

# Innovative concepts of age-friendly residential architecture as a support for ageing in place and in community -from Western models of best practices to solutions for the Romanian space

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## Abstract

**Objectives:** The accentuated trend of population ageing requires a strategic position in terms of diversification of housing and lifestyle options after the age of 65, to support the quality of life and well-being. The paper investigates representative contemporary models of housing developed in the Western space for seniors, which are based on two important concepts, ageing in place and ageing in community and the presentation of some applications in the Romanian space, developed in student projects in the V-VI years of study, coordinated in IMUAU. **Prior work:** The essential changes in the current preferences of adults who are approaching older age, in terms of residence, are charted: comfort, accessibility and safety (in anticipation of the possible reduction of mobility and the emergence of health problems), downsize of home space, shared facilities for housing and closer social contacts in the neighborhood. The work is based on previous research of the authors in the field of elderly-friendly architecture, with an interdisciplinary architecture-medicine-psychology spectrum, carried out in the last 14 years. **Approach:** The paper is narrative review, with an interdisciplinary character. Case studies are used: Western best practice models and student projects coordinated in IMUAU. **Results:** Depending on the level of independence of the users, two categories of residential architecture for seniors have been identified. The options for elderly people who only need low level of care: 1. Accessory dwelling units; 2. Age-restricted communities; 3. Senior apartments; 4. Co-housing; 5. House sharing. The options for the elderly with higher care needs are: 6. Village model; 7. Continuing Care Retirement Communities; 8. Assisted Living Facilities; 9. Group homes; 10. Memory care units; 11. Nursing-homes. The student projects developed in IMUAU addressed real situations from the Romanian space. A number of design trends were identified such as a focus on air quality, biophilic design, pet-friendly homes, access to cultural amenities and preserving community connections. **Implications:** Residential architecture that includes specific features for older people supports healthy and independent ageing, facilitating the development of sustainable, intergenerational communities. New age-friendly neighborhoods tend to offer varied active living options. Architecture contributes to the development of inclusive environments that combat age segregation and stigma. It is necessary for Romania to align to Western trends and include in new residential developments the perspective

of age in architecture. **Value:** The work critically examines the Western housing models for older persons and develops viable perspectives for implementation in the Romanian space.

**Keywords:** senior dwellings, age-friendly architecture, intergenerational communities, social sustainability, ageing in place and in community.

## 1. Introduction

The accentuated trend of population ageing requires a strategic position in terms of diversification of dwelling options after the age of 65, to support the quality of life and well-being. The ageing trend of the Romanian population is aligned with the European one, it is estimated that by 2030, the local elderly population will be around 21% and by 2050 it will reach almost 30%. Currently, in Romania, more than half of the elderly population lives in urban areas and the percentage will certainly increase [1]. In 2024, the number of pensioners was just under 5 million [2] and the average state social insurance pension was around 460 euros (equivalent to 2,292 ron) [3]. The 65+ seniors living in Romania, whose income is largely from their pensions, which are very small compared to Western countries [4] often live in their own homes that are not adapted to their needs.

Regarding older adults' lifestyle, the Eurostat report [5] shows a weak presence and involvement of Romanian population over 65 in social-cultural, sporting or volunteer activities, around 10%. However, Bucharest stands out through occasional initiatives led by the Bucharest City Hall or NGOs [4]. Involvement in this kind of activities supports healthy ageing and it is important to consider when thinking about ageing in place, in community and about housing models.

Recent studies show that most elderly people, regardless of whether they belong to the Western or the native Romanian space, want to age in their own home, institutionalization becoming an option when specialized care is needed, especially involving a medical component, when the level of dependency become significant [6]. The differences between the Western and Romanian spaces are in the intermediate options, between their own home (ageing in place) and nursing homes, provided to elderly people for living. In Romania are no residential real estate developments dedicated to the elderly so far, considering that these environments should be based on age-friendly principles, assisted living or co-living, and no models are implemented - already validated in Western Europe or the USA by the test of time - that could significantly improve the quality of life of both the elderly and their families, relieving the burden on the institutionalized social care system.

We live longer but we do not necessarily live healthier [7] the residence is very important in enabling an active and healthy ageing [8] thus architecture and design can significantly contribute to the quality of life of the elderly and their families, also to the relieving of the burden on the socio-medical care system, which risk being overwhelmed.

