POST DISASTER TEMPORARY HOUSES: THE PRODUCTION OF PLACE IN THE CASE OF 1999 MARMARA EARTHQUAKES IN KOCAELİ

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ABSTRACT

POST DISASTER TEMPORARY HOUSES: THE PRODUCTION OF PLACE IN THE CASE OF 1999 MARMARA EARTHQUAKES IN KOCAELI

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This master thesis will be focusing on prefabricated temporary houses and settlements in Kocaeli – as a place-making process – throughout post disaster reconstruction period of 1999 Marmara Earthquakes. Main stimulant for this research is the lack of acknowledgement of transforming urban and social environments under the overwhelming forces of disasters both in academic and professional domains in the country.

Appropriation and self-identification of temporary accommodation is a way of adaptation and a reaction to disruption caused by forced relocation due to disasters. Personalization process transforms the houses into homes, spaces into places. This transformation is to be analyzed within the framework of altering urban areas, disasters and adaptation processes of householders for the resumption of home. Case study will be based on temporary housing settlements – prefabricated houses – in city of Kocaeli.

The aim of this work is to understand the effective forces operating during post disaster temporary housing periods, to improve reconstruction and planning processes with the information generated out of the research and to provide data for the policy-making authorities and academic field.

Keywords: prefabricated houses, home, place-making, 1999 Marmara Earthquakes, urban environment

ÖZ

AFET SONRASI GEÇİCİ KONUTLAR: 1999 MARMARA DEPREMLERİ KOCAELİ ÖRNEĞİNDE YERİN ÜRETİMİ

Baş, Sibel
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Bu çalışma, 1999 Marmara Depremleri afet sonrası yeniden yapılanma döneminde Kocaeli ilindeki prefabrike geçici konutlar ve yerleşmelere yer yapma süreci olarak yaklaşacaktır. Ülkedeki akademik ve profesyonel alanlarda afetlerin baskın güçleri altında değişen kentsel ve sosyal çevrelerin yeterince kabul görmemesi bu araştırmanın temel çıkış noktasını oluşturmaktadır.

Afetler nedeniyle ortaya çıkan zorunlu yer değiştirme afetzedelerin hayatlarında aksamaya yol açar. Geçici barınakların kişiselleştirilmesi ve kendilenmesi, bu aksamaya verilen tepki ve oluşan koşullara uyum sürecidir. Bu süreç barınağı eve, mekanı yere dönüştürür. Bu dönüşüm başkalaşan kentsel alanlar, afetler ve hane halkının evi yeniden kurmak için geçirdiği uyum süreçleri çerçevesinde analiz edilecek, örnek inceleme, Kocaeli ilindeki geçici prefabrik konut yerleşmelerine odaklanacaktır.

Bu çalışma afet sonrası geçici barınma dönemlerindeki etkin güçleri anlamayı, yürütülen araştırmadan edinilen bilgiyle yeniden yapılanma ve planlama süreçlerini geliştirmeyi ve politika geliştirici otoritelerle akademik alana veri sağlamayı hedeflemektedir.

Anahtar kelimeler: prefabrike evler, ev, yer-yapma, 1999 Marmara Depremleri, kentsel çevre

To my dear family,

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TABLE OF CONTENTS

ABSTRACT iv
ÖZ vi
ACKNOWLEDGEMENTS ix
TABLE OF CONTENTS x
LIST OF TABLES xii
LIST OF FIGURES xiii
CHAPTERS 1
1 INTRODUCTION 1
1.1 Academic Motivations and Aim of the Thesis 1
1.2 Promises of the Thesis and Research Method 3
1.3 Introduction of the Thesis Structure 4
2 TEMPORARY HOUSING AND PLANNING: METHODOLOGY OF THE THESIS 6
2.1 Discussions on Temporary Housing and Field Research 6
2.2 Temporary Housing as a Step of Post-Disaster Reconstruction 13
2.3 Methodology 15
3 THE PLANNING OF TEMPORARY PLACE 17
3.1 Context 22
3.1.1 Overview of the Post-Disaster Reconstruction in Turkey 23
3.1.1.1 Disaster Laws 26
3.1.2 Urban Development of Kocaeli and Habitant Profile 28
3.1.3 Kocaeli Temporary Housing Settlements 1999: Introduction to the Case 35
3.2 Decision Making Process of Temporary Accommodation in Kocaeli 37
3.2.1 Turkish Statistical Institute Survey on Temporary Housing Preferences 37
3.2.1.1 Financial Support 40
3.2.1.2 Prefabricated Houses 41
3.2.1.3 Self-Built Shelters 41
3.2.1.4 Automobile Ownership 43
3.2.2 Technical Specifications and Announcement in Resmi Gazete 44
4 THE PRODUCTION OF TEMPORARY HOME 49

4.1 Location, Planimetry and Tectonics 54
4.1.1 Site Scale 56
4.1.1.1 Location and Approach 56
4.2 Planimetric and Tectonic Analysis 58
4.2.1 Site Scale 58
4.2.1.1 Site Layout and Relation with Urban Environments 58
4.2.1.2 Design Decisions on Residential and Public Areas 79
4.2.2 Building Scale 86
4.2.2.1 Architectural Diversities in the Making of the Settlements 88
4.2.2.2 Being an Intruder: Public and Private Spaces 91
4.2.2.3 Claim of the Environment and Self-identification 91
4.2.3 Block Unit Scale 91
4.3 Epilogue 96
5 POST-RECONSTRUCTION ASSESSMENT IN DISASTER AREA 100
5.1 Public Assessment 101
5.2 State Assessment 114
5.2.1 Prime Ministry State Planning Organization Report on the Economic and Social Effects of Earthquake 114
5.2.2 Prime Ministry Report on Problems and Requests in the Region after 17th August and 12th November 1999 Earthquakes 115
5.2.3 Turkish Court of Accounts Report on Operations of Ministry of Public Works and Settlement after Marmara Earthquakes 116
6 CONCLUSION AND DISCUSSION 123
6.1 Brief of the Thesis 123
6.2 Scope and Framework of the Thesis 125
6.3 Findings of the Thesis 126
6.3.1 Significance of the case 127
6.3.2 Disruption and discontinuities in knowledge 129
6.4 Final Words 130
BIBLIOGRAPHY 131
APPENDICES 137
A. Site plans of temporary housing settlements in Kocaeli 137
B. Resmi Gazete technical specifications announcement 158

LIST OF TABLES

TABLES

Table 1 List of companies, cities and number of houses to be built (Cumhuriyet Gazetesi, 25.09.1999, p.6). 45
Table 2 List of companies and number of houses to be built (Cumhuriyet Gazetesi, 25.09.1999, p.6). 46
Table 3 The information about scale, block and residence numbers (by the author) 80
Table 4 The information about demographics (by the author) 81
Table 5 The information about public facilities (by the author) 82
Table 6 The information about administrative facilities (by the author) 83
Table 7 The information about public services (by the author) 84
Table 8 The information about infrastructure (by the author) 85
Table 9 Payments by the state institutes (T.C. Sayıştay Başkanlığı, March 2002, p.45). 121
Table 10 Number of finished and incomplete prefabricated houses (T.C. Sayıştay Başkanlığı, March 2002, p.46)..... 121
Table 11 Number of finished and incomplete prefabricated houses (T.C. Sayıştay Başkanlığı, March 2002, p.46)..... 122

LIST OF FIGURES

FIGURES

Figure 1 Earthquake risk zones of Turkey (T.C. Başbakanlık Afet ve Acil Durum Yönetimi Başkanlığı Deprem Dairesi Başkanlığı)..... 23
Figure 2 The distribution of big earthquakes in Turkey (T.C. Başbakanlık Afet ve Acil Durum Yönetimi Başkanlığı Deprem Dairesi Başkanlığı). 24
Figure 3 Emergency shelter tents of Kızılay (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999). 25
Figure 4 Emergency shelter tents provided by army (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999). 26
Figure 5 Land structure of Izmit Bay (International Earthquake Symposium Kocaeli 2009). 30
Figure 6 Panorama of the city of Izmit in 1745 (International Earthquake Symposium Kocaeli 2009)..... 31
Figure 7 Seismic risk zones of Kocaeli (TÜBİTAK Marmara Araştırma Merkezi)..... 32
Figure 8 Map showing the intensity of Izmit Earthquake (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999)..... 33
Figure 9 Self-built timber shelter in Gölyaka (T.C. Gölyaka Kaymakamlığı, 2000). 42
Figure 10 Self-built timber shelter in Gölyaka (T.C. Gölyaka Kaymakamlığı, 2000). 43
Figure 11 The location and aerial view of temporary housing settlements (image from Google Earth accessed on 24.06.2011). 54
Figure 12 Aerial view of temporary housing settlement in disaster area (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999). 57
Figure 13 Aerial view of temporary housing settlement in disaster area (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999). 57
Figure 14 The diagram of Bahçecik 3 Temporary Housing Settlement (drawing by the author). 60
Figure 15 The diagram of Bahçecik 2 Temporary Housing Settlement (drawing by the author). 61
Figure 16 The diagram of Darıca Temporary Housing Settlement (drawing by the author). 62

Figure 17 The diagram of Değirmendere Temporary Housing Settlement (drawing by the author). 63
Figure 18 The diagram of Derince 1 Temporary Housing Settlement (drawing by the author). 63
Figure 19 The diagram of Derince 1 Temporary Housing Settlement (drawing by the author). 64
Figure 20 The diagram of Donanma Komutanlığı Başiskele Temporary Housing Settlement (drawing by the author). 65
Figure 21 The diagram of Donanma Komutanlığı Çuhane Temporary Housing Settlement (drawing by the author). 66
Figure 22 The diagram of Döngel 2 Temporary Housing Settlement (drawing by the author). 67
Figure 23 The diagram of Ereğli Temporary Housing Settlement (drawing by the author). 68
Figure 24 The diagram of Gölcük Gözleme Tepe Temporary Housing Settlement (drawing by the author). 69
Figure 25 The diagram of Halıdere Temporary Housing Settlement (drawing by the author). 70
Figure 26 The diagram of İzmit Temporary Housing Settlement (drawing by the author). 71
Figure 27 The plan of Karamürsel Temporary Housing Settlement (İller Bankası). 72
Figure 28 The plan of Karamürsel Temporary Housing Settlement (drawing by the author). 72
Figure 29 The diagram of Körfez 5 Temporary Housing Settlement (drawing by the author). 73
Figure 30 The diagram of Köseköy Temporary Housing Settlement (drawing by the author). 74
Figure 31 The diagram of Kullar I-II Temporary Housing Settlement (drawing by the author). 75
Figure 32 The diagram of Kullar III Temporary Housing Settlement (drawing by the author). 76
Figure 33 The diagram of Ulaşlı Temporary Housing Settlement (drawing by the author). 77
Figure 34 The diagram of Uzunçiftlik Temporary Housing Settlement (drawing by the author). 78

Figure 35 The diagram of Yuvacık Temporary Housing Settlement (drawing by the author). 79
Figure 36 Temporary housing settlement neighborhood in disaster area (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999). 86
Figure 37 Temporary housing settlement neighborhood in disaster area. (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999) 87
Figure 38 The frontyard of a prefabricated house (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999). 87
Figure 39 Diverse parcel, road and block sizes (drawing by the author). 89
Figure 40 Plan and façade drawings (drawing by the author). 90
Figure 41 Interior view of a temporary prefabricated house (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999) 92
Figure 42 Interior view of a temporary prefabricated house (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999) 93
Figure 43 The self-built shelter by earthquake victims (Deprem Sempozyumu Kocaeli 2005). 93
Figure 44 The plan and views of prefabricated houses provided by the state (Deprem Sempozyumu Kocaeli 2005). 94
Figure 45 The interior and exterior views of prefabricated (Deprem Sempozyumu Kocaeli 2005). 94
Figure 46 The construction of concrete basement. (T.C. Başbakanlık Devlet İstatistik Enstitüsü, September 1999) 95
Figure 47 Fevzi Çakmak Temporary Prefabricated House (International Earthquake Symposium 2007). 110
Figure 48 Dismantling steps of prefabricated houses (International Earthquake Symposium 2007). 111
Figure 49 Inappropriate storage (International Earthquake Symposium 2007). 112
Figure 50 Inappropriate storage (International Earthquake Symposium 2007). 112
Figure 51 View of concrete foundations (International Earthquake Symposium 2007).. 113
Figure 52 Dismantling operations (International Earthquake Symposium 2007)..... 113
Figure 53 The organization scheme of Ministry of Public Works and Settlement (T.C. Sayıştay Başkanlığı, March 2002). 118
Figure 54 The use of financial resources (T.C. Sayıştay Başkanlığı, March 2002)..... 119
Figure 55 Prefabricated housing settlement in disaster area (T.C. Sayıştay Başkanlığı, March 2002). 120

Figure 56 Bahçecik 3 nolu Geçici İskan Alanı (İller Bankası) 137
Figure 57 Bahçecik 2 nolu Geçici İskan Alanı (İller Bankası) 138
Figure 58 Darıca Geçici İskan Alanı (İller Bankası) 139
Figure 59 Değirmendere Geçici İskan Alanı (İller Bankası) 140
Figure 60 Derince 1 nolu Geçici İskan Alanı (İller Bankası) 141
Figure 61 Derince 1 nolu Geçici İskan Alanı (İller Bankası) 142
Figure 62 Donanma Komutanlığı Başiskele Geçici İskan Alanı (İller Bankası) 143
Figure 63 Donanma Komutanlığı Çuhane Geçici İskan Alanı (İller Bankası) 144
Figure 64 Döngel 2 Geçiic İskan Alanı (İller Bankası) 145
Figure 65 Ereğli Geçici İskan Alanı (İller Bankası) 146
Figure 66 Gölcük Gözleme Tepe Mevkii Geçici İskan Alanı (İller Bankası) 147
Figure 67 Halıdere Geçici İskan Alanı (İller Bankası) 148
Figure 68 İzmit Geçici İskan Alanı (İller Bankası)..... 149
Figure 69 Karamürsel Geçici İskan Alanı (İller Bankası) 150
Figure 70 Körfez 5 nolu Geçici İskan Alanı (İller Bankası)..... 151
Figure 71 Köseköy Geçici İskan Alanı (İller Bankası)..... 152
Figure 72 Kullar I ve II Etap Geçici İskan Alanı (İller Bankası)..... 153
Figure 73 Kullar III Etap Geçici İskan Alanı (İller Bankası)..... 154
Figure 74 Ulaşlı Geçici İskan Alanı (İller Bankası) 155
Figure 75 Uzunçiftlik Geçici İskan Alanı (İller Bankası)..... 156
Figure 76 Yuvacık Geçici İskan Alanı (İller Bankası) 157
Figure 77 Resmi Gazete technical specifications announcement 158

CHAPTER 1

INTRODUCTION

1.1 Academic Motivations and Aim of the Thesis

Major part of urban settlements and industrial zones in Turkey are located in earthquake prone areas. North Anatolian Fault, running along the country is an active fault producing big scale earthquakes within certain time intervals. The country has experienced earthquakes causing extensive destruction many times in history and had to develop strategies for reconstruction and recovery processes each time.

On 17th of August 1999, city of Kocaeli in Marmara Region has experienced an earthquake destroying urban center and many of districts within administrative borders. The devastating effects of earthquake covered a large area including neighboring cities Yalova, Istanbul, Bolu and Adapazari.

Following the disaster, the state has undertaken the recovery period including the planning and realization of reconstruction processes. Ministry of Public Works and Settlement assigned its departments to complete all three steps of reconstruction described by Bulent Ecevit, the Prime Minister at the time as;

- emergency sheltering,
- temporary housing
- and permanent housing.

Throughout the reconstruction period another major earthquake hit Bolu on 12th of November 1999 causing damage in same region. The disasters were referred as Marmara and Duzce Earthquakes by state afterwards. The data concerning the loss caused by these

earthquakes were not provided separately further on. Moreover recovery and reconstruction processes have been combined and considered as one by the state.

Loss of houses due to earthquakes in 1999, the reconstruction process and future earthquake resistant planning have been researched and documented by academic and public domains during last twelve years. Whereas the gap between the onset of this loss and regaining of home, temporary accommodation, is relatively less questioned.

The period between the loss of housing and regaining of it by householders provides the possibility of observing the recovery and place making processes of disaster victims and planners. Temporary accommodation sets economic, cultural and social challenges for planners and decision making authorities within a time limit. Moreover, it also forces the users to adapt to a new housing environment and resume daily life for a certain amount of time within a given location. Thus this step of post-disaster period, forms an area where the house is to be regained and transformed into a home and at the same time challenged to be an aphemeral one by temporariness.

Planning of this period determined its abilities and deficiencies as a response to crisis and management of emergency situations. Temporary accommodation period in 1999 consisted of

- decision-making
- site-selection,
- settlement planning,
- construction,
- occupancy
- post-occcupancy steps.

The production of place in temporary accommodation period had two major actors and approaches. The providers and users of these settlements produced the place separately from one another. The providers, decision makers and planners, planned and constructed the settlements depending on the resources and the users, disaster victims, transformed these settlements according to their needs during occupancy.

Providers – decision makers and planners;

- decision making
- site selection
- settlement planning

Users – disaster victims;

- occupancy
- post-occupancy

Construction and use of houses have been questioned in quality of their design, adequacy and ability of being a place by academic studies and mass media. Although the settlements and their design have been documented and criticized relatively more than other steps, the production and planning processes have still not been questioned and analyzed in detail.

The focus of this master thesis will be this gap in the area aiming to understand the effective forces operating during post disaster temporary housing periods, to improve reconstruction and planning processes with the information generated out of the research and to provide data for the policy-making authorities, academic and professional fields.

1.2 Promises of the Thesis and Research Method

The thesis will be examining the decision-making, planning, occupancy and post-occupancy steps of temporary housing settlements in city of Kocaeli.

Kocaeli has been selected due to its being the center of the first earthquake on 17th August 1999 and being the urban settlement which has suffered the most extensive destruction and loss within the region. Moreover Kocaeli has undergone the same processes of rapid urban expansion, population increase and migration which are the effective forces transforming major part of the disaster prone cities in Turkey. Hence, the city sets an example for the country in understanding the immediate disaster response and post disaster recovery capacities of an urban environment which has been shaped into its current form by the above mentioned factors.

Thus the main outcome of the research is expected to be the detailed analysis of temporary accommodation step of post-disaster recovery process which is planned and realized in search of responding to the needs of an urban environment in consideration to its physical and demographic transformation throughout time.

The study will be based on rendering of archives of relevant institutions which were in effect at the time, literature review covering the national and international approaches to the subject, interviews with the authorities and in particular the planners who participated in the process of temporary housing, academic studies and articles in periodicals about the settlements reflecting the experiences of both providers of the houses and householders of these houses afterwards.

The overall combination of all these studies into a whole, will be giving an integrated overview of Kocaeli temporary housing period in 1999.

1.3 Introduction of the Thesis Structure

The thesis will be analyzing prefabricated housing settlements in city of Kocaeli in three major steps retracing the set of actions that took place following the disasters supported with the background formed by the previous mentioned studies.

In order to set the academic context of the research and explain the method to be used throughout this thesis further in detail, the discussions and concepts related to the field of study are going to be explored before inquiring into the selected case. Within this part of the study, the concepts related to diverse aspects of temporary housing by academic scholars are to be described and compared in regard to the case.

Based on the discussions setting the framework of the research, the following chapter will be focusing on the decision making and planning steps of the case. To be able to understand and introduce the case in Kocaeli in 1999, the information about the approach to post disaster reconstruction in Turkey will be outlined. This approach is to be defined by the laws and organizations of state institutions in effect at the time of the disasters. Moreover, the urban development and transformation of the habitant profile of the city

will be provided. The decision making process of temporary housing in disaster area is to be unfolded with the aid of official documents and reports at the final parts of the chapter.

The fourth chapter of the research will be focusing on the realization and occupancy of the temporary prefabricated housing settlements in Kocaeli supported by the analysis of these environments from site scale to block unit scale. The locations of settlements in regard to the administrative borders of the city and its districts and in regard to the urban structure of the districts they are located in are to be questioned in detail. The analysis at this chapter is going to be supported by the visuals gathered and produced throughout the research. The plans and aerial views of settlements, diagrams of diverse parceling decisions within the settlements and block plans of houses provided by the technical specifications will be forming this support. In addition, following the visual documentation and analysis, the residential, public and infrastructural elements forming the settlements are to be listed in tables.

In order to be able to understand the abilities and deficiencies of the reconstruction policy utilized in 1999 and the places produced as an outcome of this policy, the fifth chapter will be focusing on post-reconstruction and post-occupation assessment of temporary prefabricated houses in disaster area. The evaluation will be based on two diverse approaches providing data from habitants, planners, constructors and observers of the prefabricated houses; former being public and academic approach and latter being the state assessment. Although both of these approaches are expected to render the study with important data, the approach of state institutions and their reports are critical in understanding the self-evaluation mechanisms of the state in case of disasters.

In conclusion the thesis is to be summarized with a brief. The initial goals and expected outcomes of the study are to be remarked within the framework and then followed by the findings of the study. The incorporated overview of the research is to be drawn by these findings under the structure of significance of the case and disruptions and discontinuities of knowledge gained with the experiences. The conclusion will be finalized with further suggestions for future researchers willing to study in this area.

CHAPTER 2

TEMPORARY HOUSING AND PLANNING: METHODOLOGY OF THE THESIS

2.1 Discussions on Temporary Housing and Field Research

Temporary accommodation process in Kocaeli included destruction of urban center and displacement of masses, followed by relocation of disaster affected in new settlements.

In order to understand this process the thesis will be based on diverse discussions and concepts. The discussions surrounding post-disaster recovery circumstances within academic context will be introduced providing a general summary to be considered further in detail throughout the chapters.

Urban settlements, relocation, and mobility caused by disasters shall be analyzed related to subjective and individual influences and stories of householders. How does the displaced population define home? What kind of adaptive responses do they give in their new refuges, new destinations after years?[1]

Daniel Stokols and Irwin Altman point out that relocation and displacement have various reasons depending on whether they are voluntary or forced. Voluntary relocation includes a decision process of;

- decision to leave
- search for a new place
- and the choice among alternatives. Whereas forced relocation does

[1] Irwin Altman and Daniel Stokols, *Handbook of Environmental Psychology* (New York: Wiley, 1987), p. 676.

not follow these steps leading to a disruption.[2]

The space defined as ‘emptiness’ and spacing as ‘making empty, giving up and abandoning’ by Martin Heidegger will be the start point in understanding locations selected for prefabricated settlements in Kocaeli. As Heidegger explains, in this case space is just what is to be occupied, what is to be taken since it is what receives, what holds in and what grants closure. Space makes room in the manner of yielding a place, of granting the specifity to ‘removals-unto’. The space provides possibility for adapting and making place for the displaced.[3]

Diverse definitions of space and place and aspects of these definitions will be forming the background for the analysis of prefabricated houses in Kocaeli.

Space being described as non-specific and empty, Doreen Massey defines place with regard to space. If space is a simultaneity of stories, places are collections and intersections of those stories as well as of the non-meetings-up, the disconnections and the relations not established, the exclusions within this space. She points that all these contribute to the specifity of place.[4] Place is differentiated from space with its quality of being peculiar. David Harvey emphasizes the collection and overlapping of stories in place likewise. He relates place to memory and future, explaining place as sites of collective memories that hold out the prospects for different futures.[5]

One of the main references for most studies about place is Edward Relph’s Place and Placelessness. He states that to be human is to have and to know one’s place. He refers to Martin Heidegger telling that ‘place’ places man in such a way that it reveals the external bonds of his existence and at the same time the depths of his freedom and reality.’[6] Relph defines place as not just the ‘where’ of something; as the location plus everything that occupies that location seen as an integrated and meaningful phenomenon.’[7]

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[2] Ibid., p.669
[3] Martin Heidegger, *Mindfulness* (New York: Continuum Books, 2006), p. 85.
[4] Doreen Massey, *For Space* (London: Sage Publications, 2005), p. 130.
[5] David Harvey, *Cosmopolitanism and Geographies of Freedom* (New York: Columbia University Press, 2009), p. 179.
[6] Edward Relph, *Place and Placelessness* (London: Pion Limited, 1976), p. 1.
[7] Ibid., p. 3.

Relph explains placelessness as well as place itself. He describes placelessness as both an environment without significant places and the underlying attitude which does not acknowledge significance in places. So the simultaneity and emptiness attributed to space also includes the insignificance. Placelessness relates to cutting roots, eroding symbols, replacing diversity with uniformity and experiential order with conceptual order.[8] As space can be changed from insignificant into significant thus a place; this definition makes it understandable that the quality of being uniform and insignificant can also diminish a place to space, emptiness.

Unlike Edward Relph, Marc Auge defines non-places. He tells that if we define a place as relational historical and concerned with identity, then space which cannot be defined as such will be a non-place.[9]

Auge explains that the distinction between places and non-places derives from the opposition between place and space. He refers to Michel de Certeau for the definition of space; describing space as 'frequented place', 'an intersection of moving bodies'.[10]

Auge bases his definition of 'non-place' on two realities; spaces formed in relation to certain ends and the relations that individuals have with these spaces.[11] He explains that 'anthropological place' is formed by individual identities while non-place creates the shared identity of passengers.[12]

The planning of settlements in 1999 encouraged 'placelessness', which was, a weakening of the identity of places to the point where they not only look alike but feel alike and offer the same bland possibilities for experience.[13]

Earthquakes in Marmara Region in 1999 caused forced relocation. The movement from one place to another continued till the displaced population reached its final destination, permanent houses. Prefabricated housing settlement was just a break during this journey. Doreen Massey describes the journey between places as to move between collections of

[8] Ibid., p. 143.
[9] Marc Auge, Non-places Introduction to an anthropology of supermodernity (London and New York: Verso, 1995), p. 77.
[10] Ibid., p. 79.
[11] Ibid., p. 94.
[12] Ibid., p. 101.
[13] Relph, op. cit., p. 90.

the paths followed through space and to reinsert oneself in the ones which he/she relates.[14] However, under the circumstances of disaster, it is not possible for the traveler to choose the place which he/she relates. She/he has to find ways to relate to the place subsequently to the arrival. As Stephen Cairns points; the migrant might seem to be rootles and deterritorialized however her/his aim/destiny is to reterritorialize, to settle, to make a home, to become a citizen in a new place. This is what separates the migrant from the nomad.[15]

The traveler is moving from one place to another in order to find a final destination. Nomad on the other hand carries his/her place with him/her searching for a suitable location to temporarily settle down. For their final destinations and thus their new settlements migrants are the ones, needing to adjust to new conditions and reterritorialize. Paul Carter refers to Elias Canetti 1978 for the definition of the migrant 'as the ones who always come from elsewhere'.[16] During post-disaster periods the relocation is not voluntary and does not follow the decision making and selection process of the migrant. Migrants confront with the disruption caused by the loss of old houses and appropriation process of new houses. Elizabeth Kenworthy Teather looks up to Rutherford 1990, in order to explain that migrants constantly negotiate between an inherited past and a heterogeneous present. She tells that they live in a state of 'inbetweenness' belonging neither one place nor the other.[17] The attachment formed with place is disrupted by a disaster and is to be found in a new place.

The absence of attachment to new settlement is seen as a deficiency for migrants and the success of adaptation to this new settlement is measured by the ability of it being a place. However, Edward Relph tells that location or position is neither necessary nor a sufficient condition of place. Relph emphasizes that this demonstrates that mobility or nomadism do not make it impossible to form an attachment to place.[18] Thus, in contemporary society migrants are not automatically homeless or placeless. The adaptation and self-identification processes carried out by migrants create the attachment to their environment even if the circumstances do not provide a pre-given one.

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[14] Doreen Massey, *For Space* (London: Sage Publications, 2005), p. 130.
[15] Stephen Cairns, *Drifting: Architecture and Migrancy* (London and New York: Routledge, 2004), p. 2.
[16] Ibid., p. 83.
[17] Elizabeth Kenworthy Teather, *Embodied Geographies Spaces, Bodies and Rites of Passage* (London and New York: Routledge, 1999), p. 188.
[18] Edward Relph, *Place and Placelessness* (London: Pion Limited, 1976), p. 30.

The post-disaster period includes break in bonds and discontinuity. Loss of houses and reconstruction of new ones bring the question of the definition of home. Edward Relph describes home as an attachment to a particular setting, a point of departure in comparison with which all other associations with places have only a limited significance and from which we orientate ourselves and take possession of the world.[19] Home is a reference point for our relations with our environment. However, the search for home after a disruption is not necessarily concluded with the ideal circumstances. Thus migrants keep searching for home. Elizabeth Kenworthy Teather emphasizes that traditional definitions of home have failed to those who have given up the search for home. Teather tells that they started to think of home nowhere and home anywhere as post-modernist travelers. She explains that post-modernist discourse on home challenges the traditional notion of home and allows one to make an explicit connection between migration and home. Within this discourse; the world in constant flux provides unpredictable contingencies.[20] Thus, as Edward Relph has explained before, place and home do not depend on certain conditions to be found. The occupiers of place and home in fact are the creators. The reterritorialization and relocation of disaster-affected include diverse steps and actors to be adapted and used by the migrants in the end.

The relocation of migrants includes reconstruction of their lost dwellings. Mark Rkatansky refers to Martin Heidegger 1971 giving the definition of dwelling as; 'to be set at peace, to remain at peace within the free, the preserve, the free sphere that safeguards each thing in its nature'.[21] Based on this definition, the migrant is to be set at peace with the new dwelling which is provided to him/her. Stephen Cairns explains that architecture took its place in this reterritorialization in different forms ranging from the establishment of enclaves segregated from host communities, to the construction of individual dwellings distributed among host communities in the name of assimilation. In between the extremes of segregation and assimilation there are diverse adaptive, syncretic, and hybridized modes of architectural reterritorialization.[22] The provision of housing is to furnish the migrants possibility of reconstituting the connection they have lost. David Harvey refers to Christian Norberg Schulz in his explanation of the existential purpose of building,

[19] Ibid., p. 40.
[20] Elizabeth Kenworthy Teather, *Embodied Geographies Spaces, Bodies and Rites of Passage* (London and New York: Routledge, 1999), p. 186-187.
[21] Stephen Cairns, *Drifting: Architecture and Migrancy* (London and New York: Routledge, 2004), p. 99.
[22] Ibid., p. 2.

architecture and urban design which is to uncover the meanings of potentially present in the given environment.[23]

Under negative effects of disruption, residents give adaptive responses and optimizing behaviors to return to a less negative state.[24] As Stephen Cairns states; within the architecture/migrancy association main image to surface is that of the adaptations carried out by migrants on the architectures of their 'destinations'.[25]

Migrancy due to disasters carries connotations of traumatic displacement. Unlike the architecture carried out by migrants for voluntary relocation, architecture for migrants has the diminished state of being in action assigned to its inhabitants. Cairns gives borderline architectures of Nissen-huts used during World War II, shantytowns and refugee camps as example. Stephen Cairns warns that this assignment can only be made in case of failing to notice the exerting power that is regulary exercised by migrants in order to provide their own shelter in circumstances of disaster or poverty.

Among the types of architecture for migrants the situation in which public opinion is mostly formed upon is emergency housing and disaster relief structures. These structures' design is to respond to the immediate consequences of a mass forced displacement by a disaster or war.[26]

As Stephen Cairns points out emergency shelters responding to mass forced displacement by disasters are developed and provided by governmental, inter-governmental and non-governmental organizations often in collaboration with their military or private sector partners from the building and engineering industries. Cairns explains the whole process and discourse of emergency housing. He states that the discourse of emergency housing and disaster relief is formed by the nature of the disaster itself and its expected disruptive effects on human life. Due to these limiting conditions; the architecture of these structures is inscribed in terms of economic, logistical, structural and material efficiency. In a conventional manner, emergency housing is conceived and delivered through anonymous,

[23] David Harvey, *Cosmopolitanism and Geographies of Freedom* (New York: Columbia University Press, 2009), p. 180.
[24] Irwin Altman and Daniel Stokols, *Handbook of Environmental Psychology* (New York: Wiley, 1987), p. 675.
[25] Stephen Cairns, *Drifting: Architecture and Migrancy* (London and New York: Routledge, 2004), p. 18.
[26] Ibid., p. 23.

large scale and bureaucratized operations. Stephen Cairns classifies this kind of bureaucratic vernacular architecture as a different kind of architecture-without-architects, 'from above'. Cairns gives data about the post-disaster houses referring to Ian Davis, %80 of post-disaster accommodation is built by the victims of such disasters themselves. He further explains that due to this situation; the image of a purpose-built architecture for migrants is a peculiar one. Moreover, this conventional 'from above' model of emergency shelter provision has been augmented by more responsive models that seek to encourage sustainable knowledge transfer in the field of housing.

Stephen Cairns states that this seemingly anonymous field is also interlaced with famous architects. He gives the example of Shigeru Ban, who has also worked through post-disaster period in 1999 Marmara Earthquakes. Ban's paper tube structures have been used in diverse disaster areas, and his approach has been widely discussed in bureaucratic, professional and art contexts. His work has received formal institutional support from United Nations as well. Cairns criticizes the casual and licentious consideration of this kind of accommodation in field of architecture whereas emergency housing provision is disciplined by its instrumental remit. He notes that this is visible in Shigeru Ban's expression that emergency housing, in order to attend to the migrant's 'psychological state', needs to 'be beautiful'. He claims that Ban deliberately promotes an ambiguity between being 'moved' emotionally and being moved on. Stephen Cairns further explains that this kind of approach generates a consequence of finding aesthetic experience close to that of the dismal. Moreover, it is an indicator that architecture's aesthetic capacities are being exercised even in these most challenging of situations.

Referrinfg to Ian Davis, Stephen Cairns tells that many of the specialist agencies dealing with disaster relief shelter understand the involvement of architects as opportunism. These agencies are skeptical of the 'ingenuity and persistence of designers'. Their opinion about the architects involved in this production, this architecture-for-migrant is simply 'an opportunity for generating innovative designs that are impossible to implement'.[27]

Cairns tells that this argument includes the assumption that the design parameters of disaster-relief-shelter offer architects a socio-political cover unchained exercise in existenzminimum functionalism as well as a more general aesthetics of minimalism. He furthermore argues that by the way of this moral cover, deeply held modernist attitudes

[27] Ibid., p. 24.

are able to be unapologetically aired. He refers to Rem Koolhaas, as capturing architecture's undifferentiating enthusiasm for this architectural genre in his bitter observation 'Burns are the ideal clients of modern architecture: in perpetual need of shelter and hygiene, real lovers of sun and the great outdoors, indifferent to architectural doctrine and to formal layout'. Stephen Cairns points out that the increasing popularity of this genre within contemporary architectural discourse suggests that the compelling and over-riding concern is the possibility for experimentation, not the object of experimentation. Cairns concludes that in current architectural discourse, architecture-for-migrants, despite its 'adminitrative misery', sits within this larger pool of opportunities for experimentation on mobility, ephemerality and '21st century nomad life' referring to Bahamon (2002).[28]

2.2 Temporary Housing as a Step of Post-Disaster Reconstruction

Post-disaster reconstruction consists of diverse steps answering diverse needs of dwelling. Depending on the urgency and size of need; emergency shelters are immediately provided, followed by temporary shelters, temporary housings and finally; permanent housings. Within these steps temporary housing is where the discussions and concepts about place and home get involved in the process due to the resumption of household daily activities.

Referring to Enrico Quarantelli and his division of housing and sheltering, Cassidy Johnson explains the reconstruction steps:

- Emergency shelter: a place where a family stays during the height of the emergency. This can be a public facility or the home of a friend or family member. Since the stay is short there is no provision of food or other services.
- Temporary shelter: a place where a family resides immediately following the disaster for an expected short stay. This can be a tent, a self-built shelter, a public facility, the home of family or friends, or a second home. The length of stay dictates the need for food, possibly medical provision and other services.

[28] Ibid., p. 25.

- Temporary housing: a place where a family resides temporarily and resumes their household responsibilities and daily activities. This can be a prefabricated temporary house, a winterized tent, a self-built shelter, a mobile home, an apartment, or the home of family member or friend.
- Permanent housing: the place where a family will reside permanently after the disaster. This refers to the family returning to their rebuilt home or moving into new permanent quarters in the community.[29]

Temporary accommodation is disaster affected families' interim lodging between the onset of the disaster and the period when they regain permanent housing. It fills the gap between the immediate relief phase and the later construction phase. Housing involves the resumption of household responsibilities and activities whereas in sheltering normal daily life activities are put on hold.

Cassidy Johnson lists various considerations for the construction of temporary accommodation settlements. The type of houses, regional and local issues and climate do not depend on the disaster itself. However, long-term effects of temporary accommodation, project-procurement, planning and construction time, permanent reconstruction strategy and timing and location depend on disaster.[30]

Depending on the disaster; different planning variables are dominant over the construction of temporary housing. The project management of temporary housings with a realistic timeline, pre-planning of the location and pre-determined contracts for the land is necessary. Temporary accommodation has long-term effects such as the change in physical structure of the city. They may be used longer than intended; turning into permanent in time.

Construction of temporary housing is directly related to that of permanent ones. The amount of time that the temporary accommodation will be needed and temporary accommodations' construction causing a delay in permanent housing strategy are key issues of the cycle.

[29] Cassidy, Johnson, "What's the Big Deal about Temporary Housing? Planning Considerations for Temporary Accommodation after Disasters: Example of the 1999 Turkish Earthquakes," http://www.grif.umontreal.ca/pages/i-rec%20papers/cassidy.PDF (accessed June 15, 2009).
[30] Cassidy Johnson, What's the Big Deal about Temporary Housing?

In the case of 1999 Marmara Earthquakes the temporary housing has been selected as prefabricated blocks which indicated that they would be used longer than a year or two.

2.3 Methodology

Main focus of the research is the planning and production of place in temporary housing settlements in city of Kocaeli. The reconstruction of an urban environment going through a post-disaster period is to be deciphered by following the traces of whole procedure twelve years after the disaster itself.

The gaps determined in the research area, the questions not answered by academic or public assessments are to be investigated and completed in order to contribute to the existing knowledge.

The research will be based on archive research, literature review, interviews with planners, academic studies and mass media news about the prefabricated housing settlements in Kocaeli. The overall review of all these studies will be giving a whole process picture of Kocaeli temporary housing settlements.

Literature review about post-disaster housing, displacement, relocation and place-making will be providing background discussions for the analysis of the information gathered by interviews and archive researches.

