



MULTI-CRITERIA EVALUATION OF ACCESSIBILITY OF CONTEMPORARY PUBLIC UTILITY BUILDINGS – ON THE EXAMPLE OF KIELCE

WIELOKRYTERIALNA OCENA DOSTĘPNOŚCI WSPÓŁCZESNYCH BUDYNKÓW UŻYTECZNOŚCI PUBLICZNEJ – NA PRZYKŁADZIE KIELC

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Abstract

The article analyzes the accessibility of selected examples of public utility buildings, implemented at the end of the 20th century and at the beginning of the 21st century, in the structures of the contemporary city of Kielce. In order to learn about the functioning and architectural solutions of buildings that are among the most frequented by the general public, an in situ study was conducted, using a multi-criteria method that allows comparative analysis and is an effective tool in making an accurate assessment. The selection of the most relevant evaluation criteria was based on the actual needs and psychophysical condition of today's society. The research was locationally focused on the Kielce city area, taking into account current reports and statistics indicating the largest increase in the number of people over 65 in the Świętokrzyskie voivodeship. The studies carried out have led to conclusions and recommendations to help in the design and management of facility spaces.

Keywords: universal design, accessibility, barrier, alternative access, public utility facility, contemporary architecture, city

Streszczenie

W artykule dokonano analizy dostępności wybranych przykładów obiektów użyteczności publicznej, zrealizowanych pod koniec XX i na początku XXI wieku w strukturach współczesnego miasta Kielce. W celu zapoznania się z funkcjonowaniem oraz rozwiązaniami architektonicznymi budynków, należących do najczęściej uczęszczanych przez ogół ludzi, przeprowadzono badania in situ, wykorzystano metodę wielokryterialną, umożliwiającą przeprowadzenie analiz porównawczych i stanowiącą skuteczne narzędzie w dokonaniu precyzyjnej oceny. Wylonięcie najistotniejszych kryteriów oceny oparto na rzeczywistych potrzebach oraz kondycji psychofizycznej dzisiejszego społeczeństwa. Badania skoncentrowano lokalizacyjnie na obszarze Kielc, mając na uwadze aktualne raporty i statystyki wskazujące na największy przyrost liczby osób powyżej 65 lat w województwie świętokrzyskim. Przeprowadzone studia pozwoliły na sformułowanie wniosków i zaleceń pomocnych w projektowaniu i zarządzaniu przestrzeni obiektów.

Słowa kluczowe: projektowanie uniwersalne, dostępność, bariera, dostęp alternatywny, obiekt użyteczności publicznej, architektura współczesna, miasto

1. INTRODUCTION

In recent years, there has been a widespread push for accessibility in many Polish and European cities. More

and more buildings and spaces are becoming more convenient and safer, and the newly-realized facilities of philharmonics or train stations are completely

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accessible. Expressions such as "accessible city", "accessible space for all" have become the foundation of many activities and investments, carried out by municipal authorities, various organizations and scientific and academic circles, such as the POWR partnership project "Accessibility Hub – a center for practical learning of accessibility" [1], implemented at the Kielce University of Technology and Kraków University of Technology. Thanks to joint efforts, the urban space is changing, together we are overcoming external barriers but also those that lie in our beliefs.

The accessibility of buildings and public spaces is undoubtedly a complex and interconnecting concept, related to the principles of universal design pioneered by architect and urban planner Selwyn Goldsmith, and developed by Ronald Mace. Based on his own experience, Mace founded the Center for Universal Design in 1989, which has become a major source of information and research on universal design internationally. The premise of this concept assumes equal and equitable access to various types of goods, taking into account the broadly understood limitations of users. Designed in this way, the flexible space accommodates all types of disabilities and responds to the diverse needs of the users, regardless of their age, social status or education. New facilities and public spaces are being built in the spirit of universal design, and existing ones are being adapted to people with different needs. All this is to ensure that no user, regardless of their preference or level of fitness, is excluded and discriminated against.

In order to learn about the functioning and architectural solutions of buildings that are among the most frequented by the general public, such buildings were identified (case studies) and *in situ* studies were carried out in several of them [1].

1.1. Purpose and scope of the research

The main objective of the studies became to conduct accessibility analyses of selected public facilities that have been functioning in the structures of the contemporary city of Kielce from the end of the 20th century and the beginning of the 21st century. The authors focused their research locationally on the Kielce city area, keeping in mind current reports and statistics indicating the largest increase in the number of people over 65 in the Świętokrzyskie voivodeship [more: 2]. An important part of the work also became the identification of the most relevant criteria based on the actual needs and psychophysical condition of today's society.

