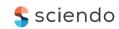
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"AN ACCESSIBLE CITY" – A LOOK FROM THE PERSPECTIVE OF THE '60+' GENERATION

"DOSTĘPNE MIASTO" – PRÓBA SPOJRZENIA Z PERSPEKTYWY POKOLENIA "60+"

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Abstract

This paper presents the results of workshop experiments aimed at realising the concept of the accessible city and identifies key considerations for enabling seniors to function better in the city's public space, based on the real needs of an ageing population. The study used field research (in situ), functional-spatial analysis (case studies) and data synthesis. The latest available data from the Statistics Poland on the demographic situation of senior citizens, government programmes and current legislation – depicting the current and projected situation in Poland were analysed. Faced with alarming data indicating that Poland's population will continue to grow older until 2050, with the number of people aged 60+ reaching 40.4% of our country's total population, field research was carried out into the accessibility of selected urban spaces and a set of architectural and urban planning recommendations were presented to address the most important needs and better functioning of the 60+ generation. As the Świętokrzyskie Voivodeship is currently home to the largest total population of senior citizens, the region's capital, Kielce, was chosen as the location for the analysis.

Keywords: Accessibility Hub, senior-friendly cities, creating age-friendly environments, lifelong learning, the '60+' generation, Kielce.

Streszczenie

W artykule przedstawiono wyniki eksperymentów warsztatowych ukierunkowanych na realizację koncepcji miasta dostępnego oraz wyłoniono najważniejsze przesłanki umożliwiające lepsze funkcjonowanie seniorów w przestrzeni publicznej miasta, opierając się na rzeczywistych potrzebach starzejącego się społeczeństwa. W pracy posłużono się badaniami terenowymi (in situ), analizą funkcjonalno-przestrzenną (case studies) oraz syntezą danych. Przeanalizowano dostępne najnowsze dane GUS w zakresie sytuacji demograficznej seniorów, programy rządowe i obowiązujące przepisy – obrazujące obecną i prognozowaną sytuację w Polsce. W obliczu niepokojących danych wskazujących, że do 2050 r. populacja Polski wciąż będzie stawała się coraz starsza, a liczba osób w wieku 60 lat i więcej osiągnie 40,4% ogółu ludności naszego kraju, przeprowadzono badania terenowe pod kątem dostępności wybranych przestrzeni miejskich oraz przedstawiono zestaw zaleceń architektoniczno-urbanistycznych uwzględniających najważniejsze potrzeby i lepsze funkcjonowanie pokolenia "60+". W związku z faktem, że obecnie najwyższa liczba osób w wieku senioralnym zamieszkuje w województwie świętokrzyskim, na miejsce analiz wybrano stolicę regionu – Kielce.

Slowa kluczowe: Hub dostępności, miasta przyjazne seniorom, kreowanie przestrzeni przyjaznej starości, kształcenie przez całe życie, pokolenie "60+", Kielce.

1. INTRODUCTION

The trend of an ageing population is nowadays a global phenomenon. At the same time, a trend towards a decreasing population is increasingly evident in many Polish cities [1]. This situation has certainly been significantly influenced by the SARS-CoV-2 virus pandemic, the effects of which have been particularly severe for senior citizens. Additional



restrictions on access to services, especially health services, have exacerbated the problems they face on a daily basis. However, although this topic has been relevant since 2002, when the World Health Organization (WHO) developed recommendations on the functioning of older people (the Policy Framework on Active Ageing programme) and subsequently implemented the Global Age-Friendly Cities project [2], there is still a lack of comprehensive measures to eliminate the problems, and inaccessible design solutions can be found in the space of many cities, creating numerous barriers for the '60+'generation.

In Poland, senior citizen policy has been in place at the central level since 2012, and in the second decade of the 21st century the issue of urban accessibility has taken on particular importance. The addressed topic of urban accessibility involves a wide spectrum of coupled issues, linked not only to architecture and urban planning, but also to environmental psychology and other social science disciplines such as gerontology, sociology and social pedagogy. The literature in this area is extensive, but mainly covers a narrow range of specialised studies. In contrast, there is still little interdisciplinary research on the issue showing the needs associated with the functioning of seniors in the urban environment. The most recent extensive research in the discipline of architecture and urban planning mainly concerns two thematic groups related to the built environment and housing. In this field, the activities of Polish academia should be singled out: Faculty of Architecture of the Gdańsk University of Technology (A. Gawlak) [3], Faculty of Architecture of the Silesian University of Technology (E. Niezabitowska, B. Komar, I. Benek, A. Labus) [4-6], Faculty of Architecture of the Wrocław University of Science and Technology (B. Gronostajska, Scientific conferences: "Habitat", "Architektura bez granic" [Architecture without borders] [7], the Faculty of Architecture of the Cracow University of Technology (P. Haupt¹, G. Schneider-Skalska) [8, 9], as well as research conducted by the Department of Architectural and Urban Design Theory and Planning

at the Faculty of Civil Engineering and Architecture of the Kielce University of Technology (W. Seruga, S. Wehle-Strzelecka, J. Gil-Mastalerczyk²) [10-12].