The process of planning and production of prefabricated houses in Kocaeli is to be classified by interviews with the planners of the period. The outline drawn by the planners is to be supported by official settlement plans and specifications provided by Ministry of Public Works and Settlement for the prefabricated houses.

The plans of the settlements are to be analyzed based on detailed understanding of space division decisions, public services and privacy considerations of planners. Visual diagrams are to be utilized in order to understand the reasoning behind selection of locations and their relations with existing urban fabric.

The behavoial analysis is to be based on previous researches carried by academic and public domains. Moreover, mass media tools are to provide documentation of how users responded to these new settlements.

CHAPTER 3

THE PLANNING OF TEMPORARY PLACE

> "To live in an environment which has to be endured or ignored rather than enjoyed is to be diminished as a human being."[31]

This chapter will be focusing on the planning process of temporary housing settlements in Kocaeli in 1999. In order to understand this period, the background of post disaster reconstruction in Turkey is to be discussed. The effective laws and institutions at the time of the disaster and decision making authority organization are to be explained as well.

In order to be able to understand the provision and production of post-disaster temporary accommodation it is necessary to consider the discussions about place and its production through the concepts that have been outlined in the previous chapter. The empty space which receives removals unto and the act of dwelling within this space is the base of this process. However, the components of place which is differentiated from space by its significance to its inhabitants are necessary to be considered in this act.

As defined by Martin Heidegger; space is what receives, what holds in and grants closure and thus is to be occupied and taken.[32] So throughout the planning of temporary settlements in Kocaeli; space made room for removals unto and was the source of place to be formed by disaster relief structures. The space provided emptiness to be filled and occupied. However, due to the nature of temporary housing, the space was to be occupied for a certain period of time thus was to be a place for a limited period as well. Following the end of need for these units, place was to be abandoned and emptied to return to its insignificance once again. Space, in case of Kocaeli temporary prefabricated houses, gained the ability of being a place for a limited interval unlike any other transformation.

[31] Edward Relph, *Place and Placelessness* (London: Pion Limited, 1976), p. 147.
[32] Martin Heidegger, *Mindfulness* (New York: Continuum Books, 2006), p. 85.

Design and planning of temporary accommodation differentiates from the others in this particular condition. The space is transformed in order to be able to host 'home' for a certain time and still be able to provide the sense of attachment it requires.

Edward Relph refers to Martin Heidegger to define the act of building, occupying the geographic space (Vycinas, 1961, pp.14-15). He explains that by the very act of building; space is moulded, created and possessed in a way which is not deliberate and self-conscious. The modification and transformation is dwelling within the space, thus building is dwelling. The result is places which evolve and have an organic quality.[33] The act of building within the space for temporary houses alters it for embracing the dwelling.

On the other hand, Relph refers to Norberg-Schulz, 1971, pp.13-16 explaining that architectural space connects closely to deliberate attempt of creating spaces. However, he also points out that the space of city planning is primarily based on function in two dimensional map spaces instead of experiences of space.[34] This explanation makes the settlement planning of prefabricated house more comprehensible in its design aspects. The major concern for two dimensional, cognitive space of maps is clearly visible in site plans of settlements, which will be analyzed in detail within the production of temporary home. Relph criticizes that space under these ciscumstances is perceived to be manipulable according to the constraints of functional efficiency, economy and the whims of planners and developers.

Edward Relph draws attention to the connection between the space of urban planning and architectural space throughout history which resulted in continuity between buildings, streets and squares. The disruption in this link clearly alienated the architectural space and diminished it to that of individual buildings constructed in isolation. Thus the experience of the spaces among buildings is left to chance.[35] In case of Kocaeli temporary housing settlements the design process has started with the architectural space and its placement within the space. As a consequence the planning and design process followed a path reverse than usual.

[33] Edward Relph, *Place and Placelessness* (London: Pion Limited, 1976), p. 17-18.
[34] Ibid., p. 22.
[35] Ibid., p. 23.

Moreover, as Christian Norberg Schulz states referred by David Harvey that the experiential anticipated outcome of building, architecture and urban design is to uncover the meanings of potentially present in the given environment. In the case of Kocaeli, since the design process started with the units themselves and followed by site planning; the purpose of uncovering the potentials of given environment was not a main consideration.[36]

Marc Auge tells that the layout of the house, the rules of residence, the zoning of the village, placement of altars, configurations of public open spaces, land distribution provide every individual a system of possibilities both spatial and social.[37] The spatial forms of routes, axes, paths, crossroads and open spaces are diverse institutional arrangements establishing social space. Auge explains that in geometric terms, these forms correspond to line, intersection of lines and the point of intersection.[38]

Furthermore, Auge tells that the new towns designed by technicist and voluntarist urbanization projects are often criticized for failing to offer 'places for living', as to those produced by an older, slower history.[39]

The process of place-making and the sense of place one has for where he/she lives have been discussed by Edward Relph. The disruption in continuity of relationships with places due to major transformations in urban environments results in inability to fully recover for many.[40] Relph explains that the most dramatic and significant event in production and continuity of place is the founding of it. On the other hand, he argues that place-making is a continuous process and the very fact of having been lived in and used and experienced lends many places a degree of authenticity.[41]

Edward Relph refers to Lukermann 1964 for six major components of place and defines it as not just the 'where' of something; as the location plus everything that occupies the location. The constituents are;

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[36] David Harvey, *Cosmopolitanism and Geographies of Freedom* (New York: Columbia University Press, 2009), p. 179-180.
[37] Marc Auge, Non-places Introduction to an anthropology of supermodernity (London and New York: Verso, 1995), p. 52.
[38] Ibid., p. 57.
[39] Ibid., p. 66.
[40] Edward Relph, *Place and Placelessness* (London: Pion Limited, 1976), p. 65.
[41] Ibid., p. 71.

- The idea of location described in terms of internal characteristics (site) and external connectivity to other locations (situation).
- Integration of elements of nature and culture
- Interconnection by a system of spatial interactions and transfers.
- Places are localized – they are parts of larger areas and are focuses in a system of localization.
- Places are emerging or becoming; with historical and cultural change new elements are added and old elements disappear.
- Places have meaning: they are characterized by the beliefs of man.[42]

Relph establishes relationships between place and diverse aspects to explain the components of it. Relationship of place to time and to community becomes more obvious in the making of place. The persistence of the character of places relates to continuity. The feeling that this place has endured and will persist a distinctive entity even though the world around may change is the result of growing attachment to home area. Places carry the present expressions of past experiences and hopes for the future with this continuity and persistence.[43] These experiences are created and known through common involvement in common symbols and meanings by people. Relph states that people are their place, and a place is its people.[44]

In contrast with Edward Relph, Doreen Massey explains that what is special about a place is not the collective identity or eternity of the hills. Massey states that what is special about place is not a pre-given collective identity or the eternity of the hills. She tells what is special about the place is precisely that throwntogetherness, the unavoidable challenge of negotiating a here-and-now; and a negotiation which must take place within and between human and nonhuman.[45] Furthermore she claims that even in an invisible imperceptible way, nature is moving and it has not been timeless and not has been 'here' for ever.[46] By this way, Massey questions the stability of the concept of 'home' since we can't go 'back' in the sense that it will have moved on from where we left it.[47]

[42] Ibid., p. 3.
[43] Ibid., p. 31-33.
[44] Ibid., p. 34.
[45] Doreen Massey, *For Space* (London: Sage Publications, 2005), p. 140.
[46] Ibid., p. 135.
[47] Ibid., p. 137.

Doreen Massey asks, if everything is moving where is here? And she answers as 'here' is no more/less than an encounter, and what is made of it. It is irretrievably, here and now. She claims, it won't be the same 'here' when it is no longer now.

For Doreen Massey; 'here' is where spatial narratives meet up or form configurations, occasions of trajectories (which have their own temporality). Moreover 'here' is where the succession of these meetings, the accumulation of weavings and encounters build up a history. The continuity is formed by the returns to 'here' and the very differentiation of the temporalities of the paths followed by those moving through space. Massey points out, that the returns are always to a place that has moved on and the layers of our meeting intersecting and affecting each other, interlacing a process of space-time. Massey explains; 'here' is an intertwining of histories in which the spatiality of those histories is inevitably entangled. The inetrconnections themselves are part of the construction of identity.[48]

David Harvey states that it is hard to investigate thoroughly the literature on place without encountering the relationalities of memory and identity. He refers to Michel de Certeau telling that social analysis is bound to connect history to place in order to have a possibility. Moreover, Gaston Bachelard states that all inhabited spaces bear the essence of the notion of home. There, memory and imagination remain associated, each one working for their mutual deepening.

Harvey emphasizes that the memory of the past is also about hope for the future. He refers to Mary Gordon telling; that there is a link between hope and memory and once cannot hope for anything if s/he remembers nothing. Harvey then explains that preservation or construction of a sense of place is an active moment in the passage from memory to hope, from past to future.[49] David Harvey describes place related to memory and future, as sites of collective memories that hold out the prospects for different futures.[50]

[48] Ibid., p. 139.
[49] David Harvey, *Cosmopolitanism and Geographies of Freedom* (New York: Columbia University Press, 2009), p. 178.
[50] Ibid., p. 179-180.

3.1 Context

The world is becoming increasingly urban; rapid urbanization on the pathway of disaster risk areas; draw the general outlines of the relationship between disasters and urban environments. In contradiction to the facts global urbanization is occurring fastest in areas which are under high risk of disasters; areas known to be prone to earthquakes, volcanic eruptions, floods, landslides and other disasters.[51] This contradiction is closely related to the socio-economic structure of the countries. The obligation to migrate from safer settlements to vulnerable cities is unavoidable for people who have to earn to live.

In order to understand the context of post-disaster reconstruction it is necessary to understand the post-disaster urban environment. Steinberg and Shields explain, architecture is more visible when it fails. In the case of a natural disaster, victims are forced to face the real dimensions of time and space. Time is decompressed and habitants have to confront full weight and hardness of the materiality of the built environment within the limits of human body.[52]

David Harvey explains that increasing urbanization makes the urban the primary level at which individuals experience, live out, and react to social transformations and structures in the world around them. He further discusses that out of the complexities and perplexities of this experience; we build an elementary consciousness of the meanings of space and time; of social power and its legitimations; of forms of domination and social interaction; of the relation to nature through production and consumption; and of human nature, civil society, and political life.[53]

[51] World Disasters Report, 1999, p. 18.
[52] Steinberg, P., Shields, R. (2008). What is a City? Rethinking the Urban after Hurricane Katrina, Athens and London: the University of Georgia Press. p.57
[53] David Harvey, *Consciousness and the Urban Experience Studies in the History and Theory of Capitalist Urbanization* (Maryland: The Johns Hopkins University Press, 1985), p. 251.

3.1.1 Overview of the Post-Disaster Reconstruction in Turkey

The Earthquake Risk Map of Turkey (Figure 1) shows the cities within major risk of being hit by big scale earthquakes. As shown at the map main urban areas of the country are under risk.

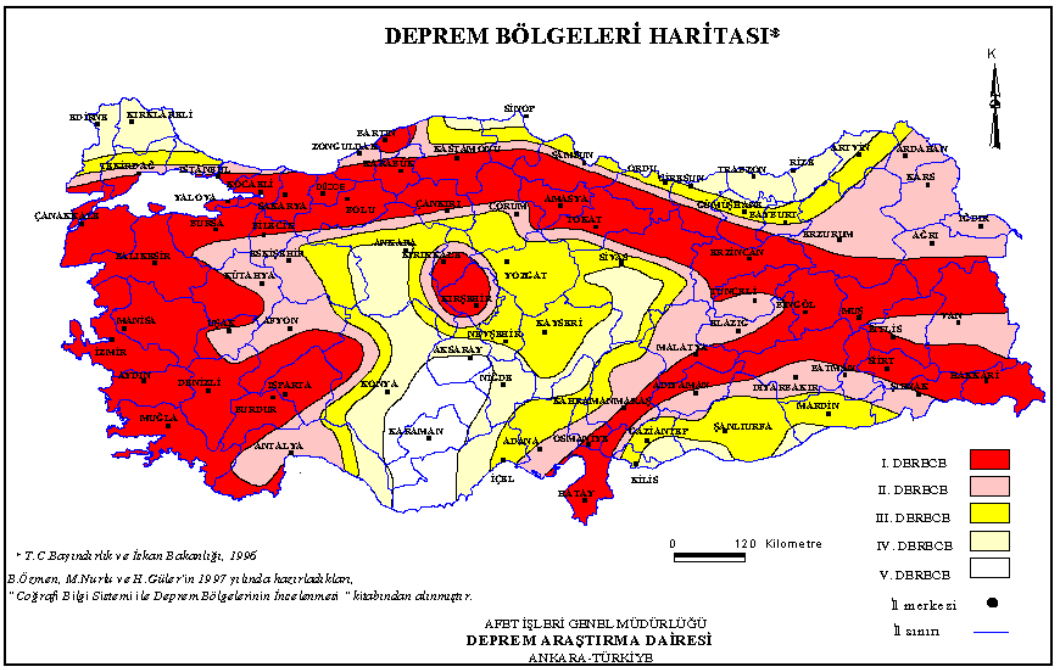


Figure 1 Earthquake risk zones of Turkey in 1997 showing city of Kocaeli within first degree.

Within the last century, Turkey has experienced many earthquakes with magnitudes over six, which caused destruction in urban environments. The map provided by Afet ve Acil Durum Yonetimi Baskanligi (Figure 2) clearly shows the accumulation of big scale earthquakes around Kocaeli and its neighboring cities.

As a state policy in Turkey, all reconstruction works are undertaken by the government within the framework of a system planned by The Ministry of Public Works and Settlement.

Throughout post disaster reconstruction; temporary housing period becomes a critical issue as it is the transition from an emergency state to a stable one. The reconstruction planning was made by The Ministry of Public Works and Settlement[54] in Turkey within a structure defined by the Disaster Law 7269 till 2009, published in 1959. This law sets the boundaries of a disaster-response program and construction of temporary housings and development plans. The development and site plans are provided by the planning departments of ministry. Temporary houses can be constructed, rented or bought for those who are affected or who are potentially under risk of disasters; or disaster affected can be supported financially.

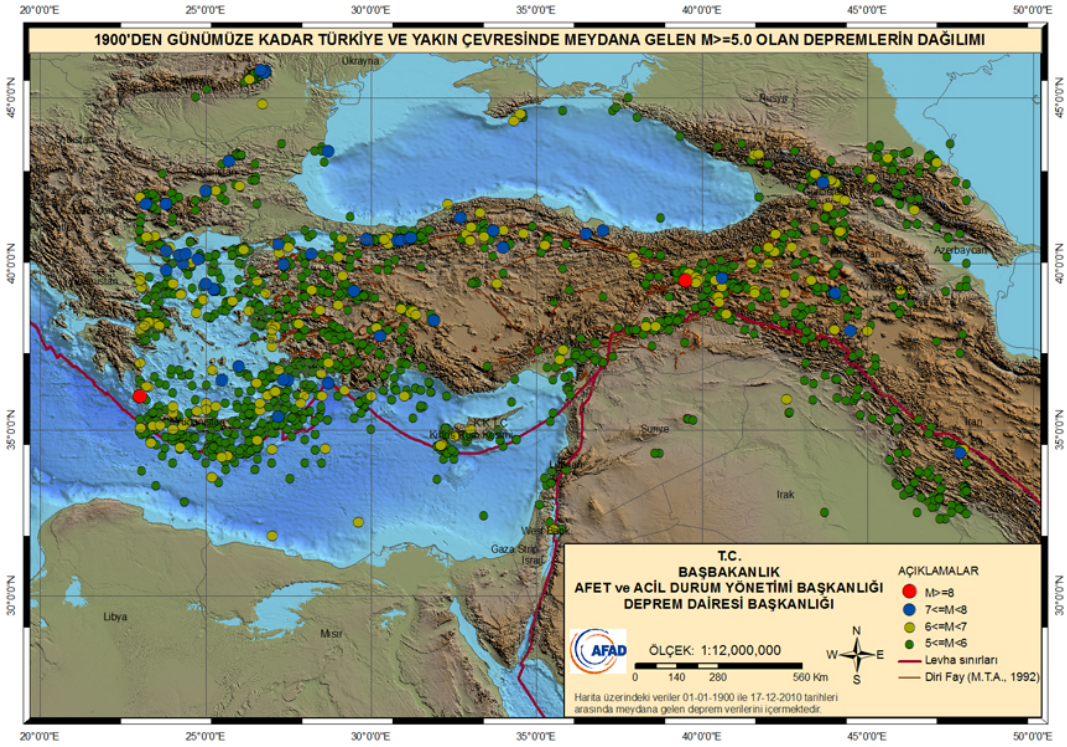


Figure 2 The distribution of big earthquakes in Turkey and neighboring countries since 1900.

On 1975, 6th of September there has been an earthquake with a magnitude of 6.9 in Diyarbakir, Lice. State has undertaken the construction of temporary houses of 52 m^2. Following Marmara earthquake President Suleyman Demirel has requested a report about Lice. Governor Nafiz Kayali stated that only necessary state buildings have been

[54] Afet İşleri Genel Müdürlüğü Afet Sonrası İşleyiş – Ekrem Demirbaş (Afet İşleri Genel Müdür Eski Yardımcısı, Jeolog) – 10.06.2009

reconstructed in the meantime and moreover the provision of temporary housing led the victims to expect that the stat would provide permanent ones as well. Hence, they have been living in these houses for 24 years instead of making investments for their own permanent houses.[55] Six years after the Marmara earthquake, Ministry of Public Works and Settlement has started the construction of 1079 permanent houses in Diyarbakir.[56]

Figure 3 Emergency shelter tents of Kızılay in disaster area in 1999.

[55] "Çeyrek Asırlık Yara Lice," *Milliyet Gazetesi*, 6 September 1999, p. 5.
[56] Ferit ASLAN, "30 Yıl Sonra Deprem Evi," *Hürriyet Gazetesi*, 20 September 2005.

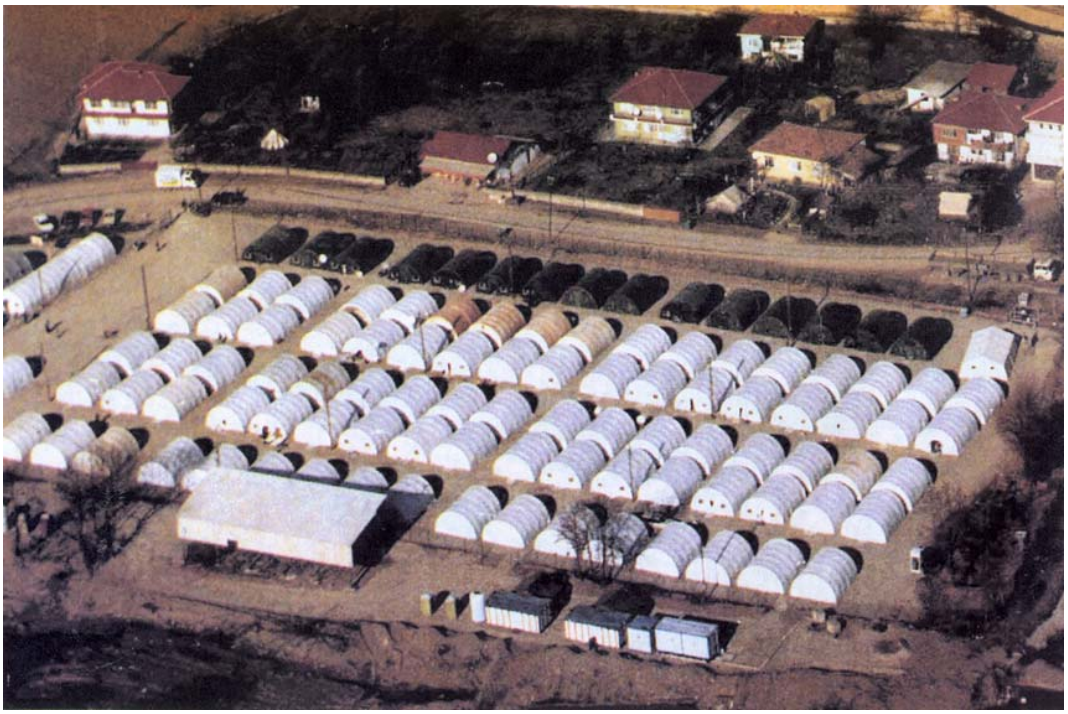


Figure 4 Emergency shelter tents provided by army in disaster area after 1999 Marmara Earthquakes.

3.1.1.1 Disaster Laws

Until it has been changed in 2009, Disaster Law 7269 was in effect. Thus in case of 17 August 1999 Marmara Earthquake the law drew the outlines of the organization of reconstruction and the actions to be taken.

First article of the Disaster Law 7269 states that; the law is in effect in case of earthquake, fire, flood, landslide, snowslide and similar disasters. The law is in effect in areas where these disasters caused or might possibly cause damage on built area influencing the life in general. Ministry of Public Works and Settlement is authorized to decide about the level of damage. The governors of these areas have the authority to take necessary decisions immediately according to the urgency.[57]

[57] 7269 kanun, p.3203 p. 1

The law gives authority to governors and deputy governors to use the lands that belong to state temporarily and in case these are not enough it is possible to use the lands that belong to private people.[58]

For the technical works to be done in disaster areas; disaster law 7269 defines the construction conditions of temporary houses. Thirteenth article explains that; the state can construct, rent or buy temporary houses for those affected by disaster or might be affected. And if these precautions cannot be done in a short time the disaster affected can be provided with financial support instead.[59] Infrastructure of the buildings stated by this law is to be completed by Ministry of Public Works and Settlement.[60] State undertakes the construction of new houses for owners of houses heavily damaged or might be damaged due to these disasters.[61]

Following the earthquakes in 1999, there have been temporary changes in the law for the reconstruction period. The law has given the authority to Ministry of Public Works and Settlement for all the steps of reconstruction period in disaster areas.

> 'Geçici Madde 13 – (Ek: 31/8/1999 - KHK-574/3 md.) (1)
> (Değişik ibare : 23/3/2000 - KHK - 598/2 md.) 17 Ağustos ve 12 Kasım 1999 tarihinde vuku bulan depremler dolayısıyla genel hayata etkili afete maruz bölgede yer alan illerde afete maruz kalanların, hasar tespiti ve hak sahipliği işlemlerine dair esas ve usullerin belirlenmesi ile geçici ve kesin iskanlarının temini amacıyla yeni yerleşim alanlarının tespiti ve prefabrik veya kalıcı konutların, kamu yapıları ve tesislerinin inşaat ve esaslı onarım işlerinin yapımı için her türlü alım, satım, hizmet, yapım,kira, trampa, mülkiyetin gayri ayni hakları tesis etmede ve taşıma işlerinde Bayındırlık ve İskan Bakanlığı yetkilidir.
> Ancak, Milli Savunma Bakanlığının inşaat, milli ve Nato altyapı hizmetleri ile Ulaştırma Bakanlığına bağlı genel müdürlüklere kanunlar ile yapım yetkisi verilmiş olan özel ihtisas işleri birinci fıkra hükmüne tabi değildir.
> Geçici Madde 14 – (Ek: 31/8/1999 - KHK-574/3 md.)
> Afetzedelerin yerleşmelerini çok hızlı bir şekilde sağlayabilmek amacıyla; araştırma, sondaj, imalat, prototip imalat, keşif, etüt, harita, plan, proje, müşavirlik, kontrollük ve benzeri her türlü hizmetleri müşavirlik firmaları vasıtasıyla yaptırmaya Bayındırlık ve İskan Bakanlığı yetkilidir.'[62]

[58] Ibid., p.3205 sayfa 3
[59] Ibid., p.3207 sayfa 5
[60] Ibid., p.3211 sayfa 9
[61] Ibid., p.3211 sayfa 9
[62] Ibid., p.3220-1

Thus the process has been under the control of Ministry of Public Works and Settlement, realized by its institutions under a given framework. Icisleri Bakanligi has dismissed Afet Bolge Koordinatorlugu one year after the earthquake. Acording to a KHK published on Resmi Gazete on 23rd august of 2000 the duties undertaken by Afet Bolge Koordinatorlugu have been transferred to city governors.[63]

Afet Genel Mudurlugu has been transformed into The Disaster and Emergency Management Presidency following Marmara Earthquakes. The organization and duties of the presidency are defined by the law 5902 published in 2009.

3.1.2 Urban Development of Kocaeli and Habitant Profile

City of Kocaeli has expanded rapidly due to industrial development and vicinity of Istanbul and transportation routes. The migrants coming from all regions of Turkey as work-labor carried their own experiences to Kocaeli as well. However, these migrants formed a population unaware of city's history and dwelling traditions. Some of them escaped from other disaster-hit cities to this disaster prone area. This part of thesis will be providing information about development and past experiences of Kocaeli before analyzing the case of 1999 any further.

Sennur Kaya states Izmit, located on the North Anatolian Fault line, had been exposed to earthquakes, most of which had had destructive intensity, as from the dates which it had been constructed with the name Nikomedia in year 264 before Christ and had been reconstructed again after these earthquakes.

During the period of Ottoman Empire, Izmit's spreading area was wetland in the south, and the land available for agriculture in the North as indicated in the map prepared in the end of 19th century to show the swamp intended to be dried. (Figure 5) Kaya emphasizes that according to the map the sloping northern part of the city is more available for residence and has a soil structure that is more resistant to the earthquake.[64]

[63] "Afet Koordinatörlüğü Feshedildi," *Cumhuriyet Gazetesi*, 24 August 2000, p. 7.
[64] Şennur Kaya, "Opinions about the Effects of the Earthquakes Leading to Destruction in Izmit, the Ottoman City on the Physical Construction in the Context of Religious Constructions," in

Physical development of Kocaeli gained momentum after Ottoman rule began to strengthen in Anatolia. The expansion of Baghdad Road passing through today's Inonu Boulevard brought the shipyard into force and this forced Izmit to grow around the coast. Kaya states that as a result of all the developments the city was formed in diverse zones; residential areas in the North and the commercial buidings in the South.

The devastating earthquakes in Izmit are listed as in 1509, in 1567 and more in 18th century. The earthquake in 1719 had destroyed eighty percent of the city and the shipyard. All the damage mentioned for this earthquake show that major destruction was in South of the city.[65]

International Earthquake Symposium Kocaeli 2009,
http://kocaeli2009.kocaeli.edu.tr/fullpaper09.pdf (accessed March 26, 2011) p. 499.
[65] Ibid., p. 501

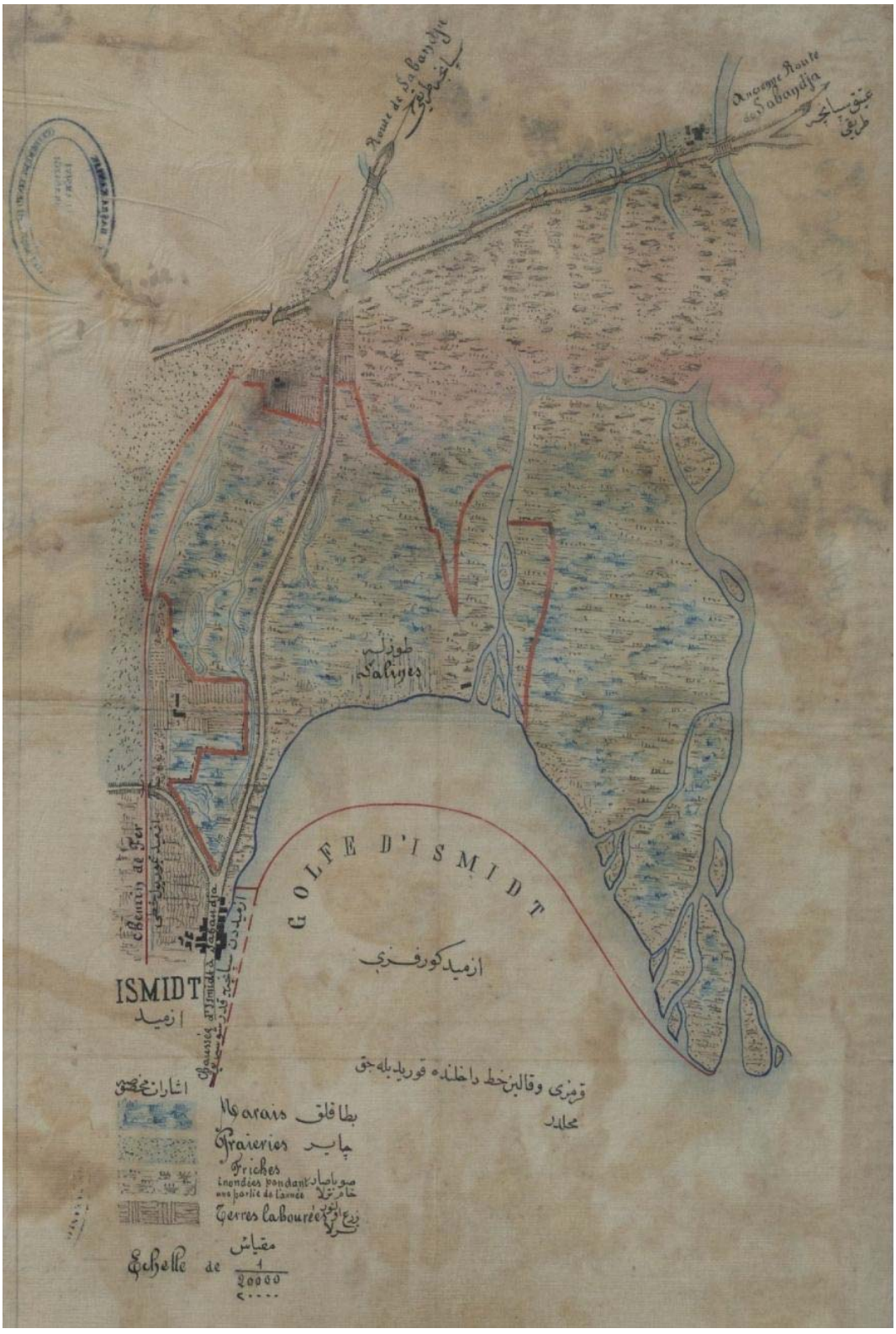


Figure 5 Land structure of Izmit Bay and surrounding areas in 19th century and the swamp intended to be dried.

Referring to Peyssonel's panorama of İzmit drawn in 1745 (Figure 6), Sennur Kaya explains that the physical structure of city was pictured as spreading from the sloping terrain in the North to the eastward in the southern plain. The density of buildings was high in the north, but was relatively low in the east part of the southern plain. There was no settlement along the coast except for the shipyard.[66]

On 22 May 1766, Izmit was hit by earthquake again and it destroyed all the buildings located along the coast. Same parts of the city were affected by the earthquake as in the previous ones.[67]

Sennur Kaya refers to Urekli 2000 that Izmit was affected in the first degree by the 1894 earthquake which affected a large area in Marmara region in the last period of 19th century.[68]

Kaya concludes that the negative effects of previous earthquakes ruining the city depend on the severity as well as the soil – structure relationship. Kaya tells that even though the earthquakes mainly affected the wetland areas located in the southern part of the city this region has been used as mainly a business zone.[69]

Figure 6 Panorama of the city of Izmit in 1745 drawn by Peyssonel. The density of buildings is high in the north and relatively low in the east part of the southern plain. The only settlement along the cost is shipyard.

[66] Ibid., p. 502
[67] Ibid., p. 503
[68] Ibid., p. 504
[69] Ibid., p. 505

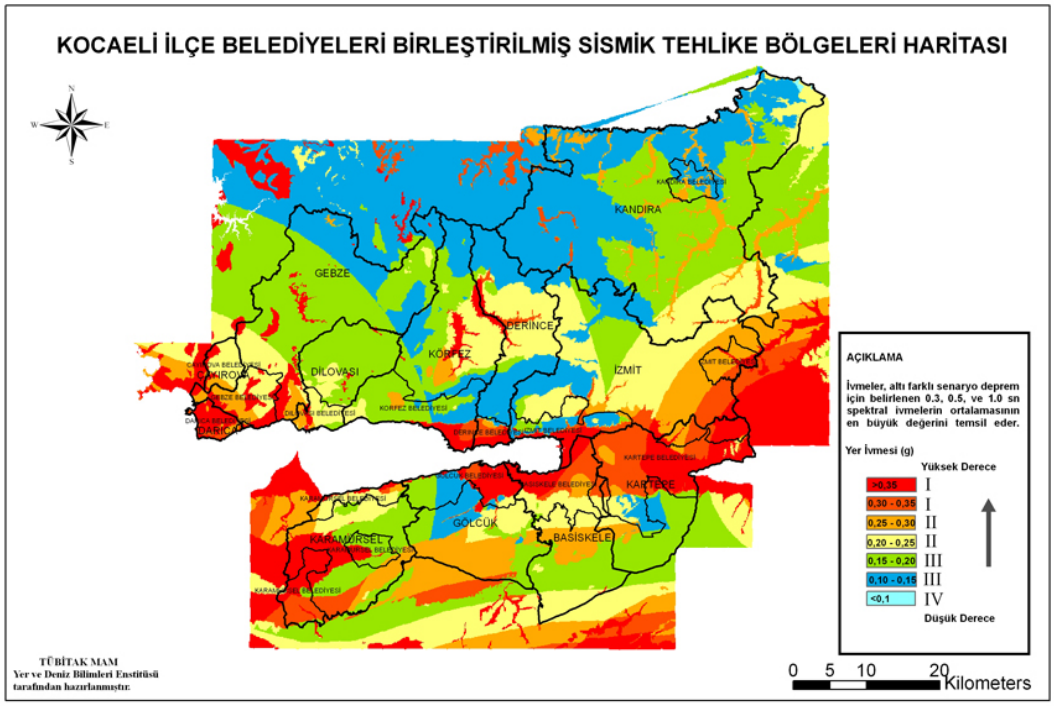


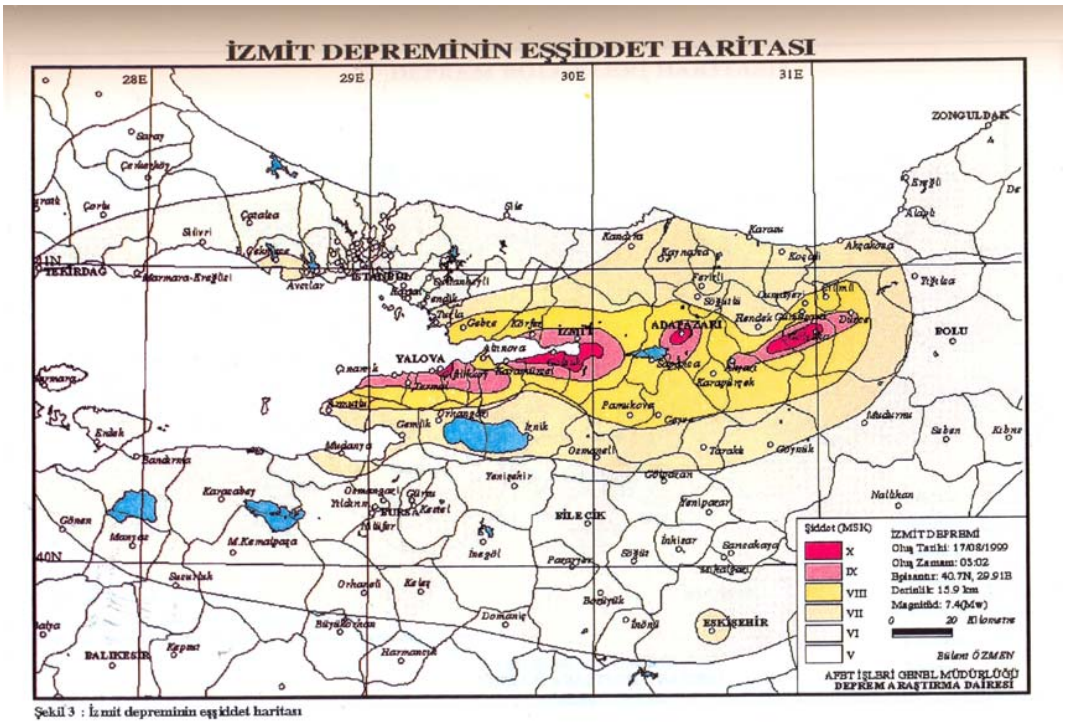
Figure 7 Seismic risk zones of Kocaeli and administrative districts indicating disaster prone and construction safe areas for the city

The history of devastating earthquakes in Kocaeli continued in 1999 influencing mainly the southern parts and wetlands. The map of Izmit Earthquake in 1999 by Afet Isleri Genel Mudurlugu shows in which parts the intensity of earthquake was bigger than others (Figure 8) which corresponds to the seismic risk zones of the city (Figure 7).

The main administrative units of Kocaeli where temporary housing settlements were located in 1999 can be listed as Başiskele, Darıca, Derince, Gölcük, İzmit, Karamürsel, Kartepe and Körfez. The historical development of these settlements provide information about local characteristics and the course of transformation throughout last decades.

İzmit is the central administrative unit of Kocaeli, which has been founded as Nikomedia in third century. Due to its being last stop of Silk Road before İstanbul, the settlement has been an important node of developments. And it has been recorded that the settlement faces a big earthquake almost every century.[70]

[70] http://www.kocaeli.bel.tr/Content.aspx?ContentID=19066&CategoryID=2415, (accessed June 13, 2011).



Şekil 3 : İzmit depreminin eşşiddet haritası

Figure 8 Map showing the intensity of Izmit Earthquake in the region, corresponding to the seismic risk zone map.

Başiskele has been declared a town in 2008. It has Yeniköy, Bahçecik, Yuvacık and Kullar within its administrative borders with a population of 63.091. The permanent houses built in Yeniköy, Bahçecik, Yuvacık and Karşıyaka after 1999 Earthquakes have been effective in this population.[71]

Darıca has received migration from Romania and Bulgaria before 1990s and from that date on with the industrial developments from all over Turkey, specifically Kars, Erzurum, Bilecik, Bolu, Gumushane and Tunceli. Thus the social and demographic structure of the settlement has been formed by diverse ethnic origins.[72]

[71] http://www.kocaeli.bel.tr/Content.aspx?ContentID=11183&CategoryID=2412, (accessed June 13, 2011).
[72] http://www.kocaeli.bel.tr/Content.aspx?ContentID=19150&CategoryID=1319, (accessed June 13, 2011).

