An Analysis on the Proximity of Green Spaces in Housing Environments

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ABSTRACT

The appropriate design of the green space may improve the quality of housing environment relying on its visual, physical and psychological impact on urban dweller's life. Recent research shows that people have constantly attempted to alter their living environment through involving with green spaces especially in their housing periphery. The urban greenery such as green yards, gardens and parks, which are built to cover up the lack of green spaces in the cities become one of the important issues for urban life. As a result, the level of accessibility and permeability of greeneries within the cities, in fact, affect the residents' level of satisfaction and the quality of life.

The current study applies the proximity concept as an important tool for reading interrelations between housing environment and the green spaces in various contexts from the single house building to the urban scale. The thesis is aimed to support the argument of greenery's impact on the quality of residential life by the means of a thorough literature review of the introductory chapter. Then it focuses on proximity concept and importance of accessibility to green spaces in two different housing typologies as samples. The first case is a standard housing neighborhood which consists of row semi detached houses and located in a Nicosia city in North Cyprus. Second one is "sheshsad dastgah" located in Mashhad city in Iran which formed by apartment blocks. Case studies are selected from two different countries in order to understand the role of culture to define the model of proximity, which is based on the cultural distances.

The results showed that proximity to greenery provide an opportunity for residents to extend their activities to outdoor spaces and increase the feeling of belonging to the neighborhood. Residents use plants as a flexible tool to modify the level of privacy in their living environment, and define their territory. Through the observations of proximity to green spaces within four hundred meters from the home to the green spaces and in reach of maximum 5 minute time period, increase the resident satisfaction and encouraged them to participate in the outdoor activities. Since current urban development regulations and production methods of multiple-family units limits dwellers access to green spaces on the ground level, this study suggested to recreate the vertical green spaces such as green facades, green balconies and roof gardens to provide a new perspective in proximity of green spaces.

Keywords: Housing environment, Green spaces, proximity, territory, privacy.

ÖZ

Yeşil alan tasarımı görsel, fiziksel ve psikolojik olarak kentlilerin yaşamı üzerinde olumlu etki yaratması ile konut çevresinde kalite artışına neden olmaktadır. Yapılan son araştırmalarda, insanların özellikle konutlarının çevresine yakın çeperlerde sürekli olarak yeşil alanlar aracılığıyla yaşam ortamlarını değiştirme ve iyileştirme çabaları gözlemlenmiştir. Şehirlerde yeşil alanların eksikliği azaltmak için bahçe ve parkların planlanması kentsel yaşam için önemli noktalardan biri haline gelmiştir. Şehirlerde yeşil alanlara erişilebilirlik ve geçirgenlik düzeyleri, yaşam kalitesi ve sakinlerinin memnuniyet seviyesini etkilemekte olduğu sonuç olarak dile getirilebilir.

Bu çalışmada, tek bir konuttan başlamak üzere, kentsel ölçekte çeşitli bağlamlarda oluşan konut ortamlarındaki yeşil alanlar arasındaki ilişkilerin deşifre edilmesinde yakınlık (proksimite) kavramı önemli bir gösterge olarak ele alınmıştır. Bu tezde giriş bölümünde de belirtildiği üzere, ayrıntılı bir yazın incelemesi yoluyla yeşil alan ve mekanların konut yaşam kalitesindeki etkisi söylemini destekleme amaçlanmıştır. İlk bölümü izleyen bölümlerde ise, yakınlık kavramı ve örnekler olarak seçilmiş iki farklı konut tipolojisinde yeşil alanların önemi üzerinde durularak seçilen örnek durumlar incelenmiştir. Birinci örnek, Kuzey Kıbrıs'ta Lefkoşa şehrinde bulunan ve bitişik nizam sıralı konutlardan oluşan "Standart Evler" konut grubu ve yerleşmesidir. İkinci incelenen konut kompleksi ise apartman bloklarından oluşan ve İran'ın Meşhet şehrinde bulunan "Sheshsad Dastgah"dır. Kültürel uzaklıklara dayanan "Yakınlık" modelini tanımlamak ve kültürün rolünü anlamak için bu çalışmaları iki farklı ülkeden seçilmiştir.

Konut çevrelerinde yeşil alan tasarımı ve uygun yakınlıkların belirlenmesi konusunda yapılan bu çalışmadaki ise yöntem olarak gözlem, anket ve söyleşi yoluyla çözümlenmeye çalışıldı. Sonuçlara göre, yeşil alan ve mekan çözümlemelerine olan yakınlık düzeylerinin, konut sakinlerine açık alanlardaki faaliyetlerini ve mahalleye aidiyet duygusunu arttırmak için bir olanak sağladığını göstermektedir. Konut sakinleri ise kendi yaşam ortamında mahremiyet düzeyini değiştirmek ve belirlemek için esnek bir araç olarak bitki ve yeşil elemanları kullanmaktadırlar. Böylelikle, kendi konut etrafında sahip oldukları mekan ya da topraklarında belirledikleri egemenlik sınırlarını tanımlayabilmektedirler. Örneğin, dörtyüz metre uzaklıkta bulunan yeşil alanlara, konutlardan erişimin maksimum 5 dakikalık bir süre içerisinde ulaşılabilmesi, kullanıcının ikamet memnuniyetini arttırarak onları açık hava etkinliklerine katılmaya teşvik etmektedir.

Mevcut kentsel gelişim düzenlemeler ve çoklu aile birimleri üretim yöntemlerinden dolayı, konut sakinlerinin zemin seviyesinde konumlanan yeşil alanlara erişiminin kısıtlanması, bu çalışmada yakınlık konseptine yeni bir bakış açısı ortaya koyarak, yeşil elemanlarla desteklenmiş cepheler, balkonlar ve çatı bahçeleri gibi dikey konumda yeni yeşil alanlar önermektedir.

Anahtar Kelimeler: Konut Çevresi, Yeşil Alanlar, Yakınlık (Proksimite), Sahiplenme, Mahremiyet.

Dedicated to Kasra

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Chapter 1

INTRODUCTION

1.1 Backgrounds of the Study

Green space can alter the quality of housing environment due to its visual, physical and psychological impact on urban dweller's life. Recent international studies emphasize the importance of nature for people's quality of life, but the reality is that the new concept of compact urban form can only serve the urgent need of urban greenery for residents. Growth of the population has generated a great deal of discussions about the provision of land for new housing development in cities. The history of urban design showed that families with children prefer to live in suburbia due to the lack of public green spaces in the cities. However, the new concept for urban design proposes a compact form in order to achieve sustainable urban life. Compact city idea proposed by Dantzig and Saaty's (1973), the extreme form of centrist, which decrease urban sprawl and protects countryside. Compact city would reduce the travel distances, energy consumption and pollutions. Therefore, there is a gap between residents' preferences and urban strategy.

On the other hand, public green spaces are proposed as an effective factor in order to create a sustainable housing environment due to its environmental, social and economic benefits. According to Laurie, landscape and urban greenery have physical, physiological and psychological effect one human life (Laurie 1975). This means green spaces in the urban context and open spaces do not just play aesthetical

role, but they also play a significant role in ecological systems that preserve air, water, micro-climate, energy resources and have an effect on human well-being and quality of life. Thus, the necessities of landscape or green spaces in housing environment have become an inevitable issue in sustainable design. Consequently, the quality of contemporary residential development and the green spaces in relation to them has become the main concern of current research.

1.2 The Problem Statement

Recently, the growth of the population has generated a great deal of discussions about the provision of land for new housing development while it is clear from previous research that most of the people prefer to live in greener spaces. However, over the past few decades, cities become bigger and denser to provide more space for a living, but using land for green spaces decrease. Now the problem is the contrast between user's preferences or demand for more green space, and the compact-city concept. The main questions are:

- How do the green spaces increase the quality of the resident's life?
- Does the proximity to the green spaces can be an important parameter for inhabitant of a certain society?
- How does the housing environment organize to create maximum proximity to green spaces in different scale of design in compact cities?

Answering these questions provides a better understanding of possible advantages of integrating the housing environment with green spaces and the possibility of developing this idea for new housing developments.

1.3 Aim and Objectives

The aim of this survey is to analyze the impacts of green spaces on human life and its social, physical and psychological features. Furthermore, it has focused on the proximity of urban green spaces due to their efficient role in an urban context, especially on housing environment. This study focused on proximity features to find a standard dimension to reach green spaces by the residents in the cities. The evaluation of this study is expected to provide a framework for reading housing by proximity model, and understanding the role of different levels and typologies of greenery to the housing environment within the urban context as well as the configurations of the housing units.

1.4 Limitation

In this study, housing exterior spaces and the green spaces surround houses are examined in two different cities in horizontal and vertical direction. The cases are "Standard Evler" project in a Nicosia city in North Cyprus and "Sheshsad Dastgah" residential project in the Mashhad city in Iran which are shown two different examples of housing environment. "Standard housing" neighborhood consists of row semi detached houses while "Sheshsad Dastgah" is formed by apartment blocks. In case number one, the proximity of green spaces examined was effective in the horizontal direction and it focused on the connection between home and its private garden on ground floor. However, in case number two, the proximity model studied was in vertical direction and it determined the connection of houses in the apartment blocks and shared common green spaces in the housing complex. Case studies are selected from two different countries in order to understand the role of culture to define the model of proximity of the green spaces through housing environment. In this research, the period of housing construction has not been considered in the similar

timing in these two selected cities, due to the fact that housing exterior spaces continuously have been changed according to residents need and their cultural background.

1.5 Methodology

The thesis is based on the qualitative research methods blended with questionnaires and interviews of the selected households. It has been organized in four steps: the first step is a literature review and study previous research about the impacts of green spaces in human life. Subsequently, it has focused on literature review on the theory of proximity , territory and privacy and its relation in the territory of housing units in order to create a background for the study. The third step investigated the housing proximity of green spaces in different scales from urban, neighborhood, cluster to the housing unit in order to attain standard model for housing proximity in various scales. The last step, analyses the proximity model on two specific case studies, which are selected from two different urban contexts, first one from Nicosia city in North Cyprus and the other one from Mashhad city in Iran.

Ten houses are selected from each neighborhood to examine the model of proximity in different scale. They are selected according to their strategic location in the neighborhood and activities which take place in the housing exterior spaces that affect the model of proximity. The method for collecting data was observed each neighborhood in three different times, interviews with ten selected houses from each neighborhood and fifty questionnaires are filled by residents in both neighborhoods. The case studies are selected from two different countries in order to show the effect of culture and lifestyle in human behavior. Besides, the differentiation of urban

context in these two contexts will show us the different model of proximity in a relatively small town “Nicosia”, and a compact city “Mashhad”.

Chapter 2

IMPACTS OF NATURE AND GREEN SPACES ON HUMAN LIFE

2.1 Introduction of Green Space

Nowadays, urban green spaces become one of the significant subjects for architects, urban designers and planner due to the lack of the greenery within cities and their valuable role in human life. According to Handley et al. (2003) green spaces in an urban area consist of a variety of different land features which include different functions or it can be formal or informal green spaces. In other word, urban green spaces included any vegetated land within a city such as parks, sport field, children‘s playground, gardens, grassed areas and cemeteries. Moreover, they are the ‘green lungs’ of the cities, which improve people’s physical and mental health. They may provide places for recreation activities like walking, cycling, sitting, socializing and children playing.

Further, Chiesura (2004) argued, that urban parks and open green spaces have a strategic importance to increase the quality of urban life and the provision of urban greenery such as Urban parks, forests and green belts raise the quality in a different way. Moreover, the green spaces provide environmental impacts such as purifying air and water, filtering wind and noise and create micro-climate effect and provide social and psychological services which have an important role on the livability of modern cities and the well being of urban residents.

Studies showed that the green spaces increase the quality of the residents live, while it takes place when the greenery establishes the direct connection to the places where people live around it. For that reason Olmsted (1870) stated, the presence of single park with large size and scale is not enough for residents. Therefore, the green spaces especially the parks should be interrelated to the others and to the housing neighborhoods surrounded them.

It is apparent from the studies that urban green spaces provide various benefits for urban living. Therefore, this chapter has focused on the role of green spaces in human life due to its physical, social and physiological impacts. The next section (chapter 3) will examine the relationship between different urban green spaces and residential environments and will examine the concept of proximity and its effect in the housing environment.

2.2 Benefits of Green Spaces

Over the past few decades, discussions over the connection of people with green spaces have become extremely heated due to the lack of greenery in the cities and effect of compaction of cities disconnected people from nature. Mansor and Said (2008) stated that urban greenery is an interrelated network of ecological system which affect the quality of the environment by conserving air, water, energy resources and providing micro-climate effect. Besides, the green spaces are vital spaces for urban life which provide a network for recreation, leisure activities and social interaction for urban residents.

The result of Mansor's studies on people experience of nature showed that connection with greenery provides social, physical and psychological impacts on -

human life. Socially, relationship with green spaces increase community interaction between family, friends and neighbors and provide a sense of harmony, bonding and attachment to a place (Kim and Kaplan, 2004). Physically, green spaces make opportunity for residents participate in recreational activities, which may include physical activities like jogging, walking, exercising and playing (Mansor and Said, 2008). Furthermore, psychologically, connection with the outdoor environment provide a feeling of pleasure such as enjoyment, being relaxed, comfortable, calm and restful and recovery from stress (Korpela, 2002; Ulrich, 2002; Cooper-Marcus, 2000; Rohde and Kendle, 1994). In summary, connection with urban green spaces improves the quality of residents' life in cities.

2.2.1 Social Impacts

According to the studies the greenery creates a network for social interaction and social activities in outdoor spaces which bring various benefits to the social life. Section below examined the social impacts of green spaces.

2.2.1.1 Social Interaction and Recreational Opportunities

Zhou and Rana (2011) argued that most of activities in outdoor spaces and social interaction are taking place more frequently in a preferable environment than other places. Kweon et al. (1998) stated that greater access to green space makes more social tie between older people in an inner city than others. In addition, a sense of the community can be increased by frequently visiting the outdoor green space (Kearney, 2006). Besides, green spaces create opportunity for residents to spend more time in the outdoor area which make more social connection.

Moreover, different enjoyments can take place in different type of green spaces. For example, urban parks provide places to picnic, recreation and socializing or

neighborhood Park may provide daily contact with nature for residents (Fleischer & Tsur, 2003).

2.2.1.2 Positive Effects in Users Groups

The section below investigates the impacts of green spaces on different user groups such as children, adults, elderly, men, women and disabled people. However, the most of the impact of greenery goes back to the children and elderly people due to their having more time to spend in open spaces.

2.2.1.2.1 Age Groups

The Studies illustrate that young adults participate in the green space for more leisure-activities or physical activity while results of other studies showed that adolescence and teenage girls (15-18years old) are less preferred to attend in physical activity due to the safety issued in urban greeneries. Several studies have drawn lots of attention to the role of green spaces on different age groups, but older persons and children were commonly cited as more infrequent users (Sugiyama et al., 2009). Therefore they may receive more benefit from greenery.

The results of the studies showed that physical activity has an important role in child obesity. The Potwarka and colleagues (2008)'s research illustrated that children's weight is related to the availability of green spaces, which has at least 1km distance from the children's living areas. Besides, open spaces without well maintenance or neglected spaces with damaged facilities particularly affect children's lives. Generally parents prevent children from playing outdoors specially from such places as risky and associated with anti-social behavior. Thomas and Thompson (2004) in "A Child's Place" study mentioned that the outdoor environment is a social space for children which influences the way they use public space for play and personal development.

Besides, one of the most important social benefits of green spaces comes back from children playing outside. Open spaces help children develop their imagination and creativity, and playing outside create opportunity for children to socialize and meet others from different cultural backgrounds and classes. Studies showed that children who are playing in natural environments have more improved concentration than those playing in non-green environments.

Frances Kuo's studies (2001) showed that connection with even very small green spaces may improve the children's abilities to pay attention, delay gratification, and manage impulses. In addition, Davis (2008) described that being in contact with green space might increase Children's attention. Besides, Kahn and Kellert's research (2002) on the nature and child development argued that cognitive, affective, and moral development has a strong connection with direct contact with nature.

In case of elderly people, the result of the studies showed that physical activity improves older people's mental well-being and decrease depression and anxiety (Lampinen et al, 2006). Moreover, other research illustrated that green spaces provide an opportunity for physical activity, which improve elderly well-being in terms of reducing the risk of 'dementia' (Karp et al., 2006; Larson et al., 2006), and decrease the possibility of Alzheimer's disease (Teri et al., 2003). Therefore, green spaces near to the living environment create opportunity for a variety of physical activities and the characteristics of these places can influence the elderly's choice of participating in outdoor activities (Sugiyama et al, 2009).

It is clear from a study of elderly' behavior in the United States that, availability of green spaces near to their living environment provides the strength of social bonding among residents who are living in the neighborhood (Kweon et al, 1998). Furthermore, existence of outdoor green spaces in the neighborhood and use of this place increase the social interactions among neighbors and can contribute to the sense of community (Kearney, 2006; Kim, And Kaplan, 2004).

In addition, Takano and Nakamura's analysis (1996) on walk able green spaces near to the housing projects showed a positive effect of green spaces on the longevity of elderly. Also, Milligan et al (2004) 's research argued that contact with green spaces and gardening activity might improve the sense of achievement, satisfaction and aesthetic pleasure from the environment and improve their general health and well-being.

2.2.1.2.2 Gender, Ethnicity and Disability Groups

According to Cohen et al (2007) man and women used the green spaces in different ways and the greenery has different impacts on them. For example, males participate in green open spaces more than females, and they are twice as likely to be more active. The results of studies on the availability of green spaces, in the Universities of Edinburgh and Glasgow (2012) showed that men living in the more green environments were about 10% less likely to die from lung and heart problems than those in the least green spaces. But, there is no difference between women in this case. Foster et al (2005)studies illustrated that women were more likely to walk without specific purpose rather than for physical activities and exercising . Living in homes surrounded by green spaces and being in touch with the nature also, impacts the pregnant women due to its effect of cleaning air and increasing O2.

On the other hand, the results of other studies (Mitchell and Popham, 2008; Ball et al, 2007; Morris, 2003; Abercrombie, 2008) determined that ethnic minorities, females and disable people are less likely to participate in urban green spaces due to the perception of safety and their hard accessibility and permeability.

2.2.1.3 Crime Reduction

Mostly, people imagine that more vegetation areas increase the crime by providing a hidden place for criminal activities. They assume that open mowed areas are safer than densely vegetated areas, which cause more feared for them. However, maintained green spaces extremely decrease crime. The result of over 98 studies on the role of green spaces in apartment buildings in Chicago described that green spaces cut crime by half (Barton, 2008). As it will discuss later (2.2.2 psychological benefits) restorative effects can be achieved by visual contact with nature and the attractive living environment may also improve well-being by enhancing satisfaction, attachment, and a sense of responsibility. Related to these results, contact with nature might reduce feelings of anger, frustration and aggression (Groenewegen et al, 2006).

Additionally, Barton stated "green spaces increase a neighborhood's collective surveillance by inviting more people to use vegetated landscapes and ensuring more eyes on the watch to prevent crime in outdoor spaces" (Barton, 2008). Consequently, neighbors can control their local environments, and this may increase feelings of social safety and even reduce actual rates of aggressive behavior and criminal activity within the neighborhood (Kuo & Sullivan, 2001).

2.2.1.4 Increased Workplace Productivity

Studies of workplaces show that green spaces within a business environment improve productivity and morale among employees. Desk workers with a visual contact with nature such have a window, in a picture frame, or around them in the form of indoor plants have more comfort and relaxation feeling and those with no visual connection has more stress and anxiety (Dravigne, 2008).

2.2.2 Psychological Impacts (Well-being Benefits)

The green spaces have a positive effect on human well-being and mental health. Therefore the section below considers the psychological impacts of greenery in the urban context of human life.

2.2.2.1 Mental Health

Recently the relation between landscape and health became an important issue in research and the urban policy level. The world's Health Organization stated health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Therefore, The European Landscape Convention (Council of Europe, 2000) decided to encourage people to protect the landscape and consider it, as "a key element of individual and social well-being". Thus, this understanding of landscape and health prepares the background to emphasize on the relation between human psychological and social needs and the form of environment. Martine Petelot stated that connection with greeneries is necessary for mental well-being. He argued "Our garden allows us to work the earth, to watch things grow, people need to scratch about in the soil, breathe in the scent of plants and flowers, let off steam and meet other people. For many, it is almost like therapy" (cited in Barton, 2008).

2.2.2.2 Promoting Physical Health

According to Hill‘s study (2002), green spaces influence the physical and well-being of residents. Further, Sugiyama claimed that characteristics of green spaces encouraged people to participate in outdoor activities, which reduce the possibility of diseases such as diabetes, and some types of cancer (Sugiyama et al, 2009). Besides, Hartig (2003) noted that blood pressure may be lowered in a natural setting. Tanaka et al studies (1996) showed that green spaces have a positive effect on the longevity of the elderly.

Green spaces encourage people to undertake healthy physical activities such as walking or cycling or use these activities as a mode of transport (Taylor et al, 1998). In general, there is some evidence to claim that creating access to green space in urban areas could help public health benefits by encouraging people to participate in physical activity and in turn reducing risks for obesity.

2.2.2.3 Stress Reduction Benefits

Ulrich's “Stress Recovery Theory” (Ulrich, 1984, 1999) explains that natural scenes might reduce stress while the built environment has the opposite effect on recovery from stress. The environmental psychology researchers have recently reviewed whether the most important reason for preferring natural landscape instead of urban one is the healing effect on reducing stress (Van den Berg et al, 2007). In addition, Kellert and Wilson (1993) suggested that people have more tendencies with nature, showing that contact with the nature might be directly beneficial to health. In the 19th century, Frederick Law Olmsted observation showed that having visual contact with nature reduces the stress of daily life (Olmstead, 1999).