1.1. Purpose and methodology of research

The aim of this paper is to present the results of workshop experiments aimed at realising the concept of the accessible city and to identify the most important prerequisites for enabling seniors to function better in public space — linked to the physical characteristics of the city, based on the real needs of an ageing population. It should be emphasised that other aspects not covered in the study, such as the ageing process, social psychology, the residential environment or the quality of life of seniors, are also inextricably linked to this issue [3-7, 9-11].

The paper is based on field research – in situ, functional-spatial analyses - case studies and data synthesis. The latest available data from the Statistics Poland on the demographic situation of senior citizens, government programmes and current legislation, depicting the current and projected situation in Poland and forecasts for the future were analysed. Then, to find out how the public space of a contemporary city is shaped and accessible to seniors, field research was carried out in the surroundings of the campus of the Kielce University of Technology. On the basis of the field research of selected urban spaces carried out, a set of architectural and urban planning recommendations were presented that take into account the most important needs and better functioning of older people.

2. CURRENT DEMOGRAPHIC SITUATION OF SENIORS IN POLAND

According to the most up-to-date results of research carried out by the Statistics Poland and aggregate data compiled at the Statistics Poland on the basis of departmental reporting, demographic projections indicate that Poland's population will continue to grow older until 2050. The steadily increasing process of population ageing has been observed in

Project manager for the "Hub dostępności – centrum praktycznej nauki dostępności" [Accessibility hub – centre for practical accessibility training] (Project POWR.03.05.00-IP.08-00-CWD/20, implemented under the Operational Programme Knowledge Education Development 3.5 Comprehensive programmes of higher education institutions, Higher Education for the economy and development; co-financed by the European Social Fund – funded from the European Funds) carried out by Cracow University of Technology and Kielce University of Technology, which is the project partner (2021-2023).

Project manager for the "Hub dostępności – centrum praktycznej nauki dostępności" [Accessibility hub – centre for practical accessibility training] at Kielce University of Technology (project partner) carried out jointly with Cracow University of Technology POWR.03.05.00-IP.08-00-CWD/20, implemented under the Operational Programme Knowledge Education Development 3.5 Comprehensive programmes of higher education institutions, Higher Education for the economy and development; co-financed by the European Social Fund – funded from the European Funds), 2021-2023.



Poland since 2006. In 2005, the share of seniors in the country's population increased by 17.2%, while in 2021 it reached 25.7% (Fig. 1).

The country's current population – equal to 37,907,700 – will fall to 34.0 million in 2050. In contrast, the number of seniors, which stood at 9.7 million at the end of 2021, is expected to increase, according to the Statistics Poland's forward-looking projections, to 10.8 million in 2030, to 12.3 million in

2040 and to reach 13.7 million in 2050. This means that the number of people aged 60 and over will account for 40.4% of Poland's total population (Fig. 2).

The current demographic state of Poland has undoubtedly been influenced by the 2021 situation caused by COVID-19. Nationwide, 450,500 people aged 60 and over died at the time, accounting for 86.7% of the total number of deaths. Compared to 2020, this number has increased by 37,700, or 9.1% [13].

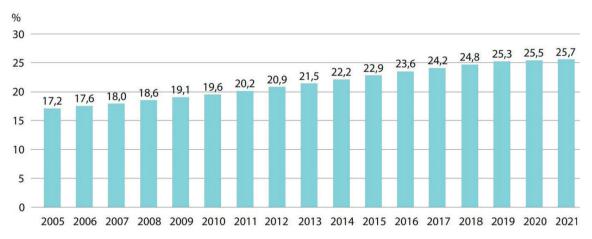


Fig. 1. Share of people aged 60 and over in the population of Poland – total. As of 31.12.2021. Source: [1]

