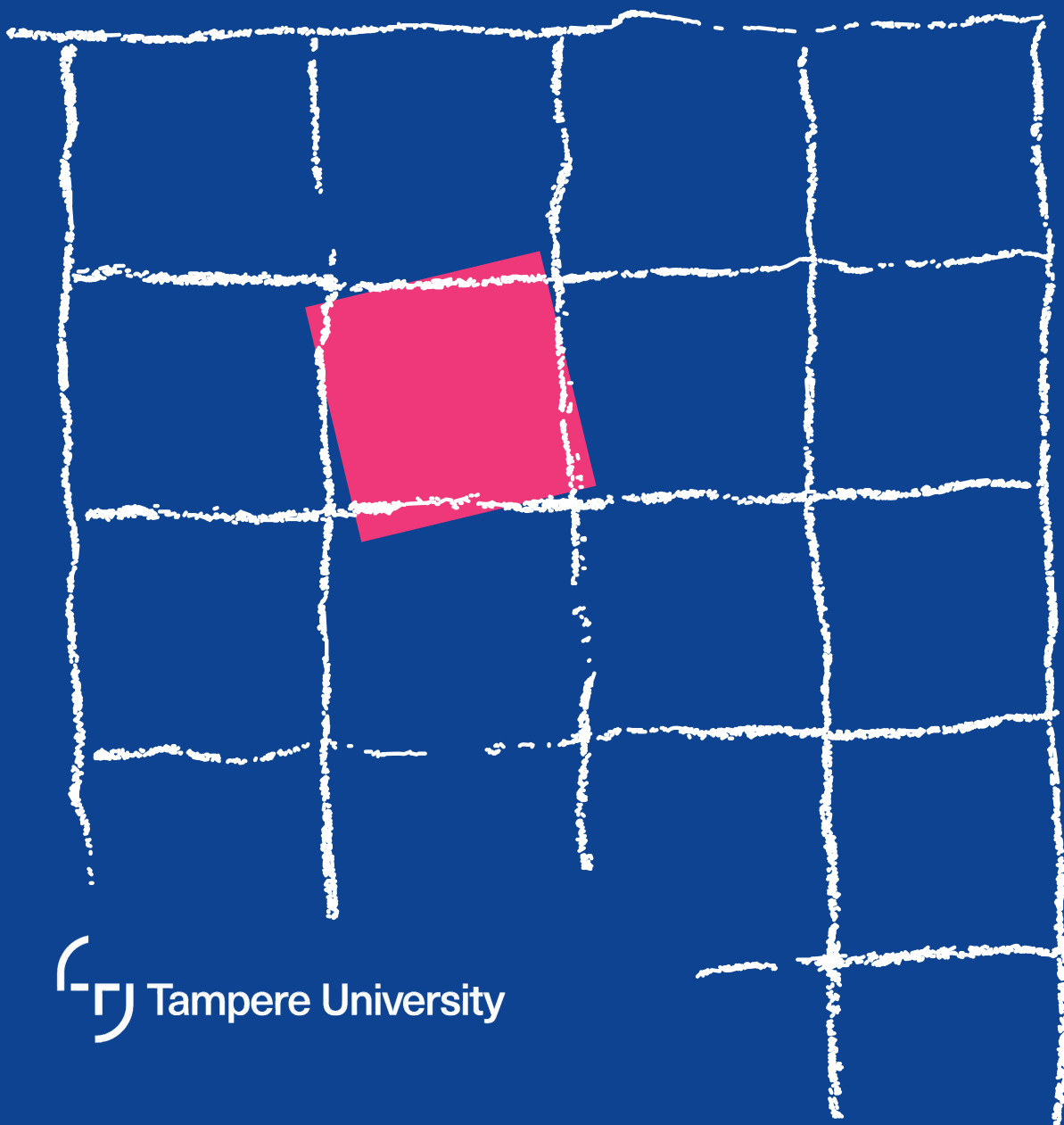
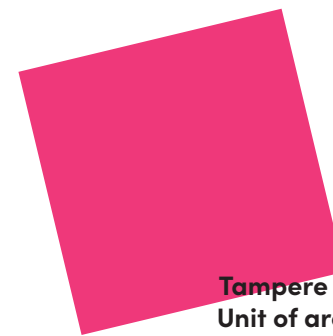


# urban reconstruction patterns





# **urban reconstruction patterns**



**Tampere university  
Unit of architecture  
2023  
Edited by Juho Rajaniemi,  
Iryna Serhiuk &  
Ilari Anttila**

# con- tents



page 2

4

8

12

16

18

20

24

26

30

34

38

42

46

50

54

60

64

68

72

78

82

88

92

94

98

foreword

urban-type city

hamlet or farmstead

multimodal systems in urban planning

sustainable mobility

prioritizing traffic safety

medium-rise city quarter

ensuring inclusiveness of public space

bicycle as a mode of transportation

city main street

pedestrian street

village street

transport square

memorial square

multifunctional village square

urban forest

city vegetable garden

hydropark

fairs

parking in the city

access to water

elements of inclusive environment

bicycle paths

outdoor advertising

landscaping of residential area

food stands

Tampere University 2023  
Unit of Architecture

Editors: Juho Rajaniemi, Iryna Serhiuk  
and Ilari Anttila

Layout: Ilari Anttila

Print: Grano Oy

ISBN: 978-952-03-3055-2 (print)

ISBN: 978-952-03-3056-9 (web)

# fore-

# word

2 The original Pattern Language was published by the architect Christopher Alexander and his colleagues in 1977. The opus offers 253 highly practical patterns that together form a language to aid in planning and constructing towns and buildings. Each pattern includes a picture of a typical example of that pattern and an introductory paragraph providing context. This is followed by a description of the essence of the problem and an empirical background explaining it. Finally, each pattern presents a solution to the problem, along with a diagram illustrating its main features. The connections to other patterns are also specified.

The present book contains 25 patterns loosely following the aforementioned principles. All patterns are intended to assist in Ukraine's reconstruction during and after the ongoing war. They have been designed by five Ukrainian architecture students: Nataliia Bila, Yuliia Demchyshyna, Valeriia Pansiuik, Yuliia Piddubna, and Oleksandra Verteletska. The work was carried out as part of their Urban Reconstruction course in May-June 2023. The reconstruction of Ukraine will involve numerous decisions. Each town and village has its unique features, and a specific pattern language should actually be designed for each of them. Nevertheless, I sincerely hope that this book and its patterns will be helpful in the reconstruction of some towns and villages.

This book, as well as the studies on architectural and urban reconstruction for Ukrainian architecture students, were funded by the Finnish Ministry of Education and Culture. The studies comprised a total of 60 study credits. Most of the teachers and professors at Tampere University Unit of Architecture have been involved in educating the students. Additionally, many visiting lecturers shared their knowledge during the studies. I would like to extend special thanks to postdoctoral researcher Iryna Serhiuk, who made significant efforts in teaching and mentoring the Ukrainian students in person at Tampere, as well as remotely assisting those students in Rivne, who were unable to leave their country due to the ongoing war.

Juho Rajaniemi

Professor of Urban Planning and Design

Tampere University



# urban-type city

Yuliya Piddubna

Urban-type settlement, abbreviated as "smt," is a term used to denote a town. [1]

In Ukraine, populated areas with a population of at least 10,000 inhabitants are referred to as towns, as well as smaller settlements that historically developed as towns. Urban settlements with a population of at least 2,000 people, and where over half of the employed population is not engaged in agricultural or forestry activities, are called urban-type settlements. The largest number of rural settlements is concentrated in the forest-steppe region of Ukraine, while the smallest number is found in the Donbas region. [2] Historically and culturally, the term "mistechko" (town) was used in Ukraine, which was replaced by "smt" during the Soviet era.



fig. 1. Structure of planning for an urban-type settlement

The existence of such towns is primarily based on a specific type of activity. Each town has either factories or enterprises that contribute to a larger population compared to a typical village. Therefore, the defining factor in the reconstruction of towns is precisely the availability of employment and work for people.

The structure of a town consists of low-rise buildings and private houses, churches of various denominations, shops, clinics, or even entire hospitals (figure 1). Most urban-type settlements also have squares (multi-functional rural squares) that are used for holding rallies, assemblies, and ceremonies during holidays, as well as for hosting markets where residents can sell their products or simply buy necessary goods once a week.

The majority of construction in Ukraine took place during the 1960s-1980s using outdated urban planning norms and infrastructure that were not designed for the current population. Often, historically formed town structures were destroyed to make way for Soviet replacements. Therefore, during the reconstruction of towns, it is possible to change or improve this structure.

Towns in Ukraine differ according to economic activities. For example, the southern part of Ukraine is an agrarian region where local residents are primarily engaged in agriculture and the processing of agricultural products, while the east is predominantly oriented towards industry. Therefore, based on this, it is necessary to first determine why residents would return to their towns and how to increase their population. If enterprises return and resume their operations, it is reasonable to create a comfortable town for the residents and their families.

Thus, as mentioned before, a mistechko is based on two types of construction: private and low-rise buildings.

For private construction, it is appropriate to identify the main factors, which include the house, auxiliary buildings (for winter preservation, livestock, equipment), a

garage, and the surrounding area. An integral part of private construction is the surrounding area. Most people living in urban-type settlements have their own garden, which provides them with everything they need in the summer and allows them to preserve food for the rest of the year. An example of a site plan is shown in figure 2.

Urban-type settlements are predominantly characterized by low-rise construction. This allows residents to feel more comfortable and cozy. It also enables a harmonious combination of multi-apartment buildings with private housing. However, low-rise construction has its own peculiarities that should be taken into account. Residents of multi-apartment buildings often have their own gardens near their houses (CITY VEGETABLE GARDEN, PAGE 60), larger courtyards that harmoniously blend with the town center. Typically, the number of floors in these buildings ranges from 4 to 7 (MEDIUM-RISE CITY QUARTER, PAGE 20).





fig. 2. Plan of a private residential plot: 1-residential house, 2-garage, 3-greenhouse, 4-utility-building, 5-playground, 6-gazebo, 7-compost pit for organic waste

The difference between a city and an urban-type settlement is not only in the number of inhabitants but also in the surrounding environment. While most Ukrainian cities are predominantly built-up and have smaller yards compared to villages, an urban-type settlement is like a town in the midst of nature, whether it is a forest or a steppe. Therefore, the decisive factor is to combine the construction with the surrounding environment, as this is the characteristic feature of an urban-type settlement.

#### REFERENCES:

- [1] "Urban-type settlements," *Wikipedia*. Accessed March 17, 2023. Available: [en.wikipedia.org/wiki/Urban-type\\_settlement](https://en.wikipedia.org/wiki/Urban-type_settlement)
- [2] Educational Portal Akademy. "The system of resettlement of the population of Ukraine," Accessed June 27, 2023. Available: [zno.academia.in.ua/mod/book/tool/print/index.php?id=2519](https://zno.academia.in.ua/mod/book/tool/print/index.php?id=2519)

#### FIGURES:

1. Pexels. Photograph. Available: [www.pexels.com/uk-ua/photo/5118788/](https://www.pexels.com/uk-ua/photo/5118788/)
2. Yuliya Piddubna, *Plan of a private residential plot*. Illustration, 2023.

# hamlet or farmstead

Yuliya Pidubna



fig. 1. Ukrainian farmstead.

**K**hutir is a type of rural settlement, usually consisting of single-yard households, where household and field work is performed individually or by a group of related or interconnected individuals with common economic interests (figure 1). [1]

Khutir in Ukraine is not only a historical and cultural heritage but also needs to be restored while improving it. Firstly, a khutir exists for people, it is their property and environment where all their needs are provided for. However, their planning is outdated. After World

War II, the reconstruction was carried out according to the plans of the USSR, which did not pay much attention to the comfort and traditions of the residents. They were more focused on the economy and reducing interaction between people.

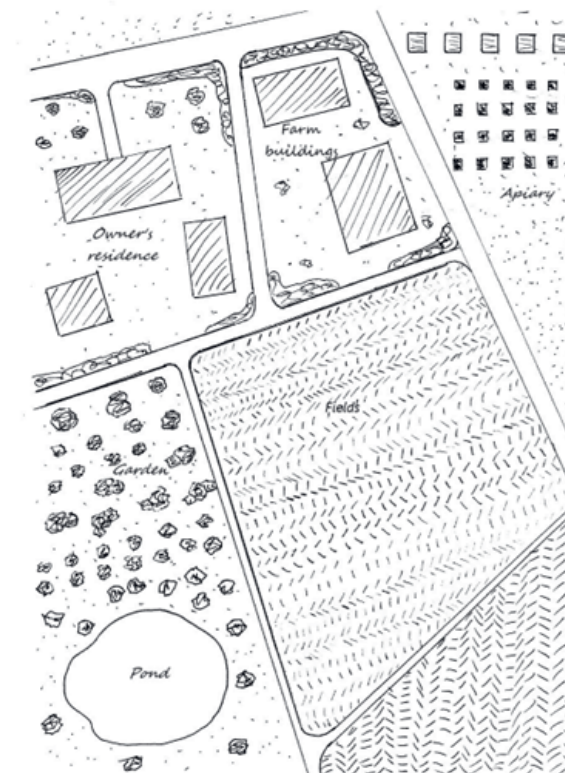
In Ukraine, there are different types of khutirs based on their origin. For example, in Rivne region, khutirs were formed as a result of agricultural land and farming. The main goal of the villagers was to cultivate the land and grow various crops, hence the

existence of khutirs. In Donetsk region, for example, khutirs were formed as settlements for miners, where they lived, rested, and carried out their daily activities. It was convenient because housing and work were within the same territory.

The settlement system of a khutir differs from a rural system. Khutir planning has technical advantages (figure 2). Within a khutir, homeowners have a certain space for initiative and individuality, as well as the opportunity to arrange their territory in the most convenient way for themselves. People have the opportunity to organize their own household and quickly meet their most significant and urgent needs because everything is within the khutir. Most importantly, they can do it according to their own

preferences. It is interesting that people can implement the latest technological means. In other words, a khutir is a personal space for people where they can explore their comfort and improve it. It gives people more freedom. Therefore, preserving khutirs is an integral part of Ukraine's reconstruction.

fig. 2. Plan of a khutir (hamlet).



Therefore, during the reconstruction process, it is necessary to consider the following factors:

1. The main goal or activity on which the khutir will be based should be interesting and financially viable for people to stay within the boundaries of the khutir. Therefore, it is important to determine how people will earn a living. Whether it will be agriculture, mining, or a factory, the key is to ensure that people have employment opportunities. If the khutir has been completely destroyed along with its main activity, new approaches need to be considered. Is it possible to restore the farming, mining, or other industries? In such a case, for a khutir can be given a new purpose, such as becoming a nature reserve or a memorial, or it can be incorporated into an existing village for development and preservation of cultural heritage.

2. The planning of the khutir should be convenient and cater to the needs of its residents. Typically, a khutir includes the dwellings of the owners, production buildings where to engage with agricultural activities and livestock farming, as well as storage facilities for crops and equipment needed for land cultivation.

3. A khutir is a part of a village and should actively participate in village life. Therefore, the planning of the khutir should include a smooth transition into the village without violating the boundaries of the khutir itself. This facilitates convenient food supply and communication links. For this purpose, an efficient transportation system (VILLAGE STREET, PAGE 38) should be established to ensure the connectivity. The khutir is, after all, a part of the village, so people should have an easy access to municipal institutions, stores, banks, and other facilities

4. Ukrainian villages and khutirs are known for their abundance of greenery. This represents the inseparable bond between people and the surrounding natural environment. The territory is not extensively built-up, but rather has forests, steppe landscapes, lakes, and so on. Therefore, during the reconstruction process, it is important to restore and establish green connections between buildings and villages, which unfortunately have also been destroyed (LANDSCAPING OF RESIDENTIAL AREA, PAGE 94).

Considering all these factors, the preservation of khutirs is an integral part of Ukraine's reconstruction efforts and the preservation of its cultural heritage.

#### REFERENCES:

[1]

"Khutor," *Wikipedia*. Accessed January 1, 2023. Available: [en.wikipedia.org/wiki/Khutir](https://en.wikipedia.org/wiki/Khutir)

#### FIGURES:

1.

Pixabay user Zephyrka. Photograph. Available: [pixabay.com/photos/carpathians-mountains-ukraine-field-7228043/](https://pixabay.com/photos/carpathians-mountains-ukraine-field-7228043/)

2.

Yuliya Piddubna. Illustration, 2023.





# multimodal systems in

Natalia Bila

# urban planning

12 It is important to think about effective combinations of different ways of moving. Having a bus route in every settlement of the community is often difficult and quite economically unprofitable. At the same time, comfortable combinations of different ways of moving (modalities) significantly reduce the cost of the entire system. For example, if there is a high-quality pedestrian and bicycle path from the village to the bus route, and there is a safe bicycle parking lot at the bus stop itself, then people can easily cover part of the way from home to the bus by bicycle or electric scooter and then transfer to the bus, leaving the bicycle or electric scooter on the free parking lot.

Such a system will require significantly fewer bus routes, and the routes themselves will have more passengers. In general, the pyramid of priority modes of transportation for sustainable mobility should be built according to the principle with the following three conditions:

- Transport projects must be economically viable;
- Prioritize first of all those who are the least protected - the poorest, the less mobile (society);
- Minimal impact on the environment.

Therefore, if a specific transport solution meets the listed criteria, it is sustainable. Walking is considered the most sustainable way of moving. First of all, it does not cost to the pedestrian anything, and the infrastructure for walking is much cheaper than the infrastructure of other types of movement due to the small weight of the pedestrian. The infrastructure requires fewer layers of building materials and hardly wears out during use.

