

SPATIAL ANALYSIS OF MASS HOUSING AREAS  
IN DÜZCE

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IN DÜZCE**

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## **ABSTRACT**

### **SPATIAL ANALYSIS OF MASS HOUSING AREAS IN DÜZCE**

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In literature on residential areas, the settlement pattern is analyzed starting from their first appearance. In the pre-industrial city was no specialization of land use, the urban layout was relatively irregular, the street markets, shops, workshops and homes being mixed together.

However, after industrialization for cities there was a need for housing supply and these were mostly supplied by blocks around working areas. All of these settlements were not healthy and efficient. So with regulations and policies for better settlements more healthy and secure places were planned for workers with the idea of modernism. Also modernism brought the pure geometry for building design. The colour and facade of the buildings were determined related to functions or structural rationalist ideas. This standard and simple blocks were criticised by some. Like, Sitte's (1889) eulogied historic spaces for their random and artistic city aesthetic.

The sprawl of housing areas increased the need for accessibility and social integration to each other and main center. On the other hand, the residential quarters in their

inner dynamics, the public realm, circulation, self character etc. must be defined for good working settlement and its environment. This resulted in traditional neighborhood properties for better residential settlements that new urbanist way of thought encouraged more ecology and pedestrian-oriented settlements.

In Düzce after earthquake in 1999, important scale of housing necessity appeared and this need was supplied with mass housing projects in short time. In fact, 20% of the urban settlement is provided by these mass housing projects and the projects will go on. In fact, 40 % of the settlement is expected to be provided with mass housing projects.

Master thesis attempts to clarify the design problems in mass housing areas in Düzce. The problems related to mass housing environment will be discussed, with reference to design concept, to explain whether or not these mass housing areas provide neighborhood standards.

**Key Words:** Residential Area Design, Mass Housing, New Urbanism, Neighborhood

## ÖZ

### DÜZCEDEKİ TOPLU KONUT ALANLARININ MEKANSAL ANALİZİ

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Konut alanları literatürü incelendiğinde, yerleşim dokuları belli bir düzen içindedir. Genelde arazi kullanımında özelleşme bulunmayıp, kent yerleşimi düzensiz, mağaza ve atölyeler ve konutlar karma biçimde bulunmaktadır.

Fakat endüstri devrinden sonra, kent merkezleri özelleşmiş, daha fazla konuta ihtiyaç duyulmuştur. Başlangıçta konut alanları sağlıklı ve yetersiz sayıda üretilmiştir. Daha sonra modernist akımın öncülüğünde, yönetmelik ve politikadaki düzenlemeler ile daha sağlıklı ve güvenli alanlar oluşturulmuştur. Modernizm aynı zamanda endüstri kentine sade geometriyi getirmiştir. Renkler ve cepheler kullanım amacına ve yapısına göre rasyonel olarak belirlenmiştir. Standart ve basit yapılar farklı kesimler tarafından eleştirilmiştir. Sitte nin de içinde bulunduğu grup bu yapılaşmanın tersi yönde tarihi mekanlar ile rastgele ve artistik yerleşimlerin olması kanısındadır. Modernizmin sunduğu bütünlük, sanatsızlık modern kentin kimliğini oluşturmaktadır.

Konut alanlarındaki yayılma devam edince kent merkezine ulaşım ve sosyal entegrasyon gereksinimi ortaya çıkmıştır. Bir diğer yandan kendine yeterli olan kent parçalarında çevresi ve kendi etkinliği için kamusal, dolaşım, özgü karakter önem

kazanmıştır. Bu da geleneksel mahalle kavramını savunan yeni rasyonelleşme akımı ile sonuçlanmıştır.

Düzce’de 1999 depreminden sonra gereksinim duyulan büyük ölçeklerdeki konut ihtiyacı toplu konutlar ile sağlanmıştır. Yerleşim alanının yüzde 20 sini oluşturan bu yerleşimler toplu konut idaresi projeleri ile devam etmekte olup yüzde 40 oranına ulaşması beklenmektedir.

Bu master tezi bu toplu konut alanlarındaki tasarım problemlerini incelemektedir. Bu ölçüde geniş mekana sahip konut alanları modernist çerçevede sade, sağlıklı ve kullanışlı yapılardır ancak kamusalılık, canlı sokaklar ve aktivite alanları ile standart mahalle kavramının gereklerini sunup sunmadıkları sorgulanmalıdır.

Anahtar Kelimeler: Konut Alanı Tasarımı, Toplu Konut, Yeni Kentleşme, Mahalle

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To My Family...

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## **LIST OF ABBREVIATIONS**

### **ABBREVIATIONS**

MHA	Mass Housing Administration
UMCOR	The United Methodist Committee on Relief
KARIDAS	Catholic Relief Services
IBC	International Blue Crescent
TND	Traditional Neighborhood Design
DEPDER	Association of Earthquake Victims
NGO	Non governmental Organisation

# CHAPTER I

## INTRODUCTION

### 1.1. Approaching the Issue

Since their first occurrence settlement patterns have been considered in residential literature. In the first times, the residential areas were in the city centre integrated with commercial and leisure areas in a compact form. The pre-industrial city is usually identified by the non existence of a central business district; in some cases one exists however it was not dominant. Usually there was no specialization of land use, the urban layout was relatively irregular, the street markets, shops, workshops and homes were mixed together.

However, after industrialization more housing supply was needed and these were totally supplied by blocks around working areas. All of these settlements were not healthy and efficient. So with regulations and policies for better settlements, more healthy and secured spaces were planned for workers with the idea of modernism. Modernism also brought the thought of building design which was oriented by pure geometry with the materials such as steel, concrete and glass and which was also a reflection of industrial revolution in the city. There could be high buildings discouraging human scale. The colour and facade of the buildings were determined in relation to functions or structural rationalist ideas. Like Le Corbusier, the high blocks were used for residential purposes and the other areas were efficiently used green areas for agriculture.

On the other hand, mass housing projects mostly emphasized the ventilation and the use of sun. This brought the healthy settlement but on the other side, all were simple and functional. In the first times, they were near the city centers but with the

increases in population, their sprawl became inevitable. These higher and similar blocks were always criticised by some. At this period, some ideas were proposed.

The sprawl of housing areas increased the need for accessibility to the main center and social integration. The self sufficient settlements became an important issue in practice and for the literature on residential areas. On the other hand, for good working settlement and its environment there was a need to analyse the residential quarters with their inner dynamics, the public realm, circulation and self character.. This resulted in the consideration of traditional neighborhood properties for better residential settlements. The new urbanist way of thought encouraged more ecological and pedestrian-oriented settlements.

In developed countries improving housing standards and supplying the housing demand in higher standards is the main concern. In developing countries, the problem is related to improving the existing conditions for low income groups. However, for a city experiencing an earthquake, such as Düzce, the problem is related to immediate supply. The details related to physical design is ignored with the panic of those days. Dwellings built in these periods cover an important size and population in urban land.

Düzce as a small city is facing a period of an important change with the need of a mass and quick housing supply following the 1999 Duzce Earthquake. Düzce has already experienced an important city development with population increases in the last 10 years. The urban area is structured by new investments through three urban transformation projects. These projects which have already started will undoubtedly affect the whole structure in the city as the transformation is taking place through the abruptly taken decisions.

In Düzce, earthquake had effects on social, economic and physical environment. In this study only the spatial effects of the earthquake will be discussed. After 17 August 1999 Marmara and 12 November 1999 Düzce earthquake, many houses were damaged and an important shelter problem occurred. The following period in the region has been the recovery period. New shelters such as tents, prefabricated



houses were built for temporary uses. Then permanent houses were considered and built in many parts of the disaster region. In this period, the projects were designed and implemented with in an integrated administrative mechanism but in very short time. In fact in such a short time, a vast amount of dwellings have been built. However these areas were away from previous central areas and were imposing a new different living environment. In following years as permanent housing projects big mass housing projects took place in the city in order to provide shelter for a huge population. The ventilation, sun, orientation systems were considered and earthquake secured buildings were constructed. As a small city Duzce is on the verge of revision of urban space with mass housing projects to create a new urban quality.

## **1.2. Problem definition and Hypothesis**

Mass housing settlements in Düzce are important as in these settlements a considerable percentage of the citizens live. At present, 20% of the residential units is provided by these mass housing projects. In fact, it is expected that this ratio would increase up to 40 % in the coming years.

This master thesis attempts to clarify the design problems in mass housing areas in Düzce. This study makes a spatial analysis of mass housing areas in two scales;

1. within entire city
2. within the clusters of mass housing areas.

At the first scale, the problems related to mass housing areas will be discussed considering urban design concepts such as macroform expansion, urban sprawl and accessibility to define urban integration. At the second scale the spatial structure of mass housing areas will be analysed considering the design criteria of traditional neighbourhoods such as creating livable streets, public realm and specialized space in itself.

The hypothesis of this study is housing supply with mass housing projects is an opportunity to create space with arrangement of good appearance and useful functionalities and the new urbanist elements in design helps better living environments in mass housing areas.

Therefore the mass houses in Düzce are analyzed for defining the reasons for inability to create better neighborhood spaces with public realm, livable streets and identified character for housing quarters and with their integration to the entire city.

One of the aims in this study is to find out the problems related to creating space with mass housing projects within the last 10 years. Another aim is to find out reasons for fragmented locations and incompetent mass housing environments while there were opportunities to develop well-designed spaces. This research also aims to provide a set of criteria as an input that would increase the possibility of satisfaction related to spatial design quality.

### **1.3. Research questions**

For all Turkey mass housing has a popular term in the last two decades. The main question of this master thesis is that whether or not the mass housing projects made by different sources such as MHA, MPWS, foreign capital and charities creates well-designed housing environment with good appearance and function.. So in study two main research questions are;

1. Can an integrated space in the city through mass housing projects be created?
2. Can mass housing projects achieve to be a good neighborhood?

While the housing need after the earthquake was supplied only considering the number of dwellings needed, the spatial quality was ignored. These housing areas should provide livable spaces in themselves as a neighborhood and also should be

connected to the entire city functionally when considered within the framework of the modernist idea.

#### **1.4. Methods of study**

In this thesis the spatial analysis of mass housing projects is made with reference to specific cases of mass housing projects. The case study method will be used to investigate and answer research questions.

The four different examples of mass housing projects which will be compared in this thesis are;

1. Memursen Project: It is made by Mass Housing Administration (MHA) and built for low and middle income groups.
2. Permanent Housing Project: The Ministry of Public Works and Settlement (MPWS) constructed this area as it was obliged to construct permanent dwellings in a number equal to the number of house owners who were influenced by the earthquake.
3. World Bank Houses: The World Bank gave grant for construction of 622 dwellings for the house owners who were influenced by the earthquake.
4. Beyciler houses: Beyciler Social Housing Project started as a result of the cooperation between IBC (International Blue Crescent) and CRS (Catholic Relief Service) 168 dwellings were constructed with social and management center to families which had no security.

There are various resources for the case study. The criteria for comparison of the four cases are set after making a literature survey on the ideas related to housing and design; modernism and new urbanism .

The interviews with different parties, such as city planners in Düzce Municipality, representatives of MHA, constructors, executors, provide preliminary information on;

- The effects of earthquake on housing market in Düzce

- The effects of different actors in construction
- The effects of plan implementations,

While all the reports, books, articles, research and formal studies related to Düzce help to put up the main context of the research, direct observation and involvement of the writer in the planning process as planner in Düzce municipality enabled to set the problems and make the spatial analysis in the case studies.

### **1.5. Outline of the study**

In the second chapter of this study the aim is to define the historical background of residential areas and the trends coming with modernisation and new urbanism. Residential area concept is evaluated within urban design literature.

The terminology of traditional neighborhood, modernism – mass housing and then new urbanism – neighborhood concepts is given in the third chapter. The statement in this chapter is that the residential area can be created by different fashions and forms in history. From the traditional to modern and from modern to post modern the inner dynamics and integration to entire city is important for a residential area. These are changed and differentiated but the examples like Berlin public houses can integrate different styles and generate well defined living spaces. The inevitable items for neighborhood are activities (such as school, commercial, green areas, slow traffic, walking distance), integrated to city with transport systems and land use pattern. This can be worked with modernist healthy and functional buildings. The aim is to determine whether these mass housing areas modern trend or traditional neighborhood style with livable streets, public realm and integrated to entire city.

The fourth chapter is devoted to the case studies with housing projects and urban design analysis in clusters and between clusters according to modernist and new urbanist idea.

The sixth chapter is the concluding chapter.

## **CHAPTER II**

### **RESIDENTIAL AREAS**

Housing as a term is provision of lodging or shelter that covers, protects, or supports the individual. It is the act of providing with accommodation. With many others, it structures collectively in which people are housed and designs a protective cover to contain or support a mechanical component. The related terms which will be used in this study are residential area (a district where people live; occupied primarily by private residences), housing estate (a residential area where the houses were all planned and built at the same time), suburb (a residential district located on the outskirts of a city) district (region marked off for administrative or other purposes) neighbourhood (geographically localised community within a larger city, town or suburb).

Housing is between the primarily necessities of human. It is difficult to imagine people achieving life objectives without a “home.” The word “home” has many different meanings such as shelter, social needs, a response to special needs, social interaction, comfort and security. It is obvious that home is a base that is integral to people’s emotional, cultural, social and economic health.

Housing need can be supplied in city centers or suburbs. A residential community is a community, usually a small town or city, that is composed mostly of residents, together with commercial businesses and/or industrial facilities. These three are considered to be the three main types of occupants of the typical community. Residential communities are typically communities that help to support more commercial or industrial communities with providing consumers and workers ; An example of a residential community would include a small town or city located a number of miles outside of a larger city, or a large town or city located near a

smaller, yet more commercially- or industrially-centered, town or city. (www.wikipedia.com)

Mostly the residential activity is taken in an environment that Deilmann (1977) defines as housing group. The housing groups have different forms with different design quality and value. The sizes and functions are diverse. On the other hand, neighborhood can be considered as socialisation of residential community. It is discovery of relationships between populations, spaces, buildings, distances in a city and it is the spatial level of relation. The built structure of a neighborhood is analysed with forms, types of buildings, design characteristics and implementation of design principles. Its developmental structure is analysed in terms of development forms, method of development, position of development. The common areas in a neighborhood are essential and they are streets, walkways, parking areas, green areas, meeting places and play grounds.

Urban planning asserted itself with the design of public spaces, the building of residences was left to private initiative. The building blocks are the simplest form of residences. The interior of the earliest blocks, was kept open as gardens or playgrounds. The forms occurred after the World War I such as German Houses were small and built on their own plots. The blocks for workers had free interior spaces. They were high storey; they had great access to sun shine and light; functions of residential street was also present and there was a court and a garden in the plot. There was homogeneity of inhabitants provided with isolation from public street (Deilmann, 1977).

The modernist concept of architecture was oriented toward to practicality and purpose. There had been a transformation from street space to a uniform, loose optical open division of building area. The street corridors turned into vertical garden city namely satellite cities and park settlements. Different types of houses lacking urban spaces as courtyards, streets and squares were build. There were independent buildings around the periphery of the block. Courtyard building and

linear building were defined as two separate forms with molecular building as combination (Deilmann, 1977).

Deilmann (1977) considers a housing group isolated from a larger urban context. There is a tendency to spatial disengagement of different types of uses. These are basically open areas and built form .

Open areas are the geometrical properties of building developments and their forms directly influence the magnitude, proportion and quality of open spaces. One of the open areas is play grounds which should guarantee the visual and acoustic supervision. It has to be dealt with considerable amount of noise. The distance from home is essential. The connection to pathway should be provided. Different activities have to be considered around the area. As a second type of an open area, Green areas are trees, hills and distant views which form social aesthetics. There should be hierarchy between areas to control and own the area. The functions and sizes are also important.

As a third element of open areas is parking areas. They have to be close to the apartments. The separation of pedestrian and vehicle is an opportunity for movement. There should be no visual disturbance. The size and number have to be considered and should be related to need (Deilmann,1977).

On the other hand, building form is related to density and floor. The form is determined by site forms, site sizes, development value, vehicle numbers, depth of buildings and orientation. The different forms have different opportunities. As an example detached housing have privacy and freedom advantage over other forms (Deilmann,1977).

Deilmann's descriptions for housing area needs the solid-void analysis to see scale, orientation, size, movement, geometry of the settlement. Deilmann (1977) classifies the forms of buildings as follows;

1. Molecular building: the advantages are good light and ventilation, but the enclosure is a problem and additionally there is less coordination with individual buildings.
2. Line building: the disadvantages are privacy and noise while publicity is an advantage and gives the chance for designing a street and a corridor .
3. Courtyard : It is the way of building with maximum density. But there is a lack of ventilation and there is noise problem. There are views into windows from all sites. As an advantage the open areas are used functionally and they have appropriate size and proportion.

## **2.1 Residential Districts**

The concept of residential districts can be defined as a spatial system that is formed of parts, each with its own characteristics. Schumacher has also developed a theory of this type (Rossi, 1984). These districts are a part of city form. It is bound up with the city evolution and nature. It summarizes the city image. It is a morphological and structural unit characterized by a certain landscape, a certain social content, and its functions. It includes economic classes as well as economic functions corresponding in an essential way to the process of formation of modern metropolis. The city part relations have simple function of dependence but respond to entire city. Larger city constitutes a smaller city that is challenge for functionalist theory. This aspect is zoning. In Burgess's study of Chicago, zoning defined tendency of the city to be disposed in concentric residential districts around a central business district (Burgess, 1921). It is indicated as a series of concentric zones which corresponded to well-defined functions. Principal parks, arteries, industrial and railroad land, ethnic population are all defined from wealthier to poorer. But the study is weak as it does not deal with the entire city. The basic functional differentiation is detailed in structure of urban artifacts. In Baurneister formulation, the zones are characteristic. There are many independant parts and this relies mainly on the entire historical process of city. Despite the rigid plans, Hassinger grasped a functional division of plots. (Hassinger, 1916)



Lynch states that these well-defined characteristic districts are areas of references. They have little perceptual content but they are useful as organising concepts. They have little reference to surrounding area, isolated districts arise independently of their zone. (Lynch, 1988)

An individual dwelling is a category which does not mean to adopt a functional criterion of urban land-use division. A city is always characterized by individual dwellings. Cities in which the residential aspect do not exist or have not existed and where the residential function was initially subordinated to other urban artifacts, a modification of the city's structure soon occurred giving importance on individual dwelling. The location of an individual dwelling is related to geographic, morphological, historical and economic factors. The alternation of residential zones as well as their specialized structure from a typological standpoint seems largely dependent on economic patterns and speculation mechanism. The success of residential complexes is also related to the existence of public services and collective facilities. (Eisenman, 1999)

The individual development mostly creates segregation in space. Although segregation is an inherently spatial concept, it can also result in social fragmentation. This effects relations within different neighbourhoods and in the city as a whole.

Design and planning decisions have often had some unexpected effects on problems such as social isolation and economic segregation. Studies have shown that there is a spatial mechanism involved in the creation of poverty areas and it is argued that spatial segmentation of areas has detrimental effects on the most vulnerable populations, especially those who depend on local movement and local networks for support and exchange (Vaughan 2007, 248). Neighbourhoods tend to have stronger integration towards the city core compared with cross connections that are much weaker.

The design of areas is important since an integration with "main street" or a "central square" can work as a core for residential area. As integration at different radius is

compared it is possible to sense a rather predictable situation in the inner city (with a block grid structure) as the integration core at different radius tend to be more consistent, and also is enlarged as the radius is increased. spatial distance is through depth analysis. In other studies it is found that deprived areas (or ghettos) are characterised by a high depth measure in relation to the surroundings (Vaughan et al. 2005). The focus is on the distance between the city centre and a suburb well-developed relations; for example within communities, associations, and churches, as well as through kinship the local centres are not well functioning; neither as a social meeting place nor for commercial activities. They are often described as turned inside out or not located in a central position in the neighbourhood. Similar reasoning is made by Jane Jacobs who besides a local activity emphasizes continuity and influences from the city level as one essential aspect of a functioning urbanity (Jacobs 1992). Starting with the centres; the result indicates that the intention to locate planned centres in highly accessible locations seems not to have been fulfilled in many of the studied neighbourhoods. Integration reflects spatial accessibility, a kind of centrality, but in urban studies it could also be of relevance to analyse the potential for through-movement (choice) and identify the spaces (or segments) that are most likely to be frequently used as routes (Hillier and Iida 2005, 553). It should be pointed that the quality of a neighborhood is linked to the overall quality of the built environment. Housing projects should not be viewed singularly, but viewed as part of the larger neighborhood or community plan area in which they are located. This is important for design continuity and compatibility. Integrating new construction with the existing fabric and scale of development in surrounding neighborhoods are essential. Taller or denser development is not necessarily inconsistent with older lower density neighborhoods but must be designed with sensitivity to existing development. For example new developments should not cast shadows or create wind tunnels that will significantly impact existing development and should not restrict vehicular or pedestrian movements from existing development. Designing new construction to respect the pedestrian orientation of neighborhoods and providing innovative designs for a variety of housing types to meet the needs of the population are needed.

There is architectural and landscape interest for both pedestrians and neighboring residents related to residential Street Frontages so it is important to locate buildings on the site so that they reinforce street frontages, provide as many ground level entries as possible, relate buildings to existing and planned adjacent uses, ensure that building entries are prominent and visible. Maintaining existing setback patterns, except where community plans call for redevelopment to change the existing pattern locating transparent features such as porches, stoops, balconies, and Windows facing the street to promote a sense of community, and encouraging side and rear-loaded garages are important for a residential area. Where not possible, reduction of the prominence of the garage through architectural features and varying planes is necessary.

## **2.2. Traditional Housing Areas – Pre Industrial City**

According to Lewis Mumford, “Neighborhoods, in some primitive, inchoate fashion exist wherever human beings congregate, in permanent family dwellings; and many of the functions of the city tend to be distributed naturally—that is, without any theoretical preoccupation or political direction—into neighbourhoods.” (Mumford, 1954). Most of the earliest cities around the world as excavated by archaeologists have evidence for the presence of social neighbourhoods. Historical documents shed light on neighbourhood life in numerous historical preindustrial or nonwestern cities. Neighbourhoods are typically generated by social interaction among people living near one another. In this sense they are local social units larger than households not directly under the control of city or state officials. In some preindustrial urban traditions, basic municipal functions such as protection, social regulation of births and marriages, cleaning and upkeep are handled informally by neighbourhoods and not by urban governments; this pattern is well documented for historical Islamic cities.

In addition to social neighbourhoods, most ancient and historical cities also had administrative districts used by officials for taxation, record-keeping, and social

control. Administrative districts are typically larger than neighbourhoods and their boundaries may cut across neighbourhood divisions. In some cases, however, administrative districts coincided with neighbourhoods, leading to a high level of regulation of social life by officials. For example, in the T'ang period in the Chinese capital city Chang'an, neighbourhoods were districts and there were state officials who carefully controlled life and activity at the neighbourhood level.