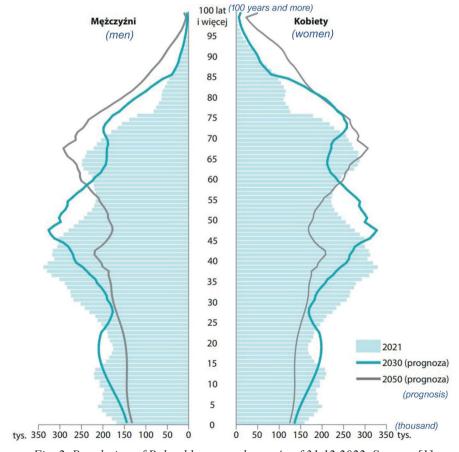


Fig. 2. Population of Poland by sex and age. As of 31.12.2022. Source: [1]



2.1. Share of seniors among urban residents

On the basis of the above analyses, it should be noted that the share of older people continues to increase, including urban residents. In 2021, it was 27.7%, and in the Statistics Poland's projections, it will settle at 42.4% in 2050. At the same time, the number of senior citizens varies significantly spatially due to the disproportion of the total population in the individual voivodeships. In 2021, the lowest share of older people, at 23.6%, was recorded in the Małopolskie

Voivodeship. In contrast, the highest number of senior citizens resides in the Świętokrzyskie Voivodeship, standing at 28.5% (Fig. 3).

Overall, the largest group of seniors are those aged 60-64 and the smallest are those aged 85 and over. The expected steady increase in the number of senior citizens, but also the decline in the total population, have resulted in a dynamically increasing old-age dependency ratio (number of people aged 65 and over per 100 people aged 15-64) since 2011 (Fig. 4) [1].

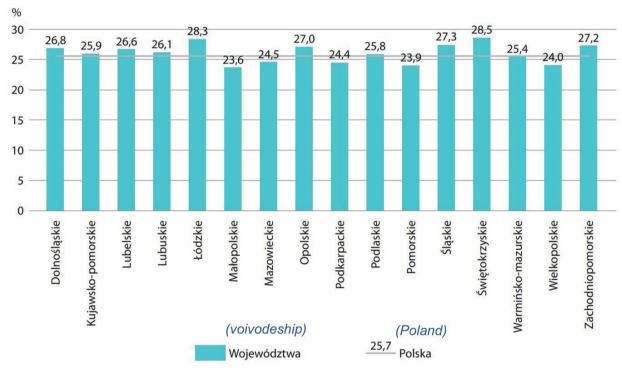


Fig. 3. Share of persons aged 60 and over in the total population of Poland – by voivodeship in 2021. As of 31.12.2021. Source: [1]

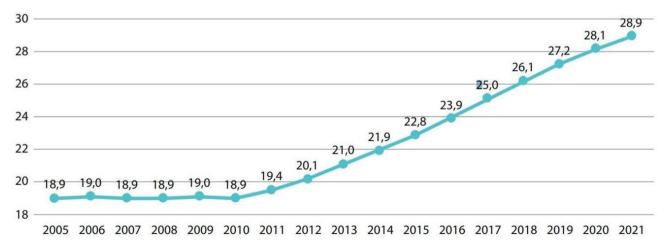


Fig. 4. Elderly dependency ratio (aged 65 and over). As of 31.12.2021. Source: [1]



3. SENIOR CITIZENS AND THEIR RIGHT TO ACCESSIBILITY. SENIOR CITIZEN POLICY AT CENTRAL LEVEL

Poland has a number of regulations in place to ensure equitable access to public spaces and facilities for seniors. This is due to the provisions in force since 20 September 2019 - the Polish Act on Ensuring Accessibility for Persons with Special Needs [Ustawa o zapewnieniu dostępności osobom ze szczególnymi potrzebami] [14] and the Polish Act on Ensuring Digital Accessibility of Websites and Mobile Applications [Ustawa o zapewnianiu dostępności cyfrowej stron internetowych i aplikacji mobilnych] [15]. The Acts guarantee that all public entities meet minimum requirements for older persons in three areas of accessibility: architectural, digital, information and communication (in accordance with Article 6 of the Accessibility Act) [14]. Exceptions include situations where, for various reasons, e.g. legal, technical, such as the preservation of the building, the fulfilment of the statutory conditions has to be achieved by alternative access. Under current government legislation and programmes, people with special needs, including the '60+' generation, are guaranteed the full right to accessibility, but for the moment only by public entities. It has been announced that by 20 September 2024, implementing regulations for the Act of 7 July 1994 – Building Law [Ustawa z dnia 7 lipca 1994 r. – Prawo budowlane], concerning the technical conditions to be met by buildings and their location - taking into account the needs of persons with special needs (Article 44 in conjunction with Article 66) will be issued [14].