The next thing is that walking is accessible to the widest possible number of people, regardless of the level of wealth, gender and age, etc. And most importantly, walking does not generate emissions and is the most environmentally friendly way to move.

It is bicycle transport that occupies the second position in the pyramid of priority ways of moving, because it is cheaper for the user than a private car. At the same time, bicycle infrastructure, as well as pedestrian infrastructure, requires significantly less construction materials and almost does not wear out, due to the small weight of the cyclist.

The low cost of a bicycle and its maintenance makes it possible for a very wide range of people to use this type of transport. And lastly, a bicycle, like walking, does not create harmful emissions.

The next position is occupied by public transport, it has its advantages and, unfortunately, also disadvantages, which relate specifically to the creation of harmful emissions, but their number is much lower in terms of each transported passenger, compared to private cars.

At the same time, unlike private cars, it is constantly in motion, satisfying the need of users for constant movement. Even without taking into account the increase in the price of fuel, public transport remains much more accessible to vulnerable groups of the population, compared to private cars. It should be added that the public transportation is often the only option for the movement of women in families with one car, which is mainly driven by a man.

A private car is still considered the least sustainable mode of transportation according to the three criteria listed above.

13



A car remains an expensive investment for a family. In addition to the cost of the car itself, the fuel itself and the future maintenance of the vehicle are expensive. If there were other available transportation options, the family could spend this money on something else, such as investing in their own family business, recreation, or children's education. Due to the high cost, the car is an inaccessible transport option for the least protected segments of the population. If a car is the only option for moving around the territory of a certain community, families without a car become "involuntary hostages" without the ability to satisfy the need for movement. In addition, emissions from cars are considered the biggest source of pollution in the less industrialized regions of Ukraine.

Nevertheless, private cars are indispensable in rural areas, for trips, for example, over long distances or the transportation of certain goods. Their location on the last step of the pyramid does not mean that we should completely abandon cars. The idea should be to create conditions in which residents use cars only in those cases when it is really necessary - for urgent trips over long distances or with a large load. For the rest of their trips, they will be able to choose more sustainable ways to travel - on foot, by bike or by public transport. In addition, the use of private cars creates traffic jams in cities and problems with parking in cities.

FIGURES:

1. Nataliia Bila. Illustration, 2023.

14

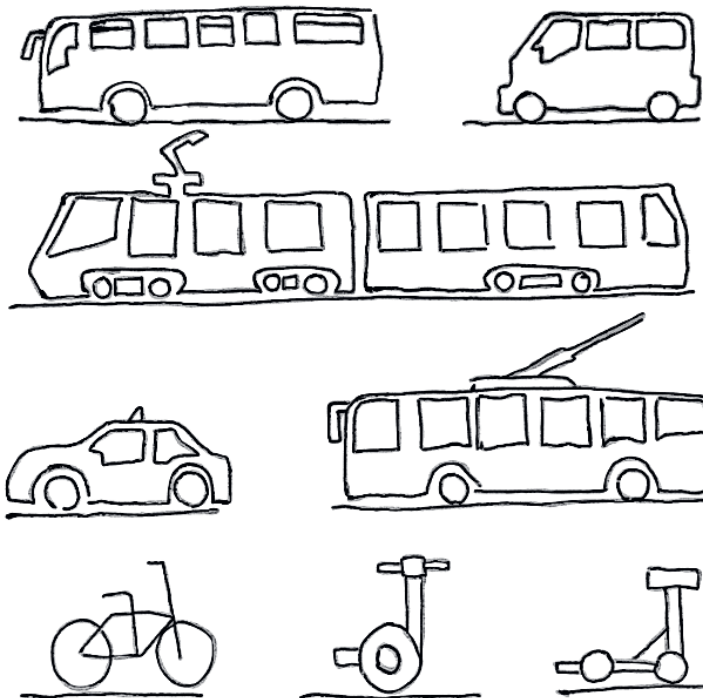
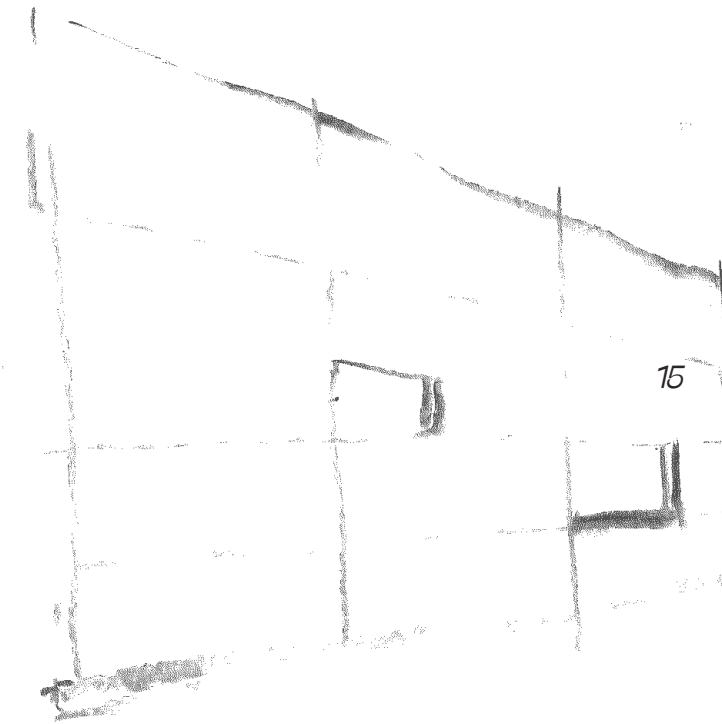


fig. 1.



15

# sustainable mobility

Nataliia Bila

16 In general, sustainable mobility is the provision of services and infrastructure for the movement of people and goods that enhances the economic and social development of current and future generations in a safe, physically and economically accessible, efficient and resilient way, most importantly while minimizing carbon and other emissions and environmental impacts. In order to accurately understand the scenario of restoring the mobility system in communities, it is necessary to take a certain number of steps: the first thing to do is to understand the key changes in the territory of a certain community and the challenges associated with them; look at these challenges from the perspective of different user groups; to investigate the planning structure of a community, in fact, to understand from where and to where residents need to go; to look at different ways of moving and to choose for each of the user groups several options and combinations that would satisfy their needs. The planning structure of the community, that is, how the settlements are located relative to each other, primarily affects the planning features of a connected multimodal transport system. And

the primary focus on the types of users and precisely their needs for movement will ensure comfortable mobility for the maximum number of residents.

The main challenges for communities recovering after hostilities and occupation (de-occupied) are destroyed transport infrastructure (streets, roads, bridges); stolen or destroyed inventory of public transport; destroyed housing, educational or health care facilities, administrative buildings, etc.; destroyed enterprises (with or without the possibility of relocation); significant population outflow; a change in the transport behavior of the population, namely an increase in bicycle and pedestrian movements of people due to restrictions in the operation of public transport and the fuel crisis; and the risk of repeated armed aggression. Therefore, the key task of the mobility system is, first of all, the economic recovery of the community, and more precisely, the creation of the necessary conditions under which the returning residents can easily get to work or to commercial, social, administrative, etc. .d. institutions.

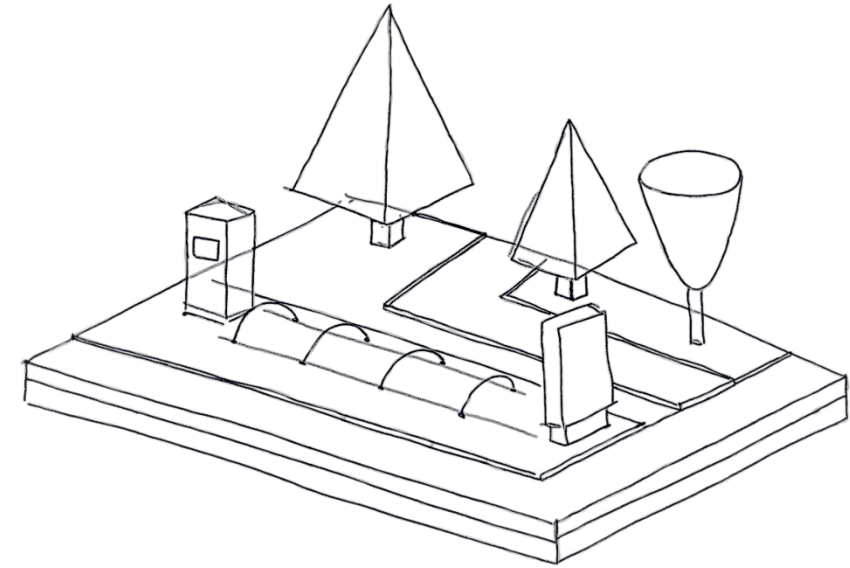


fig. 1.

## FIGURES:

1.

Nataliia Bila. Illustration, 2023.

# prioritizing traffic

Nataliia Bila

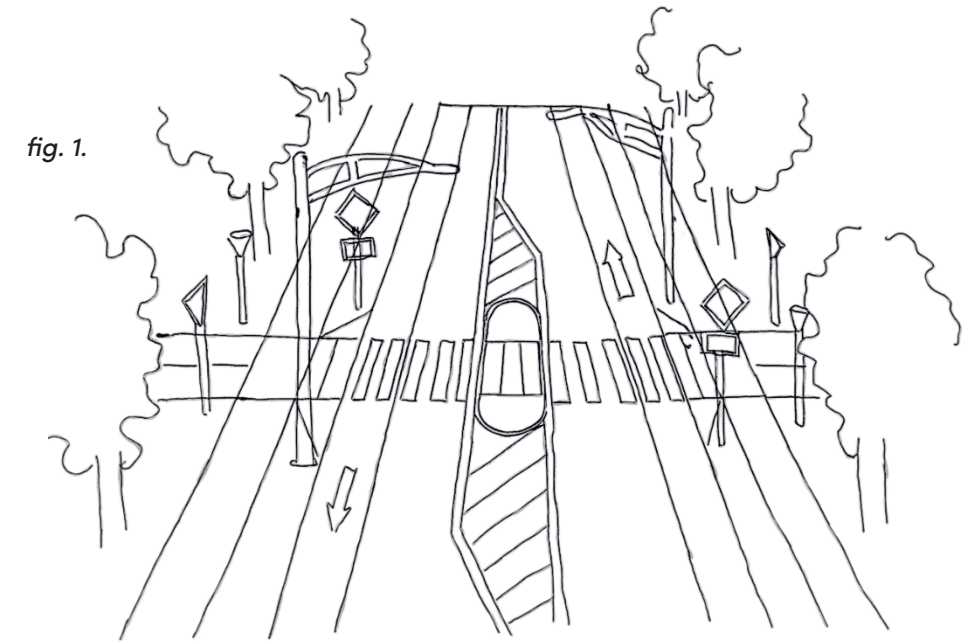
The lives and health of citizens are much more important than the speed of traffic on the road through the community. Therefore, it is definitely necessary for specialists to always take the side of pedestrians when designing future streets.

18 Traffic safety is one of the main elements of building a mobility system that will preserve the lives and health of residents and lead to the creation of a comfortable living environment in settlements. Every citizen deserves not to be killed or maimed when leaving the home.

Vehicle speed is a key factor affecting fatalities and injuries on today's streets. Excessive speed does not allow the driver to react in time to a change in the road situation and make the right decision to prevent an accident. The science of traffic safety long ago established a system of universal rules that allow drivers to keep within certain speeds that will allow them to react in time even to the most unpredictable changes on the road. That is why there are speed limit zones in most cities of the world.

The behavior of traffic participants depends on how the street is designed. A wide, straight, empty section of the street will provoke the driver to move faster. A winding narrow street with certain obstacles will lead to discomfort at high speeds. Therefore, there is a whole list of means that allow you to keep drivers within a certain speed limit. Exceeding the permissible speed will be uncomfortable for drivers and will require excessive attention when driving. This principle is called "traffic calming". There are several examples of these means that should be used on Ukrainian roads, and one of them is safety islands at pedestrian crossings. Safety islands are such inserts along the axis of the carriageway, which usually separate two directions of traffic. They are meant to draw the driver's attention to pedestrians. At the same time, a visual obstacle in the middle of the road causes a certain unconscious reaction of reducing speed. An island divide the long section of the crossing into two shorter ones and thereby significantly increase the safety of pedestrians.

# safety



Another effective option may be to raise the level of the carriageway to the entire width of the crossing. Due to the ramp, drivers must reduce their speed, while the car itself is not damaged. Such elevation creates additional comfort for pedestrians, as the intersection of the carriageway is at the same level as the sidewalk.

In general, ensuring the complete safety of pedestrians on Ukrainian roads is one of the most important priorities of our time, and approaches to ensure this safety should become a key condition in the reconstruction of transport networks.

FIGURES:  
1.

Nataliia Bila. Illustration, 2023.

# medium- rise city

Valeriia Panasniuk

20

A medium-rise urban block describes a city district with buildings of moderate height, typically ranging from four to ten stories. These areas provide a compromise between the low density of suburbs and the high density of central city districts. The concept of a medium-rise urban block is becoming increasingly popular as a sustainable and people-oriented approach to urban development. It is a typical housing type in middle-sized and small cities in Ukraine, as mentioned in the pattern "Urban type city" (PAGE 4), and is characterized by buildings ranging from 5 to 7 stories in height. This type of residential development deserves attention as it provides a comfortable and convenient living environment. Here are some features and advantages of a medium-rise urban block:



fig. 1. Medium-rise city quarter in Kyiv, Ukraine.

**Scale and density:** A medium-rise urban block offers a transition between low-density residential areas and the high-density development of central city districts. The moderate building height allows for increased population density while maintaining a people-oriented environment. Buildings are typically closer to each other, fostering a sense of community and creating comfortable inter-building spaces.

# quarter

**Mixed land use:** Medium-rise urban quarters often incorporate mixed land use, combining various functions such as residential spaces with commercial premises, offices, retail outlets, and public services. This promotes the development and diversity of the neighborhood, where residents can live, work, and socialize within a short distance, ensuring convenience and accessibility to necessary services.

**Practicality and connectivity:** Thanks to the low building height and well-developed street system, medium-rise urban quarters are more practical and contribute to improved walking experiences while reducing reliance on private transportation. Pedestrian sidewalks, bicycle lanes and public transport facilitate active mobility and reduce congestion. Having all the necessary services and amenities in the vicinity eases daily commutes and minimizes the need for long trips. Pedestrian sidewalks, bicycle lanes, and public transport promote an active lifestyle and support a healthy way of living. The moderate building height creates a cozy environment, ensuring sufficient natural light and views while minimizing excessive noise

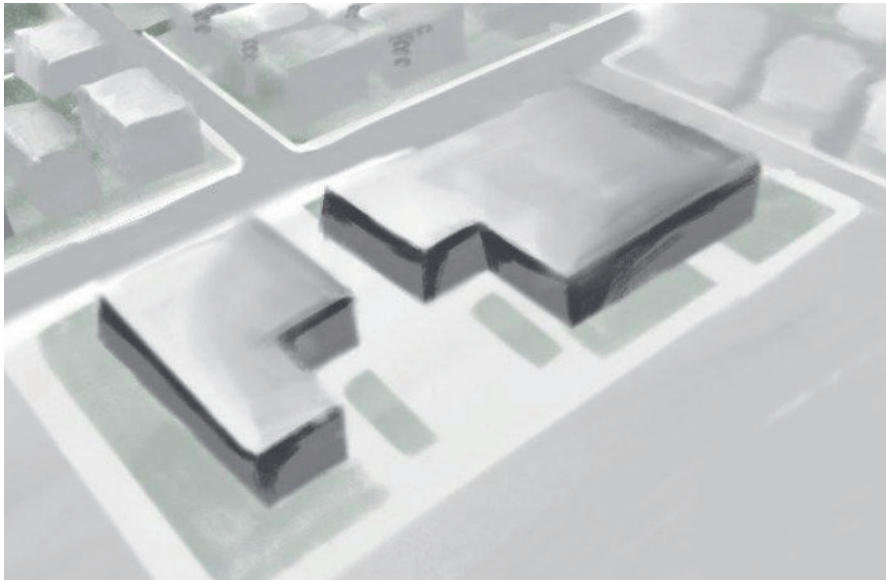
and shadows. Further information on this topic can be found in patterns "Sustainable mobility" (PAGE 16) and "Ensuring inclusiveness of public spaces" (PAGE 24).

**People-oriented environment:** In contrast to high-rise developments, medium-rise urban quarters maintain a more personal and people-oriented character. Buildings are typically designed with consideration for interaction with the street and pedestrian areas, paying attention to architectural details, facades, and public spaces. This creates visually appealing and comfortable urban environments for residents and visitors.

21



More information on greening can be found in patterns “Urban forest” (PAGE 54), and “Hydropark” (PAGE 64). Medium-rise urban quarters can include green zones, parks and open spaces that create a natural balance in the environment and support a healthy lifestyle. They provide places for leisure, social gatherings, and entertainment.



*fig. 2. Medium-rise city quarter*

Green spaces and public squares: Medium-rise urban quarters place great emphasis on creating public spaces and green areas such as parks, squares, and landscaped courtyards. More detailed planning of different squares is described in patterns “Transport square” (PAGE 42), “Memorial square” (PAGE 46) and “Multifunctional village square” (PAGE 50). These spaces provide opportunities for relaxation, entertainment, and community interaction. Incorporating green infrastructure, such as street trees and rooftop gardens, improves environmental quality and promotes sustainability.

The medium-rise urban quarter creates a harmonious and convenient environment for residents, contributing to sustainable urban development and improving the quality of life. These advantages make the quarter attractive for living in middle-sized cities in Ukraine, offering a comfortable and convenient environment for residents.

