The Role of Landscape in Achieving (Ageing in Place) within Multi-Story Housing Projects

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Abstract. The world is experiencing an increase in population leading to an increase in the percentage of people over the age of 65 years, so the aging of the population will not be confined to developed countries only, but also to developing countries. During the next five decades, more than 80% of the elderly will live in civilized cities and regions, due to the direct impact of urban areas on the quality of life for older people to spend most of their time in their local neighborhoods, and therefore they are sensitive to aspects related to the urban environment surrounding them. In order to assist the elderly to practice their daily lives in an appropriate way and support their aging in the place, the research will focus on the elderly in multi-story housing projects and how to work on, connecting them with nature within these complexes and help them in the successful completion of their daily activities. To achieve this the concept of (aging in place), will be addressed and given the role of landscape that can play in support of aging in place for the elderly. So the research came to study the possibility of achieving this concept in multi-story housing projects, where the concept of (aging in place), and the possibility of achieving it by landscape. It will be studied through an extensive literature review for addressing a holistic theoretical framework for indicators related to landscape and how they contribute to achieve aging in the place at the level of multi-story housing projects. Finally, the research reach the locally possibility of benefiting from that framework and diagnosing the obstacles to achieve those possibilities to provide landscape that can assist the elderly in multi-story housing projects achieve ageing well in a convenient and comfortable place for this important segment of the society.

1. Introduction
The world is witnessing a population increase leading to an increase in the percentage of the elderly people over the age of 65 years, the aging of the population will not be confined to developed countries only, but developing as well that during the next five decades. More than 80% of the elderly will live in urban cities and regions, so interest in the elderly category emerged through many organizations, especially the World Health Organization, which launched many initiatives and put forward many projects that help in creating age-friendly cities for the elderly by adopting eight basic areas that contribute to achieving this.

Given the expected increase in fertility rates in Iraq and the increase in the ages of the elderly (65 years) in Iraq by 2025, where the percentage will reach about 3.3% of the population of Iraq (estimated at 31.9 million in 2009), and may reach 4.2% by the year 2040 [1].

So the research came to study how to help the elderly and achieve aging in place, especially about the requirements of the surrounding environment, where studies indicate the direct impact of urban areas on the quality of life for older people, and given that they spend most of their time in their local neighborhoods, then they are sensitive to every aspect related to that environment especially landscape, which is one of the eight dimensions proposed by the World Health Organization that
support the elderly in their environment. So the research will address the role of landscape in achieving aging in the place for the elderly, leading to the diagnosis of vocabulary that links the elderly The nature and the surrounding environment to produce indicators of how to achieve them and benefit from them locally, especially in multi-story housing projects.

2. Ageing in Place

Age Friendly Cities has produced many concepts that have been linked directly and indirectly to the three dimensions of sustainability (social, economic and environmental) through the focus on all generations, not one generation or one segment. From this perspective, the so-called inclusive neighborhoods and the use of technology were suggested as one of the factors that apply the concepts of architecture to friendly cities for the elderly, including aging in the place [2], where aging in place was defined as "living within society and feeling independent". While other studies indicated that aging in place (is the ability to live in society or the home safely, independently and comfortably regardless of age, income and level of capabilities) the relationship of aging in the place to the environment, whether physical or social, to achieve a certain level of activities. [3], live inside Society feels independent and self-reliant (ibid., P. 2) As For WHO it is reported to be the ability to live in a home and community in a safe, independent and comfortable manner, regardless of age, income and ability level [4].

The concept of aging in place was achieved in age-friendly cities by providing a supportive environment that enables its residents to live effectively with their extended families (children and grandchildren) in residential neighborhoods and provide opportunities for participation in society, and this could mean modifying existing spaces to the required spaces by adding additional services to preserve the life value.

The WHO initiative included eight basic and sub-domains that directly affect age-friendly cities from the point of view of the elderly, including the following:

- Transportation: The costs of public transportation included the successive timing of trips and their frequency, their coverage of all areas of the city, and the ease of access to services through public transport, and included some design standards that were linked to achieving the principles of safety, ease of access (Accessibility), ease of vision and maintenance.
- Housing: it was emphasized on affordable housing units and their proximity to services, the proximity of services and the proximity of maintenance points, as well as the importance of providing elements of safety, comfort in that together, and the ability of housing units to amend and at affordable and available costs and knowledge of the needs of the elderly.
- Landscape and buildings: included the design requirements of the landscape of the elderly
- Social participation: easy access to social activities through public transportation, the diversity of social activities to attract a large segment of the elderly, in order not to be exposed to the risk of staying alone.
- Social inclusion and inclusion: Services for the elderly are usually provided by volunteer teams, and emphasize that the importance of raising awareness of the needs and requirements of the elderly
- Community participation
- Communication and informatics
- Community and Health Services

