

A METHOD FOR EVALUATING THE IMPACT OF UNIVERSAL DESIGN ON THE ATTRACTIVENESS OF MILITARY TOURISM SITES

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ABSTRACT

Motives: The interest in military tourism has been increasing steadily around the world, especially among tourists interested in military history. Given the lack of methods and studies examining the impact of universal design on the attractiveness of public open spaces in military tourism sites, an innovative method should be developed to diagnose the accessibility of such sites for all social groups within the realm of the possibilities offered by universal design.

Aim: The main aim of the study was to propose a method for assessing the impact of universal design on the attractiveness of public open spaces on the example of the Wolf's Lair, a popular military tourism site in Poland. The specific objectives were to describe the origins of tourism, with special emphasis on military tourism, and to present the unique characteristics of public space design. Public space attributes that contribute to effective design of tourist space were identified based on the results of a questionnaire survey. Indicators and measures for assessing the identified attributes were developed and presented, and the principles for their implementation were described.

Results: The analyses carried out in the study revealed that the assessed site has considerable appeal for tourists, especially those interested in military history. Based on the results of the assessment conducted with the use of the proposed method, it can be concluded that the examined site is characterised by a high level of tourist attractiveness. The presented findings constitute valuable information for the management of the Wolf's Lair (State Forests).

Keywords: universal design, military tourism, public space

INTRODUCTION

In recent years, military tourism has become increasingly popular among tourists, especially those interested in military history and technology. The scope of the term 'military tourism' has become

increasingly broad (Venter, 2017) and has been repeatedly linked to related topics such as 'dark tourism' and 'blood tourism' (Raine, 2013; Biran & Hyde, 2013). According to Kwilecki, the main reason for military tourism is cognitive motivation, as this particular form of tourism broadens the

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mind, increases knowledge, and general culture (Kwilecki, 2011). The growing interest in military tourism forces the owners and managers of tourist facilities to adapt these sites to the users' needs (Pearn & Heritage, 2011). The principles of accessible tourism should be considered already at the design stage to ensure that people with different types of disabilities (in mobility, vision, hearing, and cognition) can function independently and with dignity in tourist space (Buhalis & Darcy, 2011). Tourist space should also be managed in a way that promotes harmonious spatial development (Ptaszycka-Jackowska, 2007).

Due to the lack of methods and studies that examine the impact of universal design on the attractiveness of public open spaces in military tourism facilities, an innovative method should be developed to diagnose the accessibility of these facilities for all social groups within the realm of the possibilities offered by universal design. The main objective of the study was to propose a method for assessing the impact of universal design on the attractiveness of public open spaces on the example of the Wolf's Lair, a popular a military tourism site in Poland. The specific objectives were to describe the origins of military tourism, and to present the unique characteristics of public space design. Public space attributes that contribute to effective design of tourist space were identified based on the results of a questionnaire survey. Indicators and measures for assessing the identified attributes were developed and presented, and the principles for their implementation were described.

MATERIALS AND METHODS

The research was carried out in several stages. The origins of military tourism and the characteristic attributes of public space were discussed in the first stage of the study. The attributes of public space that contribute to the effective design of tourist space were identified in the second stage. In the third stage, the final list of indicators was developed. The indicators and measures for assessing public space attributes were then identified. In the final stage, the proposed

research methodology was tested in a selected site. The research methods applied in the process of developing the method for assessing the impact of universal design on the attractiveness of public open spaces in military tourism sites are presented in Table 1.

Table 1. Research methods applied in the process of developing a method for assessing the impact of universal design on the attractiveness of public open spaces in military tourism sites

Stage	Research Methods
Conceptual analysis	Literature analysis
Development of a preliminary list of indicators	Literature analysis
Development of a list of indicators	Diagnostic survey; Statistical analysis
Development of evaluation measures	Monographic method
Development of evaluation principles	Scoring method

Source: own elaboration.

A list of twenty (20) indicators supporting a reliable assessment of the impact of universal design on the attractiveness of public open spaces in military tourist sites was developed based on the results of a direct survey. The survey involved 100 experts in the field of universal design and tourism, and it was conducted at the beginning of February 2023. The respondents were researchers and lecturers of the Faculty of Geoengineering at the University of Warmia and Mazury in Olsztyn (specializing in construction and tourism, 86 persons), persons responsible for the organisation and management of tourist traffic in collaboration with the Tourist Promotion and Information Centre in Giżycko (6 persons), and tourist guides in Giżycko municipality, including in the Wolf's Lair (8 persons).

