

**CURRENT TRENDS OF URBAN SPACE DEVELOPMENT****Kurian V. V.,**Assistant, Department of Urban Planning,  
4rchitect.urbanplanner@gmail.com, ORCID: 0000-0002-5943-7085**Slipchenko V. R.,**Student, Department of Urban Planning,  
lemur.catta53@gmail.com**Kurilovych K. V.,**Student, Department of Urban Planning,  
kate04k06@gmail.com*Institute of Architecture and Art,  
Odessa State Academy of Civil Engineering and Architecture, Odessa*

**Abstract.** United Nations statistics indicate that urban populations across Europe are steadily increasing. In particular, the countries of Eastern Europe have the highest percentage of urbanization, which is not surprising, since cities are centers of economic development. It is cities that provide 70 percent of the gross domestic product. The UN predicts that by 2050 the urban population will account for 70% of the total world population. Consequently, the process of urbanization poses new challenges and requirements for urban spaces, and a comfortable infrastructure and economic environment are becoming the most pressing issues. One of the preferred models for the spatial development of modern cities is the polycentric model. In this form, the harmonious coexistence of all points of the territory is possible, the balanced development of all regions, and ensuring the same quality of life throughout the city. The polycentric model provides for the placement of all social infrastructure within walking distance for each resident of the city. This approach will allow avoiding traffic jams, preserving the cultural heritage and historical parts of megacities.

**Keywords:** polycentric model, urban spaces, development trends, megacities, urbanization.

**Introduction.** The urbanization process raises several new challenges that architects and developers have to respond to immediately. The number of dissatisfied populations is growing, and the uneven development of urban spaces makes us look for new ways to solve these issues. In this case, one should repeat the experience of the most developed countries and resort to a polycentric model of city development. It will create a city without outskirts, in which every resident can feel comfortable studying, working, and relaxing in the same area. Polycentrism will make cities environmentally sustainable, develop remote regions, improve living standards, and have a positive impact on the economy of the city and the entire country.

**Formulation of the task.** To find out the modern trends in the development of urban spaces:

- to analyze the disadvantages and advantages of the most common models of urban spaces;
- to assess the polycentric model and consider the prospects for the development of this form.

**The basic material and results.** For many centuries, cities were built in a certain way and intended for human use. They increased from the center in small parts, the streets were not very wide, and the houses were not high. All this happened because people moved around the city on foot. Cities were not particularly planned, they were created by themselves, sleeping areas were not built and no one singled out the industrially developed points of the city, everything was mixed. But with the

advent of cars, people faced a lot of problems. Cities are upset, distances become impossible to cover on foot, and it is already difficult to imagine your life without cars [1].

The creation of a city where people feel comfortable, where green spaces are protected and traffic jams are absent is considered one of the main tasks of urbanism. All this must find its embodiment in the city of the future. Researchers identify seven basic principles by which modern megacities should develop:

*Smart city.* Artificial intelligence is being introduced into city life to improve the quality of human life. This is done using technologies of the 21st century, such as fire safety sensors, 24/7 monitoring screens, emergency detectors, smart poles. A resident of such a city at any time can notify special services about emergencies, garbage, or other things. The whole system is integrated with security and fire brigades. As soon as they find out about any problem, they will immediately go to your call.

*Safe city.* Crime problems are tackled with ubiquitous surveillance cameras. In addition, for safety purposes, smart lights are used, which not only help save energy but also respond to sounds or screams and immediately report this to specialized services.

*Friendly city.* A city of this type should be oriented towards all social groups of the population. It is important to create comfortable conditions for the elderly, children, and people with disabilities. Children should be always safe, be able to move freely around the city's streets, and have plenty of space to play, including a variety of playgrounds, sports stadiums, and green areas. Seniors need convenient transportation, enough seating, and a convenient and understandable information system in the city. For people with disabilities, the urban environment should be equipped with enough ramps and railings. It is necessary to consider the standards for such people for doorways, supporting devices, elevators.

