AN ANALYSIS OF LIVING ENVIRONMENTS OF THE ELDERLY AND A PROJECT FOR ASSISTED LIVING IN ANKARA

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This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Architecture.

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ABSTRACT

AN ANALYSIS OF LIVING ENVIRONMENTS OF THE ELDERLY AND A PROJECT FOR ASSISTED LIVING IN ANKARA

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Ageing has become a significant research area in the last few decades. The most important reason that makes ageing issue significant is the increasing rate of the older indviduals within the population all around the world. Statistical data on ageing both in Turkey and in the world reveals that, in the near future, the number of population over 65 will increase dramatically. It can be asserted that there will be an urgent need of specifically designed accommodation for this portion of the population. Hence, this thesis intends to search for and practice a design solution for the elderly housing.

One of the instruments that supported the formulation of such a solution is the subject of 'universal design'. Within the scope of this study, the principles of universal design and its relationship with ageing are defined, examined and evaluated. It is accepted that living environment has effect on the enhancement of the individual's quality of life. For this reason, the relationship between person and environment is briefly discussed in congruence with principles of universal design and provision of quality of life. Accessibility, safety, privacy,

autonomy and independence are the common concerns of universal design and provision of a higher quality of life.

With review of the definitions of specific elderly housing types, another approach for this study is to make a case study of the existing architectural solutions for the elderly housing. This helped to understand architectural approaches to the relationship between ageing and environment in the world.

In the light of the findings, an architectural project, presenting a habitable environment for the elderly, is proposed. For the project, the concept of "assisted living" as a new category for elderly housing, is chosen.

Keywords: ageing, universal design, quality of life domains (accessibility, safety, privacy, autonomy and independence), housing for the elderly, assisted living.

ÖZ

YAŞLILARIN YAŞAM ÇEVRESİNİN ANALİZİ VE ANKARA'DA
YAŞAM DESTEKLİ KONUT PROJESİ

Erbaş, İrem
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Yaşlanma konusu önemli bir araştırma alanı olmaya başlamıştır. Yaşlanma konusunu önemli hale getiren en önemli sebep yaşlı nüfusa, toplam nüfustaki oranının bütün dünyada artıyor olmasıdır. Türkiye'de ve tüm dünyada istatistiksel veriler altmış beş yaş üzerindeki insan nüfusunun, yakın gelecekte, çarpıcı bir şekilde artacağını göstermektedir. Buradan hareketle denilebilir ki gelecekte nüfusun bu bölümü için özel olarak tasarlanmış konutlara acil ihtiyaç duyulacaktır. Tezde yaşlıların barınmasına yönelik bir tasarım çözümü araştırmak ve geliştirmek amaçlanmaktadır.

Bu tip bir çözümün oluşturulmasına kaynak olan yaklaşımlardan biri 'evrensel tasarım' konusudur. Bu çalışma kapsamında evrensel tasarım ilkeleri tanımlanmış, incelenmiş ve bunların yaşlılık olgusu ile ilgisi değerlendirilmiştir. Bireyin yaşam kalitesinin artmasında, yaşam çevresinin etkili olduğu kabul edilmiştir. Bu yüzden, kişi ve yaşam çevresi arasındaki ilişki ve yaşam kalitesini oluşturan tanımlar (erişilebilir olma, emniyet,/güvenlik, mahremiyet, özerklik, bağımsızlık) evrensel tasarım prensipleri benzerlikleriyle birlikte kısaca tartışılmıştır.

Yaşlılar evi türlerinin tanımlarının irdelenmesiyle birlikte, bu çalışma için bir araç da yaşlıların barınmasına yönelik mevcut mimari çözümlerin araştırılmasıdır. Bu araştırma, yaşlanma ve çevre arasındaki ilişkinin önemini ortaya çıkaran kavram ve bakış açılarının gelişimini anlamaya katkıda bulunmaktadır.

Bu araçların ışığında, yaşlılara yönelik yaşanabilir bir ortam/çevre sunan mimari bir proje önerilmiştir. Proje için, yaşlı evi tipleri arasında yeni bir kategori olarak ortaya çıkmaya başlayan "yaşam desteği içeren konut" türü seçilmiştir.

Anahtar Kelimeler: yaşlanma, evrensel tasarım, yaşam kalitesi tanım kümesi (erişilebilirlik, emniyet/güvenlik, mahremiyet, özerklik, bağımsızlık), yaşlılar için konut, yaşam desteği içeren konut.

To my family

and

to Özdemir family

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CHAPTER 1

INTRODUCTION

The aim of this thesis is to examine ageing and its relationship with living environment and the importance of housing for the elderly and propose a project in Ümitköy, Ankara as an example for a good fit between old people and their residential environments. First, ageing will be discussed from an architectural point of view associated with social and physical aspects. Second, the relationship between elderly and their environment will be explored in order to enhance their quality of life. The concept of universal design and its principles play a key role in achieving the quality of life for the elderly. Features such as the provision of accessibility, safety, privacy, autonomy and independence are defined as the domains of quality of life. Third, the attitudes of Turkish elderly towards institutional living will be reflected in relation to the cultural differences and the quality of the services given by the existing facilities. Next, the types of elderly housing will be described, assisted living type will be introduced and some of the existing examples from Turkey and other countries will be presented.

The literature review on definitions of ageing, universal design, quality of life and approaches, types and the investigation of examples of housing for the elderly shed light on the formation of a project proposal of assisted living type in the end.

1.1 Problem Definition

The basic reason to interpret the problem of housing for the elderly principally derives from the ageing population. The increase of the elderly population occurred as a result of industrialization. Technological developments in various areas, such as health and food, have lengthened the life expectancy.

In addition, from the society's perspective, it can be observed that the structure of the society has been changing as a result of industrialization and urbanization all over the world as well as in Turkey. This change has been causing a transformation in the structure of the family in Turkish society that leads a transformation in the life styles too. Large families living together with grandparents leave their place to nuclear families. As a result of this transition, older individuals begin to search for and sometimes prefer alternative living types. It can be asserted that in Turkey, there is a growing need of alternative housing types which will give opportunity to older individuals to make choice about where to live.

Ageing is an interdisciplinary study area because of its biological, psychological, sociological, economical and environmental aspects. There are wide ranges of studies on the ageing process, which take their intellectual base from different disciplines. However, what they have in common is that they all assume old age as a problem for the individuals. All these disciplines search and study to appoint the economic and social problems in a society occuring as a result of an ageing population. Hence, the feedbacks of these research and studies provide information for the planning of services and utilities intended to meet the problems of the elderly.

For instance, Heywood, Oldman and Means referred to the argument of Lynott and Lynott (1996) on the history of theoretical developments in gerontology. As Heywood, Oldman and Means quoted from Lynott and Lynott, the 'facts' of old age some 30 years earlier were ill health, retirement, poverty or social isolation.

These three authors have also cited from Havinghurst (1954) who made research about adjustment, activity and life satisfaction of an individual. Heywood, Oldman and Means stated that the focus was the individual older person adjusting to the problems of later life. The provision of autonomy of an older individual and the provision of the opportunity of life satisfaction is possible by specially designed and adaptable environments.[1]

Ageing issue has also had an effect in UN's agenda. According to the sources of United Nations, by the year 2050, %20 of the world population will be at the age of 60 and over. In the developed countries this percentage will be %33 of the total population.[2]

In order to emphasize the effect of ageing, the examples from plans, principles, frameworks and assemblies on ageing presented by UN are investigated. Some of them are as follows:

> Vienna International Plan of Action on Ageing (1982),
> United Nations Principles for Older Persons (1991),
> Conceptual Framework For The International Year Of Older Persons (1999),
> Second World Assembly on Ageing, (2002).

It was in the agenda of United Nations that there is a need for developing policies and programmes for the ageing sector of the society as an important part of comprehensive plans for economic and social development. In their 84th plenary meeting on Dec.14th, 1978, The General Assembly of UN decided:

> ...to organize, in consultation with Member States, specialized agencies and organizations concerned, a World Assembly on the Elderly in 1982, as a forum to launch an international action programme aimed at guaranteeing economic and social security to older persons, as well as opportunities to contribute to national development.[3]

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[1] Frances Heywood, Christine Oldman, Robin Means, Housing And Home In Later Life, Buckhingham: Open University Press, 2002, pp. 20-22.
[2] Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, "World Population Prospects: The 2004 Revision and World Urbanization Prospects: The 2003 Revision", http://esa.un.org/unpp, accessed on15 May 2005.
[3] United Nations General Assembly-Thirty Third Session, http://www.un.org/documents/ga/res/33/ares33r52.pdf, accessed on March 2006.

It is reported that *Vienna International Plan of Action on Ageing* was the first international instrument on ageing, guiding thinking and the formulation of policies and programmes on ageing. This plan of action was endorsed by the United Nations General Assembly in 1982 (resolution 37/51), having been adopted earlier the same year at the World Assembly on Ageing at Vienna, Austria. [4]

The primary aim was to strengthen the capacities of governments and civil society to deal effectively with the ageing of populations and to address the developmental potential and dependency needs of older persons.

It is stated in the UN's resources that this plan is part of an international framework of standards and strategies developed by the international community in recent decades. It is noted that this plan should be considered in relation to agreed standards and strategies in the areas of human rights, advancement of women, families, population, youth, disabled persons, sustainable development, welfare, health, housing, income security and employment, and education.[5]

In its content there are 62 recommendations. The areas of concern to ageing individuals are described as follows:

1. health and nutrition
2. protection of elderly consumers
3. **housing and environment**
4. family
5. social welfare
6. income security and employment
7. education

From these areas of concern, this thesis selects the *'housing and environment'* area. In the light of previous studies, as stated previously, mostly the physical aspects are taken into consideration, from an architectural point of view.

[4] Vienna International Plan of Action on Ageing, http://www.un.org/esa/socdev/ageing/ageipaa.htm, accessed on March 2006.
[5] Ibid.

After this plan of action, in 1991, the United Nation's General Assembly adopted the *United Nations Principles for Older Persons* (resolution 46/91). There are five main categories in which 18 principles take place.

1. independence
2. participation
3. care
4. self-fulfilment
5. dignity

General Assembly of UN encouraged governments to incorporate these principles into their national programmes whenever possible.[6] *(Appendix A)*

Another instrument was *The Conceptual Framework for the International Year of Older Persons*[7] prepared in 1999 (document A/50/114) and based on the Plan and Principles. It comprised four facets:

- situation of older persons
- individual lifelong development
- relationship between the generations
- interrelationship of population ageing and development

Later, *Second World Assembly on Ageing* was held in Madrid, Spain on 8-12 April 2002, under the concept of 'Building A Society for All Ages'. According to the Second *World Assembly on Ageing Adopts Madrid International Plan of Action and Political Declaration,* world governments set out a blueprint for an international response to the opportunities and challenges of population ageing in the twenty-first century and the promotion of the concept of a 'society for all ages' - the main theme of the event. It was stated that:

> As the demographic changes are expected to be the greatest and most rapid in developing countries, where the older population is expected to quadruple by 2050, the Assembly recognized the importance of placing ageing in the context of strategies for the eradication of poverty, as well as efforts to achieve full participation of all developing countries in the world economy. The texts promoted a new recognition that ageing was not simply an issue of social security and welfare but of overall development and economic policy. They also stressed the need to

[6] United Nations Principles for Older Persons, http://www.un.org/esa/socdev/iyop/iyoppop.htm , accessed on March 2006.
[7] International Year of Older Persons, A Society for All Ages, http://www.un.org/esa/socdev/iyop/index.html, accessed on March 2006.

> promote a positive approach to ageing and overcome the negative stereotypes associated with it.[8]

As seen above, the increasing interest on the fact of ageing and its process forced professionals to concentrate on other issues associated with the fact of ageing one of which is 'housing'. Many countries take the matter of housing and care for the elderly as a contemporary problem. For this reason, they propose new types of residential environments as an alternative to institutional living, representing progressive solutions. These include private residences with different levels of supportive services. While individuals are protecting their privacy in their own flats, they also come together and socialize with others. However, in Turkey, although we are facing the same problem, the only alternative type of accommodation for the elderly is institutional living, rest home models with or without care units. And most of these buildings are designed as typical projects. For this reason, the goal is to find out new alternatives for the care of the elderly by defining housing options specially designed for elderly people. At that point, in the scope of this thesis, some research questions can be raised:

- What are the main considerations in developing a living environment for the elderly in Turkey?

- How do principles of universal design contribute to this process?

- What are the attributes of a living environment for the elderly that give a homelike character?

[8] Second World Assembly on Ageing, Madrid International Plan of Action, Concept of Society for All Ages, http://www.un.org/ageing/coverage/pr/SOCM22.htm, accessed on March 2006.

1.2 Scope of the Thesis

In the light of the precedent research and studies, this thesis is organised in two main parts: theoretical and practical. The theoretical part starts with the definition of ageing and illustration of ageing population rates. In the following chapters, the concept of universal design and its principles are introduced. The features that provide 'quality of life' in housing design for the elderly are examined and correlated with the concept of universal design. Starting from the meanings of 'home' and 'house', the role of housing for the elderly, the attitudes of Turkish elderly towards institutional living and the types of design for the elderly housing are scrutinized. In the practical part, an example for assisted living in Ümitköy, Ankara is designed and presented.

After the introduction, Chapter Two briefly defines ageing. In the light of research on population trends with respect to age, the importance of planning for the elderly is revealed. Some statistics about age and population are employed to emphasize the need for a better understanding of elderly-environment relations in physical and social contexts. Population pyramid of Turkey and world population prospects and the existing housing services for the elderly in Turkey are presented in figures and tables.

In Chapter Three, definitions of universal design and its principles are given. Since changes in health and ability status may occur as a result of ageing process, the older population and their needs become a subject of universal design. One of the purposes of universal design is to meet these changes and needs, and enhance quality of life of elderly. Hence, this chapter frames the features that minimize the negative effects of ageing in the design of the living environments for the elderly.

In Chapter Four, principles of universal design and the relationship with design strategies for elderly people are discussed in the scope of how design affects life satisfaction. The quality of life and its domains are defined. The ways of

improvement of the quality of life in an elderly housing are highlighted. The significance of the features of privacy, independence and autonomy, which are three domains of quality of life, is emphasized. In the following parts of Chapter Four, the attitudes of Turkish elderly towards communal living are evaluated in the light of the results of researches made by İmamoğlu O. & İmamoğlu V., İmamoğlu O. & Kılıç.

In Chapter Five, three major types of elderly housing are introduced. Assisted living type, which is a new category among the other types, is described with its appealing 'homelike' character. The features that promote this character to the assisted living type are investigated.

In Chapter Six, a brief investigation of existing built examples of elderly housing is made under two headings: space organization, scale, the geometry used for the building mass (formal solutions), the construction language, and the interior treatments (finishes, dimensions of spaces) in connection with the principles of universal design. The study of examples frames the general design guidelines of proposed project in terms of site selection, forming the program, organizing the spaces and interrelating functional features with social aspects.

In Chapter Seven, the design project is explained from site selection to the formation of the building mass. With respect to the principles of universal design, features of the designed building are listed. Recommended dimensions and sizes are given as anthropometric data. The importance of lighting and other finishing elements are presented to be guidelines for further design studies.

CHAPTER 2

AGEING POPULATION AND IMPORTANCE OF PLANNING FOR THE ELDERLY

2.1 Definition of Ageing

Old age is known as the last stage of the three-stage life phase. 'Ageing' has a negative image in most people's minds. However it must be remembered that ageing is universal and normal, a process that begins at birth.[9] A new definition is given to this third stage. It is called 'third age':

> The ageing of society is possibly the greatest demographic challenge western societies have to face in the future. The traditional three-stage life-phase of the industrial age (youth, adulthood and old age) has reached obsolescence. A new third age has emerged in which those reaching retirement age can expect to live actively for an additional twenty to thirty years.[10]

Peter Laslett is the person who developed the theory of third age which originally dates from 1950s[11]. According to him, the central feature of the third age is the *personal achievement*. It is the period of *activeness, autonomy* and *self-fulfilment*.[12] Here, he draws a positive image of old age.

In a different vein, Diane Carstens defines the ageing process as a kind of adaptation to physical and social changes. She emphasizes the possible changes caused by ageing:

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[9] Isaac Green, [*et al.*], Housing for the Elderly: The Development and Design Process, New York: Van Nostrand Reinhold, 1975, p.10.
[10] Grayscale Urbanism: Cities for the New Third Age, http://www.angelil.arch.ethz.ch/teaching/html/s_research_studio.html, accessed on September 2006.
[11] Özlem Özer-Kemppainen, Academic Dissertation : Alternative Housing Environments for the Elderly in the Information Society: The Finnish Experience, Department of Architecture, Faculty of Technology, University of Oulu, 2006, p.20.
[12] Ibid.

> To all persons, the ageing process also means adaptation to a series of subtle and/or critical changes in social and functional roles, physical health, sensory acuity, and physical ability.[13]

She highlights that the ageing process tends to reduce older people's sense of security and control over their lives, diminish self-confidence, and reduce social networks.[14]

On the other hand, Weithington and Krout recognize that well-being of the elderly somewhat depends on their living environments. In other words, the authors relate ageing (in terms of behavior and well-being) with the living environment:

> The living environments of the elderly have significant impact on the behavior and well-being of them (Lawton, Windley & Byerts, 1982; Scheidt & Windley, 1998). The person-environment theories of ageing have built on Lewin's (1951) observation that behavior is a function of the interaction between the person and the environment.[15]

2.2 Ageing and Demographics

Population of the old aged people is increasing rapidly all over the world. Recorded progress in social and economic fields, development of technology, and as a result, reflection of this progress to the living conditions shows that an increase is expected in the old-aged population.

World Health Organization (WHO) is one of the institutions that highlight the fast ageing population. WHO stresses on some facts about the ageing population and gives some statistics[16]:

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[13] Diane Y. Carstens, Site Planning and Design For the Elderly : issues, guidelines, and alternatives, New York : Van Nostrand Reinhold, 1985, p.10.
[14] Ibid., p.13.
[15] Elaine Weithington and John A. Krout (Ed.), Residential Choices and Experiences of Older Adults: Pathways to Life Quality, New York: Springer Publishing, 2002. p.5-6. (Accessed from http://books.google.com)
[16] The world is fast ageing - have we noticed?, http://www.who.int/ageing/en,, accessed on March 2006.

- In 2000, there were 600 million people aged 60 and over; there will be 1.2 billion by 2025 and 2 billion by 2050.
- Today, about two thirds of all older people are living in the developing world; by 2025, it will be 75%.
- In the developed world, the very old (age 80+) is the fastest growing population group.
- Women outlive men in virtually all societies; consequently in very old age, the ratio of women/men is 2:1.

In the light of the statistical data it can be predicted that Turkey will face with some problems in providing adequate facilities for this group of population in future. There are many reasons to promote housing research and investigate solutions for the ageing population. These can be listed as; the increase in the number of elderly population, the change in the structure of the family, the differentiation in the life styles, the changing expectations, concerns and interests. Table 2.1 shows the services given to the elderly in Turkey. These services are mostly given in an institutional environment.

According to the research carried out by Social Services and Child Protection Organization (SHÇEK), there is a need and desire for institutions for the elderly people who don't need special care, but want to strengthen their social interaction and come together with the similar age-group and involve in different social, cultural and art related activities. In recent years, in spite of their limited numbers, such kinds of service programs have been developed for the retired elderly (e.g., İzmir, Narlıdere Resting and Caring Home of Retired Organization, Ankara, Balgat 75. Year Resting and Caring Home of Retired Organization).[17]

[17] Social Services and Aids, "Report of Private Expertise Commission", 8th Five Year Development Plan, Ankara, 2001, p.24.

Table 2.1. Research in respect of the date 10.07.2006[18]

Homes for the aged	Number	Capacity
Affiliated to the Prime Ministry Social Services and Child Protection Organization (SHÇEK)	**72**	**7474**
Affiliated to the Other Ministries	**7**	**2592**
Belonging to Municipalities	**19**	**1990**
Belonging to Associations and Foundations	**33**	**2230**
Belonging to Minorities	**7**	**979**
Private	**90**	**3208**
Total	**228**	**18473**

[18] Social Services and Child Protection Organization (SHÇEK), from Inventory of the Elderly Services Department.

2.3 Data of Population Increase with respect to Age

Below, there are some statistical data of population, which reveal the changes in total population according to years, age groups and gender.

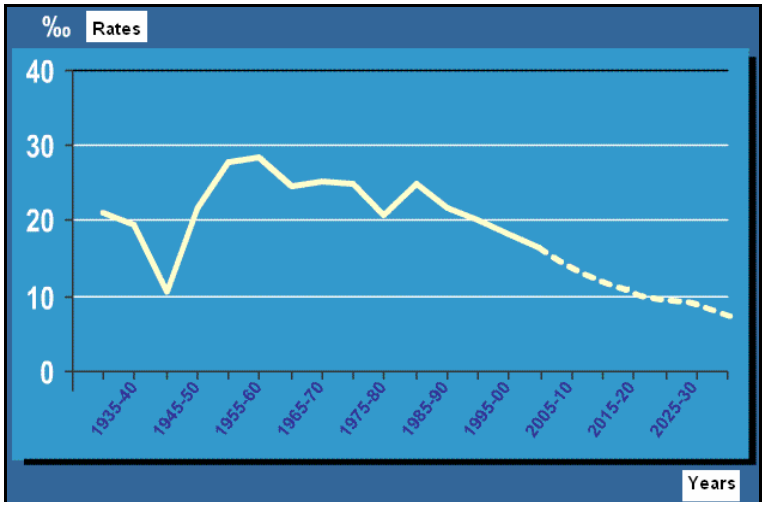

Figure 2.1. Rate of Population Increase in Turkey.
Source: DIE[19]

Figure 2.1., above, shows the rate of population increase for five year periods between the years 1935-2030.