The literature has also indicated important dimensions of expressing aging in a place (sense of identity, social relations, independence of choice)

Through what was presented, it becomes clear the importance of the environment surrounding the elderly, so the focus will be on Landscape, as it is one of the main dimensions that the World Health Organization indicated that it contributes to achieving and supporting ageing in place, so the previous literature will be searched to reach the most important vocabulary and indicators that need to be achieved in the Landscape to reach an external environment that supports ageing in place.
3. The Literature Review:

Studies have indicated the relationship of ageing in place with three dimensions (environment, society, home) to achieve the daily activities of the elderly, and that attachment to the place comes through maintaining the relationship between daily activities and residential neighborhood through the approach of accessibility, familiarity and communication to achieve daily social activities and societies characterized with familiarity and communication. [5] Therefore, ageing in place can express a sense of identity, social and independence relationships of choice.

Another study also pointed to the association of ageing in place with the social sciences and health sciences by providing a social environment surrounding the residents and a tangible physical environment which changes according to the wishes, needs and events of the elderly by providing a supportive environment for the elderly that enables its residents to live effectively with the family and the neighborhood and society, and providing opportunities for participation in society, i.e. effectively including the elderly through the infrastructure system that meets their needs, taking into consideration political, social, cultural, and economic factors and their role in finding change and developing new strategies for a developed community [6].

Another study also presented the dynamics of the relationship between aging and the environment that was studied before presenting what is known as (the science of aging) and presenting the sensory perception model for the elderly about the environment.
- Micro system is the direct environment of the person
- Meso system, such as family, home and environment
- Eco-system (ecosystem) related to the neighborhood and residential complexes (which the elderly interact with and adapt on a daily basis [7].

The study have mentioned that ageing in place includes the interconnection between the science of aging, the social sciences and housing where the study sees that ageing in place is associated with individual factors (education, profession, income, gender and race), the physical environment (The residential environment), and the social environment (social activities and their role in obtaining familiarity and communication societies to obtain the identity of the residential neighborhood) There are also support services (a supportive infrastructure organization such as a transportation organization), where the study sees that one of the most important aspects of achieving ageing in place is the need of integration of health and social services [8].

The study of (Gavin J. Andrews) pointed to the association of aging in place with residential neighborhoods through a wide range of human and social activities and through three aspects that include attachment to place, spatial experience and spatial identity and reliance on the hypothesis of linking the place with society with an evaluative relationship through the belief (It is the human being who activates the place) and (the place is the one that creates people) and there are characteristics that affect the emotional feeling of a person around the place by evoking a wide range of basic feelings starting with positive feelings (happiness, reassurance, sufficiency, contentment, excitement) all the way to the negative feelings such as (fear, anger, loss, and sadness) in addition to many other meanings and feelings that the recipient can conjure up and that are related to space and social classification and that can be evoked by repeating the experience in the place during time, to apply daily activities that can develop identities and relationships with the place and that the physical presence of the elderly is in place [9].

As for (Merino, et al), he pointed out that ageing in place reinforces the values of self-reliance, independence, communication and collective support by family and friends, as this concept was linked to the environment, social support and home care, and recently added to it the technological aspect, as the study indicated the necessity of achieving modification and changes in the daily environment of the elderly in a way that enhances social life, physical and psychological health and achieving independence in daily activities. The study indicated the importance of outer space for the elderly in the residential environment, and that aging may limit the activity and movement of the elderly, because environmental barriers do not provide accessibility for the elderly, path pavements and lighting in general must have an impact on the ability of the elderly, their general activity and quality of life [10].
While the study of (Bigonnesse and Chaudhury 2019) proposed ways to achieve the concept of aging in the place in several ways, including: [11]

Social: it must take place (empowering the elderly, social inclusion, social participation)

Phenomena: It should be done (enhancing the sense of belonging to the place, identity, time, attachment to the place, the meaning of the home emotionally and emotionally) (home)

Ecology: Considering older persons a dynamic part of the environment.

The study also presented the factors that affect aging in the place, namely:

1- Individual factors include: (controlling daily activities, independence, privacy, spatial and temporal affinity, residential neighborhood is part of the identity of the elderly, repeating the activity periodically creates spatial affinity at the level of residential neighborhood, which in turn leads to place attachment).