2.2.2.4 Restorative and Therapeutic Benefits

It is clear from recent studies that people who living in the cities believe that being in touch with nature improves their health and well-being by providing them with restoration from stress and fatigue (Frerichs, 2004). Frerichs stated that 95% of residents of The Netherlands have an opinion that visiting nature has a positive effect to obtain relief from stress (Frerichs, 2004). In 1983, Stephen Kaplan and Janet Talbot explored that people might gain a recovery from fatigue by visiting nature and have restful experience (Kaplan and Talbot, 1983). A few years later, Rachel and Stephen Kaplan (1989) investigated the influence of the natural environment for human mental health under the 'Attention restoration theory'. They defined "Restoration" as "the process of renewing physical, psychological and social capabilities diminished in ongoing efforts to meet adaptive demands" (Kaplan, 2002). Gesler (1992, 1993) studies on 'therapeutic landscapes' suggested that green spaces increase mental and physical well being. Gesler's concept showed that green spaces not only satisfy a human need, but can also provide social networks, and settings for therapeutic activities (Gesler, 1993).

2.2.2.5 People's Feeling of Belonging

Recent studies examined the relationship between well maintained local green spaces and people's feeling of belonging. It appears that people who live in a greener area have more sense of attachment to their living environment than those who has more distance from greenery. Furthermore, green spaces create meeting opportunity for residents and in turn promote a sense of community in general aspects. Kim and Kaplan (2004) claimed "sense of a community of residents is strengthened when they feel at home (community attachment), have bonds with others, feel a sense of connection with the place (community identity) and have access for local exploration

(pedestrianism)" (as cited in Maas et al, 2009). Result of studies illustrated that only green spaces and natural features were the most important physical features, which can promote these four domains of sense of community. Neutral features can increase the feeling of emotional attachment to a neighborhood and consequently people's identity with a place, which decrease the feeling of loneliness and rise social support (Pretty et al, 1994; Prezza et al, 2001).

2.2.3 Environmental Impacts

Urban green space has a significant role on the micro-climate of a region, improving air condition and reducing building energy consumption. The result of various studies shows that green spaces can make many ecosystem benefits, such as regulating ambient temperatures, filtering air and reducing noise. Therefore, well design green spaces can protect habitats and preserve biodiversity in the cities (Byrne and Sipe, 2010).

2.2.3.1 Temperature and Air Modification

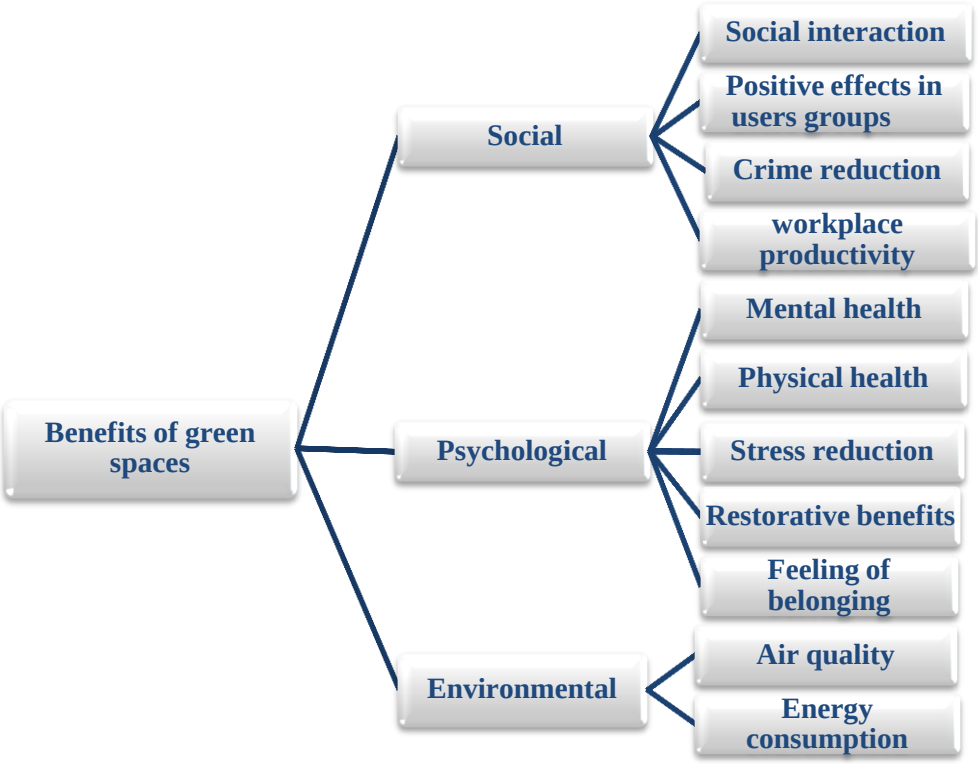
One of the most important physical effects of green spaces is increasing the quality of life by cleaning and cooling the air in cities. Fam et al, (2008) study explained that trees have a cooling effect on the micro-climate due to their shading and evaporation impacts. In a study, Owen et al. (1998) reported that heats degree was increased when the amount of vegetation decreased (Owen et al, 1998). Furthermore, Taha (1997) stated that the temperature of the building and the building surface may decrease by increasing vegetation cover around a building may. Besides, greenery can help to decrease the "heat Island effect" which produces by asphalt, concrete and building materials. Likewise, it is clear from the studies that tree's canopy decrease the air temperature under it as much as (-12) -(-15) °C (Fam et al, 2008). A study in Chicago illustrated that trees can clean the air by filtering 234 tons of pollution such

as nitrogen oxide (NO2), sulfur dioxide (SO2) and carbon monoxide (CO) and ozone O3 (Jo and McPherson, 2001).

2.2.3.2 Reducing Energy Consumption

As it is mentioned above green spaces, may reduce air temperatures and the shading characteristics of trees may affect the demand energy for cooling. Therefore, reducing demand for cooling may decline the amount of co2 in the air (Akbari et al. 2001; Coutts et al. 2007). A Chicago study showed that shade, evaporation effect and wind reduction of the green spaces affect the urban planning strategy (Jo & McPherson 2001). For example, Fam study showed "a large tree with a canopy of 10 meters located 6.6 m from the east or the west wall of buildings provided the largest carbon reduction through the saving of cooling energy of 7 - 8%" (Fam et al, 2008).

Table 1: Benefits of green spaces for residents' life (Author, 2012).



2.3 Conclusion to the Chapter

The review of literatures explained the social, physical and psychological benefits of urban green space (Table 1). It showed that the urban green space provides opportunities for recreation, social interaction and esthetic enjoyments. It also promotes physical and mental health of the residents. The results of the literature review (Olmstead, 1999; Kaplan, 2001; Frerich, 2004; Chau, 2012) explained that visual contact (visual proximity) to green spaces is one of the important ways to achieve more benefits from greenery. As it is discussed through the several studies (Takano & Nakamura, 1996; Miligan et al., 2004; Frerich, 2004; Foster et al. 2005), the physical connection (physical proximity) to green spaces in walk able distances increase the level of physical and mental health of residents. Furthermore, other studies (Gesler, 1993; Kweon et al, 1998; Kim &Kaplan, 2004; Kearney, 2006) demonstrated that green spaces provide social networks for social activities, which is

created social proximity between the users. Besides the green spaces increase the quality of residents' life, other important factors in urban living are accessibility and availability of the green spaces within a city. In sum, proximity measures can be sought in the residential areas in three different levels with visual, physical and social parameters. Therefore, proximity to green spaces has investigated through the literature in the chapter three to focus on the housing environment in order to attain a an appropriate model for proximity in housing design.

Chapter 3

PROXIMITY OF GREEN SPACES IN HOUSING ENVIRONMENT

3.1 Introduction of Proximity Concept to the Housing Research Area

Previous chapter (chapter two) demonstrated significant social, physical and psychological impact of green spaces in human life. The history shows how humankind has always tried to improve his/her living conditions, however, the population growth and urban development changed the urban structure and forms, increased uncontrolled development of cities. As a result, a high percentage of nature has been converted to the man-made environment. Although the new development disconnects people from nature, but urban greenery such as parks, gardens and green yards are built to cover up the lack of green spaces in the cities. In such condition the dimension and the scale of greenery within the cities which fulfills residents' need is of a great importance. In addition, the 'accessibility' and the 'proximity' to these spaces affect the residents' level of satisfaction. This study focused on proximity features to find a standard dimension to reach green spaces by the residents in the cities. In the current chapter, the study seeks to examine the proximity theory to acquire a theoretical framework. Then, it surveys the proximity to green spaces in different scale in a housing environment to achieve a standard model to design green spaces.

Below, the proximity theory is surveyed which is introduced by Edward Hall, followed by qualitative aspects of proximity to green spaces in urban, neighborhood, cluster and home scale.

3.2 Proximity in Term of Theoretical Framework

Anthropologist Edward T. Hall introduced the term proximity in 1966. He defined proximity in his studies as a matter that has covered a wide range of human attributes and behavior. Hall (1966) claimed that in order to study human, first the differences between human cultures in the world should be known, after that; the nature of human receptor or system should be realized, but, the way which one received data and how is modified by culture cannot be ignored. (Figure 1)

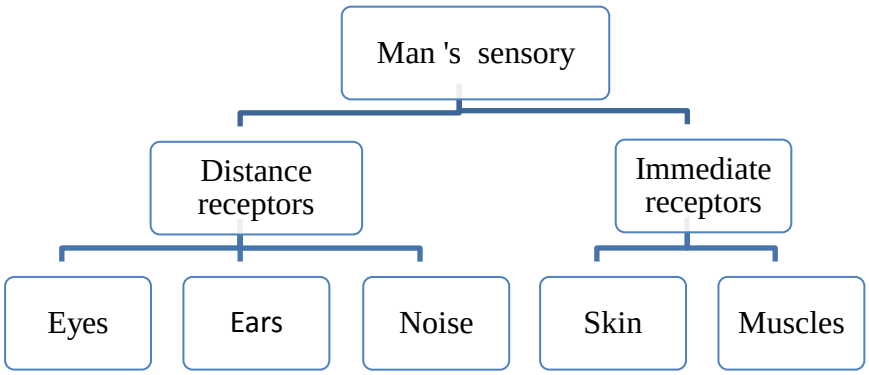


Figure 1: According to Hall (1966), man's sensory classified into two categories: 1. The distance receptors 2. The immediate receptors (Author, 2013)

Hall defined proximity as a term, which deals with the ways people determine the spaces they use. Later, he explained the term “proximity” as “man's use of space as a specialized elaboration of culture” (Hall, 1966). Further, he stated, “The study of culture in the proximity sense is the study of people's use of their perceptual apparatus in different emotional states during different activities, in different relationships, settings, and contexts” (Hall, 1966). He explained that culture is the main factor that affects the determination of these space dimensions. Consequently, Age group, sex, gender, religion, economics, ethnic group and lifestyle are some of those cultural factors. (Figure2)

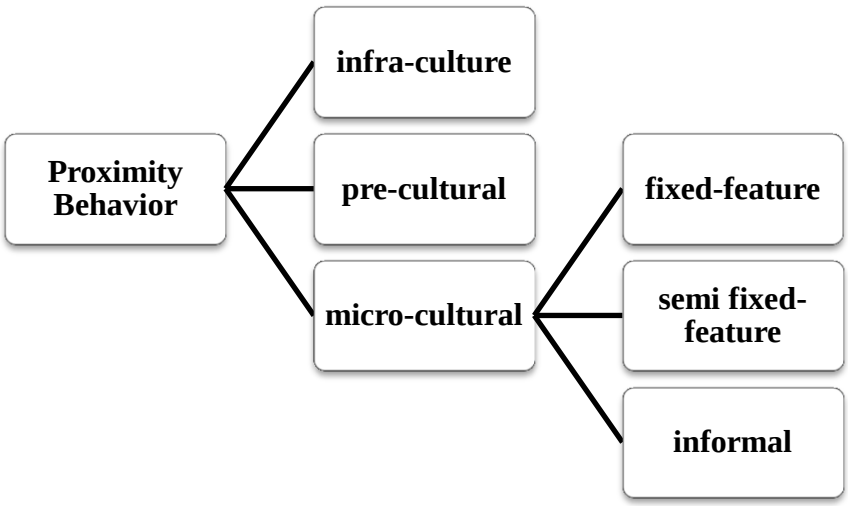


Figure 2: Hall (1966) clarified proximity behavior in his book “The hidden dimension” on three levels (Author, 2013).

According to Hediger’s (1955) studies on animals, they define territories and have a series of uniform distances from each other, which defend against these spaces such as fight distance, critical distance, personal and social distance. Hall (1966), also has argued that human determine territories and classifies distances according to his/her reactions. Hall (1966) categorized these distances according to human senses and

his/her perception of the environment. These distances are intimate, personal, social, and public. He established them with a close and far phase within each zone, and the understanding that the size of these zones would vary from culture to culture. Hall believes that there is a boundary around an individual that considered “personal “and this personal space can investigate as an individual territory. This sense of personal space perceived not only visually, but "by the ears, thermal space by the skin, kinesthetic space by the muscles, and olfactory space by the nose" as well (Hall, 1990). (Table 2)

Table 2: Human’s distances which define by Edward Hall (1966), (Author, 2013)

Human’s distances	Intimate distance	Personal distance	Social distance	Public distance
Close phase	0-15 cm	45-76cm	120-213cm	365-762cm
Far phase	15-45cm	76-120cm	213-365cm	Over 762cm
General	0-45cm	45-120cm	120 -365cm	Over 360cm

Additionally, Altman and Lett (1967) find proximity as a part of “the mutual interaction between man and his environment" and "how people use their bodies and manipulate objects in their environment”. It is clear from the studies that proximity deals with determination of spaces. Besides, there are many factors, which establish these dimensions as Hall claimed the most important one is culture.

Research on human behavior showed that the concept of proximity includes personal space around human and his relation to the environment and study the human environment reveal the idea of territory. Most of the authors (Delong, 1970; Becker & Mayo, 1971; Edney, 1976) define territorial behavior as human action to control, define and mark his/her area. Abu-ghazzeh (2000) stated that the area is called

territory if it characterized by the owner according to his/her personality and identification. Therefore, personalization the space is one way, that people express their territory, and they will show defensive behavior if boundaries are distrupted (Altman, 1975). Moreover, the territorial behavior between humans has been set up the platform for social interaction and social organization. Lyman and Scott (1967) stated that humanity has the four types of territory such as body, home, public, and international territories. Body territory refers to the spaces around the human body (personal space). Home territories "are areas where the regular participants have a relative freedom of behavior and a sense of intimacy and control over the area" (Lyman & Scott, 1967). Public territories consist of spaces which everyone has free access such as streets and parks. International territory are zones where temporary occupied by people for social gathering.

In addition, Altman (1975) proposed three types of territories; primary, secondary and public territories. "Primary territories are private places where the owner has exclusive rights to use the space" (Altman, 1975). Examples can be interior spaces in the home which are personalized by residents. Secondary territories consist of semi-public spaces where a person interacts with other people or neighbors. Conflicts between user groups can happen to these territories if these territories are not personalized with the owners (Altman, 1975). Examples are backyard, gardens and neighborhood parks. In public territories almost anyone allowed temporary access (Altman, 1975). Examples consist of a nearby recreation area or an urban park.

The current study focused on home territory and its secondary terms which are related to the proximity to the housing environment to understand human territorial behavior when they have proximity to green spaces. Mostly, people control their

secondary territory by organizing and personalizing their green spaces like placing a fence, hedges or signs as environmental messages in residential areas. Further the environmental or territorial signs may reflect meanings such as prestige, identity power and personality.

Scheerlinck argued that the concept of depth and proximity “are related to the use of space in more public and private way”. He referred the depth idea to N.J. Habraken (1998), who argued “Territorial depth is measured by the number of boundary crossings … needed to move from the outer space to the innermost territory”. He claimed that outer spaces represent public spaces and innermost can be private spaces, while the gaps or spaces between the building refers to in between spaces. Besides, Madanipour (2003) stated “from the intimate space of the home to the interpersonal space of the busy city streets, we are located in different environments at each moment”. Therefore the concept of public, private and in between spaces should consider in the study in order to understand how people can provide privacy for their living areas from the public street to the private house.

In other words, territorial studies showed that people may define territory to achieve more privacy in their living environment. Altman (1976) and Doyal (1997) argued that privacy is the significant concept in housing study due to its importance as a basic human need. Harrison (1988) also affirmed that privacy is the way to control the amount of contact that each person might have with others. “Privacy helps people achieve focus or concentration, contributes to "rest and recuperation" and thereby reduces stress, reduces social tensions, and makes it possible for members of small groups of people to interact with each other in a candid manner” Harrison (1988). However, Untermann (1977) studied on privacy concept in housing outdoor

environment showed “People fence their gardens to define their territory, achieve more privacy, and control their children. Consequently, Abu-ghazzeh (2000) explained that people may achieve privacy by planting green spaces and landscaping, as well as physical elements like fences, walls and hedges.

Following part focuses on the relation between residential buildings and their proximity to the green spaces in a different city scale like urban, neighborhood, clusters and housing unit. Besides, it studies the standard dimension between urban greenery and housing environments to achieve greatest advantages of proximity to them.

3.3 Proximity of the Green Spaces in Different Scales in Housing Area

It has been shown through recent studies that proximity is related to the distance, which is not only about the length between two points or objects but also it consists of social, cultural, physical, territorial and symbolic aspects. Proximity in housing environment is the set of distances between home and its environment. Therefore, in order to study housing and its environment, it is logical to analysis the housing layout by the proximity model in micro and macro level, like from the unit scale to the clusters, to the neighborhood and to urban. Furthermore, the relation between the home territories and the concept of proximity might affect the public, private and, in-between space organization around units. In neighborhood scale, the public boundaries and thresholds might shape the public territories and social proximity among neighbors. Similarly, urban parameters such as functions, densities, accountability and the way of defining boundaries might create different models of proximity. For example, new trends and improvement of technologies may also

create new concepts of proximity, which might reduce distances by using cars, public transportation, telecommunication, internet access and even wireless systems.

On the other hand, Solà-Morales (1992) claimed that urban spaces could see as a system of relative distances between housing blocks, individual dwellings, leisure facilities and neighborhoods, industrial areas and residential development areas.

While housing areas are involved with the subject of proximity research, considering spaces around housing is inevitable issued. Hence, this study evaluates the proximity concept in housing areas especially focus on green spaces around units and survey the concept of the housing individually, clusters, neighborhood and urban environments, in order to systematize the system of distances between housing and green spaces.

3.3.1 Proximity to the Urban Green Spaces in City Scale (Public Green)

Nowadays, urban parks usually use for various reasons, like social interaction, playing, exercising, enjoying nature, using fresh air and a picnic. According to Fredric Olmstead (1999), the 'father' of urban parks, they should be places where people could experience the beauty of nature, breathe fresh air, and have a place for recreation like music and art appreciation as well as activities such as sports and games.

Tratsaert (1998) studies on proximity to the urban park showed that most of people have been leaving the cities due to the lack of public green spaces and children's playground. In addition, Herzele and Wiedemann (2003) argued that one of the reasons of creating suburbia is the lack of greenery in the cities, and they believed most of the people migration to the urban fringe in order to achieve were seeking for

a green and calm place. As a result, proximity to the urban park becomes important factors in order to provide a livable place in cities. However, it is achievable by creating accessible and attractiveness green spaces in all residential areas.

Sears and Wade (2010) documented that urban areas visited due to their various amenities and they provide much-needed green space for the residents. Moreover, living close to parks might provide more often opportunity to visit and people might spend more time for physical activities, walking or biking. (Figure 3) Physical activities in outdoors provide much benefit for human health like, increasing physical fitness, reducing depression and anxiety (Sears & Wade, 2010).

Figure 3: St. James Park, one of London's finest public spaces

Herzele and Wiedemann (2003) noticed, distance and walking time from home has become the most important factor for using green spaces. For that reason, accessibility is the main factor in proximity of urban parks that influence park visits and uses. Besides, urban parks should be visible, reachable and have acceptable distance from neighborhoods. Moreover, urban parks should be reachable for all

socioeconomic groups with a minimum cost of money or even can be in walking distance, the cost includes time duration, transportation fees and so on. Zhou and Rana (2011) studies showed that parks with closer distances are more preferable to residents. However, the size, structural differences and attractiveness are the other factors, which cause people prefer to go to these spaces. Other important characteristics include the surrounding land use and availability of organized events and quality of amenities that draw people to the park (Cohen, e. Al. 2007). Besides, Smale (1985) studies showed that increasing residential distance from the recreation center reduced the likelihood of membership. Therefore, the studies in European country represent the standards for size and distance that each resident should be able to catch at least one green space. Table three shows the maximum distance and minimum surface for each. Consequently, proximity to the urban parks and recreational green spaces has a significant role in residents' life due to its physical, social and psychological impacts.

Table 3: Minimum standard for urban green spaces (MIRA-S 2000)

Functional level	Maximum distance from home (m)	Minimum surface (ha)
Residential green	150	
Neighborhood green	400	1
Quarter green	800	10 (park: 5 ha)
District green	1600	30 (park: 10 ha)
City green	3200	60
Urban forest	5000	>200 (smaller towns) >300 (big cities)

MIRA is a product of the Flemish Environment Agency (VMM), a government agency which is analyzing the state of the Flemish environment and discusses the environmental policy and looks ahead to possible environmental development.

3.3.2 Proximity to Local Park on Neighborhood Scale (Semi-public Green)

This part focuses on the definition of neighborhood than it is considering on the term proximity between common spaces and the neighborhood. According to Girling and Kellett (1952) the term "neighborhood" is frequently referring to the urban "building blocks" of complementary land uses, transportation networks, services, and amenities. Besides, Moughtin (1992) defined neighborhood as "a neighborhood is formed naturally from the daily occupations of the people, the instance it is convenient… to walk…to daily shopping…and a child to walk to school." People should not have a long walk and should not cross a main traffic road.