## 2. Objectives

The paper aims to reflect on architectural solutions for elderly-friendly dwelling in the Romanian urban space, in order to promote an active and healthy ageing for as long as possible and, when certain levels of dependency occurs, on contemporary formulas of socio-medical assistance, in variable proportions, starting from two important concepts:

ageing in place and ageing in community. To achieve this goal, three specific objectives were formulated: mapping representative Western elderly-friendly contemporary housing models, which have shown their success by passing the test of time; critical analysis of these models, grouped in two categories, for independent elderly people or those who require little help and for elderly people who require more help, with different levels of dependency; presentation of architectural applications in the Romanian space, developed in the projects of students in the 5th-6th years of study, coordinated in IMUAU.

### **3. Prior work**

The paper starts from concepts related to current gerontological theories such as active and healthy ageing, successful ageing, ageing in place and in the community and furthers moves on to architectural concepts, independent and assisted living facilities.

The work is based on previous research of the authors in the field of elderly-friendly architecture, with an interdisciplinary architecture-medicine-psychology spectrum, carried out in the last 14 years.

In a recent research (2023) it was explored the adaptation and design innovation of collective housing for seniors in Romania to promote active, healthy ageing in community. It was highlighted, in an interdisciplinary approach of architecture-medicine-psychology, architectural modifications and gerontotechnology to enhance autonomy and comfort for elderly residents, emphasizing user-centered designs and sustainable, age-friendly environments [8].

Another study (2021) carried out in the same interdisciplinary team examines the Vatra Luminoasă neighborhood in Bucharest, applying intergenerational architecture to foster age-friendly living. Through research by design, 23 student projects proposed innovative residential and community solutions for seniors, emphasizing therapeutic architecture. Findings highlight the potential for sustainable, inclusive urban design responsive to ageing needs [9].

The particularity of the research developed in the interdisciplinary team in recent years leaves its mark on the responses of elderly-friendly architecture, which must work harmoniously and efficiently, to increase the quality of life of the users, with assistive technologies. Thus, it was highlighted that digital divide among the ageing population, emphasizing the role of smart assistive technologies in promoting active, healthy ageing. Interdisciplinary solutions, including gerontotechnology and rehabilitation medicine were explored, for enhancing autonomy, safety, and social engagement, while advocating for improved digital literacy and age-friendly innovations [10].

The Covid-19 pandemic had an important impact on elderly-friendly architecture and was discussed in two recent studies. It was investigated how the COVID-19 pandemic has reshaped architectural perspectives on smart dwellings, emphasizing adaptability, health, and technological integration. Design strategies that prioritize flexibility, well-being, and enhanced functionality, addressing the evolving needs of living spaces in a post-pandemic world were explored [11]. The needs of elderly people with neurocognitive disorders

(NCDs) were also taken into account and the answers of dementia-friendly architecture were charted in response to the challenges of the Covid-19 pandemic. It was highlighted the importance of spatial stability, routine, and “memory anchors” in promoting safety and well-being for people with NCDs, balancing versatility and stability [12].

#### **4. Approach**

The paper’s methodology is narrative review, with an interdisciplinary character. Case studies are used: Western best practice models and student projects coordinated in IMUAU. Research on typologies of elderly-friendly residential architecture is quite limited, so we needed to study specialized websites that promote various housing complexes dedicated to seniors, and to access forums to read the opinions of those involved in managing such complexes as well as those who build such buildings or their beneficiaries. The essential changes in the current preferences of adults who are approaching older age, in terms of residence, are charted: comfort, accessibility and safety (in anticipation of the possible reduction of mobility and the appearance of health problems), downsize of home space, shared facilities for housing and closer social contacts in the neighborhood [13]. In Romania, ageing in place and place attachment must be an important goal of urban and ageing policies [4].