Neighbourhoods in preindustrial cities often had some degree of social specialisation or differentiation. Ethnic neighbourhoods were important in many past cities and remain common in cities today. Economic specialists, including craft producers, merchants, and others, could be concentrated in neighbourhoods, and in societies with religious pluralism neighbourhoods were often specialised by religion. One factor contributing to neighbourhood distinctiveness and social cohesion in past cities was the role of rural to urban migration. This was a continual process in preindustrial cities, and migrants tended to move in with relatives and acquaintances from their rural past (Mumford, 1954).

## **2.3. Modernism and Mass Housing**

### **2.3.1. Modernism**

Modernist culture grappled with and sought to resolve a basic contradiction along three major dimensions of experience: time, space, and self. On the dimension of time or history, the contradiction took the form of change versus permanence. All modernists registered in their work the experience of the shock of the new world and its radical break with the old. The continuous section of time in premodern societies, guarded by nature and religion, was torn asunder by the new technologies of production and consumption, rendering it chaotic and contingent. Time was no longer governed by the rhythms of human tradition but was reduced to a rationalized, objective thing, under the control of the alien technologies of stopwatch and assembly line (Harvey 1989, pp. 10-12,31-35; Jameson 1991, pp. 302-313; 1994, pp. 8-21,84-86).

Prior to World War II, the Prairie style, the International style, and the work of Frank Lloyd Wright had gained only limited acceptance in America dominated traditional architectural styles. In America, architectural tastes were generally historically oriented and European architects and landscape architects introduced European Modernism at the beginning of World War II. Most notable of these architects were Walter Gropius and Mies van der Rohe from Germany and, Le Corbusier from Swiss. The ideas of the European Modernists and those of American architects already working with a Modernist vocabulary developed in time, with the Europeans having an important influence over this new architecture. Gropius, van der Rohe, Le Corbusier, and others not only practiced Modernist and International style architecture in the United States, they also taught it. Their greatest impact was made in the late 1940s, with the accumulated needs of building in the postwar years and the rush of veteran enrollments in schools of architecture infiltrated by European Modernism.

This new Modernism spread to architecture schools across the country and, though Colonial Revival remained the dominant style, particularly for residential designs, Modernism entered American architecture.

The basic ideas of Modernism emphasized function and utility; abstract beauty, sculptural form, symbolism, honesty and the use of modern materials and technology as well as an emphasis on the use of natural materials. Some of the most prominent and outspoken representatives of various aspects of Modernism in America were Walter Gropius, Ludwig Mies van der Rohe, Le Corbusier, Frank Lloyd Wright, Eric Mendelsohn, Rudolph Schindler, and Richard Neutra.

Modernism concepts applied to residential architecture occur most often in exclusive subdivisions and as in-fill construction in older, established, high-end neighborhoods. It can also be found on suburban homes outside of subdivisions. Modernism in its less high-style application is to be found on homes in suburban locations, usually in lower-end subdivisions, but rarely, or never, as in-fill in older in-town neighborhoods (Odell, 2010).

Modernism, with high levels of Miesian influence, were used on commercial buildings in the traditional setting of downtown and mid-town commercial zones. These buildings usually housed offices, and those located in the downtown conform to traditional set-backs and street orientation. In addition to these traditional locales, during the post-war years, commercial and industrial architecture spread out along the newly constructed, large, four-lane highways radiating out from cities, or encircling cities. These buildings will not only exhibit Modernist style, but they will also have a modern, car-accommodating form, and will rarely be more than two-stories high.

Modernism is not a well-defined, commonly understood style. The following is a list of features to facilitate the identification of Modernist architecture. This list draws on previous attempts at defining the style, tenets of post-war Modernist architects, and the surveyors' observations as they have documented Charlotte's Modernism. The sliding glass doors, patios and outdoor living spaces, large expanses of glass, courtyards, horizontal orientation and integration of natural landscape features into design, use of natural materials provides landscape integration. The form is horizontal with simple, clean lines, form following function, exposed structure, asymmetry, de-emphasis or lack of articulation at main entrance, and lack of ornamentation (Mecklenburg,2010).

Modernism also introduced a new concept of space. The motor car took over the urban space, changing the relationship between human beings and buildings; between buildings and open spaces; between solid and void, abolishing enclosed public spaces such as streets and square as known before. This gave way to vast open spaces and flexible location of high rise buildings, subordinating the void to the solid, undermining the spaces of sociability. After the static, enclosed public spaces of the past in both East and West the modernist public spaces were to be free floating, fast moving, all-encompassing (Madanipour, 2003).

Scientific discoveries, technological development, urbanization and globalization have all transformed the speed and scale of events and hence the nature of cities and

relations between public and private spheres. The modern city gone through a spatial and temporal process of dispersion, creating nonconverging networks. This was in complete contrast to the former cohesive nodal role of the public space. From the clear distinction of the integrated public and private spaces in the small settlements, cities had grown in size, scattered and fragmented along functional and social lines. In order to accommodate change public and private spaces exploded and multiplied as part of this urban explosion. Domestic space moved from integration of work, leisure and living to ever more precarious, monofunctional intimate and exclusive spaces of ever smaller households. The public space also lost its integration with cultural economic and political significance, to be despatialized. It became an instrumental tool to sell the city, although it was also expected to help promote social cohesion and cultural richness. (Madanipour, 2003).

This modernist's urge towards purity and harmony had some particular consequences for the city life. First, the modernist obsession by the principle of order, hygiene and aestheticization, led to the vanishing of the public space in Europe. At modernism public space seemed to win that the "permanent struggle" between public and private, but some scholars consider it was a "pyrrhic victory". While in the pre-modern cities there were logics of public and private co-existence and struggle in the city space, the modernist ideology "resulted in clearer distinction between "public" and "private" space, with fewer ambiguous, semi-private, or semi-public spaces in between" (Dennis 2008: 145). Although in the modern city the public unconditionally dominated the private, the public space was different than before: *"This might appear a domination of public space, as it was drastically expanded, in form of the parks in the middle of which high rise buildings were erected. However, this space was ill-defined and under-used, indeed it was "lost space" ..., where none of the functions of the public space could be performed; sociability was becoming impossible"* (Madanipour 2003: 202).

The second consequence of the implementation of the modernist ideals in urban design is the domination of the passive spectatorship and sacrifice of the social functions to the aesthetic. Before modernism, the monumental buildings "were meant equally

to be used” and the spectator “was also an actor in it”. Since the 19th century major buildings in the city “came to be conceived as objects to be looked at, to be viewed”. This domination of aesthetic lead to the “offer of visual pleasure at the cost of mixed social and economic use”, to the “social exclusion in the name of visual pleasure” (Sennett 2010).

The publicity is important as a tool for design. The design concerns public spaces and create environment within private dwellings and open common areas. For equality and creating spaces for encouraging coming together, the public spaces are important. That can be exemplified as there are streets, squares and green parks for people to use while the open area and architecture are simple and standart. However, on the modernist space approaches mobilization of property is a mean for the good of public (Günay, 1999). This an extensive deal that the design in private property appeals to public. In this concern, the housing units are private properties but the designs of them is a mean for society. Their created apperance is interest for whole society(Günay, 1999).

The 20<sup>th</sup> century relation between public and private is different from 19<sup>th</sup> century. In the 19<sup>th</sup> century, public buildings were horizontally expansive for a variety of technical reasons, and private buildings emphasized verticality to fit more private space on increasingly limited land. Conversely, in the 20<sup>th</sup> century, public buildings became vertically oriented and private buildings became organized horizontally. Many aspects of modernist design still persist within the mainstream of contemporary architecture today.

Following this machine aesthetic, modernist designers typically rejected decorative motifs in design, preferring to emphasize the materials used and pure geometrical forms. In fact the supporters think that modernist design should reject the old styles and structures inherited from Ancient Greece or from the Middle Ages. The design emphasized simplicity and clarity of form. This approach created a housing environment which included open-plan interiors and avoided clutter.



As a modernist architect, Le Corbusier is a good example considering his architectural and urban proposals. He develops the ideal city proposals such names as contemporary city, linear city and radiant city utopians. These are the cities depending on geometry and machinery. Contemporary city is similar to vertical garden city that includes tall buildings and open green areas around them. This city is designed symmetrically and there are standard plot systems, 365m<sup>2</sup> in size. This is also the distance between bus and metro stops. The accessibility is provided by full straight paths. There is a strict differentiation between land uses such as work, residential, industry and social areas. This is zoning system. Around the buildings there are cafes, social activities, forests, agricultural areas and sport centers. There is no determined property and there is no area designed for an elite group. Radiant city is a reflection of independence. Also there is no class discrimination. UNITE is the basic standard unit and the size is determined related to family size. The city provides the organized development in parallel regions in linear form. Linear city have important transportation systems and these systems affects and directs the design. Administrative, commercial and industrialization areas are imported into design. University and green areas are the buffer regions. The functions are divided in terms of sitting, working, recreation and circulation. These functions are zoned and designed with typical architecture proposals. The style is functional, hygienic and rational.

Le Corbusier harmonized and lent credence to the idea of space as a set of destinations which mankind moved between, more or less continuously. He was therefore able to give credence and credibility to the automobile (as a transporter); and most importantly to freeways in urban spaces. His philosophies were useful to urban real estate development interests in the American Post World War II period because they justified and lent architectural and intellectual support to the desire to destroy traditional urban space for high density and high profit urban concentration, for both commercial and residential uses. Le Corbusier's ideas also sanctioned further destruction of traditional urban spaces to build freeways connecting this new urbanist approach to low density, low cost (and highly profitable), suburban and

rural locales which were free to be developed as middle class single-family (dormitory) housing(Wikipedia.com).

In Le Corbusier's plan including suburban and rural areas, and urban commercial centers connectivity between isolated urban villages created for lower-middle and working classes and other destination points, was missing with regards to the scheme of movement . This was because as designed, the freeways traveled over, at, or beneath grade levels of the living spaces of the urban poor. The projects and their areas, having no freeway exit ramps, cut-off by freeway rights-of-way, became isolated from jobs and services concentrated at Le Corbusier's nodal transportation end points. As jobs increasingly moved to the suburban end points of the freeways, urban village dwellers found themselves without convenient freeway access points in their communities and without public mass transit connectivity that could economically reach suburban job centers (Corbusier, 1987). Le Corbusier thought that buildings should function as machines for living in.

Le Corbusier also revised the approaches to the problem of slums. Le Corbusier sought efficient ways to house large numbers of people in response to the urban housing crisis. He believed that his new, modern architectural forms would provide a new organizational solution that would raise the quality of life for the lower classes. These were social projects which appealed to many people to live in. In plan details, there were large blocks of cell-like individual apartments stacked one on top of the other, with plans including a living room, bedrooms and kitchen, as well as a garden terrace.

This design was used for houses in the city too. In 1922, he presented his scheme for a "Contemporary City" for three million inhabitants. The centerpiece of this plan was the group of sixty-story, cruciform skyscrapers; steel-framed office buildings encased in huge curtain walls of glass. These skyscrapers were set within large, rectangular park-like green spaces. At the center there was a huge transportation hub, which on different levels included depots for buses and trains, as well as highway intersections, and at the top, an airport. He had the fanciful notion that commercial airliners would land between the huge skyscrapers. Le Corbusier

segregated pedestrian circulation paths from the roadways and overvalued the use of the automobile as a means of transportation. As one moved out from the central skyscrapers, smaller low-story, zigzag apartment blocks housed the inhabitants. Le Corbusier hoped that politically-minded industrialists in France would lead the way with their efficient Taylorist and Fordist strategies adopted from American industrial models to reorganize society.



Figure 1 : Le Corbusier - Plan Voisin for Paris ([www.wikipedia.com](http://www.wikipedia.com))

In the 1930s, Le Corbusier expanded and reformulated his ideas on urbanism, eventually publishing them in *La Ville radieuse* (The Radiant City) of 1935. Perhaps the most significant difference between the Contemporary City and the Radiant City is that the latter abandons the class-based stratification of the former; housing is now assigned according to family size, not economic position.

After World War II, Le Corbusier attempted to realize his urban planning schemes on a small scale by constructing a series of "unités" (the housing block unit of the Radiant City) around France. Le Corbusier was very influential in the sphere of urban planning, and was a founding member of the Congrès International d'Architecture Moderne (CIAM). Le Corbusier described the city of the future as consisting of large apartment buildings isolated in a park-like setting on pilotis (Corbusier, 1987). Le Corbusier's theories were adopted by the builders of public housing in Western Europe and the United States. The large basic structures in

cities, but not 'of' cities, have been widely criticized for being boring and unfriendly to pedestrians.([www.wikipedia.com](http://www.wikipedia.com))

Le Corbusier was heavily influenced by problems he saw in industrial cities at the turn of the century (that is, from the 19<sup>th</sup> to the 20<sup>th</sup> century). He thought that industrial housing techniques led to crowding, dirtiness, and a lack of a moral landscape. He was a leader of the modernist movement to create better living conditions and a better society through housing concepts. Ebenezer Howard's Garden Cities of Tomorrow heavily influenced Le Corbusier and his contemporaries.

Modern city is against the disintegration and isolating (Tonkiss, 2005). There is space for public in modernist city and modern town planning and design is related to public design. The citizens can visit all the physical space. These are the common places that people show similar character. The city shares identity and belonging. In modern city there is sociality form which makes the space. Jacobs (1961) identifies the importance of social interaction on physical fabric. The design has to provide harmony for mobility and fluidity of use. There are common uses for citizens. To exemplify, in the modern town with public design there are social housing and less imaginative tracts of commercial and suburban development.

However the zoning system creates problems in mobility in strict uses. Zoning separates different uses and remove social life from street and enclose it within the precinct. The housing development areas become dorm towns and the centers lose livability at nights. Additionally, the over design on common identity and minimizing variety create problem in spatial space. This uniformity fetishize quite standart distinction. There was strict visual and social uniformity there is already no diversity. The monotony dominances space. The variety loses and a fetish model become dominant. Separated housing areas generates own identity and move away from other housing groups. The absence of public environment between each housing area creates the problem of gated communities. Around the edge of cities, such residential streets can appear. Such settlements include various shared

amenities with a park or other common area development, but they are distinct from intentional communities. On the other hand, mass housing projects of mid-century urban planning are middle class apartment buildings endowed with uniformity and fragmentation of social and spatial relations. In a determined area, the houses are same and the social character of the people living there are similar. So this similarity in many cases results in monotony and strict similarity.

Creating such a similar and perfect harmony in a place needs comprehensive design for area. In modern design for towns includes that total plans and considerations. In fact, from 1920s to 1950s modern architecture and comprehensive planning survived under the same roof. State dominated as the owner and controller of space and supplier of finance. In this way, social needs and control on development can be provided. Planning principles pressed for control over land, provision of social facilities, separation of functions, while architecture ran after functionalism, standardization and rational production of buildings. (Günay, 1999) in functionalist way architects design a building based on the purpose of that building and building's size, massing, spatial grammar and other characteristics are driven solely by the function of this building. Standardization or standardisation is the process of developing and agreeing upon some technical standards. A standard is a document that establishes uniform engineering or technical specifications, criteria, methods, processes, or practices. This standard determines controls all development. The buildings are built after a long research, discussions and conceive which makes the production rational.

Modern way of building production had been specific and precise. The way of presentation was simple and all was for the supply of the need. A space for social activities had also been created for all public. The distinction was prevented with common area designs (Günay, 1999). According to Lefebvre (1994:82-83) any space implied, contained and dissimulated social relationships. A space was not a thing but rather a set of relations between things (objects and products). In other words, space was a social relationship. Therefore, such a modern space provides similar

opportunities for all people. Minimized distinctions encourage the integration between bodies (Günay, 1999).

Starting from the question of how can the design of modern housing can be successful, Peter Rowe explored (1993) the social, cultural, and expressive history of housing at two crucial moments: the first large-scale developments along modernist lines in the 1920s. Second, the widespread reconsideration of modernist principles in the 1970s. Although the inquiry was conducted along historical and theoretical lines, it proposed to uncover practical principles that would guide the design of modern housing, each principle responding to a contemporary architectural paradox posed by modern conditions.

In case of housing there are three more or less parallel themes concerning modernity. First technocracy and the attendant tendency of modern space to become universal rose while the experience of time was confined to the present. Second, was the problem of representation for a culture in which subject-centered reason had replaced metaphysical foundations. Third, social practices gave rise to urban concentrations and the production of mass housing on an unprecedented scale.

The high-rise public housing developments lasted only from the mid-1950s to the early 1970s. Modernist planning of social housing in industrialised countries had been understood as a convergence of aspects such as the normalisation of residential environments, standardisation and the regulation of minimum standards and techniques of architectural mass production. All of these were conducted with the active intervention of the state in reshaping cities and towns (Rowe, 1993).

### **2.3.2. Modernisation Criticism**

According to modernism the city was a machine, with form following function and treated urban public space as an undifferentiated whole, with a concern for light and ventilation uppermost, and seen as decisive benefits for health. Social and psychological needs were generally avoided by the modernists, and therefore the function of public space was never fully considered. As such the larger areas of open

space found in many modernist projects typically had no prescribed social activity or function. These open spaces were also unconnected.

The result was vast expenses of space which could be left underused, only to be watched from the top of the high rise buildings or from car windows. Such space can be considered negative in that its role is entirely subservient to that of the buildings in which the life of the city is deemed to take place.

By contrast, positive urban space can be seen as a container of public life, which as the discussion has been dominant view of public space throughout history. Camillo Sitte can be viewed as one of the first critics of modern approach to city building. Sitte (1889) admired historic spaces for their random and artistic city aesthetic. He attacked the uniformity and the artless and dull character of modern city planning. His work had been an inspiration for future critics of the modular regularity of modernist city.

With reference to open space, Sitte criticises the power the engineer and hygienist in determining design; the tendency of open space to be the unconsidered remainder of a site after a building has been placed upon it, the unenclosed open nature of modern streets and plazas, and the regularity of spaces. The importance of Sitte's work is that many of his criticisms are still relevant to contemporary public space. (Bentley 1998) Sitte observed a convergence in urban public space designs that no longer has any link to the diverse artistic or cultural identity of man. Public space according to Sitte was too often an afterthought.

Contemporary critics, by contrast, have tended to focus on social critiques for the failure of modernist public space. Sennett (1990) like Sennett, acknowledged past civilisations, particularly the ancients with reference to participation in public life. He argued that modern public life is too personalised, and it is modern society's obsession with personalities that has created a society where the majority of people have no real public role.

Sennett blamed modernism for creating isolated, dead public spaces. He made the criticism of modern public space as being a space to move through rather than a place to be. He recognised that the city itself is an amalgamation of strangers. He observed that the stranger was a necessity of the city but the stranger himself was a threatening figure, and few can take pleasure in that world of strangers' which was the comopolitan city (Sennett,1990).

Many critics ascribe the failure of modernist space to the poor definition between public and private particularly with reference to crime. One of the most influential was the writer Jane Jacobs (1992) who blamed modernist urban design for disrupting stable social relationships. Thus her classic critique discussed public space with reference to safety on sidewalks and listed three qualities a public street should have for handling strangers.

First there should be a clear demarcation between what is public space and what is private space. Second, there must be eyes upon the street. The building on street should be equipped to handle strangers. Third, the sidewalk must have users on continuously both to add to the number of effective eyes on the street and to induce people in buildings along the street to watch the sidewalks in efficient numbers.

Therefore critiques of modernist urban space are numerous and diverse, and argue the movement led to a homogenisation of spatial types ignoring the social and psychological needs of an increasingly diverse city. The imposition of a uniform aesthetic vision produced a space that detached its users from history and culture. Urban public space was too often rendered as functionless while disrupting social relationships and creating suspicion of strangers within it. The fundamental impacts on design are related to use and viability of public space.

Jacobs (1992) rejected the modernist views that dominated urban planning and architecture in the 1950s-60s and constructed an alternative philosophy that values traditional neighborhoods and the role of the inner city. Proponents of her view believed that urban villages provided a viable alternative to the negative social



characteristics that characterize modernism in cities, such as freeways and high-rise estates.

Another strong impetus for urban villages has been growing dissatisfaction with urban sprawl that characterized the development of many cities since World War II. Urban villages were seen to create self-contained communities that reduced the need to travel large distances and reduce the subsequent reliance on the automobile. The decline of harmful industry and the emergence of the service economy allowed the integration of employment and residential activities for the advantage of residents. This was in contrast to the single-use zoning that helped to stimulate urban sprawl during the industrial era. Through more consolidated development, urban villages could reduce the interference of urban growth on the countryside. These environmental consequences of urban sprawl started to dominate discussion promoting urban villages in recent years.

Urban villages were widely seen to provide a solution to the failure of community that was often associated with modernism and sprawl. The concept used the social and physical morphology of the traditional rural village as an inspiration for creating better functioning communities. The urban village movement had been influenced by Ebenezer Howard's Garden City ideals which also emphasized environmental determinism in relation to community. Urban design elements such as public space and pedestrianization were employed to facilitate the development of community by encouraging human interaction. This philosophy shared many attributes with the new urbanism school of thought.

### **2.3.3. Mass Housing**

Mass housing is a housing settlement which is built on a determined plot referring to environment with planned socio-physical infrastructure and. They are mostly high storey blocks (Anon, 1990).

According to Sarisözen() mass housing concept includes the meaning of integration between many housing units, social institutions and housing variety in new city

parts. However, all of these settlements have a common aim which is providing housing as a whole. Additionally, mass housing aims to supply the sheltering need with commercial, education, green area, health and similar uses in the settlement patterns.

On the other hand, Turkish Language Institute (TDK) defines mass housing as it is the total of houses which is encouraged in terms of credit and assistance by state in previously planned settlement areas ([www.tdk.gov.tr](http://www.tdk.gov.tr)).

The mass housing enterprises particularly became popular in suburbs around city center in last 20 years since the credit mechanism has been desirable and the central areas' chaos such as traffic, noise and security.

This form of dwelling today is representative of our daily life and it is reflection of the ordinary and the normal. It is the form that conforms to a invented restricted world. It is a way of sheltering a large number of people. It awakens the opposition of the public. The relationship between people and matter which is what the town consists of and unity of man and matter.

As mass housing, public housing and social housing are used as terms of mass production of housing. They are also used for provision housing for citizens in big scales if there is high demand.

Public housing is a form of housing tenure in which the property is owned by a government authority, which may be central or local. Social housing is an umbrella term referring to rental housing which may be owned and managed by the state, by non-profit organizations, or by a combination of the two, usually with the aim of providing affordable housing ([www.wikipedia.com](http://www.wikipedia.com)). Public housing as a means of urban and industrial development and policies promoting higher levels of homeownership were closely interconnected in the post-war period (Mar, 2003) Mass housing is a tool for functionalist approach of housing supply. The term used for mass housing construction but Le Courbisier refered to dwelling as a machine

that could be designed according to a strictly personal definition of functions (Habraken, 1972).

Although there are social and economic concerns, there have been design criticisms about mass housing (public housing areas). First, the inhabitants of mass housing can not possess their town. They remain lodged in an environment which is not a part of themselves. The form conforms to an invented restricted world. Mass housing is a universal way and the fact that in housing the whole society the involvement of the individual is deemed to be undesirable (Habraken, 1972) .