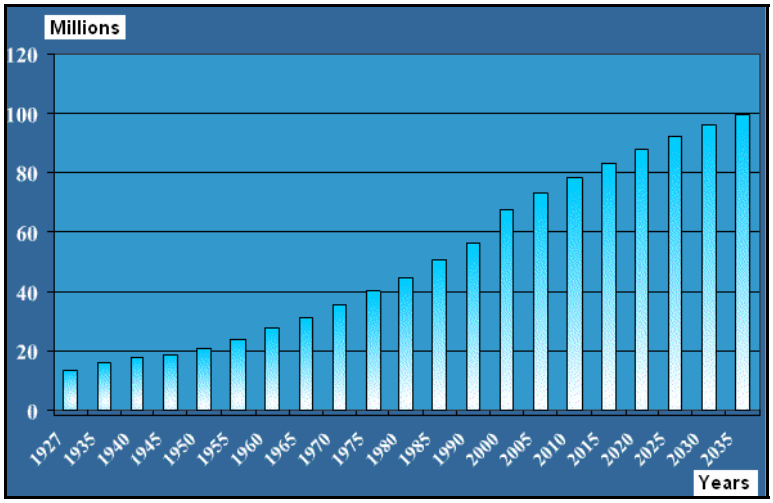

Figure 2.2. Population Increase in Turkey.
Source: DIE

[19] UNFPA United Nations Population Fund, Population Dynamics in Turkey, http://www.un.org.tr/unfpa_tur/populationdynamics1turkey.asp, source is DIE, accessed on 10.05.2005.

Figure 2.2 shows the population increase by number of people between the years 1927-2035 in Turkey. It is predicted that the population will be 100 million and 10 million of this population will be people aged 65 and over by the year 2035.

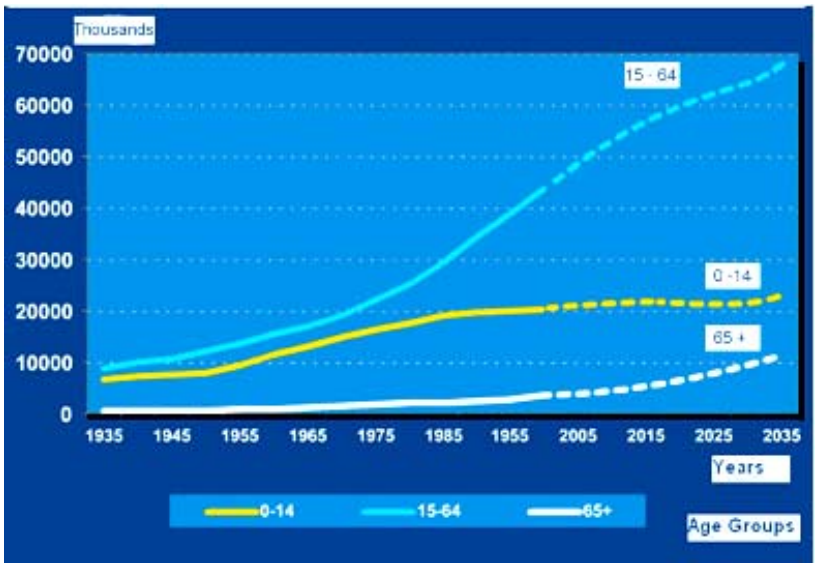

Figure 2.3. Population in Turkey According to Age Groups.
Source: DIE

Figure 2.3 shows the change in population by number of people according to the age groups between the years 1935-2035. It is seen that number of 65 years old and older people is expected to be 10 million by 2035. It is apparent that the rate of increase rises for people over 65 after the year 1955.

2.3.1 Population Pyramid in Turkey in Years 1935, 1955, 2000, 2035 [20]

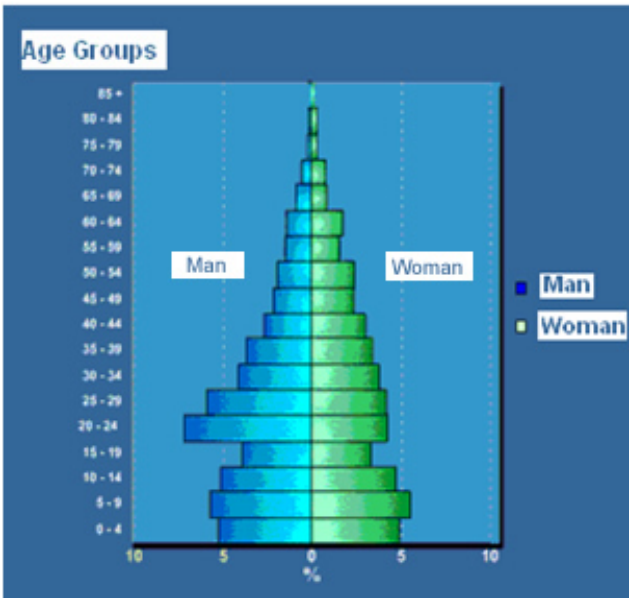

Figure 2.4. Population Pyramid (5 years), 1935.
Source: DIE

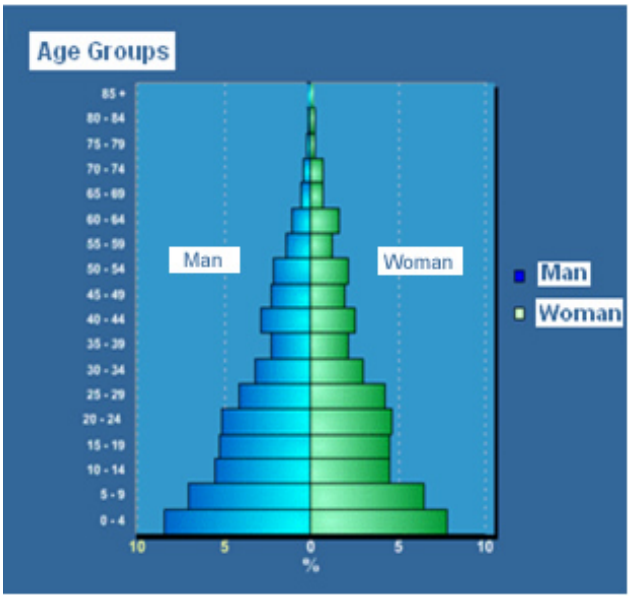

Figure 2..5. Population Pyramid (5 years), 1955.

Source: DIE

[20] Ibid.

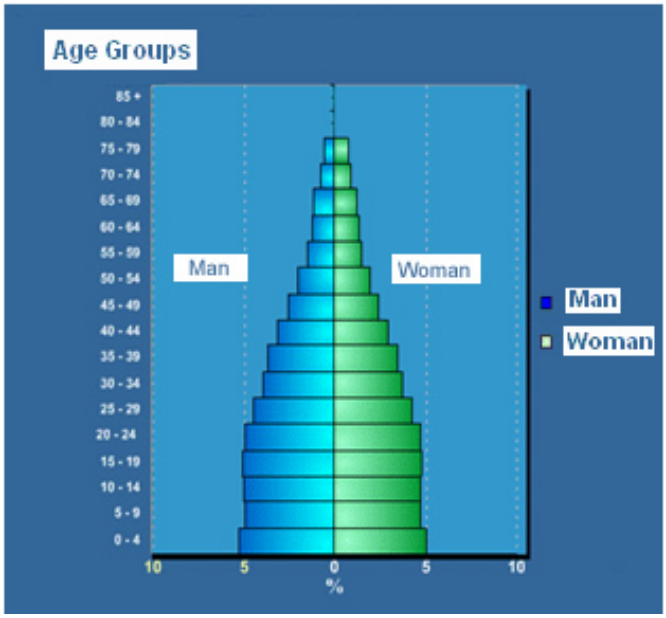

Figure 2.6. Population Pyramid (5 years), 2000.
Source: DIE

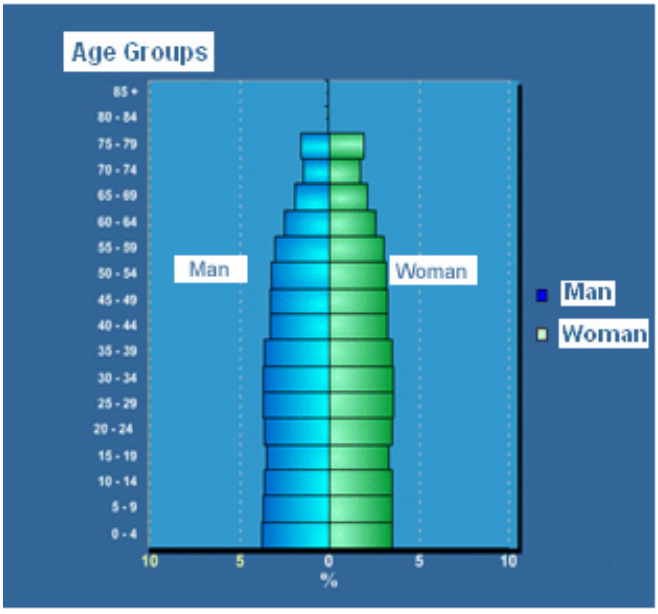

Figure 2..7. Population Pyramid (5 years), 2035.
Source: DIE

Beyond the generalized statistics of the population rates, Turkish Institute of Statistics has made more specific research in terms of age groups as well. This is called *population pyramid*, which shows the population according to gender and percentage of age groups.

The figures 2.4, 2.5, 2.6 and 2.7 are given to compare the population in the past with its predicted future in Turkey. These data demonstrate that an increase is expected for 60 and over aged people, in a period of 35 years. In the future, by the year 2035, people 60 years old and over will take an important part and portion of the population as compared to the year 2000.

According to another research by the UN, the overall situation of the world and Turkey can be compared. These tables show the population rate for people aged 60+, 65+, and 80+ between the years 1950-2050. Particularly, people aged 65+ in Turkey will become 17.230.000 in 2050, which were 687.000 in 1950. In 2005, this number was recorded as 3.983.000.

2.3.2 World Population Prospects[21]

Table 2.2. World Population Aged 60+, 1950-2050.

Year	(thousands)	(%)
1950	205 363	8,2
1955	225 164	8,2
1960	246 353	8,1
1965	275 142	8,2
1970	311 897	8,4
1975	349 738	8,6
1980	382 354	8,6
1985	429 031	8,9
1990	486 512	9,2
1995	543 484	9,5
2000	609 242	10
2005	672 386	10,4
2010	764 738	11,2
2015	893 031	12,4
2020	1 031 363	13,6
2025	1 192 603	15,1
2030	1 366 650	16,7
2035	1 530 050	18,1
2040	1 665 342	19,1
2045	1 810 680	20,3
2050	1 968 153	21,7

[21] Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, "World Population Prospects: The 2004 Revision and World Urbanization Prospects: The 2003 Revision", http://esa.un.org/unpp, accessed 15 May 2005.

Table 2.3. Turkish Population Aged 60+, 1950-2050.

Year	(thousands)	(%)
1950	1 240	5,8
1955	1 442	5,9
1960	1 714	6,1
1965	1 999	6,2
1970	2 457	6,8
1975	2 745	6,7
1980	2 911	6,3
1985	3 235	6,2
1990	3 824	6,7
1995	4 564	7,3
2000	5 233	7,7
2005	5 840	8
2010	6 727	8,6
2015	8 031	9,7
2020	9 726	11,2
2025	11 874	13,1
2030	14 129	15,1
2035	16 657	17,2
2040	19 173	19,4
2045	21 421	21,4
2050	23 056	22,8

Table 2.4. World Population Aged 65+, 1950-2050.

Year	(thousands)	(%)
1950	130 875	5,2
1955	145 591	5,3
1960	161 594	5,3
1965	178 349	5,3
1970	203 114	5,5
1975	231 660	5,7
1980	263 946	5,9
1985	287 564	5,9
1990	325 407	6,2
1995	371 764	6,5
2000	421 351	6,9
2005	475 719	7,4
2010	526 680	7,7
2015	604 553	8,4
2020	714 786	9,4
2025	832 151	10,5
2030	968 397	11,8
2035	1 113 129	13,2
2040	1 244 970	14,3
2045	1 349 556	15,2
2050	1 464 938	16,1

Table 2.5. Turkish Population Aged 65+, 1950-2050.

Year	(thousands)	(%)
1950	687	3,2
1955	817	3,3
1960	973	3,4
1965	1 254	3,9
1970	1 550	4,3
1975	1 808	4,4
1980	2 111	4,6
1985	2 164	4,2
1990	2 296	4
1995	2 839	4,5
2000	3 483	5,1
2005	3 983	5,4
2010	4 428	5,7
2015	5 133	6,2
2020	6 229	7,2
2025	7 698	8,5
2030	9 517	10,1
2035	11 363	11,8
2040	13 422	13,6
2045	15 441	15,4
2050	17 230	17

Table 2.6. World Population Aged 80+, 1950-2050.

Year	(thousands)	(%)
1950	13 780	0,5
1955	16 080	0,6
1960	18 826	0,6
1965	22 247	0,7
1970	26 746	0,7
1975	31 451	0,8
1980	35 948	0,8
1985	43 691	0,9
1990	53 044	1
1995	61 571	1,1
2000	70 254	1,2
2005	86 648	1,3
2010	105 414	1,5
2015	122 591	1,7
2020	141 535	1,9
2025	160 219	2
2030	194 177	2,4
2035	241 587	2,9
2040	287 079	3,3
2045	339 595	3,8
2050	394 224	4,3

Table 2.7.Turkish Population Aged 80+, 1950-2050.

Year	(thousands)	(%)
1950	56	0,3
1955	73	0,3
1960	83	0,3
1965	79	0,2
1970	120	0,3
1975	142	0,3
1980	308	0,7
1985	331	0,6
1990	330	0,6
1995	360	0,6
2000	339	0,5
2005	407	0,6
2010	587	0,8
2015	738	0,9
2020	833	1
2025	957	1,1
2030	1 226	1,3
2035	1 651	1,7
2040	2 175	2,2
2045	2 802	2,8
2050	3 411	3,4

According to the statistical data, we understand that the world's population is growing older with an increasing rate. In order to meet the changing needs of this growing population, alternatives of housing and services should be developed in time. Because of the advancement in technology, particularly in medicine, bringing better and healthier life-styles, the older population will represent larger percentages of total population in the future. Therefore, as a result of this fact, consideration about design of housing for senior citizens is getting more complex with requirement of extended understanding of the needs and circumstances of ageing. As Carstens suggests, health and general life satisfaction of older people can be associated with the design and management of the housing environment they live.[22] From this point, it can be asserted that, Carstens' suggestion is a quite significant input to be concerned more deeply about the design criteria to shape the housing environments of the elderly.

[22] Diane Y. Carstens, Site Planning and Design For the Elderly : issues, guidelines, and alternatives, New York : Van Nostrand Reinhold, 1985, p5.

CHAPTER 3

UNIVERSAL DESIGN

3.1 The Concept of Universal Design

Since the main subject of this thesis is a responsive housing design for the elderly, the concept of universal design and its principles have significance on the study and final design product. The theme of the thesis, 'design for the elderly', is one of the concerns of universal design.

The concept of universal design was first used in 1970's. In 1985, it is reinterpreted by the American architect Ronald Mace. Since then, it has become a study area and an accepted design approach in architecture, urban design and product design. In some resources it is named as: 'inclusive design' or 'design for all'.

Ronald Mace defined it as:

> Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.[23]

> Universal design is a framework for designing things, places, and communications so that they work for the widest possible spectrum of users without adaptation or specialized design. It is also called design-for-all and lifespan design. It is not a design style but an orientation to any design process that starts with a responsibility to the experience of the user.[24]

Rob Imrie asserted that universal design is a social movement:

> In its broadest term, universal design is a social movement underpinned by a range of foundational principles, primarily concerned with making

[23] The Center For Universal Design, About Universal Design, http://www.design.ncsu.edu:8120/cud/newweb/about_ud/aboutud.htm, accessed on May 2005.
[24] Adaptive Environments Center, Universal Design, http://www.adaptenv.org/, accessed on May 2005.

> products, environments and communication systems usable to the greatest extent possible by the broadest spectrum of users.[25]

By the adoption of Council of Europe Resolution ResAP (2001) 1, the characteristics of universal design are emphasized. The resolution defined universal design as a strategy:

> ...making the design and composition of different environments and products accessible and understandable to, as well as usable by, everyone, to the greatest extent in the most independent and natural manner possible, without the need for adaptation or specialised design solutions.[26]

It is accepted with the same resolution that the intent of the universal design concept is to simplify life for everyone by making the built environment, products, and communications equally accessible, usable and understandable at little or no extra cost.

> The universal design concept promotes a shift to more emphasis on user-centred design by following a holistic approach and aiming to accommodate the needs of people of all ages, sizes and abilities, including the changes that people experience over their lifespan.[27]

Accessibility is a term, which acts as an umbrella issue for all parameters that influence human functioning in the environment. It is defined as an environmental quality in the European Concept for Accessibility[28].

Consequently, it is stated that universal design concept extends beyond the concept of accessibility for people with disabilities and it is highlighted that

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[25] Rob Imrie and Peter Hall, "Inclusive Design and Development in the Built Environment", Inclusive Design: Designing and Developing Accessible Environments, London and New York: Spon Press, 2001, p.14.

[26] Resolution ResAP(2001)1 On The Introduction of the Principles of Universal Design Into the Curricula of All Occupations Working on the Built Environment - Council of Europe, Appendix to Resolution ResAP(2001)1, http://cm.coe.int/ta/res/resAP/2001/2001xp1.htm, accessed on June 2005.

[27] Ibid.

[28] Elaine Ostroff, "Universal Design: The New Paradigm", in Universal Design Handbook, W. F. E. Preiser and E. Ostroff Ed., New York: McGraw Hill, 2001, p 1.5.

there is a need for an integrated understanding to become an integrated part of architecture, design and planning of the environment.

3.1.1 Principles of Universal Design

At the Center for Universal Design at North Carolina State University[29] a group of architects, product designers, engineers, and environmental design researchers established seven principles of universal design to provide guidance in the design of products and environments (Connell, Jones, Mace, Mueller, Mullick, Ostroff, Sanford, Steinfeld, Story, & Vanderheiden, 1997). Following are the principles of universal design:

> 1-Equitable use: the design should be useful to people with diverse abilities
> 2-Flexibility in use: the design should accommodate a wide range of individual preferences and abilities
> 3-Simple and intuitive use: use of the design should be easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level
> 4-Perceptible information: the design should communicate necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities
> 5-Tolerance for error: the design should minimize hazards and the adverse consequences of accidental or unintended actions
> 6-Low physical effort: the design should be used efficiently and comfortably and with a minimum of fatigue
> 7-Size and space for approach and use: appropriate size and space should be provided for approach, reach, manipulation, and use regardless of user's body size, posture or mobility

These principles are key concerns of creating supportive and adaptable environments for the elderly. As it will be explained in the following part, ageing brings some limitations to an indiviual's life. These limitations can be social or physical. In order to provide quality of life within a supportive environment for older people, they should be minimized.

[29] Universal Design, http://www.design.ncsu.edu/cud/index.html, accessed on September 2005.

3.2 Ageing Concept in Universal Design

In the *Universal Design Handbook*, old age is taken as an issue. It is stated that although a few writings took place in this resource, numerous authors emphasized the unprecedented change in demographics, with an ageing population that will live longer, and the implications for design. [30]

In the beginning, Moore[31] identified the opportunities and challenges for designers to address human needs by design. In her article, she questionned the importance of age in design:

> The existence of an ever-growing population of elders throughout the world has identified another range of generational support.
>
> Our elders, dealing with changed capacity, reduced ability, and increased need, require the same accommodations and compensations in late life that they found necessary at life's start.
>
> Acceptance and utilization of new offerings in architecture and design will require a user-centered awareness and understanding, focusing on the coexistence of multiple generations, representing a broad range of abilities and capacities. Our homes, workplaces, and communities must provide for daily solutions that simultaneously address the distinctions of generations, their level of health, and amount of wealth.

Sandhu[32]concerned with ageing by sequencing the five rights of the International Federation on Ageing (IFA) which were based on the UN's *Principles for Older Persons* explained in the introductory chapter:

> The built environment should maximize *independence*.
> It should enable full *participation* in society.
> It should enhance the provision and process of *care*.
> It should provide a platform for *self-fulfillment*.
> It should enhance individual *dignity*.

[30] Elaine Ostroff, "Universal Design: The New Paradigm", in Universal Design Handbook, W. F. E. Preiser and E. Ostroff Ed., New York: McGraw Hill, 2001, p.1.8.
[31]Patricia. A. Moore, "Experiencing Universal Design", in Universal Design Handbook, W. F. E. Preiser and E. Ostroff Ed., New York: McGraw Hill, 2001, p.2.3.
[32]Jim Sandhu, "An Integrated Approach To Universal Design: Toward The Inclusion Of All Ages, Cultures, And Diversity", in Universal Design Handbook, W. F. E. Preiser and E. Ostroff Ed., New York: McGraw Hill, 2001, p 3.10.

It will be discussed in the next chapters that these five rights take place in the defined domains of quality of life.

As a more specific subject, Coleman[33] reframed the thinking about the recipients of the design process in the context of social and demographic change. In his article, he mainly explained the concept of 'designing for our future selves'. He aimed to help not only designers but also policy makers in order to search for new solutions.

Kose[34] reflected the ageing popoulations in industrializing nations. He exemplified Japanese society, which has the fastest-growing ageing population. He assessed the design guidelines that the Japanese government has developed as precautions and solutions for ageing population.

Harrison[35] similarly described the changing demographics and changing cultural patterns that affect the elderly living apart from their families, in new urban housing developments where they have access to services and public transportation.

3.3 Disability Factor

The assumption which supports a social model for disability becomes very compelling rather than a medical model.[36] In the case of housing and environment, physical characteristics of a building become vital for an accessible design. For instance, steps and stairs, narrow doors, overall standardized design, and lack of space in a house cause disability. Absence of

[33] Roger Coleman, "Designing For Our Future Selves", Universal Design Handbook, W. F. E. Preiser and E. Ostroff Ed., New York: McGraw Hill, 2001, pp. 4.1-4.25.
[34] Elaine Ostroff, "Universal Design: The New Paradigm", in Universal Design Handbook, W. F. E. Preiser and E. Ostroff Ed., New York: McGraw Hill, 2001, p.1.8.
[35] Ibid.
[36] Frances Heywood, Christine Oldman and Robin Means, Housing And Home In Later Life, Buckhingham: Open University Press, 2002, p 28.

ramps, traffic lights, narrow pedestrian ways and barriers on pedestrian ways create prevention of use in the environment.

Muir has made a study that mostly focuses on the services for the design of accommodation for the elderly[37]. According to Muir, in terms of a good housing design, primarily, these two objectives should be taken into consideration:

> -to slow down the functional decline that occurs in old age by encouraging and enabling activity,
> -to maintain and improve the quality of life in old age by providing sufficient support, independence and privacy.