Among the preferences of seniors in the Western space, built environments for ageing in place have been identified. At the neighborhood level, settlements with a pleasant climate, higher temperatures and lower taxes are preferred [14, 15] close to their birth place [16] or where their children live [17]. From dwelling’ point of view, seniors want smaller areas, shared living, elderly-friendly rented houses. Seniors strongly want to age in place and at the same time to socialize, to belong to an active community. Emphasis is placed on the quality of the built environment [13]. Of course, translating these desires into concrete numbers for seniors in Western Europe or the USA is completely different than it would be for Romanian seniors. A living space of 90 sqm means a smaller space for a Western senior, while in Romania, such a space can be found in a 4-room apartment. For a senior in Romania, retiring to a smaller apartment usually means choosing a studio with an area that can be between 25 and 40 sqm. Western seniors want a balcony of around 12 sqm, for Romania, the existing blocks certainly offer much smaller areas, mostly between 2 and 6 sqm. Seniors want age-friendly apartments with amenities such as elevator, broad doorways, elevated toilet, etc. They also prefer closed kitchens, green garden-type spaces near the home, common meeting and socializing spaces nearby, dedicated parking spaces. They also prefer smaller cities, quieter localities that are at a maximum distance of 15 minutes from a large city that has all the necessary amenities, especially health care [13]. The preference for socializing, for dedicated meeting spaces, is less common among Romanian seniors who still go out and socialize sitting on benches in front of their apartment buildings or in the closest park. However, community facilities are fewer in Romania.

#### **5. Results**

Depending on the level of functional independence of the users, eleven types of residential architecture for seniors- for ageing in place and in community- have been identified, grouped in two broad categories.

- **Options for elderly people who need low level of care (5.1.-5.5.):**

5.1. Accessory dwelling units; 5.2. Age-restricted communities; 5.3. Senior apartments; 5.4. Co-housing; 5.5. House sharing.

- **Options for the elderly with higher care needs (5.6.-5.11.):**

5.6. Village model; 5.7. Continuing Care Retirement Communities; 5.8. Assisted Living Facilities; 5.9. Group homes; 5.10. Memory care units; 5.11. Nursing-homes.

- **Options for elderly people who need low level of help:**

### ***5.1. Accessory Dwelling Units (ADUs)***

An accessory dwelling unit (ADU) is defined as a small, self-contained residential unit, which is located on the same lot of an existing single-family residential building [18]. An ADU mainly can be found in three scenarios: a separate unit within the main house (attic or basement), an addition to the main house (a distinct apartment with separate entrance) or a total separate home on the property (a converted garage or a total new built structure) [19]. These ADUs can be found under different names: granny flats, in-law units, backyard cottages, casitas, over-garage apartments and other secondary units, coexisting with the main house, on the same lot [20].

ADU typology comes from the American space. Although this form of housing for seniors has already been used for about 20 years [19] sources show that only in 2020 [20] a law was promulgated in this regard and ADUs were introduced into the California Civil Code. ADU offers all the comfort needed for independent living for an adult 65+, being equipped with a living area (kitchen, living room, service toilet room, pantry, etc.) and a night area (bedroom, bathroom, dressing room), on a maximum 100 sqm [20], according to American laws.

In the USA, this type of housing for seniors is also encouraged through taxes, which are a maximum of 50% of those for the main house [21]. However, regardless of the way in which ADUs are built, attached or detached - partially or totally - from the volume of the main house, American law requires that the owner of both be the same person and that they cannot be sold separately.

Drawing a parallel with the Romanian space, this typology of dwelling could be implemented, in the detached version, especially for houses located on the outskirts of large cities (where the house lots are more generous), in rural areas but also for houses in the city center in the version in which the ADU is included within the existing building. What should be taken into account is that when we use the attic, variants of lifting platforms or elevators for vertical movement must be taken into account. Of course, the most comfortable option remains the development of the ADU only on the ground floor and in direct relation to the outdoors.

### ***5.2. Age-restricted communities***

Age-restricted communities appeared in Southwest America in the '60s, and currently, sources count over 50 such communities in the US. Among the benefits of age-restricted housing stand out: meeting specific senior housing demand (located in proximity of medical centers), supportive amenities and facilities for a better quality of life for seniors

(elderly-friendly design such as walk-in showers, wider doorways and halls, elevators), ageing in community (group organized leisure activities, community facilities for socializing and spending time together) higher level of security, housing turnover and sometimes lower maintenance smaller home options [22].

It should be noted that these communities are intended for independent seniors who remain connected to community life, thus developing in areas with public facilities: restaurants, shops, medical centers, cultural and fitness clubs [23].

According to the current American legislation, at least 80% of the houses that are part of these communities must have a resident at least 55 years old [19] and in some cases 62 years old [24]. Most of the time, the elderly move here quite late, between 70 and 74 years old, and they live here for an average of 8 years. The houses can be lived in by the owners or rented [18].