Besides, Girling and Kellett (1952) used the term neighborhood as "a spatial sense of sharing common proximity and boundary. Therefore, neighborhoods are those broadly legible if not precisely definable, areas of cities in which people say they live, work, learn, or play". Moreover, the neighborhood may be different in physical size, shape, population, density, or character. Recently, proximity to the service or to public transportation that one would walk (between 5 and 10 minutes, 400 to 2400 meters for most people) used to identify neighborhoods, which approximately included 50 to 200 hectares land. Besides, neighborhoods define by different boundaries or edges that might be various in type and character from one to another. For example, one may separate by the heavily trafficked street while one with common open spaces that overlapping several neighborhoods or interconnect them (Girling C., 1952). In addition, Perry argued that 10 percent of each neighborhood should occupy by small parks and recreation areas. At the end, it is the planning unit of the town, city, and village.

Therefore, Local Park or common green space in the neighborhood should consider in detail. Common spaces in the residential environment mean those "that are not owned by anyone but belong to all the owners". It can include common passages, recreational facilities, community centers, parking space, sports room, common room, landscaping, fences, and garden or any kind of open space. This study focused on the proximity of Local Park (common green spaces) more than the other parts and considered social, cultural and physical characteristic of these spaces in order to illustrate the benefit of proximity to these kinds of spaces.

Many studies considered these issues to demonstrate the connection between the physical condition of housing environment and the quality of life. Neuvonen's study of outdoor recreation activities, which refer to the activities that happen in outdoor spaces, illustrated that most of the typical "close-to-home" activities are walking, cycling, jogging, dog walking and outings with children. His study showed that Nature-based recreation activities create an opportunity for entertainment and relaxation, both physically and mentally (Neuvonen, Sievanen, Tonnes & Koskela, 2007). Further, the short distance to green areas near to residential blocks within a neighborhood increased the number of "close-to-home" activities. Therefore, the nature based recreational areas should locate close to the neighborhood in order to provide safe, comfortable and year-round access for daily outings (Neuvonen et. al, 2007).

Consequently, physical proximity like easy accessibility, an aesthetic and safe environment provides frequent participation in outdoor recreation and expected health benefits possible (Humpel et al., 2002). Although, most working people have limited time for recreation activities during weekdays, but available common space

or “close to home” areas within their neighborhoods create this opportunity for them. Neuvonen (2007) stated, “The proximity and good accessibility of recreational green areas have been found to be an important attractiveness factor in one’s living environment”. Lindhagen (1996) studied on the residents of a Swedish town determined that a short distance to recreation areas was important for most of them. Therefore, the number of visits reduced when the distances enlarged. The Swedish study illustrated that the maximum distance should not be more than one kilometer (Hornsten & Fredman, 2000). However, the Nordic Council of Ministries determined 250-300m for maximum walking distance for daily uses. Nevertheless, spaces for the weekend, picnic and vacation might be located further (Nordisk Minister, 1996).

Aside from accessibility, in this scale many factors become important like hierarchy of spaces, view, privacy, intimacy and safety. Now it is necessary to consider more detail such as social, visual, cultural and physical dimension of proximity within the neighborhood.

Social dimension of proximity display that, proximity of common green spaces in neighborhood provides space for social contact and decrease the social gap in the community. Zhou (2011) noted that social interactions happen more frequently in a preferable environment than other places. Consequently, when using outdoor green spaces repeated, it will create a sense of community (Kearney, 2006). In a similar study, Kweon (1998) argued that attractive green areas could be a focal point for “positive informal social interaction, strengthening social ties and thereby social cohesion” within the neighborhood. Moreover, older people who live in spaces with accessibility to green areas have more social ties than other groups. Social cohesion directly effects on well-being and feelings of safety, which has a relationship with

mental health (Verheij, 1996). McAuley (2000) determined that having a connection with the neighbors and participating in social activities brings great psychological satisfaction and disappearing unhappiness. Indeed, common spaces between the blocks as a public green space created social diversity. It means these kinds of spaces provide an opportunity to connect people from different socioeconomic and ethnic groups together, or they can act as a separator wall to define community borders (Solecki and Welch, 1995; Gobster, 1998).

Common open spaces, which shared in a neighborhood, should facilitate by playground area, green spaces, gathering place and sport facilities that children, families, adults and older people can safely play and exercise. In that case, safety environment raises the level of communal activity among various social group and increase residents ‘satisfaction with their local area.

According to Americans studies on safe neighborhoods, residential project, which design with more green area, have less level of crime in comparing with the one without greenery (Kuo & Sullivan, 2001). In a similar investigation, Cave (2004) and Wheater (2008) recommended that in order to increase feelings of safety in green spaces, they should maintain well while not blocking the view by high-level vegetation. In addition, it suggested that in order to reduce vandalism in public green spaces having park staffs could be helpful (Cave, Molyneux & Coutts, 2004).

3.3.3 Proximity to the Common Green Spaces in the Housing Cluster or Housing Complex (Semi-private Green)

Studies on green spaces showed that private outdoor spaces are important as well as public ones. They demonstrated that it is a very important matter for the majority of people to have a small place in the sun such as a small balcony. Vasilevska (2012) emphasized that small balcony might be only "a few meters square but it gave residents the chance to relax outdoors in privacy, to read a book, do a spot of gardening or have a barbeque". These spaces become more important when they are creating a semi-private level of privacy for households. This level of privacy might form by walls, railings, canopies or strategically placed pot plants and shrubs. Some of the residence might cover their private garden, patio, yard or even their balconies with high fences or walls to limit the vision from outside to achieve more privacy. In addition, the sun-shining balconies, which are used for relaxing in an outdoor, are more preferable by residents.

Aside from, some study that focused on the efficient role of the balcony to provide small private spaces, other studies focused on value of view from this space to the green areas. According to Gehl (1987), visual permeability is one of the most factors to consider for high-rise buildings and new apartments. It is clear that the senses of human sight move better in horizontal direction. Thus, when the houses got distance from the level of the street, residents' level of perception of space might decrease, and they do not see most of the event in the street or in their neighborhood. Consequently, the balconies can act as linkage between residents and outdoor spaces.

Kearney (2006) study showed “opportunities to visit natural areas and having a view of nature from home have a great impact on neighborhood satisfaction. In other word, visual proximity to nature has more effect on neighborhood satisfaction than physical proximity. In a similar study Kaplan (2001) argued that being in contact with natural element or having view from window especially trees increase the sense of residents' satisfaction with their neighborhoods and their well-being.

While visual proximity to green spaces has social benefits for residents, at the same time it has economic benefits. There are large numbers of studies documented that proximity to green spaces like forest, urban park or common green spaces affect the price of dwellings. For example, Jim studies showed that having proximity to the green spaces in neighborhood increase the price of private residential unit in Hong Kong (Jim, & Chen, 2010). Besides, Griffiths (1999) introduced a balcony as “environmental filter” which can reduce energy consumption by acting as a sun-shading device, provide surfaces for planting , decrease air pollution and traffic noise in most of high-rise buildings and high-density environments (Chau, Wong, & Yiu, 2004).

Likewise, Chau (2010) argued that to the resident’s point of view, a balcony might provide panoramic views and enlarge interior spaces. According to the studies the high-rise residential buildings and apartment blocks which have a balcony with a view of the green area near to their living areas or they have shared common spaces within their neighborhood are more preferable by residents due to their impacts on reducing stress and increase the quality of dwellings.

3.3.4 Proximity to Green Spaces in the Garden, Terraces and Balconies (Private Green)

Herzele and Wiedemann (2003) affirmed “the availability of small green spaces on the doorstep is of crucial importance, especially for less mobile people and young children”. Although it is recommended by an American and European studies that 400m is the minimum distance for reaching neighborhood parks, but studies on children’s activity showed that this range (400m) cannot be considered as a safe for young children where the area includes dangerous or heavily trafficked streets. Hence, Local parks, playground areas and private gardens can serve spaces for children to play and exercise. The results of Bhatti and Church studies (2004) illustrated that a great number of people prefer dwellings with private garden over a balcony because of its combination of meaning such as freedom, being outside, privacy and gardening. Bhatti and Church (2004) defined private garden as “an external setting that forms an integral part of the dwelling”.

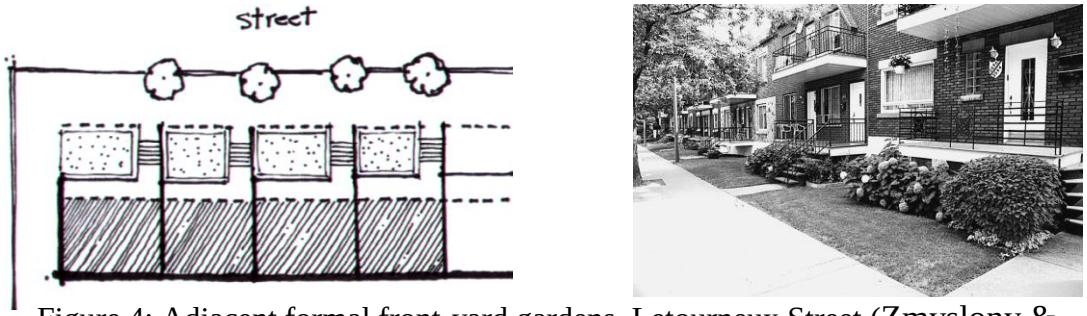


Figure 4: Adjacent formal front-yard gardens, Letourneux Street (Zmyslony & Gagnon, 1998)

In addition, Grampp (1990) determined three types of gardens: a) gardens that only used for domestic activity not for growing plants and act as an outdoor extension of houses b) formal gardens that maintained well and neat therefore hardly used for leisure c) gardens that used for gardening and growing plants (Grampp, 1990). (Figure 4)

Francis (1990) defined ten personal meanings for the garden, which were: "(1) a place to be (2) a place to care for growing things (3) a place to control (4) a place to exert creativity (5) a place that reflects personality (6) a place of freedom (7) a place of productive work (8) a place to own (9) a place that develops over time and (10) a place of retreat" (as cited in Coolen, & Meesters, 2011).

Bhatti and Church (2004) noted that gardens have an important role in human life in order to bring various functions and meanings like privacy, sociability and physical connections to nature by themselves. Alexander (2002) argued that private garden could gather family, friends and children in order to create an opportunity to interact and spend leisure time together. It is clear from Bernardini and Irvine (2007) study that most of the people prefer a private garden for enjoying life, playing with children, gardening, being outside, having more privacy, peace and quiet or want to be undisturbed.

Kaplan (1985) studied the link between environment and residential satisfaction in her study. She titled this study as “Nature at the Doorstep: Residential Satisfaction and the Nearby Environment” which focused on green spaces with a few steps accessibility from home as well as having a view from window to these spaces. She found that the natural environment plays a significant role in human life, and determined that small pieces of nature; with the view of some trees and shrubs rather than large open areas might affect human satisfaction. Kaplan (1985), also argued that growing flowers and gardening are very important to provide opportunities for residence to be in touch with nature. Kaplan (1985) claimed residents who could see the gardens had a stronger sense of community. Moreover, as it was mentioned before, proximity to green spaces especially private garden has a great benefit on human health and well-being. One of the other impacts of proximity to garden refers to its effects on reducing the energy consumption by shading, creating evaporative cooling and improving efficiency of mechanical air conditioning units.

In garden scale, the hierarchy of spaces becomes important in order to create more privacy for residents. Therefore, public, private and in between spaces should be discussed. Madanipour and Stahle (2003) considered the term territory and interface between private and public areas. Madanipour (2003) argued “boundary is indeed a set of communication and interface between the two different areas” while Stahle (2003) determined how entrances are the most important link between the private and public. On the other hand, Classon (2012) found “the difference between private and public territory is related to the level of control and territory is also a way of controlling space and organize activities, form behavior, shape identities and create distinctiveness”.

In terms of territory, private garden associated with in-between spaces, which created a buffer zone between home and public spaces and provided privacy for dwelling. Private garden is the place to see and to be seen by others. Therefore, by these kinds of spaces people express their personality and identity. As it is discussed earlier the territory means control of physical space and the personalization of space is one of the most methods of defining territory (Porteous, 1976).

Moreover, personalization increases the sense of security and identity. Porteous (1976) noted, "Personalization is extended into color schemes, tree planting and even garden sculpture". The garden will change yearly and seasonally and could provide maximum opportunity for personal expression. Besides, people can personalize their gardens by different borderlines. Borders and boundary lines are defined by fences and walls that make the territory of each garden, which could build with different materials. These boundaries could define by soft or hard elements like trees, shrubs, flowers, wooden or steel fences as well as walls.

According to Daniels and Kirkpatrick (2006) studies on landscape design, front and back gardens often have different characteristics and different design. For example, more visual impact is located on the front while, back garden used for functional purposes. Previous studies showed that back yard included most neglected trees while shrubs and hedges were located in front yards. Generally, back yards use for growing plants for food and keeping animals like dogs and chickens. However, Daniels and Kirkpatrick (2006) claimed "many ornamental species, power lines and small shrub cover tend to be more prevalent in the front yard". Therefore, front yard might use for more public activities than the backyard, and it can locate near to the entrance and living room as more public part of the house. In addition, the back yard

can connect to the kitchen or a more private part of the house. According to Jurkow (2000) “front yard could be private and public, personal and communal, cultural and natural”.

3.4 Conclusions of the Chapter

According to Herzele and Wiedemann (2003) the green spaces should places in a residential environment in order to support urban resident’s quality of life. It is apparent that, appropriate combinations of green spaces in the city (urban park, green sport fields, Local Park, playground area, etc.) and outside the city (forest, woodland, green belt) lead to create livable cities due to their different functions and amenity. In addition, proximity, accessibility, surface and safety are introduced by Herzele as the main factors which attract people to use green spaces. Neuvonen (2007) studies also concluded that the amount of green spaces and accessibility to them increase the number of visits. Therefore, in order to improve the urban quality of life, proximity and distance from residential areas to each of the urban greenery should be considered. Figure (5) explains proximity and related distances between a house and green spaces on four levels which is considered in this chapter (public green, semi-public green, cluster housing and semi-private green and private green). In the next chapter (chapter 4) the proximity of greenery and its role to define territories and privacy will analysis in a residential area in real cases.

As a conclusion, four types of green spaces detected in relation to the housing environments as significant parameters to evaluate the users' satisfaction and quality of life as:

1. Urban green (Public green)
2. Neighborhood green (Semi-public green)
3. Cluster green (Semi-private green)
4. Intimate green (Private green)

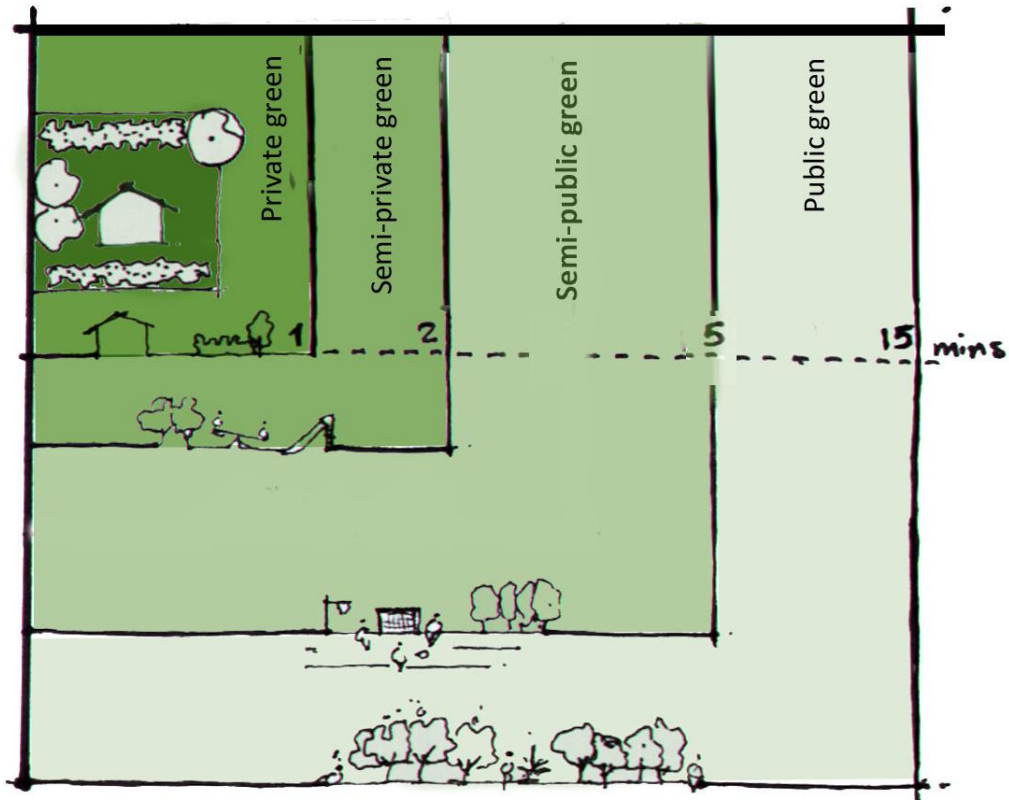


Figure 5: Proximity of home to the urban greenery in different scale (Author, 2013).

Chapter 4

CASE STUDIES

4.1 Introduction

This chapter will introduce two case studies, which will analysis later by referring to the concept of proximity. As it is discussed in pervious chapters, culture features such as privacy and territoriality affects the model of proximity. Therefore, two case studies were selected from two countries with different culture and lifestyle in order to show how people in each culture may use spaces in different ways. By the literature reviews, proximity and related distances between housing and green spaces have detected in four levels (public green, semi-public green, semi-private green and private green), there are assumed as important parameters to evaluate in the selected cases.

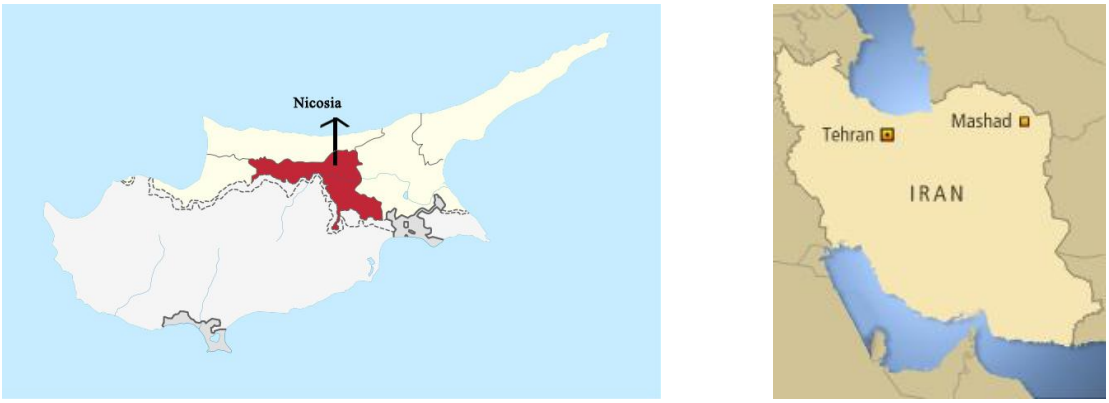


Figure 6: (Left) Nicosia on map (wikipedia.org)-(Right) Mashhad city on map (iranmap.com)

4.2 Criteria for the Case Selections

The first case study is chosen from Nicosia, the capital city of North Cyprus that is located in the eastern part of the Mediterranean Sea. The second case is selected from the city of Mashhad which is famous by a religious character, located in the North-East of Iran. (Figure 6)

The reason of having different samples of cases is to gather various ranges of parameters, which exist in the housing system and arrangement of green spaces such as public or private spaces, territorial spaces organization, climate conditions, typology of urban development and type of residential development (low rise and high rise buildings). This research selected the middle income housing typology for case studies which is the most common typology of housing in both cities.

4.3 Techniques and Methods

The methods used for collecting data were observation to choose important examples, to detect any traces of changes from outside (facades, exterior common spaces, barriers, territories, personalization …) and questionnaire were filled by 50 household. From first two methods ten houses were selected from each neighborhood to do the interviews with households, they selected depending to their strategic location and originality in the neighborhood. This survey categorized houses according to the percentage of using green spaces: type A houses with greenery (full green), type B houses with a medium density of greenery (semi-green) and type C houses with less green spaces or without any greenery. The results are shown later in tables.

4.4 Parameters of Evaluation the Cases

As it is discussed through the literature review which is concluded at the end of the chapter 2 (2.3 conclusion to the chapter); visual, physical and social proximity to green spaces are the important features that most of the authors mentioned in their studies. Therefore, the current research will consider the visual, physical and social proximity of green spaces in the case studies.

Visual proximity (VP): This parameter is a factor to understand the requirement of perceptive senses, which effect users psychologically and might affect the quality of the housing environment and increase the users' satisfaction form their environment.

Physical proximity (PP): Physical proximity shows the physical distances configurations, especially in the relation of green spaces and their usage. Actual distances will be attempted to evaluate in the selected housing case to compare the general approaches.

Social proximity (SP): this parameter shows how the distances between houses and green spaces provide social networks for social activities, which is created social proximity between the users.

4.5 Case 1: Standart Evler (Standard houses) in Nicosia City

“Standart Evler” located on Kaymakli Street in Nicosia city (Figure7), built by the Public Works Department in 1946 for government employees and workers (Schaar et al, 1995). Nicosia is the largest city in Cyprus, which is located in the center of the island. It is a divided capital city, with the total 150,000 population (according to 2006 census). Turkish people settled in the northern part while Greek people inhabitants of the southern part.