The questionnaire was designed by the authors of this study, and it comprised 30 attributes of public open spaces in tourist facilities that had been selected by the authors of the study during their preliminary research. The respondents were asked to rate the impact of each attribute on the attractiveness of public open spaces in tourist sites on a three-point scale, where:

- 0 points – the attribute is not essential in the development of public open spaces in tourist sites;
- 1 point – the attribute is moderately important in the development of public open spaces in tourist sites;
- 2 points – the attribute is very important in the development of public open spaces in tourist sites.

Thirty attributes of public open spaces in military tourism facilities were identified by the authors of the study during their preliminary research: vending machines with drinks and snacks; safety barriers; area cleanliness; free Wi-Fi; hotel on the site; benches (separate resting places); surveillance; rainwater drains; fencing; lighting (light poles); route signposting (for guiding visitors); disabled parking; refreshment point; tourist information point; first aid centre; souvenir shop; route surface; proximity to facilities; condition of route surface; footpath width; cycle path; litter bins; information boards (description of the site, its location and history); textured guide panels for the blind and visually impaired; toilets; vertical layout of the route (footpath slope); separate playground; range of induction loops enabling the use of audio guides; street lighting; tall and short vegetation.

The initial list of 30 attributes was reduced to 20 items that received the highest scores in the questionnaire. The impact of these attributes on the accessibility and attractiveness of the assessed facilities was determined by calculating weights. The following procedure was applied to compute weights:

1. The total number of points allocated to all 20 attributes that received the highest scores was calculated;
2. The number of points allocated to each attribute was divided by the total number of points allocated to all 20 attributes;
3. The resulting weights were applied in the evaluation based on the weighted sum method.

The list of 20 attributes of public open spaces in military tourism sites, selected based on the results of the questionnaire survey, and the accompanying weights are presented in Table 2.

In the respondents' opinion, the following attributes had a low impact on the attractiveness and accessibility of public open spaces in military tourism sites: first aid centre; cycle path; fencing; rainwater drains; free Wi-Fi; vertical layout of the route (footpath slope); vending machines with drinks and snacks; souvenir shop; separate playground; hotel on the site.

The principles for assessing the selected attributes were formulated with the use of the adopted evaluation method. The assessed attributes of public open spaces were aggregated into a single metric that comprehensively expresses the overall quality of the evaluated facility (Babicz-Zielińska, Rybowska & Obniska, 2008). Point scales combine the advantages of verbal and numerical scales. Each point on the scale is assigned a conventional number and a corresponding verbal expression (Jędryka & Kozłowski, 1986). The accuracy of the evaluation depends on the correct definition of individual quality levels, which is essential for obtaining correct results. Secondly, the assessment team has to be adequately trained to ensure that each team member has a clear understanding of the evaluated attributes.

A reliable grading scale should meet the following requirements:

- each point on the scale should represent a different level of quality that can be easily identified by the assessor;
- each point on the scale (each level of quality) should have a clear definition;
- the number of points should be limited and should not exceed 3 levels;
- all attributes should be rated on a scale with the same number of points (Baryłko-Pikielna, 1975).

Metrics were developed to build a model for assessing the impact of universal design on the attractiveness of public open spaces in military tourism facilities. Metrics were developed based on an analysis of the literature and the results of ongoing research on recent solutions in the development of public open spaces.

An evaluation sheet containing indicators, the relevant measures (which are an important part of universal design principles for developing tourist

Table 2. List of 20 attributes of public open spaces in military tourism sites, selected based on the results of the questionnaire survey, and the accompanying weights

No.	Attribute	A	B	C	$\Sigma = A*0 + B*1 + C*2$	Weight
		0 – non-essential	1 – moderately important	2 – very important		
1.	Information boards (description of the site, its location and history)	0	0	100	200	0.062
2.	Toilets	0	0	100	200	0.062
3.	Route signposting (for guiding visitors)	0	5	95	195	0.059
4.	Area cleanliness	5	5	90	185	0.057
5.	Safety barriers	10	5	85	175	0.054
6.	Lighting (light poles)	0	25	75	175	0.054
7.	Disabled parking	0	25	75	175	0.054
8.	Litter bins	5	20	75	170	0.052
9.	Textured guide panels for the blind and visually impaired	0	30	70	170	0.052
10.	Tourist information point	0	35	65	165	0.051
11.	Benches (separate resting places)	5	30	65	160	0.049
12.	Condition of route surface	5	30	65	160	0.049
13.	Refreshment point	5	40	55	150	0.046
14.	Tall and short vegetation	5	40	55	150	0.046
15.	Rainwater drains	10	35	55	145	0.044
16.	Route surface	15	25	60	145	0.044
17.	Footpath width	5	50	45	140	0.043
18.	Surveillance	10	45	45	135	0.041
19.	Range of induction loops enabling the use of audio guides	0	65	35	135	0.041
20.	Proximity to facilities	15	40	45	130	0.040
Σ					3260	1.000

Source: own elaboration.

space) and weights was developed to assess the impact of universal design on the attractiveness of public open spaces in military tourist facilities.

