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EXPERIENCING URBAN SPACE IN RESIDENTIAL ESTATES

DOŚWIADCZANIE PRZESTRZENI MIEJSKIEJ NA TERENIE OSIEDLI MIESZKANIOWYCH

Abstract

The article examines how urban space in residential estates is experienced through aesthetic qualities, accessibility and everyday usability. Its aim is to show that the quality of shared residential space depends not only on visual order, greenery and the scale of development, but also on the continuity of pedestrian routes, resting places and the absence of urban-design barriers. The study combines architectural and urban analysis, field observation and a research walk using an age simulation suit in the Wzgórza Krzesławickie residential estate in Kraków. The results indicate that terrain differences, pavement quality, stairs, limited visibility and a lack of resting places may significantly affect the comfort and independence of older users.

Keywords: *accessibility, age simulation suit, older adults, residential estates, urban experience*

Streszczenie

Artykuł dotyczy doświadczania przestrzeni miejskiej na terenie osiedli mieszkaniowych w odniesieniu do walorów estetycznych, dostępności i codziennej użyteczności. Celem jest wykazanie, że jakość przestrzeni wspólnych zależy nie tylko od kompozycji, zieleni i skali zabudowy, lecz także od ciągłości tras pieszych, miejsc odpoczynku oraz braku barier urbanistycznych. Badania połączyły analizę architektoniczno-urbanistyczną, obserwacje terenowe i spacer badawczy z użyciem symulatora starości na osiedlu Wzgórza Krzesławickie w Krakowie. Wyniki wskazują, że różnice terenu, jakość nawierzchni, schody, ograniczona widoczność i brak miejsc odpoczynku wpływają na komfort oraz samodzielność starszych użytkowników.

Słowa kluczowe: *dostępność, doświadczenie przestrzeni, osiedla mieszkaniowe, osoby starsze, symulator starości*

1. INTRODUCTION

Experiencing urban space involves assessing its appearance, its manner of use and the relationships that emerge between people and their surroundings. In residential-estate spaces, particular importance is attached to the scale of development, the legibility of the layout, the accessibility of approaches, the quality of surfaces, the equipment of shared spaces, the presence of greenery and the possibility of rest. These elements influence both the aesthetic assessment of a place and the everyday comfort of using it.

In classical approaches to urban theory, an important role was assigned to the image of the city, visual sequences and the capacity of space to create legible perceptual structures.[1] Later interpretations placed stronger emphasis on the everyday functioning of space: walking, stopping, observing, encounters and informal social contacts.[2] From this perspective, the quality of space does not result solely from its composition. It also depends on whether it supports ordinary, repeated activities of users.

For this article, it is essential to understand urban space as a living environment that affects users' health, well-being and independence. Lawton and Nahemow argued that human functioning depends on the relationship between a person's abilities and the demands of the environment.[3] With age, the importance of features that may remain barely noticeable for younger users increases: kerb heights, continuity of pedestrian routes, pavement quality, the presence of handrails, benches, shade, lighting and the proximity of services. Therefore, aesthetics, functionality and accessibility should be analysed together as interdependent components of the quality of the housing environment.

2. EXPERIENCING SPACE AND ACCESSIBILITY IN OLDER AGE

Studies on walkability show that pedestrian conditions depend both on the technical parameters of a route and on the quality of urban design. Important features include human scale, enclosure, transparency, complexity and imageability of space.[4] In relation to older adults, this issue is particularly important because features of the built environment may support independence or restrict mobility.[5]

Ageing modifies the perception and use of space. Deteriorating eyesight and hearing, slower information processing, weaker balance and reduced physical ability mean that the city begins

[1] K. Lynch, *The image of the city*, MIT Press, Cambridge 1960, pp. 2–10; G. Cullen, *The concise townscape*, Architectural Press, London 1961, pp. 17–20.

[2] J. Jacobs, *The death and life of great American cities*, Random House, New York 1961, pp. 55–73; J. Gehl, *Life between buildings: Using public space*, Van Nostrand Reinhold, New York 1987, pp. 9–13.

[3] M.P. Lawton, L. Nahemow, *Ecology and the aging process*, [in:] C. Eisdorfer, M.P. Lawton (eds.), *The psychology of adult development and aging*, American Psychological Association, Washington 1973, pp. 619–674.

