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Sustainable Environment for Elderly People

Georgi Georgiev

New Bulgarian University, Department of Architecture

e-mail: ggeorgiev@nbu.bg, www.nbu.bg

Abstract. The paper is focused on extremely important issue of an aging population and the related need to explore, develop and extend prospective forms of sustainable environment for the elderly. Having in mind the persisting grows of ageing population the task is getting extremely large economic and social effect. Prospective trends in development of manmade environment for elderly people and their relevance to the Bulgarian situation are investigated. The relevance was considered from several points of view – economic, climatic, socio-cultural etc. Selected diploma projects of architecture students from NBU are outlined as good practice examples.

Keywords: accessible housing, old age exclusion, ageing-friendly community, alienation, ageing in place,

JEL Codes: R11, R12, R14, R21, R23, R31, R38

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Introduction

Developed countries in Europe, North America etc. are facing unique demographic changes. Ageing population, low birth rates and changing family structures are significantly modifying the society pattern. We are facing dramatic shrink of working age population and in the same time - a growing retired population. In Europe currently there are 3 people of working age (15- 64) for every person of 65 or older. By 2025, this number is expected to reach 2 to 1, and by 2060, over half of Europeans will be of retirement age (by current standards). The growing burden on the younger population is unsustainable and this trend will further worsen. Countries must therefore ensure that people can stay healthy and remain active in working condition as longer as possible. In order to preserve the economic growth pace in the future, people's active life will need to be extended. This means creating an environment where becoming old does not necessarily mean being dependent on others. The concept of "ageing in place", is getting popularity more and more.

The growth of the ageing population in Europe is more than ever a big challenge for the next decades. Indeed, this demographic change will have a huge impact on urban planning and architecture, as cities must fit to people's needs. The European Commission emphasizes that "population ageing is one of the most important phenomena influencing policy directions in the multidimensional context of social, labor market and economic transformations" (Population ageing in Europe, EC 2014).



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1. Ageing Population

The ageing population in Europe is projected to grow substantially in the next decades, by 2050 one third of the European population will be aged over 65, says the United Nations. Therefore, new challenges will need to be addressed in terms of mobility, transports, social support, community services and housing. The growth of the European ageing population is caused by three phenomena: increase of life expectancy, persistence of low fertility rates and transition to retirement of post-war baby boomers. Low fertility dynamics in most of the EU member states is expected to spur the ageing population phenomenon. In 2060, Europe is projected to count 517 million inhabitants, only 16 million more than in 2010. Furthermore, the population will decline in half of the EU countries, stresses the European Commission (Population ageing in Europe, 2014).

Today, EU is aware the European population is getting older and older and that European policies need to be adapted to this new demographic dynamic. However, this awareness and positive perspective towards the challenge of the ageing population is quite new. Indeed, in the 50s ageing was considered as a “problem” while in the 60-70s optimistic assessments started to be more frequent. Nowadays, the main concern regarding this demographic change is the labour market. In fact, the age class 15-64 will decline from 67% of the population structure in 2010 to 56.2% in 2060. This situation opens up questions such as how the working-age class will be able to finance elderly pensions. Currently, there are 4 working-age persons for every person aged over 65, it is projected to be only 2 for 1 in 2060, (The 2015 Ageing Report, European Commission, 2015). The growth of the ageing population in Europe is more than ever a big challenge for the next decades. Indeed, this demographic change will have a huge impact on urban planning and architecture, as cities must fit to people’s needs.

