses of these primary participants have great diversity, and thus, examining them exceeds the limitation of the study.

Table 5.2. Spatial-organization characteristics questioned in the conventional Kano part of the pilot study

	Functional side	Dysfunctional side
1	Living in a house <i>with a corridor</i>	Living in a house <i>without a corridor</i>
2	Living in a house with a living room <i>close to the entrance hall</i>	Living in a house with a living room <i>far from the entrance hall</i>
3	Living in a house with a kitchen <i>close to the entrance hall</i>	Living in a house with a kitchen <i>far from the entrance hall</i>
4	Living in a house with the bedrooms <i>far from the entrance hall</i>	Living in a house with the bedrooms <i>close to the entrance hall</i>
5	Living in a house with a bathroom and WC <i>close to the bedrooms</i>	Living in a house with a bathroom and WC <i>at the entrance hall</i>
6	Living in a house with the bedrooms placed <i>close to each other</i>	Living in a house with the bedrooms <i>far from each other</i>
7	Living in a house <i>with a separate living room apart from the guest room</i>	Living in a house <i>without a separate living room apart from the guest room</i>
8	Living in a house with the bedrooms <i>far from the living room</i>	Living in a house with the bedrooms <i>near the living room</i>
9	Living in a house with a living room and kitchen <i>close to each other</i>	Living in a house with a living room and kitchen <i>far from each other</i>
10	Living in a house with an <i>open kitchen</i>	Living in a house with a (normal) <i>closed kitchen</i>
11	Living in a house with <i>two wet cores (bathroom and WC)</i>	Living in a house with <i>one wet core (bathroom)</i>
12	Living in a house <i>with a separate bathroom in parents' bedroom</i>	Living in a house <i>without a separate bathroom in parents' bedroom</i>
13	Living in a house <i>with a balcony</i>	Living in a house <i>without a balcony</i>
14	Living in a house with a <i>balcony connected to the living room</i>	Living in a house with a <i>living room without a balcony</i>
15	Living in a house with a <i>balcony connected to the kitchen</i>	Living in a house with a <i>kitchen without a balcony</i>
16	Living in a house with a <i>balcony connected to parents' bedroom</i>	Living in a house with <i>parents' bedroom without a balcony</i>
17	Living in a house with a <i>balcony connected to kid's room</i>	Living in a house with <i>kid's room without a balcony</i>
18	Living in a house <i>with an additional space like a cellar, storage, or laundry</i>	Living in a house <i>without an additional space like a cellar, storage, or laundry</i>

In this framework of the pilot study, two mass-housing projects in different typologies were selected: TİBAŞ Houses (1988-1990), and Mimkent 1 Mass-Housing (1991-1992)—both of which are in Karabağlar-Izmir. It is important to mention here that Mimkent 1 project also refers one of the main cases of the dissertation; however, because it contains 68 housing blocks, two of them (randomly selected) could easily be reserved for the pilot study. In the following sections, firstly the projects are described with their plan analyses, and then, the survey results are explained in detail.

5.2.1.1. TİBAŞ Houses: Description and Analysis

TİBAŞ Houses project was selected as the pilot case because of its similarities as well as the significant differences from the main cases in terms of the plan typology. In this respect, again, only 3+1 plan types were examined to be in parallel with the examination of the main cases. TİBAŞ project was built for the Pension Fund Foundation of Turkey İş Bank Inc. Members, and designed by the architect Salih Zeki Pekin (MATU Architecture). It is a gated community, and a mass-housing project including 91 housing-units (60 of them are 3+1 types). It was built between the years of 1988-1990, for high incomes of that period, in Basinsitesi Neighborhood of Karabağlar (Figure 5.1) (in the years of construction, the Neighborhood was in the hinterland of Konak Municipality). In due course, middle-high and middle income people could also afford the units. Thus, the recent unit-prices of square meter are approximately 1600 TL (in 2012). Information about the project is also tabulated in Table 5.3.



Figure 5.1. TİBAŞ Houses, Karabağlar, Izmir, 1988-1990: Aerial photograph (black circle demonstrates the settlement) (Source: Google Earth 2012)

Table 5.3. Summary of the information about TİBAŞ project

Name of the project		Production model (financier)	Location	Number of housing units	Start of the construction	Start of the inhabitation
Middle and middle-high incomes	TİBAŞ Houses	Pension Fund Foundation of Turkey İş Bank Inc.	Periphery of the city-center (Karabağlar)	91	1988	1990

TİBAŞ Housing cover five adjacent parcels on a sloped area, and *for this reason*—as stated by Pekin (1991)—designed in the form of terraced houses, with a cascade-like organization of the masses, which adds a dynamic appearance to the facades in descending sides (Figures 5.2.b, c, and d). Nevertheless, it is a monolithic structure planned on an H-shaped layout (Figure 5.2.a), and the longer side of this H lays along with the north-south axis, between İnönü Avenue (at the north) and 170th Street of Basinsitesi Neighborhood (at the south). In two voids of the H, the project includes some recreation spaces like a tennis court, play ground, and amphitheatre. There are two main entrances to the block from the east and west facades, and they also lead to the closed car park. After the car park, there is an administration office controlling the block for 24 hours with security personnel and cameras.



Figure 5.2. TİBAŞ Houses, Karabağlar, Izmir, 1988-1990: **a.** Plan demonstrating the outdoor recreation spaces; **b.**, **c.** Views of the block from İnönü Avenue; **d.** View from the east facade (Sources: **a.** Archive of Karabağlar Municipality; **b.**, **d.** Photographs by İpek Ek; **c.** Pekin 1991)

According to its architect, Pekin (1991), one of the most important points of the project is that different plan types were applied for different kinds of families, thus, he also criticized the *uniformity* problem in housing designs. He also stated that, instead of being a disadvantage, the slope of topography served for creating different plan schemes within the terraced masses (Pekin 1991): accordingly, most of the floors cover different layouts in line with the terracing and slope, which necessitated various plan-trials for

many units despite they have the same number of rooms and similar alignments. Hence, though Pekin (1991) claimed that various plan types were applied in the project, this variation is only limited with some nuances. Thus, these differences are observed in terms of *dimensions* and *shapes* of the rooms in the plan schemes, but spatial organization of the units does not point out significant change in these plans.

Nonetheless, there are mainly three different plan types for 3+1 units in the project. In this respect, if we return to the *fixed plan template*—of which fixed character was already discussed in Chapter 3—in the order of

- 1.) Entrance, [2.) Additional space,] 3.) Bathroom (and/or WC), 4.) Three bedrooms (with a parents' bathroom), 5.) Living room, 6.) Kitchen, [7.) Additional space],

and place these alignment-numbers (through clockwise or counter-clockwise) on the related spaces in three plans of the project—without considering the order of their own alignments—then the differences can be clearly revealed. Furthermore, plan schemes can also be abstracted or reduced into the *plan diagrams* by keeping only the information of *sizes* (that is, areas) of the spaces as proportional to each other, *connection* points (that is, the doors) between each other, and *shapes of the corridors and entrance halls* (corridors are roughly demonstrated with L or I, and entrance halls are represented with the proportional dimensions of their rectangle-like shapes). Considering the numbers in the plan template mentioned above, illustration in Figure 5.3 was prepared to compare the spatial organizations of these three unit-types of the project in terms of both *plan schemes* and *plan diagrams*.

As it can be figured out by the comparison, A-type plan is almost the same with the uniformed template. However, there are two main points differing from the order of this uniformed one: the first is that, the *bathroom and WC is separated* from each other, and the WC is placed at the right side of the main entrance. This placement actually complies with the placement of the *additional spaces* in previously examined unit-plans (in Chapter 3) like the cellars and laundry rooms. Thus, the WC substituted the place of these spaces, which also points out that it can also be perceived as an additional space (and in some cases—like in Figures 3.1, and 3.3 in Chapter 3—cellar or laundry can also be placed near or between the bathroom[s], that is, in place of the WC in the uniformed template). The result is obvious throughout the examined examples that spaces with smaller areas like the WC, cellar and laundry are *generally* placed next to the main entrance—at the right or left sides—near the bathroom or kitchen. The second

difference is the presence of the *dining room* separated slightly by a projection from the living room. Therefore, it still works with the living room. A final detail refers the *door* between the entrance hall and corridor, by which the privacy of the bedrooms and bathroom is increased. In summary, the spatial alignment of A-type plan is as follows:

- 1.) Entrance, 2.) Bathroom, 3.) Three bedrooms, 4.) Living room (with a *dining room*), 5.) Kitchen, 6.) WC.

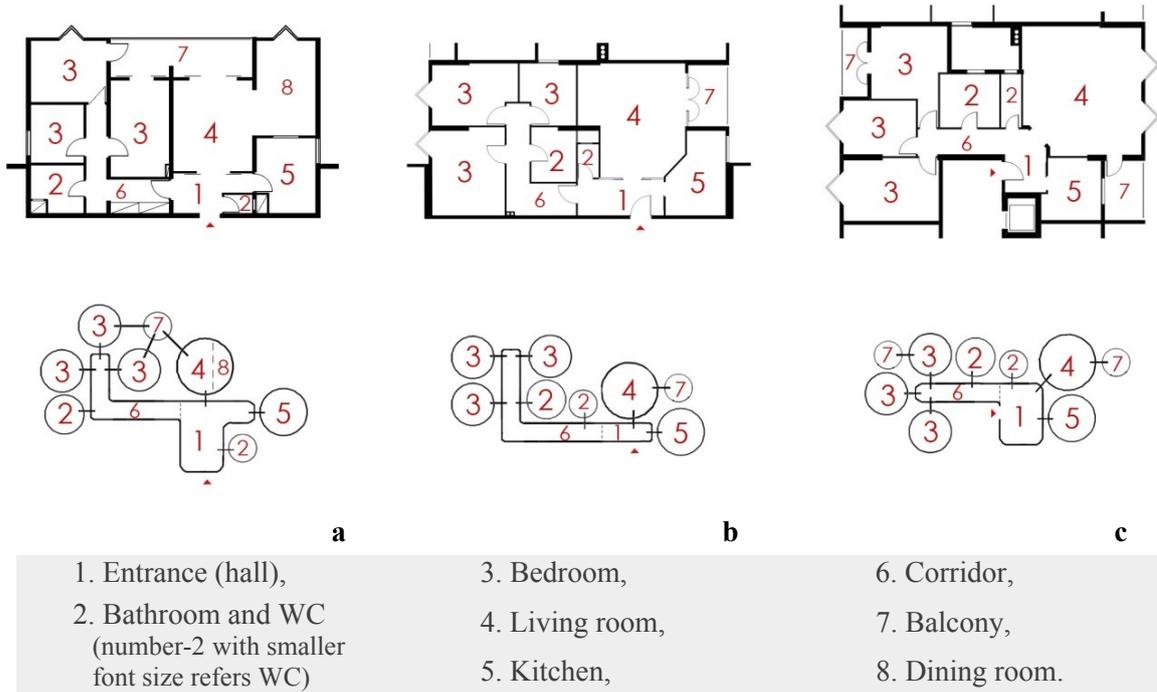


Figure 5.3. Units with 3+1 plan types in TIBAŞ Houses, Karabağlar, Izmir, 1988-1990: **a.** Above: unit with A-type plan, Below: plan diagram of unit-A; **b.** Above: unit with B-type plan, Below: plan diagram of unit-B; **c.** Above: unit with C-type plan, Below: plan diagram of unit-C (Source: Archive of Karabağlar Municipality [plan schemes and diagrams were drawn by İpek Ek])

B-type plan also resembles to A-type, and differs from the uniformed template in one respect: in a clockwise reading, three bedrooms are placed *before* the bathroom and WC. In other words, three-bedrooms and bathroom + WC changed their placements with each other. Thus, the alignment becomes the following one:

- 1.) Entrance, 2.) *Three bedrooms*, 3.) *Bathroom and WC*, 4.) Living room, 5.) Kitchen.

There is also a *door* between the entrance hall and corridor, like in A-type plan. Moreover, this time, it points out another detail about privacy: while the bathroom is placed next to the bedrooms, and thus, separated by the door providing privacy, the WC

takes place near the living room, and can be used commonly. Therefore, the adjacency between the bathroom and WC is only in terms of their volumetric presence, but not their connection points. This peculiarity indicates the single difference between B- and C-type plans, as well: in C-type plan, there is not any door separating the corridor from the entrance hall (that is, the spatial alignment of C-type plan is exactly the same with B-type's). However, the privacy in C-type is provided by a *twist-like* treatment (by planning the entering-direction opposite to the bedrooms) in the plan, which hides the more private spaces from the glances after entering the unit. In this respect, considering the majority of similarities between TİBAŞ plans and uniformed plan template (as shown in Table 5.4), the only significant difference in the plans of TİBAŞ project is the concept of *privacy* which plays an important and highlighted role. However, this privacy is not among the results of the pilot Kano-survey conducted in this project.

Table 5.4. Comparison of the spatial alignments of the uniformed plan and three typical 3+1 plans of TİBAŞ project (cells with grey demonstrate the parallelism between the alignments)

	1	2	3	4	5	6
<u>Uniformed alignment</u>	Entrance	Bathroom (and/or WC)	Three bedrooms	Living room	Kitchen	Additional space
<u>A-type plan</u>	Entrance	Bathroom	Three bedrooms	Living room (with a dining room)	Kitchen	WC
<u>B-type plan</u>	Entrance	Three bedrooms	Bathroom and WC	Living room	Kitchen	-
<u>C-type plan</u>	Entrance	Three bedrooms	Bathroom and WC	Living room	Kitchen	-

Moreover, by some linear readings based on the division of plan in latitudinal and longitudinal directions, spaces can also be grouped according to the main axes in these plans. By this way, it can be checked whether these groups repeat themselves in the other 3+1 plans of different mass-housing projects, which also points out uniformity. Regarding these analyses (Figure 5.4), it is observed that linear readings of TİBAŞ plans do not refer any variation. In both latitudinal and longitudinal readings, there are not any spaces having an *unusual* location with regard to the uniformed template. Besides, between three plan-schemes, bedrooms, entrance hall, WC, bathroom, kitchen, and balcony are repeated in latitudinal division; and bedrooms, balcony, living room, bathroom, WC, entrance hall, and kitchen are repeated in

longitudinal division. According to these linear readings, spaces can be grouped as in Tables 5.5 and 5.6.

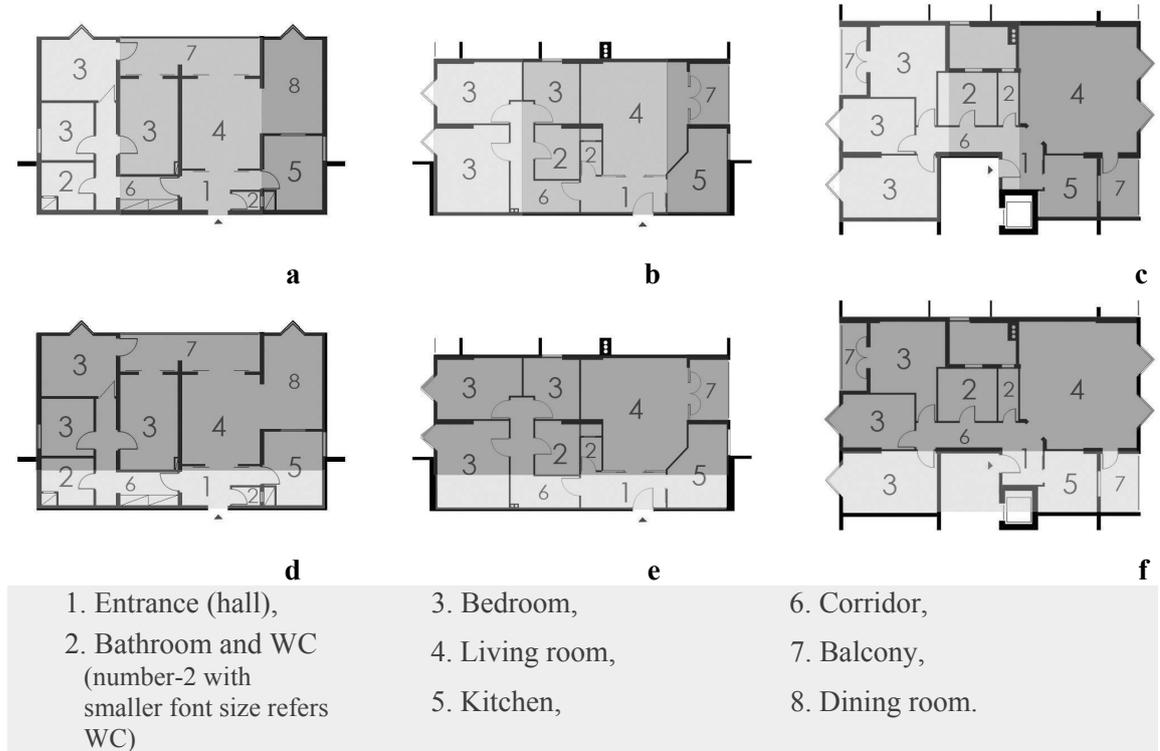


Figure 5.4. TİBAŞ Houses, Karabağlar, Izmir, 1988-1990: **a.** Latitudinal division of A-type unit **b.** Latitudinal division of B-type unit; **c.** Latitudinal division of C-type unit; **d.** Longitudinal division of A-type unit; **e.** Longitudinal division of B-type unit; **f.** Longitudinal division of C-type unit (Source: Archive of Karabağlar Municipality [plan schemes and coloring were drawn and applied by İpek Ek])

Table 5.5. Spatial grouping in latitudinal divisions of 3+1 plans in TİBAŞ (common spaces between three plan types are underlined)

	Left hand-side	Middle	Right hand-side
A-type plan	Two <u>bedrooms</u> Bathroom	Balcony One bedroom Living room Entrance hall <u>WC</u>	Dining room <u>Kitchen</u>
B-type plan	Two <u>bedrooms</u>	One bedroom Living room Bathroom + <u>WC</u> Entrance hall	Balcony <u>Kitchen</u>
C-type plan	Balcony Three <u>bedrooms</u>	Bathroom + <u>WC</u>	Living room Entrance hall <u>Kitchen</u> Balcony

Table 5.6. Spatial grouping in longitudinal divisions of 3+1 plans in TİBAŞ (common spaces between three plan types are underlined)

	Upper side	Lower side
A-type plan	<u>Balcony</u> Three <u>bedrooms</u> <u>Living room</u> + Dining room	Bathroom <u>Entrance hall</u> WC <u>Kitchen</u>
B-type plan	Three <u>bedrooms</u> Bathroom + WC <u>Living room</u> <u>Balcony</u>	<u>Entrance hall</u> <u>Kitchen</u>
C-type plan	<u>Balcony</u> Two <u>bedrooms</u> Bathroom + WC <u>Living room</u>	One bedroom <u>Entrance hall</u> <u>Kitchen</u> Balcony

As the final analysis, it can be observed that all of the balconies in three plans are connected to the living room but not to the kitchen—only in A-type plan, it is also connected to one of the bedrooms; and in C-type, there is another balcony connected to the bedroom. One of the reasons of their disconnection with the kitchen or dining is the construction manner with shear walls coinciding between these spaces. However, the treatment in C-type plan cannot be explained in this respect. Thus, though TİBAŞ plans have some variations, they only refer some differences which are very minor to break the uniformity in the plan schemes.

5.2.1.2. Mimkent 1 Mass-Housing: Description and Analysis

The reason of including Mimkent 1 Mass-Housing project into the pilot study is to test the questionnaire in an example which is also among the cases of the main study. Besides, Mimkent 1 is a typical mass-housing project; it has a large-scale settlement, considerable amount of unit number, and typical unit-plans. Mimkent projects have two stages, and the first stage, that is, Mimkent 1 project is selected for the surveys. Mimkent 1 was designed and produced by the private company, Demirer Construction Inc., between the years of 1991-1992. The units were sold by lot in the manner of cooperative system (Demirer 2010). The settlement locates in the periphery of the city-center, in Esentepe-Karabağlar (Figure 5.5). It addresses especially to middle and middle-high income groups with the unit prices of square meter changing between 1000 TL and 1600 TL (in 2012). There are 1200 housing units in the project, and they are

distributed in 68 blocks. Number of 3+1 units is 1083. This information is also summarized in Table 5.1, and later in Table 5.20.

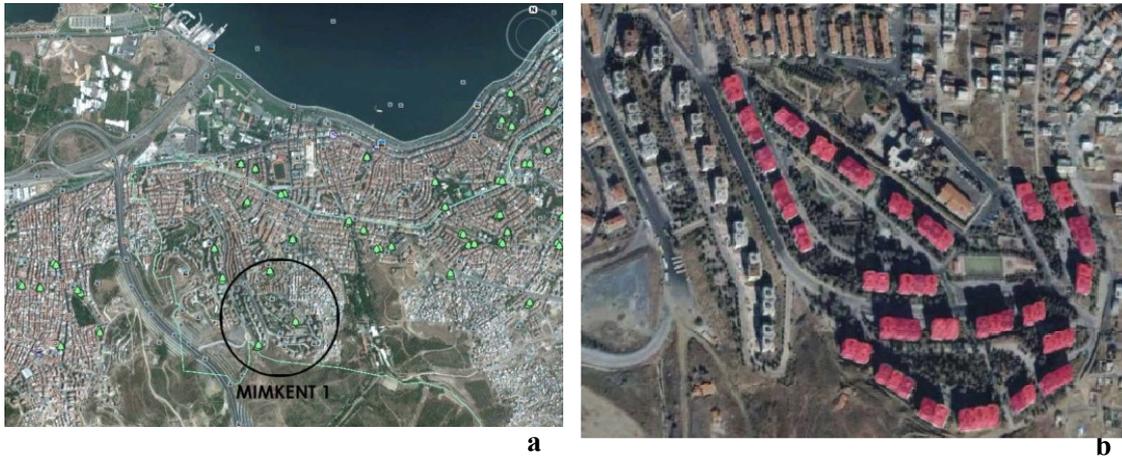


Figure 5.5. Mimkent 1 Mass-Housing, Esentepe-Karabağlar, Izmir, 1991-1992: **a.** Aerial photograph (black circle demonstrates the settlement); **b.** Aerial photograph in detail (blocks with red refer Mimkent 1 project) (Source: **a.**, **b.** Google Earth 2012)

Mimkent 1 project also takes place on a slopped area (Figure 5.6), and in formal respect, its typology comprises apartment blocks with eight or nine storey. Façade designs of these blocks were especially accentuated with the projected balconies (some of them were glazed), and they are all the same with their parapet walls in similar colors, even with the decorative lines on them; all of them repeat each other within the same rhythm (Figure 5.7). Regarding the settlement typology, on the other hand, it is not a gated community. However, because it is a large scale project, it corresponds to a separate neighborhood distinguished from the surroundings. Thus, it has separate play grounds and recreation areas in the settlement, as well.



Figure 5.6. Mimkent 1 Mass-Housing, Esentepe-Karabağlar, Izmir, 1991-1992: **a.**, **b.** Views from the settlement (Source: Demirer Group's archive)

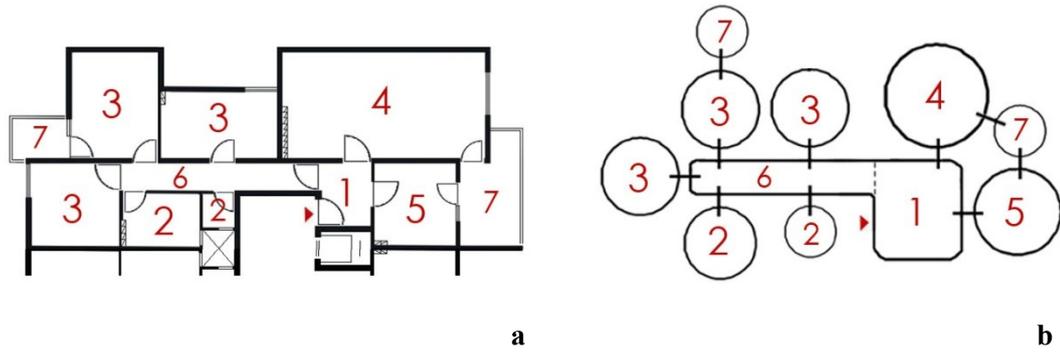


Figure 5.7. Mimkent 1 Mass-Housing, Esentepe-Karabağlar, Izmir, 1991-1992: **a.**, **b.** Views from some of the blocks; **c.** View demonstrating the façade treatments (Source: Photographs by İpek Ek)

Uniformity in facades is also relevant for the plan designs. There is only one sort of plan solution for 3+1 units, and this scheme thoroughly repeats the uniformed plan template. Blocks were generally designed as adjacent to each other in twos (for example, Figure 5.7.c demonstrates the façade of this kind of implementation), and each of these blocks containing 3+1 units has two units on each floor. Figure 5.8 illustrates the typical plan of 3+1 units together with its abstracted plan-diagram. Accordingly, spatial alignment of Mimkent 1 project through clockwise is as follows:

- 1.) Entrance, 2.) WC and bathroom, 3.) Three bedrooms, 4.) Living room, 5.) Kitchen.

As it is perceived, spatial alignment of a typical unit in Mimkent 1 project is the same with the uniformed plan-scheme, which can also be clarified by the following comparative table (Table 5.7).



1. Entrance (hall),	3. Bedroom,	6. Corridor,
2. Bathroom and WC (number-2 with smaller font size refers WC)	4. Living room,	7. Balcony.
	5. Kitchen,	

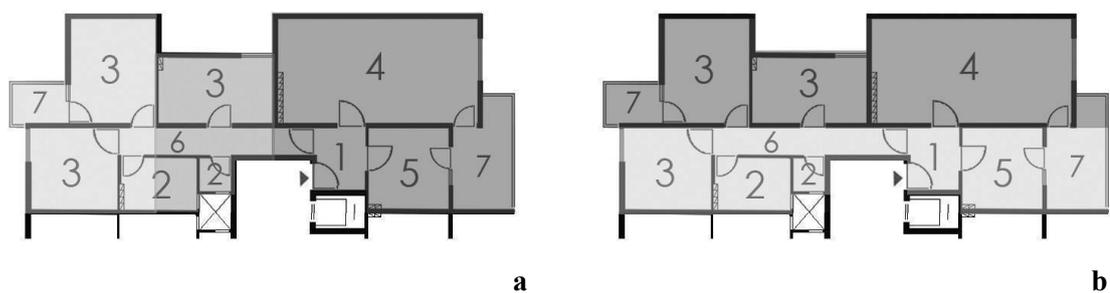
Figure 5.8. Mimkent 1 Mass-Housing, Esentepe-Karabağlar, Izmir, 1991-1992: **a.** Plan scheme of 3+1 unit; **b.** Plan diagram of 3+1 unit (Source: Archive of Karabağlar Municipality [plan scheme and diagram were drawn by İpek Ek])

Table 5.7. Comparison of the spatial alignments of the uniformed plan and the typical 3+1 plan of Mimkent 1 project (cells with grey demonstrate the parallelism between the alignments)

	1	2	3	4	5
Uniformed alignment	Entrance	Bathroom (and/or WC)	Three bedrooms (with a parents' bathroom)	Living room	Kitchen
Typical plan in Mimkent 1	Entrance	WC and bathroom	Three bedrooms	Living room	Kitchen

On the other hand, regarding the divisions in latitudinal and longitudinal axes (Figure 5.9) (Tables 5.8 and 5.9), spatial groups in Mimkent 1 repeat the ones in both TİBAŞ (see Tables 5.5 and 5.6) and the uniformed template. Thus, according to these latitudinal and longitudinal readings, it is seen that all of the spaces are constantly in the same group in comparison to the other unit designs. Besides, again like TİBAŞ, a *door* separating the corridor from the entrance hall is also present in the plan scheme of Mimkent 1. Certainly, *privacy* is the keyword to comprehend this kind of treatments in the plans. By this way, not physical but *visual distance* is created easily. Therefore, in terms of the consideration of privacy, 3+1 plan solution of Mimkent 1 is the same with the ones in TİBAŞ. One of the reasons of this parallelism may be attributed to the *period* of their construction; in the 1990s these separations for privacy might have been demanded by the users. However, this sort of doors may not be preferred in the recent

implementations. Thus, this characteristic is not included as a data in the uniformed template. On the other hand, balconies comply with the uniformed plan: there are two balconies in the project; one of them is connected to one of the bedrooms, and the other opens to both living room and kitchen (thus, in the uniformed spatial-alignment, the balcony is generally connected to either living room or kitchen, or both of them, and sometimes a second balcony can be added to one of the bedrooms, as well). As a final summary, equality between the uniformed plan and the plan design in Mimkent 1 can be re-emphasized, which also affected the results of both pilot and main surveys substantially.



1. Entrance (hall),
2. Bathroom and WC (number-2 with smaller font size refers WC)
3. Bedroom,
4. Living room,
5. Kitchen,
6. Corridor,
7. Balcony.

Figure 5.9. Mimkent 1 Mass-Housing, Esentepe-Karabağlar, Izmir, 1991-1992: **a.** Latitudinal division; **b.** Longitudinal division (Source: Archive of Karabağlar Municipality [plan drawings and analyses were prepared by İpek Ek])

Table 5.8. Spatial grouping in latitudinal division of 3+1 plan in Mimkent 1

Left hand-side	Middle	Right hand-side
Balcony Two bedrooms Bathroom	One bedroom WC	Living room Entrance hall Kitchen Balcony

Table 5.9. Spatial grouping in longitudinal division of 3+1 plan in Mimkent 1

Upper side	Lower side
Balcony Two bedrooms Living room	One bedroom Bathroom + WC Entrance hall Kitchen + Balcony

5.2.1.3. Results of the Pilot Survey

In TİBAŞ project, questionnaires were delivered to all 91 units, however, only 10 of them returned (and only nine of them were from the inhabitants of 3+1 units, the 10th was from 4+1 unit; however, evaluations are made regarding 10 inhabitants). In Mimkent 1, on the other hand, the survey was conducted in two blocks having 32 units in total (each of them has 16 units), and 13 questionnaires returned. Results of these surveys are discussed and listed below regarding the order of the question-groups in the questionnaire respectively (i.e. the general information questions, conventional Kano questions, Kano-support questions, and contextual questions). Thus, regarding the answers to the *general information questions*, in the first place, it is worth to summarize the inhabitant profiles of these projects. In TİBAŞ Houses, medicine, banking, tourism, and military service are among the professions of the inhabitants. 70% of them are retired, and 30% are working. Again 70% of them stated their income-group as *middle-high*, and 30% of them stated as middle. All of the inhabitants are the owners of their houses. In Mimkent 1 Mass-Housing, teacher, manager, technicians, engineer-specialist, and bankers refer the answers for the professional positions. 62% of the inhabitants are retired, and 38% are working. 64% of them stated their income-group as *middle*, 27% as middle-high, and 9% as low. 92% of them are the owners of their houses. Other information like age, sex, education, family type, and duration of inhabitation for both projects is shown in Table 5.10.

Table 5.10. Information about the inhabitant-profiles of TİBAŞ and Mimkent 1 projects

	Age	Sex		Education	Family type	Duration of inhabitation	
	Older than 40	Men	Women	Bachelor (min.)	Nuclear	Less than 10 years	More than 10 years
TİBAŞ	90%	67%	33%	80%	100%	40%	60%
Mimkent 1	77%	36%	64%	62%	85%	30%	70%

On the other hand, *frequencies* of the answers to the *conventional Kano questions* in TİBAŞ (Table 5.11) and Mimkent 1 (Table 5.12) projects are tabulated below in detail. As suggested and discussed in Chapter 4, the detailed reading manner for *Indifferent* category is also considered in these tables. Besides, the *scores* of both projects regarding these answers are also demonstrated in Table 5.13 comparatively (here, the questioned characteristics are summarized regarding the functional sides in Table 5.2).

Table 5.11. Frequencies of the answers with the Kano scores in TİBAŞ (cells with grey demonstrate the highest scores regarding the explanations in remarks column)

Questioned characteristic	A	O	M	I (+)	I (0)	I (-)	R	Q	Score	Remarks
1	0	2	0	3	2	0	2	1	I(+)	-
2	1	2	0	7	0	0	0	0	I(+)	-
3	0	2	0	7	0	1	0	0	I(+)	-
4	4	4	1	1	0	0	0	0	O	M > O > A > I
5	3	1	1	4	0	1	0	0	A	-
6	0	0	1	3	1	2	0	0	I(+)	-
7	3	1	0	2	2	1	1	0	A	-
8	2	5	1	2	0	0	0	0	O	-
9	1	5	0	4	0	0	0	0	O	-
10	0	0	0	2	1	3	4	0	R	-
	0	4	0	3	1	2	0	0	O	
11	3	4	1	1	0	1	0	0	O	-
12	4	3	0	3	0	0	0	0	A	-
13	1	7	1	1	0	0	0	0	O	-
14	3	4	0	2	1	0	0	0	O	-
15	4	4	0	2	0	0	0	0	O	M > O > A > I
16	0	0	0	4	5	0	1	0	I(0)	-
17	0	0	0	3	3	2	2	0	I(+/0)	-
18	2	4	0	1	3	0	0	0	O	-

Table 5.12. Frequencies of the answers with the Kano scores in Mimkent 1 (cells with grey demonstrate the highest scores regarding the explanations in remarks column)

Questioned characteristic	A	O	M	I (+)	I (0)	I (-)	R	Q	Score	Remarks
1	2	3	2	0	2	3	1	0	O	M > O > A > I
2	0	2	3	7	0	0	1	0	I(+)	-
3	2	0	3	7	1	0	0	0	I(+)	-
4	1	2	3	7	0	0	0	0	I(+)	-
5	3	2	3	4	0	1	0	0	I(+)	-
6	0	0	0	6	5	1	1	0	I(+)	-
7	3	4	0	3	2	0	1	0	O	-
8	2	3	0	7	1	0	0	0	I(+)	-
9	3	2	0	4	3	1	0	0	I(+)	-
10	0	1	0	5	1	5	0	0	I(+/-)	-
11	1	5	0	7	0	0	0	0	I(+)	-
12	6	1	1	5	0	0	0	0	A	-
13	2	5	1	4	1	0	0	0	O	-
14	1	1	0	5	3	3	0	0	I(+)	-
15	1	3	2	5	1	1	0	0	I(+)	-
16	0	2	0	5	3	2	0	0	I(+)	-
17	0	1	0	1	5	1	4	0	I(0)	-
18	2	5	0	4	1	0	0	0	O	-

Table 5.13. Comparison of the Kano scores (with the conventional and suggested readings) of TİBAŞ and Mimkent 1 projects (cells with light grey demonstrate the parallelism between two results; cells with darker grey demonstrate the differences between the conventional and suggested readings)

Questioned characteristic A house with...		TİBAŞ		Mimkent 1	
		Conventional reading	Suggested reading	Conventional reading	Suggested reading
1	a <i>corridor</i>	I	I (+)	O	O
2	a living room <i>close to</i> the entrance hall	I	I (+)	I	I (+)
3	a kitchen <i>close to</i> the entrance hall	I	I (+)	I	I (+)
4	bedrooms <i>far from</i> the entrance hall	O	O	I	I (+)
5	a bathroom and WC <i>close to</i> the bedrooms	A	A	M	I(+)
6	bedrooms placed <i>close to</i> each other	I	I (+)	I	I (+)
7	a separate living room apart from the <i>guest room</i>	I	A	O	O
8	bedrooms <i>far from</i> the living room	O	O	I	I (+)
9	a living room and kitchen <i>close to</i> each other	O	O	I	I (+)
10	an <i>open kitchen</i>	I	R/O	I	I (+/-)
11	<i>two wet cores</i> (bathroom and WC)	O	O	I	I (+)
12	a <i>separate bathroom</i> in parents' bedroom	A	A	A	A
13	a <i>balcony</i>	O	O	O	O
14	a <i>balcony</i> connected to <i>living room</i>	O	O	I	I (+)
15	a <i>balcony</i> connected to <i>kitchen</i>	O	O	I	I (+)
16	a <i>balcony</i> connected to <i>parents' bedroom</i>	I	I(0)	I	I (+)
17	a <i>balcony</i> connected to <i>kid's room</i>	I	I (+/0)	I	I (0)
18	an additional space like a <i>cellar, storage, or laundry</i>	O	O	O	O

Furthermore, for another comparison, these scores are given with both the *conventional* Kano reading in the first columns, and the suggested reading manner in the second columns for each project.

Though the numbers of returned questionnaires in both projects are low, regarding the results in these three tables (Tables 5.11, 5.12 and 5.13), spatial-organization characteristics that should be maintained or changed can be determined, as well. In this determination, the current plans of the projects (3+1 plans) are comparatively and synchronically re-examined with the Kano scores. The

characteristics which can be maintained or changed are marked with ‘+’ in the related columns.² To demonstrate this examination in a legible way, Table 5.14 for TİBAŞ, and Table 5.15 for Mimkent 1 are presented below. Tables 5.14 and 5.15 also provide understanding about the satisfaction from the spatial organization. If the ‘+’ marks are added, total of the characteristics which are to be maintained and changed can be calculated. According to this kind of calculation, it may be claimed that both A-type and B-type plans in TİBAŞ result in user-satisfaction because of the satisfaction rate of 72%. Since the satisfaction rate corresponds to 78% for C-type plans, then it may also be suggested that they are more proper for the inhabitants of TİBAŞ. Regarding a similar reading, plan scheme of Mimkent 1 refers greater satisfaction—with the rate of 83%—than the ones in TİBAŞ. This satisfaction actually depends on the presence of an additional balcony in one of the bedrooms, and on the connections of the other balcony to both kitchen and living room. It also explains the reason of that the characteristic of “having a balcony” is in the category of *One-dimensional* in both projects (see Table 5.13). On the other hand, this outcome of increased satisfaction demonstrates us that the uniformed plan-template is also preferred by the inhabitants because of the great parallelism between the uniformed plan and the plan of Mimkent 1 (see Table 5.7). The same claim is also possible for TİBAŞ Houses (see Table 5.4).

Furthermore, reliability of the conventional Kano questions and results can be checked by the *Kano-support questions*. If the inhabitant answers the latter ones in a parallel logic with the former ones, then it may be asserted that the questions are clearly

² Determining the characteristics to be maintained or changed in the current plans is possible by the following reading manner: if the questioned characteristic is already *present* in the plan, and if the score corresponds to one of A, O, M, or I(+), then, it indicates that the inhabitants are *pleased* to have this characteristic. Thus, the column “to be maintained” in the related table is marked with ‘+’. However, if the questioned characteristic is *absent* in the plan, and if the score corresponds to one of A, O, M, or I(+), then, it indicates that the inhabitants *wish* to have this characteristic, which leads us that this *absence* should be *changed*—and the cell in the column of “to be changed” is marked with ‘+’. On the other hand, if the questioned characteristic is already *present* in the plan, and if the score corresponds to one of I(-) and R, this situation points out the characteristics to be *changed* because of the *displeasure* of the users; then, the column “to be changed” is marked with ‘+’. And if the questioned characteristic is *absent* in the plan, and if the score corresponds to one of I(-) and R, then, we may conclude that this *absence* should be *maintained*, and mark the column of “to be maintained.” Besides, I(0) scores can be undertaken in a different manner from the other categories. Thus, in the case of I(0), if the questioned characteristic is already *present* in the plan, since I(0) points out that the user is *not* interested in the *presence* of this characteristic, the column of “to be changed” may be marked. And if the questioned characteristic is *absent* in the plan, because the user is *not* interested in this *absence*, it should be *maintained* to be absent, and the column of “to be maintained” can be marked. Hence, while the characteristics which may be maintained point out *satisfaction* from the plan, characteristics that may be changed refer *dissatisfaction*. This reading manner is relevant for the other cases in the main study, as well.