*Ecological city.* Rational use of water, energy, as well as the transition to alternative sources - all this is an integral part of the cities of the future. For example, consider Reykjavik. This city is known for completely switching to geothermal energy and abandoning any type of fuel [4].

*Green City.* The idea of a central city park has long been outdated and has lost its relevance. In our time, small and compact parks should be created, which will be full-fledged public spaces, combining ecological and utilitarian functions. Due to the lack of territory, it becomes impossible to allocate space exclusively for green spaces. Parks should be multifunctional. All urban spaces should be adapted to different people, both active children and elderly people who want to relax, or noisy companies. Designers and architects must pay attention to individual needs, exploring all possible scenarios for the behavior and movement of people.

*Fast city.* Two concepts can be included in this category: the 15-minute city and the more radical-minute city. The first model is a city in which everything should be within walking distance. It is necessary to divide the city into small districts that will develop independently of the center. And everything that a person needs will be within a 15-minute walk. Many urbanists have come to believe that the era of daily car use must come to an end. The competent design of the urban environment should help in this. In our time, the Dutch cities of Groningen and Utrecht operate on this principle [2].

However, it is possible to create an even more comfortable city by taking advantage of the one-minute city concept. This idea was invented in Sweden. It was decided to re-plan not the districts, but each street, and in such a way that everything you need was at a minimum distance from your place of residence, perhaps even in your house. By 2030, Sweden plans to change all streets. Architects and property developers plan to shatter the notion that city streets are designed solely for movement. For these purposes, new sets of outdoor furniture are being developed, designed to rationally use the territory allotted to them. And all innovations are discussed with the residents of the city. Planners interact with children, adults, and seniors, allowing them to create their environments. [9]

Despite technological progress and innovation, people are working increasingly, it is believed that about 80% of their time is spent between work, home, and shopping. A waste of time caused by long travels around the city to the destination and focusing on different tasks. Gradually, this all causes changes in urban planning, considering the interests of residents.

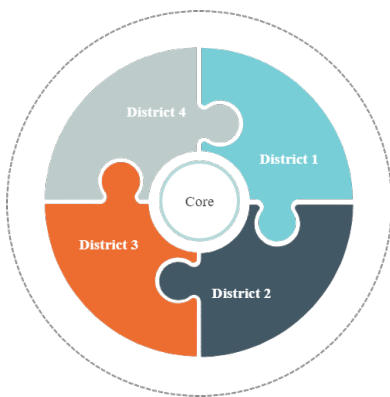
Good urban management is a priority issue. This leads to a lot of urban planning innovations. Urban researchers find several models for the spatial development of cities. These models differ in indicators of economic development, population growth rates, social infrastructure, diversification, the structure of the residential area, quality of architecture, and planning [4].

Among them are the following:

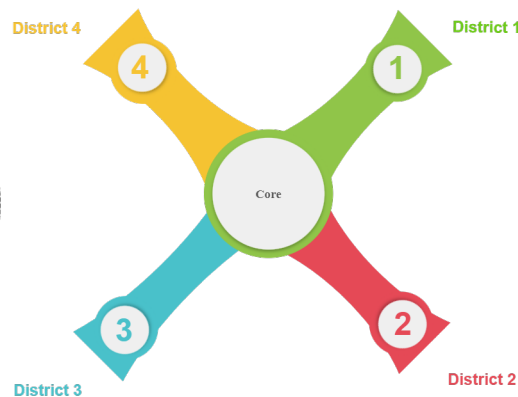
*Monocentric city model.* This model of city development is characterized by the presence of a central space, which is in the lead over the rest of the districts. All social infrastructure is located in the center. The disadvantage of this model is that the commercial and social needs of the population living far from the center are not met. However, this form has its advantages. One of them is the opportunity for the city to develop compactly with densely populated areas (pic. 1).

*Ray city model.* This concept presupposes the development of the main areas of the city along transport routes, other areas, these areas are closely connected with the center but do not interact with each other (pic. 2).