This neighborhood developed during the British Colonial period. In general, the British Empire period reflected the modern lifestyle with the new materials and technologies for the period (Ozay, 2004). The standard housing (Standart Evler) designed as one of the first planning neighborhoods that include houses, a primary school with sport facilities, a small central open space, shops and a cafe. In urban scale, it has a high level of proximity to public facilities such as the bus station, shops, terminal and sport centers (Figure 8). Standard housing was a successful project, due to its appropriate accessibility and proximity of driving distances to the commercial center, workplace and main transportation links (Mayer, 2011).

Cyprus has hot and humid climate, there are long and hot summers and short and cool winters. For that reason, people spend more time in exterior spaces than interior spaces and the semi open spaces are more preferable during the hot summer days. Moreover, most of the residents planted trees and overhead plants or use canopy and pergola to provide shade for summer days (Ozay,2005).

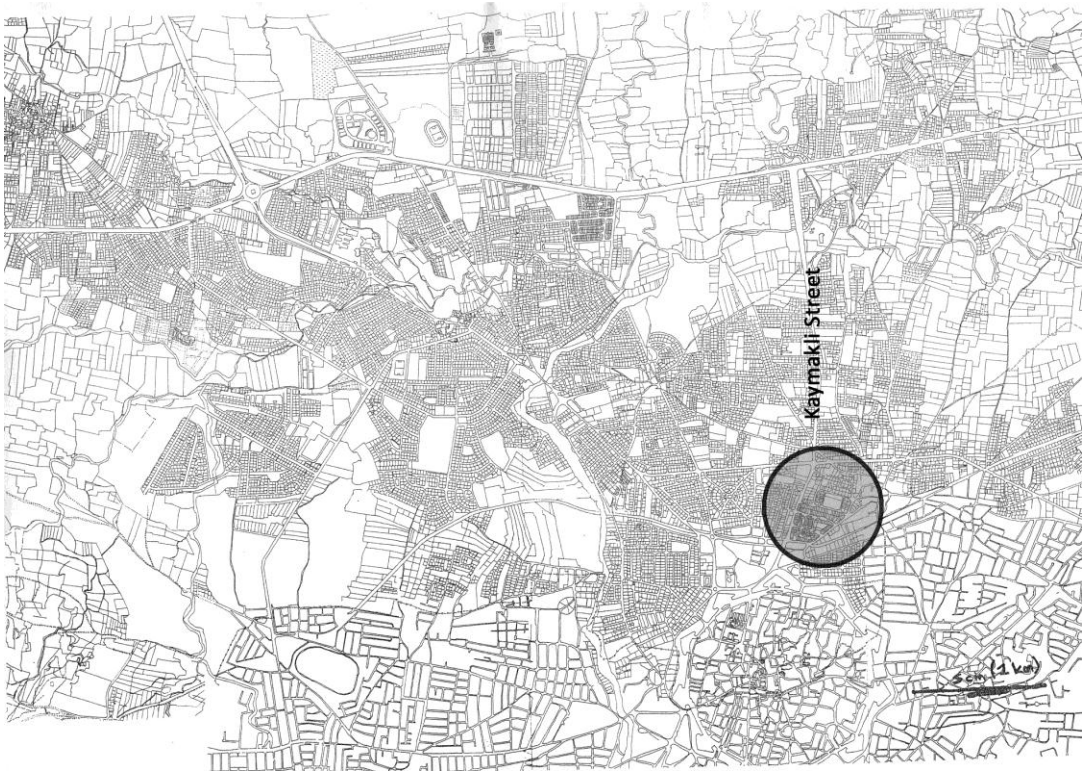


Figure 7: Location of standard houses in Nicosia map.

Figure 8: Neighborhood site plan analysis (Author, 2013).

It calls Standart Evler due to the small size and compact form of the houses. Typology of the houses is a typical terrace house with garden and semi-open spaces, fits the general solution of the housing in Nicosia. Houses consist of two stories building with front garden and small yard at the back. Generally, in plan layout, ground floor plan organized by semi-private spaces such as living room with physical and visual proximity to the front garden and, kitchen has a connection with backyard while the bathroom and bedrooms were located on the first floor.

Moreover, observation showed that residents modified their houses according to their needs such as changing the place of entrance, extending kitchen to the back yard or adding a structure for car parking. Besides, in this neighborhood resident used a different method for defining their houses territory and personalized their spaces. Therefore, the front garden has detected as the most important part of the house, which expresses resident's identity and personality.

4.5.1 Use of Green Spaces

This section considers the brief explanations of green spaces of "Standart Evler", continues with the definition of three categories of houses on a Standart Evler project according to the define activities through the use of their green spaces.

It is apparent that connection to the outdoor spaces such as garden, yard and balcony is essential for Cypriot houses due to the hot and humid weather condition. However, the analysis of urban context showed that urban greenery such as urban park and neighborhood parks with a certain quality have not been existed in Nicosia City. In other words, most of the public greenery in this city is not well designed or arbitrarily happened for inhabitants and they are not used by housing residents. After the observation and questionnaires phases, the study aimed to analysis the private, semi private and semi-public greenery. Therefore, ten houses selected from "Standart

Evler" as examples in order to figure out both front and back yard in more details. It categorized cases of three different types according to the activities that take place in outdoor spaces. Type A consists of houses with front and back yards that mostly are used for gardening activities. Type B includes houses that use their front gardens for sitting and watching activities in the street, receiving guests and social interaction with neighbors. Type C analyses outdoor spaces that are used only for car parking facility and no other activities are taking place in outdoor.

4.5.1.1 Type A

Questionnaire analysis showed that 70% of the households in this neighborhood are elderly and middle aged families, which use their front garden for gardening. Trees, shrubs and flowers planted in the front garden to define territories, which also provide pleasant view, shading and fresh air in the environment. The vegetation, despite increasing the quality of the environment, provides an opportunity for residents to control their living environment and make privacy for themselves. As a result, this green area provides distance between the street and the house, which has a function like in between space and separate public zone from private one. Therefore, this semi public area provides a hierarchical transition from the street to the interior.

Furthermore, the section analysis shows that the dimension of the street is from6 to 8 meters, the pedestrian sidewalk is 2.5 meters, and the front garden is from 5 to 7 meters. Besides, proximity to the street and small dimension of sidewalks, which are undefined and covered by low quality material, affects people's perception of the territory and privacy. (Figure 9)

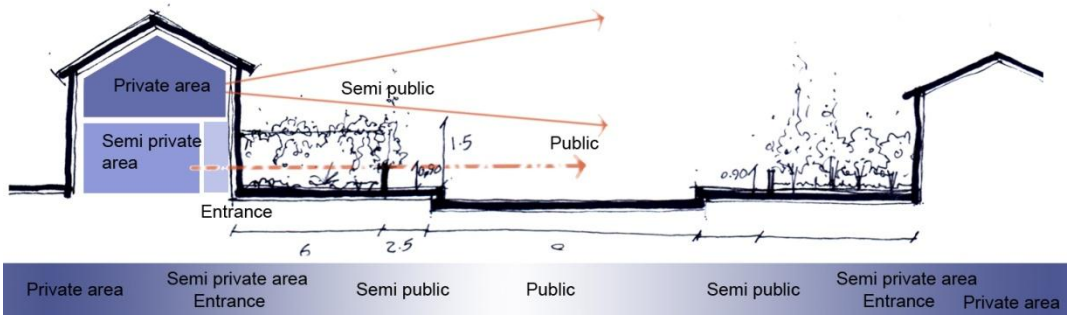


Figure 9: Section of type A show the hierarchy of public, semi-public and private spaces (Author, 2013).

The interviews analysis proved that 60% of the residents control the view from the street by the density of greenery like planting trees, shrubs, hedges in borders near to the street while flowers and small shrubs are located near the windows to create a colorful view from the interior. Although, residents create a colorful garden but they do not have visual proximity to this space because they have a view only from one small window. Therefore, there is a limited visual connection to the front garden.

Although, this green area is small in dimension but large numbers of activities take place in this area. In some cases, front gardens are used to grow plants for food such as vegetables, lettuce and cabbage or olive and lemon trees. According to the interviews, residents' gardening activity for not only producing food, but also, spending time in outdoor spaces and may have social interaction with their adjacent neighbors or the one who pass through the street.

It is clear from observation that 70% of the residents have been living in this complex for a long time. Therefore, they have a sense of community and feeling of belonging to their environment. Consequently, mostly household members used to change the environment and personalize spaces according to their needs. It is clear that most of these modifications taking place in the front garden order to define these green spaces for different activities. The visual, physical and social proximity have been shown in table 4, according to the observation of type A and explain the level of privacy and permeability of these houses.(table 4)

Table 4: Level of proximity, privacy and permeability of type A houses (Author, 2013).

Case Number	Type	Level	Evaluation				
			Visual proximity	Physical proximity	Social proximity	Level of privacy	Level of permeability
1	A	Very-high					
		High	✓			✓	✓
		Medium		✓	✓		
		Low					
		Very-low					
2	A	Very-high			✓		
		High		✓			✓
		Medium	✓			✓	
		Low					
		Very-low					
3	A	Very-high					
		High		✓		✓	
		Medium	✓				✓
		Low			✓		
		Very-low					

The visual proximity to green spaces in type A has tolerance between medium to high level, while the physical proximity to greenery change between high to medium. Interviews illustrated that residents who are living in this type have high and medium social proximity. The houses have a medium level of privacy due to the using greenery in their territories and the level of the permeability is high.

4.5.1.2 Type B

According to the interviews, most of the people prefer to spend time in outdoor spaces than interiors due to the limited size of the houses, lack of enough daylight and the quality of interior spaces. Moreover, the hot and humid weather condition in Cyprus makes people feel more comfortable in outside to use fresh and cool air during the evening and night. Therefore, residents build outdoor spaces more dominant than indoor spaces.

According to the questionnaires, almost 70% of the residents use their front yard for gathering with family, playing with children or as a place for social interaction with neighbors. This garden or semi-open area may provide a social interface to the street and make proximity between families who may communicate and make a sense of community in the neighborhood. It is clear from the observation that 80% of the houses have shaded area in the garden for the climate to protect residents from the sun and rain. This shading can be made from a tree, greenery, pergola or canopy. (Figure 10)

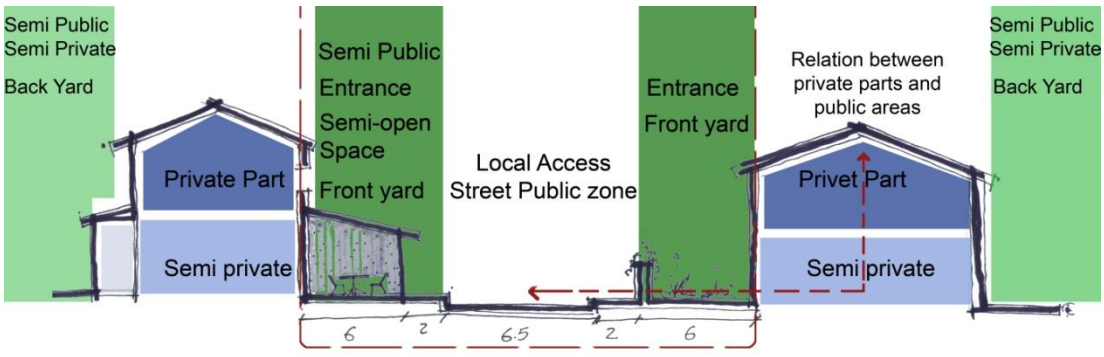


Figure 10: Section of type B shows the hierarchy of public, semi-public and private spaces (Author, 2013).

Usually, residents may receive guests in their yards for that reason; they have the proper furniture in their yards. Old women often meet their neighbors at 10 o'clock in the morning for drinking coffee as a tradition behavior. Therefore, this kind of physical and visual proximity to the outdoor area provides a possibility for social activities. Table 5 shows the visual, physical and social proximity according to the observation of type B and explains the level of privacy and permeability of these houses.

Table 5: Level of proximity, privacy and permeability of type B houses (Author, 2013).

Case Number	Type	Level	Evaluation				
			Visual proximity	Physical proximity	Social proximity	Level of privacy	Level of permeability
4	B	Very-high					
		High		✓	✓		
		Medium	✓				✓
		Low				✓	
		Very-low					
5	B	Very-high			✓		
		High	✓			✓	✓
		Medium		✓			
		Low					
		Very-low					
6	B	Very-high			✓		
		High		✓			✓
		Medium	✓			✓	
		Low					
		Very-low					
7	B	Very-high					✓
		High		✓			
		Medium			✓		
		Low	✓			✓	
		Very-low					

The visual proximity to green spaces in type B has tolerance between medium to high level, while the physical proximity to greenery change between high to medium. Interviews illustrated that residents who are living in this type have high social proximity. The houses have a medium level of privacy due to the combination of greenery and fences in their territories and the level of the permeability is high.

4.5.1.3 Type C

Generally, in Cyprus walking activity does not take place due to the climate especially in the hot days. For that reason, there is no public transportation to support accessibility within the city and the lack of quality of pavement makes people use cars.

According to the interviews, a large number of families in this neighborhood almost have two cars. However, in house plan there is no place for car parking, but residents create car parking in the front yard, which is supported by shading extension. Proximity to the car in the front garden limited the visual connection from inside to the outside. Besides, in this type of houses, outdoor spaces are used only for car parking consequently the proportion of green spaces decrease and car disconnects view of the green spaces. Activities do not take place in this type of outdoor space while the green spaces create the micro-climate effect, which is moderate, the weather in the yard; residents are deprived of this advantage. (Figure11)

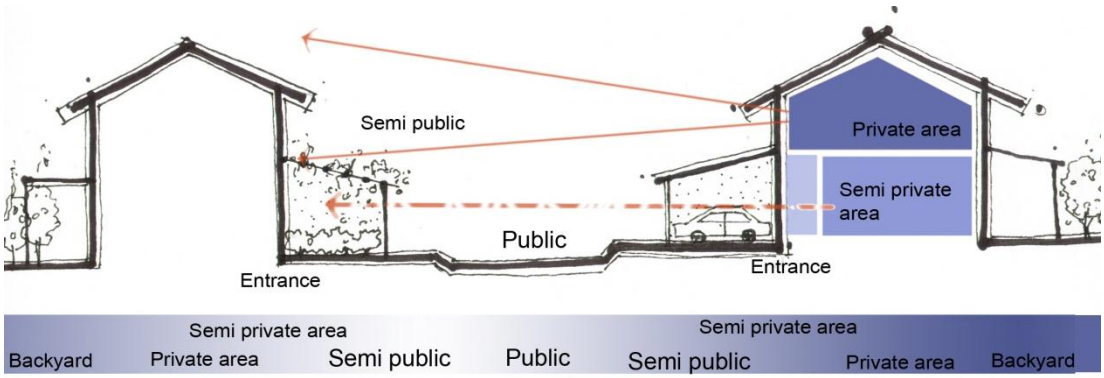


Figure 11: section of type C shows the hierarchy of public, semi-public and private space (Author, 2013).

Table 6 shows the visual, physical and social proximity according to the observation of type C and explains the level of privacy and permeability of these houses. The visual proximity to green spaces in type C has tolerance between medium to low level, while the physical proximity to greenery change between high to medium. Interviews illustrated that residents who are living in this type have high social proximity. The houses have a low level of privacy due to the lack of greenery in their territories and the level of the permeability is medium to low degree.

Table 6: Level of proximity, privacy and permeability of type B houses (Author, 2013).

Case Number	Type	Level	Evaluation				
			Visual proximity	Physical proximity	Social proximity	Level of privacy	Level of permeability
8	C	Very-high			✓		
		High					
		Medium		✓			
		Low	✓			✓	
		Very-low					✓
9	C	Very-high					
		High			✓		
		Medium		✓			✓
		Low	✓			✓	
		Very-low					
10	C	Very-high					
		High	✓	✓	✓		
		Medium					✓
		Low				✓	
		Very-low					

Tables 7 to 16 showed the analysis of the selected houses from Standard housing project. Each table consists of the location of each house on the map, ground floor plan and pictures. The tables divided into three parts, the first part considered the general information about the case, the second part is discussed barriers and level of privacy and permeability. The third part analysis cases according to proximity feathers. At the end of each table the comments about the house is given according to the observations and interviews.

Table 7: Case number 1 from Standart Evler neighborhood (Author, 2013).

Type A	**An analysis the proximity of green spaces**				
	Number: 1				
	User type:	Young couple ○	Family with children ○	Middle age family ●	Elderly ○
					
					
Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ●	Neighborhood green (Local Park) ○	Public green (Urban park) ○
Activities	Gardening ○	Sitting and gathering outside ●	Receiving guests ●	Keeping pets ●	Car parking ●
Boundaries and barriers	Tall trees ○	Steel fences ●	Concrete wall ○	Shrubs or hedge ●	Flower box ●
Permeability	The vegetation has an extra impact and the degree of permeability is high .				
Level of privacy	They create a high level of privacy with the help of green spaces in their front yard.				
Visual proximity (VP)	They have a visual connection to the front yard. They prefer to hide the car , therefore use the back yard as car parking. They have physical distance to the school and shops(100m)				
Physical proximity (PP)	They have physical distance to the front garden and street(5m). Public facilities and park is far from their house(more than 300m).				
Social proximity (SP)	They have social interaction with their neighbors due to live here for long time.				
Additional part / other changes	They add one room for their grandchild near to the kitchen and extend their kitchen to the backyard				
Resident's willings to change	They want to have a bigger garden in order to grow plants for food and have more spaces for keeping their animals like birds, rabbits and dog .				
Overall	Proximity to the green spaces effect users life in order to provide opportunity for them to have social interaction with their neighbors in the front garden. Also, the Location of house in the corner provides a wide view to the outside. They have the opportunity to see street but they controll their view from outside to the inside .				

Table 8: Case number 2 from Standart Evler neighborhood (Author, 2013).

Type A	**An analysis the proximity of green spaces**				
	Number: 2				
	User type:	Young couple ○	Family with children ●	Middle age family ○	Elderly ○

Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ●	Neighborhood green (Local park) ○	Public green (Urban Park) ○
Activities	Gardening ●	Sitting and gathering outside ●	Receiving guests ○	Keeping pets ○	Car parking ●
Boundaries and barriers	Tall trees ○	Steel fences ●	Concrete wall ○	Shrubs or hedge ●	Flower box ●
Permeability	The vegetation has an extra impact and the degree of permeability is high .				
Level of privacy	The level of privacy is medium due to the density of greenery				
Visual proximity (VP)	They have a visual connection to their front garden.but the size of windows limited the view to the outside.				
Physical proximity (PP)	They have physical distance to the school and shops(100m) .they have distance from public park (5km)				
Social proximity (SP)	They have relationship with their neighbors and women have coffee meeting each day with other neighbors.				
Additional part	They add one room near to the kitchen and canopy for car parking.				
Resident's willings to change	They want to have a bigger yard in order to provide spaces for children playing.				
Overall	They have a sense of belonging to their living environment as a result of proximity to the green spaces. They use green space for gardening, using fresh air, produce food and social interaction.				

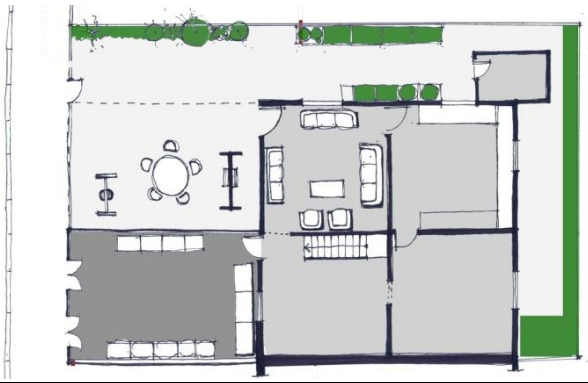
Table 9: Case number 3 from Standart Evler neighborhood (Author, 2013).

Type A	**An analysis the proximity of green spaces**			
	Number: 3			
	User type:	Young couple ○	Family with children ○	Middle age family ○	Elderly ●

Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ●	Neighborhood green (Local park) ○	Public green Urban park ○
Activities	Gardening ●	Sitting and gathering outside ●	Receiving guests ○	Keeping pets ●	Car parking ●
Boundaries and barriers	Tall trees ○	Steel fences ●	Concrete wall ○	Shrubs and hedge ●	Flower box ●
Permeability	The vegetation has an extra impact and the degree of permeability is high due to the hight of vegitation .				
Level of privacy	They have a high level of privacy due to the density of greenery .				
Visual proximity (VP)	They have a visual connection to front garden, but the hight of vegitation limited visual connection to the street.				
Physical proximity (PP)	They have proper physical distance to the school , mosque and shops (100-200 m)				
Social proximity (SP)	They don't have a relationship with their neighbors.				
Additional part	There is an extension for defining entrance and one room near to the kitchen.				
Resident's willings to change	They want to live in a bigger house and have more privacy .				
Overall	Proximity to green space create a calm and quiet environment for users. However, proximity to the street and school make a noise pollution in the afternoon.they live here for a long time. They used greenery to define strong territory and privasy for their home.				

Table 10: Case number 4 from Standart Evler neighborhood (Author, 2013).

Type B	**An analysis the proximity of green spaces**				
	Number: 4				
	User type:	Young couple ○	Family with children ●	Middle age family ○	Elderly ○



Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ●	Neighborhood green (Local park) ○	Public green (Urban park) ●
Activities	Gardening ○	Sitting and gathering outside ●	Receiving guests ●	Keeping pets ○	Car parking ○
Boundaries and barriers	Tall trees ○	Steel fences ●	Concrete wall ○	Shrubs and hedge ○	Flower box ●
Permeability	The degree of permeability is low due to thr territory definition.				
Level of privacy	The level of privacy is low due to the fenses.				
Visual proximity (VP)	They have no visual proximity to the outside due to the additional part as a shop.				
Physical proximity(PP)	They have physical proximity to the café house, shops and green area(100-200m)				
Social proximity(SP)	They have a social connection with their next neighbors.				
Additional part	They add one shop in the front yard due to the economic recession. Also, they add a bathroom on ground floor.				
Resident's willings to change	They want to have a big garden for children playing .				
Overall	They have social relationships with neighbors but there is no visual and physical proximity to the green area. The extension part limited their visual proximity and limited the daylight in the living room . The quality of living space are low in this house. There is hight partition between this house and the next neighboor due to create private area for users.				