In order to provide a broader context for the studies, a synthetic analysis of the current state of knowledge

was made at the same time. Then, using previous research [3-5] facility analyses were conducted based on selected examples and adopted criteria.

2. BASIC TERMINOLOGY AND LEGAL CONSIDERATIONS

The topic of universal design is absorbing much of the scientific community, being addressed in numerous studies and current research that emphasize the needs of people with disabilities and identify design guidelines for all. Among the studies conducted, attention is drawn to the multifaceted nature and focus on a well-defined context, the specific needs of users, such as the residential environment, the needs of seniors [6, 7], the qualitative aspect related to the arrangement of space [8] or innovation [9].

In the collective work *Architekci zmian. Innowacje dla osób z niepełnosprawnością* [10], recognized leaders and social innovators come together to create a new disability paradigm with significant national and international impact. A significant source of knowledge are expert studies, such as: *Diagnoza głównych barier architektonicznych w przestrzeni publicznej Warszawy* [11] or *Możliwości zwiększenia dostępności budynków użyteczności publicznej* [12] – including an accessibility audit of the building interior and its surroundings, as the most sensitive places for people with disabilities. In turn, guides like: *Włącznik. Projektowanie bez barier* [13], *Projektowanie bez barier – poradnik* [14], *Standardy dostępności budynków dla osób z niepełnosprawnościami* [15], contain comprehensive universal design guidelines for the design of buildings and spaces, and present the most common issues regarding the design of accessible environments and adaptability of the immediate environment in which a person with a disability lives and resides.

A large spectrum of the knowledge base is formed by documents of governmental organizations, international organizations and regulations [16].

The main premise of universal design according to Ronald Mace is a strategic approach to designing, planning and creating buildings, spaces, products to serve and be accessible to all people, without the need for adaptation or specialized design. In 1997, the Center for Universal Design developed 7 principles of universal design: identical use, flexibility in use, simple and intuitive use, noticeable information, fault tolerance, effortless use, and size and space appropriate for access and use [17, 18]. In 2009 Konrad Kaletsch additionally formulated the 8th principle, which emphasizes perception of equality. Article 2 of the Convention on the Rights of Persons with Disabilities

emphasizes the importance of universal design for products, environments, programs and services to be usable by all, to the greatest extent possible, without the need for adaptation or specialized design [19].

The Act of August 27, 1997, on Vocational and Social Rehabilitation and Employment of Persons with Disabilities [20] defines the concept of a person with special needs, which also includes the elderly, persons with disabilities, permanently or temporarily impaired mobility or perception. In turn, the Act on Ensuring Accessibility to Persons with Special Needs indicates the meaning of terms such as accessibility, alternative access, barrier and the division into architectural, digital or information and communication barriers¹ [21]. The basic legal act in Poland sanctioning the rights of people with disabilities is the Constitution of the Republic of Poland [22], which ensures freedom and human and civil rights, prohibits discrimination against citizens in social life, social and cultural rights, emphasizes that every person has inalienable dignity and, regardless of their degree of disability, should be treated equally with others, have equal rights in access to public spaces and services. The Constitution imposes an obligation to comply with binding international law and regulations concerning people with disabilities, such as the UN "Convention on the Rights of Persons with Disabilities" [23] and the EC Communication "European Disability Strategy 2010-2020" [24].

In addition, there are laws and regulations, such as, among others, the Act of August 27, 1997, on Vocational and Social Rehabilitation and Employment of Persons with Disabilities [20], which mandates that people with disabilities be enabled to participate in society by, among other things, eliminating barriers, particularly architectural barriers. The Construction Law act [25] indicates the need to provide the necessary conditions for the use of public facilities and multi-family housing by people with disabilities, especially those in wheelchairs. The Regulation of the Minister of Infrastructure on the technical conditions to be met by buildings and their location [26] defines a public utility building, a multi-family residential building and a collective residence, for which accessibility by persons with disabilities must be ensured in accordance with the Building Law, as well as the specific requirements for these facilities met in terms of accessibility.

¹ Existing architectural barriers can be divided into: external – directly related to communication: pedestrian, road, rail, bus and associated facilities; internal – directly related to the form and function of various buildings [19].

