

Advantages Of Building Multi-Storey Buildings In The Khorezm Oasis

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Abstract

This article scientifically justifies the need for high-rise buildings in the Khorezm oasis, taking into account the region's high groundwater levels. It explores territorial, economic, and social benefits, while also addressing modern engineering solutions to hydrogeological challenges. The paper emphasizes the efficient use of land resources, sustainable urbanization, and environmental safety.

Keywords: high-rise buildings, groundwater level, Khorezm, urbanization, construction technologies.

Introduction

The Khorezm oasis has unique geological features, and the proximity of the ground surface to the groundwater level has a significant impact on construction processes. However, there are opportunities to solve this problem through modern construction technologies, engineering approaches and planning methods. At the same time, the construction of multi-storey buildings plays an important role in improving the standard of living of the population, rational use of land resources and ensuring ecological balance.

Main part

1. Demographic pressure and the problem of land resources

Against the background of increasing population density in Khorezm, land shortage is becoming an urgent problem. Multi-storey buildings allow for the effective use of land space.

2. Proximity of the ground surface to water: problem and analysis

The groundwater level in the region is located at a depth of 2–3 meters, which creates risks associated with the depth of

the foundation and soil density. This situation can lead to failures such as subsidence of buildings and cracking of walls.

3. Solutions through modern engineering approaches

Creation of artificial foundation layers: Reducing the impact of groundwater using geotextile and geosynthetic materials.

Drainage systems: Vertical and horizontal drainage networks to reduce the pressure of surrounding water. Waterproofing layers (waterproofing): Widely used to protect the foundation. Foundation design methods: Stability is ensured through SVA constructions, micro-SVA technologies.

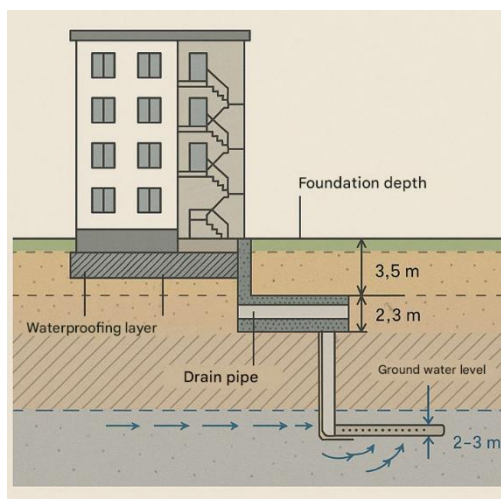


Fig 1. Modern drainage and waterproofing system diagram (1 picture)

Contents: Drainage pipes under the foundation of the building, Groundwater flow direction, Pumping stations, Geotextile layers and special membranes

Purpose: To clearly illustrate engineering approaches to groundwater control.

4. Urbanization and infrastructure benefits

Multi-storey buildings have a positive impact on the density of the city. A denser location of infrastructure such as transport, schools, and medical facilities increases the quality of services.

5. Social and economic results

It is expected to provide the population with comfortable housing, increase jobs in the construction sector, and stabilize housing prices.

6. Environmental sustainability and energy efficiency

Multi-storey buildings built on the basis of green technologies will serve to save heat and increase energy efficiency. In particular, the introduction of solar panels and smart technologies is one of the promising areas.

Conclusion

The construction of multi-storey buildings in the Khorezm oasis is not only a demographic and economic necessity, but also a strategic task that must be implemented based on scientifically based, modern engineering approaches. Although the proximity of the ground surface to water complicates this process, modern construction and drainage technologies allow us to solve this problem. As a result, sustainable urban development, a comfortable living environment for the population, and environmental safety will be ensured.

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