#### REFERENCES:

- [1] Y. Gaidai, “What danger does dense construction hide?”, *The Center for Economic Strategy*, blog, November 17, 2022. Available: [ces.org.ua/lyudy-shukayut-alternatyvy-yaki-chasto-ye-nebezpechnymy/](https://ces.org.ua/lyudy-shukayut-alternatyvy-yaki-chasto-ye-nebezpechnymy/)
- [2] “Public spaces: 10 principles of uniting people and streets,” *ProMobility*, blog, November 9, 2018. Available: [pro-mobility.org/innovaciyi/gromadski-prostori-10-principiv-obied/](https://pro-mobility.org/innovaciyi/gromadski-prostori-10-principiv-obied/)
- [3] O. Kolesnichenko, “25 floors instead of four. Why are Kyiv developers building ‘peoples houses,’” *Ukrainska Pravda*, February 17, 2022. Available: [www.epravda.com.ua/publications/2022/02/17/682266/](https://www.epravda.com.ua/publications/2022/02/17/682266/)

#### FIGURES:

1. Pixabay user Zephyrka. Photograph. Available: [pixabay.com/photos/ukraine-kiev-city-architecture-5256682/](https://pixabay.com/photos/ukraine-kiev-city-architecture-5256682/)
2. Valeriia Panasiuk. Illustration, 2023.

# ensuring inclusiveness

Nataliia Bila

War, unfortunately, is inextricably linked with the injury of military and civilian people. According to the UN, only in the period from February 24 to October 2, 2022, about 9,000 cases of injury to the civilian population as a result of hostilities were recorded. The number of representatives of less mobile groups will only grow. At the same time, the number of people with mental illnesses is increasing as a result of the war. Therefore, communities should already create such conditions of movement and life under which people will not feel excluded and will be able to lead a fulfilling life on a level with those who are lucky enough to avoid injuries. The UN Convention on the Rights of Persons with Disabilities, ratified by Ukraine, declares the principles of equality of opportunity, non-discrimination and respect for human dignity, freedom to make one's own choices, and independence.

According to the UN, every third person in the world today still does not have the necessary access to even the basic benefits of civilization, such as normal roads or public transport. This occurs despite the fact that according to the forecasts of the same UN, by 2050, 68% of the Earth's inhabitants will live in

cities. Therefore, the problem of access to services, the inclusion of everyone in the life of the community, and the creation of truly accessible public spaces and inclusive cities, remains an urgent problem at the moment.

Accessibility and inclusiveness of high-quality public space is not only about ramps and the absence of barriers in cities, but also about creating an environment in which the interests of different social groups, especially the less protected, such as elderly people, people with disabilities and teenage girls, are equally taken into account from the very beginning. A high-quality public space is one that reflects diversity and encourages people to live together, encourages them to be outdoors. Such liveliness is created by the possibility of using public spaces in different ways.

There are several ways to ensure the inclusiveness of public space, the first is to organize comfortable, regular and full lighting. It is definitely important to take into account the special infrastructure for movement, namely ramps, exits, inclusive playgrounds, mother and child rooms, and inclusive restrooms. It should be added that creating a space of interaction

# of public spaces

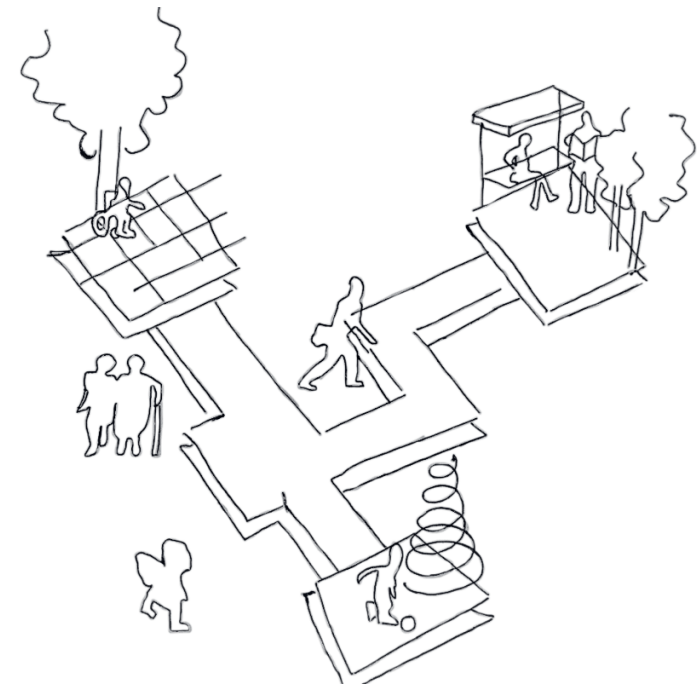


fig. 1.

where people can exchange ideas and communicate also refers to the inclusiveness of the space. Chess tables, amphitheatres, fountains, stages, parks and squares - all this can and should be included in accessible spaces for all population groups. But at the same time, it is worth taking into account the avoidance of inhuman scale in which one definitely feels discomfort and a certain insecurity. Therefore, for example, a large space of a paved area can be divided into 4-5 smaller ones and give them interesting separate functions.

The most important thing is that public spaces are accessible to everyone.

FIGURES:

1.

Nataliia Bila, Illustration. 2023.

# bicycle as a mode of transportation

Natalija Bila

26 According to recent data from the Ukrainian Ministry of Regions, about 40% of the energy infrastructure was damaged as a result of the Russian rocket attacks. At the same time, the problems with fuel should not cause the collapse of the transportation system in communities. The development of modes of movement that are driven by muscle power and electric motors makes the transport system more resilient. Thus, in the conditions of the fuel crisis in the spring of 2022, the only effective way of movement in communities turned out to be the familiar bicycle. Those settlements that have developed bicycle infrastructure and promoted the use of bicycles have proven to be more prepared for this challenge than those that rely only on road transport.

A bicycle is a means of transport that meets the criteria of sustainability and at the same time is already present in most communities. It is effective at a distance of up to 5-10 km, which essentially covers most movements within settlements and part of movements within modern

communities. It can transport both goods and people. It is not expensive to buy or to operate. And, most importantly, according to the State Statistics Service, it already belongs to 50% of Ukrainian households. The bicycle is often underestimated as a means of transportation, perceiving it as a "sports tool" or as a "recreational element". Unveiling the potential of bicycle transport will allow the community to solve a huge number of problems related to the movement of residents, will significantly reduce the negative impact on the environment, due to the minimization of the need to use public transport.

# transportation

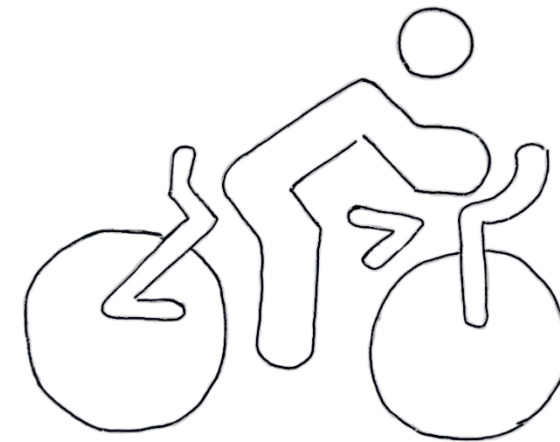


fig. 1.

The development of bicycle transport is an important component of the safety system of every community. The war has showed that, in the conditions of a fuel crisis or occupation, a bicycle is often the only way to reach relatives or take humanitarian aid to those in need. The recipe for the development of bicycle transport is quite simple - it is necessary to develop a safe bicycle infrastructure, then people will more often choose a bicycle as their main means of transportation.

A number of Ukrainian communities are already actively implementing bicycle transport development projects, creating infrastructure and giving residents the opportunity to use municipal bicycles.





Communities also provide bicycles for use by internally displaced persons to better adapt to resettlement conditions and ensure the ability to get to work or shopping in different parts of the individual city. Bicycle rental for residents can be one of the effective steps. The creation of such bike stations, where absolutely everyone can rent a bike, is quite an appropriate solution. The principle is simple: anyone can borrow a bicycle, the main thing is to return it to one of the points. Bikes can be tracked using GPS. In this way, residents themselves ensure that bicycles are not stolen or broken. A similar project was launched earlier in Kyiv even before the full-scale invasion.

Electric scooters are a fairly popular way of transportation in European cities, which are also gradually filling communities in Ukraine and replacing usual bicycles. Electric scooters are quite affordable, have a range of about 20 km and develop a speed of up to 30 km/h. The increase in the number of electric scooters in personal use in Ukrainian communities is still an insignificant phenomenon, but their number and popularity will definitely gradually increase in the future.

FIGURES:

1.

Nataliia Bila. Illustration, 2023.



# city main street

Yuliia Demchyshyna

30 The main street of the city is like a communication hub for people, vehicles, and shops. It is the street that connects different parts of the city, and this often causes traffic jams. If we distribute private and public transportation better, we can reduce traffic congestion and the number of car accidents. Giving more priority to public transportation in the city is important because it can carry more people. Having a separate lane for public transport would encourage more people to use it. As a result, we would have fewer cars on the road, which means less air pollution from exhaust gases. Bike lanes that are separate from the main road would help develop a better cycling infrastructure in the city. By using physical barriers and clear



fig. 1. City main street.

signs, both on the road and pedestrian paths, we can make cycling safer. This would encourage more people to ride bicycles within the city.

To ensure the safety and comfort of the large number of people moving on the city center streets, it is necessary to separate the road from pedestrians using greenery that provides shade. It would be beneficial to place metal poles near pedestrian crossings to protect pedestrians in case of car accidents.

To improve the movement of all road users, modern traffic lights with timers and sound signals should be used, along with retractable barriers in the middle of the road that would activate when the traffic light changes. Many drivers often disregard pedestrian safety and try to rush through traffic lights, causing accidents.

Poor artificial lighting is also one of the causes of accidents. The lighting on streets, squares, and roads should meet all safety requirements, especially at night. Unfortunately, overground and underground crossings do not solve the problem of traffic congestion on city streets. Besides, they create additional obstacles for people with limited mobility due to improper design decisions during their construction. It is advisable to use the following types of lanes on main streets:

- Lanes for public transport.
- Lanes for private transport.
- Bike lanes.
- Paths for individuals with strollers or disabilities.
- Sidewalks for pedestrians.

To solve issues related to urban street planning, it is necessary to develop a fast, convenient and comfortable public transportation network. Urban streets become more congested due to the high number of consumption zones, making it difficult to navigate through these concentrated areas in city centers. Balancing residential, commercial, and public development as well as separating commercial zones from recreational areas will improve mobility.

31



When placing commercial establishments on the ground floors, it is important to limit the construction of additional rooms or tambour that encroach upon public space and regulate their density.

When reconstructing streets, it is necessary to consider the number of lanes and their functions. If needed, an analysis of existing roads in the city should be conducted to assess their demand and increase their size. Whenever possible, widen the main thoroughfares and pay attention to pedestrian pathways, adding greenery alongside bike lanes to create convenient routes that promote

cycling and walking. In the Ukrainian cities, during the construction of transportation infrastructure in Soviet times, space was only allocated for public transport since private vehicles were not as prevalent. Today, the number of cars and population is increasing while the streets remain the same. Increasing the number of lanes will only result in a reduction of space for pedestrians. This will lead to a higher demand for transportation, and unfortunately, the problem will persist. Therefore, alternative solutions need to be employed. The pattern "Village street" (PAGE 38) also considers the Ukrainian type of street in villages, with pedestrian and bicycle lanes and benches in front of each yard.

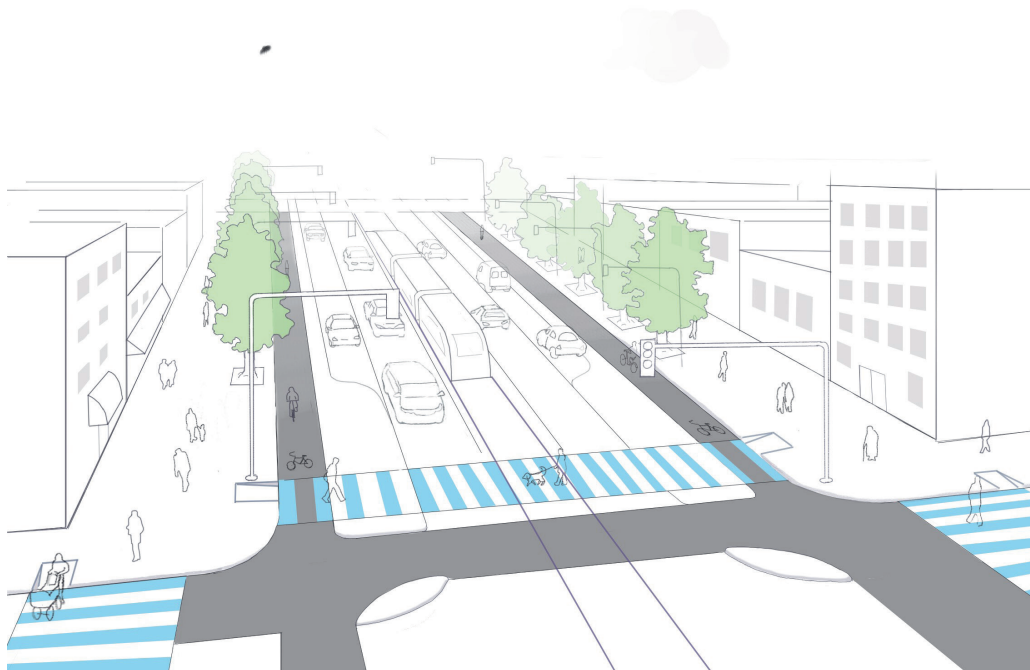
#### REFERENCES:

- [1] Y. Kleban, "'Designing a Just City' with Valentyna Zotova," *Chymoto - Cultural-publishing Project*. Available: [chytomo.com/iak-sproektuvaty-spravedlyve-misto-z-valentynoi-zotovoju/](http://chytomo.com/iak-sproektuvaty-spravedlyve-misto-z-valentynoi-zotovoju/)
- [2] M. Fedina, "Urbanism in Action: The Good and the Bad in Ukrainian Cities," *The Ukrainians*, June 1, 2017. Available: [theukrainians.org/urbanistyka-v-diyi/](http://theukrainians.org/urbanistyka-v-diyi/)
- [3] A. Lyasheva, I. Bondarenko, "Space and Inequality," *Spilne Commons*, September 22, 2021. Available: [commons.com.ua/uk/yak-pokrashiti-transportnu-mobilnist-v-ukrayinskih-mistah/](http://commons.com.ua/uk/yak-pokrashiti-transportnu-mobilnist-v-ukrayinskih-mistah/)

#### FIGURES:

1. Pixabay user hpgruesen. Photograph. Available: [pixabay.com/photos/belgrade-main-thoroughfare-dom-dome-3245940/](http://pixabay.com/photos/belgrade-main-thoroughfare-dom-dome-3245940/)
2. Yuliia Demchyshyna. Illustration, 2023.

fig. 2. City main street.



# pedestrian street

Oleksandra Vereteletska

34



fig. 1. Pedestrian street.

In Ukrainian cities, we have a large number of streets that are focused solely on cars. Small alleys between buildings, streets located in the city center — almost everything is designed for the convenience of cars rather than people who use the streets not only as a means of transportation from one point to another. These streets are not comfortable for everyone; they experience traffic congestion, are not accessible for people with disabilities, and have an unappealing appearance. Additionally, it would be desirable to see the central parts of the city completely accessible only to pedestrians and emergency services.

We have a few streets like this in Ukrainian cities, and they serve as good examples. For instance, in Lviv, one can find an interesting pedestrian area composed of 26 streets and squares. This old part of the city is a historical monument and part of UNESCO's World Heritage. This example shows that creating a pedestrian zone in such a place is relatively easy. It reduces the external impact on architectural landmarks and attracts tourists since these streets are aesthetically appealing without the noise of cars.

However, we should understand that the primary goal is to create similar pedestrian streets, possibly even smaller ones, for people returning to their cities that have been destroyed. Therefore, after selecting a city in need of reconstruction, we need to analyze whether there are already pedestrian streets, and find places where completely pedestrian streets can be created from scratch.

For example, let's say we found such a street and start considering it. We should begin organizing the street from the foundation and the side parts that may be bordered by buildings. If the buildings on both sides or at least on one side have commercial establishments, it will provide a cozy living environment. Here, we can connect a wide pedestrian path, which should touch the entrances to

the commercial establishments at the lowest permissible level. This will make them more accessible and not hinder the idea of a completely even pedestrian street.

The foundation of the street can be made with different types of paving or concrete slabs to delineate different zones. For example, we can place commercial establishments like shops and cafes in one designated zone that does not obstruct pedestrian traffic. Often, we observe a trend where pedestrian streets with a large number of cafes, especially during warm periods of the year, transform into a continuous summer terrace.

35



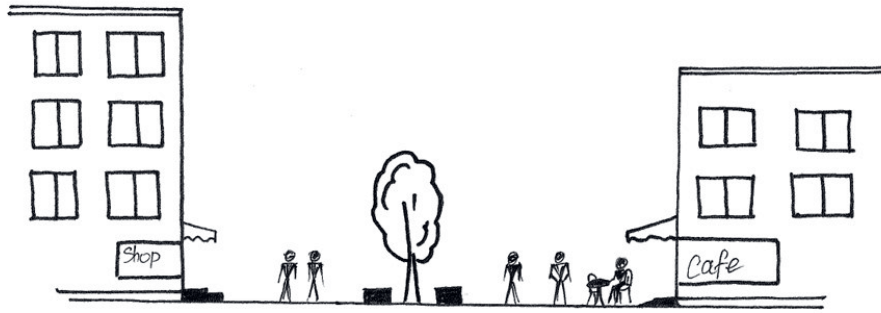


fig. 2. A section of a pedestrian street.