[4] R. Ewing et al., *Identifying and measuring urban design qualities related to walkability*, "Journal of Physical Activity and Health" 2006, no 3(s1), pp. S223–S240; R. Talavera-Garcia, J.A. Soria-Lara, *Q-PLOS, developing an alternative walking index: A method based on urban design quality*, "Cities" 2015, no. 45, pp. 7–17.

[5] A.L. Rosso, A.H. Auchincloss, Y.L. Michael, *The urban built environment and mobility in older adults: A comprehensive review*, "Journal of Aging Research" 2011, art. 816106.

to be experienced differently than by fully able-bodied users. At this stage, surface contrast, walking distance, the possibility of rest, noise levels, the safety of street crossings and intuitive orientation become more important. Literature on age-friendly environments indicates that the quality of space must be considered in connection with social, health-related and sensory factors.[6]

Spatial orientation is an important aspect of accessibility. A legible circulation system, clear landmarks, logical organisation of approaches, contrasts, lighting and surface textures reduce the user's cognitive effort. Studies on ageing and dementia emphasise that design should reduce spatial disorientation and strengthen the sense of safety.[7] Spatial-navigation deficits may appear relatively early and affect the independence of older adults.[8]

However, experiencing residential space is not limited to the ability to move around. Literature on ageing in place indicates that the willingness to remain in one's existing environment also results from attachment, familiarity with the surroundings, neighbourly relations and a sense of belonging.[9] For this reason, a residential estate should be understood as an everyday environment in which aesthetic qualities, accessibility and social relations complement one another.

3. AIM AND SCOPE OF THE STUDY

The primary aim of the article is to demonstrate that urban space in residential estates is experienced both through aesthetic qualities and through accessibility, ease of movement and the presence of urban-design barriers. It was assumed that the way space is perceived depends on the characteristics of the user, including age and physical ability.

The additional aim is to verify the usefulness of a research walk using an age simulation suit as a tool supporting the assessment of accessibility in residential-estate space. The study was carried out in the Wzgórza Krzesławickie residential-estate complex in Kraków. The analysis covered shared spaces, pedestrian routes, approaches to services, resting places and sections of the route where difficulties occurred for users with reduced mobility.

4. RESEARCH METHODS

The study used architectural and urban analysis, field observations, photographic documentation and a research walk with an age simulation suit. The selection of methods resulted

[6] H.-W. Chau, E. Jamei, *Age-friendly built environment*, "Encyclopedia" 2021, no. 1(3), pp. 781–791; M.A. Gardener, F. Lemes de Oliveira, *Urban environment cues for health and well-being in the elderly*, "Cities & Health" 2020, no. 4(1), pp. 117–134.

[7] R. Davis, C. Weisbeck, *Creating a supportive environment using cues for wayfinding in dementia*, "Journal of Gerontological Nursing" 2016, no. 42(3), pp. 36–44; J.M. Wiener, F. Pazzaglia, *Ageing- and dementia-friendly design: Theory and evidence from cognitive psychology, neuropsychology and environmental psychology can contribute to design guidelines that minimise spatial disorientation*, "Cognitive Processing" 2021, no. 22(4), pp. 715–730.

[8] J. Plácido et al., *Spatial navigation in older adults with mild cognitive impairment and dementia: A systematic review and meta-analysis*, "Experimental Gerontology" 2022, no. 165, art. 111852.

[9] J.L. Wiles et al., *The meaning of "aging in place" to older people*, "The Gerontologist" 2012, no. 52(3), pp. 357–366.

from the assumption that the assessment of residential space should include both its material features and the perceived ease of use. This approach corresponds with research on ambience, in which user behaviour and well-being are linked with physical parameters, the atmosphere of a place and the subjective perception of space.[10]

4.1. ARCHITECTURAL AND URBAN ANALYSIS

The architectural analysis covered the form, scale and technical condition of the buildings that co-create the urban interiors of the estate. The urban analysis made it possible to identify the features of the residential-estate space that are important for its perception and use, including the layout of pedestrian routes, the accessibility of shared spaces, connections with services, the legibility of approaches, greenery, resting places and equipment.

During the study, barriers that hindered efficient movement through the estate were identified. These primarily concerned height differences, stairs, local lack of ramps or handrails, sections with poor-quality surfaces, narrow pavements and less visible places. The results of the analyses were supplemented with photographic documentation and a map showing the route of the research walk.