3. SUBJECT OF RESEARCH AND EVALUATION CRITERIA

The selection of public utility buildings included in the study was based on their importance and significance in the daily life of the residents of the city of Kielce and Kielce powiat, in terms of culture and access to public administration. The following public utility facilities in Kielce were analysed for accessibility:

1. Kielce Cultural Centre (1992)
2. Public Library in Kielce (2007)
3. Świętokrzyskie Philharmonic in Kielce (2011)
4. Powiat Starosty Office in Kielce (2013)

Conducted literature studies and previous research [3-5] made it possible to formulate criteria as a tool for evaluating the accessibility of the proposed significant facilities in the city of Kielce. The study used a multi-criteria method, which enabled comparative analyses and is an effective tool to help make an accurate assessment. Finally, 3 evaluation criteria were formulated:

Criterion No. 1

External access to the facility:

- designation of a motor vehicle parking system near one of the main entrances, including the location of traveller drop-off points,
- unobstructed pedestrian routes leading to the entrance,
- entrances and exits at ground level,
- information at the entrance to the facility,
- wide door openings and easy door operation,
- sufficient space around the door to allow a person in a wheelchair to open and close the door.

Criterion No. 2

Traffic in the internal space of the building – reaching all necessary functions and zones in the petitioner/customer service area:

- organization and hierarchy of space – a simple and logical functional layout of the interior space,
- available connections of the utility floors of the facility,
- easy access to elevators and toilets, including those adapted to the needs of people with disabilities, intuitive, obvious and accessible fire escape routes,
- spacious elevators equipped with access systems for people with limited perception, safe stairways that are convenient to use and will allow safe evacuation in emergency situations, non-slip surfaces for pedestrian routes,
- appropriate height, location and easy operation of buttons (for example in elevators),
- the visual aspect, the appropriate contrast of walls, floors, doors and signage.

Criterion No. 3

Petitioner/customer service area:

- easy access to information points,
- appropriate height of service points,
- clear and universally understandable signage,
- the transmission of important information through two or more modalities – the senses of perception (touch, sound and visual content),
- hearing support systems.

Criteria that are more important from the point of view of contemporary development and required by law regulations:

- designation of a motor vehicle parking system near one of the main entrances,
- entrances and exits at ground level,
- information at the entrance to the facility,
- sufficient space around the door to allow a person in a wheelchair to open and close the door,
- easy access to elevators and toilets, including those adapted to the needs of people with disabilities,
- spacious elevators equipped with access systems for people with limited perception,
- appropriate height, location and easy operation of buttons (for example in elevators),
- the visual aspect, the appropriate contrast of walls, floors, doors and signage,
- clear and universally understandable signage,
- the transmission of important information through two or more modalities – the senses of perception (touch, sound and visual content),
- hearing support systems.

4. MULTI-CRITERIA EVALUATION OF ACCESSIBILITY OF PUBLIC UTILITY BUILDINGS

4.1. Kielce Cultural Centre,

year of establishment: 1992, finalization of construction: 2002, designer: arch. Daniel Olędzki (Figs. 1-8)

The building of the Kielce Cultural Centre (KCC) was modelled after the plans for the Musical Theatre in Gdynia. Construction was completed in 1992, and the last construction works were finalized in 2002. The Centre is located at Moniuszki Square and is one of the most important cultural facilities in the city.

Criterion No. 1

External access to the facility:

- parking spaces for the disabled are located approximately 10 m from the building, near the main entrance to the building,

- the entrance for the disabled is located at the main entrance from the ground level,
- the pavements leading from the parking lot to the building's main entrance have slight slopes and are free of obstructions,
- there is clear signage and information at the entrance to the building,
- the door in the main entrance area of the building is sliding and wide, which significantly facilitates and affects the comfort of the user,
- sufficient space around the door allows it to open and close freely, including for a person in a wheelchair,
- the functional layout of the exterior is simple, logical and clear.

Criterion No. 2

Traffic in the interior space of the building:

- the main lobby area with a cloakroom for customers has been adapted for people with disabilities, the hall is spacious and easy for everyone to move around,
- vertical traffic for wheelchair users between floors is not possible due to the lack of elevators in the building's public areas,
- to get to the auditorium, a wheelchair user must be assisted by a staff person, and must be guided through the staff area, where there is a passenger elevator,
- the facility's staff is distinguished by their great sensitivity and extensive knowledge of the needs of people with disabilities and the requirements resulting from accessibility needs. Because of its conscious approach to many problems, and despite the facility's obstacles, the staff allows each user full access to the vast majority of activities and events that take place at the facility,
- the management board's ongoing efforts to subsidize the introduction of an elevator in the main hall area are of note. The proposed location will not deteriorate the functional assumptions of the building, but will significantly facilitate the use of the facility,
- the functional layout of the building is complicated, so moving around the facility requires assistance from KCC staff each time,
- the facility has clearly marked vertical traffic and handicapped toilet areas,
- the corridor areas are wide and spacious, with smooth anti-slip surfaces,

- traffic areas in the building have contrast elements for the visually impaired. Graphical solutions refer to the description of doors, toilets and main service areas in the building, as well as the directions of evacuation,
- fire escape routes are not cluttered with any obstacles.