Table 5.14. Examination of the Kano scores regarding 3+1 plan types in TİBAŞ ('+' marks indicate the action that might be taken)

TİBAŞ A house with...		Kano result	A-type plan		B-type plan		C-type plan	
			To be maintained	To be changed	To be maintained	To be changed	To be maintained	To be changed
1	a <i>corridor</i>	I(+)	+		+		+	
2	a living room <i>close to</i> the entrance hall	I(+)	+		+		+	
3	a kitchen <i>close to</i> the entrance hall	I(+)	+		+		+	
4	bedrooms <i>far from</i> the entrance hall	O	+		+		+	
5	a bathroom and WC <i>close to</i> the bedrooms	A	+		+		+	
6	bedrooms placed <i>close to</i> each other	I(+)	+		+		+	
7	a separate living room apart from the <i>guest room</i>	A		+		+		+
8	bedrooms <i>far from</i> the living room	O	+		+		+	
9	a living room and kitchen <i>close to</i> each other	O	+		+		+	
10	an <i>open kitchen</i>	R/O	+		+		+	
11	<i>two wet cores</i> (bathroom and WC)	O	+		+		+	
12	a <i>separate bathroom</i> in parents' bedroom	A		+		+		+
13	a <i>balcony</i>	O	+		+		+	
14	a <i>balcony</i> connected to the <i>living room</i>	O	+		+		+	
15	a <i>balcony</i> connected to the <i>kitchen</i>	O		+		+		+
16	a <i>balcony</i> connected to <i>parents' bedroom</i>	I(0)		+	+		+	
17	a <i>balcony</i> connected to <i>kid's room</i>	I(+/0)	+			+	+	
18	an additional space like a <i>cellar, storage, or laundry</i>	O		+		+		+
		Total:	13 (72%)	5 (28%)	13 (72%)	5 (28%)	14 (78%)	4 (22%)

Table 5.15. Examination of the Kano scores regarding 3+1 plan type in Mimkent 1 ('+' marks indicate the action that might be taken)

Mimkent 1		Kano result	To be maintained	To be changed
A house with...				
1	a <i>corridor</i>	O	+	
2	a living room <i>close to</i> the entrance hall	I (+)	+	
3	a kitchen <i>close to</i> the entrance hall	I (+)	+	
4	bedrooms <i>far from</i> the entrance hall	I (+)	+	
5	a bathroom and WC <i>close to</i> the bedrooms	I (+)	+	
6	bedrooms placed <i>close to</i> each other	I (+)	+	
7	a separate living room apart from the <i>guest room</i>	O		+
8	bedrooms <i>far from</i> the living room	I (+)	+	
9	a living room and kitchen <i>close to</i> each other	I (+)	+	
10	an <i>open kitchen</i>	I (+/-)	+	
11	<i>two wet cores</i> (bathroom and WC)	I (+)	+	
12	a <i>separate bathroom</i> in parents' bedroom	A		+
13	a <i>balcony</i>	O	+	
14	a <i>balcony</i> connected to the <i>living room</i>	I (+)	+	
15	a <i>balcony</i> connected to the <i>kitchen</i>	I (+)	+	
16	a <i>balcony</i> connected to <i>parents' bedroom</i>	I (+)	+	
17	a <i>balcony</i> connected to <i>kid's room</i>	I (0)	+	
18	an additional space like a <i>cellar, storage, or laundry</i>	O		+
Total:			15 (83%)	3 (17%)

understood by the inhabitant. According to this checking system, for TİBAŞ project (Table 5.16), the rate of parallelism between the Kano and support questions is 71%. Besides, for Mimkent 1 (Table 5.17), this rate corresponds to 60%. Lowness in this rate can be attributed to the highness of the unanswered questions. However, regarding the answers to the question of “are you pleased to live in your unit” in the part of the *contextual questions*, majority of the inhabitants in both projects stated that they are pleased. Again for this part, answers to the questions asking “the reasons of buying that unit,” “properties of the unit that they would like to live in,” “whether they would like to move,” “whether the area of the unit is *sufficient* for their needs,” “whether they are *pleased* to have a corridor in that form and dimensions,” “whether the design of the unit is *proper* for their life styles,” “whether living in their housing *costs* much,” “whether their house is *useful*,” “what they like or do not like in their houses,” “how much important it is to take sunlight and to have a kind of view (city, sea, etc.),” “which adjectives they can use to describe their houses,” “whether they *like* the appearance of

their apartment/block,” and “whether they are *pleased* to live in a multi-storey block” are also worth to mention here.

Table 5.16. Parallelism rate between the conventional and supporting Kano-questions in TİBAŞ project

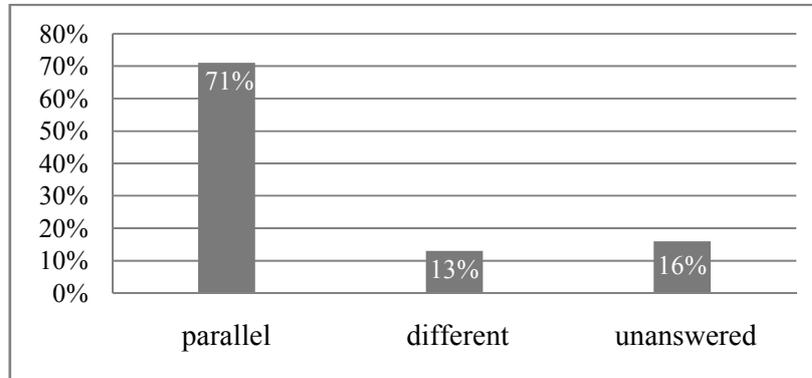
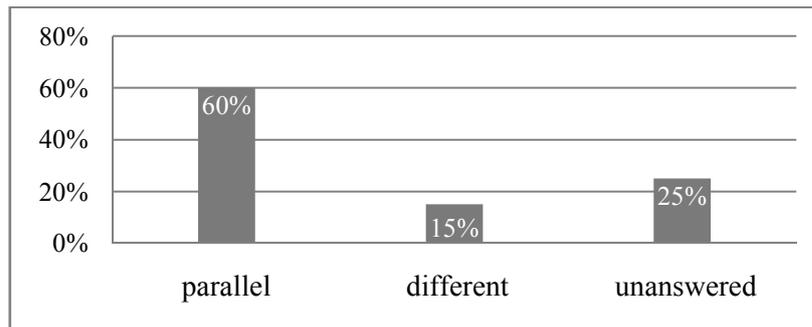


Table 5.17. Parallelism rate between the conventional and supporting Kano-questions in Mimkent 1 project



Accordingly, in TİBAŞ project, among the reasons of buying that unit, spaciousness, plenty of sunlight, seascape, security, affordable price, car park, and central heating system were the ones stated frequently. About the unit that they would like to live in, it is seen that the answers are compatible with the properties of the house that they have already lived in. However, few of the inhabitants stated that they would like to live in a detached house, and a house in a settlement without slope. The latter one indicates a complaint, if we consider the high slope in the topography of TİBAŞ. Half of them prefer to move, while the other half rejects it. Majority of them think that the area of the unit is sufficient for their needs (78%) as well as the form and dimensions of their corridors (63%). 75% of the inhabitants think that the design of unit is proper for their life styles, and 89% of them found costly to live in this housing. On the other hand, all of the users agreed on the usefulness of the units. Among the criticized points, however,

high slope, and thus, the necessity of staircases, and small window openings were mentioned. All of the inhabitants would like to have nice views, and they are pleased with the views they have. Therefore, the adjectives to describe their homes comprise mostly the positive ones like wide-spacious, beautiful, day-lighted, cute, and simple. Only 13% of them found their units narrow, dark, and boring. Similarly, 78% of the inhabitants like the appearance of their housing, and 33% of them are pleased to live in this kind of multi-storey housing.

For Mimkent 1, on the other hand, strength, seascape, spaciousness, wideness, and affordability because of the cooperative system are among the user-preferences about the project. However, wider and detached house with a garden, with a swimming pool and without stairs refer inhabitants' answers to the question of where they would like to live in. Some of them stated that they are already pleased to live in their current housing. Similar to TİBAŞ case, half of the inhabitants want to move, while the others do not. Again, half of them think that the unit-area is sufficient for their needs, and the form and dimensions of the corridor are fine; but the other half think that the area is insufficient, and the corridor is narrow and unnecessarily long. According to 80% of them, design of the unit is proper for their life styles, and again, another 80% found costly to live in this housing. Nevertheless, all of the users agreed on the usefulness of the units. The inhabitants are pleased to live in their housing because of the seascape, security, and fresh air in the settlement; however, they also criticized insufficiency in the area of rooms, sound insulation, lacking of a cellar, length of the corridor, multi-storey building design, and distance from the shopping centers. Similar to TİBAŞ, again, all of the inhabitants would like to have nice views, and they are pleased with the views they have. Thus, 88% of the users described their homes with the adjectives of wide-spacious, beautiful, day-lighted, cute, and simple. All of the inhabitants, on the other hand, like the appearance of their housing, as well. And 70% of them are pleased to live in this kind of multi-storey housing.

Of course, these readings, results, and percentages sound reductive in the sense of that a space and satisfaction from it depend on more complicated dynamics which cannot be undertaken completely regarding the limitations of this study. However, all of them help us understand the reasons of uniformity in the plan schemes, and indicates that this uniformity is *not* perceived as an *undesirable* situation by the inhabitants; rather, it can be observed via the surveys that it has been and is *demande*d. Furthermore, regarding the low return-rate of the questionnaires, less attention can be attributed to the

results of the pilot study. Therefore, these results were mainly evaluated to improve the design of the questionnaire. Inferences about user-satisfaction from the uniformed plan are, thus, adjourned to the section of the main study.

5.2.1.4. Changes in the Questionnaire Design

After the pilot study, especially *wording* of the conventional Kano questions and choices, and even the *layout* of the pages were changed (for Turkish originals and English translations of the questionnaires applied in the main and pilot studies, see respectively Appendices B, C, D, and E). In this respect, primarily, *opposite* wording for the functional/dysfunctional division was found problematic in the pilot study. It was decided to design these pairs as offering *alternative* ways to each other. This change makes sense in that there cannot be a universal *negative* or *positive* connotation which is recognized by everyone in terms of space organization. Thus, dysfunctional sides were designed regarding the other most applied alternatives among the current plan schemes. In this respect, for example, if the functional side corresponds to “living in a house *with* a corridor,” dysfunctional side does *not only* comprise “living in a house *without* a corridor” but also refers a plan scheme “in which all rooms open to the entrance hall” compulsorily. This kind of division manner offering alternatives also helps the inhabitant imagine *what else can be possible*, if the current situation does not work. Besides, some *relative* adjectives like *closeness* and *farness* were also eliminated as far as possible; thus, one of the inhabitants of the pilot survey had criticized their relativity. Nevertheless, in the Kano-support questions, wording was not changed, and relative adjectives like *closeness* and *farness* were deliberately used to catch different user-perceptions about these characteristics. Final version of the conventional Kano questions (with both functional and dysfunctional sides) with the *new wording* applied in the main study can be followed further in Table 5.18.

The final important change is again in the *wording* of five *choices* in the conventional Kano part. In the pilot study, wording did not refer to direct translation of English counterparts. The problem laid in the difficulty of finding their one-to-one Turkish translations. Thus, the first version of the choice-set applied in the pilot study was designed from scratch to find closer meaning-counterparts of English ones. However, this set was proper for making a *gradation* rather than a *categorization*, which

contradicted the very aim of the Kano model. Therefore, it was decided not to mislead the survey with new wording trials, and to use another version applied previously in a different survey conducted in Turkish (for this study see İlder, Özgen and Aykol 2007). In this respect, the first and last versions of these choices in the research, and the most cited version in the literature (originally in English) are listed comparatively in Table 5.19.

Table 5.18. Spatial-organization characteristics questioned in the conventional Kano part in the main study

	Functional side	Dysfunctional side
1	Living in a house <i>with a corridor</i>	Living in a house with an <i>entrance hall</i> (without a corridor) connected to all rooms
2	Living in a house with a <i>living room</i> connected to the <i>entrance hall</i>	Living in a house with a <i>living room</i> connected to the <i>corridor</i>
3	Living in a house with a <i>kitchen</i> connected to the <i>entrance hall</i>	Living in a house with a <i>kitchen</i> connected to the <i>corridor</i>
4	Living in a house with <i>bedrooms</i> connected to the <i>corridor</i>	Living in a house with <i>bedrooms</i> connected to the <i>entrance hall</i>
5	Living in a house with a bathroom and WC <i>next</i> to the bedrooms	Living in a house with a bathroom and WC <i>at the entrance hall</i>
6	Living in a house with bedrooms placed <i>next</i> to each other	Living in a house with bedrooms placed <i>in a distance</i> with each other
7	Living in a house <i>with a separate living room</i> apart from the <i>guest room</i>	Living in a house <i>without a separate living room</i> apart from the <i>guest room</i>
8	Living in a house with the bedrooms placed <i>in a distance</i> with the living room	Living in a house with the bedrooms placed <i>next</i> to the living room
9	Living in a house with a living room and kitchen placed <i>next</i> to each other	Living in a house with a living room and kitchen placed <i>in a distance</i> with each other
10	Living in a house with an <i>open kitchen</i>	Living in a house with a (normal) <i>closed kitchen</i>
11	Living in a house with <i>two wet cores</i> (bathroom and WC)	Living in a house with <i>one wet core</i> (bathroom)
12	Living in a house <i>with a separate bathroom</i> in parents' bedroom	Living in a house <i>without a separate bathroom</i> in parents' bedroom
13	Living in a house <i>with a balcony</i>	Living in a house <i>without a balcony</i>
14	Living in a house with a <i>balcony</i> connected to the <i>living room</i>	Living in a house with a <i>living room</i> without a <i>balcony</i>
15	Living in a house with a <i>balcony</i> connected to the <i>kitchen</i>	Living in a house with a <i>kitchen</i> without a <i>balcony</i>
16	Living in a house with a <i>balcony</i> connected to <i>parents' bedroom</i>	Living in a house with <i>parents' bedroom</i> without a <i>balcony</i>
17	Living in a house with a <i>balcony</i> connected to <i>kid's room</i>	Living in a house with <i>kid's room</i> without a <i>balcony</i>
18	Living in a house <i>with an additional space</i> like a <i>cellar, storage, or laundry</i>	Living in a house <i>without an additional space</i> like a <i>cellar, storage, or laundry</i>

Table 5.19. Wording of the choice-sets in the conventional Kano part in the pilot and main studies with the most cited version in the literature (Turkish counterparts of the choice-sets applied in the studies are given in italic in parentheses)

	First version (in the pilot study)	Last version (in the main study)	Most cited version in the literature (in English)
1.	I certainly want it (<i>Kesinlikle isterim</i>)	I like it very much (<i>Çok hoşuma gider</i>)	I like it that way
2.	I prefer it (<i>Tercih ederim</i>)	I expect it that way (<i>Öyle olmasını beklerim</i>)	It must be that way
3.	It does not make any difference (<i>Fark etmez</i>)	It does not make any difference (<i>Fark etmez</i>)	I am neutral
4.	I do not prefer it (<i>Tercih etmem</i>)	I do not like, but I can endure (<i>Hoşlanmam ama katlanabilirim</i>)	I can live with it that way
5.	I never want it (<i>Kesinlikle istemem</i>)	I never like it (<i>Hiç hoşuma gitmez</i>)	I dislike it that way

5.2.2. The Main Study

In the light of the feedbacks from the pilot study, and after changing the questionnaire design, the main study was undertaken in six different cases, as also mentioned in the beginning of this chapter. These cases comprise Albayrak Housing in Mavişehir-Karşıyaka and Soyak Housing in Mavişehir-Karşıyaka for high-income group, Mimkent 1 Mass-Housing in Esentepe-Karabağlar and Ege-Koop Körfez Houses in Karşıyaka for middle-income group, Narbel Mass-Housing in Narlıdere and 2nd stage of TOKI Mass-Housing in Tınaztepe-Buca for low-income group. In the calculation of sample size, number of 3+1 housing-units was considered instead of the number of inhabitants—which increases the size into a very impractical scale. Therefore, the size of each survey for each case corresponds approximately to 40 questionnaires—that is, 40 inhabitants from 40 different 3+1 units. Surveys were applied with the confidence level of 95% and confidence interval of 15—though a smaller interval was intended, it was rather impossible to conduct a survey in such a large size regarding the time and supply limitations. Results of these calculations with some details from the projects are briefly tabulated in Table 5.20.

In parallel with the section of the pilot study, cases of the main study are also examined under two sub-titles: description with analysis, and survey results. But before this division, cases are grouped under the sub-titles corresponding to income groups. Furthermore, examination structure (analyses by plan schemes and abstracted diagrams,

and the sections of results) in the main study similarly repeat the structure of the pilot study. Comparative interpretation of the results regarding the projects, on the other hand, is undertaken in Chapter 6.

Table 5.20. Sample size calculations for each case with the details of block types and housing-unit numbers

Income group and name of the project		Total number of blocks in the project		Number of blocks containing 3+1 units	Storey-numbers of blocks containing 3+1 units	Total number of housing units in the project	Number of 3+1 units		Min. number of the questionnaires needing to be applied
High-income	Albayrak Mavişehir Housing	12		12	5 / 6	536	256		37
	Soyak Mavişehir Housing	2 A-type	21	10	-	1568	-	640	40
		4 B-type (3+1)			17		256		
		6 C-type (3+1)			17		384		
9 D-type		-			-				
Middle-income	Mimkent 1 Mass-Housing	68		68	8 / 9	1200	1083		41
	Ege-Koop Körfez Houses	8 A-type	27	19	-	696	-	496	39
		12 B-type (3+1)			8		396		
7 C-type (3+1)		6 / 7 / 8			100				
Low-income	Narbel Mass-Housing	2 A-type	22	16	10	850	640		40
		4 B-type							
		16 C-type (3+1)							
	TOKI Mass-Housing (2 nd stage)	21 B-type	29	8	8	986	272		37
		8 C-type (3+1)							

5.2.2.1. High-Income Cases

5.2.2.1.1. Albayrak Mavişehir: Description and Analysis

Albayrak Mavişehir Housing were produced by the cooperation of Emlak Konut REIT and the private company of Albayrak Inc. between the years of 2006-2010 in Mavişehir-Karşıyaka (Figure 5.10.a) (also see Table 5.1). It was designed by the architects Tamer Başbuğ (head of the team), Hasan Özbay, Baran İdil, and Aslı Özbay

(TH & IDIL Architects). It is a gated community, and a mass-housing project including 536 housing-units (256 of them are 3+1 types) in 12 blocks (Figure 5.10.b) of which storey-numbers are five or six (for further details, see Table 5.20). Regarding the unit prices of square meter, which changed between 1140 TL and 2700 TL (in 2008), it can be claimed that the project mostly addresses to middle-high and high incomes. Therefore, the project has various services in the settlement like the security team and cameras serving for 24 hours, recreation areas, swimming pools, and open car parks.



Figure 5.10. Albayrak Housing, Mavişehir-Karşıyaka, İzmir, 2006-2010: **a.** Aerial photograph (black circle demonstrates the settlement); **b.** Site plan (blocks are highlighted with red) (Sources: **a.** İzmir Metropolitan Municipality City Surf 2012; **b.** Tamer Başbuğ's archive [coloring and labels were added by İpek Ek])

The project is constructed on two adjacent parcels on a flat topography (Figures 5.11.a and b). Blocks comprise horizontal masses (Figures 5.11.c, d and e), and this horizontality refers a contrast with the other mass-housing projects surrounding the settlement—one of them is Soyak Mavişehir Housing, the other high-income case of this study, which have blocks with 17-storey. Thus, low storey-numbers of the project are among the advantages mentioned by the architect Tamer Başbuğ in the interview realized for this study (Başbuğ 2010, also see Ege Mimarlık 2008). Façade organizations also differ from the other recent mass-housing examples. Not only the horizontal emphasis, but also the divisions and projections on the facades, and their colors create a balanced composition organized in a symmetrical manner. The blinds give a rhythm to the façade organizations, as well.

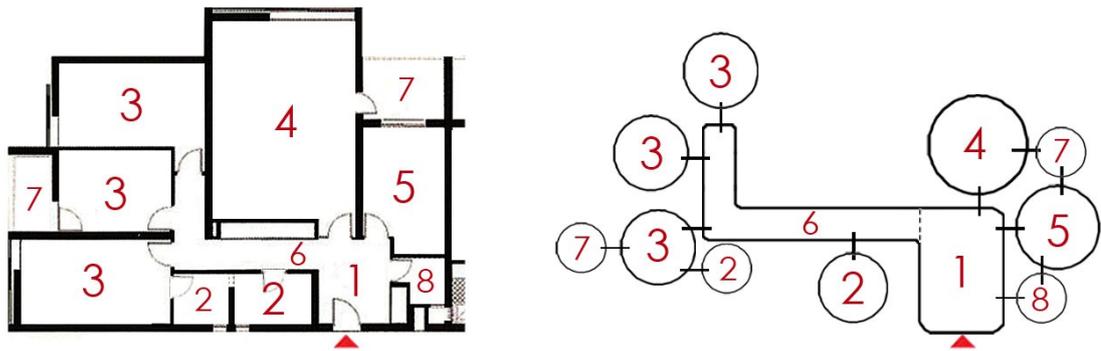
There are eight units placed symmetrically on the floor having 3+1 units. In terms of plan schemes of these units, it was denoted by the architect that the project has seven different plan types to address different kinds of families (Ege Mimarlık 2008). There is one sort of plan for 1+1, two for 2+1, three for 3+1 (one of them is duplex), and one for 4+1 (duplex) units (Albayrak Mavişehir 2011). However, when they are examined, it is seen that, except the duplex one, two of 3+1 units have the same plan scheme, because one is the symmetrical version of the other (therefore, there are six different choices for the plan schemes). Regarding the clockwise reading, spatial alignment of 3+1 plan type, on the other hand, repeats the uniformed plan template (Figure 5.12). Rooms are organized around an L-shaped corridor. There are two balconies one of which serves both living room and kitchen, and the other serves one of the bedrooms. There is a *laundry room* as the additional space. Its location—next to the entrance hall—also complies with the usual implementations. Briefly, spatial alignment of 3+1 units in Albayrak is as follows in clockwise reading:

- 1.) Entrance, 2.) Bathroom, 3.) Three bedrooms (with a parents' bathroom), 4.) Living room, 5.) Kitchen, 6.) *Laundry room*.

In this respect, Table 5.21 also demonstrates the parallelism between the uniformed template and Albayrak's alignment. On the other hand, Albayrak's plan does not differ from the other plan schemes (examined in the pilot study) in terms of the spatial alignment regarding the linear readings through latitudinal and longitudinal axes, either (Figure 5.13) (see Tables 5.5, 5.6, 5.8 and 5.9). According to these linear readings, spatial alignments can be grouped as in Tables 5.22 and 5.23.



Figure 5.11. Albayrak Housing, Mavişehir-Karşıyaka, Izmir, 2006-2010: **a.**, **b.** Views from the model; **c.**, **d.**, **e.** Views from the blocks (Sources: **a.**, **b.** Tamer Başbuğ's archive; **c.** Ege Mimarlık 2008 [photograph by Erdem Yıldırım]; **d.**, **e.** Tamer Başbuğ's archive [photographs by Erdem Yıldırım])



a		b	
1. Entrance (hall),	3. Bedroom,	6. Corridor,	
2. Bathroom and WC (number-2 with smaller font size refers WC)	4. Living room,	7. Balcony,	
	5. Kitchen,	8. Laundry room.	

Figure 5.12. Albayrak Housing, Mavişehir-Karşıyaka, Izmir, 2006-2010: **a.** Plan scheme of 3+1 unit; **b.** Plan diagram of 3+1 unit (Source: Tamer Başbuğ’s archive [plan scheme and diagram were drawn by İpek Ek])

Table 5.21. Comparison of the spatial alignments of the uniformed plan and the typical 3+1 plan of Albayrak project (cells with grey demonstrate the parallelism between the alignments)

	1	2	3	4	5	6
Uniformed alignment	Entrance	Bathroom (and/or WC)	Three bedrooms (with a parents’ bathroom)	Living room	Kitchen	Additional space
Typical plan in Albayrak	Entrance	Bathroom	Three bedrooms (with a parents’ bathroom)	Living room	Kitchen	Laundry room



a		b	
1. Entrance (hall),	3. Bedroom,	6. Corridor,	
2. Bathroom and WC (number-2 with smaller font size refers WC)	4. Living room,	7. Balcony,	
	5. Kitchen,	8. Laundry room.	

Figure 5.13. Albayrak Housing, Mavişehir-Karşıyaka, Izmir, 2006-2010: **a.** Latitudinal division; **b.** Longitudinal division (Source: Tamer Başbuğ’s archive [plan analyses were prepared by İpek Ek])

Table 5.22. Spatial grouping in latitudinal division of 3+1 plan in Albayrak Mavişehir

Left hand-side	Middle	Right hand-side
Three bedrooms Balcony Parents' bathroom	Living room Bathroom Entrance hall	Balcony Kitchen Laundry room

Table 5.23. Spatial grouping in longitudinal division of 3+1 plan in Albayrak Mavişehir

Upper side	Lower side
Balcony Two bedrooms Living room Balcony + Kitchen	One bedroom Parents' bathroom + Bathroom Entrance hall Laundry room

As it can be observed from the plan analyses, typical plan of 3+1 units in Albayrak Mavişehir complies with the uniformed plan-template in many respects. This parallelism is also observable in inhabitants' perceptions; in other words, it is also relevant for the results of the Kano survey. Thus, following section is reserved for the examination of these results for the case of Albayrak.

5.2.2.1.2. Albayrak Mavişehir: Survey Results

The Kano survey in Albayrak Mavişehir project was conducted in 40 units (3+1) with 40 inhabitants. Similar to the structure of the pilot-study section, results of the survey are discussed and listed below regarding the order of the question-groups in the questionnaire respectively (general information questions, conventional Kano questions, Kano-support questions, and contextual questions). Accordingly, inhabitant profiles of the project were figured out by the *general information questions*. In this respect, professions of the inhabitants cover medicine, veterinary medicine, engineering, law, military service, aviation, artisanship, authorship, jewellery, hairdressing, accounting, commerce, and sportsmanship. 90% of them are working. 82.5% of the inhabitants stated their income-group as *high*, and the rest of them stated as middle-high. All of the inhabitants are the owners of their houses. Other information like age, sex, education, family type, and duration of inhabitation is shown in Table 5.24.

Table 5.24. Information about the inhabitant-profiles of Albayrak Mavişehir project

Age	Sex		Education	Family type	Duration of inhabitation	
	Men	Women			Bachelor (min.)	Nuclear
Older than 40	75%	25%	90%	90%	17.5%	82.5%

In terms of the *conventional Kano questions*, on the other hand, *frequencies* of the answers and categorical *scores* in Albayrak project are tabulated below in detail (Table 5.25) (here, the questioned characteristics are summarized regarding the functional sides given in Table 5.18). As in the pilot study, the suggested reading-manner for *Indifferent* category is also considered in Table 5.25 for Albayrak case. Regarding the results in this table, spatial-organization characteristics that should be maintained or changed are determined, as well. This kind of determination is possible by a comparative re-examination of the current 3+1 plan in Albayrak project together with its Kano scores. Results of this synchronic reading are demonstrated in Table 5.26. Considering the marks in Table 5.26, satisfaction from the spatial organization in Albayrak project can also be figured out. Thus, by adding the ‘+’ marks, total of the characteristics which are to be maintained (as well as the ones to be changed) can be calculated, which can give an idea about the satisfaction-rate from the current plan. In this respect, it can be claimed that the user-satisfaction from 3+1 plan in Albayrak is not very high with the rate of 44%. However, because of its majority, if we ignore I(0) scores for they do not refer a preference, then, this rate increases to 58%. Nevertheless, regarding the rate of 44%, it can also be asserted that the inhabitants *do not* prefer to live in the uniformed plan-template, because of the great parallelism between the uniformed plan and the plan of Albayrak (see Table 5.21).

Results from the rest of the questionnaire, on the other hand, say the opposite of the above satisfaction rates (44% or 58%), and indicate a great satisfaction mentioned by the inhabitants themselves. In this respect, by examining the *Kano-support questions*, reliability of the conventional Kano part can also be checked. Because the Kano-support part was designed in parallel with the conventional one, how many questions were understood by the inhabitants can be measured, as well. In this respect, the rate of parallelism between the conventional Kano and support questions is 89% (Table 5.27). Considering that there are not any unanswered questions, this rate is rather high, which also designates consistency. This consistency rate supports the reliability of

44% or 58% satisfaction rates, as well. Similarly, this kind of high consistency is also observed in the answers to the part of the *contextual questions*. Answers to the question of “are you pleased to live in your unit” demonstrate that all of the inhabitants without any exceptions are pleased to live in their homes. Again almost invariably, the users answered the question about “the reasons of buying that unit” by mentioning the characteristic of *spaciousness*.

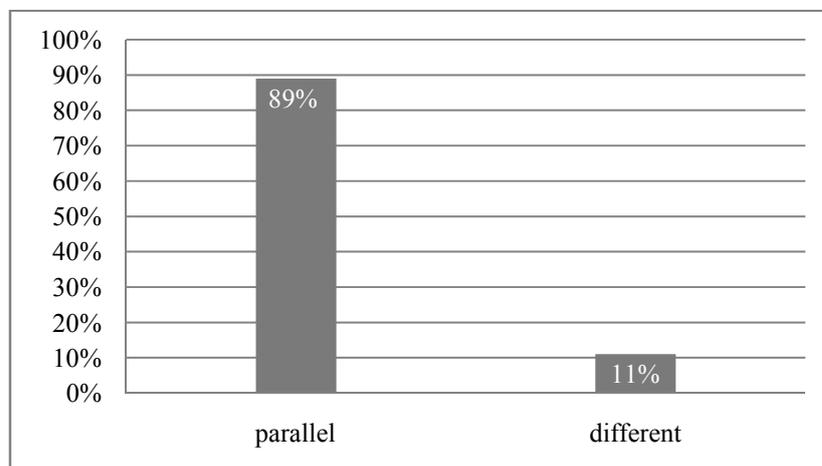
Table 5.25. Answer-frequencies of the conventional Kano questions with the categorical scores in Albayrak Mavişehir (cells with grey demonstrate the highest scores)

	Questioned characteristic	A	O	M	I (+)	I (0)	I (-)	R	Q	Score
	A house with ...									
1	a <i>corridor</i>	26	6	0	6	0	2	0	0	A
2	a <i>living room</i> connected to the <i>entrance hall</i>	2	0	0	13	1	21	3	0	I(-)
3	a <i>kitchen</i> connected to the <i>entrance hall</i>	2	0	0	16	1	21	0	0	I(-)
4	<i>bedrooms</i> connected to the <i>corridor</i>	7	3	1	25	1	3	0	0	I(+)
5	a bathroom and WC <i>next</i> to the bedrooms	11	1	1	25	0	2	0	0	I(+)
6	bedrooms placed <i>next</i> to each other	0	0	0	4	0	27	9	0	I(-)
7	a separate living room apart from the <i>guest room</i>	0	2	2	32	2	1	1	0	I(+)
8	bedrooms placed <i>in a distance</i> with the living room	15	2	0	20	2	1	0	0	I(+)
9	a living room and kitchen placed <i>next</i> to each other	14	1	0	22	2	1	0	0	I(+)
10	an <i>open kitchen</i>	5	2	1	26	5	1	0	0	I(+)
11	two wet cores (bathroom and WC)	1	0	0	10	26	3	0	0	I(0)
12	a <i>separate bathroom</i> in parents' bedroom	0	0	0	15	24	1	0	0	I(0)
13	a <i>balcony</i>	14	24	0	2	0	0	0	0	O
14	a <i>balcony</i> connected to the <i>living room</i>	12	17	0	10	1	0	0	0	O
15	a <i>balcony</i> connected to the <i>kitchen</i>	12	5	0	3	20	0	0	0	I(0)
16	a <i>balcony</i> connected to parents' bedroom	4	0	0	8	22	6	0	0	I(0)
17	a <i>balcony</i> connected to <i>kid's room</i>	0	0	0	2	20	10	8	0	I(0)
18	an additional space like a <i>cellar, storage, or laundry</i>	4	4	1	10	20	1	0	0	I(0)

Table 5.26. Examination of the Kano scores regarding the typical 3+1 unit in Albayrak Mavişehir ('+' marks indicate the action that might be taken)

Albayrak Mavişehir A house with...		Kano result	To be maintained	To be changed
1	a <i>corridor</i>	A	+	
2	a <i>living room</i> connected to the <i>entrance hall</i>	I(-)		+
3	a <i>kitchen</i> connected to the <i>entrance hall</i>	I(-)		+
4	<i>bedrooms</i> connected to the <i>corridor</i>	I(+)	+	
5	a bathroom and WC <i>next</i> to the bedrooms	I(+)	+	
6	bedrooms placed <i>next</i> to each other	I(-)		+
7	a separate living room apart from the <i>guest room</i>	I(+)		+
8	bedrooms placed <i>in a distance</i> with the living room	I(+)	+	
9	a living room and kitchen placed <i>next</i> to each other	I(+)	+	
10	an <i>open kitchen</i>	I(+)		+
11	<i>two wet cores</i> (bathroom and WC)	I(0)		+
12	a <i>separate bathroom</i> in parents' bedroom	I(0)		+
13	a <i>balcony</i>	O	+	
14	a <i>balcony</i> connected to the <i>living room</i>	O	+	
15	a <i>balcony</i> connected to the <i>kitchen</i>	I(0)		+
16	a <i>balcony</i> connected to <i>parents' bedroom</i>	I(0)	+	
17	a <i>balcony</i> connected to <i>kid's room</i>	I(0)		+
18	an additional space like a <i>cellar, storage, or laundry</i>	I(0)		+
Total with I(0) scores (out of 18):			8 (44%)	10 (56%)
Total without I(0) scores (out of 12):			7 (58%)	5 (42%)

Table 5.27. Parallelism rate between the conventional and supporting Kano-questions in Albayrak Mavişehir project



Beside of it, neighborhood, settlement properties, facilities, comfort, durability, appearance of the blocks, interior design, alternative ways for payments, and security are also frequently stated among the preference reasons. In parallel with these reasons, inhabitants utilized the following adjectives to describe the “properties of the unit that they would like to live in”: spacious, comfortable, restful, ones with a garden and seascape. Some of them also stated that they would like to live in a unit like the one they have *already* lived in.

Agreement in the answers to these questions is completely repeated without any exception in the answers to the question of “whether they would like to move,” as well; and all of the inhabitants rejected to move. Again 100% of them agreed on that “the area of the unit is *sufficient* for their needs,” “they are *pleased* to have a corridor in that form and dimensions,” “the design of the unit is *proper* for their life styles,” “they *like* the appearance of their apartment/block,” “their house is *useful*” because of its spaciousness, and “they are *pleased* to live in a multi-storey block” because of the security and neighborliness. This rate slightly decreases to 82.5% in the question asking “whether living in their housing costs much” with the answer of “no.” Consistently, they did not criticize anything in their housing, and again, stated that they like spaciousness, restfulness, comfort, daylight, locations of the rooms in their units, Mavişehir Neighborhood, and security in their settlements. All of the inhabitants found having nice views very important, since it provides restfulness and pleasure. In accordance with it, the adjectives to describe their homes comprise completely the positive ones like wide-spacious, beautiful, day-lighted, and cute.

As it can be observed from the above summaries about the survey in Albayrak Mavişehir project, it can be claimed that though the results of the Kano questions (the conventional and supporting parts) support each other, they differ from the contextual ones, because they comprise the questions asking about the details of architectural design of the housing unit in terms of the *functionality* of spatial organization. However, the contextual questions look at the scene from a larger perspective; thus, they include user perceptions about the settlement properties, facilities, aesthetics, services and even the affordability. Therefore, it seems that approximately 100% satisfaction rate obtained from the contextual part contends with 44% or 58% satisfaction rates coming from the Kano parts. However, when the contents and extents of these parts in the survey are considered, it sounds plausible. This situation also points out that the results need to be

discussed in detail, evaluated with all respects, and compared with the ones of the other cases.

5.2.2.1.3. Soyak Mavişehir: Description and Analysis

Soyak Mavişehir Housing in Mavişehir-Karşıyaka (Figure 5.14) was produced by the cooperation of Emlak Konut REIT and private company of Soyak Inc. between the years of 2006-2008 (also see Table 5.1). It was designed by a team in Soyak Inc. as a gated community including 1568 housing units (640 of them are 3+1 types) in 21 blocks (Figure 5.14.b) of which storey-numbers are 16 or 17 (for further details, see Table 5.20). The project mostly addresses to middle-high and high incomes regarding the unit prices of square meter changing between 2000 TL and 2300 TL (in 2007). Hence, the project has various services in the settlement like the security team and cameras serving for 24 hours, recreation areas including sport areas (basketball and tennis), swimming pools, play grounds, and open car parks.



Figure 5.14. Soyak Housing, Mavişehir-Karşıyaka, Izmir, 2006-2008: **a.** Aerial photograph (black circle demonstrates the settlement); **b.** Site plan (Sources: **a.** Izmir Metropolitan Municipality City Surf 2012; **b.** Soyak 2009 [labels in English were added by İpek Ek])

Soyak Mavişehir project contains two stages of which parcels are adjacent to each other on a flat topography (see Figure 5.14.b). Blocks were planned on a grid layout, and separated from each other by the swimming pools and other facilities in the

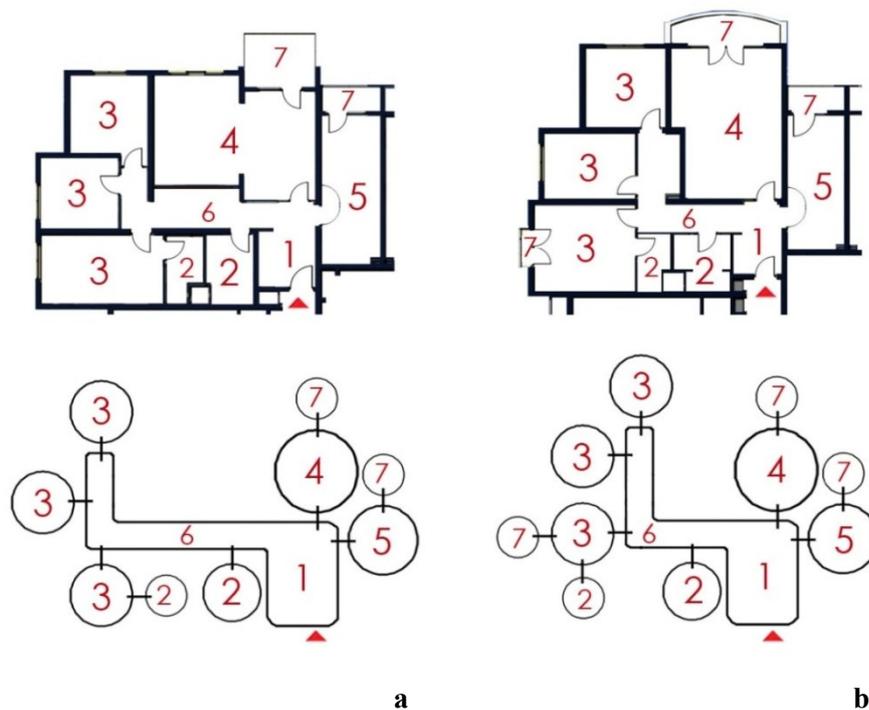
recreation areas. They have vertical masses opposite to the ones in Albayrak which is also adjacent to Soyak. Thus, by means of the façade organizations of these blocks, it can be claimed that another template is relevant (Figure 5.15), because it has similar treatments with the ones discussed in Chapter 3 (especially see Figures 3.6 and 3.8.e-f). In this respect, it is observed that the façade was divided horizontally by the change of colors of white and brown, probably to decrease the emphasis on verticality.



Figure 5.15. Soyak Housing, Mavişehir-Karşıyaka, Izmir, 2006-2008: **a., b.** Views from the 3D modelling; **c., d.** Views from the model; **e., f.** Views from the blocks (Sources: **a., b., c., d.** Soyak 2009; **e., f.** Photographs by İpek Ek)

Similarly, like the use of color differentiation, the use of vertical fragmentation in the masses is, again, one of the most salient characteristics in the high-rise mass-housing projects. This fragmentation is generally provided by the balconies projecting in different forms and dimensions. Thus, it should have been used on the facades of Soyak project to provide a kind of dynamism.

Like the facades, 3+1 plan schemes of Soyak project also repeat the uniformed template. They are distributed in B and C blocks, and there are four units placed symmetrically on each floor. Thus, there are two sorts of 3+1 plans (Soyak 2009); however, difference between them is mostly based on the dimensions and forms (Figure 5.16). If we examine the plans, it is seen that C-type plan differs from B-type in three respects: 1.) Additional balcony in parents' bedroom (though it is very small), 2.) Form of the balcony opening to the living room, 3.) Lengths of the arms of L-shaped corridors.



1. Entrance (hall),	3. Bedroom,	6. Corridor,
2. Bathroom and WC (number-2 with smaller font size refers WC)	4. Living room,	7. Balcony.
	5. Kitchen,	

Figure 5.16. Soyak Housing, Mavişehir-Karşıyaka, İzmir, 2006-2008: **a.** Above: B-type plan scheme of 3+1 unit, Below: B-type plan diagram of 3+1 unit; **b.** Above: C-type plan scheme of 3+1 unit, Below: C-type plan diagram of 3+1 unit (Source: Plan schemes and diagrams were prepared and drawn by İpek Ek regarding the plan drawings taken from Soyak 2009)

Therefore, spatial alignments of these 3+1 units in Soyak are the same with each other:

- 1.) Entrance, 2.) Bathroom, 3.) Three bedrooms (with a parents' bathroom), 4.) Living room, 5.) Kitchen.

In terms of the parallelism between spatial alignments of the uniformed plan-template and these two plans, Table 5.28 reveals the similarities comparatively.

Table 5.28. Comparison of the spatial alignments of the uniformed plan and two typical 3+1 plans of Soyak Mavişehir project (cells with grey demonstrate the parallelism between the alignments)

	1	2	3	4	5
<u>Uniformed alignment</u>	Entrance	Bathroom (and/or WC)	Three bedrooms (with a parents' bathroom)	Living room	Kitchen
<u>B-type plan</u>	Entrance	Bathroom	Three bedrooms (with a parents' bathroom)	Living room	Kitchen
<u>C-type plan</u>	Entrance	Bathroom	Three bedrooms (with a parents' bathroom)	Living room	Kitchen

According to the reading through the latitudinal and longitudinal axes, on the other hand, it can be observed that Soyak project has, again, similar alignments with the ones examined so far (Figure 5.17) (see Tables 5.5, 5.6, 5.8, 5.9, 5.22, and 5.23). Groups of spaces in Tables 5.29 and 5.30 also demonstrate the parallelism in linear readings. Thus, it can be seen that B- and C-type have only some nuances regarding all these divisions, and longitudinal divisions of them (especially C-type) are almost the same with Albayrak's.