3.4 Universal Design, Disability and Environmental Design for the Elderly

As stated above, universal design and its principles have vital effect on design for the elderly. The principles of universal design are concerned with the relationship between disease, disability, housing and accessibility for the elderly. Imrie underlines that:

> Universal design conceives of the body as neither fixed nor static but as fluid and ever changing. The body, as a dynamic entity, requires an architectural or design process, which is able to anticipate changes in physiological and other needs.[38]

As Marsden states, with advancing age, there is a greater likelihood of disability:

[37]Muir Gray, "Living Environments for the Elderly.1: Living At Home", in The Ageing Population Burden or Challenge?, Nicholas Wells and Charles Freer Ed., New York: Stockton Press, 1988, p 203.
[38] Rob Imrie, "From Universal to Inclusive Design in the Built Environment", in ed. by John Swain, Sally French, Colin Barnes, Carol Thomas, Disabling Barriers-Enabling Environments, London: SAGE Publications, 2004, p.281.

> Having a disability means that a person requires assistance because of difficulty with personal care activities, known as 'activities of daily living (ADLs) including bathing, dressing, getting in or out of bed, using the toilet, feeding oneself, and navigating the home environment', or with the management of everyday activities, called 'instrumental activities of daily living (IADLs) including ability to prepare meals, clean house, manage money, take medications, use the telephone, shop for groceries, and navigate the neighborhood outside the home.'[39]

Changes in health and ability (physical illnesses, mental difficulties, and physical disability: hearing, vision losses, limited movement) status make the subject of housing for the elderly be examined under the light of universal design. Since housing should match the functional abilities, these changes become concerns for the project:

> Housing that does not match functional abilities (for those with impairments such as mobility difficulties) exposes older adults to environmental stresses (Lawton & Nahemow, 1973).[40]

Most of the researchers believe that the environmental design considerations for disabled persons are similar to persons who are ageing:

> Environmental design is an important consideraton for persons with disabilities as well as those who are ageing (Brown, 1989). In fact, the environmental needs of ageing people are often remarkably similar to those of persons with disabilities. Issues such as environmental adaptation, mastery, choice, safety, comfort, convenience and accessibility are of concern to both populations.[41]

In other words, the major goal of correlating universal design and housing for the elderly is to provide supportive environments for older individuals. For this correlation, Carstens asserts that physiological, social, and functional aspects of the ageing process may directly influence design and affect the lives of

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[39] John P., Marsden, Humanistic Design of Assisted Living, Baltimore: The John Hopkins University Press, 2005, p.10. (Accessed from http://books.google.com)

[40] Heidi Holmes, Katherine Beissner, Kelly Welsh, and John A. Krout, "Housing, Health, and Disability",.in ed. by Elaine Weithington and John A. Krout, Residential Choices of Older Adults: Pathways to Life Quality, New York: Springer Publishing, 2002, p.117. (Accessed from http://books.google.com)

[41] Roy V. Ferguson, "Environmental Design and Quality of Life", in ed. by R.I. Brown, Quality of Life for People with Disabilities: Models, research and practice, Cheltenham, UK: Stanley Thornes (Publishers) Ltd., 1997, p.252.

elderly residents.[42] Hence, she has prepared a checklist showing some special attention points responding to the negative effects of ageing[43]:

1. Sensory process and perception:
- the quality and quantity of light
- the use of color (brighter colors and those in the orange-yellow-red spectrum are easier to distinguish)
- contrasts of light and dark shadows and advancing and receding colors as they distort depth perception
- the intensity and pitch of sounds (lower-pitched sounds are more easily heard)
- tactual cues that may be more easily read

2. Central nervous system and cognitive functions:
- Decreased concept formation ability affecting orientation and wayfinding
- Difficulty in distinguishing and interpreting background noises from foreground sounds

3. Temperature adaptation:
- The reduced ability to adapt to changes in temperature requires amenities and detailing for temperature moderation/control

4. Disease:
- Providing easy access to nearby restrooms

[42] Diane Y. Carstens, Site Planning and Design For the Elderly : issues, guidelines, and alternatives, New York : Van Nostrand Reinhold, 1985, p.10.
[43] Ibid., p.13.

CHAPTER 4

HOUSING OF THE ELDERLY

4.1 Definition and Importance of Quality of Life in Housing Design for the Elderly

In the previous chapter, it is indicated that getting older is a process of life not a disease or an illness; however, it brings some changes to the individuals. Because of the limited physical activities and growing sensitivity and decreasing adaptivity to the environment, ageing forces designers to search for ways to provide quality of life in their environments.

Basic needs of the elderly can be simply classified as physical, psychological and social needs. Because of the amplification of the needs and requirements by ageing, housing for the elderly must be treated in a different and special way. For this reason, it can be asserted that design approaches should respond to such kind of special target groups with special needs.

Interaction of the elderly with built environment is affected by the changing lives, lifestyles and physical capabilities. It can be claimed that people have more time to make use of their home and the environment when they get older. Particularly after retirement, people have the opportunity of sparing more time at home, in parks, recreational activity areas and similar kind of community facilities. On the other hand, it is apparent that physical conditions and capabilities of the individual may change as a result of ageing. Limitations in vision or mobility can occur, or chronic diseases can come into being. The design of living environments for the elderly should respond to these changes. Housing design for the elderly responding to these changes is the concern of this thesis.

Housing the elderly, as both an architectural and social issue, takes a considerable part in the physical environment.[44] Quality of life is an issue that should be evaluated under the title of housing for the elderly. It has been described in a variety of ways:

> Although no precise, consensual definition has emerged, investigators generally agree that the construct is multidimensional and has both subjective and objective components (Birren & Dieckmann, 1991; Lawton, 1991; Stewart & King, 1994).[45]

One of the definitons is that it is a subjective, complex, and multidimensional construct with interacting and overlapping domains.[46] In another resource, the quality of life is defined as the interaction between the individual and the environment. It can be described in terms of personal control that can be exerted by the individual over the environment.[47]

It is also discussed in the Vienna International Plan of Action on Ageing that 'housing' has a great influence on the quality of life of any age group in any country. Emphasizing the adaptability concept in housing design it was stated that:

> Adequate living accommodation and agreeable physical surroundings are necessary for the well-being of all people, and **it is generally accepted that housing has a great influence on the quality of life of any age group in any country.** Suitable housing is even more important to the elderly, whose abodes are the centre of virtually all of their activities. **Adaptations to the home,** the provision of practical domestic aids to daily living and appropriately designed household equipment can make it easier for those elderly people whose mobility is restricted or who are otherwise disabled to continue to live in their own homes.[48]

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[44] David G. Robson, Anne-Marie Nicholson and Neil Barker, Homes for the Third Age : a design guide for extra care sheltered housing, London : E & FN Spon, 1997, pp 1-4.
[45] Mary M. Ball, Frank J. Whittington, Molly M. Perkins, Vickie L. Patterson, Carole Hollingsworth, Sharon V. King, Bess L. Combs, "Quality of Life in Assisted Living Facilities: Viewpoints of Residents", The Journal of Applied Ger ontology, Vol. 19 No. 3, September 2000, p.305.
[46] Ibid., p.311.
[47] Trevor Parmenter and Michelle Donelly, "An analysis of the dimensions of quality of life", in ed. by R.I. Brown, Quality of life for people with disabilities: Models, research and practice, Cheltenham, UK: Stanley Thornes (Publishers) Ltd., 1997, p.111.
[48] Vienna International Plan of Action on Ageing. http://www.un.org/esa/socdev/ageing/ageipaa.htm, accessed on March 2006.

Furthermore, the handicaps for the mobility of the elderly was pointed out:

> **The elderly meet manifold problems in traffic and transport.** Especially elderly pedestrians have to cope with objective or subjectively felt dangers that restrict and limit their mobility and participatory aspirations. The traffic circumstances should be adapted to older people instead of the other way around. Measures and facilities should include traffic education, speed limits especially in human settlements, traffic-safe environments, accommodations and means of transport, etc.[49]

In this thesis, an attempt is made to provide a responsive and inclusive housing design for the elderly. While doing this, home and house concepts are defined by referring to different authors. Furthermore, the domains of quality of life: privacy, autonomy and independency of the users are evaluated as design inputs.

For the argument that the environment can enhance or limit the individual's quality of life, Ferguson states in his article that an architectural design should regard person-environment as an integral unit. He quotes that (Canter & Craik (1981)) the built environment should not just reflect principles of construction and aesthetics, but also should be designed with a careful view to meeting the behavioral and psychological needs of the inhabitants of the buildings.[50] He says that homes, residential centers, schools and programme settings are primary environments for people with disabilities where the relationship between design and behavior is of particular significance.[51]

Ferguson also emphasizes the interdependency between behavior and environment:

> As the general awareness grows that physical and psychological functioning are not mutually exclusive entities but interdependent phenomena on a shared continuum, more effort is being applied to understanding the psychological effects of physical environments on their

[49] International Plan of Action on Ageing, Recommendations for Action, http://www.un.org/esa/socdev/ageing/ageipaa3.htm#A3, accessed on April 2006.
[50] Roy V. Ferguson, "Environmental Design and Quality of Life", in ed. By R.I. Brown, Quality of Life for People with Disabilities: Models, research and practice, Cheltenham, UK: Stanley Thornes (Publishers) Ltd., 1997, p.251.
[51] Ibid.

> inhabitants and the joint effects of physical and social environments on behavior (Cohent, et. al, 1995). The social environment consists of interpersonal transactions while the physical environment is the setting in which these transactions occur (Wachs & Gruen, 1982).[52]

Psychological well-being, independence and autonomy, social relationships and interactions, meaningful activities, and care given by the facility are assumed as certain domains of quality of life.[53]

Domains relevant to quality of life are classified as:

> 1.Physical well-being: health, fitness, mobility, personal safety
> 2.Material well-being: finance/income, housing quality (privacy, meals/food, neighborhood, possessions), transport, security and tenure
> 3.Social well-being: personal relaionships (family/household life, relatives, friends/social life) community involvement (activities and events, acceptance and support)
> 4.Emotional well-being: positive effect, status/respect, mental health/stress, sexuality, fulfilment, faith/belief, self-esteem
> 5.Productive well-being: competence, productivity/contribution, choice/control, independence, job, homelife/housework, leisure/hobbies, education

From these domains, particularly, physical, material and social well-being are the concerns for architectural projects.

Independence/autonomy and privacy/control are identified as the components of the quality of life. These four components have vital effects on the design for the elderly housing. Also contact with families, personal comfort in the physical and social environment are the additional factors for the quality of life listed by the researchers.[54]

> Most domains identified had an obvious relationship to the environment—social and physical—of the facility, and most were influenced, to varying degrees, by the structure and process of the care provided. Psychological well-being, autonomy and independence, social relationships, and meaningful activities were linked inextricably to the quality of care as

[52] Ibid., p.253.
[53] Mary M. Ball, Frank J. Whittington, Molly M. Perkins, Vickie L. Patterson, Carole Hollingsworth, Sharon V. King, Bess L. Combs, "Quality of Life in Assisted Living Facilities: Viewpoints of Residents", The Journal of Applied Ger ontology, Vol. 19 No. 3, September 2000, p.312.
[54] Ibid., p.306.

were a number of other domains (e.g., safety and security, religion, physical environment, food).[55]

Facilities (physical environment, building itself, program, management, care, etc.) must provide adequate solutions in order to improve the quality of life of their residents. According to the research, it is implied that the residents of assisted living facilities gave importance to the value of independence and autonomy.[56]

One of the previous studies about the issue of 'ageing' is the master thesis of Müge Kılınç entitled *Institutional Environment And Place Attachment As Determinants of Elders' Life Satisfaction*.[57]

In her thesis, she mainly stressed the relationship between older people and their environment. In the light of the assumption that there is strong relationship between environmental characteristics and the behavior and satisfaction of people, Kılınç aimed to understand how to improve the accommodation conditions of the elderly. The main concern of her study is about the environmental quality of residential institutions and its effects on life satisfaction of elderly by the mediation of place attachment. Institutional environment (design, social and institutional aspects), older individual's attachment to place and their life satisfaction and the relationship between these three factors were examined. It was also aimed to analyze the way in which those three aspects interact with each other to conclude with place attachment.

4.1.1 Provision of Autonomy, Independence and Privacy

Privacy is one of the key concepts in housing design. It has many interpretations like seclusion and solitude. But privacy is a need of an

[55] Ibid., p.319.
[56] Ibid., p.314.
[57] Müge Kılınç, Master Thesis: Institutional Environment And Place Attachment As Determinants of Elders' Life Satisfaction, Ankara: Department of Psychology, METU, January 2006.

individual. Personal privacy is often controlled by physical and organizational factors. In a research made in England named National Consumer Study (Willcocks *et al*., 1982), it is indicated that access to personal space encouraged social interaction: those residents having their own room made more friends.[58]

The same research in local authority homes indicated that elderly residents wanted environmental control. They expressed a preference for a room of their own, windows they could open, temperature they could control, access to an ordinary bath – aspects of daily living which the researchers identified as '*normal, unexceptional and non-institutional'*, and which they used as a guide for reconstructing the residential environment around the needs of the individual (Willcocks *et al*., 1982).[59]

Autonomy can be described as the freedom of action. The physical and organizational environments are the crucial factors in the provision of autonomy.

As stated in an article by Mary M. Ball and *et al*.[60], autonomy refers to residents' control over their everyday environments, choice of options and the key element of meaningful autonomy is the ability of individuals to make decisions. It is emphasized that dependence on others causes loss of control:

> dependence on others often translated into loss of control: loss of freedom to do what one wanted, when and how one wanted to do it, and loss of control over one's space, possessions, information, and person (Agich, 1993; Ball & Whittington, 1995).[61]

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[58] Sheila Peace, "Living Environments for the Elderly 2: Promoting the 'Right' Institutional Environment", in The Ageing Population Burden or Challenge?, Nicholas Wells and Charles Freer Ed., New York: Stockton Press, 1988, p. 224-225.
[59] Ibid., p. 227.
[60] Mary M. Ball, Frank J. Whittington, Molly M. Perkins, Vickie L. Patterson, Carole Hollingsworth, Sharon V. King, Bess L. Combs, "Quality of Life in Assisted Living Facilities: Viewpoints of Residents", The Jour nal of Applied Ger ontology, Vol. 19 No. 3, September 2000, p.315.
[61] Ibid., p.320.

Privacy and independence are concepts that are identified with the home. According to Hoglund, privacy and independence are two intangible components of housing.[62] It is stated that they are criteria that establish a framework for design and decision-making throughout the process.[63] Hoglund criticizes Instituional living:

> Institutions are based on a strong group identity where privacy, self-expression, and individuality are manipulated. These highly structured and authoritarian organizations often undermine those aspects of individuality that contribute to a strong individual identity.[64]

4.1.2 Home, House and Living Environments of the Elderly

There are many studies and researches on older people and their domestic environments. In an article by İmamoğlu & İmamoğlu[65] the importance of housing is emphasized. It is stated that, according to the White House Conference on Ageing met in 1971, housing was the most important element in the lives of the elderly. However, it is implied that housing shouldn't be considered as an independent unit because housing conditions interact with other social and physical aspects of the older person's living environments. Therefore, by this definiton the goals of housing programs have been extended beyond being only physical shelters, they should also provide and improve the quality of life.

Heywood, Oldman and Means focus on older people's homes and their housing. Although they primarily investigate the housing and home in later life in the UK, they also refer to the experiences of other countries.[66]

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[62] David J. Hoglund, Housing for the Elderly: Privacy and Independence in Environments for the Aging, New York: Van Nostrand Reinhold Company, 1985, p.1
[63] Ibid., p.2.
[64] Ibid., p.18.
[65] Olcay and Vacit İmamoğlu, "Housing and Living Environments of the Turkish Elderly", in Journal of Environmental Psychology, 12, 1992a, p.35.
[66] Frances Heywood, Christine Oldman and Robin Means, Housing And Home In Later Life, Buckhingham: Open University Press, 2002, p.2.

Heywood, Oldman and Means defined ‘housing’ as:

> Housing is a physical structure within which a self-selected household lives. It is a place in which the basic human activities of sleeping, eating, washing, storage of possessions, social contact, recreation and care within the self-selected household take place. The word may also incorporate the attributes of the structure: its location, size, design, condition, accessibility, affordability, warmth and comfort.[67]

They implied that the word ‘housing’ has rather a technical meaning than ‘home’ and they defined ‘home’. Citing from Benjamin and Stea, Heywood, Oldman and Means stated that:

> Home is a myriad of things: it is a set of relationships with others, it is a statement about self-image and identity, it is a place of privacy and refuge, it is a set of memories, it is social and physical space and so on (Benjamin and Stea 1995).[68]

At the same time, the authors emphasized that the concept of home assumes a central importance in later life of the people. Furthermore, it is implied that ‘home’ constitutes the main focus in life for older people. It can be explained by the quotation:

> Reduced mobility, reduced social opportunities as result of reduced incomes and the death of friends results in a strong attachment to home.[69]

Because of the fact that home is the main focus for the elderly, living environments of them should deeply be taken into consideration and designed to provide life satisfaction.

> Desirability of staying in your own home compared to any form of institutional care, the pivotal assumption being that institutions such as residential homes and nursing homes lack the capacity to be a home.[70]

It is stated by Heywood, Oldman and Means that in a postmodern age, increasing numbers of older people are in a position to buy themselves ‘lifestyle’, such as living in retirement housing. They explained by referring to

[67] Ibid. p. 3.
[68] Ibid. p. 4.
[69] Ibid., p.30.
[70] Ibid., p.62.

Tulle-Winton (1999) that choosing to move to retirement housing represents a deliberate stratagem to cope with 'the declining body', a positive way of 'resisting the ageing process'.[71]

It can be induced by means of this positive manner of resisting the ageing process that, proposing alternative living environments gives the older individuals opportunity to make choice of housing.

Çağrı İmamoğlu, in his doctorate dissertation, explained the place concept and processes by which a new place type may develop, and briefly reviewed 'assisted living type', an alternative for the elderly housing, as a new emerging place type. He mainly examined how it developed from the interaction of societal needs and the existing place types of home and nursing home.[72] He referred to different studies about the physical design of institutional environments in order to shed light on the understanding of 'place' types. He cited from Rapoport that settings do not determine behavior; they do manage to have people conform to the rules almost all of the time. He also stated that this mechanism works so frequently and naturally that it becomes almost invisible to the individual. From this source, he emphasized that places posses more characteristics beyond being physical entities: *they communicate meaning, identity, and appropriate behavior*. Again citing from Rapoport (1990a, 1998), İmamoğlu highlighted that environments are closely related with communication and meaning. Environments reflect and control communication between people, though the nature of the environments and communication depends on the group and cultural norms, understandings, and so forth.[73]

İmamoğlu asserted that an integrative understanding of place experience may bring about an understanding of the concept of home that can perhaps be carried over to residences for older adults. He discussed:

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[71] Ibid., p.38.
[72]Çağrı İmamoğlu, Doctoral Dissertation: Toward an Understanding of Place Schema: Societal and Individual-Level Representations of Assisted Living, Wisconsin: The University of Wisconsin-Milwaukee, 2002, p. 45.
[73] Ibid., p.39.

> Studies that specify multiple components and dimensions of the experience of home could be particularly useful for such an approach. One such study is Robinson *et al.*'s (1984) examination of the hypothesized duality of "homelike" and "institutional" in-group homes. Robinson and colleagues identified homelike and institutional building elements. Following studies using Robinson *et al.*'s material showed that even the mentally retarded can distinguish homelike versus institutional features (Thompson *et al.*, 1996 b), which indicates the strength of the schema of home.[74]

He reminded that the cultural differences might play a role in understanding of the two place types: homelike or institutional. He explained it by comparing Swedes and Turks with a reference to an article by Olcay İmamoğlu and Vacit İmamoğlu:

> For example, the same "homelike" features in a residential facility for older adults could be useful in Sweden, where institutional living is perceived as an appropriate alternative, whereas they might be disregarded in Turkey, where such a lifestyle is seen only as a last resort (İmamoğlu & İmamoğlu, 1992) - or where "homelike" may perhaps be communicated by different cues.[75]

Kılınç, also stressed the importance of the institution whether it is perceived as a home or not. She cited that [76]:

> According to Rantz *et al.*, (1999) the institutional residential house should be viewed as home, therefore the utmost effort should be spent to minimize its institutional image. In a similar vein, the study of İmamoğlu Ç. (2002) indicated that the respondents who evaluate the assisted living as favorable, associated it with the concept of homeness at the same time, and the researcher concluded that "a favorable assisted living schema tends to develop by associations with the home schema". (İmamoğlu Ç., 2002, p.181).

Again she gave reference to Perez, Fernandez-Mayaralas, Rivera, Abuin, (2001) and asserted that they similarly found that the residential satisfaction is related with home-related attributes (such as, comfort, size, distribution and degree of

[74] Ibid., p.49.
[75] Ibid., p.50.
[76] Müge Kılınç, Master Thesis: Institutional Environment And Place Attachment As Determinants of Elders' Life Satisfaction, , Ankara: Department of Psychology, METU, January 2006, p.11.

light, insulation), number and type of amenities in building, neighbor network, availability of space in the institution, and institutional comfort.

4.2 Turkish Elderly and Housing

It can be said that the social conditions of the traditional Turkish family life in Turkey is rapidly changing with the modernisation of life-styles, and it has inevitable effects on Turkish people and their family lives.

Peace[77] cited that the research of Tinker (1984) showed that in England and Wales, the vast majority of older people live in a wide variety of ordinary housing in the community. In contrast, residential homes, nursing homes and hospitals accommodate very little percentage of the elderly population. This finding is similar to Turkish case. Because as indicated in the data taken from Social Services and Child Protection Organization (SHÇEK) Department of the Elderly Care Services the total number of accommodation designed for the elderly is 228 with a total capacity of 18.473 people. It can be inferred from these numbers that most of the old Turkish people live in residential housing (private residences) in the community.

Therefore, it can be deduced in the light of the age statistics and numbers of the alternative living types that there is an increasing need for specially designed new accommodation for the elderly.

In order to establish a background for the case in Turkey, some previous researches that dealt with the issue have been re-read. In the article, *Housing And Living Environments Of The Turkish Elderly,* the current living environments of the Turkish elderly were explored as a function of

[77] Sheila Peace, "Living Environments for the Elderly. 2: Promoting the 'Right' Institutional Environment", in The Ageing Population Burden or Challenge?, Nicholas Wells and Charles Freer Ed., New York: Stockton Press, 1988, p.217.

urbanization.[78] According to the research, although the elderly's assessment of their physical living conditions did not differ much as a function of urbanization, their satisfaction with life declined from small towns to metropolises. The article starts with an examination of the current living environments of the elderly with a purpose of exploring what kind of living environments may be best for them. This examination and exploration constituted a basis for this thesis.