In order to face the ageing population challenge, European Union policies focus on economic growth, innovation and employment. The EU has identified the shrinking of the workforce as the most important problem induced by this demographic change. Indeed, the European Commission says the decrease of the age-working class will have a considerable impact on future economic growth and fiscal sustainability. Thereby, the Europe 2020 strategy goals focus on promoting active ageing policies, reforming social protection systems and fostering “solidarity, cooperation and understanding between generations”. The European Union considers there is a need to develop human capital in order to respond to this demographic change. This goes through the development of age-integrated life phases and the promotion of older workers’ skills. This aspect is very important as “actual productivity decline related to age is much smaller than the decline perceived by employers in many cases” (European Commission report). However, the responsibility for planning, funding and managing the ageing population policies is still in the hands of national governments. “(EU is) dealing with urgent issues of common interest to which all the member States need to respond” says the EU green paper on demographic change. In fact, the role of the EU is to determine a global strategy on ageing, while member States are in charge of the implementation of ageing population policies, such as housing accessibility regulations. According to Dr. Elizabeth Mestheneos (Greek Council Member and elected Vice President on the Executive of the AGE-Platform), EU could help in the “promotion of standards in housing, transport, build environment and public facilities”. Nevertheless, only a few governments already enforced accessibility policies based on EU standards, highlighted Dr. Elizabeth Mestheneos in her report “Ageing in place in the European Union”. (Mestheneos, E., Global Ageing, vol.7, №2, 2011).

Today, ageing population policies are starting to be viewed as an overall society matter and not only designed for elderly people. The reason is that retirees are now considered as people with skills and knowledge which could benefit the society, they live in. The ageing population as phenomenon is moving from a “challenge” to an “opportunity” perspective. Indeed, active older people could be a resource for



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the community and the economy, as long as their physical and psychological well-being is guaranteed. In return, it is also proved that active elderly people have a greater satisfaction in their life (Lim and Putman, 2010). Therefore, accessible housing will surely play an important role in the commitment of elderly people in their local community. According to the European Commission, an adapted living environment is one of the key of successful ageing, as well as good health, education, marital status, favorable financial situation, family networks or the socio-cultural context. The EU-funded research project “Multilinks” - how demographic changes shape intergenerational solidarity, well-being and social integration (www.multilinks-project.eu) emphasizes the fact that ageing demographic changes affect all people (young, middle-age and old). Seniors may become key actors in society if civic engagement was encouraged. Thanks to their availability, skills, knowledge and life experience, elderly people are a rich source of third-sector volunteers. This could only be possible subject to great psychological and physical well-being. More than ever, the living environment of the elderly should be tailored to their needs.

Active ageing population also benefits the economy and the labour market. The Europe 2020 strategy aims to invest in the human capital of employees to counteract the deterioration of productivity potential als at older ages in order for people to remain active as long as possible in the labour market. Indeed, the growth of the ageing population goes along with an increase in life expectancy, mandating the rise of the retirement age (European Commission). Accessible housing could help people to remain active by designing healthier living spaces. It also should be noted that the ageing population is a source of potential economic growth thanks to the development of a new economic dynamic, referred as the “silver economy”. The growth of the ageing population in Europe is going to create new market opportunities to serve the needs of people aged 50 and over, “including both the products and services they purchase directly and the further economic activity this spending generates” (www.oxfordeconomics.com).

All in all, the development of a holistic approach towards ageing also affects accessible housing policies. The World Health Organization (WHO) created a framework for assessing the “age-friendliness” of a city. Among social support from relatives, friendly and inclusive public spaces, community services, transport and mobility, housing plays an important role. Thus, a familiar location, “care-ready” housing, multi -units apartments and clustered living centers with shared facilities seem to be key-elements to successful ageing.

The holistic perspective on ageing results in a “design for all people and all ages” approach. Universal design aims to create housing which “could be used by everyone regardless of ability or disability” (Demirkan, H. “Housing for the ageing population”). Along with prescribed requirements for accessible housing (wide doors, sufficient clear space for wheelchairs, grab bars...), designs should promote social inclusion, human diversity and equality. This is a real challenge for architects because of the clinical outlooks accessible housing can sometimes have. Indeed, people need to feel their apartment is a Home, that is to say, a place where they feel safe, satisfied and independent, mentioned Oya Demirbilek (Associated professor build environment and liveable cities, University of New South Wales, Australia). Architectural shapes should promote social inclusion, intergenerational interaction, affordability, flexibility and adaptability. The purpose of accessible housing is beyond health and safety issues: it is the starting point for the building of inclusive communities. Nowadays, inclusive designs are more than ever necessary in order to fully optimize resources of the ageing population. Involving different generations in multi generational dialogue and using their potential to pass on local traditions and culture to the younger generation is an important component of building cohesive local societies. The growth of the ageing population in Europe is an inescapable demographic change opening questions on social support,



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community and health services, mobility, transports and housing. Hence, communication between researchers, governments, employers, societies and architects is required to address the ageing population challenge.