As a conclusion, Soyak's plans repeat the uniformed template in both circular and linear readings of their spatial alignments. Moreover, when we examine the results of Kano survey, this conclusion is highlighted again, and the uniformity can be followed by the answers of the inhabitants, as well. With this purpose, following section is reserved for the examination of these results for the case of Soyak.



- | | | |
|--|-----------------|--------------|
| 1. Entrance (hall), | 3. Bedroom, | 6. Corridor, |
| 2. Bathroom and WC
(number-2 with smaller font
size refers WC) | 4. Living room, | 7. Balcony. |
| | 5. Kitchen, | |

Figure 5.17. Soyak Housing, Mavişehir-Karşıyaka, İzmir, 2006-2008: **a.** Latitudinal division of B-type unit; **b.** Latitudinal division of C-type unit; **c.** Longitudinal division of B-type unit; **d.** Longitudinal division of C-type unit (Source: Soyak 2009 [plan analyses with coloring were prepared by İpek Ek])

Table 5.29. Spatial grouping in latitudinal division of 3+1 plan-types in Soyak Mavişehir (common spaces between two plan types are underlined)

	Left hand-side	Middle	Right hand-side
B-type plan	<u>Three bedrooms</u>	<u>Balcony</u> <u>Living room</u> <u>Bathroom +</u> <u>Parents' bathroom</u> <u>Entrance hall</u>	<u>Balcony</u> <u>Kitchen</u>
C-type plan	<u>Three bedrooms</u> Parents' bathroom	<u>Balcony</u> <u>Living room</u> <u>Bathroom</u> <u>Entrance hall</u>	<u>Balcony</u> <u>Kitchen</u>

Table 5.30. Spatial grouping in longitudinal division of 3+1 plan in Soyak Mavişehir (rooms were grouped according to their door locations, and common spaces between two plan types are underlined)

	Upper side	Lower side
B-type plan	Two <u>bedrooms</u> <u>Living room</u> <u>Balconies + Kitchen</u>	One bedroom <u>Parents' bathroom + Bathroom</u> <u>Entrance hall</u>
C-type plan	Three <u>bedrooms</u> <u>Living room</u> <u>Balconies + Kitchen</u>	<u>Parents' bathroom + Bathroom</u> <u>Entrance hall</u>

5.2.2.1.4. Soyak Mavişehir: Survey Results

The Kano survey was conducted with 40 people from 40 different units (3+1) in Soyak Mavişehir project (with 19 people in B-type, and 21 people in C-type). This section undertakes the results of this survey considering the sub-parts of the questionnaire respectively (general information questions, conventional Kano questions, Kano-support questions, and contextual questions). In this respect, regarding the *general information questions*, profiles of the inhabitants mainly comprise the following professions: management, medicine, banking, business, law, consultancy, architecture, and design. Besides, few students and housewives also participated to the survey. Approximately, 63% of the inhabitants are working, and the rest is retired, student, or housewife. There are various answers in Soyak regarding the income groups of the users in comparison to Albayrak's: 58% of them stated their income-group as *middle-high*, 40% stated as high, and 2% stated as middle. On the other hand, only 29 people answered the question about the ownership, and stated that they are the owners of their houses. Other information like age, sex, education, family type, and duration of inhabitation is shown in Table 5.31.

Table 5.31. Information about the inhabitant-profiles of Soyak Mavişehir project

Age	Sex		Education	Family type	Duration of inhabitation	
	Men	Women			Less than 3 years	3 years and more than 3 years
Older than 40			Bachelor (min.)	Nuclear		
70%	54%	46%	83%	92%	25%	75%

Furthermore, information about the answers to the *conventional Kano questions* in Soyak is tabulated below in detail with the *frequencies* and *categorical scores* (Table 5.32) (here, the questioned characteristics are summarized regarding the functional sides given in Table 5.18). The scores are not grouped according to the plan types of B and C, since they have almost the same spatial alignments. In the evaluation of scores, the suggested reading and interpretation manner for *Indifferent* category are also considered in Table 5.32 for Soyak case.

Table 5.32. Answer-frequencies of the conventional Kano questions with the categorical scores in Soyak Mavişehir (cells with grey demonstrate the highest scores)

	Questioned characteristic	A	O	M	I(+)	I(0)	I(-)	R	Q	Score
	<i>A house with ...</i>									
1	<i>a corridor</i>	11	16	1	12	0	0	0	0	O
2	<i>a living room connected to the entrance hall</i>	1	0	0	8	3	22	5	1	I(-)
3	<i>a kitchen connected to the entrance hall</i>	0	0	0	7	7	21	5	0	I(-)
4	<i>bedrooms connected to the corridor</i>	5	11	4	19	0	1	0	0	I(+)
5	<i>a bathroom and WC next to the bedrooms</i>	11	2	1	25	0	1	0	0	I(+)
6	<i>bedrooms placed next to each other</i>	3	0	0	4	1	22	10	0	I(-)
7	<i>a separate living room apart from the guest room</i>	8	1	0	24	4	3	0	0	I(+)
8	<i>bedrooms placed in a distance with the living room</i>	20	6	1	12	0	1	0	0	A
9	<i>a living room and kitchen placed next to each other</i>	13	8	1	17	0	0	1	0	I(+)
10	<i>an open kitchen</i>	8	1	0	17	13	1	0	0	I(+)
11	<i>two wet cores (bathroom and WC)</i>	5	0	1	15	11	8	0	0	I(+)
12	<i>a separate bathroom in parents' bedroom</i>	9	0	0	15	16	0	0	0	I(0)
13	<i>a balcony</i>	9	27	2	2	0	0	0	0	O
14	<i>a balcony connected to the living room</i>	4	24	1	10	1	0	0	0	O
15	<i>a balcony connected to the kitchen</i>	11	13	1	7	8	0	0	0	O
16	<i>a balcony connected to parents' bedroom</i>	2	1	0	12	23	2	0	0	I(0)
17	<i>a balcony connected to kid's room</i>	0	0	0	4	21	10	5	0	I(0)
18	<i>an additional space like a cellar, storage, or laundry</i>	5	9	2	19	5	0	0	0	I(+)

According to the results in Table 5.32, spatial-organization characteristics that should be maintained or changed can be determined, as well, by a synchronic and comparative re-examination of the scores with the current 3+1 plans in Soyak project. This comparison is demonstrated in Table 5.33. Furthermore, in this table, results and evaluations are grouped according to the plan types of B and C, since there is a nuance in C-type, which covers the additional balcony connected to the parents' bedroom.

Table 5.33. Examination of the Kano scores regarding two typical 3+1 units in Soyak Mavişehir ('+' marks indicate the action that might be taken, and cells with grey demonstrate difference between the actions of B- and C-type)

Soyak Mavişehir A house with...		B-type plan			C-type plan		
		Kano results	To be maintained	To be changed	Kano results	To be maintained	To be changed
1	a corridor	A	+		O	+	
2	a living room connected to the entrance hall	I(-)		+	I(-)		+
3	a kitchen connected to the entrance hall	I(-)		+	I(-)		+
4	bedrooms connected to the corridor	I(+)	+		O	+	
5	a bathroom and WC next to the bedrooms	I(+)	+		I(+)	+	
6	bedrooms placed next to each other	I(-)		+	I(-)		+
7	a separate living room apart from the guest room	I(+)		+	I(+)		+
8	bedrooms placed in a distance with the living room	A	+		A	+	
9	a living room and kitchen placed next to each other	I(+)	+		A	+	
10	an open kitchen	I(+)		+	I(+)		+
11	two wet cores (bathroom and WC)	I(+)	+		I(0/-)		+
12	a separate bathroom in parents' bedroom	I(0)		+	I(+)	+	
13	a balcony	O	+		O	+	
14	a balcony connected to the living room	O	+		O	+	
15	a balcony connected to the kitchen	A	+		O	+	
16	a balcony connected to parents' bedroom	I(0)	+		I(0)		+
17	a balcony connected to kid's room	I(-)	+		I(0)	+	
18	an additional space like a cellar, storage, or laundry	I(+)		+	I(+)		+
Total with I(0) scores:		(out of 18)	11 (61%)	7 (39%)	(out of 18)	10 (56%)	8 (44%)
Total without I(0) scores:		(out of 16)	10 (63%)	6 (37%)	(out of 15)	9 (60%)	6 (40%)

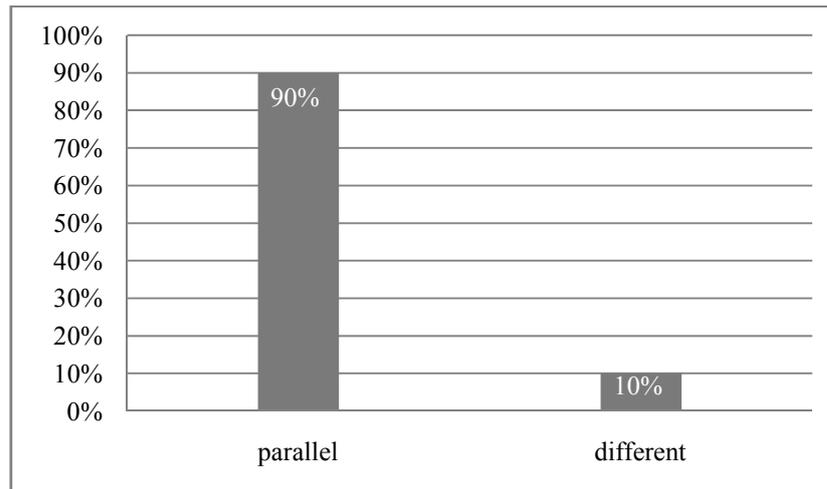
According to Table 5.33, and in terms of the actions to be taken (maintaining or changing), B- and C-type plans differ from each other in three respects: 1.) number of wet cores, 2.) separate bathroom in parents' bedroom, and 3.) balcony connected to parents' bedroom. Here, although the first two characteristics are the same in B- and C-type plans, inhabitants' expectations differ. However, by means of the third characteristic, it is not only inhabitants' expectations which differ, but also the plan types. Nonetheless, these differences do not have a great effect on the satisfaction rates as concluded by this table (thus, the satisfaction rates from the planimetric design organizations can be figured out by the help of the marking system).

Regarding these marks, it can be claimed that the user-satisfaction from B-type of 3+1 plans in Soyak corresponds to 61%, while this rate decreases to 56% in C-type plans. This difference can be attributed to the other characteristics of the design organizations that could not be undertaken in this survey, because the plan types refer almost the same spatial alignment. These results may also point out that the inhabitants *prefer* to live in the uniformed plan-template, because of the great parallelism between the uniformed plan and the plans of Soyak (see Table 5.28). On the other hand, if we ignore I(0) scores for they do not refer any preference, then, this rate increases to 63% in B-type, and 60% in C-type.

Rest of the survey results similarly indicates that the inhabitants are pleased with the design characteristics about the spatial alignment. High rate of parallelism (90%) between the answers of the conventional Kano and *Kano-support* questions also indicates the reliability of the results (Table 5.34). Parallelism with these parts is also observed in the answers to the *contextual questions*. All of the inhabitants answered the question about "whether they are pleased to live in their units" as "yes" by further explanations about the reasons of their consent. These reasons mainly correspond to the positive perceptions about spaciousness, comfort, restfulness, facilities and services that are provided, view of the units, usefulness, quietness, security, design features, and high-quality of materials and of living. Answers about "the reasons of buying that unit" are majorly parallel with the previous reasons, and accumulated on spaciousness, comfort, usefulness, restfulness, security, location in a nice environment, high-quality, indoor and outdoor designs, quality of built-in furniture, architecture, stability, affordability, prestige, and assurance of Soyak. In both questions, special emphasis on *spaciousness* can be figured out easily. Again in parallel with these reasons, inhabitants utilized the following adjectives to describe the "properties of the unit/housing that they

would like to live in”: spacious, comfortable, restful, secure, quiet, and ones with high neighborliness-rate, detached, with open kitchen, balcony, garden and swimming pool. Some of them also stated that they would like to live in a unit like the one they have *already* lived in.

Table 5.34. Parallelism rate between the conventional and supporting Kano-questions in Soyak Mavişehir project



The question of “whether they would like to move” was also answered with great consistency, and all of them rejected to move. Similarly, 100% of them agreed on that “the area of the unit is *sufficient* for their needs,” “they are *pleased* to have a corridor in that form and dimensions,” “the design of the unit is *proper* for their life styles,” “their house is *useful*” because of its spaciousness, restfulness, quietness, practicality, built-in furniture, view, services, location and environment, “they *like* the appearance of their apartment/block,” and “they are *pleased* to live in a multi-storey block” because of the security and neighborliness. However, the rate decreases to 78% in the question asking “whether living in their housing costs much” with the answer of “no.” The inhabitants did not criticize anything in their houses, consistently, and stated again that they like spaciousness, restfulness, security, usefulness, comfort, stability, beauty, niceness, location of the settlement, nice view, services, facilities, practicality, design, high-quality, locations of the rooms in their houses, fine insulation, built-in furniture, and central heating system. Besides, all of them denoted that having nice views is very important, since it provides restfulness and pleasure, and they are worth to buy. Adjectives that they utilized to describe their homes also comprise completely the positive ones like wide-spacious, beautiful, day-lighted, and cute.

Regarding the above summary, because the contextual questions look at the scene from a larger perspective and include the perceptions about settlement properties, facilities, aesthetics, services and affordability, it is seen that this part has the most positive answers in comparison with the rest of the survey results. However, in Soyak's survey, all of the sub-parts of questionnaire refer a general pleasure based on living in this housing. In this respect, 100% satisfaction rate obtained from the contextual part conflicts with 61% and 56% (or 63% and 60%) satisfaction rates coming from the Kano part. Though the final outcomes are mathematically parallel to each other, variety in the answers points out that they need to be discussed in detail, evaluated with all respects, and compared with the ones of the other cases.

5.2.2.2. Middle-Income Cases

5.2.2.2.1. Mimkent 1 Mass-Housing: Survey Results

Architectural-design characteristics and basic information about Mimkent 1 Mass-Housing project were described and analyzed in Section 5.2.1.2 (pp. 126-30) in this chapter, because it is also among the cases of the pilot study. Therefore, the following section undertakes only the survey results of the main study regarding the sub-parts of the questionnaire respectively (general information questions, conventional Kano questions, Kano-support questions, and contextual questions).

40 people from 40 different units (in 3+1) have participated to the main Kano survey of Mimkent 1 which has only one type of 3+1 plan-scheme. In this respect, according to the answers to the part of the *general information questions*, users that participated to the survey majorly comprise housewives (49%) or retired persons (46%)—the rest contains a worker and a mapping technician. Because of the days and hours that the survey was conducted, working inhabitants could not be reached. In terms of the income groups that were stated by the inhabitants, *middle-high* covers approximately 53% of them as the major part, middle group follows it with approximately 42%, and the rest (5%) corresponds to high income. 95% of the users, on the other hand, stated that they are the owners of their houses. To summarize, other information like age, sex, education, family type, and duration of inhabitation is shown in Table 5.35.

Table 5.35. Information about the inhabitant-profiles of Mimkent 1 project

Age	Sex		Education	Family type	Duration of inhabitation	
	Men	Women			Bachelor (min.)	Nuclear
Older than 40	47%	53%	8%	95%	3%	97%

Similarly, results of the *conventional Kano* questions are listed below according to the *frequencies* of the answers and *categorical scores* (Table 5.36) (here, the questioned characteristics are summarized regarding the functional sides given in Table 5.18). Suggested reading and interpretation manner for *Indifferent* category are considered in this table for Mimkent 1. Furthermore, a synchronic and comparative re-examination of the results in Table 5.36 with the current 3+1 plans in Mimkent 1 lead us another table (Table 5.37) giving information about which of the spatial-organization characteristics should be maintained or changed in this project. Table 5.37 can also reveal the information about the satisfaction rates of the users from their current unit-designs. In Mimkent 1 project, the satisfaction rate corresponds to 61%—or to 62% if I(0) scores are ignored.

The rate of 61% (or 62%) indicates that the inhabitants are *pleased* to live in the plan scheme of Mimkent 1 which is completely parallel with the spatial organization of the uniformed plan-template (see Table 5.7). Rest of the results in the other sub-parts of the survey also demonstrates that the inhabitants generally prefer to live in their housing units as well as the settlement. In this respect, the rate of parallelism between the parts of the conventional Kano and *Kano-support* demonstrates the reliability of the survey-results, and it corresponds to 93% (Table 5.38). Similarly, in the *contextual* part, the question about “whether they are pleased to live in their units” was answered with “yes,” and stability, quietness, spaciousness, restfulness, comfort, usefulness of the unit, security and other characteristics of the settlement were mentioned among the reasons of this answer. “The reasons of buying that unit,” again, refer the positive perceptions mainly about the characteristics of the settlement, and quietness, spaciousness, usefulness, stability, and restfulness of the units. On the other hand, inhabitants utilized the following adjectives to describe the “properties of the unit that they would like to live in”: spacious, comfortable, restful, quiet, stable, secure, and accessible.

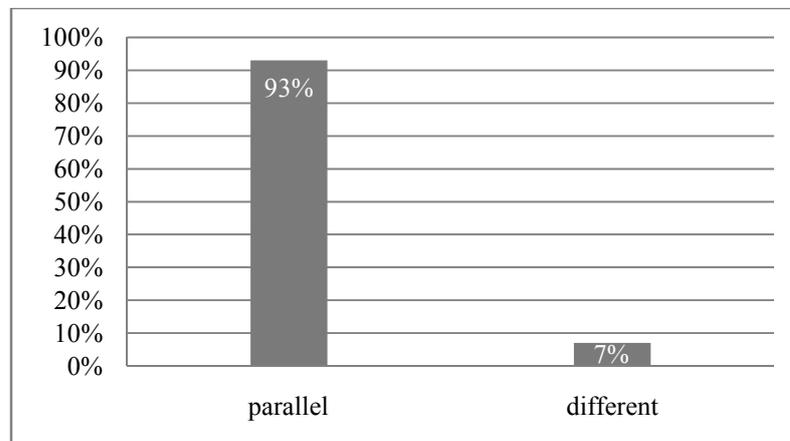
Table 5.36. Answer-frequencies of the conventional Kano questions with the categorical scores in Mimkent 1 (cells with grey demonstrate the highest scores)

	Questioned characteristic <i>A house with ...</i>	A	O	M	I(+)	I(0)	I(-)	R	Q	Score
1	<i>a corridor</i>	13	0	1	19	2	5	0	0	I(+)
2	<i>a living room connected to the entrance hall</i>	0	0	1	6	7	26	0	0	I(-)
3	<i>a kitchen connected to the entrance hall</i>	0	0	0	8	4	27	1	0	I(-)
4	<i>bedrooms connected to the corridor</i>	1	1	1	32	2	3	0	0	I(+)
5	<i>a bathroom and WC next to the bedrooms</i>	8	1	0	31	0	0	0	0	I(+)
6	<i>bedrooms placed next to each other</i>	1	1	0	3	2	30	3	0	I(-)
7	<i>a separate living room apart from the guest room</i>	6	5	3	25	0	1	0	0	I(+)
8	<i>bedrooms placed in a distance with the living room</i>	14	2	0	24	0	0	0	0	I(+)
9	<i>a living room and kitchen placed next to each other</i>	11	2	1	26	0	0	0	0	I(+)
10	<i>an open kitchen</i>	5	0	0	20	14	1	0	0	I(+)
11	<i>two wet cores (bathroom and WC)</i>	4	0	0	19	17	0	0	0	I(+)
12	<i>a separate bathroom in parents' bedroom</i>	4	0	0	14	22	0	0	0	I(0)
13	<i>a balcony</i>	6	32	2	0	0	0	0	0	O
14	<i>a balcony connected to the living room</i>	5	8	0	22	5	0	0	0	I(+)
15	<i>a balcony connected to the kitchen</i>	0	0	0	9	31	0	0	0	I(0)
16	<i>a balcony connected to parents' bedroom</i>	0	0	0	2	38	0	0	0	I(0)
17	<i>a balcony connected to kid's room</i>	0	0	0	0	26	6	8	0	I(0)
18	<i>an additional space like a cellar, storage, or laundry</i>	6	1	0	10	23	0	0	0	I(0)

Table 5.37. Examination of the Kano scores regarding the typical 3+1 unit in Mimkent 1 ('+' marks indicate the action that might be taken)

Mimkent 1 A house with...		Kano result	To be maintained	To be changed
1	a <i>corridor</i>	I(+)	+	
2	a <i>living room</i> connected to the <i>entrance hall</i>	I(-)		+
3	a <i>kitchen</i> connected to the <i>entrance hall</i>	I(-)		+
4	<i>bedrooms</i> connected to the <i>corridor</i>	I(+)	+	
5	a bathroom and WC <i>next</i> to the bedrooms	I(+)	+	
6	bedrooms placed <i>next</i> to each other	I(-)		+
7	a separate living room apart from the <i>guest room</i>	I(+)		+
8	bedrooms placed <i>in a distance</i> with the living room	I(+)	+	
9	a living room and kitchen placed <i>next</i> to each other	I(+)	+	
10	an <i>open kitchen</i>	I(+)		+
11	<i>two</i> wet cores (bathroom and WC)	I(+)	+	
12	a <i>separate bathroom</i> in parents' bedroom	I(0)	+	
13	a <i>balcony</i>	O	+	
14	a <i>balcony</i> connected to the <i>living room</i>	I(+)	+	
15	a <i>balcony</i> connected to the <i>kitchen</i>	I(0)		+
16	a <i>balcony</i> connected to <i>parents' bedroom</i>	I(0)		+
17	a <i>balcony</i> connected to <i>kid's room</i>	I(0)	+	
18	an additional space like a <i>cellar, storage, or laundry</i>	I(0)	+	
Total with I(0) scores (out of 18):			11 (61%)	7 (39%)
Total without I(0) scores (out of 13):			8 (62%)	5 (38%)

Table 5.38. Parallelism rate between the conventional and supporting Kano-questions in Mimkent 1 project



Furthermore, while 95% of the users rejected to move from their homes, 100% of them agreed on that “the area of the unit is *sufficient* for their needs,” “they are *pleased* to have a corridor in that form and dimensions,” “the design of the unit is *proper* for their life styles,” “their house is *useful*,” “they *like* the appearance of their apartment/block,” and “they are *pleased* to live in a multi-storey block.” 20% of them, on the other hand, think that “living in their housing costs much.” Almost all of the inhabitants did not criticize anything in their units, consistently, and stated again that they like spaciousness, restfulness, usefulness, stability, location of the rooms, views, and settlement properties. Only two of them complained about the small sizes of the balconies. Again 95% of the users denoted that having nice views is very important, since it provides restfulness, pleasure, comfort, and light. Adjectives that they utilized to describe their homes also comprise completely the positive ones like wide-spacious, beautiful, day-lighted, and cute.

As it is seen in the above summaries, answers to the contextual part also indicate us users’ pleasure to live in their units as well as in their settlement. And their pleasure with the uniformed template is also repeated in Mimkent 1 project. However, going further than the mathematical calculations is necessary to understand the details, which will be discussed and evaluated in Chapter 6 comparatively.

5.2.2.2.2. Ege-Koop Karşıyaka Körfez Houses: Description and Analysis

Ege-Koop Körfez Houses were produced by the private building-cooperative organization of Ege-Koop between the years of 2004-2008 in Onur Neighborhood of Karşıyaka (Figure 5.18.a) (also see Table 5.1). It was designed by the designer team of Ege-Koop as a mass-housing settlement having 696 housing units (496 of them are 3+1 types) in 27 blocks (Figure 5.18.b) of which storey-numbers are six, seven or eight (for further details, see Table 5.20). The project mostly addresses to middle incomes regarding the unit prices of square meter changing between 1000 TL and 1300 TL (in 2012). Though the project does not offer any social or cultural facilities inside the settlement, it was denoted that the settlement locates in an environment which already has many services like the health centers, cultural foundations, nursery, primary and high schools, and recreation areas (Mimdap 2008).

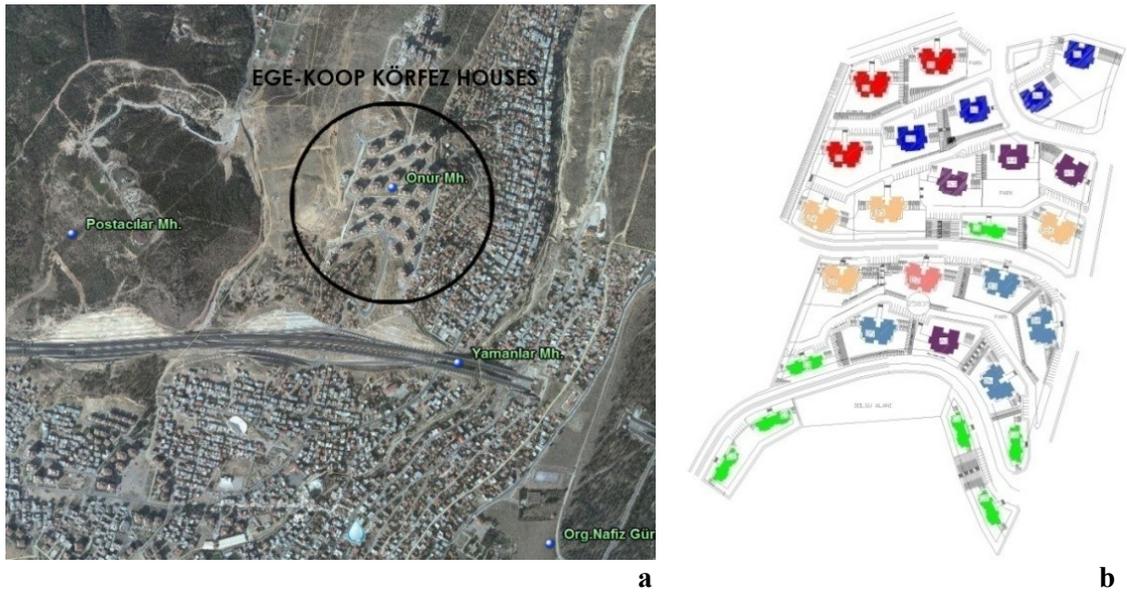


Figure 5.18. Ege-Koop Körfez Houses, Karşıyaka, Izmir, 2004-2008: **a.** Aerial photograph (black circle demonstrates the settlement); **b.** Site plan (blocks are colored) (Sources: **a.** Izmir Metropolitan Municipality City Surf 2012; **b.** Ege-Koop's archive)

Site of the project has a slopped topography providing the blocks opportunity of viewing Karşıyaka's bay from above, which also gives the project its name (*Körfez* in Turkish corresponds to *bay* in English). The settlement comprises two parcels one of which has 14, and the other has 13 blocks (see Figure 5.18.b). There are only car parks and some recreation areas inside of the settlement. Although the blocks are not high so much, they are vertical buildings, especially in comparison to the low-rise buildings surrounding the project (Figure 5.19). Therefore, façade organizations are similar with the other vertically-designed buildings examined so far in this chapter (for similar examples, also see Chapter 3, Figures 3.8.e-f, 3.10.b, and 3.12.d). Thus, by complying with the uniformed template of facades, blocks in Ege-Koop Körfez Houses were also designed with horizontal divisions by the change of monochrome tones of brownish-red to decrease the emphasis on verticality. Vertical fragmentation of the masses is the other usual treatment seen in high-rise mass-housing projects as well as Ege-Koop Körfez Houses. However, in this project, these vertical fragmentations are not only defined by the projections of the balconies, but also by the volumetric projections of the other rooms. Therefore, it can be claimed that these projections are among the strategies to provide façade-designs a kind of dynamism—indented contours of the blocks can easily be followed in the plan schemes, as well.



Figure 5.19. Ege-Koop Körfez Houses, Karşıyaka, Izmir, 2004-2008: **a., b.** Views from the settlement; **c., d.** Views from the settlement blocks (Source: Ege-Koop 2010)

There are two sorts of 3+1 plan-schemes in Ege-Koop Körfez Houses: B-type, and C-type. B-type blocks contain four units placed symmetrically on each floor, while C-type ones contain two units. As B-type plan-scheme completely repeats the spatial organization of the uniformed template, C-type has some differences (Figure 5.20). One of the most important differences in C-type is that two bedrooms are placed right and left sides of the entrance hall, one of them is placed between the cellar and wet cores, while the other is placed before the kitchen in the clockwise reading. Besides, another

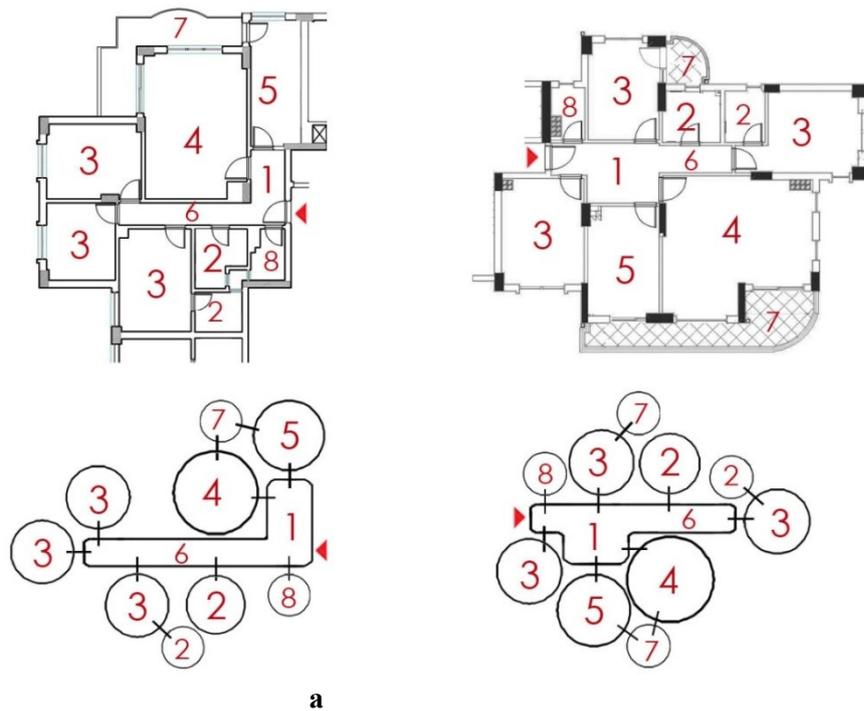
important point is that in C-type, the entrance hall is designed after a sub-space for entering; by this way the hall locates almost in the middle of the plan, and recalls the traditional plans with *sofas* in traditional Turkish houses. However, these treatments break the uniformity of the plan to a certain degree, because without considering the different locations of the bedrooms and entrance hall, plan scheme of C-type also has the guide-lines of the uniformed template. Accordingly, spatial alignments of these two plans are as follows:

B-type:

- 1.) Entrance, 2.) Cellar, 3.) Bathroom, 4.) Three bedrooms (with a parents' bathroom), 5.) Living room, 6.) Kitchen.

C-type:

- 1.) Entrance, 2.) Cellar, 3.) Room, 4.) Bathroom, 5.) Bedroom (with a parents' bathroom), 6.) Living room, 7.) Kitchen, 8.) Room.



- | | | |
|---|--|---|
| <ol style="list-style-type: none"> 1. Entrance (hall), 2. Bathroom and WC
(number-2 with smaller font size refers WC) | <ol style="list-style-type: none"> 3. Bedroom/Room, 4. Living room, 5. Kitchen, | <ol style="list-style-type: none"> 6. Corridor, 7. Balcony, 8. Cellar. |
|---|--|---|

Figure 5.20. Ege-Koop Körfez Houses, Karşıyaka, Izmir, 2004-2008: **a.** Above: B-type plan scheme of 3+1 unit, Below: B-type plan diagram of 3+1 unit; **b.** Above: C-type plan scheme of 3+1 unit, Below: C-type plan diagram of 3+1 unit (Source: Ege-Koop's archive [plan schemes and diagrams were prepared and drawn by İpek Ek])

For C-type, it may be claimed about the rooms (they are noted as *room* on the plan drawing taken from Ege-Koop’s archive) in the second and seventh lines that one of them can be transformed into a living room by reserving the current living room as the guest room. Besides, in both plans, cellars as the additional spaces are placed between the entrance and bathroom, rather than between the kitchen and entrance. However, this treatment also does *not* break the uniformity of the template, because additional spaces are generally placed either the left or the right side of the main entrance-door. Table 5.39 reveals the parallelism and differences between the spatial alignments of the uniformed plan-template and these two plans.

Table 5.39. Comparison of the spatial alignments of the uniformed plan and two typical 3+1 plans of Ege-Koop Körfez Houses project (cells with grey demonstrate the parallelism between the alignments)

	1	2	3	4	5	6	7
<u>Uniformed alignment</u>	Entrance	Additional space	Bathroom (and/or WC)	Three bedrooms (with a parents’ bathroom)	Living room	Kitchen	Additional space
<u>B-type plan</u>	Entrance	Cellar	Bathroom	Three bedrooms (with a parents’ bathroom)	Living room	Kitchen	-
<u>C-type plan</u>	Entrance	Cellar Room	Bathroom	Bedroom (with a parents’ bathroom)	Living room	Kitchen	Room

Furthermore, regarding a linear reading through the latitudinal and longitudinal axes in both plans, situation in curvilinear readings is repeated. That is, while B-type complies with the uniformed template, C-type breaks it in latitudinal reading because of the *unusual* locations of the cellar, entrance hall, kitchen, and two rooms/bedrooms separated from the third one (Figure 5.21). Similarly, C-type also breaks the *uniformity* in longitudinal reading because of the *unusual* locations of parents’ bathroom, and the living room. Groups of spaces divided according to these kinds of linear readings in Tables 5.40 and 5.41 also demonstrate the parallelism and differences between the alignments. Therefore, it can be claimed that the readings of B-type are almost similar

with the ones examined so far in this chapter (see Tables 5.5, 5.6, 5.8, 5.9, 5.22, 5.23, 5.29, and 5.30), while C-type has some differing points.



- | | | |
|--|------------------|--------------|
| 1. Entrance (hall), | 3. Bedroom/Room, | 6. Corridor, |
| 2. Bathroom and WC
(number-2 with smaller font
size refers WC) | 4. Living room, | 7. Balcony, |
| | 5. Kitchen, | 8. Cellar. |

Figure 5.21. Ege-Koop Körfez Houses, Karşıyaka, Izmir, 2004-2008: **a.** Latitudinal division of B-type unit; **b.** Latitudinal division of C-type unit; **c.** Longitudinal division of B-type unit; **d.** Longitudinal division of C-type unit (Source: Ege-Koop's archive [plan analyses were prepared by İpek Ek])

Table 5.40. Spatial grouping in latitudinal division of 3+1 plan-types in Ege-Koop Körfez Houses (spaces in *italic* demonstrate the *unusual* locations with regard to the uniformed template; common spaces between two plan types are underlined)

	Left hand-side	Middle	Right hand-side
B-type plan	Three <u>bedrooms</u> Balcony	<u>Living room</u> <u>Bathroom + Parents'</u> <u>bathroom</u>	Kitchen Entrance hall Cellar
C-type plan	<i>Cellar</i> Two <u>bedrooms/rooms</u> <i>Entrance hall</i> <i>Kitchen</i>	Two balconies <u>Bathroom + Parents'</u> <u>bathroom</u> <u>Living room</u>	<i>One bedroom/room</i>

Table 5.41. Spatial grouping in longitudinal division of 3+1 plan in Ege-Koop Körfez Houses (rooms were grouped according to their door locations, spaces in italic demonstrate the *unusual* locations with regard to the uniformed template; common spaces between two plan types are underlined)

	Upper side	Lower side
B-type plan	<u>Two bedrooms</u> Living room <u>Balcony</u> Kitchen <u>Entrance hall</u>	<u>One bedroom</u> Bathroom + Parents' bathroom Cellar
C-type plan	<u>Entrance hall</u> Cellar <u>Two bedrooms</u> <u>Balcony</u> Bathroom + <i>Parents' bathroom</i>	<u>One bedroom</u> Kitchen <i>Living room</i> Balcony

To summarize, B-type plan of Ege-Koop Körfez Houses refers the *same* alignment with the uniformed template, while C-type has *similarities* majorly complying with the uniformed one. Whether this uniformity is preferred or not can be answered regarding the results of the Kano survey. In this respect, following section is reserved for the examination of these results for the case of Ege-Koop Körfez Houses.

5.2.2.2.3. Ege-Koop Karşıyaka Körfez Houses: Survey Results

As in the other cases, in Ege-Koop Körfez Houses, too, the Kano survey was conducted with 40 people living in 40 different units having two kinds of 3+1 plan schemes (B- and C-type). However, the survey realized in B-type blocks comprises 35 questionnaires, while, in C-type blocks, it contains only five questionnaires. The reasons of this unbalanced distribution are that the inhabitants in C-blocks were reluctant to answering the questionnaire, and most of them were away from their houses in the period of the survey conducted. Nevertheless, C-type plan-scheme and the survey in C-blocks were not ignored in this study in order to reach the possibility of comparison. Therefore, for both B- and C-type together, the following sections undertake the survey results considering the sub-parts of the questionnaire respectively (general information questions, conventional Kano questions, Kano-support questions, and contextual questions).

In this respect, regarding the part of the *general information questions*, all of the users that participated to the survey totally comprise the housewives; again, because of that the survey could be conducted in the part of the day when working people were in their offices. Majority of the users answered the question about income groups as *middle-high* (93%), while only 5% of them stated as middle, and 2% stated as high. Again all of the inhabitants stated that they are the owners of their houses. Other data obtained from the general information part of the survey, like age, sex, education, family type, and duration of inhabitation is given in Table 5.42.

Table 5.42. Information about the inhabitant-profiles of Ege-Koop Körfez Houses project

Age	Sex		Education	Family type	Duration of inhabitation	
	Men	Women			Bachelor (min.)	Nuclear
Older than 40	0%	100%	0%	100%	65%	35%

Furthermore, answers to the *conventional Kano questions* in Ege-Koop Körfez Houses is tabulated below in detail with the *frequencies* and categorical *scores* (Table 5.43) (here, the questioned characteristics are summarized regarding the functional sides given in Table 5.18). Similarly, the suggested reading and interpretation manner for *Indifferent* category are considered in this table for Ege-Koop Körfez Houses, too. In this examination, the scores are not grouped according to the plan types of B and C, since the survey in C-types was conducted in a very minor scale. Moreover, spatial-organization characteristics that should be maintained or changed can be determined regarding the results in Table 5.43 by a synchronic and comparative re-examination of these scores with the current 3+1 plans in Ege-Koop Körfez Houses. This comparison is demonstrated in Table 5.44 by which information about the rates of user-satisfaction can also be figured out. In Ege-Koop Körfez Houses project, the satisfaction rate corresponds to 67% for both of the users living in B- and C-type plan-schemes—or if I(0) scores are ignored, then, this rate decreases to 65% in B-type, and increases to 71% in C-type.