In the evaluation sheet, the assessed attributes were grouped into four tourist attractiveness classes.

However, it should be noted that the number of the examined attributes influences the accuracy of the evaluation and depends only on the person performing the assessment. The evaluation form is presented in Table 3.

Table 3. Scale for assessing the impact of universal design on the attractiveness of public open spaces in a military tourism site

No.	Criterion	Measure	Scale	Points	Weight	Points X Weight
1	2	3	4	5	6	7
1.	Information boards (description of site, its location and history)	Information boards available for all attractions, in many languages	2	0.062		
		Information boards available for all attractions, in Polish only	1			
		Information boards available for selected attractions or not at all	0			
2.	Toilets	Disabled toilets available	2	0.062		
		Disabled toilets not available	1			
		Toilets not available	0			
3.	Route signposting (for guiding visitors)	Route clearly signposted	2	0.059		
		Route not clearly signposted	1			
		No signposts	0			
4.	Area cleanliness	The entire site is clean	2	0.057		
		Only the footpaths are clean	1			
		The entire site is littered	0			
5.	Safety barriers	Safety barriers present in all hazardous locations	2	0.054		
		Safety barriers only in selected hazardous locations	1			
		No safety barriers	0			
6.	Lighting (light poles)	The entire site is well lit	2	0.054		
		Some parts of the site are not well lit	1			
		The site is not lit	0			
7.	Disabled parking	Adequate number of disabled parking spaces	2	0.054		
		The number of disabled parking spaces does not meet demand at peak times	1			
		No disabled parking spaces	0			
8.	Litter bins	Litter bins are evenly distributed throughout the site	2	0.052		
		Litter bins are not evenly distributed throughout the site	1			
		No litter bins	0			
9.	Textured guide panels for the blind and visually impaired	All footpaths have textured slabs for the blind and visually impaired	2	0.052		
		Only some footpaths or section have textured slabs for the blind and partially sighted	1			
		No textured guide panels for the blind and visually impaired	0			
10.	Tourist information point	Tourist information officers speak foreign languages	2	0.051		
		Tourist information officers do not speak foreign languages	1			
		No tourist information point	0			
11.	Benches (separate resting places)	Benches are evenly distributed throughout the site	2	0.049		
		Benches are not evenly distributed throughout the site	1			
		No benches	0			

cont. Table 3

1	2	3	4	5	6	7
12.	Condition of route surfaces	Paved routes without potholes	2			
		Paved routes with potholes	1		0.049	
		Unpaved routes	0			
13.	Refreshment point	More than one catering facility on the site	2			
		Only one catering facility on the site	1		0.046	
		No catering facilities on the site	0			
14.	Tall and short vegetation	Tall and short vegetation well maintained	2			
		Tall vegetation well maintained, short vegetation not well maintained or absent	1		0.046	
		No tall vegetation or tall vegetation poses a threat to visitors	0			
15.	Rainwater drains	All sections of footpaths have storm drains	2			
		Only some sections of the footpaths have storm drains	1		0.044	
		None of the footpaths have storm drains	0			
16.	Route surface	Tourist routes are paved with safe bituminous materials	2			
		Tourist routes are paved with hard materials (concrete, asphalt)	1		0.044	
		Unpaved routes	0			
17.	Footpath width	Footpaths are wide enough to enable smooth traffic flow	2			
		Only some footpaths/sections are wide enough to enable smooth traffic flow	1		0.043	
		Narrow footpaths compromise the visitors' safety	0			
18.	Surveillance	The entire site has surveillance cameras	2			
		Only some parts of the site have surveillance cameras	1		0.041	
		No surveillance	0			
19.	Range of induction loops enabling the use of audio guides	The entire tourist site is covered by an induction loop enabling the use of the audio guide	2			
		Only a part of the tourist site is covered by an induction loop enabling the use of the audio guide	1		0.041	
		No audio guide	0			
20.	Proximity to facilities	Proximity to facilities enhances the site's appeal for tourists	2			
		Proximity to facilities is considered neutral	1		0.040	
		Proximity to facilities decreases the site's appeal for tourists	0			
Class I	$1.5000 \leq x \leq 2.000$	Class III	$0.500 \leq x < 1.000$			1.000
Class II	$1.000 \leq x < 1.500$	Class IV	$0.000 \leq x < 0.500$	Tourism attractiveness score		

Source: own elaboration.