2. The need of shaping a new living environment for elderly

The traditional facilities provided for elderly people - assisted living centres, continuing care communities and nursing homes are no longer suitable to the needs of the ageing population. The segregation of retirement-aged people prevents society access to an increasingly important labour and community resource. Traditional manmade environment for elderly is also increasingly unpopular from their own perspective. The new realm is that people would rather be part of a lively, age-heterogeneous community as they grow older, both for the services available to them in such a setting and also for the services they could offer to others. It is increasingly important that living space for elderly is created to accommodate the changing needs of residents as they get older. The society is not only looking for designs that can just house the elderly applicants, but should also consider designs that can be adapted and allow people to grow old in them. As the population is ageing the need for accessible housing is constantly increasing. Accessible residential buildings for elderly are in growing demand all over the developed world. The focus is more and more centered on the individual dwelling. There are three primary priorities that must be addressed: accessibility, health, affordability.

Residential buildings for elderly should be accessible. How this general term could be explained? Accessible housing should be obstacle-free, with unhindered access both indoors and outdoors. Additional features of accessible housing are:

- flexibility and adaptation to residents' needs at various stages of their lives
- adjustable spatial solutions
- integrated ICT technologies
- Inclusive (universal) design.

Accessibility is the degree to which a product, device, or environment is available to as many people as possible. It can be viewed as "ability to access" and benefit from something. Accessible housing, therefore, is housing which is comfortably usable by all people, including disabled people or people facing challenges that may have arisen as a result of ageing. Legislation governing accessible housing varies considerably between countries. It is usually the case that housing must meet certain, very well-defined requirements to be classified as "accessible". There are also often multiple tiers of accessibility that a design can aspire to. Some homes may be fully wheelchair accessible, others only wheelchair adaptable, and still others not adaptable at all for wheelchair users but possibly still appropriate for those with other disabilities.

With increasing age, the proportion of women becomes greater – because of their longer life expectations – until in the age group 85 years and upwards, men account for only 27 per cent of the total. Gerontologists speak of a feminization in age, so that the housing market will have to take special account of the needs of older women. On the whole, the picture of old age that exists in society is a very uniform one. With greater age, however, people become less and less alike. Senior citizens are an extremely heterogeneous group. In addition to their different educational, social, cultural and political identities, which remain unchanged, their financial situations vary. Furthermore, some people remain independent until an advanced age, while others need support or care from their early years of retirement. For future generations, therefore, it will be necessary to provide a wide range of housing forms for the elderly to meet all needs. In recent years, the spectrum has been considerably extended.



Sheltered residences and communal forms of living in old age are certainly among the most attractive innovations in this field. Housing types in which the residents have their own, fully equipped flats find a far greater degree of acceptance.

3. Elderly housing proposals in Diploma Projects of NBU

The analysed Master Degree diploma projects of students in architecture from the New Bulgarian University were elaborated after carefully studying the existing best practice and analysis of the country specifics. As a result, some general framework for design of homes for elderly in Bulgarian context have been shaped as follows:

- Provision of the best medical care, attention and monitoring of the general or specific condition (for people with special care requirements);
- Particular attention to the psychological needs of the elderly;
- Provision of the highest level of service, comfort and constant care in an atmosphere of comfort and security;
- Provision of specialized health care for maintaining a high quality of life, while providing emotional and spiritual support to their families;
- Creating a peaceful and favorable spatial environment that meets the needs and ensures a decent residence for the elderly; providing an architectural environment close to home;
- Providing a favorable location for homes for elderly in an urban or natural environment, not far from the livable urban areas, thus overcoming the social exclusion of residents.

