

## UNIVERSAL DESIGN OF URBAN SPACES IN UKRAINE: PROBLEMS AND PROSPECTS

**Natalia Novoselchuk<sup>1</sup>, Liudmyla Shevchenko<sup>1</sup>, Olena Troshkina<sup>2</sup>, Arsenii Troshkin<sup>3</sup>**

<sup>1</sup> National University "Yuri Kondratyuk Poltava Polytechnic", Poltava, Ukraine,

<sup>2</sup> National Academy of Fine Arts and Architecture, Kyiv, Ukraine,

<sup>3</sup> State University "Kyiv Aviation Institute", Kyiv, Ukraine

**Abstract.** The issue of the development of the concept of universal design in Ukraine at the present stage is considered in the article. The general state of the solution of this issue is characterized and statistical data is provided. Using the example of Ukrainian cities, in particular the city of Poltava, the main problems and prospects for development that require gradual resolution are outlined. The main task is to ensure the accessibility of the urban environment by creating comfortable conditions for using the housing and communal infrastructure and equipping buildings, taking into account the needs of low-mobility population groups. The object of the study is urban spaces and streets from the point of view of their barrier-free nature and landscape organization. To achieve the set goal, various scientific methods were used in the work. In particular, the empirical method was used for the purpose of observation and comparison. The theoretical method was used to process historical data on the development of the spaces and streets selected for the study. The method of field surveys helped to identify existing problems in the studied areas of the city. And the method of experimental design contributed to the implementation of the main techniques and recommendations in practice. The result of the research is the analysis and development of a number of project proposals taking into account the principles of universal design and modern landscape organization. Currently, for Ukraine, solving the problems of disability and low-mobility population groups is one of the priority areas of the state's social policy. A significant impetus is the ongoing Russian-Ukrainian war. Since the number of people with disabilities who received it as a result of the war is growing every day. True accessibility and barrier-freeness covers all spheres of public life. Universal design is not limited to accepted principles, laws or prescribed rules. It includes respect for other people's borders, a human-centric approach, concern for comfort for everyone and the understanding that human needs are noticed. We can talk about full inclusion only when every person has unhindered access to buildings, education, the Internet, has the opportunity to work and freely use transport. Ukraine, which is becoming a veteran-centric state in the realities of war, is obliged to be inclusive.

**Keywords:** universal design, barrier-free, accessibility, low-mobility population groups, disability

### Introduction

The United Nations Convention on the Rights of Persons with Disabilities [1] was the first international legal instrument to establish the obligation of governments to carefully consider and implement the principles of accessibility and universal design. They aim to enable people with disabilities to "live independently and participate fully in all aspects of life." A study by the Center for Social Change and Behavioral Economics, supported by the United Nations Children's Fund (UNICEF) and the Expert Council on Accessibility Communication, found that 83 percent of respondents consider accessibility to be a new value for society [2].

In their study Una Tle, Lelde Bergmane note that efforts to ensure a safe and accessible outdoor environment for all citizens are only at the planning and research stage. Urban planning decisions, building codes, political attitudes and other ambitions of the previous decade have left a significant mark on the environment. A change of approach cannot happen quickly and on a large scale. Therefore, the existing urban environment requires thoughtful, careful and detailed planning and implementation [3].

So, today accessibility and barrier-freeness are one of the most important indicators of the comfort of urban spaces. This applies to all types of urban environments: streets, public buildings and spaces, landscape and recreational areas, residential areas, etc. That is, areas where people move, work, relax, get healthy, play sports, etc. The main indicator of accessibility is an environment that is free from obstacles and organized on the basis of the principles of universal design. In 2020, a national survey was conducted in Ukraine by the Kyiv International Institute of Sociology and the public organization "Bezbariernist". According to it, more than 70 percent of Ukrainian citizens have encountered various kinds of barriers. These obstacles can lead to discrimination on various grounds, such as social status, gender or disability [2].

Currently, for Ukraine, solving the problems of disability and low-mobility population groups should become one of the priority areas of the state's social policy. A significant impetus for this is the ongoing Russian-Ukrainian war. The hostilities have led to a significant increase in the number of people with disabilities and functional impairments in Ukraine. This necessitates the use of urgent measures to ensure the accessibility of the architectural and urban environment for all categories of the population.

The number of people with disabilities who have suffered from injuries is growing every day. Thus, according to official data, there are already three million people with disabilities in Ukraine as of October 2024. More than 300 thousand of them have received this status since the beginning of the full-scale invasion [4]. And these numbers are constantly growing. The war continues, and the number of people with disabilities is only increasing. Therefore, Ukrainian cities urgently need a barrier-free environment. In Ukraine, as in the whole world, universal design should become the optimal means of humanizing the aggressive architectural and urban environment. Universal design should be aimed at forming an architectural environment for use and adaptation to the needs and capabilities of all categories of users. The design of streets, houses, parks, public spaces, any elements of the subject-spatial environment and individual objects should be convenient for everyone, regardless of physical limitations, age, weight, and perception characteristics and other.