Criterion No. 3

Customer service area:

- information desks are located at the main entrance to the building,
- access to information desks is difficult due to their height – not adapted to people with disabilities,
- the main hall area with a cloakroom for customers has been adapted for people with disabilities, has a smooth surface without architectural barriers,

- hearing aids are located in the ticket office area, where an induction loop is installed to help serve the hearing impaired.

Conclusions: The KCC building has been partially adapted to people with disabilities.

The building's big assets include an entrance for people with disabilities at ground level, an induction loop in the ticket office area, and spacious corridors and staircases. A major problem is the lack of elevators in the general traffic area, which means that wheelchair users must use the elevators in the service area. Of great importance is: the right approach, sensitivity and knowledge of the people managing the facility regarding the needs of people with disabilities, the corrective actions taken.



Fig. 1. View of the main entrance to the building of the Kielce Cultural Center



Fig. 2. View of the KCC building

Source: <https://www.4dkielce.eu>, accessed on: 02.2023



Fig. 3. Access to the main entrance



Fig. 4. Parking spaces for the disabled at the main entrance to the building



Fig. 5. Main entrance area with glazing markings



Fig. 6. Cloakroom and hall area on the ground floor



Fig. 7. Horizontal communication on the first floor

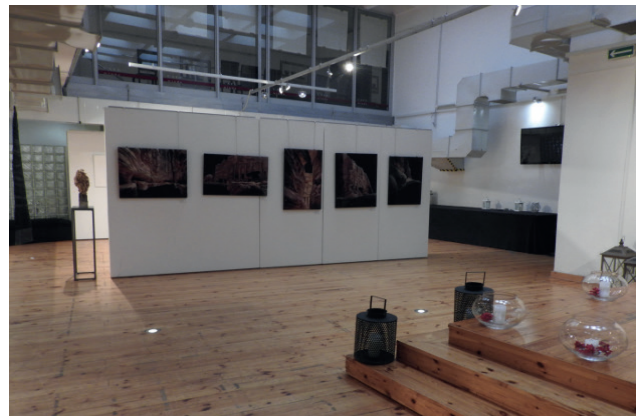


Fig. 8. Art gallery accessible to the public with a disability

Photographs: the author, February 2023.

4.2. Gombrowicz Voivodeship Public Library in Kielce, year of establishment: 2007, designer: Detan Pracownia Architektoniczna, Kielce (Figs. 9-22)

The building is located on Ściegiennego street is a local government cultural institution, maintained from the budget of the Świętokrzyskie Voivodeship.

Criterion No. 1

External access to the facility:

- parking spaces for people with disabilities are located in the parking lot behind the library (about 30 m from the main entrance area of the building),
- the road leading from the parking lot to the Library building has a smooth, paved and level surface free of obstacles,
- the main entrance to the building is not suitable for people with disabilities who use a wheelchair, due

- to the stairs leading up to the entrance and the lack of a ramp for people with disabilities in this area,
- entrances for people with physical disabilities, including those in wheelchairs, are located on the side of the building to the right of the main entrance – directly from ground level,
- access for wheelchair users is through a wide gate, followed by a convenient sidewalk with a smooth paved surface without architectural barriers,
- in the entrance area for people with disabilities, the space at the entrance door has the required dimensions for manoeuvring,
- the doors in the entrance area for people with disabilities are swinging and wide enough,
- the space around the door is wide enough for manoeuvring and allows wheelchair users to open and close the door.

Criterion No. 2

Traffic in the interior space of the building:

- right at the entrance dedicated to people with disabilities, there is an elevator that allows vertical traffic to all floors. The elevator is spacious and includes buttons at the right height with braille signage,
- the functional layout of the building is simple, logical and legible, corridors and horizontal traffic spaces are wide and do not contain elements that impede traffic for people with disabilities, and have smooth anti-slip surfaces,
- the facility's floors are accessible to all users via elevators,
- elevator and restroom access for people with disabilities is easy and logical,
- the vertical and horizontal traffic zones, as well as the restroom area, have clear signage for people with disabilities,
- fire escape routes are not cluttered with any obstacles.