The diploma project "**Multifunctional building for the elderly**" by graduate student Nayden Kordev, supervised by Prof. G. Georgiev, is structured with theoretical and design part (fig.1). The theoretical part has been developed in great detail and provides a good basis for the design concept. The graduate, based on experience from his internship at the Dutch housing corporation Wonbron, examines different models of social housing and outlines several key principles:

- Affordability of elderly housing, especially for low-income households;
- Decent quality of the buildings and the environment in which they are located;
- Ability to deliver residential premises suitable for people with special needs - protected and adapted housing for disabled people, adults and homeless people;
- Combating social exclusion, i.e. support for creation of social mix;
- Security of use;
- Involvement of tenants in decision making process, related to construction and occupancy of the buildings;
- Energy savings in homes.
- Full time 24/7 residential care;

The aim of the diploma project is to create well-equipped homes of suitable size, good quality, located in a well-functioning environment and at a reasonable cost. The terrain is a lively place in the city centre, which would provide good communication and connections, and help eliminate social exclusion in some of its aspects. The project contains rented dwellings - 20 apartments for rent by the elderly; 28 individual rooms for 24 hour care; 8 apartments for temporary accommodation of relatives or other visitors; two stores, a 96 seat restaurant, a medical and physiotherapy center with a swimming pool, landscaped terraces, offices and an underground garage providing parking for 21 cars and 19 electric scooters. There is a ramp to the underground garage.