Research on military tourism

Tourism is a highly complex phenomenon involving social, cultural, economic, spatial and environmental factors. This is evidenced by a wide variety of forms and characteristics of tourism that are capable of satisfying even the most demanding visitors.

In addition, the large number of research studies dedicated to tourism and the theoretical concepts presented in the literature attest to the interdisciplinary character of tourism. In view of the above, is difficult, if not impossible to formulate a single universal definition of tourism. Selected definitions of tourism are presented in Table 4 based on a review of the literature.

Table 4. Definitions of tourism proposed in the literature

Year	Author	Definition
1977	Bartkowski	Tourism is related to physical activity and is synonymous with excursions or trips outside one's place of permanent residence for entertainment and relaxation, and it usually involves visits to natural sites, architectural sites, art monuments, objects of material culture, learning about other people and population groups in a given country, participation in cultural, sporting or other events, as well as the desire to come into contact with nature or undertake some form of physical activity
1998	Toczek-Werner	Tourism involves travel and excursions that are undertaken as leisure activities for the purpose of entertainment, health and gaining new experiences. Travel and excursions are accompanied by many phenomena. The term 'tourism' refers to a wide range of socio-economic and cultural phenomena and processes that contribute to the image of tourism and modify its definition
2013	Maćkowska, Podciborski	Tourism is a diverse and wide-ranging phenomenon. It is of great importance as a form of rest, relaxation, cognition, acquisition of knowledge, physical and mental regeneration. Tourism is also an important part of the economy. In some areas, tourism is a significant source of income for the residents and investors, and it contributes to the economic development of towns and regions

Source: own elaboration based on: Bartkowski, 1977; Toczek-Werner, 1998; Maćkowska & Podciborski, 2013.

In the late 1990s, a classification of tourism was proposed by Gaworecki based on the main purpose of tourist trips. The following types of tourism were identified: leisure, cultural, social, and sports tourism (Gaworecki, 1998). The classification proposed by Gaworecki became increasingly outdated over the years. The purpose of tourism trips and the travellers' preferences continue to change, and many travellers participate in several forms of tourism at the same time.

The evolution and complexity of tourism were discussed again by Kurek in 2007. According to the cited author, tourism is a phenomenon that can be analysed at various levels and realms:

- psychological, relating to individual needs, motives for traveling, personal values, purpose of travel, perceptions, behaviour, and experiences;
- social, relating to interpersonal relationships and interactions during the trip, social tangents, bonds, social stereotypes, and their impact on the interacting parties;
- spatial, because the migration (movement) of people (tourists) is a spatial phenomenon, and the development of tourist facilities that meet the visitors' needs induces profound changes in space;
- economic, because the transactions on the tourism market involve the suppliers of tourist services and consumers, and have economic consequences for both parties, as well as for market growth;

– cultural, because tourism is both an element of culture and an expression of culture (function of culture); tourism promotes the interaction of cultures and leads to their transformation (Kurek, 2007).

In 2009, Różycki identified the following types of tourism: sightseeing, biographical, active, military, sport, leisure, medical, culinary, motivational, social, business, conference and congress, maritime, commercial, profit, ethnic, religious, pilgrimage, cultural, entertainment, educational (also known as study tourism), agritourism, ecotourism, and geotourism (Różycki, 2009). A review of the literature indicates that military tourism had been first identified as a distinctive form of tourism only at the end of the first decade of the 21st century. The classification proposed by Lijewski, Mikułowski and Wyrzykowski in 2002 makes a clear distinction between sightseeing and cognitive tourism, but does not make a direct reference to military tourism (Lijewski, Mikułowski & Wyrzykowski, 2002).

The recent emergence of military tourism as a separate category of tourism can be attributed to the fact that most Polish military sites of symbolic and historical significance had been closed to the public until the early 1990s for political and security reasons (Cold War). Today, these sites are becoming important new destinations for cognitive tourism. The growing interest in this type of tourism was high-

lighted by Poczta who argued that military tourism is one of the unconventional forms of active tourism (Poczta, 2008). The development of military tourism has also been discussed by Chylińska (2006), Cynarski (2012), Stach (2013), and Zgłobicki et. al (2016). A similar observation was made by Kowalczyk who noted that military tourism is a relatively new category of tourism. In the work of Jędrysiak and Mikos von Rohrscheidt, military tourism was also referred to as military cultural tourism, war tourism, battlefield tourism, and military equipment tourism. Military tourism serves a variety functions, including historical-educational, martyrological, political-ideological, cultural-entertainment, recreational-sporting, and adventure (Kowalczyk, 2009).