Table 11: Case number 5 from Standart Evler neighborhood (Author, 2013).

Type B	**An analysis the proximity of green spaces**				
	Block number: 5				
	User type:	Young couple ○	Family with children ○	Middle age family ●	Elderly ○

Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ●	Neihghborhood green Local park ○	Public green (Urban park) ○
Activities	Gardening ●	Sitting and gathering outside ●	Receiving Guests ●	Keeping pets ●	Car parking ●
Boundaries and barriers	Tall trees ●	Steel fences ●	Concrete wall ○	Shrubs and hedge ●	Flower box ○
Permeability	The vegetation has an extra impact and the degree of permeability is high .				
Level of privacy	The level of privacy is high due to the hight of hedges and dansity of vegitation.				
Visual proximity (VP)	They have a visual connection to the front garden and the street.				
Physical proximity (PP)	They have proper physical distance to green spaces. (5m) and street 5-8m).				
Social proximity (SP)	They usually meet their neighbors in the garden.				
Additional part/other additions	They enlarged living room and add a store in the yard.they extened the living room and add room near to the kitchen .				
Resident's willings to change	They want to have bigger houses. Due to have spaces for their pets and for gardening.				
Overall	They have a sense of belonging to their living environment as a result of Proximity to the green spaces. Visual connection to the green space was important for them therefore they used large windows in their living room. They spend more than 6 hours in the garden .				

Table 12: Case number 6 from Standart Evler neighborhood (Author, 2013).

Type B	**An analysis the proximity of green spaces**				
	Number: 6				
	User type:	Young couple ○	Family with children ○	Middle age family ●	Elderly ○
					
					
Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ●	Neighborhood green (Local park) ○	Public green (Urban park) ○
Activities	Gardening ●	Sitting and gathering outside ●	Receiving guests ●	Keeping pets ○	Car parking ●
Boundaries and barriers	Tall trees ○	Steel fences ●	Concrete wall ○	Shrubs and hedge ●	Flower box ●
Permeability	The vegetation has an extra impact and the degree of permeability is high .				
Level of privacy	They have a medium level of privacy due to the combination of fenses and greenery.				
Visual proximity (VP)	They have a visual connection to the outside.				
Physical proximity (PP)	They have proper physical distance to the school and shop. Physical proximity to the school (150m) make a problem for residents due to the traffic and noises after finishing school.				
Social proximity (SP)	They live for a long time in this neighborhood .Therefore, they have a social connection with most of the residents.				
Additional part/other changes	They add a bathroom on the ground floor and in the back yard they add a store. And for car parking they design structure for the roof .				
Resident's willings to change	They want to enlarge their living room .				
Overall	The green spaces provide space for receiving gestes in open area and they use front garden nine months in a year. The physical proximity to green space increase the sense of belonging in their residents.				

Table 13: Case number 7 from Standart Evler neighborhood (Author, 2013).

Type B	**An analysis the proximity of green spaces**				
	Block number: 7				
	User type:	Young couple ○	Family with children ●	Middle age family ○	Elderly ○

Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ●	Neighborhood green (Local park) ○	Public green (Urban park) ○
Activities	Gardening ●	Sitting and gathering outside ●	Receiving guests ●	Keeping pets ○	Car parking ●
Boundaries and barriers	Tall trees ○	Steel fences ●	Concrete wall ○	Shrubs and hedge ○	Flower box ●
Permeability	Level of permeability is high due to the territory organization.				
Level of privacy	The level of privacy is low due to the short fenses and hedges				
Visual proximity (VP)	The size of openings limited their visual connection to the outside.				
Physical proximity (PP)	They have proper physical distance to the shops, public space and main street (2.5m)				
Social proximity (SP)	They have social relationships with their neighbors.				
Additional part	They add a bathroom on the ground floor and for car parking create canopy.				
Resident's willings to change	They want to live in 3 bedroom house with big garden.				
Overall	They spend most of their time in the front garden .However, proximity to the main street make kind of problem for residents such as air pollution, noise and create an insecure environment for residents. They have minimum distance to the main street which make many problem for residents.				

Table 14: Case number 8 from Standart Evler neighborhood (Author, 2013).

Type C	**An analysis the proximity of green spaces**				
	Number: 8				
	User type:	Young couple ●	Family with children ○	Middle age family ○	Elderly ○

Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ●	Neighborhood green Local parsk ○	Public green (Urban park) ○
Activities	Gardening ○	Sitting and gathering outside ○	Receiving gues ○	Keeping pets ○	Car parking ●
Boundaries and barriers	Tall trees ○	Steel fence ●	Concrete wall ○	Shrubs and hedges ○	Flower box ●
Permeability	The degree of permeability is low due to the territory definitions.				
Level of privacy	The level of privacy is low due to the lack of greenery .				
Visual proximity	They have a visual connection to the outside .				
Physical proximity	They have proper physical distance to the street, school and shops. (200-300m)				
Social proximity	They have a social connection with their neighbors women have coffee meeting each day with other neighbors..				
Additional part	There is no additional part in plan layout .				
Resident's willings to change	They want to organize their garden for growing plants and exten their living room .				
Overall	Location of house on corner provides visual proximity to the outside. However , the front garden doesn't organize well and there is no physical connection to the green spaces. The quality of the environment was low.				

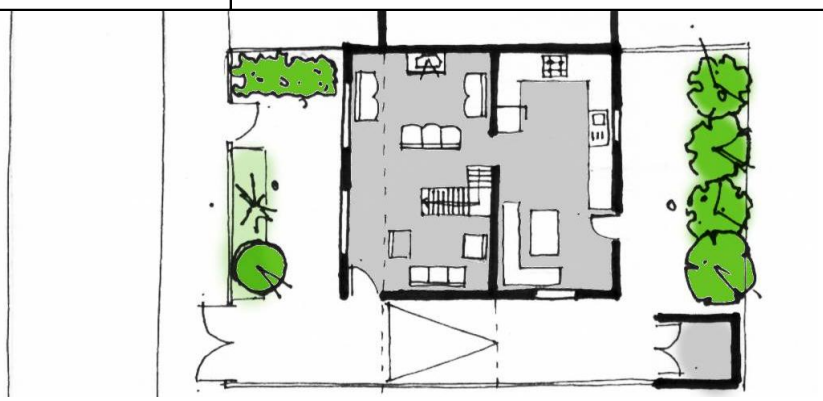
Table 15: Case number 9 from Standart Evler neighborhood (Author, 2013).

Type C	**An analysis the proximity of green spaces**				
	Number: 9				
	User type:	Young couple ○	Family with children ●	Middle age family ○	Elderly ○

Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ○	Neighborhood green (Local park)	Public green (Urban park) ○
Activities	Gardening ○	Sitting and watching outside ○	Receiving guests ○	Keeping pets ●	Car parking ●
Boundaries and barriers	Tall trees ○	Steel fences ●	Concrete wall ○	Shrubs and hedge ●	Flower box ○
Permeability	The degree of permeability is high due to the fanse.				
Level of privacy	A level of privacy is lowdue to the fenses.				
Visual proximity (VP)	They have a limited visual connection to the outside .				
Physical proximity(PP)	They have proper physical distance to the public facilities and main street (30-50m)				
Social proximity(SP)	They have social relationships with their neighbors. Young adults have social interaction with their friends within the neighborhood.				
Additional part	They add a bathroom on the ground floor and add a staircase in the front garden for the first floor . They add a roof structure for car parking.				
Resident's willings to change	They want to have bigger houses.				
Overall	They don't use the front garden for the setting because of its proximity to the street which make noise and insecure environment for residents. They don't have good view therefore they change the form of openings.				

Table 16: Case number 10 from Standart Evler neighborhood (Author, 2013).

Type C	**An analysis the proximity of green spaces**				
	Number: 10				
	User type:	Young couple ○	Family with children ○	Middle age family ●	Elderly ○



Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Backyard ●	Front garden ●	Neighborhood green (Local park)	Public green (urban park) ○
Activities	Gardening ○	Sitting and watching outside ○	Receiving guests ○	Keeping pets ○	Car parking ●
Boundaries and barriers	Tall trees ○	Steel fences ●	Concrete wall ●	Shrubs and hedge ●	Flower box ○
Permeability	The degree of permeability is high due to the territory definition.				
Level of privacy	The level of privacy is low due to the fenses and greenery on the borrders.				
Visual proximity	They have a visual connection to the outside.				
Physical proximity	They have physical distance to street (6m)				
Social proximity	Proximity to the public green spaces create social tie between the neighbors in the whole neighborhood.				
Additional part	They add space to store in the back yard. They extend the living room to the garden and kitchen to the backyard. They change the location of entrance.				
Resident's willings to change	They want to have bigger houses.				
Overall	Proximity to the street make noise and decrease the level of privacy . They don't have a connection to the green space .the have large windows which create wide view to the outside.				

4.5.2 Results

As it is discussed before urban greenery such as urban park and neighborhood parks with high quality are not existent in Nicosia city. Therefore, the following section analysis the semi private and private greenery in “Standard housing” project and both front and back yard examined in more details.

4.5.2.1 Front Gardens

There is nine-month summer in north Cyprus. Therefore, the garden has a significant role in Cypriot life. In such climate people, spend most of their time in outdoor spaces than interior parts. Generally, in “Standard houses” outdoor spaces consist of front garden and back yard. Frond garden is often used for growing plants, car parking, sitting area, gathering place for family and receiving guests.

According to the observation, residents used various material for defining their territories and barriers. Normally, outdoor barriers consist of concrete walls, wood or steel fences and greenery such as trees, shrubs and hedges. According to interviews, they prefer to have more green elements within their yards in order to use their shading in hot days. Therefore, wide range of houses used the combination of green spaces and fences to define barriers. In this neighborhood, front garden usually design by many ornamental species of flowers, small shrub cover and hedges in different density and heights, which create highly permeable spaces between the houses due to this characteristic most of the social activities take place in front yards. (Figure 12)

Figure 12: The pictures show the different type of territory in this neighborhood (Author,2013)

4.5.2.2 Backyard

The open space on the backside of the building is mostly used for more private activities. In “Standart Evler”, usually back yards are isolated from the street and have a high level of privacy. Growing plants for food, drying laundry, keeping pets such as dogs, birds, chicken and rabbit are the most activities, which take place in backyards. Normally Backyards are accessible through the kitchen, or they connect to the front garden by a narrow path. Backyards are defined by fences or fruit trees, which limit visual proximity to the street and physical connection with the neighbors. (Figure 13)

Figure 13: Pictures show the backyards

4.5.2.3 Proximity in Standart Evler

The findings of the analysis show that green spaces in Cypriot houses have a significant role due to its visual, physical and social effects. According to the questionnaires, 70% of residents have been living in this neighborhood for a long time (more than 40 years). Therefore, residents made additional spaces according to their needs while the most of changes are taking place in the front garden, which creates a specific degree of permeability and personalization in the neighborhood. As a result, wide ranges of fences and vegetation in different density and heights have

been seen in the streets that are defining the borders and territories. These kinds of definition of territory show the personality of the residents and their tendency to have a connection with nature. They used their front garden for gardening in order to have a more green and colorful view also using the shading effect, which moderate the weather condition during the hot days.

The findings of (type B) analysis illustrate that social gathering in outdoor spaces especially in the front garden, as an extension of the houses is popular among older residents (4.2.1.2 Type B, table 5, look social proximity). Interviews' analysis displayed that sitting in the outside is rooted in Cypriot lifestyle. People sit outside together during the evenings to talk, use the fresh air and relax. Therefore, front gardens provide opportunities for residents to see and meet other people and increase the sense of community. Consequently, social proximity increases the level of safety and residents' satisfaction due to the sense of belonging to the neighborhood; they try to defend from their environment.

In a general view, the whole streets are covered with greeneries. However, the common open space, which is located in the middle of the neighborhood, is abandoning without any specific design. This space has no furniture, green area or space for a playground, for that reason children play in the street, which is very dangerous. In that case, people have no social or physical proximity to the public spaces, and lack of collective spaces is very tangible (Table 4). Lack of public transportation and inappropriate pavement in the city scale reduce the level of walk ability and accessibility to the public spaces. Besides these may influence the level of permeability to public areas while, these spaces have a significant role to provide a platform of communication for people.

The analysis of category (C) illustrates that the standard model of houses does not serve enough space for residents and made many changes happen. The questionnaire analysis showed that 80% of residents in this neighborhood change the plan layout on the ground floor, and 20% of them have no green spaces in the front garden. Usually they extend their living room to the front yard and the kitchen extended to the back yard. However, residents may achieve bigger interior spaces, but they may lose more green spaces. Using this method for extending interior spaces, decreases the amount of the area in the garden and declines the level of quality in outdoor spaces. Subsequently less activity may take place in the outdoors, which influence the feeling of belonging and less personalizing may happen. Finally, the lack of the green spaces in the front garden decreases the level of privacy, safety and residents 'satisfactions (see 4.2.1.3 Type C, table 6). The Table 17 shows the overall distances between home and green spaces in the Standard housing project.

Table 17: Table shows the distances between home and green spaces in the Standart Evler project (Author, 2013).

Distances	**Meters**
Front garden (private green)	5-7
Backyard (private green)	3-4
Street edge (semi-private green)	7.5-9.5
The neighborhood park (semi-public green)	100-300
The urban park (public green)	5000

4.6 Case 2: “Sheshsad Dastgah” in Mashhad

Mashhad is the second largest city in Iran and a religious city which is located in northeast of Iran. It has 2,772,287 at the 2011 population census. Mashhad features a semi-arid climate with hot and dry summers and cool to cold winters (Mashhad Municipality, 2003). Residents of this city mostly are Muslim and the privacy of their living environment is one of the most important issues for them.

“Sheshsadad Dastgah” is one of the first experiences of social housing in Mashhad city built in1980s (Figure 14). This project became one the famous residential project due to its large, beautiful and successful landscape design. It is limited by four streets; Ferdowsi Boulevard (from north), Sadeghi Boulevard (from east), Ershad Boulevard (from south) and Dehkhoda street (from west). (Figure 15)

Figure 14: Location of “Sheshsad Dastgah” on Mashhad map (http://pdfcast.net)

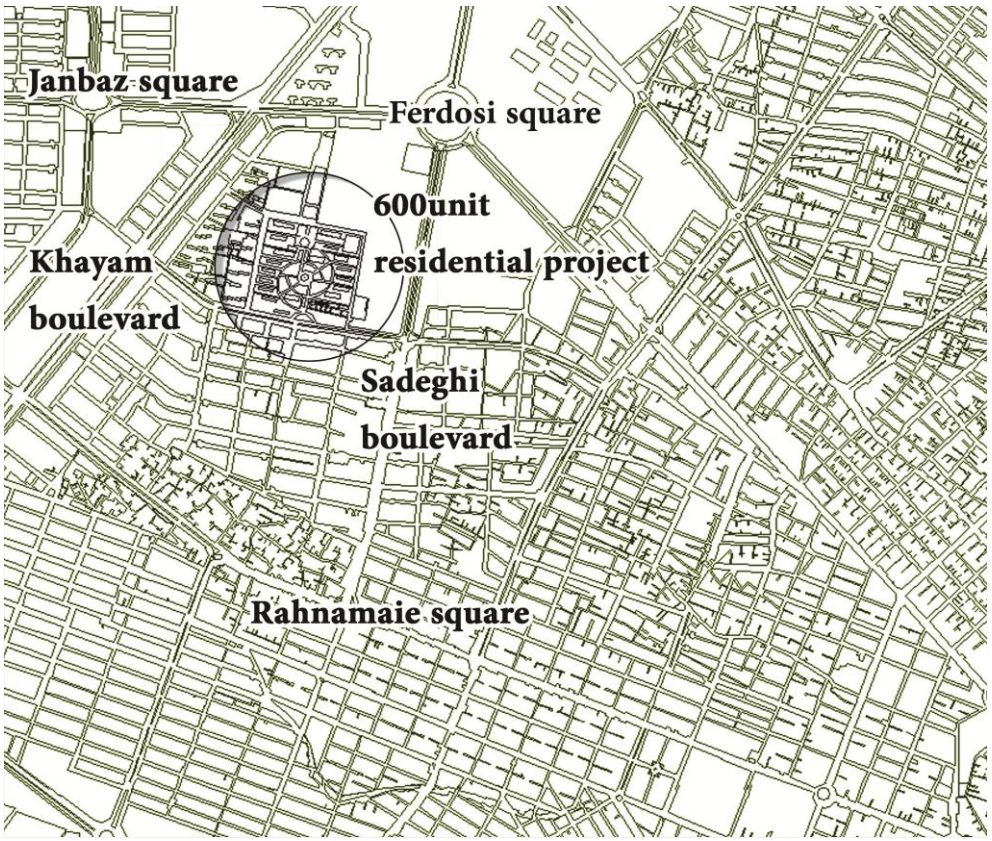


Figure 15: Six hundred unit project (Author, 2013)

This neighborhood consists of six hundred housing units that placed in nineteen residential blocks. A children's playground, a primary school with sport facilities, a kindergartener, a central open green space with a fountain in the middle and shops are supported this neighborhood. In urban scale, it has a high level of proximity to public facilities such as Public Park, public transportation, shopping center, recreational and sport centers.

Typology of the houses is five stories building with balcony. Generally, plan layout organized two units on each floor, which include a living room, kitchen, two bedrooms, a bathroom and a large balcony with a view to the outside. In the ground floor plan, in front of each block there are large green spaces, which covered by small shrub, small pine trees and flowers providing a welcoming entrance for all apartments. While in back side of blocks, there is a row of tall sycamore trees, which provide pleasant green pedestrian road. (Figure 16, 17)

Figure 16: (Left) backside of blokes (Right) green spaces in front of blocks,(by author)

Figure 17: (left) balconies (Right) entrance of one of the apartments, (by author)

In general, point of view, open spaces had a significant role to form the concept of this project. These open spaces are included spaces like public green spaces, common open spaces, children's playground, pedestrian access and car access. The figure below shows the formation of the main entrances and the main public green space in the middle of the complex (Figure 18). For case studies, this study considered the fifty questionnaires, which are filled by residents and analysis the data from interviews and observation. Therefore, ten housing units are selected from this neighborhood as an example, in order to understand the role of proximity to the green spaces in a big city like Mashhad.

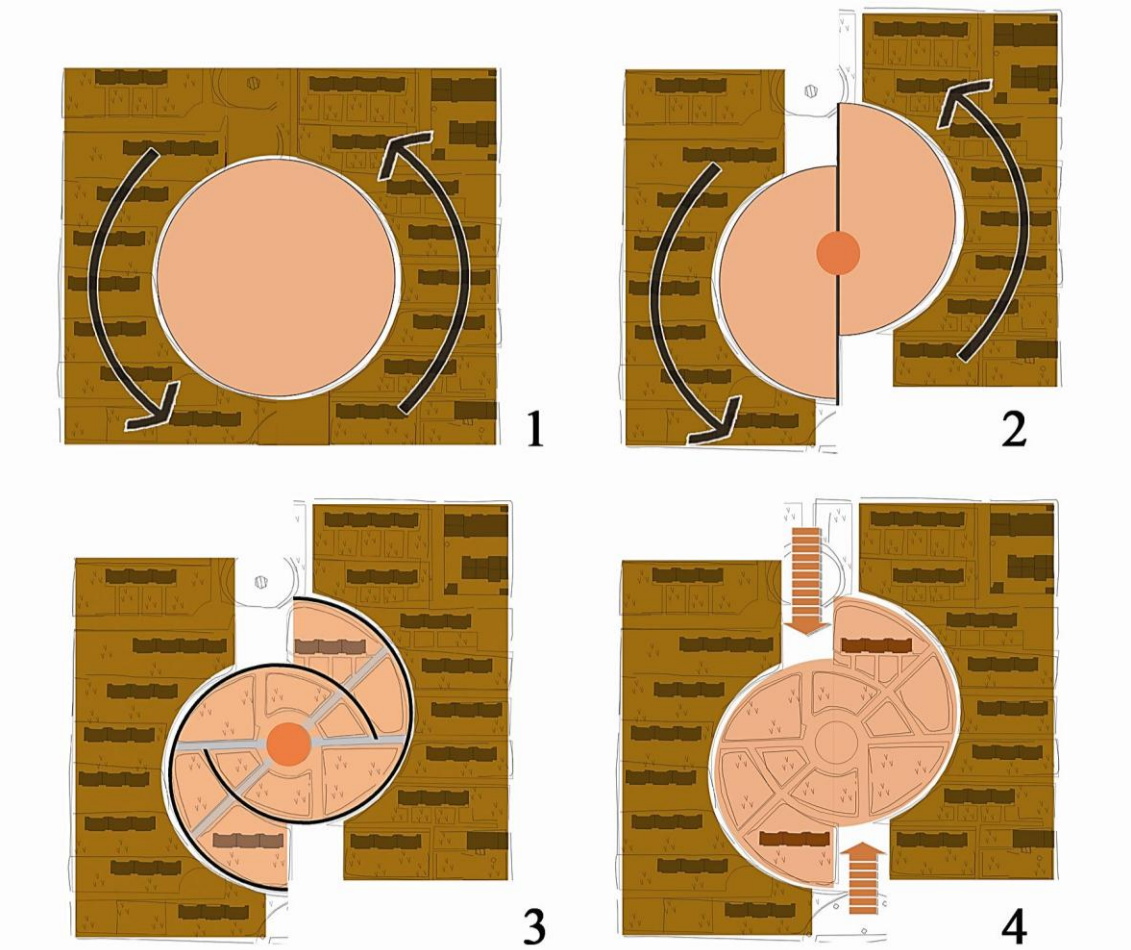


Figure 18: The concept of the project combined two simple geometric shapes together and in order to break the symmetry they moved from the center and provide a dynamic form for the public space in the middle of the project.