In their survey, researchers tried to explore and compare the physical, social and psychological characteristics of 448 Turkish elderly from 55-71 years old from small towns, cities and metropolitan areas. The questionnaire was prepared for Turkish elderly based on the form prepared by Küller (1988) in Sweden and composed of objective questions about housing, neighborhood, and mobility patterns, to the more personal ones about the social situation, retirement experiences, recreation, health and psychological status of the respondents. The respondents evaluated the dwellings and the neighborhoods. The part in relation to dwellings were concerned with:

> *(a) Dwelling standards* (number of rooms, the size of the household, having separate kitchen, balcony, bathroom, type of toilet)
> *(b) Dwelling facilities* (cooking, cold-hot water, washing machine, type of heating, etc.)
> *(c) Location standards* (street lighting, greenary, meeting places, car parking, cinema, restaurant, etc.)

These indice were assessed to reveal the differences between the existing alternatives for elderly housing in different parts of the country (from small towns, cities and metropolitan areas).

One of the findings was that the elderly living in metropolitan areas consider facilities more important than location and greenary. On the other hand,

[78] Olcay and Vacit İmamoğlu, "Housing and Living Environments of the Turkish Elderly", in Journal of Environmental Psychology, 12, 1992a, p. 35.

dwellers in the small cities and towns find location and greenary more important than the facilities.[79]

The authors asked the respondents to make evaluations of dwellings (outside noise, privacy, pleasantness, functionality) and neighborhoods (traffic, air pollution, loneliness, isolation, etc.). The results indicated that there were no differences between the metropolitan, city and small town neighborhoods; however, within the metropolitan areas, the neighborhoods in the central areas were evaluated more positively than those in squatter areas.

The findings of İmamoğlu and İmamoğlu's research indicated that Turkish elderly felt less satisfied with their lives as a function of urbanization. It can be induced that, because of the fact that Turkish elderly have strong social contacts, the decrease in social contacts causes loneliness for them. The causes of this decline were related to the social changes accompanying urbanization as they stated in the beginning of the research. They mentioned several findings supportive of this argument:

Their findings indicated that Turkish elderly considered:

- the personal (home-related) and interpersonal aspects of their neighborhoods as most important,
- the functional and natural characteristics as secondarily important,
- the architectural and recreational aspects as the least important.

It is understood that dwellings and people constitute the most important aspects of the living environments of Turkish elderly's. Apart from this statement, another finding indicated that Turkish elderly seemed to be less satisfied with the *social aspects* of their existing living environments. Moreover, it is stated that Turkish elderly tend to have more frequent contacts in larger social network. It means that the design of a residential setting for Turkish elderly should comprise facilities enabling socialization. At that point, the

[79]Ibid., p. 40.

neighborhood of the settlement also becomes vital for the overall design. It will be better to design residential environments in a housing district including various facilities for Turkish elderly.

It was deduced that although Turkish elderly had negative attitudes toward institutional living in general, they became more favorable with urbanization and age. In other words, urbanization and increasing age are two important factors in the change of the attitude of the Turkish elderly towards institutional living.

It seems that this kind of positive attitude demands a need for planning special living environments with a provision of meaningful interactions, particularly for the Turkish elderly living in the metropolitan areas. Also there is an expectation of increase in the demand for alternative living patterns for the elderly.

It was noted that the independent living units for the elderly should be organized in a way to satisfy the needs of social interdependencies. For example, to explain, as a response to this concern, guest rooms for families, and communication centers (common activity spaces, hobby rooms, dining hall, sport activity space, etc...) for social contacts can be considered.

The significance of the aspect of control over one's own lifestyle was underlined. It was elucidated that the implementation of integration of the elderly into the social and physical aspects of living environments provides the control over their lifestyles at the same time. This control was explained by having opportunity to choose the type of living environment that best suits elderly's needs.

In the article, *The Social Psychological Worlds of Swedes and Turks in and Around Retirement*, İmamoğlu & İmamoğlu made a cross-cultural comparison

of the life situations of Swedish and Turkish people in and around retirement. They explained the importance of this comparison as follows[80]:

> 1.) Retirement and ageing studies have mostly been carried out in developed countries such as Sweden where old age is regarded as a problem. This body of knowledge needs to be complemented by information from developing countries, such as Turkey, where old age is not regarded as a problem.
>
> 2.) Turkey is undergoing rapid social change that has repercussions on almost every aspect of life; for example, with both spouses working and living in apartments, particularly in cities, it is increasingly difficult to continue the existing patterns of caring for the elderly.

In this article, the authors dealt with social network differences and some related sociopsychological characteristics. In addition, they considered respondents' evaluations of their current life situations in terms of self-images, life satisfaction, attitudes toward ageing, and feelings of loneliness.

They questioned how the respondents living within different social networks in two countries evaluate their current life situations in and around retirement. They asked questions in order to understand their:

(a)Comparative self-image
(b) Life satisfaction
(c) Attitudes toward ageing
(d) Feelings of loneliness

It was seen that in both countries the size of the social network was positively correlated with the frequency of external social interactions. This meant that those having a wider social network also tended to have more frequent interactions and feel less lonely.

In another article titled *Life Situations And Attitudes Of The Turkish Elderly Toward Institutional Living Within A Cross-Cultural Perspective*, which is part of a cross-cultural project, İmamoğlu & İmamoğlu examined the current life

[80] Olcay and Vacit İmamoğlu, Marianne and Rikard Küller, "The Social Psychological Worlds of Swedes and Turks in and around Retirement", in Journal of Cross-Cultural Psychology, Vol.24, No.1, 1993, p.27.

situations and attitudes of the Turkish elderly toward institutional living in terms of age, gender, and urbanization with a comparison to Swedish.

With this article, the authors aimed[81]:

> (a) to explore changes in the current life situations and attitudes of the Turkish elderly toward institutional living in terms of age, gender and urbanization of the area of residence,
>
> (b) by way of comparisons with the Swedish study, to assess the generalizability of the findings within a cross-cultural perspective.

Within the context of how significant the emotional interdependence and relatedness are, for the Turkish elderly, life situations of the elderly were investigated in terms of;

> (a) social contacts,
> (b) self-images,
> (c) life satisfaction,
> (d) attitudes toward ageing, and
> (e) feeling of loneliness

The results of the research were categorized in terms of current life situations (urbanization differences, gender differences, age differences) and attitudes toward institutional living. Briefly, the results of the interviews reflected that:

Current life situations: Turkish respondents not only lived in larger households but also had more frequent contacts with larger external social networks. However, the Turkish respondents had more negative attitudes toward ageing and felt lonelier and less satisfied with their lives than the Swedes.

Attitudes toward institutional living: Compared to the Swedish, Turkish respondents were on the whole less favorable toward living in both sheltered

[81] Olcay and Vacit İmamoğlu, "Life Situations and Attitudes of the Turkish Elderly Toward Institutional Living Within a Cross-Cultural Perspective", in Journal of Gerontology: Psychological Sciences, Vol.47, No.2, 1992b, p. 102.

housing and old folks homes, but they tended to be relatively more favorable toward communal living[82].

Results indicated that attitudes toward institutional living with increasing age became more favorable. The 60-64-age range seemed to be critical for this change of attitude, which was particularly strong for sheltered housing. Sheltered housing and old folks homes, became relatively more favorable with urbanization.

> A positive attitude toward institutional living was most strongly related to *personal loneliness*. Lonelier respondents, who interacted less frequently with smaller social networks and who had negative attitudes toward their selves, lives, and ageing, were relatively *more favorable to institutional living*. Thus, the Turkish respondents seemed to view living in institutions as a last resort.[83]

İmamoğlu & İmamoğlu's findings showed that by increasing age (after age 60), people might start to be more realistic and start thinking relatively more favorably toward alternative living styles beyond normative values. Thus, the social changes accompanying both urbanization as well as the reduced social contacts and increased feelings of loneliness accompanying ageing might lead the Turkish elderly to be more favorable toward alternative living styles.

As a conclusion, it can be anticipated that in Turkey, the demand for alternative living patterns might be expected to increase in the near future, particularly in larger cities. Therefore, it would be advisable to *provide various housing and living alternatives in congruence with the characteristics of the Turkish culture*. If they are provided in the future, then the elderly will have the opportunity to decide on what would be optimal for their needs.

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[82] Some definitions may be useful. İmamoğlu and İmamoğlu used the term "communal living". Communal living can be defined as; a kind of common living, serves a group of people who live together and accompany each other in daily activities such as shopping, cooking, etc. Mostly the individuals who want to live with others at similar age prefer this type. Another term "sheltered housing" can be defined as a kind of institutional type of living with the provision of several facilities planned for the old people. This type of housing also includes private rooms for living.

[83] Olcay and Vacit İmamoğlu, "Life Situations and Attitudes of the Turkish Elderly Toward Institutional Living Within a Cross-Cultural Perspective", in Journal of Gerontology: Psychological Sciences, Vol.47, No.2, 1992b, p. 105.

4.3 The Importance of the Quality of the Living Environment

In the article written by İmamoğlu and Kılıç, *A Social Psychological Comparison Of The Turkish Elderly Residing At High Or Low Quality Institutions*, the respondents from low and high quality institutions were compared in terms of life satisfaction[84]. This research revealed the importance of the quality of institutions for elderly and how these institutions, particularly their physical characteristics, affect the behavior of the elderly.

The results indicated that respondents from high quality institutions were more satisfied with their lives and institutional living and:

> - They were having more personal control.
> - They have moved to the institution more voluntarily.
> - They were more likely to prefer their current living environments and to attribute importance to facilities, services, physical surroundings and leisure time activities.

The authors emphasized that studies conducted in the West seem to indicate that one of the factors influencing the elderly's outlook toward institutional living might be the quality of the services provided. By recalling the previous studies of İmamoğlu and İmamoğlu, authors generalized that the Turkish elderly seemed to assess their living circumstances more negatively than the Swedish as a comparison in terms of:

(a) life satisfaction,
(b) attitudes toward ageing and
(c) feelings of loneliness in spite of their more frequent social contacts

From this point on, they raised the question of:

> If the Turkish elderly were to reside at institutions where better services were provided, would they assess institutional living more positively, as in the West, or would they still retain their negative outlooks regardless of the quality of their institutions?

[84] Olcay İmamoğlu and Nevin Kılıç, "A Social Psychological Comparison Of The Turkish Elderly Residing At High Or Low Quality Institutions", in Journal of Environmental Psychology, 19, 1999, p.232.

If the institutional living patterns provided good services, the Turkish elderly might be more favorable to live in such environments and assess their living conditions more positively.

In terms of 'preferences for different living conditions', equal numbers of elderly seemed to prefer their 'current living place' and 'own homes' as ideal living conditions. Second most preferred living condition is staying 'with children or a relative' and third, 'sheltered housing'. The first choice, 'current living place' was preferred mostly by the elderly living in high quality institutions[85].

> Thus, quality of institutions appears to be an important predictor of the elderly's preferences for and satisfaction with their life situations at institutions within the collectivistic Turkish context as well.[86]

It is predicted in the article that unlike specific assessments, attitudes toward institutional living in general appear to be relatively resistant to change within the Turkish context. Because the better the opportunities provided by the institutions, the more appealing they might appear to the elderly.

It was concluded that the designers and planners should work on increasing the quality and variety of living environments for the elderly, so that they could choose the optimal alternatives for their needs.

All these researches above showed that strong social networks and interdependence are both dominant in Turkish society as a cultural value. As a result of this fact, Turkish elderly attribute more importance to people and the social network in their neighborhoods. It can be deduced from the point that the living environments designed specifically for the elderly should meet the demand of successful social networks by means of organizing spaces for socialization.

[85] Ibid. p. 238.
[86] Ibid. p. 239.

The quality of institutions appeared as a significant contributor to the elderly's assessments of their living conditions. It was advised as a conclusion that the quality and variety of living environments should be increased.

The national character of Turkish elderly (in terms of social relationships, interdependency), and the level of disability together set up the preliminary decisions in design. These specific criteria shape the living environment of Turkish elderly.

What is common for all is that, the design of housing and environment for elderly should also include alternative solutions in itself. A user should have opportunity to make choice; a single person house, house for a couple, or a public living with private rooms.

CHAPTER 5

TYPES OF DESIGN FOR THE ELDERLY HOUSING

5.1 Definitions of Different Types

Due to progress and advance in technology, the matter of housing has taken a great portion of the researches. In all different disciplines, particularly sociology, economics, and architecure, how vital the need for housing has been emphasized. As a result of this, new specialized forms of housing have started to be examined. Because of the special needs and changing abilities in the ageing process, housing for the elderly has become a research issue.

There are several types of housing for seniors in Europe and the USA depending on the senior's health and financial situation. These can be defined as:

Independent elderly housing[87] (individual residences, doublexes, apartments of all kinds): As understood from its title, this type responds to the independent seniors who do not need any assistance, or extra help.

Assisted elderly housing[88]: Including varying degrees of service, food and care, combination of private, shared and common spaces supporting help or privacy.

Institutional elderly housing[89]: Is classified as nursing homes, hospitals, instituitions for the disabled, mental institutions, which provide full assitance and care.

[87] Isaac Green [et.al], Housing For The Elderly, The Development and Design Process, New York: Van Nostrand Reinhold Co., 1975, p.21.
[88] Özlem Özer, Master Thesis: Housing For The Elderly, Ankara: Department of Architecture, METU, 1990, p.15.

It is possible to identify them more clearly. For instance, independent elderly housing type can be named as independent living or senior apartment as well in the literature. It is age-restricted multiunit housing with self-contained living units for older adults who are able to care for themselves. Usually no additional services such as meals or transportation are provided.

Assisted living is a kind of transition between independent living and institutional care. This type usually offers individuals or couples private units that consist of a bedroom with bathing facilities and small cooking area. Residents also have access to a full-service dining room, a medical care service, and a variety of other spaces for recreational and social activities.

As a kind of institutional living, nursing home provides 24-hour nursing care, room and board, and activities for residents and those with chronic and/or long-term care illnesses. This is defined as one step below hospital acute care.

Independent communities and institutions for specific age groups allow for a great deal of social activities. On the other hand, it can be stated that assisted living or congregate housing designed as a community, and consisting of home-like single-units with 5-6 residents and with social spaces also responds to the elderly as an alternative particularly for those who need daily assistance.

5.2 Assisted Living

Particularly in Europe and USA, the variety of purpose-built housing types has been expanding in recent years. The need of such a development arises from the lack of fit between the changing needs of older adults and their residential preferences from existing housing options. As a result, to bridge this gap, an increasing number of residential alternatives have become available.[90]

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[89] Ibid., p.16.

[90] Elaine Weithington and John A. Krout (Ed.), Residential Choices and Experiences of Older Adults: Pathways to Life Quality, New York: Springer Publishing, 2002, p.4. (Accessed from http://books.google.com)

However, in Turkey, the alternatives for the elderly housing seem quite limited. There is a need to introduce new alternatives for the elderly housing responding to different needs and preferences. Thus, one of the aims of this thesis is to present a new type of elderly housing.

In Turkey, housing and ageing service programs have not been well integrated or coordinated. Most of the elderly live in their own homes where special services for special needs of housing are not planned or provided. Assisted living for the elderly is a newly developing form of housing in western countries to be used.

There is no standard definition of assisted living in Turkey yet. It can neither be categorized as institutional living nor as nursing homes. Assisted living is much more like 'living at home' including assisted care when needed.

> Assisted living facilities are for people needing assistance with Activities of Daily Living (ADLs) but wishing to live as independently as possible for as long as possible. Assisted living exists to bridge the gap between independent living and nursing homes. Residents in assisted living centers are not able to live by themselves but do not require constant care either. Assisted living facilities offer help with ADLs such as eating, bathing, dressing, laundry, housekeeping, and assistance with medications. Many facilities also have centers for medical care; however, the care offered may not be as intensive or available to residents as the care offered at a nursing home. Assisted living is not an alternative to a nursing home, but an intermediate level of long-term care appropriate for many seniors.[91]

Many authors define assisted living. According to William J. Brummett assisted living is:

> a group living arrangement for the physically and cognitively frail elderly where a wide range of individualized assistance is available 24 hours a day from a professional caregiving staff in a physical and

[91] Assisted Living Info, "What is Assisted Living", http://www.assistedlivinginfo.com/alserve.html, accessed on May 2005.

> operational environment that embraces the quality and character of home.[92]

According to Marsden assisted living:

> offers housing that is residential in character and appearance. The delivery of supportive services and housing is based on a philosophy that adresses the needs and preferences of residents; maximizes residents' independence, dignity, privacy, autonomy, and decision making.[93]

In another article, assisted living facilities are defined as "non-medical, residential settings that provide housing, food service, personal services, and watchful oversight".[94]

In order to explain the evolution of assisted living type Brummett defines:

> Assisted living developed locating itself in the broad and significant gap that existed between board and care facilities and nursing homes providing intense assistance in a group living homelike environment. Assisted living aims at maintaining similar homelike qualities and individualized services, while expanding the service and social/activity options, maturing the service delivery system, providing accessibility.[95]

Brummett states that there are two components defined for the assisted living model:

> Service rich, comprehensive, flexible and individually assessed assistance and care provider, and these services are offered within an environment that provides as much (as possible) autonomy, comfort and stimulation as experienced at home.[96]

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[92] William J. Brummett, The Essence of Home : Architectural Design Considerations for Assisted Living Elderly Housing, Milwaukee, WI : Center for Architecture and Urban Planning Research, University of Wisconsin/Milwaukee, c1994, p.11.
[93] John P., Marsden, Humanistic Design of Assisted Living, Baltimore: The John Hopkins University Press, 2005. p.13. (accessed from http://books.google.com)
[94] Mary M. Ball, Frank J. Whittington, Molly M. Perkins, Vickie L. Patterson, Carole Hollingsworth, Sharon V. King, Bess L. Combs, "Quality of Life in Assisted Living Facilities: Viewpoints of Residents", The Jour nal of Applied Ger ontology, Vol. 19 No. 3, September 2000, p.304.
[95] William J. Brummett, The Essence of Home : Architectural Design Considerations for Assisted Living Elderly Housing, Milwaukee, WI : Center for Architecture and Urban Planning Research, University of Wisconsin/Milwaukee, c1994, p.20.
[96] Ibid., p.22.

Çağrı İmamoğlu, stated in his dissertation that, 'assisted living' has become one of the preferred modalities of care, gaining vast popularity among the public in US.[97]

Referring to Schwarz, İmamoğlu supports the fact that from the problems of the nursing home emerged a new place type, assisted living. He mentions about two desirable objectives of this new type with respect to the long-term care needs of older adults:

> The first one is a flexibility of care that meets the needs of individuals with differing levels of disabilities. The second one is the creation of a more "homelike" environment that promotes such attributes (of place experience) as resident privacy, independence, social interaction and the like (Regnier, 1994; Brummett, 1997; Schwarz, 1999). Similarly, in her model of assisted living, Keren Brown Wilson (1990) identified six attributes related to physical and operational environment; these attributes are privacy, dignity, choice, independence, individuality and homelike surroundings.[98]

In the literature, assisted living is described as possessing residential character. In another article, İmamoğlu Ç. and İmamoğlu E.O. emphasize that assisted living is a kind of homelike setting for the elderly. With references to various authors (Wilson, 1990; Regnier, 1994; Brummett, 1997; Ball *et al.*, 2000; Dobbs, 2004) they state that:

> Assisted living facilities are generally treated as aiming to provide flexible care to meet the needs of individuals with differing levels of disabilities at homelike settings involving such attributes as privacy, dignity, choice, independence, individuality and homelike surroundings (Wilson, 1990; Regnier, 1994; Brummett, 1997; Ball *et al.*, 2000; Dobbs, 2004).[99]

> Older adults and their families have been pushing providers to change existing settings to reflect a more appealing and homelike quality (Schwarz, 1999). New place types emerged under different names (e.g., board and care homes, personal care homes, group homes, close care),

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[97]Çağrı İmamoğlu, Doctoral Dissertation: Toward an Understanding of Place Schema: Societal and Individual-Level Representations of Assisted Living, Wisconsin: The University of Wisconsin-Milwaukee, 2002, p. 51.

[98] Ibid.

[99] Çağrı İmamoğlu and Olcay E. İmamoğlu, "Relationship Between Familiarity, Attitudes and Preferences: Assisted Living Facilities as Compared to Nursing Homes", Social Indicators Research, Vol.79 Issue 2, October 2006, p.236.

> which generally are referred to as assisted living facilities (e.g, Schwarz and Brent, 1999; Habell, 2001)[100]

As İmamoğlu Ç. stresses, home represents a relationship between people and their physical environment. For this reason, he says, "it is difficult to identify the subtle and emotional aspects of home":

> Although there is a high degree of consensus among providers to provide a "homelike" place, the constituents of such a place is difficult to determine objectively.[101]

Types of spaces that should be organized in an assisted living setting are described in Brummett's work:

> Spaces provided within an assisted living facility usually include larger, more active spaces as well as smaller, more intimate group shared spaces, dining room and service kitchen, a few smaller and less institutional-like staff work spaces, relatively central reception/oversight area between 12 and 130 apartment units (typically, 25-75 units are most preferred and viable (Seip, 1989). Additional social/service spaces may also be provided, depending on the size of the facility and availability of such services nearby in the community.[102]

5.2.1 Assisted Living and the Meaning of Homelike Character

In this thesis, it is intended to design a housing settlement which will go beyond an institution and break the negative image of existing examples of institutional living that resemble hospitals. A new housing type of assisted living will be proposed which is mostly described to be 'homelike'. Hence, in this part of the thesis, there is an attempt to describe homelike character of assisted living type of housing. In the beginning, to give the 'principles of home' may be useful with reference to Brummett. Brummett defines a home as[103]:

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[100] Ibid., p.236

[101] Çağrı İmamoğlu, Doctoral Dissertation: Toward an Understanding of Place Schema: Societal and Individual-Level Representations of Assisted Living, Wisconsin: The University of Wisconsin-Milwaukee, 2002, p. 52.

[102] William J. Brummett, The Essence of Home : Architectural Design Considerations for Assisted Living Elderly Housing, Milwaukee, WI : Center for Architecture and Urban Planning Research, University of Wisconsin/Milwaukee, c1994, p.25.

[103] Ibid., pp.52-79.

1. a place of shelter and safety,
2. a place offering meaningful connections with family and community, and where one is a meaningful contributer to a greater whole,
3. a place for rest, intimacy and solitude. A place that is yours with clear boundaries,
4. a place of control and freedom,
5. a place that is known, expected and fixed,
6. a place of comfort and inhibition. A place where locations and relationships are known and adaptable to changing needs,
7. a fixed center from which to embark from and return to,
8. a place of chosen opportunities, activities, and lifestyle. A place for challenge and stimulation,
9. a place expressive of the identity of the unique individual, and the status of the individual in the community,
10. a place where one finds the important and meaningful things one covets. A place of continuity. A place that holds memories.