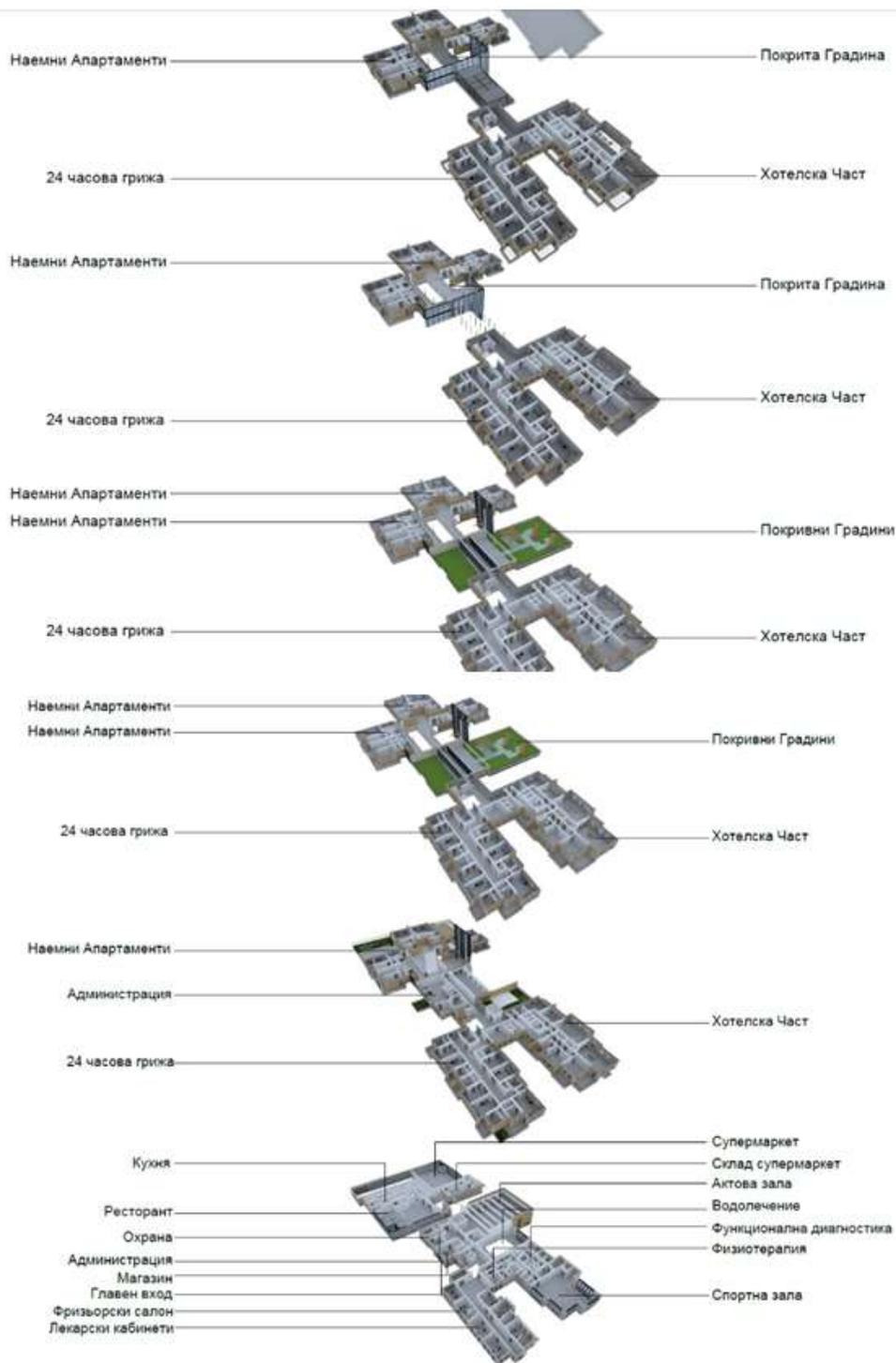


Fig.1 "Multifunctional building for the elderly" – functional scheme



Diploma project "**Home for People of Silver Age**", by Veselina Stanislavova, guided by prof. P.Stolarov (fig.2) presents a complex that brings together all the categories of people in need, enabling each of them to receive the necessary care. The project creates a spatial environment, depending on the nature of the needs of differently categorized groups of people. The survey made in addition to the project indicates that there is an urgent need for more elderly care homes, with more than 3,000 people at the waiting list. The most common problems of existing elderly care homes are: lack of specialized buildings with specific functionality; existing facilities are placed in buildings initially used for other purposes - hospitals, schools, barracks; lack of qualified and motivated staff; social exclusion; inability to meet individual needs. The diploma project offers renovation of a former school building with a new extension added. Due to the need to encourage the activity of the elderly, special attention is paid to the outer spaces - the garden and its view, where social contacts between the inhabitants are carried out. Due to the need for sharing and communication, informal contact points between smaller groups of people are designed, close to communication nodes (stairwells and elevators). Due to the need to share the past and interest in history and geography, a reading corner with historical literature, maps, etc. is provided. Besides the sports area, a greenhouse is designed where the inhabitants can grow fruits, vegetables, flowers.



Fig.2 Diploma project "Home for People of Silver Age" – main entrance

The diploma project "**Home for Elderly**", by Katie Georgieva, giuded by Prof. P. Chavov (Fig.3) cites several examples of foreign practice in which the focus is on the aesthetic and cozy environment of a high standard, a strong connection with nature, the creation of interesting and attractive spaces for communication of the elderly. The choice of the terrain also coincides with a site with a symbolic importance for care, compassion and charity – the Carmelite Monastery of St. Spirit. The project creates a four-level building that is completely accessible to people with disabilities. The public areas are located on the ground floor, naturally linked to environment and the courtyard. On the ground floor there is a kitchen with dining room, meeting/cinema room, small library, sports hall, rehabilitation room and manual physiotherapy, 2 living/reception rooms in typical home atmosphere; a meeting room with ample



seating, television, quiet games, general activities; doctor's office with manipulation; dental office, staff offices; service rooms. The rooms are mainly for individual accommodation except for 6, which are two-person apartments. The size of the rooms allows accommodation of people with aids, well sunbathed and supplied with kitchenette. There is an option for an extra bed when relatives can sleep. Shaping is based on the principle of combining two forms that assume the two main functions of the building - residential and social. The architectural design, the selected materials and the color scheme are marking the functional differences - a tighter and elegant appearance, a more techno-style for the with public function spaces and a warmer and more private appearance of the residential spaces.