The Polish government's 'Accessibility Plus' programme, which has been in operation for several years, should also be pointed out. Its aim is to ensure that the whole of society, including the '60+' generation, is provided with the right conditions to live with dignity, to function independently, to participate in society. There are extensive activities focusing on accessibility to public spaces, transport, education, health and many other areas. This is expected to result in the removal of architectural barriers and the provision of full accessibility in clinics, hospitals, offices, schools, universities, multi-family housing, train station facilities and urban public spaces.

Poland also has an Accessibility Council, set up by a group of experts representing various backgrounds. It is made up of government representatives, entrepreneurs and accessibility experts. The main tasks of the council include opinion giving and advising in the process of drafting legislation, recommending changes in legislation resulting from accessibility needs, expressing opinions and taking positions on the needs of people

with disabilities and on measures to improve public awareness of accessibility, as well as preparing expert opinions and analyses necessary for the implementation of activities planned in the programme [16].

The Accessibility Partnership is also being implemented and currently has 241 Signatories³ [17]. This is a commitment to working together to implement the Accessibility Plus Programme, which involves sharing experiences and creating ideas on the development of accessibility in Poland.

The activities carried out within the framework of the National Urban Policy 2030, an instrument to guide government policy towards cities and urban functional areas, are also becoming crucial [18]. The essence of urban policy is, among other things, to improve the quality of life of city dwellers, especially as they make up around 60% of Poland's population. The key goals for long-term urban development, along with the compact city, the green city, the productive city, the digital city and the efficient city, include the accessible city, understood as not only bridging barriers through rational organisational and functional improvements, but also as a guarantee to ensure equal opportunities for all inhabitants and their full participation in community life and access to public services regardless of size and location in the settlement structure [18].

In the sphere of universal accessibility, all activities initiated by local governments, cultural institutions, and other entities, as well as projects and collective guidelines implemented by academia to increase universal accessibility are equally important⁴.

³ Data as at 28.11.2022, source: [17].

⁴ Within the framework of the project "Hub dostępności – centrum praktycznej nauki dostępności" [Accessibility hub - centre for practical accessibility learning] (Project POWR.03.05.00-IP.08-00-CWD/20), a "Accessibility Knowledge Centre" was established at Kielce University of Technology, Faculty of Civil Engineering and Architecture, as a unit supporting the application and dissemination of universal design principles in the area of higher education, in particular by disseminating universal design principles and initiating cooperation with the socio-economic environment of the university, in order to develop innovative products and standards for universal services based on universal design principles. As part of a joint activity with the Cracow University of Technology, the following will be created and made available: a database of accessibility knowledge in architectural and urban design, construction and landscape architecture, a library of good practices in architecture, urban planning and construction, a database on improving air quality in therapeutic and rehabilitation spaces through the active use of plants, a database of design materials in the form of an online catalogue for designers, a database of plants improving aerosanitary conditions in the human environment depending on scale and spatial possibilities.



To conclude this part of the demographic, statutory analyses, it should be emphasised that social policy towards seniors is not only about legal regulations, but also about direct and indirect interventions and the shaping of a new, high-quality living and functioning environment for the '60+' generation. However, the near future will tell what effect all the planned and initiated measures will have on the real accessibility of Polish urban spaces.

4. "KIELCE – AN ACCESSIBLE CITY". SELECTED EXAMPLES OF URBAN SPACES – CASE STUDY

As the capital of the region and of the Świętokrzyskie Voivodeship – which has the highest number of senior citizens in the country (Fig. 3) – the city of Kielce has been facing a serious demographic and accessibility issue for years. In addition, the overall population is steadily declining in the entire voivodeship and in the Kielce Functional Area. Moreover, the city of Kielce itself is the municipality with the highest share of '60+' people in the population, with those aged 60-64 and 65-69 making up the largest proportion of the total. [19]. The ageing of the population here becomes not only a demographic problem, but also a key social issue and a challenge for today's city authorities. For these reasons, various initiatives are being taken in Kielce towards this group of city dwellers. Forecasts and studies on the implementation of senior citizenship policy are being developed, addressing measures relating to the creation of friendly living conditions, the identification of areas of intervention, and measures focusing on inclusive growth. These include:

- Polityka senioralna kieleckiego obszaru funkcjonalnego na lata 2020-2030. Aktualizacja październik 2022 [Senior Policy of the Kielce Functional Area for 2020-2030. Update October 2022]. The document sets out strategic objectives, which include, above all, improving the quality of life of seniors, activating seniors, and developing forms of social support for seniors [19].
- Polityka senioralna miasta Kielce: Seniorzy aktywni dla Kielc Kielce przyjazne seniorom, 2018-2022 [Senior Policy of the City of Kielce: Seniors active for Kielce Senior-friendly Kielce, 2018-2022]. A reporting and information study on the availability of places and forms of support for seniors [20].
- Rekomendacje dot. realizacji polityki senioralnej w Kielcach, Wyniki prac Kieleckiego Forum Seniorów – 5 zespołów roboczych utworzonych przez Fundację "PEStka" przy Kieleckiej Radzie