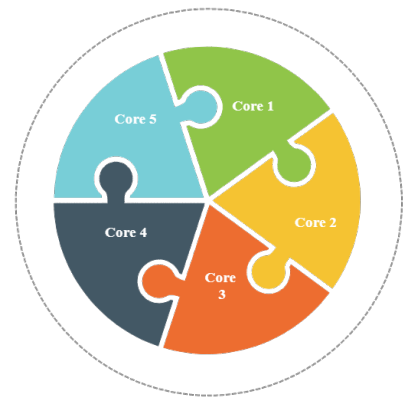
*Polycentric city model.* This model has found its embodiment in the most developed countries of the world. Nowadays, it is considered one of the most promising since it improves the quality of life for every resident of the city. Basic human needs are met, saving time [5]. There is no longer the need to get to the city center every day since all districts develop evenly, and the commercial infrastructure is within walking distance. But the formation of a city of this type will require a lot of financial resources (pic. 3) [12].



Pic. 1. Monocentric city model (by Kurilovych K. V.)



Pic. 2. Ray model of city development (by Kurilovych K. V.)



Pic. 3 Model of a polycentric city (by Kurilovych K. V.)

When planning urban spaces, it is also necessary to take into account the basic needs of people and the requirements of the new time. This includes the manufacturability of urban infrastructure, the creation of a safe environment, organic architecture, and a people-centered approach. The polycentric development model meets these requirements most of all [2].

The main feature that distinguishes this development model from others is the presence of several centers in the city. This model makes it possible to ensure the multifunctionality of areas and the diversity of urban spaces. Cities built on this principle will have several independent centers, which will ensure the development of the knowledge economy, creative industry, and innovation. Every year more and more developers are switching to the «Mixed Use» concept, which makes urban spaces multifunctional. This makes it possible to integrate commercial, healthcare, entertainment, and cultural functions into one complex. It is also important to take into account the school and kindergartens in such projects in advance since the social infrastructure is becoming one of the important criteria when choosing housing. [10]

Orientation to a person and his needs is one of the key principles of polycentrism. Taking this into account, the development should be organized not in a single point, but an integrated manner, capturing large-scale territories. [9]

London is a perfect example of a polycentric city. At the moment, it has the main core - the historical center, which does not affect the residents in any way, since the optimal number of sub-centers are dispersed throughout the city, which takes on part of the economic and commercial function, evenly sharing the load on the infrastructure of the whole of London. In the structure of London, urbanists distinguish the center, which is the historical core - Inner London, which also includes 13 districts around it, and the equally significant Outer London, which consists of 19 districts. Both parts form Greater London [5].

The experience of the South Korean capital, Seoul, can be considered no less interesting. At the moment, the city is carrying out several works aimed at reducing the concentration of economic and industrial resources in the core of the city. More and more regional government bodies appear in the city. Local authorities have decided to abandon centralized management. The main districts of the city have full budgetary and administrative independence, they independently plan reconstruction and new buildings [11].

The entire city is divided into 5 main areas. Each of them develops their development plan, taking into account natural conditions and ecological indicators of the environment.

The peculiarity of the development of Seoul is a combination of the basic principles of the spatial development of the city and the formation of innovative territorial clusters. One of these is the reconstruction project of the old Seoul Station 7017 Project (pic. 4, 5, 6, 7).



Pic. 4. Master plan. Skygarden, Seoul (Author Daehee Suk) [8]



Pic. 5. Seoullo Park Overpass 7071 Skygarden, Seoul (Author Sen Yang) [6]



Pic. 6. Seoullo Park Overpass 7071 Skygarden, Seoul (Author Sen Yang) [7]



Pic. 7. Seoullo Park Overpass 7071 Skygarden, Seoul (Author Sen Yang) [8]

On the site of the 1970 elevated road in the vicinity of the station, a multifunctional center was created, which included a transport hub, a sports and recreation area, as well as business centers. The Seoul government has turned the train station area into a tourist attraction. This made it possible to renovate the road, revitalize and develop the area [3].

