

PLANNING AND DESIGN FEATURES OF MID- AND HIGH-RISE RESIDENTIAL BUILDINGS IN KHOREZM CITIES

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Abstract

Since Uzbekistan gained independence, rapid urbanization and housing reforms have significantly influenced the architectural development of regional cities. In Khorezm cities, population growth and limited urban land resources have stimulated the construction of mid- and high-rise residential buildings. This thesis examines the planning and design features of such buildings, focusing on spatial organization, façade solutions, and climatic adaptation. The study highlights current challenges and proposes future development directions aimed at improving residential quality and architectural identity in Khorezm cities. The analysis is based on field observation and comparative evaluation of recent residential projects in Khorezm cities.

Keywords: *mid-rise buildings, high-rise residential housing, urban planning, architectural design, Khorezm cities.*

Аннотация

С момента обретения независимости Узбекистаном процессы урбанизации и реформы в сфере жилищного строительства существенно повлияли на архитектурное развитие региональных городов. В городах Хорезмской области рост численности населения и ограниченность городских территорий обусловили активное строительство средне- и многоэтажных жилых зданий. В данном тезисе рассматриваются планировочные и архитектурно-проектные особенности таких жилых зданий с акцентом на пространственную организацию, фасадные решения и

адаптацию к местным климатическим условиям. В работе также выявляются основные проблемы современного жилищного строительства и предлагаются перспективные направления развития, направленные на повышение качества жилой среды и формирование архитектурной идентичности городов Хорезма.

Ключевые слова: *среднеэтажные жилые здания; многоэтажное жилищное строительство; градостроительство; архитектурное проектирование; города Хорезмской области; жилая архитектура.*

Introduction

Urban housing development has become one of the key priorities in Uzbekistan during the post-independence period. Economic reforms, demographic growth, and modernization of the construction sector have led to a gradual transformation of urban environments. In Khorezm cities such as Urgench and Khiva, these changes are especially visible in the increasing number of mid- and high-rise residential buildings.

Mid- and high-rise housing provides an effective solution for accommodating growing urban populations while optimizing land use. However, the planning and design of such buildings require careful consideration of regional characteristics, including climatic conditions, socio-cultural context, and existing urban structure. This thesis aims to analyze the planning and design features of mid- and high-rise residential buildings in Khorezm cities and to identify key trends and challenges shaping their development.

Literature Review

Research on urban housing and residential architecture emphasizes the increasing role of mid- and high-rise residential buildings in contemporary cities, particularly under conditions of rapid urbanization and land scarcity. Studies on post-independence urban development in Uzbekistan indicate that housing architecture has undergone significant transformation, moving away from rigid Soviet-era standardization toward more flexible and market-oriented residential forms (Rubenstein, 2015; Tokarev, 2018). These changes have directly influenced

the spatial organization and architectural appearance of regional cities, including those in the Khorezm region.

Urban design literature highlights that the planning quality of multi-storey residential buildings largely depends on functional zoning, spatial efficiency, and integration with surrounding urban infrastructure. Carmona (2010) notes that successful residential environments require a balance between density, accessibility, and public space organization, especially in mid- and high-rise developments. Such principles are particularly relevant for regional cities where new residential complexes must coexist with established urban fabric.

Climatic responsiveness is identified as a critical factor in residential building design, especially in hot and arid regions. Givoni (1998) and Szokolay (2014) emphasize that building orientation, façade articulation, shading devices, and natural ventilation are essential strategies for ensuring thermal comfort and reducing energy consumption. These principles are highly applicable to Khorezm cities, where climatic conditions impose specific constraints on architectural planning and design decisions.

In addition to environmental considerations, the role of local architectural traditions in shaping residential identity has been widely discussed. Ahmedov (2012) argues that traditional Uzbek architectural elements, such as spatial hierarchy, façade rhythms, and transitional spaces, can be effectively adapted to modern residential buildings. However, existing studies also point out that contemporary multi-storey housing often lacks a strong connection to regional architectural identity, resulting in visually uniform and context-insensitive urban environments.

Overall, the reviewed literature suggests that while mid- and high-rise residential buildings are an effective response to modern housing demands, their planning and design should integrate functional efficiency, climatic adaptation, and cultural context. These theoretical insights provide an important framework for analyzing the planning and design features of mid- and high-rise residential buildings in Khorezm cities.

Methodology

This study is based on a qualitative analytical approach. The analysis is based on field observation and comparative evaluation of recent residential projects in Khorezm cities, primarily Urgench and Khiva. Key planning and design aspects, including spatial layout, building height, facade composition, and climatic adaptation elements, were examined. A comparative method was applied to identify differences between mid-rise and high-rise residential buildings. In addition, relevant architectural and urban planning literature was used to support the analysis. The findings were synthesized to determine current trends and development challenges.

Discussion

The analysis shows that mid-rise residential buildings in Khorezm cities are typically characterized by compact planning schemes and rational apartment layouts. These buildings are often integrated into existing urban neighborhoods, ensuring accessibility to social and transport infrastructure. High-rise residential buildings, in contrast, are usually developed as part of larger residential complexes, where vertical circulation, parking, and shared public spaces play a significant role.

Façade design in many recent projects reflects standardized construction approaches, with limited variation in architectural expression. Although modern materials are widely used, insufficient attention is sometimes paid to shading and thermal comfort. Considering Khorezm's hot climate, design solutions such as recessed balconies, sun-protection elements, and optimized window placement are essential but not always fully implemented.

The findings also indicate a growing interest in energy-efficient technologies and sustainable planning principles; however, their application remains inconsistent. Strengthening climate-responsive and context-sensitive design strategies could significantly improve the quality of residential environments.

Conclusion

The conducted analysis shows that mid- and high-rise residential buildings

have become an integral part of urban development in Khorezm cities during the post-independence period. Their emergence is closely connected with increasing housing demand, urban land limitations, and the need for more efficient spatial organization. As a result, multi-storey residential buildings now play a decisive role in shaping both the functional structure and the visual character of contemporary urban environments.

The study reveals that current planning approaches primarily focus on compact layouts and functional zoning, aiming to ensure basic living comfort and efficient land use. Mid-rise buildings generally demonstrate better integration into existing urban neighborhoods, while high-rise residential buildings tend to form new residential complexes with shared infrastructure and public spaces. However, despite these advantages, a high degree of standardization remains evident, often resulting in repetitive architectural solutions and limited spatial diversity.

Climatic adaptation is identified as one of the most critical challenges in the design of residential buildings in Khorezm cities. Although certain projects take into account building orientation, shading elements, and ventilation, these strategies are not consistently applied across developments. Insufficient attention to climate-responsive design negatively affects indoor comfort and increases energy consumption, highlighting the need for more thoughtful environmental planning.

Furthermore, the analysis indicates that the architectural expression of many mid- and high-rise residential buildings lacks a strong connection to local identity. The limited use of traditional spatial and façade elements reduces the potential to create a distinctive urban image that reflects the cultural and historical context of the region. Strengthening this connection would not only enhance aesthetic quality but also support environmental adaptability.

In conclusion, the future development of mid- and high-rise residential architecture in Khorezm cities requires a more integrated approach that balances functional efficiency, climatic responsiveness, and architectural identity. By improving planning strategies, diversifying design solutions, and adapting

buildings more effectively to local conditions, it is possible to enhance residential quality and contribute to sustainable and context-sensitive urban growth.

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