2- Built environment: must achieve (independence, accessibility, connectivity, mixed use, encourage walking).

3- Support and social interaction through assistance in adapting to health problems, social participation through peer support, direct contact between friends and neighbors, participation in physical activities, helping to feel safe, social inclusion and community participation through (giving back) such as volunteering and participating in intergenerational activities, social communication and social participation through diversity of events and the distance and proximity of the site to events and easy access to destinations.

4- Daily activities: where the study sees that the services at the level of the residential neighborhood include daily activities (groceries, banking services, post offices, pharmacies, health clinics, centers for senior citizens, public transportation systems) and these activities should be designed within easy walking distances.

5- Transportation: Transportation is an important aspect of the experience of aging in place. It is a practice designed for how to experience the world symbolically, financially and emotionally. It structures the experience of the place. It is possible for the elderly to describe the residential neighborhood in which they live based on the levels of mobility in the built environment and access to social services.

From the previous literature review, it is possible to summarize what has been presented in previous studies carried out by the elderly in landscape, especially in housing projects, because they represent the primary focus achieved for these activities as shown in the table below.

3.1 Extracting what was presented in the previous literature review

From the previous literature review, it is possible to summarize what has been presented in previous studies carried out by the elderly in landscape, especially in housing projects, because they represent the primary focus achieved for these activities as shown in the table below.

| Study author | Main topic |
|--------------|------------|
| 1 Low et al. 2019 | The study proposed the relationship between the trilogy of home, community and the environment the attachment to place comes from daily activities that must provide the following: proximity accessibility familiarity connectivity Dimension for ageing in place Place attachment Sense of identity Social relations Choice independency |
| 2 Sun, et al. 2017 | The relationship between gerontology and environment throw: (Micro system) Person direct environment (mesosystem (ecosystem) Home and family It is related to the housing project and the neighborhood, with which the elderly interact and adapt on a daily basis |
| 3 Who 2007 | The study presented 8 basic and sub domains that affect aging in Social inclusion Social participation Services for the elderly are usually provided by volunteer teams that |
| 4 | Dye et al. 2011 | Relationship between gerontology, social sciences, and housing. | Individual factors and housing environment. |
|---|---|---|---|
| 5 | Gavin j. et al. 2015 | Requirements for activities in the landscape: Space requirement and social requirement. | Environment requirements and their effects on daily life. |
| 6 | Wen et al. 2018 | The study divided patterns of activities in landscape into: Walking activities, sitting activities, physical activities, and gardening activities. | Cycling activities and their impact on physical health and mental health. |
| 7 | Bigonnesse et al. 2019 | Factors affecting aging in place: Individual factors, built environment, and support and social. | Independence and support for active aging. |

| Place emphasis on raising awareness of the needs and requirements of the elderly. | Presenting the modern technological and technical side in meeting the requirements of the elderly at the level of housing units. |
|---|---|
| Community and social services. | Connectivity. |
| Transportation. | Presenting the modern technological and technical side in meeting the requirements of the elderly at the level of housing units. |
| Housing. | Presenting the modern technological and technical side in meeting the requirements of the elderly at the level of housing units. |
| Landscape. | Presenting the modern technological and technical side in meeting the requirements of the elderly at the level of housing units. |
| Social participation. | Presenting the modern technological and technical side in meeting the requirements of the elderly at the level of housing units. |

| 4 Dye et al. 2011 | Relationship between gerontology, social sciences, and housing. | Individual factors and housing environment. |
|---|---|---|
| 5 Gavin j. et al. 2015 | Requirements for activities in the landscape: Space requirement and social requirement. | Environment requirements and their effects on daily life. |
| 6 Wen et al. 2018 | The study divided patterns of activities in landscape into: Walking activities, sitting activities, physical activities, and gardening activities. | Cycling activities and their impact on physical health and mental health. |
| 7 Bigonnesse et al. 2019 | Factors affecting aging in place: Individual factors, built environment, and support and social. | Independence and support for active aging. |
### Table: Interaction

| Interaction | Helping to cope with health problems |
|-------------|---------------------------------------|
|             | Social participation through peer support and direct contact between friends |
|             | Social inclusion and social participation by giving back to the volunteer and participating in intergenerational activities |

| Daily activities | Groceries, banking services, post offices, pharmacies, health clinics, elderly centers, public transportation systems so activities must be within walking distances and easy to access |

| Transportation | Transport is affected by access to social services and the built environment, such as services close to residential units. |

| Physical environment | Maintenance of walking paths, Bus stops, which can lead to less isolation, Ease of movement, which leads to positive health benefits, Increase feelings of well-being through social inclusion and participation |

| Social environment | It can provide social support opportunities for teaching and learning, Work, volunteer and participate in community activities, for example, participate in conducting training through formal or informal courses, Assist the elderly in developing new skills that can create or enhance self-confidence, Coping strategies that allow older people to stay independent as they get older, Promote job satisfaction and a sense of value and benefit within the community |

