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GARDEN CITIES AND GARDEN SUBURBS: HISTORY, PRINCIPLES, AND PROSPECTS OF URBAN DEVELOPMENT

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Abstract

Modern urbanization processes intensify the contradiction between the necessity of urban growth and the human need for contact with the natural environment. In this context, the reference to the garden city concept, proposed by Ebenezer Howard at the end of the 19th century [1], becomes relevant as one of the key ideas in the history of urban planning. The aim of the article is to analyze the historical background and principles of the garden city model, as well as to assess the prospects of applying these ideas in the contemporary context of sustainable development. The methodological basis of the research includes historical-analytical and comparative methods, as well as case studies of historical (Letchworth, Welwyn) and modern examples of innovative greening (Bosco Verticale, One Central Park, Nanyang Technological University, High Line Park) [6; 8].The study demonstrates that the main principles of garden cities — functional zoning, controlled growth, self-sufficiency, and integration of green infrastructure — remain relevant. Contemporary practices of biophilic design and green architecture (vertical gardens, green roofs, park reconversions) expand and transform Howard's ideas, preserving their significance for the 21st century [7; 9]. It is concluded that the concept of the garden city can be considered as a basis for strategies of sustainable urban development and the creation of a healthy urban environment of the future.

Keywords

Garden city; garden suburb; Ebenezer Howard; urbanization; sustainable development; biophilic design; green infrastructure; urban ecology

Problem Statement Modern cities face complex challenges: overpopulation of megacities, air and water pollution, shortage of green areas, traffic congestion, and the deterioration of quality of life [2]. Traditional industrial models of urban planning are losing their effectiveness. There arises a need to search for alternative strategies that integrate natural systems into the structure of the city.

Relevance of the Topic The garden city concept proposed by Howard [1] has not lost its significance even after more than a century. Its key principles—harmonious coexistence of urban and natural environments, limited growth, and self-sufficiency of settlements—align with the contemporary principles of sustainable development. International documents — the UN 2030 Agenda for Sustainable Development and the New Urban Agenda (Habitat III, 2016) [3] — directly emphasize the necessity of integrating green infrastructure into urban planning.

Analysis of Scientific Publications The ideas of the garden city were further developed in the works of classical theorists such as L. Mumford [2], P. Hall [4], and R. Fishman [5], as well as contemporary researchers including T. Beatley [6], P. Newman [7], N. Dunnett [8], and M. Köhler [9]. In recent decades, the focus has shifted toward sustainable urbanism and biophilic design. Ukrainian researchers (O. Mezentseva, N. Shulha, I. Sokolov, L. Tovkun) [10; 11] have advanced these directions in the context of domestic cities, analyzing the formation of green frameworks, the implementation of biophilic principles, and the renovation of industrial zones into public spaces.

Methods The research employed a set of methodological approaches that enabled a comprehensive analysis of the evolution of the garden city concept and its contemporary development:
• Historical-analytical method (based on the works of Howard and his followers [1–5]);
• Comparative analysis (comparison of the garden city and the garden suburb);
• Case study method (Letchworth, Welwyn, Bosco Verticale, One Central Park, Nanyang Technological University, High Line Park [6–9]);
• Systems analysis (assessment of the impact of green infrastructure on ecology and social practices);
• Interdisciplinary approach (synthesis of architecture, sociology, ecology, and economics).