These communities are generally made up of low-rise houses, generally a maximum ground floor + 1 floor or attic, with a traditional architecture and green spaces. However, there are also collective housing buildings complexes for such communities [25].

In Romania, age-restricted communities could certainly be implemented, at least for future adults 55+, as the population ageing trend follows that of the West. There is a need for better information on the advantages of such a housing model that brings interaction and supports active and healthy ageing.

### **5.3. Senior apartments**

The age restriction, 55+, also applies to apartments for seniors, which are also dedicated to independent, active adults who are not necessarily retired. These apartments are usually rented [19]. The main advantages are: maintenance-free, security, no mortgage, specific amenities [26]. These apartments are designed, architecturally, from the start, on age-friendly principles (limited stairs, grab bars, accessorized bathrooms). The advantage is that these specific apartments take into account from the beginning possible health problems that may appear with ageing and further adaptations are no longer necessary. Everything is aesthetically and functionally carefully thought out *ab initio*. Unlike communities, this type of housing cannot offer additional services, which can vary from shared leisure activities to the eventual provision of meal services [27].

However, the cost of senior apartments is lower compared to other specific dedicated facilities. Probably this model would be an easier one to implement in the Romanian space for the simple fact that the costs are lower. Specific differences for apartments dedicated to the elderly include aspects of universal design and design for disabled people, small adjustments to minimum dimensions and do not have a significant impact on costs.

### **5.4. Co-housing**

Co-housing is a sustainable model that emphasizes the importance of intergenerational relationships, accommodating both seniors and people from other age groups. Seniors can have joint recreational and cooking activities. Another important advantage is that they

share the costs for the maintenance of common spaces, gardens, recreation areas and parking. This model is for active and independent seniors who don't need continual self-care [19]. Each older adult has personal space while he has access to common living room, this type of dwelling offers both privacy and interaction. Co-housing is based on freedom, independence and support because everybody is caregiver but also receiver [28].

An interesting example of co-housing is the recent (2020) adaptive reuse of an agricultural warehouse that becomes a “senior” cohabitation in Guimera, Spain [29] 2 family units in the same building. Each couple has private spaces like bedrooms and bathrooms but they share kitchen, dining and living room.

For Romania, this model can be advantageous, especially for sociable seniors, for friendly families, as it reduces maintenance costs that most often cause problems.

### ***5.5. House sharing***

This model was born as a response to the needs of single, unmarried, divorced or widowed elderly people. It is a supportive model that has the advantage of reducing maintenance costs because they are shared, adding companionship [19]. It can work in two ways, two older adults decide to buy or rent a home together or one of the persons owns the property and the second moves in to live together, paying rent. The housemates/apartment mates can both be elderly or they can be of different ages, in an intergenerational support, an older person and a younger person (eg. a student) [30]. As in the case of the co-housing model, each person has his own bedroom and they share the kitchen and living room and sometimes, the bathroom. As with any type of housing involving two people who were not necessarily close, there are advantages (affordability, autonomy, built-in network of support) and drawbacks (decreased privacy, compromise, potential of uneven power dynamic) and these must be weighed to make the best decision. From an architectural point of view, the image of a home is preserved, the amenities are those of home, you can choose a neighborhood where you feel familiar and where connections in the community can be developed or be maintained.

### **• Options for the elderly with higher care needs (2.6.-2.11.):**

### ***5.6. The village model***

The Village Model responds to the growing demands of older people who, in the vast majority, even in USA or UK, want to remain living in their own home for the rest of their lives. A significant percentage of adults remain single starting at the age of 60. Statistics show in USA and UK that the prevalence of single people over 60 is between 10% and 46%. Over 65 years old, 1 in 3 people live alone and over 85 years old, half of the elderly are single [31].

The image of these villages is a groups of houses with a height regime generally up to gf+2, a domestic and warm appearance, with common spaces carefully designed for the needs of the elderly [32].

This model becomes architecturally most interesting in the case of dementia villages, a particular case of the village model dedicated to older persons with major neurocognitive

disorders from Alzheimer's disease. A reference example in this regard is *The Hogeweyk* (Netherlands, 2009), the first dementia village that became inspirational and put the well-being of the residents first, elderly people with major neurocognitive disorders, being part of the extended community of the city of Weesp. Focusing on possibilities, not on disabilities, creating accessible spaces that maximize independence, orientation, communication, Hogeweyk has inspired other recent successful projects, remarkable for dementia-friendly architecture and design, such as *The Village Landais* (10700 sqm, Dax, France, 2020) [33] or *Carpe Diem Village* (18000 sqm, Dønski, Norway, 2020) [34].