As a result of large scale building construction and the current interest in planned communities and new towns, bigger and bigger sites are developed. Therefore, this side of planning deserves a special consideration. At the outset, it is necessary to distinguish between composite sites and single sites. Composite sites consist of numbers of parcels that are usually sold and developed as separate projects that may or may not be part of a coordinated design. Single sites are planned and built according to a coordinated site plan. There is not always a clear-cut distinction between these two types of developments. - In either situation, one of the most desirable attributes of a site is its variety and contrary to this the least desirable characteristic is monotony. Even though great care may have been taken to develop a diversity of housing types and site details, a large site often seems monotonous just by virtue of size alone. To counteract this, it is possible to apply several design techniques. The shape of a site can be adjusted. The massiveness of a large site is disguised if its shape is irregular or narrow. This also avoids site development which looks the same from all directions. The visual fields can be broken up by taking the advantage of a site's natural amenities. Allowance for visual breaks and contrast is a vital factor in site design. Even when building designs must be repeated to hold down costs, as is necessary in the case of low-rent housing, scattering the units throughout a community rather than grouping them together, can reduce the dullness produced by masses of identical buildings. In terms of functionality and idealism, mass housing has modern architecture properties (Chiara, 1984; Habraken, 1972).

As criticised by Habraken (1972) the image of mass housing as a material form is extremely static and it is not fruitful way. Mass housing is a totality in which it is difficult to change any individual part. The imposed manner makes the environment strict and permanent. Today mass housing projects are the repeating the same unit as only a schema so defined as negative. In projects, the functionality and utilitarianism is dominant, the supply of physical need is considered. Function and technology forms the mass housing for modern designers. There is no cultural continuity. The designers put the typical units far from abstract meanings. (Başkaya).

According to Rapaport (1972), in western society the housing puts the identity of owner so it is a symbol. The owner after architect puts the personal desires and forms the identity. The modern housing can be revised with differentiated hopes of users. The users provides the personification and representation of own ideologies. But in the mass houses this representation is different and restricted. Human being provides cultural, technological or traditional meaning to his environment. Modern mass housing needs such a representation. The mass housing however ignored the personal and society identity with cutting off cultural continuity. In many cases, modernism differentiate from traditional and the identity appear in the different conditions.

Contemporary neighborhoods are open air exhibitions, sample cards of styles and personalities. The sitting of blocks contributes to this impression when they place themselves in the centre and demand that the pedestrian as in an exhibition. The image of mass housing city is a static one. Mass housing as a means of providing houses is necessarily restricted. The user cannot determine what has to be done in case they want to enrich their lives, raise their standards of comfort or establish their social position. Their dwellings will be replaced when only worn out. No new appearance, new technology, no amenities, no concept of living can have their effect on it without reconsidering the whole mass housing area as a new housing project. In the following sections examples of mass housing experiences from Vienna and Berlin will be examined.

### 2.3.3.1. Vienna

Some council housing estates were built in Vienna shortly after World War I. The Metzleinsthaler-Hof was designed by the architect Hubert Gessner. However, a comprehensive building programme could be started only with the help of the newly introduced housing tax. Contrary to the buildings of New Frankfurt, which first of all intended to maximize private areas of living, the socialisation of housing was emphasized in Vienna. Politicians stressed that the ‘liberation of housewives’ could be promoted through transferring household functions to the communal facilities. (Eve Blau, *The Architecture of Red Vienna*, Cambridge 1998). At the same time these communal facilities would demonstrate the superiority of a socialist city – the council housing estates comprising of all those social achievements which represented the difference to the nineteenth century capitalist city. An improved infrastructure, for example kindergartens, was also to the benefit of the residents of the surrounding area.



Figure 2 : Vienna social houses (deputy-dog.com)

The building programme of 1923 provided two types of apartments: The smaller apartment (35 m<sup>2</sup>) had one room, kitchen, anteroom, and toilet,; the larger one (45 m<sup>2</sup>) additionally had a small bedroom. Since 1925 these basic types were gradually enlarged up to 57m<sup>2</sup>, also most of the apartments were then equipped with balconies. Following the decision of the City Council in 1923 communal facilities were part of all estates. Meeting rooms, bath houses, kindergartens, educational workshops,

laundries, mother-and-child centres, health centres, special tuberculosis prevention centres, children's dentist, sports halls, libraries, cooperative shops, and the like were not only a compensation for the small apartments, but actually represented an important step of societal development in housing.

The style of Vienna public housing differed from new building in other European cities, notably in Frankfurt and Berlin. This phenomenon aroused a broad interest. In 1926 the German writer Ernst Toller described the Vienna housing projects as 'proletarian forms of culture' in contrast to 'bourgeois' German functionalism. Josef Frank, although the planner of several housing estates himself, called this form of architecture ironically *Volkswohnungspalast* (people's housing palace) and suggested a new 'proletarian architecture' instead. In the meantime Adolf Loos and other representatives of a more modern architecture designed functionalist blocks or stepped buildings with large terraces, but they were not successful.

The public housing built between 1973 and 1985 was a government funded 27-storey complex. Approximately 10000 low-income residents were allocated in this area. There was a remarkable amount of greenery. As it can be seen in Figure 3 as you can see, the blocks are topped with outdoor swimming pools (used regularly by 70% of the residents). Other facilities are indoor swimming pools, fitness rooms, solariums, saunas, tennis courts, schools, 2 medical centres, church, shopping mall, restaurants, 3400 underground parking spaces and a metro station. The complex even runs its own tv station .



Figure 3 : Vienna public houses after 1973 (deputy-dog.com)

### 2.3.3.2. Berlin

In 1930, Gropius implemented the ideas on a housing project in Berlin. Siemensstadt Housing Project aimed to prevent the loss of heat and a project according to climate conditions was prepared. This project on the other hand, shows a contrast rejecting the street form and excluding it. The rejection of street in this project is similar to mass housing developments in Turkey (Ersoy,2009).



Figure 4 : Berlin Mass houses

Another example Berlin Modernism Housing Estates consisted of six subsidized housing estates (Siedlungen) that testified innovative housing policies from 1910 to

1933, especially during the Weimar Republic. At this period the city of Berlin was particularly progressive socially, politically and culturally. The properties were outstanding examples of the building reform movement that contributed to improvements in housing and living conditions for people with low income through novel approaches to town planning, architecture and garden design. The estates also provided exceptional examples of new urban and architectural typologies, featuring brand new design solutions, as well as technical and aesthetic innovations.



Figure 5 : Berlin mass housing courtyard

Bruno Taut, Martin Wagner and Walter Gropius were among the leading architects of these projects which exercised considerable influence on the development of housing around the world.

Architects of the Classical Modernism responded to the lack of housing after World War I at the highest architectural level: modern, affordable flats with kitchens, bathrooms and balconies, in houses without backyards or side wings, instead providing light, air and sun in these six housing estates. The high-quality architecture, the language of the shapes, floor plans of the flats and urbanistic design of the estates became a role model for the entire 20th century. In 2008 corresponding to the UNESCO strategy to increasingly protect sites of the Modernism, these estates were declared as World Heritage.



Planning and construction of the housing estates marked a structural change in housing. It was only possible in this way as to the special political and social conditions during the years following World War I. As a counter-model for private-sector speculative building and its tenements, representation of a new architecture for a new society was needed.

Aesthetic perceptions of the avantgarde of arts and architecture were, therefore, linked with political left-wing social concepts. Trade unions, cooperative and municipal building companies became the main supporters of this constructed utopia. Today, a second change is taking shape. The public sector has been withdrawing from housing construction and sold flats to private tenants and investors. Once again, housing estates are becoming a model demonstrating how the maintenance of these emblematic historical buildings may be reconciled with the contemporary requirements for fittings and convenience (Wakermann, 1997).

#### **2.4.New Urbanism**

Neo-Traditional Neighborhood Design is a town planning principle that has gained acceptance in recent years as a solution to a variety of problems in suburban communities. Traditional neighborhoods are more compact communities designed to encourage bicycling and walking for short trips by providing destinations close to home and work, and by providing sidewalks and a pleasant environment for walking and biking. These neighborhoods are reminiscent of 18th and 19th century American and European towns, along with modern considerations for the automobile.

Over the last decades there has been a desire in many urbanized areas of the United States to create more “livable” communities. One direction of thinking in this “new urbanism” put forward the retrieval of traditionally styled land use developments. Within this neotraditional style of land-use, densely spaced residential

neighborhoods are integrated with areas of commercial office and retail businesses. One of the objectives of creating neotraditional neighborhoods is to develop self-sufficient communities in which people live, work, and shop within walking distance. While such land use is common in many large urban areas and rural cities, this type of combined land use is rarely seen in suburban communities. One effort to retrieve a more traditional style of land development has taken place in the City of Novi, Michigan (Wohlson, 1999).

These types of land use developments are desirable for several reasons. One of the benefits is a decrease in traffic demand resulting from the pedestrian oriented nature of the development. Neotraditional developments are also satisfying due to their convenience. The integration of residential and commercial land use into a single community allows residents to live in close proximity to places of employment, shopping, and entertainment. Neotraditional development projects often incorporate decorative enhancement features such as ornate street lighting fixtures, brick paver sidewalks and other land/streetscape amenities. These features allow the neotraditional community to introduce an ambience absent from most suburban communities (Wolshon, 1999).



Figure 6 : New Urbanist design-Lakeland Heights Village Center (002mag.com)

New Urbanism movement emerged in the late 1970s and early 1980s when the first debates about the shortcomings of the urban sprawl in American settlements

occurred. The first practiced planning with New Urbanism ideas was Seaside in Florida.

The leaders of the New Urbanism movement and the advocates of neo-traditionalism believe that the urban pattern presented by New Urbanism is more advantageous than the one in sprawling suburbs. According to them, New Urbanism produces higher sense of community, less travels by car, less environmental pollutions, etc. Therefore they claim that they have found a good alternative to urban sprawl. Numerous studies have been published on this issue. Of course the urban sprawl has its own followers. Thus a distinct result has not been concluded (Wohlson, 1999).

New urbanism is a design theory, practice, and movement aiming to restore principles of traditional neighborhood development (TND). Although new urbanist thought may influence urban design in established communities, its application lies in either building infill developments of a significant size and scale, or in building new planned communities on the land that hasn't been developed previously, the greenfields. .

A compact, mixed use neighborhood where residential, commercial and civic buildings are within close proximity to each other is proposed by New Urbanists. It is a planning concept based on traditional small towns and city neighborhoods. The variety of uses permits educational facilities, civic buildings and commercial establishments to be located within walking distance of private homes. A TND is served by a network of paths, streets and lanes designed for pedestrians as well as for vehicles. Residents have the option of walking, biking or driving to reach the places within their neighborhood. Potential future modes of transit are also considered during the planning stages (Wohlson, 1999).

Public and private spaces have equal importance, creating a balanced community that serves a wide range of home and business owners. The inclusion of civic buildings and civic space such as plazas, greens, parks and squares develops community identity and value. Such neighborhoods allow the efficient use of public

resources and can help preserve the historic and architectural character of the community.

A traditional neighborhood:

- Is compact with a discernable center;
- Is designed for the human scale with buildings placed closer to the street and a variety of gathering places.
- Provides a mix of uses, including residential, commercial, civic, and a variety of open space uses in close proximity to one another within the neighborhood;
- Provides a mix of housing styles, types, and sizes to accommodate households of all ages, sizes, and incomes;
- Incorporates a system of relatively narrow, shaded, interconnected streets with sidewalks, bikeways, and transit that offer multiple routes for motorists, pedestrians, and bicyclists and provides for the connections of those streets to existing and future developments;
- Retains existing buildings or creates new buildings with historical or architectural features that enhance the visual character of the community;
- Incorporates significant environmental features into the design;
- Reserves prominent sites and vistas for significant buildings or features
- Has an elementary school close enough so that most children can walk from their homes.
- Places parking lots and garage doors away from the fronts of the street
- Should be organized to be selfgoverning
- Is consistent with the community's comprehensive plan (Miskowiak, 2006).

When old neighborhoods are considered communities with houses close to the sidewalk, interconnected streets, and neighbors looking out for one another can be visualized. Residents could walk to school, the park, and the grocery store. Considering these. TND offers residents more choices in housing, commerce,

transportation, and recreational opportunities, while building a more socially cohesive and environmentally sensitive community (Miskowiak, 2006).

Contemporary development has shifted away from the historic pattern of residential growth occurring around a core center of civic buildings, public squares, and houses of worship. Communities are increasingly comprised of subdivisions isolated from civic and commercial activity. In place of the original grid of streets upon which American communities were established, most new developments have one or two entrances, and their streets end in cul-de-sacs. Although some homebuyers will continue to prefer separate, homogenous subdivisions, the market has not yet realized the potential of offering the alternative of Traditional Neighborhood Developments.

In 2005 Congress for the New Urbanism participants generally pointed out the importance of the following:

- A discernable center: helps maintain a “sense of place” and serves as a potential transportation node for transit
- Most dwellings within a five-minute walk of the center: enables residents to use non-motorized transportation to access central amenities
- Variety of dwelling types, such as townhouses, single-family houses, and apartments: provides housing opportunities for people of all demographics (younger, older, kids, no kids)
- Shops and offices at the edge: provides easy access to work and other essential activities
- Small playgrounds close to dwellings: promotes recreational and community-building opportunities
- Small ancillary buildings permitted in back of houses: provides space for rental housing (e.g. for students or elderly) and small offices
- Schools within walking distance: promotes active living opportunities for children while reducing traffic and air congestion
- Streets connected by a network: decreases traffic congestion

- Street trees and narrower streets: slows traffic and creates a more pedestrian- and bicycle-friendly scale
- Parking lots and garage doors are put at the rear of buildings, often on alleys: promotes a pedestrian scale and cohesive street aesthetic ([www.vtpi.org](http://www.vtpi.org))



Figure 7 : Streetscapes ([www.jameshardie.com/](http://www.jameshardie.com/))

Though new urbanism is also intended for cities cut to pieces by highways, it is more the planner's answer to suburban sprawl and the breakdown of community caused by a post-World War II obsession with the automobile. Apart from nearly total dependence on the car, the typical suburb, with its looping or dendritic street pattern and dead-end cul-de-sacs.

New urbanism combines aspects of 18<sup>th</sup> and 19<sup>th</sup> century American and European towns with modern considerations, including the car. Though most of the architecture so far has been traditional, any vernacular architecture is also possible. Neighborhoods should overlap at their edges to form larger developed areas, interconnected by streets, public transit, and bicycle and footpaths. Regional mass transit and superhighways enable workers to commute to remote job centers (Post, 1994).

## **2.5. Neighborhood**

The definition of neighborhood is one of residential perceptions. They are normally residential areas of distinctive identity, often distinguished by name, bounded by recognisable barriers or transition areas such as railway lines, main roads, parks, age or character of building (Barton, 2003). They have often a primary school and local shops.

The concept of planning neighborhood as identifiable segments of cities is not new. A notable pioneer advocate of this idea was Ebenezer Howard with Garden Cities of Tomorrow 1898. The town of Letchworth was designed and built in 1903 as new town center with residential neighborhoods (Anderson,2000).

The neighborhood unit is defined as a residential area in which elementary school, size limited in population and in size of walkability, boundaries are defined, there are variety in houses, slow traffic, commercial nodes and employment in itself. Neighborhood increases social contacts that reduce the personal atmosphere in cities (Anderson,2000).

Neighborhood is essential to identify (Chiara, 1984). The following definitions are made by Chiara;

1. Cluster is outside of the family, this grouping of several dwelling units forms the most intimate of associations. There is a strong personal identification among all individuals. Physical proximity is an important element.
2. Apartment building contains several clusters. It can support a wider range of facilities. Personal identity and close proximity are significant in this relationships.
3. Complex of apartment buildings are the grouping that becomes larger, relationships are more selective and based on special interests. There is less personal contact and physical proximity.

4. Hamlet or cluster of blocks are similar to a neighborhood, except in number. It contains a wide range of families. There is limited personal contact and a wider assortment of facilities.

5. Cluster of blocks is in this imaginative design for a luxurious vertical neighborhood. All ground floor area is for use of all tenants, including the enclosed first floor of the apartment units. In the plot for four of these apartment units, communal land is subtended into parks and play areas and fenced by parking areas down the long sides of the rectangular plot. Short ends are fenced with tennis courts. The architects of this apartment type also gave deep and obvious attention to the more intimate undertow of family life, in addition to the community life of the ground level, and the intermediate porch life on the terraces adjoining the sidewalks in the sky.

6. Single neighborhood is the complex which is sufficiently large to support an elementary school, local shopping, and a range of recreational facilities. It is small enough to identify with personally yet large enough to sustain a variety of interests and friendships. It is a major planning tool in organizing larger physical areas.

7. Cluster of neighborhood contains an adequate number of people to support a full range of educational, social and economic facilities. It may be considered as a small town or village (Chiara, 1984).

In this study Chiara's definitions direct the analysis that from the scale of apartment, cluster and neighborhood.





Figure 8 : Residential Street - Mansfield ([www.smartgrowthformansfield.org](http://www.smartgrowthformansfield.org))

Neighborhoods are common and accessible areas. They create or strengthen connections and relationships. As units, apartments are more secure with storeys in neighborhoods as they control the entrance and prevent random entrances (Alexander, 1977).

For neighborhood areas the legible and controllable elements are important for more secure settlements. The open areas should be seen and controlled by people from houses. The undefined areas are not secure. For Lynch, Legibility provides "...the ease with which its parts may be recognised and can be organised into a coherent pattern." (Alexander, 1977)

Neighborhoods create their own energy and character. People need an identifiable spatial unit and belonging. The size is determined by people approximately 3 buildings around their building. This small environment sometimes larger creates own identity and people own it. Boundary zone has own meeting places, functions, life style in itself (Alexander, 1977).

In neighborhood environment the traffic is thought at minimum since the traffic diminishes the people relations. The minimum disturbance is better for secure and composed living area (Alexander, 1977).

This disturbance can be made by designed parts. The comfortable and secure environment is provided by defined common and private areas. The hierarchy and transition encourages security and integration. This can be exemplified by cluster designs in housing settlements. People do not feel comfortable if houses do not form a cluster and with public land jointly owned by householders. (Alexander, 1977)

In a preliminary study made in 1926 and in a report published by the committee on the regional plan of New York and its Environs in 1929, Perry put forward this neighborhood theory. Its basic principles were:

1. major arterials and through traffic routes should not pass through residential neighborhood. Instead these streets should provide the boundaries of the neighborhood.
2. interior street patterns should be designed and constructed through use of cul-de-sacs, curved layout and light-duty surfacing so as to encourage a quiet, safe, low-volume traffic movement and preservation of the residential atmosphere.
3. the population of the neighborhood should be that which is necessary to support its elementary school.
4. the neighborhood focal point should be the elementary school centrally located on a common or green, along with other institutions that have service areas coincident with the neighborhood boundaries.
5. the neighborhood would occupy approximately 160 acres with a density of 10 families per acre. The shape would be such that no child would walk more than 0.5 mile to school.
6. the unit would be served by shopping facilities, churches, a library, and a community center located near the elementary school.

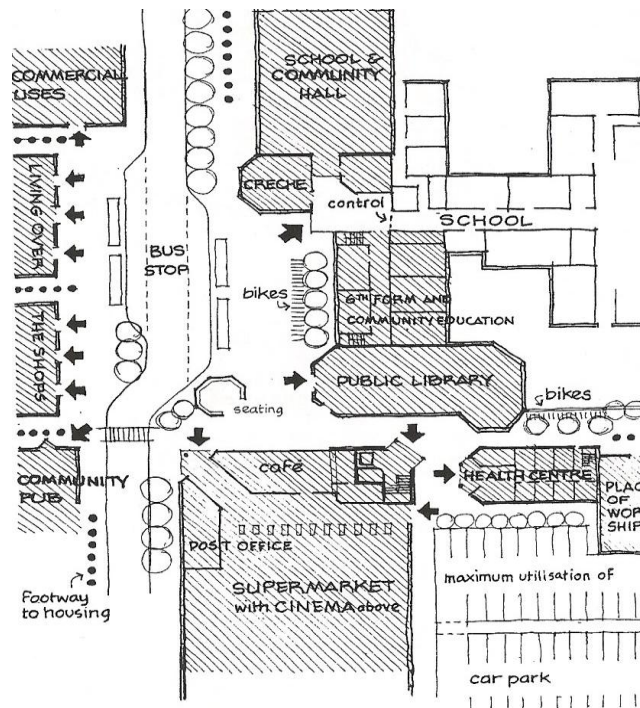


Figure 9 : Neighborhood center (Barton, 2003)

N. L. Englehardt has presented a comprehensive pattern of the neighborhood as a component of the successively larger segments in a city structure. The neighborhood unit includes the elementary school, a small shopping district, and a playground. These facilities are grouped near the center of the unit so that the walking distance between them and the home does not exceed 0.5 mile. An elementary school with a standard enrollment of between 600 and 800 students will represent a population of about 1700 families in the neighborhood unit. Two such units will support a junior high school with a recreation center in conjunction; the walking distance does not exceed 1 mile from the center to the most remote home. Four units require a senior high school and a commercial center. It will also be an appropriate size for a major park and recreation area. This grouping forms a community with a population. The component parts of this community pattern are integrated, and such communities may be arranged in whatever combinations the sources of employment and communication to and from them may require (Englehardt, 1927).

Ebenzer Howard puts the basic goal as to combine the advantages of town life with that of the country. He advocated the building of towns designed for healthy living

and industry of a size that makes a full measure of social life possible but not larger; surrounded by a rural belt; the whole of the land being in public ownership, or held in trust for the community.

The neighborhood is a residential area with homogeneous characteristics, of a size comparable to that usually served by an elementary school. A typically ideal neighborhood for planning purposes would be 6000 to 8000 people (Chiara, 1984).

Neighborhoods occur in various shapes and sizes. Population densities vary from a few thousand to many thousands per square mile, and there is also a wide variation in the numbers of children. Therefore, each neighborhood must be studied carefully. Because most residents live within a short distance of the school or playground, they walk to it and tend to use it frequently, often for shorter periods than in the centers planned for a larger geographic unit (Chiara, 1984).

On the other hand, the community is a section of a city, primarily a residential area. It usually represents the service area of a high school, contains a large business center, and commonly constitutes a section of the city measuring 2-3 miles across. It can be thought of as “a community of neighborhoods” because it is usually composed of three to five neighborhoods. Consequently, the population varies, but on the average is 3 to 5 times that of a neighborhood, or from 20000 to 40000 people. It may have a less pronounced homogeneity than the neighborhood but should not be so dissimilar as to make unified planning impossible. If the dissimilarities are pronounced, the community may need to be subdivided for planning (Chiara, 1984).

The area designed as the city, town, borough, or village lends itself to the provision of areas and facilities for use by the entire population of the political subdivision. Major parks, golf courses, camps, museums, and botanical gardens, which cannot be provided in each neighborhood and community, are typical citywide areas. In small localities comprising one community and with a single high school, citywide

planning is largely comparable with planning for a single community as described above, although some facilities commonly provided in larger citywide areas are included. School districts vary widely in size and population, but districtwide school planning involves primarily neighborhoods and communities. Some of the large school districts provide districtwide facilities for an outdoor education-recreation complex, interscholastic activities, consolidated educational programs, and some type of post high school center or community college for day pupils (Chiara, 1984).