Derince has been founded with the republic. The location of Derince has been selected for the harbor and later on the workers of harbor settled down where they work. Derince has received migration from Balkans, Caucasus and Kirim and Romania.[73]

Karamürsel has been established in 1902. The social structure of Karamursel has been formed by (Manavlar) Türkmen – Yürük ethnic origins followed by Rum and Armenian origins. Furthermore Karamursel has received migration including Çerkez, Boşnak, Laz ve Gürcü ethnic characteristics.[74]

Körfez has population of 107.058. The settlement has been declared a town in 1988. The population density decreases as the settlement expands from the coast towards higher parts. The town has experienced rapid development after 1960s in relation to industrial development.

The local habitants of the town 'Manav' form the minority of population recently. %90 of the population is formed by migrants from other cities. Some of habitants left the town after 1999 Earthquakes, however they moved back after a certain amount of time.[75]

One year after the earthquakes hit the region, a sociological survey has been done with the people living in prefabricated houses in order to track the socio-economic and psychological changes. This survey encompassed the prefabricated houses in urban areas, thus it did not provide information about rural settlements.[76] 129.338 interviewees of the survey lived in 39.928 prefabricated houses built in 80 different locations.[77]

The survey has been done with 500 married couples with children. The ideas of married people with children reflected the family structure and point of view to the concept of home.[78]

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[73] http://www.kocaeli.bel.tr/Content.aspx?ContentID=20248&CategoryID=641, (accessed June 13, 2011).
[74] http://www.kocaeli.bel.tr/Content.aspx?ContentID=19249&CategoryID=2417, (accessed June 13, 2011).
[75] http://www.kocaeli.bel.tr/Content.aspx?ContentID=19328&CategoryID=2419, (accessed June 13, 2011).
[76] Aytül Kasapoğlu and Mehmet Ecevit, *Depremin Sosyolojik Araştırması Hasarları Azaltma ve Toplumu Depreme Hazırlıklı Kılma*, (Ankara: Sosyoloji Derneği, 2001), p. 19.
[77] Ibid., p. 24-25.
[78] Ibid., p. 33.

%42.6 percent of interviewees live in prefabricated houses in Kocaeli, %27.8 in Sakarya, %29.6 in Duzce. The %58.2 percent of survivors was native borns of the cities they lived in, %41.8 was immigrant. Due to the highly industrialized structure of the region it has received high amount of worker migration.[79] The amount of immigrants support the idea that they did not have any disaster memory and explains why most of survivors preferred financial aid, since they had a hometown, a home if they wish to go back.

The profile of inhabitants of Izmit shows the factors in decision making process following their experience with earthquakes for the first time. Industrial development of Izmit provided to most of inhabitants economic advantages. The victims of Izmit earthquake preferred to move to Istanbul another disaster prone area for same reasons. The examples from prefabricated settlements from Kocaeli confirm this information.

Capakcur family living in Derince Prefabricated settlement migrated fom Mus to Izmit at the beginning of 1990s. Huseyin Capakcur tells that he was a victim of 19 august 1966 Varto earthquake as well.

Fadime Ayvaz and Hasan Ayvaz have moved to Izmit with their family after the 1993 Erzincan earthquake. They are living in Derice Prefabricated Settlement after being influenced by 1999 earthquakes.[80]

3.1.3 Kocaeli Temporary Housing Settlements 1999: Introduction to the Case

Temporary prefabricated houses and settlements built in Kocaeli after 1999 Marmara Earthquakes form the focus of this research. Whole process of decision making, planning and design and occupancy is to be analyzed through concepts and discussions of place making and home outlined in previous chapters. Urban environment of Kocaeli is selected among other affected environments due to its ability of representing other cities within the country with its habitant and built area profiles. As an industrialized metropolis city,

[79] Ibid., p. 34.
[80] Hatice Tuncer, "Kaçtıkça Yakalayan Deprem," *Cumhuriyet Gazetesi*, 14 August 2000, p. 3.

Kocaeli showed the capabilities and deficiencies of urban environments in Turkey expanding in an uncontrolled way for the last decades.

For 1999 Marmara earthquakes the in-migration statistics show the influences of industrialization to the city population and influences of earthquakes.

The net migration rate of 1995-2000 periods Kocaeli;

- 1975-1980: net migration: 53640

Rate of net migration: %112.9

- 1980-1985: net migration: 41287

Rate of net migration: %67

- 1985-1990: net migration: 83262

Rate of net migration: %108.2

- 1990-2000: net migration: 211

Rate of net migration: %0.20[81]

As Ekrem Demirbaş states, during Kocaeli earthquake; the biggest damage was the lack of disaster memory. The natives of the region did not build their home on savannas lying from Yalova to Bolu but on the hills; since they learned from their past experiences that the soil structure caused damage. The new constructions and urban developments however, are made on savannas showing that they do not have disaster memory. The lack of this memory is caused by the demographic structure of the region, which is shaped by the migration - mostly from East Blacksea Region – to industrialized cities.[82]

In 1999 Kocaeli earthquake the squatter houses on the hills of İzmit were not damaged as much as those in other districts due to the soil properties. After the emergency shelter period, the winterized tents were used, the survivors moved to temporary housings. During this earthquake and recovery period diverse types of temporary accommodation were used:

- state owned buildings
- social complexes of state
- 44000 prefabricated housings. These were emptied between six months to one year time and passed to permanent houses.

[81] http://www.tuik.gov.tr/AltKategori.do?ust_id=11, (accessed June 14, 2009).
[82] Ekrem, Demirbaş, *Afet İşleri Genel Müdürlüğü Afet Sonrası İşleyiş*, 10.06.2009

> As the tenants were not rightful owners they had to occupy the temporary one longer than others.[83]

State dominancy over the reconstruction periods is changing. Although in Ankara, the capital, there were two factories for prefabricated house construction belonging to state; they are sold to private sectors for the rennovation of machinery. These factories had 1050 workers and were capable of producing even permanent housings. However, today they have 20 workers.[84]

3.2 Decision Making Process of Temporary Accommodation in Kocaeli

Post-disaster reconstruction is undertaken by Ministry of Public Works and Settlement in Turkey. After the earthquakes in 1999, under the framework of Disaster Law 7269, the construction of new houses was defined by temporary additional articles.

3.2.1 Turkish Statistical Institute Survey on Temporary Housing Preferences

Prior to the construction and planning of temporary prefabricated houses, there have been discussions about whether these houses were necessary or not. And Ministry of Public Works and Settlement has issued a survey to Turkish Statistical Institute to determine this necessity.

Konut Idaresi ve Emlak Bankasindan sorumlu Devlet Bakani Sadi Somuncuoglu and Toplu Konut Idaresi eski baskani Yigit Guloksuz stated that construction of 50.0000 prefabricated houses would be a waste of resources. They stated that the construction of these houses takes 3-4 months and their cost is equal to half of the permanent ones.

[83] Ekrem, Demirbaş, *Afet İşleri Genel Müdürlüğü Afet Sonrası İşleyiş*, 10.06.2009
[84] Ekrem, Demirbaş, *Afet İşleri Genel Müdürlüğü Afet Sonrası İşleyiş*, unpublished interview 10.06.2009

On the other hand Hasan Barutcu from Tepe Group, claimed that it was possible to finish 50.000 houses in 3 months and that they would not be a waste of resources since they can be stored after the use and state would have a stock in case of another disaster.[85] However, the explanations from Tepe Group were criticized since the company was the major provider of prefabricated housing materials and a producer at the time.

Against all suspicions and questions Koray Aydin Minister of Public Works and Settlement introduced the prefabricated houses with a public meeting on 2nd of September 1999. The houses were 30 m^2 and with a cost of 1.5 billion liras. He stated that the infrastructure would be done by Iller Bankasi Genel Mudurlugu. Aydin told that the houses would be twin blocks and the technical contracts were ready.

Minister claimed that it was possible to dismantle these houses and reuse them in Southeast Anatolia region.[86]

Prior to construction of temporary housings, between the dates 11-19 September 1999; while the disaster affected people were living in emergency and temporary shelters; a site survey has been made by Turkish Statistical Institute.[87] The questionnaire covered the cities of Kocaeli, Sakarya, Bolu and Yalova. It has been made in order to determine the housing preferences of earthquake victims. The survey was to determine the temporary housing type preferences of the householders of heavily damaged and demolished houses in Kocaeli, Bolu, Sakarya and Yalova. The options listed in the survey were:

- Prefabricated house
- State owned guesthouse
- Financial aid for rent
- The option of migration to other cities[88]

According to the results the victims preferred financial support. Out of 60.000 interviewees 35.000 asked for financial support and 18.000 asked for prefabricated

[85] "Bakan Prefabrik Eve Karşı," *Milliyet Gazetesi*, 30 August 1999, p. 9.
[86] "30 Metrekarelik Hayat," *Milliyet Gazetesi*, 2 September 1999, p. 14.
[87] T.C. Başbakanlık Devlet İstatistik Enstitüsü, *17 Ağustos 1999 Depreminin Yaşandığı Bölgede 11-19 Eylül 1999 Tarihleri arasında Yapılan Geçici Iskan Tercih Eğilimlerini Belirleme Çalışması Raporu: 11-19 Eylül 1999*, (Ankara: Devlet İstatistik Enstitüsü, 2001), p. III.
[88] Ibid., p. VIII.

houses. However, Minister of Public Works and Settlement Koray Aydin told that the construction of 26.750 prefabricated houses would be completed anyway.

- 59.844 households were interviewed for the survey. Total number of householders was 250.874. 43.523 households had heavily or medium damaged houses.
- 57,8 percent of householders of heavily or medium damaged houses preferred financial support, 41,2 percent preferred prefabricated houses, 0,3 percent state guesthouses and 0,7 percent decided to move to other cities.
- Out of 17.932 householders who preferred prefabricated houses, 57,8 percent lives in Kocaeli, 17,9 in Sakarya, 5,3 in Bolu and 19 in Yalova.
- Out of 4.927 households with heavily damaged or medium damaged houses, 20,2 percent prefers to move to Istanbul, 10,3 percent to Ankara, 8,7 percent to Bursa, 5,8 percent to izmir, 5,2 percent to Antalya.[89]
- Of the 43523 households %57.8 percent preferred financial aid for rent, %41.2 preferred prefabricated houses and %0.3 the state guesthouses as temporary accommodation.[90]

Among the total number of householders who had tolerable and heavily damaged houses, the major part of families had 3-4 members. This data provides necessary information for determination of the size of temporary houses.[91]

Among the number of householders who had demolished and heavily damaged houses, %11.3 were considering migration from the disaster affected area. Although this amount seems small according to the devastating influence of the earthquake, the householders who had already migrated during one month time until this survey was made, is not included.

- In disaster affected zone, among the householders who considered migrating, %20.2 percent wanted to move to Istanbul, %10.3 to Ankara, %8.7 to Bursa, %5.8 to Izmir, %5.2 to Antalya. In Kocaeli of 3195 householders %19 considered Istanbul, %10.6 Ankara; Sakarya.[92]

[89] "Depremzedeler Kira Yardımı İstiyor," *Cumhuriyet Gazetesi*, 24 September 1999, p. 7.
[90] T.C. Başbakanlık Devlet İstatistik Enstitüsü, *17 Ağustos 1999 Depreminin Yaşandığı Bölgede 11-19 Eylül 1999 Tarihleri arasında Yapılan Geçici Iskan Tercih Eğilimlerini Belirleme Çalışması Raporu: 11-19 Eylül 1999*, (Ankara: Devlet İstatistik Enstitüsü, 2001), p. XI.
[91] Ibid., p. 6.
[92] Ibid., p. 9.

Although it is not clear whether the cities preferred by the survivors to migrate were the hometowns of them or not; it is a contradiction that disaster affected people wanted to move to most vulnerable city to earthquake, Istanbul. This contradiction indicates the importance given to economic and cultural possibilities and opportunities instead of safety.

The results of this survey indicated that major part of the disaster affected believed that they would be able to reconstitute their home themselves instead of being provided by state. However, this did not change the decision of Ministry of Public Works and Settlement to construct prefabricated temporary houses.

The temporary accommodation options 'architecture for migrants' and 'architecture by migrants' can be explained in detail under financial support, prefabricates housing, self-built shelters and automobile ownership.

3.2.1.1 Financial Support

Of the 43523 households whose houses were tolerable and heavily damaged, %57.8 percent preferred financial aid for rent, %41.2 preferred prefabricated houses and %0.3 the state guesthouses as temporary accommodation.[93]

Major part of householders preferred financial help for rent rather than prefabricated houses. This might be due to the percentage of tenants and will to migrate from the area or the will to have the control over reconstruction of their own houses. The contradiction in the choice of survivors to move to new vulnerable and densely populated cities with financial support reflects the level of consciousness and education about disasters and disaster prone areas.

[93] Ibid., p. XI.

3.2.1.2 Prefabricated Houses

By the Prime Ministry Crisis Office, a research has been completed in order to follow the works done by state institutions for earthquake influenced areas. According to this research, prefabricated houses have been chosen by the ministry as temporary housing units; depending on the simple assembly and construction. Moreover depending on surveys it has been decided to construct 26.000 prefabricated houses by the state. With the ones donated by private sector and other countries this number has reached to 32.000.[94]

The size of prefabricated houses has been determined as 30 m^2 twin housing blocks. Within administrative boundaries of Kocaeli, 14 diverse locations have been chosen for temporary housing settlements and the infrastructure works have been completed by Iller Bankasi.[95]

3.2.1.3 Self-Built Shelters

To be able to compare the capabilities of prefabricated houses in responding the needs of survivors, self-built shelters as temporary housing sets an example (Figure 9 – 10).

Golyaka has been affected by both of the earthquakes in 1999. Although it is a relatively small city; same urban development processes have been effective in Golyaka as in other cities of Turkey. And after the earthquakes same temporary housing implementations have been applied. However, in this city, the individual and kinship responses have proved to be more efficient and fruitful.

In order to be able to salvage their goods from the wreckage, claim their own property and be more comfortable; the survivors in Gölyaka did not prefer tent settlements and set their

[94] T.C. Başbakanlık Kriz Yönetim Merkezi, *Depremler 1999: 17 Ağustos ve 12 Kasım Depremlerinden sonra Bakanlıklar ve Kamu Kuruluşlarınca Yapılan Çalışmalar*, (Ankara: Başbakanlık Basımevi), p. 53.
[95] Ibid., p. 53.

tents close to their own homes.[96] Governors encouraged the survivors to build their own shelters on their own lands. Moreover they were specifically motivated to construct timber shelters.[97]

Self built timber shelters were individual and subjective responses to needs of families. These shelters had windbreak over entrance doors and roof attic spaces for storage.

It was considered as a success that local authorities supported and motivated the disaster victims to build their own homes, which proved to be more efficient than prefabricated houses.

Figure 9 Self-built timber shelter in Gölyaka following the 1999 Marmara Earthquakes.

[96] T.C. Gölyaka Kaymakamlığı, *Gölyakada Deprem 17 Ağustos ve 12 Kasım 1999 Depremleri*, (Gölyaka: T.C. Gölyaka Kaymakamlığı, 2000), p. 35.
[97] Ibid., p. 37.

Figure 10 Self-built timber shelter in Gölyaka following the 1999 Marmara Earthquakes.

3.2.1.4 Automobile Ownership

According to the survey of Aytül Kasapoğlu and Mehmet Ecevit; the automobile ownership has increased after the earthquakes in 1999. Statistically the difference was not remarkable however; the underlying factors of this increase are important in understanding the post-disaster behavior settings of victims.

The survivors of earthquake perceived the automobile both as an object providing the possibility of mobility and as a temporary shelter ensuring the continuity of life. The characterizing factors of home; continuity, privacy, refuge and security were attributed to automobile in case of using it as a shelter.

After the 17 August 1999 Kocaeli earthquake, Ekrem Demirbas states that 21.000.000 people lived outside their homes during the first week until the emergence of the situation

passed away.[98] The decision to live out of home was not solely dependent upon parks or other public areas, automobile ownership provided the opportunity of living out of built environment which was under risk.[99]

3.2.2 Technical Specifications and Announcement in Resmi Gazete

After the survey of preferences for temporary housing period was completed, the Ministry of Public Works and Settlement decided to utilize prefabricated houses as temporary accommodation. For the construction of these prefabricated settlements a contract has been set with 'container' producer companies. The ministry provided a specification for the detailed projects of prefabricated twin houses.

The announcement for the construction of prefabricated houses was made on 4th of September 1999 in Resmi Gazete by Ministry of Public Works and Settlement Yapi Isleri Genel Mudurlugu. It has been specified in this announcement that the blocks would be formed of 30 m^2 twin houses. The price of these blocks were determined as 3.000.000.000,-TL including the concrete foundation. The houses were required to be finished and submitted within two months after the selection of locations. Moreover, the companies applying for the construction of these houses were required to have the capacity to construct minimum 250 twin houses.[100]

The design of twin houses has been described in the technical specification in detail which was given to the companies applied to Ministry of Public Works and Settlement for the construction.

- It has been specified that the base level of the houses would be site-cast concrete platforms. Prefabricated building system would be pre-produced modules and it must be possible to dismantle these modules in case of need.

[98] Ekrem Demirbas, Afet Isleri Genel Mudurlugu Former Vice Director, has been within the crisis organization which responded to emergency situations following 1999 Marmara Earthquakes. He explains that the week following the first earthquake on 17th August 1999, twentyone million people among the country avoided being at home and stayed out on the streets or at open public areas. This data shows that almost one third of the population at the time being, was living within the reach of earthquake's seismic influence area

[99] Aytül Kasapoğlu and Mehmet Ecevit, *Depremin Sosyolojik Araştırması Hasarları Azaltma ve Toplumu Depreme Hazırlıklı Kılma*, (Ankara: Sosyoloji Derneği, 2001), p. 40-42.

[100] "Prefabrik Konut Yaptırılacaktır," Resmi Gazete 23806, 4 September 1999, p. 71.

- The blocks would be 60 m^2 of twin houses consisting of 30 m^2 units. The houses would each have toilets, bathrooms, kitchen unit, bedroom and living space.
- A curtain would be made for providing the division of living space and bedroom.[101]

On 25th of September 1999 the list of companies (Table 1 – 2) to construct prefabricated houses in disaster area[102] has been published with the number of houses they undertook.[103]

Table 1 List of companies, cities and number of houses to be built determined by the Ministry of Public Works and Settlement in 1999.

Company Name	City	Number of Houses
ALİ BİRCAN VE KARDEŞLERİ İnş. Tic. Koll. Şti., METİN DEMİR - ERAL İnş. Teks. Oto. ve San. AŞ., AKABE Hırd. İnş. Malz. Tic. ve San. AŞ., UBM İnş. Tur. Tic. San. Ltd. Şti., SUPEN İnş. San. ve Tic. Ltd. Şti., PİDOSEN Plast. Doğr. ve İnş. San. Ltd. Şti., BUHA Enerji İnş. Teks. İth. İhr. Taah. Tic. ve San. Ltd. Şti. (Ortak Girişim)	Sakarya	1492
DÖRTLER Makine ve Çelik Kont. İml. Tah. Koll. Şti., HAKEM İnş. Ltd. Şti. (Ortak Girişim)	Sakarya	1944
2001 Yapı Elemanları San. ve Tic. AŞ., Özekip İnş. San. ve Tic. Ltd. Şti., HEDEF İnş. San. ve Tic. Ltd. Şti., İLKAY Müh. San. ve Tic. Ltd. Şti. (Ortak Girişim)	Yalova	722
AKROPOL İnş. San. İth. İhr. Tic. Ltd. Şti., SUAT ERBİL (Ortak Girişim)	Çınarcık	490
HAKAN Profil Demir Çekme Oto Turz. İnş. San. Ltd. Şti., MİRBEY İnş. Turz. Tic. ve San. Ltd. Şti. (Ortak Girişimi)	Yalova	1532
TREYSAN Prefabrik Çelik Yapılar San. ve Tic. AŞ.	Sakarya	1896
EKİNCİLER ve Ort. İnş. Tic. Ltd. Şti.	Yalova	996
TEKNİKEL Yapı Elemanları San. ve Tic. Ltd. Şti., KIZILKANAT İnş. San. ve Tic. AŞ. (Ortak Girişimi)	Yalova	902

[101] "Geçici İskân Amaçlı 2x30=60 m^2 lik Prefabrike İkiz Konutlara Ait Teknik Şartname ," Resmi Gazete 23806, 4 September 1999, 71.
[102] Nedim Şener and Ezelhan Üstünkaya, "Prefabrik Konut Kavgası," *Milliyet Gazetesi*, 16 September 1999, p. 9.
[103] "Prefabrike Konut Ihalesini Alan Firmalar," *Cumhuriyet Gazetesi*, 25 September 1999, p. 6.

Table 2 List of companies and number of houses to be built in Kocaeli determined by the Ministry of Public Works and Settlement in 1999.

Company Name	City	Number of Houses
GERGEF İnş. Ltd. Şti., BAŞAR Mim. Müh. Dek. Müş. Turz. ve İnş. Ltd. Şti.	Kocaeli	500
TEPE Yapı San. Aş	Kocaeli	1910
ÜLKÜSAN Çelik Kalıp San. ve Tic. Ltd. Şti., BAŞAK Müh. Müt. Ltd. Şti. (Ortak Girişim)	Kocaeli	520
İNAŞ İnş. Yat. San. ve Tic. AŞ.	Kocaeli	964
TEKNİKEL Yapı Elemanları San. ve Tic. Ltd. Şti., KIZILKANAT İnş. San. ve Tic. AŞ. (Ortak Girişimi)	Kocaeli	600
GÜROL Teknik San. ve Tic. Ltd. Şti., UYAR Yapı End. ve Tic. Ltd. Şti., SER İnş. Tic. Ltd. Şti. (Ortak Girişimi)	Kocaeli	1444
SELKA Çelik Çerçeveli Prefabrike Yapılar San. ve Tic. Ltd. Şti., ERS İnş. San. ve Tic. AŞ (Ortak Girişimi)	Kocaeli	1478
ULU İnş. Turz. Teks. San ve Dış. Tic. Ltd. Şti., BLYBOR (Ortak Girişimi)	Kocaeli	456
KALYON Plastik San. ve Tic. AŞ., KALYON İnş. San. ve Tic. AŞ. (Ortak Girişimi)	Kocaeli	900
NURİŞ Prefabrik Yapı İnş. San. ve Tic. Ltd. Şti., İSPA İnş. San. ve Paz. AŞ. (Ortak Girişimi)	Kocaeli	456
DAĞYAPI Prefabrik Yapı İnş. Tek. San. ve Tic. Ltd. Şti.	Kocaeli	2000
HAMLE Ağaç. Mam. Tic. ve San. AŞ, KANAT İnş. Tic. Ltd. Şti. (Ortak Girişimi)	Kocaeli	500
ESHA İnş. San. ve Tic. Ltd. Şti.	Kocaeli	916
LAMBDA İnş. Taah. Turz. San. ve Tic. Ltd. Şti., OSET Mim Ltd. Şti. (Ortak Girişimi)	Kocaeli	576
ORAŞ End. Tek. San. ve Tic. AŞ., BUTAŞ İnş. San. ve Tic. Ltd. Şti. (Ortak Girişimi)	Kocaeli	600
SİSTEMLİ Proje Müş. İnş. Nak. Tic. Ltd. Şti., BENGİLER İnş. ve Tic. Ltd. Şti., AZE Yapı End. Teks. Gıda Elk. Elektronik Eğitim, Sağlık ve Turz. Tic. Ltd. Şti. (Ortak Girişimi)	Kocaeli	552
OPAL Prefabrik Yapı San. Tic. Ltd. Şti.	Kocaeli	968
ALÇE Prefabrik Yapı ve Eşya San. Ltd. Şti.	Kocaeli	1000

According to the data given; the number of houses to be built in Kocaeli was 16.340, 5.332 in Sakarya and 4.152 in Yalova. In October 1999 Public Works and Settlement Ministry completed the infrastructure auction for prefabricated settlements.

The sewage and clean water sanitary systems contract, worth 12trillions, was shared among Taskent, Ysar Yapi, Okyanus, Ilsan, Cano, Hitit, Aks, Egesan, Mescioglu, Obitas, Anilcan and Mintas construction companies.[104] Minister of Public Works and Settlement

[104] "Deprem Bölgesinde İkinci İhale Altyapı İçin," *Milliyet Gazetesi*, 2 October 1999, p.7.

Koray Aydin confessed that the infrastructure of prefabricated houses, the bases, was determined to be permanent concrete ones in order to be able to spend the money.[105]

Government planned to build 50.000 prefabricated houses with a cost of 85.000.000.000.000. -TL; however, private sector companies stated that this amount would only cover 30.000 houses.

Treysan was one of the companies undertaking the construction of prefabricated houses. The firm is under the framework of Çeçen Şirketler Grubu; owner of this group Ibrahim cecen believed that prefabricated houses would be a waste. He explained that with the infrastructure costs one square meter of prefabricated houses would cost 150 dollars. In this case 50.000 houses of 30square meters would cost 225 million dollars and be finished within three or four motnhs. He advised to finish permanent houses within six months instead.

On the other hand, another major company undertaking the construction of prefabricated houses was Tepe. Director of Tepe Group Ali Kantur; supported the construction of these houses. He claimed that prefabricated houses could be dismantled and reused in future disasters and that it would take much longer to finish permanent houses.[106]

The construction of prefabricated houses by private companies caused public discussions. Following the Marmara earthquake Fatih Altayli has written on Hurriyet Newspaper informing the public that Afet Isleri Genel Mudurlugu had a factory in Ankara, on Eskisehir Road with a capacity of producing 150.000 prefabricated houses per year. He informed that the factory has been shut down after 1993 Erzincan Earthquake.

The cost of prefabricated houses to be built for 1999 earthquake is 3000 dollars however Altayli stated that the cost would have been around 600 dollars if the factory weren't shut down.[107]

After his article on 3rd of September 1999, Fatih Altayli wrote that one of readers has visited this factory. The reader told that the factory was locked however, there were

[105] "Aydın Prefabrike Konutları Yetiştirmeye Çalışıyoruz," *Hürriyet Gazetesi*, 5 November 1999.
[106] "85 Trilyona ancak 30 Bin Prefabrik Ev Yapılır," *Hürriyet Gazetesi*, 11 September 1999.
[107] Fatih Altaylı, "Afet İşleri, prefabrik ev fabrikasını niye kapattı?," *Hürriyet Gazetesi*, 3 September 1999.

betopan panels stocked in the garden left in open air. The reader has also asked an employee about why the stocks haven't been used for Marmara region, and he learned that previous general director has ordered to shut down the factory.[108]

The debate about the necessity of prefabricated houses and the method of their construction was questioned once again with this information.

[108] Fatih Altaylı, "Afet evleri, fabrika bahçesinde çürütülüyor," *Hürriyet Gazetesi*, 10 September 1999.

CHAPTER 4

THE PRODUCTION OF TEMPORARY HOME

> "Every city is an accumulation of memories, embedded in its architecture. A city's places are locations in time as well as in space."[109]

Ilhan Tekeli explains that housing serves various functions in a society as a shelter, a produced community, a consumption good, a security meachanism for family, a social position in society which determines the formation of social relations, a place for reproduction of labor, a saving mechanism which protects itself against inflation, a mechanism to rechannel urban tent, a cultural artifact, a building block of living environment, an antirecessionist tool for macroeconomics.[110] As a consequence, disaster affected residents of cities experience diverse steps throughout post-disaster period with the loss of housing. They confront loss of social and physical environment, investments, displacement, homelessness and relocation as migrants.

The reconstruction phase provides disaster affected with new houses. However, the reconstitution of home does not include recovery of just physical conditions. The occupation of householders and their identification with the physical environment are to transform this emptiness into place and thus home.

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[109] Philip E. Steinberg and Rob Shields, *What is a City? Rethinking the Urban after Hurricane Katrina*, (Athens and London: the University of Georgia Press, 2008), p. 25-26

[110] İlhan Tekeli, *Türkiye'de Yaşamda ve Yazında Konut Sorununun Gelişimi*, (Ankara: T.C. Başbakanlık Toplu Konut İdaresi Başkanlığı, 1996), p. xii.

Ali Madanipour provides a comparison between house and home. He tells house is the place built for inhabiting in without any identity or characteristics attributed to it. Whereas he refers to home as the intimate, cozy and reliable place to go after a hard day of work providing a private territory, protection, and a locus in the social world.[111]

Since the household activities are resumed first in temporary houses, the qualifying elements of home like continuity, privacy, refuge, security are assigned to them. In the experience of home there is close attachment, familiarity that is part of knowing and being known here, in this particular place. This attachment is reestablished with the appropriation and identification of houses. The temporary houses – prefabricated houses – are used as a template in order to reach satisfying environments for their residents. As Christian Norberg-Schulz explains,

> "Architectural space may be defined as a 'concretization' of existential space. 'Existential space' is a psychological concept, denoting the schemata man develops, interacting with the environment, in order to get along satisfactorily."[112]

Schulz further extends that not only the houses, but also the settlements possess identity as well. This identity he tells depends on its relationship to the landscape. The figural character and organization of a settlement is based on the principles of proximity, continuity and closure.[113] Schulz compares the authentic places which have this identity formed in time in close relation with human development and space which is understood to be empty and undifferentiated and objectively manipulable.[114]

As migrants of earthquake, habitants of Kocaeli were relocated in prefabricated housing settlements in selected areas by the government. The planning and construction process was to recover the 'place' and 'home' for a limited time interval until they received their final destination, homes. The temporariness of these settlements from the start of their use implied the fact that they were not to be a home for far future and the users were not to dwell here. These houses were regarded as transition zones for a certain period of time. However, the houses had to be used longer than originally intended thus perception of

[111] Ali Madanipour, *Public and Private Spaces of the City*, (London: Routledge, 2003), p. 71.
[112] Christian Norberg-Schulz, *Existence, Space and Architecture*, (New York: Praeger Publishers, 1971), p. 37.
[113] Ibid., p. 75-78.
[114] Edward Relph, *Place and Placelessness*, (London: Pion Limited, 1976), p. 23.

users changed. Finally the disaster affected did not want to leave their prefabricated houses for their permanent destinations.

The understanding and perception of home change under the forced displacement and relocation circumstances. Elizabeth Kenworthy Teather has interviewed migrants in Canada, questioning their understanding of home. To the question of where their home was; they have responded in diverse manners. The possibility to pursue life priorities and indulge personal interests; having a personal space where one can be oneself; the possibility of being with family were major aspects they described in order to perceive a place as home. Another approach was that the world was not a permanent home and the only safe haven was to be found in religion and God. Within this understanding, migrants seem to have given up on the idea of trying to find a home on this world.[115]

Elizabeth Kenworthy Teather emphasizes that traditional definitions of home have failed to those who have given up the search for home. Teather tells that they started to think of home nowhere and home anywhere as post-modernist travelers. She explains that post-modernist discourse on home challenges the traditional notion of home and allows one to make an explicit connection between migration and home. Within this discourse; the world in constant flux provides unpredictable contingencies.[116]

Karen Fog Olwig gives an example of the perception of home both as a concrete physical place and as the personal space of relations and identification which covers wherever one goes. In the example; Victor Borge was asked whether he considered moving back home. He replies 'Home? But I am in my home all the time; its walls are just very far apart!' Olwig explains that Borge projected himself as a man of the world who has not allowed himself to be constrained by ties to his original homeland or the particular locality of his everyday life.[117]

On the other hand Elizabeth Kenworthy Teather tells that the concept of travelling accepts change as a natural state of affairs, whereas home asks for a closure. She states that with the movement of travel it is normal to break down the boundaries whereas home is a

[115] Elizabeth Kenworthy Teather, *Embodied Geographies Spaces, Bodies and Rites of Passage* (London and New York: Routledge, 1999), p. 184-185.
[116] Ibid., p. 186-187.
[117] Nigel Rapport and Andrew Dawson, *Migrants of Identity*, (Oxford and New York: Berg, 1998), p. 225.

'walled city' in order to maintain its state of familiarity.[118] Moreover, Edward Relph describes home as an attachment to a particular setting, a point of departure in comparison with which all other associations with places have only a limited significance and from which we orientate ourselves and take possession of the world.[119]

Gaston Bachelard states that throughout the life of a man the house thrusts aside possbilities, it is the continuity of the house which is eternal. Without it, Bachelard claims, man would be a dispersed being. The house is human being's first world before he is cast into the world.[120]

Although the walled city asks for closure, continuity and familiarity, Iain Chambers explains that whether home is desirable or not, homecoming for migrants is impossible. The reason of this Chambers tells is that migrancy involves a movement in which the points of departure and arrival are subject to change constantly. Furthermore, he refers to Stuart Hall telling that migration is a one way trip. Hall states for migrants there is no home to go back to.[121]

The victims of 1999 Marmara Earthquakes experience displacement and thus migrancy. The loss of their houses and uncertainty of their future destinations lead to the one way trip in which they do not have a home to go back to and do not have a home to move into.

Iain Border defines city as a matrix of routes, junctions and structures which function as a metaphor of memory. The historic elements are surrounded by superimpositions standing on the foundations of 'lost' structures. Kocaeli with its lost built-environment would be functioning as a metaphor of memory for disaster victims of earthquakes. The victims will be referring to the image of their previous houses and neighborhoods while constituting and adjusting to their new housing settlements.[122]

Iain Border defines place as the product of subjective projection and internalization of an external reality. He uses memory to differentiate place from space and as such he tells that

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[118] Elizabeth Kenworthy Teather, *Embodied Geographies Spaces, Bodies and Rites of Passage* (London and New York: Routledge, 1999), p. 186-187.
[119] Edward Relph, *Place and Placelessness* (London: Pion Limited, 1976), p. 40.
[120] Gaston Bachelard, *The Poetics of Space* (New York: The Orion Press, 1964), p. 7.
[121] Iain Chambers, *Migrancy, Culture, Identity* (London and New York: Routledge, 1994), p. 9.
[122] Ian Borden and others, eds. *The Unknown City: Contesting Architecture and Social Space: A Strangely Familiar Project* (Cambridge: The MIT Press, 2001), p. 62.

amnesia reverses that process and dissolves place back into the indifference of space.[123] Thus the loss of memories for victims leads to loss of their places as well.

Other than the aspects of closure, continuity, familiarity and memory Gaston Bachelard states that the house shelters daydreaming allowing one to dream in peace. He explains thought, experience and daydreaming sanction human values and mark humanity. Daydreaming, Bachelard points out, derives direct pleasure from its own being. Therefore, he continues, that the places in which we have experienced daydreaming reconstitute themselves in a new daydream, and since our memories of former dwelling-places are relived as daydreams that these places of the past remain in us for all time.[124]

Gaston Bachelard defines our house as our corner of the world, as our first universe.[125] He states that all really inhabited spaces bear the essence of the notion of home. As explained before he emphasizes that the sheltered experiences the house in its reality and virtuality by means of thought and dreams. As a consequence when the sheltered transfers to a new house by these means; an entire past comes to dwell in the new house as we carry our lores with us.[126]

However, at this point, as Iain Border reminds, it is necessary to acknowledge that memory is subject to political and psychic operations; while accepting that it is one of the key ingredients in the creation of place.[127]

Based on the discussions related to the city, house and home mentioned above; the temporary housing settlements and the prefabricated houses in Kocaeli in 1999 are to be analyzed further on. The diagrams and plans will be highlighting main concerns in planning, realization and occupancy of these settlements.

[123] Ibid., p. 55.
[124] Gaston Bachelard, *The Poetics of Space* (New York: The Orion Press, 1964), p. 6.
[125] Ibid., p. 4.
[126] Ibid., p. 5.
[127] Ian Borden and others, eds. *The Unknown City: Contesting Architecture and Social Space: A Strangely Familiar Project* (Cambridge: The MIT Press, 2001), p. 63.

4.1 Location, Planimetry and Tectonics

Prefabricated housing settlement locations were selected among state owned fields within city borders of Kocaeli. Due to lack of pre-disaster mitigation and planning, these locations were decided upon quickly according to their availability and accessibility at the time being.

Kocaeli has twelve main administrative districts. The location of temporary housing settlements with their relations to surrounding urban environments can be seen in Figure 11.

Figure 11 The location and aerial view of temporary housing settlements in Kocaeli administrative borders in 1999.

Ministry of Public Works and Settlement Afet İşleri Genel Müdürlüğü has published a circular note for the selection of lands to be used in reconstruction of houses in disaster areas. The note stated in the third article that the selection process should be preserving the unity of settlements considering the infrastructural, social, cultural, and educational and health services. And to meet these conditions, new settlement locations should be as close as possible to old ones. Moreover, the lands classified and referred as 2B Forestry[128]

[128] The second article, section B of the Law of Forestry 6831 defines these areas. The 2B Forestry lands which have lost their forest characteristics before the date of 31/12/1981 can be excluded from forestry zones to be utilized for agricultural purposes. Moreover the areas where a village, town or an urban settlement is located are considered under the framework of this law as well.

and agricultural areas could not be used for this purpose unless there was no other choice.[129]

The locations of prefabricated housing settlements for disaster affected area in 1999 Marmara Earthquakes were selected by Afet İşleri Genel Müdürlüğü, İller Bankasi Genel Müdürlüğü, Yapı İşleri Genel Müdürlüğü and Teknik Araştırma ve Uygulama Müdürlüğü. Ministry of Public Works and Settlement authorities stated that houses were to be built on areas in vicinity to old settlements.[130] Therefore, planning decisions had the priority of maintaining unity above all other design considerations.

Minister Edip Safter Gaydalı explained that following the surveys in the earthquake affected area; it has been clear that there were no appropriate sites for construction. He told that there was no area for a new city to be built and the laws forbade construction on the areas which were appropriate. These areas were forests and the government discussed whether to allow construction or to move people from the region.

Minister of Forestry, Prof. Dr. Nami Cağan explained that due to conditions it could be possible to open these areas for construction of temporary settlements.[131]

Urban environment development plans of cities had to be changed under emergency circumstances and prefabricated housing settlements occupied some of major housing zones.