Leaving the area of cafes and shops, we may create a space for free movement of people. Attention should be paid to making this part the most comfortable one. The surface should be safe, allowing people with various needs to move freely and confidently in this area.

Finally, we are able to reach the most tranquil zone of this bustling street. This center should be peaceful, serving as the main resting place after walks or visits to the shops along the street. It should attract people and provide them desired relaxation. Here, we need to combine benches and greenery since this area should not occupy the entire length of the street, as well as it should not be the only one throughout the entire street. Based on the length of the street, we need to select the appropriate number of these main relaxation spots. These oases should be spacious enough for anyone to rest or simply sit there, without obstructing the crossroads of pedestrian traffic.

The components of the street that we are clearing can be found on "Main Street of the city" (PAGE 30), which will also help understand the difference between these two types of streets. The main idea of this street is to create a peaceful, comfortable atmosphere for walking, shopping, and enjoying a cup of coffee while reading a book. Therefore, it should be accessible to everyone and ensure inclusivity in public space (PAGE 24).

#### REFERENCES:

[1]

LEOPOLIS, "The most beautiful pedestrian streets in different cities of Ukraine," Lviv1256. Available: [lviv1256.com/lists/najkrasyvishi-pishohidni-vulytsi-v-riznyh-mistah-ukrajiny/](https://lviv1256.com/lists/najkrasyvishi-pishohidni-vulytsi-v-riznyh-mistah-ukrajiny/)

#### FIGURES:

1.

Pexels. Photograph. Available: [www.pexels.com/photo/narrow-alley-in-a-town-17367756/](https://www.pexels.com/photo/narrow-alley-in-a-town-17367756/)

2.

Oleksandra Verteletska, Illustration, 2023.



# village

Oleksandra Vereteletska

# street



fig. 1. Barmaky Village.

with their fellow villagers and facilitating communication among them. Everything happens here: conversations between villagers, household activities, folk celebrations, and traditions. For example, during a wedding, it all starts from the house and continues on the street as the newlyweds make their way to the church, and they return through the same road. The street always participates in the entire procession, allowing people to share their festivities

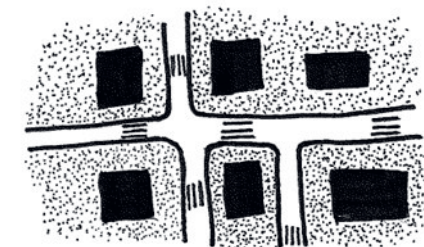
with others, and becomes alive, more than just a means of connection. It has also witnessed sad moments when people bid farewell to a loved one, walking together along a familiar street on their final journey. The street in a Ukrainian village is an integral part of its culture.

The Ukrainian village is one of the most important parts of the cultural heritage that still lives on and evolves. The village has many significant components, one of which is its streets. A village street is not just a connection between houses and other villages; it is a place where something is always happening. It can be seen as an extension of the homeowner's yard, connecting them

However, Ukrainian villages are becoming more modern and developing each day. We will be rebuilding many villages from scratch, so it is necessary to reconsider all the shortcomings while living in a village and improve what is familiar and dear to everyone. Here are some of the problems: the lack of pedestrian walkways, the absence of bicycle lanes, improper traffic regulation, and not all streets have proper paving (often just sandy or dirt roads). This list is not exhaustive, and it can be expanded, but these fundamental issues require immediate attention. Previously, pedestrian safety was much less of a concern than it is now. Motor vehicles often disregard speed limits since there are virtually no regulation in villages. It is necessary to install not only speed limit signs but also possibly video cameras that can capture speed or speed bumps. People living on transit streets that connect neighboring villages and towns suffer the most. Even pedestrian crossings can be challenging. Traffic regulation is crucial because rural roads are used not only by cars or buses but also by farmers' machinery, livestock, and domestic animals, and encounters with them can be fatal for everyone involved.

The absence of pedestrian walkways is something that could be eliminated from villages. One might wonder, why they are necessary in a village? In reality, it is very important as it guarantees safety for everyone, especially if you want to move peacefully alongside any type of transportation without trying to dodge or avoid it. These are basic elements - the presence of separate lanes for vehicles and safe zones for pedestrians.

fig. 2. Increase of pedestrian crossings.



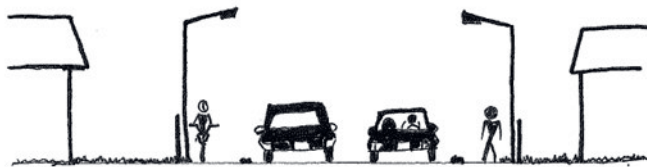
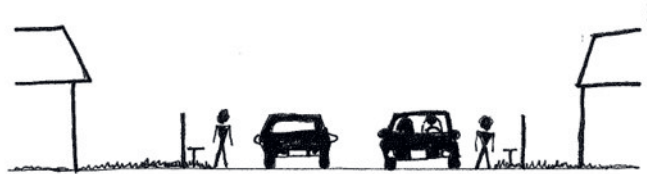


fig. 3. Changing the road profile. Creation of a pedestrian and bicycle zone, lighting and a safety island from traffic.

FIGURES:

1. Oleksandra Verteletska, *Barmaky Village*. Photograph, 2023.
2. Oleksandra Verteletska. Illustration, 2023.
3. Oleksandra Verteletska. Illustration, 2023.

The main mode of transportation in rural areas is bicycles. They are fast, versatile, and accessible to children and teenagers. It is necessary to designate areas with the highest traffic volume for bicycle lanes. If the width of the street allows, bike lanes can be created on both sides with different directions. Alternatively, a pedestrian line can be separated on one side of the street, followed by the road itself and a bicycle lane. If the width of the street does not allow the separation of pedestrian and bicycle zones, they can be combined. Here we encounter another issue related to bicycles: where they can be safely parked without worrying about their security? To address this, it is advisable to allocate areas for bicycle parking near public and commercial buildings such as shops, clinics, clubs, administrative buildings, and others. This approach will encourage more people to choose bicycles as a means of transportation and they do not have to leave them unattended on the roadside.

There are certain specific differences between a rural street and a pedestrian street, embedded in their meanings. A pedestrian street can exist both in cities and villages, making it more or less universal (the difference likely lies in the surrounding environment). On the other hand, connecting a rural street to a city is challenging because its significance differs fundamentally due to the nature of urban planning.



# transport square

Yuliia Demchyshyna

42

One of the major transportation hubs connecting cities and towns is the transport square used by many people every day. It is an important gathering place for both vehicles and pedestrians, although the focus tends to be more on transportation – urban, intercity, and private. However, the connection between the train station and pedestrian walkways also plays a crucial role. This space was created by people for people, so why is it so difficult to safely access the train station? Why are there no recreational areas or waiting spaces for people?



fig. 1. Transport square.



fig. 2. Transport station.

Similar issues exist in almost every location within transport squares. First and foremost, to make the station square better, it needs to be made more pedestrian-friendly by expanding sidewalks and optimizing public transport logistics. The urban transport line should be reconstructed, making the bus stops more comfortable and prioritizing pedestrian pathways over parking spaces near the entrance to the train station. The main entrance of the train station should be directly connected to various pedestrian paths for safe movement. Car access should be prohibited and separated, with dedicated underground parking facilities. More information about parking options can be found in pattern "Parking in the city" (PAGE 72).

Using Dvirts'ova Square in Lviv as an example, we can examine how the reconstruction of this area took place. The renovated square features more greenery and organized parking, including the addition of an underground parking facility. There is now more pedestrian space, and the number of tram stops has increased to four, with one relocated closer to the train station. Changes will also affect pedestrian pathways, as they will be moved to the center of Chernivetska Street. This is done to allow people to enter directly into the train station. This pedestrian zone will be adorned with trees and benches.

43





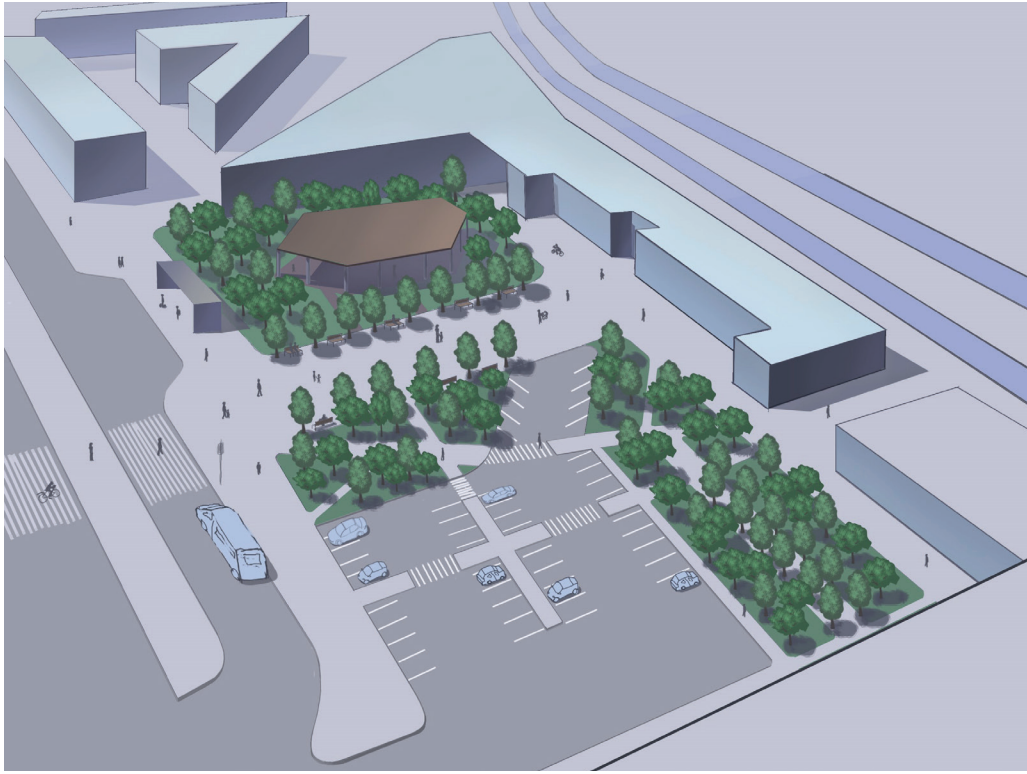


fig. 3. Transport square

A large pedestrian square can become a comfortable and safe public space where people can wait for their transportation in comfortable conditions. Transport stops and waiting areas can be protected from weather conditions with canopies and green plantings, while bike lanes can lead to bicycle parking spaces. It is also important not to forget about people with reduced mobility, and many projects should consider the needs of all individuals, avoiding unnecessary stairs in recreational areas and providing entrances to buildings without stairs or with elevators. To popularize train stations, it is possible to add or expand shopping centers, making train stations not only transportation hubs but also

multifunctional spaces. The role of greenery and principles of designing green spaces are discussed in the patterns "Landscaping of residential area" (PAGE 94) and "Urban forest" (PAGE 54).

A comfortable transport square should be free from chaotic parking and scattered street vending. Taking into account the passenger flow, the necessary number of parking spaces should be calculated, and in cities with a large population, underground parking facilities should be constructed. The transport square should provide access to the main entrance for both vehicles and pedestrians, considering inclusivity in all aspects.

#### REFERENCES:

- [1] Action! Zaporizhia, "Railway Station Square in Zaporizhia After Reconstruction: Expectations and Reality," *Diy!*, May 5, 2021. Available: [act.org.ua/2021/05/pryvokzalna-ploshcha-zaporizhzhia-pislia-rekonstruktsii-ochikuvannia-i-realnist/](http://act.org.ua/2021/05/pryvokzalna-ploshcha-zaporizhzhia-pislia-rekonstruktsii-ochikuvannia-i-realnist/)
- [2] S. Shavranska, "A Tourist Information Center is Planned to be Established at Dvirtsiev Square," *Your City*, June 17, 2021. Available: [tvoemisto.tv/news/ploshcha\\_dvirtsieva\\_pislya\\_rekonstruktsii\\_yaki\\_roboty\\_shche\\_planuyut\\_provesty\\_foto\\_video\\_120827.html](http://tvoemisto.tv/news/ploshcha_dvirtsieva_pislya_rekonstruktsii_yaki_roboty_shche_planuyut_provesty_foto_video_120827.html)
- [3] "Aerial Photo: How Dvirtsiev Square Looks After Reconstruction," *VGORODE*, April 27, 2020. Available: [lviv.vgorode.ua/news/transport\\_y\\_ynfrastruktura/a1113849-foto-z-visoti-jak-vihljadaje-ploshcha-dvirtsieva-pislja-rekonstruktsiji](http://lviv.vgorode.ua/news/transport_y_ynfrastruktura/a1113849-foto-z-visoti-jak-vihljadaje-ploshcha-dvirtsieva-pislja-rekonstruktsiji)
- [4] D. Cherkaska, "Why Vokzalna Square Needs a Complete Reconstruction, Not Just Repairs? Explaining with Examples," *Khmarochos*, February 4, 2019. Available: [hmarochos.kiev.ua/2019/02/04/chomu-privokzalniy-ploshhi-davno-potribna-povna-rekonstruktsiya-a-ne-remont-poyasnyuyemo-na-prikladah/](http://hmarochos.kiev.ua/2019/02/04/chomu-privokzalniy-ploshhi-davno-potribna-povna-rekonstruktsiya-a-ne-remont-poyasnyuyemo-na-prikladah/)

#### FIGURES:

1. Pixabay user 652234. Photograph. Available: [pixabay.com/photos/architecture-platform-station-stop-4376921/](https://pixabay.com/photos/architecture-platform-station-stop-4376921/)
2. Pexels. Photograph. Available: [www.pexels.com/uk-ua/photo/2136360/](https://www.pexels.com/uk-ua/photo/2136360/)
3. Yuliia Demchyshyna, *Transport square*. Illustration.

# memorial square

46 **M**emorial squares are important places that allow us to remember events and people. In this way, we honor the memory of individuals or historical events and ensure that we do not forget what is important to remember. The appearance of memorial squares should provoke thought, awareness and understanding. For every Ukrainian, these places will have a special sacred significance as they will preserve our pain and the loss of something or someone.

This place should have its own distinct design, which will vary depending on its purpose and context. The elements used should provide an understanding and serve the purpose of honoring the memory.

The foundation of the square is a monument or statue that can serve as the centerpiece or starting point of the memorial square. This particular element should contain symbols that provide an understanding of the event, person or people being honored. It should include specific information, such as inscriptions directly on the



fig. 1. Holodomor memorial square in Toronto, Canada.

sculpture, plaques, or interactive displays, providing descriptions of historical events or individuals.

Equally important is the landscaping of such squares. A memorial square can be part of an existing or new park area. Well-chosen landscaping, combined with the memorial's concept, will help create a more serene atmosphere.

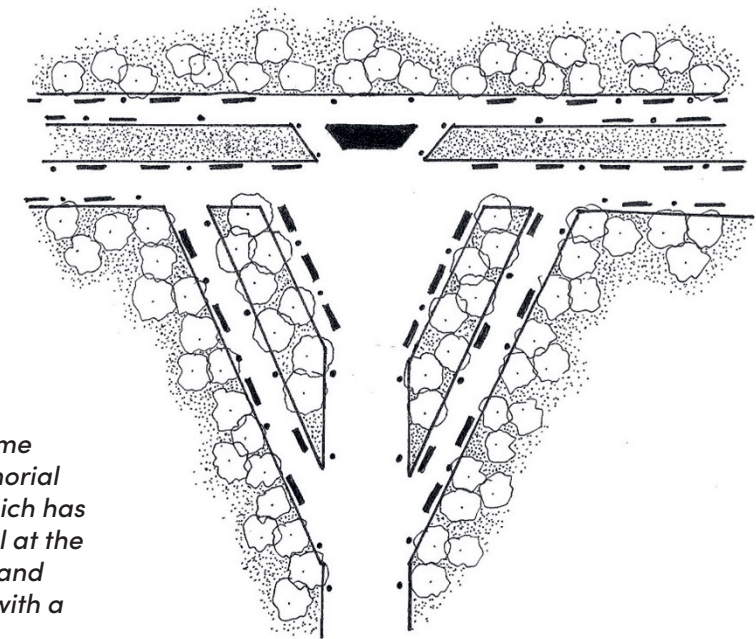


fig. 1. Scheme of the memorial square, which has a memorial at the beginning and continues with a square.



Such an atmosphere can either soothe or evoke a sense of tranquility when the moment of understanding the place you are in arrives. To ensure comfortable stay in the park, seating areas should be provided. They will allow visitors to pause and contemplate the place more deeply rather than just quickly passing by. The memorial area should include a large gathering space for commemorating anniversaries, which can be either open or covered, depending on the design and concept. This will enhance the sense of unity and connection during memorial days.

Since 2014, many people in Ukraine have suffered not only morally but also physically. It is these individuals who require the most support and understanding, along with increased accessibility to facilitate movement. Therefore, the memorial site must be accessible and inclusive to everyone. Ramps, tactile elements, and appropriately sized pathways should be installed when needed to meet these requirements.

Lighting can provide a unique ambiance by highlighting specific details and creating a certain atmosphere. Proper placement of not only regular lanterns but also additional spotlights will create an atmosphere that emphasizes the significance of the memorial area. This can include illuminating inscriptions, dates, names, and even contribute to the fulfillment of the original idea.

Memorial square must be comfortable, contemporary, accessible to all (PEDESTRIAN STREET, PAGE 34), and provides an inclusive environment (ENSURING INCLUSIVENESS OF PUBLIC SPACES, PAGE 24).