In the United States The country or the region which is a geographic area that sometimes includes parts of more than one county, is increasingly used as a unit for planning. Many such planning units are located in close proximity to a metropolitan city and include both the city and the surrounding region. Others are primarily rural in nature and are composed primarily of unincorporated areas. Planning on a regional or district basis lends itself to the provision of extensive properties usable for family outings, winter and water sports, and other activities requiring large land and water areas. Since these properties are distant from dense population centers, people require transportation in order to reach them and consequently tend to use them less frequently but for longer periods than is true of the areas in the smaller planning units. The increase in statewide planning makes it important that plans developed for smaller geographic units take into account existing and proposed facilities for statewide use (Chiara, 1984).

Even though area and facility planning is done for various geographic units and political subdivisions and involves a great variety of school and recreational properties, there is a relationship among the resultant plans. The areas and facilities provided in one unit or subdivision often influence the need for them elsewhere. Areas and facilities in the larger units supplement those in the smaller ones and are used by the people living in all these subdivisions. Therefore, cooperation among the agencies involved in planning at different levels is essential in order to achieve coordinated programs (Chiara, 1984).

Visual aspects, the causes of building in deteriorated condition, overhead wires, signs, poor landscaping, poor maintenance result in bad scene for area. They create nuisance and may depreciate property value. The solutions can be provided by the use of landscaping as barrier, good building and property maintenance, sensitive selection of advertising graphics, concealment of utility lines, high standard of landscaping (Chiara, 1984).

Neighbourhoods are often social communities with considerable face-to-face interaction among members. Neighbourhood and community characteristics influence health, education, employment and other quality of life outcomes. The characteristics of neighbourhoods that appear to be most closely associated with these outcomes include neighbourhood institutional resources (child care, schools, health care, recreation, employment, etc.), neighbourhood relationships (parental, friends, community support) and neighbourhood norms and collective attitudes (community efforts to support healthy growth and behaviour) (Moloughney, 2004).

Neighbourhoods have several advantages as areas for policy analysis as well as an arena for social action:

1. Neighbourhoods are common, and perhaps close to universal, since most people in urbanised areas would probably consider themselves to be living in one.
2. Neighbourhoods are convenient, and always accessible, since you are already in your neighbourhood when you walk out your door.
3. Successful neighbourhood action frequently requires little specialised technical skill, and often little or no money. Action may call for an investment of time, but material costs are often low.
4. With neighbourhood action, compared to activity on larger scales, results are more likely to be visible and quickly forthcoming. The streets are cleaner; the crosswalk is painted; the trees are planted; the festival draws a crowd.
5. Visible and swift results are indicators of success; and since success is reinforcing, the probability of subsequent neighbourhood action is increased.

6. Because neighbourhood action usually involves others, such actions create or strengthen connections and relationships with other neighbours, leading in turn to a variety of potentially positive effects, often hard to predict.

7. Over and above these community advantages, neighbourhood activity may simply be enjoyable and fun for those taking part (Moloughney, 2004)..

But in addition to these benefits, considerable research indicates that strong and cohesive neighbourhoods and communities are linked –quite possibly causally linked – to decreases in crime, better outcomes for children, and improved physical and mental health. The social support that a strong neighbourhood may provide can serve as a buffer against various forms of adversity.

Various disciplines have formulated theories of neighborhood. Concepts evolved since the end of the 19th century and some claim that neighborhood is an American invention. Conceptualization of neighborhoods corresponds historically to significant population growth and increases in the size of urban agglomerations, which precipitated the stratification of urban residents into relatively homogeneous groups at social and spatial levels. It is also related to the modern phenomenon of spatial division between residence and work, which leads to the social status-, rather than work-based, layering of urban societies—to the extent that, today, the term neighborhood is often used for areas whose sole function is residential.

Scholars in the social sciences now commonly consider a “multiplicity” of neighborhood definitions and numerous levels of influence on these definitions. First is the block face, or the area over which children can play without supervision. Second, the “defended neighborhood” is the smallest area possessing a corporate identity as defined by mutual opposition or contrast to another area. Third, the “community of limited liability,” is a district represented by a local governmental body, in which individuals’ social participation is selective and voluntary. And fourth, at the highest geographical scale, the “expanded community of limited liability,” covers an entire sector of the city. These scales combine neighborhood

geography and sociology, and thus help conceptualize different levels of interaction between neighborhood environment and behavior (Moudon,2006).

Neighbourhoods have generally relatively strong spatial connections towards the core but weak cross connections. Some areas, that geographically seem to be close to the city centre, prove to be segregated due to its spatial configuration; the design of the layout obstructs spatial integration, isolates the neighbourhood and efficiently impairs accessibility. The integration analysis reveals that both vulnerable as well as affluent areas are found in segregated positions on a global level (Hanson 2000).

## **2.6. Modernism and New Urbanism in Design**

There are claims related to modernist and new urbanist views that both of them are integrated and answered each other's problems.

Modernism began as an idea to develop a new architectural solution that would integrate the traditional building needs with the needs of the new social demands of the expanding cities. The main premise was that architectural design and style could take advantage of the new technological possibilities that were starting to emerge. With the adoption of glass, steel, and reinforced concrete as new materials with the use of industrialized mass-production techniques, a new material and aesthetic vision of the future was created. This new view of architecture sought to simplify form in an attempt to reject classic ornamentation and decoration to stay true to the new materials and allowing form to follow function. Le Corbusier, the visionary of this new architecture, liked to say, a house "is a machine for living in." The goal was to create a house which would be a "machine for the inhabitant," and thus as beautiful and as functional as a machine.

He wrote too about a new idealism that was to bolster an expanding definition of modernism: "form follows function," classic architecture gives way to "democratic architecture," and standardization and simplicity. For example, the new ideals addressed how there should be no more congested streets and sidewalks; and no more untidy neighborhoods; and that inhabitants in cities should be living in



hygienic, regimented high-rise towers, set far apart in a park-like landscape. Le Corbusier's manifesto on Radiant City (La Ville Radieuse) added the feature of design for a rational city which should be separated into discrete zones for working, living, and leisure. Most importantly, there should be large complexes, meaning, big buildings, big open spaces, and big urban roadways.

Today, the new urbanist designers attempt to recapture the territory of modernism as if it were something new that has never been seen before. The new urbanism vision of architecture starts with the most basic ideas of modernists, the use of technology to improve living conditions, the use of easily walkable distances between buildings and transit, the inclusion of both public spaces and green spaces and the inclusion of a variety of housing types that can allow for people with a broad range of incomes, ages, and family types to all live within a single neighborhood. The ever improving technology, the glass, steel, and reinforced concrete that were used so heavily by the early modernist have been replaced by the newest, most innovative products made from recycled and sustainable materials. The Congress for the New Urbanism defines its movement according to elements that need to be present for a neighborhood to be authentic. These elements define thirteen principles of planning and architecture that need to be coordinated to create human-scale, walkable communities. The neighborhood needs to have a discernible center, with a square or a green space that is used as a community focal point and gathering place, and most of the housing needs to be within a five-minute walk or less of the city center. Like the modernist grid, the relatively narrow streets of the new urban neighborhood need to form a connected network. These streets also need to be shaded by rows of trees. The narrow streets need to influence slow traffic flow, thus making the streets suitable for pedestrians and bicycles. Pedestrian and vehicular traffic needs to have a variety of routes to any destination within the community.

There are several approaches to this work: urban retrofits, infill projects, transit-oriented development, and suburban transformation. The architects, who are working with urban planners, are thought to include both traditionalists and modernists. What draws them together is the vision to stop urban sprawl and the

belief that traditional neighborhoods can restore their vitality by focusing on needed functions and the sustainability of these functions in their immediate community. The current trend in this decade is to "reconsider the failing single-use housing projects, large car-dependent thoroughfares, and segregated commercial centers that had become the 'norm' of civic planning and zoning thought." One of the examples frequently featured as a success new urbanism development is Seaside in Florida. This community, within ten years, became internationally famous for its architecture and quality of its streets and public spaces. The town plan was designed by architects/new urbanists Andres Duany and Elizabeth Plater-Zyberk. The key intent of new urbanism or also referred to as "traditional neighborhood development" is to encourage the return of nineteenth-century planning principles in order to return to design that fosters a sense of community. Seaside is a classic example of the thirteen elements and then even additional elements. This model requires complete integration of the development: all structures fan out from the town center which is a square; shops and offices are located at the edge of the neighborhood, and shops are varied to support household needs; schools are located within one mile of all residences; small playgrounds are within one-eighth of a mile from all dwellings; streets are laid out in a network so that there are alternative routes (no cul de sacs); buildings are close to the street; waterfront access and views for all town residents; architectural variety exists with designs from all architectural periods; front porches are set back about 16 feet behind required fences; and etc. Much like the modernist, Corbusian utopia had its critics, so too are there critics of neighborhood community like Seaside.

The new Urbanism and classic modernism have many things in common: their innovative use of materials, their response to traditional building needs with the needs of the new social demands of the expanding city or town; and a social responsibility to the residence of these new communities for restoring the urban fabric of human relationship within their immediate political and socio-economic environments. The difference comes in the one thing that makes new urbanism work where modernism failed -- community involvement in the governance and maintenance of the community. The new urbanist community does not rely on city, state or

federal government bodies to sustain it. However, it can be questioned as to whether or not cities and towns can actual be created by the architects and commuity planners without investing in the institutions within the community that embody the political, cultural, religious, and socio-economic practices mores of the residents. And then, when interacting with these new urbanists, who is to say what influence the most vocal and/or affluent residents will advocate when the destiny of the community is at stake. Again the critics of new urbanism suggest that the politics of the right and the left could interfere with the basic design principles (Slotdog, 2006).

It has been said that Le Corbusier's model of modernism is still a formidable influence in architecture of our time, as addressed in the new urbanism literature. To Le Corbusier, architecture goes beyond utilitarian needs. For him, this means that it is not such the employment of stone, wood, and concrete from which houses are built but that is construction. This is ingenuity at work. Architecture is in the beauty of that construction and this is where art enters to influence the form that follow function. Today, the new urbanist remark that it is the ingenious urban planner that brings humanity into the architectural design.

## **CHAPTER III**

### **DESIGN GUIDELINES**

In this chapter the aim is to formulate the criteria for analysis in order to discuss the four cases in Düzce. As mentioned in the introduction this master thesis attempts to clarify the design problems in mass housing areas in Düzce and a spatial analysis of mass housing areas in two scales;

1. within entire city
2. within the clusters of mass housing areas.

Therefore the criteria for analysis will be formulated for these two scales.

#### **3.1. Analysis between cluster and city**

The first scale of spatial analysis covers the problems related to mass housing areas considering urban design concepts such as macroform expansion, urban sprawl and accessibility to define integration with the city.

##### **3.1.1. Integration**

The objective of an integrated process is to create places that are physically, socially and economically dependent. Away of revealing these interdependencies and relationships is establishing virtuous cycles. For example, connected streets encourage walking, which improves health, creates active streets, and reduces pollution and energy consumption. Likewise, green spaces can provide leisure facilities, and landscape can modify microclimate as well as creating wildlife corridors. Design responses to objectives such as better health, higher productivity and lower emissions can overlap, becoming mutually supportive. The relationships between the elements of the built environment are complex. The initial task at the design stage is to identify the most important relationships for a particular situation.

These should be considered in the masterplanning process. There are a number of new ways of modelling energy and resources. Spreadsheets and computer models are being developed to help this process (Integrated Design, 2008).

Delivering growth with an integrated network of through routes requires looking not only outward to the wider network but also inward to the design of the through routes. Urban design is the context for highway design and engineering. To be successful, such routes must fulfil several different roles, accommodating transport, vehicular traffic, pedestrians and cyclists, and achieving the wider aims of urban design. It is essential to engage in early partnership working between the urban design, planning, highway engineering and transport providers to coordinate efforts, and achieve a balanced and effective solution (Integrated Design, 2008).

The changing structure of this multi-fragmented and elaborate urban space created urban polarisations. This process that caused increasing fragmentation and disintegration inevitably led to debates on urban projects as tools (Özaydın,2006). The housing projects are some of these projects.

As public and private spaces each part exists in an effort to integrate to the whole with its own social and physical formation and transformation. The ontologic link between the parts and the whole is that they should be handled not only as geographical disintegrations but through the disintegration in the community, space and time in the social organisation (Çınar, Çizmeci, 2003). In this process, the city image can be dealt as a whole such as the “figure” in diversified relations with the “environment”. The urban figure lives and grows in an organised manner. It has a certain order and a mutual structural dependence both in the functional and symbolic sense is created among its parts (Mazzoleni, 1996).

Urban projects mostly residential projects have a serious role in urban integration and/or disintegration especially in metropolitan areas. If urban integration is to be achieved, just as we need to creation of variety in unisolated public areas for common use is needed and these have to be considered as a vital part of the urban

fabric. Urban projects will have positive contributions to the metropolis if they do not remain within a limited project designing understanding, have a long term development vision put forth by wide scope planning behind the logic of transformation, have a function relating to urban development behind pretentious presentations, are not considered as an area of consumption that has powerful attraction and high political returns (Özaydın,2006).

As the negative effects of urban sprawl are mainly felt elsewhere, such as in the neglected urban core, or on the congested freeway, developers and those living on the urban fringe appear to get the best of both worlds: enjoying all the benefits of their large residences and socially homogenous neighbourhoods, while not having to deal with any of the negative effects that sprawl may cause. (The negative effects of sprawl will be discussed in more detail in the next section). The lifestyle choices of the general public, especially those who can afford to live on the attractive urban fringe, have proven to be very enduring.

Social and economic processes are taking place on an ever-larger geographical scale, in which suburban areas increasingly emerge into local centres that develop their own economic activities and because of this start competing with the original urban core (Garreau, 1988). The result is the development of cities with multiple centres, or polycentric cities. In a polycentric city, commuting is no longer centralised but instead it is reciprocal in the sense that flows are directed not only from the suburbs to the urban core but also from the urban core to the suburbs. The spatial range of functional relations corresponds to commuting and firm-relational flows that remain within the urban region. Flows of goods, services and people become decentralised as the number of workers commuting between suburbs and bypassing the old urban core increases (crisscross relations). More specifically, economic complementarities within the daily urban system (DUS) arise, where one location may be regarded as „central“ in terms of one particular function while other places might be central in terms of other functions (Oort, 2009).

Inter-urban relations refer to relations between core and peripheral districts in different urban regions. As catchment areas of different cities start to overlap, individual metropolitan areas lose significance as independently functioning daily urban systems and could instead be perceived as forming parts of an *urban network*. Much of the current literature is focused on this development -that is, the development of the Polycentric Urban Region (PUR). The PUR can be represented as an urban network of historically and spatially separate metropolitan areas comprising a larger region (Bourne and Simmons, 1978; Meijers, 2007). These metropolitan areas can be network-cities themselves, but this is not necessarily the case (i.e., the Urban System can be dominated by a polycentric structure at the inter-urban level and a monocentric structure at the intra-urban level or vice versa). Likewise, urban network formation on the inter-urban level is not necessarily the next evolutionary step after the (intra-urban) network-city (Parr, 2004, Graham and Marvin 2001).

### **3.1.2. Urban Sprawl**

There are many characteristics that can be associated with the term 'urban sprawl', although there remains debate in the planning literature with regards to the development of an exact definition for the term, and disagreement whether particular urban forms should be categorised as urban sprawl or not. According to Gillham (2002) there are four main characteristics of sprawl, which mirror the earlier definition given by Nelson et. al. (1995). These characteristics are leapfrog or scattered development, commercial strip development, low density, and large expanses of single-use development. Leapfrog and scattered development go beyond the urban fringe to create built-up communities that are isolated from the city by areas of undeveloped land. In many ways these can be seen as the most extreme examples of urban sprawl, with a highly inefficient use of the land, and a greater need to build highways and other infrastructure to service the outlying areas. Leapfrog development can be distinguished from 'satellite towns', a similar type of development beyond the urban fringe, by the former's much lower density and once again the almost exclusive reliance on the automobile as the method of transport for

those living in such areas. ‘The result is a haphazard patchwork, widely spread apart and seeming to consume far more land than contiguous developments’ (Gillham, 2002: 4), and even though the open tracts of land are usually filled in eventually, leapfrog development remains an inefficient use of land (Arbury).

In addition to those elements of sprawl, a lack of public space is a characteristic that truly identifies a ‘sprawled’ community from one that is not. As Gillham (2002: 7) elaborates, urban sprawl is distinguished by ‘...an unbroken fabric of privately owned land divided only by public roads. The major civic open spaces, parks and commons that grace many older urban-core areas can be few to nonexistent in much of the nation’s post-war suburban world.’ While this aspect of sprawl appears to have negative consequences for the city as a whole, it is important to remember that there are many positive aspects of urban sprawl, which have clearly contributed to its widespread proliferation. Burchell and Mukherji (2003) explain that urban sprawl has allowed people to gain access to less expensive, single family homes on large lots situated away from urban centres where there is widespread crime and poverty, while still allowing residents great freedom of movement, as the vast highway systems have been built to accommodate their automobiles. Indeed, it is very important to recognise that at the individual level, there are many benefits of living in a ‘sprawled’ community. Cities dominated by urban sprawl have enabled the fulfilment of many key goals both at individual and societal levels, such as ‘...the freedom to hold land, to live and travel wherever one pleases, to accumulate wealth, and to participate in a democratic government at both the local and national level. In many ways, suburbanisation is a celebration of individual freedom and wealth’ (Gillham, 2002: 69).

Herbert Gans’ account is that suburbs are not only residential areas, where the realized and sustainable homogeneity take place (Gans, 1995:182) He advocates those suburbs are an integral part of the city, not the autonomous units. Homogeneity is the characteristic point of all neighborhood units located in the “outer city”. The other characteristic point of outer city neighborhoods is uniformity. This “outer city” consists of different people who choose to live among



distinct neighborhoods on the basis of place, nature of work, income, racial and ethnic characteristic, social status, taste, preference and prejudice (Gans, 1995:18). Mike Savage and Alan Warde (1993:77-78) focus other perspectives on suburbanization. To the Orthodox accounts, the meeting of supply and demand for a particular type of housing and residential environment is represented the growth of suburbs. Because of the cheaper and more effusive land on the urban fringe, people prefer to live in there with reasonable priced, good quality of environment and special houses with gardens. Housing with a particular life style and market for housing are important tools of Weberian accounts.

### **Urban Sprawl with Mass Housing**

The mass houses develop on housing subdivisions that are large tracts of land consisting entirely of newly-built residences. Duany and Plater-Zyberk (1950) claim that housing subdivisions “are sometimes called villages, towns, and neighborhoods by their developers, which is misleading since those terms denote places which are not exclusively residential. They are also referred to as developments. Different from inner city developments these are newly emerging settlements. These huge lands only can be found in the periphery of the city. These developments in this way, are a way of urban sprawl. Under control or not, new emerging areas are added to city and accessibility and integration become the dominant problem.

In neighborhood design, sprawl can be formed by land-use pattern and density gradient. It should be better to devise and evaluate patterns of land-use intensity, relating these patterns directly to the accessibility and open space analyses, and distinguish four levels of intensity, for town centre: retail, leisure, business, civic and high density residential development, local high streets and environs: small-scale mixed uses with medium to high density residential development. Additionally, considering main networks of streets and routeways, it is supposed to devise the network of distributor roads on a modified grid basis that responds to the contours, ensures permeability, and gives natural centrality to town centre, plan the cycling and walking network using semi car free safe routes as well as the

distributor roads, ensuring permeability and Access to nodes, identify neighborhoods, based on historic associations when they exist or pattern of streets and catchment.

### **3.1.3. Accessibility**

Accessibility may vary considerably within a neighborhood depending on the distribution of retail and services relative to the population within and beyond the neighborhood. Therefore, it is important also to evaluate accessibility from different points or for different areas within the neighborhood. Residents also make use of activities outside of the neighborhood, not just those found within their boundaries (Clifton, 2001).

The housing development must have convenient routes of access to employment, shopping, institutional needs, and recreation. Location near major highways or public transportation is desirable. The three methods of Access are: walking, public transportation and private automobile. The transport support related to population levels, private parking, auto service station, public parking, public bus transport, taxi service, bus station are essential for settlements to 40000 people population (Chiara, 1984).

The simplest method of access to any facility would be by walking. Even though many facilities can not be located within walking distance, effort should be made to have as many as possible of the facilities used most frequently nearby. A variation of walking is the use of bicycles. This greatly increases the range of accessibility but is still highly economical in time and Money. Provisions should be made for the maximum utilization of bicycles within the housing development and the surrounding circulation network. This can be achieved by the use of special bike lanes parallel to the street or completely independent bikeways away from the vehicular traffic (Chiara, 1984).

Aside from walking, planners generally agree that mass transportation modes provide the most rational means of circulation within urban and suburban setting. This includes trains, buses, monorails, subways, minibuses, and many other variations. Public transportation is more efficient and can move greater numbers of people than any other means. Also mass transportation uses less land for right of ways and reduces air pollution in sharp contrast to the automobile (Chiara, 1984).

Currently the automobile is the most convenient way to travel. However, it is expensive and highly inefficient as a means of moving large numbers of people from their homes to work or other facilities. Automobiles require highways to get to a destination and once there need parking space. Both of these requirements commit large amounts of land that can be utilized more productively. Also, in recent years the automobile has become the major culprit in atmospheric pollution (Chiara, 1984).

As well as these accessibility is an important concept for urban planners because it reflects the possibilities for activities, such as working or shopping, available to residents of a neighborhood, a city, or a metropolitan area. Accessibility is determined by attributes of both the activity patterns and the transportation system in the area. The spatial distribution of activities as determined by land development patterns and their qualities and attributes are important components of accessibility, as are the qualities and attributes of the transportation system that links these activities, such as travel time and monetary costs by mode. Although most researchers agree on this general definition of accessibility, they have developed a wide variety of ways to measure it (Clifton, 2001).

### **3.2. Analysis within the cluster**

In the second scale of the spatial analysis in this thesis, the spatial structure of mass housing areas will be analysed considering the design criteria of traditional neighbourhoods such as creating livable streets, public realm and specialized space in itself.

As mentioned in the second chapter, according to Miskowiak (2006), when the spatial aspects are considered a traditional neighborhood

- Is compact with a discernable center;
- Is designed for the human scale with buildings placed closer to the street and a variety of gathering places.
- Provides a mix of uses, including residential, commercial, civic, and a variety of open space uses in close proximity to one another within the neighborhood;
- Provides a mix of housing styles, types, and sizes to accommodate households of all ages, sizes, and incomes;
- Incorporates a system of relatively narrow, shaded, interconnected streets with sidewalks, bikeways, and transit that offer multiple routes for motorists, pedestrians, and bicyclists and provides for the connections of those streets to existing and future developments;
- Retains existing buildings or creates new buildings with historical or architectural features that enhance the visual character of the community;
- Incorporates significant environmental features into the design;
- Reserves prominent sites and vistas for significant buildings or features
- Has an elementary school close enough so that most children can walk from their homes.
- Places parking lots and garage doors away from the fronts of the street

The four case studies will be analysed related to these neighborhood standards..