Seniorów w ramach szerszego przedsięwzięcia pn. "Senior kielecki – świadomy i odpowiedzialny" [Recommendations on the implementation of senior citizens' policy in Kielce, Results of the work of the Kielce Senior Forum – 5 working groups established by the "PEStka" Foundation at the Kielce Senior Citizens' Council as part of a broader project entitled "Seniors of Kielce – aware and responsible"], 2019 [21].

- Strategia rozwoju miasta Kielce na lata 2007–2020 [Development strategy of the city of Kielce for 2007-2020]. One of the operational objectives is: to improve the quality of life of the city's residents, including people with disabilities and senior citizens [22].
- Wojewódzki program przeciwdziałania wykluczeniu społecznemu na lata 2018-2023 [Voivodeship Programme Against Social Exclusion for 2018-2023]. One of the operational objectives is to address the social exclusion of people with disabilities and those affected by mental disorders [23].

4.1. Field research

Testing the accessibility of the urban space of Kielce for the general public

At Kielce University of Technology, experiments related to the accessibility of a specific urban space in Kielce were carried out as part of the newly established, state-of-the-art laboratory "Accessibility Knowledge Centre", which has been in operation since 2022 at the Department of Architectural and Urban Design Theory and Planning of the Faculty of Civil Engineering and Architecture. The pilot experiments took place within the workshop "Projektowanie uniwersalne - aspekt dostępności obiektów i przestrzeni" [Universal urban design accessibility aspects of civil structures and spaces [8] with the participation of representatives of the socioeconomic environment, including designers, real estate developers, experts, employer organisations, business representatives, local authorities. The workshop formula was based on two independent and freely modifiable blocks, depending on the needs and level of involvement of group participants. They were given the chance to test first-hand the limitations associated with various medical conditions in the elderly (Figs. 5, 6) using special disease and defect simulators, including the 'GERT' age simulation suit. Through a set of separate elements simulating the effects of ageing and intellectual disability, the direct experience of the difficulties that seniors



face in everyday life situations became real. The interaction of special elements made it possible for the participants to experience first-hand the effects imitating the sensory impairment associated with changes in the human body over time. These mainly include the following:

- limitation of movement and an age-related hindered, unsteady gait – shoe covers and ankle weights have allowed them to experience balance problems and weakened leg strength;
- pressure on the spine, tilting of the pelvis, postural discomfort, increased physical strain, loss of

- strength and even imbalance caused by a special suit with knee stiffeners that restrict movement of the knee and elbow joints;
- altered and impaired grip, feeling of impaired hand dexterity, restricted freedom of movement – with special gloves;
- increasing a person's weight by several kilograms
 through appropriate weights adding around 40 years or more;
- hearing and sight impairment using special headphones and goggles – simulators for agerelated eye diseases and sight impairment.



Fig. 5. Simulator instruction conducted in a safe laboratory setting – Accessibility Knowledge Centre – prior to the start of field experiments, Kielce University of Technology, December 2022, photo by Joanna Gil-Mastalerczyk, Rafał Głogowski



















Fig. 6. Workshop experiments conducted with representatives of the socio-economic environment in the public space of the city of Kielce (designers, experts, Kielce Housing Cooperative, Foundation Centre for Local Europe), December 2022, photo by Joanna Gil-Mastalerczyk