İsmail Barış, Mayor of Gölcük, criticized the selected temporary housing settlement areas within Gölcük. He stated that the areas were selected according to the old site plans of Ministry of Public Works and Settlement without consulting the municipality. He claimed that 2500 prefabricated houses were planned to be built on mass housing areas and fruit gardens. He stated that potential areas for permanent houses were selected for temporary ones. İsmail Barış also criticized that it caused problems that the planning process was done in Ankara, far from earthquake affected areas.[132]

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[129] "7117(2007/2) Sayılı Bayındırlık ve İskan Bakanlığı Afet İşleri Genel Müdürlüğü Yeni Yerleşme Yerlerinin Tespiti, Temini, Planlanması ve Devir-Temliki Genelgesi," http://www.afetacil.gov.tr/mevzuat/genelge/yersecimi_genelgesi.pdf, (accessed March 26, 2011).
[130] "Proje Denetimi Mühendislerde," *Milliyet Gazetesi*, 16 September 1999, p. 9.
[131] Muharrem Sarıkaya, "İnşaat Yapılacak Yer Yok…," *Hürriyet Gazetesi*, 16 September 1999.
[132] "Toplu Konut Alanı Geçici İskâna Açıldı," Cumhuriyet Gazetesi, 25 September 1999, p. 3.

4.1.1 Site Scale

4.1.1.1 Location and Approach

The location and relation of settlements to city centers were criticized by habitants and professional planners (Figure 12 – 13). The settlements were considered deficient in recovering the disruption caused by forced displacement and relocation in public domain.

Edward Relph tells that location or position is neither necessary nor a sufficient condition of place. In relation with his statement, Relph explains that mobility or nomadism does not make it impossible to for an attachment to place and in contemporary society most mobile people are not automatically homeless or placeless.[133] Thus the location of settlements did not necessarily indicate that the disaster affected would not be able to have the opportunity to bond with their new houses.

In order to provide details for the relation of place and location Edward Relph refers to Levis Strauss 1971 and his first journey to Latin America. Strauss describes his experience as the opposite of 'travel' since the ship has transformed into a home before which nature put a new show every morning.[134]

Rather than the location of dwelling, the experience and attachment provides sense of place and home for inhabitants. Indifferent housing settlements and prefabricated blocks created challenge for disaster victims; however they were not necessarily reason for lack of sense of place.

[133] Edward Relph, *Place and Placelessness* (London: Pion Limited, 1976), p. 30.
[134] Ibid., p. 29.

Figure 12 Aerial view of temporary housing settlement in disaster area in 1999.

Figure 13 Aerial view of temporary housing settlement in disaster area in 1999.

4.2 Planimetric and Tectonic Analysis

4.2.1 Site Scale

İller Bankası has documented twenty one diverse temporary prefabricated housing settlements within administrative borders of Kocaeli in post-disaster period of 1999 Marmara Earthquakes.

The settlements were located in Bahçecik, Darıca, Değirmendere, Derince, Başiskele, Döngel, Ereğli, Gölcük, Halıdere, Körfez, Kullar, Ulaşlı, Uzunçiftlik and Yuvacık districts of Kocaeli (Izmit).

Site plans of settlements were prepared in 1/1000 scale, including planning notes for design. The average number of householders per house in Kocaeli prefabricated housing settlements was 4.5 people. Gross area of settlements changed within a wide range, starting from 1.3 ha to 115.5 ha. The parcel sizes determined for each settlement varied, although the form and design of these parcels did not. The area of parcels ranged between 162.75 m^2 and 231.25 m^2. The size of roads for all settlements was six meters however, the distance of blocks to the roads changed. Public facilities in temporary housing settlements were specified on the site plans provided by İller Bankası.

4.2.1.1 Site Layout and Relation with Urban Environments

Bahçecik 3 nolu Geçici İskân Alanı (Figure 14) has been planned in 1/1000 scale on 5 hectares area, with 110 blocks of twin houses. Total resident number of this area is 990. Unlike other settlements, it is noted on the plan to preserve existing trees within the area. The planning institute has provided a block design for the dimensions of houses and distances between them.

Bahçecik (Kocaeli) 2no lu Geçici İskân Alanı (Figure 15) has been planned in 1/1000 scale on 22 hectares area, with 450 blocks of twin houses. Total resident number of this

area is 4050. The planning institute has provided a block design for the dimensions of houses and distances between them.

Darıca (İzmit) Geçici Yerleşim Alanı (Figure 16) has been planned in 1/1000 scale on 11 hectares area, with 294 blocks of twin houses. Total resident number of this area is 2646. The planning institute has provided a block design for the dimensions of houses and distances between them.

Değirmendere 3 (Kocaeli) Geçici Yerleşim Alanı (Figure 17) has been planned in 1/1000 scale on 0.3 hectares area, with 9 blocks of twin houses. Total resident number of this area is 81. The planning institute has not provided a block design for the dimensions of houses and distances between them.

Derince (Kocaeli) 1.nolu Geçici Yerleşim Alanı (Figure 18) has been planned in 1/1000 scale on 48.3 hectares area, with 1268 blocks of twin houses. Total resident number of this area is 11.412. The planning institute has provided a block design for the dimensions of houses and distances between them.

Figure 14 The diagram of Bahçecik 3 Temporary Housing Settlement showing the distribution of residential and public densities.

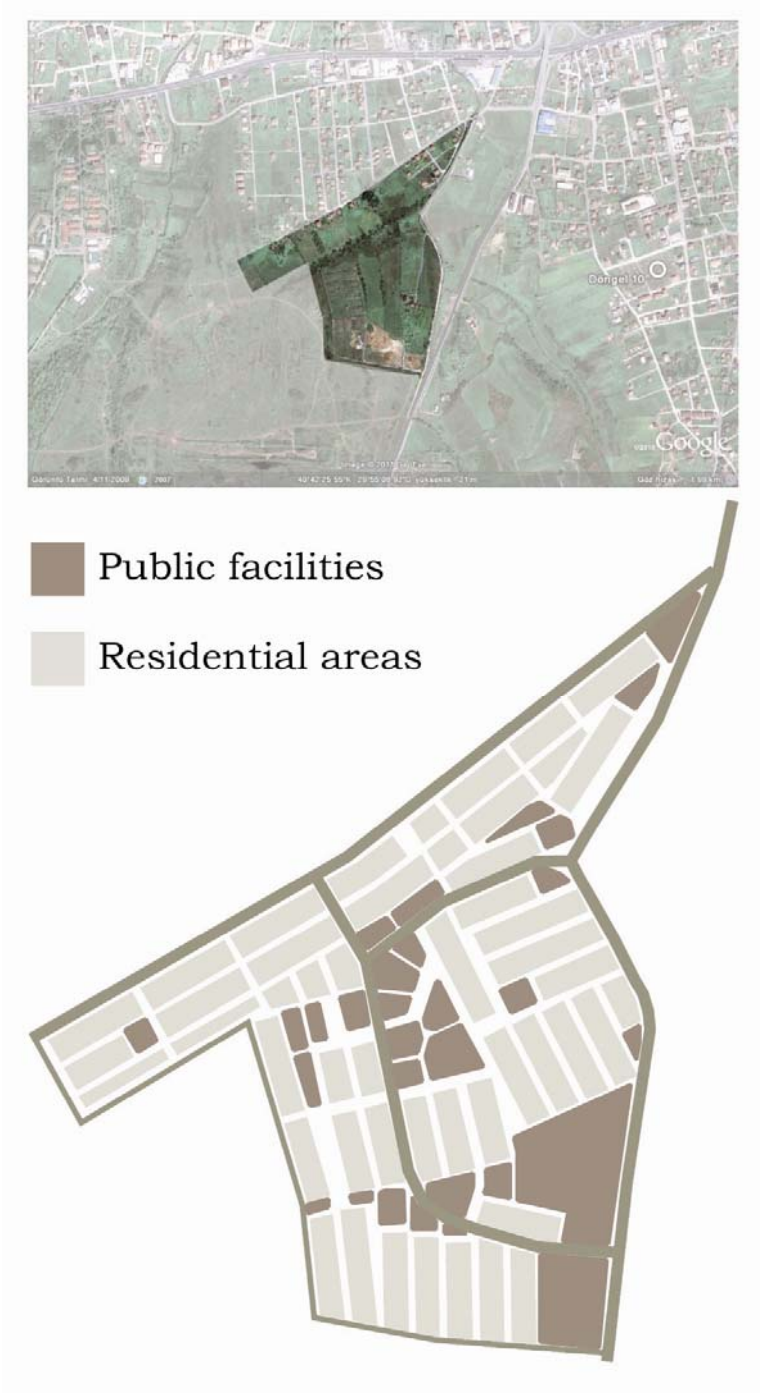

Figure 15 The diagram of Bahçecik 2 Temporary Housing Settlement showing the distribution of residential and public densities.

Figure 16 The diagram of Darıca Temporary Housing Settlement showing the distribution of residential and public densities.

Derince (Kocaeli) 1.nolu Geçici Yerleşim Alanı (Figure 19) has been planned in 1/1000 scale on 48.3 hectares area, with 1268 blocks of twin houses. Total resident number of this area is 11.412. The planning institute has provided a block design for the dimensions of houses and distances between them.

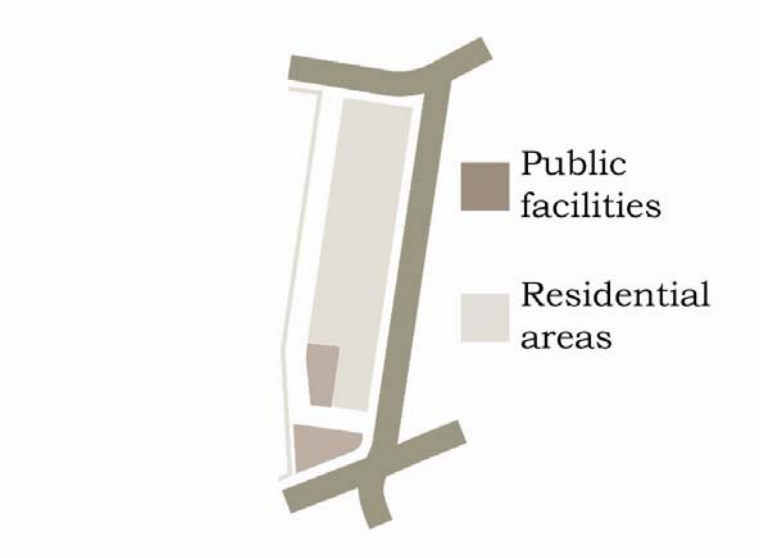

Figure 17 The diagram of Değirmendere Temporary Housing Settlement showing the distribution of residential and public densities.

Figure 18 The diagram of Derince 1 Temporary Housing Settlement showing the distribution of residential and public densities.

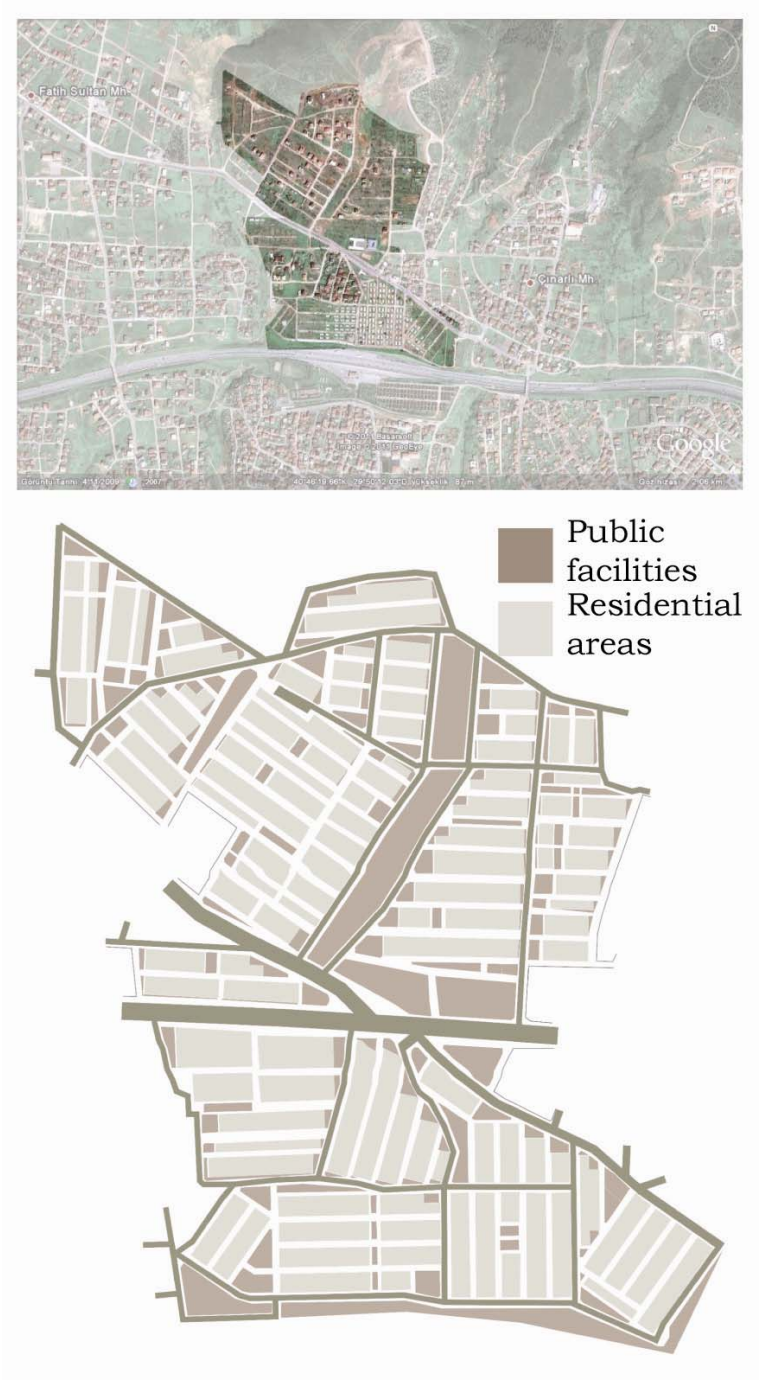

Figure 19 The diagram of Derince 1 Temporary Housing Settlement showing the distribution of residential and public densities.

Donanma Komutanlığı (Basiskele) Geçici İskân Alanı (Figure 20) has been plnned in 1/1000 scale on 1.85 hectares area, with 104 blocks of twin houses. Total resident number

of this area is 936. The planning institute has not provided a block design for the dimensions of houses and distances between them.

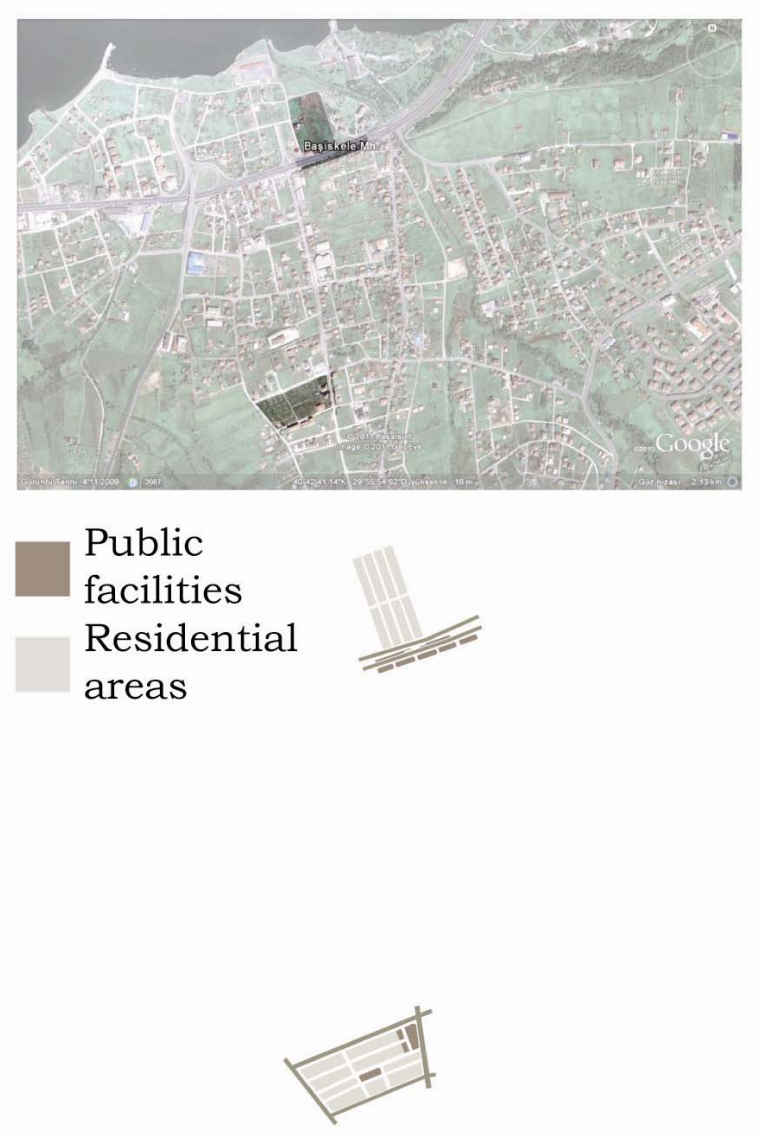

Figure 20 The diagram of Donanma Komutanlığı Başiskele Temporary Housing Settlement showing the distribution of residential and public densities.

Donanma Komutanlığı (Cuhane) Geçici İskân Alanı (Figure 21) has been planned in 1/1000 scale on 14 hectares area, with 575 blocks of twin houses. Total resident number of this area is 5175. The planning institute has not provided a block design for the dimensions of houses and distances between them.

Figure 21 The diagram of Donanma Komutanlığı Çuhane Temporary Housing Settlement showing the distribution of residential and public densities.

Döngel 2 (Kocaeli) Geçici Yerleşme Alanı İmar Planı (Figure 22) has been planned in 1/1000 scale on 13.32 hectares area, with 283 blocks of twin houses. Total resident number of this area is 2547. The planning institute has provided a block design for the dimensions of houses and distances between them.

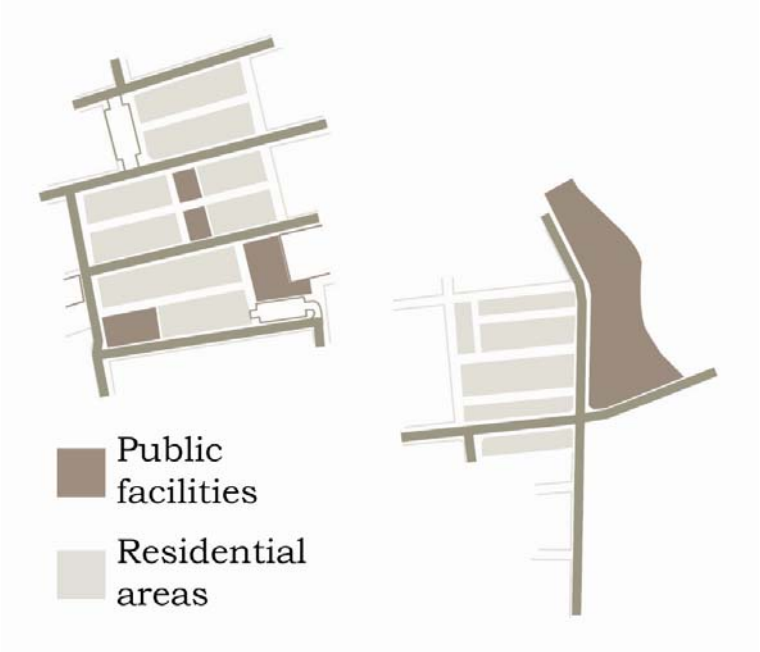

Figure 22 The diagram of Döngel 2 Temporary Housing Settlement showing the distribution of residential and public densities.

Ereğli (Kocaeli) Geçici Yerleşim Alanı (Figure 23) has been planned in 1/1000 scale on 1.3 hectares area, with 33 blocks of twin houses. Total resident number of this area is 297. The planning institute has provided a block design for the dimensions of houses and distances between them.

Gölcük (Kocaeli) Gözleme Tepe Mevkii (1 ve 4 nolu) Geçici İskân Alanı (Figure 24) has been planned in 1/1000 scale on 44.5 hectares area, with 989 blocks of twin houses. Total resident number of this area is 8901. The planning institute has provided a block design for the dimensions of houses and distances between them. Unlike other settlement plans, planning institute has provided an alternative for Golcuk.

Figure 23 The diagram of Ereğli Temporary Housing Settlement showing the distribution of residential and public densities.

Halıdere (Kocaeli) Geçici İskân Alanı (Figure 25) has been planned in 1/1000 scale on 3.23 hectares area, with 93 blocks of twin houses. Total resident number of this area is 837. The planning institute has provided a block design for the dimensions of houses and distances between them.

İzmit Geçici Yerleşim Alan Planı (5 nolu alan) (Figure 26) has been planned in 1/1000 scale, with 188 blocks of twin houses. Total resident number of this area is 692. The planning institute has not provided a block design for the dimensions of houses and distances between them.

Karamursel Geçici Yerleşim Alan Planı (Figure 27 – 28)has been shown on two different scaled maps. This area has only been marked with a square with planning notes on it.

Körfez 5 (Kocaeli) Geçici Yerleşim Alanı (Figure 29) has been planned in 1/1000 scale, without plan notes about the area and the number of blocks or residents. The planning institute has provided a block design for the dimensions of houses and distances between them.

Figure 24 The diagram of Gölcük Gözleme Tepe Temporary Housing Settlement showing the distribution of residential and public densities.

Figure 25 The diagram of Halıdere Temporary Housing Settlement showing the distribution of residential and public densities.

Figure 26 The diagram of İzmit Temporary Housing Settlement showing the distribution of residential and public densities.

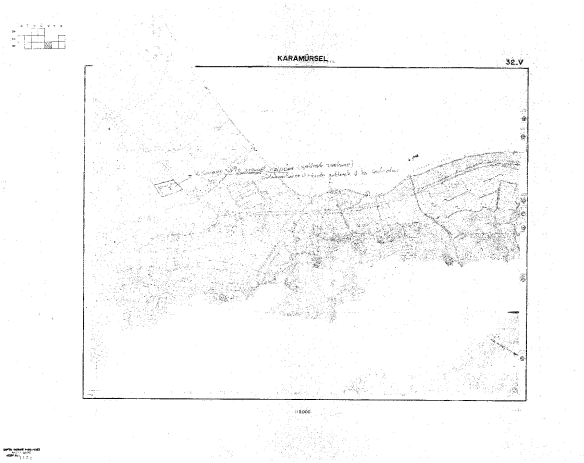

Figure 27 The plan of Karamürsel Temporary Housing Settlement showing the selection and planning considerations.

Figure 28 The plan of Karamürsel Temporary Housing Settlement showing the selection and planning considerations.

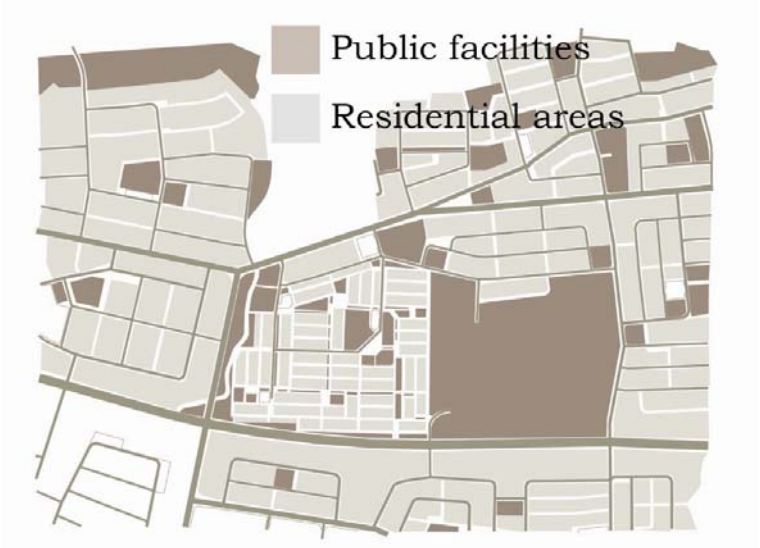

Figure 29 The diagram of Körfez 5 Temporary Housing Settlement showing the selection and planning considerations.

Köseköy Kocaeli Geçici Alan (Figure 30) has been planned in 1/1000 scale on a 16.2 hectares area, with 362 blocks of twin houses. Total resident number of this area is 3258. The planning institute has not provided a block design for the dimensions of houses and distances between them.

Kullar (İzmit) Kocaeli I-II geçici Yerleşim Alanı (Figure 31) have been planned in 1/1000 scale on 25/18.35 hectares area, with 708/556 blocks of twin houses. Total resident numbers of these areas are 6372/5004. The planning institute has provided a block design for the dimensions of houses and distances between them.

Kullar (Kocaeli) III. etap Geçici Yerleşim Alanı (Figure 32) has been planned in 1/1000 scale on a 43.35 hectares area, with 1264 blocks of twin houses. Total resident number of this area is 11376. The planning institute has provided a block design for the dimensions of houses and distances between them.

Figure 30 The diagram of Köseköy Temporary Housing Settlement showing the selection and planning considerations.

Ulaşlı (Kocaeli) (2 ve 3 nolu alan) Geçici İskân Alanı (Figure 33) has been planned in 1/1000 scale on a 9.8 hectares area, with 260 blocks of twin houses. Total resident number of this area is 2340. The planning institute has not provided a block design for the dimensions of houses and distances between them.

Uzunçiftlik (Kocaeli) Geçici Yerleşim Alanı (Figure 34) has been planned in 1/1000 scale on a 37 hectares area, with 823 blocks of twin houses. Total resident number of this area is 7407. The planning institute has not provided a block design for the dimensions of houses and distances between them.

Yuvacık (Kocaeli) Geçici Yerleşim Alanı (Figure 35) has been planned in 1/1000 scale on a 115.5 hectares area, with 2687 blocks of twin houses. Total resident number of this area is 24183. The planning institute has provided a block design for the dimensions of houses and distances between them.

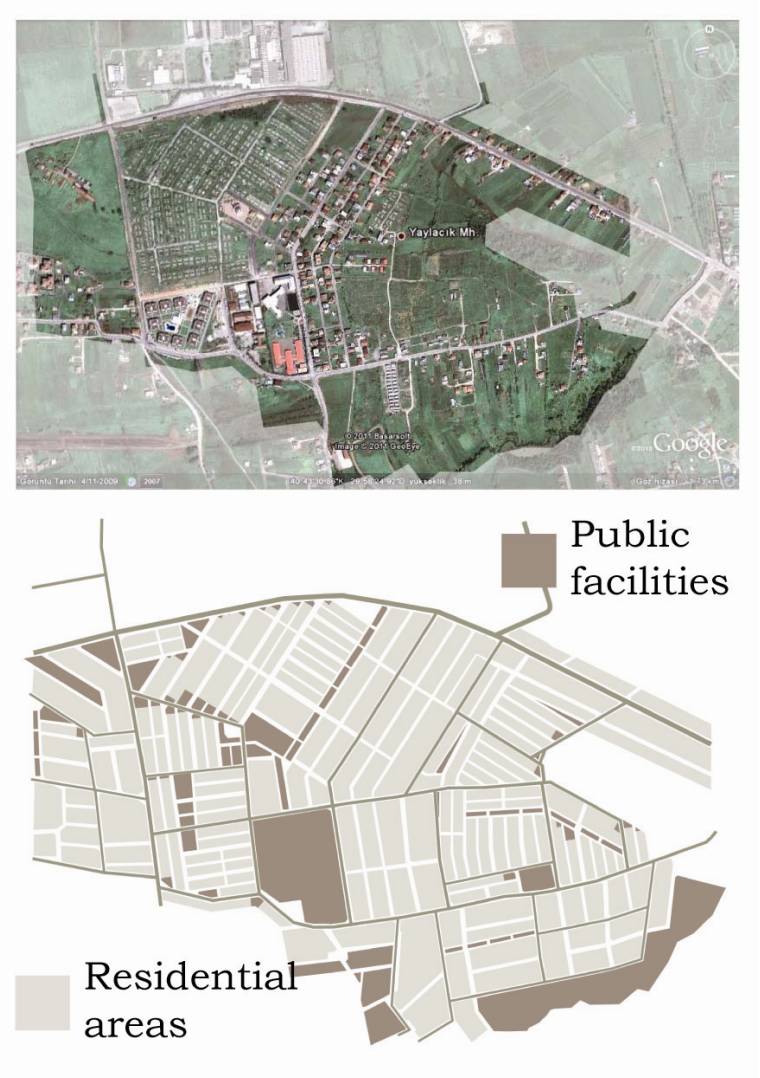

Figure 31 The diagram of Kullar I-II Temporary Housing Settlement showing the selection and planning considerations.

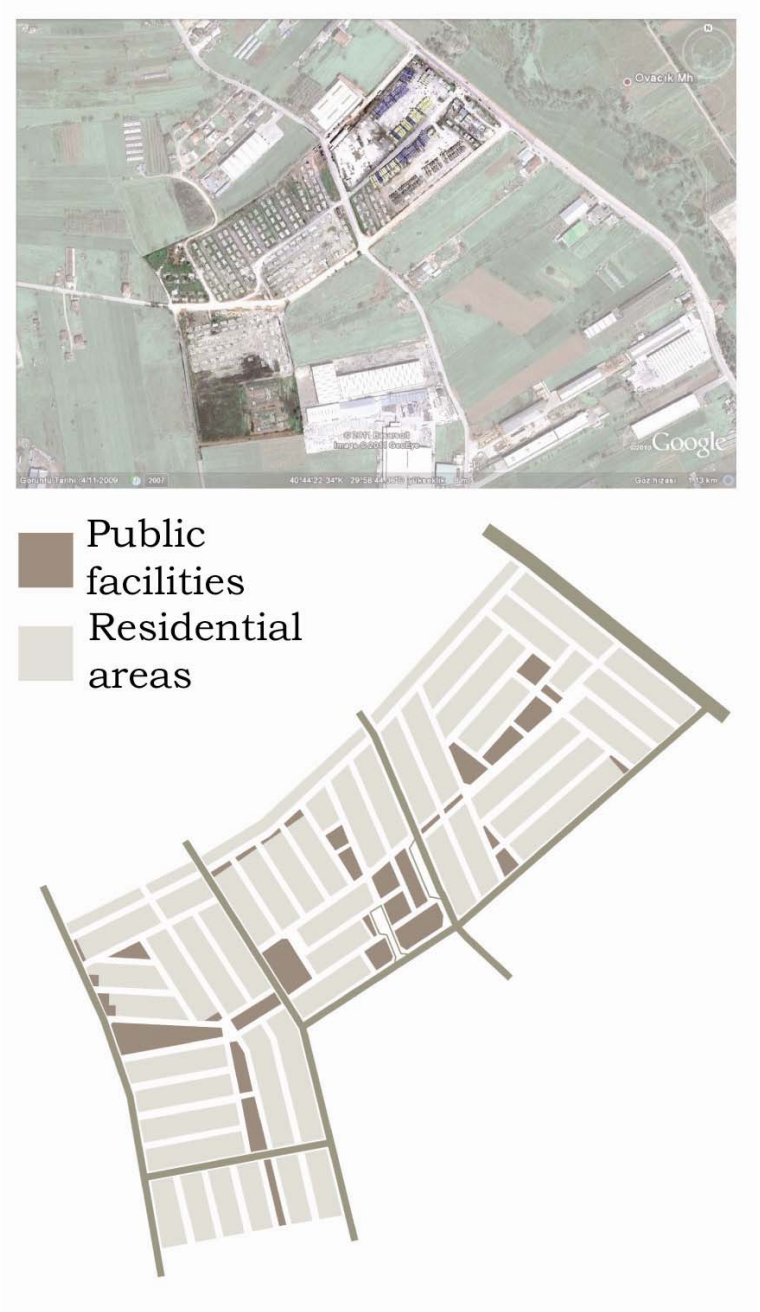

Figure 32 The diagram of Kullar III Temporary Housing Settlement showing the selection and planning considerations.

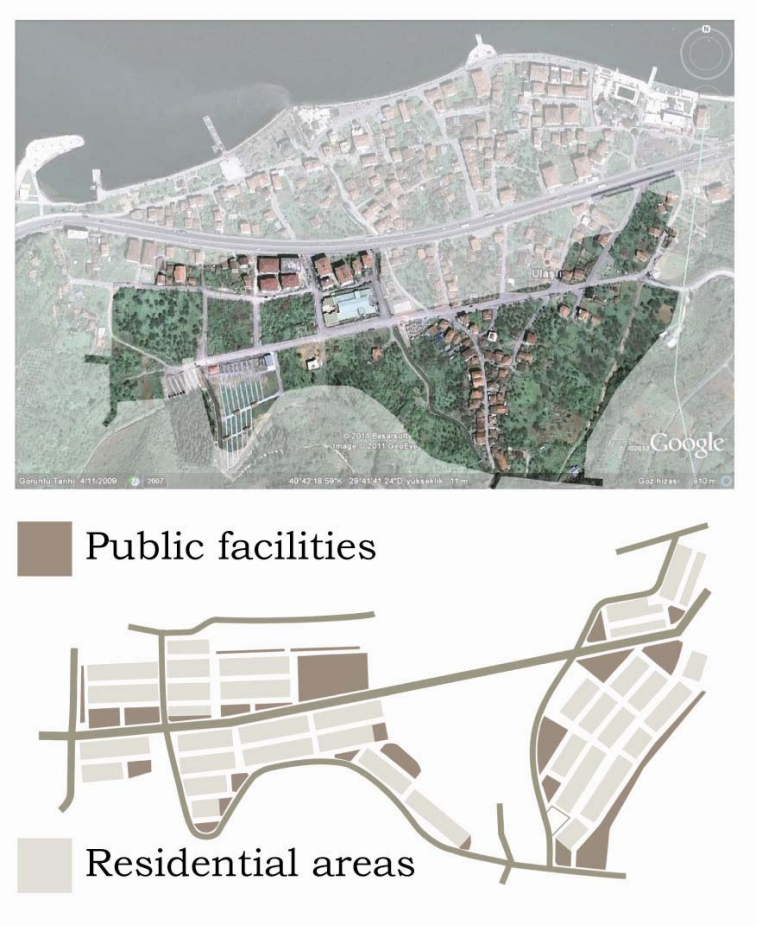

Figure 33 The diagram of Ulaşlı Temporary Housing Settlement showing the selection and planning considerations.

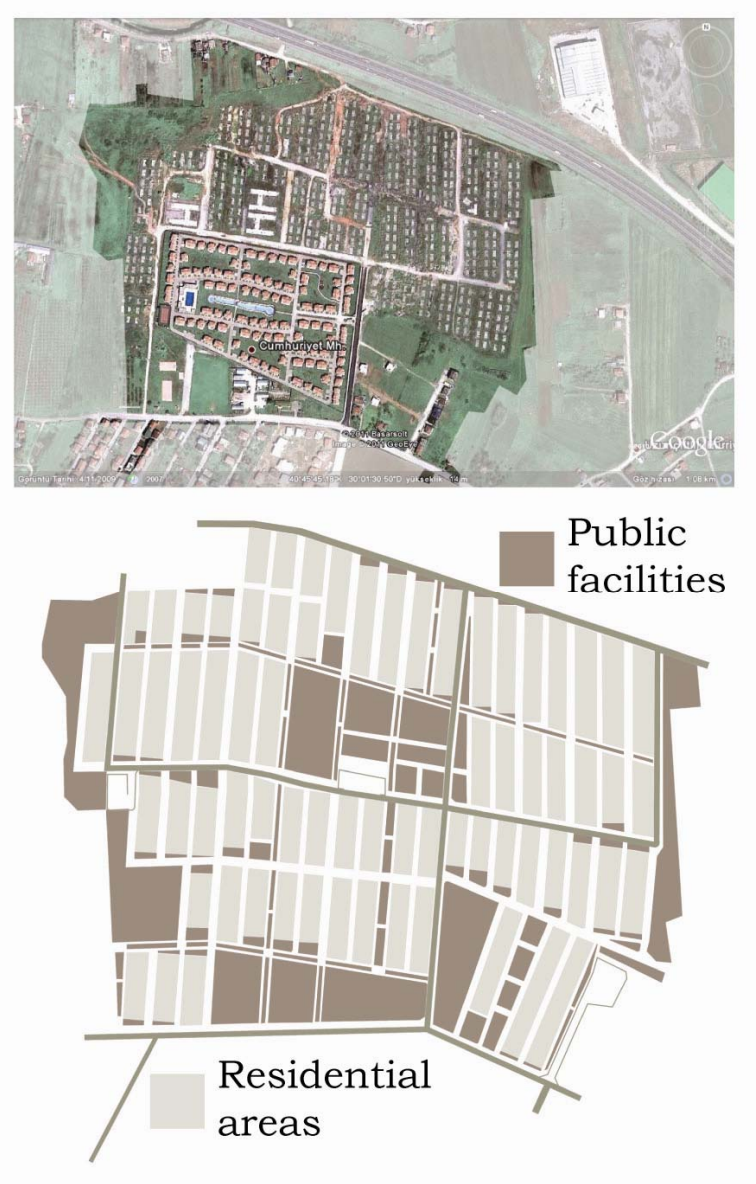

Figure 34 The diagram of Uzunçiftlik Temporary Housing Settlement showing the selection and planning considerations.

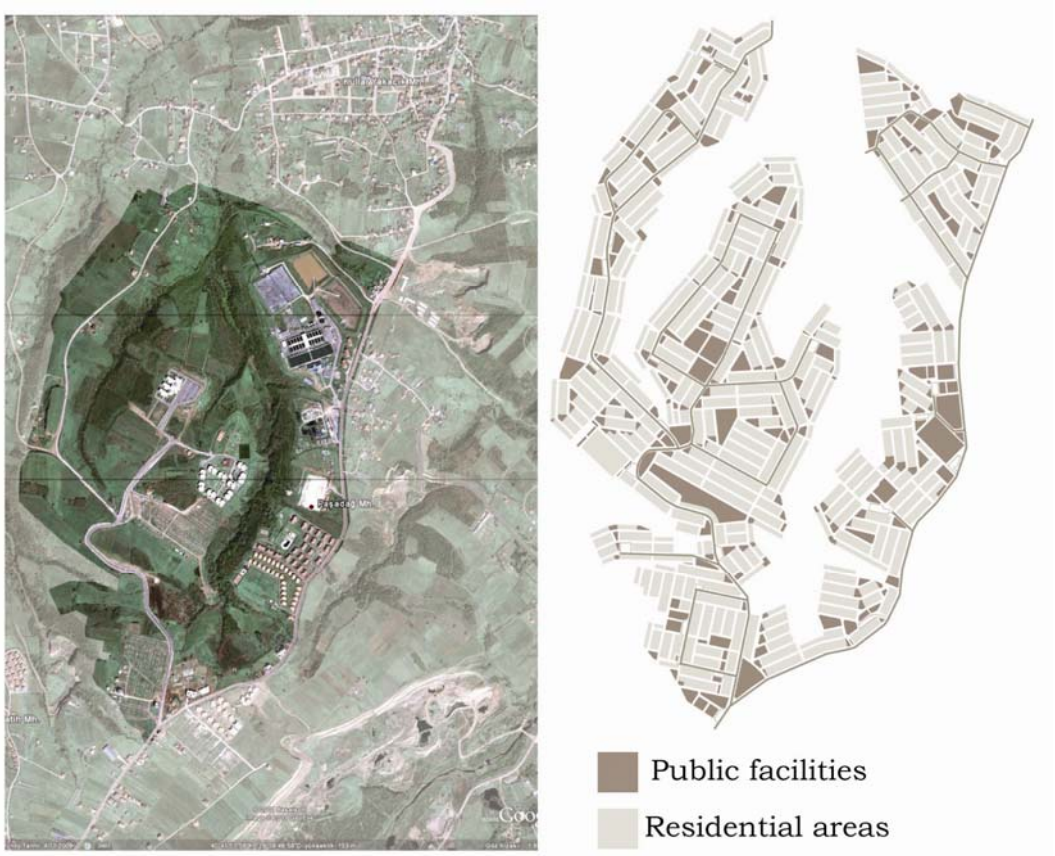

Figure 35 The diagram of Yuvacık Temporary Housing Settlement showing the selection and planning considerations.