### 3.2. The needs of the older people in the landscape of residential projects:

Like any other age group, or any other age group that has specific needs where Maslow’s pyramid indicates the main needs, which includes: Psychological needs, safety, belonging, self-esteem and self-actualization. It is considered self-esteem, which reaches the top of the pyramid for the elderly, as the pyramid that indicates the importance of self-esteem through self-realization and here through landscape as a designer, decision-maker, and as a legislative authority on the other hand.

While the Max Neve Pyramid also includes basic needs subsistence, protection, affection, understanding, participation, leisure, creativity, identity and freedom [12].

While other research and studies have shown that there are six factors affect the needs of the landscape affecting aging in place for the elderly, these factors include familiarity, legibility, distinctiveness, accessibility, comfort and safety [13].

The same approach was also discussed by (Talen) [14] who stated that motivation, equality, liveliness, organic perfection, society, and sustainability are good sources of design for diversity. This proposal includes three strategies for implementing social diversity in American neighborhoods. The study stated that social diversity requires an environment that requires design for different types of people, people with different needs, interests and tastes, and this mix requires attention to how people relate and how they feel secure in return, those strategies are mixing, connectivity and safety.

Other research findings (Wen, Et al.,) also showed that despite diverse cultural backgrounds, the elderly show a common preference for landscapes that has specific characteristics: safe, accessible, Physical activities, Social communication and legible landscapes. The research also concluded that despite the type of landscapes seen by elderly in urban neighborhoods, they were sensitive to communication, air quality, noise, and the nature of activities as well as sensitive to changes in seasons, open landscapes, and appropriate shades [15].

Another study also showed that the main characteristics of age-friendly cities are interconnected with the physical and social environments, and the physical environment can include many factors such as: [16]
Walking paths that are well maintained, providing points as bus shelters in addition to bus stops which can lead to a less sense of isolation, in addition, enabling movement and ease of movement, and this may lead to positive health benefits and increased feelings of well-being through social inclusion and participation, while the social environment can provide social support opportunities for education, learning, work, volunteering and participation in Community-based activities, for example, participating in conducting training through formal or informal courses also assisting the elderly in developing new skills that can create or enhance self-confidence and coping strategies that allow older people to remain independent as they age, while enhancing job satisfaction a sense of value and benefit within the community.

There is another approach similar to this where the main health aspects were utilized through exposure to the scene and appreciation for the aesthetic aspects related by reducing levels of stress and psychological fatigue, improving the ability to pay attention, recover faster, and strengthening the physical aspect for the elderly, in addition to strengthening People's well-being, behavioral changes that improve mood and general well-being. [17]

| Table 2. The elderly needs in landscape in residential projects (prepared by the authors) |
|---|---|
| No. | Study author |
| 1 | Maslow 1943 |
| | Psychological needs |
| | Basic needs |
| | Need for shelter |
| | The need for safety |
| | Safety in terms of design, such as stairs |
| | The need for love and attachment (social needs) |
| | Need for family |
| | Need to be connected |
| | The need for pairing |
| | - The need for independence and self-esteem |
| 2 | Max Neve 1992 |
| | The study presented the basic needs from the point of view: |
| | Presence and sufficiency |
| | protection |
| | affection |
| | understanding |
| | participation |
| | comfort |
| | creativity |
| | identity |
| | Freedom |
| 3 | Burton et al. 2006 |
| | Factors affecting the needs of the elderly in landscape and supporting and aging in place |
| | - Familiarity |
| | - Legibility |
| | - Distinctiveness |
| | - Accessibility |
| | - Comfort |
| | - Safety |
| 4 | Low et al. 2019 |
| | A supportive environment for the elderly enables its residents to live effectively |
| | Providing opportunities to participate in society |
| | Active inclusion of the elderly through the infrastructure system that meets their needs |
| | accessibility |
| | connectivity |
| | Mixed land use |
| | Housing density |
| | Encourage walkability |
| | accessibility |
| 5 | Bigonnesse et al. 2019 |
| | The elderly need affordable housing through: |
| | - Community participation |
| | Communication and informatics |
| | Society and health services |
| 6 | Who 2007 |
| | The need for social inclusion |
| 7 | Dye et al. 2011 |
| | The need to integrate health and social services |
| | The main needs are categorized into: |
| | Presence and sufficiency |
| | protection |
| | affection |
| | understanding |
| | participation |
| | comfort |
| | creativity |
| | identity |
| | freedom |
| | mixing |
| | engagement |
| | Safety |
| 8 | Talen 2008 |
| | Aesthetic need |
| | Green outer spaces that can enhance walking, walking and other physical activities |
| | - Gardens that can enhance participation |
| | Green spaces that can support social media, interaction and well-being |
| | Therapeutic gardens and landscape |
| | Aesthetic and attractive green areas |
Communication, air quality, noise and nature of events are also sensitive to change in natural seasons, open outdoor spaces and appropriate shades.