4.6.1 Use of Green Spaces

This section considers the brief explanations of green spaces of “Sheshsad Dastgah”, continues with the definition of three categories of houses on the “Sheshsad Dastgah” project.

The analysis of urban context showed that there is a proper amount of urban greenery such as urban park and neighborhood parks with the appropriate quality in Mashhad city. Besides, most of the people usually visit public greenery in this city due to their facilities and well designed conditions for all user types. Therefore, in this case aim is to analysis the four types of greenery which is considered in previous chapter (3.3 Proximity of the green spaces in different scale in housing area) and ten houses selected from standard housing as an example in order to analysis both front and back yard in more details. It categorized cases to the three different types according to the various forms of the balconies. Type A consists of houses which have greenery in the balconies and these spaces mostly are used for gardening activities. Type B includes houses that use the combination of greenery and fences to achieve more privacy. Type C analyses houses, which are eliminated balconies for extending the interior spaces and there are no green spaces. The following tables show their plans, pictures and analysis.

4.6.1.1 Type A

According to the observation, most of the houses in this category use greenery to control the visual proximity to the private area. Therefore, they use shrubs and flowers on their balconies to control view from the street and create semi-private area for sitting and watching outside. The analysis shows that the most residents who have greenery in their balconies are elderly and middle aged families that are living for a long time in this neighborhood. For that reason, they have a strong feeling to

the environment and physical proximity to the large and great public green space in the middle of the project bring the sense of safety to the environment. Furthermore, the distance between the main streets provide calm and quiet spaces, which cause people, spend more time in their balconies for using fresh air and enjoying pleasant views. These balconies provide a hierarchy in an environment, which separated public spaces from private one. On the other hand, the transparence characteristic of greenery promotes the permeability to these spaces.

Furthermore, the section analysis shows that the dimension of the street is 6 to 8 meters, the pedestrian sidewalk is 2.5meters, and the depth of balconies is 2.5-meter while the green spaces in front of all blocks have 15 to 18 meter distance. Besides, proximity to the street and large distance between two blocks, which covered with green spaces, affects people's satisfaction and influence their perception of the territory and privacy. (Figure 19)

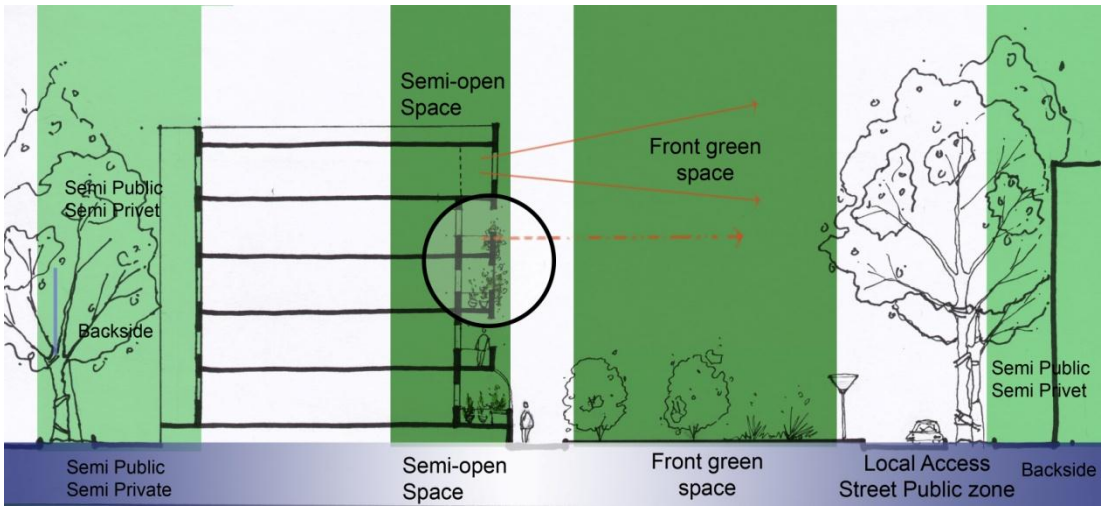


Figure 19: section shows the type A and its connection to the green space in front of the block (Author, 2013).

Table 18 shows the visual, physical and social proximity according to the observation of type A and explains the level of privacy and permeability of these houses.

Table 18: Level of proximity, privacy and permeability of type A houses (Author, 2013).

Case Number	Type	Level	Evaluation				
			Visual proximity	Physical proximity	Social proximity	Level of privacy	Level of permeability
1	A	Very-high					
		High	✓	✓		✓	✓
		Medium			✓		
		Low					
		Very-low					
2	A	Very-high				✓	
		High		✓	✓		✓
		Medium	✓				
		Low					
		Very-low					
3	A	Very-high					
		High	✓	✓			
		Medium			✓		✓
		Low				✓	
		Very-low					

The visual proximity to green spaces in type A fluctuated between medium to high level, while the physical proximity to greenery is high. Interviews illustrated that residents who are living in this type have high and medium social proximity with their neighbors. The houses have a high level of privacy due to the using greenery in their territories and the level of the permeability is changing between high and medium.

4.6.1.2 Type B

This category consists of houses, which use fences and green spaces together. Observation shows that 60 % of residents who are living in the ground floor belong to this category. Steel fences use for covering the balconies due to security issues, which prevent access from the outside and provide a safe environment for living. The analysis reveals that the combination of green space and fences create a high level of privacy for the residents. Although, residents have a visual connection to the outside, the physical proximity or accessibility to the green spaces are limited by this kind of fences. Therefore, it may affect the level of social interaction and social cohesion as well. (Figure 20)

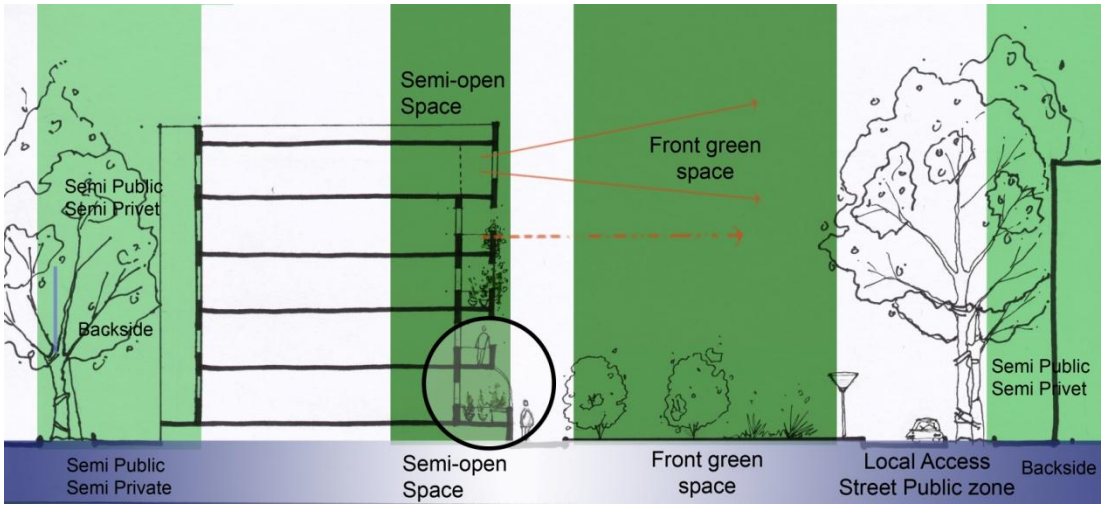


Figure 20: section shows the type B and its connection to the green space in front of the block (Author, 2013).

The finding from observation demonstrates that matting balconies are popular among residents, due to its transparent feature and shading quality. Therefore, this semi pubic area provides an opportunity for residents spend more time in the balcony without any disturbance from outdoor condition.

Table 19: Level of proximity, privacy and permeability of type B houses (Author, 2013).

Case Number	Type	Level	Evaluation				
			Visual proximity	Physical proximity	Social proximity	Level of privacy	Level of permeability
4	B	Very-high					
		High		✓	✓	✓	
		Medium	✓				
		Low					✓
		Very-low					
5	B	Very-high			✓		
		High					✓
		Medium	✓	✓			
		Low				✓	
		Very-low					
6	B	Very-high					
		High		✓		✓	
		Medium	✓				
		Low			✓		
		Very-low					✓
7	B	Very-high			✓		
		High		✓		✓	✓
		Medium	✓				
		Low					
		Very-low					

Table 19 shows the visual, physical and social proximity according to the observation of type B and explains the level of privacy and permeability of these houses. In type B most of the houses have medium visual proximity to green spaces, while the physical proximity to greenery changed between high to medium. Interviews illustrated that residents who are living in this type have high levels of social proximity. The houses have a medium level of privacy due to the combination of greenery and fences in their territories. The level of the permeability is fluctuating between high and low due to the density of greenery.

4.6.1.3 Type C

The observation shows that the residents create changes in plan layouts. For example eliminating one of the bedrooms and extending living room or eliminating balconies and extend their living room trough the spaces. While, this method is used in several houses, for extending the interior spaces, the quality of spaces decreases due to ignoring the profits of green spaces which they bring to the houses.

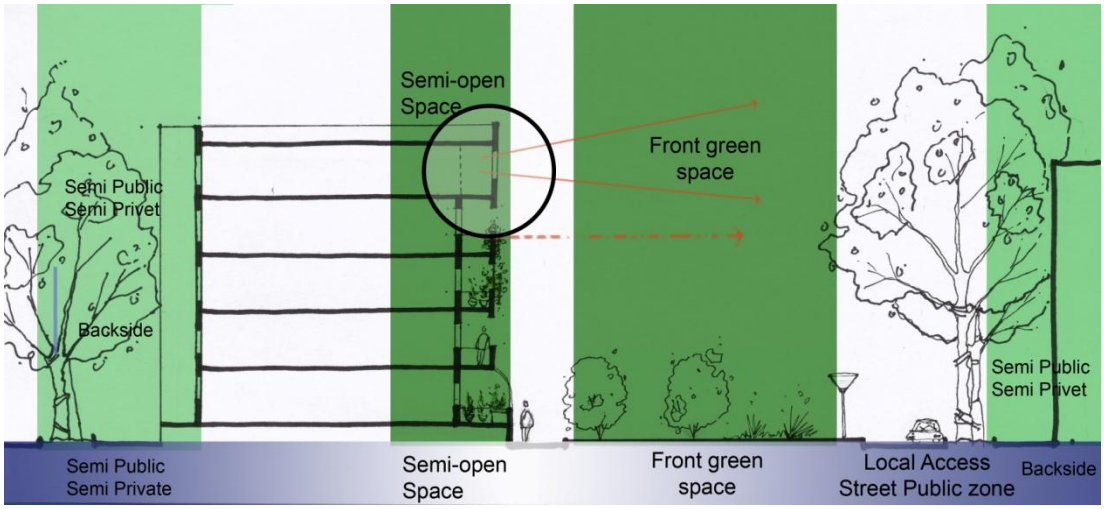


Figure 21: section shows the type C and its connection to the green spaces in front of the block (Author, 2013).

Observation shows that most of the houses, which are located on upper floors, prefer to eliminate their balconies because in these floors, there is no physical connection with the green area (Figure 21). Therefore, they use their balconies to enlarge interior space. When the visual proximity disconnected the level of social interaction may decrease. However, the level of visual proximity is low the analysis show that social cohesion with neighbors has a high level. This may happen due to the existence of public open spaces in the middle of a neighborhood. As it is apparent from interviews, most of the residents are using this public area for various reasons such as playing with children, social interaction with their neighbors, physical activity and as

a picnic area on weekends. Besides, Pedestrian accessibility to the playground area provides a safe environment for children to have more freedom in the neighborhood.

Table 20 shows the visual, physical and social proximity according to the observation of type C and explains the level of privacy and permeability of these houses. In type C most of the houses have medium visual proximity to green spaces, while the physical proximity to greenery is high. Interviews demonstrated that residents who are living in this type have different level of social proximity from very high to low levels. The houses have a low level of privacy due to the elimination balconies (there is no semi-private area between the dwellings and outdoor spaces). The level of the permeability is fluctuating between high and low due to the location of houses in different levels.

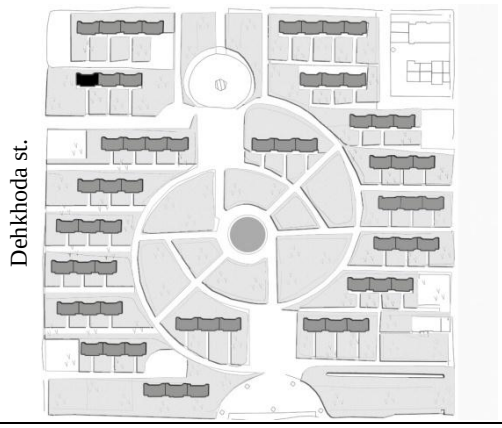
Table 20: Level of proximity, privacy and permeability of type C houses (Author, 2013).

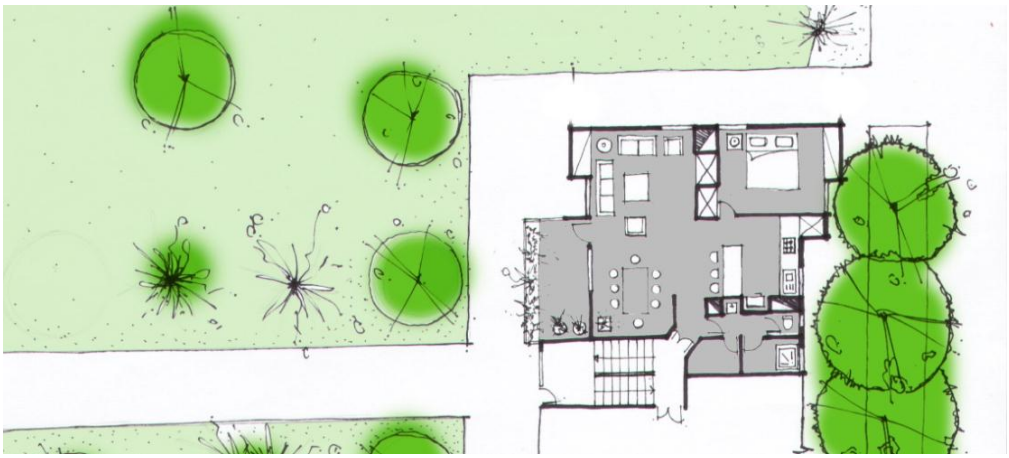
Case Number	Type	Level	Evaluation				
			Visual proximity	Physical proximity	Social proximity	Level of privacy	Level of permeability
8	C	Very-high			✓		
		High		✓		✓	
		Medium	✓				
		Low					✓
		Very-low					
9	C	Very-high					
		High		✓			
		Medium	✓				
		Low			✓	✓	✓
		Very-low					
10	C	Very-high			✓		
		High		✓			✓
		Medium	✓				
		Low				✓	
		Very-low					

Tables 21 to 30 showed the analysis of the selected houses from “Sheshsad Dastgah” project. Each table consists of the location of each house on the map, ground floor plan and pictures. The table divided into three parts, the first part considered the general information about the case, the second part is discussed barriers and level of privacy and permeability. The third part analysis cases according to proximity feathers. At the end of each table the comments about the house is given according to the observation and interviews.

Table 21: Case number 1 from Sheshsad Dastgah neighborhood (Author, 2013).

Type A	**An analysis the proximity of green spaces**				
	Number: 1 (Block 11 –Apartment 3)				
	User type:	Young couple ○	Family with children ○	Middle age family ○	Elderly ●

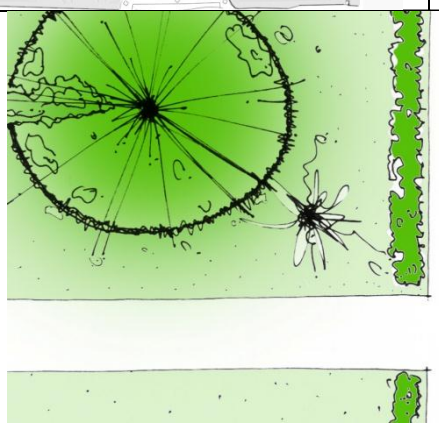


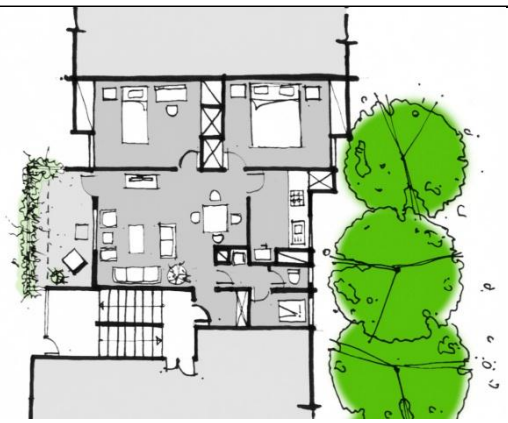


Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ●	Front garden ●	Doorstep Green Space ●	Neighborhood green (Local park) ●	Public green (Urban park) ●
Activities	Playing with children ○	Gardening ●	Drying laundry ●	Receiving guests ○	Sitting and watching outside ●
Boundaries and barriers	Window glass ○	Steel fences ○	Wood fence ○	Shrubs or hedge ○	Flower box ●
Permeability	The vegetation has an extra impact and the degree of permeability is high .				
Level of privacy	They create a high level of privacy with the help of green spaces in the balcony.				
Visual proximity (VP)	They have a visual connection to the outside through the balcony .				
Physical proximity (PP)	They have proper physical distance to the urban park(3500m) ,localpark(200m), door step greenery (3m) ,street(30m) and shops (100m)				
Social proximity (SP)	They have social interaction with their neighbors .				
Additional part	They enlarged living room by eliminating one of the bedrooms .				
Resident's willings to change	They want to extend the balcony in order to have more space for gardening.				
Overall	Proximity to the green spaces effect users life in order to provide opportunity for them to have social interaction with their neighbors in public green part. Also, the Location of house in the corner provides a wide view to the green spaces which reduce levels of stress . They live in quietness and peace environment due to their distance from Dehkhoda st.				

Table 22: Case number 2 from Sheshsad Dastgah neighborhood (Author, 2013).

Type A	**An analysis the proximity of green spaces**				
	Number: 2 (Block 12 –Apartment 3)				
	User type:	Young couple ○	Family with children ○	Middle age family ●	Elderly ○

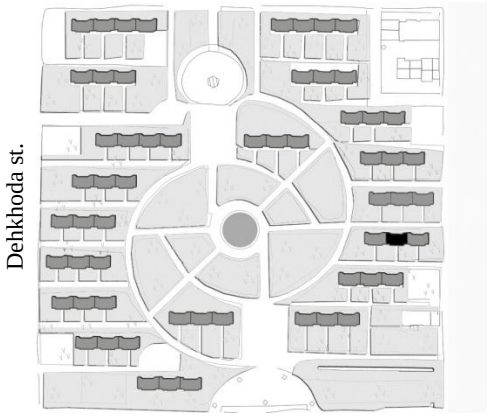


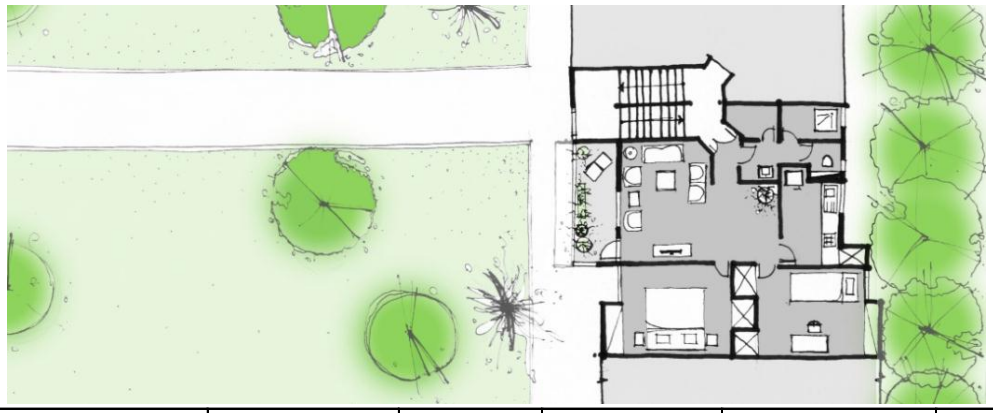


Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ●	Front garden ○	Doorstep Green Space ●	Neighborhood green Local park ●	Public green Urban park ●
Activities	Playing with children ○	Gardening ●	Drying laundry ●	Receiving guests ○	Sitting and watching outside ●
Boundaries and barriers	Window glass ○	Steel fences ○	Wood fence ○	Shrubs or hedge ○	Flower box ●
Permeability	The vegetation has an extra impact and the degree of permeability is high .				
Level of privacy	They create a high level of privacy in balcony with the help of green spaces .				
Visual proximity	They have a visual connection to the outside through the balcony .				
Physical proximity	They have proper physical distance to the public green(3500m), local park (100m), shops (200-150m) and playground area(50-70m).				
Social proximity	Proximity to the public green space create opportunity for social interaction, between the neighbors in the whole neighborhood.				
Additional part	They changed the location of the entrance and eliminated the store room .				
Resident's willings to change	They want to have bigger houses.				
Overall	They have a sense of belonging to their living environment due to the proximity to the green spaces. They use public open space for exercising , using fresh air and social interaction. The house located in the middle of the project therefore , green spaces provide a quiet and calm environment for residents. Greenery provide high level of privacy in balcony and they spend more then 4 hours in a balcony.				