Therefore, the case studies will be analysed in terms of accessibility, controlling growth and integration in upper scale while discernable center, buildings placed closer to the street and a variety of gathering places, a mix of uses, mix of housing styles, types, and sizes, narrow, interconnected streets, historical or architectural features, environmental features, prominent sites and vistas, elementary school and parking lots.

### **3.3. Mass Housing Design in Turkey**

In Turkey, in urban fringes, the dominant effect is brought by mass housing developments. During the 1990s multicentral urbanization was seen., In the 21<sup>th</sup> century, the regional sprawl is differentiated development. In fact, different from spatial jump and different centers in itself, the new settlements intense on one region (Ataöv, 2007). These areas create new popular settlement area.

To solve the severe housing shortage problem, many developing countries give much emphasis to the quantitative supply side of housing. This study shows that, building more housing units with given resources, reducing land acquisition, and construction costs by increasing building density, and decreasing building quality, creates a multitude of problems .One of these problems is design of housing areas.

Most authors claim that the mass housing projects encourage the carelessly designed spaces. A study conducted on mass housing Pproject effects on urban development showed that mass housing areas directed the side for development. Examples also show that in many times mass houses provide the construction according to municipal plan controlling development and construction within an area (Aydemir, 2002; Tuna, 1996).

The mass housing concept in Turkey can be analysed considering the effects of MHA. Starting from 1984 this institution have had an important impact on implementation of mass houses in cities. In 1984, Mass Housing Law was accepted in order to meet the need of mass housing, to establish the methods and principles to be conformed, to develop industrialized construction techniques and tools, and to create and use a Mass Housing Fund for providing State subsidy. In 1987, the scope of the fund was enlarged and in 1988, by an amendment in the rules and regulations, as well as mass housing, office and workshops, tourism areas, small-scale industrial units and cooperatives of small business owners and craftsmen were included in the scope of the Fund. However, due to those changes, the Fund's support to mass housing decreased. Determination of mass housing settlement areas by governors'

offices, even those which are not included in the urban planning system and settlement rules, increased density in many Turkish cities. Moreover the additional social and technical infrastructure, which was not in the scope of plans and programs, caused supplementary work and budget problems. As it can be seen, mass housing is appraised only as a technical application tool (Suher, 1995 ).

The recent developments in mass housing progresses related to upper class demands, MHA projects developed for supplying the housing need, private enterprises for generating rent and profit. This resulted in different courses.

According to Kazmaoğlu (2003) , the housing developments can be interpreted related to historical socio-cultural features. In Anatolia the housing settlements were not planned rationally. As the community was nomadic, the structuring was depended on temporariness which is organic and spontaneous. Therefore, the lack of settled and plan understanding no class system directed the people to live together. So all of these affected the buildings' civic properties. The houses like all buildings and people are developed in organic pattern while they are simple and practical. However, in Europe the cities are different and they were all integrated designed with social infrastructure and housing. The urban spaces are integrated with squares, roads, urban land use patterns and urban parks. In early Greek, the land is restricted related to population. In Renaissance, the cities were planned and designed with middle age's liveliness and organic. But in Otoman Empire the feudalism's property system prevented similar improvement in cities. With modernisation period, this organic pattern was started to leave and the planning mechanisms for environment was started to use. The expansion of cities, differentiation of social structure encouraged the improvement. The differentiation of social pattern increased the diversification of status which resulted in a new upper class demanding comfort, different status indicators. Mostly in İstanbul, Ankara and İzmir the increased population, the complexity in centers, problems in already filled central areas directed this class to move to periphery of city and develop new suburb settlements. ( Arradamento Mimarlık 1998/03) these are the areas where they want to generate their environment with reference to their status. Security, comfort, sport, recreational

area, closed car parking areas, technical assistance are the advantages for these new settlement areas as modern urban patterns. The quality is the important need for these areas. ( Arradamento Mimarlık 2003/07-08, pp. 75-76 )

With increases in population, industrialization and urbanization more and more people moved into cities starting in 1950's. This movement led to changes in environmental ideals. People discovered apartment living, which represented a prestigious type of accomodation, preferred by the well-to-do and aspired to by lower income groups. This movement which stil continues, gave rise to higher apartment buildings, disappearance of green areas and abolishment of neighborhoods. Thus, the closely settled neighborhoods of homogenous people were transformed into the densely populated, heterogeneous areas where people might not be acquainted with even the people living in the same apartment building. In response to such changes, many people aspired to live in the newly developing suburban areas. Thus, paralel to the rurall-urban migration, there is a relatively recent move from central areas to outskirts of city (İmamoğlu, 1996)

Especially after World War II, Turkey experienced an important migration from rural areas to cities and urbanization with overpopulation and many metropolitan had been experienced housing problem with overpopulation (Peynircioğlu,2002). Housing cooperatives in Turkey has a history more than 60 years (Özüekren 1996; p: 355). The first examples were aimed for need rather than market but this changed on the contrary by the time. MHA was established in 1984 with the law numbered 2985. It is the most important attempt of the government in solving housing problem throughout the republican period (Sinemillioğlu).

Housing provision through MHA has both advantages and disadvantages. The goal is to transform those advantages into opportunities, and prevent the disadvantages from becoming threats. Some criticize the fact that the housing gap is only being met by MHA as one of the drawbacks. Most mass-housing projects have the planning principles of providing privacy at home, economical and fast construction of many housing blocks by the tunnel formwork system; yet they also have problems of

flexible growth, sound and thermal insulation problems, excessive vertical density of high and wall-like or point blocks, unaesthetic city-silhouette, and too much space consumed on ground parking lots. One of the issues is that MHA thinks that it must generate high density settlements. However, it mistakenly believes that this is possible only through high rise buildings. The other alternative is to use horizontal blocks, which may leave less ground space but which might be fit for the existing cultural form layouts of most cities in the nation (MHA meetings, 2009).

Among the criticized aspects of MHA are:

- The head of MHA is the only authority concerned with selling urban land, making decisions on planning and determining the value of lands. Hence it is a kind of government supported monopoly in the housing sector (Geray, 2009).
- MHA has rights and authority of a financial institution among other finance offices and banks.
- MHA has extended power on city planning and tax exemption.
- The government makes it easier to sell public lands for the use of MHA.

In 2004, all duties and authority of the Urban Land Office were transferred to MHA. Based on this legal arrangement, 64.5 million square meters of land have been passed on to MHA's portfolio (Pulat Gökmen, Özsoy, 2008). Therefore MHA has become privileged among the government institutions that have taken responsibility of Development Plans and construction permits of local authorities in cities (Geray, 2009).

Some criticisms claim that MHA gives valuable urban lands with high unearned income in cities to the construction firms with low prices, and that there is no sufficient control on these land sales (Tuna, 2009). MHA declared that it has built homes for low-income groups. It gives 45-60 square meter flats to these families, but they are generally big families, and the flats do not fit these families. It is asserted that the authority does not consider the saving capacities of poor families (Tuna 2009).



Some criticize that MHA is not very successful in organizing housing demands. In some cities like Ardahan, Bitlis, Erzurum and Şanlıurfa, MHA could not sell 1515 housing units out of 1625 built flats (Tuna, 2009). Turkish Government Control Institution has submitted a report about MHA implementations. In this report, they have highlighted that MHA has built housing all over Turkey, but it does not consider economic conditions, housing needs, possible housing demands of settlement areas; MHA did not make feasibility work in chosen areas (Tuna, 2009).

It seems that the quantitative objectives of the Authority are mostly met: MHA has constructed 45,293 units and received about half of the 8 billion TL to be collected. This is from the Revenue Share Model. From the sale model, out of almost 300,000 places built, 265,000 have been sold. Of the 165,000 units, the social facilities and environmental design (i.e. landscape architecture) are in the process of completion (Anon, 2008). It has provided completion credit to 56,000 units since 2003. In the same report, it is stated that by the end of 2007, MHA had aimed to start the construction of 250,000 residences and by mid-year, this goal had already been reached. This led the institution to increase its goal to 500,000 in the following term. Over 61,000 residences are being produced for low-income urban groups ([www.toki.gov.tr](http://www.toki.gov.tr)).

Real Estate Investment Trust has built nineteen housing settlements in Istanbul, five settlements in Izmir. Twenty-eight settlements and the number of housing units constructed are 35,231 all over Turkey. There have been 359,677 housing units built along with their infrastructures, social structures and surrounding arrangements; 573 housing settlements have been finished, 204 housing settlements are still being constructed all over Turkey in 2009 ([www.toki.gov.tr](http://www.toki.gov.tr)).

During the last decade, according to Cengizkan (2009), the aims of creating a quality living environment, especially for the low-income, have not been implemented: instead, superficial numeric aims were adopted. The aims were set as:

- Improving the quality of the finished housing with new actors in the building production,
- Increasing the quality of near environment of housing and settlements,
- Supporting the level of justice among different user groups by bringing them together in the same living quarters,
- Homogenizing housing based on the common grounds of affordability,
- Obtaining the sustainability of mass-housing projects through participatory democratic methodology,
- Realizing the results of residential environments to become separable parts of the city due to the housing production system.

The aims have not been met due to the predominance of the low-cost public and public lands in the global market, it has been met through high rents and profit.

It seems that mass-housing projects, on such a large scale, are pushing forward the population growth of the cities. Although some are used as secondary homes, it encourages people's investments in real estate more than providing residences for those who do not have one. These projects are orienting the development plans, indicating the location of residential areas and urban facilities. In the case of Balıkesir, a middle-size city located in the south Marmara and northwestern Aegean regions, a large transformation project has been undertaken by MHA, which will change the future of the city layout and social make-up. Especially, the high density settlements are projected to cause a lot of ownership problems (i.e. change of hands, rent focus formation, etc.), and a non-conforming urban texture (which used to have lowrises). This is claimed to be opposite of the physical urban quality. This is aimed to be a prestigious project with a total area of 70,000m<sup>2</sup> out of which 12,176m<sup>2</sup> is spared for residential use. The buildings, especially housing, were claimed to be of higher quality than the usual standardized MHA implementations and even more so than the social housing projects formerly built. However, the resulting housing turned out to be of material quality only. Therefore, they were criticized to be of low-spatial quality, a neglected aspect of "prestigious" housing. Furthermore, the

identity of the city as less dense is lost with the high blocks of residences and commercial buildings (Birol, 2008).

As an evaluation criterion, user satisfaction is quite difficult to meet. On one side limited housing typology for the economies of scale, and on the other, multi-culture and heterogeneity of urban populations, the values and needs of which vary greatly, are on the other. The issue is how to meet the sometimes conflicting needs in the same project. One consideration is related to quantity and the other is related to quality. The dwellers of the mass-housing projects constitute too big a population sample to properly sample in terms of their assessment of their homes. In some articles it is said that “MHA’s use of the same tunnel formwork system producing the same house plan types in all cities and in the same fashion indicates that the qualitative and quantitative user needs targeted have not been properly analyzed and that is a problem” (Tomruk, 2009). For example the middle-income groups in Kayseri are growing fast and determining the future generation and production of urban lands -- in terms of emptying of city centers. The transformation of an Anatolian city with such a change in the role of the middle-class, together with the mass-housing projects, may lead to concerns about such changes in the environment with the existing historical center (Tozoğlu, Sönmez, 2008). One of the major criticisms of the mass-housing projects in urban areas is related to those built at the peripheral city for the low-income people; their far distance from their work places and social networks may turn out to be a disappointment in the future and may even be vacated by their dwellers (Kumkale, 2009).

In Turkey, achievement of acceptable levels of quality in the construction sector has long been a problem. Great expenditures of time, money, and resources are wasted each year due to inefficient or nonexistent quality levels prevailing in the industry. The situation is even worse in the case of mass housing projects addressing to low and middle income groups. It is the purpose of this paper to identify the type of deviations resulting in rework in mass housing projects, since construction firms can only increase their profit margins by paying more attention to the deviation types.

More importantly, firms can improve their images in the sector and thus, can take new projects (Kazaz, 2005).

## CHAPTER IV

### DUZCE CASE STUDY

#### 4.1. Introduction

From the literature, modernist and new urbanist ideas will be used for clarifying the design problems in mass housing areas in Düzce. This study refers to design principles for creating space and in two scales; in entire city and within the cluster.

The problems related to mass housing environment will be discussed in design concept in urban sprawl and accessibility to define urban integration and the necessities of neighborhood such as school, size, boundaries, circulation, centre etc. For creating livable streets, public realm and specialized space in itself.

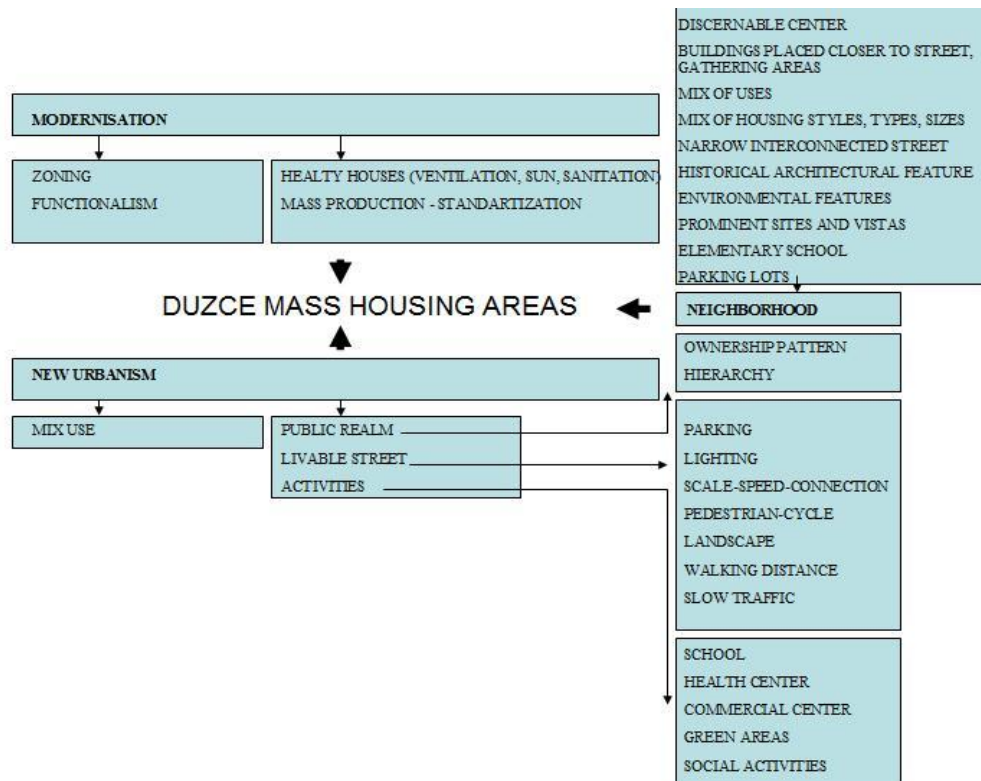


Table 1. The Structure of Analysis

The four different examples of mass housing projects which will be compared are;

1. Memursen Project made by MHA.
2. Permenant Housing Project made MPWS
3. World Bank Houses
4. Beyciler houses

#### **4.2. Overview for Duzce**

The history related to Düzce goes back to the 14<sup>th</sup> century. But the history of Konuralp which is the settlement 8 km from Düzce, goes back to the 3<sup>rd</sup> century BC. Konuralp has important hisrorical heritages. It was one of the cities of Bithynia in 74 BC. The name was Prusias Pros Hypios. After invasion of Pontus, it became Roma domination. After this invasion, it was assimilated as Latin Culture. In Roman period, the Christinaty was dominant. After 395 the city became a part of Eastern Roma Empire. Osman Gazi dictated to get Konuralp to Otoman Empire and then these two settlements were invaded.

16<sup>th</sup> century Düzce was a center for villages that was named as “bazaar”. This area was a common space for villages and had a flat geographic characteristic. It was on the road of İstanbul and Sivas that were important centers in Turkey. The demand of timber was supplied for navy in Otoman Empire. The settlement was a place for migrated people from Kafkasya, Eastern Karadeniz, Eastern Anatolia and Rumeli.

In the second period of 19<sup>th</sup> century, Düzce had 139 villages and 36000 population. It became district in 1870. After 1950 since it is located on the higway between Ankara and İstanbul, the accesibility encouraged urbanisation and increase in population. This brought the importance to area. In 1935 it had 6.500, in 1950 10.000 then in 1985 it had 56.280 population.

The location of Düzce is important as Bolu, Sakarya, Zonguldak and Black Sea coast are the neighbors. The districts are Akçakoca as coastal settlement, Yığılca,

Çilimli, Cumayeri, Gümüşova and Gölyaka as agricultural settlements. There are 111 municipalities, 80 districts and 280 villages.

Population increase is related to location of city. The expansion direction of İstanbul is on the TEM road. So many experts claim that the city regions already came to Düzce periphery. The economic development is faster. The university attracts more staff, students and service sector around the city. The Organized Industrial district encourages enterpreneuers to invest in this location. This area is on the development process. After earthquake the settlement got the status of provience that many institutional and spatial arrangements affect population and physical development. Its 56 % of population lives in villages that shows that population depends on agricultural production and the low density construction is widespread. The economic finance is provided from 58 % from agriculture, 21 % from service, 12 % from industry and 9 % from construction sector ([www.duzce.bel.tr](http://www.duzce.bel.tr)).

In Düzce, first degree agricultural land is totally 38963 ha that is 15 % of agricultural lands.. on the other hand, if the necessary precautions can be taken, total 56511 ha agricultural land can be used for production. But 22 % of it is under production. 43 % is forest and 3 % is meadow .

After Bolu provinence demand, 1st organised industrial region was allowed by site selection unit of Ministry of Industry and Trade by 5084 numbered Encouragement Law. It is 173 ha in Düzce Beyköy. 63 planned plots for industrial development in 2007 subdivided and resulted in 57 plots. 2nd organised industrial region was determined as 81 ha and 9 industrial plots. Small scale industry has been tried to form and build for 2 years. 70 % of the land has been complited. There are 3 types of Project unit. 553 units with 80m<sup>2</sup>, 275 units with 160 m<sup>2</sup>, 72 units with 235 m<sup>2</sup> were built.

The sectoral analysis shows that the important production branches are food, mechanics, furniture and textile. The physical opportunities such forests, agricultural lands and accesibility makes these sectors important.

The center of the city has agricultural quality capacity. As a known bazaar, the production was also marketed to the periphery of the area in recent times.

Main corridor splitted this flat area up two parts. Tem, D-100 and major roads of city divides the city strictly. The main center of city on the D-100 road. From early ages the accesible area have been crowdedly settled which canbe seen from 1963 plan to today's 2020 plans. If there had not been an earthquake the settlement would continue to develop on the accesible corridors. But there had been new development in the northern part. Now there is an effort to connect previous center and the new developments. The balance and continuity is stil tried to be achieved.

The settlement is mostly low density as a rural settlement. The provisions are also low but concerned with urban sense. In the 1963 plan somehow solid void concerns were present. But after than the plans mostly encourage random development. Most of the peripheral areas of the settlement is open to construction without green, water and industrial area concerns.

The low density always encouraged the urban sprawl in city. While concentric form in center and agricultural development around the city can be a good solution such a small city, the agricultural valued land have been under danger.

After than, the production of mass housing in several parts of city became impotent dispersion problem and undefined density and related infrastructure problem.

### **Planning History of Duzce**

The first plan was made in 1950 but there is no record related to that. After that plan, in 1963 there a second plan is made for settlement. It was approved and came into affect on 29.05.1964. This plan proposed 40.000 population for 1990.

The residential, industrial and agricultural areas were planned and the accesibility was mentioned in design.



(1963 plan)	Size (ha)	Density (person per ha)	Population
<b>Settled Area</b>	161	80	12.880
<b>Proposed Area</b>	295	90	26.550
<b>Total Residential Area</b>	456	86	39.350

Table 2: Areas and densities proposed in 1963 plan

In 1978, a new development plan was mentioned. A 1/5000 scale master plan was prepared and approved in 1980. Nevertheless, it was not complete and implementation plans were not approved.

After this planning trial, in 1982 State Planning Organization (SPO) started studies related to economic plans. Düzce in this study is at the 4th level center and was seen in influence area of İstanbul with 7 level centers. This plan proposes 160.000 population for 2005. In 1986, this was discussed again and approved with the claim of opening agricultural areas to construction, the plan was prohibited. After revisions, the plan was used till to 2001.

The highway D-100, is an important accessibility corridor on which there are central activities as commercial and working area uses. Planned areas are on these corridors. This new development plots are on located on three directions. The international and interregional traffic corridor is in the development area. The residential areas are near these traffic corridors. However, this has not been taken as a problem and was not taken any solution related to that. Water resources have not been discussed as an input. Green areas and open area uses were not defined the water passes so the water opportunity lost importance and perceptibility.

The 17 August 1999 and 12 November 1999 are the turning points for plan of city. On 3 December 1999, the city became a and settlement published 12297 numbered notice to revise existing implementation plans. Although the 1987 implementation plan had been implemented; collector roads, major roads, central service uses, administrative uses could not be implemented, finance could not be provided, other technical infrastructure was not realized so new plan was needed.

In earthquake, 7093 residential, 1348 working units collapsed, 3205 residential, 647 working units were damaged. With reference to 1997, there is 76900 people and 68% of these people lost their homes. Illegal housing became inevitable. In 1997, Düzce had 288.195 people and density was 111 p/m<sup>2</sup>.

The two earthquakes of 1999 resulted in physical pattern changes and disappearance. Alternative settlement areas were discussed by Turkish Scientific and Technical Researches Institution (TÜBİTAK) (MTA), Ankara University. The existing city around was not suitable for settlement. Northern East part of city was suitable. In these areas 10.000 residential units were planned and 7.500 units were built. City center was not planned.

320 ha area was not in municipal district which was announced by MPWS on 29 March 2001 it was added into municipal district. Municipality gave bid of ground survey to a private firm. Disaster General Management approved it on 10.10.2000. 245 ha in center was prohibited to construction. However, since it had central commercial activities, expanded hinterland, existing building stock, urban movements, daily population movement, traffic density etc. new survey was made by Ankara University, these areas could be constructed by precautions. Disaster General Management approved. For studies, the base map was composed by air photos.

After researches, plan revisions were made for decreasing the number of storeys that could be built, and in 2001 they started to be implemented. New disaster settlement affected urban expansion directions. 1/100.000, 1/25.000 scaled plans were planned and implemented. Bank of Provinces sent a group and they worked on unplanned

areas and revision on planned areas in 2004. A plan bid was made and then new settlement areas and existing areas were planned together.

Existing plan directs the expansion on Akçakoca Road. New neighborhoods are primarily new settlement expansions. New expansions are northern sides by environment plan. But Melen Catchment area was turned into drinking water catchment area with decision of the Council of Ministers on 07 may 2008. this part is important for urban expansion. 48 neighborhood are already approved. Two earthquakes directed the expansion area on the northern part of city. It is 6 km distance from the center and has 10.500 unit capacity. 350 ha would be built with mass houses with 42.000 population. But there are important agricultural areas between city center and the new settlement area.

Düzce revision and extension 2020 plan proposes 170.000 population in 3370 ha and it is approved on 13.04.2001 by Düzce Municipality.