However, the statistics are not very encouraging today. According to the results of 2023, only 22 percent of the 54 thousand studied facilities were barrier-free [2]. Given the growing number of people with disabilities in Ukraine as a result of hostilities, the main importance of universal design lies in the possibility of active involvement of this population group in public life, their full social integration

and adaptation. The importance of universal design also lies in the fact that new buildings and structures designed and constructed according to its principles do not require additional adaptation when used by a wide range of citizens with different functional capabilities and needs. That is, they do not require additional financial costs for their reasonable adaptation. And of course, the issue of ensuring accessibility in historical buildings or buildings of the Soviet period, which were built without taking into account modern standards, is much more difficult.

It should be noted that positive developments in the field of universal design in Ukraine took place back in 2020. This happened thanks to the "Without Barriers" program launched by Olena Zelenska. It is aimed at creating a universal public space that is friendly to low-mobility population groups and families with children. In addition, in 2021, the "National Strategy for Creating a Barrier-Free Space in Ukraine for the Period Until 2030" was approved [5]. Already during the war, in the spring of 2023, the Action Plan for 2023-2024 for the implementation of this Strategy was approved. It covers six areas: physical, informational, digital, social, educational, and economic barrier-free.

## Materials and Methods

Any methods and approaches gradually evolve over time. Today, a comfortable human life is becoming a priority. And this directly affects the requirements for designing a quality environment. A very relevant issue is the reconstruction of urban spaces and the creation of a safe, accessible, sustainable and environmentally healthy environment. Respect for people should be the key strategy for changing the way the urban environment and all its components are designed. At the same time, creating an accessible environment is a task that affects all components of the city – from common urban spaces to a separate courtyard and residential cell. Taken together, this forms a residential cluster that creates a quality life.

The purpose of this work is to analyze the current state of accessibility of urban spaces and streets, identify problematic issues and prospects for their resolution, using the example of Ukrainian cities, in particular the city of Poltava. The object of the study is urban spaces and streets from the point of view of their barrier-free status and landscape organization. To achieve the goal, the following tasks have been outlined:

- To characterize and summarize the main existing problems regarding the accessibility of urban spaces;
- To conduct a field survey and visual analysis of selected routes (street fragments) to identify shortcomings and problematic issues in terms of accessibility and architectural organization of these spaces;
- To outline prospects and ways to solve the issues of accessibility of urban spaces and provide proposals for improving and ensuring accessibility and landscape organization of selected street fragments.

The study used various scientific methods. The empirical method was used for the purpose of observation and comparison. On its basis, various urban spaces in the city of Poltava were studied and analyzed, the main problems were identified and summarized in terms of their accessibility, architectural and design solutions and the overall attractiveness of the urban environment. On the basis of the theoretical research method, data on the historical development of the spaces and streets selected for the study over time were processed. The method of field surveys helped to identify existing problems in the studied areas of the city. The experimental design method was used to implement the main techniques and recommendations in the practice.

To study the issue under study, sections of the largest streets of Poltava were taken – Europeyska and Reshetylivska, as well as fragments of Gogol and Velikotyrnivska streets. The visual analysis conducted based on the method of field surveys made it possible to identify a number of unresolved problematic issues regarding accessibility and landscape organization of spaces. Based on this, design proposals for Reshetylivska and Europeyska streets were developed. They demonstrate the landscape reconstruction of selected areas and fully take into account the issues of accessibility

of these spaces. In addition, an analysis of fragments of Gogol and Velikotyrnivska streets is presented, which shows specific problem areas and provides proposals for their solution.

In previous publications, the authors explore the issues of landscape organization of urban spaces, landscaping and greening of residential courtyards [6, 7, 8, 9, 10, 11, 12] and broadly cover the Ukraine architecture of different periods and its national traditions [13, 14, 15, 16]. All these studies provide an opportunity to deeply study the range of tasks set in this article. In working with the urban environment at the present stage, architects need to be guided by the principles of barrier-free, participatory and human-centricity.

## Results and Discussion

It should be noted that at the present stage, the world is actively moving from the "medical model" to the "social model", from the creation of "smart adaptations" for people with disabilities to universal design. Adherence to the concept of universal design allows citizens with limited mobility to visit various objects in the urban environment almost regardless of their physical condition. The "medical model" views disability as a pathology that requires treatment. It emphasizes that a person needs to overcome their disability through medical intervention, that something is "wrong" with a person, rather than what a person needs. This leads to the fact that people lose independence, choice and control in their own lives. The "social model" views disability as a problem created by society. It considers social discrimination to be the most significant. This model considers disability to be a normal aspect of the life, not a deviation. In recent years, Ukraine has paid significant attention to the implementation of universal design principles in the process of designing and constructing buildings and structures. Today, the country has the State Building Code V.2.2-40:2018 "Inclusivity of buildings and structures. Basic provisions" (effective from April 1, 2019) [17]. This is the result of significant work by a team of authors who tried to take into account the needs of people with disabilities as much as possible. This standard includes several sections, including requirements for land plots, planning organization of buildings and structures, the living environment of low-mobility population groups, etc.