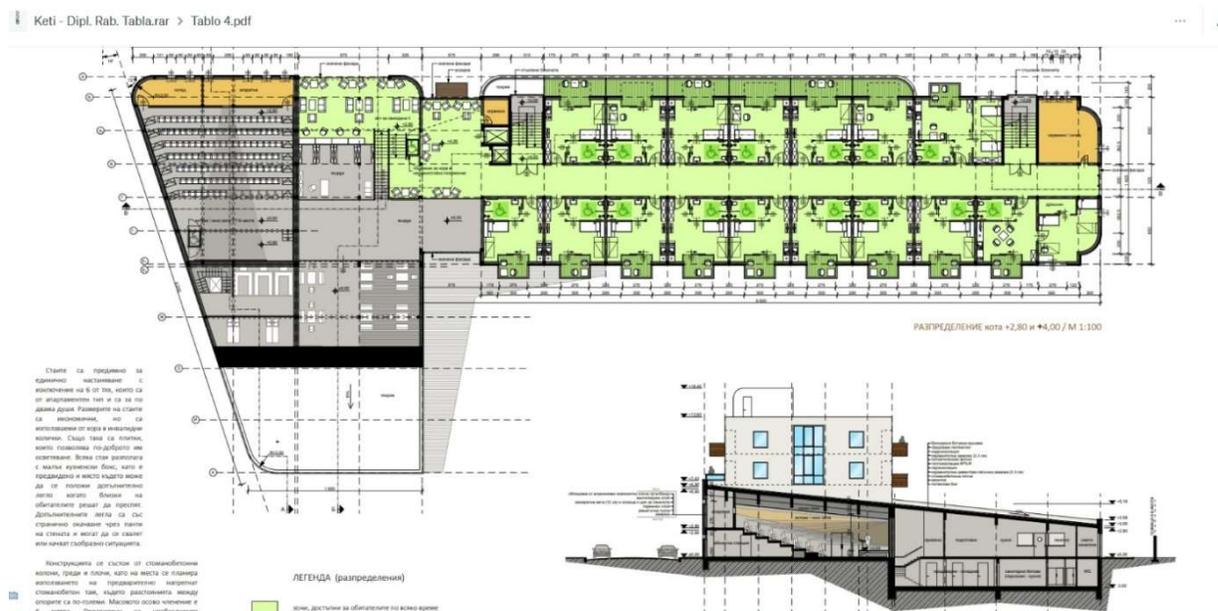


Fig.3 The diploma project "Home for Elderly"- second floor plan and section

The project **"Rehabilitation Complex - Bankya"** by a graduate Peter Ivanov, guided by Prof. K. Boyadzhiev (Fig.4) has been crafted with compelling energy for the development of the social environment and services, in the reconstruction and adaptation for new functions of the former residence, which huge potential, but in rundown status. The choice of the place is more than a success and a provocation, called by some "the Bulgarian Karlovy Vary"- the residence of the former socialist dictator T. Zhivkov in Bankya, wallowing in ruins and being architectural masterpiece of one of the most famous Bulgarian architects - Nikola Nikolov. A respectable concept was created to revitalize the site and open it to people with a very wide range of activities to guarantee its successful economic development in the future. In this respect, the project revealed a major feature of the graduate student - his ability to design planning strategies. The diploma project contains: park area with amphitheater and playground; sports area with tennis, basketball and volleyball courts; lake and waterfall; mini golf, artificial river; entertainment area; parking; sports hall; rehabilitation center and nursing home; single-family residential buildings etc. In the project, the individual architectural and landscaping sites are skillfully assembled as a whole. The newly designed parts is in line with existing architecture in the manner of late modernism of 60-ies of last century. The project combines a wide range of features such as outdoor activities, that would satisfy both children and adults during their weekend or short vacation here, with a nursing home, creating a unique opportunity for revitalization and social inclusion. Walking or biking is a must for staying



in this place in combination with a historical site or just enjoying the green surroundings of the park, as well as numerous activities organized for vacationers or visiting families and senior citizens such as mini golf, swimming, fitness and many attractions.