These are generalized principles explaining the characteristics of a home. They play an important role in the design of an assisted living for the elderly. Because many researchers mention about the homelike feature of an assisted living type.

According to a study made by Marsden that asks for an evaluation of physical features of assisted living, it is found that older people promote assisted living as a non-institutional choice:

> Assisted living has been promoted as a noninstitutional relocation choice offering personal care services for older persons in a residential or homelike context. Yet, it is unknown whether assisted living is actually perceived as homelike. – the exterior appearance: entries, building height, sense of 'institutional' or 'homelike'.[104]

Marsden and Kaplan have suggested three themes for creating a homelike setting; supportive protection, human scale, naturalness. Human scale is one of the most important factors in design in terms of human perception. For the

[104] John P. Marsden, "Older Persons' and Family Members' Perceptions of Homeyness in Assisted Living", in Environment and Behavior, Vol. 31 No.1, January 1999, p.86-87.

elderly, it can be asserted that, because of the possibility of reduced perception, human scale helps them to orientate themselves:

> Human scale can be interpreted as relating a building to the dimensions of the body to make it more manageable and graspable both visually and as a place to physically use. This type of environment is certainly more inviting and may instill a sense of competence in older persons.[105]

Three categories of features for human scale that were believed to contribute to the concept of home are listed as[106]:

- main entries
- roof lines
- building materials

Three other variables that are also important:

- window treatments
- massing
- landscaping

Marsden and Kaplan also suggested that enclosing elements that provide actual sheltered covering or that offer varying degrees of transition between the public street and private housing may provide a general sense of supportiveness, assurance, and protection for older persons. [107]

Brummett and Regnier are other researchers asserting that use of a familiar architectural language is important in design. This can be achieved by material type or as Marsden stated, by use of any symbols recognizing home, such as window shutters.[108] The preference of bringing individual furniture may also provide belonging to the place as a home. It can be asserted that it is this kind of familiarity, which attributes homelike character to elderly housing.

[105]Ibid., p.87.
[106] Ibid., pp.88-89.
[107] Ibid., p.84.
[108] Ibid., p.87.

Brumett stated that, many researchers (Hoglund, Wilson and Regnier) suggest a residential or homelike environment is most supportive. [109] In a parallel vein with Marsden, Brummett lists the issues that give an assisted living type of housing, homelike character as:

> Attempts to embrace homelike character throughout the design include issues of massing, image, scale, purpose and nature of rooms, interior and exterior materials, details and textures, lighting, furnishings (including allowing residents to bring their own furniture) and fixtures.[110]

İmamoğlu Ç. and İmamoğlu O. made a research to explore attitudes toward and preferences for living in the newly emerging place type of assisted living facilities in comparison to nursing homes. According to the results, the respondents were found to be more favorable toward assisted living, because they conceived assisted living more homelike and less institutional than a nursing home.[111]

To summarize, with reference to Brummett's work, here, some of the concepts, which give the homelike character to a building, are presented:[112]

1- Security and safety
2- Connectedness and belonging
3- Privacy and territoriality
4- Control and autonomy
5- Choice and opportunity
6- Familiarity and order
7- Self-projection and self-symbol

It can be asserted that provision of these concepts forms the quality of life for the elderly in their residential environment. The proposal will be formed around these concepts as guidelines.

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[109] William J. Brummett, The Essence of Home : Architectural Design Considerations for Assisted Living Elderly Housing, Milwaukee, WI : Center for Architecture and Urban Planning Research, University of Wisconsin/Milwaukee, c1994, p.8.
[110] Ibid., p.25.
[111] Çağrı İmamoğlu and Olcay E. İmamoğlu, "Relationship Between Familiarity, Attituds and Preferences: Assisted Living Facilities as Compared to Nursing Homes", in Social Indicators Research,Vol.79 Issue 2, October 2006, p.245.
[112] William J. Brummett, The Essence of Home : Architectural Design Considerations for Assisted Living Elderly Housing, Milwaukee, WI : Center for Architecture and Urban Planning Research, University of Wisconsin/Milwaukee, c1994, p.48.

CHAPTER 6

ARCHITECTURAL EXAMPLES

In this chapter, diverse examples of housing projects for elderly are examined. The examples of conventional projects are consciously eliminated. Rather it is aimed to present examples of alternative solutions with specific design concerns emphasizing not only functional requirements but also aesthetic qualities.

Among many examples, only eight will be presented here. However, it is limited with eight in this thesis. Two examples were chosen from Turkey, five from Europe, and one from USA. Among these only two of them, the ones in Ankara and in İzmir were examined at situ while the others were elaborated according to the written and visual materials that could be accessed from different sources.

The examination of the existing living environments with different types for the elderly shed some light on the search of a design project as part of this thesis. Certain design criteria derived from the examination of examples contributed to the project.

6.1 **Residence in the Black Forest,** Neuenbürg, Germany, Architects: Mahler, Günster & Fuchs

Figure 6.1. View of the four residential blocks from the river.

The building is composed of four identical blocks including 28 dwellings. The simple geometric form of blocks and their arrangement in a natural surrounding give the project a homelike character. This is strengthened by the use of timber cladding on the facades. Householders are able to access outside on each level by means of galleries and balconies. A solar energy system incorporated into building providing heating and hot water for the building. Solar panels placed on the southwest slope of the roof minimize the energy consumption of the dwellings.[113]

[113] Arian Mostaedi, Residences for the Elderly, Barcelona : Carles Broto i Comerma : Leading International Key Services, 1999, pp. 8-17.

Figure 6.2. River facade with external sliding shutters.

Figure 6.3. Solar panels covered with transparent corrugated perspex.

Figure 6.4. Timber access galleries.

6.2 **Maison pour personnes agées dependants,** Vitry-sur-Seine, France, Architect: Soisick Cleret

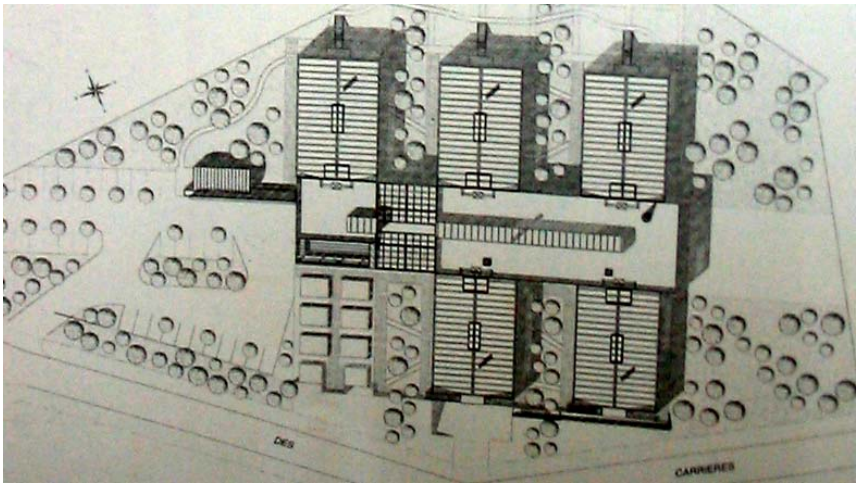

Figure 6.5. Site plan.

This project also has a simple distribution of geometric forms comprising five pavilions of double storeys connected with a common axis of circulation and collective facilities. The arrangement of housing blocks creates U-shaped semi-private courtyards.

External materials of the pavilions are zinc and wood. These are used separately on different surfaces of the blocks: while the common access block is more transparent, the facades facing the courtyard are covered with zinc and the solid facades of the pavilions are covered with timber.[114]

[114] Arian Mostaedi, Residences for the Elderly, Barcelona : Carles Broto i Comerma : Leading International Key Services, 1999, pp. 28-37.

Figure 6.6. The entrance facade.

Figure 6.7. U-shaped courtyard in-between the pavilions.

Figure 6.8. The access area located in the central part.

The staircase divides the lobby space into two, provides access to the dwellings. The glazed roof and the wall provides natural lighting. The color and material choice reflects a warm and spacious area. The distances between the furniture are suitable for the wheelchair users.

Figure 6.9. and 6.10. Views from the interior.

The pictures above illustrate the concern of the architect for the importance of natural lighting for elderly housing. On the other hand, it is understood from the same pictures that the height of the two parallel walls with large voids above exceeds the human scale.

6.3 **Centre de long Séjour a Keramour,** Rostrenenen, France, Architects: Debulois, Guervilly & Dunet Architects

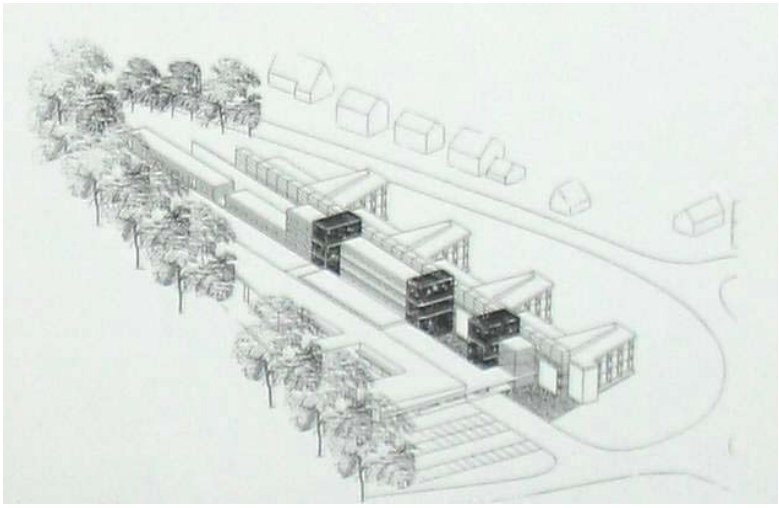

Figure 6.11. Axonometric view.

Figure 6.12. View from the car park.

This project is composed of several volumes connected to a common axial circulation volume. This articulation creates defined common outdoor spaces. It can be said that the repetition of the volumes provides easy orientation and legibility for the users. Solid-void relationship is observed by means of the photographs.[115]

115 Arian Mostaedi, Residences for the Elderly, Barcelona: Carles Broto i Comerma: Leading International Key Services, 1999, pp. 216-221.

Figure 6.13. Sectioned axonometry.

Figure 6.14. Facilities open onto wooden landscape.

Figure 6.15. Openings on the facade and vertical circulation.

Figure 6.16. View through the staircase.

Figure 6.17. The staircase.

6.4 **Lundhaven residential home,** Scovelunde, Denmark, Architects: Lundgaard & Tranberg A/S

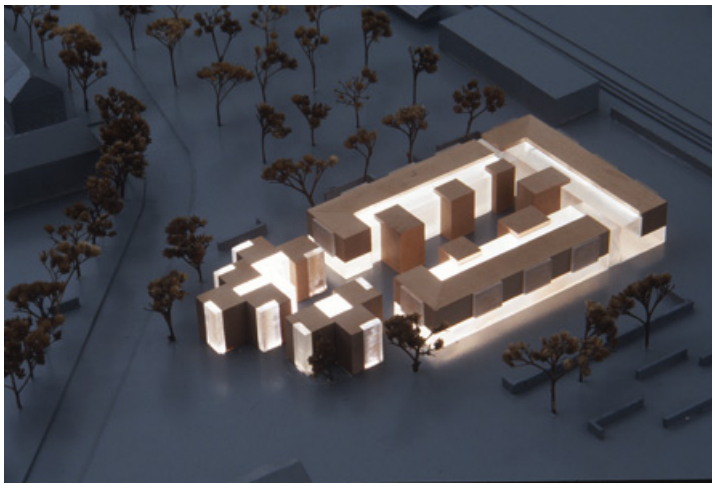

Figure 6.18. Model of the project.

This residential home comprises 48 patients' rooms, service and medical facilities and a number of private apartments for residents to live independently. The project also includes medical and nursing complex that accommodates common rooms and personnel at ground level, with residential rooms on the upper floors. While the courtyards created between the blocks work as the outdoor spaces, the connector corridors with transparent facades looking to the courtyard enable visual interaction between inside and outside. In this project, a special attention is given to the outdoor space design. Some material changes on the ground, and various lighting fixtures are used in outdoor design.[116]

[116] AW:Architektur und Wettbewerbe, Seniorenresidenzen/ Residences for Senior Citizens, (197) March 2004, pp. 12-15.

Figure 6.19. Transparent connector corridors facing the courtyard.

Figure 6.20. and 6.21. Opening details.

Figure 6.22. and 6.23. Views from the outdoor.

6.5 **Northside Community Center & Mabuhay Court Community Center and Affordable Senior Housing,** San José, California, USA, Architects: David Baker & Partners

Figure 6.24. Site plan.

Figure 6.25. Section of the project.

This project reflects a mixed use of 96 low-income senior housing units and a community center providing services both for the senior residents and the neighborhood. As seen in the site plan, housing units and a community center are integrated with a public park and a courtyard. This integration allows the elderly to socialize with the community. The stoops and the ramp give direct access to the courtyard from different sides.

The housing blocks are three-storey. There are three types of dwelling units; studio, one-bedroom and two-bedroom units. Apartments have private balconies and porches linked to stoops. The units are described as adaptable for the disabled.[117]

[117] Northside community center & mabuhay court community center and affordable senior housing, http://www.dbarchitect.com/work/housing/affordable/www-9808/9808-5.htm, accessed on May 2005.

Figure 6.26. Main entrance to senior housing.

Figure 6.27. Mixed use community building with affordable senior units above.

Figure 6.28. Residents have direct access to the courtyard via stoops.

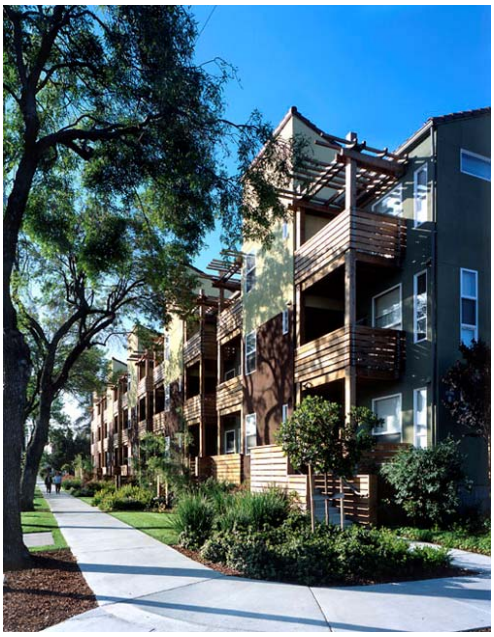

Figure 6.29. Stoops along eastern elevation allow residents direct access to street.


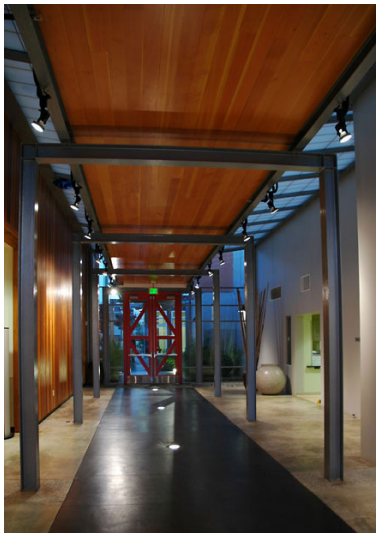

Figure 6.30. and Figure 6.31. Main entrance and lobby of community center.


Figure 6.32. and Figure 6.33. Public access to the park and meditation garden.


Figure 6.34. and Figure 6.35. View of the courtyard and access ramp.

Figure 6.36. Community auditorium.

Figure 6.37. Interior of the community auditorium.

6.6 **Housing for elderly,** Ingolstadt, Germany, Architect: Behnisch, Behnisch & Partners

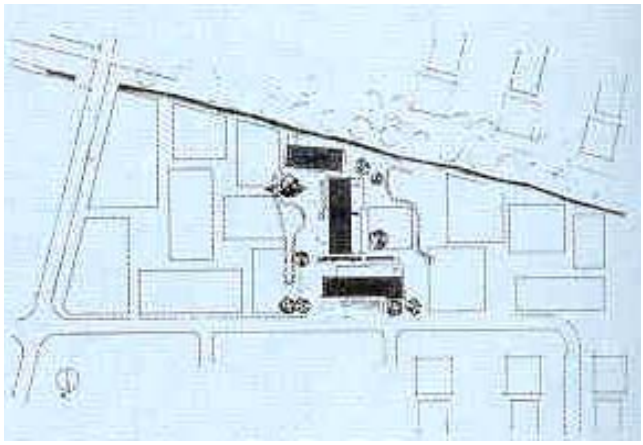

Figure 6.38. Site Plan.

This project differs from others with its variety of inhabitants including large families, single mothers, students and senior citizens. The project was located in a residential district. As a design strategy, the pattern of this development penetrates into the existing city fabric. Thus, this configuration not only provides formal harmony bu also enhances the social interaction between the elderly residents and others. Hence, the elderly feel that they are not isolated from the neighborhood and active social life. [118]

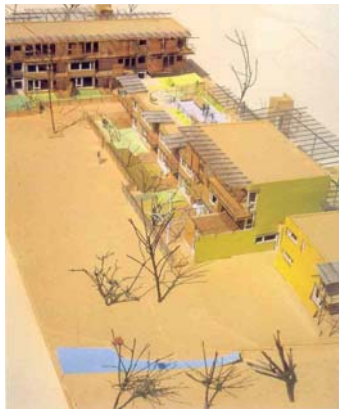

Figure 6.39. and Figure 6.40. View from outdoors and Model of the project.

[118] Bernard Chan (Ed.), Housing: Hundreds of Architects, Hong Kong: Pace Publishing, 2005, pp. 58-66.

Figure 6.41. Views of the dwelling facades.

Two to three-storey blocks maintains the human scale. The colorful facade treatments provide legibility and easy orientation for the users. The sun breakers on facade are used not for only functional purposes but also for aesthetic concerns. The dwelling blocks are arranged in a way creating private gardens.

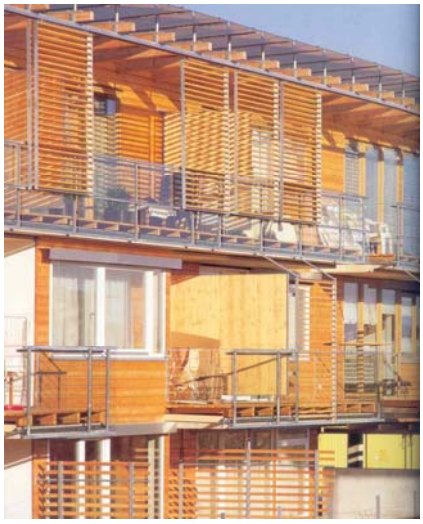

Figure 6.42. and 6.43. Views of the dwelling facades.

6.7 Balgat 75. Year Resting and Caring Home of Retired Organization,

Ankara, Architects: Oya Pakdil and Fatih Pakdil

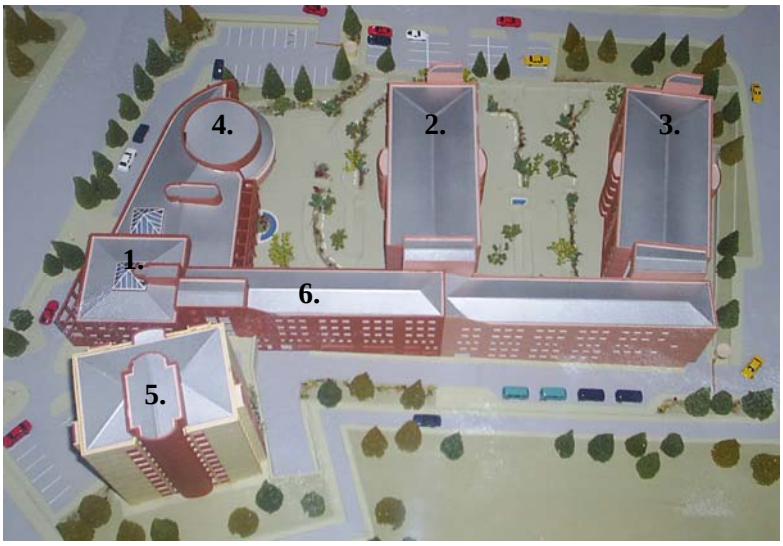

Figure 6.44. Model of the settlement.

1. Administration
2. and 3. Residential blocks
4. Common facilities
5. Flats
6. Services, shops, hobby rooms, medical care center

Figure 6.45. View of the east (entrance) facade.
Source: http://www.emekli.gov.tr/huzurevi/ankara/ankara_resim.html

Figure 6.46. View from the south.
Source: http://www.emekli.gov.tr/huzurevi/ankara/ankara_resim.html

The size of the lot of the complex is about 16 000 m² and the total floor area is about 30 000 m². There are 168 rooms of 27 m² (for single person), 8 rooms of 34 m² (for two persons) and 47 studio flats of 55m². In the complex, it is aimed to create a home-like environment. Each room has its own bathroom, kitchen counter and furniture. There are also 16 special rooms with 32 beds for the elderly who need medical assistance and treatment in daily life.

Other functions are hobby rooms, activity spaces for sport, a multi purpose hall and a dining room. On each floor of the residential blocks, there is a dining hall and a living room across each other to serve 20 people. Total number of such spaces is nine.[119]

[119] Website of Turkish Retired Organization, http://www.emekli.gov.tr/huzurevi/ank75.html, accessed on May, 2005.

Figure 6.47. Room 1 – Bedroom.
Source: http://www.emekli.gov.tr/huzurevi/ankara/ankara_resim.html

Figure 6.48. Room 2 - Living room.
Source: http://www.emekli.gov.tr/huzurevi/ankara/ankara_resim.html

Figure 6.49. Room 3 – Bedroom and living room.
Source: http://www.emekli.gov.tr/huzurevi/ankara/ankara_resim.html

The figures 6.47., 6.48., and 6.49. indicate finishings of the rooms. The use of color, choice of the floor material, and the furniture are used to reflect a desire to create a homelike space rather than an institutional environment.

Figure 6.50. Kitchen in a flat.
Source: http://www.emekli.gov.tr/huzurevi/ankara/ankara_resim.html

Kitchen and bathroom in an elderly housing unit should be designed according to the universal design principles. As seen in the picture, the washbasin and cupboard treatments in the kitchen do not fit these principles. A wheelchair user will have difficulty in using the kitchen. Instead an adequate empty space should be left under the washbasin for ease of use.