**Conclusions.** Trends in the development of urban spaces and the prospects for polycentric development are considered. The disadvantages and advantages of the most common models of urban spaces are analyzed. It was revealed that the development of modern cities includes the integrated development of all territories, the development of the principles of sustainable development, ecological development, as well as the formation of centers of geopolitical influence. Polycentrism can rightfully be considered one of the key components of sustainable development. High-quality communication systems will have a positive effect on the ecological state of the city. Given the fact that everything you need will be within walking distance, the need for daily use of the car will significantly decrease. This, in turn, will reduce CO2 emissions. The successful implementation of these principles will be evidenced by the improvement in the quality of life of the population.

### Література

- [1] Хмелева А. Г. Современные модели городских агломераций // Вестник Самарского государственного университета. 2015 № 8 (130) С. 163–168.
- [2] Єршова О. Л., Бажан Л. І. Розумне місто: концепція, моделі, технології, стандартизація. Статистика України. 2020. № 2–3. С. 68–77.
- [3] Smart and sustainable city case of urban transformation of Seoul. URL: <https://www.slideshare.net/simrc/smart-and-sustainable-city-case-of-urban-transformation-ofseoul-myounggu-kang>.
- [4] Б. С. Черкес, С. М. Лінда Архітектура сучасності: остання третина ХХ — початок ХХІ століть: навч. посіб. М-во освіти і науки України, Нац. ун-т «Львів. політехніка». 2014. — 380, 4 с. : іл. — Бібліогр.: с. 349—351.
- [5] Голдбергер П. Навіщо потрібна архітектура, Strelka Press, 2016
- [6] <https://benkuipers.nl/project/skygarden-seoul/>
- [7] <https://www.archdaily.com/882382/seoulo-skygarden-mvrdv>
- [8] <https://www.mvrdv.nl/projects/208/seoulo-7017-skygarden>
- [9] Raven, J., Stone, B., Mills, G., Towers, J., Katzschner, L., Leone, M., Gaborit, P., Georgescu, M., and Hariri, M. (2018). Urban planning and design. In Rosenzweig, C., W. Solecki, P. Romero-Lankao, S. Mehrotra, S. Dhakal, and S. Ali Ibrahim (eds.), *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network*. Cambridge University Press. New York. 139–172
- [10] Древаль І. В. Конспект лекцій з дисципліни «Теорія містобудування» (для студентів 6 курсу денної форми навчання, спеціальності 191 – Архітектура та містобудування, фахове спрямування «Містобудування») / І. В. Древаль ; Харків. нац. ун-т міськ. госп-ва ім. О. М. Бекетова; – Харків : ХНУМГ ім. О. М. Бекетова, 2017. – 43 с
- [11] Планування забудови міського середовища / [авт. Палеха Ю. М.; асоц. Міст України та громад] - К.: Гнозис, 2008. - 121 с
- [12] Ніщик Т. О. Просторовий розвиток міста: дис. ... канд. екон. наук : 08.00.05 / Ніщик Тетяна Олександрівна ; Луц. нац. техн. ун-т. - Луцьк, 2010.

### References

- [1] Khmeleva A. G. Modern models of urban agglomerations // Bulletin of the Samara State University. 2015 № 8 (130) С. 163-168.
- [2] Ershova O. L., Bazhan L. I. Smart city: concept, models, technologies, standardization. Statistics of Ukraine 2020. № 2–3. С. 68–77.
- [3] Smart and sustainable city case of urban transformation of Seoul. URL: <https://www.slideshare.net/simrc/smart-and-sustainable-city-case-of-urban-transformation-ofseoul-myounggu-kang>.