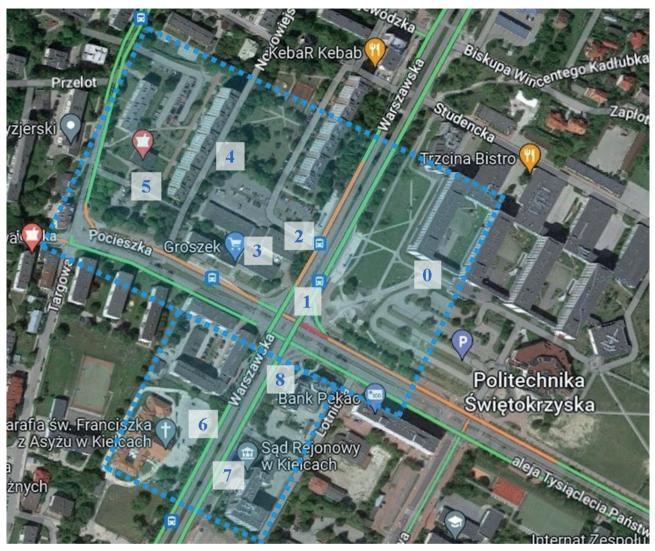


Fig. 7. Overview map illustrating the space being tested: 0 – exterior zone in front of the Faculty of Civil Engineering and Architecture of the Kielce University of Technology – starting point of the experiment; 1 – public transport zone, crossing lanes at the intersection of roads with heavy traffic; 2 – bus stop with ticket machine; 3 – service zone: grocery, butcher's shop, plumber's shop, Municipal Sports Club, Post Office, and other small services; 4 – green areas, recreation and leisure; 5 – community space at the housing estate "KSM Sady"; 6 – space of the sacral complex of the parish of St. Francis of Assisi with the Capuchin Monastery; 7 – space in front of the District Court; 8 – space in front of the National Bank of Poland Regional Branch in Kielce

The field research encompassed publicly accessible space in the surroundings of the campus of Kielce University of Technology, along busy Warszawska Street, Aleja Tysiąclecia Państwa Polskiego, Pocieszka Street, Nowowiejska Street, in the service and social space next to the KSM "Sady" housing estate, the space of the sacred complex of the parish of St. Francis of Assisi with the Capuchin Monastery, the space in front of the District Court and the National Bank of Poland Regional Branch in Kielce (Fig. 7). Analyses of the design and functionality of the solutions used in the city's structure – from the perspective of users with disabilities, as well as

analyses of compliance with current legislation — were carried out. Pedestrian zones, the accessibility of bus stops and bus services, the location of individual urban infrastructure facilities and transport links between them, the proximity of shops and services, squares and urban greenery were tested. In addition to the sheer opportunity to experience disability, indepth reflection on the barriers and needs of seniors with a variety of limitations was important in the experiment.

The analysis of the existing solutions was sufficient to draw up a summary of the barriers encountered and thus develop key demands, which include:



- infrastructure improvements to pavements, including removal of high thresholds, steep ramps;
- creation of a good structure of footpaths, continuation of guiding paths – especially at road junctions, where it is necessary to stop and get information confirming the current route;
- installation of landscaping elements, including benches and railings at ramps, exits to communal green areas, estates;
- eliminating the unevenness of a neglected area;
- the appropriate dimension and the accessibility and usability of the space;
- development of recreational and leisure spaces adapted to the needs of older people;
- installation and upgrading of lighting along footpaths and walkways;
- providing clear view axes at the end of traffic routes, and providing a wider field of view;
- introduction of separate cycle lanes;
- preservation of areas of natural greenery, proposal to introduce scented greenery;
- visible and comprehensible signage with discernible graphic information, e.g. to find one's way (given the spatial orientation problems experienced by senior citizens), warnings of dangers in public spaces;
- the use of markings for the visually impaired, e.g. a textured stripes, special lines or convex patterns allowing the space to be explored e.g. with a cane, feet (the use of audible signalling of the situation in the space at all tested crossings is valuable).

5. DISCUSSION AND RESULTS

The main goals of the experiments were to understand the concept of accessibility and to correctly identify and define the needs of people with disabilities – in the public space of the city, to be aware of the existence of barriers and accessibility restrictions and to know how to prevent them. The idea was also to provide knowledge on how to ensure accessibility, understanding the need for an appropriate approach to the design of services and civil structures from the perspective of the user with special needs. In doing so, it was important to acquire practical skills for creating new solutions to facilitate the functioning of seniors – as people with special needs – in the physical structures of the city.

The research undertook an empirical exploration of the sense of identity of '60+' seniors in the situation of various disabilities they experience. In this way, the participants tested the possibilities for

a generation of older people – users of architecture with multiple disabilities – to move and act freely in the built environment. The debriefing and concluding discussions critically analysed current solutions and spatial barriers, as well as proposals for introducing solutions that could be implemented under the conditions of the city of Kielce, especially what could be done better, what can be improved. Participants presented interesting ideas on how to make a specific place accessible to people with disabilities, proposed solutions and the use of social innovations from the area of the tested space, locating products and civil structures in it – created with users with special needs in mind. It was found that older people, who are most often faced with multiple and varied ailments, are generally less mobile and spend much more time in their immediate environment. It is therefore imperative for municipal authorities and managers of public spaces to ensure, through proper management, that their users can remain independent in their local environment for as long as possible in the future. The conclusions state that it is becoming fundamental to work towards the concept of a fair and ageingfriendly city, thus taking into account the needs of different user groups, including the '60+' generation.