## REFERENCES:

[1]

"In Kolomyia, a New Memorial Square Will be Built on Heroes' Square," *Mi100*, September 21, 2022. Available: [mi100.info/2018/09/21/v-kolomyii-zbuduyut-novyj-memorialnyj-skver-na-ploshhi-heroyiv/](https://mi100.info/2018/09/21/v-kolomyii-zbuduyut-novyj-memorialnyj-skver-na-ploshhi-heroyiv/)

## FIGURES:

1.

Mykola Swarnyk, *Holodomor Memorial Toronto*. Photograph, 2018. Available: [commons.wikimedia.org/wiki/File:Holodomor\\_Memorial\\_Toronto\\_General\\_view.jpg](https://commons.wikimedia.org/wiki/File:Holodomor_Memorial_Toronto_General_view.jpg)

2.

Oleksandra Verteletska. Illustration, 2023.



# multifunc- tional

Valerija Panasiuk

# village

# square

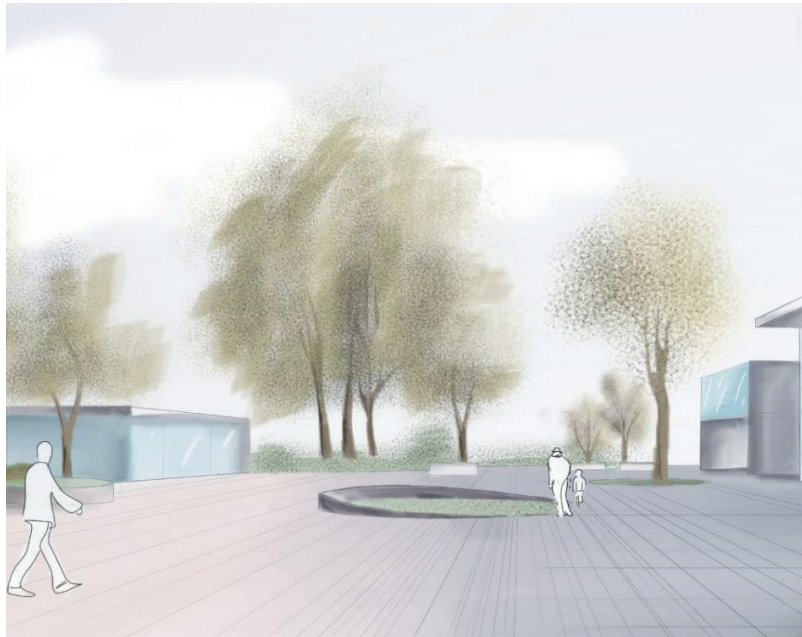


fig. 1.  
Multifunctional  
village square.

**M**ultifunctional village square is a concept that involves combining multiple functions within one territory in villages, including commercial, administrative, recreational, and others. This is one of many square

types, others listed in patterns "Transport square" (PAGE 42) and "Memorial square" (PAGE 46). This pattern contributes to the development of rural areas, improves the quality of life for residents, and stimulates economic growth.

Advantages of a multifunctional rural area:

**Increased accessibility of services.**

This concept provides rural residents with access to a wide range of services that may have been limited or unavailable in rural areas before. The introduction of shopping centers, administrative buildings, recreational facilities, and other functions in rural areas ensures convenient and fast access to necessary services. These can include stores, supermarkets, pharmacies, restaurants, cafes, banks, post offices, medical centers, fitness centers, libraries, cultural and entertainment facilities, and many others. Village residents have convenient access to essential services without the need for long trips to cities.

**Economic development.** Economic development is one of the key advantages of a multifunctional rural area, as it creates new opportunities for local economic growth. The presence of diverse services contributes to attracting investments and creating new opportunities for local entrepreneurs who can open stores, restaurants, small businesses, or provide services in the rural area. This leads to the creation of new jobs, growth in internal demand, and increased income.



fig. 2. Village square in Cortona, Italy.



#### Expanding of social opportunities.

The multifunctional village square creates space for meetings and communication between residents, provides opportunities for cultural, art and educational development in the village, opens access to various social services and support, promotes social integration of different population groups. It can contain premises for cultural events, sports complexes, libraries and other facilities. This stimulates an active lifestyle, promotes community development and strengthening of social ties between residents. Opportunities for the development of culture, art and education in the village are art galleries, theaters, museums, music schools, courses and trainings. The presence of such institutions contributes to the expansion of the cultural outlook of residents, provides opportunities for self-realization and learning new skills. Social integration of different population groups helps to preserve and develop traditions, maintain social diversity and form a sense of community.

#### Increasing the attractiveness of rural areas.

A multifunctional village square can become an attractive place for recreation. It adds new amenities to the villages, that helps to bring new residents. This can positively affect the development of tourism and increase the prestige of rural areas.

**Optimization of land use.** Instead of allocating separate areas for separate functions (trade, administration and entertainment), this concept allows to combine them in one place. This reduces land fragmentation and ensures more efficient use of resources.

A multifunctional rural area is an important element of sustainable development in rural areas. It creates favorable conditions for economic growth, improvement of quality of life, and expansion of social opportunities for rural residents.

#### REFERENCES:

[1]

A. R. Ponomarenko and L. M. Barmashina, "Multifunctional Rural Community Centers," presented at *IX International Scientific and Practical Conference*, October 30, 2018. Available: [shorturl.at/kptlL](https://shorturl.at/kptlL)

#### FIGURES:

1.

Valeriia Panasiuk, *Multifunctional village square*. Illustration, 2023.

2.

Juho Rajaniemi. Photograph, 2011.

# urban

Yulija Demchyshyna

# forest

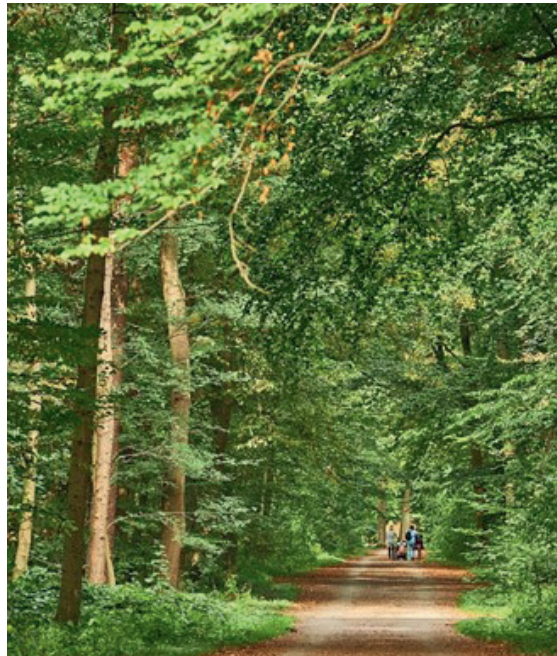


fig. 1. Hannover, Eilenriede.

is not just about adapting to global warming, but also about economics, mental well-being, and longevity. The role of green spaces in city life is to fulfill human needs for relaxation, recreation, health benefits, and a connection with nature, as well as to provide habitats for other species.

An excellent example of urban forest is the city of Hanover in Germany. Its urban forests, parks, and recreational areas make it the greenest metropolis in Germany, while Lake Maschsee and Steinhuder Meer create a seaside atmosphere with swimming, sailing and surfing.

Eilenriede is the largest urban forest in Germany, located in the eastern part of the city near Oststadt. Most of the paths here are covered with gravel or soil, hidden in shady forest

spaces along the Schiffgraben River. Eilenriede stretches through the center and eastern part of the city and is one of the largest and oldest urban forests in Europe, covering an area of 640 hectares (almost twice the size of Central Park in New York City, USA). This combination of nature and all the advantages of a large city is what the residents of Hanover consider proper, making it their ideal place to live.



fig. 2. Eilenriede plan.

In addition to a rich population of animals and plants, Eilenriede offers opportunities for various sports and free time activities: a large network of trails, hundreds of benches, ponds, sunbathing meadows, dog-walking meadows, forest restaurants, and adventure playgrounds.



The benefits of urban forests are significant, and they play an important role in cities:

- **Cooling cities:** urban forests play a crucial role in cooling cities, especially in the face of climate change. As global temperatures rise, cities become heat islands because materials such as concrete and asphalt absorb and retain heat even after the sunset. Green corridors connecting the city with rural areas can become important routes for the flow of cool and fresh air.
- **Air purification:** plants also play a crucial role in removing air pollution. They trap dust particles on their surfaces and convert carbon dioxide emitted from burning fossil fuels. Their impact is particularly significant in large cities with high levels of pollutants.
- **Noise and flood protection:** plants also provide protection against noise by dampening sound waves. They prevent the degradation of urban soils and can help protect cities from flooding during heavy rainfall since their root systems and unsealed soil retain water. Green areas also act as biodiversity hotspots. Green corridors can reduce wind flow, eliminate drafts between buildings, and prevent significant damage to buildings during storms.

- **Support for physical and mental health:** Urban forests can provide spaces for sports, running, walking, and active leisure. Contact with nature can lower anxiety levels, reduce the likelihood of mental disorders, and increase a sense of well-being. Research shows that in some cases, contact with nature can be as effective as medication, and an increase in the stress hormone cortisol helps combat postpartum depression. For example, just a 20–30 minute walk in a park or spending time near trees can increase happiness and reduce the risk of mental disorders like anxiety. Greening the city also contributes to increased productivity in people and significantly enhances their efficiency in the workplace.
- **Urban forests are ecosystems that allow for the preservation of all life cycles of animals and plants without excessive interference (unlike parks).**

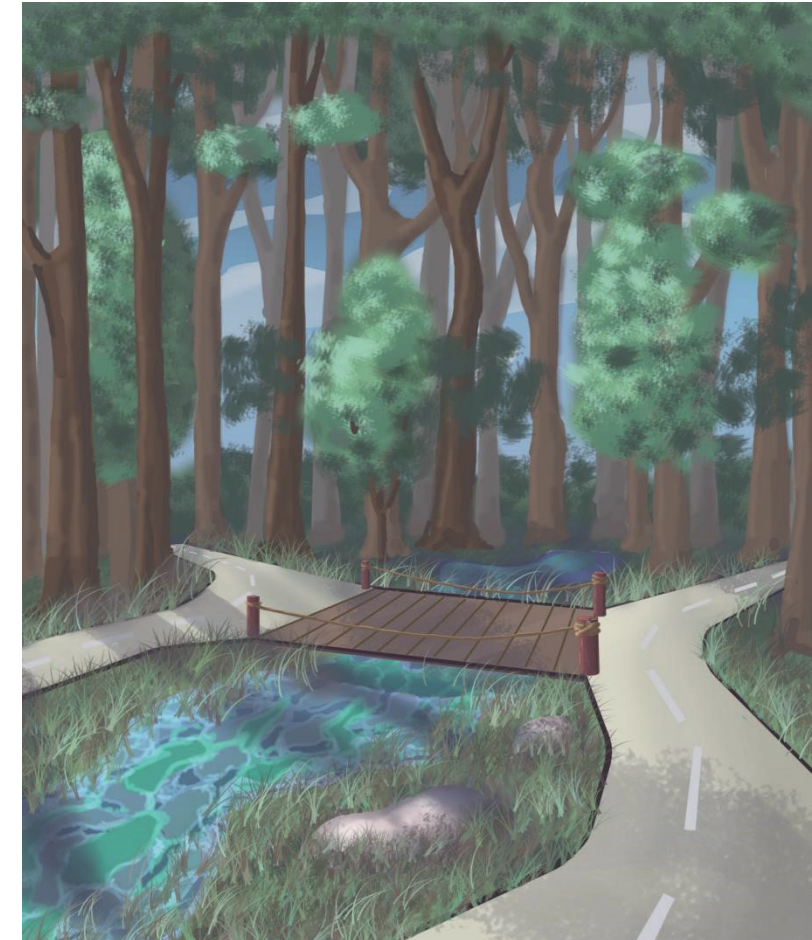


fig. 3. Urban forest.

In densely built urban spaces without the possibility of creating new parks, it would be beneficial to design or establish mini-forests, creating installations with large plantings (for example, in the center of London by architect Asif Khan). Mini-forests help explore the boundary between natural and urban spaces, creating comfortable and beautiful recreational areas in the midst of urban streets. And parks should be made more natural in order to preserve and nurture their fauna. This could be done in many ways, e.g., by not mowing the grass, but allowing it to grow naturally.



In pre-war Ukraine, several attempts were made to create urban forests, particularly in the city of Chernivtsi. Based on this example, several excellent points can be identified for creating urban forests: cleaning, correcting, and strengthening the shores of existing lakes; arranging embankments on swampy areas (not mandatory); laying pedestrian, running, and cycling paths with minimal interference in the existing landscape;



fig. 4. & 5.

creating additional artificial ponds (which can be part of the water purification system) with small bridges; an adequate number of recreational areas, especially near the ponds; arranging ecological and inclusive children's and sports playgrounds throughout the park; convenience and accessibility of all locations for people with reduced mobility; creating several inclusive public restrooms with changing facilities; and parking for cars and bicycles.

Urban forests, in many characteristics, resemble "hydroparks" (PAGE 64) and are part of "urban greening and nature-oriented approaches".

Overall, urban forests are important components of green infrastructure in cities, providing numerous ecological, social, and economic benefits for residents and the urban ecosystem as a whole. Urban forests contribute to biodiversity conservation by providing shelter and food for various plant and animal species. They can create ecological corridors for the movement of wildlife and contribute to the preservation of natural ecosystems in an urban environment.

REFERENCES:

- [1] "A Forest in the Middle of the City," *Das Portal der Hannover Marketing und Tourismus GmbH*, April 13, 2022. Available: [shorturl.at/aemu2](https://shorturl.at/aemu2)
- [2] "Hannover - The Green City," *Das Portal der Hannover Marketing und Tourismus GmbH*. Available: [www.visit-hannover.com/en/Press/What-Hannover-has-to-offer/Hannover-The-green-city](https://www.visit-hannover.com/en/Press/What-Hannover-has-to-offer/Hannover-The-green-city)
- [3] D. Krutko, "In Chernivtsi, the City's Largest Park with an Embankment is Being Reconstructed," *Skyscraper*, July 10, 2022. Available: [hmarochos.kiev.ua/2022/07/10/u-chernivczyah-rekonstruyuyut-najbilshyj-park-mista-z-naberezhnoyu-vizualizacziyi/](https://hmarochos.kiev.ua/2022/07/10/u-chernivczyah-rekonstruyuyut-najbilshyj-park-mista-z-naberezhnoyu-vizualizacziyi/)

FIGURES:

- 1. Pixabay, *Hanover Eilenriede*. Available: [pixabay.com/photos/hanover-eilenriede-urban-forest-4705651/](https://pixabay.com/photos/hanover-eilenriede-urban-forest-4705651/)
- 2. Wikimedia Commons, *Eilenriede in Hannover Lageplan*. Photograph, 2007. Available: [https://commons.wikimedia.org/wiki/File:Eilenriede\\_Plan.jpg](https://commons.wikimedia.org/wiki/File:Eilenriede_Plan.jpg)
- 3. Yuliia Demchyshyna, *Urban forest*. Illustration.
- 4. Pexels, *Central park with skyscrapers in New York City*. Available: <https://www.pexels.com/photo/central-park-with-skyscrapers-in-new-york-city-5847354/>
- 5. Pexels, *Amazing landscape of green plantations near city*. Available: <https://www.pexels.com/photo/amazing-landscape-of-green-plantations-near-city-5047128/>



# vegetable

# garden

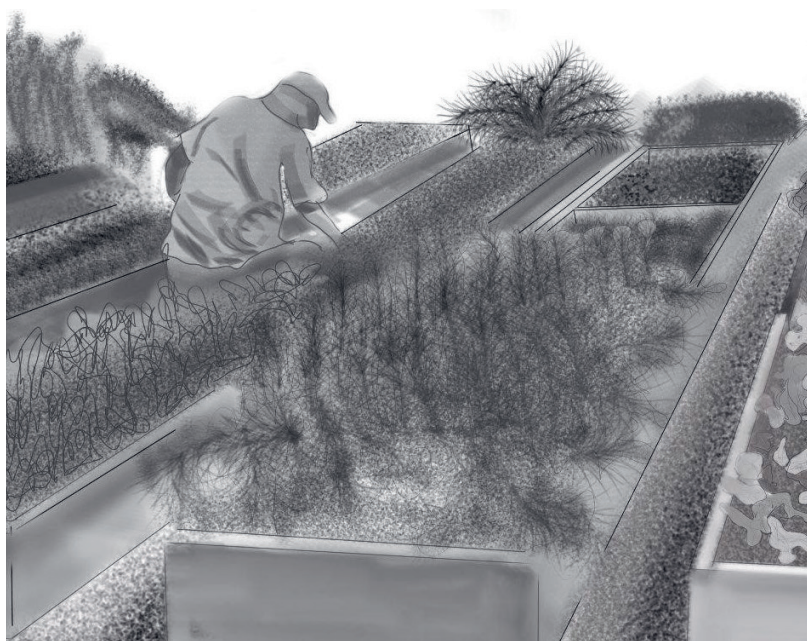


fig. 1. City vegetable garden.

In Ukraine, there is a long-standing tradition of rural agriculture, particularly gardening. A great example of this is a "khutir" or homestead, as described in pattern "Hamlet or farmstead" (PAGE 8). It is relatively easy for people living in private houses to have their own

gardens, but what about those residing in multi-apartment buildings? In such cases, urban gardens serve as a great alternative for them. Urban gardens are small plots in suburban areas where city dwellers can grow their own vegetables and fruits, enjoy nature, and spend time outdoors.

This practice has gained popularity in many countries, and it is not surprising considering the numerous benefits it brings to the environment. In the 1990s, there was a trend of establishing small garden plots on residential premises. It emerged for several reasons, but it did not contribute to the aesthetic and functional use of public land space.