Table 5.43. Answer-frequencies of the conventional Kano questions with the categorical scores in Ege-Koop Körfez Houses (cells with grey demonstrate the highest scores)

	Questioned characteristic <i>A house with ...</i>	A	O	M	I(+)	I(0)	I(-)	R	Q	Score
1	<i>a corridor</i>	19	0	0	21	0	0	0	0	I(+)
2	<i>a living room connected to the entrance hall</i>	0	0	0	10	0	21	9	0	I(-)
3	<i>a kitchen connected to the entrance hall</i>	9	0	0	11	0	20	0	0	I(-)
4	<i>bedrooms connected to the corridor</i>	9	0	0	31	0	0	0	0	I(+)
5	<i>a bathroom and WC next to the bedrooms</i>	30	0	0	10	0	0	0	0	A
6	<i>bedrooms placed next to each other</i>	0	0	0	9	0	31	0	0	I(-)
7	<i>a separate living room apart from the guest room</i>	0	0	0	40	0	0	0	0	I(+)
8	<i>bedrooms placed in a distance with the living room</i>	0	0	0	40	0	0	0	0	I(+)
9	<i>a living room and kitchen placed next to each other</i>	10	0	0	30	0	0	0	0	I(+)
10	<i>an open kitchen</i>	21	9	0	10	0	0	0	0	A
11	<i>two wet cores (bathroom and WC)</i>	0	9	0	31	0	0	0	0	I(+)
12	<i>a separate bathroom in parents' bedroom</i>	11	9	0	10	9	0	1	0	A
13	<i>a balcony</i>	0	40	0	0	0	0	0	0	O
14	<i>a balcony connected to the living room</i>	0	40	0	0	0	0	0	0	O
15	<i>a balcony connected to the kitchen</i>	0	20	0	10	10	0	0	0	O
16	<i>a balcony connected to parents' bedroom</i>	0	0	0	18	10	0	12	0	I(+)
17	<i>a balcony connected to kid's room</i>	0	0	0	0	21	18	1	0	I(0)
18	<i>an additional space like a cellar, storage, or laundry</i>	1	8	0	31	0	0	0	0	I(+)

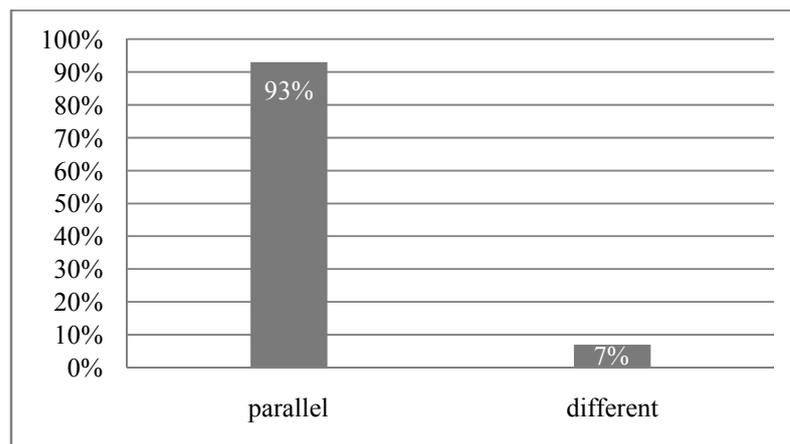
Table 5.44. Examination of the Kano scores regarding two typical 3+1 units in Ege-Koop Körfez Houses ('+' marks indicate the action that might be taken, and cells with grey demonstrate the differences between the actions for B- and C-type)

Ege-Koop Körfez Houses A house with...		B-type plan			C-type plan		
		Kano results	To be maintained	To be changed	Kano results	To be maintained	To be changed
1	a <i>corridor</i>	I(+)	+		I(+)	+	
2	a <i>living room</i> connected to the <i>entrance hall</i>	I(-)		+	I(+)	+	
3	a <i>kitchen</i> connected to the <i>entrance hall</i>	I(-)		+	I(-)		+
4	<i>bedrooms</i> connected to the <i>corridor</i>	I(+)	+		I(+)		+
5	a bathroom and WC <i>next</i> to the <i>bedrooms</i>	A	+		A	+	
6	<i>bedrooms</i> placed <i>next</i> to each other	I(-)		+	I(-)	+	
7	a separate living room apart from the <i>guest room</i>	I(+)		+	I(+)	+	
8	<i>bedrooms</i> placed <i>in a distance</i> with the living room	I(+)	+		I(+)		+
9	a living room and kitchen placed <i>next</i> to each other	I(+)	+		I(+)	+	
10	an <i>open kitchen</i>	A		+	A		+
11	<i>two wet cores</i> (bathroom and WC)	I(+)	+		I(+)	+	
12	a <i>separate bathroom</i> in parents' bedroom	A	+		I(+)	+	
13	a <i>balcony</i>	O	+		O	+	
14	a <i>balcony</i> connected to the <i>living room</i>	O	+		O	+	
15	a <i>balcony</i> connected to the <i>kitchen</i>	O	+		I(+)	+	
16	a <i>balcony</i> connected to <i>parents' bedroom</i>	I(+)		+	I(+)		+
17	a <i>balcony</i> connected to <i>kid's room</i>	I(0)	+		I(0)		+
18	an additional space like a <i>cellar, storage, or laundry</i>	I(+)	+		I(+)	+	
Total with I(0) scores:		(out of 18)	12 (67%)	6 (33%)	(out of 18)	12 (67%)	6 (33%)
Total without I(0) scores:		(out of 17)	11 (65%)	6 (35%)	(out of 17)	12 (71%)	5 (29%)

The satisfaction rate of 67% (or 65%, and 71%) indicates that the inhabitants are *pleased* to live in both B- and C-type plan-schemes. This situation points out that the inhabitants living in B-type plan are also pleased to live in the uniformed plan-template,

as it was demonstrated in Table 5.39. However, because the satisfaction rate in C-type is higher than B-type in case I(0) scores are ignored, it may also be claimed that the inhabitants living in C-type plan are *not* so pleased to live in the uniformed plan, but to live in a plan having some differences in comparison to the uniformed one. On the other hand, rest of the results obtained from the other sub-parts of the survey also strengthen the outcome of that the inhabitants are pleased to live in their units as well as their settlement. In this respect, if we check the parallelism rate between the conventional Kano and *Kano-support* parts, it is seen that the majority of inhabitants answered the questions comprehendingly and with awareness, because this rate is very high in Ege-Koop Körfez Houses, and it corresponds to 93% as in the case of Mimkent 1 (Table 5.45).

Table 5.45. Parallelism rate between the conventional and supporting Kano-questions in Ege-Koop Körfez Houses project



Furthermore, in terms of the results of the *contextual* part, again, we can observe that the inhabitants generally gave positive answers about their units and settlement. For example, all of them answered “yes” to the question about “whether they are pleased to live in their units,” and for the reasons, they mentioned spaciousness, comfort, restfulness, and usefulness of their units. Similarly, all of the users answered to the question concerning “the reasons of buying that unit” positively by denoting that their unit is spacious, comfortable, useful, and restful, and one of them stated that she even likes the distribution of the balconies.

Again, in parallel with the mentioned characteristics of their homes, the inhabitants utilized the following adjectives to describe the “properties of the unit that they would like to live in”: spacious, comfortable, and restful. On the other hand, all of

them rejected to move from their homes, and agreed on that “the area of the unit is *sufficient* for their needs,” “they are *pleased* to have a corridor in that form and dimensions,” “the design of the unit is *proper* for their life styles,” “living in that housing does *not* cost much,” “their house is *useful*,” “they *like* the appearance of their apartment/block,” and “they are *pleased* to live in a multi-storey block.” None of them criticized their houses, but stated that they like spaciousness, comfort, restfulness, usefulness, quietness, stability, and amount of daylight entering the unit. Furthermore, all of them denoted that having nice views is very important for them, since it provides comfort, health, visual richness, restfulness, pleasure, and light, it increases the worth of the unit, and it is necessary. Similar to the previous statements, they utilized only positive adjectives to describe their homes, like wide-spacious, beautiful, day-lighted, and cute.

In summary, the results of both Kano and open-ended parts point out that the users are pleased to live in their units, and they do not criticize anything about their settlement. Therefore, it can be claimed that users’ pleasure with the uniformed template, again, repeated in Ege-Koop Körfez Houses, as well. However, as stated before, it is necessary to go further than these results by comparing all of the cases with each other in a responsive sense to reveal more details for each, and to reach more concrete outcomes about the satisfaction from the uniformed template. Chapter 6 serves for these purposes.

5.2.2.3. Low-Income Cases

5.2.2.3.1. Narbel Mass-Housing: Description and Analysis

Narbel Mass-Housing were produced by the cooperation of Narlıdere Municipality (Nar-Bel co. ltd.) and a private company (Demirer Construction Inc.) between the years of 1997-1999 in 2nd İnönü Neighborhood, Narlıdere, and in a slum area, as a part of an urban renewal project (Figure 5.22.a) (also see Table 5.1). It was designed by Demirer Group within the settlement having 850 housing units (640 of them are 3+1 types) in 22 blocks (Figure 5.22.b) of which storey-numbers are fixed to ten (for further details, see Table 5.20). It is not a gated community, but an urban renewal project (Demirer 2010). Regarding this situation as well as the unit prices of

square meter, which changed between 700 TL and 1100 TL (in 2011-2012), it can be claimed that the project mostly addresses to low and middle-low incomes. Settlement of the project does not include any social or cultural facilities inside; and, it is far from the environment having those kinds of facilities. Thus, only necessary ones like health centers and schools are available around the settlement.

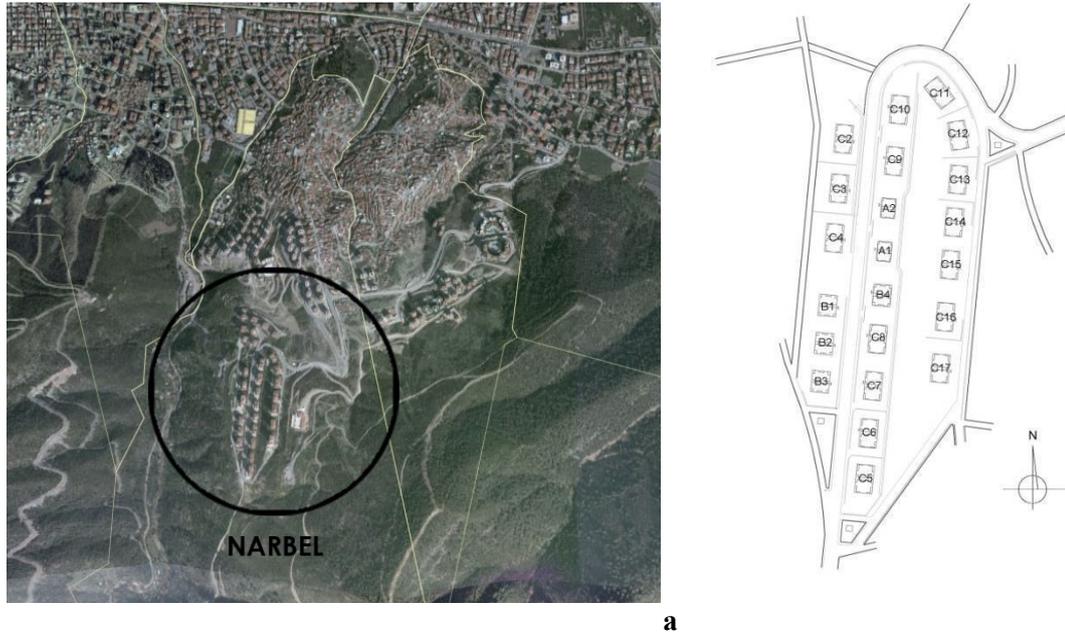


Figure 5.22. Narbel Mass-Housing, Narlıdere, Izmir, 1997-1999: **a.** Aerial photograph (black circle demonstrates the settlement); **b.** Site plan (Sources: **a.** Izmir Metropolitan Municipality City Surf 2012; **b.** Demirer Group’s archive [labels were added by İpek Ek])

The project locates in an area with high slope surrounded by the hills, which causes to difficulties in the construction phases of the road and substructures. Especially the road winding in and around the settlement is stated as “the most expensive road of the city” in the website of Izmir Metropolitan Municipality (2008). There are not any recreation or sport areas inside of the settlement; only car parks were designed in front of each block. However, housing units looking to the north have a wide perspective opening towards Izmir bay, which is announced as the most attractive characteristic of Narbel Housing in the web sites of real-estate sales (Figures 5.23.a, c and e). Although the blocks are placed in parallel with the contour lines of the slope, because they are already high-rise buildings with ten-storey, and because of this high-slopped topography, vertical emphasis becomes more highlighted (Figure 5.23). Façade designs of these blocks are similar with the other vertically-designed mass-housing projects

examined so far (for similar examples, also see Chapter 3, Figures 3.2, 3.8.c, 3.10.a, and 3.12). The uniformed template for facades is relevant for Narbel blocks, as well. In this respect, as one of the most salient characteristics in high-rise mass-housing projects, it can also be observed in this case that the facades were divided vertically by the change of colors and projections of the fragmented sub-masses.

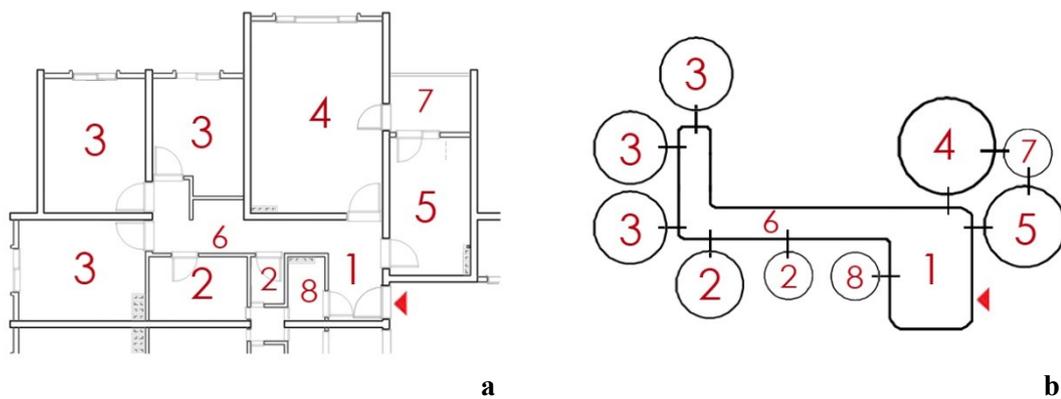


Figure 5.23. Narbel Mass-Housing, Narlıdere, Izmir, 1997-1999: **a.**, **b.**, **c.**, **d.** Views from the settlement (Sources: **a.** Panoramio 2009b; **b.** WowTurkey 2009 [photograph by Cem Tamer]; **c.** Panoramio 2009a [photograph by Saim Gülderen]; **d.**, **e.** WowTurkey 2006 [photographs by Orkun Kara])

There is only one sort of 3+1 plan scheme in Narbel Mass-Housing, and it thoroughly repeats the uniformed plan-template (Figure 5.24). There are four units placed symmetrically on each floor, and each of them has the same plan-template. Accordingly, the spatial alignment of 3+1 units in Narbel project is as follows:

- 1.) Entrance, 2.) *Cellar*, 3.) Bathroom and WC, 4.) Three bedrooms, 5.) Living room, 6.) Kitchen.

As it is perceived from this alignment, a typical unit in Narbel project is the same with the uniformed plan-scheme, which can also be clarified by the following comparative table (Table 5.46):



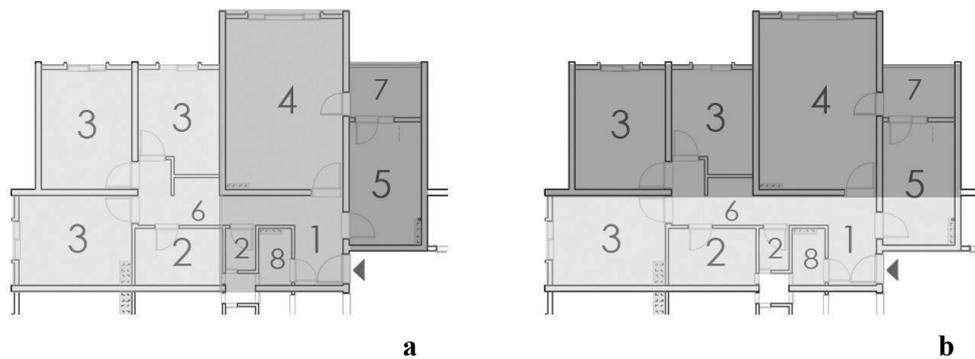
1. Entrance (hall),	3. Bedroom,	6. Corridor,
2. Bathroom and WC (number-2 with smaller font size refers WC)	4. Living room,	7. Balcony,
	5. Kitchen,	8. Cellar.

Figure 5.24. Narbel Mass-Housing, Narlıdere, Izmir, 1997-1999: **a.** Plan scheme of 3+1 unit; **b.** Plan diagram of 3+1 unit (Source: Demirer Group’s archive [plan scheme and diagram were prepared and drawn by İpek Ek])

Table 5.46. Comparison of the spatial alignments of the uniformed plan and the typical 3+1 plan of Narbel project (cells with grey demonstrate the parallelism between the alignments)

	1	2	3	4	5	6
<u>Uniformed alignment</u>	Entrance	Additional space	Bathroom (and/or WC)	Three bedrooms	Living room	Kitchen
<u>Typical plan in Narbel</u>	Entrance	Cellar	Bathroom and WC	Three bedrooms	Living room	Kitchen

Furthermore, in a linear reading, regarding the divisions in latitudinal and longitudinal axes, it is seen that the situation in curvilinear reading is repeated, again (Figure 5.25) (see Tables 5.5, 5.6, 5.8, 5.9, 5.22, 5.23, 5.29, 5.30, 5.40, and 5.41). According to these linear readings, spatial alignments can be grouped as in Tables 5.47 and 5.48. Here, it is worth to mention that, in latitudinal division, location of the cellar is *unusual* regarding its locations in the other cases as well as in the uniformed template. Rest of the spaces, however, repeats the uniformity.



1. Entrance (hall),	3. Bedroom,	6. Corridor,
2. Bathroom and WC (number-2 with smaller font size refers WC)	4. Living room,	7. Balcony,
	5. Kitchen,	8. Cellar.

Figure 5.25. Narbel Mass-Housing, Narlıdere, Izmir, 1997-1999: **a.** Latitudinal division; **b.** Longitudinal division (Source: Demirer Group's archive [plan analyses were prepared by İpek Ek])

Table 5.47. Spatial grouping in latitudinal division of 3+1 plan in Narbel Mass-Housing (space in *italic* demonstrates the *unusual* location with regard to the uniformed template)

Left hand-side	Middle	Right hand-side
Three bedrooms Bathroom	Living room WC <i>Cellar</i> Entrance hall	Balcony Kitchen

Table 5.48. Spatial grouping in longitudinal division of 3+1 plan in Narbel Mass-Housing

Upper side	Lower side
Two bedrooms Living room Balcony	One bedroom Bathroom + WC Cellar Entrance hall Kitchen

As a final word, in the light of the above examinations, it can be claimed obviously that 3+1 plan scheme of Narbel Mass-Housing has a similar spatial alignment with the ones previously examined, that is, with the uniformed plan. As in the other cases, survey results of Narbel provide us understanding about whether this uniformity is preferred by the inhabitants. Following section discusses these results for the case of Narbel Mass-Housing.

5.2.2.3.2. Narbel Mass-Housing: Survey Results

Survey was conducted with 40 inhabitants living in 40 different units—but in the same 3+1 plan-scheme. Results of this survey are presented below regarding the order of question-groups in the questionnaire respectively (general information questions, conventional Kano questions, Kano-support questions, and contextual questions). According to this order, firstly the *general information questions* reveal some conception about the user profiles. In this respect, because the part of the day when the survey was conducted coincides with the part when the working people were at their offices, professions of the inhabitants mainly consist of the housewives and retired persons—only one stated that he is a doctor and still working. Though the range of the unit price of square meter indicates low or middle-low income group, 50% of the inhabitants stated that they are *middle-high* income—and the rest stated that they are *middle* income. 98% of them are the owners of their houses. Other related information of this part of the survey like age, sex, education, family type, and duration of inhabitation is shown in Table 5.49:

Table 5.49. Information about the inhabitant-profiles of Narbel Mass-Housing project

Age	Sex		Education	Family type	Duration of inhabitation	
Older than 40	Men	Women	Bachelor (min.)	Nuclear	Less than 3 years	3 years and more than 3 years
43%	23%	77%	13%	100%	2%	98%

As the main part of the survey, results of the *conventional Kano questions* are given in Table 5.50 in detail with the *frequencies* of answers and categorical *scores* of Narbel project (here, the questioned characteristics are summarized regarding the functional sides given in Table 5.18). Similar with the other cases examined so far, the suggested reading manner for *Indifferent* category is also considered in this table for

Narbel case. Besides, Table 5.50 also provides us making inferences about the spatial-organization characteristics that should be maintained or changed. In order to determine these kinds of characteristics, re-examination of the current 3+1 plan in Narbel project was comparatively and synchronically undertaken with the Kano scores.

Table 5.50. Answer-frequencies of the conventional Kano questions with the categorical scores in Narbel Mass-Housing (cells with grey demonstrate the highest scores)

	Questioned characteristic	A	O	M	I (+)	I (0)	I (-)	R	Q	Score
	<i>A house with ...</i>									
1	<i>a corridor</i>	39	0	0	1	0	0	0	0	A
2	<i>a living room connected to the entrance hall</i>	2	0	0	0	0	16	22	0	R
	<i>a living room connected to the corridor</i>	22	0	0	16	0	0	2	0	A
3	<i>a kitchen connected to the entrance hall</i>	0	0	0	5	0	33	2	0	I(-)
4	<i>bedrooms connected to the corridor</i>	3	0	0	36	0	1	0	0	I(+)
5	<i>a bathroom and WC next to the bedrooms</i>	3	0	0	35	0	2	0	0	I(+)
6	<i>bedrooms placed next to each other</i>	0	0	0	2	0	37	1	0	I(-)
7	<i>a separate living room apart from the guest room</i>	2	0	0	37	0	1	0	0	I(+)
8	<i>bedrooms placed in a distance with the living room</i>	4	2	0	32	2	0	0	0	I(+)
9	<i>a living room and kitchen placed next to each other</i>	3	1	0	33	3	0	0	0	I(+)
10	<i>an open kitchen</i>	6	4	0	29	1	0	0	0	I(+)
11	<i>two wet cores (bathroom and WC)</i>	1	0	0	7	31	1	0	0	I(0)
12	<i>a separate bathroom in parents' bedroom</i>	0	0	0	6	33	1	0	0	I(0)
13	<i>a balcony</i>	24	14	0	2	0	0	0	0	A
14	<i>a balcony connected to the living room</i>	22	12	0	6	0	0	0	0	A
15	<i>a balcony connected to the kitchen</i>	3	2	0	6	29	0	0	0	I(0)
16	<i>a balcony connected to parents' bedroom</i>	0	0	0	2	20	13	5	0	I(0)
17	<i>a balcony connected to kid's room</i>	0	0	0	0	13	20	7	0	I(-)
18	<i>an additional space like a cellar, storage, or laundry</i>	1	2	1	10	25	1	0	0	I(0)

Accordingly, this synchronic reading is demonstrated in Table 5.51. Besides, the marks in Table 5.51 can also reveal the satisfaction rate from the spatial organization in Narbel project. This rate corresponds to 56%—and increases to 62%, if I(0) scores are ignored.

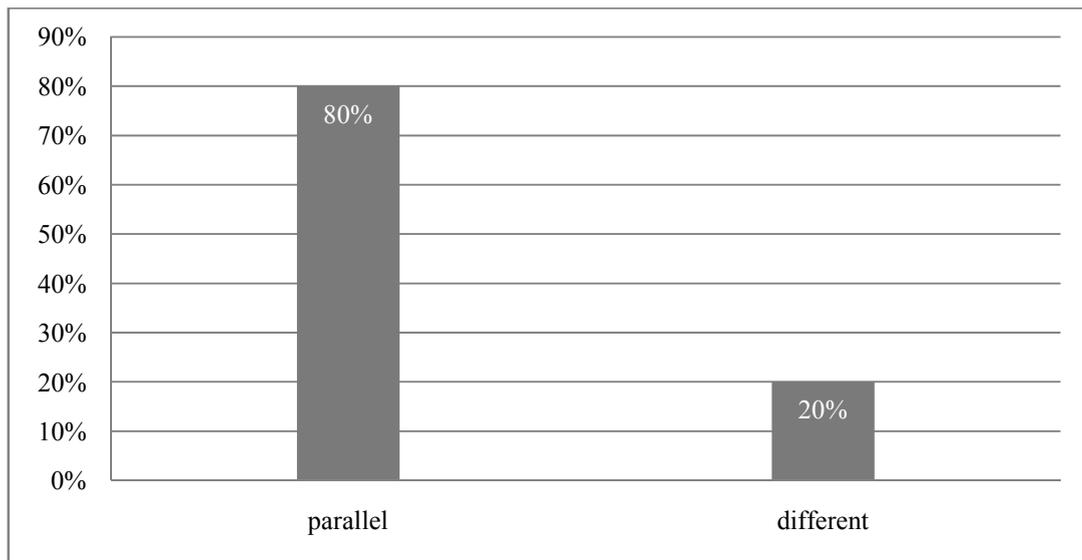
Table 5.51. Examination of the Kano scores regarding the typical 3+1 unit in Narbel Mass-Housing ('+' marks indicate the action that might be taken)

Narbel A house with...		Kano result	To be maintained	To be changed
1	a <i>corridor</i>	A	+	
2	a <i>living room</i> connected to the <i>entrance hall</i>	A		+
3	a <i>kitchen</i> connected to the <i>entrance hall</i>	I(-)		+
4	<i>bedrooms</i> connected to the <i>corridor</i>	I(+)	+	
5	a bathroom and WC <i>next</i> to the bedrooms	I(+)	+	
6	bedrooms placed <i>next</i> to each other	I(-)		+
7	a separate living room apart from the <i>guest room</i>	I(+)		+
8	bedrooms placed <i>in a distance</i> with the living room	I(+)	+	
9	a living room and kitchen placed <i>next</i> to each other	I(+)	+	
10	an <i>open kitchen</i>	I(+)		+
11	<i>two</i> wet cores (bathroom and WC)	I(0)		+
12	a <i>separate bathroom</i> in parents' bedroom	I(0)	+	
13	a <i>balcony</i>	A	+	
14	a <i>balcony</i> connected to the <i>living room</i>	A	+	
15	a <i>balcony</i> connected to the <i>kitchen</i>	I(0)		+
16	a <i>balcony</i> connected to <i>parents' bedroom</i>	I(0)	+	
17	a <i>balcony</i> connected to <i>kid's room</i>	I(-)	+	
18	an additional space like a <i>cellar, storage, or laundry</i>	I(0)		+
Total with I(0) scores (out of 18):			10 (56%)	8 (44%)
Total without I(0) scores (out of 13):			8 (62%)	5 (38%)

In this respect, it can be claimed that the users are generally pleased to live in the plan scheme of their units in Narbel, though the satisfaction rate is not very high (56% or 62%). It is also relevant for the uniformed template because of the high parallelism between the plan schemes of Narbel and the uniformed one (see Table 5.46). Results of

the rest of the questionnaire, similarly, conforms the above outcome, that is, the *satisfaction* from the unit design. Besides, parallelism rate of 80% between the answers of the *Kano-support questions* and the conventional Kano questions (Table 5.52) also strengthen this claim as well as the reliability of the answers.

Table 5.52. Parallelism rate between the conventional and supporting Kano-questions in Narbel Mass-Housing project



This kind of high consistency is also observed in the answers to the part of the *contextual questions*. Answers to the question of “are you pleased to live in your unit” indicate that all of the inhabitants without any exception are pleased to live in their homes; and they mentioned spaciousness, comfort, restfulness, and stability of the housing among the reasons of this pleasure. Again almost invariably, the users answered to the question about “the reasons of buying that unit” by mentioning especially the characteristic of spaciousness near the restfulness, comfort, quietness, and characteristics of neighborhood. In parallel with these reasons, inhabitants utilized the adjectives of spacious, comfortable, restful, lighted, and quiet to describe the “properties of the unit that they would like to live in.” All of the users agree on that “they would *not* like to move to another house,” “the area of the unit is *sufficient* for their needs,” “they are *pleased* to have a corridor in that form and dimensions,” “the design of the unit is *proper* for their life styles,” “living in that housing does *not* cost much,” “their house is *useful*,” “they *like* the appearance of their apartment/block,” and “they are *pleased* to live in a multi-storey block.” Consistently, they did not criticize anything in their houses, and again, stated that they like spaciousness, restfulness, usefulness, comfort,

quietness, stability, view, light, and neighborhood properties. All of the inhabitants found having nice views very important, since it provides restfulness and pleasure. In accordance with it, the adjectives to describe their homes comprise completely the positive ones like wide-spacious, beautiful, day-lighted, and cute.

The above overview of the survey results indicates that the inhabitants are not only pleased to live in their units, but also in their neighborhood. Considering that the settlement as well as the unit does not include any advanced services, high satisfaction rate of the users can be explained by that their *expectations* from a unit and a settlement are *not* high. Therefore, relationships between the user-expectations and quality will be discussed in Chapter 6 in detail and comparatively to enlighten the reasons of the satisfaction or dissatisfaction.

5.2.2.3.3. TOKI Buca Mass-Housing: Description and Analysis

Buca Mass-Housing in Tınaztepe (Figure 5.26.a) was produced by TOKI between the years of 2008-2010 (also see Table 5.1). The contractor firm for construction was Siyah Kalem Inc. However, the designer team is also from TOKI, and thus, plan schemes of the units are the typical ones repeating in almost all of the mass-housing projects built by TOKI. The project contains two stages: the first stage contains 694 units (21 blocks), and the second one includes 986 housing units (29 blocks). As the case of this research, the second stage was selected to limit the large extent of the data—which does not affect the research negatively because the plan schemes are the same. In the second stage, there are two kinds of blocks and plans, as B-type (21 blocks) and C-type (eight blocks) (Figure 5.26.b); and only C types have 3+1 units—the first stage of the project, on the other hand, completely consists of the same type of C-blocks with six- or seven-storey. Storey-numbers of the blocks in the second stage are fixed to eight, and 272 of the housing units are 3+1 types (for further details, see Table 5.20). The project is not a gated community, and it mostly addresses to low incomes regarding the unit prices of square meter changing between 700 TL and 1200 TL (in 2011). The project includes various facilities inside the settlement like the primary and high schools, nursery, health center, mosque, commercial units, and car parks.

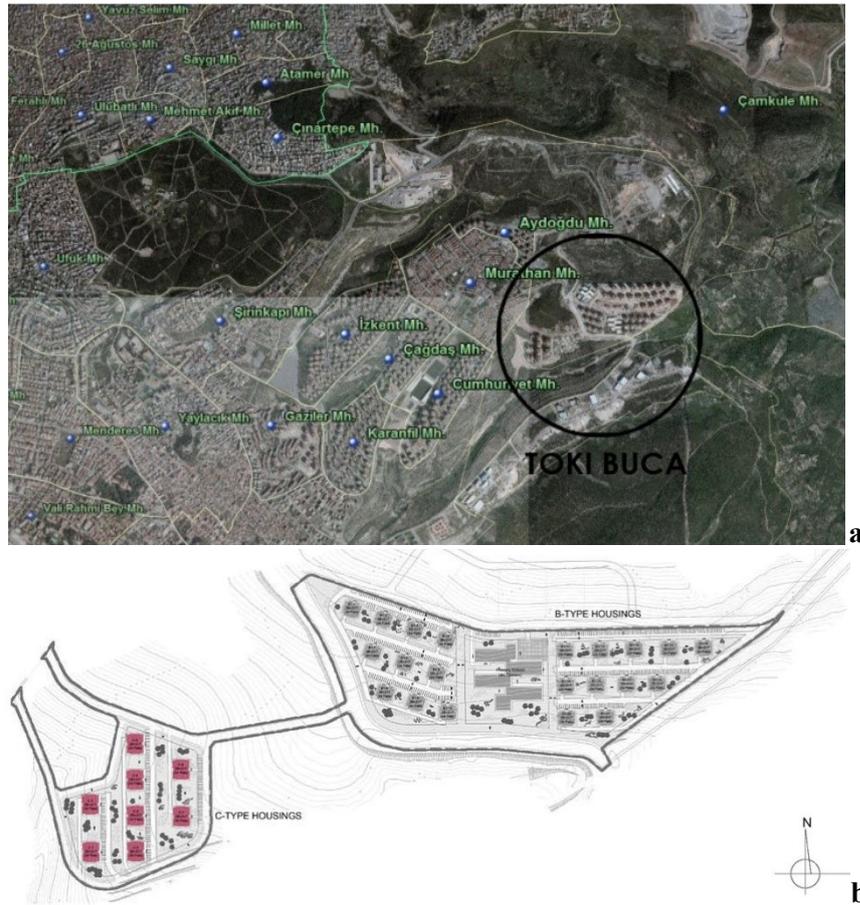


Figure 5.26. TOKI Buca Mass-Housing, Tinaztepe, Izmir, 2008-2010: **a.** Aerial photograph (black circle demonstrates the settlement); **b.** Site plan of the 2nd stage (blocks with red demonstrate the limitation of the research) (Sources: **a.** Izmir Metropolitan Municipality City Surf 2012; **b.** TOKI's archive [coloring and labels were added by İpek Ek])

Site of the project consists of two main large parcels (see Figure 5.26.b): at the north side of the largest parcel, there are only C-type blocks built in the first stage (see Figure 5.26.a); and at the south part, there are B-type blocks built in the second stage (see Figure 5.26.b). The smaller parcel, on the other hand, includes again the C-type blocks built in the second stage (see Figure 5.26.b). The site has a sloped topography, and the blocks were located according to the contour lines of this slope. Their facades were designed simply, accentuated by horizontal and vertical differentiation of the colors, and vertical fragmentation of the sub-masses (Figure 5.27). Uniformity in façade design can also be read from the facades of TOKI's Buca project; thus, similar façade-treatments were discussed in Chapter 3 (see Figures 3.2, 3.8.c, 3.10.a, and 3.12). Here, the horizontal differentiation of the colors should have been used to break the vertical emphasis, and vertical differentiation should have been used to provide the simple facades a kind of dynamism.



a



b



c



d



e

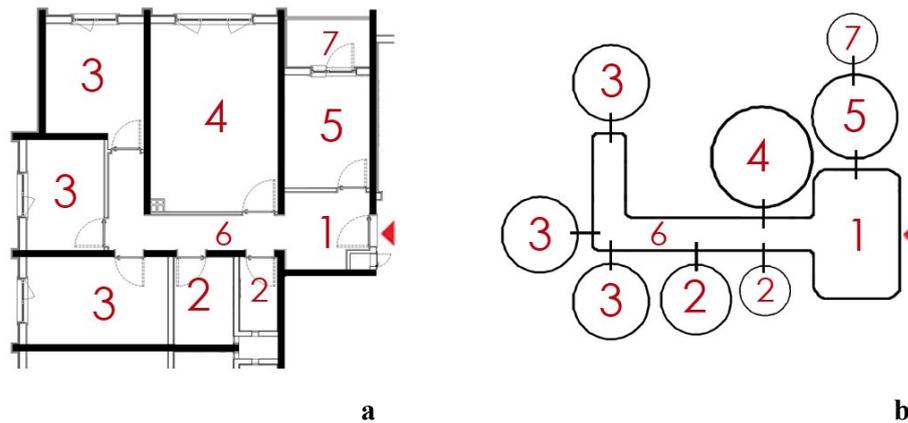
Figure 5.27. TOKI Buca Mass-Housing, 2nd stage, Tinaztepe, Izmir, 2008-2010: a., b., c., d., e. Views from the settlement (Sources: TOKI Izmir Buca 2012: a., e. Photographs by Tolga Avcı; b., c. Photographs by Hüsnü Çiftçioğlu; d. Photograph by Osman Altay)

The mosque and the buildings for other facilities can easily be perceived in the settlement views with their low-rise masses and different materials, among the high-rise uniformed facades of the housing (see Figure 5.27).

There are four units placed symmetrically on each floor in the blocks of the second stage of TOKI Buca project. All of the units having 3+1 plan-scheme are in C blocks. Plan of these units repeats the uniformed template, as well (Figure 5.28). Spatial alignment of these 3+1 units is as follows:

- 1.) Entrance, 2.) WC and Bathroom 3.) Three bedrooms, 4.) Living room, 5.) Kitchen.

In this respect, Table 5.53 reveals the parallelism between the spatial alignments of the uniformed plan-template and 3+1 plan-scheme of TOKI Buca, comparatively.



1. Entrance (hall),	3. Bedroom,	6. Corridor,
2. Bathroom and WC (number-2 with smaller font size refers WC)	4. Living room,	7. Balcony.
	5. Kitchen,	

Figure 5.28. TOKI Buca Mass-Housing, 2nd stage, Tinaztepe, Izmir, 2008-2010: **a.** Plan scheme of 3+1 unit; **b.** Plan diagram of 3+1 unit (Source: TOKI's archive [plan scheme and diagram were prepared and drawn by İpek Ek])

Table 5.53. Comparison of the spatial alignments of the uniformed plan and the typical 3+1 plan of TOKI Buca project (cells with grey demonstrate the parallelism between the alignments)

	1	2	3	4	5
Uniformed alignment	Entrance	Bathroom (and/or WC)	Three bedrooms	Living room	Kitchen
Typical plan in TOKI Buca	Entrance	WC and Bathroom	Three bedrooms	Living room	Kitchen

Regarding the linear readings through the latitudinal and longitudinal axes, on the other hand, it can be observed that TOKI Buca Mass-Housing has, again, similar alignments with the ones examined so far (Figure 5.29) (see Tables 5.5, 5.6, 5.8, 5.9, 5.22, 5.23, 5.29, 5.30, 5.40, 5.41, 5.47, and 5.48). Groups of spaces in Tables 5.54 and 5.55 also demonstrate the parallelism in linear readings.



1. Entrance (hall),	3. Bedroom,	6. Corridor,
2. Bathroom and WC (number-2 with smaller font size refers WC)	4. Living room,	7. Balcony.
	5. Kitchen,	

Figure 5.29. TOKI Buca Mass-Housing, 2nd stage, Tınaztepe, Izmir, 2008-2010: **a.** Latitudinal division; **b.** Longitudinal division (Source: TOKI's archive [plan analyses were prepared by İpek Ek])

Table 5.54. Spatial grouping in latitudinal division of 3+1 plan-type in TOKI Buca

Left hand-side	Middle	Right hand-side
Three bedrooms	Living room Bathroom + WC	Balcony Kitchen Entrance hall

Table 5.55. Spatial grouping in longitudinal division of 3+1 plan in TOKI Buca (rooms were grouped according to their door locations)

Upper side	Lower side
Two bedrooms Living room Balcony + Kitchen Entrance hall	One bedroom Bathroom WC

Consequently, 3+1 plan scheme in the second stage of TOKI Buca project repeats the uniformed template in both circular and linear readings of its spatial alignment. Besides, if we examine the results of the Kano survey, this conclusion is articulated again, and the uniformity can be followed by the answers of the inhabitants, as well. With this purpose, the following section is reserved for the examination of the survey results for the case of TOKI Buca.

5.2.2.3.4. TOKI Buca Mass-Housing: Survey Results

The Kano survey was conducted with 40 people from 40 different units (3+1) in TOKI Buca project, as well. The following section examines the results of this survey considering the sub-parts of the questionnaire respectively (general information questions, conventional Kano questions, Kano-support questions, and contextual questions). Therefore, firstly regarding the *general information questions*, we can mention that the profiles of the inhabitants mainly comprise the housewives with the rate of approximately 93%—the reason of this majority is related with the part of the day when the survey was conducted. About income groups, again approximately 93% of the inhabitants stated that they are *middle* income; however, rest of them answered that they are middle-high income. On the other hand, 83% of the users answered that they are the owners of their houses. Other information like age, sex, education, family type, and duration of inhabitation is shown in Table 5.56.

Table 5.56. Information about the inhabitant-profiles of TOKI Buca project

Age	Sex		Education	Family type	Duration of inhabitation	
	Men	Women			Less than 3 years	3 years and more than 3 years
Older than 40	8%	92%	Bachelor (min.)	Nuclear	67%	33%
13%			2%	98%		

Furthermore, information of the *conventional Kano questions* in TOKI Buca is tabulated below in detail with the *frequencies* and *categorical scores* (Table 5.57) (here, the questioned characteristics are summarized regarding the functional sides given in Table 5.18). In terms of the evaluation of scores, the suggested reading and interpretation manner for *Indifferent* category are also considered in this table for TOKI Buca case. Besides, by the results in Table 5.57, spatial-organization characteristics that

should be maintained and changed are also determined by a synchronic and comparative re-examination of these scores with the current 3+1 plan in TOKI Buca project; and they are demonstrated in Table 5.58.