4.2.1.2 Design Decisions on Residential and Public Areas

The settlements have been planned with green areas, public toilets, showers and laundry units, administrative units, security, commercial areas, mosques, healthcare facilities, carparks, water storage, socio-cultural areas, education areas and agricultural area (Table 3 – 4 – 5 – 6 – 7 – 8). However, it is not possible to follow how it has been decided to have some of the facilities in some of the settlements and not in others.

Table 3 The information about scale, block and residence numbers of temporary housing settlements in Kocaeli.

	Scale	Gross area (ha)	Basement Level (m)	Block	Residence
Bahçecik (Kocaeli) 2 Geçici İskân Alanı	1/1000	22	0.50	450	900
Değirmendere 3 (Kocaeli) Geçici Yerleşim Alanı	1/1000		0.32	9	18
Derince (Kocaeli) 1.nolu Geçici Yerleşim Alanı	1/1000	48,3	0.50	1268	2536
Derince (Kocaeli) 1 nolu Geçici Yerleşim Alanı	1/1000	48,3	0.50	1268	2536
Donanma Komutanlığı (Basiskele) Geçici İskân Alanı Planı	1/1000	1,85	0.50	104	208
Döngel 2 (Kocaeli) Geçici Yerleşme Alanı	1/1000	13,32	0.50	283	566
Gölcük (Kocaeli) Gözleme Tepe Mevkii (1 ve 4 nolu) Geçici İskân Alanı	1/1000	44,5	0.50	989	1978
Gölcük 3 nolu (Alternatif Alan) Geçici İskân Alanı Planlaması / Gölcük (Kocaeli) 1 ve 4 nolu Alan (Alternatif) Geçici İskân Alanı Planlaması	1/1000	19/49,5	0.50/0.50	270/1168	540/2336
Körfez 5 (Kocaeli) Geçici Yerleşim Alanı	1/1000		0.50		
Kullar (İzmit) Kocaeli I-II Geçici Yerleşim Alanı	1/1000	25/18,35	0.32/0.32	708/556	1416/1112
Kullar (Kocaeli) III. etap Geçici Yerleşim Alanı	1/1000	16,65	0.32	506	1012
Ulaşlı (Kocaeli) (2 ve 3 nolu alan) Geçici İskân Alanı	1/1000	9,8	0.50	260	520
Uzunçiftlik (Kocaeli) Geçici Yerleşim Alanı	1/1000	37	0.32	823	1646
Yuvacık (Kocaeli) Geçici Yerleşim Alanı (1nolu alan)	1/1000	115,5	0.32	2687	5374
Köseköy Kocaeli Geçici Alan İskân Planlaması	1/1000	16,2		362	724
Donanma Komutanlığı (Cuhane) Geçici İskân Alanı	1/1000	14	0.50	575	1150
Ereğli (Kocaeli) Geçici Yerleşim Alanı (1 no. alan)	1/1000	1,3	0.32	33	66
Bahçecik (Kocaeli) 3 nolu Geçici İskân Alanı	1/1000	5	0.50	110	220
Darıca (İzmit) Geçici Yerleşim Alanı (1 no'lu alan)	1/1000	11	0.32	294	588
İzmit Geçici Yerleşim Alan Planı (5 nolu alan)	1/1000			188	376
Halıdere (Kocaeli) Geçici İskân Alanı Planlaması	1/1000	3,23	0.50	93	186

Table 4 The information about demographics of temporary housing settlements in Kocaeli.

	Average number of householders	Total population
Bahçecik (Kocaeli) 2 Geçici İskân Alanı	4,5	4050
Değirmendere 3 (Kocaeli) Geçici Yerleşim Alanı	4,5	81
Derince (Kocaeli) 1.nolu Geçici Yerleşim Alanı	4,5	11.412
Derince (Kocaeli) 1 nolu Geçici Yerleşim Alanı	4,5	11.412
Donanma Komutanlığı (Basiskele) Geçici İskân Alanı Planı	4,5	936
Döngel 2 (Kocaeli) Geçici Yerleşme Alanı	4,5	2547
Gölcük (Kocaeli) Gözleme Tepe Mevkii (1 ve 4 nolu) Geçici İskân Alanı	4,5	8901
Gölcük 3 nolu (Alternatif Alan) Geçici İskân Alanı Planlaması / Gölcük (Kocaeli) 1 ve 4 nolu Alan (Alternatif) Geçici İskân Alanı Planlaması	4,5/ 4,5	2430/10512
Körfez 5 (Kocaeli) Geçici Yerleşim Alanı	4,5	
Kullar (İzmit) Kocaeli I-II Geçici Yerleşim Alanı	4,5/ 4,5	6372/5004
Kullar (Kocaeli) III. Etap Geçici Yerleşim Alanı	4,5	4554
Ulaşlı (Kocaeli) (2 ve 3 nolu alan) Geçici İskân Alanı	4,5	2340
Uzunçiftlik (Kocaeli) Geçici Yerleşim Alanı		7407
Yuvacık (Kocaeli) Geçici Yerleşim Alanı (1nolu alan)	4,5	24183
Köseköy Kocaeli Geçici Alan İskân Planlaması		3258
Donanma Komutanlığı (Cuhane) Geçici İskân Alanı	4,5	5175
Ereğli (Kocaeli) Geçici Yerleşim Alanı (1 no. alan)	4,5	297
Bahçecik (Kocaeli) 3 nolu Geçici İskân Alanı	4,5	990
Darıca (İzmit) Geçici Yerleşim Alanı (1 no'lu alan)	4,5	2646
İzmit Geçici Yerleşim Alan Planı (5 nolu alan)	4,5	692
Halıdere (Kocaeli) Geçici İskân Alanı Planlaması	4,5	837

Table 5 The information about public facilities of temporary housing settlements in Kocaeli.

	Park	Playground	WC/Shower /Laundry	Socio-Cultural Facilities
Bahçecik (Kocaeli) 2 Geçici İskân Alanı	16	4	4	2
Değirmendere 3 (Kocaeli) Geçici Yerleşim Alanı	1			
Derince (Kocaeli) 1.nolu Geçici Yerleşim Alanı	9	3	9	2
Derince (Kocaeli) 1 nolu Geçici Yerleşim Alanı	26	2	28	1
Donanma Komutanlığı (Basiskele) Geçici İskân Alanı Planı				
Döngel 2 (Kocaeli) Geçici Yerleşme Alanı	1	1	1	
Gölcük (Kocaeli) Gözleme Tepe Mevkii (1 ve 4 nolu) Geçici İskân Alanı	25	3	7	6
Gölcük 3 nolu (Alternatif Alan) Geçici İskân Alanı Planlaması / Gölcük (Kocaeli) 1 ve 4 nolu Alan (Alternatif) Geçici İskân Alanı Planlaması				
Körfez 5 (Kocaeli) Geçici Yerleşim Alanı	9	4	4	1
Kullar (İzmit) Kocaeli I-II Geçici Yerleşim Alanı	5/1		4/2	2/1
Kullar (Kocaeli) III. Etap Geçici Yerleşim Alanı	7	2	3	4
Ulaşlı (Kocaeli) (2 ve 3 nolu alan) Geçici İskân Alanı	2	1	3	1
Uzunçiftlik (Kocaeli) Geçici Yerleşim Alanı	10	6	7	1
Yuvacık (Kocaeli) Geçici Yerleşim Alanı (1nolu alan)				
Köseköy Kocaeli Geçici Alan İskân Planlaması	1			1
Donanma Komutanlığı (Cuhane) Geçici İskân Alanı	2			
Ereğli (Kocaeli) Geçici Yerleşim Alanı (1 no. alan)		1	1	
Bahçecik (Kocaeli) 3 nolu Geçici İskân Alanı	4		1	1
Darıca (İzmit) Geçici Yerleşim Alanı (1 no'lu alan)	3	3	2	
İzmit Geçici Yerleşim Alan Planı (5 nolu alan)	3	1	2	
Halıdere (Kocaeli) Geçici İskân Alanı Planlaması	3	1	1	

Table 6 The information about administrative facilities of temporary housing settlements in Kocaeli.

	Entrance	Administration	Security Guard	Square
Bahçecik (Kocaeli) 2 Geçici İskân Alanı	1	1		
Değirmendere 3 (Kocaeli) Geçici Yerleşim Alanı				
Derince (Kocaeli) 1.nolu Geçici Yerleşim Alanı	1	1	1	1
Derince (Kocaeli) 1 nolu Geçici Yerleşim Alanı	1	3	1	
Donanma Komutanlığı (Basiskele) Geçici İskân Alanı Planı				
Döngel 2 (Kocaeli) Geçici Yerleşme Alanı		1		
Gölcük (Kocaeli) Gözleme Tepe Mevkii (1 ve 4 nolu) Geçici İskân Alanı	4	2		1
Gölcük 3 nolu (Alternatif Alan) Geçici İskân Alanı Planlaması / Gölcük (Kocaeli) 1 ve 4 nolu Alan (Alternatif) Geçici İskân Alanı Planlaması				
Körfez 5 (Kocaeli) Geçici Yerleşim Alanı	1	1		
Kullar (İzmit) Kocaeli I-II Geçici Yerleşim Alanı		1/1		1/-
Kullar (Kocaeli) III. Etap Geçici Yerleşim Alanı		1		
Ulaşlı (Kocaeli) (2 ve 3 nolu alan) Geçici İskân Alanı	2			
Uzunçiftlik (Kocaeli) Geçici Yerleşim Alanı		1		
Yuvacık (Kocaeli) Geçici Yerleşim Alanı (1nolu alan)				
Köseköy Kocaeli Geçici Alan İskân Planlaması		1		
Donanma Komutanlığı (Cuhane) Geçici İskân Alanı				
Ereğli (Kocaeli) Geçici Yerleşim Alanı (1 no. alan)		1		1
Bahçecik (Kocaeli) 3 nolu Geçici İskân Alanı	1	1		1
Darıca (İzmit) Geçici Yerleşim Alanı (1 no'lu alan)	1			1
İzmit Geçici Yerleşim Alan Planı (5 nolu alan)	1	2	1	1
Halıdere (Kocaeli) Geçici İskân Alanı Planlaması	1	1		1

Table 7 The information about public services of temporary housing settlements in Kocaeli.

	Commercial Area	Mosque	Eelementary School/ Daycare	Healthcare Facility
Bahçecik (Kocaeli) 2 Geçici İskân Alanı	1	1	1	1
Değirmendere 3 (Kocaeli) Geçici Yerleşim Alanı				
Derince (Kocaeli) 1.nolu Geçici Yerleşim Alanı			1	
Derince (Kocaeli) 1 nolu Geçici Yerleşim Alanı		1	1	
Donanma Komutanlığı (Basiskele) Geçici İskân Alanı Planı				
Döngel 2 (Kocaeli) Geçici Yerleşme Alanı				
Gölcük (Kocaeli) Gözleme Tepe Mevkii (1 ve 4 nolu) Geçici İskân Alanı	2		1	3
Gölcük 3 nolu (Alternatif Alan) Geçici İskân Alanı Planlaması / Gölcük (Kocaeli) 1 ve 4 nolu Alan (Alternatif) Geçici İskân Alanı Planlaması				
Körfez 5 (Kocaeli) Geçici Yerleşim Alanı	1		1	1
Kullar (İzmit) Kocaeli I-II Geçici Yerleşim Alanı	1/-	1/-	3/-	1/1
Kullar (Kocaeli) III. Etap Geçici Yerleşim Alanı	1		1	1
Ulaşlı (Kocaeli) (2 ve 3 nolu alan) Geçici İskân Alanı			1	
Uzunçiftlik (Kocaeli) Geçici Yerleşim Alanı	1		1	1
Yuvacık (Kocaeli) Geçici Yerleşim Alanı (1nolu alan)				
Köseköy Kocaeli Geçici Alan İskân Planlaması			1	
Donanma Komutanlığı (Cuhane) Geçici İskân Alanı				
Ereğli (Kocaeli) Geçici Yerleşim Alanı (1 no. alan)				
Bahçecik (Kocaeli) 3 nolu Geçici İskân Alanı	1	1	1	1
Darıca (İzmit) Geçici Yerleşim Alanı (1 no'lu alan)				
İzmit Geçici Yerleşim Alan Planı (5 nolu alan)			1	
Halıdere (Kocaeli) Geçici İskân Alanı Planlaması				

Table 8 The information about infrastructure of temporary housing settlements in Kocaeli.

	Carpark	Built Area	Water Storage	Agricultural Area	Recreation Area
Bahçecik (Kocaeli) 2 Geçici İskân Alanı					
Değirmendere 3 (Kocaeli) Geçici Yerleşim Alanı					
Derince (Kocaeli) 1.nolu Geçici Yerleşim Alanı	3				
Derince (Kocaeli) 1.nolu Geçici Yerleşim Alanı		1			
Donanma Komutanlığı (Basiskele) Geçici İskân Alanı Planı					
Döngel 2 (Kocaeli) Geçici Yerleşme Alanı		1			
Gölcük (Kocaeli) Gözleme Tepe Mevkii (1 ve 4 nolu) Geçici İskân Alanı	2	2	1		1
Gölcük 3 nolu (Alternatif Alan) Geçici İskân Alanı Planlaması / Gölcük (Kocaeli) 1 ve 4 nolu Alan (Alternatif) Geçici İskân Alanı Planlaması					
Körfez 5 (Kocaeli) Geçici Yerleşim Alanı					
Kullar (İzmit) Kocaeli I-II Geçici Yerleşim Alanı					
Kullar (Kocaeli) III. Etap Geçici Yerleşim Alanı	1				
Ulaşlı (Kocaeli) (2 ve 3 nolu alan) Geçici İskân Alanı					
Uzunçiftlik (Kocaeli) Geçici Yerleşim Alanı	1				
Yuvacık (Kocaeli) Geçici Yerleşim Alanı (1nolu alan)					
Köseköy Kocaeli Geçici Alan İskân Planlaması					
Donanma Komutanlığı (Cuhane) Geçici İskân Alanı					
Ereğli (Kocaeli) Geçici Yerleşim Alanı (1 no. alan)	1				
Bahçecik (Kocaeli) 3 nolu Geçici İskân Alanı					
Darıca (İzmit) Geçici Yerleşim Alanı (1 no'lu alan)	1				
İzmit Geçici Yerleşim Alan Planı (5 nolu alan)	2				
Halıdere (Kocaeli) Geçici İskân Alanı Planlaması				1	

4.2.2 Building Scale

All temporary housing settlements in Kocaeli have been formed by twin house blocks within row housing order in grid outlines (Figure 36 – 37 – 38). These blocks have same internal design with diverse dimensions in all settlements – 12,5m x 6,5m or 11m X 5,5m. It is not clear how the differences in dimensions of these houses have been decided; however, it is a possibility that the construction companies have taken initiative in the production process. The base levels for prefabricated blocks differ in diverse areas from 0.5m to 0.32m.

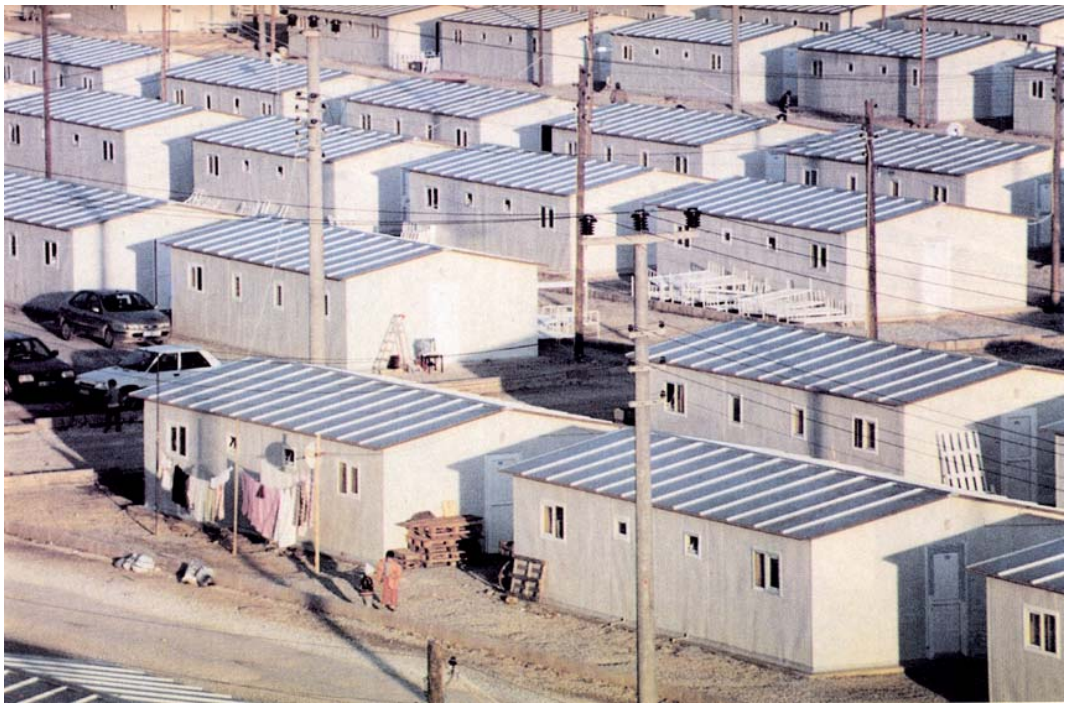

Figure 36 Temporary housing settlement neighborhood in disaster area in 1999.

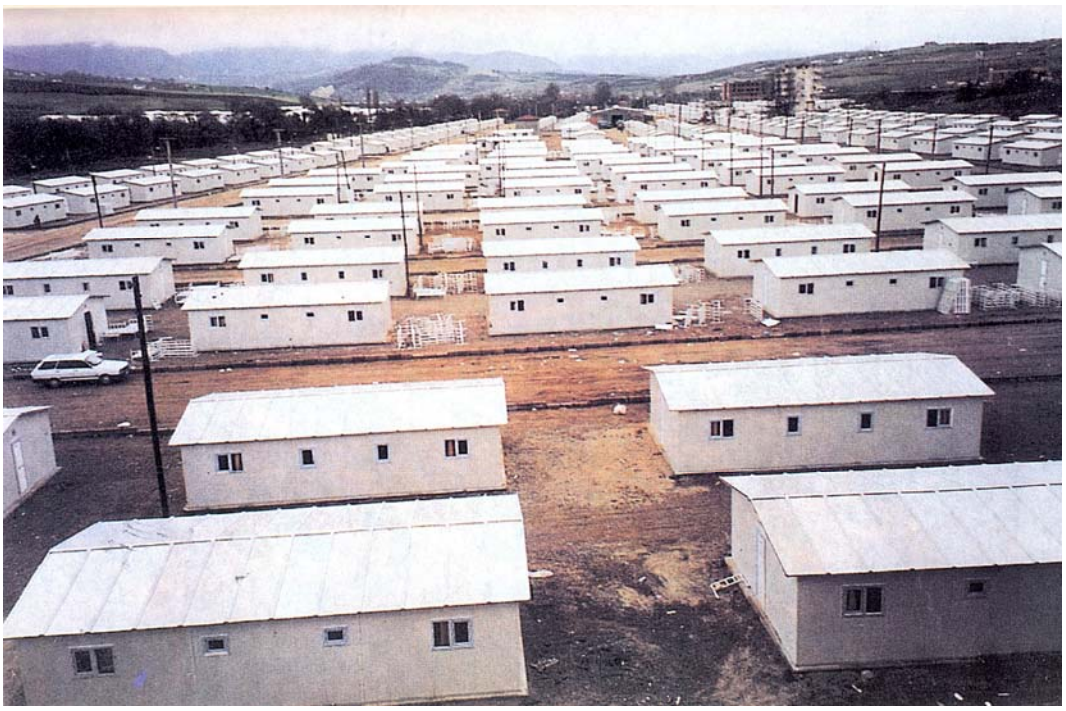

Figure 37 Temporary housing settlement neighborhood in disaster area in 1999.

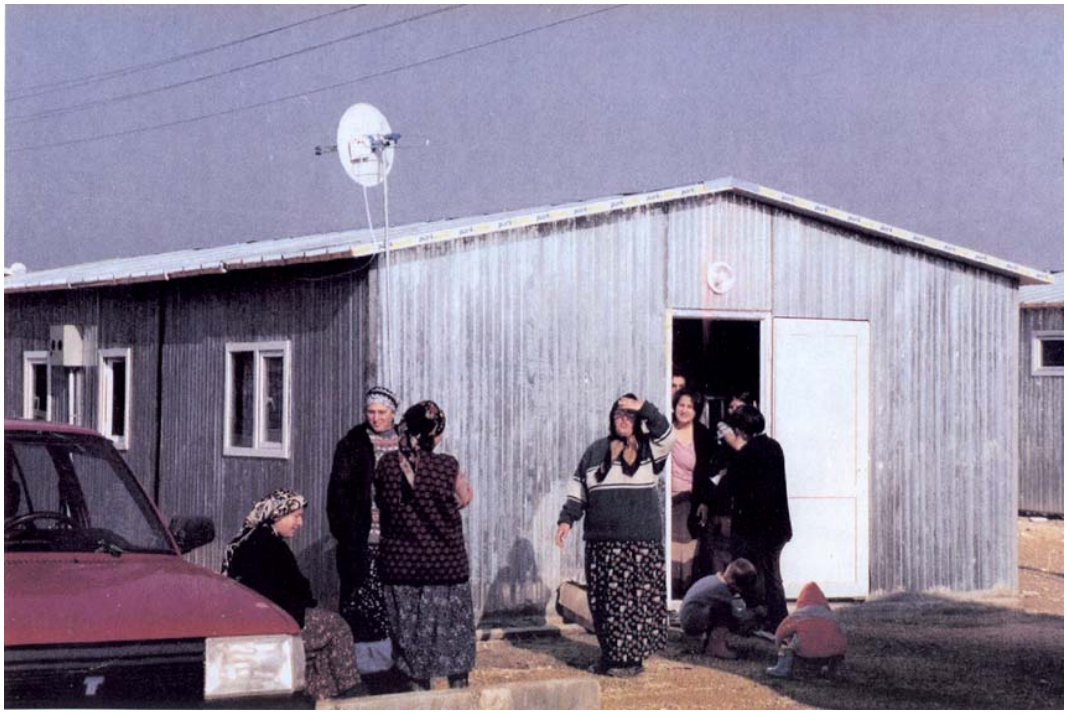

Figure 38 The frontyard of a prefabricated house in temporary housing settlement in disaster area in 1999.

4.2.2.1 Architectural Diversities in the Making of the Settlements

The interior plan of all twin blocks followed same pattern, however as stated before they had different dimensions (Figure 39 – 40). This data contradicted with the average householder numbers – which was given same for all settlements as 4.5 people.

The block size in Bahçecik 2 nolu Geçici İskân Alanı is 6.25mx6.5m. The size of parcels is 15.5mx10.5m. The distance between short sides of blocks is 3m, which means the entrances of houses have 1.5m area in front.

The block size in Derince 1 nolu Geçici İskân Alanı is 5.5mx5.5m. The size of parcels is 17mx11.5m. The distance between short sides of blocks is 6m, which means the entrances of houses have 3m area in front.

The block size in Gölcük Gözleme Tepe Mevkii Geçici İskân Alanı is 5.5mx5.5m. The size of parcels is 17mx11.5m. The distance between short sides of blocks is 6m, which means the entrances of houses have 3m area in front.

The block size in Yuvacık Geçici İskân Alanı is 6.25mx6.5m. The size of parcels is 18.5mx12.5m. The distance between short sides of blocks is 6m, which means the entrances of houses have 3m area in front.

Due to lack of appropriate insulation and interior division of the blocks, householders stated that private lives have been disrupted in these houses.

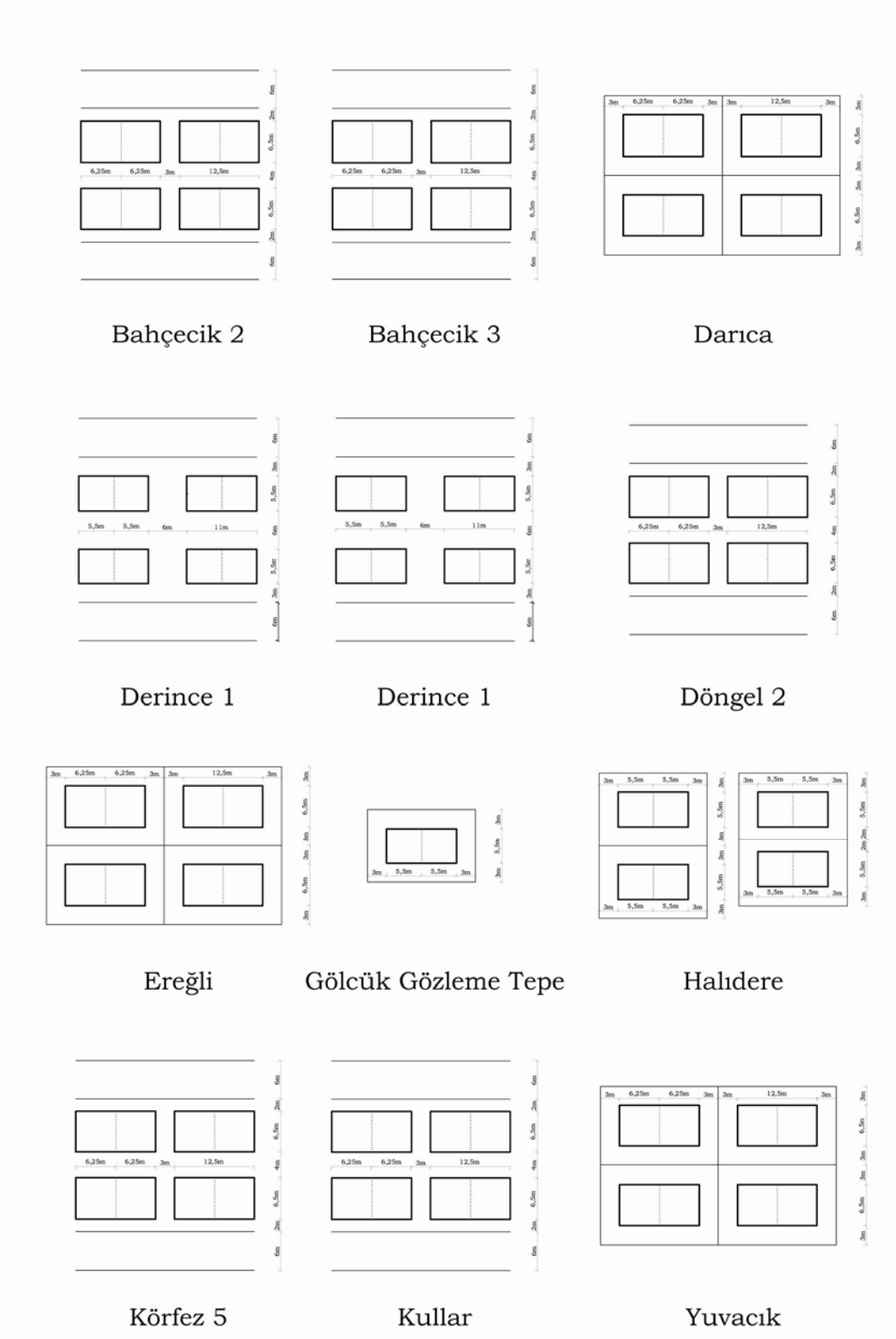

Figure 39 Diverse parcel, road and block sizes in temporary housing settlements of Kocaeli.

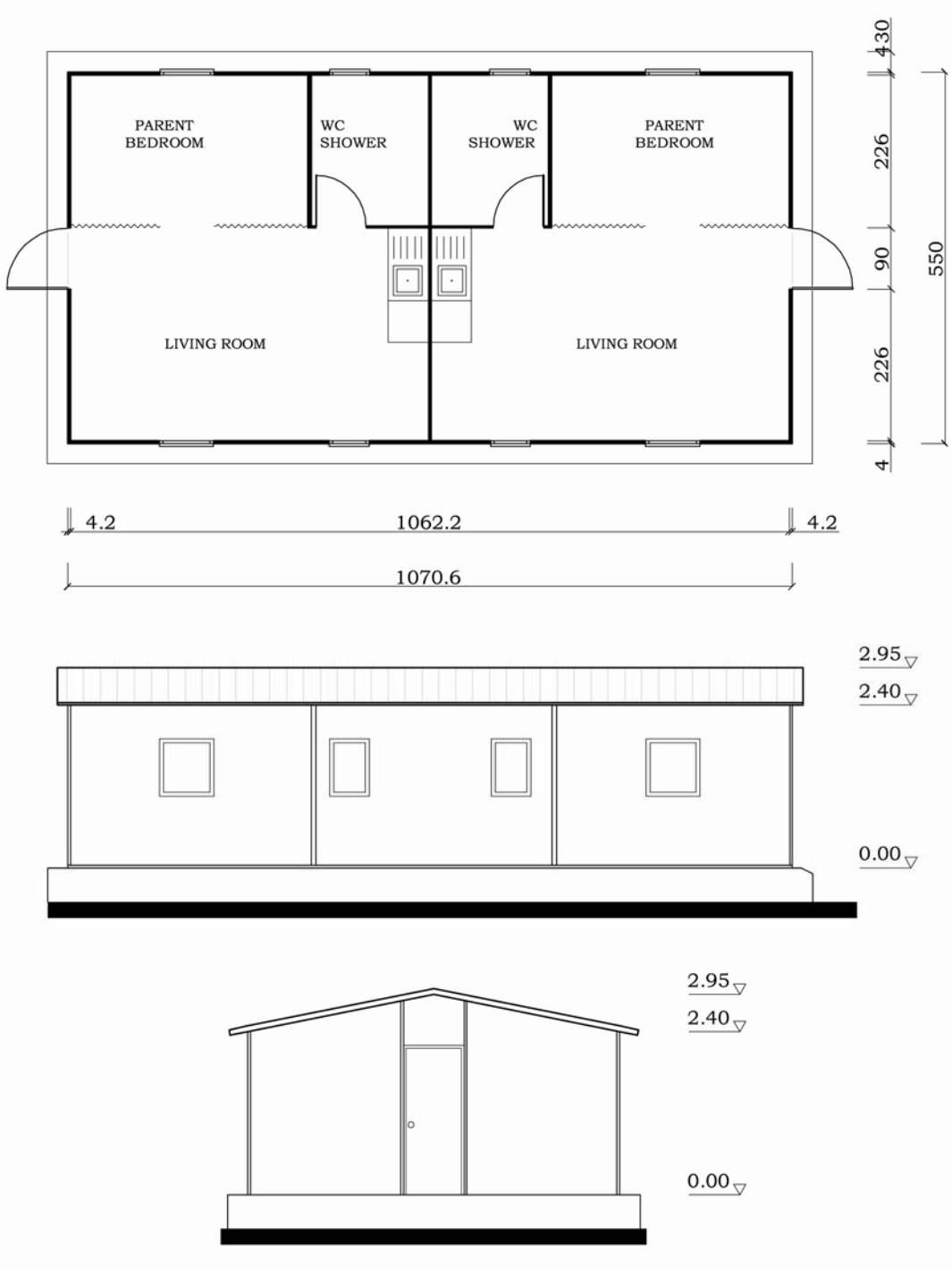

Figure 40 Plan and façade drawings in 1/100 scale provided by the state technical specifications for prefabricated houses.

4.2.2.2 Being an Intruder: Public and Private Spaces

Against all negative sides of living in these blocks, residents explained that they have experienced their old neighborhood relations in these settlements, which they could not in apartment blocks in the city.

4.2.2.3 Claim of the Environment and Self-identification

The major change of in the settlements can be observed at the entrance of houses. This provides us the information that the design of an entrance directly leading into living space has been a problem for the disaster affected.

It has been reported that the inhabitants of prefabricated houses have been changing their houses by adding new parts to them. They have called these changed houses 'prekondu' similar to 'gecekondu' the term for squatter houses in Turkish. Afet Bölge Koordinatör Valiliği stated that there wouldn't be any punishments for these changes unless they are done for compulsory needs.[135]

4.2.3 Block Unit Scale

Deniz Demirarslan states that prefabricated houses provided by the government have been appropriated by the users in accordance with their needs (Figure 41 – 42 – 43 – 44 – 45). The users had to share the twin blocks with another family, and the separation unit inbetween did not provide enough privacy for neither of them. Families have complained about the privacy problems between and within the houses.

[135] "İzmit'in yerleşimi kuzeye kaydırılsın," *Cumhuriyet Gazetesi*, 16 December 1999, p. 6.

Similar to the problem of division unit of houses, the use of a curtain for the separation of parent bedroom from the living room has created privacy issues as well. The entrance of houses leading directly to living spaces resulted in loss of heating and cleaning problems. The obligation to pass through the kitchen zone in order to get to the wet cells and the smells coming out of these units dirctly into the living area disturbed the users. To be able to solve this problem, they added some parts outside the houses which caused problems between the authorities and users. Lack of window openings on the entrance facade has been reported as well.[136]

Figure 41 Interior view of a temporary prefabricated house in disaster area in 1999.

[136] Deniz Demirarslan, "Yaşanan Depremler Sonrası Acil Barınma İhtiyacının Karşılanması," in *Deprem Sempozyumu Kocaeli 2005*, http://kocaeli2007.kocaeli.edu.tr/kocaeli2005/bildiriler.htm (accessed March 26, 2011) p. 2.

Figure 42 Interior view of a temporary prefabricated house in disaster area in 1999.

Demirarslan states that both the users of prefabricaed houses and those who built their own shelters have told that they have finally experienced the long-gone neighborhood relationships due to living in apartment blocks. They told that the children were able to play outside in the mud freely and friendships were being reestablished.[137]

Figure 43 The self-built shelter by earthquake victims, combining the repfabricated house with an extension.

[137] Ibid., p.

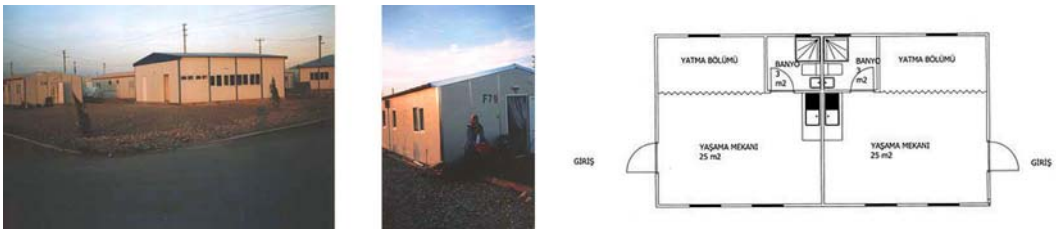

Figure 44 The plan and views of prefabricated houses provided by the state.

Figure 45 The interior and exterior views of prefabricated houses provided by the state.

The concrete bases of the houses still remained on the sites for a long period after the earthquakes, ruining the agricultural areas (Figure 46).

The twin structure and back to back construction of prefabricated houses caused bad ventilation conditions preventing cross ventilation. The lack of division of inner space of prefabricated houses (they had approximately the same size of squatter houses but the latter had most adequate division since it was shaped in time according to needs unlike prefabricated houses) forced residents to create their own divisions in accordance with the needs.

Main issues with the design of houses include interior division problems, location of wet cells – vicinity to kitchen unit – and the lack of differentiation of entrance space from the living space.

Two years following the earthquake the permanent houses have not been completed and prefabricated housing users tell about their problems. Main problem about the settlements seem to be the privacy issues due to lack of sound insulation of the houses. Married couples living in these houses complain that the lack of insulation caused to diminished sex life.

Since the average households have children and there is no specific area reserved for them in the living room, families claim that success of the students is decreasing.

Figure 46 The construction of concrete basement of prefabricated temporary houses in settlements in 1999.

Sevgi Sevil from Cumhuriyet Kadınları Derneği Sakarya Branch stated that women living in the prefabricated houses need psychological assistance. She explained that husbands abuse women blaming the economic problems on them.[138]

[138] "Depremzedenin özel yaşam özlemi," *Hürriyet Gazetesi*, 30 August 2001.

4.3 Epilogue

The production of place in temporary housing settlements has been analyzed in diverse scales from site scale to block unit scale through different aspects.

The aspects of location and approach, layout and relations with environment and the organization of public and private places shall be rementioned for an integrated overview of the production of place in site scale.

- Location and approach

The prefabricated temporary housing settlements have been located in outer skirts of existing urban fabric. The locations have been decided in accordance with their availability and accessibility at the time being. The settlements have been located in empty areas, and site plans have been designed by planning institutes of the state.

Disaster affected habitants were not willing to leave their belongings behind and move away from their old neighborhoods. The destroyed city centers have been reminders of these lost structures for the victims. New settlements were superimposed standing on the foundations of these lost structures. Hence the decision of proximity to existing urban fabric could have been considered as appropriate for this condition. However, the means of transportation disaster victims had during post-disaster period challenged them with their physical capabilities. Thus the habitants of temporary housing settlements did not experience the proximity that planners had aimed to provide.