A huge list of unresolved issues can be divided into 4 groups: these are entrances and courtyards of residential buildings, streets, public spaces and entrance groups of public buildings. An analysis of State Building Codes helped to understand that they contain answers to almost every problem. However, despite a fairly broad regulatory base, this is not enough to create a comfortable city for everyone. Why? Accessibility specialists and leading architects agree that regulatory documents are structured according to the types of objects. Each of them provides accessibility standards. In order to design an urban space, it is necessary to use different regulatory documents. Sometimes the standards provide generalized parameters of solutions, and sometimes they have significant detail. In some cases, designers interpret them independently and do not always create optimal design solutions from the point of view of accessibility. Regulatory documents do not always correlate with each other and have differences in solutions. The vast majority of existing buildings and infrastructure were built according to the standards in force at that time and their owners have no obligation to bring these facilities up to current accessibility standards.

Therefore, the following problems regarding the accessibility of the environment are present in urban spaces and buildings:

- Lack of full-fledged functional zoning of the residential yard: there is no clear division into areas for a specific functional purpose, places for various activities, a sufficient percentage of greenery, parking areas for cars;
- Lack of fences - around green areas, flower beds near houses or on sidewalks to separate them from cars using car tires, posts, hemispheres-limiters. All this creates additional obstacles for pedestrians, especially for people with visual impairments;
- Uneven surface – holes, ledges, cracks;
- Parked sidewalks and roadsides - cars parked in inappropriate places violate traffic rules and do not leave enough space for pedestrians to move;
- Obstacles on the way - columns, semicircles against parking, advertising stands and city lights, barriers, low flower beds and fences around trees are inconvenient for creating obstacles in the way of people's movement, are dangerous for people with

visual impairments;

- Lack of address signs - buildings often lack signs indicating the address and house number, including directions to other buildings. Existing signs are not always accessible for reading due to incorrect location or incorrect size and contrast of the inscriptions;
- Cluttering of pedestrian streets – kiosks, terraces, summer areas of food establishments take up the territory of pedestrian ways on the sidewalks and limit the space for people to move, including in wheelchairs;
- Lack of places to rest – too few or no benches, short-term rest areas along the streets;
- Absence or critically low number of bicycle paths – the movement of people on bicycles or electric scooters on sidewalks creates additional danger for pedestrians, especially for low-mobility groups of the population (people with autism, the blind, children and the elderly). This is prohibited by traffic rules. Sometimes the existing bicycle paths are too narrow, which creates additional danger. For safe movement, bicycle users need an extensive bicycle network, and for ease of use, the presence of bicycle parking lots and bicycle maintenance stations. Narrow spaces where it is impossible to conveniently turn the bicycle, and spaces near buildings where they cannot safely leave the bicycle, are inaccessible to them;
- Lack of shade and greenery – insufficient shade on sidewalks in the summer makes it more difficult for older people and parents with children to move around. The absence or lack of greenery on the streets affects the overall temperature in the area and creates a heat island effect, when the area as a whole becomes hot;
- Low tree canopy and overhead obstacles – tree crown, low-placed signs and markings can interfere with pedestrian movement and lead to injuries, especially for people with visual impairments;
- Unequipped underpasses – underpasses that are not equipped with ramps or elevators are inaccessible to the elderly, people in wheelchairs, and parents with children in strollers. The issue of organizing the correct ramp remains problematic, while the arrangement of underground passages with elevators has isolated cases.

The identified problems require a gradual solution at all levels. The main task is to ensure the accessibility of the urban environment: roads and streets, parks, residential buildings, public spaces, buildings. This is possible by creating comfortable conditions for using the housing and communal infrastructure, including the equipment of public buildings, taking into account the needs of low-mobility groups of the population. The problematic issue is ensuring accessibility to historical buildings and rethinking the Soviet heritage. These buildings were designed according to other State Building Codes, where accessibility issues were not taken into account. Therefore, when reconstructing such objects, problems are solved individually in each specific case. This is especially difficult to solve in historical buildings, where the planning and/or constructive solution imposes significant restrictions. Especially since some of these buildings are monuments of culture.

In Ukraine, the Big City Lab team has developed the "Album of Barrier-Free Solutions". It examines in detail the construction of a barrier-free environment. It is necessary to understand human diversity in order to create an environment based on the principles of universal design. It is necessary to know what everyone needs for unhindered use of space. The structure of the Album is based on the formation of a new philosophy and approach to designing spatial solutions, which is designed to create a world that is as convenient as possible for different people [18].

Therefore, the album is a thorough guide for designers of public spaces, which contains all the necessary standards and recommendations regarding dimensions, materials, and location. Architects can evaluate the space and design an adaptive solution by referring to this album. The album describes the principles of designing territories and buildings based on universal design. While the design algorithm must be decided individually depending on the specific situation. The algorithm requires taking into account the features and factors of each specific urban location and each residential yard: the number of residents, the area of the territory, the development in this place, etc [18].

