

Planning approaches for the green infrastructure in modernistic housing estates in the context of aging society

People over the age of 60 represent a significant group of the world's population, which continues to grow. In Poland, according to 2021 data, this group accounts for 25.7% of the total population. Senior citizens are a special part of society, characterized with specific needs based on their health condition, several disabilities related for example to limited walking ability and social status. Modernistic housing estates, which are a permanent element of urban landscapes, are largely inhabited by elderly people. Currently ongoing transformations of modernist housing estates, especially regarding public spaces and green infrastructure (GI), do not always take into account the needs of the elderly inhabitants. On the other hand, many studies show that GI has a significant positive effect of people well-being, including the group of elderly people.

It is hypothesized that tailored for modernistic housing estates and their elderly inhabitants planning approaches can support better management of existing and development of new GI in such contexts. That can significantly improve well-being of elderly inhabitants of such estates and also contribute to improving living conditions of other groups of inhabitants. To work with this hypothesis, two main research questions will be answered during implementation of this research project:

Research question 1: What are the needs of people aged 60+ living in modernistic housing estates in relation to the green infrastructure?

Research question 2: What solutions can be effective to improve the accessibility and experience of GI use in modernistic housing estates by people aged 60+?

Thus **the research project aims** to develop planning approaches for the GI in modernistic housing estates to improve the well-being of people aged 60+. The research will address 4 modernistic housing estates in Opole (Poland) as a case study areas.

Due to the complexity of the study based on qualitative methods, including participatory meetings held in two rounds in the 4 housing districts, a 36-month time frame was assumed. The research plan was divided into 6 work packages (WP): initial actions, participatory workshop (I), modeling and visualization, participatory workshop (II) – evaluation, developing planning approaches, communication strategies. To begin with (WP1), preliminary activities such as desk research, structured and unstructured interviews and field studies will be undertaken. Then, the first participatory workshops will be conducted for residents aged 60+ of the analyzed estates (WP2). The meeting will be based on the *Planning for real* method and *Design Thinking* tools, and will be designed to identify the needs and expectations of senior citizens regarding GI. Then, the knowledge gathered during the workshop and preliminary activities will be used to develop 3D models representing prototypes of planning approaches (WP3). These will then be reviewed by residents during a second participatory workshop (WP4), during which it is planned to use virtual reality technology. Comments and conclusions collected during the second workshop will be the basis for the development in the final stage of the planning approaches, compiled into a synthetic report (WP5). To ensure that the project runs smoothly and reliably, a package of communication strategy activities is also planned (WP6).

The result of the proposed research project will be a contribution to knowledge covering planning approaches for the sustainable transformation of modernistic housing estates. Nowadays, more and more scientific literature in the field of urban planning is devoted to the needs of the elderly. However, there is a lack of research on the needs regarding the GI found in the housing estates. The research will contribute to supplementing the knowledge on planning the development of modernistic housing estates and may translate into an improvement in the quality of life and health of residents.

Keywords: green infrastructure, modernistic housing estates, elderly