Table 5.57. Answer-frequencies of the conventional Kano questions with the categorical scores in TOKI Buca (cells with grey demonstrate the highest scores)

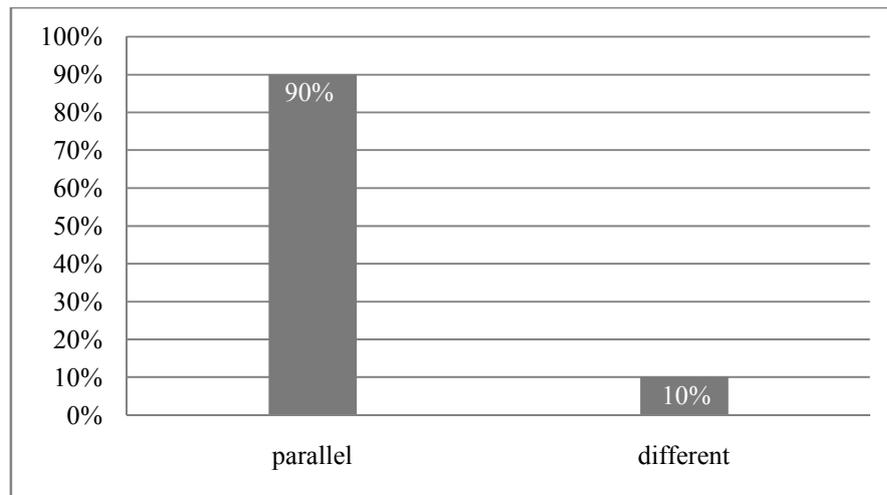
	Questioned characteristic <i>A house with ...</i>	A	O	M	I(+)	I(0)	I(-)	R	Q	Score
1	<i>a corridor</i>	31	1	0	7	0	1	0	0	A
2	<i>a living room connected to the entrance hall</i>	1	0	0	5	0	34	0	0	I(-)
3	<i>a kitchen connected to the entrance hall</i>	0	0	0	6	0	34	0	0	I(-)
4	<i>bedrooms connected to the corridor</i>	1	0	0	37	0	2	0	0	I(+)
5	<i>a bathroom and WC next to the bedrooms</i>	1	0	0	38	0	1	0	0	I(+)
6	<i>bedrooms placed next to each other</i>	1	0	0	0	0	38	1	0	I(-)
7	<i>a separate living room apart from the guest room</i>	2	0	0	36	0	2	0	0	I(+)
8	<i>bedrooms placed in a distance with the living room</i>	3	2	0	35	0	0	0	0	I(+)
9	<i>a living room and kitchen placed next to each other</i>	5	4	0	30	1	0	0	0	I(+)
10	<i>an open kitchen</i>	6	3	1	29	1	0	0	0	I(+)
11	<i>two wet cores (bathroom and WC)</i>	1	0	0	9	29	1	0	0	I(0)
12	<i>a separate bathroom in parents' bedroom</i>	1	0	0	10	29	0	0	0	I(0)
13	<i>a balcony</i>	3	32	0	4	0	0	1	0	O
14	<i>a balcony connected to the living room</i>	3	19	3	13	1	1	0	0	O
15	<i>a balcony connected to the kitchen</i>	4	1	0	14	20	1	0	0	I(0)
16	<i>a balcony connected to parents' bedroom</i>	0	0	0	5	24	11	0	0	I(0)
17	<i>a balcony connected to kid's room</i>	0	0	0	0	10	21	9	0	I(-)
18	<i>an additional space like a cellar, storage, or laundry</i>	1	0	0	6	31	2	0	0	I(0)

Table 5.58. Examination of the Kano scores regarding the typical 3+1 units in TOKI Buca ('+' marks indicate the action that might be taken)

TOKI Buca A house with...		Kano result	To be maintained	To be changed
1	a <i>corridor</i>	A	+	
2	a <i>living room</i> connected to the <i>entrance hall</i>	I(-)	+	
3	a <i>kitchen</i> connected to the <i>entrance hall</i>	I(-)		+
4	<i>bedrooms</i> connected to the <i>corridor</i>	I(+)	+	
5	a bathroom and WC <i>next</i> to the bedrooms	I(+)	+	
6	bedrooms placed <i>next</i> to each other	I(-)		+
7	a separate living room apart from the <i>guest room</i>	I(+)		+
8	bedrooms placed <i>in a distance</i> with the living room	I(+)	+	
9	a living room and kitchen placed <i>next</i> to each other	I(+)	+	
10	an <i>open kitchen</i>	I(+)		+
11	<i>two</i> wet cores (bathroom and WC)	I(0)		+
12	a <i>separate bathroom</i> in parents' bedroom	I(0)	+	
13	a <i>balcony</i>	O	+	
14	a <i>balcony</i> connected to the <i>living room</i>	O		+
15	a <i>balcony</i> connected to the <i>kitchen</i>	I(0)		+
16	a <i>balcony</i> connected to <i>parents' bedroom</i>	I(0)	+	
17	a <i>balcony</i> connected to <i>kid's room</i>	I(-)	+	
18	an additional space like a <i>cellar, storage, or laundry</i>	I(0)	+	
Total with I(0) scores (out of 18):			11 (61%)	7 (39%)
Total without I(0) scores (out of 13):			8 (62%)	5 (38%)

According to the '+' marks, it can be claimed that the user-satisfaction from 3+1 plan scheme in TOKI Buca corresponds to 61%, while this rate increases slightly to 62%, if I(0) scores are ignored. This result also points out that the inhabitants *prefer* to live in the uniformed plan-template because of the parallelism between the uniformed template and plan scheme of TOKI Buca (see Table 5.53). Rest of the survey results also complies with the results of the conventional Kano part. Parallelism between the conventional and supporting Kano-questions strengthens this claim with the rate of 90%, which indicates the reliability of the results, as well (Table 5.59). Therefore, examination of the reasons of high user-satisfaction from the spatial alignment of TOKI Buca is comparatively undertaken in Chapter 6.

Table 5.59. Parallelism rate between the conventional and supporting Kano-questions in TOKI Buca project



In terms of the *contextual questions*, on the other hand, it is seen that all of the inhabitants answered to the question about “whether they are pleased to live in their units” as “yes” by mentioning that their units are spacious, restful, comfortable, quiet, and have nice views. Answers about “the reasons of buying that unit” are majorly parallel with the previous reasons, with the ones of spaciousness, comfort, restfulness, location/environment, and affordability—besides, one of the interesting reasons is the “number of rooms,” which may indicate that user-expectations are low in TOKI Buca.

In parallel with these reasons, inhabitants utilized the following adjectives to describe the “properties of the unit that they would like to live in”: spacious, comfortable, restful, and one with a balcony. The question of “whether they would like to move” also answered with great consistency, and 98% of them rejected to move. Furthermore, 100% of them agreed on that “the area of the unit is *sufficient* for their needs,” “they are *pleased* to have a corridor in that form and dimensions,” “the design of the unit is *proper* for their life styles,” “their house is *useful*,” and “they *like* the appearance of their apartment/block.” Besides, all of them “are *pleased* to live in a multi-storey block,” and in this respect, they mentioned the reasons of neighborliness, security, dynamism, and sense of community provided by the multi-storey blocks. However, the rate decreases slightly to 93% in the question asking “whether living in their housing costs much” with the answer of “no.” The inhabitants did not criticize anything in their houses, consistently, and stated again that they like spaciousness, restfulness, comfort, quietness, security, and affordability. Moreover, 95% of them denoted that having nice views is very important, because it provides restfulness and

pleasure; while the rest of them stated that the *environment* is important rather than the view. Similar to the previous statements, they utilized only positive adjectives to describe their homes, like wide-spacious, beautiful, day-lighted, and cute.

The above summaries indicate that there is a great parallelism among the sub-parts of the survey. In totality, the survey results demonstrate that the inhabitants of TOKI Buca are pleased to live in their units designed in a manner complying with the uniformed template. On the other hand, because the contextual questions look at the scene from a larger perspective and include the perceptions about the settlement properties, facilities, aesthetics, services and affordability, it can also be claimed that they are also pleased to live in their settlement and neighborhood. Results of the conventional Kano part, open-ended questions, plan schemes and diagrams of TOKI Buca are evaluated with all respects, and compared with the ones of the other cases in Chapter 6, because the variety in the answers reveals that they need to be discussed in detail.

CHAPTER 6

COMPARISON AND EVALUATION OF THE RESULTS

In Chapter 5, each of the research-cases was examined regarding both of the characteristics of spatial alignment and the survey results. Therefore, Chapter 6 is reserved to compare and evaluate the results of each case by means of their plan schemes and survey results to provide further interpretations. This comparison and evaluations are undertaken according to the following respects:

- Architectural-design characteristics
 - Site plans and settlement properties
 - Floor plans
 - Spatial alignments
 - Plan schemes and diagrams of the units
 - Spatial alignments of the units regarding circular and linear readings
 - Connection points of spaces
 - Area-sizes of each space and unit (with the price-ranges of the units)
 - Facades
- Survey results
 - Scores of the conventional Kano survey
 - Answers to the Kano-support questions
 - Answers to the contextual questions

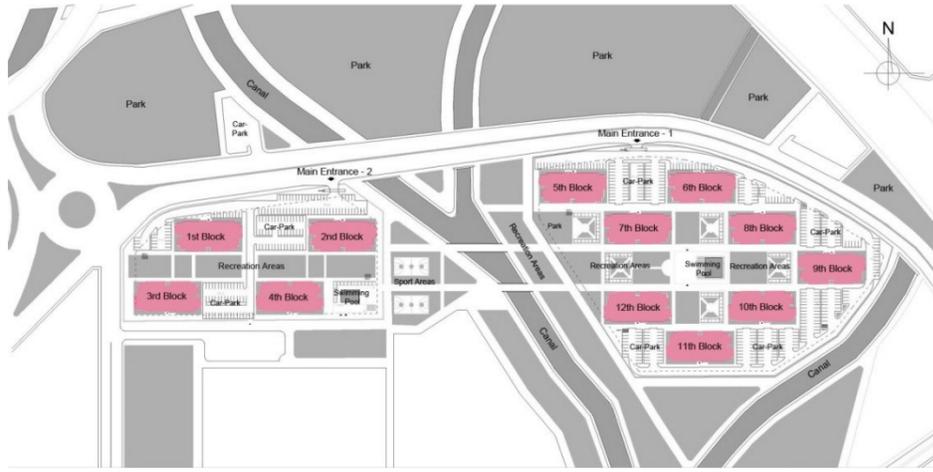
Apart from these respects, a comparative-table for the “inhabitant profiles” is given in Appendix F. It is not included in this section, since this research does not intend to reduce the results by interpreting them considering the profile-types. Rest of the respects mentioned above comprises the main structure of Chapter 6. They are comparatively examined for the whole set of cases and by considering the divisions of income groups in case of need. With this comparison, some detailed evaluations are also undertaken for each income group and each case, as well. In order to conclude the findings of the research, the final section of this chapter is reserved for syntheses of evaluations and further interpretations.

6.1. Comparison and Evaluation of the Architectural-Design Characteristics

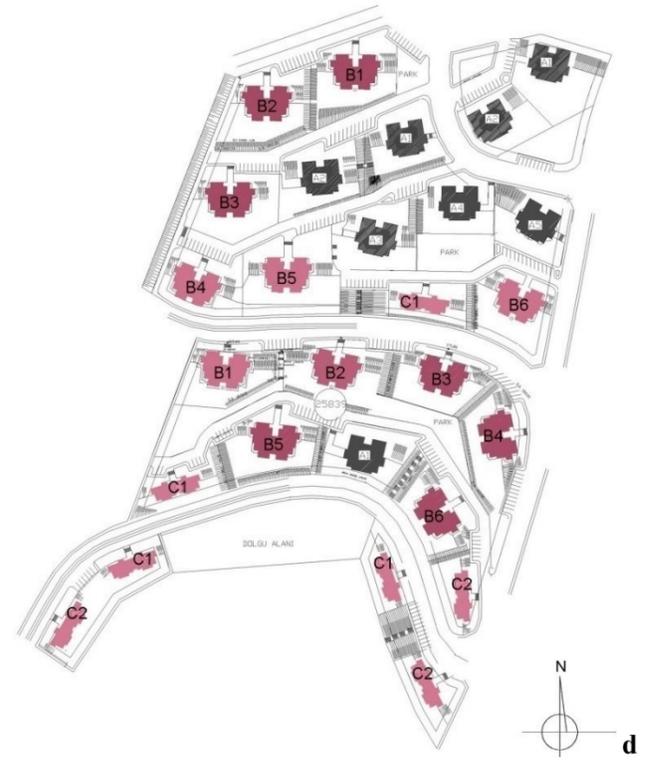
Architectural design characteristics are undertaken in this research with regard to the respects of the site plans and settlement properties, floor plans, spatial alignments, and façade designs, as also mentioned in the above section. Therefore, to begin with a larger perspective, firstly it may be useful to look at the comparison between the site plans and settlement properties of six cases. By this way, it can also be checked whether there are different implementations in terms of these respects. Thus, Figure 6.1 is reserved for the comparison of site plans, while Table 6.1 summarizes the settlement properties of the cases regarding their communal typologies, services and facilities.

Concerning the comparison in Figure 6.1, it can be observed that the settlement designs have grid layouts especially in the sites having plain topography like Albayrak's and Soyak's. On the other hand, locations of the blocks in the projects with slopped-topographies comply with the contour lines coming from these slopes. By examining the site-plan drawings, we can also figure out the services and facilities provided in the settlements. They diversify in the projects of high income-group with recreation and sport areas, swimming pools, and car parks. Nevertheless, for example in TOKI Buca Mass-Housing as one of low income-group projects, there are also schools and a mosque provided inside of the settlement. For comparison, we can clearly follow these services and facilities provided inside or in close location to the settlements, from Table 6.1. The sites of high-income projects locate in the neighborhoods which already have lots of commercial, social and cultural facilities; they are the parts or satellites of the developed neighborhoods. However, the sites of both middle and low incomes locate far from the facilities provided by the developed neighborhoods; therefore, they have to restructure their own services inside their settlements. In this respect, we may conclude that while the settlements of high incomes contain services corresponding to some *luxury* facilities like the swimming pools, sport areas and commercial units; ones of middle and low incomes include only the *necessary* ones like the health centers, schools, play grounds, and car parks.

High Income Group



Middle Income Group



Low Income Group

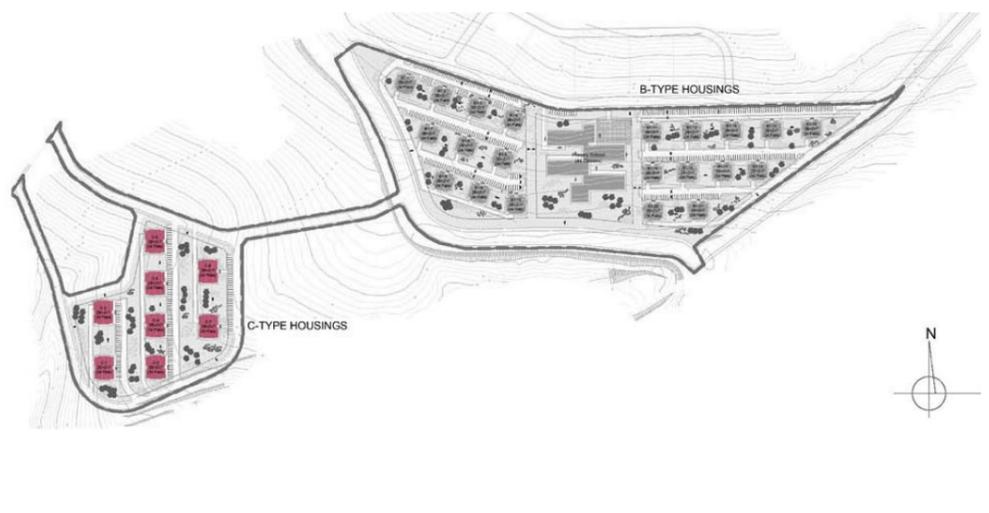
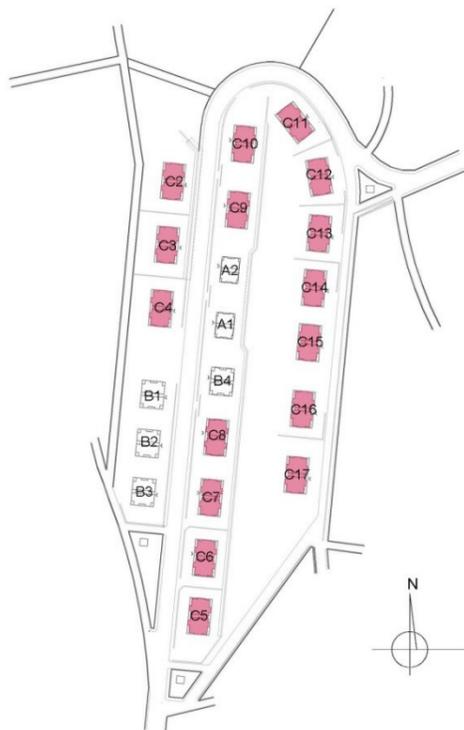


Figure 6.1. Comparison of the site plans of six cases (blocks with red refer the limits of the projects selected for the main survey; coloring and labels were added by İpek Ek): **a.** Albayrak Mavişehir Housing; **b.** Soyak Mavişehir Housing; **c.** Mimkent 1 Mass-Housing (aerial photo has to be used instead of the site plan because of the unavailability of it); **d.** Ege-Koop Körfez Houses; **e.** Narbel Mass-Housing; **f.** TOKI Buca Mass-Housing 2nd stage (Sources: **a.** Tamer Başbuğ's archive; **b.** Soyak 2009; **c.** Google Earth; **d.** Ege-Koop's archive; **e.** Demirer Group's archive; **f.** TOKI's archive)

Table 6.1. Comparison of the settlement properties (cells with grey demonstrate services and facilities which are *not* provided inside the settlement or in close location to the settlement)

		Communal typology	Services (inside)					Facilities (inside or in close location)			
			Security	Car parks	Recreation areas (parks/play grounds)	Swimming pools	Sport areas	Schools / nurseries	Commercial units	Health centers	Socio-cultural foundations
High Income Group	Albayrak Mavişehir Housing	Gated residential community	+	+	+	+	+	+	+	+	+
	Soyak Mavişehir Housing	Gated residential community	+	+	+	+	+	+	+	+	+
Middle Income Group	Mimkent 1 Mass-Housing	Open residential community	-	+	+	-	+	+	-	+	+
	Ege-Koop Körfez Houses	Open residential community	-	+	+	-	-	+	-	+	+
Low Income Group	Narbel Mass-Housing	Open residential community	-	+	+	-	-	+	-	+	-
	TOKI Buca Mass-Housing	Open residential community	-	+	+	-	-	+	-	+	-

In terms of the floor plans, on the other hand, it may be claimed that all of them remind each other with their indented masses, which points out the uniformity, as well. Figure 6.2 was prepared for a legible comparison between the floor plans. Most of them have four units (in 3+1 plan-scheme) on the floor like in the blocks of Soyak B- and C-type, Ege-Koop B-type, Narbel and TOKI Buca. Besides, there are floor plans having two units (in 3+1 plan-scheme) on each floor like the ones in Mimkent 1 and Ege-Koop C-type. Albayrak example differs from the others in this respect, because it can contain up to eight units on the same floor and these units have different plan schemes (but there are four units in the terrace floor). However, all of the cases refer the floor plans organized symmetrically through the axes of blocks' entrances. Moreover, through the axes perpendicular to the ones of the entrance direction, Albayrak, Ege-Koop C-type, and Mimkent 1 examples differ from the others with their asymmetrical organizations. Therefore, considering the symmetrical design-manner in x or y axes, or both of them, the projects again offer uniformity.

This uniformity also echoes in the designs of the units. As already given in the previous chapters, the spatial-alignment typology which is applied in the examined mass-housing projects is figured out as follows:

- 1.) Entrance, [2.) Additional space,] 3.) Bathroom (and/or WC), 4.) Three bedrooms (with a parents' bathroom), 5.) Living room, 6.) Kitchen, [7.) Additional space].

This alignment refers the *uniformed* and *fixed plan-template* as demonstrated by the significant parallelism between the spatial alignments of the main and pilot cases as well as the cases examined in Chapter 3. To observe this parallelism in a more legible way, Figure 6.3 and Table 6.2 can be examined comparatively.

High income-group plans consist of Albayrak Mavişehir's typical plan for 3+1 units, and Soyak Mavişehir's two typical plans for 3+1 units (B- and C-type). All of three are almost the same in terms of their spatial alignments regarding the circular reading through clockwise (see Figure 6.3 and Table 6.2), as examined in Chapter 5. Firstly, it is clear that Soyak's alignments refer exactly the same with each other; and in second place, the only differing point in Albayrak's plan-scheme is the presence of an additional space, a laundry room. All of the spaces in three plans surround an L-shaped corridor of which shorter arm is reserved for three bedrooms. These L-shaped corridors in three plans begin with rectangular entrance halls reserved for connections to the

High Income Group



a

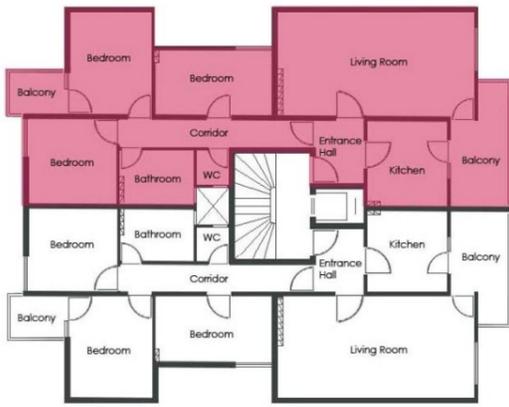


b

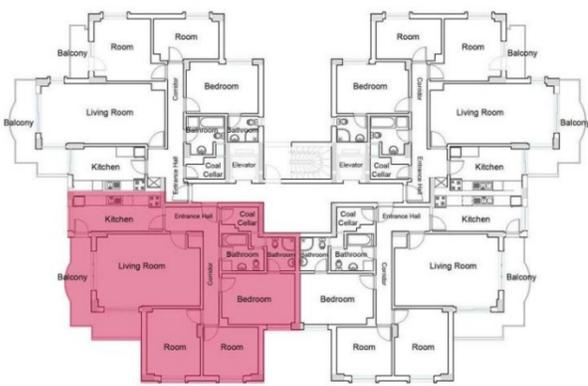


c

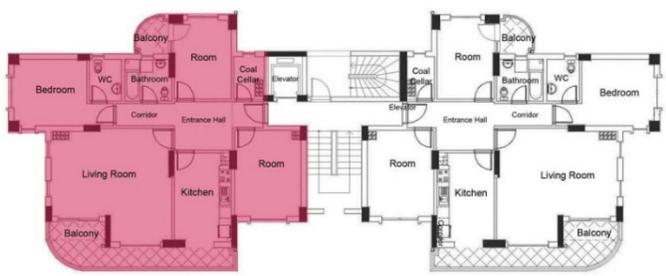
Middle Income Group



d



e



f

Low Income Group



g



h

Figure 6.2. Comparison of the floor plans of six cases (units with red refer the ones having 3+1 plan-schemes examined in the research): **a.** Floor plan of Albayrak Mavişehir Housing; **b.** B-type floor plan of Soyak Mavişehir Housing; **c.** C-type floor plan of Soyak Mavişehir Housing; **d.** Floor plan of Mimkent 1 Mass-Housing; **e.** B-type floor plan of Ege-Koop Körfez Houses; **f.** C-type floor plan of Ege-Koop Körfez Houses; **g.** C-type floor plan of Narbel Mass-Housing; **h.** C-type floor plan of TOKI Buca Mass-Housing (Sources: **a.** Tamer Başbuğ's archive; **b., c.** Soyak 2009; **d.** Archive of Karabağlar Municipality; **e., f.** Ege-Koop's archive; **g.** Demirer Group's archive; **h.** TOKI's archive)

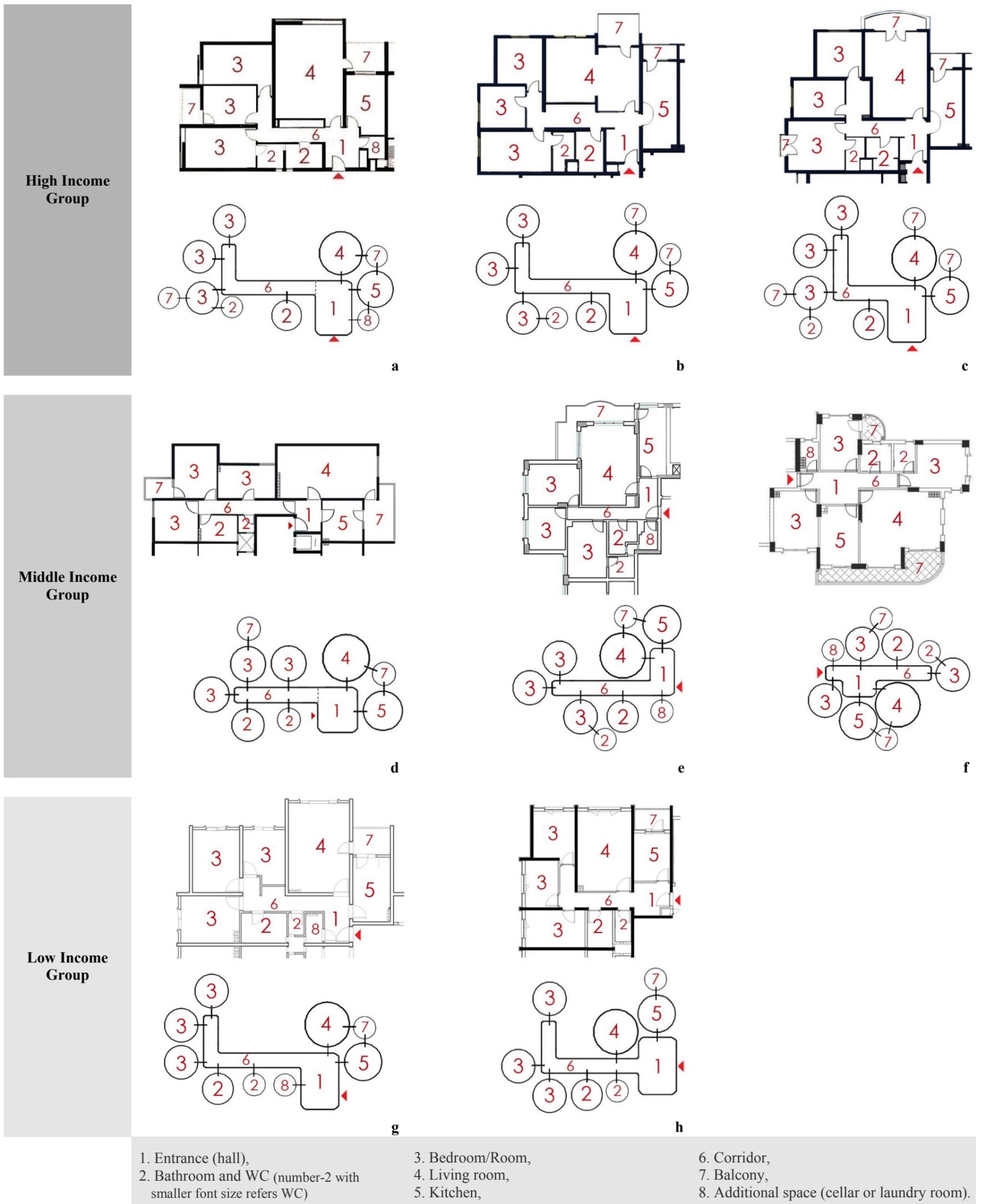


Figure 6.3. Circular readings of the spatial alignments of 3+1 units in six cases: **a.** Albayrak Mavişehir Housing: Above: plan scheme, Below: plan diagram; **b.** Soyak Mavişehir Housing: Above: B-type plan scheme, Below: B-type plan diagram; **c.** Soyak Mavişehir Housing: Above: C-type plan scheme, Below: C-type plan diagram; **d.** Mimkent 1 Mass-Housing: Above: plan scheme, Below: plan diagram; **e.** Ege-Koop Körfez Houses: Above: B-type plan scheme, Below: B-type plan diagram; **f.** Ege-Koop Körfez Houses: Above: C-type plan scheme, Below: C-type plan diagram; **g.** Narbel Mass-Housing: Above: plan scheme, Below: plan diagram; **h.** TOKI Buca Mass-Housing: Above: plan scheme, Below: plan diagram (Sources: Plan schemes and diagrams were prepared and drawn by İpek Ek regarding the plan drawings taken from the following sources: **a.** Tamer Başbuğ's archive; **b., c.** Soyak 2009; **d.** Archive of Karabağlar Municipality; **e., f.** Ege-Koop's archive; **g.** Demirer Group's archive; **h.** TOKI's archive)

Table 6.2. Comparison of the spatial alignments (in clockwise circular-reading) of the uniformed template and six cases (cells with grey demonstrate the parallelism between the alignments)

		1	2		3	4	5	6	7		
<u>Uniformed alignment:</u>		Entrance	(Additional space)		Bathroom (and/or WC)	Three bedrooms (with a parents' bathroom)	Living room	Kitchen	(Additional space)		
High Income Group	Albayrak Mavişehir Housing	Entrance	-		Bathroom	Three bedrooms (with a parents' bathroom)	Living room	Kitchen	Laundry room		
	Soyak Mavişehir Housing	Entrance	B type		Bathroom	Three bedrooms (with a parents' bathroom)	Living room	Kitchen	-		
			C type								
Middle Income Group	Mimkent 1 Mass-Housing		Entrance	-		WC and bathroom	Three bedrooms	Living room	Kitchen	-	
	Ege-Koop Körfez Houses	B type		Entrance	Cellar		Bathroom	Three bedrooms (with a parents' bathroom)	Living room	Kitchen	-
		C type		Entrance	Cellar	Room	Bathroom	Bedroom (with a parents' bathroom)	Living room	Kitchen	Room
Low Income Group	Narbel Mass-Housing		Entrance	Cellar		Bathroom and WC	Three bedrooms	Living room	Kitchen	-	
	TOKI Buca Mass-Housing		Entrance	-		WC and bathroom	Three bedrooms	Living room	Kitchen	-	

living room and kitchen—here, there is also a laundry room in Albayrak’s plan. On the other hand, in three plans, living rooms always have a balcony. However, while this balcony is also connected to the kitchen in Albayrak’s plan, kitchens have separate balconies apart from the ones of living rooms in Soyak’s plans. Besides, one of the bedrooms has another balcony in both Albayrak’s plan and Soyak’s C-type plan—Albayrak’s balcony is at the kid’s room, while Soyak’s one is at the parents’ bedroom. Besides, all of these parents’ bedrooms have separate wet cores.

There are three sorts of 3+1 plans in middle income-group section of the research, as well. They contain Mimkent 1 Mass-Housing’s typical plan, and Ege-Koop Körfez Houses’ two typical plans for B- and C-type. All of the spatial alignments refer mainly the same order through clockwise reading (see Figure 6.3 and Table 6.2). In this respect, the only difference between Mimkent 1’s plan and Ege-Koop’s B-type is an additional space, that is, the cellar, the latter one has. However, C-type plan of Ege-Koop has one more difference which is important: in this plan scheme, three bedrooms were not located as next to each other, but within a distance to each other, which seems as if breaking the uniformed order of the alignments. Nonetheless, Table 6.2 demonstrates that it actually does not break this fixed order, but only breaks the *rule* of designing the bedrooms as next to each other. Hence, the *core groups* of spaces (entrance hall, wet core, bedroom, living room, and kitchen) in C-type have still the same main-locations with the ones of the other alignments; thus, they follow the *same spatial cycle*.

For again middle income-group plans, we can denote that all of them have I-shaped corridors. However, towards the end of these corridors, privacy increases gradually with the wet cores and bedrooms in Mimkent 1’s and B-type of Ege-Koop. Although it also has an I-shaped corridor, C-type plan of Ege-Koop reveals a different connection-manner for the bedrooms: while one of them still locates at the end of the corridor, the other is attached at the right hand-side of the entrance door, and the last one is opened directly to the entrance hall. Each one of the latter two rooms close to the entrance may be transformed into a living room apart from the guest room, if the users would like to have this kind of space. Moreover, there is another difference for the locations of the entrance halls, though their shapes are rectangular: while the entrance halls of Mimkent 1 and Ege-Koop’s B-type were placed directly after the entrance door, C-type’s comes after a sub-space which is connected to the entrance door, a room, and a cellar, and locates before the entrance hall—by this way, this entrance hall actually

loses its meaning and becomes a kind connective space like a *sofa*. However, the entrance halls are connected to the living rooms and kitchens in all three plan types—besides, in B-type plan of Ege-Koop, there is also a cellar opening to the entrance hall; and in C-type, there is a room (bedroom) connected to this space.

Considering all middle-income cases, we observe that, like in Albayrak's design, balconies open to both of the living rooms and kitchens. Furthermore, in Mimkent 1 and Ege-Koop's C-type, there are secondary balconies connected to one of the bedrooms (parents' bedroom in Mimkent 1, and kid's room in Ege-Koop). In terms of the secondary wet cores, on the other hand, though we can find them in all three plans, they serve for the parents' bedroom only in Ege-Koop plans. Therefore, in Mimkent 1, this secondary wet core is closer to the entrance hall, available for more common use; and thus, bathroom as a more private space follows the WC in the circular reading.

Low income-group cases cover Narbel Mass-Housing's and TOKI Buca Mass-Housing's typical plans for 3+1 units. In terms of their spatial alignments read through clockwise, both of these plans have the same order, except the cellar in Narbel as the additional space (see Figure 6.3 and Table 6.2). Spaces in both plans were designed around the L-shaped corridors which begin with the rectangular entrance-halls and ends with three bedrooms in the shorter arm of L. While in Narbel's plan, the living room, kitchen and cellar open to the entrance hall; in TOKI Buca, *only* kitchen is connected to the entrance hall—the living room opens to the corridor. In this respect, the latter case differs from the plans of the other five cases, as well. Both of low-income plans, on the other hand, have only one balcony: in Narbel, it is connected to both living room and kitchen; while in TOKI Buca, it only opens to the kitchen. Again in both plans, there are secondary wet cores: like in Mimkent 1, they locate closer to the entrance hall, and thus, they are followed by the bathrooms, and available for more common use.

As it is seen in Figure 6.3 and Table 6.2, parallelism between the circular readings of the spatial alignments demonstrates the *uniformity* in the plans of all cases. This uniformity can also be demonstrated by the linear readings, through longitudinal and latitudinal axes dividing the plans into sub-groups of spaces. Thus, according to these divisions, it can be seen that most of the spaces are *fixed* in these sub-groups because of their frequency of being at the *same location* regarding the uniformed plan-template. These linear readings are given in Figure 6.4, and Table 6.3. According to Table 6.3, the spaces underlined in italic demonstrate the ones having *unusual* locations



Figure 6.4. Linear readings of the spatial alignments of 3+1 units in six cases: **a.** Albayrak Mavişehir Housing: Above: latitudinal division, Below: longitudinal division; **b.** Soyak Mavişehir Housing: Above: latitudinal division of B-type, Below: longitudinal division of B-type; **c.** Soyak Mavişehir Housing: Above: latitudinal division of C-type, Below: longitudinal division of C-type; **d.** Mimkent 1 Mass-Housing: Above: latitudinal division, Below: longitudinal division; **e.** Ege-Koop Körfez Houses: Above: latitudinal division of B-type, Below: longitudinal division of B-type; **f.** Ege-Koop Körfez Houses: Above: latitudinal division of C-type, Below: longitudinal division of C-type; **g.** Narbel Mass-Housing: Above: latitudinal division, Below: longitudinal division; **h.** TOKI Buca Mass-Housing: Above: latitudinal division, Below: longitudinal division (Sources: Analyses were prepared by İpek Ek regarding the plan drawings taken from the following sources: **a.** Tamer Başbuğ's archive; **b., c.** Soyak 2009; **d.** Archive of Karabağlar Municipality; **e., f.** Ege-Koop's archive; **g.** Demirer Group's archive; **h.** TOKI's archive)

Table 6.3. Comparison of the spatial alignments (in linear readings) according to latitudinal and longitudinal divisions (spaces underlined in italic demonstrate the *unusual* locations with regard to the ones in the uniformed template; and the spaces in bold italic indicate the ones not repeating among these six cases, but repeating in TİBAŞ plans)

		Latitudinal division			Longitudinal division		
		Left hand-side	Middle	Right hand-side	Upper side	Lower side	
High Income Group	Albayrak Mavişehir Housing	Three bedrooms Balcony Parents' bathroom	Living room Bathroom Entrance hall	Balcony Kitchen Laundry room	Balcony Two bedrooms Living room Balcony + Kitchen	One bedroom Parents' bathroom + Bathroom Entrance hall Laundry room	
	Soyak Mavişehir Housing	B type	Three bedrooms	Balcony Living room Bathroom + Parents' bathroom Entrance hall	Balcony Kitchen	Two bedrooms Living room Balconies + Kitchen	One bedroom Parents' bathroom + Bathroom Entrance hall
		C type	Three bedrooms Parents' bathroom	Balcony Living room Bathroom Entrance hall	Balcony Kitchen	Three bedrooms Living room Balconies + Kitchen	Parents' bathroom + Bathroom Entrance hall
Middle Income Group	Mimkent 1 Mass-Housing	Balcony Two bedrooms Bathroom	<i>One bedroom</i> WC	<i>Living room</i> Entrance hall Kitchen Balcony	Balcony Two bedrooms Living room	One bedroom Bathroom + WC Entrance hall Kitchen + Balcony	
	Ege-Koop Körfez Houses	B type	Three bedrooms Balcony	Living room Bathroom + Parents' bathroom	Kitchen Entrance hall Cellar	Two bedrooms Living room Balcony Kitchen Entrance hall	One bedroom Bathroom + Parents' bathroom Cellar
		C type	<u>Cellar</u> Two bedrooms/rooms <u>Entrance hall</u> <u>Kitchen</u>	Two balconies Bathroom + Parents' bathroom Living room	<u>One bedroom/room</u>	Entrance hall Cellar Two bedrooms Balcony Bathroom + Parents' bathroom	One bedroom Kitchen <u>Living room</u> Balcony
Low Income Group	Narbel Mass-Housing	Three bedrooms Bathroom	Living room WC <u>Cellar</u> Entrance hall	Balcony Kitchen	Two bedrooms Living room Balcony	One bedroom Bathroom + WC Cellar Entrance hall Kitchen	
	TOKI Buca Mass-Housing	Three bedrooms	Living room Bathroom WC	Balcony Kitchen Entrance hall	Two bedrooms Living room Balcony + Kitchen Entrance hall	One bedroom Bathroom WC	

regarding the uniformed template—here, the spaces in bold italic, similarly, indicate the ones *not* repeating among these six cases, but repeating in TİBAŞ plans, which is also considered because it is one of the cases of the pilot study conducted in this research (see Tables 5.5 and 5.6 in Chapter 5).

For all cases' spatial alignments, another examination and comparison can be realized in terms of the space groups connected to the entrance hall, corridor, balconies, and WCs. This kind of examination may become clearer, if it is tabulated as in Table 6.4. In this comparison, the entrance hall is undertaken as a space composed of two spaces (main- and sub-entrance spaces) because of the case of Ege-Koop's C-type. Similarly, corridors are also examined regarding two sub-spaces deriving from the arms of L shape—in I-shaped ones, this kind of categorization is not applied. Besides, balconies are considered with the secondary and tertiary ones, if there are. Within a similar logic, wet cores are categorized regarding the presence of the sorts like bathroom, common secondary WC, and parents' bathroom, and their connection points. The conclusion for this analysis is that, as also indicated in Table 6.4, there are only two sorts of differences or two *unusual* implementations differing from the uniformed template: two rooms/bedrooms opening to the entrance hall in C-type plan of Ege-Koop, and the living room opening to the corridor in TOKI Buca. Rest of the spatial connections is mainly the same in all cases as well as in the uniformed template.

Another comparison for each case can be made between the area-sizes of each space and their unit prices (Table 6.5). According to this table, the projects are ranged regarding the total area-sizes of the units with their price ranges in ascending manner from top to bottom. In Table 6.5, in this respect, we can see that there is not any column which follows the order ascending gradually from top to bottom (from the lightest to the darkest) in terms of the sizes. However, the most regular ascent is observed in the columns of bedroom-1 (parents' bedroom), bedroom-3, living room, and kitchen. Rest of the sizes follows irregular orders. On the other hand, it is also clear that darker cells are majorly collected in the row reserved for Albayrak project, while lighter ones are generally collected in the row of TOKI Buca project, which also corresponds to the comparison between their total sizes of the unit-areas and price ranges.