- Layout and relation with environment

The layouts of temporary prefabricated housing settlements have been designed by planners of state institutions in Ankara without visiting the sites. The selection and design processes have been carried out utilizing the plans at state archives. Thus the space of urban planning was based on two dimensional spaces of maps instead of experiences. The spaces have been considered as manipulable according to efficiency and economy under post-disaster circumstances.

The site has been planned after the design of twin prefabricated houses has been completed. Thus the connection between architectural space and city planning space has been disrupted resulting in alienation of architectural space and experience of spaces among buildings has been left to chance.

The site plans of temporary housing settlements have been designed in 1/1000 scale based on a grid outline. However, neither the landscape nor the existing urban fabric had a direct relation to this structure. The continuity and closure in existing urban fabric have been disregarded for the sake of providing a quick solution to the housing problem. The matrix of routes, junctions and structures within this grid outline were not capable of functioning as a metaphor of memory for its habitants. The place they had carried in memories with themselves to these new settlements has been formed in accordance with the needs of landscape and social lives.

- Zoning and public-private infrastructure

The spatial forms of routes, axes, paths, crossrodas, and open spaces establishing social space are line, intersection of lines, and point of intersection in geometric terms. These spatial forms in site plans and layouts of temporary housing settlements are based on grid geometric forms. The lines, intersection of lines and points of intersections are identical resulting in same spatial forms and same social spaces and experiences.

The spatial and social possibilities provided by the layout of twin blocks, placement and configuration of open public spaces were planned identical for and within the settlements, although each settlement has been located in a unique location and each block in the settlements was occupied by different habitants. The zoning of public facilities such as parks, playgrounds, cultural activities, commercial areas, religious structures have been defined by the grid outline which did not follow the consideration of offering social interaction and gathering places for disaster victims.

The point where the places look and feel alike, offer same possibilities of experience has been considered as placelessness. The environments without significance or difference of spatial experiences from one another weakened the identity of places to this point. The replacement of diversity in existing urban fabric, the old neighborhoods of disaster victims, with uniformity diminished the temporary housing settlements to placelessness.

The experiential order which was formed throughout time in old settlements has been replaced with conceptual order which was expected to form experiences in the future.

The building scale has been separated to its constituent elements of private and public spaces in order to determine the nature of the whole.

- Public spaces between blocks and sizes

The figural character of settlements was shaped by the design decisions on proximity, continuity and closure of public and private spaces. The sizes of blocks, the distances among blocks in accordance with the location of entrances and the width of roads within the settlements determined the spatial experiences of habitants.

The post-disaster land circumstances forced the open spaces surrounding the houses to be public, although the cultural and social structure required a transition zone before the private interiors.

The transformation of temporary prefabricated houses into homes has been examined through the point of view of users and the concept of place-making.

- Place making

Unlike migrants, the disaster victims had the aim to reterritorialize to settle down temporarily in the settlements. Their final destination was not the prefabricated houses. The circumstances of temporary prefabricated house habitants were closer to nomads, carrying their place with themselves in search of a location to temporarily settle down.

The housing blocks built for sheltering disaster victims had identical properties without any characteristics attributed to them.

The transformation of these houses and settlements from spaces into places have been formed with the collections, intersections of stories of disaster victims as well as with the non-meetings up, disconnections, not established relations and exclusions. The memories of shared disaster experiences and hopes for different futures shaped the connection among the community. The settlements, housing blocks and interiors have been

transformed into place by subjective projection and internalization of an external reality. The making of place has started with the foundation of physical structure and this process has continued with the very fact of having been lived and used and experienced.

The time and continuous use of settlements provided these environments familiarity, intimacy and the sense of security. The attachment to houses providing private territory and protection in the social world to disaster victims formed the place, home.

The social foundation of home has been supported and realized with the adaptive responses and optimizing behaviors of disaster victims in search of reaching to a less negative state.

CHAPTER 5

POST-RECONSTRUCTION ASSESSMENT IN DISASTER AREA

There have been public, academic and state assessments analyzing the efficiency of settlements following the completion of prefabricated houses, use and dismantling processes. Academic researches, news on mass media and government reports provided an opportunity to evaluate and ameliorate post-disaster production of place.

Among diverse types of newspapers the earthquakes and their influences on various aspects of daily life have been discussed. The economic, social and political impacts were main headlines.[139]

The economic impacts were grouped as losses due to earthquakes, the cost and the taxes which were introduced in order to compensate them.

The social changes due to disasters were subjected to analysis in subgroups of psychological influences on society, sociological effects, non-governmental organizations, the obligatory earthquake insurance system and the legal changes in construction.

Political impacts of the earthquakes were widely discussed in the reactions of society towards government, state and Kizilay and the changes that were brought to effect in Kizilay Institution.

[139] Müge Demir, *Yazılı Basında Deprem Haberlerinin Kamuoyuna Yansıması* (İzmir: Ege Üniversitesi, 2002).

5.1 Public Assessment

Within the academic field, main part of researches was completed in universities located in Marmara Region focusing on the realization of projects and risk analysis for future. University of Kocaeli started a series of international earthquake symposiums supported by various workshops cooperating with diverse disciplines. Master and Phd dissertations suggested solutions for design and risk analysis of reconstruction during post-disaster periods. Moreover, these researches analyzed 1999 Marmara Earthquake reconstruction in its design, construction, use and dismantling aspects. However, while academic and public domains focused on these issues; the overall production of temporary houses was never completely questioned. The questions answered by these studies reflected the consequences of separation of planning and construction as observed within the realization and use of these houses.

Academic and public studies outlined several issues concerning prefabricated houses and settlements constructed for the recovery of disaster victims of 1999 Marmara Earthquakes. Starting with the decision making process of reconstruction period; design and bidding process of houses, transition of disaster victims from emergency shelters to temporary ones, investigations carried about the ministry's actions, fire problems at settlements and post-occupancy and dismantling of prefabricated houses were main titles discussed.

- General information about houses and the bidding process

On 10 September 1999 the bid for construction of prefabricated houses has been finalized. Ministry of Public Works and Settlement agreed with 25 firms for the construction of 26.000 houses with a 10 percent profit making range. Three companies shared the major part of construction, Tepe, Treysan and Hakem, each with 1900 houses. The houses were designed as 60 m^2 twin blocks consisting of 30 m^2 houses. The cost of these houses was expected to be around 50.000.000.000.000 Turkish Liras with the money currency at the time being.

Each house was to be built with TSE approved materials and have toilet, bathroom and kitchen. As for the provision of furniture each house would have two bunk beds and a pull out couch.

In 1999, throughout the reconstruction period Tepe Construction was the main producer of the gypsum board, fundamental unit of prefabricated houses, in Turkey. So Tepe was to construct 1900 houses and moreover be the only provider of the main material for other firms. The company has been criticized to have increased the prices of gypsum board right before the bidding process.

Treysan, one of the main constructors, was an Ankara based cargo glider producing company which had experience in prefabricated house, office construction. General Director of Treysan Atilla Gokce claimed some of the companies among the list of not having enough experience in prefabricated construction.

Hakem was a Blacksea Region based company which also had experience in prefabricated house production.[140]

Before the bidding process, while introducing the design of houses Minister of Public Works and Settlement Koray Aydin stated that the prefabricated houses of 30square meters 'were not impossible to live in or possible to live in either'. The size of and design of houses were considered neither adequate nor inadequate by the authorities. Aydin defended the selection of government with the possibility to dismantle these houses and reuse in case of another disaster.[141]

Following the bidding process, Council of Ministers decided that the financial support of 100million to disaster affected households was not to be paid back. Moreover, the cost prefabricated houses was not to be paid back either. On the other hand permanent houses would be paid back, and the tenants who did not have a house before the earthquake would not be able to get a permanent house.[142]

[140] "İhaleyi Alanlardan İşi Bilmeyenler Var," *Milliyet Gazetesi*, 11 September 1999, p. 15.
[141] "Görüntüyü kurtarıyorlar," *Cumhuriyet Gazetesi*, 2 September 1999, p. 1.
[142] "Başka Kente Taşınana da Kira Yardımı," *Hürriyet Gazetesi*, 12 September 1999.

Oktay Ekinci published an article about prefabricated houses subjecting them to an analysis in order to discover essential features in October 1999.

Ekinci started his analysis by questioning the design of prefabricated houses based on the concept of 'home' asking whether they were houses or shelters. He called the ability of these houses to answer the minimum housing needs into question considering all the technical specifications and the cost nearly same as permanent houses.

Oktay Ekinci criticized that the architectural design of the 30 m^2 twin houses would not have been approved by instructors of architecture faculties in case they were designed by students. He emphasized that the space arrangement was against human rights to have adequate standard of living and the culture.

The example project given with the specifications for prefabricated houses includes the division of living space and parent bedroom with a 'curtain'. Ekinci criticized the use of 'curtain' comparing it to the ones in 'changing cabins' of clothing stores. He explains that this decision must have been taken in order to decrease the costs.

Ekinci also analyzed the public private space separation of house starting from the entrance of the houses. Entering the houses directly through living room he claimed, created problems in cleaning and heating. He criticized the conservative approach approving the design of these houses as being unaware of 'Anatolian vernacular architecture' which had wind shields for entrances.

The necessity to pass through kitchen counter in order to reach wet cells, the problem of cooking and bathroom smells inside the living room were other negative sides stated by Ekinci.

Moreover, he emphasized that the designers of this project did not take the cultural aspects into consideration. The lack of windows on the entrance façade was due to lack of knowledge about the habit of checking the guest from a window before answering the doors.[143]

[143] Oktay Ekinci, "Maliyetleri Yüksek; Mimari Tasarımları Özensiz; Kısa Sürede 'Hurdaya' Çıkacaklar... Prefabrikede 'İnsanı' Unuttular...," *Cumhuriyet Gazetesi*, 14 October 1999, p. 6.

- The transfer of victims from emergency shelters to prefabricated temporary houses

The delay in completion of prefabricated settlements forced the government to offer the victims moving to other cities. In order to encourage the victims to move, government suggested undertaking the moving, accommodation and food expenses in this case. [144]

The transition of disaster affected from emergency tents to prefabricated houses showed many deficiencies in both planning and construction of temporary houses. The victims did not prefer to move to these settlements with various reasons, financial difficulties being the major one.

In December 1999, %90 of the prefabricated houses was completed in Izmit, Golcuk, Yalova and Cinarcik. However, major part of the victims still preferred to stay in emergency shelters for the 100.000.000 Turkish Liras financial support with the money currency at the time being and three meals given daily by Kizilay.

Moreover, the victims did not prefer moving due to lack of education facilities in settlements although they had religious facilities. The problem of transportation to city centers rose for children of the households in case of living in prefabricated houses.[145]

The earthquake victims in Kocaeli did not want to move to prefabricated houses due to their sizes and the fact that they had to give up on food support. The habitants of Military Emergency Shelters explained that the tents were winterized and they had three meal food support and social facilities. They also claimed that the prefabricated settlement locations were not close enough to their works and social lives to commute.[146]

- Bidding process of temporary houses and Ministry of Public Works and Settlement

An investigation has been started in 2001, on the second anniversary of earthquakes, about the bidding process of prefabricated houses built by Ministry of Public Works and

[144] "Depremzede Göç Etsin," *Milliyet Gazetesi*, 27 November 1999, p. 17.
[145] *Milliyet Gazetesi*, 4 December 1999, p. 16.
[146] Azer Bortacina, "Çadırdan ayrılmıyorlar," *Cumhuriyet Gazetesi*, 8 December 1999, p. 3.

Settlement.[147] Minister of Public Works and Settlement Koray Aydin resigned following the start of this investigation.[148]

- Fires at settlements

Prefabricated houses were used longer than the planned interval. Thus, the longer they were occupied the more structural problems occurred.

Major problems reflected in mass media were the sewage, heating and electricity deficiencies.[149] Many houses were damaged due to fires starting from 2001 till they were completely emptied.

On 21st November 2001, after a fire in prefabricated settlements authorities stated that the households would be placed in other prefabricated houses and they would be provided new furniture.[150] The provision of temporary accommodation, in this case, covered the maintenance in time as well.

- Post occupancy and dismantling process of houses

The residency of disaster victims in temporary prefabricated houses continued longer than intended by the state. Within this extended interval various issues were outlined by media and academic domains. Due to lack of pre-planning of course of actions to be taken when the houses were emptied; there has been a chaos. The extended use of prefabricated houses formed the first major difficulty that needed to be solved. Moreover, even when the occupiers moved to their permanent houses; the question of how to reuse the prefabricated ones remained. The self-generated solutions to this question were either to sell or to send these houses to be used in other cities.

- Extended use of prefabricated houses

[147] Kadir Ercan, Oya Armutçu and Nurettin Kurt, "Bayındırlık'ta 2 Katrilyonluk Operasyon," *Hürriyet Gazetesi*, 22 August 2001.
[148] "Bayındırlık Bakanı Aydın istifa etti," *Hürriyet Gazetesi*, 4 September 2001.
[149] "Düzce'de prefabrik yangını," *Hürriyet Gazetesi*, 26 November 2003.
[150] "Adapazarı'nda 2 prefabrik yandı," *Hürriyet Gazetesi*, 21 November 2001.

On the first anniversary of Marmara Earthquake, Ministry of Public Works and Settlement Minister Koray Aydin gave detailed information about the number of victims living in emergency shelters and prefabricated houses. He stated that there were 48.000 victims living in 50 emergency shelter settlements and 147.000 victims living in 42.761 prefabricated houses. Although not all victims were transferred to temporary houses from emergency shelters, the locations of new permanent houses were selected. These locations were determined different from the previous urban areas to avoid future risks.[151]

Two years after the disaster, Governor of Kocaeli Fahri Keser announced the takeover of administrative facilities of 12 prefabricated housing settlements with 40.000 householders in the city. The administration was handed over from state to habitants of settlements.

Moreover governor acknowledged that the cost of storage or dismantle of the houses would be too high and the 14.500 houses in Kocaeli could be rented to their users.[152]

In 2002, Ministry of Public Works and Settlement Minister Abdulkadir Akcan informed the public that the prefabricated houses were being abused out of their purpose of use. Although the disaster-affected moved to their permanent houses, they kept the keys of prefabricated ones and rented these houses to terrorist groups. (pkk and dhkp-c)[153]

Three years after the earthquake half of the 14.471 prefabricated houses built in Kocaeli have been emptied. There were still 5.349 households and 19.642 householders lived in these houses.[154]

Four years after the earthquake there were still 14000 people living in 3934 prefabricated houses in Kocaeli. 17778 permanent houses were built for 34275 heavily damaged and destroyed houses. 15760 of them were taken by 'hak sahibi'. 2018 houses which were made extra were still empty. The tenants who did not get permanent houses were still living in prefabricated houses.[155]

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[151] Emin Çölaşan, "Koray Aydın'ın açıklaması," *Hürriyet Gazetesi*, 9 June 2000.
[152] "Prefabrikler depremzedelere devredilecek," *Hürriyet Gazetesi*, 9 September 2001.
[153] Şehriban Oğhan and Nuray Babacan, "Deprem konutlarında PKK'lılar oturuyor," *Hürriyet Gazetesi*, 29 April 2002.
[154] "Kalıcı konutlar hala tamamlanmadı," *Hürriyet Gazetesi*, 13 August 2002.
[155] "40 Bin Depremzedenin Çilesi Hala Bitmedi," *Milliyet Gazetesi*, 17 August 2003, p. 16.

Five years after the earthquake, the users in Kocaeli refused to empty the prefabricated houses in Derince[156], Yenikoy Prefabrikleri and Cinarli Village and started hunger strike. [157]

Seven years after the earthquake, the only prefabricated houses in Kocaeli were those in Derince Municipality. These houses were for those who did not have any other place to go. In order to force the users to empty the houses; the electricity and water supplies were cut.[158]

Eleven years after the earthquake, in Bolu, Karacayir District the bases of the prefabicated houses used for the earthquake period were still possible to find. The houses had been used for police accommodation and then removed.[159]

- The sell of prefabricated houses

Following the completion of permanent houses in Kocaeli, it has been decided to provide protection for 16.000 prefabricated houses. The reasons for this decision has been expained as the impossibility to dismantle and reuse the houses somewhere else, impossibility to store, the loss of value of the settlement areas and the future disaster risks. Authorities explained that the areas where the settlements were constructed have lost their agricultural properties.[160]

Public Works and Settlement Ministry has announced in 2002 that 4.500 prefabricated houses in Duzce region were to be sold. It was stated that the houses would be sold in groups of 50 with a price of 21.500.000 Turkish Liras with the money currency at the time being per square meter.[161]

14.000 of the 23.000 prefabricated houses in in Bolu, Duzce, Adapazari, Kocaeli and Yalova were being sold with a price of 1.360.000.000 Turkish Liras with the money currency at the time being per each twin block in 2003.

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[156] "Depremzedelerin açlık grevi 5. gününde," *Hürriyet Gazetesi*, 7 September 2004.
[157] "Prefabrik yıkımında 10 gözaltı," *Hürriyet Gazetesi*, 10 October 2004.
[158] Ergün Ayaz, "Prefabrik sakinlerine 'tahliye' şoku," 16 August 2006.
[159] Mutlu Yuca and Koray Yılmazdemir, "Bolu'da vahşi cinayet," *Hürriyet Gazetesi*, 29 September 2010.
[160] "Prefabrikelere koruma," *Cumhuriyet Gazetesi*, 30 January 2001, p. 7.
[161] "Düzce'deki prefabrikler satılıyor," *Hürriyet Gazetesi*, 11 July 2002.

It was explained by the Ministry of Public Works and Settlement that due to the difficulty of storage of these houses and reuse; the houses would be sold. It was also stated that there would be 'container' stocks in disaster prone areas with some of the houses. These cities would be Ankara, Kocaeli and Sakarya at first step. Adana and Erzincan would follow.[162]

In 2003 according to data provided by Afet Isleri Genel Mudurlugu; 44.500 prefabriacted houses were built in total as temporary accommodation. And these 60 m^2 blocks were being sold with a price of 1.320.000.000 Turkish Liras with the money currency at the time being. 15.400 houses were already sold with an approximate income of 4.000.000.000.000 Turkish Liras with the money currency at the time being. Around 5000 of prefabricated houses were given to disaster affected due to housing need, 1173 houses and 8 social facility blocks were transferred to other cities for school and hospital needs.[163]

- Reuse of prefabricated houses in east Anatolia

Government planned to move the prefabricated houses in disaster zone to South East and East Anatolia Regions for the 'back to village' Project. Minister Edip Safter Gaydali claimed that the houses would be unusable if stocked in storage. He told that the walls of houses were dismantable and it was possible to have wider houses in accordance with the local use.

Mesut Yilmaz on the other hand, pointed out to the need for barns in the regions and stataed that the adequacy of prefabricated houses should be checked for this need.[164]

Two years following the earthquake Devlet Bakani Hasan Gemici stated that they applied to Prime Ministry to move 10.000 of 46.000 unused prefabricated houses in earthquake area to East Anatolia. Gemici stated that they will be utilized as society centers.[165]

In 2003 Governor of Bolu Mehmet Ali Turker informed that the prefabricated blocks were being sent to East and Southeast Anatolian Regions for reuse. Ministry of Public Works

[162] "Prefabrik deprem konutları satışta," *Hürriyet Gazetesi*, 19 April 2003.
[163] "Depremzedelerin yaraları sarılamadı," *Hürriyet Gazetesi*, 15 August 2003.
[164] Muharrem Sarıkaya, "Prefabrikler Güneydoğu'ya...," *Hürriyet Gazetesi*, 29 December 1999.
[165] "Prefabrikler Güneydoğu'ya gidiyor," *Hürriyet Gazetesi*, 22 August 2001.

and Settlement determined the blocks; Governors completed the dismantling and sent them to the needing cities.[166]

- Dismantling of houses

Hakan Arslan and Nilay Cosgun have examined the dismantling/deconstruction process of temporary houses in Duzce after occupany. They have determined that there were no planning studies for the dismantling/deconstruction phases before, during and after the disaster. Consequently, there were no infrastructures for the organization of the dismantling/deconstruction operations. The operations were carried out by the inexperienced subcontractors which resulted in loss of material during dismantling and deconstruction.[167]

In order to dismantle the houses the applications were made to the Ministry of Public Works and Settlements province directorship. The ministry guided the applications to the subcontractors and dismantling process was done by public or private sector.[168]

The dismantling process was not controlled by an organization or agent. It was completed depending on the only criteria of rapid diassemble. The process was not documented or recorded in order to be used while rejoining and reconstructing the houses in their new locations (Figure 48).[169]

Arslan and Cosgun stated that following the dismantling; the need for storage occured. Ministry of Public Works and Settlement province directorship provided a storage site for the units and materials of the temporary houses. However, due to lack of planning, the inappropriate storage caused losses (Figure 49 – 50).[170]

[166] "Prefabrikler okul oluyor," *Hürriyet Gazetesi*, 6 September 2003.
[167] Hakan Arslan and Nilay Coşgun, *The Evaluation Of Temporary Earthquake Houses Dismantling Process In The Context Of Building Waste Management*, p. 1.
[168] Ibid., p. 3.
[169] Ibid., p. 4.
[170] Ibid., p. 5.

Figure 47 Fevzi Çakmak Temporary Prefabricated House exterior view.

The reuse of infrastucture of the houses was not been planned in advance. Each housing unit had a concrete foundation with a height of appr. 35-40 cm meaning 21-24 m^3 concrete could have been recycled. However, the concrete foundations have only been used as landfill material following the dismantling (Figure 51).

Figure 48 Dismantling steps of prefabricated houses in post-occupancy period.

Figure 49 Inappropriate storage of electrical materials of prefabricated houses.

Figure 50 Inappropriate storage of sandwich panels of prefabricated houses.

Figure 51 View of concrete foundations of temporary houses after dismantling.

Figure 52 Dismantling operations carried out by subcontractors.

5.2 State Assessment

Prime Ministry, Turkish Court of Accounts and Prime Ministry State Planning Orgnization published reports concerning the operations carried out by state and government during post-disaster period of 1999 Marmara Earthquakes. These reports discussed the economic and social effects of earthquakes, problems and requests in the region and the efficiency of reconstruction operations undertaken by Ministry of Public Works and Settlement.

5.2.1 Prime Ministry State Planning Organization Report on the Economic and Social Effects of Earthquake

The report by the Prime Ministry focused on region, urban planning and land use with a special chapter.

It has been stated that Marmara is a main region in I. and II. degree earthquake zones experiencing rapid but unorganized urban development. İstanbul, Kocaeli and Bursa are given as the main cities experiencing this change. The troubles in the region and their reasons have been listed as;

- The lack of appropriate settlement plans and the practice of these plans
- The possibility of abuse of location selection and project steps and lack of the controlling process of construction step
- Due to wrong decisions of land use; residential, industrial and commercial areas are
- The insufficiency of social and technical infrastructure due to increase in population brought by migrancy
- Construction amnesties encouraging the illegal development
- The unplanned and uncontrolled expansion of cities like İstanbul and concentration of industrial and national income in these cities
- The use of agricultural areas for construction
- Speculations on land prices

- On 17 August 1999 the loss in this dense industrial and populated area has been great due to unplanned urban development and the deficiencies in reconstruction practices.[171]

5.2.2 Prime Ministry Report on Problems and Requests in the Region after 17th August and 12th November 1999 Earthquakes

By the Prime Ministry a report has been prepared determine the problems in the region covering cities of Bolu, Duzce, Sakarya, Kocaeli, Yalova and İstanbul in 2002. For the report named "17 Ağustos ve 12 Kasım 1999 Depremleri Sonrasında Bölgedeki Mevcut Durum, Sorunlar ve Talepler"; local administratives, non governmental organization representatives and disaster victims have been interviewed.

According to the report; prefabricated houses and containers which sheltered victims in post-disaster period transformed into source of problems in time.

The statements outlined by the report;

- After the removal of emergency tent settlements, the sand and gravel used to provide height for their bases have not been cleaned. Land owners required their fields to be cleaned but it hasn't been done. Donated tents have been given to Kizilay but they weren't stored adequately.
- The containers used throughout the post disaster period later on transformed the aestehetic appearance of the city and the hygiene conditions.
- Prefabricated houses became a source of problem. Even if they were to be sold as metal; the dismantling costs were over the income to be got by the selling. Moreover, even if they were sold, the reuse of the land they were constructed on required big expenses to resume their original situation.[172]

[171] T.C. Başbakanlık Devlet Planlama Teşkilatı Müsteşarlığı, *Ekonomik ve Sosyal Etkileri Muhtemel Finansman İhtiyaci Kısa-Orta ve Uzun Vadede Alınabilecek Tedbirler*, (Ankara: Devlet Planlama Teşkilatı Müsteşarlığı 08.09.1999), p. 172.
[172] "Başbakanlık: Deprem bölgesi sorun yumağı," *Hürriyet Gazetesi*, 16 October 2002.

5.2.3 Turkish Court of Accounts Report on Operations of Ministry of Public Works and Settlement after Marmara Earthquakes

Turkish Court of Accounts analyzed the reconstruction operations undertaken by Ministry of Public Works and Settlement throughout post-disaster period in the region after Marmara and Duzce Earthquakes.

The report gave official information about the earthquakes. In 1999 there have been two major earthquakes with 7.4 and 7.2 magnitudes which influenced Eastern Marmara Region. According to data of Başbakanlık Kriz Yönetim Merkezi 18.243 people died, 376.379 buildings were damaged. Major part of reconstruction in the region was under the responsibility of Ministry of Public Works and Settlement.

This report investigated the answers of two questions in order to evaluate the post disaster operations of the ministry. First, the context of actions performed by ministry was questioned in its appropriateness and organization. Second the compatibility of actions carried out and the needs was called into question.[173]

Ministry of Public Works and Settlement has decided to construct 30 m^2 prefabricated houses with a price of 1.500.000.000 Turkish Liras with the money currency at the time being by bidding method with 25 companies. The companies constructed 31.393 houses, and 11.521 houses were given to the state. For the total 44.433 houses Ministry of Public Works and Settlement paid 166.000.000.000.000 Turkish Liras with the money currency at the time being.[174]

The ministry has planned to finish prefabricated houses till 30.11.1999 however by 31.12.1999 80% of houses were finished and only 50% has been submitted to the owners. Although the houses were all completed by March 2000, it hasn't been possible to move the householders until the emergency shelters were dismantled.

[173] T.C. Sayiştay Başkanliği, *Bayindirlik Ve İskân Bakanliğinin Marmara ve Düzce Depremleri Sonrasi Faaliyetleri*, (Ankara: T.C. Sayiştay Başkanliği, March 2002), p. 1.
[174] Ibid., p. 5

The report underlined two basic reasons explaining why the temporary housing process did not meet its goals. First reason is the delay in construction of both 'infrastructure and upper structure of houses'. Second, the victims living in emergency shelters did not want to move to houses since they wouldn't be able to receive 100.000.000 Turkish liras for the rents. 30% of the householders living in prefabricated houses had the right to get a permanent house. There was no information or data about the homeless or tenants in the disaster area.

The report criticizes the lack of planning concerning how the prefabricated temporary houses would be used after occupancy. The report foresaw that it was highly possible that these temporary houses would transform into permanent houses since the needs of whole population had not been considered.[175]

The organization of functions of Ministry of Public Works and Settlement was given with a scheme (Figure 53) for the damage control, rights to permanent houses, location selections, temporary and permanent housing construction during post disaster period. [176]

For this report, site surveys were made in Yalova, Kocaeli and Sakarya cities. It had been assumed that a survey carried out in these cities would give results representing the whole disaster affected zone.

The reasons for the selection of these cities were given as;

- These cities cover the areas which were most affected by the earthquake
- %77.3 of prefabricated houses for temporary accommodation and %74.2 of permanent houses were in these cities.[177]

[175] Ibid., p. 6.
[176] Ibid., p. 14.
[177] Ibid., p. 18.

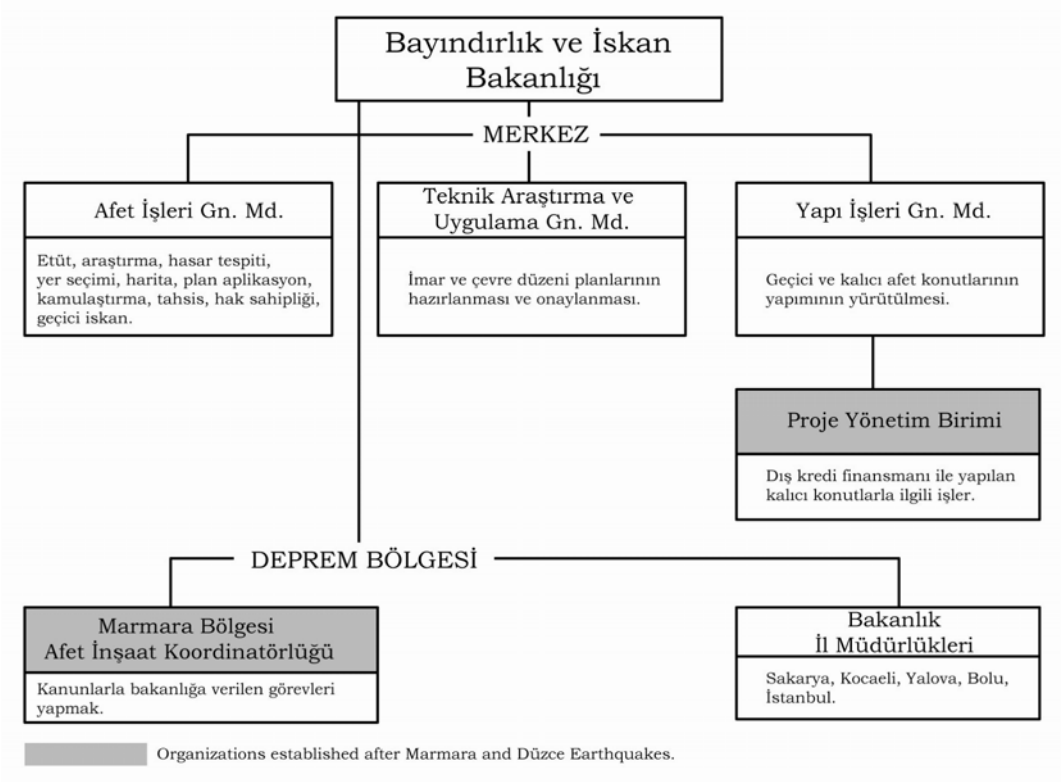

Figure 53 The organization scheme of Ministry of Public Works and Settlement after Marmara and Düzce Earthquakes.

The report concentrated on the context of the operations analyzing the adequacy of organizations. The outcomes of the analysis have been clearly stated and explained with their reasons.

The report emphasized that Ministry of Public Works and Settlement Marmara Deprem Bolgesi Afet Insaat Genel Koordinatorlugu did not meet its goals as efficient as intended since the authority and responsibility fields have not been defined clearly.

It has been stated that the bidding process of temporary and permanent houses were to be done by Koordinatorluk. However, it has been done by main departments of Ministry of Public Works and Settlement at the end. This type of practices came out of daily necessities instead of a planned organization.[178]

[178] Ibid., p. 21.

The report has questioned the coordination among institutions which were in operation during the reconstruction process. It has been found out that the institutions of the state have influenced each other in a negative way since a good cooperation and coordination haven't been established among them. The very first example of this situation was the delay in transferring of the victims from emergency shelters to prefabricated houses. The householders living in emergency tents were given 100.000.000.-TL and three meal food support by Sosyal Yardimlasma ve Dyanisma Vakfi. Since the householders in prefbaricated houses – constructed by Ministry of Public Works and Settlement - received only dry food supplies they did not want to leave their emergency tents. And thus moving from emergency tents has been delayed.[179]

Referring to Figure 54, the report provided detailed data of the resources used in disaster area and the purposes they have been used for. [180]

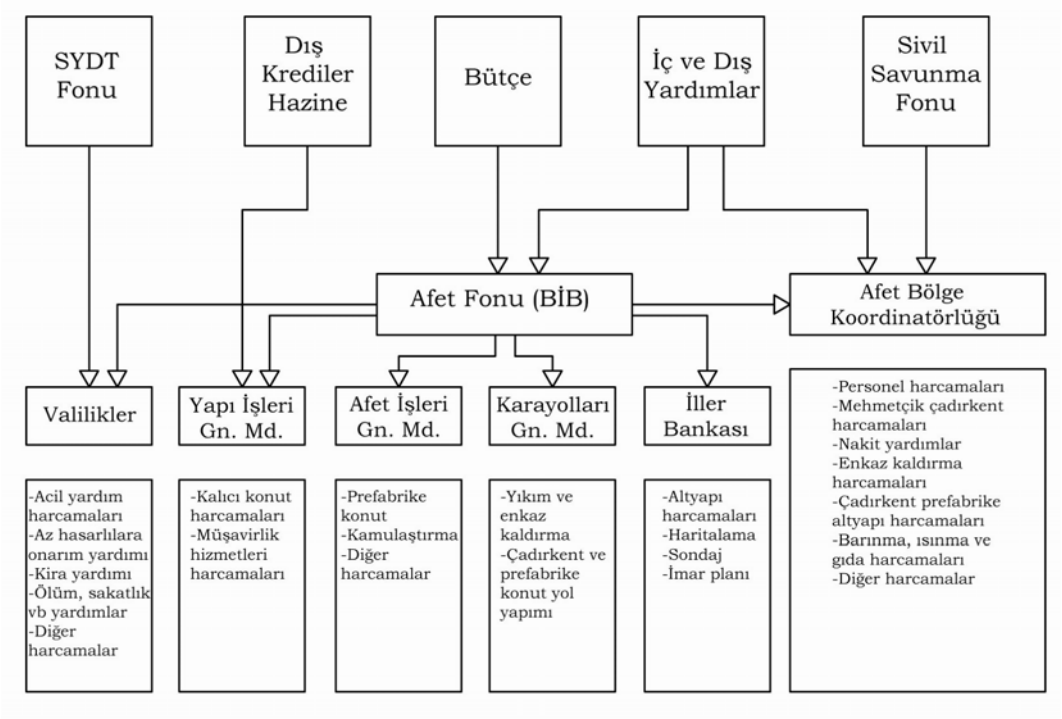

Figure 54 The use of financial resources in post-disaster reconstruction period of 1999 Marmara Earthquakes.

[179] Ibid., p. 22.
[180] Ibid., p. 29.

The third chapter of the report focused on the compatibility of operations and the needs, including the temporary housing operations as well.

The report analyzed the prefabricated houses starting from the bidding announcement at Resmi Gazete on 04.09.1999 outlining main problems. There was no information about the total number of houses on the announcement. Ministry of Public Works and Settlement had the authority to increase or decrease the total number of prefabricated houses. 95 companies attended the announcement and 25 of them got the contract to build the houses for 1.500.000.000 Turkish Liras with the money currency at the time being including the base. The contract included the construction of 32.039 houses however 31.933 have been built. This number didn't include the donation of 11.521 houses.[181]

Figure 55 Prefabricated housing settlement in disaster area in 1999.

It had not been specified how the companies would be selected or where and how many houses would be constructed. On the technical requirement list; it has been stated that the material to be used should be appropriate for mantling and dismantling without losses.

[181] Ibid., p. 43.

However, authorities later on stated that the control of this process has been made by just the sight of the materials. [182]

Main structures of the houses were built by construction companies. Whereas infrastructure was undertaken by other institutions;

- Sanitary and sewage system – iller bankasi
- Roads – Karayollari Genel Mudurlugu
- Electricity – TEDAS

Table 9 Payments by the state institutes for infrastructure and main structure of prefabricated houses including the costs of donated houses.

State Institutes	The amount of payment for prefabricated houses
İller Bankası	79.300.000.000.000 TL
TEDAŞ	3.500.000.000.000 TL
Karayolları Gn.Md.	9.800.000.000.000 TL
Üst Yapı ve Sosyal Tesis	72.800.000.000.000 TL
	166.000.000.000.000 TL

The numbers of finished and submitted houses by the end of December 1999 and January, February and March 2000 in Kocaeli, Yalova and Sakarya were provided by the report (Table 10 – 11).[183] The table provided data about the construction and submission sequence of houses in disaster affected cities. "[184]

Table 10 Number of finished and incomplete prefabricated houses in cities of Kocaeli, Yalova and Sakarya by the end of 1999 and beginning of 2000.

	31.12.1999		31.01.2000	
	Temporarily Accepted	Submitted to Householders	Temporarily Accepted	Submitted to Householders
Kocaeli	13.341	-	13.842	5.514
Yalova	5.220	2.055	5.220	4.077
Sakarya	3.630	3.630	5.881	5.726

[182] Ibid., p. 44.
[183] Ibid., p. 45.
[184] Ibid., p. 46.

Table 11 Number of finished and incomplete prefabricated houses in cities of Kocaeli, Yalova and Sakarya by February 1999 and March 2000.

	28.02.2000		31.03.2000	
	Temporarily Accepted	Submitted to Householders	Temporarily Accepted	Submitted to Householders
Kocaeli	16.248	11.071	16.248	12.242
Yalova	5.220	5.220	5.220	5.220
Sakarya	5.881	5.881	5.881	5.865

CHAPTER 6

CONCLUSION AND DISCUSSION

6.1 Brief of the Thesis

During the reconstruction of built environment, the effort of disaster victims to regain a balance and a sense of humanity can clearly be observed in temporary accommodation step. The steps of emergency sheltering and permanent housing are the two extreme points of the reconstruction interval. Emergency situation is the period when survivors face the loss of continuity in life in every aspect – physical, psychological and social -. Whereas permanent housing is the utmost point of reconstruction of what is lost. Between these two extremes; the process of becoming continues. The reactions and responses of adaptation and adjustment question, agitate and alter every aspect of home towards a new shape.

The disasters experienced in Turkey in 1999, Marmara and Duzce earthquakes, had a wide influence zone. However, not only the size of its physical influence, but also the size of social and demographic impact has been extensive since the region is the most industrialized and developed of the country, taking migration from other regions. The migration not only influences other regions but also shapes the characteristics of Marmara Region.

The lack of collective knowledge and memory of habitants in Marmara caused inappropriate choices of housing and urban development both for individuals and for local authorities. The displaced masses of earthquakes in 1999, relocated first in search of work and second due to devastating disasters, had to confront the abominable consequences.

Marmara experienced a reverse process following the earthquakes. Out-migration from the region during post-disaster period was confirmed by local authorities supported by the fact that the victims preferred financial aid instead of temporary accommodation provision. However, despite all the disruption caused by disasters in the region, major part of victims selected to move to another vulnerable city, Istanbul.