The situation was different in Western European countries. According to Logan and Reeves, academics and tourists have a growing interest in the heritage associated with dark events, both national and international. These types of tourist destinations include extermination camps, massacre and genocide sites, former maximum security prisons, defence quarters, and former dictatorial headquarters (Logan & Reeves, 2009). At the beginning of the 21st century, the dynamic development of military heritage tourism was discussed by Huh (2002), and Chhabra, Healy and Sills (2003).

According to Kowalczyk (2018), historical-military tourism involves all forms of activity undertaken by tourists (as a primary or secondary objective) who have an interest in historical objects and places that are broadly associated with warfare and the military.

In the definition proposed by Zienkiewicz and Podciborski (2019), military cultural tourism involves travel that is undertaken for educational purposes and to acquire new experiences, where visits to military defence sites and facilities associated with the history of armed conflict, the army, weapons, military commanders, and soldiers are the key attractions during the tour program. The following sites attract tourists with an interest in the military: fortifications, historical battlefields, places related to famous people in military history, armament plants, museums, shelters, bunkers, war cemeteries, graves

of war victims, and important defence structures and buildings, as well as events of military significance (Zienkiewicz & Podciborski, 2019 citing Jędrysiak and Mikos von Rohrscheidt, 2011). The visited sites should be a part of public open space, i.e. they should be freely accessible to all members of the public, without any architectural barriers.

Land-use planning and tourism

Numerous definitions of public space have been proposed in recent decades, but research on public space continues to evolve dynamically. The following factors exert the greatest influence on the quality of public space: legal regulations, construction technology, policy-making (on a macro scale), and socio-cultural factors (on a micro scale).

Wejchert defined public space as an area that is accessible to all members of the local community as well as outsiders and serves as a setting for community activities in urban life (Wejchert, 1993). The diversity of functional forms and the accessibility of public space gave rise to subsequent definitions of the concept.

Dymnicka characterised public space as space to which all citizens should have a guaranteed right of access. Public space supports the free expression of opinions and diverse behaviours (limited only by the general rules of social coexistence), and direct social interactions (Dymnicka, 2009). Jałowiecki and Szczepański define traditional public space as a zone of freedom, where every user can feel free (Jałowiecki & Szczepański, 2006). In turn, Loegler argued that public spaces should create opportunities for experiencing life and interacting with community members (Loegler, 2009). Wysocki emphasised the importance of accessibility, arguing that public space should be a place where people meet, work, and spend their free time; the local residents visit public spaces every day on their way to and from work. Public spaces attract both residents and tourists, and the social interactions and activities in public spaces promote the integration of local communities. Public spaces should be inclusive, friendly and accessible to all, and

they should promote social integration regardless of the users' mobility or cognitive ability, becoming a place where interpersonal ties are strengthened and civil society develops (Wysocki, 2009).

According to Kochanowska, public spaces in urbanised areas should be designed to meet the residents' needs (cultural, identity, social needs), attract outsiders (tourists, potential investors), create an integrated settlement with a distinct image and defined identity (place brand) (Kochanowska, 2009), while providing the users with a sense of security. The definition proposed by Szatan (2012) focuses on the 'openness' and 'universality' of public space, and posits that public and pseudo-public space should be open and accessible to all who wish to use it, and that it should be 'authentic' by responding to social needs, expectations, and preferences. Similarly to Kochanowska, Szatan notes that public space should be socially acceptable and should provide all users with a sense of security (Szatan, 2012).

According to Chmielewski, people feel threatened when they are lost in unfamiliar space. However, individuals who are familiar with urban landmarks and the street layout can easily navigate through urban space with a sense of certainty and inner peace (Chmielewski, 2016). Perceptions of insecurity in public space could be triggered by the lack of spatial order or the presence of social groups that are deemed as "dangerous" (Bierwiazzonek, 2016). Lorens and Martyniuk-Pęczek also noted that since the 1970s, public spaces in highly developed countries have been attracting homeless people, beggars, and other socially marginalised individuals, which could explain the growing safety concerns (Lorens & Martyniuk-Pęczek, 2010). Bierwiazzonek observed that access to public space does not have to be unconditional or complete. Many public spaces, such as parks and gardens, are fenced and closed at night. Physical obstacles are the most direct approach to restricting the accessibility of public space (Bierwiazzonek, 2016). According to Lorens and Martyniuk-Pęczek, physical accessibility of public space can be temporarily limited for safety or logistic reasons (Lorens & Martyniuk-Pęczek, 2010).

The process of creating safe and well-designed public spaces is complex, and it requires effective

planning and the involvement of many actors. Attractive and accessible public spaces increasingly influence people's decisions on where to live and work (Rogowska, 2016).