In summary, as a result of the experiences – based on selected public spaces of the contemporary city of Kielce – and barriers encountered on an architectural and urban scale, it was unanimously concluded that all residents should have an unrestricted right to use the infrastructure and services offered by the city without problems. An 'accessible city' only becomes fair and friendly when all its users, regardless of age can:

- move freely on the streets;
- receive comprehensible information very important for hearing-impaired, blind people;
- enter all service buildings (shops, laundries) and public buildings (post office, clinic);
- use public services without hindrance, especially people with special needs (such as: visually impaired, wheelchair users), otherwise this translates into exclusion from social and urban life;
- easily, with simple and intuitive operation –
 purchase a bus ticket from a ticket machine, a
 parking ticket from a parking meter;
- freely get on the bus and move in any direction, with all buses having a lowered floor, equipped with ramps so that wheelchair users can use them without hindrance and parents or grandparents with pushchairs have no problems in using them (Fig. 8).















Fig. 8. Senior-friendly elements when traveling by public transport: light and sound signaling at crossings, stable and safe bus passage thanks to batteries in the floor, comfortable space for wheelchairs, seats, handrails, buttons – dedicated to seniors. Photo: Joanna Gil-Mastalerczyk

Figure 9 illustrates the key elements that constitute the accessibility of public space—related to the physical features of the city. The synthesis of the proposals indicates: service and residential development, public and social space and transport. These components impinge on the safety, accessibility and seamless movement of an ageing population in urban spaces.



Fig. 9. Key elements that constitute the accessibility of the city's public spaces. Own elaboration



6. SUMMARY

Taking into account the latest demographic forecasts, the disablement that increases with age and, above all, the fact that we are all getting older, multifaceted action is becoming a priority, in terms of:

- building a senior-friendly public space and local living environment;
- making urban spaces safe and more accessible;
- high architectural and urban quality as well as aesthetic and landscape value of publicly accessible urban spaces;
- the involvement of local and regional authorities in transforming and improving cities to meet the changing needs of their citizens.

In the light of the experiments presented and described, it also becomes crucial to shape positive perceptions of old age in society by implementing the principles of accessibility – through education and awareness-raising of stakeholders – civil servants, employers' organisations, designers, institutions (...), as well as continually raising awareness among young people. Equally important is public participation – at every stage of seniority policy, and the dissemination of knowledge and action for education for old age, into old age, through old age (from the youngest generation) and education in old age (older people) [19].

REFERENCES

- [1] The situation of older people in Poland in 2021, Statistical analyses of the Statistics Poland. Warsaw, Białystok 2022, source: https://stat.gov.pl/, accessed: 01.02.2023.
- [2] Global Age-Friendly Cities: A Guide, WHO, Geneva 2007.
- [3] Gawlak A.: *Mieszkanie dla zdrowia. Projektowanie dla przysztych seniorów* [Housing for health. Urban planning for tomorrow's seniors]. ISBN. 978-83-7775-650-8, Poznan University of Technology Publishing House, Poznan 2022.
- [4] Niezabitowska E.: *Metody i techniki badawcze w architekturze* [Research methods and techniques in architecture]. Silesian University of Technology Publishing House, Gliwice 2014.
- [5] Komar B.: Współczesna jakość spółdzielczej przestrzeni osiedlowej w świetle zasad rozwoju zrównoważonego na wybranych przykładach [Contemporary quality of cooperative estate space in the light of the principles of sustainable development based on selected examples]. Silesian University of Technology Publishing House, Gliwice 2014, ISBN 978-83-7880-139-9.
- [6] Benek I., Labus A.: Wytyczne w zakresie projektowania uniwersalnego mając na uwadze potrzeby osób niepełnosprawnych [Guidelines for universal planning with regard to the needs of people with disabilities]. Laboratory of Architecture 60+ Foundation Publishing House, Warsaw 2016.
- [7] Gronostajska B.E.: *Kształtowanie środowiska mieszkaniowego seniorów* [Shaping the housing environment for seniors]. Wrocław University of Science and Technology Publishing House, Wrocław 2016.
- [8] Project "Hub dostępności centrum praktycznej nauki dostępności" [Accessibility hub centre for practical accessibility training] (Project POWR.03.05.00-IP.08-00-CWD/20, implemented under the Operational Programme Knowledge Education Development 3.5 Comprehensive programmes of higher education institutions, Higher education for the economy and development, co-financed by the European Social Fund funded from the European Funds) carried out by Cracow University of Technology and Kielce University of Technology, which is the project partner (2021-2023).
- [9] Schneider-Skalska G.: Kształtowanie zdrowego środowiska mieszkaniowego wybrane zagadnienia [Shaping a healthy housing environment selected issues]. Cracow University of Technology Publishing House, Cracow 2004.
- [10] Seruga W.: *Piękno w przestrzeni środowiska mieszkaniowego*. Środowisko Mieszkaniowe, 35, 2021, 66-97, e-ISSN 2543-8700, https://housingenvironment.pk.edu.pl/srodowisko/article/view/463, accessed: 16.01.2022.
- [11] Wehle-Strzelecka S.: Architektura w zrównoważonym środowisku mieszkaniowym. Monografia 312, Wyd. Politechniki Krakowskiej, Cracow 2004.
- [12] Gil-Mastalerczyk J.: Discovering others and transforming the world together the effect of an innovative attitude in sustainable design. Global Journal of Engineering Education, Vol. 25, No. 1, 2023.
- [13] Statistics Poland's statistical analyses. Warsaw, Białystok 2022, from: https://stat.gov.pl/download/gfx/portalinformacyjny/pl/defaultaktualnosci/6002/2/4/1/sytuacja_osob_starszych_w_polsce_w_2021_r.pdf, accessed: 1.02.2023.
- [14] Ustawa z dnia 19 lipca 2019 r. o zapewnianiu dostępności osobom ze szczególnymi potrzebami [Polish Act on Ensuring Accessibility for Persons with Special Needs] (Journal of Laws of 2019, item 1696).
- [15] Ustawa z dnia 4 kwietnia 2019 r. o dostępności cyfrowej stron internetowych i aplikacji mobilnych podmiotów publicznych [*Polish Act on Ensuring Digital Accessibility of Websites and Mobile Applications*] (Journal of Laws of 2019, item 848).