For villages dedicated to independent or low-dependency elderly people, “neighbors caring for neighbors” model works. The model works well both in Europe and in the USA where there are currently about 300 such retirement villages [19]. These retirement villages are nonprofit community groups in which members pay modest fees, a few hundred dollars per year, to have access to dedicated public transportation, health and wellness services, home repairs, socio-cultural activities. The retirement villages can be coordinated by volunteers or by paid staff. This housing model has a positive impact on well-being, fights loneliness and associated depression, and reduces maintenance costs for community members [35].

This is a model that could be implemented in Romania on the outskirts of the big cities that are currently developing or even in rural areas. Currently, residential investments are expanding in our country, yet nothing is being built dedicated to the elderly category. It is also a matter of mentality, of information because the future Romanian older persons will certainly have a different openness and other desires in terms of housing.

### **5.7. Continuing Care Retirement Communities (CCRCs)**

CCRCs is a complex model that offers housing on different levels, from completely independent living, to assisted living facilities, up to the nursing home or memory care unit model, for the elderly who need 24/7 care. This model also emphasizes community, common spaces, both indoor and outdoor, and therapeutic natural environments. But there is this cautious vision of the future which anticipates possible health problems and this continuum of care ensures residents with a stability of ageing in place, which they call and feel like home [36]. This vision is evident in the architecture of the ensemble. *St. George Continuing Care Retirement Community* (Georgia, SUA, 2004) emphasizes the importance of the natural environment, being organized on a generous surface of over 17000 sqm and consisting of 130 housing units, of which 25 are assisted living units [37].

An interesting and complex example from an architectural point of view is the *Moldaw Taube Koret Campus for Jewish Life* (San Francisco Bay Area, USA, 2001) [38] which proves its efficiency through its good functioning for almost 25 years, because it is important that time speaks for itself, the way in which architecture lives, after the completion of the construction, along with the implemented housing model. *The Moldaw Taube Koret Campus for Jewish Life* is a multigenerational complex for multifamily homes and communities with an area of almost 64,000sqm, including 170 independent living units, 12 assisted living units, 11 memory care units, 12 buildings nursing home and amenities- restaurant-style dining, housekeeping, valet parking and a beauty salon. The complex is declared to be ideal for three-generation families, it is designed from the start



to be socially sustainable, intergenerational, an active place for all community members, of all ages.

This model is of course very complex, requires an interdisciplinary approach, significant financial resources and market studies to see if it could be attractive to the Romanian population.

### **5.8. Assisted Living Facilities (ALFs)**

ALF is a form of long-term care that provides housing, meals, and personal care support for older people that need help with daily care [39]. Seniors who choose to live in an ALF do not require highly medicalized round-the-clock supervision. ALFs have a capacity of 25 to over 100 residents. In an ALF several services are provided, such as: three meals a day, assistance with personal care, help with medications, 24-hour supervision, security, housekeeping and laundry, social and recreational activities [40]. Social activities make a difference compared to a nursing home where medical care is predominant and can include: holiday celebrations, birthdays parties and milestone events, arts and crafts workshops, game nights, happy hours, outings, fitness classes, cultural activities (guest speakers, musical performances, art exhibition) clubs [41]. In general, payment is fully covered by residents, there is no co-payment from the government.

*Housing for Elderly People* (Alcácer do Sal, Portugal, Aires Mateus, 2010) [42] is a project described as somewhere between a hotel and a hospital, with an interesting architecture that sits on the uneven topography of the land. Each senior has his own room and there are common facilities for all residents. However, at the interior design level, there is a noticeable lack of colors, landmarks, customization, lack of a warmer image that the elderly need to feel comfortable.

Nursing homes operate in Romania, although some of them are more like assisted living facilities as services, but the residents most often have many comorbidities, requiring 24/7 medical care because in Romania, ageing in place, in home is preferred.

### **5.9. Group homes**

Group homes are a form of Assisted Living Facilities, offering similar services as the previous model but on a smaller scale, with an image more close to a home, to residence. Caregivers can live, together with their own family, in the same house with the elderly they care for. These group homes can accommodate up to 20 residents and are found under various names such as: adult family homes, board and care homes, residential assisted living or residential care homes [19, 43].