Table 23: Case number 3 from Sheshsad Dastgah neighborhood (Author, 2013).

Type A	**An analysis the proximity of green spaces**				
	Number: 3 (Block 3 –Apartment 2)				
	User type:	Young couple ○	Family with children ●	Middle age family ○	Elderly ○

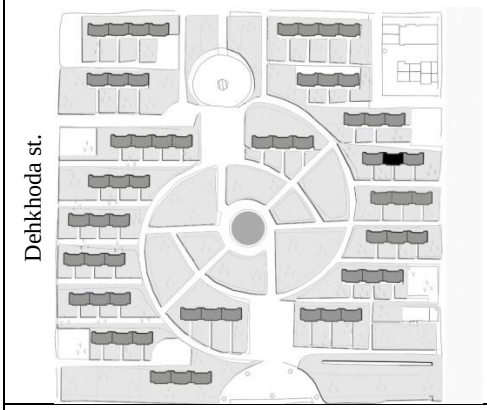




Location on plan	Ground floor ○	First floor ●	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ●	Front garden ○	Doorstep Green Space ●	Neighborhood green Localpark ●	Public green Urban park ●
Activities	Playing with children ●	Gardening ●	Drying laundry ●	Receiving guests ○	Sitting and watching outside ○
Boundaries and barriers	Window glass ○	Steel fences ○	Wood fence ○	Shrubs and hedge ○	Flower box ●
Permeability	The degree of permeability is low due to its vertical location.				
Level of privacy	They have a low level of privacy due to its territory definition.				
Visual proximity	They have a visual connection to the outside through the balcony .				
Physical proximity	They have proper physical distance to the local park (70-100m), a primary school and shops(250m). But, playground area is far from their house therefore their child play in front of the block(300m).				
Social proximity	Proximity to the public green spaces create social tie between the neighbors in the whole neighborhood.				
Additional part	There is no additional part in plan layout .				
Resident's willings to change	They want to live in a house with big garden in order to have a safe place for their children.				
Overall	This house has a great position on the site, due to its proximity to the main streets, facilities and public green area. But, living in a second floor disconnect them from greenery.they use balcony just 2 hours a day due to the low level of privacy.				

Table 24: Case number 4 from Sheshsad Dastgah neighborhood (Author, 2013).

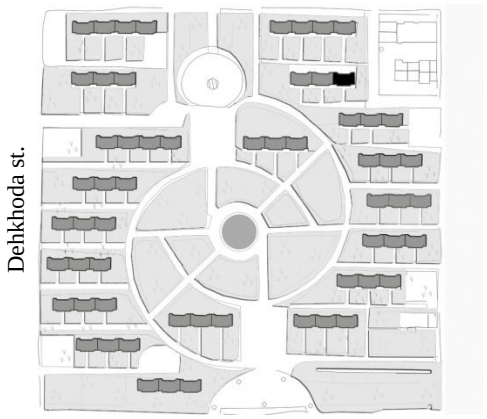
Type B	**An analysis the proximity of green spaces**				
	Number: 4 (Block 5 –Apartment 2)				
	User type:	Young couple ○	Family with children ●	Middle age family ○	Elderly ○



Location on plan	Ground floor ○	First floor ●	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ●	Front garden ○	Doorstep Green Space ●	Neighborhood green (Local park) ●	Public green (Urban park) ●
Activities	Playing with children ○	Gardening ●	Drying laundry ●	Receiving guests ○	Sitting and watching outside ●
Boundaries and barriers	Window glass ○	Steel fences ●	Wood fence ○	Shrubs and hedge ○	Flower box ●
Permeability	The vegetation has an extra impact in order to create shading. But, the degree of permeability is low .				
Level of privacy	They create a high level of privacy with balcony with the help of green spaces .				
Visual proximity (VP)	They have a limited connection to the outside through the balcony .				
Physical proximity (PP)	They have physical distance to public green space (50-70m), shop, school and playgreound area(100m).				
Social proximity (SP)	They have social coonection with their neighboors in blocks 3,8,14 and 15.				
Additional part	They changed the place of one of the bedrooms and extended the living room. Also, they reduced the size of the balcony .				
Resident's willings to change	They want to have a house with 3 bedrooms.				
Overall	They have visual proximity however physically have distance from greenery. Parents gather in public area and have a social interaction with their neighbors when their children were playing in the playground. They use the local park as a place for physical activity and exercising				

Table 25: Case number 5 from Sheshsad Dastgah neighborhood (Author, 2013).

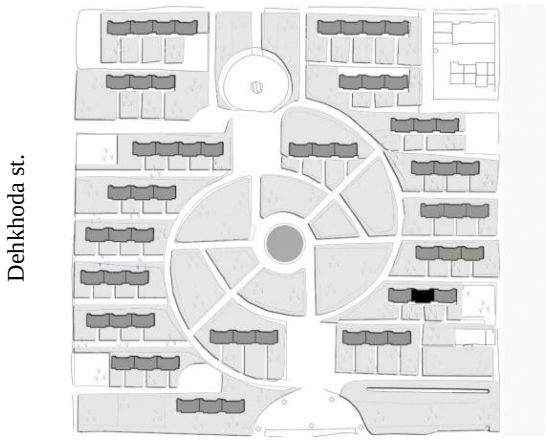
Type B	**An analysis the proximity of green spaces**			
	Number: 5 (Block 8 –Apartment 1)			
	User type:	Young couple ○	Family with children ○	Middle age family ●	Elderly ○

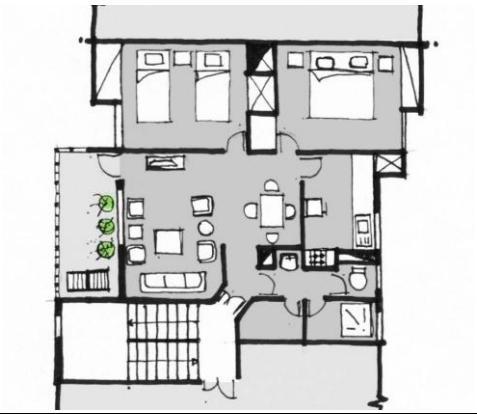


Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ●	Front garden ○	Doorstep Green Space ●	Neihborhood green Local park ●	Public green (Urban park) ○
Activities	Playing with children ○	Gardening ●	Drying laundry ●	Receiving guests ○	Sitting and watching outside ●
Boundaries and barriers	Window glass ○	Steel fences ●	Wood fence ○	Shrubs and hedge ○	Flower box ●
Permeability	The vegetation has an extra impact and the degree of permeability is high .				
Level of privacy	They have a low level of privacy due to the dansity of vegitation.				
Visual proximity (VP)	They have a visual connection to the outside from the balcony .				
Physical proximity (PP)	They have physical distance to the local park (100m).However, physical proximity to the school make a problem for residents due to the traffic and noises after finishing school(20-30m)				
Social proximity (SP)	They live for a long time in this neighborhood.Therefore, they have a social connection with most of the residents.				
Additional part	They use steel fences in balcony in order to have secure territory .				
Resident's willings to change	They want to enlarge their living room .				
Overall	The narrow street between this block and school is empty during the night which cause an insecure environment for residents. Thus, they have to use steel fence for safety. But his fences limited their access to greenery.				

Table 26: Case number 6 from Sheshsad Dastgah neighborhood (Author, 2013).

Type B	**An analysis the proximity of green spaces**				
	Number: 6 (Block 2 –Apartment 2)				
	User type:	Young couple ○	Family with children ●	Middle age family ○	Elderly ○

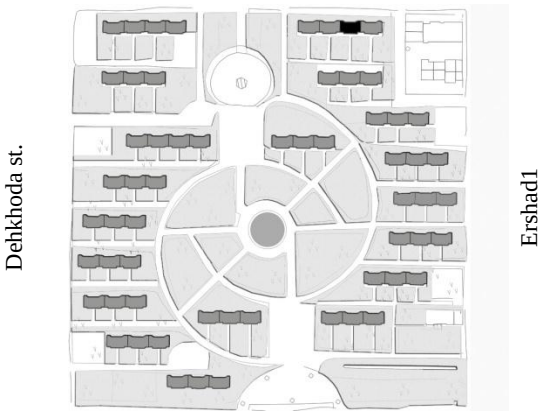




Location on plan	Ground floor ○	First floor ○	Second floor ●	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ●	Front garden ○	Doorstep Green Space ○	Neighborhood green (Local park) ●	Public green (Urban park) ●
Activities	Playing with children ○	Gardening ○	Drying laundry ●	Receiving guests ○	Sitting and watching outside ○
Boundaries and barriers	Window glass ○	Steel fences ●	Wood fence ○	Shrubs and hedge ○	Flower box ○
Permeability	Level of permeability is low.due to the fenses.				
Level of privacy	The shape of fences in balcony created a kind of private area for residents.				
Visual proximity (VP)	Fences limited visual connection with the outside .				
Physical proximity (PP)	They have physical distance to the shops(50m), local park (50-70m) and main street (100m to Ershad BLVD)				
Social proximity (SP)	They don't know their neighbors but their childern play with neighbors' child				
Additional part	They use steel fences in balcony in order to have secure territory .				
Resident's willings to change	They want to live in 3 bedroom house with big garden.				
Overall	They don't have a physical connection to the greenery therefore they used their balconies just for drying laundry. Social proximity is low because they don't have a connection to the outside and they prefer to spend time in a public park instead of their neighborhood park.				

Table 27: Case number 7 from Sheshsad Dastgah neighborhood (Author, 2013).

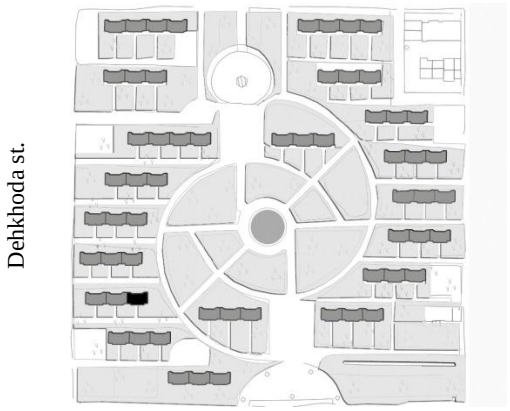
Type B	**An analysis the proximity of green spaces**			
	Number: 7 (Block 9 –Apartment 2)			
	User type: Young couple ○	Family with children ○	Middle age family ○	Elderly ●



Location on plan	Ground floor ○	First floor ○	Second floor ●	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ●	Front garden ○	Doorstep Green Space ○	Neighborhood green (Local park) ●	Public green (Urban park) ●
Activities	Playing with children ○	Gardening ●	Drying laundry ●	Receiving guests ○	Sitting and watching outside ●
Boundaries and barriers	Widoww glass ○	Steel fence ○	Wood fence ○	Shrubs and hedges ○	Flower box ●
Permeability	the degree of permeability is high .				
Level of privacy	A high level of privacy created by using a mat for covering balcony. This kind of coverage is used for shading in hot summer days.				
Visual proximity	They have a visual connection to the outside .				
Physical proximity	They have physical distance to playground area(50m) , shops and street (20-30m)				
Social proximity	She has a great social connection with her neighbors . Elderly people use public green space for gathering and chatting.				
Additional part	Living room is enlarged by eliminating one of the bedrooms.				
Resident's willings to change	She want to have bigger balcony.				
Overall	A sense of belonging to the living environment made by proximity to the green spaces. Resident uses public open space for exercising , using fresh air and social interaction. Proximity to the shops is advantageous for the user but close distance to the street make noise in the backside of the house .				

Table 28: Case number 8 from Sheshsad Dastgah neighborhood (Author, 2013).

Type C	**An analysis the proximity of green spaces**				
	Number: 8 (Block 16 –Apartment 1)				
	User type:	Young couple ○	Family with children ●	Middle age family ○	Elderly ○



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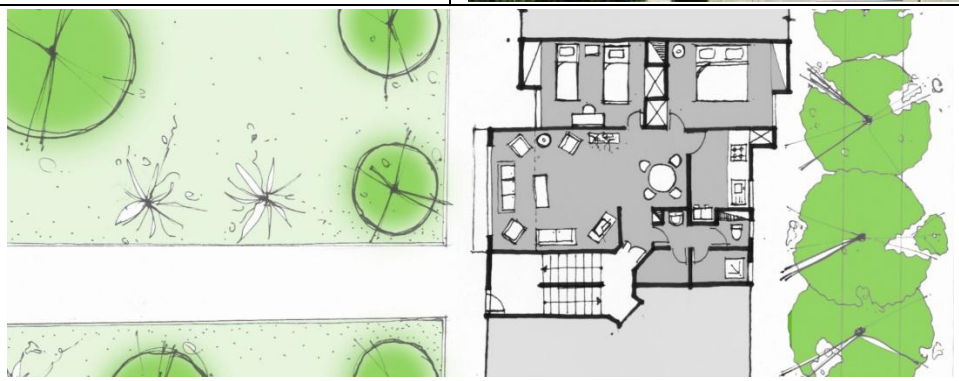
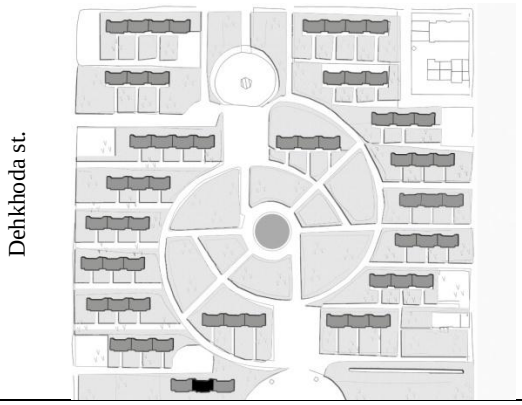
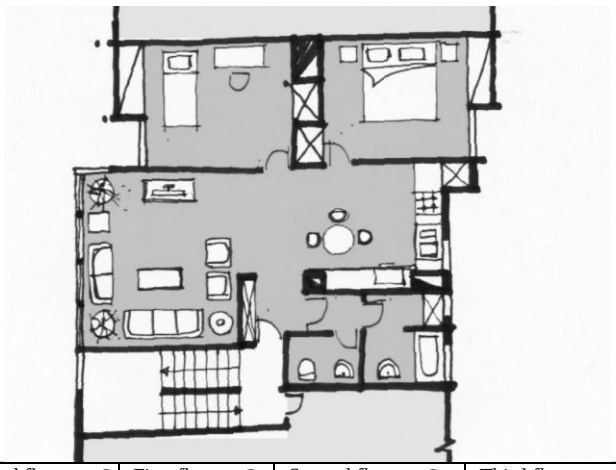


Location on plan	Ground floor ○	First floor ○	Second floor ○	Third floor ●	Fourth floor ○
Use of green space	Balcony with flowers ○	Front garden ○	Doorstep Green Space ○	Neighborhood green (Local Park) ●	Public green (Urban park) ●
Activities	Playing with children ○	Gardening ○	Drying laundry ○	Receiving guests ○	Sitting and watching outside ○
Boundaries and barriers	Widoww glass ●	Steel fences ○	Wood fence ○	Shrubs and hedge ○	Flower box ○
Permeability	The degree of permeability is low due to the form of balcony				
Level of privacy	A level of privacy is high because of the location in third floor nobody can see inside the house .				
Visual proximity	They have a visual connection to the outside .				
Physical proximity	They have physical distance to the Local park 100m and street(200m)				
Social proximity	Proximity to the public green spaces create social tie between the neighbors in the whole neighborhood.				
Additional part	They enlarged living room and eliminated balcony .				
Resident's willings to change	They want to have bigger houses.				
Overall	Proximity to the green space provide a safe environment for residents. Therefore, They use neighborhood green space for playing with children , social interaction with neighbors, physical activity and as space for picnic on weekends.				

Table 29: Case number 9 from Sheshsad Dastgah neighborhood (Author, 2013).

Type C	**An analysis the proximity of green spaces**				
	Number:9 (Block 18 –Apartment 2)				
	User type:	Young couple ○	Family with children ○	Middle age family ●	Elderly ○

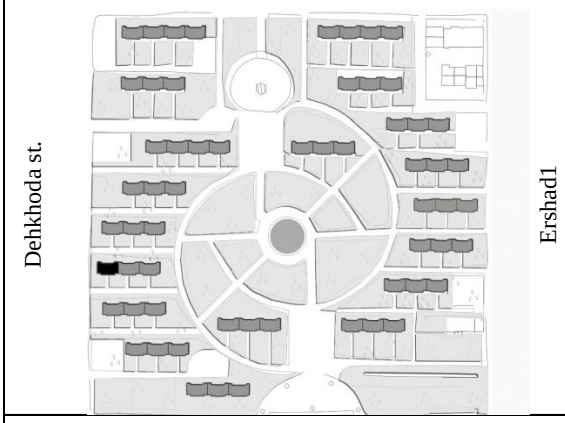




Location on plan	Ground floor ○	First floor ○	Second floor ●	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ○	Front garden ○	Doorstep Green Space ●	Neighborhood green (local park) ○	Public green (Urban park) ●
Activities	Playing with children ○	Gardening ○	Drying laundry ○	Receiving guests ○	Sitting and watching outside ○
Boundaries and barriers	Window glass ●	Steel fences ○	Wood fence ○	Shrubs and hedges ○	Flower box ○
Permeability	The degree of permeability is low due to the inclosure balcony.				
Level of privacy	The level of privacy is low because of proximity to the main street (Ershad BLVD).				
Visual proximity	They have a visual connection to the outside.				
Physical proximity	They have physical distance to main street 20m. (Ershad BLVD)				
Social proximity	They don't have social intraction with their neighbors.				
Additional part	They enlarged living room and eliminated balcony .				
Resident's willings to change	They want to have bigger houses.				
Overall	Proximity to the main street make noise and decrease the level of privacy . They don't have a connection to the green space because they cannot see this space. They don't have social connection with their neighbors and they don't use the local park.				

Table 30: Case number 10 from Sheshsad Dastgah neighborhood (Author, 2013).

Type C	**An analysis the proximity of green spaces**				
	Number: 10 (Block 15 –Apartment 3)				
	User type:	Young couple ○	Family with children ○	Middle age family ○	Elderly ●



Location on plan	Ground floor ●	First floor ○	Second floor ○	Third floor ○	Fourth floor ○
Use of green space	Balcony with flowers ●	Front garden ○	Doorstep Green Space ○	Neighborhood green (local park) ●	Public green (Urban park) ●
Activities	Playing with children ○	Gardening ●	Drying laundry ○	Receiving guests ○	Sitting and watching outside ●
Boundaries and barriers	Window glass ●	Steel fences ○	Wood fence ○	Shrubs and hedge ○	Flower box ○
Permeability	The vegetation has an extra impact and the degree of permeability is high .				
Level of privacy	The level of privacy is low due to the territory definition and location in ground floor.				
Visual proximity	They have a visual connection to the outside.				
Physical proximity	They have physical distance to neighborhood park 150-200m ,street (50m) and shops (300m)				
Social proximity	They usually meet their neighbors in their green space in front of the house.				
Additional part	They enlarged living room, eliminated balcony and add steps in order to create private garden in front of their house.				
Resident's willings to change	They want to have bigger houses.				
Overall	They have a sense of belonging to their living environment as a result of Proximity to the green spaces. They use the local park for exercising , using fresh air and social interaction. They have social intraction with their neighbors.				

4.6.2 Results

As it is discussed before there is a proper amount of urban greenery such as urban park and neighborhood parks with the appropriate quality in Mashhad. The urban park (Mellat park) has 3500meter distance from the "Sheshsad Dastgah" neighborhood. The following section analysis the semi-public, semi-private and private greenery in "Standard housing" project

4.6.2.1 Common Green Space

This residential project has large, pleasant and green open space in the middle, which is public share open space for all residents. Green spaces in this project consist of a different kind of vegetation like tall sycamore trees that covered the backside of all blocks; Locust trees are placed randomly in front of some blocks; small pine trees and flowers are positioned in doorstep green spaces in front of all blocks. Besides, small shrubs and hedges separated blocks near to the main street (Ershad Boulevard) from the pedestrian path to provide a high level of privacy for the residents.

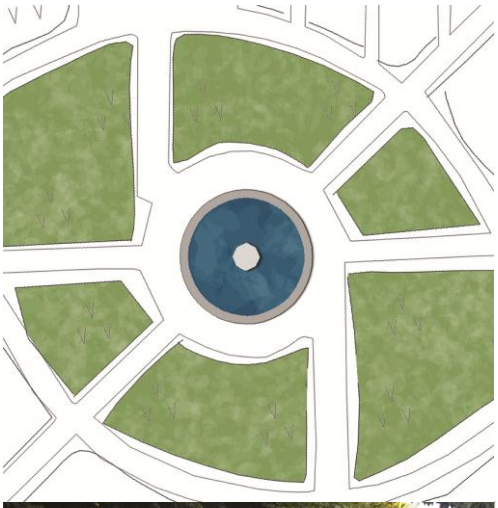



Figure 23: (Left) site plan of public green space in the middle of the project (by author)
Figure 22: (Right) fountains in the middle of public open space (by author)

Figure 25: (Right) possibility to play with children due to the shading (by author)
Figure 24: (Left) sport facilities in the public open space (by author)

In addition, common open spaces facilitated by urban furniture, lighting elements, sport facilities and water element (fountain). All the pedestrian access support common open space in the middle in order to provide space for gathering residents and create social proximity in the environment. Accessibility and permeability are the main characteristic of these spaces because residents can travel in this project without difficulty. (Figure 22, 23)

It is clear from observation that, most of the residents use public open spaces as a place for social gathering, playing with children, walking, physical activity, using fresh air and relaxation. Moreover, the combination of green spaces and pedestrian accesses within the project provide a high level of safety for residents especially for children. Furthermore, playground spaces support children requirement for playing. In addition, physical proximity to this green space encourages elderly people to spend their time in open spaces. (Figure 24, 25)

4.6.2.2 Green Spaces in Front of Blocks (Doorstep Nature)

Generally, there is a large distance between two blocks, which start from 25m to 40m in some blocks. The physical distance between the block and the street is about 15 to 18m, which is covered with greenery and lead people to the entrances (Figure 26). These spaces create a kind of buffer zone between blocks and car access, which protect them from street noise and air pollution (Figure 27). Moreover, this kind of physical proximity to green space may provide a pleasant atmosphere due to its sufficient impacts to protect residents from the sun and create a micro-climate effect that make balance in the environment. Consequently, people may spend more time outside for social interaction with their neighbors. In addition, young children who are not able to go and play in children's playground use these green spaces for playing with their neighbors' child. (Figure 28)

Figure 26: Green spaces in front of blocks (by author).