Figure 6.51. Bathroom of a unit.
Source: http://www.emekli.gov.tr/huzurevi/ankara/ankara_resim.html

In the bathroom, the special bars and an adjustable seat were designed for the users with disability. However, the division panel of shower creates a barrier at the intersection point with the floor.

Figure 6.52. The corridor of the medical care units.
Source: photograph by Res.Asst. Tolga Özden

In medical care block, the corridor is loaded on one side. The entrances are personalized with the residents' names written on the fixed plates. The light colors and natural lighting makes the corridor spacious. Use of grab bars on the walls supports the users with mobility disabilities to move easier.

Figure 6.53. Common space facing outdoor.
Source: photograph by Res.Asst. Tolga Özden

The common space is interrelated with the outdoor space. However, lack of small, intimate conversation spaces and poor landscaping create poor outdoor space.

6.8 **Narlidere Resting and Caring Home of Retired Organization,** İzmir,

Architect: Celal Koç

Figure 6.54. Model of the overall project.
Source: http://www.emekli.gov.tr/huzurevi/izmir/izmir_resim.html

Figure 6.55. Geriatric Block.
Source: http://www.emekli.gov.tr/huzurevi/izmir/izmir_resim.html

Figure 6.56. View of the Conference and Living Center.

This complex is located in Narlıdere, İzmir, on a sloping site with sea scenery. To access the facility is easy by public transportation. However, the sloping character of the site is compelling for the elderly.

It is a large complex comprising of independent elderly housing blocks, a geriatric care center (with a physiotherapy and rehabilitation center), a social center and a greenhouse. The complex provides various facilities for the elderly.

Figure 6.57. View of the independent blocks.

Figure 6.58. and 6.59. Three-storey housing groups for the independent units with terraces and gardens on the ground floor.

The independent elderly housing blocks have 336 double and 144 single rooms[120]. Every group of four rooms is opened to a common living space, which supports interaction between the users. Rooms are arranged along the corridors, which connect the blocks. Each room has its own bathroom and kitchenette.

Figure 6.60. Interior view of the vertical circulation in housing block.

The glazed wall provides interaction with outside. Lifts are located across the staircase.

Figure 6.61. Corridor in the geriatric care part.

The geriatric care part provides short-term and long-term care to the residents with a physiotherapy and rehabilitation center. The corridors and the rooms are designed in accordance with the principles of universal design: adequate door

[120] Website of Turkish Retired Organization, http://www.emekli.gov.tr/huzurevi/izmnarlidere.html, accessed on May, 2005.

and corridor widths, different use of color for easy perception, good lighting, etc.

An important part of the complex is the social center. A market, a bank, a post office, a hairdresser, a library, a cafeteria, a playroom, a restaurant and a large lounge are organized in this center. A health unit between the geriatric center and social center is located.

The central ramp is designed as part of the space providing easy access between the two floors. The open character of the volume between the floors enables interaction.

Figure 6.62. Central ramp in the social center.

Cafeteria, kiosk, hobby spaces, social service area, nursing rooms and security rooms are arranged in the service block. With the connection corridor, the residents can access directly the nearest service block from their rooms.

Apart form those functions, the settlement mixes different age groups by providing a tall block for the university students that serves as a dormitory and a single storey building serves as a kindergarden.

Figure 6.63. Kindergarden close to the independent units.

Figure 6.64. Dormitory building.

Figure 6.65. Explanatory site plan in the entrance.

Figure 6.66. Common room.

Figure 6.67. Lobby.

These three photographs show the use of signage inside and outside the building. This is vital for the provision of perceptible information. Signage

helps both the residents and the guests to orient themselves in site, housing blocks, social center and the geriatric center.

As a conclusion for this chapter, although the number of examples that are examined are not enough to make any generalizations, it is observed that the common ground they can be brought together depends on simple geometric forms and spatial organization of the projects. Particularly the examples from Europe and U.S were chosen from those designed in human scale. It can be asserted that the scale is important for the elderly to perceive the environment easier and feel at home. Additionally, the sites of the projects were chosen in unisolated parts of cities with the concern for their socialization.

The settlement pattern usually indicates a structure consisting of articulated blocks and open spaces defined by these blocks as courtyards. Dwelling units can be geometrically distinguished within spatial organization, which provides easy orientation. Arrangements formed by articulation of blocks with their diverse facade treatments, create dynamism on the facades. As a result, buildings become more legible.

The project in Ingolstadt, Germany and İzmir, Turkey are examples for universal design with its inclusiveness feature, consisting of a mixed of user groups.

CHAPTER 7

ARCHITECTURAL DESIGN PROPOSAL

7.1 Target Age Group

Self-sufficient elderly and the elderly who need limited assistance that are mostly retired or demanding to live with those at similar age, particularly at 65 and over are target inhabitants. As the statistics show, this specific age group has an increasing number, which will approximately be a quarter of the total population in 2050. The increasing number of the target age group reveals that there will be more necessity for spaces designed particularly responsive to their physical capabilities in the near future.

7.2 General Design Concerns

As stated previously, ageing process involves a series of critical changes affecting the elderly's perception and interpretation of the environment. To respond to that, Carstens[121] listed some general concepts for design:

- Offering appropriate levels of challenge and support when needed (e.g. access to facilities and services both on and off site, walking surfaces that are easy to negotiate).

- Providing variety and choice (e.g. formal and informal spaces, places for social interaction as well as intimacy and privacy, choices in scale of spaces).

- Promoting a sense of autonomy, independence, and usefulness: (e.g. comfort and ease of use, options for control of privacy, opportunities for participation in activity programming, service delivery, and activity

[121] Diane Y. Carstens, Site Planning and Design For the Elderly : issues, guidelines, and alternatives, New York : Van Nostrand Reinhold, 1985, pp.15-16.

organizing, orientation and wayfinding).

- Allowing personalization and control over the environment: important for self-esteem and satisfaction for aging persons, a sense of control increases the feeling of home and the use of space while decreasing the institutional character (e.g. display and garden areas for residents' own use, individual/ unit patios or balconies, unit entry vestibules with space for personalization; flowers, etc.).

- Providing for adaptability of design-the constant and accommodating models: design must be able to accommodate, to a degree, the changing interests, preferences, and abilities of residents and the gradual aging of the population within the project.

- Providing access to community services, facilities, and information (e.g. close and convenient public transportation, stops, and routes, safe and convenient walking routes to community).

- Establishing management policies on use of facilities and activity programming.

Apart from these physical aspects, the social aspects should also be considered in the service provision of an elderly housing. In other words, an inter-disciplinary and integrated approach in the planning of service provision to the elderly is vital.

When designing buildings for the elderly, the general criteria can be the experience of the variety of accessible and inclusively designed spaces. These gain more significance because of the decreased capability of the elderly.

Regnier, in his article, *Design Principles and Research Issues in Housing for the Elderly*[122], also analyzes the background of design guidelines and theory-based research in housing for older people, and criticizes the existing guidelines lacking conceptual or theoretical foundation. Instead, he offers 12 principles of design in order to help both theorists and practitioners with the design of housing the elderly. These are;

[122] Victor Regnier, "Design Principles and Research Issues in Housing for the Elderly", http://www.homemods.org/library/life-span/design.html, accessed on February 2006.

1. Personal privacy
2. Social interaction
3. Personal control and autonomy
4. Orientation and wayfinding (assistance in knowing where one is and finding one's way inside the home)
5. Safety and security
6. Accessibility (to needed services) and functioning (maintaining or improving personal independence)
7. Stimulation and challenge
8. Sensory assistance (when needed)
9. Familiarity
10. Good aesthetics and appearance
11. Self-expression or personalization, and
12. Adaptable or flexible environments

As understood, these 12 principles are all in parallel with Carstens' and Brummett's considerations. During the design process, a great importance is attributed to these principles.

7.3 Concept of Site and Location

Site and location is one of the most significant parts of the design. Boundaries and context of site, location of the housing units, and proximity to facilities have strong effects on people. Determination of the location may have a variety of parameters. For example; the decision can be to integrate the new design in a residential district of a city, or to find larger area without any reference points and to plan the site. The climate, directions, neighborhood and access to the center all constitute the parameters in site selection.

It can be asserted that one of the most important key concerns in locating elderly housing settlement is its proximity to the public spaces such as libraries, stores, public markets, pharmacy, any health care units and places of worship. To provide safety and privacy of the site is crucial, too.

7.3.1 Site Selection

The site for this project was chosen from Ümitköy, Ankara. The most important reason for this decision is its central location in a recently developed popular upper middle class residential district. The site is surrounded by two storey residences with their private gardens *(Appendix C, Figure C.1.).* Besides, the surrounding environment of this site is composed of commercial stores with different uses such as banks, cafes, a shopping mall, drug stores, restaurants etc., along a boulevard *(Appendix C, Figure C.2.).* In other words, it is a moderately busy neighborhood and has a pleasant atmosphere. In the decision of the site selection, the shortness of the distances from site to various facilities was effective because walking becomes important and somewhat difficult for the elderly. In addition, it is easy to reach central parts of Ankara by public transportation.

The size of the particular lot is 8600m² and fits the needs for a managable sized elderly housing. The site is bordered in its west by a boulevard (Sekizinci Cadde) and by the main facades of private residences on the other three directions *(Appendix C, Figure C.3. and C.4).* The three-lane boulevard in the west side of the lot generates noise and pollution since it is busy during daytime. It may also be considered dangerous for the elderly. Therefore, a buffer zone will be created on the west side of the lot.

Figure 7.1. Aerial view of the Site and the Neighborhood.

Source: Inta Spaceturk

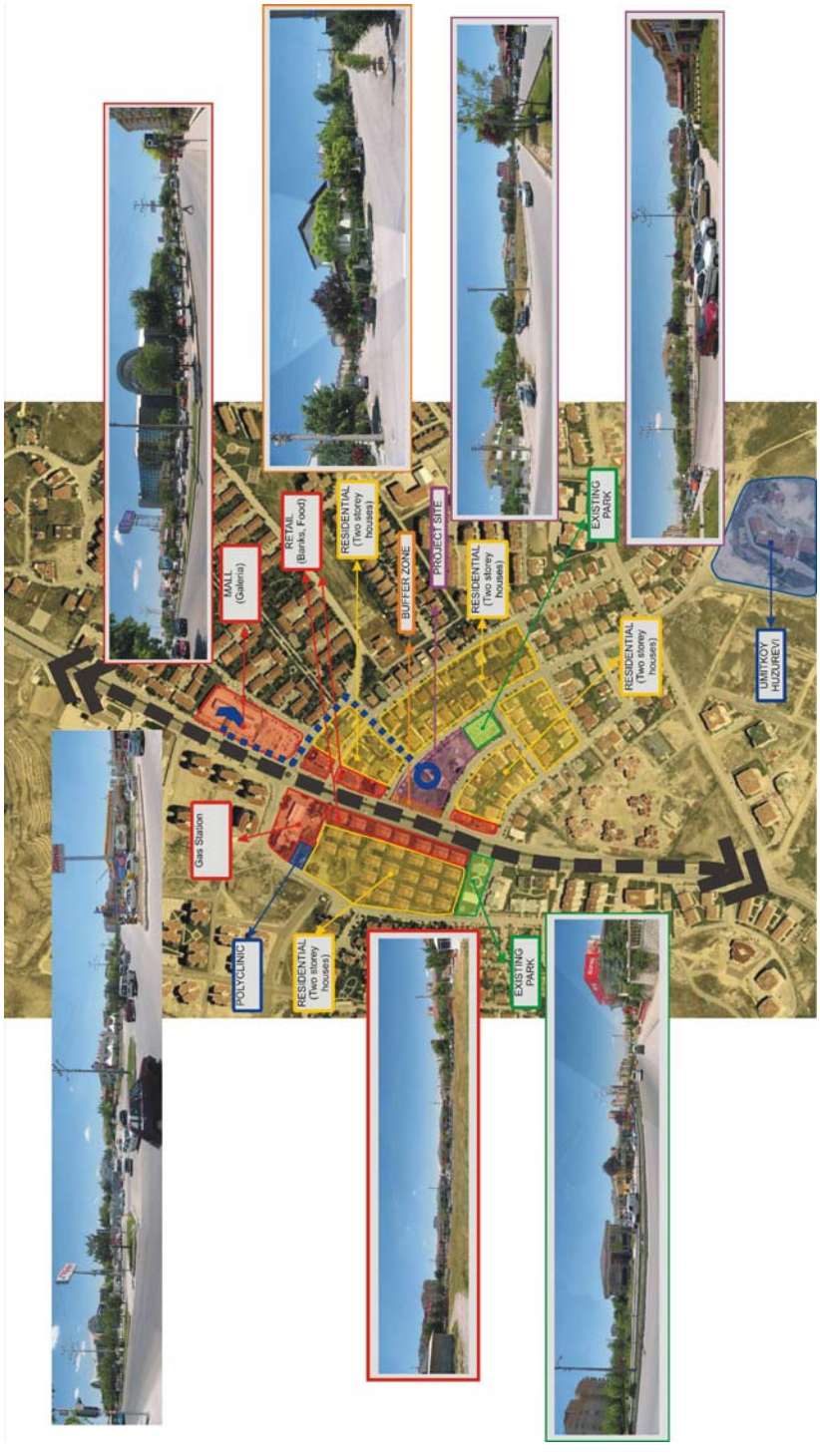

Figure 7.2. Analysis of the Site and the Neighborhood.

7.3.2 Site Design

In her book, Carstens analyzed and presented design of outdoor spaces for the elderly housing. She made some recommendations about outdoor spaces:

> Outdoor space should possess sense of community, strong activity programming, and connection to food service, connection to indoor common areas, connection to hobby/crafts rooms and units and also connection to major access route. It is stated that a smaller, intimate outdoor space with defined edges is most suitable for small group conversation and socializing.[123]

Approaching from a larger scale, it can be said that the site is mainly designed to gather neighboring residents to its common meeting and communication spaces. The main purpose is to integrate the residents of the new building and the people living in the neighborhood. A buffer zone is reserved to break off the site from the busy Sekizinci Cadde *(Appendix C, Figure C.5.and C.6.).*

In order to create a connection between the commercial line across the boulevard and the residential part on the north-east side, a straight walkway is designed which enlarges to create small, intimate outdoor sitting areas. This walkway extends parallel to the main building of the three-partitite design that will be explained in detail. The northeast, landscaped part of the project site is designed to offer an outdoor setting for the residents and their interaction with the neighborhood *(Appendix C, Figure C.5. and C.6.).*

The general scheme is a composition of three rectangular blocks two of which are parallel to each other and perpendicular to the third. This composition creates two common plazas on the northeast side of the site constituting entrances to the building. The main entrance is defined by an entrance plaza with the multi purpose hall on the upper floor which works as a wellcoming canopy *(Appendix C, Figure C.6., C.8., C.9., C.10., C.11., C.12. and C.17.).*

[123] Diane Y. Carstens, Site Planning and Design For the Elderly : issues, guidelines, and alternatives, New York : Van Nostrand Reinhold, 1985, p.93.

The only vehicle access to the site is provided from a secondary street (Dokuzuncu Cadde), which takes place on the north-east side of the site. The car parks are placed perpendicular to the Dokuzuncu Cadde inside the buffer zone. In addition, a garage is located on the basement floor *(Appendix C, Figure C.4., C.13. and C.14).*

7.4 Architectural Design

7.4.1 The Concept

As a result of getting older, the possibility of limitation in mobility increases, or any other disability may occur. Because of this reason, the anthropometric data identify the sizes of the spaces. It can be asserted that design of a living environment for senior citizens mostly depends on the functional requirements. For instance; the width of the corridors, the spaces left between the furniture and the height level of the shelves, sinks and washbasins are determined by taking the wheelchair users into consideration. From that point, it can be stated that the inner organization and the form of this architectural proposal are derived from the functional aspects as a primary concern.

Nevertheless, this does not mean that social concerns are ignored. As previously argued, Turkish elderly give importance to interaction and socialization. They have large social networks and prefer to communicate with other people. This concern constituted a crucial design input as well. To sum up, it can be expressed that possible physical and social needs and demands are responded to in the proposal.

Keeping in mind the principles of universal design, this project can be described with three keywords that set up the concept: simplicity, readibility and clarity. These keywords are defined as the concept in order to provide accessibility in the project.

To expand, simplicity can be explained by the organization of spaces in the layout and its reflection to the third dimension: simple rectangular forms, solid-void proportions and relationships.

Readibility is considered to provide easy orientation for the users. In order to explain this, it can be said that the sub-spaces designed between the main configuration give clues about the standing point. For instance, the two different greenhouses combining the housing blocks contain different types of plants. This helps a resident easily find his/her home by means of taking this differentiation as a reference point, and locate himself/herself (*Appendix C, Figure C.8., C.10., C.12.).*

Clarity comes from the two previous concepts, that is to say, simplicity and readibility form clarity in overall design. Every space can be clearly identified with its simple organization supported by the outdoor. Variations in the use of material, color and texture are the elements that may be used to clarify the private, semi-private, semi-public and public spaces. The transparency of the communal facade interprets the common activities taking place inside *(Appendix C, Figure C.20.).*

7.4.2 The Program

Table 7.1. Total Floor Area.

Floors	Floor Area (with terraces)
Basement Floor	1565 m²
Ground Floor	2930 m²
First Floor	2625 m²
Second Floor	2535 m²
	TOTAL: 9655 m²

Table 7.2. Types of Housing Units, Total Numbers and Total Area.

TYPE	m²	Ground floor	1st floor	2nd floor	TOTAL
Single person	55	4	3	6	13
Two single persons sharing a room	75	6	2	3	11
Couples	65	3	8	2	13
					37 units with 61 residents

In addition to these areas, each type has its own terrace with an area of 6,80 m².

7.4.3 Spatial Organization

Previously mentioned three concepts are realized in building three main blocks: 1. Main Block: The main block is a three storey mass acting both as a community center and private residential block consisting of housing units (which set up three residential blocks), two greenhouses connecting residential blocks with southwest orientation, guest rooms, medical and care-takers' rooms, reading rooms, dining hall, cafeteria, and other common activity areas *(Appendix C, Figure C.16., C.17. and C.20.).*

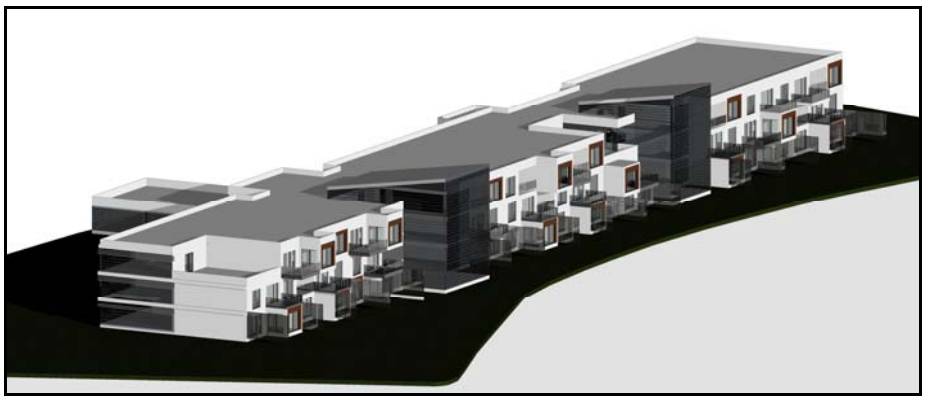

Figure 7.3. Axonometric view looking through southwest facade.

Inside the main entrance of the building, an information and security desk takes place with a lobby. This space is connected to the communal space, which is also open to the neighborhood residents' use. A greenhouse is the focal point that serves both as an entrance and a social center. When needed, the sheltered exterior plaza of the entrance can be connected to enlarge this space *(Appendix C, Figure C.17.)*. The first and the second dwelling blocks are organized with a direct connection to this central space. Apart from this central space there is another greenhouse breaking the linear flow of the plan through the outside on northeast side and forming a secondary entrance for hobby rooms, and a free space to be used for temporary exhibitions on the ground floor and offices on the first floor. It also links the second and the third dwelling blocks *(Appendix C, Figure C.8., C.10., C.13. and C.16.)*. These two transparent common spaces enable the residents to orient themselves easily.

Figure 7.4. Northeast facade.

In addition, another element that promotes orientation and wayfinding is the linear organization of the building. It has an identifiable character. As stated above, the rigidity of linearity is softened at two points in order to avoid an excessively long, one-piece corridor. Building mass is visually and functionally supported by the outdoor spaces. Views of outdoor space are maximized with the northeast façade *(Appendix C, Figure C.20.)*.

With another description, the building of the residential settlement can be described simply as composed of two main arms (northeast and southwest) with a transitional and connecting corridor.

Figure 7.5. Southwest facade.

On the ground and the first floors, the southwest wing of the main block is built by juxtaposing housing units constituting groups of four along the corridor. Only on the second floor, by subtracting one unit from the first and the third group, sunbathing terraces are created. They are faced to southwest in order to take advantage of sun and daylight as much as possible *(Appendix C, Figure C.19.).* All dwelling units on the ground floor have their own gardens that open to a larger common garden *(Appendix C, Figure C.6. and C.7.).* This hierarchy between spaces is formed in order to protect the distinction between privacy and publicness.

Figure 7.6. Perspective of the northeast wing.

The northeast wing is designed with a solid-void combination along three floors. Although the medical rooms and care-takers' rooms form a solid part, the dominant character of the north-east wing is its horizontal and vertical voids (common spaces) *(Appendix C, Figure C.20.).* The vertical voids along the floors are designed to provide a perceptual dimension that means a contact between people *(Appendix C, Figure C.16. and C.17.).* This perceptual dimension helps the users to perceive the entire building as a whole and increases interaction between the users of the building on the different floors. Variable common spaces designed on each floor provide easy orientation.

The transparent, glazed facade of the building demonstrates communication with the environment and establishes indoor-outdoor relationship. It is one of the most dominant features of the composition *(Appendix C, Figure C.20.).*

2. Secondary Block 1 is a single storey building elevated by columns and includes a multi purpose hall for film shows, seminars or other meetings. Foyer of the multi purpose hall unites with the cafeteria of the greenhouse on the first floor of the main block. It provides a shelter for the main entrance. Its roof works as a roof garden for the second floor of the main block *(Appendix C, Figure C.17., C.18., C.21. and C.22.).*

3. Secondary Block 2 is a two storey building including a second entrance for not only hobby rooms on the ground floor and administrative offices on the first floor, but also for second and third dwelling blocks. This block is also united with a greenhouse *(Appendix C, Figure C.7., C.8. and C.22.).*

In order to strengthen the social relations between the elderly, different kinds of spaces for various activities are proposed: hobby rooms located on the ground floor of the Secondary Block 2, free spaces for daily sport activity and common spaces for drinking tea, coffee, etc., inside the dwelling blocks.