### **5.10. Memory care units**

Memory Care Units are institutions that provide specialized care for older people with major neurocognitive disorders from Alzheimer's disease or other types of progressive-degenerative dementia. This means structured routines, reducing stress and special dementia-friendly design for managing wandering and self-harm behaviors [44]. Memory Care Units may have loop hallways (eg. *Santa Rita Geriatric Center*, 2003, Menorca, Spain [45] access doors in rooms customized by different colors, quiet rooms, orientation

landmarks, specific colors for stimulating appetite, relaxation, activation (eg. *Alzheimer Respite Center*, 2009, Dublin, Ireland [46] spatial inertia, gardens for reminiscence therapy. Memory Care Units can be independent or part of continuing care retirement communities [19].

In Romania, there are many nursing homes that are declared as being for seniors with Alzheimer's disease, but in terms of architecture and activities they do not differ from a regular building. There is a need to assimilate this Western model and implement architecture with specific dementia-friendly features.

### **5.11. Nursing homes**

Nursing homes provide medical and social care in various proportions 24/7 to elderly people with different degrees of dependency [47]. Nursing homes represent the most complete form of institutionalized care in which the medical component is predominant. There is specialized staff that helps the residents with daily activities such as: bathing, dressing, eating, using the bathroom and getting in and out of beds or chairs [19]. Nursing homes can be defined as medical settings instead of residential environment such the previous models. Some seniors may be permanent residents until the end of their lives, while others may come temporarily until their health improves and allows them to return to their own home or to another form of less medicalized care [48]. From an architectural point of view, nursing homes represent complex ensembles in which age-friendly features are highlighted down to the smallest detail. The architecture differs greatly depending on the socio-cultural environment in which the nursing home is built, but it is always user-centered, accessible, and uses many of the principles of Universal Design. The relationship with the natural environment, with the communities in which they are integrated, is important (eg. *Mornington Nursing Home*, LyonsArchitects, 2007, Victoria, Australia [49], *Sakuragien – Aomori Elderly Nursing Home*, Waiwai, 2020, Mutsu, Japan [50], *Sentidos Comprehensive Center for the Elderly*, Estudio Cordeyro & Asociados, 2022, Funes, Argentina) [51]. During the Covid-19 pandemic, many such nursing homes were criticized for their high mortality rate [52] from an architectural point of view, a smaller scale of these institutions is needed, with the possibility of separating specific units to prevent the spread of infections [53]. Covid-19 has been an architectural lesson for elderly care and hospitals in general, and will likely produce a paradigm shift.

Perhaps the nursing home program for seniors is the only one that works in Romania, because there is an urgent need. The discussions here are vast, most nursing homes in Romania operate in adaptively reused buildings that do not meet the necessary standards. Most of the time, residents stay at least two in a room, the spaces dedicated to activities are reduced or not specifically designed according to the needs of seniors. There is a need to design dedicated senior homes, taking over from Western home models, but also taking into account the socio-cultural specificities of the Romanian people.

- **Student projects coordinated in IMUAU- «Ion Mincu» University of Architecture and Urbanism, Bucharest, Romania:**

The student projects developed in IMUAU addressed real situations from the Romanian space.

**5.12. Elderly dwellings | Street with garden | Vatra Luminoasă | Bucharest, Romania**

University Year: 2019-2020 [Fig. 1. (a)]

Authors: St. arch. Răzvan Badea Șuțu & St. arch. Teona Dascălu

Tuthors: Prof. PhD. Arch. Dan ȘERBAN | Lect. PhD. Arc. Mihaela ZAMFIR |

Lect. PhD. Arch. Ana Maria VESA (DOBRE) | Arch. Simina DRON

**5.13. Elderly dwellings | Strips | Vatra Luminoasă | Bucharest, Romania**

University Year: 2019-2020 [Fig. 1. (b)]

