УДК– 378.147

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INNOVATIVE CONSTRUCTION TECHNOLOGIES OF THE 21st CENTURY IN UZBEKISTAN.

Abstract: *The article discusses innovative construction technologies of the 21st century in Uzbekistan. The modern world is growing at a rapid pace in all areas, and construction is not lagging behind. In this article we talk about some of the innovations used in modern construction.*

Key words: *innovation, construction, technology, smart home, energy efficient home, BIM technologies (Building Information Modeling).*

ИННОВАЦИОННЫЕ СТРОИТЕЛЬНЫЕ ТЕХНОЛОГИИ 21 ВЕКА В УЗБЕКИСТАНЕ.

Аннотация: *В статье рассматриваются инновационные строительные технологии XXI-века в Узбекистане. Современный мир растёт быстрыми темпами во всех сферах, не отстаёт и строительство. В статье рассказываем о некоторых инновациях, применяемых в современном строительстве.*

Ключевые слова*: инновация, строительство, технология, умный дом, энергоэффективный дом, BIM-технологии (Building Information Modeling).*

In Uzbekistan, innovative construction technologies are actively used, especially in residential construction. Some of these technologies include:

1. 3D printing: The first houses in Central Asia with the use of 3D printing were built in Uzbekistan. This technology allows to significantly speed up the construction process and reduce costs.

2. Energy-efficient materials: In Uzbekistan, energy-efficient materials such as insulating panels and solar batteries are widely used. This helps to reduce heating and electricity costs.

3. Smart homes: In Uzbekistan, smart home technologies are also actively developing, which allow to automate the management processes of a house and improve living comfort.

4. Use of BIM technologies: BIM technologies (Building Information Modeling) allow to create digital models of buildings, which simplifies the design and construction process.

5. Use of eco-friendly materials: In Uzbekistan, eco-friendly materials such as wood and clay are actively used, which helps to reduce the negative impact on the environment.

These are just some of the innovative construction technologies used in Uzbekistan. The development of these technologies improves the quality of life for people and makes construction more efficient and environmentally friendly.

Consider 3D printing: 3D printing in construction is an innovative technology that allows you to create three-dimensional objects by sequentially laying down layers of material. This printing method is used to create a variety of designs, ranging from small architectural details to entire buildings.

The main advantage of 3D printing in construction is the ability to create complex shapes and structures that are impossible or very difficult to produce using traditional methods. In addition, this method can significantly reduce

construction time and cost, since many operations are performed automatically without human intervention.

For 3D printing in construction, special materials are used, such as concrete, plastic, metal, etc. The choice of material depends on the requirements for the structure and its operating conditions.

The 3D printing process begins by creating a digital model of an object, which is then divided into many thin layers. Each layer is then printed separately to form the final object.

3D printing in construction has great potential for development. It can be used to create individual residential buildings, industrial facilities, bridges, roads and other infrastructure structures. Thanks to this technology, it is possible to create unique architectural solutions that were previously impossible.

Let's take a closer look at smart homes.

Smart home technologies are a system of interconnected devices and appliances that are controlled automatically or remotely. These devices may include lighting, heating, air conditioning, security, audio/video systems, appliances and more.

A smart home is controlled using a central controller, which can be connected to the Internet and controlled through a mobile application or web interface. Thus, the user can control all systems of his home from anywhere in the world.

The benefits of using smart home technologies are obvious. Firstly, they increase the level of comfort of life. For example, the user can set a schedule for the air conditioner or heater to create an optimal microclimate in the house. It can also control lighting, creating different lighting scenarios for different occasions.

Secondly, smart home technologies help save energy. For example, the system can automatically turn off unnecessary appliances or reduce their power

when not in use. In addition, the user can receive notifications about possible problems in the operation of systems and quickly respond to them.

Finally, smart home technologies provide a high level of security. They may include video surveillance systems, motion sensors and door/window opening sensors, as well as access control systems. All of these elements work together to protect your home from burglary and other threats.

Thus, smart home technologies are becoming increasingly popular due to their efficiency, convenience and security. They help users manage their home more efficiently and economically, making life more comfortable and safe.

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