The greenhouses, which are formed as connection points of these two secondary blocks to the main block, are concieved of having different types of planting. They form galleries on the upper floor. The main facades of the greenhouses face the two-storey housing groups of the neighborhood on the southwest direction.

There is also a basement floor where a carpark, a service area, staff rooms, a laundry, H.V.A.C, storage, an archive, a safety and control room and a shelter space are located *(Appendix C, Figure C.13. and C.14.).*

7.4.4 Design of Dwelling Units

Figure 7.7. and 7.8. Perspectives of dwelling units.

The project includes 37 dwelling units serving 61 residents who are independent or may need some assistance. There are three different kinds of plans: single person (13 units), two single persons sharing a room (1+1) (11 units), and couples (13 units), each of which comes together with different combinations on each floor *(Appendix C, Figure C.23., C.24. and C.25.).* The variation of types gives opportunity to the potential users to make choice.

Each dwelling unit has a living room, a bedroom, a bathroom, a kitchenette and a balcony or garden with a terrace facing the southwest direction nourishing from the sunlight. They are designed with a private balcony if placed on the

upper levels and a private outdoor space with a terrace if placed on the ground floor.

In detailed scale that is not shown in this thesis, dimensions of all entrances, paths, corridors, doorways and other spaces should be designed in a way making the spaces accessible for the residents with mobility disabilities *(Appendix B, all figures)*. Moreover, again with reference to these principles, changes in materials, changes and contrasts in colors, and changes in textures are important features for the perception of the elderly to make them identify and distinguish the spaces easily.

7.4.5 Features of the Building Designed with respect to the Principles of Universal Design

In order to evaluate the project according to the principles of universal design, the features can be listed as such:

1. Equitable use.
The project presents a residential environment that is capable of accommodating all types of users who may have a disability or not. In addition, for non-residents, in other words people living in the neighborhood or their families may also have an access and visit the building.

2. Flexbility in use.
The program is designed in order to respond to diverse needs of all users. For example, the building provides three different dwelling options for people in order to allow them to choose the appropriate one. Moreover, the building provides public uses without eliminating the privacy of the individual. One can rest in his/her private flat whereas he/she can socialize with others in common spaces.

3. Simple and Intuitive Use.

The spatial organization of the project is simple. The mass is formed with the juxtaposition of the spaces along a corridor in a linear order. The corridor is loaded with the dwelling units only on one side: facing southwest. The dwelling units' doors are recessed from the corridor for indirect entrance. The walls of the entrance doors have niches for the residents, to personalize their own unit entrance with flowers or any other objects. The color and material changes are possible to make the three dwelling blocks simply discernible on the facade. Circulation of the building that forms galleries on the upper floors is also simple and clear.

4. Perceptible Information.

With its glazed facade and galleries on the upper floors, the main circulation spine gives opportunity for communication between the users. The greenhouses as the two social centers help the residents to orient themselves in the building. It can be said that the architectural language of the building gives 'perceptible information'. In detailing, any visual (signage) and sensory (sound system) equipment, differences in color, differences in texture, niches, and recessed doors on the walls of the dwelling entrances will give 'perceptible information' to the residents.

5. Safety (can be related to tolerance for error).

The entrance to the site and the building should ensure safety. Outside, the buffer zone separates the site from the busy boulevard (Sekizinci Cadde). No entrance is allowed from the boulevard. Security control room is designed to protect entrances and exits of the entire area. The fire exits of the building and a shelter on the basement floor are provided for emergency situations.

6. Low Physical Effort.

Simple circulation lines, lifts for the vertical circulation, and the resting spaces on the circulation routes help the residents to use low physical effort. Beyond that, putting ramps in level changes will provide users access with low physical

effort particularly in the inclined sites. In addition, doors and windows will be designed in accordance with the principle of ‘low physical effort’.

7. Size and Space for Approach and Use.

Dimensions of the spaces are appropriately arranged for people who may have disability. The heights (for example, washbasins) and the widths (for example, corridors) are suitable for the wheelchair users.

CHAPTER 8

CONCLUSION

The growing interest on 'ageing and its process' forced professionals to concentrate on issues associated with the fact of ageing one of which is 'housing and environment of the elderly'. In most countries, new types of residential environments have been created as alternatives to respond the changing demands of the older people. However, as stated, although Turkey is facing the same problem, the only alternative type of accommodation for the elderly is institutional living, rest home models with or without care units most of which are designed as conventional projects.

In this thesis, the main considerations in developing a living environment for the elderly in Turkey are put forward. Two significant issues were emphasized to indicate these considerations. First one is universal design and its principles. The other one is the search for the attributes of a living environment for the elderly that give a homelike character. The attitudes of Turkish elderly towards communal living are also evaluated.

Ageing process is a kind of adaptation to physical and social changes. The adaptation phase creates relationship between the behavior and the environment. In this relationship the researchers mention the domains of quality of life that is associated with principles of universal design.

The provision of accessible and successfully operating environments for equality of all users and their changing demands throughout their life span is the major concern of universal design. The problems of all ages, abilities and sizes are taken into account in universal design approach. Since people get older, their health and ability status may change. To provide accessibility to

older people in their living environments, the physical characteristics of housing for the elderly become vital. With the purpose of providing accessibility, universal design examines how to reduce physical and social barriers in the environment. Seven principles of universal design help to create environments meeting the needs of people with cognitive, visionary, hearing and mobility impairments. Hence, universal design principles play a key role in design of elderly housing to match the functional abilities of older individuals. Every designer should take these principles into account during the design and construction process.

Reminding that housing the elderly is a kind of social process, the physical environment should be planned responsive to the social and physical facts of ageing. In this thesis, an attempt was made to provide a responsive and inclusive housing design for the elderly regarding person-environment as an integral unit. While doing this, the domains of quality of life: privacy, autonomy, independency and safety of the users were evaluated as design inputs. The quality of life is defined as the interaction between the individual and the environment. It is described in terms of personal control that can be exerted by the individual over the environment. Facilities of elderly housing must provide adequate solutions in order to improve the quality of life of their residents.

In this thesis, the features that are designed as a good fit between the elderly and their residential environments can be listed as:

- Being capable of accommodating all types of users who may have a disability or not.
- Responding to diverse needs of all users with three different dwelling options for people in order to allow them to choose the appropriate one.
- Private flats (for privacy) and common spaces.
- The simple spatial organization.

- Provision of natural lighting with large glazed facades.
- Provision of communication by galleries and the main circulation spine.
- Provision of easy orientation, simple circulation lines, lifts for the vertical circulation, the resting spaces on the circulation routes.
- Ensuring safety for the elderly by creating a buffer zone between the complex and the busy boulevard.
- Use of appropriate dimensions in the spaces for people who may have disability.

Autonomy, privacy and independence are the three significant features in the provision of quality of life. Autonomy was described as the freedom of action. The physical and organizational environments are the crucial factors in the provision of autonomy. As stated in the related chapter, access to personal space (feature of privacy) encourages social interaction: those residents having their own room make more friends. This is very important for Turkish elderly. Because according to Turkish elderly, social aspects of a facility and the opportunity to establish social networks are the most important features in communal living.

Since there will be cultural differences for the concept of communal living, it is found valuable to evaluate the attitudes of Turkish elderly towards communal living. It is clear that the social conditions of the traditional Turkish family life in Turkey are rapidly changing with the modernization of life-styles, and it has inevitable effects on Turkish people and their family lives. However, most of the old Turkish people live in residential housing in the community. The researches have shown that Turkish elderly had negative attitudes toward institutional living in general, however, they became more favorable with urbanization and age. In other words, urbanization and increasing age are two important factors in the change of the attitude of the Turkish elderly towards institutional living. Quality of the service is another factor affecting the attitude. If various communal living patterns provide good services, the

Turkish elderly will be more favorable to live in and make choice of such environments and assess their living conditions more positively.

Since Turkish elderly have a large social network and frequent social contact with others, the decrease in social contacts causes loneliness for them. For this reason, the design of a residential setting for Turkish elderly should comprise facilities enabling socialization. Hence, the neighborhood of the settlement also becomes vital for the overall design. That is the reason why the project was designed at this particular location and site with its proximity to various facilities.

The target age group was determined as people at the age of 65 and over. The project's site was selected close to the facilities and located in a housing district not only to support and promote interaction with the community but also provide easy access to public and commercial spaces and to the central parts of the city.

As part of study, several types of housing for seniors were defined which depend upon the senior's health and financial situation. The major three types are, independent elderly housing, assisted elderly housing, and institutional elderly housing. Assisted living type was introduced as an alternative to Turkish examples.

Although there is no standard definition for assisted living, it is defined as a kind of transition between independent living and institutional care. This type usually offers individuals or couples private units that consist of a bedroom with bathing facilities and a small cooking area. Residents also have access to a full-service dining room, a medical care service, and a variety of other spaces for recreational and social activities.

The researches indicate that one of the most important charcteristics of an assisted living type is its homelike, residential character and appearance. Older people become more favorable to this type of housing because of conceiving it

more homelike. Supportive protection, human scale (for human perception and orientation), and naturalness (informal architectural character) are the features that promote homelike character to an assisted living housing. Massing, image, scale, nature of rooms, interior and exterior materials, details and textures, lighting, furniture and fixtures are the material issues that will attribute homelike character to a design. Provision of security and safety, belonging, privacy, autonomy and control, choice, familiarity and self-projection are the other issues attributing homelike character to a design.

Analyzing the built examples shed light on the project with an examination of their types, programs, space organizations, scale, architectural languages, material uses, etc. For instance, it is examined that the projects are formed around the articulation of different blocks that can be distinguished on the third dimension. Some of them provided a common spine for circulation and all of them were in human scale with their low heights. These features are evaluated as providing easy orientation, perception and legibility for the users. For this reason, they are considered in the space organization of the project.

To summarize the proposed project, first of all, the major intention was to create a home-like environment for the elderly. In the program, there are dwelling units each of which comprised a living room, a bedroom, a kitchenette and a bathroom. Provision of solar orientation is important for the psychological well being of the elderly. For this reason, living rooms and bedrooms are organized facing southwest. Moreover, each unit has a terrace on the ground floor and a balcony on the upper floors oriented to southwest direction. The ground floor units also have direct access to their private gardens from their terraces. Different kinds of common activity spaces are designed to support and enhance socialization that are open to the neighborhood uses at the same time.

As for the design, simple and clear organization of spaces and facades are proposed to ease the orientation of the users and way finding. The dwelling

units are articulated in a linear order along the one side of a corridor. The other side is left for common uses. The project is designed with the purpose of creating functional ties between the spaces.

Housing environments have influence on the life satisfaction of the older people. Hence, the functionality of the design becomes the primary concern. To provide maximum functionality the program is prepared to meet changing demands. Hierarchy of spaces, public uses and privacy, flexibility in circulation spaces, and expanding points on circulation spaces (to transform the space according to the activity that will take place) for activities are considered during the programming and organization. Apart from those, particularly the dimensions of entrances, ramps, staircases, corridors, and lifts are designed in light with appropriate accessibility standards, which are vital in every design for an equitable use. Adequate daylighting, acoustics, thermal comfort, security are other criteria to be evaluated during the design and construction process in the project. In finishing and detailing phases, color and fabric will also be considered as important features providing better perception and orientation within the building.

As seen in the beginning, statistics of demographics indicate that the subject of 'housing the elderly' should be studied more deeply in order to provide adequate sheltering for old people. In general, it can be claimed that different kinds of problems occur according to the age groups of the elderly. The physical conditions of the elderly inevitably change in ageing process. It is apparent that these different problems require variety of responses and solutions. However, as stated before, the existing elderly housing responding to the needs in Turkey are very limited in number and in type as well. That's why, the alternatives offered for housing the elderly remain inefficient. This study was an attempt to reflect an example of how elderly environments can be designed responding to the demands in a 'homelike' environment and with some some institutional features as well.

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APPENDIX A

UNITED NATIONS PRINCIPLES FOR OLDER PERSONS

Independence

1. Older persons should have access to adequate food, water, shelter, clothing and health care through the provision of income, family and community support and self-help.

2. Older persons should have the opportunity to work or to have access to other income-generating opportunities.

3. Older persons should be able to participate in determining when and at what pace withdrawal from the labour force takes place.

4. Older persons should have access to appropriate educational and training programmes.

5. Older persons should be able to live in environments that are safe and adaptable to personal preferences and changing capacities.

6. Older persons should be able to reside at home for as long as possible.

Participation

7. Older persons should remain integrated in society, participate actively in the formulation and implementation of policies that directly affect their well-being and share their knowledge and skills with younger generations.

8. Older persons should be able to seek and develop opportunities for service to the community and to serve as volunteers in positions appropriate to their interests and capabilities.

9. Older persons should be able to form movements or associations of older persons.

Care

10. Older persons should benefit from family and community care and protection in accordance with each society's system of cultural values.

11. Older persons should have access to health care to help them to maintain or regain the optimum level of physical, mental and emotional well- being and to prevent or delay the onset of illness.

12. Older persons should have access to social and legal services to enhance their autonomy, protection and care.

13. Older persons should be able to utilize appropriate levels of institutional care providing protection, rehabilitation and social and mental stimulation in a humane and secure environment.

14. Older persons should be able to enjoy human rights and fundamental freedoms when residing in any shelter, care or treatment facility, including full respect for their dignity, beliefs, needs and privacy and for the right to make decisions about their care and the quality of their lives.

Self-fulfillment

15. Older persons should be able to pursue opportunities for the full development of their potential.

16. Older persons should have access to the educational, cultural, spiritual and recreational resources of society.

Dignity

17. Older persons should be able to live in dignity and security and be free of exploitation and physical or mental abuse.

18. Older persons should be treated fairly regardless of age, gender, racial or ethnic background, disability or other status, and be valued independently of their economic contribution.

APPENDIX B

RECOMMENDED SIZES AND DIMENSIONS FOR INTERIOR DESIGN

The figures given in this part represent some anthropometric data for the formulation of the interior spaces. The widths of the circulation spaces in the dwelling units and common actvitiy areas and between these two should be designed suitable for the people with any disabilities. Moreover, negotiation of the openings, the height of the kitchen and bathroom elements, any other shelves or cupboards should be considered taking account of the wheelchair users. In the first set of figures, the suitable dimensions for the circulation of wheelchair users are given.

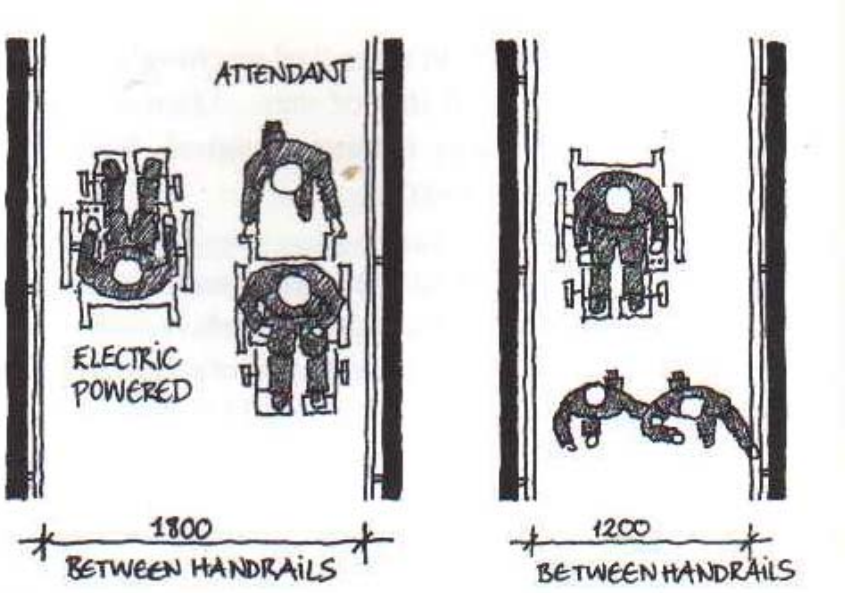

Figure B.1. Recommended widths of corridors for two-way and one-way traffic.[124]

[124] David G. Robson, Anne-Marie Nicholson, and Neil Barker, Homes for the Third Age : a design guide for extra care sheltered housing,London : E & FN Spon, 1997, p.30.s

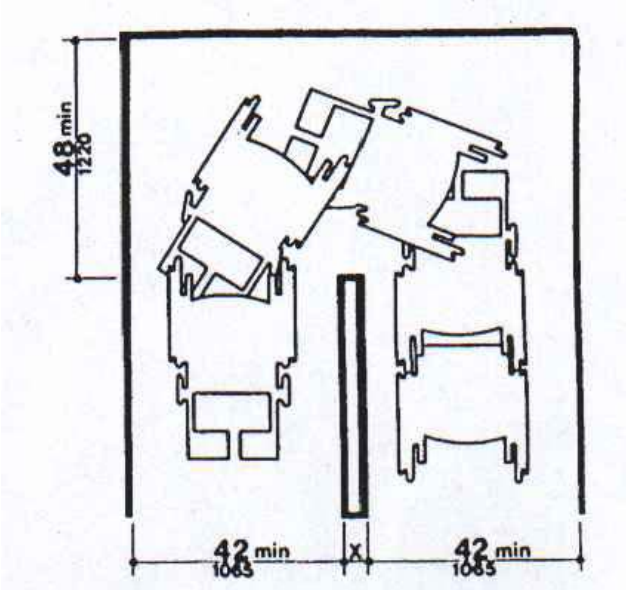

Figure B.2. Turns around an obstruction. [125]

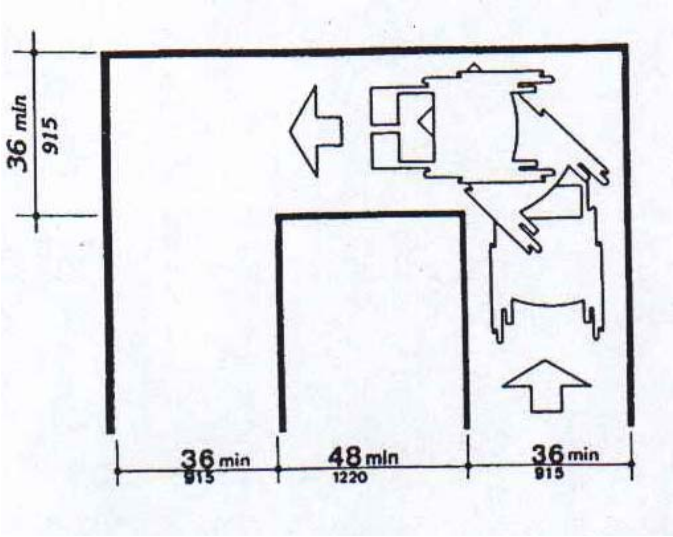

Figure B.3. 90 degrees turn. [126]

[125] Robert Grist, [*et al.*], The Accessible Space Team. Accessible Design Review Guide: an ADAAG guide for designing and specifyig spaces, buildings, and sites . New York : McGraw-Hill, c1996., p.319.
[126] Ibid.

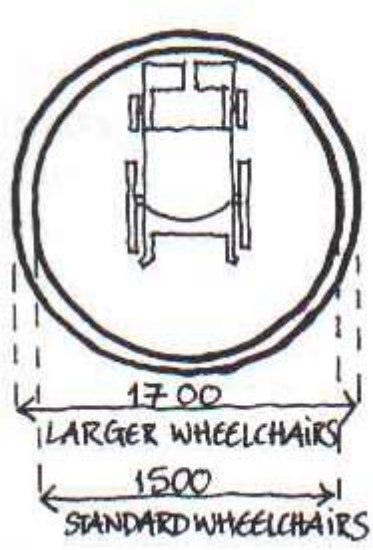

Figure B.4. Wheelchair turning circles.[127]

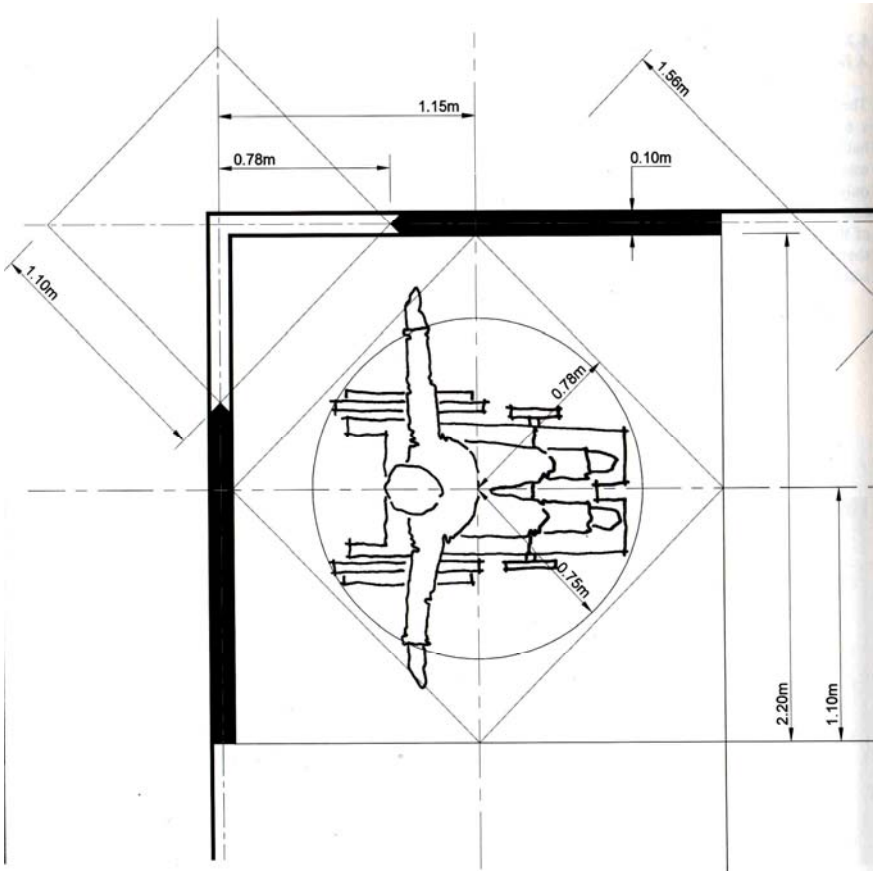

Figure B.5. An activity cell.[128]

[127]David G. Robson, Anne-Marie Nicholson, and Neil Barker, Homes for the Third Age : a design guide for extra care sheltered housing,London : E & FN Spon, 1997, p.30
[128] Ibid., p.142.