Public space is also closely linked with the concept of sustainable development. Well-designed public spaces significantly contribute to the competitive advantage of urbanised areas, shape the identity of small towns, and attract new residents, tourists, and investors (Sobol, 2013). Public spaces designed in accordance with the principles of sustainable development should be characterised by high quality, high functionality, a positive impact on the users' mental and physical health, safety, ability to meet the needs of different social groups, including people with disabilities, the elderly, and families with young children; ability to foster diverse interpersonal contacts, and accessibility for pedestrians and cyclists (Sobol, 2013).

The presented definitions indicate that public space design is a rapidly evolving area of urban planning. These definitions are not limited to space or a specific location, and they account for public space users and their needs.

The contemporary man, his needs, and various mobile and static approaches to satisfying those needs, are the integral attributes of a place. Individual perceptions and responses (and interactions with other elements of the urban interior) drive the evolution of public space (Gaweł & Szafranek, 2018).

The beginnings of the dynamic development of tourism space management can be traced back to the 20th century, a period that witnessed numerous socio-economic changes and promoted the emergence of tourism in various areas of social life, including cultural, psychological, spatial, social, and economic (Podciborski & Zienkiewicz, 2017).

According to Drzewiecki, tourist space is a part of geographical space which has the required characteristics for promoting various types of recreational activities that play an important role in the social and spatial dimension (Drzewiecki, 1992). Włodarczyk (2009) also observed that tourist space is a part of geographical space where tourist activities take place. Tourist traffic is an essential criterion for classifying

a part of geographical space as tourist space. Tourist space is also identified based on the presence of tourist facilities whose size and character describe the type of tourist space. According to Włodarczyk, the condition and development of tourist space are influenced by the following factors: natural heritage, cultural heritage, infrastructure and, above all, people who visit tourist destinations and undertake various activities in tourist space (Włodarczyk, 2009).

It can be argued that tourists act as entrepreneurs because tourist activities are primarily responsible for the development and management of tourist areas. Therefore, the authorities responsible for spatial planning and decisions relating to the construction, expansion, and modernization of tourist facilities should be fully aware of the consequences of their decisions, as well as the fact that tourist facilities which are available to visitors at a fee should be of adequate standard and should feature amenities for visitors with disabilities in mobility, vision, hearing, and cognition. Buhalis and Darcy (2011) also noted that authorities at different levels of public administration and the owners of tourist facilities should provide tourists with universally designed tourist products (tourist space) that are free of architectural barriers. In their opinion, universal design solutions are essential for promoting the development of accessible tourism and the construction of technical infrastructure to ensure that people with disabilities can function independently and with dignity in public space.

It should be noted that the meaning of public space has changed over the years under the influence of political, social, economic, and technical factors. The essence of the term “public space” is derived from the Latin word *publicus* which refers to the general human population and a community with shared interests. Therefore, public space is a public good and a common good intended for the general public of users (Mantey, 2019). Consequently, the aim of the social policy implemented by local governments should be to make recreational spaces available to people with mobility and cognitive impairments, including the elderly and families with young children. It should be noted that for many people, the opportunity to rest

and relax is a part of rehabilitation or social therapy. The facilities provided in recreational areas should serve all users, and should encourage them to engage in physical activity and social interactions (Benek, 2015).

The above problems can be resolved through the implementation of universal design principles at the design stage. These principles have been laid down by Article 2 of the Convention on the Rights of Persons with Disabilities which was adopted in New York on 13 December 2006. This document states that universal design means designing products, environments, programmes, and services that are accessible to all members of the public, without the need for adaptation or special design. These principles also apply to tourist space which is a specific type of public space. It should be noted that not all public spaces designed according to the principles of universal design meet the needs of all users, but specific measures can be undertaken to broaden the scope of public space users, including in tourist spaces.

According to the principles of universal design, the following basic amenities should be designed or retrofitted during public space development:

- **pedestrian routes** – to promote the independent movement of people with physical and cognitive impairments, and to ensure the safe movement of other users;
- **pedestrian amenities** – pedestrian amenities should be carefully planned and should follow a consistent pattern to provide users with easy access to litter bins, ticket machines, entrances, and information points. Such facilities include rest areas, information points, landscaping elements, lighting, drainage, temporary and mobile elements (summer cafés, advertising and information boards, stalls);
- **overcoming differences in terrain** – physical barriers along pedestrian routes should be eliminated to make tourist space more available to users. In each public space development project, optimised design solutions should be implemented to increase the accessibility of the built environment for people with physical and cognitive impairments. Differences in slope can be overcome by installing

ramps, appropriately designed external stairs or lifts (Benek, 2015 based on Johni & Thuresson, 2005).

