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PRINCIPLES FOR DESIGNING CITIES AND SATELLITE CITY AREAS

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Annotation: Urban and satellite cities are areas that are located in the same metropolitan zone and, in most cases, are economically, socially and culturally interdependent. Currently, the issue of the proper design and development of the city and its satellite cities is due to many problems, including population density, transportation systems, green areas and architectural development. This article provides a scientific analysis of the peculiarities of the design of urban and satellite cities.

Keywords: city, satellite city, urban planning, trend, function, area, demography, architecture.

Introduction. Urban planning is the process of designing, developing, and managing cities. It is carried out with the aim of properly planning urban infrastructure, creating a comfortable living environment for the population, and ensuring economic stability. The process focuses on securing the sustainable development of cities—economically, socially, and environmentally—while fostering favorable living conditions for their residents. Satellite cities, for instance, are linked to major urban centers through factors such as development patterns, population density, and transport connectivity. They help reduce population density in large cities, address shortages in housing and social infrastructure, and diversify economic development. Furthermore, satellite cities contribute to maintaining ecological balance and ensuring the rational use of natural resources. Regulations governing urban planning activities are designed to facilitate the proper planning of a country's urbanization process, ensure the efficient use of urban land, and create comfortable living conditions for the population. In the Republic of Uzbekistan, there are several laws and regulatory documents that govern urban planning activities. The Urban Planning Code of the Republic of Uzbekistan establishes general principles in the field of urban planning and contains the rules that must be followed when planning urban territories. It defines requirements for the allocation of land plots, the siting of facilities and housing, and the standards for infrastructure. Cities and satellite cities constitute a cluster of urban areas located in close proximity to one another, linked by economic, social, and cultural ties. The primary city often serves as a significant hub for the country or region, possessing substantial economic and cultural potential. A satellite city, meanwhile, is typically situated in the vicinity of the primary city and facilitates economic activity.

Methods. The primary distinctions between a city and its satellite cities are characterized as follows:

1. The main city serves as a hub for the economy, commerce, culture, and administration, while satellite cities function as additional residential areas, as well as zones for manufacturing and services;

2. Strong transport links exist between the city and its satellite cities. Public transport and road infrastructure are well-developed along these routes, providing convenient mobility for the population;

3. Satellite cities are often designed with the goal of creating a comfortable living environment. Featuring more green spaces and areas for recreation, they can serve as leisure destinations for the urban population. Satellite cities play a significant role in modern urbanization. They not only alleviate the burden on major cities but also contribute substantially to the sustainable economic, social, and environmental development of a country or region. Key aspects of satellite cities are presented below:

1. Reducing population density. Satellite cities help alleviate the growing population density in major urban centers. This prevents the overconcentration of people in the main city and reduces the strain on resources such as housing, road infrastructure, and public services. In satellite cities, where population density is lower, living conditions are generally more comfortable, and a healthier environment is fostered.

2. Addressing housing and infrastructure challenges. Rising land and housing costs in the main city create significant issues. Satellite cities, by offering relatively affordable housing and extensive infrastructure, expand living options in the metropolitan area. In this way, residents are provided with accessible housing and quality social infrastructure.

3.Diversifying economic development. Satellite cities can be developed into major hubs for economic activity. By creating new opportunities in manufacturing, trade, and services, they reduce dependence on the primary city. This, in turn, helps to generate new jobs, attract investment, and strengthen the local economy.

4. Reducing pressure on transport infrastructure. The existence of satellite cities lowers the burden on transport networks, as residents are able to live and work in these satellite cities rather than frequently commuting to the main city. This helps to reduce traffic congestion within the transport system and enhances safety on urban roads.

5. Maintaining ecological balance. Major cities face environmental challenges linked to urbanization, including pollution, the loss of green spaces, and the overconsumption of resources. Satellite cities contribute to environmental preservation by providing a green, eco-friendly setting for a portion of the population, thereby reducing the ecological burden on the primary city.

6. Enhancing cultural and social diversity. As satellite cities develop, they cultivate their own distinct cultural and social environments. These cities offer their residents a rich cultural life, as well as access to educational and healthcare institutions, recreational areas, and entertainment centers.

Discussion and Results. The principles of designing cities and satellite towns hold great significance in the contemporary urban planning process; to ensure their effective and sustainable development, the following principles must be taken into account:

1. Integrated transport system. It is necessary to create a robust and efficient transport system between the city and its satellite towns. This includes the following:

• Public transport: Providing convenient mobility options for the population through the introduction of buses, metro, trams, or rapid transit systems connecting the main part of the city with satellite towns;

• Bicycle and pedestrian paths: Creating opportunities for green and eco-friendly modes of transport and developing infrastructure for them;

2. Preserving and developing green spaces. Green spaces are essential for ensuring the ecological sustainability of cities and satellite towns. The following principles are important when designing them:

• Parks and recreational areas—creating leisure spaces for the public while simultaneously preserving the natural environment;

• Ensuring natural flow and migration routes by creating green corridors—paths that connect various green areas.

3. Development of economic and social infrastructure. Proper planning of social and economic infrastructure is necessary to improve the well-being of the population and ensure the sustainable development of the city.

• Creating convenience for people by establishing trade and service centers in the vicinity of residential areas;

• Educational and healthcare institutions, schools, hospitals, and cultural centers should be located throughout cities and satellite towns in accordance with the needs of the population.

4. Principles of architecture and design. The architecture of a city and its satellite cities must be harmonious—in every respect.

• Local and contemporary design and architecture should reflect national and local characteristics, while also expressing modernity;

• Aesthetic and functional harmony: it is important that buildings and structures be both aesthetically pleasing and functionally convenient. This has a positive impact on the urban environment.

5. Environmental sustainability and energy efficiency. Maintaining environmental sustainability is one of the core principles in the design of cities and satellite towns:

• Introducing eco-friendly technologies, such as green technologies, energy-efficient equipment, and the use of solar and wind energy;

• Protecting the urban environment by establishing water and waste management systems, as well as systems for conserving water resources and recycling waste.

6. Balancing urbanization. It is important to maintain an economic and social balance between the main city and satellite cities, and to manage population density:

• Planning regional development, and creating jobs and services in satellite cities with the aim of reducing density in urban centers;

• Maintaining balance by planning residential and commercial zones in and around cities. Through the proper design of cities and satellite towns, it is possible to achieve integrated, sustainable development and create a comfortable living environment for the population.

Conclusion. Designing cities and satellite cities based on these principles facilitates their integrated development and ensures a high-quality living environment for the population. Through the proper design and development of these areas, it is possible to transform them into more comfortable, sustainable, and economically developed regions. Given the significant value of satellite cities, their strategic planning—conducted in tandem with the development of the primary city—plays a crucial role in advancing urbanization and enhancing the well-being of the population. Achieving this goal requires a comprehensive and integrated approach.

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