- [16] https://www.gov.pl/web/fundusze-regiony/rada-dostepnosci-w-nowym-skladzie, accessed: 02.02.2023.
- [17] https://www.funduszeeuropejskie.gov.pl/strony/o-funduszach/fundusze-europejskie-bez-barier/dostepnosc-plus/partnerstwo-na-rzecz-dostepnosci/lista-sygnatariuszy/, accessed: 02.02.2023.
- [18] National Urban Policy 2030 adopted on 14 June 2022 by resolution of the Council of Ministers, source: https://www.gov.pl/web/fundusze-regiony/polityka-miejska, accessed: 2.02.2023.
- [19] Polityka Senioralna Kieleckiego Obszaru Funkcjonalnego (KOF) na lata 2020-2030. Aktualizacja październik 2022 [Senior Policy of the Kielce Functional Area for 2020-2030. Update October 2022], source: https://zitkof.kielce.eu/ZIT-KOF/Grupy-tematyczne/Polityka-senioralna.html, accessed: 02.02.2023.
- [20] Polityka Senioralna Miasta Kielce: Seniorzy aktywni dla Kielc Kielce przyjazne seniorom, 2018-2022. pdf [Senior Policy of the City of Kielce: Seniors active for Kielce Senior-friendly Kielce, 2018-2022].
- [21] Rekomendacje dot. realizacji polityki senioralnej w Kielcach. Wyniki prac Kieleckiego Forum Seniorów 5 zespołów roboczych utworzonych przez Fundację "PEStka" przy Kieleckiej Radzie Seniorów w ramach szerszego przedsięwzięcia pn. "Senior kielecki świadomy i odpowiedzialny" [Recommendations on the implementation of senior citizens' policy in Kielce, Results of the work of the Kielce Senior Forum 5 working groups established by the "PEStka" Foundation at the Kielce Senior Citizens' Council as part of a broader project entitled "Seniors of Kielce aware and responsible"]. Kielce 2019, source: http://fundacjapestka.pl/, accessed: 2.02.2023.
- [22] Strategia rozwoju miasta Kielce na lata 2007-2020. Aktualizacja [Development strategy of the city of Kielce for 2007-2020. Update]. source: https://www.kielce.eu/pl/, accessed: 1.02.2023.
- [23] Wojewódzki program przeciwdziałania wykluczeniu społecznemu na lata 2018-2023. Kielce, 2018 [Voivodeship Programme Against Social Exclusion for 2018-2023]. Prepared by Regionalny Ośrodek Polityki Społecznej [Regional Centre for Social Policy], source: https://www.swietokrzyskie.pro/file/2019/01/3._WPPWS_2018_2023___wer_PDF na sejmik.pdf, accessed: 1.02.2023.

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