- 
- [4] Cherkes B. S., Linda S. M. Architecture of modernity: the last third of the XX - early XXI centuries: textbook. way. Ministry of Education and Science of Ukraine, Nat. Lviv University Polytechnic «. 2014. - 380, 4 p. : il. - Bibliogr .: p. 349—351.
- [5] Goldberger P. Why architecture is needed, Strelka Press, 2016.
- [6] <https://benkuipers.nl/project/skygarden-seoul/>
- [7] <https://www.archdaily.com/882382/seoulo-skygarden-mvrdv>
- [8] <https://www.mvrdv.nl/projects/208/seoulo-7017-skygarden>
- [9] Raven, J., Stone, B., Mills, G., Towers, J., Katzschner, L., Leone, M., Gaborit, P., Georgescu, M., and Hariri, M. (2018). Urban planning and design. In Rosenzweig, C., W. Solecki, P. Romero-Lankao, S. Mehrotra, S. Dhakal, and S. Ali Ibrahim (eds.), *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network*. Cambridge University Press. New York. 139–172
- [10] Dreval I. B. Abstract of lectures from the discipline «Theory of Mistobuduvannya» (for students of the 6th year of the full-time education, specialty 191 - Architecture and Mistobuduvannya, fahove directing «Mistobuduvannya») / I. V. Dreval; Kharkiv. nat. un-t misk. Mrs. im. O. M. Beketova; - Kharkiv: KhNUMG im. O. M. Beketova, 2017. - 43 p.
- [11] Planning to forget the middle of the city / [ed. Palekha Yu. M.; asoc. Mist of Ukraine and communities] - K. : Gnosis, 2008. - 121 p.
- [12] Nishchik T. O. Prostorovy development of the place: dis. ... cand. economy Sciences: 08.00.05 / N\_shchik Tetyana Oleksandrivna; Luts. nat. tech. un-t. - Lutsk, 2010.

## СУЧАСНІ ТЕНДЕНЦІЇ РОЗВИТКУ МІСЬКОГО ПРОСТОРУ

**Кур'ян В. В.,**  
ас. каф. містобудування,  
4rchitect.urbanplanner@gmail.com, ORCID: 0000-0002-5943-7085

**Сліпченко В. Р.,**  
ст. каф. містобудування,  
lemur.catta53@gmail.com

**Курілович К. В.,**  
ст. каф. містобудування,  
kate04k06@gmail.com

*Архітектурно-художній інститут,  
Одеська державна академія будівництва та архітектури, м. Одеса*

**Анотація.** Статистика Організації Об'єднаних Націй показує, що міське населення в Європі постійно зростає. Зокрема, країни Східної Європи мають найвищий відсоток урбанізації, що й не дивно, адже міста є центрами економічного розвитку. Саме міста дають 70% валового внутрішнього продукту. ООН прогнозує, що до 2050 року міське населення становитиме 70% всього населення світу. Отже, процес урбанізації висуває нові виклики та вимоги до міських просторів, а комфортна інфраструктура та економічне середовище стають найактуальнішими питаннями. Однією з переважних моделей просторового розвитку сучасних міст є поліцентрична модель. У такому вигляді можливе гармонійне співіснування всіх точок території, збалансований розвиток усіх регіонів, забезпечення однакової якості життя в усьому місті. Поліцентрична модель передбачає розміщення всієї соціальної інфраструктури в пішохідній доступності для кожного мешканця міста. Такий підхід дозволить уникнути заторів, зберегти культурну спадщину та історичні частини мегаполісів.

Сучасне місто є складною формою поселення. Міські та сільські поселення повинні являти собою раціональну комплексну організацію виробничих зон, житлових районів, мережі громадських, культурних та навчально-виховних установ, спортивних споруд, торгових та побутових підприємств, що забезпечують найкращі умови для праці, побуту та відпочинку людей.

Якщо місто не здатне надавати і забезпечувати роботу інфраструктури і комфортного середовища, що запитується жителями, то воно стає незручним для сучасної людини. Раніше з цим доводилося миритися, а сьогодні немає нічого простішого, ніж обрати собі інше місто та переїхати. Успішними будуть ті міста, які зможуть розвиватися синхронно із запитом молодого покоління, що цінує свободу, комфорт та багатофункціональність. Вже зараз ми спостерігаємо постійне посилення доцентрових тенденцій, виходячи з яких вся найкраща інфраструктура, архітектура та культура концентруються у певних точках на карті.

Місто є відображенням того, як нам комфортніше жити на даному етапі розвитку цивілізації. У процесі розвитку міст пріоритетом для влади та для самих архітекторів має залишатися комфорт людей, а не миттєва вигода.

**Ключові слова:** поліцентрична модель, міські простори, тенденції розвитку, мегаполіси, урбанізація.