Criterion No. 3

Service area:

- access to information desks, elevators and restrooms for people with disabilities is easy and clear,
- there are reception and information desks at the entrances to the lending and reading rooms, adapted for people with disabilities who use wheelchairs,
- within the lending and reading rooms, there is a blue zone aimed at people with the autism spectrum disorder and impaired social interaction. Using placards with graphic markings, these people can

- easily communicate their desire to borrow a book, return a book or other usage preferences at the facility,
- in addition, for people with disabilities, including the elderly, there is a program – Books on call, book delivery, access to the media archive. In addition, access to board games and multimedia (more than 16,000 CDs and DVDs of movies, music and about 5,000 audiobooks) which are made available externally is available to all users,
- the reading room has specialized equipment such as: a printer, which convert written text into the Braille alphabet, and devices that magnify text for the visually impaired, specialized scanners that convert text into speech,
- the website is adapted for people with disabilities in terms of colour, contrast, and accessibility and legibility of information,
- there are no assistive listening components in the facility.

Conclusions: The Voivodeship Public Library building has been adapted for use by people with disabilities and equipped with specialized assistive equipment. The main entrance area does not meet accessibility requirements, so access has been provided via wide paths with a level surface, leading to the door on the east side from ground level. Inside the building, assets include the legibility of the building's layout, a spacious elevator, corridors and staircases, as well as accessible information areas in the lending and reading rooms with many facilities for the visually impaired, autistic or those in wheelchairs.



Fig. 9. Entrance to the Public Library from the front side

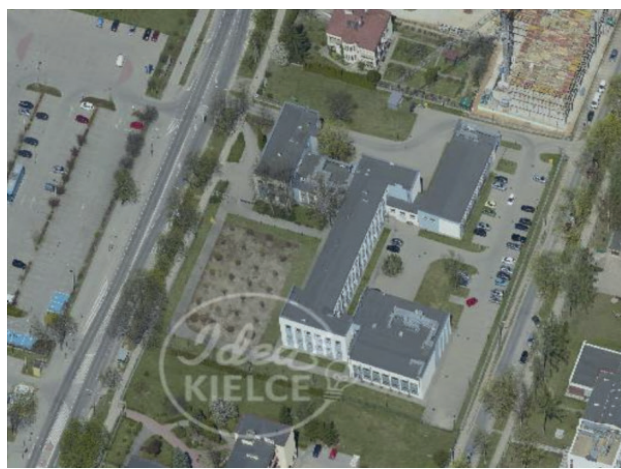


Fig. 10. View of the Public Library building
Source: <https://www.4dkielce.eu>, accessed on: 02.2023



Fig. 11. Pavement zone on the front side



Fig. 12. Passage through a gate to a wheelchair-accessible area



Fig. 13. Elevator located at the entrance to the building



Fig. 14. Horizontal communication in the zone in the entrance area on the eastern side



Fig. 15. Horizontal communication at the rental



Fig. 16. Lowered desk for people with disabilities

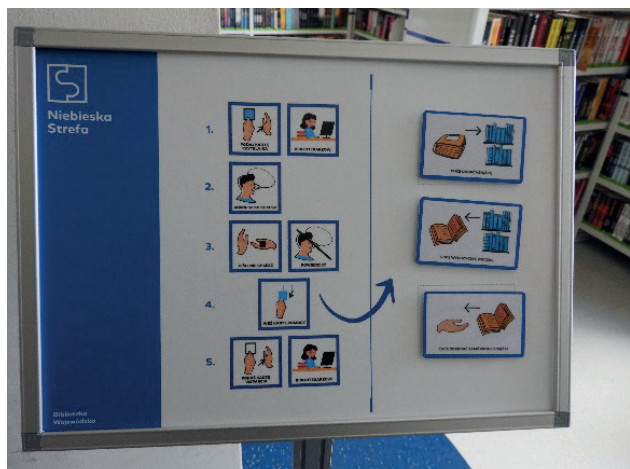


Fig. 17. Blue zone – cards for users with autism spectrum disability for expressing preferences