**Personal land ownership.** Urban residents have the opportunity for their own land plots where they can grow vegetables, fruits, herbs, and other plants of their choice. This practice can be aimed at self-sufficiency in food, reducing dependence on imported food products, and preserving traditional agricultural methods.

**Environmental practice.** Urban gardens promote environmentally sustainable farming methods, such as organic cultivation, composting, and the use of natural fertilizers. They help preserve soil fertility and reduce the use of chemical substances. Natural pest control methods, such as companion planting, the use of repellent plants, and biological control, help maintain balance in ecosystems and reduce the use of chemical pesticides. This contributes to the conservation and protection of biodiversity, as well as providing habitats for insects, birds, and other beneficial organisms.



### **Social interaction and cooperation.**

Urban gardens create opportunities for communication and knowledge exchange among their users. They foster the formation of communities where people can learn from each other, share resources, and mutually support one another.

### **Biodiversity.**

Urban gardens contribute to the preservation of natural biodiversity by creating habitats for plants and animals. They can include fruit tree orchards, flower meadows, and spaces for insects to thrive. This creates conditions for species diversity of plants that can be beneficial for local flora and fauna, as well as for preserving the genetic diversity of plants. Suburban gardens that offer plant diversity and create favorable conditions for insects, including bees, butterflies, and others that play an important role in pollinating plants and spreading seeds to other areas. Additionally, plant diversity can attract wildlife, such as birds, which find shelter and a food source in these gardens. Moreover, in urban gardens, people often cultivate heirloom plant varieties that may be lost in modern agriculture, helping to preserve the genetic diversity of plants and prevent the extinction of certain species.

fig. 2. Rooftop farming.



**Recreation and relaxation.** Urban gardens provide opportunities to enjoy nature, spend time outdoors, relax, and unwind. They create an atmosphere of peace and harmony, helping to escape from the noisy urban environment.

Urban gardens are an important element of sustainable development and improving the quality of life. They contribute to the preservation of the environment, increase self-sufficiency in food production, and strengthen communities.

### REFERENCES:

- [1] M. Ryabyka "The New Life of the Nursery in the Zalizna Voda Park," *Your City*, April 26, 2021. Available: [tvoemisto.tv/blogs/nove\\_zhyttya\\_rozsadnyka\\_u\\_parku\\_zalizna\\_voda\\_abo\\_dlya\\_chogo\\_u\\_lvovi\\_misky\\_sadgorod\\_119422.html](https://tvoemisto.tv/blogs/nove_zhyttya_rozsadnyka_u_parku_zalizna_voda_abo_dlya_chogo_u_lvovi_misky_sadgorod_119422.html)
- [2] O. Bodniak "Full and Happy - How Agriculture and Horticulture Helps Cities During Wartime," *Zaxid.net*, March 31, 2023. Available: [zaxid.net/siti\\_i\\_shhaslivi\\_yak\\_nam\\_dopomozhut\\_miski\\_gorodi\\_i\\_fermi\\_n1560882](https://zaxid.net/siti_i_shhaslivi_yak_nam_dopomozhut_miski_gorodi_i_fermi_n1560882)

### FIGURES:

1. Valeriia Panasiuk. Illustration, 2023.
2. Wikimedia Commons, *Farm above Atré Ebisu*. Photograph, 2021. Available: [commons.wikimedia.org/wiki/File:Farm\\_above\\_Atr%C3%A9\\_Ebisu.jpg](https://commons.wikimedia.org/wiki/File:Farm_above_Atr%C3%A9_Ebisu.jpg)

# hydropark

Valerija Panasjuk

64 According to the general definition, a "hydropark" is a type of park with a water-based recreational complex. It also shares similarities with an urban forest described in pattern "Urban forest" (PAGE 54). This type of park is very popular in Ukraine and can be found in practically every city. However, not all of them are convenient for leisure activities, and most people do not want to visit them, although in summer days, they can be the most popular places to spend time.

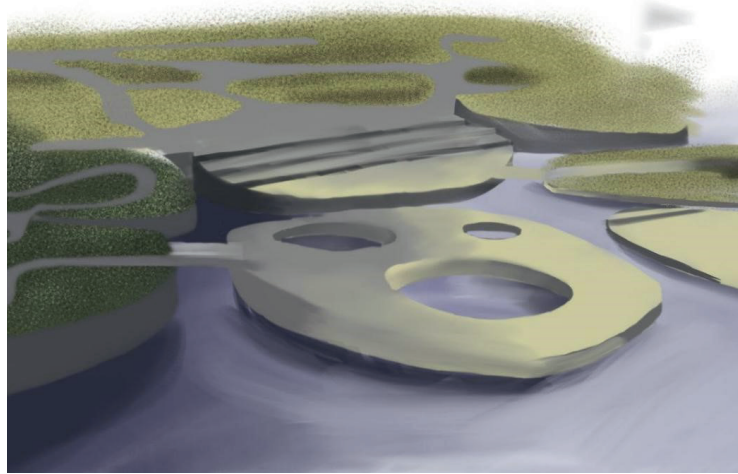


fig. 1. Hydropark.

1. Shaded structures
2. Retail kiosks
3. Sports and children's playgrounds
4. Dog walking areas
5. Changing facilities near the water body
6. Toilets, showers, drinking fountains

Unlike regular beaches near lakes, rivers, and seas, a hydro park cannot simply have changing cabins, and people will enjoy their time on the same lake. The main idea behind their creation was quite interesting, but the Soviet authorities focused more on the general concept rather than convenience and inclusivity. The main elements for creating a comfortable space in hydro parks include:

1. Shaded structures (or any type of shelters) are places where people can seek protection from the sun. In Ukraine, there is a problem related to the fact that planners and builders of hydro parks often overlook the need for them. One way to address this issue is through planting greenery. Besides providing good sun protection, trees, no matter how cliché it may sound, generate oxygen, which improves air quality. Moreover, a place filled with trees looks much more aesthetically pleasing and is the essence of hydro parks. It is also important to create more covered areas, both on the beach and in other recreational zones: pedestrian walkways, seating areas, gathering spaces, footpaths.

2. Retail kiosks. When you take a stroll in the park, you're likely to want to buy a drink or grab a bite to eat. The solution to this problem is quite simple - to create a separate area for commerce, where people can purchase something delicious and others can earn a living. It is important to establish not only places where food and drinks can be bought but also areas where people can rest and have a snack (FOOD STANDS, PAGE 98). Kiosks are an integral part of such places. These should be temporary structures that can be easily moved to another location if needed.



fig. 2. A gazebo in a hydropark.





fig. 3. *Hydropark sunshades in Kyiv.*

**3.** Sports and playgrounds. Since a hydro park is a place for recreation, people with children enjoy spending their free time there. But how can we make such areas comfortable and safe? Since the main idea of a hydro park is to have a park surrounding a body of water, it is logical that larger cities create large entertainment complexes with water parks, while smaller cities have enclosed playgrounds for the safety of children. Currently, these playgrounds appear outdated and unsafe due to their neglected condition. However, refurbishing them and installing more modern equipment can significantly change the situation. It is also crucial to have designated spaces for sports or at least provide bike paths, jogging tracks, and fields for beach sports within the hydro parks.

**4.** Dog walking areas. Having a separate fenced area for dog walking with appropriate amenities is extremely important. We cannot prohibit people from bringing their pets to the hydro park, but we can create a comfortable space for them.

**5.** Changing rooms and showers. To ensure a comfortable leisure experience and meet hygienic needs, it is necessary to provide more changing rooms and make them safe. These are basic requirements for people to enjoy their leisure time and should be provided.

**6.** Toilets. Currently, most hydro parks either lack public toilets or have unusable facilities. The optimal solution is to replace them with eco-friendly toilets, which are more economical and convenient to use. Installing them all in one place is impractical; biotoilets should be distributed throughout the park's territory.

By implementing all of these aspects, people will have a more enjoyable time and experience in hydro parks. Since they are an integral part of most cities, they play a significant role in their improvement.

#### REFERENCES:

- [1] "Hydro park," *Slovnyk.ua*. Accessed July 4, 2023. Available: [shorturl.at/glxzO](https://shorturl.at/glxzO)

#### FIGURES:

1. Valeriia Panasiuk. Illustration, 2023.
2. Pixabay user jotoya. Photograph. Available: [pixabay.com/ru/photos/j%C3%A4rvi-auringonlasku-maisema-ulkona-5062227/](https://pixabay.com/ru/photos/j%C3%A4rvi-auringonlasku-maisema-ulkona-5062227/)
3. Jorge Franganillo, *Kiev Hydro park*. Photograph, 2017. Available: [commons.wikimedia.org/wiki/File:Kiev\\_Hydropark\\_\(40022707464\).jpg](https://commons.wikimedia.org/wiki/File:Kiev_Hydropark_(40022707464).jpg)

# fairs

Oleksandra Vertelejska

A fair is a place where various artisans and vendors come together to showcase and sell products, services, or cultural aspects. Fairs pop up with different sizes and types, including trade fairs, exhibitions, agricultural fairs, and others.

In Ukraine, fairs of various types are quite common and take place in big cities, villages, and towns. However, we have a problem with regular fairs where anyone can sell their products. For example, there are several temporary fairs in the center of Lviv, where farmers' markets are set up on specific days. This phenomenon is also widespread in many other cities throughout the country. But most fairs occur on a daily basis, where people from villages or small towns come to the market to sell what they have produced. Typically, they are set up along the road, near stores and market stalls that also sell various products. People



fig. 1. Outdoor fair.

display what they brought for sale on boxes or improvised stalls they made themselves.

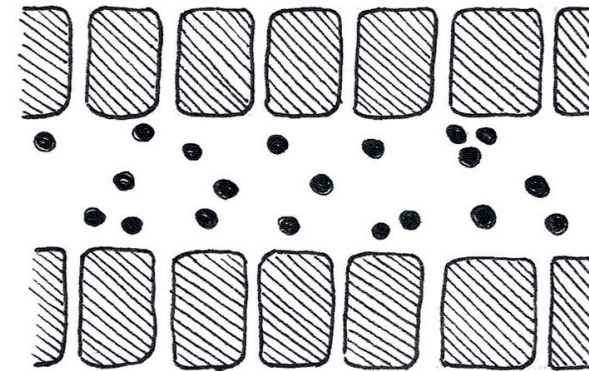


fig. 2. The layout of counters and the flow of people.

Such types of markets differ from the regular ones that may occur several times a year. A classic example of a traditional Ukrainian fair is Sorochynsky Fair, which is even described in literature. At the beginning of the 20th century, "Volyn Fairs" were held in Rivne, for which a separate area of the city was designated. Regular fairs are usually large, featuring various activities and craftsmen from different parts of Ukraine.

Today, fairs can be considered more spontaneous or informal. Therefore, it is necessary to establish two schemes: one for large festive fairs and another for small regular fairs.

Let's start with spontaneous fairs: they are usually located near permanent markets with a high concentration of people. Accordingly, designated areas should be allocated for the safe movement of people and temporary parking for vehicles transporting goods. Proper organization of stalls, working hours, and personnel to oversee the fair is essential. The stalls should have coverings to protect people and products from the sun and rain. This space should be comfortable for both sellers and buyers, as there is always a large influx of people, whether in the morning, during lunchtime, or in the evening after work. To prevent it from becoming a completely spontaneous fair, a certain number of spaces should be allocated per person, and perhaps specific time slots in the morning and evening to reduce the concentration of vendors.



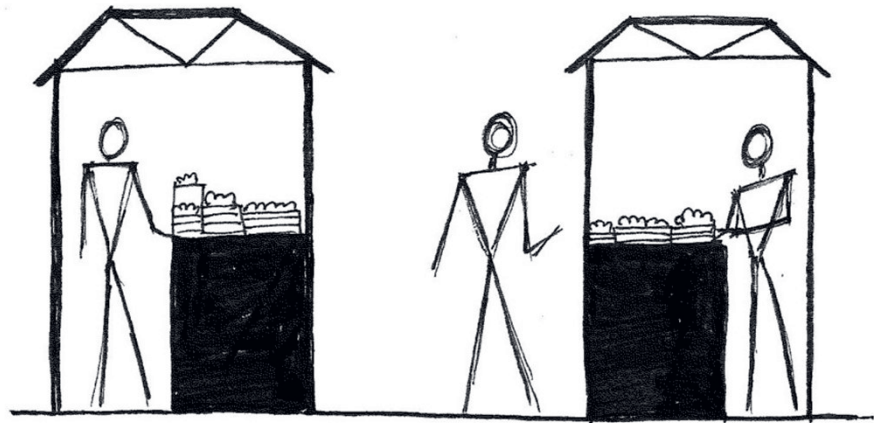


fig. 3. Counters and people.

Holiday markets should have a similar structure, but they still differ from regular markets. They can be located in the city center, a park area, or an open field outside the city or village. More space is needed for visitors because there will be workshops, various entertainment zones for children and adults, and, most importantly, the products of artisans who have come from different regions to showcase their skills and find customers. The products can be categorized into sections, such as food products, artworks, clothing, workshops, performances, and entertainment. This division will help people navigate and visit what they are interested in without spending a lot of time searching.

These simple methods may help transform informal markets into safe and convenient spaces for everyone. It will allow sellers to promote their products without breaking the law and positively impact the development of small-scale farming. This proposed type of market can be located near the main market, adjacent to it, or within it. This will help organize the people who create informal markets and make the city more compact and multifunctional. It will also contribute to structuring the chaotic planning system of markets and fairs.

FIGURES:

1. Bex Walton, *Farmers' market at Logan Square*. Photograph, 2019. Available: [commons.wikimedia.org/wiki/File:Farmers%27\\_market\\_at\\_Logan\\_Square\\_%2847879913851%29.jpg](https://commons.wikimedia.org/wiki/File:Farmers%27_market_at_Logan_Square_%2847879913851%29.jpg)
2. Oleksandra Verteletska. Illustration, 2023.
3. Oleksandra Verteletska. Illustration, 2023.



# parking in the city

Yulija Demchyshyna



fig. 1. A parking lot.

The issue of parking availability in Ukrainian cities is becoming increasingly urgent. There has been a significant increase in the number of vehicles in recent times. This trend can be attributed to the widespread use of gas equipment for cars, increased availability of the corresponding fuel, as well as high demand for taxis and the growth of imported vehicles. The problem of parking space shortages is also experienced by those city residents, for whom parking on sidewalks and lawns has become a common practice.

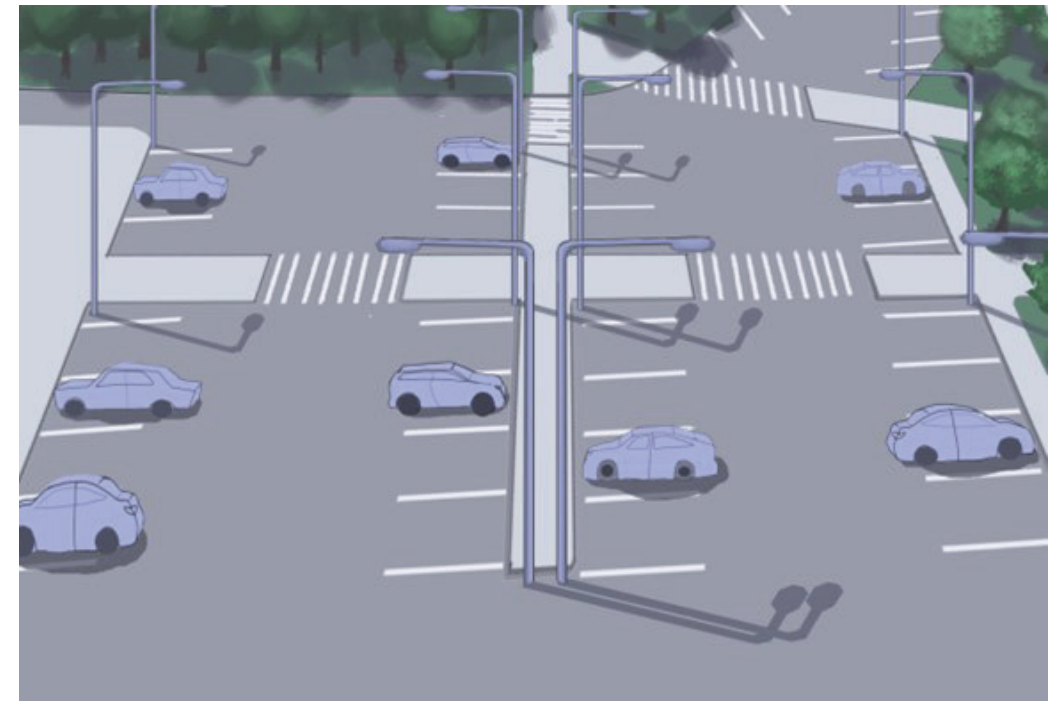
People need to realize that when purchasing a car, they should consider the ability to afford parking spaces since free parking spots in cities are limited. Cities need to pay more attention to public transportation: by making it convenient, we contribute to reducing the influx of new cars into the city. Public transportation, including buses, trams, and metros, facilitates the transportation of a large number of passengers simultaneously, which helps reduce traffic congestion and emissions of harmful substances into the atmosphere.

Such efficient use of space saves room on roads and helps avoid parking problems, which is especially crucial in large cities. Public transportation and bicycles are more accessible to the general public.