However, despite these guidelines, public spaces still feature numerous barriers, which indicates that the needs of people with disabilities are being marginalised. According to Szoltysek, the main barriers that prevent disabled tourists from fully enjoying their experience, include:

- **physical barriers** – barriers that limit mobility, in particular uneven road surfaces and pavements that restrict the use of wheelchairs or walkers;
- **architectural features** – stairs or manually opened doors which prevent disabled visitors from accessing certain locations;
- **public and private transport** – most means of public and private transport are not adapted to the needs of disabled drivers and passengers;
- **public information** – in particular traffic lights which are designed for users without visual and hearing disabilities (Szoltysek, 2013).

These observations indicate that physical barriers should be eliminated already at the stage of designing the infrastructure in public spaces.

Verification of the proposed method on a selected test object

The Wolf's Lair is one of the most attractive tourist sites in the Polish voivodeship of Warmia and Mazury (Fig. 1).

The Wolf's Lair has been managed by Srokowo Forest District since 2017. During that time, numerous measures have been implemented to improve the site's availability to the public. New footpaths were built, various solutions were introduced to improve visitor safety, and the overgrowth obstructing the view of historic buildings was removed. A small historical exhibition was set up in one of the surviving bunkers. The site was provided with a modern entrance complex, footpaths were paved and lit, and new displays were installed. A service building and a car park were built to accommodate cars, campers, and coaches. The new service building has an area of several hundred square metres, and it houses the main hall, offices, a souvenir shop, an information point, a room for guides, a family room, a café, camper

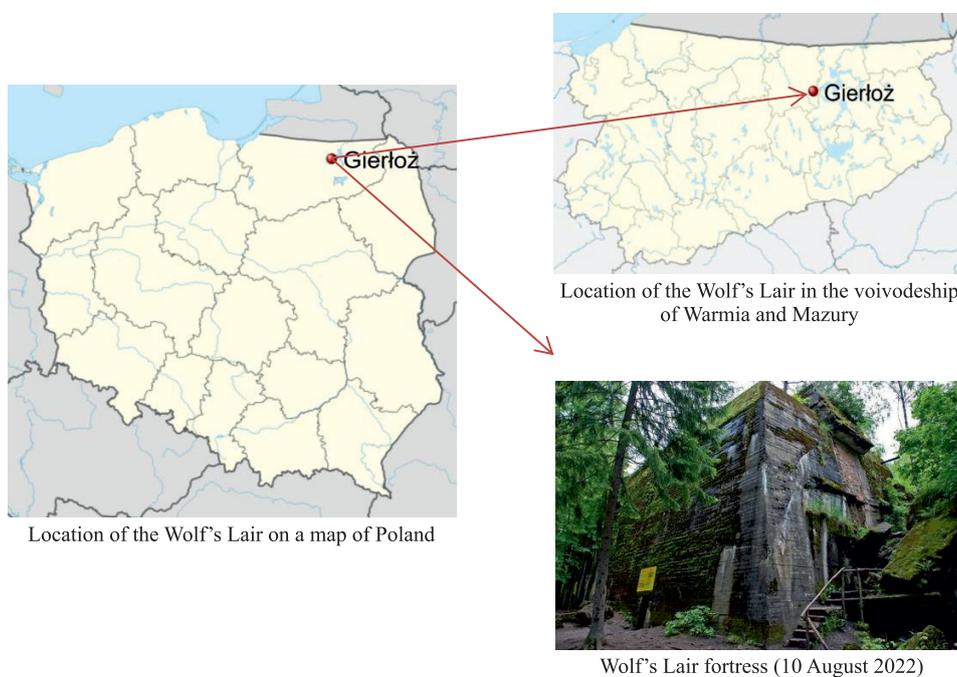


Fig. 1. Location of Wolf's Lair
Source: own elaboration (photograph taken by the author on 10 August 2022).

maintenance area, as well as toilets and showers that are accessible to disabled visitors.

At present, visitors can tour the surviving parts of the concrete fortress, some of which are in a very good condition. Tourists can hire guides who speak several languages or use the audio guide service. A phone app with information about the site can be also downloaded free of charge. The app contains a detailed map of the Wolf's Lair and the main tourist facilities, including the car park, restaurant, hotel, campsite, and toilets.

Additional renovation and modernisation efforts are being implemented to increase the site's attractiveness and accessibility. Footpaths were recently resurfaced to make the site more accessible

to wheelchair users and families with young children. Information boards (multilingual), litter bins, and comfortable benches for the elderly, who are frequent visitors to the site, were installed along the paths. Footpath lighting was improved (Fig. 2).