Fig. 18. Blue zone in the landing room for users with autism spectrum disability



Fig. 19. Service area in the landing room



Fig. 20. Entrance to the landing room – sliding door

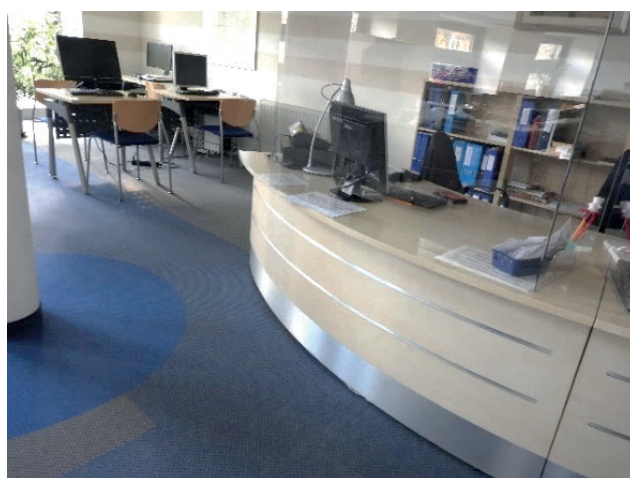


Fig. 21. Service area in the reading room



Fig. 22. Reading room – passage between desks

Photographs: the author, February 2023.

4.3. Świętokrzyskie Philharmonic in Kielce,

year of establishment: 2011, designer: PIW-PAW Architekci (Figs. 23-34)

The philharmonic building is located at ul. Żeromskiego in Kielce and is one of the most important cultural facilities in the city.

Criterion No. 1

External access to the facility:

- parking spaces for the disabled are located in the underground parking lot closest to the general circulation areas to the building,
- the pedestrian routes inside the building leading to the entrance are free of obstacles,
- the entrance for the disabled is located at the main entrance, on the ground level,
- the road that leads from the parking lot to the Świętokrzyskie Philharmonic building has a smooth even surface,
- signage and information at the entrance to the building is clear and legible,
- in the main entrance area of the building, the doors are swinging and wide enough,
- the space at the door is of adequate size and allows free manoeuvring for wheelchair users,
- the functional layout of the exterior is simple, logical and clear.

Criterion No. 2

Traffic in the interior space of the building:

- the functional layout in the building is simple and clear, corridors and horizontal traffic spaces are wide and do not contain elements that impede traffic for people with disabilities, and have smooth non-slip surfaces,

- the floors are accessible to all users via spacious elevators,
- the vertical and horizontal traffic areas and toilets for the disabled are clearly and intuitively marked,
- traffic areas in the building have contrast elements for the visually impaired. Contrasts have been used on both the walls and floors, which is certainly a significant convenience for the visually impaired,
- graphical solutions refer to the description of doors, toilets and main service areas in the building, as well as the directions of evacuation,
- fire escape routes are not cluttered with any obstacles,
- elevators have buttons at the appropriate height with braille markings,
- there are no elements of hearing support.

Criterion No. 3

Customer service area:

- access to the information points in the building is simple and clear,
- information desks were conveniently located at the main entrance to the building,
- the customer service area has not been adapted for the disabled, with no lowering of the countertop for wheelchair users,
- the cloakroom area has been adapted for wheelchair users.

Conclusions: The Philharmonic building, with the exception of the ticket office area, is an accessible facility for all user groups. Noteworthy features include a convenient main entrance, a clear functional-spatial and traffic layout, spacious corridors, elevators and staircases, and auditoriums that are accessible to all.



Fig. 23. Main entrance to the Świętokrzyska Philharmonic



Fig. 24. View of the Świętokrzyska Philharmonic
Source: <https://www.4dkielce.eu>, accessed on: 02.2023