The state policy of providing prefabricated houses as a form of temporary housing functioned as an intervention to the disaster affected area, disrupting the recovery process and aggravating the urban environments. The alienation of planning and production phases of these houses from each other and from public, professional and academic domains led to incompatibility of necessities and provision.

The occupancy period lasted longer than planned and gave rise to physical and social problems in temporary housing settlements. Furthermore, the delay both in construction and occupancy of these houses influenced the provision of permanent houses and thus the finalization of recovery process.

In the case of Marmara, post-occupancy and dismantling of prefabricated houses have not been planned in advance. Subsequently to the transfer of permanent house owners from temporary settlements, the question of how to reuse or dismantle the prefabricated houses arised. Moreover, those who were tenants before the earthquakes, since they did not have rights to permanent ones, had to find new houses within the city which was facing housing shortage.

The tenant householders who remained in the settlements longer than the owners were forced to empty temporary houses in various ways.

Subsequently, the government had to find ways of removing disoccupied prefabricated houses specifically starting from the lands which were rented from private people.

Although it had been stated in the specifications given to the construction companies that the houses were required to be storable, later it has been clear that the dismantling and storage of prefabricated units would be costly and over-priced. Thus major part of the houses was sold to private people and companies with a certain price. Some of these houses were utilized by the state itself in eastern regions of Turkey for Back to Village

Project. Apart from the main structures, concrete bases of houses were use as land-fill material later on.

The research carried out, focused on analyzing prefabricated housing settlements in Kocaeli briefly summarized above in three major steps in accordance with the course of actions taken.

Foremost, the planning process has been subjected to an analysis. In order to be able to comprehend the nature of this process, a background has been set providing information about post-disaster reconstruction in Turkey. Afterwards, based on this information the case of Kocaeli in 1999 has been introduced including the legal framework and urban context of the specific city.

In the second place, the enquiry concentrated on actualization and usage of prefabricated houses in city of Kocaeli. This section of the thesis extended the search of knowledge starting with site scale finally reaching the unit scale in settlements supported by the documentation of plans and visual diagrams.

Ultimately, in order to be able to make an assessment of the whole process final part brought post-reconstruction and post-occupancy into focus. The evaluation took two diverse approaches into consideration, former being public and academic and latter being the state assessment.

6.2 Scope and Framework of the Thesis

The thesis has examined the planning, decision-making, occupancy and post-occupancy steps of temporary housing settlements in city of Kocaeli.

Main goal this research has set out to render was to fill the gap of research in academic domain with analysis of the temporary accommodation step of recovery process of Kocaeli urban environment going through post-disaster reconstruction in 1999. The outcome of the study is expected to provide crucial data for disaster prone cities of Turkey for future risks.

For the reason that major big cities in Turkey go through rapid urban growth and population increase similar to the case, Kocaeli has been specifically chosen as a representative among the earthquake affected cities in the region.

The research has been executed under the framework of chronological order followed during the process as decision-making, planning, construction, occupancy and post-occupancy steps. The study has been elaborated through the academic context based on key concepts place-making, post disaster reconstruction, migration and home.

6.3 Findings of the Thesis

As can be generated from the visual documents and diagrams and public records of habitants' experiences, temporary prefabricated housing during post-disaster period of 1999 Earthquakes in Kocaeli brought the understanding of home and place into question both in public and academic domains.

Critical approaches towards the settlements outlined the deficiencies and possible solutions for them; however experiences of habitants of these houses also showed some unexpected advantages. Moreover the very fact of being lived and used attributed these settlements and houses the sense of place and home.

The sense of place and attachment to home environments integrated with diverse cultural and social characteristics were put to test in the given physical structure of prefabricated houses. Moreover, professional contribution and collaboration of urban planning and architecture have been challenged under time, land use and material limitations.

The prominent status of post-disaster housing requires the remark of outcomes of the experience in Kocaeli temporary housing settlements. Certain issues shall be outlined to provide an integrated overview.

6.3.1 Significance of the case

Urban context and the act of producing place were foremost considerations in the discussions that arose in case of Marmara Earthquakes and the post-disaster housing provision.

The historical development and rapid urban growth of Kocaeli within last decades represent the pattern followed by major part of cities in Turkey. The transformation of housing stocks and planning policies from 1960s onwards shaped the urban characteristics.

The raise of role of economic infrastructure of Marmara Region in the country led to increase in population due to in-migration. Thus collective memory of urban habitants has been limited to decreasing number of locals. The change in habitant profile of Kocaeli was followed with detachment from local characteristics in housing habits towards apartment blocks. Although the use of similar housing options in different cities unified them to a level of being identical and insignificant; it also provided the possibility of comparing deficiencies under various conditions and deriving potential contingencies.

The act of producing places for displaced masses in case of disasters requires diverse actors' involvement in the process. Turkey, as a state policy, utilizes the method of providing temporary housing for disaster affected householders. Thus the process throughout post-disaster interval is planned and actualized by institutes and apparatuses of the state.

In 1999, although the planning step of prefabricated houses was completed by the departments of Ministry of Public Works and Settlement, the production was carried out by private companies. The gradual elimination of prefabricated house factory of Afet Isleri Genel Mudurlugu and the rise in costs were reasons leading to the investigation of Minister Koray Aydin later on.

Moreover, planning considerations in site plans of settlements in relation to their surroundings and design qualities of prefabricated houses in accordance with the necessities were perceived meager in public domain.

- Influence and relations with existing urban environment

The locations of temporary housing settlements in Kocaeli were determined in accordance with the vicinity to existing urban fabric and availability of lands.

The selection of agricultural areas and mass housing sites for temporary settlements led to delays in construction of permanent houses and diminution in land values. The infrastructure of prefabricated houses, concrete bases and sewage systems, were not removed from the lands long after the transfer of victims to permanent houses. High costs of removal of these structures were not foreseen by the planners and designers.

- Sustainability and reuse

Post-occupancy life cycle of prefabricated houses was not planned in advance. Selling and reusing the blocks were options arose following the social and physical problems in empty settlements.

In order to reuse the blocks, government dismantled major part to be used in 'Back to Village Project'. The rest was sold to private people or companies with a certain price. The dismantling of these houses was carried out by inexperienced subcontractors which resulted in loss of material.

- The housing investment and recompense

Major part of victims of 1999 Marmara Earthquakes did not prefer to stay in prefabricated houses before the government started the constructions. The need for permanent houses and financial support was priority of householders.

Private companies experienced in prefabricated housing production suggested that the cost of houses and the time spent would be less than the compensation. Moreover, within the government, the dominant approach was to prioritize permanent housing construction.

Against all the counter suggestions, government decided to build temporary houses with a price close to construction of a permanent one. The victims living in prefabricated houses, during their occupancy, stated that although they had opposed to prefabricated houses it

had been to their advantage since permanent houses were not finished in a timely manner. However, the delay in permanent housing was partly caused by the use of resources for temporary ones.

- Professional domain and its limitations

Contribution and collaboration of professional domains such as urban planning, architecture, anthropology, sociology and psychology, were not embraced throughout post-disaster temporary housing period. The opportunity of utilizing these professions and their accumulation of knowledge has been disregarded.

6.3.2 Disruption and discontinuities in knowledge

The knowledge and experience in field of post-disaster reconstruction gathered throughout previous disasters by state institutitons Kizilay, Afet ve Acil Durum Yonetimi Baskanligi and Ministyr of Public Works and Settlement have not been utilized in the case of 1999 Marmara Earthquakes.

The accumulation of knowledge and improvement in responsive post-disaster planning cannot be observed in the case of Kocaeli temporary prefabricated housing settlements.

The process of reconstruction and recovery has been carried out with inexperienced planners and constructors although the state had institutions and factories specialized in the field of post-disaster housing as mentioned in previous chapters.

Knowledge itself, described by Michel Foucault's method, in a given historical period is not defined by proved suggestions or by things 'known' by an individual or collective someone.[185] Foucault explains the shift from a focus on 'continuities of thought' toward a focus on 'disruptions'. He refers to these disruptions as moments of transformation or threshold when ways of thinking have undergone large-scale changes.[186]

[185] Michel Foucault, *The Archaeology of Knowledge*, (London and New York: Routledge, 2005).
[186] Michel Foucault, *The Archaeology of Knowledge*, (London and New York: Routledge, 2005), p. 4.

The disruption in accumulation of knowledge and the linear path that the transfer of this knowledge follows is clearly visible among the domains which are effective actors in post-disaster periods. Moreover, these actors, being architecture, planning, engineering or sociology, are producers of the knowledge as well.

6.4 Final Words

The discussions and findings mentioned to this extent shall be considered as a contribution to the process of place-making throughout post-disaster periods in Turkey in urban environments confronting rapid transformation.

The study made clear that the process of place-making under challenging circumstances of post-disaster urban environments involves various social and physical constructions limited and extended by requirements of actors of the process. The temporary prefabricated houses and settlements in city of Kocaeli demonstrated the deficiencies of the actors involved in the provision. However, the process following the construction of these settlements also showed the social process transforming the spaces into places and houses into homes. Moreover, there have been unexpected advantages of these environments which were not to be found in transforming urban environments of the country.

In conclusion, the research rendered an analysis of temporary housing environments in their processes and practices of production of place based on experiences of their residents and planners and the documentation of a detailed architectural research. Post-disaster reconstruction and housing is a topical concern for the country. The contribution of professional domains of urban planning and architecture shall be involved in the process for future risks. Future studies shall be focusing on how to combine this contribution and the provision of housing in order to ameliorate the post-disaster period.

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http://www.kocaeli.bel.tr/Content.aspx?ContentID=19328&CategoryID=2419, (accessed June 13, 2011).