The spatial comparison for the units can be extended further; however, the conclusion may be more comprehensive, if they are examined with the design characteristics of the facades. Therefore, Figure 6.5 is reserved for facades' comparison of the selected cases. As it can be seen in this figure, it can be clearly observed that the

Table 6.4. Comparison of the connection points of spaces (spaces underlined in italic demonstrate the *unusual* connections with regard to the ones in the uniformed template)

		Entrance hall		Corridor		Balconies			Wet cores			
		Main	Sub	Long arm	Short arm	Primary	Secondary	Tertiary	Bathroom	WC	Parents' bathroom	
High Income Group	Albayrak Mavişehir Housing	Living room Kitchen Laundry room		Bathroom	Three bedrooms	Living room Kitchen	Parents' bedroom	-	Corridor	-	Parents' bedroom	
	Soyak Mavişehir Housing	B type	Living room Kitchen		Bathroom	Three bedrooms	Living room	Kitchen	-	Corridor	-	Parents' bedroom
		C type						Parents' bedroom				
Middle Income Group	Mimkent 1 Mass-Housing	Living room Kitchen		WC Bathroom Three bedrooms		Living room Kitchen	Parents' bedroom	-	Corridor	Corridor	-	
	Ege-Koop Körfez Houses	B type	Living room Kitchen Cellar		Bathroom Three bedrooms		Living room Kitchen	-	-	Corridor	-	Parents' bedroom
		C type	Living room Kitchen <u>Room</u>	<u>Room</u> Cellar	Bathroom One bedroom		Living room Kitchen	Room	-	Corridor	-	Parents' bedroom
Low Income Group	Narbel Mass-Housing	Living room Kitchen Cellar		WC	Three bedrooms Bathroom	Living room Kitchen	-	-	Corridor	Corridor	-	
	TOKI Buca Mass-Housing	Kitchen		WC Bathroom <u>Living room</u>	Three bedrooms	Kitchen	-	-	Corridor	Corridor	-	

Table 6.5. Comparison of the area-sizes (in square meter) of each space and unit with the price ranges of the units of six cases (projects are ranged regarding the total area-sizes of the units in ascending manner from top to bottom; in order to demonstrate the gradation of the sizes, achromatic scheme was applied according to the logic of that the darker the cell, the bigger the area-size; and in a similar manner, monochrome of blue was applied with regard to the change in the price-ranges of the units: the darker the blue, the higher the price)

		Entrance hall	Corridor	Additional space (cellar / laundry room)	WC	Bathroom	Parents' bathroom	Bedroom-1 (parents' bedroom)	Bedroom-2	Bedroom-3	Living room	Kitchen	Balcony opening to the living room and/or kitchen (total)	Balcony opening to the bedroom	Total area	Price range of a square meter (TL)	
Low Income Group	TOKI Buca Mass-Housing	5.82	8.09	-	2.76	5.00	-	11.74	10.75	8.16	22.46	9.10	3.90	-	87.72	700-1200	
	Narbel Mass-Housing	4.80	7.42	2.09	1.40	5.51	-	12.00	11.25	8.73	22.23	9.76	4.20	-	89.39	700-1100	
Middle Income Group	Mimkent 1 Mass-Housing	4.08	6.98	-	1.38	5.13	-	10.97	10.26	9.45	26.63	8.70	8.00	3.00	94.58	1000-1600	
	Ege-Koop Körfez Houses	B type	3.80	6.79	3.38	-	5.00	3.59	13.89	13.53	10.03	27.70	12.00	12.06	-	111.77	1000-1300
		C type	7.00	3.38	3.00	-	4.60	3.20	14.02	13.68	11.11	29.70	12.00	11.16	2.30	115.15	
High Income Group	Soyak Mavişehir Housing	C type	4.97	9.31	-	-	4.84	2.67	14.30	10.32	9.74	25.25	12.44	6.79	0.52	134.90	2000-2300
		B type	5.69	12.39	-	-	5.58	3.98	14.96	11.14	9.55	30.38	15.04	9.08	-	153.79	
	Albayrak Mavişehir Housing	10.05	9.41	3.26	-	6.00	4.00	19.00	18.43	13.31	42.81	15.26	7.68	4.86	154.07	1140-2700	



Figure 6.5. Comparison of the facades of six cases (most of the images are cropped to focus on the façade designs): **a., b., c.** Albayrak Mavişehir Housing; **d., e., f.** Soyak Mavişehir Housing; **g., h., i.** Mimkent 1 Mass-Housing; **j., k., l.** Ege-Koop Körfez Houses; **m., n., o.** Narbel Mass-Housing; **p., r., s.** TOKI Buca Mass-Housing (Sources: **a.** Ege Mimarlık 2008 [photograph by Erdem Yıldırım]; **b, c.** Tamer Başbuğ's archive [photographs by Erdem Yıldırım]; **d., e., f., g., h., i.** Photographs by İpek Ek; **j., k., l.** Ege-Koop 2010; **m.** Demirer Group's archive; **n., o.** WowTurkey 2006 [photographs by Orkun Kara]; **p., r., s.** TOKI İzmir Buca 2012 [photographs respectively by Tolga Avcı, Hüsnü Çiftçioğlu, Osman Altay])

most different façade-design belongs to Albayrak project. Rest of the designs resembles to each other; however, the similarity is clearer between Soyak and Ege-Koop with their brownish colors. In this respect, also considering Table 6.5, we cannot directly correlate the façade design with the price ranges because of the similarity between these two projects. Similarly, Mimkent-1, Narbel, and Buca TOKI correspond to another group by means of the common features in façade-designs like the light coloring and simplistic fragmentation in the masses. Regarding all of these analyses, consequently, we may claim that there is uniformity in façade designs of the selected cases, as well. On the other side, as mentioned in Chapter 5, all of the users in six cases *like* the appearance of their blocks. Nonetheless, Albayrak's distinguishing façade-design is presented as a significant feature in its marketing, as also stated by its architect (Başbuğ 2010).

On the other hand, in the sense of marketing and prices, if we examine Table 6.5 with Table 6.1, we may make further inferences about the reasons of user-preferences and different price ranges. In Table 6.1, cells with grey correspond to services and facilities which are *not* provided inside the settlement or in close location to the settlement. Thus, it can be observed that these cells are mostly accumulated in the rows of middle- and low-income cases, while high-income ones (gated communities) have or are near to all listed services and facilities, as already mentioned. This may be the reason of that the users of Albayrak and Soyak projects pay *much* for their units, although they live in the same plans with the users of the other cases in terms of the spatial alignments. Therefore, we may reach the conclusion of that the settlement and neighborhood characteristics are much more effective in *increasing* the price than the spatial alignments and planimetric or façade designs of the units.

User expectations and preferences especially about the settlement and housing services, therefore, determine the price ranges, as the above comparison demonstrated. Thus, finally, it is inferred from these examinations that user-expectations may *not* generally be related with the spatial alignments, and façade designs, but with the settlement characteristics. Surely, these outcomes should be supported by the statements of the users themselves, that is, by the survey results. Therefore, the following section is reserved for the comparison of the survey results of each case.

6.2. Comparison and Evaluation of the Survey Results

In a similar structure with the sections in Chapter 5, comparison of the survey results of each case is undertaken regarding the order of the question-groups in the questionnaire respectively (conventional Kano questions, Kano-support questions, and contextual questions)—table comparing the results of the general information questions, that is, the inhabitant profiles, is given in Appendix F. Therefore, Table 6.6 is reserved for the comparison of the *conventional Kano questions* in terms of the categorical scores of each question-pair for each project. Furthermore, scores of the *total calculation/evaluation* covering the sum of the results of each survey in *six projects* are also added to the bottom of this table (answer frequencies of this total calculation is given in Appendix G). When we compare this row at the bottom of Table 6.6, it can be seen that the most frequent score-type (category) in the columns of 18 characteristics—which are matched with grey—almost completely corresponds to the scores of the total calculation (also see Appendix G). Only in the 11th characteristic, frequency of I(+) scores is equal to the frequency of I(0) scores. However, because the total calculation gives us the score of I(0) for the 11th characteristic, this score-type is demonstrated as the summation of six cases.

Regarding an *inter-comparison* between all cases via Table 6.6, it is interesting that Albayrak's scores precisely correspond to the scores of the total calculation. TOKI Buca project follows it with the parallelism rate of 94.4%. In this respect, the parallelism rates of six cases with the scores of the total calculation are given in Table 6.7. It is also significant that the cases having the highest parallelism rate with the total calculation refer the cases of high and low incomes—Albayrak has the highest selling price, and TOKI Buca has the lowest one (see Table 6.5). Highness in the parallelism rates can be interpreted as a *consensus* with the general opinion, while the lowness refers different judgments. In this sense, another important result is that Ege-Koop Körfez Houses has the lowest rate with 55.5%, which also has the most different spatial-alignment (C-type plan) with regard to the uniformed one. The survey conducted in C-type of Ege-Koop is in very minor scale; nevertheless, this lowness in the rate may be correlated with differing points in this plan or different expectations of the users.

We can also make a detailed reading in Table 6.6 for an inference about the common preferences of inhabitants in six cases. Firstly, it should be noted that the

Table 6.6. Comparison of the scores of the conventional Kano questions (cells with grey demonstrate the *parallelism* regarding the scores of each project as well as the scores of the total calculation covering six cases)

Questioned characteristic A house with ...		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
		a <i>corridor</i>	a <i>living room</i> connected to the <i>entrance hall</i>	a <i>kitchen</i> connected to the <i>entrance hall</i>	<i>bedrooms</i> connected to the <i>corridor</i>	a <i>bathroom</i> and <i>WC</i> next to the <i>bedrooms</i>	<i>bedrooms</i> placed next to each other	a separate <i>living room</i> apart from the <i>guest room</i>	<i>bedrooms</i> placed in a <i>distance</i> with the <i>living room</i>	a <i>living room</i> and <i>kitchen</i> placed next to each other	an <i>open kitchen</i>	two wet cores (<i>bathroom</i> and <i>WC</i>)	a <i>separate bathroom</i> in parents' <i>bedroom</i>	a <i>balcony</i>	a <i>balcony</i> connected to the <i>living room</i>	a <i>balcony</i> connected to the <i>kitchen</i>	a <i>balcony</i> connected to <i>parents' bedroom</i>	a <i>balcony</i> connected to <i>kid's room</i>	an additional space like a <i>cellar</i> , <i>storage</i> , or <i>laundry</i>	
High Income Group	Albayrak Mavişehir Housing	A	I(-)	I(-)	I(+)	I(+)	I(-)	I(+)	I(+)	I(+)	I(+)	I(0)	I(0)	O	O	I(0)	I(0)	I(0)	I(0)	
	Soyak Mavişehir Housing	B type	O	I(-)	I(-)	I(+)	I(+)	I(-)	I(+)	A	I(+)	I(+)	I(+)	I(0)	O	O	O	I(0)	I(0)	I(+)
		C type																		
Middle Income Group	Mimkent 1 Mass-Housing	I(0)	I(-)	I(-)	I(+)	I(+)	I(-)	I(+)	I(+)	I(+)	I(+)	I(+)	I(0)	O	I(+)	I(0)	I(0)	I(0)	I(0)	
	Ege-Koop Körfez Houses	B type	I(+)	I(-)	I(-)	I(+)	A	I(-)	I(+)	I(+)	I(+)	A	I(+)	A	O	O	O	I(+)	I(0)	I(+)
		C type																		
Low Income Group	Narbel Mass-Housing	A	R/A	I(-)	I(+)	I(+)	I(-)	I(+)	I(+)	I(+)	I(+)	I(0)	I(0)	A	A	I(0)	I(0)	I(-)	I(0)	
	TOKI Buca Mass-Housing	A	I(-)	I(-)	I(+)	I(+)	I(-)	I(+)	I(+)	I(+)	I(+)	I(0)	I(0)	O	O	I(0)	I(0)	I(-)	I(0)	
Total of six cases		A	I(-)	I(-)	I(+)	I(+)	I(-)	I(+)	I(+)	I(+)	I(+)	I(0)	I(0)	O	O	I(0)	I(0)	I(0)	I(0)	

Table 6.7. Parallelism rates of the Kano scores of six cases with the ones coming from the total calculation

Albayrak Mavişehir	Soyak Mavişehir	Mimkent 1	Ege-Koop Körfez	Narbel	TOKI Buca
100%	72.2%	83.3%	55.5%	77.7%	94.4%

absence of *Must-be* category is also a significant result; because it points out that there is *nothing* of which *absence* causes a high dissatisfaction *among* the questioned characteristics, for the inhabitants of six cases. On the other hand, regarding the data in the row of “total six cases,” living in a house with a corridor (the first characteristic) is in *Attractive* category; therefore, we may conclude that the inhabitants do *not* have a special expectation about living in a plan with a corridor. Besides, a house with a balcony, and a living room with a balcony (the 13th and 14th characteristics) are in the category of *One-dimensional*; that is, these characteristics are among the *indispensable* ones for the inhabitants. Within a similar but minor influence, bedrooms connected to the corridor, a bathroom and WC next to the bedrooms, a separate living room apart from the guest room, bedrooms placed in a distance with the living room, a living room and kitchen placed next to each other, and an open kitchen (the fourth, fifth, seventh, eighth, ninth and 10th characteristics) are the characteristics under *Indifferent(+)* category. Therefore, we can claim that the presence of these characteristics is *preferred* by the inhabitants as the previous ones. Nevertheless, a living room connected to the entrance hall, a kitchen connected to the entrance hall, and bedrooms placed next to each other (the second, third and sixth characteristics) are *not preferred* by the inhabitants, hence, they are *Indifferent(-)*. Moreover, the presence or absence of two wet cores (bathroom and WC), a separate bathroom in parents’ bedroom, a balcony connected to the kitchen, balconies connected to parents’ bedroom and kid’s room, and an additional space like a cellar, storage, or laundry (the 11th, 12th, 15th, 16th, 17th and 18th characteristics) are *not important* for the users since they go to *Indifferent(0)* category. These negatively/dys-functionally perceived or not-perceived characteristics are important; for they may be transformed into the positive ones by the architects in the future designs of mass-housing projects. However, if an architect tries to consider all of these preferences, it may be difficult to cover and apply all of the expectations of the users on the same plan. Therefore, some flexible and transformable design elements may need to be regarded for such solutions meeting all expectations.

Furthermore, we may also follow a vertical reading in Table 6.6 by considering the questioned characteristics, and may interpret differing scores in this reading. In this respect, “a house with a corridor” (the first characteristic) is among the essential characteristics for Soyak inhabitants with the category of *One-dimensional*, while Albayrak inhabitants found it *Attractive*. Similar to Albayrak inhabitants, Narbel and TOKI Buca inhabitants—as low incomes—also think that the corridor is *Attractive*, that is, its absence does not cause a difference in their lives. This coincidence between low and high incomes is significant; it may demonstrate that inhabitants’ expectations are *uniformed* without regarding income groups. On the other hand, while Mimkent 1 inhabitants placed “having a corridor” under the category of *Indifferent(0)*, Ege-Koop inhabitants found it *Indifferent(+)*: namely, while the inhabitants in Mimkent 1 are not affected from its absence or presence, ones in Ege-Koop preferred its presence. This kind of different aspects in the same income-group also indicates that expectations do not differ according to income groups, in the selected cases.

Similarly, the *presence* of “a living room connected to the entrance hall” (the second characteristic) is *not* preferred by almost all of the inhabitants with *Indifferent(-)* category, except Narbel’s. Here, actually Narbel inhabitants claim a similar but marginal situation in comparison to the others; thus, their answers went to *Reverse* in this question-pair. When we reverse it, we get *Attractive*; that is, Narbel inhabitants, like the others, do not prefer the *presence* of this characteristic, and do not perceive its *absence* even. They like the alternative design-solution, “a living room connected to the corridor.” And we find this kind of solution in the current plan of TOKI Buca project of which inhabitants’ answers also went to I(-) category, which means that they are pleased to live in their current design.

The other different score appears in the characteristic of “a bathroom and WC next to the bedrooms” (the fifth characteristic). While the majority of inhabitants agree on that its presence is preferable with the score of *Indifferent(+)*, Ege-Koop inhabitants found it *Attractive*. Namely, its absence does not affect Ege-Koop inhabitants, while it affects the others in negative way. However, by these results, we can easily state that all of the inhabitants are pleased with its presence. A similar situation is also relevant for the characteristics of “the bedrooms placed in a distance with the living room” (the eight characteristic), and “an open kitchen” (the 10th characteristic). For the former characteristic, Soyak inhabitants’ answers went to *Attractive*, while the others’ went to *Indifferent(+)*. And for the latter characteristic, again Ege-Koop inhabitants’ answers

went to *Attractive*, while the others' went to *Indifferent(+)*. Since all of the inhabitants are in the positive sides of the questioning about these three characteristics—they prefer their presence—we may claim that there is a *consensus* about these characteristics.

The questioning about “two wet cores (bathroom and WC)” (the 11th characteristic) does not lead a contrast by means of the answers, either. The inhabitants of Soyak, Mimkent 1, and Ege-Koop think that this characteristic should be present in their homes by going *Indifferent(+)* score, and they stated that they also become disturbed, if it is absent. However, rest of the inhabitants do not find its absence or presence important, and their answers went to *Indifferent(0)*. A similar case is also relevant for the characteristic of “a separate bathroom in parents' bedroom” (the 12th characteristic); thus, except Ege-Koop's, all of the inhabitants found its absence or presence unimportant by the category of *Indifferent(0)*. Ege-Koop inhabitants, on the other hand, also think that its absence is unimportant, but its presence is important by going to *Attractive* category. Regarding the majority of *Indifferent(0)* scores, it should also be noted that all of the cases have secondary wet cores; thus, we may claim that one of these wet cores can be ignored in the spatial programs of the future designs of mass-housing projects.

Having “a balcony” (the 13th characteristic) is majorly found *One-dimensional*; namely, its presence is very essential for the inhabitants, and its absence is problematic. However, Narbel inhabitants think that its absence is not important, but presence gives pleasure. In parallel respect, the characteristic of “a balcony connected to the living room” (the 14th characteristic) was also found *Attractive* by Narbel inhabitants, while the others generally think that it is *One-dimensional*—Mimkent 1 inhabitants' answers went to *Indifferent(+)*, which almost corresponds to the same expectation-type (with a less emphasis) with the ones going to *One-dimensional*. On the other hand, in questioning of the characteristic of “a balcony connected to the kitchen” (the 15th characteristic), *One-dimensional* scores (with Soyak and Ege-Koop inhabitants) decrease, while *Indifferent(0)* scores (with the rest of the inhabitants) increase. Similarly, in questioning of the characteristic of “a balcony connected to parents' bedroom” (the 16th characteristic), we see that there is not any *One-dimensional* score, but only one *Indifferent(+)* score—the rest of them turns into *Indifferent(0)* category. Within the same logic, the majority of inhabitants found *unimportant* having “a balcony connected to kid's room” (the 17th characteristic) with the score of *Indifferent(0)*, while only two scores (Narbel and TOKI Buca inhabitants) went to *Indifferent(-)* category,

which indicates that its *absence* is preferred. This situation about the questionings of the balcony and its place in the plan points out that the inhabitants are *pleased* to have a balcony, but its *place* is important for them, and generally they would like to have balconies connected to the living rooms and kitchens respectively.

Furthermore, it is also significant that the presence or absence of the characteristic of “an additional space like a cellar, storage, or laundry” (the 18th characteristic) is not perceived by the majority of inhabitants with the score of *Indifferent(0)*. Only Soyak and Ege-Koop inhabitants preferred the presence of this kind of spaces, while they are not pleased with their absence with the score of *Indifferent(+)*. Opposite to the general opinion about the comfort provided by the presence of these spaces, we see that the inhabitants do *not* regard them generally, although some of them already have one of these additional spaces. Therefore, again regarding the majority of *Indifferent(0)* scores, we may claim that the additional spaces can be omitted in the spatial programs of the future designs of mass-housing projects.

On the other hand, according to the *intra-comparison* regarding income groups in Table 6.6, again, it is seen in high-income cases that Soyak Mavişehir differs from Albayrak Mavişehir in *five* scores; therefore, the parallelism between these cases corresponds to 72.2%. Similarly, regarding middle-income cases, we see that there are *eight* different scores between the cases of Mimkent 1 and Ege-Koop Körfez Houses, which refers a low parallelism-rate with 55.5%. Finally, Narbel and TOKI Buca cases differ from each other in *three* respects with a high parallelism-rate of 83.3%. These rates refer the agreements between the users of each income-group. Therefore, highness in the rate of low incomes may be related with the *similarity* between the *expectations* of the inhabitants, which is also relevant for high incomes. However, here it should also be noted that all of these differing scores in each income group do *not* correspond to opposite ends in Kano categorization like the ones of positive/functional categories (A, O, M, I[+]) and negative/dysfunctional categories (I[-], R). On the contrary, these differing scores belong to *either* positive categories *or* negative ones; or the difference occurs between the neutral score I(0) and one of the positives. Hence, we can easily claim that *all* of the users actually have almost the *same* opinion (either positive or negative) with each other about the same questioned-characteristic. This latter sentence leads us that there is also *uniformity* by means of the expectations/preferences of the inhabitants of the selected cases, which can also be called *consensus*.

A further reading about the scores in Table 6.6 can be possible by comparing each of them with each other's spatial alignment, which leads us the determination of plan-characteristics to be maintained or changed. Moreover, the Kano scores of the total calculation can also be examined together with the uniformed spatial-alignment and design-rules. Results of this reading are demonstrated in Table 6.8. In this table, cells with grey demonstrate the actions which are demanded by the *majority* of inhabitants. By this way, characteristics that are to be maintained or changed can be listed as in Table 6.9. Moreover, the satisfaction rates from the uniformed design-characteristics can also be inferred from Table 6.8 regarding the characteristics to be maintained; hence, it corresponds to 61%, and increases to 75% if I(0) scores are ignored. These rates, again, demonstrate the *consensus* between those inhabitants about the uniformed template. At this point, it is also interesting that, the *consensus* is provided by all income-groups without any exception. Parallelism between the scores, and thus, the plans, is so *great* in this respect that making further comparison between the cases of the same income-groups becomes unnecessary.

In this context, we may claim that inhabitants' expectations in the selected cases are also uniformed, and the majority of them do *not* give much importance to the characteristics of their spatial alignments. This assertion can be observed by the Kano survey conducted in this study, because the scores of 15 questions out of 18 about the spatial organization of the units fall into the category of *Indifferent* (I) (see Table 6.6); that is, according to the conventional Kano reading, the inhabitants do *not* interested in the absence or presence of those 15 characteristics in their units. This constituted a problem for the current study in such that it could be overcome by suggesting a detailed reading based on the new sub-categories covering I(+), I(0), and I(-) in order to provide further explanations about the quality-perceptions of the users. Even after this new categorization, again, four of the scores go into I(0) category in total (see Table 6.6). Therefore, we may respectively claim that the inhabitants are not generally interested in their unit designs, or do not give importance to the spatial organization of their units, which also indicates that they are pleased to live in the uniformed design, and thus, do not imagine living in another organization manner. They cannot perceive a plan typology without corridors, and for instance, they do not remember the various manners of spatial organizations applied in the traditional Turkish houses, either. They do not need to remember them, actually.

Table 6.8. Examination of the Kano scores regarding 3+1 plan types of six projects and the uniformed design ('+' marks indicate the action that might be taken; 'K.R.', 'M.', and 'C.' are used as the abbreviations of 'Kano result', 'characteristics to be maintained', and 'characteristics to be changed' respectively; cells with grey demonstrate the parallelism between the actions)

Number of the questioned characteristic	High Income Group									Middle Income Group									Low Income Group						Uniformed design		
	Albayrak Mavişehir			Soyak Mavişehir						Mimkent 1			Ege-Koop Körfez						Narbel			TOKI Buca					
				B-type plan			C-type plan						B-type plan			C-type plan											
	K.R.	M.	C.	K.R.	M.	C.	K.R.	M.	C.	K.R.	M.	C.	K.R.	M.	C.	K.R.	M.	C.	K.R.	M.	C.	K.R.	M.	C.			
1	A	+		A	+		O	+		I(+)	+		I(+)	+		I(+)	+		A	+		A	+		A	+	
2	I(-)		+	I(-)		+	I(-)		+	I(-)		+	I(-)		+	I(+)	+		A		+	I(-)	+		I(-)		+
3	I(-)		+	I(-)		+	I(-)		+	I(-)		+	I(-)		+	I(-)		+	I(-)		+	I(-)		+	I(-)		+
4	I(+)	+		I(+)	+		O	+		I(+)	+		I(+)	+		I(+)		+	I(+)	+		I(+)	+		I(+)	+	
5	I(+)	+		I(+)	+		I(+)	+		I(+)	+		A	+		A	+		I(+)	+		I(+)	+		I(+)	+	
6	I(-)		+	I(-)		+	I(-)		+	I(-)		+	I(-)		+	I(-)	+		I(-)		+	I(-)		+	I(-)		+
7	I(+)		+	I(+)		+	I(+)		+	I(+)		+	I(+)		+	I(+)	+		I(+)		+	I(+)		+	I(+)	+	
8	I(+)	+		A	+		A	+		I(+)	+		I(+)	+		I(+)		+	I(+)	+		I(+)	+		I(+)	+	
9	I(+)	+		I(+)	+		A	+		I(+)	+		I(+)	+		I(+)	+		I(+)	+		I(+)	+		I(+)	+	
10	I(+)		+	I(+)		+	I(+)		+	I(+)		+	A		+	A		+	I(+)		+	I(+)		+	I(+)		+
11	I(0)		+	I(+)	+		I(0/-)		+	I(+)	+		I(+)	+		I(+)	+		I(0)		+	I(0)		+	I(0)		+
12	I(0)		+	I(0)		+	I(+)	+		I(0)	+		A	+		I(+)	+		I(0)	+		I(0)	+		I(0)	+	
13	O	+		O	+		O	+		O	+		O	+		O	+		A	+		O	+		O	+	
14	O	+		O	+		O	+		I(+)	+		O	+		O	+		A	+		O		+	O	+	
15	I(0)		+	A	+		O	+		I(0)		+	O	+		I(+)	+		I(0)		+	I(0)		+	I(0)		+
16	I(0)	+		I(0)	+		I(0)		+	I(0)		+	I(+)		+	I(+)		+	I(0)	+		I(0)	+		I(0)	+	
17	I(0)		+	I(-)	+		I(0)	+		I(0)	+		I(0)	+		I(0)		+	I(-)	+		I(-)	+		I(0)	+	
18	I(0)		+	I(+)		+	I(+)		+	I(0)	+		I(+)	+		I(+)	+		I(0)		+	I(0)	+		I(0)		+
Satisfaction rates with I(0) scores (%):		44	56		61	39		56	44		61	39		67	33		67	33		56	44		61	39		61	39
Satisfaction rates without I(0) scores (%):		58	42		63	37		60	40		62	38		65	35		71	29		62	38		62	38		75	25

Table 6.9. Characteristics that are to be maintained or changed in future designs of mass-housing projects regarding the demands of the majority of inhabitants (i.e. the results of the total calculation) (numbers in parentheses refer the numbers in Table 5.18, in Chapter 5)

To be maintained	To be changed
(1) Living in a house <i>with a corridor</i>	(2) Living in a house with a <i>living room</i> connected to the <i>entrance hall</i>
(4) Living in a house with <i>bedrooms</i> connected to the <i>corridor</i>	(3) Living in a house with a <i>kitchen</i> connected to the <i>entrance hall</i>
(5) Living in a house with a bathroom and WC <i>next</i> to the bedrooms	(6) Living in a house with bedrooms placed <i>next</i> to each other
(8) Living in a house with bedrooms placed <i>in a distance</i> with the living room	(7) Living in a house <i>with a separate living room</i> apart from the <i>guest room</i>
(9) Living in a house with a living room and kitchen placed <i>next</i> to each other	(10) Living in a house with an <i>open kitchen</i>
(12) Living in a house <i>with a separate bathroom</i> in parents' bedroom	(11) Living in a house with <i>two</i> wet cores (bathroom and WC)
(13) Living in a house <i>with a balcony</i>	(15) Living in a house with a <i>balcony</i> connected to the <i>kitchen</i>
(14) Living in a house with a <i>balcony</i> connected to the <i>living room</i>	(18) Living in a house <i>with an additional space</i> like a <i>cellar, storage, or laundry</i>
(16) Living in a house with a <i>balcony</i> connected to <i>parents' bedroom</i>	
(17) Living in a house with a <i>balcony</i> connected to <i>kid's room</i>	

Some further interpretations can be possible by specific examinations. Thus, for example, in terms of the satisfaction rates (without I[0] scores) in Table 6.8, we observe that the minimum rate belongs to Albayrak Mavişehir Housing with 58%, which indicates that the expectations of high-income inhabitants *cannot* be met easily, although the services provided by high-income settlements are more than the ones of middle and low incomes. On the other hand, the inhabitants of Ege-Koop Körfez Houses (middle incomes) have the highest rate of satisfaction with 71%—and for example, TOKI Buca inhabitants also have a higher satisfaction rate with 62% than Albayrak inhabitants. Therefore, although the services in Albayrak settlement are more diversified and have more quality in this respect than TOKI's or Ege-Koop's, the inhabitants of Albayrak are satisfied *less* than the others. This situation leads us the explanation that it is more difficult to satisfy a *customer with high expectations* about the product or service even with high quality, as also claimed in the user-based approaches of TQM.

On the other hand, it is interesting that, at the first glance, the design of Ege-Koop C-type units seems as referring the most different one in comparison to the uniformed template. This situation may also refer that the inhabitants living in the units designed in a different alignment are more satisfied with their units than the ones living in the uniformed plans—at this point, it should also be noted that the participation of the inhabitants of C-type units is in very minor scale. However, if we re-examine C-type units of Ege-Koop, it can also be determined that this plan type also has the same *core-order* with the uniformed one, as already stated (also see Chapter 5, p. 170). In spite of this determination, we may also claim that the differences in plan organization are perceived by the inhabitants; though they do not refer a great deviation from the uniformed template. Therefore, we should denote that the satisfaction rate from the uniformed design is not too low to be ignored: 75% (or 61%) satisfaction rate demonstrates us the *consensus* between the inhabitants.

Furthermore, if we check the reliability of the survey by examining the parallelism between the answers to the conventional Kano and Kano-support parts, we see that the parallelism rates are high, and thus, convincing for the reliability (Table 6.10). This parallelism also echoes in the answers to the contextual parts. If we examine the questions having the answers with “yes” or “no” by dividing them regarding these answers, Table 6.11 is obtained (related reasons of these answers can be followed in Chapter 5). On the other hand, it can also be denoted that none of the inhabitants criticized their housing in negative respect, and the majority of them stated that they like the spaciousness, restfulness, comfort, security, usefulness, quietness, stability, view, amount of daylight, and settlement properties in their housing designs. Similarly, these definitions were also utilized to explain the “reasons of buying that house” and “properties of the house that they would like to live in.” Thus, in a parallel way, in order to define their houses, all of the inhabitants used the positive adjectives like wide-spacious, beautiful, day-lighted, and cute. The parallelism in all of these answers to the contextual questions indicates that almost all of the inhabitants would like to live in a house which they have already lived in; and hence, their preference of that unit-design is not randomly, but with a *consensus*. In other words, the *uniformity* in architectural design of the selected mass-housing projects is deliberately formed by the *consensus* of inhabitants.

Table 6.10. Parallelism rates between the conventional and supporting Kano-questions in six cases

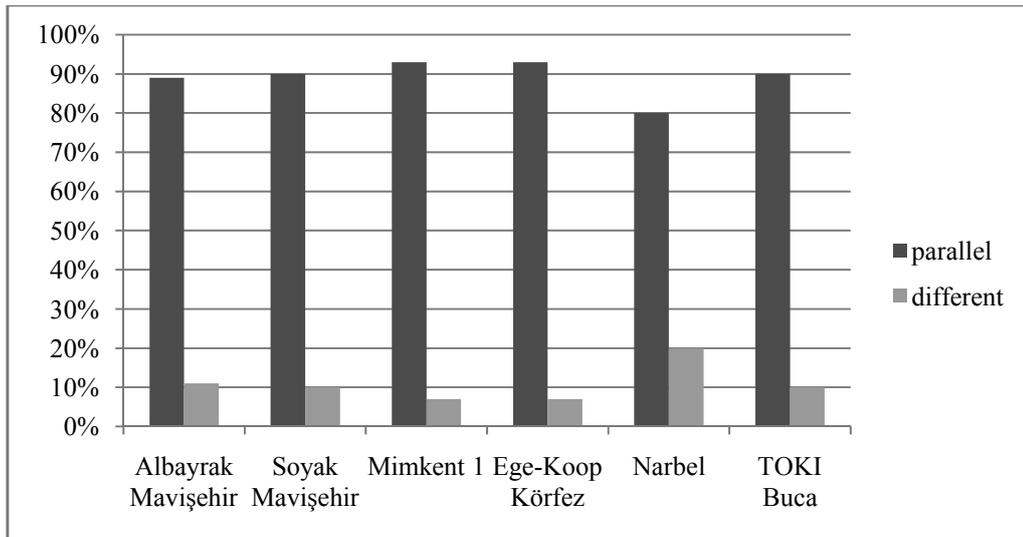


Table 6.11. Answer groups in the contextual parts regarding six cases (each of the ‘√’ mark corresponds to the result of a case; numbers in the column at the left hand-side refers the numbers of the questions in the survey)

Questions in contextual part		Answers	
		Yes	No
1	Are you pleased to live in your house?	√√√√√√	
4	Would you like to move, if it is possible?		√√√√√√
5	Is the area of your unit <i>sufficient</i> for your needs?	√√√√√√	
6	Are you <i>pleased</i> to have a corridor in this form and dimensions?	√√√√√√	
7	Is the design of your unit <i>proper</i> for your life styles?	√√√√√√	
8	Does living in your housing cost much?		√√√√√√
9	Is your house <i>useful</i> ?	√√√√√√	
11	Is having nice view important?	√√√√√√	
13	Do you <i>like</i> the appearance of your apartment/block?	√√√√√√	
14	Are you <i>pleased</i> to live in a multi-storey block?	√√√√√√	

Consensus between the inhabitants of the selected cases as one of the results of these comparative analyses corresponds to the *expectations* of the inhabitants, actually. And the *quality* is about meeting “the expectations of the customer” (Feigenbaum 1983, 7), that is, the inhabitant. In this respect, regarding the above examinations, we can state that the expectations of the inhabitants comprise a great consensus about the architectural design of the units, which, in turn, may create a uniformed design and

determine the quality of that design, as well. Hence, we can also conclude that the quality perception of those inhabitants is also uniformed in the sense of the mass-housing design. Consequently, under the light of this final assertion, the following section re-considers all of the mentioned conclusions that might be drawn from the comparative examinations in Chapter 6.

6.3. Concluding Remarks

Comparative evaluations about the architectural-design characteristics and survey results reveal significant remarks for the conclusion of the research. These remarks can be re-situated briefly as follows:

- 1) Examinations on the spatial alignments and façades of the cases selected among the current mass-housing projects demonstrate the *uniformity* in *architectural design*,
- 2) Survey results indicate the *uniformity* in the *expectations* of their inhabitants,
- 3) Inhabitants' expectations may indicate a *consensus* rather than a problem about the architectural design of the mass-housing,
- 4) The uniformity in architectural design of the mass-housing projects may also be *related with* the uniformity in inhabitants' expectations,
- 5) If the quality is "fitness for use" (Juran 1988, 2), and thus, about meeting "the expectations of the customer" or user (Feigenbaum 1983, 7), then, it can be asserted that the uniformity in both architectural design and inhabitants' expectations covers the very *quality* of the mass-housing,
- 6) Consequently, the *quality* of architectural design also indicates the *uniformity*.

In this framework, these remarks correspond to assertions of this thesis, as well. Therefore, we should return to the proofs of the above assertions in order to comprehend the connections between them. To remember the arguments and results discussed until this chapter, these proofs with further explanations covering six assertions are briefly given again below:

1) Spatial alignments and façades of the selected mass-housing projects demonstrate the *uniformity in architectural design*: as also put forward in Chapter 1

of this dissertation, there is a common manner for the design of the current mass-housing projects, which refers the uniformity in architectural design. This uniformity is observable in both spatial alignments of the units and façade designs of the blocks. The uniformity in spatial alignments can be followed by the examination of the cases undertaken in Chapters 3, 5 and 6. This examination provides us the following order:

1.) Entrance, [2.) Additional space,] 3.) Bathroom (and/or WC), 4.) Three bedrooms (with a parents' bathroom), 5.) Living room, 6.) Kitchen, [7.) Additional space].

Besides, for the uniformity in façade designs, one can examine Figure 6.5 with the related discussions (in Chapter 3, similar façade-examinations for some other cases are also available). In the light of these examinations, it can be questioned that if the spatial alignments and facades are uniformed in all cases, then, why do the prices of the units diversify? Or what are the characteristics that cost? Among many other things like the construction and material qualities, we may mention the *services* provided by the gated communities and *settlement characteristics*. Therefore, it may be asserted that the inhabitant-expectations are also formed by these factors and diversify according to these factors rather than the architectural-design characteristics like the alignments of the spaces and façade designs.

2) Survey results indicate the *uniformity in the expectations of inhabitants*:

to observe the truth of this assertion, we should mainly look at the Kano scores in Table 6.6. The intensity of parallelism between the scores in this table is very high and observable by the grey-colored cells. Besides, if we abbreviate these scores, we directly obtain the results given in the row of the “total of six cases” in the same table, and the same scores are also reached by the total calculation of the whole survey. This coincidence is also the proof of the high parallelism between the answers of the inhabitants. Furthermore, Table 6.7 giving the parallelism rates of the Kano scores of six cases with the ones coming from the total calculation demonstrates the similarity or sameness between the answers, as well. Hence, according to the parallelism in the majority of scores, we can easily claim that *all* of the users actually have almost the *same* opinion (either positive or negative) with each other about the same questioned-characteristic. Within the same logic, it can also be asserted that the expectations of the inhabitants of the selected cases are *uniformed* without regarding income groups. In other words, they do not change according to the divisions of income groups. By this

way, we may conclude that this intense *uniformity* in the expectations or preferences of the inhabitants points out the situation of *consensus*.

3) Inhabitants' expectations indicate a *consensus* rather than a problem about the architectural design of the mass-housing: as mentioned above, regarding the results of the Kano survey, there is a high parallelism between the answers in six cases, which indicates the uniformity in user expectations. And these expectations can be called consensus of opinion about the architectural-design characteristics of the mass-housing units. Therefore, as one of the main conclusions of the research, we can easily state in the light of the research findings that there is a consensus on that these mass-housing projects are proper for the life-styles of the inhabitants. In other words, architectural design of the mass-housing units meets the very expectations of the inhabitants. Hence, regarding the perspective of the inhabitant, there is *not* a quality problem in architectural design of the mass-housing units, but they are formed/uniformed by a great consensus.

4) The uniformity in architectural design of the mass-housing projects may be related with the uniformity in inhabitants' expectations: this kind of relationship may refer a dilemma like a chicken and egg situation. However, both of the ways of this dilemma are working, as it is clear in the high consistency between the uniformities of spatial alignments and user answers. That is, both uniformities in the architectural designs and survey results are very high. Although the Kano model questions the characteristics of the *ideal* product or the expectations from the *ideal* product—i.e. ideal housing-unit in our case—it is not possible for the inhabitants to answer these questions without considering their current unit-designs. Thus, because the answers include connotations not only for the ideal home, but also for the home they have already *lived* in, correspondence between the answers and the current unit-designs is expectable. Therefore, this correspondence paves the way of possibility for this fourth assertion; both of the uniformed architectural-design and inhabitant-expectations may influence and form each other.

5) The uniformity in both architectural design and inhabitants' expectations covers the very *quality* of the mass-housing: the parallelism between the spatial alignments and the scores of the Kano survey indicates that 1.) the inhabitants

have lived in the same plan types/housing designs; 2.) *they would like to live* in the same plan types/housing designs. Therefore, it might be difficult for the inhabitants to imagine the alternative ways of housing design. Their expectations may have been uniformed like their unit-designs. Thus, these expectations also determine the characteristics of the plan-type/housing-design they would like to live in. These characteristics, in turn, determine the architectural-design quality of those housing units inevitably. In other words, the inhabitants *demand* the characteristics of the uniformed design, and thus, the architects *supply* those characteristics generally without trying the alternative design solutions—because the uniformed design provides underwriting. This situation indicates the *demand and supply mechanism* or *cycle* in which the inhabitants seem to be pleased, at least, among the other actors.

6) The *quality* of architectural design also indicates the *uniformity*: after examining the above assertions about the uniformities in architectural design and inhabitants' answers, and knowing that quality is about the user expectations as well as the characteristics of the product (for the definitions of quality, see Chapter 4, pp. 82-89), we can state that the *quality* of these architectural designs also became *uniformed* because of the uniformed expectations and product-features. Uniformed design-characteristics of the current mass-housing projects create a *model* by morphing into the *customs* of the mass-housing design recognized generally and repeated constantly in due course. But, at this point, it is significant that the *uniformed quality* leads us the concept of the *standard* of which definition corresponds to “something established by authority, custom, or general consent as a model or example,” and “substantially uniform and well established by usage in the speech and writing of the educated and widely recognized as acceptable” in Encyclopedia Britannica (“Standard” 2012). On the other hand, as demonstrated by the examinations of this research, the concept of standard ensures the *ordinariness* in the cases of architectural design, and thus, recalls the concept of the *design of the ordinary*. However, because *designing activity* cannot be possible for an ordinary thing, we reach a paradox at this point, as also put forward by Bilgin (1994). Activity of mass-housing production begins to cover mainly the implementation or construction phases rather than the phase of design, because the model is always borrowed from the previous but recent examples. This situation causes to the questioning of the *profession* and the role of the architects in practical sense. Thus, if

there is a model or pattern or template for the design of mass-housing units, then, in theoretical sense, it is not necessary to be an architect to apply this model.

Consequently, we can state that because the quality of architectural design is uniformed by the *consensuses* of the inhabitants as well as of the other actors of implementation process (like the authorized persons of the central and local governments, entrepreneurs, architects, city planners, engineers, contractors, site managers, construction workers, etc.), it seems that this uniformity in mass-housing design does *not disturb*, and even is *not perceived* by the inhabitants. Hence, the uniformity is not a problem, but a preference. It indicates that there is a model for the design of the current mass-housing units, and this model is accepted and even inured by both inhabitants and architects. Chapter 7 discusses this situation observed in practical sense in the mass-housing under the light of theoretical perspectives in the literature.

CHAPTER 7

CONCLUSION

It is examined and demonstrated by the current study that there is uniformity in architectural-design characteristics of the selected mass-housing projects recently produced in Izmir; and it is found out that there is also uniformity in their inhabitants' perceptions about those characteristics, which indicates a consensus, actually (also see the concluding section in Chapter 6). Furthermore, as already discussed in Chapter 3, in the literature on mass-housing in Turkey, the uniformity in architectural-design of the mass-housing has been defined as a problem of quality. Reasons of this definition are based on that those studies generally missed inhabitants' point of view, or they mainly focused on discussing this quasi-problem by considering the transformations in social, political or economic regards, rather than measuring or evaluating it via inhabitants' perspectives. Quality measurements, on the other hand, have missed the design issue as an input of this measurement. Therefore, the current study compensates these missing points in the current literature by undertaking the architectural design issue via inhabitants' perspectives.

