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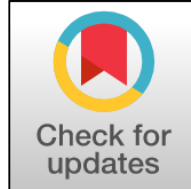
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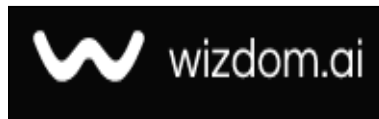
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# Prospects for the Application of Brick Walls in Modern Housing Construction Under Construction in Uzbekistan.

## *Potensi Penerapan Dinding Bata dalam Konstruksi Perumahan Modern di Uzbekistan*

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### Abstract

Since gaining independence, the Republic of Uzbekistan has undertaken extensive reforms across its national economy, emphasizing the incorporation of new technologies, scientific advancements, and best practices. This article focuses on the construction industry, a key sector in the nation's development. A primary objective is the promotion of energy-efficient construction methods for buildings and structures. The study employs a multifaceted approach, integrating modern technologies and drawing from global experiences. The results emphasize the ongoing development and progress in the construction sector, showcasing a commitment to sustainability and innovation. The implications of this research extend beyond national borders, contributing valuable insights to the global discourse on energy-efficient construction practices.

### Highlights:

- **National Economic Reforms:** The article explores the impact of independence on Uzbekistan's economy, focusing on comprehensive reforms in various sectors.
- **Energy-Efficient Construction:** A central theme involves the urgent need for energy-efficient practices in the construction industry, aligning with global sustainability goals.
- **Technological Advancements:** The content highlights the incorporation of new technologies and scientific achievements as crucial drivers of progress in the construction sector.

**Keywords:** Independence, Uzbekistan, Energy-efficient construction, Reforms, Sustainable development.

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## Introduction

Independence of the Republic of Uzbekistan Since the first years of independence of the Republic of Uzbekistan people , large-scale reforms have been carried out in all sectors of the national economy to introduce new and modern technologies, scientific and technical achievements, and best practices . The construction industry , like all ham industries , is developing. One of the most important tasks facing our republic of buildings and structures under construction today is energy-efficient construction of buildings and structures under construction.

The first in accordance with the decree of the President of the Republic of Uzbekistan dated August 3, 2009 "On additional measures to expand the scale of housing construction in rural areas", active creative work is continuing in villages aimed at improving the culture and well-being of the population [1]



**Figure 1.** *One of the brick multi-storey residential buildings under construction in Samarkand.*

## Methods

Housing constructed on the initiative of the head of state on the basis of standard projects fully meets the requirements of modern architecture, has excellent infrastructure and takes on the appearance of a compact town.

It is known that residential buildings built of bricks increase in size from year to year [2].

As a result of the implementation of a special housing construction program based on standard projects in 2009-2012, 650 new rural residential areas were built in 159 rural districts of our country, and more than 23.6 thousand individual residential buildings with a total area of 3.2 million square meters were built. More than \$ 1.2 billion of investments were allocated for this purpose. (1)

Not only in Uzbekistan, but also in other cities, the demand for brick buildings under construction is growing every year. For example: let's fight the city of Maskwa,

Residential buildings made of bricks in the city of Maskva have the size of thousands of square meters.

Indicators	2008	2009	2010	2011	2012	2013	2014	2015

total area	3342.3	3690.6	4274	4443	4578.6	4648.5	4802	4827.7
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Table 1.