The data given in Figure B.4. and Figure B.5. are vital not only for the widths of the corridors but also for the distances left between the walls and furniture in any space.

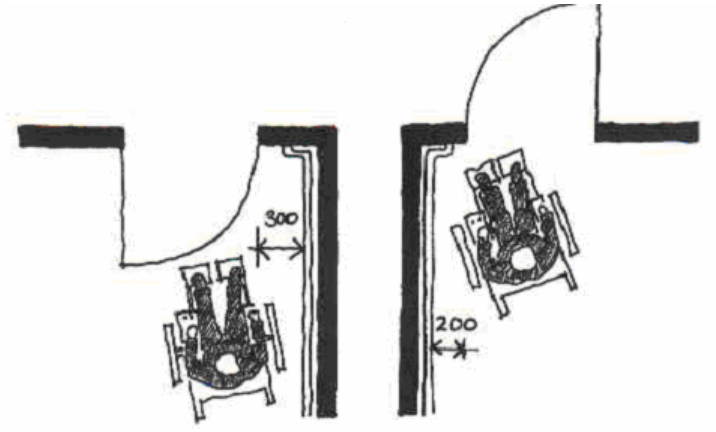

Figure B.6. Negotiating door openings in a wheelchair. [129]

Figure B.6. shows that between the door and the wall, a minimum of 300 mm space is needed if the door opens inwards, and a minimum of 200 mm space is needed if the door opens outwards. It is important to notice that grab bars are fixed on the walls for users with other mobility impairments.

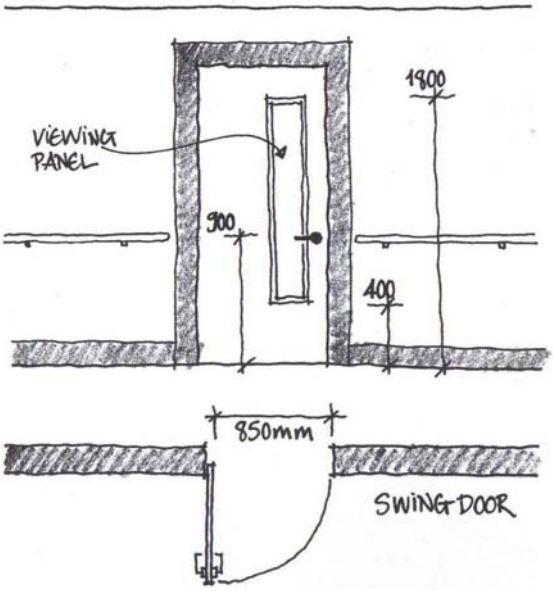

Figure B.7. A swing door. [130]

[129] Ibid., p.30.
[130] Ibid., p.87.

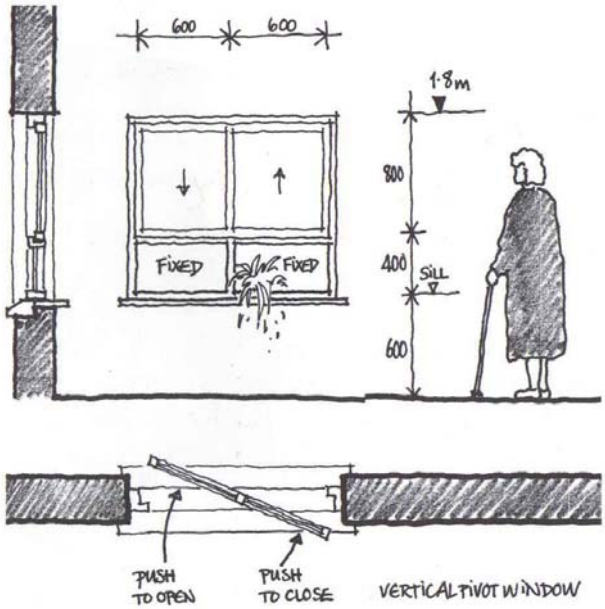

Figure B.8. Vertical pivot window.[131]

In Figure B.7., the necessary door opening is indicated as minimum 850 mm. and the necessary height of the grab bar on the wall is indicated as 900 mm. Figure B.8. shows a pivot window as a model for ease of use. Figure B.7. and Figure B.8. both show the heights needed for viewing.

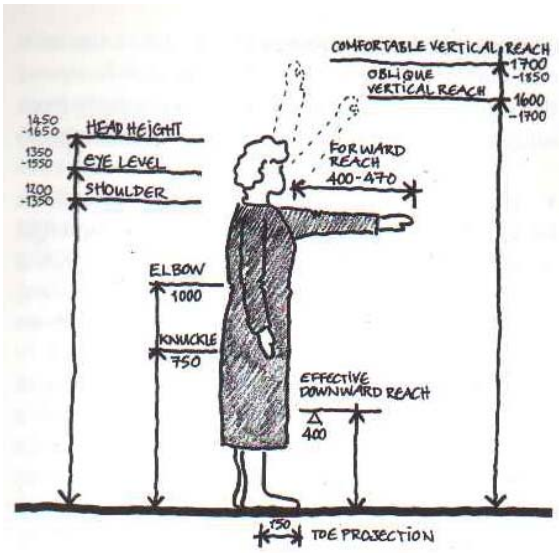

Figure B.9. Human body accessibility measures. [132]

[131] Ibid., p.89.
[132] Ibid., p.28

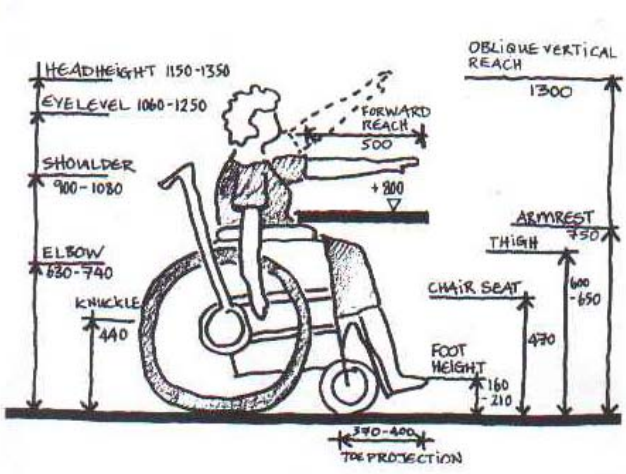

Figure B.10. Accessibility measures for a wheel chaired human body. [133]

Figure B.9. and Figure B.10. show the levels that a standing person and a person sitting on a wheelcahir can reach. These data are important particularly in the design of a kitchen and a bathroom which include washbasins and shelves.

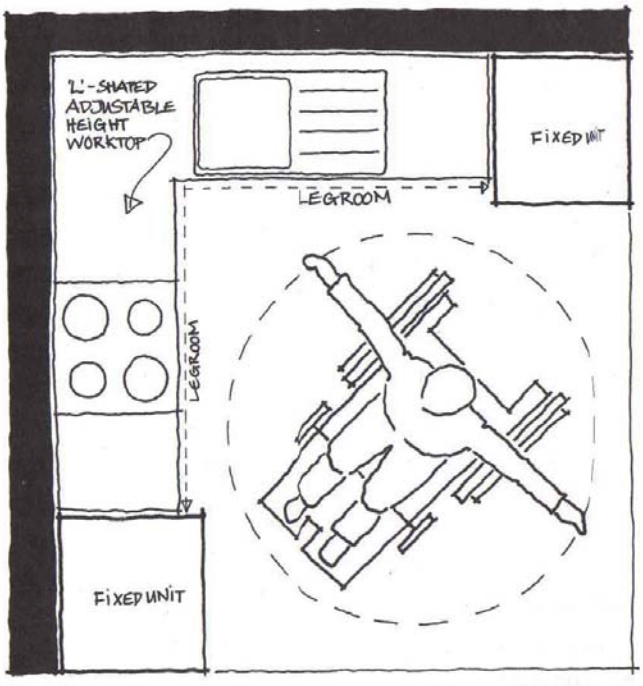

Figure B.11. 'L' shaped kitchen layout. [134]

[133] Ibid.
[134] Ibid., p.85.

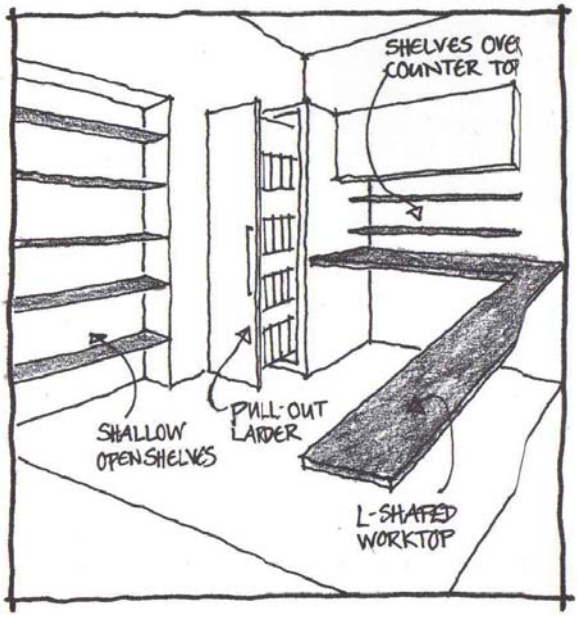

Figure B.12. Basic kitchen elements.[135]

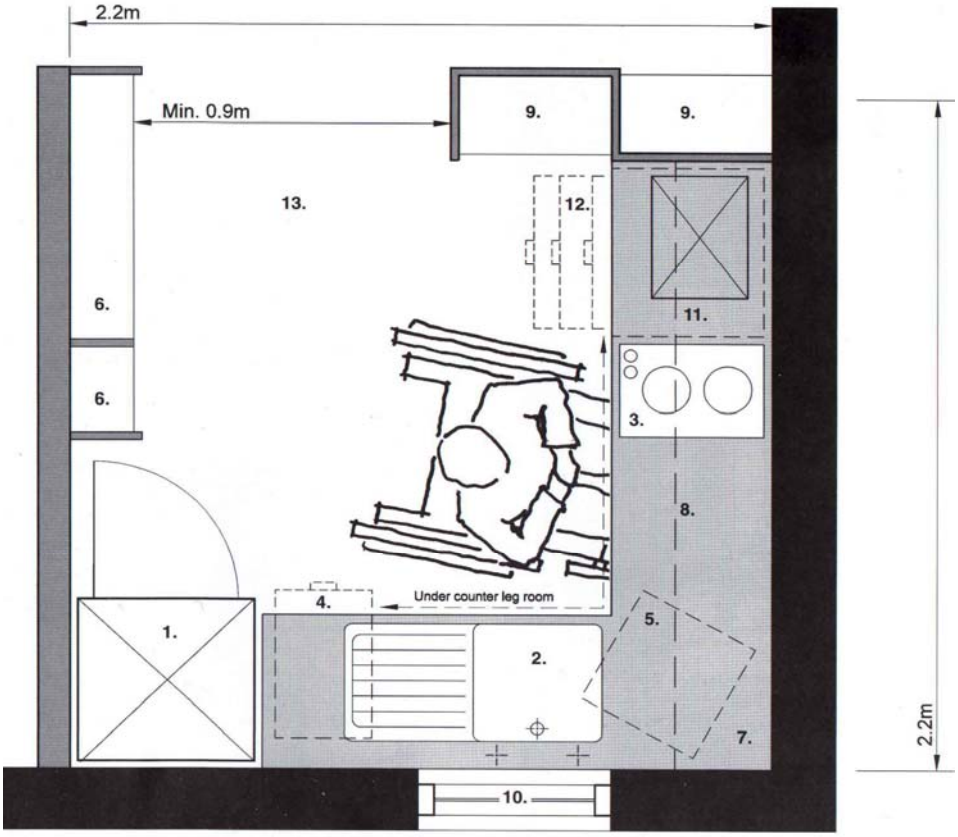

Figure B.13. A kitchen model. [136]

[135] Ibid.

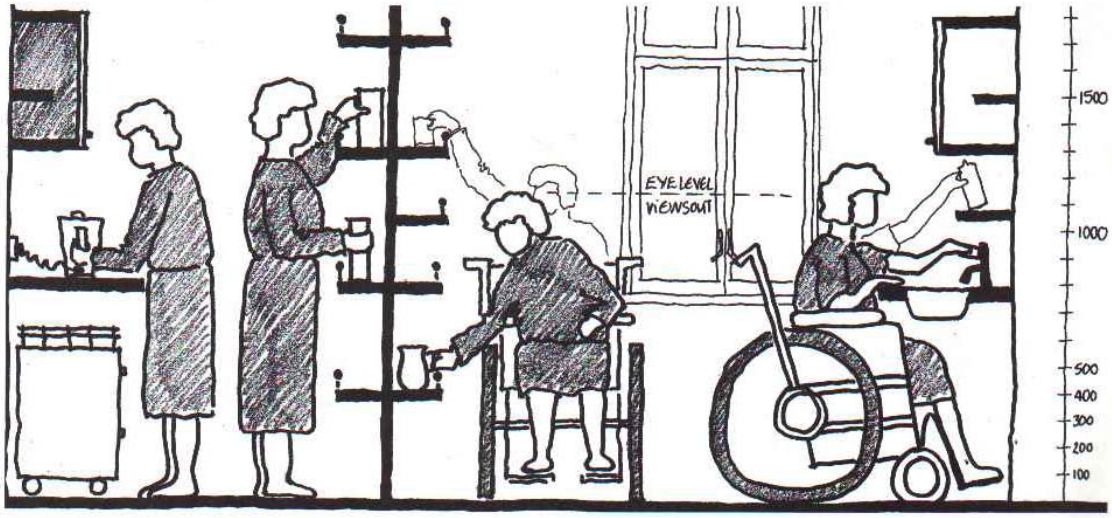

Figure B.14. Ergonomic data in a kitchen design.[137]

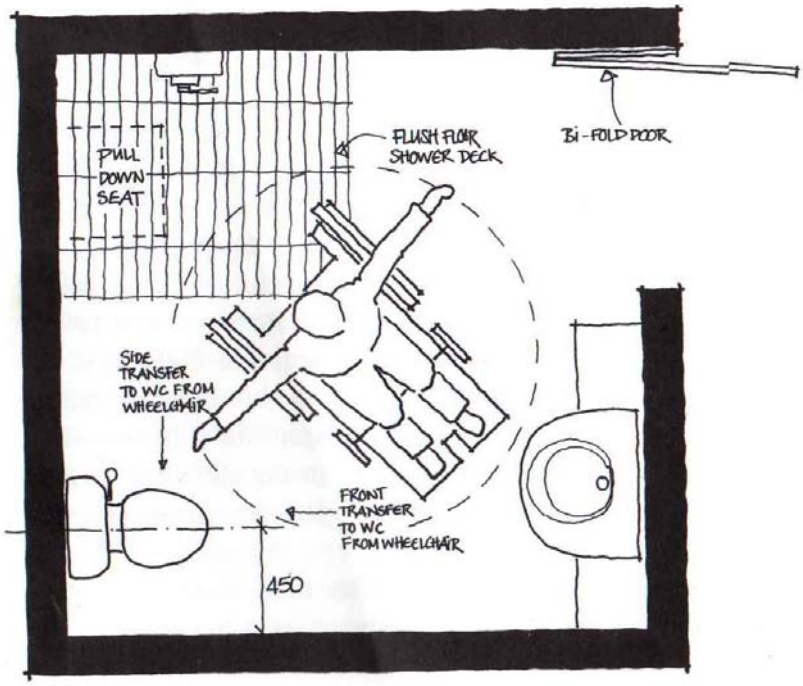

Figure B.15. Space data for a bathroom.[138]

[136] Ibid., p.145.
[137] Ibid., p.29.
[138] Ibid., p.82.

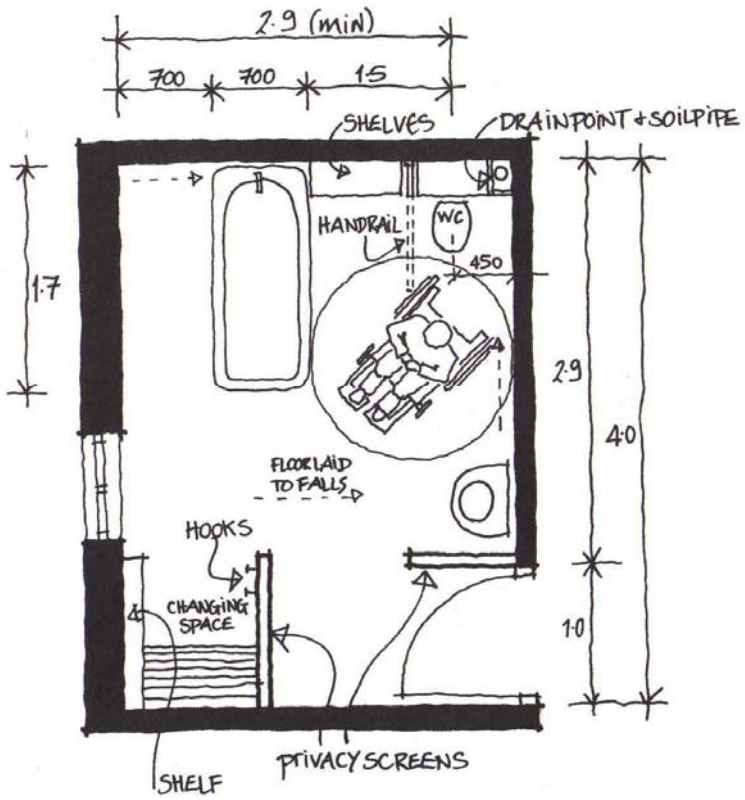

Figure B.16. Space data for an assisted bathroom.[139]

[139] Ibid., p.96.

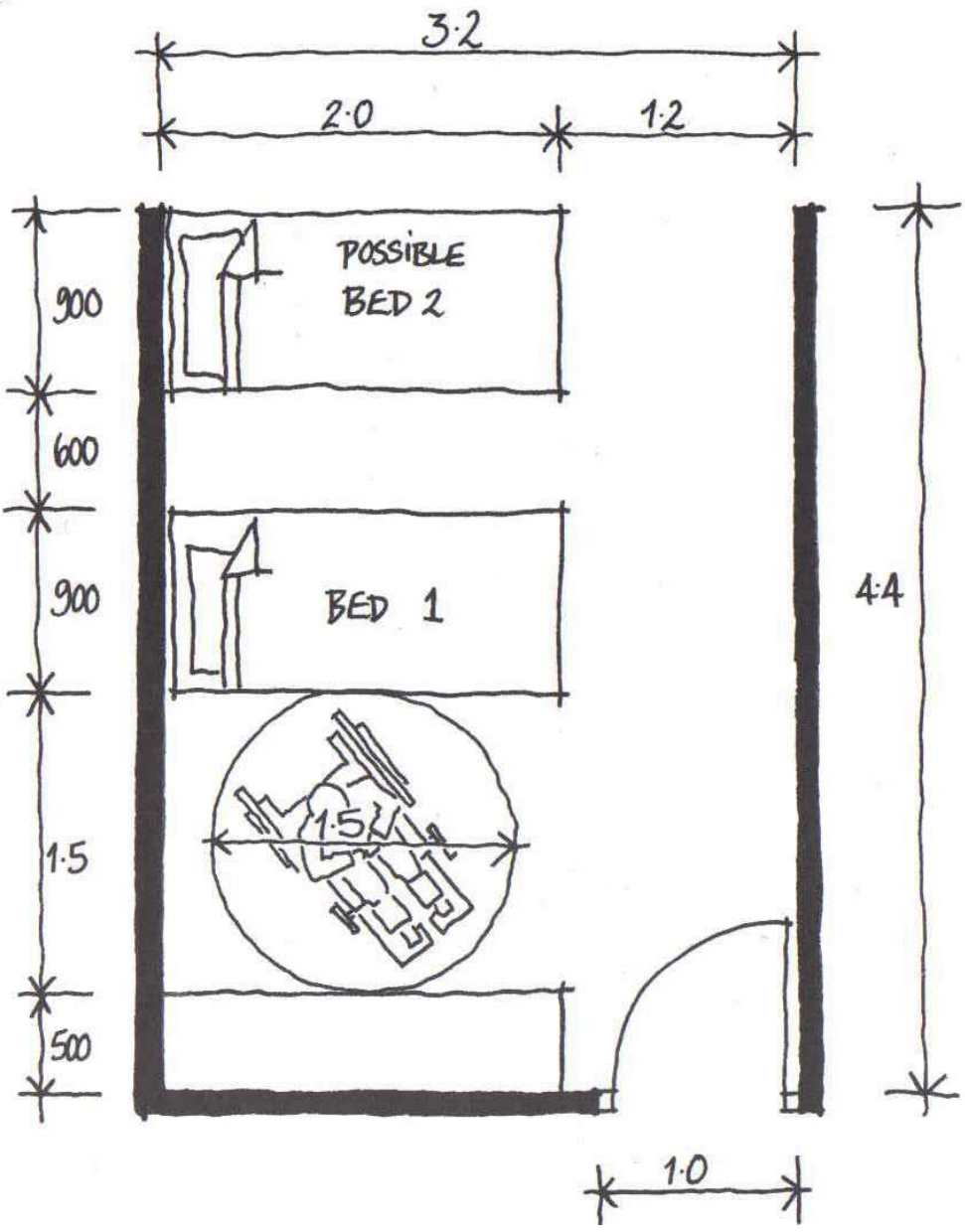

Figure B.17. Space data for a bedroom.[140]

[140] Ibid., p.81.

APPENDIX C

PHOTOGRAPHS AND DRAWINGS

This part includes photographs from site, site plan, floor plan, section, facade, dwelling unit plan drawings and space area tables of the project. However, site plan, floor plan, section, facade, dwelling unit plan drawings and space area tables of the project can be accessed from the department's library.

1. Photographs
2. 1/1000 and 1 / 500 scale site plan
3. 1/200 scale ground, first, second, basement floor plans and roof plan
4. No scale plans with space area tables
5. 1/200 scale sections
6. 1/200 scale facades
7. 1/50 scale dwelling unit plans

Figure C.1. The residential nighborhood.

Figure C.2. The main vehicle access: Sekizinci Cadde and the commercial stores along the boulevard.

Figure C.3. Sekizinci Cadde on the western border of the project site.

Figure C.4. Dokuzuncu Cadde parallel to the north side of the project site.