- Historical-analytical method. Applied to the study of E. Howard's works (Garden Cities of To-Morrow) and those of his followers (L. Mumford, P. Hall, R. Fishman, among others), as well as to the analysis of the socio-economic context of the late 19th and early 20th centuries. This method made it possible to identify the prerequisites for the emergence of the garden city concept, its ideological and philosophical foundations, and to trace the evolution of the perception of this model in academic and practical urban planning thought.
- Comparative analysis. Used to compare the garden city and the garden suburb as different models of spatial development. This method identified their fundamental differences—autonomy and self-sufficiency in the case of the garden city versus dependence on the metropolis in the case of the garden suburb. Comparative analysis justified the thesis of the distinct roles these models play in the formation of sustainable urban systems.
- Case study method. Examination of specific examples—Letchworth and Welwyn (the first implementations of the concept), Bosco Verticale (Milan), One Central Park (Sydney), Nanyang Technological University (Singapore), and the High Line Park (New York) [1; 4; 6–9]—allowed the comparison of historical and contemporary applications of the ideas of harmonizing the urbanized environment with nature. This method revealed practical tools for realizing Howard's ideas in diverse socio-economic and cultural contexts.
- Systems analysis. Applied to evaluate the impact of various forms of greening (vertical forests, green roofs, linear parks) on the ecological condition of the city, social practices, and the quality of life of the population. Within this method, the interactions of natural and anthropogenic factors, the formation of the ecological framework of the city, and its role in enhancing the resilience of urbanized territories were considered.

- Interdisciplinary approach. The study also relied on the synthesis of knowledge from architecture, urban planning, sociology, ecology, and economics. This approach made it possible to consider garden cities not only as architectural and planning structures but also as socio-economic models reflecting processes of sustainable development. Thus, the selected methods combined historical analysis with the evaluation of contemporary practices, revealing the continuity of Howard's ideas and substantiating their relevance for 21st-century urban planning.

Main Material The concept of the garden city was first proposed at the end of the 19th century by the British urban reformer Ebenezer Howard. The garden city was conceived not merely as a residential area but as a self-sufficient community providing opportunities for work, leisure, and healthy living in harmony with nature. One of Howard's main objectives was to restrain mass migration into overcrowded industrial centers by creating new settlements that combined economic opportunities with a high quality of life.

The main principles of the garden city concept are:

- Functional zoning – a clear distinction between residential, industrial, public, and recreational areas.
- Low-rise housing with private gardens and spacious green courtyards.
- An agricultural belt surrounding the city, serving as an ecological barrier and providing residents with food.
- Controlled population growth (30–35,000 inhabitants) and expansion through the creation of a network of interconnected settlements rather than uncontrolled urban sprawl.
- Economic self-sufficiency through local production, farming, and a developed service sector.
- Integration of architecture and nature: greenery as a structural element of urban planning, improving the microclimate and psychological well-being.
- A sustainable transport system focused on pedestrian and bicycle movement, along with the development of public transport.

Garden cities and garden suburbs, despite their common goal of uniting urbanism and nature, have fundamental differences. A garden city is a self-sufficient settlement with jobs, its own infrastructure, and carefully designed planning. It minimizes the need for commuting and fosters economic independence. A garden suburb, on the other hand, is a residential formation on the periphery of a large city, characterized by low-rise housing and green areas but dependent on the metropolis's economy. Daily commuting creates traffic congestion and environmental burdens, and the development of garden suburbs is often chaotic. Thus, the garden city is an autonomous and balanced spatial-social system, while the garden suburb serves an auxiliary function within the structure of the metropolis.

The world's first implementation of the concept was Letchworth (1903), located 50 km north of London. Architects Barry Parker and Raymond Unwin created a harmonious combination of rural landscape and urban infrastructure. Despite challenges with the cooperative land ownership system and slow industrial development, Letchworth became an important experiment that greatly influenced urban planning thought. The second example was Welwyn (1920), designed by Louis de Soissons. Although it preserved the key principles of the model, over time Welwyn turned into a suburb of London, reflecting the difficulties of maintaining economic independence. Contemporary urban planning expands Howard's ideas by introducing new forms of greening, including vertical gardens, green facades, and green roofs, as well as the transformation of industrial areas into parks. These solutions not only improve the aesthetic appearance of the city but also address ecological, climatic, and social integration challenges.

- Bosco Verticale (Milan, Italy).Architectural features: a residential complex of two towers (80 m and 112 m), designed by Stefano Boeri, with facades covered by more than 20,000 plants. Urban significance: an example of bio-integration in dense urban fabric, where vertical surfaces perform ecological functions. Environmental effect: plants lower façade temperatures, clean the air, and mitigate the urban heat island effect.
- One Central Park (Sydney, Australia).