Fig. 25. Ticket office area



Fig. 26. Horizontal communication in the building



Fig. 27. Locker room in the building



Fig. 28. Elevator in the building



Fig. 29. Vertical communication in the building

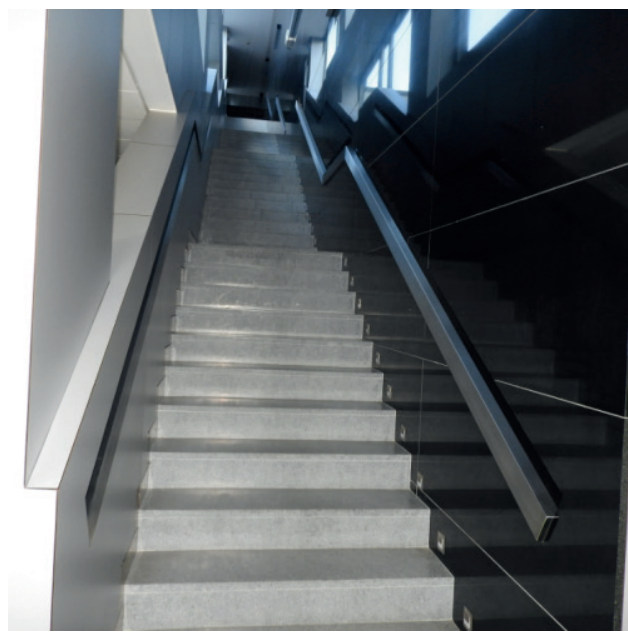


Fig. 30. Vertical communication in the building-stairs



Fig. 31. The main auditorium



Fig. 32. The main auditorium



Fig. 33. Information graphic in the building and patron



Fig. 34. Small Concert Hall

Photographs: the author, February 2023.

4.4. Powiat Starosty Office in Kielce,

year of establishment: 2013, designer: Team s.c. – Design Studio from Busko-Zdrój (Figs. 35-40)

Criterion No. 1

External access to the facility:

- parking spaces for people with disabilities closest to the building are located about 20 meters away,
- the pedestrian routes leading to the entrance are free of obstacles,
- the entrance for people with disabilities is the main entrance – directly from the ground level,
- the road that leads from the parking lot to the Starosty building has a smooth even surface,
- signage and information at the entrance to the building is clear and legible,
- in the area of the main entrance to the building there are sliding doors, wide enough, which significantly facilitates use,

- the space at the door is of adequate size and allows free manoeuvring for wheelchair users,
- the functional layout of the exterior is simple, logical and clear.

Criterion No. 2

Traffic in the interior space of the building:

- the functional layout is simple and clear, corridors and horizontal traffic spaces are wide and do not contain elements that impede traffic for people with disabilities, and have smooth non-slip surfaces,
- the floors are accessible to all users via elevators,
- the areas of vertical and horizontal traffic and toilets for people with disabilities are clearly and intuitively marked,
- traffic areas in the building have contrast elements for the visually impaired. Contrasts have been used on both walls and floors, which can be a significant convenience for the visually impaired,

- graphical solutions refer to the description of doors, toilets and main service areas in the building, as well as the directions of evacuation,
- fire escape routes are not cluttered with any obstacles,
- there are no elements of hearing support.

Criterion No. 3

Petitioner service area:

- access to the information points in the building is simple and clear,
- information desks are located at the main entrance to the building,

- the customer service area has been adapted for the disabled, with a lowered countertop for wheelchair users.

Conclusions: The building of the Poviast Starosty Office in Kielce is an accessible facility for people with disabilities. The building’s big assets include a main entrance accessible to all, the legibility of the building’s layout, spacious corridors, elevators and staircases, and accessible information areas at the building’s entrance.



Fig. 35. Entrance to the Poviast Starosty on the front side

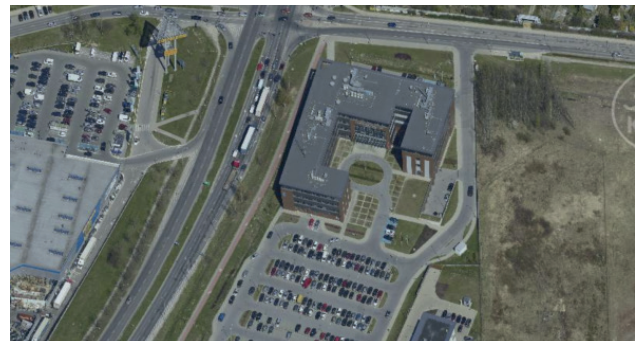


Fig. 36. Location of the Poviast Starosty Office building
Source: <https://www.4dkielce.eu>, accessed on: 02.2023



Fig. 37. Entrance from the front side



Fig. 38. Horizontal communication in the building



Fig. 39. Lowered console table in the service area

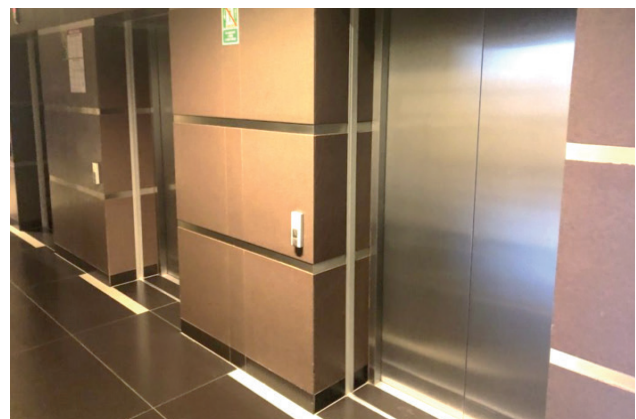


Fig. 40. Vertical communication in the building

Photographs: the author, February 2023.