APPENDIX A

Site Plans of Temporary Housing Settlements in Kocaeli

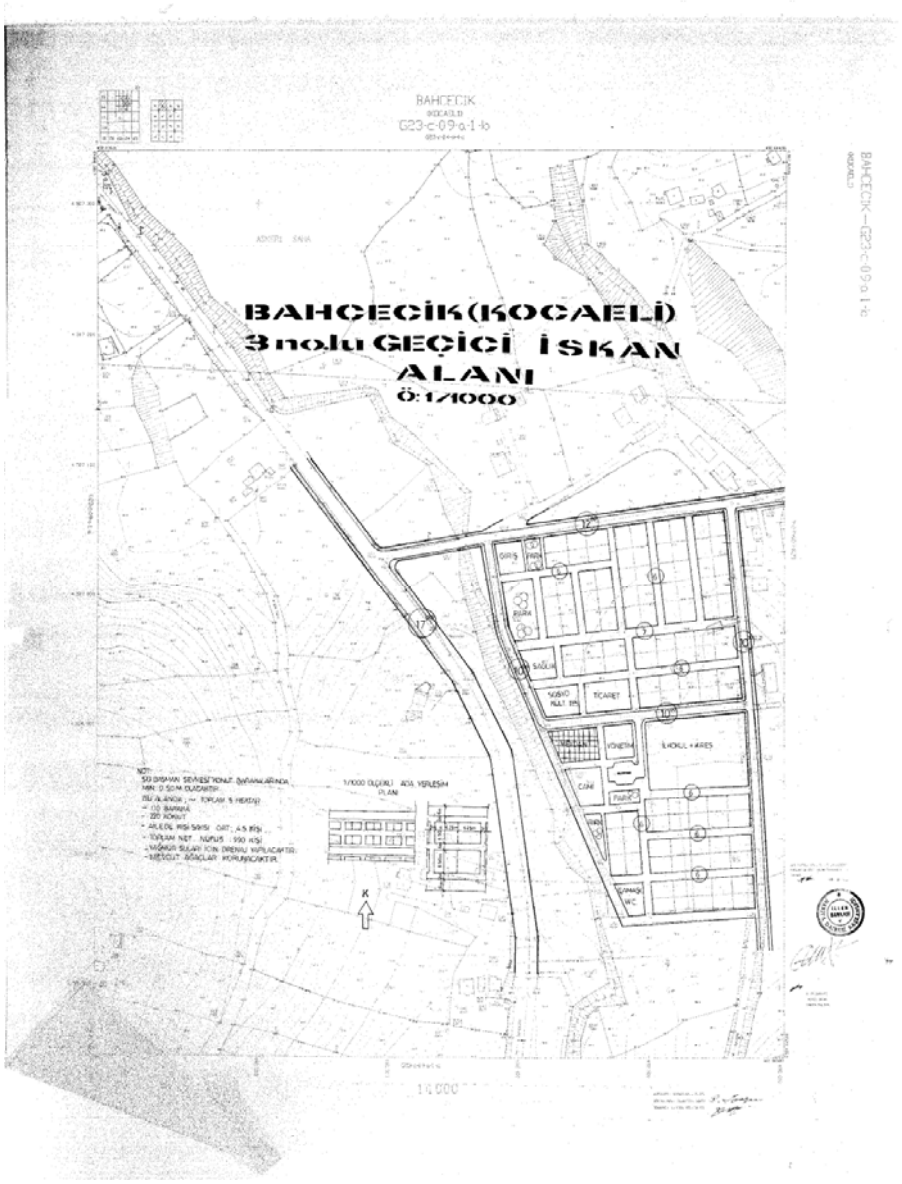


Figure 56 Bahçecik 3 nolu Geçici İskan Alanı

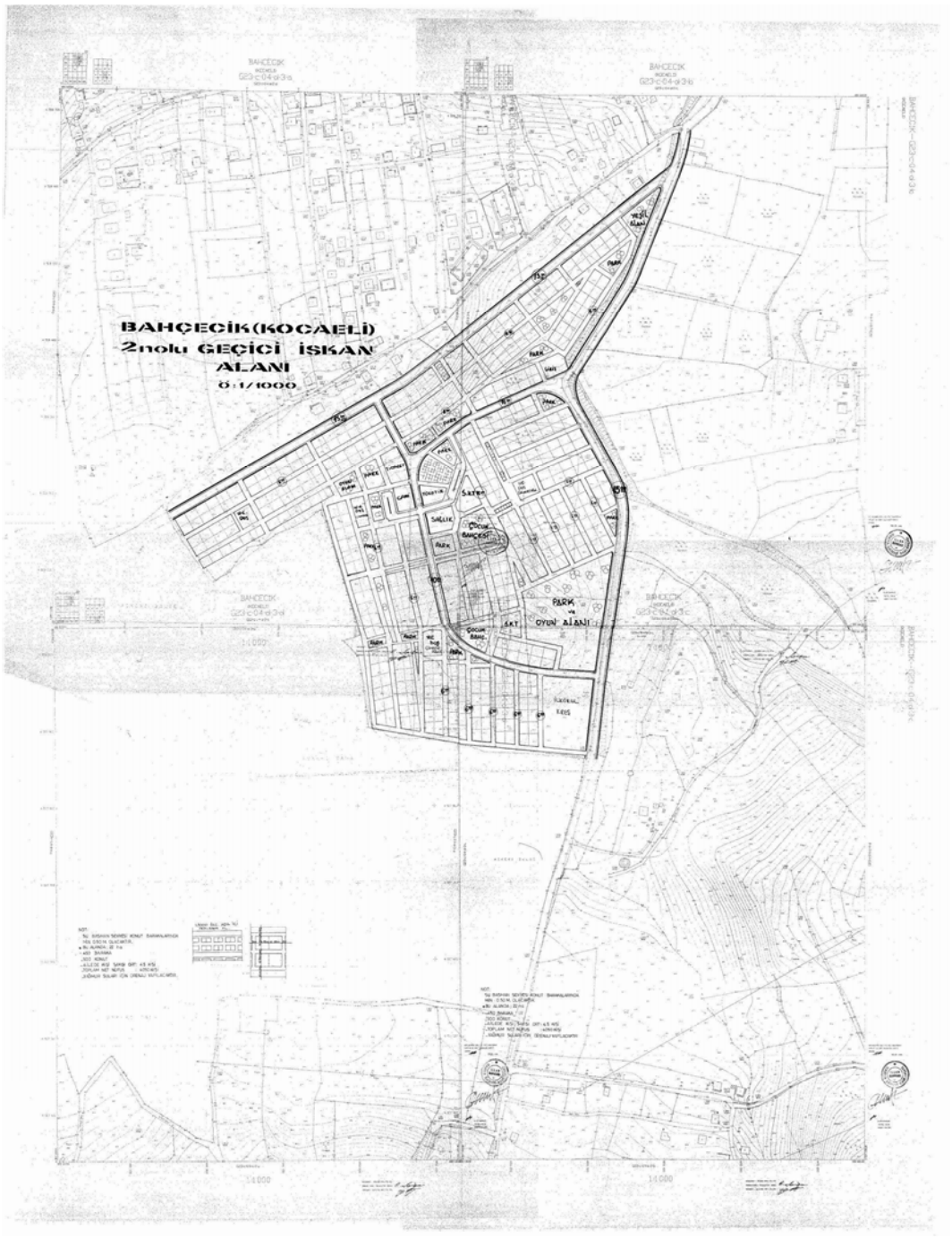


Figure 57 Bahçecik 2 nolu Geçici İskan Alanı

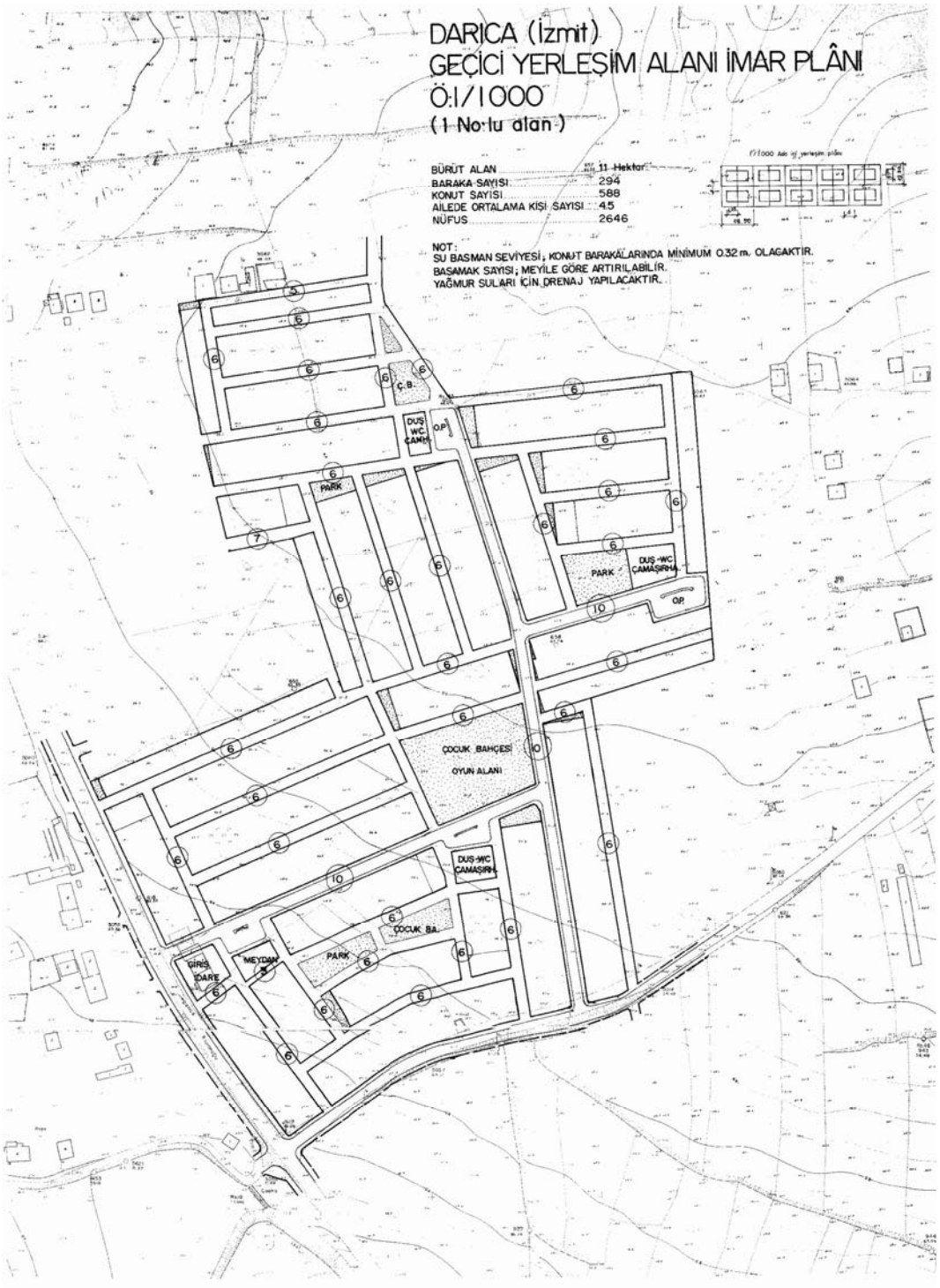


Figure 58 Darıca Geçici İskan Alanı

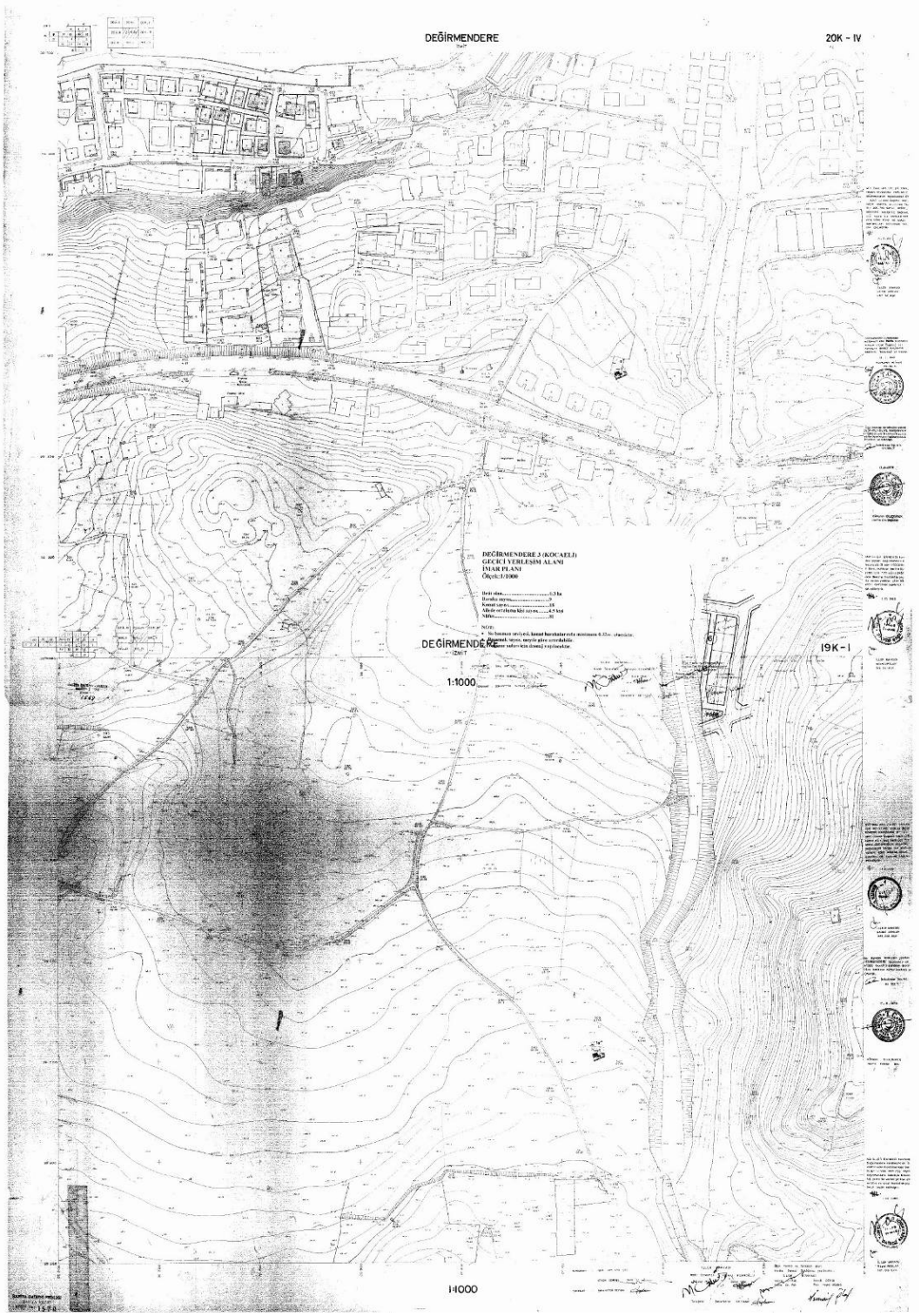


Figure 59 Değirmendere Geçici İskan Alanı

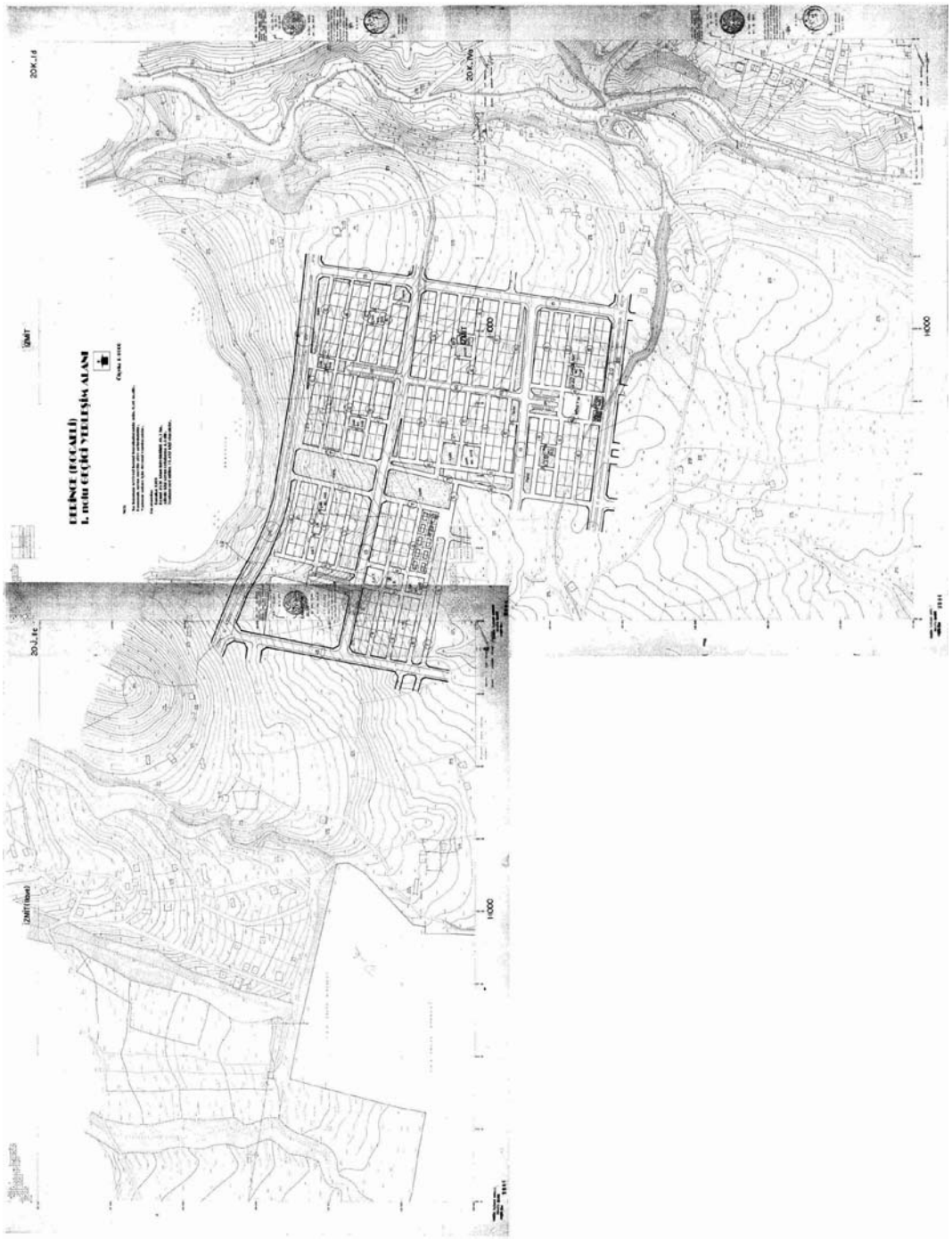


Figure 60 Derince 1 nolu Geçici İskan Alanı

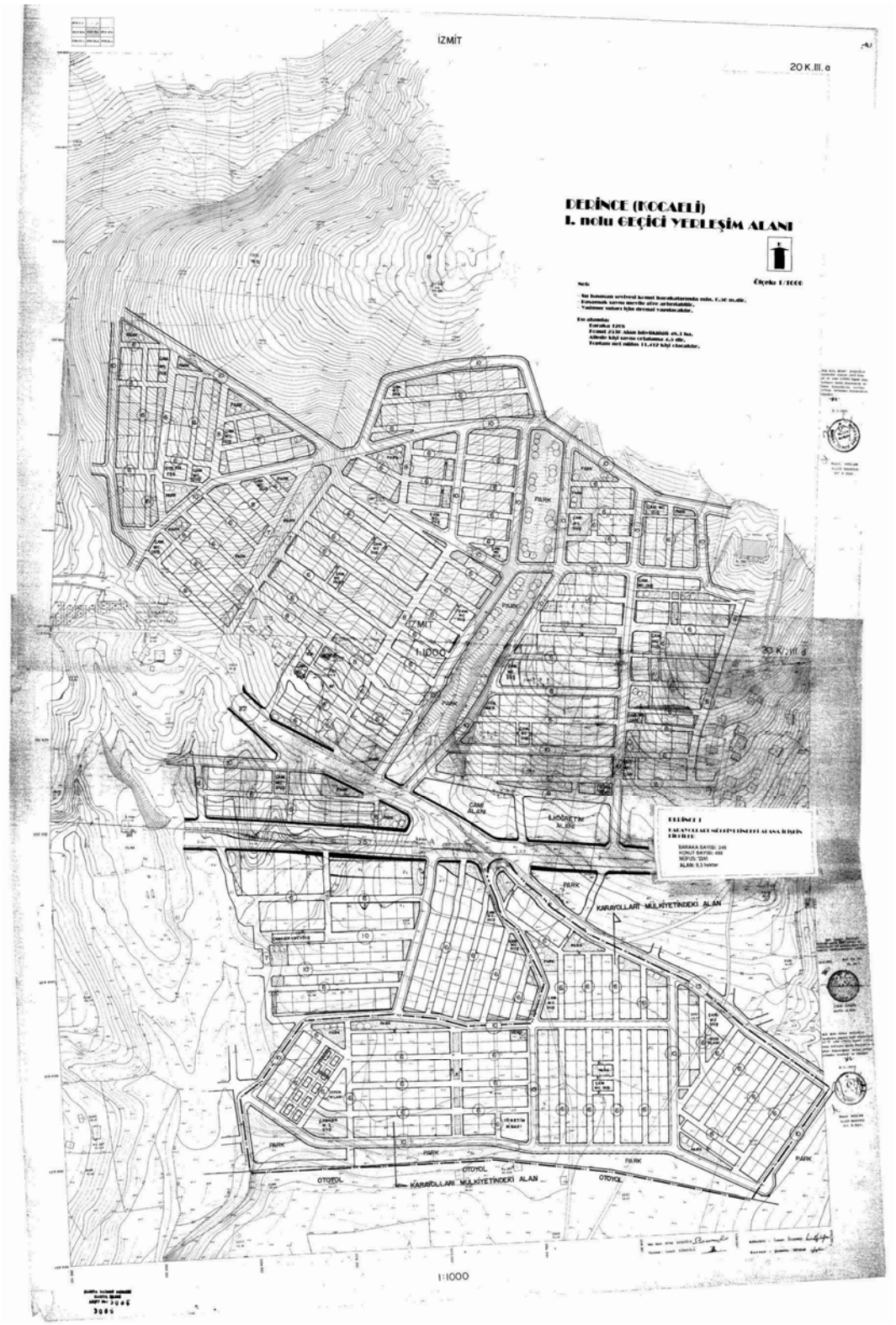


Figure 61 Derince 1 nolu Geçici İskan Alanı

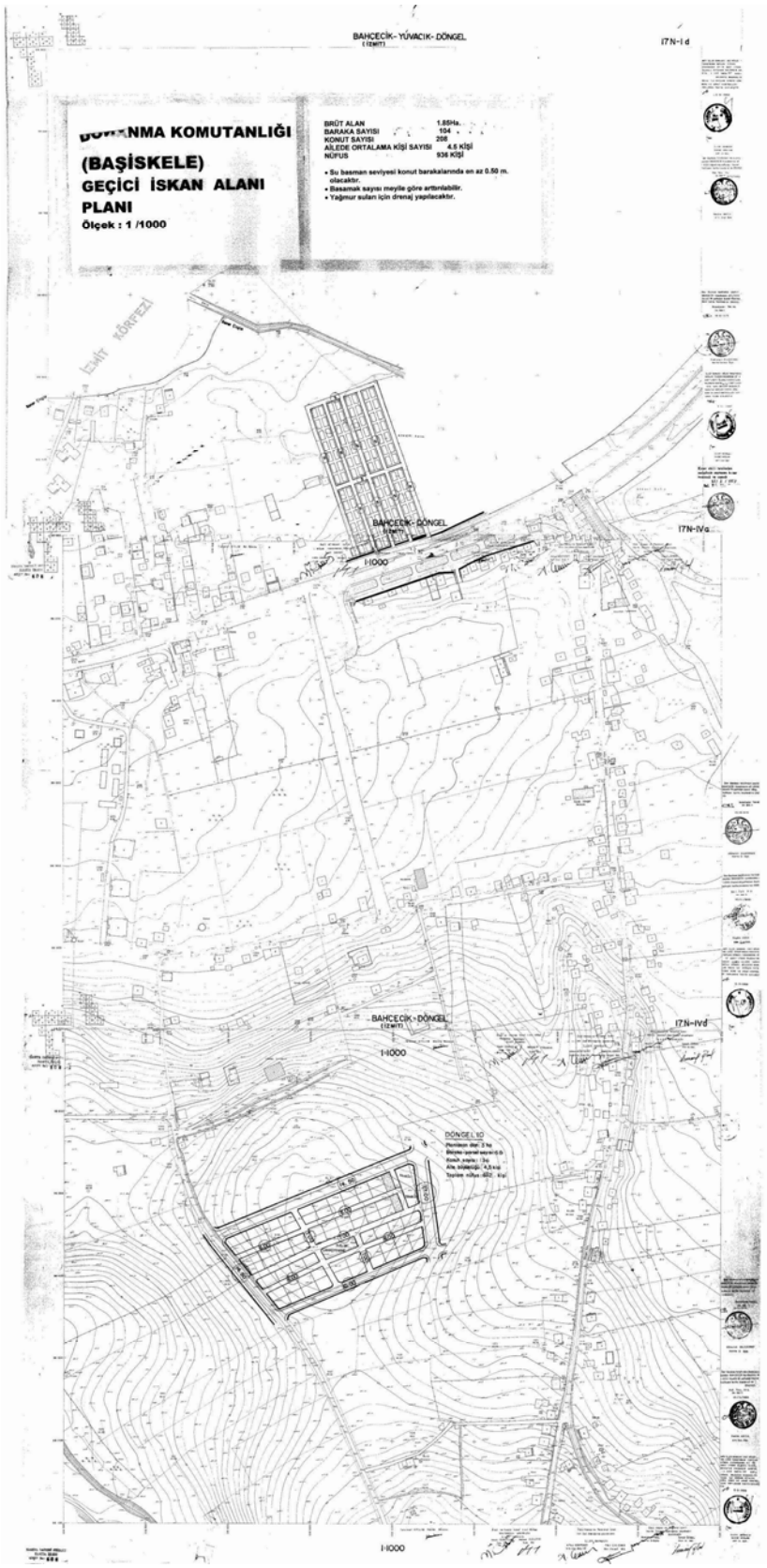


Figure 62 Donanma Komutanlığı Başiskele Geçici İskan Alanı

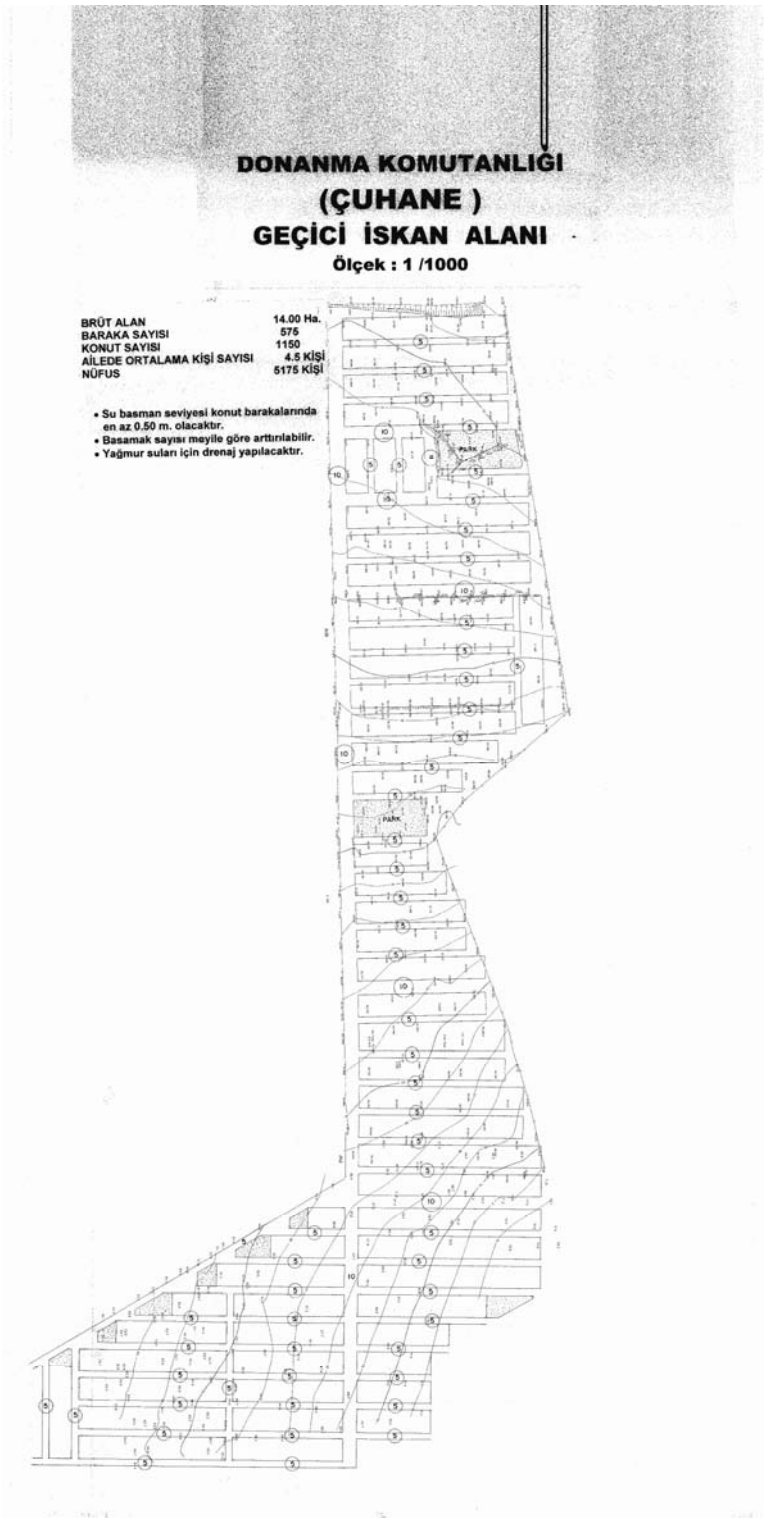


Figure 63 Donanma Komutanlığı Çuhane Geçici İskan Alanı

Figure 64 Döngel 2 Geçiic İskan Alanı

Figure 65 Ereğli Geçici İskan Alanı

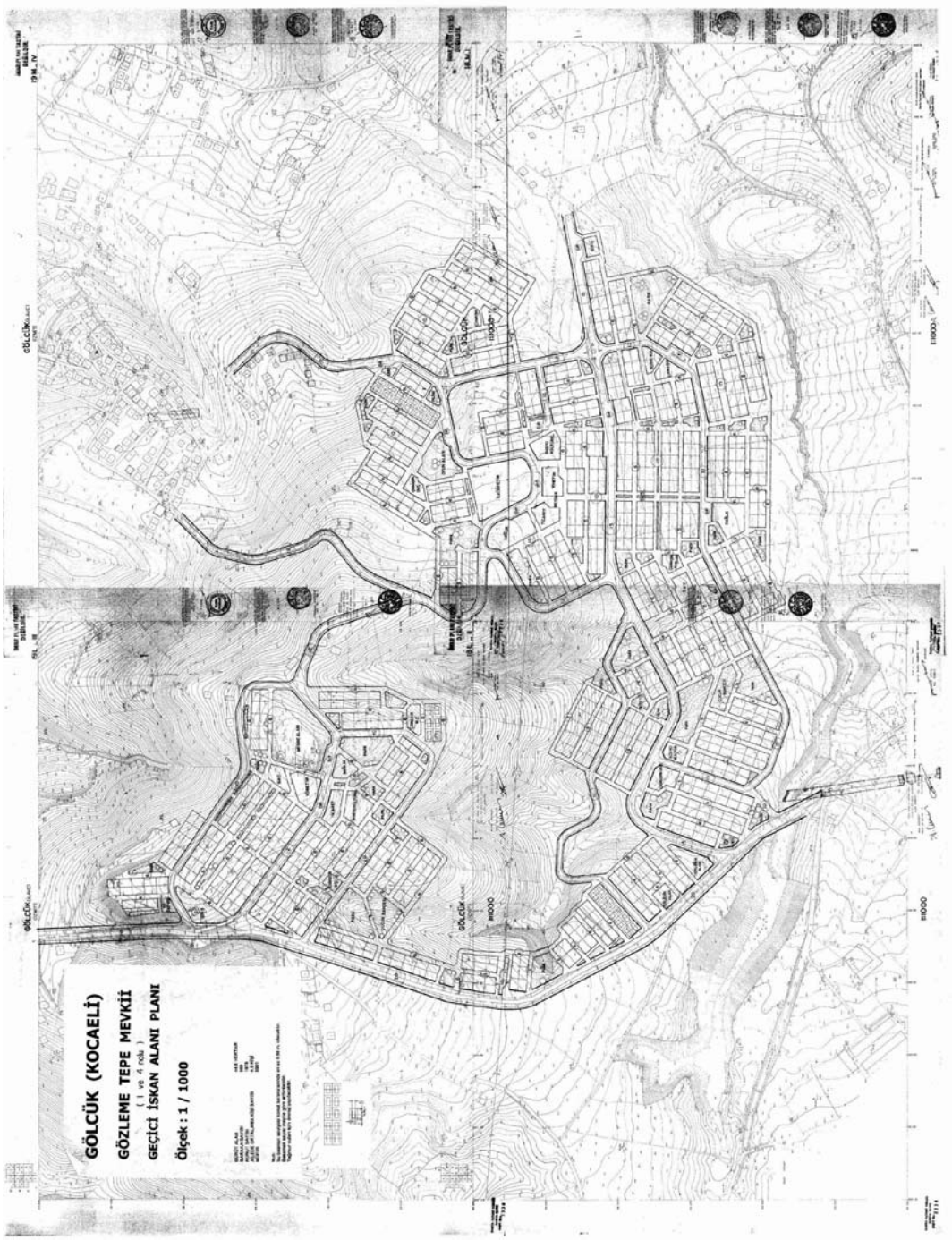


Figure 66 Gölcük Gözleme Tepe Mevkii Geçici İskan Alanı

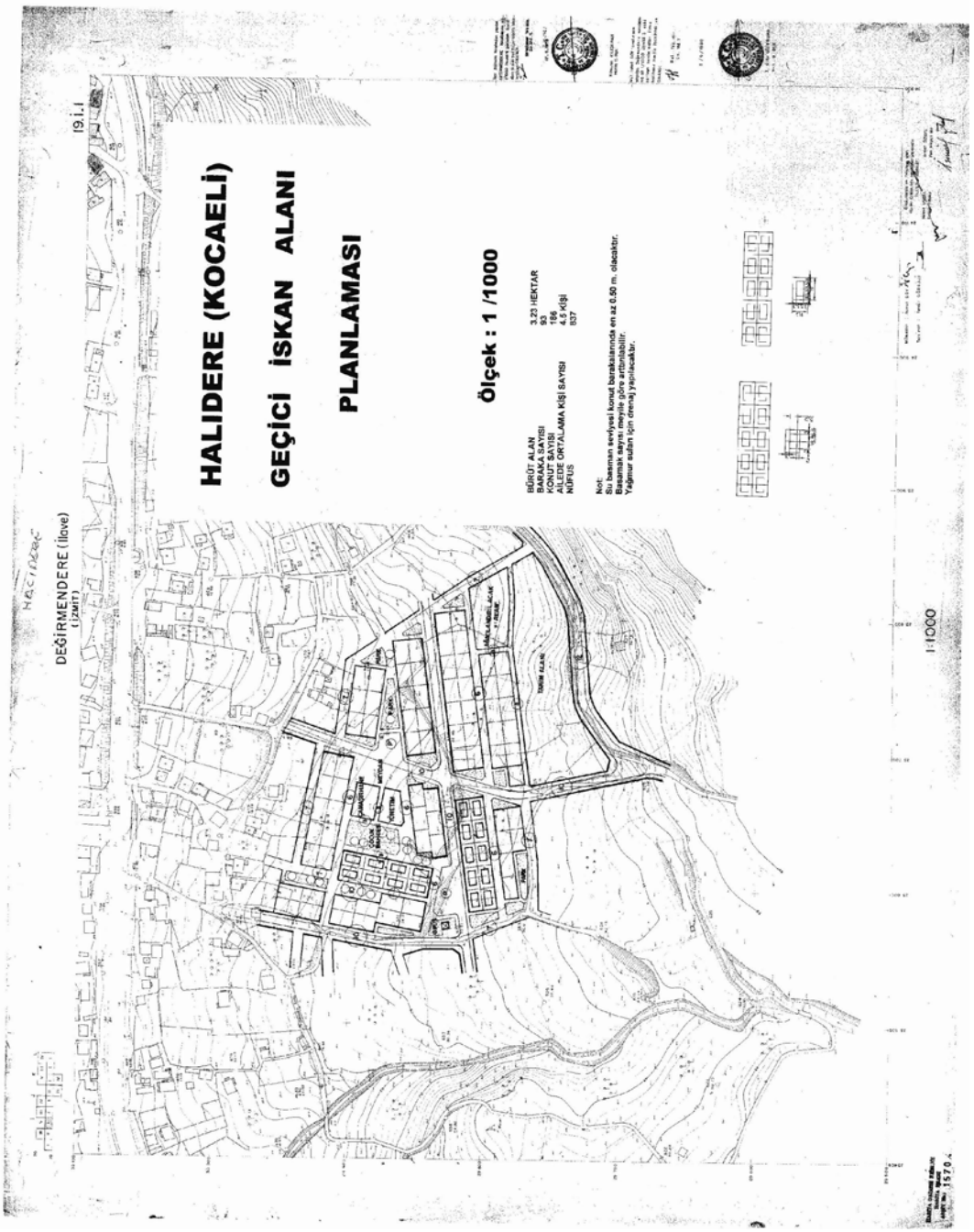


Figure 67 Halıdere Geçici İskan Alanı

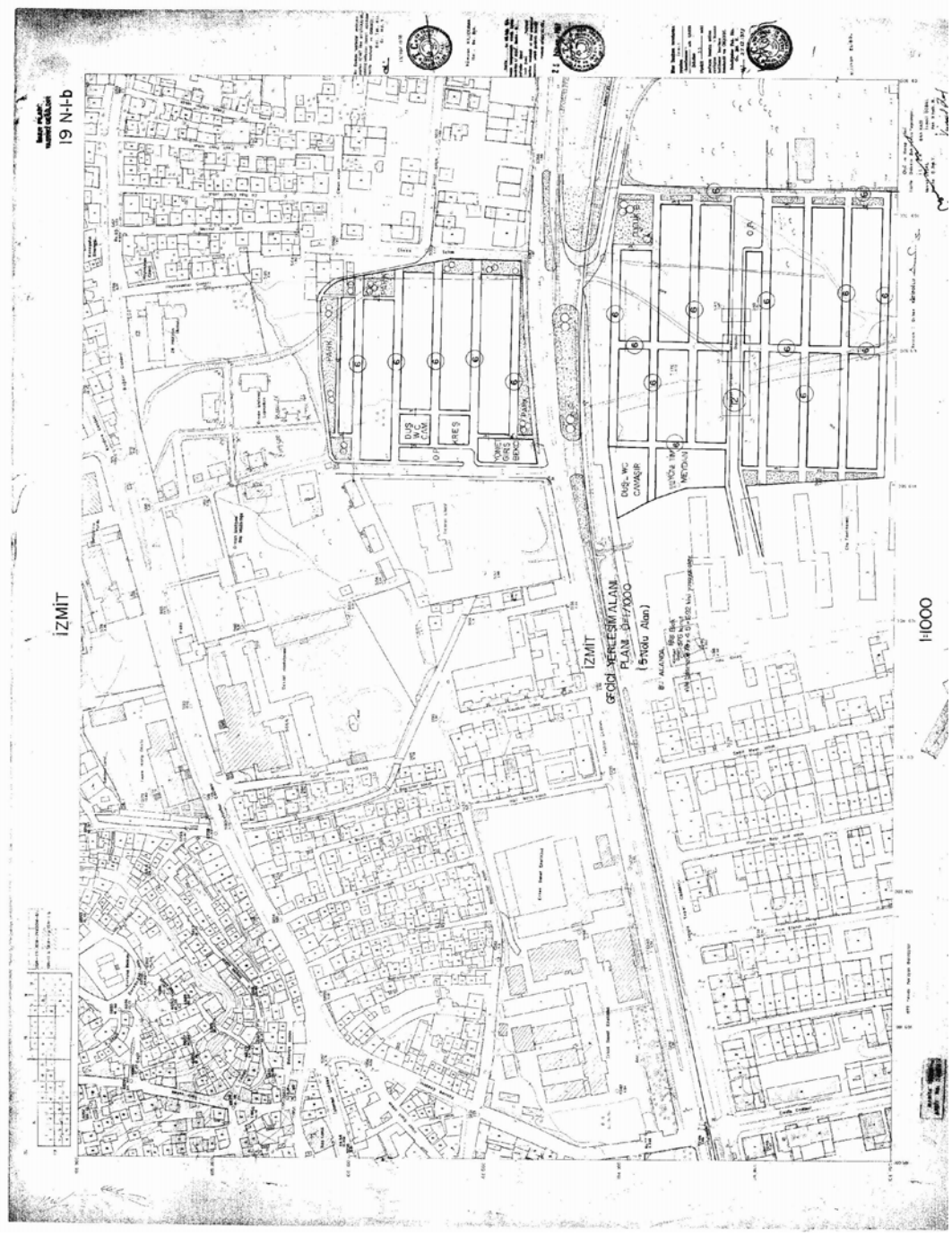


Figure 68 İzmit Geçici İskan Alanı

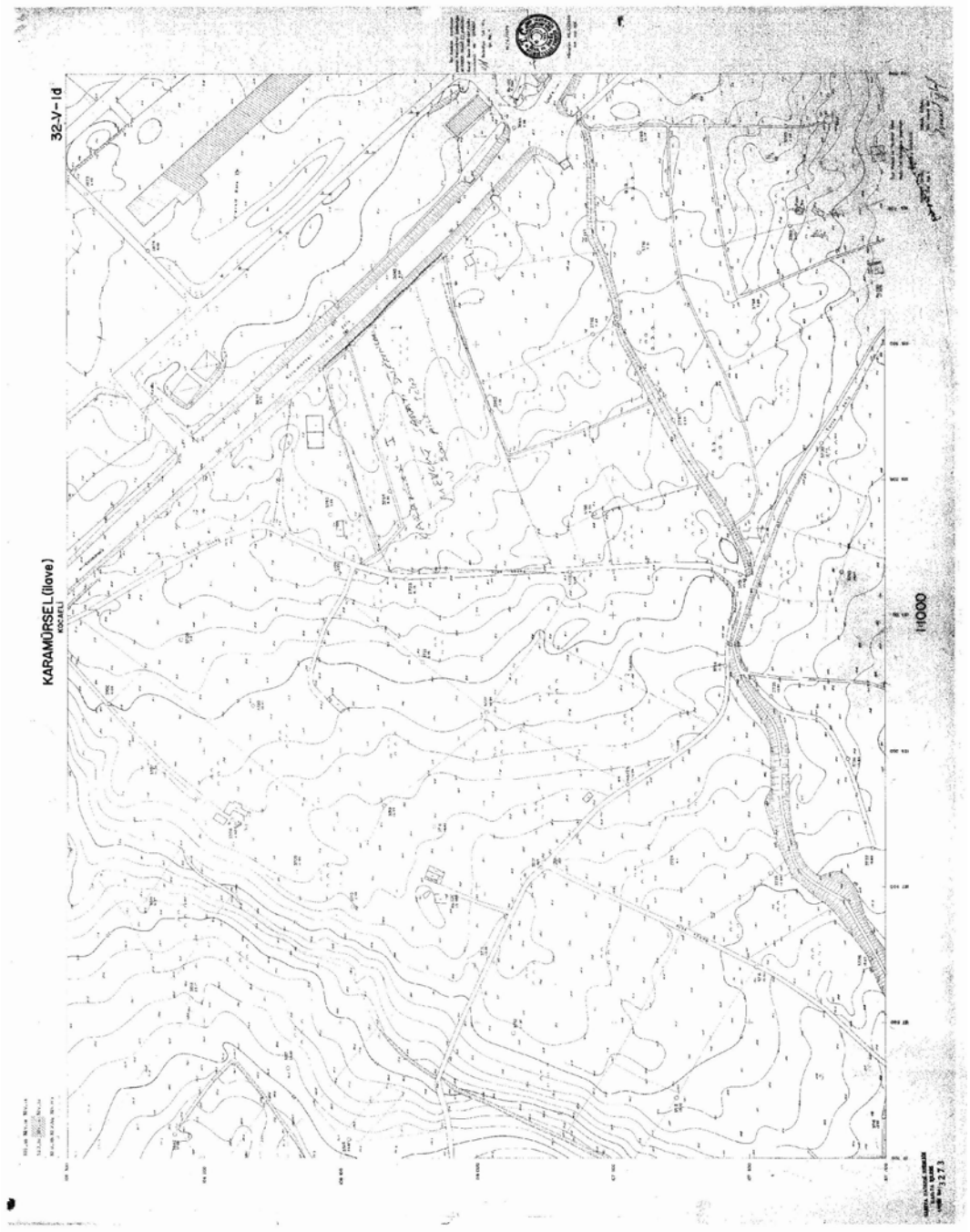


Figure 69 Karamürsel Geçici İskan Alanı

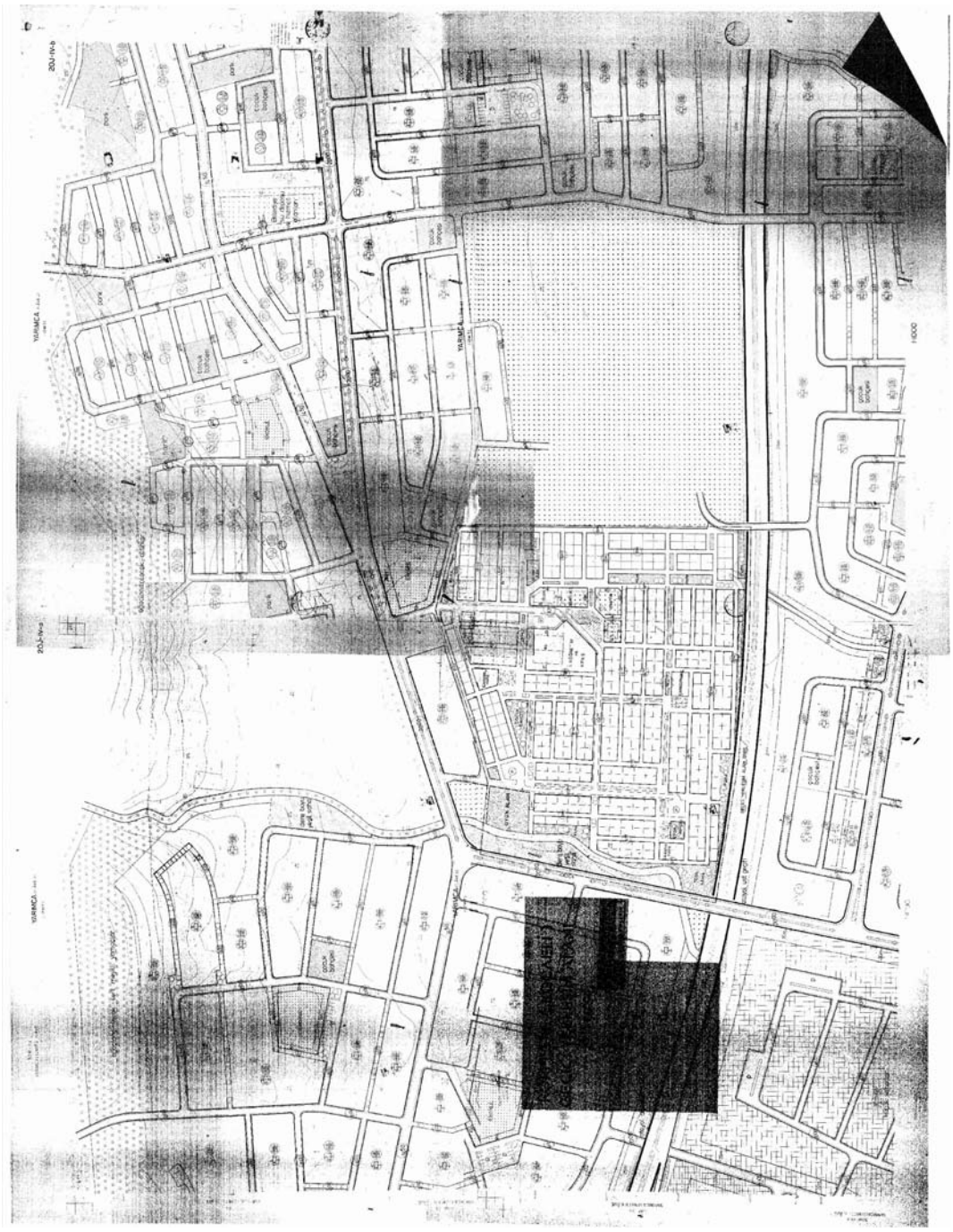


Figure 70 Körfez 5 nolu Geçici İskan Alanı

Figure 71 Köseköy Geçici İskan Alanı

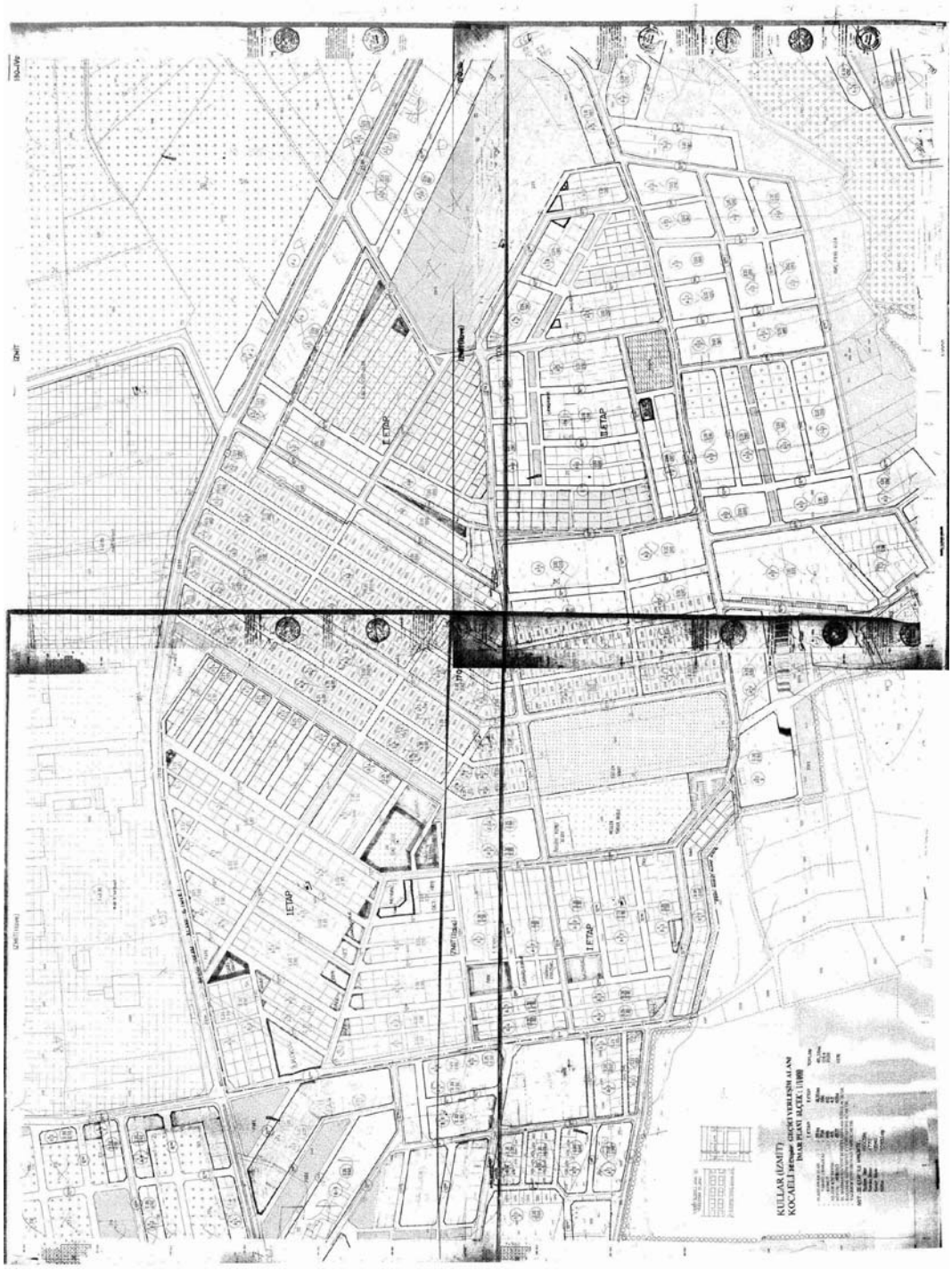


Figure 72 Kullar I ve II Etap Geçici İskan Alanı

Figure 73 Kullar III Etap Geçici İskan Alanı

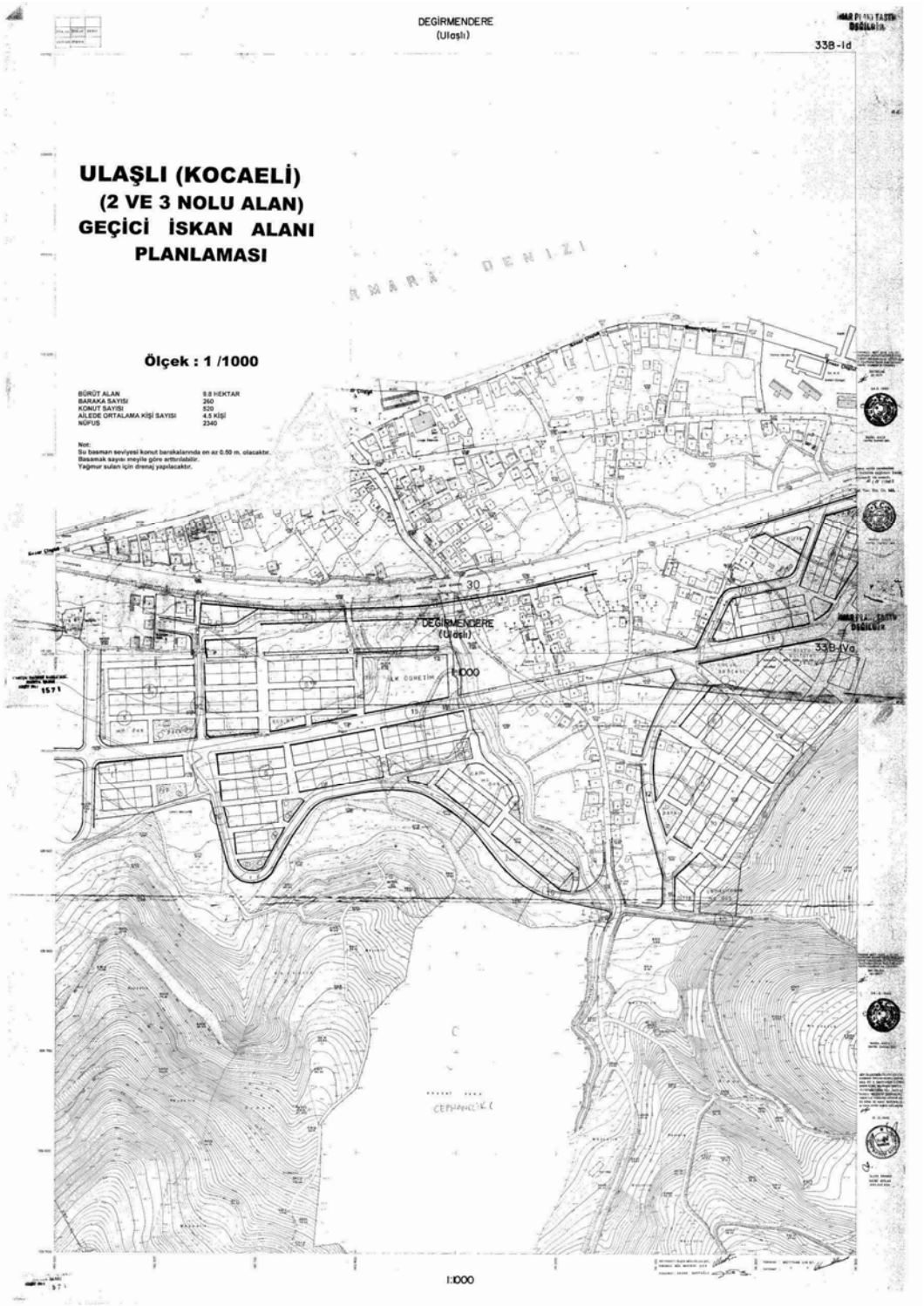


Figure 74 Ulaşlı Geçici İskan Alanı

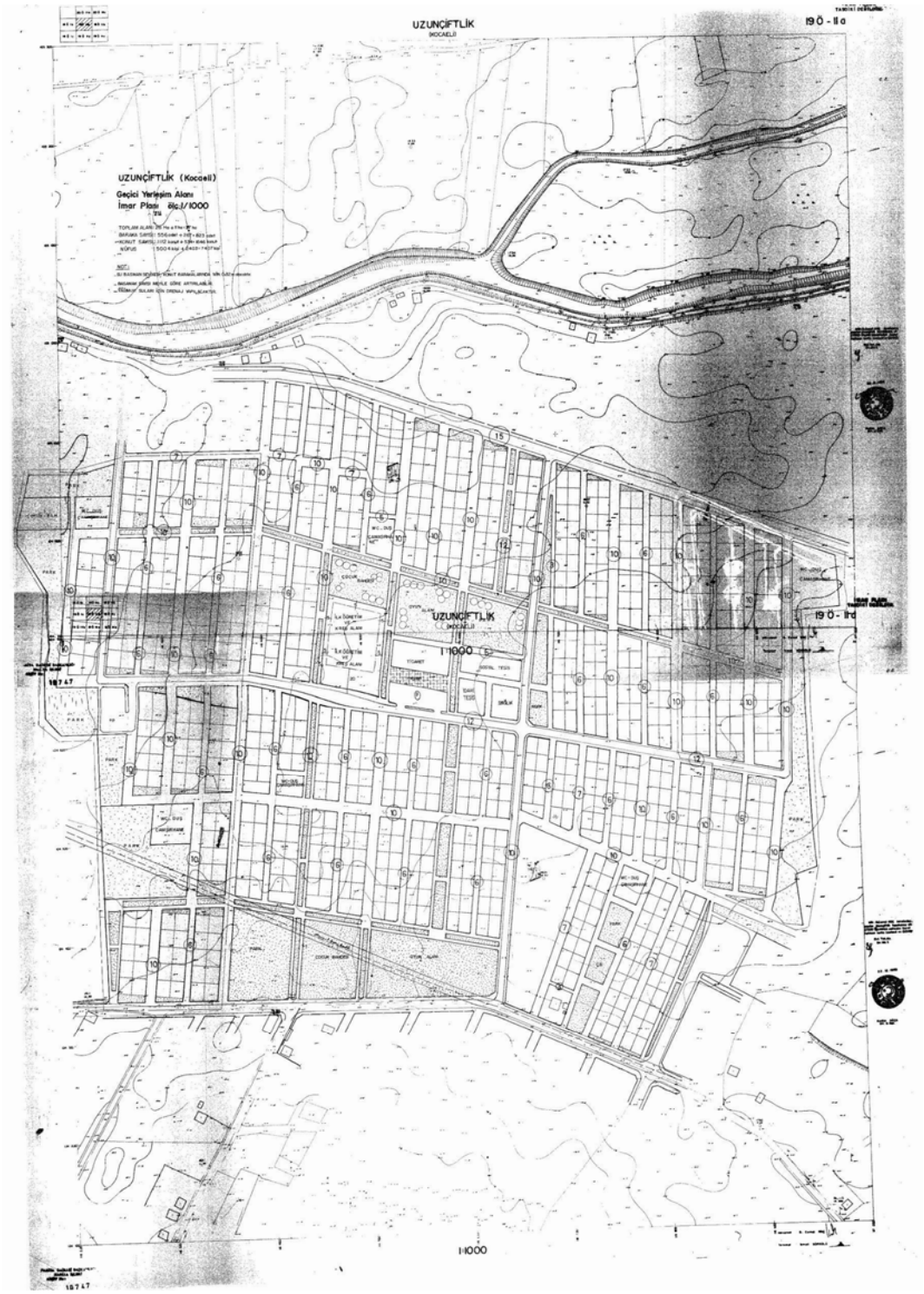
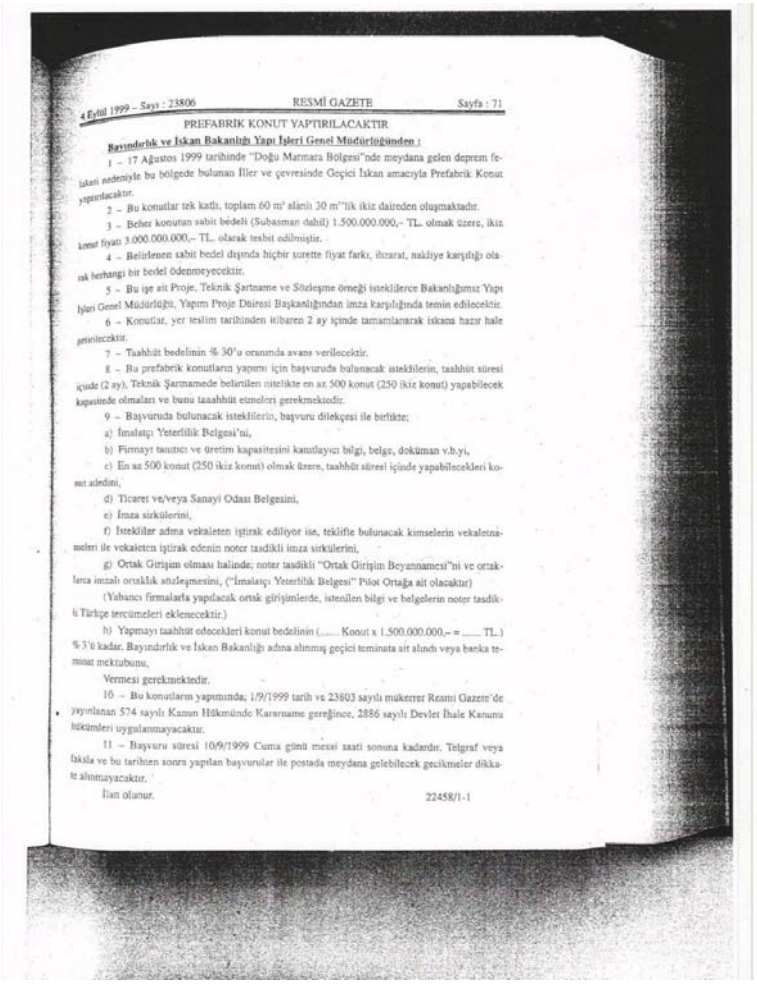


Figure 75 Uzunçiftlik Geçici İskan Alanı

Figure 76 Yuvacık Geçici İskan Alanı

APPENDIX B

Resmi Gazete Technical Specifications Announcement



4 Eylül 1999 – Sayı : 23806 RESMİ GAZETE Sayfa : 71

PREFABRİK KONUT YAPTIRILACAKTIR

Bayındırlık ve İskan Bakanlığı Yapı İşleri Genel Müdürlüğünden :

1 – 17 Ağustos 1999 tarihinde "Doğu Marmara Bölgesi"nde meydana gelen deprem felâketi nedeniyle bu bölgede bulunan İller ve çevresinde Geçici İskan amacıyla Prefabrik Konut yaptırılacaktır.

2 – Bu konutlar tek katlı, toplam 60 m² alanlı 30 m²'lik ikiz daireden oluşmaktadır.

3 – Beher konutun sabit bedeli (Subasman dahil) 1.500.000.000,– TL. olmak üzere, ikiz konut fiyatı 3.000.000.000,– TL. olarak tesbit edilmiştir.

4 – Belirlenen sabit bedel dışında hiçbir surette fiyat farkı, ihtirat, nakliye karşılığı olarak herhangi bir bedel ödenmeyecektir.

5 – Bu işe ait Proje, Teknik Şartname ve Sözleşme örneği isteklilerce Bakanlığımız Yapı İşleri Genel Müdürlüğü, Yapım Proje Dairesi Başkanlığından imza karşılığında temin edilecektir.

6 – Konutlar, yer teslim tarihinden itibaren 2 ay içinde tamamlanarak iskana hazır hale getirilecektir.

7 – Taahhüt bedelinin % 30'u oranında avans verilecektir.

8 – Bu prefabrik konutların yapımı için başvuruda bulunacak isteklilerin, taahhüt süresi içinde (2 ay), Teknik Şartnamede belirtilen nitelikte en az 500 konut (250 ikiz konut) yapabilecek kapasitede olmaları ve bunu taaahhüt etmeleri gerekmektedir.

9 – Başvuruda bulunacak isteklilerin, başvuru dilekçesi ile birlikte;

a) İmalatçı Yeterlilik Belgesi'ni,

b) Firmayı tanıtıcı ve üretim kapasitesini kanıtlayıcı bilgi, belge, doküman v.b.yi,

c) En az 500 konut (250 ikiz konut) olmak üzere, taahhüt süresi içinde yapabilecekleri konut adedini,

d) Ticaret ve/veya Sanayi Odası Belgesini,

e) İmza sirkülerini,

f) İstekliler adına vekaleten iştirak ediliyor ise, teklifte bulunacak kimselerin vekaletnameleri ile vekaleten iştirak edenin noter tasdikli imza sirkülerini,

g) Ortak Girişim olması halinde; noter tasdikli "Ortak Girişim Beyannamesi"ni ve ortaklarca imzalı ortaklık sözleşmesini, ("İmalatçı Yeterlilik Belgesi" Pilot Ortağa ait olacaktır)

(Yabancı firmalarla yapılacak ortak girişimlerde, istenilen bilgi ve belgelerin noter tasdikli Türkçe tercümeleri eklenecektir.)

h) Yapmayı taahhüt edecekleri konut bedelinin (..... Konut x 1.500.000.000,– = ... TL.) % 3'ü kadar, Bayındırlık ve İskan Bakanlığı adına alınmış geçici teminata ait alındı veya banka teminat mektubunu,

Vermesi gerekmektedir.

10 – Bu konutların yapımında, 1/9/1999 tarih ve 23803 sayılı mükerrer Resmi Gazete'de yayınlanan 574 sayılı Kanun Hükmünde Kararname gereğince, 2886 sayılı Devlet İhale Kanunu hükümleri uygulanmayacaktır.

11 – Başvuru süresi 10/9/1999 Cuma günü mesai saati sonuna kadardır. Telgraf veya faksla ve bu tarihten sonra yapılan başvurular ile postada meydana gelebilecek gecikmeler dikkate alınmayacaktır.

İlan olunur. 22458/1-1

Figure 77 Resmi Gazete technical specifications announcement.