Düzce central and near periphery area plan was approved by 75 numbered 29.04.2008 by province general council, 06.06.2008 167 numbered municipality council.

İstanbul metropolitan municipality published a legislation on 25.06.2006 and with this legislation tried to prevent damage to underground and surface water. On 07.05.2008 Council of Ministers approved melen catchment area. Waste water treatment was under capacity with damages with earthquake, new disaster houses and breaking downs. Also with the decision of İstanbul water provision İski revised existing water system. System was opened on 01.02.2009. 12.000 m<sup>3</sup>/day was increased 62.000 m<sup>3</sup>/day. generally in province, 3 waste water treatment systems is planning to construct. If this is realized all water and treatment problems will be solved. All over the settlement it will be permanent solution.

1/25000 Düzce environment plan aimed the following for 2020, the protection of natural, historical, cultural values and ecological balance, sustainable healthy

development, direction of lower scale plans, prevention of water pollution with the legislation on 31 December 2004.

In Düzce, there are 17.400 housing unit in 6.000 buildings, 7.000 units in 636 blocks in planned permanent housing, 622 units in 70 blocks in World Bank district and 547 units in 31 blocks by TOKİ buildings. In center there are 17.400 and in permanent housing region there are 8169 units totally. Working areas are 1047 in permanent housing region and 5069 in centre.

After two earthquakes implementation of plans were stopped by MPWS. The geological and geotechnical analysis were made. The base maps were formed after taking air photos. The implementation plan was approved by Municipal Council on 13.04.2001. However, the absence of plans did not prevent the illegal construction before planning process. The need of shelter is extreme sizes. This resulted in serious illegal housing. This was tried to prevent but the need encouraged it. After earthquake, the disaster settlement was out of the municipal district. This area, the area between this and municipal district and nearest other settlements were engaged to municipality. But there are still many districts and neighborhoods, there are no plan. The construction guidelines directed the building construction then the builders take permission and lastly they implement that.

But the construction before planning was seen since many villages status turned into neighborhood that engaged into municipal district. Construction servitude was obtained by plot developments. Addition to these, illegal housing provision created problems in city environment. The minimum differentiation in commercial and residential uses created taks and height considerations.

The damaged buildings can not be rebuilt because the storeys were restricted to ground level + 2 storeys and this minimization of construction rights combined with construction servitude resulted in decelerating of space recreation. The entrepreneur does not want to invest to construction.

The control firms for construction are inadequate for directing and improving the building.

The construction costs are too high.

The economic disaffordability for 18th article implementation and nationalization is another problem that affects city development.

The experts from ministry of public works and settlement controoled the buildings. The maximum construction right was ground level + 2 storeys. But there have been many buildings from before the earthquake not the same height. They are mostly ground level + 5 storeys. This is a problem of silhouette.

In some areas there are second implementation plans made so there is needed to leave for road etc. again. The citizens do not admit easily. This can be an opportunity that there is secondchance to change the function and sizes paralel to development. But this become impossible if a 4 or 5 storey building are to be built, the new construction right does not interest them. As discussed, the planning history is different and there are many other problems different from other cities.

The approved plans were for municipal districts but after expansion of districts there appeared many unplanned regions with already begun to construct. To get economic interest and rent, illegally they built speedy in short time.

The lateness of planning process can not prevent illegal construction



Figure 10 : 1963 Plan

First plan (1963) has low density and high density residential uses in plan. Between them there are industrial uses. On the northern part of city the industrial region covered by low density residential environment. For accessibility, industrial activities on the western side of the city as on the İstanbul route. Southern of D-100 is high density settlement area. With residential area also the central activities are on the southern part of D-100. the agricultural lands can be shown as the green belt around the center. The main corridor is D-100 Road. The suggested urban form can be said as concentric with one nucleus.

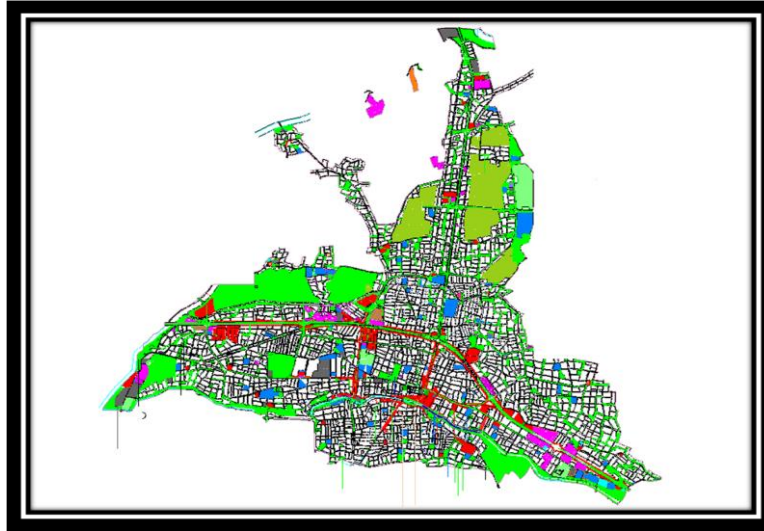


Figure 11 : 1987 Plan

Second plan (1987) proposes different activities in details and densities. The industrial areas are dispersed on the land along D-100 Road. The commercial activities on the D-100 and Atatirk boulevard to Akçakoca Road. Now there are 3 corridors which are main skeleton of system. There are green open areas left to taking air not to construct. The urban sprawl started in this plan. The residential areas expand to northern part on Akçakoca Road. The development can be said as linear city on accesible corridors.

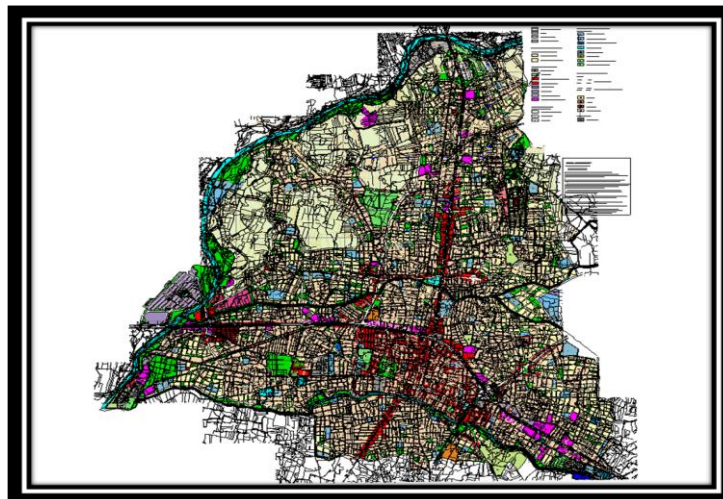


Figure 12 : 2010 Plan

Last plan (2020) at first glance has no open green areas on plan. The minimized green activities can be seen. The plan proposes high density residential activity and construction areas. Around Melen catchment area there is concern for protection. D-100 Road has increased industrial activities, Akçakoca Road to Atatürk Boulevard has increased central activities. The residential areas already dispersed to northern side and also moved to slopes of hills. Urban sprawl has become a problem.. The productive land between center and permanent housing settlement is under danger.

On the other hand, unplanned areas are still 25 % of city which is important ratio for city development. As we discussed unplanned or planned the constructions continue if citizens feel necessary. The uncontrol and absence of plan already creates physical problems in space.

#### **4.3. Effects of Earthquake in Duzce**

Duzce province is located on the North Anatolian fault line in Duzce plain. As a result of the rapid industrialization in 1980-1998, migration to the city from the rural areas increased and therefore housing demand rapidly increased. The total area of the city is 2593 km<sup>2</sup> and the population is 307.056 according to 1997 census, the density of 111 people/ km<sup>2</sup> which is much more than Turkey's average (83 people per km<sup>2</sup>). Rapid migration caused unplanned construction in the city where users often added floors to old buildings which had been constructed on weak soil. New buildings were constructed rapidly with untrained labour and substandard material. Furthermore, there were no reliable control systems for building construction (Duzce Municipality Chairmanship, 2000).

The devastating earthquake with, 7,2 magnitude occurred in Düzce province on the 12th of November, 1999. Approximately 43000 buildings were damaged. Generally damages occurred 84% in houses and 16% in work places, 980 people died and 38939 were injured (Ministry of Public Works, 2000).



The initiative is given to construction of houses by the ministry of Public Works and Settlement in Turkey. The Ministry of Public Works and Settlement produced houses only for the home owners through the agency of contractors. In addition to this, Catholic Relief Services (CRS) and International Blue Crescent (IBC) gave donation for housing for the low income victims as well. But there was no effort for the tenant's housing problem. The only study was made by DEPDER (Association of Earthquake Victims) which is an NGO established after the earthquake but is still at the level of obtaining property for housing and therefore has not yet built any houses.

#### **4.4. Urban Design Analysis in Mass Houses**

Creating space in cities depends to understandings of decision makers, projects that have been considered to implement, persistence of different implementations, revisions on the land and this is a circle that new decision is taken then implement, change and goes on. The space is in a transition and always gains and loses some characters. But there are important inputs for space that provides human living around a better environment. The housing areas are the living environment for human beings. So the design is important for daily uses. The projects and implementations of housing differs from city to city with its characteristics, history and experiences. But the unchanging thing is that the quantitative demand. In big scale demands mostly provided by mass housing settlements from 2nd World War. But most of the times, it have been simple, supply for need and carelessly done. The modernism has brought that simplest and providing demand but the space creating care has lost in time. In modernist approaches tall buildings were used as to generate more open green areas. In contrast, today to get rent tall buildings are used and more areas are agglomerated by dense blocks. The projects only consider the physical appearance and conditions of the urban environment of the site, clear off the visual dirtiness of squatter settlements, and construct high apartment blocks with high densities. (Íveynat, 2008) additionally, in 19th century the idea of cleaning the slums with modernism to produce social interacted new environment has emerged. It is the functional city that can be built with strict functional segregation and the

distribution of the population into tall apartment blocks at widely spaced intervals. However, the New Urbanists refuted this idea which is related to high-rises that nobody actually wanted to live in. But similar project details have taken place in mass housing projects in Turkey.

In Düzce, a different aspect for all these processes is seen. The city includes mass housing approaches, functional type of city property and changing character to identity in itself.

Düzce is a city that has %45 urban population only, the mass housing projects bring more apartment design that not refer to urban characteristic. The imposed mass housing projects composes the city space. The central area is unique and in history the importance has not been lost. Before the earthquake the housing demand was provided in the centre but after earthquake and taking damage, the suitable land was shown in the northern part of city on the edges of mountains. With the hurry of providing housing for victims of disaster, the projects finished in restricted time and implemented for supply of urgent need. People carried to a new environment away from 6 km far from centre and new life started there.

There appeared many deficits in time for this new settlement. The municipality and other public institutions tried to solve the problems. But the main problem is that the coordination and over plan for implementation never been provided. The settlement area implemetation plan was prepared after construction of buildings. It was such a drama that the implementation was done before plan. The social areas were left between building islands but sometimes they became large in scale such as valleys which will be unowned, sometimes they were areas which are suitable to construction and built in short time as a reserve island. The area agglomerated with buildings with different designs and uses. However all of them projected alone.

As a result of agglomeration and mechanical system there is no integration as design meaning. However, the process should include subprograms as housing details, public equipment, environment recovery and public mobility. These must be basis

for Project. Housing is in charge of constructing new dwellings and upgrading the existent units fostering better conditions of sanitation, illumination, access, also was responsible of the execution of the legalization and secure tenure processes. Public equipment and facilities are in charge of providing the new collective spaces and properly maintain the current ones. Environment recovery is undertook the conservation and restoration tasks related to the natural surroundings. Public Space and mobility are subprogram constructed new public spaces such as bridges replacing old or inexistent ones increasing internal connectivity.

They all thought in mechanical manner. In this point, Günay (1990) refers similar problem as increasing density, building apartment blocks ve incompatibility are the problems after 1980 in mass housing areas. As in many examples tip Project is blocks with high densities. They impose them. The physical environment can be provided by mechanical process as transportation and infrastructure details under speculative pressures. However, the physical space and the social space have to connect with each other in decisions, mechanical projects ignores biophysical and psicosocial system correlation. (Günay,1990) Biophysical system can be defined as comfort, heating, pollution details. In mass housing projects we can face with them mechanically. But phycosocial in the terms of social and personal attitude, ideologies, concept of space, symbol can not be seen in mass housing.

Sunlight, green slogan turned into mechanical, monotonous designs. In other words, the social relations are too complicated and social relations needs different spaces. However, what process can be used? In this perspective, space arrangements and human behaviors weren't designed in integrated way. But speculative pressures complicates the process. If the pressures are passed over, the more comprehensible projects can be produced. After perception, more qualitative projects can be produced. But today, in our country talking about that the new projects have these details is difficult. After a conseptual diagram, the big residential areas are opened to construction. So the total perspective can not be provided in this way. Both mechanical systems that includes activity functions and implementation that are socially and visually fragmented construction islands appear. . (Günay,1990)

In Düzce, similar to other cities, the problem is related to plot based projects and absolute understanding of creating building plot. But in the urban design guidelines, the projects have some rules as solid-void balance, street, public-private, identity, variety, accessibility, integration and security items for shaping space. In this study, now we will discuss the opportunities and deficits in Düzce in terms of these topics.

#### **4.4.1. Analysis between Clusters**

##### **4.4.1.1. Urban Sprawl**

In Düzce case study area, the main urban sprawl has been after earthquake. Before earthquake, the city had one nucleus and in mixed land use pattern the core was denser. In the northern part the edge was D-100 Road and in the southern part the Asar Suyu. The development type was individual construction so the site selections were near to each other.

After 1-2 years than earthquake, the citizens mostly constructed new houses in villages around center with no construction permit. All sides of the center, from northern to southern and western to eastern parts were under construction. The buildings were prefabricate or concrete etc.

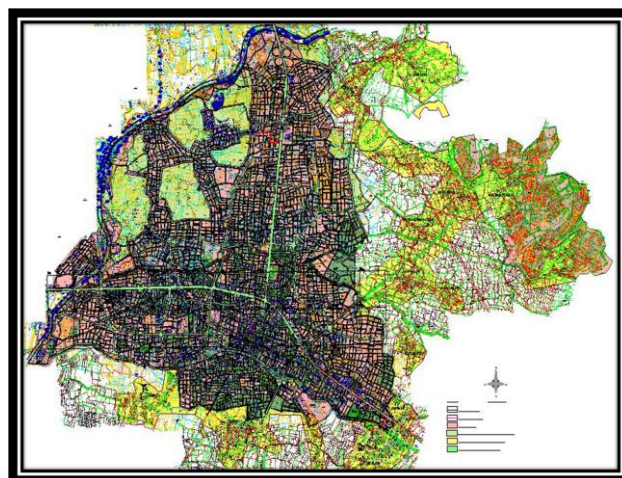


Figure 13 : Planned and Unplanned Areas

The permanent housing settlement was agreed to be built on the southern west of city center. Then the construction around permanent housing increased. This area became the main populated area.

The previous plans for Düzce were did not consider this area for development. So the infrastructure and other services are needed to be implemented. However, all the new centers for these areas can not be generated. Therefore, the center maintained its unique character.

#### **4.4.1.2. Accessibility**

The accessibility before the earthquake was provided by some boulevards and other minor streets.

After the earthquake, according to the Plan, the existing roads were widened with abundance from private properties. Most streets are made min 10m and generated new boulevards with 25m width. The vehicle and pedestrian access was ordered. More width new pavements were built.

But in such a small city, bicycle was not considered and no lane was left. The junctions were not designed that in one main boulevard approximately 10 people die in city center in traffic accident. This number is near to 150 people in city entire. This shows that the city is problematic for pedestrians.

The transportation is provided by buses. In a day, approximately 10.000 passengers come to city from permanent housing region. This is made on connection road which is started to use 5 years ago. As the junctions, pavements and signposting were not ordered the road created problem. However, this road is the main collector Metek TOKİ, World Bank and permanent Housing area. The Project and implementation were made by General Directorate of Highways with Arabian

donation, they do not own this road. However they also coordinate to municipality for adding any thing.

Before the earthquake the D-100 road was the edge for city but today this road servicing to housing areas as a urban collector road. From permanent housing, World Bank, TOKİ and Beyciler social houses all citizens use these road for entering city center. as this road also under the dominance of General Directorate of Highways, the implementation is impossible.

Any additional road was not implemented between housing areas. On the other hand, the public transportation systems were not considered for integration of these settlements. So people transfer the vehicle with new charge for every riding on. And no bicycle transportation is provided between settlements similar in them.

For the Access from Bolu road to Akçakoca road new connection road is planned and started to implement. However this road is not connected to permanent housing areas, only passes near to area.

#### **4.4.1.3. Integration**

The housing areas are not integrated with each other away from city center.as it is the only center, the city center is connect every of them with functions.

Around the permanent housing and Metek TOKİ there is picnic areas in green areas people come from city center. There is a square in permanent housing the concert, celebration and festivals are done. The facilities collect people from all settlements so it is an integration node.

After than there is no other square and street pattern for socializing, people mostly uses city center for attending facilities.

The education centers and health units are popularly used by people that in every housing region, these centers are used by also central area students with school service transportation. These shows that the facilities are strated to gain importance but time is needed.

#### **4.4.2. Analysis in Clusters**

##### **4.4.2.1. Permenant Housing Project**

###### **General Information**

The Ministry of Public Works and Settlement was obliged to construct permanent Houses up to the number of house owners who were influenced by the disaster. The selection criteria were;

- i. Appropriate Soil Structure
- ii. Property of the State

8004 housing units were constructed in Duzce and primarily the ministry gave a grant to house owners who are willing to buy houses or to construct houses in their own properties.



Figure 14 : Permenant Housing Area (Photo:personal archive)

New permanent housing sites were constructed by the Public Works after the occupancy of the temporary houses. The new settlement was 6 km away from the

city center and was located in the northeast of Duzce between Kazıkoglu, Sallar and Nalbantoglu villages (Ministry of Public Works, 2000).The permanent housing site is located on the outskirts of the Duzce Municipality boundaries and its size is approximately 350 hectares.

There are 14 regions in the new settlement and 7000 housing units. The houses are designed as 3-5 storeys. The victims moved to their permanent houses after the establishment of building lots. There are reserved housing lots in the settlement as well. The development of existing axis between the old and new settlement caused serious problems. In a prospective way new houses will be built on these enriched agriculture property and this will change the whole ecosystem in this area. New houses have been built in this axle in last 2-3 years. Although the decision for relocation of the housing site is given after the earthquake the transportation between old city center and permanent housing or work places have not been established yet. The filling of the property between these three points is not possible because of social and political forces of social groups which had work places in the old city center. The permanent work places in the permanent housing sites are not still fully used. The old city center has become more active by time and the city could not enlarge the outskirts of the new settlements (Arslan,Unlu, 2001 ).

The interesting situation is; although the central government transferred resources for infrastructure and construction of houses the connection way which is 6 km long between the new settlement and old city center has not been finished yet. The region can not adequately benefit from the municipality services because of stil being outside the municipality boundaries. The striking point is that the religious buildings are constructed rapidly usually by the community donation. All the open spaces are arranged but the users have a low tendency to use these spaces (amphitheatre, publicgardens).

Yıldırım and Arslan stated the lack of community participation both in design and in construction processes of permanent housing site. They also found in a public survey which is conducted from 100 permanent house settlers that;








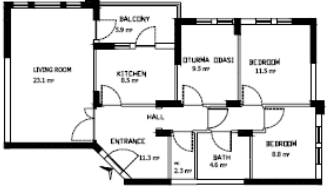
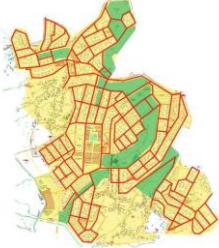

- They had no information about the house cost and re-payment process
- They had transportation problems /options between the old and new settlement
- They expect to live in 2 storey houses rather than apartment blocks.

People coming from different income levels and social status began to live side by side in the same housing blocks because of the arrangements of building lots. Some of the house owners were village settlers before the earthquake and they reject to live in this type of life style. This shows the lack of organisation and effects to the social reconstruction. People live in rural areas may have houses in their own places.


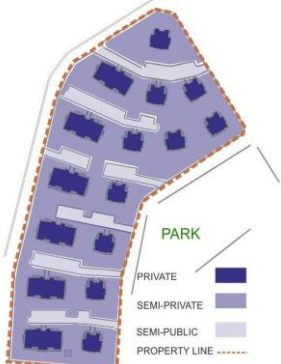
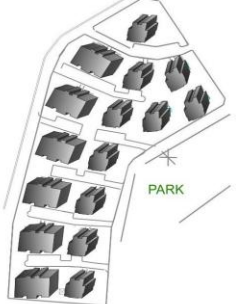
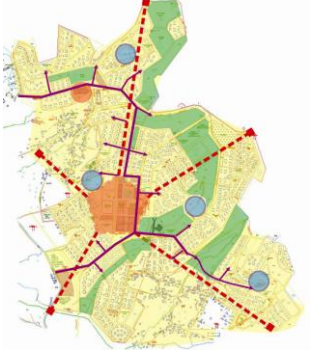
Donating those houses in a new settlement does not mean they will live there. These social facts must be taken into consideration during the planning phase of post-disaster housing. Another problem is exposed from the old city settlers which had different life habits when they live in the old city. The work places are close to their houses so they do not use transportation vehicles and majority of them had houses with gardens so they have neighborhood relationships. But new settlement offered them a public life, responsibilities and much more isolation. But some users have not even left their old habits and they continued growing vegetables in the new settlements (Arslan,Unlu , 2001).

This housing area was projected as modern housing standards which includes thousands of people sheltering problem. The buildings are all detached and apartment units. They are 2-3-5 storeys. There are open areas as play gardens for children and pergolas in green areas for elder people. The valleys are natural opportunities for settlement. The green areas are encouraged with artificial open areas as sport areas, grass green park etc. which enables the continuity of green areas.

**Table 3 : Permenant Houses General Maps**

Accessibility	General Information	Photo
	<p>The vehicle movement is provided 10.-25m roads. The vehicle roads spread over area as braching. Pedestrian movement is on pavements near vehicle road. There is one square for pedestrians. Parking is provided in parking lots.</p>	
	<p>Problem</p>	
	<p>The vehicle based transportation system ignores pedestrian and cycling.</p>	
Green Areas	General Information	Photo
	<p>There are dominant green areas and they continue in settlement pattern. They connects into settlement with different functions. The network system integrates neighborhood to nature.</p>	
	<p>Problem</p>	
	<p>Some areas become vacant related to maintance problems.</p>	
Structures	General Information	Archiecture
	<p>Molecular type of residential blocks. All provide 100 m2 use area.</p>	
	<p>Problem</p>	
	<p>The blocks do not define street and gathering areas. They do not provide enclosure.</p>	
General		Photo
		

**Table 4 : Permanent Houses Island Based Maps**

<p>Accessibility</p> 	<p>General Information</p> <p>The pedestrian and vehicle movement are together.</p> <p>Problem</p> <p>Communal pedestrian areas should be created in front of blocks but all are used as parking lots.</p>
<p>Public-Private Hierarchy</p> 	<p>General Information</p> <p>The ownership is division of island with condominium law.</p> <p>Problem</p> <p>There is sudden entrance from public to private.</p>
<p>Solid-Void</p> 	<p>General Information</p> <p>Topography orients design of settlement</p> <p>Problem</p> <p>The closed blocks do not encourage variety and choice of tenure. For communal uses they are not useful as they do not control Access.</p>
<p>Neighborhood Analysis</p> 	<p>General Information</p> <p>Neighborhood activities are provided, integrated green system and vital central activities are advantages for settlement.</p> <p>Problem</p> <p>The walking distance to central activities is far from 1 km.</p>

The Project was started and finished in 1.5 years and given to owners. In such a short time, all the Project process and implementation was made. There was no settlement in this Project area before the earthquake so it had not had a plan for settlement. After projects of houses, the plan was prepared according to necessity. Plan was approved after implementation. There were reserve areas for going on construction of houses if necessary and TOKI used 2 of these areas as residential support for citizens.