Author: St. arch. Alexandru Moldovan

Tuthors: Prof. PhD. Arch. Dan ȘERBAN | Lect. PhD. Arc. Mihaela ZAMFIR |

Lect. PhD. Arch. Ana Maria VESA (DOBRE) | Arch. Simina DRON

**5.14. Elderly dwellings | Generational wealthcare | Vatra Luminoasă | Bucharest, Romania** [Fig. 2. (a)]

University Year: 2021-2022

Author: St. arch. Sebastian Boldea

Tuthors: Prof. PhD. Arch. Dan ȘERBAN | Assoc. Prof. PhD. Arch. Karoly Nemeș |

Lect. PhD. Arch. Mihaela ZAMFIR | Lect. PhD. Arch. Alexandru Crișan |

**5.15. Elderly residential center | The 5th Garden | Vatra Luminoasă | Bucharest, Romania** [Fig. 2. (b)]

University Year: 2021-2022

Author: St. arch. Andreea Pribeanu

Tuthors: Prof. PhD. Arch. Dan ȘERBAN | Assoc. Prof. PhD. Arch. Karoly Nemeș |

Lect. PhD. Arch. Mihaela ZAMFIR | Lect. PhD. Arch. Alexandru Crișan |



Fig. 1. (a) Elderly Dwellings, Street with Gardens ; (b) Elderly Dwellings, Strips.  
Source: Archive of the “Synthesis Architectural Design Department”, IMUAU

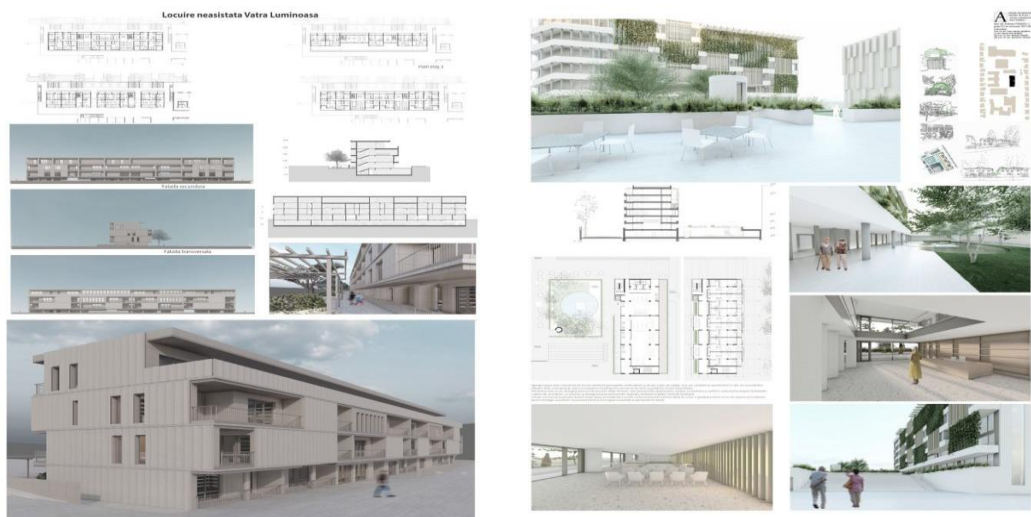


Fig. 2. (a) Elderly Dwellings, Generational Wealthcare ; (b) Elderly Residential Center, The 5th Garden.  
Source: Archive of the “Synthesis Architectural Design Department”, IMUAU

### 5.16. *Nursing home for seniors with Alzheimer’s neurocognitive disorders* | *[re]MIND Garden care home* | Craiova, Romania

Diploma Project: 2024

Author: St. arch. Oana Stan

Tuthors: Assoc. Prof. PhD. Arch. Karoly Nemeş | Lect. PhD. Arch. Mihaela Zamfir

Plot Area=3438sqm; Built Area=1363.38sqm; Total Area=3247.32sqm; Percentage of Land Occupation =39.65%; Land Use Coefficient=0.94; Height=Uf+Gf+2f; Accomodation single rooms number=28; Parking places=14.



Fig. 3. [re]MIND Garden Care Home. Bird eye view over the center.

Source: Archive of the main author

Source: Archive of the “Synthesis Architectural Design Department”, IMUAU



Fig. 4. [re]MIND Garden Care Home floor plans.  
 (a) Ground Floor Plan ; (b) 1st Floor Plan ; (c) 2nd Floor Plan  
 Source: Archive of the main author

The diploma project is a nursing home for 28 residents, older persons with neurocognitive disorders in Craiova, in the proximity of Romanescu Park, the largest and most well-known park in the city, covering 96 hectares. The connection with Romanescu Park represents a key point of the project, along with the therapeutic gardens within it [Fig. 3].