5. SUMMARY AND CONCLUSIONS

A review of the proposed public facilities of Kielce allows us to conclude that these buildings mostly have architecture and interior space adapted for people with disabilities, but not to the full extent. This is due in large part to the period in which these buildings were designed and built (except the philharmonic). In the situation of some structures, it is often difficult or even impossible to meet all the requirements for full accessibility, due to the specificity of the structure. Then the situation forces the use of alternative solutions (e.g., Kielce Cultural Centre). In addition, the solutions that are introduced into the facilities at later stages of use are not exactly

comfort solutions and those that should be considered equivalent to those envisioned at the stage of design or radical reconstruction of the facility. Based on the analysis, it should be concluded that the vast majority of the solutions and amenities introduced so far refer to conventional and formal solutions. These are more conservative concepts, with distinctive spaces and facilities that are usually introduced and dedicated specifically for the elderly and people with disabilities. With regard to the most recent buildings (the Philharmonic building) completed in Kielce in the 21st century, it should be emphasized that they constitute accessible space – based on the assumed evaluation criterion.

No criterion	Description of the criterion	Kielce Cultural Centre 1992	Public Library in Kielce 2007	Świętokrzyskie Philharmonic in Kielce 2011	Powiat Starosty Office in Kielce 2013
CRITERION No. 1 External access to the facility	designation of a motor vehicle parking system near one of the main entrances, including the location of traveller drop-off points	+	-	+	+
	unobstructed pedestrian routes leading to the entrance	+	+	+	+
	entrances and exits at ground level	-	+	+	+
	information at the entrance to the facility	+	+	+	+
	wide door openings and easy door operation	-	+	+	+
	sufficient space around the door to allow a person in a wheelchair to open and close the door	+	+	+	+
CRITERION No. 2 Traffic in the internal space of the building – reaching all necessary functions and zones in the petitioner/customer service area	organization and hierarchy of space – a simple and logical functional layout of the interior space	+	+	+	+
	available connections of the utility floors of the facility	+	+	+	+
	easy access to elevators and toilets, including those adapted to the needs of people with disabilities, intuitive, obvious and accessible fire escape routes	+	+	+	+
	spacious elevators equipped with access systems for people with limited perception, safe stairways that are convenient to use and will allow safe evacuation in emergency situations, non-slip surfaces for pedestrian routes	+	+	+	+
	appropriate height, location and easy operation of buttons (for example in elevators)	+	+	+	+
	the visual aspect, the appropriate contrast of walls, floors, doors and signage	-	+	+	+
CRITERION No. 3 Petitioner/customer service area	easy access to information points	+	+	+	+
	appropriate height of service points,	+	+	+	+
	clear and universally understandable signage	+	+	+	+
	the transmission of important information through two or more modalities – the senses of perception (touch, sound and visual content)	+	+	+	+
	hearing support systems	-	-	-	-
	SUMMARY	14(+)/3(-)	15(+)/2(-)	17(+)	17(+)

In conclusion, the studies carried out have led to conclusions and recommendations to help in the design and management of facility spaces:

- An important aspect is to pay attention to innovation and consider the needs of future seniors, given the dynamic changes in the relationship between people and the virtual environment.
- Designing concepts with bold solutions, using the latest research advances related to design for seniors and people with disabilities, including: appropriate design of spaces that eliminate barriers related to sensory dysfunctions and minimize disabilities, i.e., functionality, clarity of layouts adapted for people with visual impairments.
- Using the achievements of progress and incorporating contemporary technologies that shorten the distance and save time determine greater efficiency and precision [5].

The research issues raised in the article, as well as the recommendations made, are undoubtedly interdisciplinary in nature. Therefore, the search for a new functional structure, universality of solutions and formal assumptions becomes an important challenge for architects and designers, both of existing and newly designed public facilities. In particular, the structures of newly constructed service buildings absolutely must be clear and intuitive to facilitate the functioning and spatial relationships in the facility for all users. Each space should allow all people to use it as independently and consciously as possible.

In conclusion, it should also be emphasized that awareness of universal accessibility of buildings and universal design has significantly increased in recent years, and those managing the presented public facilities are fully aware of the needs of people with disabilities. As it stands, the financial aspect remains an important issue to be resolved.

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