The situation with parking spaces in Ukraine can be challenging and varies depending on the city and its size. Many cities in Ukraine face a shortage of parking spaces, particularly in central areas and small streets. This creates difficulties for drivers who struggle to find parking spots for their vehicles. As a result, many drivers park their cars on sidewalks, lawns, and

other inappropriate areas. This violates traffic rules and creates problems for all road users. One of the reasons for this situation is poor planning of transportation infrastructure and improper allocation of parking spaces throughout the city, or even their complete absence. In some Ukrainian cities, a paid parking system has been implemented, which serves as a convenient means of regulating parking and reducing traffic flow, especially in central areas.

fig. 2. Parking in the city.



Before any construction takes place, it is necessary to analyze and develop proper access to buildings, ensuring that traffic flows do not intersect, and calculate the required number of parking spaces for residents. Cars should occupy spaces in parking lots rather than in courtyards where children play. Additionally, it is important to organize proper access routes in courtyards for taxis, people with disabilities, and special vehicles. To prevent cars from entering and parking on children's playgrounds and parks, decorative fencing should be installed around recreational areas.

Underground and covered parking structures are popular solutions to address the problem of parking space shortages in cities.

Underground parking lots are usually located beneath buildings or open spaces. They can have multiple levels, allowing for efficient utilization of the available space. Covered parking lots, on the other hand, can be integrated into specially designated buildings or have a roof protecting vehicles from weather conditions. These types of parking facilities offer numerous advantages, especially in densely populated central areas of cities where open spaces are limited or parking spaces need to be constructed for shopping centers.



*fig. 3. Passage to an underground parking lot.*

They shield vehicles from weather conditions such as rain, snow and sunlight, reducing vehicle damage and preserving their exterior appearance. They also enhance security, as underground and covered parking lots are often equipped with surveillance systems, lighting, and security measures, ensuring a high level of safety for vehicles and owners.

However, it is important to consider that the construction of underground and covered parking lots can be costly and may require additional engineering solutions. Additionally, increasing the number of parking spaces cannot be the sole solution to the problem, as population growth and comfortable parking facilities lead to an increase of automobiles. Therefore, it is crucial to develop public transportation and cycling infrastructures in cities.

Open and underground parking lots have their own peculiarities. They require a significant amount of space, and underground parking needs to be incorporated into the building or construction project already during the design stage. Developers may cut costs by omitting underground parking from their plans. Therefore, the construction of multi-level parking structures is the most suitable solution for addressing this transportation problem. These structures can accommodate a large number of vehicles while occupying a relatively small area. They can be built as standalone buildings or added as extensions to existing structures. Constructing a parking facility involves erecting a solid, substantial building with attractive facades, wide driveways, comfortable parking bays, as well as ventilation, fire suppression, and video surveillance systems.







fig. 4. A multi-level parking structure.

The parking situation in Ukraine requires attention and resolution as part of the broader issues of transportation and urban planning. The need for parking spaces exists in many areas, and the problem of insufficient parking is addressed in the patterns "Sustainable mobility" (PAGE 16) and "Transport square" (PAGE 42). It is necessary to develop transportation infrastructure, ensure proper distribution of parking spaces, and strengthen enforcement of parking regulations. The shortage of parking spaces needs to be addressed comprehensively, taking into account the specific needs and characteristics of each city. Additionally, promoting sustainable and environmentally friendly modes of transportation is essential for reducing automobile traffic.

#### REFERENCES:

- [1] The Ministry of Justice of Ukraine, "Vehicle Parking Rules. What to do When Neighbors Park Their Cars on the Playground" Accessed July 4, 2023. Available: [minjust.gov.ua/m/pravila-parkuvannya-transportnih-zasobiv-scho-roboti-koli-susidi-parkuyut-avtona-dityachomu-maydanchiku](http://minjust.gov.ua/m/pravila-parkuvannya-transportnih-zasobiv-scho-roboti-koli-susidi-parkuyut-avtona-dityachomu-maydanchiku)
- [2] O. Sundeev, "The Basics of Parking: Rules, Fines and Who is to Blame for the Lack of Parking Spaces in Kyiv," *JuridicalMagazineOnline*, November 5, 2019. Available: [yur-gazeta.com/publications/practice/transportne-pravo/osnovi-parkuvannya-pravila-shtrafi-a-takozh-hto-vinen-utomu-shcho-v-kyevi-nemae-parkomisc.html](http://yur-gazeta.com/publications/practice/transportne-pravo/osnovi-parkuvannya-pravila-shtrafi-a-takozh-hto-vinen-utomu-shcho-v-kyevi-nemae-parkomisc.html)
- [3] "Car Parks Made of Steel: History and Prospects," *Metinvest*, December 9, 2020. Available: [metinvestholding.com/ua/media/news/avtomobiljnie-parkovki-iz-stali-istoriya-i-perspektivi](http://metinvestholding.com/ua/media/news/avtomobiljnie-parkovki-iz-stali-istoriya-i-perspektivi)

#### FIGURES:

1. Pxfuel. Photograph. Available: [www.pxfuel.com/en/free-photo-jiufp](http://www.pxfuel.com/en/free-photo-jiufp)
2. Yuliia Demchyshyna, *Parking in the City*. Illustration, 2023.
3. Wikimedia user Solomon203, *Entrance to the underground parking lot of the East Wing Building of Taiwan Television Corporation*. Photograph, 2010. Available: [commons.wikimedia.org/wiki/File:TTV\\_East-wing\\_Building\\_underground\\_parking\\_lot\\_20100928.jpg](http://commons.wikimedia.org/wiki/File:TTV_East-wing_Building_underground_parking_lot_20100928.jpg)
4. Wikimedia user Howpper, *Kadlec Parking Garage*. Photograph, 2016. Available: [commons.wikimedia.org/wiki/File:Kadlec\\_Parking\\_Garage\\_-\\_Richland,\\_Washington.jpg](http://commons.wikimedia.org/wiki/File:Kadlec_Parking_Garage_-_Richland,_Washington.jpg)

# access to water

Yuliya Piddubna

In Ukraine, access to water is regulated at the legislative level by an act called "On Amendments to Certain Legislative Acts of Ukraine Regarding Ensuring Unimpeded Access of Citizens to the Coastal Areas of Water Bodies for General Water Use." Citizens are provided with unimpeded and free access to the coastlines of seas, bays, estuaries, and islands within inland sea waters, within the beach zone, as well as to the banks of rivers, reservoirs, and islands for general water use, except for lands within protected zones, sanitary protection zones, sanitary-protection zones, and zones of special land use regulations. [1]

Therefore, in the reconstruction of Ukraine, it is proposed to consider the organization of space around lakes, rivers, and other water bodies, which should be accessible to people. Coastal areas should be for public use, rather than private plots. Water bodies and greenery systems shape the ecological structure of the city. (HYDROPARK, PAGE 64) (URBAN FOREST, PAGE 54).

Therefore, green connectivity between territories plays an important role in the appearance of urban spaces. It is important to consider these connections when arranging areas near water bodies. Unfortunately, most of the territories near lakes, rivers, and coastlines in Ukraine are not entirely open. They are often privatized and fenced off, restricting public access to the water bodies. However, this can be addressed during the reconstruction of Ukraine.

fig. 1.  
Waterfront  
at Tampere,  
Finland.



Furthermore, it is proposed to develop areas near lakes, rivers, and coastal territories. For each area, it is possible to suggest creating waterfront promenades and recreational facilities for people, such as boat rentals, equipment for water sports, sunshades for protection against direct sunlight, hammocks, loungers, and benches (figure 1).

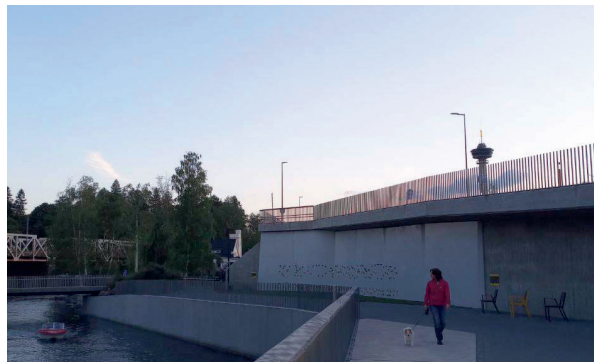
Territories with relatively large areas can be used to create volleyball playgrounds. For areas located away from crowded places, setting up gazebos with barbecue facilities would be a great solution. Lighting of recreational areas is also important to ensure comfortable leisure time and easy access to these spaces. Scenic viewpoints undoubtedly deserve attention. They can be incorporated as part of the waterfront design, adorned with trees or stones.



It is also necessary to provide recreational options for children. Playgrounds can be arranged near water bodies, but it is essential to ensure all safety measures for children. Stages can be an interesting addition near water bodies. They can provide residents with enjoyable evenings, and for street musicians or actors, they can serve as excellent performance spaces during the summer. Stages can also be designed in conjunction with areas where flash mobs and concerts take place. [2] Summer open-air cinemas can also be arranged near water bodies. Various types of art installations with practical purposes can be placed along the waterfront, allowing people to sit by the water and enjoy the sound of the sea, sunset, or sunrise.

In conclusion, when reconstructing areas near lakes, rivers, and other water bodies, it is important to prioritize human leisure. Water has a calming effect and provides tranquility for individuals, so designing spaces that enhance relaxation is crucial.

fig. 2.  
Waterfront  
at Tampere,  
Finland.



#### REFERENCES:

[1]

Ukraine, Verkhovna Rada, *On Amendments to Certain Legislative Acts of Ukraine on Ensuring Unimpeded Access of Citizens to the Waterfront of Water Bodies for Public Water Use*. October 29, 2019. No. 233-IX. Accessed: July 4, 2023. Available: [ips.ligazakon.net/document/MN022292?an=2](https://ips.ligazakon.net/document/MN022292?an=2)

[2]

"New Life for the Area Around the lake on Symonenka Street," *Smart Microdistrict Naukova*. Accessed: July 4, 2023. Available: [naukova.com/oblagorodzhennya-terytoriyi-navkolo-ozera-po-vul-symonenka/](https://naukova.com/oblagorodzhennya-terytoriyi-navkolo-ozera-po-vul-symonenka/)

#### FIGURES:

1.

Ilari Anttila. Photograph, 2023.

2.

Salla Sinisammal. Photograph, 2023.

# elements

Yuliia Demchyshyna

# of an

# inclusive environment

82

Inclusivity in urban planning is a concept that aims to create an environment that is accessible and comfortable for all individuals, regardless of their age, gender, ethnicity, physical abilities, social status, or other characteristics. Inclusive urban planning seeks to create spaces that meet the needs of all people and promote their active participation in city life.

When designing and constructing new buildings, as well as reconstructing, restoring, renovating and upgrading existing residential and public buildings and structures, ensuring full compliance with accessibility, convenience, informativeness, and safety requirements is mandatory.



fig. 1. Elements of an inclusive environment.

Accessibility for persons with disabilities (PWDs) should be ensured through physical accessibility and ease of entry, movement throughout the area, and access to services.

83

Design solutions for facilities should consider free access for all population groups, including PWDs, without compromising the living conditions and operational efficiency of the buildings. To achieve this, building elements and structures should be universally usable by all population groups. If universal design elements are not feasible, special features should be employed to accommodate the needs of people with disabilities.

Entrances to the premises should be equipped with accessible information elements about the facility. These pathways should be integrated with external transportation and pedestrian routes, parking areas, and public transport stops.

A system of orientation and informational support, including tactile and visual accessibility elements and audio indicators, should be provided along all pathways leading to buildings and structures.



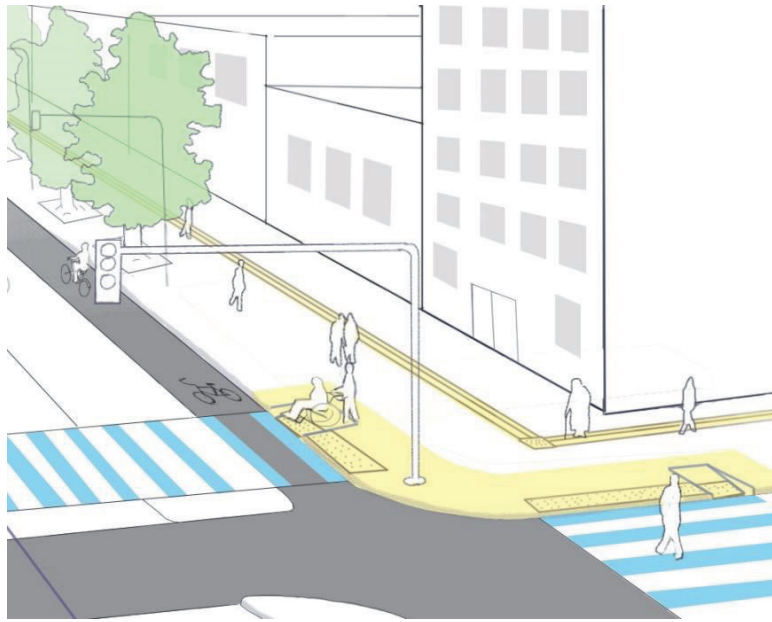


fig. 2.  
Inclusive  
pathways.

Equipment (such as mailboxes, sheltered telephones, ATMs, information boards) mounted on building walls or other structures should not hinder normal movement and maneuvering of wheelchairs. For individuals using wheelchairs, there should be the possibility of having ground-floor apartments with street access.

In an inclusive environment, there are several types of elements that promote safety, orientation, and information accessibility for all users, including individuals with various disabilities. The key elements of inclusivity mentioned in the text include Tactile Accessibility Elements (TAEs), Visual Accessibility Elements (VAEs), and Audio Indicators (AIs):

**1. Tactile Accessibility Elements (TAEs):** TAEs are designed to aid individuals with visual impairments in orientation and provide necessary information. Tactile paving (TP) is one type of TAE and should differ in texture from the surrounding surface, being detectable by touch. They should also have contrasting colors and textures. Tactile pavings serve as signaling and orientation devices, providing information about various hazards and obstacles on paths leading to social and engineering infrastructure objects.

**2. Visual Accessibility Elements (VAEs):** VAEs are used to ensure safety, orientation, and information access for all users, including individuals with visual impairments. They can include color solutions, informational signage, indicators, and markers. For example, color solutions can be used to highlight pathways or different zones, while informational signage can provide location information and descriptions of objects.

**3. Audio Indicators (AIs):** AIs are employed to provide audio information to individuals with visual impairments. Sound beacons indicate direction and danger, while voice informers provide information about objects and services available in the environment.

84 Pedestrian pathways should be sufficiently wide to allow comfortable movement. The width of such pathways should be no less than 1.8 meters. It is also important that they do not have steep slopes. If a slope exceeds 5%, special pathways with gentle inclines should be created. In cases where the slope becomes too steep, external stairs or ramps should be installed to facilitate easy movement for individuals.

Parking spaces deserve special attention. To ensure convenience and accessibility, a minimum of 10% of spaces in open individual parking lots should be allocated for vehicles of persons with disabilities. These spaces should be clearly marked with road signs and horizontal markings. It is also crucial to prevent other individuals from parking in these designated areas. Additionally, the placement of parking spaces and loading areas should be convenient and located close to the main entrances of the building, enabling people with disabilities to easily reach their destinations.

Technical devices installed for individuals with hearing impairments and other medical conditions should be consistent and provide information and signals through visual, auditory, and tactile perception. They should indicate the direction of movement, identify locations, and offer access to necessary services.



Designing with consideration for the needs of individuals with hearing impairments involves ensuring access to necessary information through visual perception using technical means of communication, orientation, and signaling, organizing sign language interpretation or subtitling, as well as arranging special areas or workstations equipped with individual or collective sound amplification devices (for individuals with hearing impairments).

The use of inclusivity elements allows for the creation of an environment that ensures safety, orientation, and information accessibility for all, including individuals with various disabilities. The section on "Ensuring Inclusivity in Public Spaces" addresses the role of an inclusive environment. Inclusivity involves eliminating discrimination and integrating people with limited mobility, older people, individuals with children, children and youth, other vulnerable social groups, as well as ensuring equal access to social benefits and the protection of human rights.

#### REFERENCES:

[1]

"Inclusiveness of buildings and structures," Ukrainian Zonal Research and Design Institute for Civil Construction. Available: [dreamdim.ua/wp-content/uploads/2019/03/DBN-V2240-2018.pdf](http://dreamdim.ua/wp-content/uploads/2019/03/DBN-V2240-2018.pdf)

#### FIGURES:

1.

Vecteezy, *Inclusive Education Composition Vector Illustration Pro Vector*. Illustration. Available: [www.vecteezy.com/vector-art/2943936-inclusive-education-composition-vector-illustration](http://www.vecteezy.com/vector-art/2943936-inclusive-education-composition-vector-illustration)

2.

Yuliia Demchyshysna. Illustration, 2023.

# bicycle

Yuliya Piddubna

# paths



Herbert Wells once said that when he sees an adult on a bicycle, he has hope for humanity. [1]

88 Ukrainian cities are small – the average distance between work and home is usually no more than fifteen to thirty minutes on foot. Therefore, choosing bicycles as a means of transportation is absolutely logical. A bicycle is not just a mode of transportation; it is a symbol of a new, better, more vibrant, and higher quality life. Moreover, such a choice contributes significantly to environmental preservation and, ultimately, one's own health. [1]

In Ukraine, updated state construction standards have come into effect, which require mandatory design of bicycle lanes and tracks during new construction, reconstruction, and major repairs of Ukrainian roads. According to the new State Building Standards "Streets and Roads of Settlements", bicycle lanes and tracks should be provided in residential and industrial areas, communal and storage zones, on main streets with continuous and controlled traffic, local streets, village and rural roads that provide access for cyclists to residential and public buildings, industrial enterprises, mass visitor sites, open parking lots, and garages. [2]

During the reconstruction of cities and roads, it is important to consider incorporating bicycle lanes and tracks (CITY MAIN STREET, PAGE 30) (VILLAGE STREET, PAGE 38). [3] It is preferable to separate bicycle lanes with delineators or curbs to prevent car parking on them.