Nature plays an important role in the design of this nursing home. It has been proven that green spaces have a positive impact on major neurocognitive disorders symptoms, especially in patients over 75 years old, and so time spent outdoor can be a precautionary measure against the Alzheimer disease.

*[re]MIND Garden Care Home* is configured around an interior courtyard designed as a dementia-friendly therapeutic garden [Fig. 5], to which all the important spaces on the ground floor open, such as the living area, the dining area, and the medical and psychology offices. In the quieter area, behind the plot, there are sports facilities, a physical activity and physiotherapy room, as well as a multi-denominational chapel and quiet rooms, specially intended for seniors with major cognitive disorders [Fig. 4. (a), Fig. 4. (b), Fig. 4. (a)]. Accommodation room for older person with Alzheimer's are designed on the principle of participatory design [Fig 6 (c)]. There is a unified set of amenities for all rooms, but also the possibility of involving the beneficiary and his family by bringing beloved objects, photographs, paintings, and decorative elements that remind of home. Most of the accommodation units on the 1st and 2nd floors benefit from opening onto the inner green courtyard. On the 2nd floor there are additional facilities that favor spending free time outdoors, a terrace designed as a garden [Fig 6 (b)] and also a greenhouse [Fig 6 (a)] where occupational therapy can be done, both in the cold and warm seasons. A multipurpose space at the groundfloor facilitates meetings with family and friends [Fig 6 (d)]. All spaces are properly accessible, including for disabled users, there are elevators and ramps to take over uneven surfaces.



[re]MIND Garden Care Home is inspired by successful Western models, taking over elements such as the Alzheimer's therapeutic garden, accommodation in single rooms, but it also adapts to the specific requirements of Romania and, more specifically, of Craiova, which can be seen in the design details of the rooms or in the way the common spaces, for meeting with the family, are carefully designed.



Fig. 5. [re]MIND Garden Care Home interior patio dementia garden.  
Source: Archive of the main author



Fig. 6. [re]MIND Garden Care Home amenities.  
(a) Greenhouse for occupational therapy through gardening ; (b) Terrace above the 1st floor arranged as a garden for senior residents ; (c) Single accommodation unit design based on co-participatory design principles ; (d) Meeting space with family and friends  
Source: Archive of the main author

## **6. Implications**

Residential architecture that includes specific features for older people supports healthy and independent ageing, facilitating the development of sustainable, intergenerational communities. A number of well-being design trends were highlighted, such as: air quality and air purification systems, biophilic design, pet-friendly housing, facilitating cultural connections, smart technology integration, multi-generational spaces, personalized living spaces, wellness and fitness integration [54, 55, 56].

New age-friendly neighborhoods tend to offer varied active living options. The design of new homes for seniors practiced in student projects offers increased comfort, safety and accessibility, assuming the change of residence around the age of 55+. Architecture contributes to the development of inclusive environments that combat age segregation and stigma. It is necessary for Romania to align to Western trends and include in new residential developments the perspective of age in architecture.

Smart cities should take into account the need for age-friendly environments in the ageing society, and to take advantage of the benefits of IoT and AI in order to be able to manage the conversion from the traditional urban design to a more function and efficiency-based structured community nest, in order to ensure intelligent and sustainable urban development [57].

## **7. Value and conclusions**

The work critically examines the Western housing models for older persons and develops viable perspectives for implementation in the Romanian space. Changes begin first of all through information and education, including in architecture. The way we live influences our quality of life, architecture and residential design have an important impact. People must be aware in Romania of the ageing trend of the population, of the fact that current generations will live longer, and that the age of seniority can be beautiful. Most of the time, it is easily accepted in Romania that after 65 you should not have many demands, that you have to get used to the fact that you will no longer be able to participate so much in social life. Housing models that work in the Western countries can be implemented in Romania so that Romanian seniors can still have a quality of life comparable to those in the West. The student projects developed at the Faculty of Architecture within the „Ion Mincu University of Architecture and Urbanism” prove innovative and creative solutions that result from the adaptation of Western models to the authentic Romanian reality. This is where changes start, from education and also from working in multi- and interdisciplinary teams, enabling the architect to understand and design living and community spaces, taking into account the beneficiary as a complex being, with different constellations of needs, desires, limitations and challenges, dynamic part of a dynamic society in continuous progress.

## **Conflicts of interests**

Authors have no conflicts of interest to declare.

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