Environmental aspect

- Reducing stress and mental fatigue
- Improving attention to the ability to recover from illness
- Enhance the physical integrity of the elderly
- Behavioral changes that improve mood and general well-being

For the purpose of extracting the theoretical framework for the role of landscape in achieving aging in space for the elderly in multi-story housing projects, and through reviewing the studies, The research found the following:

1- The requirements for aging in the place are fulfilled by:

- Social requirement: where the place attachment and sense of identity, social relations and spatial affinity emerged.
- Physical requirement: This requirement depends on the ability of the elderly to be independent in the choice, in addition to relying on the physical landscape components from the surfaces to finishing and all the space elements, including treatments and landscape furniture.
- Environmental requirement: by linking with nature to achieve containment or to achieve certain scenes, thermal comfort that can be provided through certain treatments to achieve shadows.

2 - The activities practiced by the elderly, which can serve two sides: activities that serve the aesthetic side, activities that serve mental health where it is important that the activities of the elderly vary to attract a large segment of them, as well as the proximity of services within reasonable walking distances and the proximity of maintenance points

- Physical activities: including walking, exercising, meditation and yoga, cycling, shopping activities, daily activities such as going to the pharmacy, banking services, medical clinics, etc.
- Psychological activities: including agriculture, community participation, setting up voluntary courses, acquiring new skills to enhance self-confidence, increasing educational and learning opportunities for the elderly and giving back to the community, integrative activities between generations and not only for the elderly, volunteer work to enhance job satisfaction and a sense of value and benefit Within the community.

3- The needs of the elderly in the landscape in multi-story housing projects:

- Psychological need: where comfort and understanding, participation and support, safety and protection, sufficiency, connectivity, familiarity, clarity, the need to reduce tension and behavioral...
changes to improve mood as well as ease of access to intentions and enjoy natural landscapes at the color level during a change emerged Seasons of the year.

- Aesthetic need: including enhancing the ability to walk, green spaces that support luxury, therapeutic gardens, green spaces with attractive characteristics in addition to the singularity of excellence at the level of treatments and finishes in addition to excellence at the level of outer space.
- Environmental need: The need for air quality, reducing noise levels, visual and environmental pollution, sensitivity of the elderly during changing seasons has emerged, given the need for effectiveness, whether it is an covered or exposed landscape and providing appropriate shades. Mixed land uses as an environmental need can be linked to other aspects that are concerned doing research.

In this way, the research has reached its goal in setting the theoretical framework for the role of outer spaces in achieving the concept of aging in space through both the social, physical and environmental dimensions, achieving the psychological, environmental and aesthetic needs of the elderly and providing psychological and physical activities.

4. The case study
Through the research findings of the vocabulary of aging in place, the research has achieved what can be adopted by the designer in the landscape for multi story residential projects to support older people segment and also there is another benefit of what has been reached where it is possible to review the current housing projects and research in the possibility of applying the vocabulary of the theoretical framework designed to support aging in place for older people.

The Haifa Street project was approved as the road and street network was expanded in 1980 and great attention was given to the development of multi-story housing represented by high-rise apartment buildings and their accompanying commercial and service buildings.