Architectural features: a multifunctional complex with vertical gardens (by Patrick Blanc) and a system of heliostats redirecting sunlight.

Urban significance: integration of green facades into high-rise buildings in the metropolis. Environmental effect: reduction of energy consumption, improved humidity, and enhanced microclimate.
- Nanyang Technological University (Singapore).

Architectural features: a campus with green roofs, sky gardens, and the integration of vegetation into learning spaces.Urban significance: formation of a new model of educational environment where nature and architecture form a unified whole.Environmental effect: increased energy efficiency and the creation of a healthy microclimate.

- High Line Park (New York, USA).Architectural features: a linear park on the site of an abandoned railway, 2.3 km long.Urban significance: a successful example of industrial heritage renovation into public space.

Environmental effect: increased biodiversity, improved urban climate, and creation of new recreational areas.

Conclusions. The concept of the garden city, formulated more than a century ago [1], remains relevant in the 21st century. Contemporary forms of integrating nature and the city—green roofs, vertical forests, and linear parks—demonstrate the transformation of Howard's ideas within the practices of sustainable urbanism [6–9]. Ukrainian experience [10; 11] strengthens the international context, emphasizing the universality of the garden city model as a foundation for sustainable development strategies. Its key principles—functional zoning, controlled growth, social integration, and the harmony of architecture with nature—continue to be reflected in modern urban planning practice. Whereas in the early 20th century the garden city was considered as an autonomous settlement ensuring a balance between urbanized and natural environments, today its ideas are being transformed and adapted to the conditions of global urbanization. Modern practices show that Howard's philosophy is embodied in innovative forms of integrating nature and the city: vertical forests, green roofs, linear parks, ecological corridors, and green framework systems are becoming the basis for the formation of a sustainable urban environment. Biophilic design and green infrastructure are already viewed as integral components of "green city" and "smart urbanism" strategies, as they help mitigate the negative consequences of urbanization, improve the ecological situation, and enhance the quality of life for the population. Thus, the concept of the garden city acts not only as a historical model but also as a universal methodological foundation upon which contemporary approaches to sustainable development are built.
Prospects for further research are associated with evaluating the effectiveness of green infrastructure in different climatic and social contexts, adapting the garden city ideas to post-industrial cities, and seeking solutions to ensure the equitable distribution of green spaces within the structure of the modern city.

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«МІСТА-САДИ ТА ПЕРЕДМІСТЯ-САДИ: ІСТОРІЯ, ПРИНЦИПИ ТА ПЕРСПЕКТИВИ МІСТОБУДІВНОГО РОЗВИТКУ»

Анотація Сучасні процеси урбанізації посилюють протиріччя між необхідністю розвитку міст і потребою людини в контакті з природним середовищем. У цьому зв'язку актуальним стає звернення до концепції міста-саду, запропонованої Ебенезером Говардом наприкінці XIX століття [1], яка розглядається як одна з ключових ідей в історії містобудування. Метою статті є аналіз історичних передумов і принципів моделі міста-саду, а також оцінка перспектив застосування цих ідей у сучасних умовах сталого розвитку. Методологічна основа дослідження включає історико-аналітичний та компаративний методи, а також аналіз історичних (Лечворт, Велвін) і сучасних прикладів інноваційного озеленення (Bosco Verticale, One Central Park, Наньянзький технологічний університет, High Line Park) [6; 8].У результаті дослідження показано, що основні принципи міст-садів — функціональне зонування, обмежене зростання, самодостатність та інтеграція зеленої інфраструктури — залишаються затребуваними. Сучасні практики біофільного проєктування та зеленої архітектури (вертикальні сади, озеленені дахи, парки-реконверсії) розширюють і трансформують ідеї Говарда, зберігаючи їх значущість для XXI століття [7; 9]. Зроблено висновок, що концепція міста-саду може розглядатися як основа стратегій сталого містобудівного розвитку та формування здорового міського середовища майбутнього.

Ключові слова: місто-сад; передмістя-сад; Ебенизер Говард; урбанізація; сталий розвиток; біофільний дизайн; зелена інфраструктура; екологія міста