When developing a physical accessibility strategy, it is advisable to prioritize. It is necessary to analyze at the city level which tasks are of primary importance and require immediate implementation, and which can wait. Urban spaces are a priority task. In addition, buildings that require urgent attention and adaptation in Ukraine are healthcare facilities, retail establishments and administrative institutions, as well as sports facilities and cultural and recreational facilities. A very relevant issue for Ukraine is the development of accessibility for civil defense structures (shelters and bomb shelters). After all, modern realities are such that the vast majority of shelters are old buildings where this issue is not addressed at all. This greatly complicates or makes it impossible for people with disabilities to use shelters. An example and a step forward is the development by the Big City Lab team of accessibility recommendations for shelters in the city of Slavytch. But so far these are only recommendations that require a lot of financial resources and implementation.

When monitoring and analyzing the current state of urban areas and developing accessibility strategies, the use of interactive maps and geoinformation systems (GIS) can be useful. This will allow combining a model image of the territory with tabular information (various statistical data, lists, economic indicators, etc.). The use of GIS will simplify the collection and systematization of information, its analysis and concentration of general data in one common system.

In Ukraine, urban communities face a number of problems in developing physical accessibility. When solving them, it is important to provide answers to the following questions:

- How to systematically work with accessibility in the community?
- Is it advisable to create a council on accessibility and what will its functions be?
- How to conduct research on physical accessibility?
- How to correctly develop a strategy on accessibility?
- How to build the work of the council on accessibility in accordance with the National Accessibility Strategy and the real needs of users?
- How to create projects on accessibility together with Ukrainian and international organizations?
- How to involve community residents in making decisions on accessibility?
- How to teach architects and builders to design and build barrier-free?
- Can all builders and designers create barrier-free solutions according to standards and how should they be tasked?

Studying the experience of successful international practices in the field of universal design and accessibility is a significant reference point for the development of an accessible environment in Ukraine. Analysis of these practices allows us to identify key success factors and will help adapt them to the realities of Ukrainian cities. The experience of the city of Graz (Austria) is useful and interesting. The city signs Mobility Contracts with developers of residential and multifunctional areas. This contract provides for the following main measures:

- Reduction of parking spaces for vehicles. This will help reduce the number of cars along the roads and in parking lots. Instead, it is planned to create centralized multi-storey garages for new areas, which will reduce the number of cars on the streets and maintain pedestrian accessibility in densely built-up areas;
- Support for pedestrian traffic: creation of public pedestrian paths passing through the development area;
- Support for cycling – availability of high-quality bicycle parking spaces directly at the entrances to buildings, provision of an increased volume of parking spaces compared to standard indicators, availability of service and self-service stations;
- Reconstruction of difficult sections of roads (where possible) to comply with the new volume of traffic. It is planned to build collective garages and the absence of a direct connection between the garage and the apartment. This will ensure the same access conditions for cars and public transport in terms of pedestrian accessibility [2].

Applying the experience of the city of Graz to Ukrainian realities will improve mobility and the environmental situation in cities by reducing car dependence and stimulating the development of environmentally friendly transport' modes. Such mobility contracts provide better mobility opportunities for residents of new developments. As a result, the city gets the opportunity to expand projects without overloading the road infrastructure, and residents have convenient



Fig. 1. An experiment conducted in the city of Poltava on the initiative of the National Assembly of People with Disabilities of Ukraine, which demonstrated the unsatisfactory state of physical accessibility [according to 20]

travel conditions.

The "Barrier-Free" pilot project is an example of the implementation of physical accessibility in Ukraine. It was developed for the city of Slavytch (Kyiv region), one of the youngest cities in Ukraine. In 2021, the country's first Memorandum on the development of barrier-free architecture was signed between the authorities of the city of Slavytch, the Office of Olena Zelenska, and the Ministry of Regional Development of Ukraine. The implementation of accessibility began with the lowering of curbs – the most common barriers on the streets of Ukrainian cities. In 2021, an interactive map "Barrier-Free Slavytch" was developed, which is constantly updated today. In addition, the program "Slavytch – a barrier-free city for 2024-2026" was developed. It offers ways to solve problems, the volume and sources of funding, the terms and stages of the program, and the main list of tasks and activities. The city of Slavytch has taken on the responsibility of being the first in this area. The city has become a laboratory for the development and implementation of barrier-free architectural solutions. Today, the city of Slavytch, despite the war, continues the barrier-free program and has "laboratory" research and effective solutions. This experience can be implemented by every community that aims to become barrier-free [19].