Figure 28: (Left) Green space between two blocks (by author).
Figure 27: (Right) children use green spaces in front of the blocks as playing area (by author).

4.6.2.3 Balconies

In this project, each unit has a balcony, which face to the south and has a visual connection with green spaces in front of them. Balconies are attached to the living room and provide an opportunity for residents to watch outside through their window. The physical distance between two blocks create a high level of privacy for users, therefore; they may spend more time in their balconies without disturbance from their neighbors.

Generally, people use balconies for gardening, drying laundry, using fresh air and sunlight, sitting in the evening and visiting outside. According to the observation, balconies on the ground floors are bigger, and most of their residents are elderly people. (Figure 29)

Figure 29: Different kind of balconies (by author)

Apart from some especial cases on the ground floor, which their residents try to create a direct connection to the outside in order to use green spaces near to their house. Others, who are living in the ground floor, enclosed their balconies with fences or meshes due to the safety issues, which disconnected them from outside visually and physically. On the other hand, others in upper floors modified their balconies in order to extend their living rooms and enlarge their interior spaces according to their needs. Therefore, they personalized their houses in different ways and with a variety of materials.

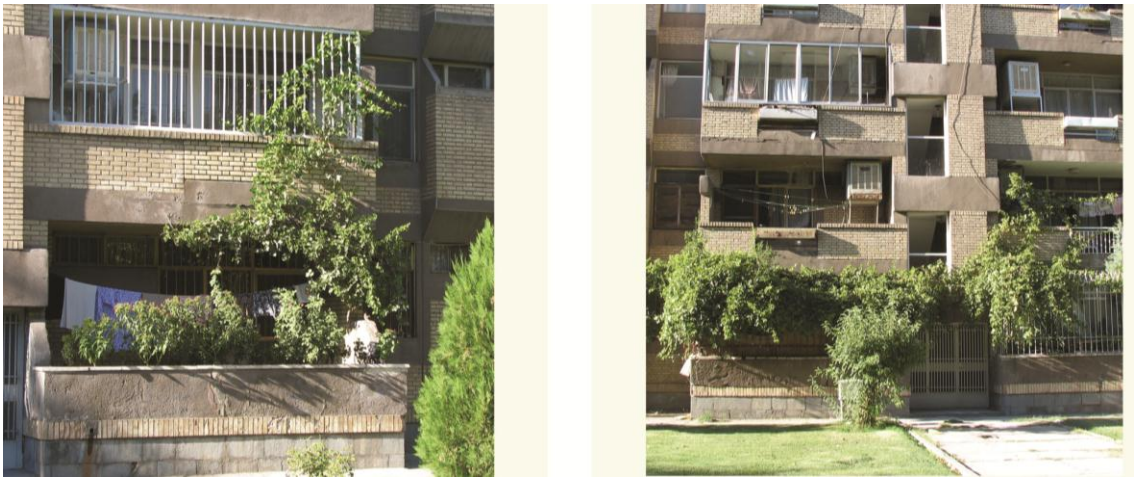


Figure 30: the combination of greenery, fences and windows on the façade(by author)

4.6.2.4 Proximity in Sheshsad Dastgah

The analysis shows that in this neighborhood green space shows the significant role due to their effects on physical and social condition of the environment. According to interview the public green area in the middle of the project, create a positive atmosphere for social interaction. It is apparent from observation that the elderly people usually spend their time in this area. According to the interviews, the sport facilities, which are located in this area, encourage all types of users to use this area for exercising and physical activities (Table 18, 19, 20). Besides, proximity to the vegetation increase amount of oxygen, decrease co2, further creates fresh air, which is one of the important reasons for being outside. The appropriate size and the high quality of the green spaces provide different sub-spaces, which serve enough space for different activity that may take place at the same time. This area supports all the users' requirement such as children, adults, elderly people, men and women at the same time.

The (type B) analysis display that most of people have lived in this neighborhood for a long time. Therefore, they have a sense of belonging to the environment, and they know most of their neighbors. Social proximity to the public area increases the sense of community in the neighborhood and people has strong relationships with each other (4.3.1.2 Type B, Table 19).

Permeability and accessibility to the green area is the most important feature, which encourage residents to spend time in this area. In this neighborhood car, accessibility does not break the pedestrian circulation. Therefore, despite the pavement built with low quality material, residents prefer to walk and travel within the neighborhood due to its safety characteristic.

Table 31: The table shows the distances in "Sheshsad Dastgah" (Author 2013)

Distances	**Meters**
Balcony (private green)	2.5
Between blocks (semi-private green)	25-30
Street edge (semi-private green)	15-18
The neighborhood park (semi-public green)	100-300
The urban park (public green)	3000-3500

The findings of (type C) analysis demonstrate that in this type of houses, physical proximity to the open spaces is disconnected, and they have only visual connection to green spaces (4.3.1.3 Type C, Table 20). Although, the literature review shows that having a view of the greenery may decrease the level of stress and have a therapeutic effect on humans. The interviews with residents who are living in this

type illustrate that they prefer to have a direct relation with open spaces. As it is clear, the residents used large windows in order to have a view to the outside. Besides, eliminating the balconies breaks the hierarchy and the semi open areas, which transfer public spaces to the private one, are totally ignored. The table 31 shows the overall distances in “Sheshsad Dastgah” neighborhood.

Chapter 5

CONCLUSION AND RECOMMENDATION

5.1 Summary of the Research

This survey focused on the relation of green spaces and housing environment and its possible social, physical and psychological impacts on residents and city dwellers. After investigating green spaces in the urban context and examining the proximity concept in different urban scales, proximity concept in two neighborhoods with different characteristic have been surveyed. Result of case analysis showed that in both cases, the visual and physical connection to green spaces were the most important issues for residents, whereas, common green areas provide a platform for their social interaction. At the end, the vertical and horizontal proximity to green spaces provide various characters and identity in the neighborhoods.

The findings illustrated that green spaces not only create an aesthetic view but also act as a tool for defining the territory of houses. These kinds of definition alter the privacy level in houses and provide a hierarchical transition from the public (street) to the private (home). Although, privacy is an initial factor in providing comfort for the residents, results of case study analysis showed that cultural factors may change the level of privacy, as well as the model of proximity.

The table 32 shows the results of analyzing the proximity of green spaces in two case studies. As it is clear from the table, in “Standart Evler” neighborhood the houses

have more proximity to private green spaces while, the amount of the private green spaces is less than $8m^2$ in second case study.

Table 32: Summery of table 17 and 31(Author, 2013)

Use of green spaces	**Standart Evler**		**Sheshsad Dastgah**	
Private green	Front garden	5-7	Balcony	2.5
	Backyard	3- 4		
Semi private green	Street edge	7.5-9.5	Street edge	15-18
			Between blocks	25-30
Semi public green	Neighborhood park	100-300	Neighborhood park	100-300
Public green	Urban park	5000	Urban park	3000-3500

The table 32 shows that the quantity of public green and semi-public green spaces is limited in Nicosia city. Besides, as it is discussed in a previous chapter the climate condition, lack of public transportation system and the low quality of pavement are influencing the level of accessibility and permeability of existence urban greenery in this city. These are the main factors which decreased the number of the visiting the urban greenery and might decrease the livability of the city. Although in "Standart Evler" neighborhood, the houses have less proximity to the urban greenery but, the low density of the city provides an opportunity for residents to have more private green spaces which bring positive impacts to the resident's life.

The table 32 illustrated that Sheshsad Dastgah residential neighborhood has great proximity to the public, semi-public and semi-private green spaces which each of them brings different impacts for the residents. While the amount of private green spaces is limited to the small balcony, the well-design and the high quality of greenery near to this neighborhood provide safe and pleasant environment for the

residents. Although participating in urban greenery increase the social proximity in this neighborhood, but, physical proximity to the limited private green spaces is also important factors in residents' satisfaction which is considered not as much of the public one in this neighborhood.

In conclusion, it can be stated that the lack of green spaces within the cities is one of the main reasons of migration of city dwellers from the urban context to the suburbs. In addition, results of various studies showed how the development outside the urban context decreases the population and, therefore decreased the livability of city centers. Besides, it causes urban sprawl, increase price of development and number of travels which is opposite the idea of compact city for providing sustainable city in the future. Therefore, this study suggests that in order to achieve maximum benefits of urban green spaces, urban context should consist of the appropriate number of hierarchical green spaces. Although the quantity of green space is of a great importance, but the quality and accessibility to these spaces are even more important. In fact, it can be stated that urban greeneries, which are not easily accessible for residents cannot be considered as green spaces since the distance decreases high percentages of its impact when the visual and physical contact is lost.

It seems to organize a set of green spaces in different scales increase the residents' satisfaction due to the fact that different urban greeneries provide various opportunities to be chosen by users. The results of the study illustrate that the most efficient green space which directly affect the quality of living area is the near to door steps greenery such as a garden or a green balcony. Due to the limited land and the high price of developing green spaces in the horizontal direction this study suggests establishing green area in the vertical direction. The Roof gardens, common

terraces in various levels and green facades are examined by same cities, which offer multiple benefits for buildings. Therefore, the proposed new green arrangement for new developed residential environments will decrease the distances between greenery and urban dwellers. The vertical green space will reduce the required land on ground level, while it may bring more positive response by itself such as an evaporating cooling effect, mitigating dust and reducing noise as an ecological response into this thesis concern.

5.2 Further Research Implications

The current research analyzed two neighborhoods in two different urban contexts and different housing typology. Thus, a list of recommendations for future studies is provided as follows:

1) Taking into account the variety of housing typology in a comparative way
2) Considering high-rise buildings as case studies for studying the proximity of greenery in vertical direction
3) Considering the possibility of green facades and its impacts on proximity measurements
4) Analyzing the role of green roof, green terraces and green facade in housing environments in terms of users' well-being
5) Evaluating the proximity of the natural environment and green belts in the urban resident's life.

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APPENDICES

APPENDIX A: Questionnaire Sample

Merheba benim adım Saloumeh. Ben Doğu Akdeniz üniversitesinde Mimarlik Bölümünde master öğrencisiyim. Yeşil alan yaşam üzerindeki etkilerini inceliyonim. Ayrıca standart ev projelerini tercih ediyorum. Bu sorular yanıtlamanıza sevinirim. Teşekkürler.

Hello I am Saloumeh, I am studying master in architecture in Eastern Mediterranean university. I am working on the role of green spaces on the quality of life in housing environments and I chose a standard housing project for the case study. I would appreciate if you fill this questionnaire. Thank you for your time.

1-Cinsiyet (Sex) : Bay (male)..... Bayan (Female)..X... Uyruk (Nationality) : .....

2- Yaş (Age): 5-10.... 11-14.... 15-25..X.. 26-45.... 46-50.... +60....

3- kaç senedir burda yaşıyorsun? (How many years you have been living here) 1

4-Bulundugunuz ev size aitmi ?(what is your own position of your house)

Yoksa (Owner)..... Kira(Tenant)...X.. durumund(Renter).....

5-Okuldaki yeşil alanları kullanıyor musunuz? (do you usually use green space of this complex)

Evet(Yes).....X..... Hair (No).....

6- Boş zamanlarıunızı aşağıdalciler den hangisinde ve nasıl değerıendiriyorsunuz? (which kinds of following spaces do you prefer to spend your leisure time)

a) Şehir dışı yeşil alanlarda (Green spaces outside the city)..... b)Şehir parklarında (Park of city) .....X.....

c) Yaşadiğınız yerin toplu özel park alanından (The Local park (green spaces within your residential neighborhood).....
d) Kendi bahçeniz (Your garden)..X.. e) Balkanunuzda(Your balcony).....

7-Hangi sıklıkta bahçenizi kullanıyorsunuz (How often do you usually use your garden)?

Sabah (Morning)....X öylen (Afternoon)...X.. akşamüstü (Evening)...X.. Gece(Night).....

8-Kendi bahçenizde ne tür aktiviteler yapıyorsunu?(Which kinds of activity do you usually do within the green spaces of your house)

a) Eğlence (Entertainment)..... b) çocuklarla oyun (Playing with children).....

c) çalışma(exercise)..... d) Sosyal ilişkiler(Social interaction)..X... e) Bahçe düzenlenmesi (Gardening)..X..

f) Temiz havayı kullanmak (using fresh air)..X... başka (others).....

9 Evinizin karşısındaki yeşl alan yaşam tarzınızı nasıl etkiliyor ?(to what extent does the green space in front of your house affect your life quality?)

10- Evinizin karşısındakri alandan nasıl yararlanıyorsunuz?(How do you interact with the green space in front of your house?)

a) Görsel olarak (pencere),(Visually (watching from windows))

b) fiziksel olarak koklma,dokanma (physically (touching, smelling, gardening))

11-Kamşularınızla sosyal ilişkilerinizi nerede paylaşıyorsunuz ?(where do you usually gather with your neighbors for chatting?)

a) Evde(In the house)......... b) Evin önünde (In front of your house)....... c) Bahçede (In your garden)..✓......

d) Arkadasınızın evinde (In your friend's house) .... e) Başka (others)........

12- Evinizdeki yeşil alanlar sizi farkli aktiviteler yapmanızı nasıl etkiler? (How do the green spaces of your house encourage you to do more exercise or attending to group activities?)

13- Yeşil alan sizin yaşadıgıniz yerin güvenlıği nasıl sağlıyor?(How much is this effect on creating secure environment for residents?)..Az... Sağlıyor...

14- Genellıkle çocuklar nerde oyun oynar? (where do children usually play?)

a) Evde(In the house)........... b) bahçede(In the yard)..X

c) sokakta(In the streets)........ d) çocuk parkında (Children's playground)....

15- Çocuklar oyun oynamak için neden bu alanlari seçer? (Why do they choose this place for playing?)
Daha iyi oyunlar oynasınlar, paylaşsınlar yapsınlar

16- Bu alanlar güvenlik açisundan yeterlimı ?(Is this save enough for playing or not?)
Değil

17- Okulun yeşil alanını nasil değerlendiriyorsunuz ?(How you evaluate the quality of the green spaces of the complex?
Kötü

18- Ne tür hayvanlari tercih edersiniz?(What kinds of pet do you have?)
Köpek, kuş, evcil hayvanlar

19- Hayvanrınızı nerde barındıyorsunuz?(Where do you keep your animals?)

a) Arka bahçede(In back yard)..X B) ön bahçede (In front yard).... c) Evin içinde (Inside the house)....

başka (Others)...............

20- Hayvanlarniza bakmak için nereyi tercih edersiniz?(Which kind of place does you prefer for keeping your animals?)...Bahçe...

21- Okulda taşunma fursati olsaydı nereyi tercih edersiniz?(which blocks do you prefer if you have the possibility to move to the other part of the complex?)...Okul...yakınları...tercih ederdim

22- Evinizde deyiştirmek istediğiniz bir şey olsaydi ,ne yapardınız?(If you want to create any changes within your house, what do you do?)...

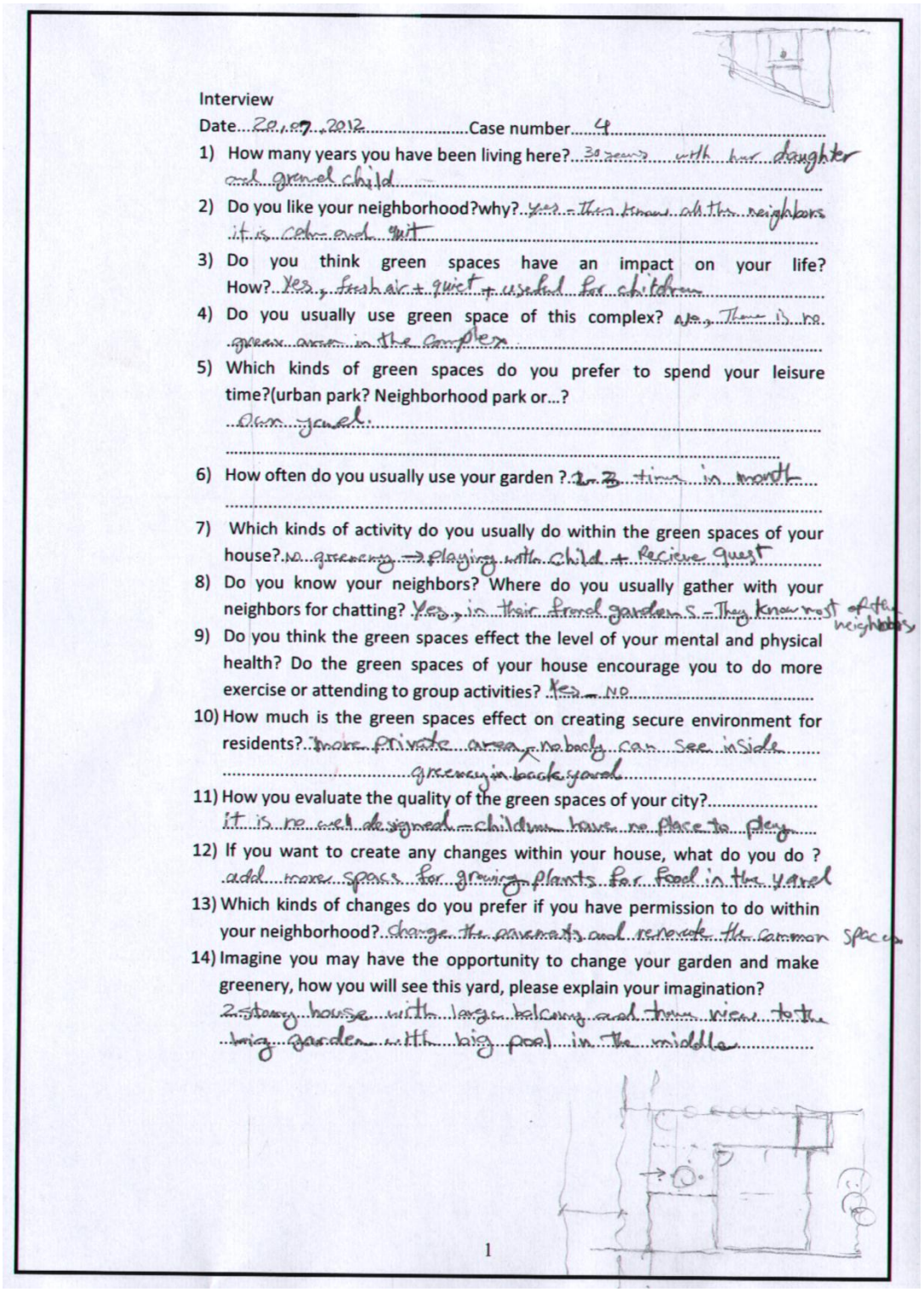
23- Mahallenizde bir şey değiştirme iznine sanip olsaydınız noyi değiştirirdiniz? (which kinds of changes do you prefer if you have permission to do within your neighborhood?) Park yapardım

24- Şehrin hanrgi bölgesinde yaşamaı tercih ederdiniz ?(which parts of the city do you prefer for a living?)...

25- Bahçenize değiştime fursatuna sahip olsaydiniz,nasil görmek isterdiniz hayalinizi anlatınız (imagine you may have opportunity to change your garden and make greenery, how you will see this yard, please explain your imagination?)....Bahçemi...yeşillik...yapmak, ondan...sonra
çiçekler...fakat...Bir Çardağım...olsun...isterdim
....

Teşekkürler......

APPENDIX B: Interviews



Interview

Date 20.07.2012 Case number 4

1) How many years you have been living here? 30 years with her daughter and grand child

2) Do you like your neighborhood? why? yes - they know all the neighbors it is calm and quit

3) Do you think green spaces have an impact on your life? How? Yes, fresh air + quiet + useful for children

4) Do you usually use green space of this complex? yes, There is no green area in the complex

5) Which kinds of green spaces do you prefer to spend your leisure time? (urban park? Neighborhood park or...?
Own yard.

6) How often do you usually use your garden ? 2-3 time in month

7) Which kinds of activity do you usually do within the green spaces of your house? no greenery → playing with child + recieve guest

8) Do you know your neighbors? Where do you usually gather with your neighbors for chatting? Yes, in their front gardens - They know most of the neighbors

9) Do you think the green spaces effect the level of your mental and physical health? Do the green spaces of your house encourage you to do more exercise or attending to group activities? Yes - NO

10) How much is the green spaces effect on creating secure environment for residents? more private area, nobody can see inside greenery in backyard

11) How you evaluate the quality of the green spaces of your city?
it is not well designed - children have no place to play

12) If you want to create any changes within your house, what do you do ?
add more spaces for growing plants for food in the yard

13) Which kinds of changes do you prefer if you have permission to do within your neighborhood? change the pavements and renovate the common spaces

14) Imagine you may have the opportunity to change your garden and make greenery, how you will see this yard, please explain your imagination?
2-storey house with larger balcony and town view to the big garden with big pool in the middle

1