### **Design Analysis**

The units are between 80m<sup>2</sup> to 100 m<sup>2</sup>. The sun, ventilation and sanitation are considered for houses. But in rainy days the infrastructure on roads creates problems. The centre distance is between 10 min. – 30 min.

As there semi public front gardens in front of houses, there is voice disturbance from play grounds. But as the area is away from high capacity roads and central activities, there is no other voice disturbance. As the Windows are wooden and unprotective, there is heating lose from Windows. In the environment, pollution is a bit problem, because there are a part of people which still use coal.

Before the earthquake, the housing units were 3 + 1 and approximately 100 m<sup>2</sup>. so this Project is more near to previous housing habits.

This housing area built by Ministry of public Works and Settlement is identified earthquake houses after temporary solutions in prefabric constructions, so it is called permanent housing. The citizens predominantly defined the demands on low storey housing. Contrast to its significance, most of the buildings are built over 3 storeys so the physical appearance does not symbolize the earthquake. As they are built in standard way of production, all the buildings are similar and diversity could not be provided.

In the circulation system, from street analysis, it can be said that the buildings do not reinforce the streets and open areas. Solid – void structure do not give the idea related to streets. There appears some strict sloops related to topography that can not be used by pedestrians and vehicle easily. There are on the other hand some vacant areas on streets periphery which creates security problems. The entrances are mostly from main streets and cul de sacs. The culde sac are used as entrances as buildings and car parks. The entrances also defines the paths which are useful ways of people in day period. In walking distance there are bazaar, markets, mosque, petty commercial etc. however all of them supplies the daily necessities. The main city center protects to be unique CBD property. The connections are successful to reach periphery settlements. There are pavements near roads and pedestrian roads also for pedestrians to walk. The lighting, resting furniture, green elements are provided by the maintenance can be problem related to vandalism. The semi public areas are secure as they are front gardens for houses but the public areas whose owns and boundries are not defined well are the problematic areas. The bus stops are secure as they are near to activities in settlement. The vehicle and pedestrian orientation is well-defined that some schools are on the last degree minor road. The view points are accessible but the hierarchy is problematic related to topography. The streets are mostly in human scale but the main junctions an done major road faces problem of speed and it is larger than human scale. There are some high enclosure feelings related to cul de sacs as the buildings are 5 storey and the road is maximum 10 m. the parking of cars is provided in perpendicular on road parking lots and on cul de sacs. They are all safe as near to blocks, many of them at the front of building entrances. They are functional in scale and measures. They are aesthetical for ground paved with locking Stones. They are well defined and enough. They are all connected to streets. They are lighted with street lights.

The width of roads are hierarchical and spacious enough to use of buses, cars and pavements are useful for pedestrians. On the main arterial the speed is high related to width of road but in smaller roads with rough cobblestone pavement so it decreases the speed. There is no cyclist road and pedestrinized activity road while these can create more livable and social environment. The pedestrians only use the

pavements near the vehicle roads. But the pedestrian Access is provided only in the Project area, there is no connection to neighbor settlements. The greenery landscape all along the road is decided and implemented so the scene is good considering the other housing Project areas and city center. When the walking distance is analysed from commercial centers, the eastern part of the settlement is disjointed related to topographic conditions and the far distance in walking category.

The ownership pattern is formed in island use, division according to condominium Law. In public – private analysis, the public areas are natural and artificial type. The public areas mostly are in the core of settlements but on hilltops there are also a few of them. The important nodes are visible from roads and houses. Furniture, lighting are used in public areas but vandalism is problem for these areas. Semi private areas are near apartments that includes resting, playing and sporting tools for housing owners. Semi private areas can be shown as in apartment blocks as transition areas. There can be talked about a hierarchy that we can see all the type of privacy in area.

Identity is not considered for area while the Project is made in hurry and provided for over necessity for sheltering. But the imposed Project was near to habits of people in terms of scale and building type as apartment. However the own character and dense housing supply opportunity provides the area important residential character.

The area provides for different income group. There are hierachic order in space from private to public. There differentiated scaled houses 2-3-5 storey and 80m<sup>2</sup> to 100 m<sup>2</sup>. there are different activity buildings used by public and private and public investments as commercial, educational and cultural activities. The variety is provided in different types and uses.

The ownership of the area was on public domain, directorate of forestry and private property changed to Condominium ownership and seperated to owners of houses which are eligible after earthquake from houses in center of city.

So there is associated common green areas but mostly they are unkept. Related to design and positioning of the buildings, the defined hierarchical private to public areas can not be provided. Related to it, the control of private area can not be satisfied so security can not be developed. The roads are flow areas and activity areas such as sport areas, playing grounds, commercial areas are most used and particularly gathering areas. The green parks, so they are important public areas for entire city.

According to neighborhood design principles, this housing area includes health center, culturel, commercial centers, open green areas for social activities. The integration can be classified as social and physical. In social terms, for entire city, permanent housing area is special with open green areas for leisure activities from walking, picnic, concerts, festivals etc. It can be attached to city with different activities such as education provision with schools, open areas etc. different land uses are found in Project area. According to entire city, this area has near building density, but also provides the social infrastructure for all city. In physical terms, the accesibility is provided with bus systems and vehicle transportation. The cycling can be a better solution for such a small city but this is always ignored.

There is connected vehicle road to city center. The main mass transport system is buses. Nearly 20.000 passesnger is carried daily from this settlement area to city center.

From solid – void analysis, social buildings as schools, commercial units, mosque and residential units are solids and parks, play grounds, valleys, roads, vacant areas and building fronts are void areas. The public uses are mostly in center of settlement but open areas and some schools are at the periphery of settlement. The public buildings can be readable from the plan with its scale and areas. The location give clues related to topography.

From neighborhood analysis, it can be said that the pattern is formed according to topography. There is linear and densed in 3 locations. On this linear corridor, there is bazaar, commercial, schools, green parks, health center etc. the corridor is dense on

daily times. The corridor is maximum 15 min to all permanent housing settlement pattern. The bus stops are on this route but in addition to this, there are bus stops also on narrow roads so they create a problem in traffic.

The edge is defined with roads as separators and connects to hilltops flats etc. as topographic characters.

The open areas are artificial parks, play grounds, social institution gardens, front gardens and sport areas and natural open green areas such as valleys.

The integration is not a problem for this part of housing projects because the public transportation, pedestrian paths to environment, speedy roads are all provided. But orientation and continuity are problematic. The molecular type of buildings created undefined access routes for settlement. There is no bikeways while there is a tendency for using bikes for sports and accessibility. The area is not gated and all integrated with paths, activities and transport.

The numerical information is total land is approximately 800.000 m<sup>2</sup> 463.000 m<sup>2</sup> is open green area, the population is approximately 28.000 and housing units are 7.000 and commercial areas are 101. In these numbers, the settlement provides enormous green area for environment that the open green area in center of city is 25.000 m<sup>2</sup> for 100.000 population.

#### **4.4.2.2. World Bank Houses**

##### **General Information**

During the reconstruction process, World Bank gave grant for construction of 622 houses. These houses projects were type. Social and cultural differences in occupants were not very well considered in the design process. Using typical housing layouts, cues or phrases in architectural and planning actions should cause critical solutions especially in flexible use of spaces implemented by The World



Bank. Thus, the congruence level with behavioral pattern issue is completely neglected even in World Bank implementations (Ünlü, 1998).

The houses were constructed with tunnel moulding system type and eventually this construction system blockades the flexibility of living in there. The height of the floor is 2.52 m and it is found low by the users. Houses had 2 rooms and 1 living room. The toilet and bathrooms are shared. The European-style toilet is found inappropriate by the users so that they were shared by the households. The plans were typical and they were not designed due to number of families and family composition. The window in the living room is found nonfunctional by the existing users. (Uzun, 2006).



Figure 15 : World Bank Houses (Photo: Personal archive)

This Project is first mass housing Project after earthquake to supply the sheltering demand. The buildings are modern and simple. The topography is a director for pattern. Sun, ventilation, sanitation is not problem for area. All architectural, open area, road and social center was projected by one editor so every thing was integrated in itself and implemented in very short time as 1 year. The blocks are some times attached some times detached related to topography. There is a try to define open common areas. The area was away from construction sites of city development region so there is no plan for area. The plan was made by also editor of Project and municipality approved it in municipal council. One hill edge was given

to be projected and constructed. The blocks are different from previous housing habits. They are small as 70 m<sup>2</sup> and 2+1. the area is the most important and valuable area when the Project finished. Because it was the first secure housings and near to center approximately 10 min. Untill the end of construction of permanent housing area the area was popular. Then the popularity started to decrease as other site was projected with larger housing units as 100 m<sup>2</sup>. this settlement area did not enlarge. Because reserve area was not given to World Bank to construction.






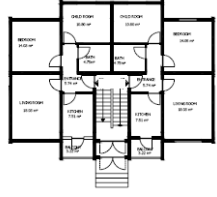


The houses are protected from noise disturbance. The heating is better as all the Windows are PVC and the walls are secured. The units are small so finding the wanted temperature is not difficult. Pollution is not problem 95% of the houses uses natural gases.

Socially it is an imposed type of arhitecture and scale for living. The previous habits are different as they were bigger. In fact, in these days, the owners of the houses cares the size so many of the owners buy new houses from different settlement or rent these ones. The character of the settlement became living area for working people coming from outside of city and students.


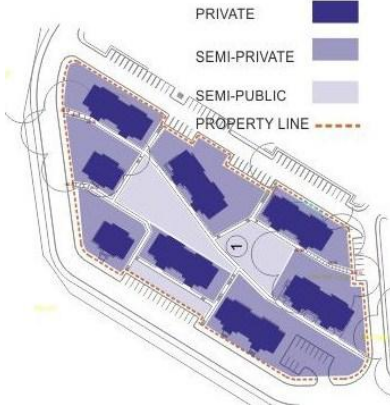
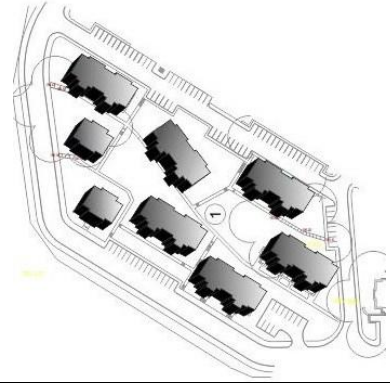

### **Design Analysis**

This housing area built by World Bank is identified earthquake houses. It provides low storey housing as demanded after eathquake. As they are built in standart way of production, all the buildings are similar in their iner designs but the heighta are differentiated.

**Table 5 : World Bank Houses General Maps**

Table 5 : World Bank Houses General Maps		
<p>Accessability</p> 	<p>General Information</p> <p>The vehicle movement is provided 10.-15m roads. The vehicle roads connects ring road with branches. Pedestrian movement is on pavements near vehicle road. There is no square for pedestrians. Parking is provided in parking lots.</p>	<p>Photo</p> 
	<p>Problem</p> <p>The vehicle based transportation system ignores pedestrian and cycling</p>	
	<p>General Information</p> <p>There is undivided green areas in which there are sport areas in it. Also in front of apartment blocks there are kindergartens with green areas.</p>	
<p>Green Areas</p> 	<p>General Information</p> <p>There is undivided green areas in which there are sport areas in it. Also in front of apartment blocks there are kindergartens with green areas.</p>	<p>Photo</p> 
	<p>Problem</p> <p>The integration to nature with pedestrian route and cycle ways are ignored.</p>	
	<p>General Information</p> <p>The sizes, storeys and colours are different. From 60m2-100m2 houses can be found.</p>	
<p>Structures</p> 	<p>General Information</p> <p>The sizes, storeys and colours are different. From 60m2-100m2 houses can be found.</p>	<p>Architecture</p> 
	<p>Problem</p> <p>The blocks do not define street and gathering areas. They do not provide enclosure.</p>	
	<p>General Information</p> <p>The sizes, storeys and colours are different. From 60m2-100m2 houses can be found.</p>	
<p>General</p> 		<p>Photo</p> 

**Table 6 : World Bank Houses Island Based Maps**

<p>Accessibility</p> 	<p>General Information</p> <p>Pedestrian uses the inside of island. The parking lots are on street side.</p> <p>Problem</p> <p>There is no pedestrianized area for pedestrian use. The cycling is ignored that the stairs are used in many areas in clusters.</p>
<p>Public-Private Hierarchy</p> 	<p>General Information</p> <p>There is a try to define semi private and semi public areas. Kindergartens are in this semi public areas.</p> <p>Problem</p> <p>The entrances from all sides from cluster damages the privacy.</p>
<p>Solid-Void</p> 	<p>General Information</p> <p>The long facade with 2 building entrances are more definable for enclosure.</p> <p>Problem</p> <p>In cluster, related to topography the semi public common areas can not be used.</p>
<p>Neighborhood Analysis</p> 	<p>General Information</p> <p>The green systems integrates with social activities. The central area is in walking distance.</p> <p>Problem</p> <p>There is no pedestrianized axe while this should integrate the clusters well.</p>

In the circulation system, The parking is mostly on streets as perpendicular and some are in front of the houses. They are functional and in good scale. They are aesthetical and well defined. All are connected to street. They are good lighted from street lamps and secure. The width of roads are hierarchical and spacious enough to use of buses, cars and pavements are useful for pedestrians. On the main arterial the speed is high related to width of road. There is no cyclist road and pedestrianized activity road while these can create more livable and social environment. The pedestrians only use the pavements near the vehicle roads. But the pedestrian Access is provided only in the Project area, there is no connection to neighbor settlements. There is no decided landscape around accesibility roads.

From street analysis, buildings do not reinforce the streets. The buildings mostly take services from green side of the buildings so streets are back of the houses. The loop system is a high speed road and can not be used as dense pedestrian area. There vacant and unowned areas. The walking distance to settlement around this area is too difficult for pedestrian since there is no pedestrian connection. But in itself, the pedestrian connection is provided by only pavements. There is no furniture and tree in area. The lighting is inefficient. The loop road and public areas are unsecure in nights. The commercial and other activies finished early hours of evening so the streets are more silent and unsecure. The orientation is problem but the nodes are school,health center, commercial activity on the main loop and on geometric centre. The streets are on human scale. There are no cul de sacs. There is no infrastructure problem.

When the walking distance is analysed from commercial centers, it is a well designed and positioned node for efficient use for every housing unit. The ownership pattern is formed in island use, division according to condominium Law. So there is associated common green areas but mostly they are unkept. Related to design and positioning of the buildings, the defined hierarchical private to public areas can not be provided. Related to it, the control of private area can not be satisfied so security can not be developed. The roads are flow areas and activity areas such as sport areas, playing grounds, commercial areas are most used and

particularly gathering areas. The green parks, so they are important public areas for this Project area.

The neighborhood pattern is composed related to topography. There is a car efor creating defined semi public areas but the public areas are not defined so many vacant areas can be seen on plan and real environment.

The center includes health center, sport areas, commercial buildings and school. There is open and close public uses near to each other. The daily interaction takes in these places. The public center is reached in 5 min. From all periphery. There is a bus system around the activities and from this loop system all the residentials take service.

According to neighborhood design principles, this housing area includes health center, commercial centers, open green areas for social activities. In social terms, this project area can not provide a better social infstructure so people uses city center for commercial and culturel activities. In physical terms, the accesibility is provided with bus systems and vehicle transportation.

The land use in the area is predominantly low densed residential and the other activities are for this location. There are commercial buildings, school, health center and residentials are solids and basketball, volleyball, football fields, play grounds, building fronts and vacant areas are voids.

The open areas are front gardens, play grounds, sport areas and vacant areas around the settlement.

Integration is main problem for settlement because there is no pedestrian connection to other settlements. There is only vehicle roads from this area to others. The lot division and discontinuity disables orientation from entrance to main facilities. The road is only director but not a good orientor. There is no walking hierarchy. There is

no bikeways. The loop road is speedy road. There barriers to deveelopment and accesibility such as topography. It is a gated community in itself.

As public - private analysis the main public uses are on the core of settlement that is the geometric center. The important uses as school, commercial are visible but the topography disables the feeling the center of the settlement. There is strict vandalism in parks, streets etc. semi public areas are front gardens in a few of them have playing tools and banks for sitting. They are more secure public areas. Semi privates are in apartment.

This area have an important character as secure disaster housing when first finished and many of the houses 1-2 storeys, but now it is selected by students and working people coming from outside as the units are small. The physical character was not considered by foreign invester at all.

The variety is between owners of houses as from different economic groups since they became ownership after earthquake. There is same sized houses they is no variety in types. The silhouette includes different building heights as 1-2-3 storeys.

The ownership of the area was on public domain, directorate of forestry and private property changed to Condominium ownership and seperated to owners of houses which are eligible after earthquake from houses in center of city.

The numerical informations are total land is 55.000 m2 20.000 m2 is open green area, the population is approximately 1.866 and housing units are 622 and commercial areas are 5.

#### **4.4.2.3. Beyciler Social Housing**

##### **General Information**

By cooperation of IBC (International Blue Crescent) and CRS (Catholic Relief Service) Beyciler Social Housing Project started as a result of this cooperation. By the light of data IBC provide, CRS donate 2.500.000\$ to the housing Project prepared by IBC. IBC construct 168 house projects with social and management center to families which had no security (Arslan,Unlu, 2001 ). The first duty was to select house owners in the project. Families were at the lowest income level. Construction of houses began in the first months of 2003. House owner's worked and participated in construction process. Four independent houses were designed in adjacent order as a block type. Houses had an independent house characteristic. This approach is considered for efficient usage of the property and supported "neighborliness" concept in a physical scene (Arslan,Unlu, 2001 ).

Beyciler social housing Project had an "Incomplete" delivery approach which the houses were constructed by the NGO's but interior of houses should be finished by the users. The ground floor serves a standart living area for an average family and is a "new beginning" opportunity. The users had a change to enlarge by their own efforts as well. "Incomplete approach" preserve low-priced, social characteristic of the houses and gives opportunity to construct more houses for families (Arslan,Unlu ,2001).

Families had chance to make changes in interior design. The flexibility of housing plan motivated the occupants to alter for their families.The observed attemptions can be indicated as below;

- Living room and children room can be joined together and became a bigger living room,
- A door can be added to the hall,
- The living room's door can be eliminated and joined with the hall,
- Selection of Toilet (Either European Sytle or Turkish Style)



- Selection of interior paint color due to choices.

Consequently, when Beyciler Social Housing Project and World Bank-Permanent Housing Project are compared according to their advantages as disadvantages. It can be pointed out from Beyciler Social housing Project that;

- Only open to low income families
- The houses constructed by the social house Project is 168 and has a small scale whereas the total house need is nearly 8000
- The people benefits from the project need help and organisation for the sustainability of the sites in future. This new NGO's should not be easily produced by the efforts of these low income families. So they need to be strengthened by the other NGO's.
- People can participate in different stages with different roles and tasks in the housing process.
- There is flexibility in design which includes possibilities for future changes. On the other hand World Bank and Permanent house projects had;
- In the long run finance are made by the earthquake victims
- The users own completed houses and environments. But the lack of participation in housing processes caused not to meet their expectations and broken down their old social relations.
- There are no flexibility in house plans so that the construction systems were with tunnel moulding system type and with reinforced concrete skeleton (Arslan,Unlu,2001 ).



Figure 16 : Beyciler Houses (Photos:personal archive)

The Project is a social housing encouraged by a foreign cooperative and participation of owners. The institution is Uluslar arası Mavi Hilal (IBC) and Catholic Relief Services (CRS). The projects is as a social housing that given to owners incomplete in this way they can appeal to many more people. The buildings are projected with good sun, ventilation and sanitation considerations. There have been no problem related to scales and distances between houses and design. the attachments between buildings provided open area definition and reinfortment of streets. The dublex blocks are given to one family. The incomplete type enables them to go on development with their own needs and lifestyles. After disaster houses were finished, there are many people who are renters or children of owners becoming homeless. Therefore such a Project was considered. The plan of settlement is determined by municipality and construction charities aggrement. The flat ground is near agricultural area as conservation area. This can be a problem for conserving new development pressure. The houses are nearly 90m<sup>2</sup>, at first floor there are 67 and second floor there are 22 m<sup>2</sup>. the connection to centre have been always a problem for vehicle and also pedestrians. There is no good roads for vehicles and no pavement and pedestrian ways to walk. There is stil need for social housing but the area can not give opportunity to new settlement.

There is noise disturbance from street and play grounds as the buildings are very near to road. Heating is not problem as the units are small and protected. Pollution is problem since nearly all of them uses coal and wood for heating.

Socially the settlement was created by participation so the Project is successful to create a lively environment.

This housing area built with involment of owners, the settlement formed own character. On the other hand, the diversity inner and outsider of the houses are provided. As citizens predominantly defined the demands on low storey housing all the houses are 2 storeys.

## **Design Analysis**

In the circulation system, parking in the area is safe as all the parking is done on the road in front of houses. They are functional and enough in size. They create a bad scene as they in front of buildings but the accessibility is easy in this way.

The width of roads are not hierarchical and spacious enough to use of buses and pavements are not implemented in Project area so they are not useful for pedestrians. On the main arterial the speed is high related to width. There is no cyclist road and pedestrianized activity road while these can create more livable and social environment. There is no pedestrian connection to neighbor settlements. No landscape is decided and implemented around the roads. The street frontages are defined and entrances from street. there is no vacant areas since all are defined and owned. The walking distance is too long that there is integration problem with center. The integration problem is related to accessibility and activities. The connections are problematic. The pavements are only walking routes. There is no furniture, green elements and lighting as a design tool. There is no determined activity areas. Commercial and other social necessities are provided from city center. The street orientation is defined for houses. There is no node different from health center and bus stops. Streets are all on human scale. There is infrastructure problem in rainy days.

When the walking distance is analysed from commercial centers, in the Project area there is no commercial area. Owners use neighbor settlement centers and they are far in walking scale. The ownership pattern is formed in island use, division according to condominium Law. Related to design and positioning of the buildings, the defined hierarchical private to public areas can be provided. Related to it, the control of private area can be satisfied. However the security is still problem related to social structure and income level of people. The roads are flow areas and activity areas such as sport areas, playing grounds are gathering areas but they are not used sufficiently.