4.2. RESEARCH WALK USING THE AGE SIMULATION SUIT

The research walk was carried out along designated routes leading through the shared spaces of the estate and through places where potential barriers had been identified. The age simulation suit made it possible to experience selected limitations typical of older age, especially reduced mobility, a restricted field of vision, lower stability and greater sensitivity to surface irregularities.

The use of simulation had the character of an empathetic diagnosis of space. The methodological justification for such an approach can be found in studies using embodied and simulation-based techniques, which make it possible to recognise the demands of the environment more accurately from the perspective of users with limited mobility or perception.[11]

5. RESEARCH RESULTS

The Wzgórza Krzesławickie estate is dominated by residential buildings from the 1970s. These are buildings of simple form, repetitive solutions and relatively good technical condition. Their large scale is balanced by extensive open areas, greenery, playgrounds, sports fields, park-like walking spaces and places for rest and meetings. As a result, the estate space may be perceived as friendly and recognisable, despite the typification of its buildings.

At the same time, the analysis showed that the equipment of some shared spaces is insufficient. The main problems are the limited number of resting places, local deficiencies in

[10] M.L.T. Bestetti, *Ambiência: espaço físico e comportamento*, "Revista Brasileira de Geriatria e Gerontologia" 2014, no. 17(3), pp. 601–610.

[11] I. Caglayan, Y. Afacan, *Simulation-based service walkthrough (SBSW) to assess airport environment performance*, "Archnet-IJAR: International Journal of Architectural Research" 2021, no. 15(3), pp. 905–924.

pavement quality and sections where access requires overcoming stairs or significant height differences. These elements do not negate the overall accessibility of the estate, but they affect the comfort of older users and people with mobility limitations.



Ill. 1. Shared spaces of the estate: scale and equipment. Source: photographs by the authors

Functional solutions within the residential-estate space constitute an important asset of the study area. Extensive open spaces provide proximity to greenery, while shared spaces available to residents support everyday social contacts. However, field observations and the walk using the age simulation suit showed that urban-design barriers occur at specific points. They are mainly related to the natural terrain in the park area, outdoor stairs, local lack of ramps, poor surface quality and limited visibility in selected places.

The map of the research walk made it possible to organise the results according to problem locations, and not only according to a general assessment of the estate. The most burdensome sections were those in which several difficulties occurred simultaneously: a terrain slope coincided with an uneven surface, a narrowed pavement or the lack of a place to stop. At such points, comfort of movement depended not on a single barrier but on their accumulation over a short section of the route.



Ill. 2. Route of the research walk and description of the identified barriers. Source: authors' own elaboration



Ill. 3. Shared spaces with varied accessibility. Source: photographs by the authors

In places where the difficulty resulted from varied ground levels, outdoor stairs were introduced, and, at some points, ramps were added. From the perspective of a physically fit person, these solutions may appear sufficient. The walk with the simulation suit showed, however, that even fragmentary barriers require greater effort, slow movement and reduce the sense of confidence. Handrails, an even surface, the possibility of rest and the legibility of route continuation are therefore of particular importance.

6. FINAL COMMENTS AND CONCLUSIONS

The study confirmed that shared spaces in residential estates are experienced by users in a multidimensional way. Their assessment depends on aesthetic qualities, the scale of development, the presence of greenery and meeting places, as well as on accessibility, the continuity of pedestrian routes, pavement quality and the possibility of rest.

The results indicate that Wzgórza Krzesławickie is generally easy to use due to its extensive open areas, greenery and the accessibility of services and shared spaces. Urban-design barriers are fragmentary. From the perspective of older adults, however, they may significantly affect comfort, the pace of movement and the sense of independence. This applies especially to stairs, height differences, narrow pavements, uneven surfaces, the lack of handrails and an insufficient number of resting places.

The research walk using the age simulation suit proved to be a useful tool complementing classical architectural and urban analysis. It allows the identification of those features of space that are not readily apparent in a standard assessment but clearly influence the experience of users with reduced mobility. In this sense, the accessibility of residential-estate space should be treated as one of the basic dimensions of its quality.

The significance of the study also lies in showing that improving accessibility does not always require a radical reconstruction of the estate. In many places, targeted interventions may be sufficient: adding handrails, improving surfaces, providing benches, strengthening lighting or making the route more legible. Such interventions may significantly increase the everyday comfort of users without disturbing the basic spatial structure of the estate.

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