In this framework, the conclusion of the current study can be undertaken within two parts interrelated with each other. The first part focuses on the answers to the research questions set at the beginning of this study. The second part, on the other hand, discusses the main issues with further interpretations under the light of those answers. In this respect, at the first place, the following answers to the research questions can be drawn from the comparative evaluations about the architectural-design characteristics and survey results:

1. The uniformed design observed in the selected mass-housing units may point out the consensus of inhabitants. Under the light of the survey findings, this consensus comprises inhabitants' demands. Thus, the parallelism or similarity between the inhabitants' expectations can also be followed in the survey findings.
2. Consensus of the inhabitants may have a determinative role primarily in the supply mechanisms of housing sector. Hence, the uniformed design provides

underwriting, which may be the reason of that the construction firms apply the same spatial-organization without regarding income groups. In this context, while inhabitants' inconsideration of architectural design quality—as can be observed via the rate of *Indifferent* scores (15 out of 18) in the conventional Kano survey—causes to the maintenance of the uniformed spatial-organization with underwriting, their expectations about the characteristics of environment and location as well as the settlement services increase the variation in these implementations—as can be observed in the answers to the open-ended questions. And this variation, in turn, may determine the very quality of mass-housing in the current projects.

3. It may be suggested that the mass-housing quality generally corresponds to the characteristics of environment and location as well as the settlement services for the inhabitants of the selected cases. Thus, the importance of these characteristics and services can be followed by their frequency in the answers to the open-ended questions. However, it may be suggested that the quality of architectural design (in terms of the spatial organization characteristics, in the extent of the study) is not generally considered by those inhabitants. That 15 out of 18 questioned-characteristics correspond to *Indifferent* category in conventional reading of the Kano survey indicates this inconsideration about the plan design of the units. Moreover, if the parallelism between the spatial alignments is taken into consideration, it can be suggested that the inhabitant actually pays for the characteristics of environment and location, and settlement services, while buying the unit. Therefore, different prices of the units within the same plan type can also be explained by the difference observed in the qualities of settlements and services.
4. As can be followed in the housing literature of Turkey, the uniformity in the quality of architectural design is undertaken as a quality problem, because it causes to monotonous built-environment and inhibits the variety in spatial experience of the inhabitants. In spite of the irregular urbanization, monotony and deficiency in the quality of architectural design, it can be claimed in the light of the survey results that the uniformity in unit plans of the cases is not perceived as a problem by their inhabitants. The sameness as well as the inconsideration seen in the expectations of inhabitants becomes

observable conspicuously in the high frequency of *Indifferent* category. Besides, if that the uniformed spatial-organization has been experienced during the lifetime by the inhabitants is considered (therefore, they may not imagine the alternative ways for designing unit), inhabitants' preference about this organization, and thus, their inconsideration about it become plausible.

At the second place, that is, by means of the concluding discussions, three featured issues can be highlighted regarding the above answers. The first one is related with the *difference* between the assertions in the housing literature of Turkey and the current study. The second issue, on the other side, is about the *parallelism* between these assertions. The third and final one refers the necessity and importance of the *further studies*. In this framework, for the first issue, we may claim that the *difference* between the assertions in the literature and this thesis is observed in the *perception* of the uniformity. Thus, the uniformity in unit-design of the mass-housing projects has been perceived as a quality problem in the literature. Moreover, most of these studies agreed generally on that this problem mainly affects users' living standards and decreases their living quality (for some leading examples about this agreement, see Tekeli 2008, Sey 1994, Bilgin 2002a; for further discussions, see Chapter 3, pp. 72-77). Therefore, regarding the special emphasis on *living standards* or *living quality* of the society/users/inhabitants in the housing literature, it may be suggested that the researchers/authors also have parallel opinions merging in that inhabitants' lives are *negatively* influenced from the *low* quality of architectural-design of the mass-housing projects which, according to them, refers a general *problem* in the housing sector of Turkey.

However, as it is demonstrated by the survey results of this dissertation, 75% of the inhabitants of the selected cases are *pleased* to live in this uniformed design (see Table 6.8 in Chapter 6). In other words, most of the inhabitants agree on that the design of their units and settlements are proper for their life-styles. They do not mention any problem of quality of architectural design; even they may not perceive it. Therefore, it may be asserted that inhabitants' expectations and satisfaction indicate a general agreement, that is, a *consensus* based on the parallelism in their demands. In that case, assertions in the literature concerning that the inhabitants are negatively influenced from the design quality of mass-housing projects and that there is a problem of architectural-design quality in mass-housing projects need to be revised regarding the findings of this

study. Hence, spatial evaluations of inhabitants should be added to the quality-literature of housing in Turkey. However, at this point, it should also be kept in mind that the inhabitants are not the specialists of architectural design, though the architectural design of a housing-unit should be formed also by considering their expectations. In the current housing practices in Turkey, inhabitants do not have a voice in the design phase. Therefore, this study may also be considered within the framework demonstrating the importance of user-participation in the design phase or as a guide for the architects who considers the voice of the inhabitants to improve the quality.

Secondly, the current study has some *parallel* points with the assertions in the housing literature, as well. The parallelism occurs in the *reasons* of the uniformity. Thus, the uniformity in *architectural design* of the mass-housing as well as the uniformity in *users' expectations* and *quality itself*, as demonstrated by this thesis, can be related with the process of modernity, as also discussed in the related literature. Among those discussions, as already mentioned in Chapter 3, Giddens' (1992) tripartite classification of modern consequences provides us understanding about the changes in the current situation of the housing supply and quality. As asserted by Bilgin (1994), there comprised a lack of quality in design, since all of the qualitative references were reduced into the quantitative ones after modernity. By this way, the architect began to design ordinary buildings, and the role of the architect was redefined in this respect; he was limited with the design of the ordinary. The norms, standards, and typologies of housing projects were formed by the reflexes of different actors especially from the housing supply (Bilgin 1994, Tekeli 2008). Therefore, though the mentioned uniformities are formed by the demand and supply mechanism, it may be claimed that the supply-side of this mechanism has been more influential and determinative in the housing sector of Turkey.

Consequently, we may briefly state that while the survey results conflict with the literature in perceiving the uniformity as a problem, they go parallel with it in defining the main reasons of the uniformity. However, under the light of these difference and parallelism, necessity of some *further studies* appears. These possible studies can mainly comprise *the revision of the literature* in terms of the addition of inhabitants' perspectives and quality perceptions, and *the revision of the role of the architect* in terms of his/her charges in the profession and housing market. In the first place, revision of the literature is necessary in that the current problem(s) of housing sector should be re-defined by considering the *perceptions of the inhabitants*, and discussions of

architectural quality should be re-oriented by considering inhabitants' perspectives. Therefore, especially in terms of the quality discussions, studies focusing on inhabitants' spatial perspectives and evaluations should increase in number to orient the sector in a feasible way. Furthermore, because the current study only focused on the perspectives of inhabitants living in the uniformed plans, further studies should also be conducted on the perspectives of inhabitants *living in different spatial alignments*. And finally, there should be studies covering the *views of the other actors* like the authorized persons of the central and local governments, entrepreneurs, architects, city planners, engineers, contractors, site managers, and construction workers active in the production, construction or design processes. In this way, the uniformity issue and its effects on mass-housing quality can be re-interpreted by these *integrated-examinations* covering the views of all sorts of actors.

In the second place, by means of the studies focused on the examination of the role of the architect and his/her charges in the profession and housing market, there may occur two possible ways for future implementations: the first way corresponds to *re-definition* of the role of the architect as a person who does not design units (and use the uniformed plan-template, instead), but *environments* and *services* for the purpose of marketing. Thus, as already mentioned, architects have begun to design only the characteristics of settlements and services by attaching some popular concepts to them for underwriting rather than designing alternative spatial-organizations providing different living qualities for different inhabitants. They have used the uniformed plan-typologies instead. Activity of design itself is decontextualized in the implementation process, in this respect, and re-contextualized in the activity of marketing, which leads us to question the role of the architect as a designer of the units. This re-definition of architect's role also leads us to the *maintenance* of the current implementations of the uniformed design—by recognizing the results indicating that 75% of the inhabitants of the selected cases are *pleased* with this uniformed design (see Table 6.8 in Chapter 6).

The second way covers producing *alternative designs* for spatial organizations of mass-housing projects. These studies should consider the views of the inhabitants *dissatisfied* from the uniformed plan, for example, like the ones with the satisfaction rate of 25% in this study (see Table 6.8 in Chapter 6). They should also consider the views of the inhabitants living in the plans *differing* from the uniformed one. On the other side, it may also be difficult for an architect to consider all of the expectations and preferences of the inhabitants in the same design. Thus, some flexible and transformable

design elements may need to be regarded for such solutions meeting the majority of expectations. By this way, the role of the architect as a designer can be re-contextualized in the designing activity, as well, though his/her role in marketing is indelible. Concordantly, it is expected that the examinations, findings and results of the current study may also serve as a guide for those further studies and implementations of the mass-housing projects.

REFERENCES

A. Published Materials

Abbott, Lawrence. 1955. *Quality and Competition*. New York: Columbia University Press.

Abdul-Rahman, Hamzah. 1993. "Capturing the cost of quality failures in civil engineering." *International Journal of Quality and Reliability Management* 10 (3): 20-32.

Aoieong, R., S. L. Tang, and S. Ahmed. 2002. "A process approach in measuring quality costs of construction projects: model development." *Construction Management and Economics* 20: 179-92.

Altaş (Esin), Nur. 1994. "Kalite Kavramı Üzerine Bir İnceleme: Fiziksel Çevrede Kalite Parametreleri Modeli." *ITU Journal* 52 (3-4): 37-48.

Altaş (Esin), Nur, and Ahsen Özsoy. 1998. "Spatial Adaptability and Flexibility as Parameters of User Satisfaction for Quality Housing." *Building and Environment*. 33 (5): 315-23.

Ana Britannica, 15th ed., s.v. "Mass housing."

ANSI/ASQC. 1978. *Quality systems terminology*. Milwaukee: American Society for Quality Control.

Arkan, Seyfettin. 1935. "Amele Evleri, İlkokul, Mutfak ve Çamaşırılık Binası. Kozlu - Zonguldak" *Arkitekt* (9): 253-58.

Arkan, Seyfi. 1936. "Kömür-iş İşçi Uramı. Zonguldak - Kozlu" *Arkitekt* (1): 9-10.

Arû, Kemal Ahmet. 1956. "Levend 4. Mahallesi. Türkiye Emlak Kredi Bankası." *Arkitekt* (3): 140-53.

ASQ (*American Society for Quality*). 1997. *American Society for Quality - Handbook*. Milwaukee: ASQ Quality Press.

Baykara, Tuncer. 1974. *İzmir Şehri ve Tarihi*. Izmir: Ege University Publications.

- Bilgin, İhsan. 1992. *Konut Üretiminin Karşılaştırmalı Analizi*. İstanbul: Yıldız Technical University Publications.
- Bilgin, İhsan. 1994. “‘Sıradan’ Olanın Yeniden-Üretimi ve Konut Sorunu.” Paper presented at the Housing Panel, Ankara, Chamber of Architects, December 13.
- Bilgin, İhsan. 1996. “Housing and Settlement in Anatolia in the Process of Modernization.” In *Housing and Settlement in Anatolia a Historical Perspective*, edited by Yıldız Sey, 472-90. İstanbul: History Foundation Publications.
- Bilgin, İhsan. 1998. “Modernleşmenin ve Toplumsal Hareketliliğin Yörüngesinde Mimarlık.” In *75 Yılda Değişen Kent ve Mimarlık*, edited by Yıldız Sey, 255-72. İstanbul: History Foundation Publications..
- Bilgin, İhsan. 2000. “Türkiye’de Toplu Konut Üretimi ve Mimarlık.” Paper presented at *Konut Politikaları ve Uygulamaları Sempozyumu: Türkiye ve Fransa Örnekleri*, İstanbul French Institute and İstanbul Technical University, İstanbul, May 24-25.
- Broh, Robert A. 1982. *Managing Quality for Higher Profits*. New York: McGraw-Hill.
- CAMLIN (Community of the Ancient Monument Lovers of İzmir and Neighborhoods). 1934. *İzmir Rehberi*. İstanbul: Resimli Ay.
- Cengizkan, Ali. 2002. “Yabancılaşma Nesnesi Olarak Banyo: Modernizm, Tüketim Toplumu ve Banyo Kültürü.” In *Modernin Saati*, edited by Ali Cengizkan, 143-55. Ankara: Boyut.
- Chen, Ling Hsiu, and Hsiang Chih Lin. 2007. “Integrating Kano’s Model into E-learning Satisfaction.” In *Industrial Engineering and Engineering Management, IEEE International Conference*, 297-301.
- Chen, Jih-Kuang, and Yu-Cheng Lee. 2009. “A new method to identify the category of the quality attribute.” *Total Quality Management* 20 (10): 1139–52.
- Crosby, Philip Bayard. 1979. *Quality is free: the art of making quality certain*. New York: New American Library.
- Davis, Kent. 1987. *Measuring Design and Construction Quality Costs Construction Industry Institute*. University of Texas at Austin, TX.
- Deming, William Edwards. 1986, 1993. *Out of the crisis*. Cambridge, Mass.: MIT, Center for Advanced Engineering Study.

- Dorfman, Robert, and Peter O. Steiner. 1954. "Optimal Advertising and Optimal Quality." *American Economic Review* (December): 831.
- Dülgeroğlu Yüksel, Y., S. Aydın, G. Pulat, Z. Yılmaz, and M. Özgünler. 1996. *Toplu Konutlarda Nitelik Sorunu*. Vol. 1-2. Ankara: Republic of Turkey Prime Ministry Housing Development Administration.
- Edwards, Corwin D. 1968. "The Meaning of Quality." *Quality Progress* (October): 36-39.
- Ege-Koop. 2006. 22. *Genel Kurul Teknik Çalışmaları*. Izmir, February 25.
- Ege Mimarlık. 2008. "Albayrak Mavişehir Konutları." *Ege Mimarlık* 3 (66): 42-47.
- Feigenbaum, Armand Vallin. 1951. *Quality control: Principles, practice, and administration*. New York: McGraw-Hill.
- Feigenbaum, Armand Vallin. 1956. "Total quality control." *Harvard Business Review* 34 (6): 93-101.
- Feigenbaum, Armand Vallin. 1982. "Quality and business growth today." *Quality Progress* 15 (11): 22-25.
- Feigenbaum, Armand Vallin. 1983, 1991. *Total quality control*. New York: McGraw-Hill.
- Garvin, David. 1987. "Competing on the Eight Dimensions of Quality." *Harvard Business Review* 65 (6): 101-109.
- Giddens, Anthony. 1992. *The Consequences of Modernity*. Cambridge: Polity.
- Gilmore, Harold L. 1974. "Product Conformance Cost." *Quality Progress* 7 (5): 16-19.
- Göktaş, Mehmet Ali. 1974. *Türkiye'de Konut Sorunları ve Sosyal Konut Politikası*. Izmir: İstiklal.
- Görgülü, Tülin. 2003. "İstanbul'da Çeşitlenen Konut Üretim Biçimleri ve Değişen Konut Alışkanlıkları." *Değişen İhtiyaçlar Çerçevesinde Konut (Special Issue)*. *Mimar.İst* (7): 50.
- Grönroos, Christian. 1983. *Strategic management and marketing in the service sector*. Cambridge: Marketing Science Institute.

- Gültekin, Tanju. 2002. "Toplu Konutlarda Yapı Bileşenlerinin Kalite Değerlendirmesi." *Gazi Üniversitesi Mühendislik Mimarlık Fakültesi Dergisi* 17 (3): 137-52.
- Gür, Şengül Öymen. 2000. *Doğu Karadeniz Örneğinde Konut Kültürü*. Istanbul: The Building Information Center.
- Gürel, E. 1987. "Toplu Konutta Evka Model." In *Türkiye'de Toplu Konut Uygulamaları Seminer ve Sergisi*, February 23-24. Izmir: Izmir Metropolitan Municipality.
- Hasol, Doğan. "Mass housing." In *Encyclopedic Dictionary of Architecture*. Istanbul: The Building Information Center, 2008.
- Hotan, Harbi. 1952. "Harbi Hotan." *Arkitekt* 11-12: 228-31.
- Hsu, Yueh-Ling, Chao-Che Hsu, and Pei-Chi Bing. 2007. "Capturing passengers' voices: the application of Kano's model in the airline industry." Paper presented at the *International Conference on Logistics, Shipping and Port Management*, Kainan University, Taoyuan, Taiwan, March 29-30.
- Hutahaean, Hotma Antoni. 2009. "Application of Service Quality Improvement Method with Integration between SERVQUAL and Kano's Model approach." Paper presented at the *International Seminar on Industrial Engineering and Management*, 88-94. Bali, Inna Kuta Beach Hotel, December 10-11.
- İlter, Burcu, Özge Özgen, and Bilge Aykol. 2007. "Lise Öğrencilerinin Alışveriş Merkezi Gereksinimlerinin Kano Modeli ile Sınıflandırılması: İzmir İli Uygulaması." *İşletme Fakültesi Dergisi* 8 (2): 141-62.
- IMM (Izmir Metropolitan Municipality). 1988. *İzmir Büyükşehir Belediyesi Çalışma Raporu*. 1984-1985-1986-1987 Comparative. IMM Directorate of the Public Relations and Press. Izmir: IMM Publications.
- IMM (Izmir Metropolitan Municipality). 1997. *Izmir Büyükşehir Belediyesi Faaliyet Raporu, 1996*. Izmir.
- Ishikawa, Kaoru. 1985. *What is Total Quality Control? The Japanese Way*. Englewood Cliffs: Prentice Hall.
- ISO 9000. 2005. *Fundamentals and Vocabulary*. Milwaukee: ASQ Quality Press.
- HCBIRHC (Housing and Credit Bank Izmir Region Headquarters of Construction). 1987. Housing and Credit Bank of Turkey, Izmir Region Headquarters of Construction.

- Izmir Municipality. 1972. *İzmir Belediye Çalışmaları*. Izmir: Publication Directorate of the Municipality.
- Izmir Municipality. 1973. *İzmir Belediye Çalışmaları*. Izmir: Publication Directorate of the Municipality, Matisş Press.
- Izmir Municipality Works. 1976. Izmir: Publication Directorate of the Municipality.
- “İzmir’de Ucuz ve Sıhhiğ Otrular, 1383 liraya İşçi Evleri.” *Belediyeler Dergisi* 1 (6): 61.
- Jane, A. Corbella, and S. Maturana Dominguez. 2003. “Citizens’ role in health services: satisfaction behavior: Kano’s model,” part 2. *Quality Management in Health Care* 12 (1): 72-80.
- Juran, Joseph Moses. 1951, 1974, 1988. *Juran’s quality control handbook*. New York: McGraw-Hill.
- Juran, Joseph Moses, and Frank M. Gyrna. 1970. *Quality planning and analysis: from product development through use*. New York: McGraw-Hill.
- Kano, N., F. Seraku, F. Takahashi, and S. Tsuji. 1984. “Attractive Quality and Must-be Quality.” *Hinshitsu. The Journal of the Japanese Society for Quality Control* (April): 39-48.
- Kara, Mustafa, and Hamit Palabıyık. 2009. “1980 Sonrası Türkiye’de Konut Politikaları Toplu Konut İdaresi Başkanlığı Gecekondu Dönüşüm Uygulamaları.” In the proceedings of *International Davraz Congress on Social and Economic Issues Shaping the World’s Future: New Global Dialogue, Isparta, September 24-26*, 1541-58.
- Kazaz, Aynur. 2000. “Toplu Konut Projelerinde Toplam Kalite Yönetiminin Değerlendirilmesi.” Paper presented at *II. Yapı İşletmesi Kongresi*, Izmir, June 15-17.
- Kazaz, Aynur, and Talat Birgönül. 2005a. “Determination of Quality Level in Mass Housing Projects in Turkey.” *Journal of Construction Engineering and Management* (February): 195-202.
- Kazaz, Aynur, and Talat Birgönül. 2005b. “The evidence of poor quality in high rise and medium rise housing units: a case study of mass housing projects in Turkey.” *Building and Environment* 40: 1548-56.

- Kazaz, A., T. Birgönül, and S. Ulubeyli. 2005. "Cost-based analysis of quality in developing countries: a case study of building projects." *Building and Environment* 40: 1356-65.
- Keleş, Ruşen. 1967. *Kooperatifçilik İlkeleri ve Sosyal Konut Politikası Açısından Türkiye'de Konut Kooperatifleri*. Ankara: Ministry of Development and Housing.
- Keleş, Ruşen. "Mass housing." In *Glossary of Urbanology Terms*. Ankara: İmge Bookstore, 1998.
- Keleş, Ruşen, and Fehmi Yavuz. 1978. *Şehircilik Sorunlar-Uygulama ve Politika*. Ankara: Ankara University Faculty of Political Sciences Publications.
- Keuhn, Alfred A., and Ralph L. Day. 1954. "Strategy of Product Quality." *Harvard Business Review* (November-December): 831.
- Khang, Do Ba, and Yin Mon Myint. 1999. "Time, cost and quality trade-off in project management: a case study." *International Journal of Project Management* 17 (4): 249-56.
- Koç, Hülya. 1981. *İzmir'de Cumhuriyet Döneminde Toplu Konut Uygulamaları*. Unpublished Master diss., Ege University Fine Arts Faculty.
- Koç, Hülya. 2001. *Cumhuriyet Döneminde İzmir'de Sosyal Konut ve Toplu Konut Uygulamaları*. Izmir: Dokuz Eylül University Faculty of Architecture Publications.
- Kuo, Ying-Feng. 2004. Integrating Kano's model into web-community service quality. *Total Quality Management and Business Excellence* 15 (17): 925-39.
- Lai, X., M. Xie, and K.C. Tan. 2004. "Optimizing Product Design using the Kano Model and QFD." In 2004 *IEEE International Engineering Management Conference*, 1085-89. Singapore, IEEE EMS Singapore Chapter.
- Lee, Yu-Cheng, Shao-Bin Lin, and Ya-Li Wang. 2011. "A new Kano's evaluation sheet." *The TQM Journal* 23 (2): 179-95.
- Leifler, Keith B. 1982. "Ambiguous Changes in Product Quality." *American Economic Review* (December): 956.
- Levitt, Theodore. 1972. "Production-line approach to service." *Harvard Business Review* 50 (5): 41-52.

- Low, Sui Pheng, and Henson K. C. Yeo. 1998. "A construction quality costs quantifying system for the building industry." *International Journal of Quality and Reliability Management* 15 (3): 329-49.
- Matzler, Kurt, and Hans H. Hinterhuber. 1998. "How to make product development projects more successful by integrating Kano's model of customer satisfaction into quality function deployment." *Technovation* 18 (1): 25-38.
- Maynes, E. Scott. 1976. "The Concept and Measurement of Product Quality." In *Household Production and Consumption*, edited by Nestor E. Terleckyj, 529 – 84. New York: Columbia University Press.
- Mean-Shen, Liu. 2009. "A Refined and Integrated Kano Model and the Implementation of Quality Function Deployment – Research on the Library of a Vocational and Technical School in Southern Taiwan." *The International Journal of Organizational Innovation* 2 (1): 252-88.
- Oberlender, G.D. 1993. *Project Management for Engineering and Construction*. New York: McGraw-Hill.
- Özüerken, Şule A. 1996. "Cooperatives and Housing Production." In *Housing and Settlement in Anatolia a Historical Perspective*, edited by Yıldız Sey, 355-65. Istanbul: History Foundation Publications.
- Parasuraman, A., V. A. Zeithaml, and L. L. Berry. 1985. "A conceptual model of service quality and its implications for future research." *Journal of Marketing* 4 (4): 41-50.
- Peach, Robert, ed. 2003. *ISO 9000 Handbook*. 4th ed. New York: McGraw-Hill.
- Pekin, Salih Zeki. 1991. "İzmir Hatay Semtinde Teras Evler Uygulaması." *Ege Mimarlık* (1): 44-47.
- Pirsig, Robert M. 1974. *Zen and the art of motorcycle maintenance: An inquiry into values*. New York: Morrow.
- Porter, Leslie J., and Paul Rayner. 1992. "Quality costing for total quality management." *International Journal of Production Economics* (27): 69-81.
- Redhouse English-Turkish Dictionary*, 8th ed., s.v. "Quality."
- Reeves, Carol A., and David A. Bednar. 1994. "Defining Quality: Alternatives and Implications." *Academy of Management Review* 19 (3): 419-45.

- Rowe, Peter G. 1993. *Modernity and Housing*. Cambridge MIT Press.
- Sariođlu, Mekin, and Turgay G6nen7, eds. 1967. *İzmir İl Yıllığı*. Izmir: Ege University Publications.
- Sariođlu, Mekin, and Turgay G6nen7. 1969. *İzmir İl Yıllığı-1967*. Izmir: Ege University Publications.
- Sauerwein, Elmar. 1999. "Experiences with the reliability and Validity of the Kano-Method: Comparison to Alternate Forms of Classification of Product Requirements." In *The Eleventh Symposium of Quality Function Deployment*, 416-29. QFD Institute.
- Sauerwein, E., F. Bailom, K. Matzler, H. H. Hinterhuber. 1996. "The Kano Model: How to Delight your Customers." In *Preprints Volume I of the IX. International Working Seminar on Production Economics*, 313-27. Innsbruck/Igls/Austria, February 19-23.
- Say, Memduh. 1941. *İjyien Bakımından İzmir Şehri*. Izmir: Bilgi.
- Sayar, Yasemin, and Hikmet G6kmen. 2008. "Harbi Hotan'dan Beş Yapıt..." *Ege Mimarlık* 64: 18-25.
- Schvaneveldt, Shane J., Enkawa Takao, and Miyakawa Masami. 1991. "Consumer evaluation perspective of service quality: Evaluation factors and two-way model of quality." *Total Quality Management* 2 (3): 149-161.
- Sey, Yıldız. 1984. "To House the New Citizens: Housing Policies and Mass Housing." In *Modern Turkish Architecture*, edited by R. Holod and A. Evin, 159-83. Philadelphia: University of Pennsylvania Press.
- Sey, Yıldız. 1994. "Konutta Kalite ve Maliyet." In *Konutta Kalite*, edited by Teoman Aktüre. Ankara: Mesa.
- Sey, Yıldız, ed. 1999. *Housing and Settlement in Anatolia a Historical Perspective*. Istanbul: History Foundation Publications.
- Şenyapılı, Tansı. 1985. *Ankara Kentinde Gecekondu Gelişimi (1923-1960)*. Ankara: Kent-Koop Publications.
- Shewhart, Walter Andrew. 1931. *Economic control of quality of manufactured product*. Van Nostrand.

- Taguchi, Gen'ichi. 1986. *Introduction to Quality Engineering: Designing Quality into Products and Processes*. Asian Productivity Organization, UNIPUB/Kraus International, White Plains, NY.
- Tan, K. C., and X. X. Shen. 2000. "Integrating Kano's model in the planning matrix of quality function Deployment." *Total Quality Management & Business Excellence* 11 (8): 1141-51.
- Tanyeli, Uğur. 2004. *İstanbul 1900-2000 Konutu ve Modernleşmeyi Metropolden Okumak*. İstanbul: Akın Nalça.
- Tapan, Mete. 1996. "Mass Housing and Its Development in Turkey." In *Housing and Settlement in Anatolia a Historical Perspective*, edited by Yıldız Sey, 366-78. İstanbul: History Foundation Publications.
- Tekeli, İlhan. 1979. "Türkiye Kentlerinde Apartmanlaşma Sürecinde İki Aşama." *Çevre* (4): 79.
- Tekeli, İlhan. 1982. "Türkiye'de Konut Sorununun Davranışsal Nitelikleri ve Konut Kesiminde Bunalım." In *Konut 81*, 57-121. Ankara: Kent-Koop Publications.
- Tekeli, İlhan. 1996. *Türkiye'de Yaşamda ve Yazında Konut Sorununun Gelişimi. Konut Araştırma Dizisi 2, TOKİ*. Ankara: Republic of Turkey Prime Ministry Housing Development Administration.
- Tekeli, İlhan. 1998a. "Bir Modernleşme Projesi Olarak Türkiye'de Kent Planlaması." In *Türkiye'de Modernleşme ve Ulusal Kimlik*, edited by Sibel Bozdoğan and R. Kasaba, 136-52. İstanbul: History Foundation Publications.
- Tekeli, İlhan. 1998b. "Türkiye'nin Konut Politikaları Üzerine." *Arredamento Mimarlık* 3: 70-73.
- Tekeli, İlhan. 2008. *1980'li Yıllara Kadar İzmir'deki Konut Sunum Biçimlerinde Yaşanan Çeşitlenmeler*. Paper presented at the Symposium of *İzmir'de, 80'li Yıllardan Günümüze Konut ve Mimarlık Kültürü*, Association of Professional Architects of İzmir, İzmir, November 29-30.
- Tekeli, İ., Y. Gülöksüz, and T. Okya. 1976. *Gecekondu, Dolmuşlu, İşportalı Şehir*. İstanbul: Cem.
- Tekeli, İlhan, and Selim İlkin. 1984. *Bahçeli Evlerin Öyküsü. Bir Batı Kurumunun Yeniden Yorumlanması*. Ankara: Kent-Koop Publications.

- TMH (Türkiye Mühendislik Haberleri). 2006. "İstanbul Ataköy Konutları." *TMH - Türkiye Mühendislik Haberleri* (442-443): 2-3.
- Tontini, Gerson. 2000. "Identification of customer attractive and must-be requirements using a modified Kano's method: Guidelines and case study." In *ASQ's 54th Annual Quality Congress Proceedings, Indianapolis, May 8*, 728-40.
- Tontini, Gerson. 2007. "Integrating the Kano Model and QFD for Designing New Products." *Total Quality Management* 18 (6): 599–612.
- Tuchman, Barbara W. 1980. "The Decline of Quality." *New York Times Magazine* 2 (November): 38.
- Üzmez, Birol. 2011. "Aile Evleri 'Kortejolar'." IFOD Olcayto Caneri Exhibition Hall. March 22 – April 04.
- Vakili-Ardebili, A., and A.H. Boussabaine. 2005. "The intricacy of eco-building design." In *Proceedings 4th International Symposium on Environmentally Conscious Design and Inverse Manufacturing*, Tokyo, Japan, Eco-Design 2005, 649-54.
- Walden, David, ed. 1993. "Kano's Methods for Understanding Customer-defined Quality." (Special Issue). *Center for Quality of Management Journal* 2 (4): 3-36.

B. Unpublished Materials

- Ağaoğlu. 2011. "My Towerland Ataşehir. Evinizi Değiştirecek Proje." Accessed October 12, 2011. <http://www.mytowerland.com/>.
- Akaretler. 2011. "Tarihçe." Accessed October 12, 2011. <http://www.akaretler.com.tr/wtarihce.asp?num=1>.
- Albayrak Mavişehir. 2011. "Albayrak Mavişehir." Accessed February 1, 2012. <http://www.albayrakmavisehir.com/>.
- Architecture Museum. 2011a. "Harikzedegân (Tayyare) Apartmanları." Accessed October 12, 2011. <http://www.mimarlikmuzesi.org/Gallery/DisplayPhoto.aspx?ID=12&DetailID=6&ExhibitionID=12>.
- Architecture Museum. 2011b. "Saraçoğlu Mahallesi Tip yapı plan ve görünüşleri" [Source: "Sedad Eldem Architect in Turkey"]. Accessed October 12, 2011. <http://www.google.com.tr/imgres?imgurl=http://www.mimarlikmuzesi.org/koleksiyon/imaglar/6/saracoglu2B.jpg&imgrefurl=http://www.mimarlikmuzesi.org/Ga>

lery/DisplayPhoto.aspx%3FID%3D19%26DetailID%3D4%26ExhibitionID%3D6&h=617&w=700&sz=104&tbnid=H9rYz4N1mUTcJM:&tbnh=79&tbnw=90&prev=/search%3Fq%3Dsara%25C3%25A7o%25C4%259Flu%2Bmahallesi%26tbn%3Disch%26tbo%3Du&zoom=1&q=sara%25C3%A7o%25C4%259Flu+mahallesi&docid=ovGd8myTPBBUGM&hl=tr&sa=X&ei=c2-VTsf5EtDCswa_iP3GBQ&ved=0CEUQ9QEwBw.

Architurk. 2011. "Harikzedegân (Tayyare) Apartmanları." Accessed October 12, 2011. http://www.google.com.tr/imgres?q=Harikzedeg%C3%A2n+tayyare&hl=tr&sa=G&rlz=1G1GGLQ_TRTR280&tbn=isch&tbnid=FaOj7IDEKqLNKM:&imgrefurl=http://www.architurk.com/proje.asp%3Fparametre%3D4%26id%3D574&docid=Swq5Wqb614rCIM&itg=1&w=1024&h=689&ei=DtGRTqv9O4bHsga0kKXhDw&zoom=1&biw=1280&bih=620.

Arkiv. 2011. "4. Levent Mahallesi." Accessed October 12, 2011. <http://www.arkiv.com.tr/p6755-4-levent-mahallesi.html>.

Başbuğ, Tamer. 2010. Tamer Başbuğ's personal interview, Izmir, 3 April 2010.

Bilgin, İhsan. 2002a. "20. Yüzyıl Mimarisi Barınma Kültürünün Hassas Dengeleri İle Nasıl Yüzleşti?" Accessed July 19, 2010. <http://v3.arkitera.com/v1/platform/konut/ihsanbilgin4.htm>.

Bilgin, İhsan. 2002b. "Toplu Konut Üretimi." Accessed July 19, 2010. <http://www.arkitera.com/diyalog/ihsanbilgin/konuturetimi.htm>.

Demirer, Murat. 2010. Murat Demirer's personal interview, Izmir, 24 May 2010.

Dictionary of Turkish Language Association, s.v. "Mass housing," accessed October 14, 2011, <http://tdkterim.gov.tr/bts/>.

Ege-Koop. 2010. "Ege-Koop Karşıyaka Körfez Evleri." Accessed February 19, 2012. <http://www.egekoopkorfezevleri.com/fotogaleri.html>.

Emlak Kulisi. 2008. "TOKİ İzmir Uzundere'de 462 YTL taksitle konut satacak!" Accessed November 30, 2011. http://www.emlakkulisi.com/7381_toki_izmir_uzundere_de_462_ytl_taksitle_konut_satacak_.

Emlak Kulisi. 2009. "9 soruda TOKİ Kayabaşı Konutları." Accessed November 28, 2011. http://www.emlakkulisi.com/20164_9_soruda_toki_kayabasi_konutlari.

Emlak Kulisi. 2010. "TOKİ Kayabaşı 22 soruda! 75 bin TL'ye!" Accessed November 28, 2011. http://www.emlakkulisi.com/toki_kayabasi_22_soruda_75_bin_tl_ye_-57723.html.

- Encyclopedia Britannica Online*, s.v. “Domestic architecture / group Housing,” accessed October 14, 2011, <http://www.britannica.com/EBchecked/topic/32876/architecture/31797/Domestic-architecture>.
- Encyclopedia Britannica Online*, s.v. “Standard,” accessed April 02, 2012, <http://www.britannica.com/bps/dictionary?query=standard>.
- Ensa. 2008. “312 Ulusoy City.” Accessed November 25, 2011. <http://www.ensaproje.com.tr/312-ulusoy-city.aspx>.
- İnşaat Dergisi. 2009. “TOKİ Konutları > 26-02-2009 TOKİ Kayabaşı Deprem Konutları’na 24 başvuru.” Accessed November 30, 2011. <http://www.insaatdergisi.com/insaat-tokikayabasidepremkonutlarina24basvuru-haberayrinti-20171-tokievleri.html>.
- İnşaat Dergisi. 2011. “TOKİ Konutları > 27-03-2009 TOKİ Ankara Turkuaz Vadisi 459 adet konutun ön şartsız, kurasız başvuru önceliğine göre satışı.” Accessed November 25, 2011. <http://www.insaatdergisi.com/insaat-tokiankaraturkuazvadisi459adetkonutunonsartsizkurasizbasvuruonceliginegoresatishi-haberayrinti-20753-toki-evleri.html>.
- Izmir Metropolitan Municipality. 2005. “Konak Kentsel Dönüşüm Projesi.” Accessed November 30, 2011. <http://www.izmir.bel.tr/kentseldonusum/index.html>.
- Izmir Metropolitan Municipality. 2008. “Narbel Mucizesi.” Accessed February 28, 2012. <http://www.izmir.bel.tr/Details.asp?textID=5581>.
- Haberkulesi. 2009. “TOKİ Kayabaşı evleri.” Accessed November 28, 2011. http://www.haberkulesi.com/haber_oku.asp?haber=3730.
- Kayaşehir News. 2010. “TOKİ Kayabaşı Konutları C Tipi Kat planı.” Accessed November 28, 2011. <http://www.kayabasihaberler.com/ana-sayfa/sizden-gelenler/fotograflar/446-toki-kayabasi-konutlari-c-tipi-kat-plan.html>.
- Kendir, Aybars. 2010. Aybars Kendir’s personal interview, Izmir, 13 March 2010.
- KentPlus. 2011. “KentPlus Mimarsinan.” Accessed November 23, 2011. http://www.kentplus.com/mimarsinan/genel_bilgiler.asp.
- Kiptaş. 2011. “Metrokent.” Accessed November 22, 2011. http://www.kiptas.com.tr/TR/YASAM/yas_genel_metrokent.asp.

- MESA Group. 2011. "Bahçeşehir Uydukent Projesi 1. ve 2. Etap." Accessed February 19, 2012. <http://www.mesagrup.com/tr/proje/bahcesehir-uydukent-projesi-1-etap-ve-2-etap>.
- Mimdap. 2008. "Ege-Koop, krizi fırsata dönüştürüyor." Accessed February 19, 2012. <http://www.mimdap.org/?p=11855>.
- Mimdap. 2010. "Uzundere konutlarında asansör krizi aşıldı." Accessed November 30, 2011. <http://www.mimdap.org/?p=30456>.
- Opan Investment. 2011. "312 Ulusoy City." Accessed November 25, 2011. <http://www.312opanyatirim.com/hakkimizda.asp>.
- Oxford English Dictionary*, s.v. "Consensus," accessed January 14, 2012, <http://www.oed.com/view/Entry/39516?redirectedFrom=consensus#eid>.
- Panoramio. 2008. "Turkuaz Vadisi Y1 Tip Konutlar." Accessed November 25, 2011. <http://www.panoramio.com/photo/24558900>.
- Panoramio. 2009a. "İzmir Narbel-1." Accessed February 28, 2012. <http://www.panoramio.com/photo/24558900>.
- Panoramio. 2009b. "Narbel'den Narlıdere Manzarası." Accessed February 28, 2012. <http://www.panoramio.com/photo/22745895>.
- Panoramio. 2012. "TOKİ Kayabaşı 7 Bölge Binaları." Accessed January 3, 2012. <http://www.panoramio.com/photo/35231410>.
- Soyak. 2009. "Soyak Mavişehir." Accessed February 7, 2012. <http://www.soyak.com.tr/web/15,45>.
- TOKİ. 2011a. "65000 Konut." Accessed November 30, 2011. <http://www.toki.gov.tr/html/satis/istanbul/kayabasi.htm>.
- TOKİ. 2011b. "Turkuaz Vadisi. Mahal Listesi." Accessed November 25, 2011. <http://www.toki.gov.tr/html/satis/ankara/turkuaz/mahallist.htm>.
- TOKİ Housing. 2009. "TOKİ Evleri." Accessed November 25, 2011. <http://www.tokievleri.org/istanbul-toki-evleri/toki-kayabasi-konutlari-detayli-inceleme.html>.
- TOKİ İzmir Buca. 2012. "TOKİ İzmir Buca." (Facebook Group of the inhabitants.) Accessed March 3, 2012. <http://www.facebook.com/groups/bucatoki/photos/>.

- TOKI Yapracık. 2011. "TOKI Yapracık Projesi." Accessed November 30, 2011. <http://www.tokiyapracik.com/>.
- Turkuaz Vadisi. 2011. "Turkuaz Vadisi Konutları." Accessed November 25, 2011. http://www.turkuazvadisi.com.tr/main_v1/.
- Turyap. 2011. "312 Ulusoy City." Accessed November 25, 2011. <http://www.turyap.com.tr/ulusoyCity.aspx?m=4&ma=1>.
- Ungvari, Steven. 2008. TRIZ Within the Context of The Kano Model or Adding the Third Dimension to Quality. *The TRIZ Journal*, accessed October 26, 2011, http://www.ideationtriz.com/paper_TRIZ_Within_Context.asp#The%20Kano%20Model.
- Webb, Peter B. 2010. "Taguchi Methods." In the online *Encyclopedia of Business*, accessed October 25, 2011, <http://www.enotes.com/biz-encyclopedia/taguchi-methods>.
- Webster's Online Dictionary*, s.v. "Quality," accessed October 19, 2011, <http://www.websters-online-dictionary.org/definitions/quality>.
- WowTurkey. 2006. "Narbel." Accessed February 28, 2012. <http://wowturkey.com/forum/viewtopic.php?t=28364>.
- WowTurkey. 2009. "Narbel." Accessed February 28, 2012. <http://wowturkey.com/forum/viewtopic.php?p=1409090#1409090>.