Other Ukrainian cities are also gradually addressing this important issue. At the initiative of the National Assembly of People with Disabilities of Ukraine, an experiment was conducted in Poltava. It demonstrated the difficulties that people with disabilities encounter when moving around the city streets. Representatives of local authorities were invited to the event. They had the opportunity to sit in a wheelchair and experience the difficulties of moving around the city (Fig. 1). The development of the Accessibility Strategy of the Poltava Urban Territorial Community for 2025-2030 is currently a noticeable positive development. The Strategy was developed by the Big City Lab team [2]. According to the monitoring conducted, the state of physical accessibility in Poltava is at an unsatisfactory level. This is demonstrated by the inadequate condition of sidewalks, which is a danger for pedestrians and the population with reduced mobility, problems with transport and cycling infrastructure, insufficient number and spontaneity of parking lots, missing or incorrect cycle

paths, lack of equipment at public transport stops (no timetable, unequipped roof, seats), etc. The most pressing problem for the community was the inaccessible general public space – the lack of correct ramps, accessible places for rest, pedestrian paths, incorrectly lowered curbs (incorrect slope), etc. One of the biggest problems is the limited number of barrier-free spaces and premises that could be used for various events [2].

Today, the city authorities have developed areas of activity and an action plan. They provide for monitoring and control in the field of accessibility of physical environment objects on a systematic basis, conducting an audit of public spaces and objects that are in the greatest demand or are in critical demand, and conducting analysis and monitoring of problems. It is planned to address such priority issues as: developing a universal design of the pedestrian part of the city's main street, reconstruction of public spaces, universal design of adjacent areas of multi-apartment residential buildings with inclusive workout areas, universal design of public toilets for the urban environment and landscaped areas, creation of barrier-free space of underground passages.

So, today there are a number of unresolved issues in the city of Poltava, especially in its historical districts. Here, in the middle of the pedestrian part of the street, elements may be located that make it difficult and dangerous for people to move, in particular people with disabilities (Fig. 2). The historical buildings themselves, which are located on narrow streets, are also a problem. They have entrance groups that do not meet modern requirements. Sometimes, the level of the first floor is much raised, which dictates the use of a sufficiently long ramp or there are already incorrect ramps, etc. All this significantly complicates the solution to the issue of accessibility. In each such situation, it is important for architects to look for an individual approach. There are no universal schemes.

Another problem in addressing the issue of accessibility of urban spaces is Soviet-era buildings, the areas around them, and entrance groups. This includes, for example, the presence of stylobates with a significant number of steps, the installation of irregular slopes of ramps without railings, the absence or insufficient number of recreation areas, etc (Fig. 3).

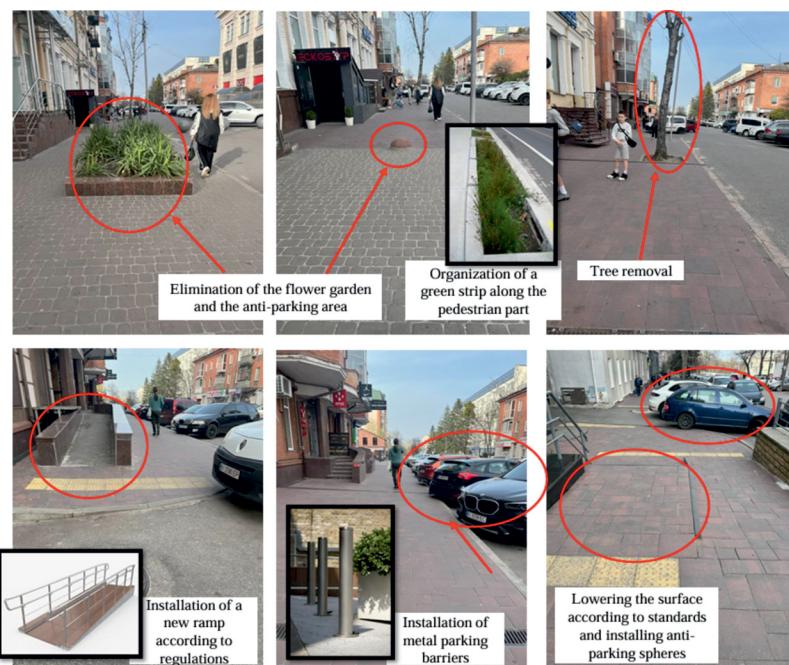


Fig. 2. Problem areas on the pedestrian part of the fragment of Gogol Street in Poltava (Ukraine) and proposals for their solution. Author – Natalia Novoselchuk [from N. Novoselchuk scheme]



Fig. 3. Problem areas at the entrance to shops located on the first floor of a residential building built during the Soviet period, Poltava (Ukraine). Author – Natalia Novoselchuk. [from N. Novoselchuk scheme]

It is necessary to note the positive developments in Ukrainian cities in this area. Among them – the installation of elevators to the entrances of buildings with a significant number of stairs, the replacement of ramps with irregular slopes with new ones, a lowering curbs according to standards. A separate problem is the underground passages, which are not equipped with elevators, except in isolated cases.