The project (349 hectares) is divided into nine parts, arranged in a strip along the sides of Haifa Street, interspersed with some intersections and roads, but the proposed usage pattern for Haifa Street has changed form and content in addition to the increase in the number of cars that have made the street pavement a public parking space for vehicles for some residents and visitors. In addition to public transport vehicles and cars of state departments employees located in the site.
Figure 2. Reality pictures of the site (B) [prepared by the authors]

For the purpose of benefiting from what was reached in the research from the role of landscape in the possibility of achieving aging in place for the elderly by adopting the three terms that was proposed and the possibility of working to achieve them, the sixth part of the Haifa Street project will be approved and as in Figure (2) where there is space (A) which It is located in front of the British embassy site and the link between the creams and residential buildings area of Haifa Street and space (B). It is surrounded by heritage homes and residential buildings. Below is a review of what must be achieved in spaces (A) and (B) according to the theoretical framework terms for the role of landscape in achieving Aging is in place as follows:

1- Regarding the dimensions of aging in the place:
- To achieve the social dimension: Site (A) and site (B) require the provision of social activities for the elderly that help social interaction and help them adapt to the age and physical difficulties they experience to achieve attachment to place, while the sense of identity is done by including the elderly socially in the project With certain activities, such as the presence of small kiosks or an open-air café, it provides seating places that create comfort and help the elderly to interact, talk and socially participate in society through speaking and communicating. These activities should also be within reasonable walking distances that are compatible with their physical abilities through the components of landscape and signs.
- With regard to the physical dimension: where spaces (A) and (B) require independence in the choice for the elderly by providing more than one activity that leaves them a choice, provided that they are clear and easily accessible with the help of the components of landscape such as terminations, lighting, movement corridors, signs, sidewalks and furniture. Space and consideration for the level teams should be compatible with the requirements of the elderly and people with special needs. Also providing plants that can achieve various options according to the color and shape of the activity required to be formed in addition to the water as landscape component to add dynamics and flow of movement at junctions and axes. And providing screens that raise specific cultural awareness ideas.
- With regard to the environmental aspect, it requires thermal comfort to be achieved through the use of the components of landscape, such as the use plants, particularly deciduous trees in certain places,
that enhance the temperature adjustments in summer and allow sunlight to reach space in winter due to their importance to the elderly, and the use of the water element to mitigate the atmosphere in summer and adding sockets to drink water in certain places. As for the connection with nature, it will be achieved through sitting, walking, watching the natural scenes, or dealing with nature through setting up workshops by specialized organizations and in cooperation with the association overseeing the housing project to help the elderly in psychological recreation on the one hand and supporting them socially on the other hand, such as agricultural operations or setting up Outdoor physical activities in groups that support the elderly.

Regarding the two sides of the activities and needs of the elderly to achieve aging in the place:
A- With regards to the psychological need, space needs to provide protection and safety through fencing space, providing night lighting and planting plants for their benefit as barriers by reducing noise from the main street, and also contribute to achieve air quality and reducing pollution.
B- As for the aesthetic need, it is achieved through the colors and texture of materials and finishes for space furniture that enable the elderly to use them easily, as well as the colors and shapes of the natural elements of space.
A- Regarding the environmental need: shaded areas should be provided for the elderly in order to increase their chances of using space during the day and encourage them to establish summer and winter activities regardless of climate change, due to the need to provide different uses, activities and purposes as one of the needs of the elderly to achieve aging in the place.

5. Conclusions
The role of landscape in supporting aging in the place in multi-story housing projects has been reached through the elements of space furnishing and the natural elements (plants and water) as follows:
1. For the dimensions of aging in the place for the elderly:
The elements of plants and water contribute to support the indicators of the social, material and environmental dimension by providing vegetation barriers, shading and natural scenes, achieving air quality, purifying pollutants, and reducing noise levels. Also, the water component contributed to supporting the environmental dimension in particular.
As for the elements of street furniture, they contributed in providing seating, supporting social aspects, and achieving places for meeting, talking and social interaction.
2. With regard to the needs of aging in the place for the elderly:
The elements of plants and water contributed to achieve the psychological and aesthetic needs, as they are two dynamic elements that can achieve change at the level of color, texture and shape and add aesthetic to the landscape. As for the environmental level, they contributed to enhance the aspect of thermal comfort and air quality.
As for the elements of street furniture, its presence is required to fulfill the needs, both psychological and aesthetic, by providing seating places for rest and enjoyment and the aesthetic space, or to enhance the environmental need by providing shaded areas.
3. With regard to aging activities in place for the elderly:
The elements of space furnishing contribute to providing the base for practicing activities in the outer spaces, whether as floors, terraces for seating, lighting ... etc.
Also, the presence of the two elements of water and plants achieve the natural aspect that these activities require.

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