The influence of universal design on the attractiveness of public open space in the Wolf's Lair military tourist site was assessed during a field interview on 14 February 2023. The evaluation was conducted with the use of the method presented in this study. The results of the assessment are presented in a simplified scoring sheet (Table 5).

The results of the assessment conducted with the use of the proposed method (tourism attractiveness score – class I) confirm that tourist facilities in the



Fig. 2. Upgraded tourist facilities in the Wolf's Lair

Source: own elaboration (photographs taken by the author on 10 August 2022).

Table 5. Simplified scoring sheet for assessing the impact of universal design on the attractiveness of public open space in a military tourism site

No.	Indicator	Measure	Scale	Points	Weight	Points x Weight
1.	Information boards (description of site, its location and history)	Information boards available for all attractions, in many languages	2	2	0.062	0.124
2.	Toilets	Disabled toilets available	2	2	0.062	0.124
3.	Route signposting (for guiding visitors)	Routes clearly signposted	2	2	0.059	0.118
4.	Area cleanliness	The entire site is clean	2	2	0.057	0.114
5.	Safety barriers	Safety barriers present in all hazardous locations	2	2	0.054	0.108
6.	Lighting (light poles)	The entire site is well lit	2	2	0.054	0.108
7.	Disabled parking	Adequate number of disabled parking spaces	2	2	0.054	0.108
8.	Litter bins	Litter bins are evenly distributed throughout the site	2	2	0.052	0.104
9.	Textured guide panels for the blind and visually impaired	No textured guide panels for the blind and visually impaired	0	0	0.052	0.000
10.	Tourist information point	Tourist information officers speak foreign languages	2	2	0.051	0.102
11.	Benches (separate resting places)	Benches are evenly distributed throughout the site	2	2	0.049	0.098
12.	Condition of route surfaces	Paved routes without potholes	2	2	0.049	0.098
13.	Refreshment point	More than one catering facility on the site	2	2	0.046	0.092
14.	Tall and short vegetation	Tall and short vegetation well maintained	2	2	0.046	0.092
15.	Rainwater drains	Only some sections of the footpaths have storm drains	1	1	0.044	0.044
16.	Route surface	Tourist routes are paved with hard materials (concrete, asphalt)	1	1	0.044	0.044
17.	Footpath width	Footpaths are wide enough to enable smooth traffic flow	2	2	0.043	0.086
18.	Surveillance	Only some parts of the site have surveillance cameras	1	1	0.041	0.041
19.	Range of induction loops enabling the use of audio guides	The entire tourist site is covered by an induction loop enabling the use of the audio guide	2	2	0.041	0.082
20.	Proximity to facilities	Proximity to facilities enhances the site's appeal for tourists	2	2	0.040	0.080
Class I	$1.5000 \leq x \leq 2.000$	Class III	$0.500 \leq x < 1.000$		1.000	1.767
Class II	$1.000 \leq x < 1.500$	Class IV	$0.000 \leq x < 0.500$	Tourism attractiveness score		Class I

Source: own elaboration.

Wolf's Lair meet the highest standard. A comprehensive video surveillance system should be installed in the entire site to improve the visitors' safety.

For many years, the condition of tourist facilities in Gierłoż had received considerable criticism from tourists and historians. The experts and the public argued that the Wolf's Lair is an important part of Polish and European historical heritage; therefore, the infrastructure should be brought up to modern standards, and the site should be presented in a wider historical context of World War II. At present, the Wolf's Lair is open to tourists, and it is a part of the "Great Forest Trail" which has been designed as a comprehensive sightseeing route of Polish forests.

CONCLUSIONS

The tourist potential of the Wolf's Lair, Hitler's wartime headquarters, was evaluated with the use of the proposed method for assessing the impact of universal design on the attractiveness of public open spaces in military tourist sites.

The assessments and analyses carried out in the study revealed that the Wolf's Lair has considerable appeal for tourists, especially those interested in military history, and that the site is accessible to people with disabilities.

The developed indicators and metrics can be applied to assess the attractiveness of any military tourist site, and the results of the assessment can be used in the process of planning and implementing renovation, modernisation, and revitalisation works. The results of the assessment can be used to identify spatial development features that promote tourism, as well as features that are lacking or in poor condition. The presented findings constitute valuable information for the owners and managers of tourist facilities, and they support informed decision-making in the process of managing tourist facilities. The proposed method can also be applied in evaluations of open-air museums.

It should be emphasised that the proposed method for assessing the impact of universal design on the attractiveness of public open spaces is a universal

approach that can be applied to various types of military tourism sites. The method can be used before the site is developed and opened to the public, as well as during operation to improve its safety or attractiveness for the visitors. The developed method can be deployed in practice to identify a site's strengths as well as areas that need improvement.

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