The design project of the city's intermediate recreational spaces using the example of a fragment of Reshetylivska Street in Poltava is an interesting project of reconstruction of public spaces taking into account the issue of universal design. An important aspect of future development is the preservation of the historical character of Reshetylivska Street. The renovation concept can be used to create a harmonious image that will reflect the rich cultural experience of Poltava. The presented project was developed taking into account the latest urban development trends. The main idea is to create a functional and aesthetically attractive environment for residents and guests of the city. The organization of a recreation area with benches of different heights and a small children's entertainment area demonstrates consideration of the needs of different age groups and the creation of an atmosphere of family comfort. Special attention was paid to the recreation area with canopies, chargers, a generator and parking spaces for bicycles and scooters. This not only creates opportunities for recreation, but also supports the use of environmentally friendly modes of transport and promotes a healthy lifestyle. The open rain channels implemented in the project not only

make life more comfortable during wet weather. They serve as a functional element, which at the same time demonstrates the desire to create spaces in interaction with the environment. The landscaping in this project has not only a decorative effect, but also practical. It acts as a barrier from external noise and dust, which is important for creating a pleasant urban environment. The implementation of this project in a modern city will contribute to the creation of a barrier-free, comfortable, safe and functional space for all residents (Fig. 4). One of the main streets of Poltava is Yevropeiska Street, 5.66 km long. It also needs improvement and modernization, taking into account the principles of universal design and accessibility. When deciding on the design of this street, green areas along it and squares were identified for detailed development. All selected areas have common problems. These are partially damaged paving of paths with holes and cracks, spontaneously created paths without hard surface, which require paving, a small number of benches and small architectural forms, which are of the same type and inconvenient, low tree crowns in some areas and partially old trees, an insufficient number of street lamps and outdated landscape design, which does not meet modern trends.

The first section (fragment 1), selected for study, and contains a small square, which is of great importance as a recreational area for local residents. The modernization project provides for the solution of all identified problems and the diversification of the functional and planning structure of the square, the change of small architectural forms to new modern ones (Fig. 5). Another landscaped section



Fig. 4. Design of an intermediate recreational space of a Reshetylivska Street's fragment in Poltava (Ukraine) taking into account the principles of accessibility and universal design. Authors – Liudmyla Shevchenko, Veronika Tyshchenko [from L. Shevchenko scheme]



Fig. 5. Design of an intermediate recreational space of a fragment of Yevropeiska Street in Poltava (Ukraine) taking into account the principles of accessibility and universal design. Authors – Liudmyla Shevchenko, Yaroslava Salvarovska [from L. Shevchenko scheme]

(fragment 2) currently has no improvement, only landscaping is located on it. The project provides for the creation of a square with places for recreation with the introduction of water elements and modern small architectural forms. This should modernize and enrich this area. The next section (fragment 3) currently has the most attractive appearance, but also requires modernization. Therefore, in this area, it is proposed to divide pedestrian flows into the main and additional ones, along which benches for recreation, small architectural forms, flowers and landscaping are placed. The use of colored paving makes it possible to clearly distinguish functional zones in this area. Yevropeiska Street also ends with a small square around which such important objects for the city are located as: the Poltava Art Museum named after Mykola Yaroshenko, the main building of the Poltava National Pedagogical University named after V.G. Korolenko and the office center. The modernization project proposed to change the existing planning solution of the square to another, more modern and appropriate to the importance of this territory (fragment 4). When developing the modernization project of all green areas and squares, the requirements for universal design and accessibility were taken into account.

It is necessary to note another significant problem regarding the introduction of accessibility and universal design in Ukraine. This is an insufficient level of funding. During martial law, other areas are a priority. Therefore, today, in order to begin to address the issue of accessibility, the optimal way may be for local communities to attract funds from international and domestic charitable funds. It is possible to obtain funding through:

- 1) Earmarked funds that cannot legally be spent on any other area;
- 2) Funds from European partners, who are not ready to finance the military sector, but have a desire to help Ukraine;
- 3) Participation in grant programs and receiving grants.

## Conclusions

True accessibility and barrier-freeness covers all spheres of public life. Barrier-freeness is an environment that is comfortable and safe for every person. It is the opportunity to fully participate in the life of society regardless of health status, age, gender, etc. It is human-centricity in every decision. This issue concerns each of us.

True accessibility is comprehensive. That is why, according to the National Strategy for Barrier-Freeness in Ukraine until 2030, 6 main areas of ensuring accessibility and adaptability have been identified. These are physical, informational, digital, social and civil, educational and economic barrier-freeness.

Accessibility is not limited to adopted laws or written rules. It includes respect for other people's boundaries, concern for comfort for everyone, and understanding that your needs are noticed. Accessibility must take into account the diversity of human requests and needs. We can talk about full inclusion only when everyone has unhindered access to both buildings and education or the Internet, the opportunity to work and freely use transport.

So, it can be said that Ukraine is making significant steps towards the development and implementation of universal design in all six areas. There is still a lot of work to be done. It is important to find donors who will help resolve the financial issue, without which positive developments are impossible. Much depends on local authorities and self-government bodies. It is necessary to raise the level of awareness of the population, work with communities, train specialists, conduct audits, develop adaptive design solutions, etc. But, despite the difficult realities of the war, Ukraine does not stop working and is trying to gradually resolve these issues. They are extremely important for a country in which the number of people with disabilities, unfortunately, is increasing in progression. The veteran-centric state that Ukraine has become in the realities of the ongoing war is obliged to be inclusive.