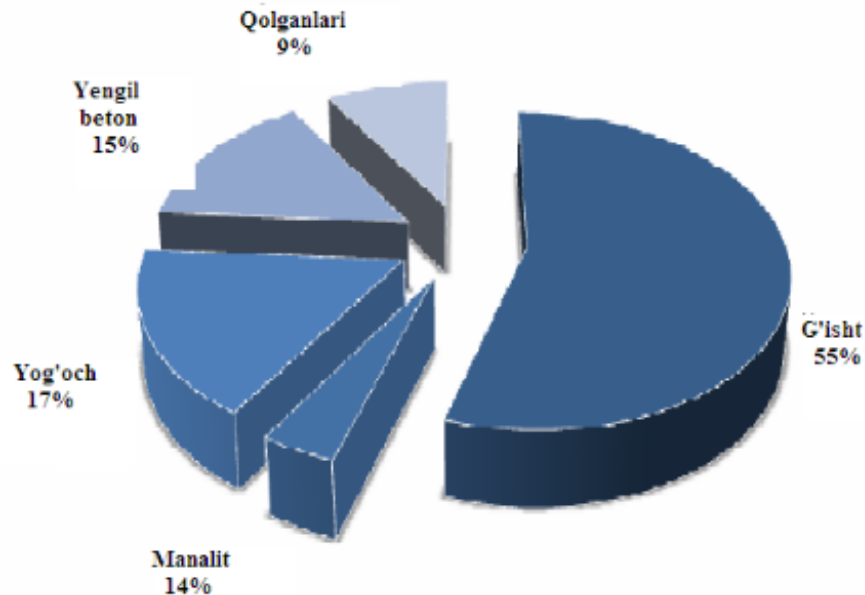


Figure 2.

It should be noted that brick buildings, although common in seismic areas, are considered a weak type of building in terms of earthquake resistance. For this reason, the height of brick buildings built in seismic areas does not exceed 3-5 floors, depending on the seismicity of the built-up area. The main reason for this condition is that the solidity of the brick wall is too low, that is, its integrity. even buildings with brick walls can adequately withstand seismic impacts if they are properly calculated and designed, and built in full compliance with building codes and regulations. [3].

## Result and Discussions

Only when all the supporting structures (longitudinal and transverse walls, floors) are firmly connected together does the building resist the forces of an earthquake as a single spatial structure. If this connection is missing or weak, the longitudinal walls may separate from the transverse ones and in some cases collapse. Because of the wall, partitions are also completely or partially flooded.

In buildings where anti-seismic measures were not applied, such phenomena occur quite a lot. To preserve buildings in the event of an earthquake, special structures that have been tested for strength are used. For example, anti-seismic belts are processed along the perimeter of the building, the panels are carefully connected to each other and to the walls, rebar is laid in the corners of the walls, as well as in the places where they intersect, etc.

Brick buildings are known to have a long history. All over the world there are such buildings built of brick, the age of which is 100-150 years [4].

G'ishtdan quril Buildings under construction and constructed of brick have the following advantages of ga ega:



1. Durability is one of the most important advantages, because everyone wants the house they live in to be strong and durable.

2. Long Durability of brick buildings, for example

the facade will last at least 100 years without repair.

a. Brick is made from clay, sand and water and therefore is a natural and pure material that is good for human health.

b. Another important advantage is frost resistance. It is known that the higher the frost resistance of the dome of a building, the longer the fleece will last.

c. Aesthetics and versatility

d. Fire resistance

e. sound insulation system



**Figure 3.** *Based on standard projects, Houses built according to standard house designs.*

Consistent economic growth in our country has a positive impact on the lifestyle and living conditions of the population, and its demand for the quality and functionality of residential buildings is also changing. Now our compatriots qurayotgan imorati ko'p avlodlarga pay special attention to quality, modernity, thinking that the building under construction today will serve flawlessly for many generations.

## Conclusion

In the context of housing construction in Uzbekistan, particularly in rural areas, the utilization of brick walls has been a cornerstone of the initiatives outlined since the early years of the country's independence. Notably, the implementation of a housing construction program based on standard projects has resulted in significant achievements, with the construction of 650 new rural residential areas and over 23.6 thousand individual residential buildings. While brick buildings demonstrate increasing demand not only in Uzbekistan but also in other cities, it is crucial to acknowledge certain limitations, especially in seismic areas where their height is restricted to 3-5 floors due to perceived weaknesses in earthquake resistance. Nevertheless, the enduring advantages of brick constructions, including durability, longevity, natural composition, frost resistance, aesthetics, fire resistance, and sound insulation, underscore their relevance in the contemporary housing landscape. As economic growth influences changing preferences, further research could delve into innovative engineering solutions to enhance the seismic resilience of brick buildings, thus contributing to the evolution of construction practices in Uzbekistan. Additionally, implications for sustainable and energy-efficient construction methodologies could be explored for future development initiatives. In conclusion, while brick buildings have a rich historical legacy and several inherent advantages, ongoing research and innovation are essential to address seismic challenges and ensure sustainable construction practices aligning with modern demands and safety standards.

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