APPENDIX A

LIST OF VARIABLES IN THE EVALUATION OF ARCHITECTURAL DESIGN

In order to make the architectural design measurable for quality evaluations, in the beginning phases of this study, a table containing all possible variables for the evaluation of architectural design was tried to be composed regarding the concerns in literature on housing studies as well as architectural criticism (besides, some interviews with the architects—Tamer Başbuğ as the architect of Albayrak Mavişhir Mass-Housings [Başbuğ 2010], Murat Demirer as the architect of Mimkent and Narbel Mass-Housings [Demirer 2010], and Aybars Kendir as the architect of Gürel Residence [Kendir 2010]—were realized to ask for their design criteria). Table A.1 refers this list of dependent and independent variables. Focus or limits of the study regarding both the questions of survey and the answers of users is also demonstrated with grey in this table.

Table A.1. List of possible dependent and independent variables for evaluations on architectural-design quality of mass-housings (cells with grey demonstrate the limits of the study)

Code	Variable	Type	Code	Variable	Type	Code	Variable	Type
A	Architectural design quality of housings	Dependent (1st)						
B	Strength / Durability	Dependent (2nd)	C4	Logic of the spatial organization	Dependent (3rd)	E5	Design character that is dependent to only its own context (time, location, and other conditions)	Independent
B1	Material decisions	Dependent (3rd)	C4.1	Logic of spatial alignment	Independent	F	User	Dependent (2nd)
B1.1	Selection of floor materials (constructional and covering)	Independent	C4.2	Logic of spatial segregation and hierarchy	Independent	F1	Social and cultural needs of the inhabitants	Independent
B1.2	Selection of wall materials (constructional and covering) (for both interior and exterior walls)	Independent	C4.3	Proper distance between the spaces	Independent	F2	Economic levels of the inhabitants	Independent
B1.3	Selection of ceiling materials (constructional and covering)	Independent	C4.4	Easy circulation between and distribution to the spaces	Independent	F3	Psychological needs of the inhabitants	Independent
B2	Structural design	Dependent (3rd)	C4.5	Direction of the spaces	Independent	F4	Educational levels of the inhabitants	Independent
B2.1	Column numbers/dimensions	Independent	C4.6	Convenience of light and heat for each room	Independent	F5	Professional variety of the inhabitants	Independent
B2.2	Constructional materials of the columns	Independent	C4.7	Logic of functional relations	Independent	F6	Life-style preferences of the inhabitants (according to ages, sexes, family sizes, professions, social statuses)	Independent
B2.3	Beam numbers/dimensions	Independent	C4.8	Consideration of collective and private activities	Independent	F7	Accessibility to different user profiles (addressing-capacity to different user profiles)	Independent
B2.4	Constructional materials of the beams	Independent	C4.9	Flexible and transformable spaces	Independent	F8	Spaces allowing private activities	Independent
C	Usefulness	Dependent (2nd)	C5	Inclusion of the natural data of location into the design	Dependent (3rd)	F9	Spaces allowing collective activities	Independent
C1	Function	Dependent (3rd)	C5.1	Consideration of climatic conditions	Independent	F10	No-changes in the divisions of spaces during the using phase (no-changes in plan or section)	Independent
C1.1	Allocation-logic of spatial activities	Independent	C5.2	Consideration of topography	Independent	G	Security	Dependent (2nd)
C1.2	Spatial dimensions (heights and areas)	Independent	C5.3	Consideration of vegetation	Independent	G1	Visual boundaries and privacy	Independent
C1.3	Location of the door/window openings	Independent	C5.4	Use of vernacular materials	Independent	G2	Restrictions for the movements of strangers	Independent
C1.4	Ventilation	Independent	C6	Considerations about the energy and sustainability	Dependent (3rd)	G3	Security system characteristics	Independent
C1.5	Providing efficient or suitable light	Independent	C6.1	Energy-effective design inputs	Independent	H	Project-character	Dependent (2nd)
C1.6	Sanitary installation	Independent	C6.2	Sustainable design inputs	Independent	H1	Size of the project (total land of construction; number of units; expected number of inhabitants)	Independent
C1.7	Central heating system	Independent	C7	Utilization of smart technologies	Independent	H2	Typological character of the project (height or area of the building block(s); functional diversity; contextual relationships of a block with the other similar ones-- being a single block or a part of a housing settlement)	Independent
C1.8	Electrical installation	Independent	D	Aesthetics	Dependent (2nd)	H3	Amount and diversity of the services and spaces provided by the housing	Independent
C1.9	Water supply system	Independent	D1	Consideration of a compositional principle as the design logic	Independent	H4	Concept of the project	Independent
C1.10	Telephone installation	Independent	D2	Relations between or spatial formations and the concept of the project	Independent	H5	Duration of the design phase	Independent
C1.11	Suitability of the floor covering materials	Independent	D3	Visual effects	Dependent (3rd)	H6	Revisions of design during the design, construction or using processes	Independent
C1.12	Suitability of the wall covering materials	Independent	D3.1	Effects of light	Independent	H7	Total budget of the project	Independent
C1.13	Suitability of the ceiling covering materials	Independent	D3.2	Decisions about colors	Independent	H8	Sale prices of the flats	Independent
C1.14	Sound insulation	Independent	D3.3	Selection of proper or exceptional materials	Independent	H9	Easy marketing	Independent
C1.15	Heat insulation	Independent	D3.4	Decisions about form	Independent	I	Architect / Design team	Dependent (2nd)
C1.16	Water insulation	Independent	D3.5	Direction of some spaces towards the dominant view, and the viewing capacity	Independent	I1	Experience of the architect(s) or company in mass-housing projects	Independent
C2	Ergonomics	Dependent (3rd)	D4	Auditory effects	Independent	I2	Educational background(s)	Independent
C2.1	Consideration of adults' ergonomics	Independent	D5	Textile effects	Independent	I3	Popularity of the architect(s)	Independent
C2.2	Consideration of children's and youth's ergonomics	Independent	D6	Olfactory effects	Independent	I4	Number of the architects in the design team	Independent
C2.3	Consideration of handicapped's or seniors' ergonomics	Independent	D7	Sensual impressions	Independent	I5	Distribution of roles in the design team	Independent
C2.4	Consideration of the factor of sexual difference	Independent	E	Context	Dependent (2nd)	I6	Harmony between the members of the design team	Independent
C3	Accessibility of the unit for users	Dependent (3rd)	E1	Social and cultural context of the location	Independent	I7	Harmony in design and construction process (good relationships with the municipalities, owners/entrepreneurs, contractors, producers)	Independent
C3.1	Easy accessibility by personal vehicle	Independent	E2	Economical context of the location	Independent	I8	Available conditions for free design	Independent
C3.2	Existence of / properly located elevators	Independent	E3	Architectural context of the location	Independent	I9	Consideration of the feedbacks from the users of the current or previously designed housing projects	Independent
C3.3	Properly located staircases	Independent	E4	Urban considerations (contributions to urban identity)	Independent	I10	Design methods and aspects (conservative or innovative approaches; inspirations, copies, or novelties)	Independent

APPENDIX B

QUESTIONNAIRE APPLIED IN THE MAIN SURVEY (TURKISH ORIGINAL)

1. Genel Bilgi Soruları							
Konutun yer aldığı adres:		.....			Blok, kat ve daire no:	
Yaş:	<input type="checkbox"/> 19 ve altı	<input type="checkbox"/> 20-29	<input type="checkbox"/> 30-39	<input type="checkbox"/> 40-49	<input type="checkbox"/> 50-59	<input type="checkbox"/> 60 ve üstü	
Cinsiyet:	<input type="checkbox"/> Kadın			<input type="checkbox"/> Erkek			
Eğitim durumu:	<input type="checkbox"/> İlk	<input type="checkbox"/> Orta	<input type="checkbox"/> Lise	<input type="checkbox"/> Yüksek Okul	<input type="checkbox"/> Üniversite	<input type="checkbox"/> Lisansüstü (Y. Lisans/Doktora)	
Meslek:	.....					
Çalışma durumu:	<input type="checkbox"/> Çalışıyor	<input type="checkbox"/> İşsiz, iş arıyor	<input type="checkbox"/> Ev hanımı	<input type="checkbox"/> Öğrenci	<input type="checkbox"/> Emekli	<input type="checkbox"/> Diğer	
Hane gelir durumu:	<input type="checkbox"/> Alt/dar		<input type="checkbox"/> Orta	<input type="checkbox"/> Orta-üst		<input type="checkbox"/> Üst	
Aile tipi:	<input type="checkbox"/> Tek kişi		<input type="checkbox"/> Çekirdek		<input type="checkbox"/> Geniş		
Ailedeki yetişkin sayısı (18 ve üzeri):	<input type="checkbox"/> 1		<input type="checkbox"/> 2	<input type="checkbox"/> 3		<input type="checkbox"/> 4 ve üzeri	
Ailedeki çocuk sayısı (0-18 yaş arası):	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4 ve üzeri		
Konutunuzda oturma süreniz:	<input type="checkbox"/> 3 yıldan az	<input type="checkbox"/> 3-5 yıl	<input type="checkbox"/> 5-10 yıl	<input type="checkbox"/> 11-20 yıl	<input type="checkbox"/> 20 yıldan fazla		
Ev sahipliği:	<input type="checkbox"/> Kendi evi			<input type="checkbox"/> Kiracı			
Dairenizin kapladığı alan (m ² olarak):	...	Daire tipi:	<input type="checkbox"/> 1 oda + 1 salon	<input type="checkbox"/> 2 oda + 1 salon	<input type="checkbox"/> 3 oda + 1 salon	<input type="checkbox"/> 4 oda + 1 salon	<input type="checkbox"/> (Diğer)

2. Kano Soruları						
Mekân organizasyonu ve mekânsal ilişkilerle ilgili sorular: (Lütfen aşağıdaki cümleleri yanda verilen ifadelerden birini işaretleyerek tamamlayınız.)						
		Çok hoşuma gider	Öyle olmasını beklerim	Fark etmez	Hoşlanmam ama katlanabilirim	Hiç hoşuma gitmez
1	Koridorlu bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Tüm odaların girişe (antreye) açıldığı (koridorsuz) bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Salonun, girişe (antreye) açıldığı bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Salonun, koridora açıldığı bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Çok hoşuma gider	Öyle olmasını beklerim	Fark etmez	Hoşlanmam ama katlanabilirim	Hiç hoşuma gitmez
5	Mutfağın, girişe (antreye) açıldığı bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Mutfağın, koridora açıldığı bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Yatak odalarının, koridora açıldığı bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Yatak odalarının, girişe (antreye) açıldığı bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Banyo ve tuvaletin, yatak odalarına yakın olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Banyo ve tuvaletin, giriş holünde (antrede) yer alması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Yatak odalarının yan yana olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Yatak odalarının ayrı yerlerde olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Salondan ayrı bir oturma odasının olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Oturma odası olmayan bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Yatak odalarının salona uzak olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Yatak odalarının salona yakın olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Salon ve mutfağın birbirine yakın olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Salon ve mutfağın birbirine uzak olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Mutfağın açık mutfak biçiminde olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Mutfağın normal kapalı mutfak biçiminde olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Banyo ve tuvaletten iki adet bulunması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Banyo ve tuvaletin, sadece bir adet olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Ebeveyn yatak odasında ayrı bir banyo bulunması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Banyosuz bir ebeveyn yatak odası...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Balkonu olan bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Balkonsuz bir evde yaşamak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Salonda bir balkon olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	Balkonsuz bir salon...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Mutfakta bir balkon olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Balkonsuz bir mutfak...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	Ebeveyn yatak odasında bir balkon olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Balkonsuz bir ebeveyn yatak odası...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Çocuk odasında bir balkon olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	Balkonsuz bir çocuk odası...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Kiler, depo veya çamaşırlık gibi mekânların olması...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	Kiler, depo veya çamaşırlık gibi mekânların olmadığı bir ev...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Kano Destek Soruları		
<u>Lütfen aşağıdaki soruları yanlarındaki boşluklara yazarak cevaplayınız.</u>		
1	Salonun girişe (antreye) yakın olması iyi midir? Neden?	
2	Mutfağın girişe (antreye) yakın olması iyi midir? Neden?	
3	Yatak odalarının girişe (antreye) uzak olması iyi midir? Neden?	
4	Sizce koridor neden önemli ya da önemsizdir?	
5	Banyo ve tuvaletin yatak odalarına yakın olması iyi midir? Neden?	
6	Yatak odalarının yan yana olması iyi midir? Neden?	
7	Yatak odalarının salona uzak olması iyi midir? Neden?	
8	Yatak odalarından birinin girişe yakın olup, oturma odası olarak kullanılmasını ister misiniz?	
9	Salon ve mutfağın birbirine yakın olması iyi midir? Neden?	
10	Açık mutfak hakkında ne düşünüyorsunuz?	
11	Ebeveyn yatak odasında ayrı bir banyonun bulunması iyi midir? Neden?	
12	Balkonu olan bir evde yaşamak iyi midir? Neden?	
13	Balkonun nerelerde olmasını istersiniz; ne amaçla kullanırsınız?	
14	Kiler, depo veya çamaşırılık gibi mekânlar hakkında ne düşünüyorsunuz?	

4. Bağlam Soruları		
<u>Lütfen aşağıdaki soruları yanlarındaki boşluklara yazarak cevaplayınız.</u>		
1	Evinizden memnun musunuz? Neden?	
2	Satın alırken ya da kiralarken, evinizi hangi özelliklerinden dolayı tercih ettiniz?	
3	Nasıl bir evde yaşamak isterdiniz?	

4	Mümkün olsa taşınmak ister misiniz? Neden?									
5	Dairenizin büyüklüğü, gereksinimleriniz için yeterli mi?									
6	Koridorunuzun biçimlenişinden memnun musunuz? (ölçüleri—uzunluğu, genişliği, yüksekliği—şekli vs.)									
7	Konut tasarımınızın aile yaşamınıza uygun olduğunu düşünüyor musunuz?									
8	Konutunuzda sunulan yaşamın maliyetli olduğunu düşünüyor musunuz? (Aidatlar vs.)									
9	Evinizi kullanışlı buluyor musunuz? Neden?									
10	Evinizde genel olarak neleri eleştiriyor ya da beğeniyorsunuz?									
11	Evinizin manzara (deniz, kent vs.) görmesi ve güneş alması sizin için ne kadar önemli? Neden?									
12	Evinizi hangi sıfatlarla tanımlarsınız? (Birden fazla işaretlenebilir)	Geniş/ferah	Güzel	Çirkin	Dar/sıkışık	Aydınlık	Karanlık	Sevimli	Sıkıcı	Basit
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Konut bloğunuzun/apartmanınızın görünümünden memnun musunuz?									
14	Çok katlı bir binada yaşamaktan memnun musunuz? Neden?									

APPENDIX C

QUESTIONNAIRE APPLIED IN THE MAIN SURVEY (ENGLISH TRANSLATION)

1. General Information Questions							
Address of the housing:		.....		Numbers of block, floor and flat:		
Age:	<input type="checkbox"/> 19 and below	<input type="checkbox"/> 20-29	<input type="checkbox"/> 30-39	<input type="checkbox"/> 40-49	<input type="checkbox"/> 50-59	<input type="checkbox"/> 60 and above	
Sex:	<input type="checkbox"/> Female			<input type="checkbox"/> Male			
Education:	<input type="checkbox"/> Primary	<input type="checkbox"/> Secondary	<input type="checkbox"/> High school	<input type="checkbox"/> Collage/ Academy	<input type="checkbox"/> Bachelor	<input type="checkbox"/> Graduate (Master/Ph.D.)	
Profession:	.....					
Working situation:	<input type="checkbox"/> Still working	<input type="checkbox"/> Unemployed, looking for job	<input type="checkbox"/> Housewife	<input type="checkbox"/> Student	<input type="checkbox"/> Retired	<input type="checkbox"/> Other	
Income situation of the unit:	<input type="checkbox"/> Low		<input type="checkbox"/> Middle		<input type="checkbox"/> Middle-high	<input type="checkbox"/> High	
Family type:	<input type="checkbox"/> One person		<input type="checkbox"/> Nuclear		<input type="checkbox"/> Extended		
Number of adults (18 and above):	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3	<input type="checkbox"/> 4 and above	
Number of children (between 0-18):	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4 and above		
Duration of inhabitation in this unit:	<input type="checkbox"/> Less than 3 years	<input type="checkbox"/> 3-5 years	<input type="checkbox"/> 5-10 years	<input type="checkbox"/> 11-20 years	<input type="checkbox"/> More than 20 years		
Ownership situation:	<input type="checkbox"/> Homeowner			<input type="checkbox"/> Tenant			
Total area of the unit (in sqm):	Type of the unit:	<input type="checkbox"/> 1 bedroom + 1 living room	<input type="checkbox"/> 2 bedroom + 1 living room	<input type="checkbox"/> 3 bedroom + 1 living room	<input type="checkbox"/> 4 bedroom + 1 living room	<input type="checkbox"/> (Other)

2. Conventional Kano Questions						
Questions about spatial organization and relationships:						
(Please complete the sentences given below by choosing one of the expressions given at the right-hand side.)						
		I like it very much	I expect it that way	It does not make any difference	I do not like, but I can endure	I never like it
1	Living in a house with a corridor...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Living in a house with an entrance hall (without a corridor) connected to all rooms...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Living in a house with a living room connected to the entrance hall...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Living in a house with a living room connected to corridor...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		I like it very much	I expect it that way	It does not make any difference	I do not like, but I can endure	I never like it
5	Living in a house with a kitchen connected to the entrance hall...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Living in a house with a kitchen connected to corridor...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Living in a house with bedrooms connected to the corridor...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Living in a house with bedrooms connected to entrance hall...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	A bathroom and WC next to the bedrooms...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	A bathroom and WC at the entrance hall...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Bedrooms placed next to each other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Bedrooms placed in a distance with each other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	A separate living room apart from the guest room...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Living in a house without a separate living room apart from the guest room...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Bedrooms placed in a distance with the living room...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Bedrooms placed next to the living room...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	A living room and kitchen placed next to each other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	A living room and kitchen placed in a distance with each other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	An open kitchen...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	A (normal) closed kitchen...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Two wet cores (bathroom and WC)...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	One wet core (bathroom)...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	A separate bathroom in parents' bedroom...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	A parents' bedroom without a separate bathroom...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Living in a house with a balcony...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Living in a house without a balcony...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	A balcony connected to the living room...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	A living room without a balcony...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	A balcony connected to the kitchen...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	A kitchen without a balcony...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	A balcony connected to parents' bedroom...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	A parents' bedroom without a balcony ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	A balcony connected to kid's room...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	A kid's room without a balcony ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	An additional space like a cellar, storage, or laundry...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	Living in a house without an additional space like a cellar, storage, or laundry...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Kano-support questions		
<u>Please answer the questions below by writing in the blanks at the right-hand side.</u>		
1	Is it nice to have a living room close to the entrance? Why?	
2	Is it nice to have a kitchen close to the entrance? Why?	
3	Is it nice to have bedrooms in a distance with the entrance? Why?	
4	Why is the corridor important or unimportant?	
5	Is it nice to have a bathroom and WC close to the bedrooms? Why?	
6	Is it nice to have bedrooms next to each other? Why?	
7	Is it nice to have bedrooms in a distance with the living room? Why?	
8	Would you like to convert one of the bedrooms into a separate guest room near the entrance?	
9	Is it nice to have a living room close to the kitchen? Why?	
10	What do you think about the open kitchen?	
11	Is it nice to have a separate bathroom in parents' bedroom? Why?	
12	Is it nice to live in house with a balcony? Why?	
13	In which locations would you like to have these balconies; for which purpose do you use them?	
14	What do you think about the spaces like the cellar, storage, or laundry?	

4. Contextual Questions		
<u>Please answer the questions below by writing in the blanks at the right-hand side.</u>		
1	Are you pleased to live in your house? Why?	
2	For which features did you prefer to buy or rent your unit?	

3	Which kind of house would you prefer to live in?									
4	If it is possible, would you like to move your flat? Why?									
5	Is the area of your unit sufficient for your needs?									
6	Are you pleased with the form of your corridor? (dimensions—length, width, height—shape, etc.)									
7	Do you think that the design of your unit is proper for the life style of your family?									
8	Does living in your housing cost much? (Dues, etc.)									
9	Do you think that your house is useful? Why?									
10	Which of the features do you criticize or like in your unit in general?									
11	How much important is it for you to have a nice view (sea, city, etc.) and sunlight? Why?									
12	By which of the adjectives do you describe your flat? (It can be marked more than one)	Wide/spacious	Beautiful	Shapeless	Narrow/jammed	Day-lighted	Dark	Cute	Boring	Simple
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Do you like the appearance of your apartment/block?									
14	Are you pleased to live in a multi-storey block? Why?									

APPENDIX D

QUESTIONNAIRE APPLIED IN THE PILOT SURVEY (TURKISH ORIGINAL)

1. Genel Bilgi Soruları							
Konutun yer aldığı adres:		.....			Blok, kat ve daire no:	
Yaş:	<input type="checkbox"/> 19 ve altı	<input type="checkbox"/> 20-29	<input type="checkbox"/> 30-39	<input type="checkbox"/> 40-49	<input type="checkbox"/> 50-59	<input type="checkbox"/> 60 ve üstü	
Cinsiyet:	<input type="checkbox"/> Kadın			<input type="checkbox"/> Erkek			
Eğitim durumu:	<input type="checkbox"/> İlk	<input type="checkbox"/> Orta	<input type="checkbox"/> Lise	<input type="checkbox"/> Yüksek Okul	<input type="checkbox"/> Üniversite	<input type="checkbox"/> Lisansüstü (Y. Lisans/Doktora)	
Meslek:	.....					
Çalışma durumu:	<input type="checkbox"/> Çalışıyor	<input type="checkbox"/> İşsiz, iş arıyor	<input type="checkbox"/> Ev hanımı	<input type="checkbox"/> Öğrenci	<input type="checkbox"/> Emekli	<input type="checkbox"/> Diğer	
Hane gelir durumu:	<input type="checkbox"/> Alt/dar	<input type="checkbox"/> Orta	<input type="checkbox"/> Orta-üst	<input type="checkbox"/> Üst			
Aile tipi:	<input type="checkbox"/> Tek kişi		<input type="checkbox"/> Çekirdek		<input type="checkbox"/> Geniş		
Ailedeki yetişkin sayısı (18 ve üzeri):	<input type="checkbox"/> 1		<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4 ve üzeri		
Ailedeki çocuk sayısı (0-18 yaş arası):	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4 ve üzeri		
Konutunuzda oturma süreniz:	<input type="checkbox"/> 3 yıldan az	<input type="checkbox"/> 3-5 yıl	<input type="checkbox"/> 5-10 yıl	<input type="checkbox"/> 11-20 yıl	<input type="checkbox"/> 20 yıldan fazla		
Ev sahipliği:	<input type="checkbox"/> Kendi evi			<input type="checkbox"/> Kiracı			
Dairenizin kapladığı alan (m ² olarak):	Daire tipi:	<input type="checkbox"/> 1 oda + 1 salon	<input type="checkbox"/> 2 oda + 1 salon	<input type="checkbox"/> 3 oda + 1 salon	<input type="checkbox"/> 4 oda + 1 salon	<input type="checkbox"/> (Diğer)

2. Kano Soruları						
Mekân organizasyonu ve mekânsal ilişkilerle ilgili sorular: (Lütfen aşağıdaki cümleleri yanda verilen ifadelerden birini işaretleyerek tamamlayınız.)						
		Kesinlikle isterim	Tercih ederim	Fark etmez	Tercih etmem	Kesinlikle istemem
1	Koridorlu bir evde yaşamak ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Koridor olmasa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Salonun, girişe (antreye) yakın olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Salonun, girişe (antreye) uzak olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Mutfağın, girişe (antreye) yakın olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Mutfak, girişe (antreye) uzak olsa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Kesinlikle isterim	Tercih ederim	Fark etmez	Tercih etmem	Kesinlikle istemem
7	Yatak odalarının, girişe (antreye) uzak olmasını ister misiniz?	<input type="checkbox"/>				
8	Yatak odaları, girişe (antreye) yakın olsa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Banyo ve tuvaletin, yatak odalarına yakın olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Banyo ve tuvalet, giriş holünde (antrede) yer alsa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Yatak odalarının birbirine yakın olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Yatak odalarının ayrı yerlerde olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Oturma odanız olsun ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Oturma odanız olmasa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Yatak odalarının salona uzak olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Yatak odaları salona yakın olsa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Salon ve mutfağın birbirine yakın olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Salon ve mutfak birbirine uzak olsa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Mutfağın açık mutfak biçiminde olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Mutfağın normal kapalı mutfak biçiminde olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Banyo ve tuvaletten iki adet bulunsa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Banyo ve tuvalet, sadece bir adet olsa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Ebeveyn yatak odasında ayrı bir banyo bulunmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Banyosuz bir ebeveyn yatak odası ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Balkonu olan bir evde yaşamak ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Balkonsuz bir evde yaşamak ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Salonda bir balkon olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	Balkonsuz bir salon ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Mutfakta bir balkon olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Balkonsuz bir mutfak ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	Ebeveyn yatak odasında bir balkon olsun ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Balkonsuz bir ebeveyn yatak odası ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Çocuk odasında bir balkon olsun ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	Balkonsuz bir çocuk odası ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Kiler, depo veya çamaşırılık gibi mekânların olmasını ister misiniz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	Kiler, depo veya çamaşırılık gibi mekânlar olmasa ne düşünürsünüz?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Kano Destek Soruları		
<u>Lütfen aşağıdaki soruları yanlarındaki boşluklara yazarak cevaplayınız.</u>		
1	Salonun girişe (antreye) yakın olması iyi midir? Neden?	
2	Mutfağın girişe (antreye) yakın olması iyi midir? Neden?	
3	Yatak odalarının girişe (antreye) uzak olması iyi midir? Neden?	
4	Sizce koridor ne işe yarar; neden önemli ya da önemsizdir?	
5	Banyo ve tuvaletin yatak odalarına yakın olması iyi midir? Neden?	
6	Yatak odalarının yan yana olması iyi midir? Neden?	
7	Yatak odalarının salona uzak olması iyi midir? Neden?	
8	Yatak odalarından birinin girişe yakın olup, oturma odası olarak kullanılmasını ister misiniz?	
9	Salon ve mutfağın birbirine yakın olması iyi midir? Neden?	
10	Açık mutfak hakkında ne düşünüyorsunuz?	
11	Ebeveyn yatak odasında ayrı bir banyonun bulunması iyi midir? Neden?	
12	Balkonu olan bir evde yaşamak iyi midir? Neden?	
13	Balkonun nerelerde olmasını istersiniz; ne amaçla kullanırsınız?	
14	Kiler, depo veya çamaşırılık gibi mekânlar hakkında ne düşünüyorsunuz?	

4. Bağlam Soruları		
<u>Lütfen aşağıdaki soruları yanlarındaki boşluklara yazarak cevaplayınız.</u>		
1	Evinizden memnun musunuz? Neden?	
2	Satın alırken ya da kiralarken, evinizi hangi özelliklerinden dolayı tercih ettiniz?	
3	Nasıl bir evde yaşamak isterdiniz?	

4	Mümkün olsa taşınmak ister misiniz? Neden?									
5	Dairenizin büyüklüğü, gereksinimleriniz için yeterli mi?									
6	Koridorunuzun biçimlenişinden memnun musunuz? (ölçüleri—uzunluğu, genişliği, yüksekliği—şekli vs.)									
7	Konut tasarımınızın aile yaşamınıza uygun olduğunu düşünüyor musunuz?									
8	Konutunuzda sunulan yaşamın maliyetli olduğunu düşünüyor musunuz? (Aidatlar vs.)									
9	Evinizi kullanışlı buluyor musunuz? Neden?									
10	Evinizde genel olarak neleri eleştiriyor ya da beğeniyorsunuz?									
11	Evinizin manzara (deniz, kent vs.) görmesi ve güneş alması sizin için ne kadar önemli? Neden?									
12	Evinizi hangi sıfatlarla tanımlarsınız? (Birden fazla işaretlenebilir)	Geniş/ferah	Güzel	Çirkin	Dar/sıkışık	Aydınlık	Karanlık	Sevimli	Sıkıcı	Basit
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Konut bloğunuzun/apartmanınızın görünümünden memnun musunuz?									
14	Çok katlı bir binada yaşamaktan memnun musunuz?									

APPENDIX E

QUESTIONNAIRE APPLIED IN THE PILOT SURVEY (ENGLISH TRANSLATION)

1. General Information Questions						
Address of the housing:		.....		Numbers of block, floor and flat:		
Age:	<input type="checkbox"/> 19 and below	<input type="checkbox"/> 20-29	<input type="checkbox"/> 30-39	<input type="checkbox"/> 40-49	<input type="checkbox"/> 50-59	<input type="checkbox"/> 60 and above
Sex:	<input type="checkbox"/> Female			<input type="checkbox"/> Male		
Education:	<input type="checkbox"/> Primary	<input type="checkbox"/> Secondary	<input type="checkbox"/> High school	<input type="checkbox"/> Collage/ Academy	<input type="checkbox"/> Bachelor	<input type="checkbox"/> Graduate (Master/Ph.D.)
Profession:	.....				
Working situation:	<input type="checkbox"/> Still working	<input type="checkbox"/> Unemployed, looking for job	<input type="checkbox"/> Housewife	<input type="checkbox"/> Student	<input type="checkbox"/> Retired	<input type="checkbox"/> Other
Income situation of the unit:	<input type="checkbox"/> Low		<input type="checkbox"/> Middle	<input type="checkbox"/> Middle-high		<input type="checkbox"/> High
Family type:	<input type="checkbox"/> One person		<input type="checkbox"/> Nuclear		<input type="checkbox"/> Extended	
Number of adults (18 and above):	<input type="checkbox"/> 1		<input type="checkbox"/> 2		<input type="checkbox"/> 3	
Number of children (between 0-18):	<input type="checkbox"/> 0		<input type="checkbox"/> 1		<input type="checkbox"/> 2	
Duration of inhabitation in this unit:	<input type="checkbox"/> Less than 3 years		<input type="checkbox"/> 3-5 years		<input type="checkbox"/> 5-10 years	
Ownership situation:	<input type="checkbox"/> Homeowner			<input type="checkbox"/> Tenant		
Total area of the unit (in sqm):	.....	Type of the unit:	<input type="checkbox"/> 1 bedroom + 1 living room	<input type="checkbox"/> 2 bedroom + 1 living room	<input type="checkbox"/> 3 bedroom + 1 living room	<input type="checkbox"/> 4 bedroom + 1 living room
<input type="checkbox"/> (Other)						

2. Conventional Kano Questions						
Questions about spatial organization and relationships:						
(Please complete the sentences given below by choosing one of the expressions given at the right-hand side.)						
		I certainly want it	I prefer it	It does not make any difference	I do not prefer it	I never want it
1	Would you like to live in a house with a corridor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	What do you think if there is not a corridor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Would you like to have a living room close to the entrance hall?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Would you like to have a living room far from the entrance hall?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Would you like to have a kitchen close to the entrance hall?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	What do you think if your kitchen is far from the entrance hall?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		I certainly want it	I prefer it	It does not make any difference	I do not prefer it	I never want it
7	Would you like to have the bedrooms far from the entrance hall?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	What do you think if the bedrooms are close to the entrance hall?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Would you like to have a bathroom and WC close to the bedrooms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	What do you think if the bathroom and WC are at the entrance hall?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Would you like to have the bedrooms placed close to each other?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Would you like to have the bedrooms far from each other?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Would you like to have a separate living room apart from the guest room?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	What do you think if you do not have a separate living room apart from the guest room?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Would you like to have the bedrooms far from the living room?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	What do you think if the bedrooms are near the living room?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Would you like to have a living room and kitchen close to each other?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	What do you think if the living room and kitchen are far from each other?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Would you like to have an open kitchen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Would you like to have a (normal) closed kitchen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	What do you think if there are two wet cores (bathroom and WC)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	What do you think if there is one wet core (bathroom)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Would you like to have a separate bathroom in parents' bedroom?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Would you like to have a parents' bedroom without a separate bathroom?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Would you like to live in a house with a balcony?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Would you like to live in a house without a balcony?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Would you like to have a balcony connected to the living room?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	Would you like to have a living room without a balcony?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Would you like to have a balcony connected to the kitchen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Would you like to have a kitchen without a balcony?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	Would you like to have a balcony connected to parents' bedroom?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Would you like to have parents' bedroom without a balcony?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Would you like to have a balcony connected to kid's room?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	Would you like to have kid's room without a balcony?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Would you like to have spaces like the cellar, storage, or laundry?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	What do you think if there are not spaces like the cellar, storage, or laundry?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Kano-support questions		
<u>Please answer the questions below by writing in the blanks at the right-hand side.</u>		
1	Is it nice to have a living room close to the entrance? Why?	
2	Is it nice to have a kitchen close to the entrance? Why?	
3	Is it nice to have bedrooms in a distance with the entrance? Why?	
4	What the purpose of a corridor according to you; and why is it important or unimportant?	
5	Is it nice to have a bathroom and WC close to the bedrooms? Why?	
6	Is it nice to have bedrooms next to each other? Why?	
7	Is it nice to have bedrooms in a distance with the living room? Why?	
8	Would you like to convert one of the bedrooms into a separate guest room near the entrance?	
9	Is it nice to have a living room close to the kitchen? Why?	
10	What do you think about the open kitchen?	
11	Is it nice to have a separate bathroom in parents' bedroom? Why?	
12	Is it nice to live in house with a balcony? Why?	
13	In which locations would you like to have these balconies; for which purpose do you use them?	
14	What do you think about the spaces like the cellar, storage, or laundry?	

4. Contextual Questions		
<u>Please answer the questions below by writing in the blanks at the right-hand side.</u>		
1	Are you pleased to live in your house? Why?	
2	For which features did you prefer to buy or rent your unit?	

3	Which kind of house would you prefer to live in?									
4	If it is possible, would you like to move your flat? Why?									
5	Is the area of your unit sufficient for your needs?									
6	Are you pleased with the form of your corridor? (dimensions—length, width, height—shape, etc.)									
7	Do you think that the design of your unit is proper for the life style of your family?									
8	Does living in your housing cost much? (Dues, etc.)									
9	Do you think that your house is useful? Why?									
10	Which of the features do you criticize or like in your unit in general?									
11	How much important is it for you to have a nice view (sea, city, etc.) and sunlight? Why?									
12	By which of the adjectives do you describe your flat? (It can be marked more than one)	Wide/spacious	Beautiful	Shapeless	Narrow/jammed	Day-lighted	Dark	Cute	Boring	Simple
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Do you like the appearance of your apartment/block?									
14	Are you pleased to live in a multi-storey block?									

APPENDIX F

COMPARATIVE-TABLE FOR THE INHABITANT PROFILES

Table F.1 gives information about the inhabitant-profiles of the six selected-cases of the main study. This information is categorized according to the respects of age, sex, education, family type, and duration of inhabitation. By this way, the inhabitant-profiles of the main cases can be compared easily with each other, and some further interpretation becomes possible for similar studies.

Table F.1. Information about the inhabitant-profiles of the main cases (cells with dark grey demonstrate the highest percentage in each column; cells with lighter grey demonstrate the lowest percentage in each column)

		Age	Sex		Education	Family type	Duration of inhabitation	
		Older than 40	Men	Women	Bachelor (min.)	Nuclear	Less than 10 years	More than 10 years
High Income Group	Albayrak Mavişehir Housings	75%	75%	25%	90%	90%	17,5%	82,5%
	Soyak Mavişehir Housings	70%	54%	46%	83%	92%	25%	75%
Middle Income Group	Mimkent 1 Mass-Housings	70%	47%	53%	8%	95%	3%	97%
	Ege-Koop Körfez Houses	13%	0%	100%	0%	100%	65%	35%
Low Income Group	Narbel Mass-Housings	43%	23%	77%	13%	100%	2%	98%
	TOKI Buca Mass-Housings	13%	8%	92%	2%	98%	67%	33%

APPENDIX G

ANSWER FREQUENCIES OF TOTAL CALCULATION

Table G.1 gives the frequencies of the answers of conventional Kano questions with the categorical scores coming from the total calculation/evaluation of the questionnaires of six main cases. The scores of this total calculation are the same with the ones comprised by the simplification of the scores in each case.

Table G.1. Answer-frequencies of the conventional Kano questions with the categorical scores in total respect (cells with grey demonstrate the highest scores)

	Questioned characteristic	A	O	M	I(+)	I(0)	I(-)	R	Q	Score
	A house with ...									
1	a <i>corridor</i>	141	26	4	66	4	10	1	0	A
2	a <i>living room</i> connected to the <i>entrance hall</i>	6	2	4	49	11	140	39	1	I(-)
3	a <i>kitchen</i> connected to the <i>entrance hall</i>	13	0	3	59	13	156	8	0	I(-)
4	<i>bedrooms</i> connected to the <i>corridor</i>	27	17	9	186	3	10	0	0	I(+)
5	a bathroom and WC <i>next</i> to the <i>bedrooms</i>	67	6	5	167	0	7	0	0	I(+)
6	<i>bedrooms</i> placed <i>next</i> to each other	5	1	0	27	8	186	25	0	I(-)
7	a separate living room apart from the <i>guest room</i>	21	12	5	197	8	8	1	0	I(+)
8	<i>bedrooms</i> placed in a <i>distance</i> with the living room	58	17	1	169	5	2	0	0	I(+)
9	a living room and kitchen placed <i>next</i> to each other	59	18	2	161	9	2	1	0	I(+)
10	an <i>open kitchen</i>	51	20	2	135	35	8	1	0	I(+)
11	two wet cores (bathroom and WC)	13	14	1	97	114	13	0	0	I(0)
12	a <i>separate bathroom</i> in parents' bedroom	30	10	1	75	133	2	1	0	I(0)
13	a <i>balcony</i>	58	173	5	14	1	0	1	0	O
14	a <i>balcony</i> connected to the <i>living room</i>	47	121	4	65	11	4	0	0	O
15	a <i>balcony</i> connected to the <i>kitchen</i>	31	44	3	53	119	2	0	0	I(0)
16	a <i>balcony</i> connected to parents' bedroom	6	3	0	52	140	34	17	0	I(0)
17	a <i>balcony</i> connected to kid's room	0	1	0	7	116	86	42	0	I(0)
18	an additional space like a <i>cellar, storage, or laundry</i>	20	29	4	90	105	4	0	0	I(0)

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Ek, Fatma İpek. “Mimarlıkta Estetiğin Kökeni Üzerine: Piranesi ile Gelen Yol Ayrımı.” *International Symposium on Theories of Art / Design and Aesthetics*, Akdeniz University, 19-21 October 2011.

Çıkış, Şeniz, and Fatma İpek Ek. “Current Descriptions of the Concept of Housing Quality: Role of Spatial Design in the Total Quality of Mass-Housings in Izmir.” *New Housing Researchers*, NHR-2010 Istanbul Colloquium, Istanbul Technical University, 2-3 July 2010.

Çıkış, Şeniz, and Fatma İpek Ek. “Conceptualization by Visual and Verbal Representations: An Experience in an Architectural Design Studio.” *The Design Journal* 13: 3 (2010): 329-354.

Çıkış, Şeniz, and Fatma İpek Ek. “Konutta Lüks Kavramının İmgesel Dönüşümü: İzmir Kent Merkezinde Çok Katlı Lüks Konutlar.” *Mimarlık Dergisi* 348 (July-August 2009): 64-71.

Ek, Fatma İpek. “Türk Tasarım Tarihini Yazarken: Bir On Sekizinci Yüzyıl Polemiğinden Geliştirilebilecek Açılımlar.” *Kimliklerin Tasarımı. Türkiye Tasarım Tarihi Topluluğu (4T)*. Izmir University of Economics, 12-13 May 2008. Izmir: Izmir University of Economics, 2008.

Ek, Fatma İpek, and Deniz Şengel. “Mısır, Etrüsk, Roma: Piranesi ve Bir On Sekizinci Yüzyıl Tartışması.” *METU Journal of the Faculty of Architecture* 25: 1 (2008): 27-51.

Ek, Fatma İpek. “‘Karanlık’, ‘Sapkın’, ‘Saçma’: Piranesi Neden Yanlış Yorumlanıyor?” *Arredamento Mimarlık* 11 (November 2007): 58-67.

Ek, Fatma İpek. “Piranesi Eserleri Tipografyası.” *Arredamento Mimarlık* 11 (November 2007): 70-80.

Ek, Fatma İpek, and Deniz Şengel. “Piranesi Between Classical and Sublime.” *METU Journal of the Faculty of Architecture* 24: 1 (2007): 17-34.

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