## References

1. Convention on the Rights of Persons with Disabilities. *United Nation*, 2007. 31 p.
2. *Barrier-free Strategy of the Poltava Urban Territorial Community for 2025-2030*. Retrieved March 21, 2025, from <https://rada-poltava.gov.ua/people/gromad/people/strateg> (Стратегія безбар'єрності Полтавської міської територіальної громади на 2025-2030 роки)
3. Ilie, U., & Bergmane, L. (2023). Development Patterns of Universal Design in Residential Courtyards in the Jugla

Neighbourhood. *Landscape Architecture and Art*, 22(22), 109–119. <https://doi.org/10.22616/j.landarchart.2023.22.11>

4. **Perun, V.** (2024). *Zelenska: There are officially three million people with disabilities in Ukraine*. Retrieved March 21, 2025 from [https://lb.ua/health/2024/10/15/639943\\_zelenska\\_ukraini\\_ofitsiyno\\_ie\\_tri.html](https://lb.ua/health/2024/10/15/639943_zelenska_ukraini_ofitsiyno_ie_tri.html) (Перун, В. Зеленська: в Україні офіційно є три мільйони осіб з інвалідністю, 2024)
5. *National Strategy for Creating a Barrier-Free Space in Ukraine*. Retrieved March 19, 2025, from <https://mtu.gov.ua/content/nacionalna-strategiya-zi-stvorennya-bezbarernogoprostoru-v-ukraini.html> (Національна стратегія зі створення безбар'єрного простору в Україні)
6. **Shevchenko, L., Novoselchuk, N., Toporkov, V.** (2018). Linear landscape spaces in the planning structure of the city. *International Journal of Engineering and Technology (UAE)*, 7(3), 672–679. doi:10.14419/ijet.v7i3.2.14612.
7. **Novoselchuk, N., Shevchenko, L., Kamal, M.** (2022) Ways of Integration of the Landform Architecture Buildings with Landscape. In: *Onyshchenko V., Mammadova G., Sivitska S., Gasimov A. (eds) Proceedings of the 3rd International Conference on Building Innovations. ICBI 2020. Lecture Notes in Civil Engineering*, vol 181, pp. 525–534.
8. **Shevchenko, L., Novoselchuk, N., Shevchenko, et. al.** (2024). Water as a typical component of historical manor parks of the Poltava Region (Ukraine). *Landscape Architecture and Art*, 24(24), pp. 73–81, DOI: 10.22616/j.landarchart.2024.24.10.
9. **Shevchenko, L., Mykhaylyshyn, O., Novoselchuk, N., et. al.** (2023). Landscaping and Greening of the Residential Buildings Courtyards of the 50s–Early 80s of the XX Century in Ukraine: Current Situations and Renewal Perspectives, *Proceedings of the 4th International Conference on Building Innovation, Lecture Notes in Civil Engineering*, 299, pp. 541–558, DOI:10.1007/978-3-031-17385-1\_43.
10. **Shevchenko, L., Novoselchuk, N., Troshkina, O.** (2022). Traditions in the formation of historical manor parks of the Poltava Region (Ukraine). *Landscape Architecture and Art*, 21(21), pp. 105–114, DOI: 10.22616/j.landarchart.2022.21.11.
11. **Troshkina, O., Us, V., Mostovenko, A., Shevchenko, L., et. al.** (2022). Cinematic methods of scenario construction in the design of landscape parks. *Landscape Architecture and Art*, Scientific Journal of Latvia University of Agriculture, vol. 20, No. 20, p. 82–91. DOI: 10.22616/j.landarchart.2022.20.09.
12. **Chebina, O., & Shevchenko, L.** (2015). *The boulevard as a type of urban linear space the historical boulevards of Poltava (Ukraine) and Mons (Belgium)*. [Bulvár ako typ lineárneho urbánného priestoru historického bulvára Poltavy (Ukrajina) a Monsu (Belgicko)] *Architektura a Urbanizmus*, 49(3-4), 199–215.
13. **Novoselchuk, N.** (2022). National Traditions in the Architecture of Ukrainian Modernism of the Early 20th Century, *Docomomo Journal*, 67, pp. 66–71, DOI: 10.52200/docomomo.67.07.
14. **Savchenko, T., & Shevchenko, L.** (2023). National character in Poltava architecture of the beginning of the twentieth century, *Urbani Izziv*, 34(1), pp. 92–106, doi:10.5379/urbanizizziv-2023-34-01-0.
15. **Bozhynskyi, N., Bozhynskyi, B., Shevchenko, L., et. al.** (2023). *Implementation of Folk Housing Traditions in Modern Individual Housing Construction*, *Proceedings of the 4th International Conference on Building Innovation, Lecture Notes in Civil Engineering*, 299, pp. 421–431, DOI: 10.1007/978-3-031-17385-1\_33.
16. **Mykhaylyshyn, O., Shevchenko, L., Mahey A.** (2023). Digital technologies as an innovative tool for the preservation of the palace complexes of Podillya in the late 19th – Early 20th century, 5th International Scientific and Practical Conference "Innovative Technology in Architecture and Design" (ITAD-2021), *AIP Conference Proceedings*, 2490(1), 040015, DOI:10.1063/5.0122741.
17. DBN V.2.2-40:2018 *Inclusiveness of buildings and structures. Basic provisions*. Kyiv. Ministry of Regional Development. 2018, 64 p. (ДБН В.2.2-40:2018 Інклюзивність будівель і споруд. Основні положення. Київ. Мінрегіон. 2018, 64 с.)
18. *Album of barrier-free solutions: Chapter 1 (taking into account wartime)*: A guide for designers and architects of public space. Retrieved March 19, 2025, from [https://mtu.gov.ua/files/big\\_city\\_lab\\_album\\_war\\_chapt\\_1-4-1\\_compressed%20\(1\).pdf](https://mtu.gov.ua/files/big_city_lab_album_war_chapt_1-4-1_compressed%20(1).pdf) (Альбом безбар'єрних рішень: Розділ 1 (з урахуванням воєнного часу): Посібник для проектувальників та архітекторів публічного простору)
19. *Slavutych is a barrier-free place*. Retrieved March 20, 2025, from <https://surl.li/kafsp5> (Славутич – безбар'єрне місце)
20. **Lysogor, M.** (2016). *Poltava deputies tried themselves as disabled people*. Retrieved March 26, 2025, from <https://poltava.to/news/38374/> (Лисогор, М. Полтавські депутати спробували себе у ролі інвалідів, 2016)