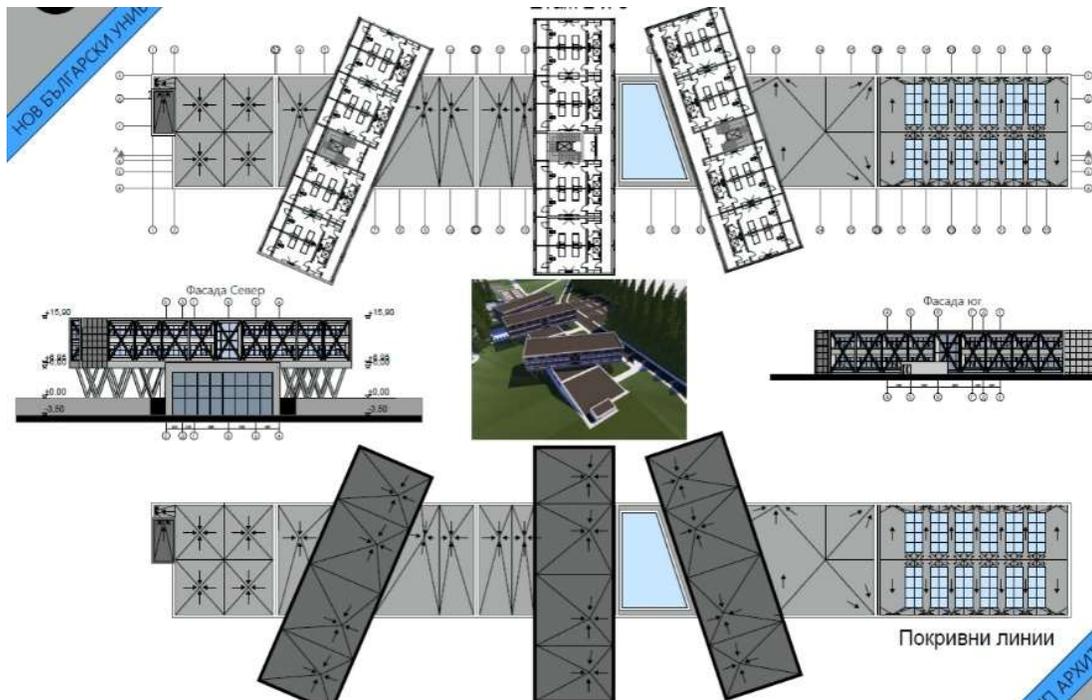


Fig.4 "Rehabilitation Complex - Bankya" – plans and facades



Fig.5 "Rehabilitation Complex - Bankya" – visualization of the entire complex



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The great focus of the complex is the Rehabilitation Center with a nursing home. The shape of the building is three parallelepiped volumes, rotated relative to each other as a replica of a changing urban environment with different morphologies perched on a pedestal, smoothly "emerging" from the ground. Powerful consoles supported by visible bar structure are oriented in different directions and provide different views, each of which is connected to different objects in the complex, approaches and parts of the alley network (fig.5)

Conclusion

Creation of lively communities, combining people from different age is a decisive factor. Freedom from barriers, creation of suitable for seniors and uncomplicated access to medical care where necessary are doubtless of great importance in the lives of the elderly. But their physical and psychological well-being depend above all on how successfully they can relate to their environment and to other people – more so than in the case of young people. In contrast to earlier generations of elderly people, senior citizens today form an extremely heterogeneous group, and the housing typologies designed for them cover a broad range. Most older people do not live any differently from the way they lived in younger years. The great majority wish to enjoy the familiar surroundings of their homes until the end of their days. In responding to the demographic changes taking place in society, the adaptation of existing dwellings and the construction of new, alternative forms of accommodation for the elderly play a key role. Creation of this new type of spatial environment for the elderly (in terms of design concept and implementation) is to a great extent still pending issue, which needs to have its urgent solution.

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