Vulnerable road users include not only people with disabilities but also mothers with strollers, people with bicycles, and injured individuals. Therefore, it is necessary to design bicycle infrastructure in the city intelligently (SUSTAINABLE MOBILITY, PAGE 16).

Bicycle infrastructure should consist of a system of bicycle lanes and tracks, bicycle parking facilities, signs, traffic lights, road signs for cyclists, rest areas, rental points, and a support system for the development of cycling. To start, it is necessary to implement road markings so that all road users know where bicycle lanes are located.

Physical barriers, such as bollards, can also be installed. For example, in Leipzig, different vehicles have their designated spaces. In some cases, the roadway for cars, trolleybuses, trams, and bicycles is divided by curbs, living fences, or metal elements, which significantly enhances safety. In other cases, the bicycle lane runs between two car lanes. Pedestrians and cyclists share the sidewalks equally, without any misunderstandings. [4] When developing a bicycle traffic system, it is possible to use the traffic flow of other vehicles as a basis. In the design of intersections for bicycle lanes, it is advisable to create circular paths where cyclists can cross each other freely and safely (figure 1).

89





In Leipzig, special traffic lights for cyclists are installed, and an extended stop line is marked at a distance of 3–5 meters in front of them. This is done to improve visibility and avoid blind spots. The extended zone, 5 meters away, is necessary for cyclists to make left turns.

Developed bicycle infrastructure includes not only bike lanes, bike parking, bike repair workshops, road signs, and traffic lights for cyclists but also bike-sharing systems, which allow renting environmentally friendly transportation for a certain period. Such systems can operate based on user registration, permanent membership, or one-time usage, and increasingly utilize information technology for payment through cards or mobile applications.

fig. 1. Bike circle.

The key conditions for bicycle infrastructure in any city are thoughtfulness and safety. It is also necessary to consider issues related to bicycle parking (PARKING IN THE CITY, PAGE 72), including near metro stations, secure bicycle storage in yards, the possibility of transporting bicycles on public transport, and more. [4]

REFERENCES:

- [1] R. Bismak, "Bike Paths Between Ukraine and Europe: a Transcarpathian Dream," *Varosh*, March 18, 2013. Available: [varosh.com.ua/idei/velodorizhki-mizh-ukrainoyu-ta-vropoyu-zakarpatska-mriya/](http://varosh.com.ua/idei/velodorizhki-mizh-ukrainoyu-ta-vropoyu-zakarpatska-mriya/)
- [2] "Streets and roads of settlements", Ukrainian Zonal Research and Design Institute for Civil Construction. Available: [dreamdim.ua/wp-content/uploads/2018/08/DBN-V23-5-2018.pdf](http://dreamdim.ua/wp-content/uploads/2018/08/DBN-V23-5-2018.pdf)
- [3] K. Khoroschak, "Nowhere Without Bike Lanes: How to Make Ukrainian Cities Safe for Cyclists," *Ukrainska Pravda*, October 1, 2021. Available: [life.pravda.com.ua/society/2021/10/1/246082/](http://life.pravda.com.ua/society/2021/10/1/246082/)
- [4] "Leipzig as an Example of Bicycle-friendly City," *Active Recreation Service*. Website. Accessed July 13, 2023. Available: [veliki.ua/ua/novosti-i-akcii/lejptsig-yak-priklad-velosipedizatsii-mista.html](http://veliki.ua/ua/novosti-i-akcii/lejptsig-yak-priklad-velosipedizatsii-mista.html)

FIGURES:

- 1. Yuliya Piddubna, *bike circle in Tampere*. Photograph, 2023.



# outdoor advertising

Oleksandra Verteletska



fig. 1. Podilska street, Khmelnytskyi.

Outdoor advertising is the information we see when leaving our homes; it catches our eye. This type of advertising encompasses a wide range of forms: we see it on digital displays, at transportation stops, on buildings, billboards, benches, electrical poles, and so on. This advertising is aimed at pedestrians and drivers to grab their attention.

However, this advertising often overwhelms streets and cities. As a result, accidents can occur on roads, and the streets of the city turn into an internet advertising tab, becoming intrusive. It is especially unfortunate when such advertising, which is aesthetically unpleasing and vulgar, is placed on buildings with historical value.

Therefore, visual appearance is crucial here: the advertising must be visually appealing and of high quality. At the same time, it should be simple so that people can understand the essence of the information; the content should be clear and concise. People should perceive the message depicted in the advertisement without overloading their minds. The placement of the advertisement itself is also very important because it should be visible and legible from a distance. However, it should not obstruct or ruin the external appearance of the building or street.

Advertising should adapt to the building, not the other way around. Often, buildings get overshadowed by advertisements, concealing facades, details, and the building itself. To address this, it is necessary to

regulate the number of signage and posters displayed by shops, establish limitations, and set specific sizes and criteria. For instance, this may depend on the size of the store and its location. The same applies to historical buildings that belong to a particular architectural style. Advertisers should understand that their advertisements must comply with legal requirements regarding size, placement, and content that respects boundaries and avoids infringement.



fig. 2. One advertising sign is also enough.

## FIGURES:

1. Alina Vozna, Khmelnytskyi, Podilska, 63. Photograph, 2018. Available: [shorturl.at/avR19](https://shorturl.at/avR19)
2. Oleksandra Verteletska. Illustration, 2023.

# landscaping of

Valeriia Panasiuk

94 The tradition of arranging the area around residential buildings is quite ancient. If we look at old photographs, drawings, or read descriptions in literature, we can learn that Ukrainians loved to decorate their houses, plant flowers, and find various ways to make their properties more beautiful. Unfortunately, the Soviet authorities did not consider our preferences for comfortable and aesthetically appealing landscaping of our territories. The buildings constructed according to the designs of Soviet architects, who clearly demonstrated a lack of understanding of people and their living spaces. However, what was suitable in the past no longer fits the needs of modern life. Our customs and preferences are closely tied to our history, so by taking that into account and addressing contemporary issues, we can find the most convenient and best solution for people. The main principles of arranging functional and comfortable residential territories can be described as follows: consciousness, cooperation, territory pollution and territory planning.

# ping of

**Consciousness.** Many developers in Ukraine fail to understand the importance of greening residential areas. A conscious approach and understanding of the benefits of green spaces lead to an improvement in the ecological situation. A thoughtful approach to planning can result in comfortable spatial arrangements, convenience for residents, satisfactory quality of life, and a reduction in environmental issues. Therefore, it is crucial for developers to prioritize a comprehensive approach to designing residential territories, taking into account the needs of residents, environmental aspects, and creating a comfortable and convenient living environment.

# residential area

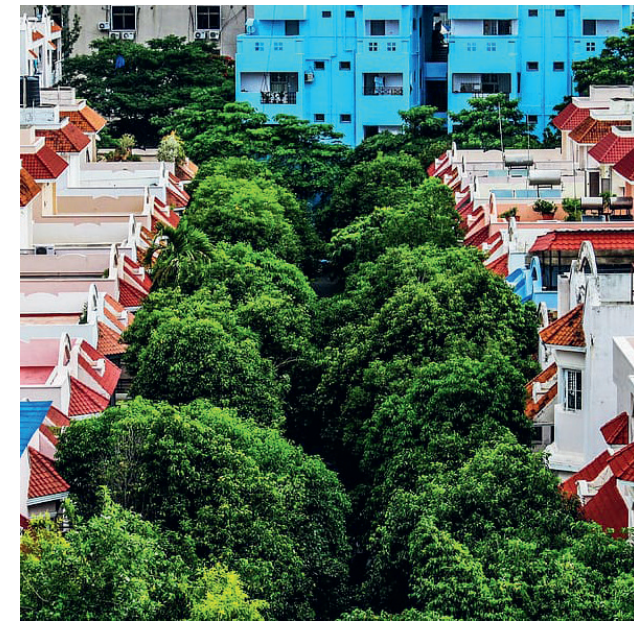


fig. 1.

**Cooperation.** Many residents of residential buildings lack awareness of the necessity for collaborative work and cooperation in greening residential areas. The absence of resident associations and joint efforts complicates the resolution of greening issues. This can have a negative impact on the outcomes of residential territory design, as different parties may have divergent goals, needs, and perspectives. Without effective cooperation, conflicts and the inability to agree on key decisions may arise,

leading to dissatisfaction among parties, unbalanced development of the territory, and failure to achieve project objectives. Overcoming the lack of cooperation requires establishing mechanisms and means for communication and information exchange among all stakeholders. This may include organizing joint meetings, working groups, public hearings, and consultations with residents. It is important to create an atmosphere of openness, mutual understanding, and willingness to compromise in order to achieve common goals.

**Territory pollution.** Many residential territories in Ukraine suffer from pollution, which hinders the development of green spaces. The absence of proper waste disposal and garbage equipment results in soil pollution and negatively affects plant health. Territory pollution can have a detrimental impact on residents' quality of life, the environment, biodiversity, and overall well-being.

**Territory planning.** Even if we combine all the points together, we will still not achieve the desired result without proper territory design. Planning greenery in residential areas is an essential component of creating a comfortable and attractive living environment. Plants can serve different functions (fencing, territory demarcation, decoration, leisure, etc.). Thus, selecting and placing plants according to their size and flowering periods is crucial. Identifying areas designated for green plantings is important. These can include central parks, playgrounds, residential lawns, or flower beds. To visually demarcate the territory, it is worth

utilizing all available possibilities of courtyard landscaping: living fences, tall decorative shrubs, or perennial flowers and plants are often used to separate one part of the courtyard from another. Play areas or picnic spots can be separated by small fences made of pickets or woven fences. Transitions between zones can be adorned with flowering arches. Individually planted specimens help draw attention to the most interesting and significant design elements. Arranging plants in compositions and considering aesthetic design principles is important. This can involve creating color schemes, contrasts, asymmetry, and balance in the arrangement of plant elements. A bench can be placed under a large tree, a vibrant pink shrub can enliven a modest green glade, and juniper thickets can create a defining border.

Taking into account everything written above, the appearance of residential areas will truly change. The main focus of this pattern is that we need to change citizens' attitudes toward their surroundings.

#### REFERENCES:

- [1] "Landscaping of the area (courtyard) of an apartment building", Owners, December 20, 2019. Available: [www.hospodari.com/resources/147131](http://www.hospodari.com/resources/147131)
- [2] "Landscape design of the private house yard", SD Building Design, June 10, 2017. Available: [www.hospodari.com/resources/147131](http://www.hospodari.com/resources/147131)

#### FIGURES:

1. Pxfuel. Photograph. Available: [www.pxfuel.com/en/free-photo-jknnr](http://www.pxfuel.com/en/free-photo-jknnr)
2. Valeriia Panasiuk. Illustration, 2023.

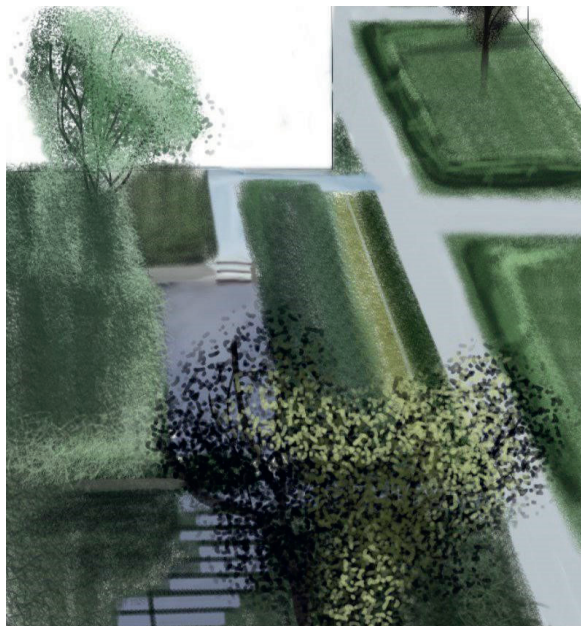
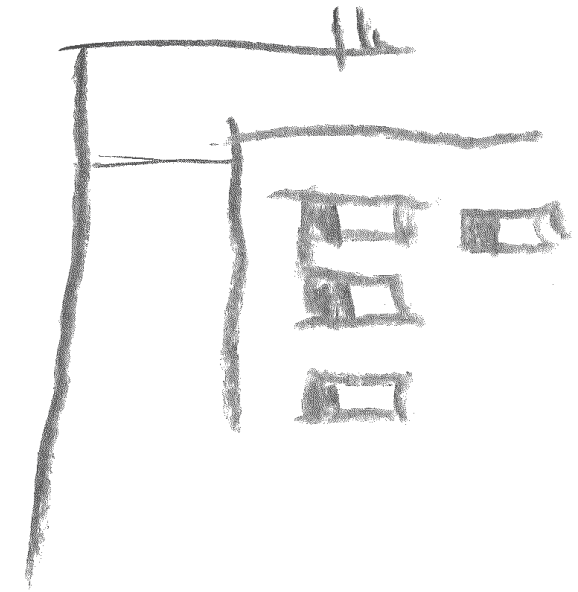


fig. 2.  
Landscaping  
of residential  
area.



# stands

98 **K**iosks are a type of retail trade that allows providing customers with goods in a convenient form. The popularity of kiosks is primarily associated with the fact that they offer the opportunity to purchase necessary items without the need to stand in long queues. Typically, kiosks offer items such as bread, water, newspapers, stationery, sweets, ice cream, dairy products, and other goods that people may not always want to go to a supermarket for. [1]

For retail trade at various fairs, including Christmas and New Year's markets, temporary wooden structures are used. The low cost and the ability for quick and easy assembly and disassembly make them suitable for mass quantities for organizing trade and other events. Depending on the complexity, the construction of a wooden pavilion takes approximately 2-7 working days. [2]

Due to their low cost and quick setup, kiosks started proliferating in Ukraine in the mid-1990s. However, their haphazard and uncontrolled placement has created numerous problems in urban spaces. The issue of kiosks in Ukraine remains relevant, as they provide convenience for residents in urban areas to purchase goods, but their appearance requires improvement. Another problem is that these kiosks often turn entrances to metro stations and bus terminals into makeshift markets. [3]

When designing kiosks, it is important to consider the specific environment and the needs of the residents. They should be placed in a way that does not obstruct pedestrians or detract from the overall appearance of the city. (OUTDDOOR ADVERTISING, PAGE 92). Indeed, each city can develop its own concept for kiosks, incorporating a unique style that can become a distinctive feature of the city. By doing so, cities can maintain

a cohesive aesthetic and create a sense of identity. Custom-designed kiosks that align with the city's overall architectural and design elements can contribute to the charm and character of the urban environment.

Grouping kiosks together to create markets (FAIRS, PAGE 68) where people can purchase various products in one place is a great idea. By involving not only interested entrepreneurs but also designers in this process, cities can obtain virtuosic art objects. Drawing inspiration from the experiences of other countries, we can consider the following approaches:

**1.** Designing kiosks to operate for a few weeks, selling seasonal souvenirs or designer collections. Opening and closing at least 10 mini-shops or cafes on a daily basis can provide support for aspiring entrepreneurs (similar to the example in London).

**2.** Taking cues from Singapore, working with kiosk design can involve creating innovative structures. Singaporean street kiosks resemble modern constructions, featuring columns with movable modules attached at different heights. These kiosks can easily transform at various angles, saving space and minimizing disruptions to pedestrian zones. They are similar to a Swiss army knife with a set of tools, allowing users to retrieve what they need (figure 1). [4]





fig. 1. Food stands.

3. Allocating dedicated spaces or revitalizing neglected areas using kiosks, as done in Vienna, is another effective approach. Over 10 years ago, the city transformed a neglected area that was avoided by locals. With budgetary resources, the city installed lighting, convenient access points to the water, and opened up the space for street artists. Additionally, there are mobile retail units (MAFs) such as showrooms, small kiosks with bars and restaurants that create beachside areas around them. Each unit is unique, but collectively they attract people with a relaxing atmosphere. [5]

Kiosks can also be designed as part of landscape design (URBAN FOREST, PAGE 54). Especially for those selling coffee and food, it is convenient to have a comfortable and beautiful place near the kiosk to relax and enjoy a cup of coffee.

REFERENCES:

- [1] "Comprehensive Advertising Design for Kiosks, Stalls and Retail Outlets," *CEHA*, September 10, 2018. Available: [ceha.com.ua](http://ceha.com.ua)
- [2] "Kiosks, Pavilions, Wooden Stalls - a Modern Trade Pavilion," *PromContract*. Available: [lestorg.org.ua/ua/g20301294-kioski-pavilyony-mafy](http://lestorg.org.ua/ua/g20301294-kioski-pavilyony-mafy)
- [3] "Small and Tenacious: Can Stalls Improve the City?," *Bird in Flight*, September 9, 2021. Available: [birdinflight.com/architectura-uk/20210909-maf-for-better-cities.html](http://birdinflight.com/architectura-uk/20210909-maf-for-better-cities.html)
- [4] "Stalls: Is a Reboot Possible?," *Institute of Enlightenment*, February 26, 2020. Available: [iprosvita.com/mafy-chy-mozhlyve-perezavantazhennia/](http://iprosvita.com/mafy-chy-mozhlyve-perezavantazhennia/)
- [5] "Good and Bad Kiosks: 7 Questions About Stalls in Frankivsk," *Kufer*. Available: [kufer.media/misto/horoshi-pogani-kiosky-7-pytan-pro-mafy-u-frankivsku/](http://kufer.media/misto/horoshi-pogani-kiosky-7-pytan-pro-mafy-u-frankivsku/)

FIGURES:

- 1. Pxfuel. Photograph. Available: <https://www.pxfuel.com/en/free-photo-jqotw>