## Authors

**Natalia Novoselchuk**, Associate prof. Ph.D, Department of Buildings Architecture and Design National University «Yuri Kondratyuk Poltava Polytechnic». Sphere of interests – landscape and urban design, interior design, heritage architecture. Address: 24 Pershotravneva Avenue, Poltava, Ukraine.  
E-mail: Ab.Novoselchuk@nupp.edu.ua  
ORCID ID: <https://orcid.org/0000-0002-7753-7872>

**Liudmyla Shevchenko**, Associate prof. Ph.D, Department of Buildings Architecture and Design National University «Yuri Kondratyuk Poltava Polytechnic». Sphere of interests – heritage architecture and landscape, modern landscape design, urban design. Address: 24 Pershotravneva Avenue, Poltava, Ukraine.  
E-mail: Ab.Shevchenko\_LS@nupp.edu.ua  
ORCID ID: <https://orcid.org/0000-0001-6840-8406>

**Olena Troshkina**, Associate prof. Ph.D, Department of Architecture of the National Academy of Fine Arts and Architecture. Sphere of interests – landscape architecture, semantics of architecture, architectural space, scenario approaches to architectural space design. Address: 20, st. Voznesens'kyj uзвіз, Kyiv, Ukraine.  
E-mail: olena.troshkina@naoma.edu.ua  
ORCID ID: <https://orcid.org/0000-0002-0597-9700>

**Arsenii Troshkin**. Senior Lecturer, PhD, Department of Architecture, National University of Water Management and Nature Resources Use. Sphere of interest – urban environment, residential zones, functional-planning structure, urban territory design, public service establishments, food establishments, restaurants, and catering establishments. Address: 49A Chornovola St., Bldg. 6, Rivne, Ukraine. E-mail: a.a.troshkin@nuwm.edu.ua  
ORCID ID: <https://orcid.org/0000-0001-7394-0923>

## Kopsavilkums

Rakstā aplūkota universālā dizaina koncepcijas attīstība Ukrainā. Rakstā raksturots vispārējais esošās situācijas stāvoklis un sniegti atbilstoši statistikas dati. Izmantojot Ukrainas pilsētu, īpaši Poltavas, piemērus, izcelti galvenie problēmautājumi un attīstības perspektīvas, kas prasa pakāpenisku un kvalitatīvu risinājumu. Pamatmērķis ir nodrošināt pilsētvides pieejamību, radot ērtus apstākļus dzīvojamās un komūnālās infrastruktūras izmantošanai. Pētījuma objekts ir pilsētas telpas un ielas, kuras izvērtētas un aplūkotas no vides pieejamības organizācijas aspektu pusēs. Lai sasniegtu izvirzītos mērķus, darbā izmantotas dažādas zinātniskās metodes: empiriskā metode tika pielietota novērojumu un salīdzinājumu veikšanai; teorētiskā metode – vēsturisko datu analīzei par izvēlēto pilsētas teritoriju attīstību; lauka pētījumu metode – esošo problēmu identificēšanai izpētītajās teritorijās; savukārt eksperimentālā projektešana veicināja galveno panēmienu un ieteikumu praktisku ieviešanu pilsētvidē. Pētījuma rezultātā izstrādāta analīze un virkne projektu priekšlikumu, kas balstīti uz universālā dizaina principiem un ir nozīmīgi ikvienam teritorijas lietotājam.