According to neighborhood design principles, this housing area includes only health center. In social terms, owners use city center for commerce and other In physical terms, the accessibility is provided with bus systems and vehicle transportation. The area is low densed residential area that the functions are limited.

In solid – void analysis we can see that there is residents and health center as solids and play grounds, sport fields and front garden are voids.

Neighborhood pattern is provided with attached houses. The flat land was designed with housing clusters and their semi public spaces. There is readable hierarchy in space.

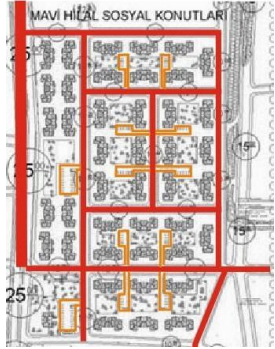

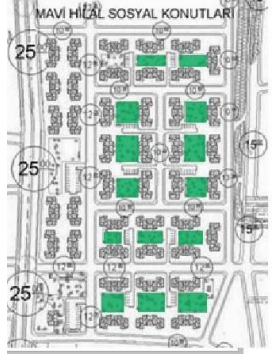


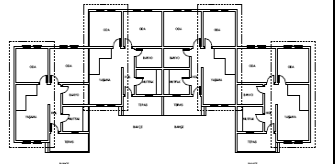

The center is around bus stops that people use them to reach city center. Health center and sport activities are on the geometrical center of design of settlement.

The edge is roads. The density, design and income level changes outside of settlement.



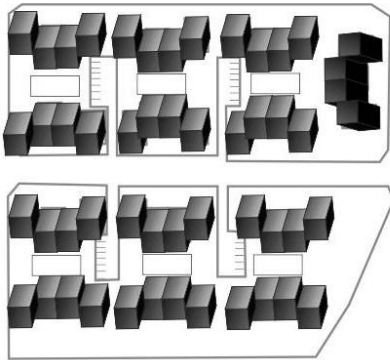

The open areas are front gardens which are mostly planted and closed with fences. The semi public areas are back side of the houses. They are used by woman for hanging clothes, visiting neighbor or playing for children.

Integration is problem for these people since they are low income people while the neighbors of this settlement is farmer with regular income. The cultural properties are ll different. Additionally, there is disconnection in physical terms that there is no pedestrian walkway and there is no fluent vehicular road. There is no bikeways while many of the owners uses bicycle as it is cheaper and center is 10 min with bike. There are barriers and conservation areas to go on development. It is negatively a gated community related to cultural and physical deficits. There is no investment bu municipality and private sector so the area becomes repulsive day to day.

**Table 7 : Beyciler Houses General Maps**

<p>Accessability</p> 	<p>General Information</p> <p>The circulation system is designed as grin iron system. The cul de sacsa re parking lots.</p> <p>Problem</p> <p>There is no pedestrianized area.</p>	<p>Photo</p> 
<p>Green Areas</p> 	<p>General Information</p> <p>There is no semi public green areas.</p> <p>Problem</p> <p>There is no public green area.</p>	<p>Photo</p> 
<p>Structures</p> 	<p>General Information</p> <p>In their inner designs they are differentiated with implementation of owners. The blocks define street and inner gardens that provides continuity.</p> <p>Problem</p> <p>There is maintanence problem that creates bad looking.</p>	<p>Archiecture</p> 
<p>General</p> 		<p>Photo</p>

**Table 8 : Beyciler Houses Island Based Maps**

<p>Accesibility</p> 	<p>General Information</p> <p>Pedestrian uses the vehicle roads. On the other hand, lack of lighting encourages vandalism.</p> <p>Problem</p> <p>It is not suitable area for pedestrian.</p>
<p>Public-Private Hierarchy</p> 	<p>General Information</p> <p>With building location and continuity the private and public hierarchy is provided.</p> <p>Problem</p> <p>The semi private areas can not used as efficiently as all looks to behind of the buildings. They are weak spaces.</p>
<p>Solid-Void</p> 	<p>General Information</p> <p>Low density blocks defines the street and common areas.</p> <p>Problem</p>
<p>Neighborhood Analysis</p> 	<p>General Information</p> <p>The participation encourages a differentiated housing site. The low density area includes health center.</p> <p>Problem</p> <p>The housing site do not have a center. The nearest commercial activities are away from 1 km.</p>

There is a good hierarchy in space. While the public areas are mostly in geometric center, new school building is made the on the direction of southern side. So the public spaces slips to southern. Some of settlement is away from this central activities. This makes these areas unattractive and unsecure. There is no furnitures in publicly used areas. The sport area and health center is under damage of vandalism. The semi private and semi public spaces are balconies and fenced gardens. The streets are publicly used areas. The hierarchy is well defined.

The participation in construction period have developed own social identity and character in area. However neglection brings deterioration and poverty for environment.

The variety is on the height that there 1 – 2 storey movements on facades. But there is no functional variety. The space hierarchy and variety is well defined, but the sizes for houses are strictly the same.

The projects area was posturage of village but with municipal council decision the area become residential area.

The total area is 70.000 m<sup>2</sup> and 12.000m<sup>2</sup> is used for social infrastructure.

#### **4.4.2.4. TOKİ Projects**

##### **General Information**

TOKİ Memursen Project is in western part of city nationalization from citizens for low and middle income, Kazukoğlu TOKİ is built in the reserve island in entrance of permanent housing area in southern part for Police cooperative and middle income, Nalbantoğlu TOKİ is built in the reserve island between permanent houses for disaster victims and Metek TOKİ is built on the Connction Road of Permanent housing by nationalization from citizens for low and middle income.



Figure 17 : TOKİ Houses( Photos:personal archive)

However all of them have different aims and they placed in different places of city, the projects are almost the same properties. All are mass houses apart from earthquake housing. The houses are physically good for getting sun, ventilation and sanitation. The detached houses are molecular type that there is no defined open areas and streets. The blocks are standart in all locations as ground level + 3. the houses are different scales from 80m<sup>2</sup> to 120m<sup>2</sup>. the center is differentiated from 15min to 30 min. There is no TOKİ reserve area to continue the construction near this settlements. But if necessary, there is an agreement between municipality and TOKİ the housing reserve areas are given TOKİ and TOKİ makes the develepment. These reserve island can not be used for different activities and uses.

There is no voice disturbance since there is no noisy road and the paly grounds do not give disorder to houses. Heating is not problem at first they all use fuel oil centrally than people started to change the system to use individually and natural gases. Heating is saved with PVC and protected walls. It is almost an imposed structure similar to all over the country. There is no reference to cultural and historical architecture and scales. Memursen and Metek Houses are built in more rural style settlement so the incompatibility can be seen.

### **Design Analysis**

In these areas, residentials, social infratructure, commercial, mosque, health center, administration center buildings are similar building as solids. Sport fields, front gardens and roads are voids.



This housing area built by TOKI is identified middle income group housing. As they are built in standard way of production, all the buildings are similar and diversity could not be provided.






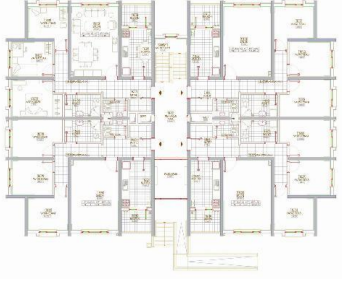


In the circulation system, parking lots are in back of the houses so they are unsecure. They are functional in scale and measure but some are solved as cul de sac. The connection to traffic can create problem. They are away from aesthetics as they are near green areas and not maintained well. They are efficient in number. They are not oriented. They are less lighted so unsecure.

The width of roads is hierarchical and spacious enough to use of buses, cars and pavements are useful for pedestrians. On the main arterial the speed is high related to width of road but in smaller roads with rough cobblestone pavement so it decreases the speed. There is no cyclist road and pedestrianized activity road while these can create more livable and social environment. The pedestrians only use the pavements near the vehicle roads. But the pedestrian Access is provided only in the Project area, there is no connection to neighbor settlements. The landscape along the road is not decided and implemented. When the walking distance is analysed from commercial centers, the efficient use of all units is provided.





The ownership pattern is formed in island use, division according to condominium Law. So there is associated common green areas but mostly they are unkept. Related to design and positioning of the buildings, the defined hierarchical private to public areas can not be provided. Related to it, the control of private area can not be satisfied so security can not be developed. The roads are flow areas and activity areas such as sport areas, playing grounds, commercial areas are most used and particularly gathering areas. However they are not used efficiently.

According to neighborhood design principles, this housing area includes health center, school, commercial centers for social activities.

**Table 9 : MHA Houses General Maps**

Table 9 : MHA Houses General Maps		
<p>Accessability</p> 	<p>General Information</p> <p>The ring road and branches as culdesac provide the circulation. The vehicle roads are 10-15m. The pedestrians uses pavements and inner clusters the paths are for pedestrians. The cycle is ignored.</p> <p>Problem</p> <p>The vehicle based transportation system ignores pedestrian and cycling</p>	<p>Photo</p> 
<p>Green Areas</p> 	<p>General Information</p> <p>There is green activity in Project area.</p> <p>Problem</p> <p>In clusters there is no efficient area for green function.</p>	<p>Photo</p> 
<p>Structures</p> 	<p>General Information</p> <p>The blocks are standart and simple. Molecular type of residential blocks. All provide 100 m2 use area.</p> <p>Problem</p> <p>The blocks do not define street and gathering areas. They do not provide enclosure.</p>	<p>Archiecture</p> 
<p>General</p> 	<p></p> <p></p> <p></p> <p></p>	<p>Photo</p> 

**Table 10 : MHA Houses Island Based Maps**

Table 10 : MHA Houses Island Based Maps	
<p>Accesibility</p> 	<p>General Information</p> <p>Problem</p>
<p>Public-Private Hierarchy</p> 	<p>General Information</p> <p>The ownership is division of island with condominium law.</p> <p>Problem</p> <p>The semi public areas used as car parks. There is sudden entrance from public to private.</p>
<p>Solid-Void</p> 	<p>General Information</p> <p>Problem</p> <p>The density of blocks prevent the open area system in clusters. The closed blocks do not encourage variety and choice of tenure. For communal uses they are not useful as they do not control Access.</p>
<p>Neighborhood Analysis</p> 	<p>General Information</p> <p>Several activities are provided in Project. in walking distance they are located.</p> <p>Problem</p> <p>The standartization creates a monotony</p>

According to entire city, this area has near building density, but also provides the social infrastructure for all city. In physical terms, the accessibility is provided with bus systems and vehicle transportation.

Both buildings and platings do not reinforce the street frontages. The green areas are all undefined. The entrances are mostly from green areas so streets are back of houses. The walking distance too long. In fact in Project area is 10 min. This shows only in region the circulation for pedestrian is possible.

The connections are problematic. The pavements are only pedestrian ways in Project area and connection to other settlement is impossible for pedestrian. There are public area furnitures such as play elements, sitting elements, lighting etc. but absance of continuity of activities and lighting creates security problems in nights. The orientation is good for vehicle since it was provided with road width. On this main road all activities are provided. The streets are on human scale but not defined. As many of the houses are stil empty there is no infrastructure problem.

The neighborhood is designed randomly. The flat area has no orientor. The center includes health center, school, mosque and commercial etc. the daily activities processes in there. From all of the settlement the center can be reached in 10 min. There is collector road from this area to Beyciler Social Housing Area.

The roads defines the edge but the area has different sytles so seem as a gated community.

The integration is problem as there is pedestrian Access problem and vehicle roads problem as they can not easily participate the main roads. There is hierarchy for vehicle road but no for pedestrians. There is no bikeways.

In public – private hierarchy the areas are weak. The public uses are in the geometrical center. Important nodes are on main route. Semi public areas are front gardens and semi private areas are in apartments.

There is imposed type of housing Project so we can not talk about an identity as good or bad.

The variety in this housing areas are between income groups. The facades are almost the same. The units are changible from 80 m<sup>2</sup> to 120 m<sup>2</sup>. there is no height differentiation and creates a bad monotonous space.

The ownership in Memursen and Metek was on private bodies. After natinalization process they were built. Other Project areas were on municipality who allocated for housing projects.

The total area for Metek TOKİ is 312.000 m<sup>2</sup> and 30.000 m<sup>2</sup> of it allocated for social infrastructure. Kazukoğlu TOKİ is 15.000 m<sup>2</sup> and 5.000 m<sup>2</sup> of it allocated for social infrastructure. Nalbantoğlu TOKİ is 90.000 m<sup>2</sup> and no area was left for social infrastructure. Memursen is 120.000 m<sup>2</sup> and 15.000 m<sup>2</sup> of it allocated for social infrastructure.

#### **4.4.3. Conclusion**

According to neighborhood design guidelines, the case study areas are analysed. According to analysis, the permanent houses have their own center which includes tailor, bazaar, market, hairdresser, stationery, greengrocer, polica station, water seller, etc. which makes the center discernable and self sufficient. On the other hand on plan, the center is dominant and located in centrum. With reference to activities other study areas do not have main center exactly.

Street characterization is seen only in Beyciler houses. It is a result of closure of buildings around the street. other Project areas have molecular type of building therefore street can not be seen as defined directly.

Table 11: Analysis Chart

		BEYCILER	W.B.	P.H.	MHA
NEIGHBORHOOD DESIGN GUIDELINES	discernable center	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	buildings placed closer to the street and a variety of gathering places	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	a mix of uses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	mix of housing styles, types, and sizes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	narrow, interconnected streets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	historical or architectural features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	environmental features	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	prominent sites and vistas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	elementary school	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	parking lots	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ACTIVITIES	SCHOOL	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	HEALTH CENTER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	COMMERCIAL CENTER	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	GREEN AREAS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	SOCIAL AREAS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ACCESSIBILITY	MASS TRANSPORTATION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	PEDESTRIAN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	VEHICLE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	CYCLE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CONTROLLING GROWTH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
INTEGRATION	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

The uses of buildings are not mix. The dominant use is residential. The other activities are located in differentiated buildings.

Beyciler houses provide variety in inside designs while the World Bank houses provides variety in storeys, sizes, colours. Permenant houses are differentiated in only colours.

All projects encourage interconnected roads for vehicle however, in terms of pedestrian and bicycle ways they are unsuccess connections. Beyciler houses have more narrow streets which necessitates lower speed for vehicles.

None of the projects provide historical and architectural features.

Permenant houses environment has differentiated environmental features such as connections to natural forest, locating sides of valleys and a better scene of green areas of city. The open green areas uses these environmental nodes and uses as vistas. With reference to topography such spaces are precious areas for entire city.

In World Bank Houses 1, in permanant houses 3, in MHA houses 1 elementary schools is found.

Parking lots for all projects are designed. Beyciler houses parking areas are on road parking while the others are parking lots. Lighting, size, ground material, point of view from houses are designed for convenient use.

According to activity provision the Ministry provision is best and TOKİ somehow better for social activities and vitality in functions. But the others provide differentiated activities in clusters.

Ministry provision is integrated to city with land use patterns and denses. The education and open areas are used by all citizens. While the other Project areas are

residential function only. All the settlements connect to city with vehicle Access and mass transport systems with buses.

It can be seen that the modernist style blocks formed living spaces with some guidelines of neighborhoods. The ministry provision as permanent housing is better for creating a livable and functional residential space. According to guidelines, the second Project is World Bank houses, then TOKİ and lastly Beyciler social houses. However the Beyciler houses are built with participation of people and generated street pattern, enclosed open areas etc. the settlement is not in the expansion route of city and the minimum maintenance reduced the quality of environment. So the area became the worst residential area.

Other mass housing areas are molecular blocks and weaken environment at first. However, with other neighborhood guidelines as circulation elements, landscape, activities etc. they became more livable and functional spaces.

The first item for neighborhood design is character that this is only seen in Beyciler social Housing that is built with participation of owners of houses. Other than this settlement the mass production is used and standard blocks prevented the special character. The livability in streets are analysed in terms of parking, lighting, speed, connection, width, Access of pedestrian, cycle, mass transport and vehicles. According to these items the houses built by Ministry of public Works and Settlement are better in circulation, sizes, connection and parking for vehicle. However it can also not provide a better environment for pedestrian, cycle and additionally not in suitable size for walking. In these terms, the others are worse than this one. The livability depends on the pedestrian Access and environment for pedestrian transitions; the landscape is not designed for good orientation and well scene environment for all projects.

In this study, Düzce is tried to be analysed and residential areas are discussed in design rules. In it important to emphasize that in Düzce, city develops randomly apart from plan. Plan is easily predicted with daily trends. In fact, the daily necessities



can not be supplied so citizens in many cases, overcome the problems. In these cases, the earthquake is the most important factor which affected the city life and city pattern as a whole.

The new construction areas are all away from existing settlement that this created a jump in development. New residential areas are planned. All of these residential areas are examples for modern type of housing. The housing areas affects the social life that people in the new city region uses more the walking tracks, pergolas to conservation, play grounds to play children etc. then in centre. The new housing areas generated a new value for several district apart from city center. this is important for city centre relaxation and scattering density. But with activities and uses the new regions have to be encouraged for a better settlement. But always the scale and size for new activities have to be controlled. Otherwise the value and optimality of houses in permanent type will lose value and become vacant. The city center still can not transform. There are many empty parcels. The damaged buildings can not rebuilt because the storeys were restricted to ground level + 2 storeys and this minimization of construction rights combined with construction servitude that resulted in decelerating of space recreation. The entrepreneur does not want to invest to construction while the experts from ministry of public works and settlement controlled the buildings. The maximum construction right was ground level + 2 storeys. But there have been many buildings from before the earthquake not the same height. They are mostly ground level + 5 storeys. This is a problem of silhouette. The previous plan gave attached while now the plans admits detached form. So there are different visual appearance. The economic problems in municipality makes the nationalization difficult creating spaces as social areas, parks, schools and roads etc. impossible.

If we take the modernisation term as an environment which is healthy, functional and accessible, the housing we have discussed are all modern. But in design details the different reasons have been resulted unsuccessful. They are modern as the provision of fresh water, rubbish collection, natural gases, transport systems and infrastructure of

road, junction, car parks, health centers, rehabilitation center, sport areas, green parks and commercial areas.

In all projects the ownership is island division and condominium law. This resulted in common public and semi public areas in clusters. But these areas are unkept so bad looking. Public areas are used efficiently in earthquake houses such as World bank and Ministry of Public Works and Settlement provision. But the hierarchy of the space is not defined with design so this brings the space uncontrol.

## CHAPTER V

### CONCLUSION

In this thesis whether the mass housing areas in Düzce housing areas provide modernist and new urbanist elements or not is the main concern. It can be seen that the functional sizes and uses in simple form are provided in housing areas in modernist thoughts. The activities for a neighborhood are also used in these housing areas. However, some of the guidelines for livable street and public realm are used in designs, the exact livability and publicity can not be succeed. This is a result of integrated design deficit. Modernist elements in implemented areas brought the standardization as criticized previously. It also generated a healthy environment with ventilation, sun and sanitation. The production is mostly by government or welfare institutions similar to entire world examples and literature. According to new urbanist principles, the activities like school, health center etc. are also provided. This supplied the need of different functions.

In upper scale, the deficit of a transportation mode and integrated land use pattern prevented the integration of housing areas to entire city. The production of houses for huge housing demand after earthquake is a modernist way of mass production. However for the sustainability of these spaces the design necessities are not considered.

In inner Dynamics, as a result of earthquake the housing areas are still used in favour. But if there was other spaces for residential these areas most probably were not used such an intensive way.

On the other hand, in a neighborhood it is seen that the mix use functions are inevitable as providing livability in day and night time. The vitality should mostly be encouraged with commercial and residential mix.

As a proposal, after all, this small city expanded with suburban settlement around city center. The disintegration and unsuccess in accesibility created problem several times. Design within cluster and design between clusters can be revitalized and varied with small implementations. These can be made by participation of owners in cluster units and municipal administration in urban scale. There is apperant deficit of places for people which can raise the quality of public realm. This areas can be designed with enclosure and continuity tools of urban design to make places. These areas can be environment for everyone Access and benefit from the full range of opportunities. The previously built environment loses value day to day. To save these areas, they can be enriched with characterizing. The richness can be provided with visual appropriateness which can be integrated into the existing urban form and natural and built environment. There is need to make connections with movement. This movement has to be legible and logical. The existing and new settlements have to be integrated urban form and natural environment. The Access should be addressed people and places by considering the needs of people, jobs and services. The landscape is an extreme tool for creating common places for integration. They should be designed with natural harmonics. It is also considered that the direct and indirect impacts on natural environment. The diversity of activities always provide social interaction and variety. But the needs are important for taking decision for creating mix-use land for a settlement. The investment has to be controlled that land value should be sustained. Lastly, every small or big scale design affects the environment. Adaptability for environment is important. The new environment should be accessed by everyone and benefitted by all members of society.

To sum up, the design of residential area is analysed with examples with modernist and new urbanist literature. To create livable spaces the modernist functionality, mass production and integration, new urbanist neighborhood design with activities complement each other. However, these guidance can be integrated with street and landscape designs in details. In new urbanist approach mix use is used different from

modernist land use zones. This makes more livable spaces in every time of day. In all four case areas, the mix use is not seen.

On the other hand, from the literature for providing livable and public realm spaces the items are mostly met by permanent houses. However, the area can not give the exact livable and public sense. This can be related to architectural, street or landscape design.

In fact, the molecular blocks can be cluster, some architectural tools such as courtyards, arcades, terraces can bring a style for areas.

In such areas, the streets are important elements for design. such spaces can be projected as home zones that residential streets in which the road space is shared between drivers of motor vehicles and other road users, with the wider needs of residents (including people who walk and cycle, and children)

The aim is to change the way that streets are used and to improve the quality of life in residential streets by making them places for people, not just for traffic. Changes to the layout of the street should emphasise this change of use, so that motorists perceive that they should give informal priority to other road users. An urban context analysis should be carried out to relate the design of the Home Zone to the buildings and their uses; and the proposed uses of the streets themselves. It is also important to consider local connections to ensure that the Home Zone is successfully integrated with the surrounding area. The advantages are reduced driving speeds - achieved by making the driver slow down as a result of the new physical layout. Greater levels of safety than traditional streets - due to speeds being reduced the potential for accidents in the streets should be reduced. This allows for safer play or social gathering of residents, which may also reduce the potential for crime as more people are out and about. More efficient use of space - a home zone tries to balance the space available for the movement of vehicles with the provision of space available for other types of resident use. A more attractive and visually diverse street scene - creating a people-friendly environment means more consideration

being given to the design of paving and planting areas within the street. Increased socialisation - people tend to stay in the street space for longer periods of time following home zone treatment and there is evidence that more dialogue takes place between residents of all age groups.

Additionally, landscape design should be implemented in areas which provide orientation to public areas or connection to streets. The entrances of buildings should be visible. The lighting should be provided for security. From parks, the buffering should be used for visual and noise disturbance.

In forming a residential area, space is also important as the supply amount and the stability of houses. In case study, in Düzce after earthquake the demand is supplied strength housing blocks in huge quantities however the space is ignored. Parallel to Düzce, the mass housing provision for housing need is also noted in Turkey. Mass housing areas needs more concern to create more livable spaces. In this study, it is tried to be exemplified and discussed with design guidelines.

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