One direction of research is the use of recycled materials such as reclaimed wood and recycled plastic products in the production of wood-cement-recycled concrete structures. This opens up new opportunities for reducing the consumption of natural resources and minimizing waste, thus promoting sustainable material use.

Researchers are also investigating effective waste processing technologies for use in the production of wood-cement-recycled concrete structures. A crucial part of this process is the development of processing methods that ensure the high quality and strength of the resulting structures.

Additionally, research points to the necessity of quality control at every stage of production of wood-cement-recycled concrete structures using secondary materials. This is necessary to ensure compliance with standards and to guarantee the strength and durability of the resulting structures.

Methods of recycling in the production of wood-cement-recycled concrete structures:

Utilization of secondary materials: Various secondary materials such as reclaimed wood, recycled plastic products, etc., can be used in the production process of wood-cement elements.

Processing technologies: To obtain quality wood-cement-recycled concrete structures using secondary materials, it is necessary to develop and implement effective waste processing technologies.

Quality control: It is important to ensure quality control at every stage of production, as the use of secondary materials can affect the characteristics and strength of wood-cement-recycled concrete structures.

Advantages of industrial wood-cement-recycled concrete structures:

Environmental friendliness: The use of secondary materials allows reducing waste and promotes sustainable resource use.

Efficiency: Industrial wood-cement-recycled concrete structures can have comparable strength and durability to traditional structures while reducing the use of natural resources.

The utilization of recycling technologies in the production of wood-cement-recycled concrete structures has great potential for reducing the environmental impact of construction and optimizing resource use. However, to achieve maximum results, further research and implementation of advanced processing and quality control technologies are necessary. The development of industrial wood-cement-recycled concrete structures can be a significant step towards sustainable construction and environmental preservation.

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TECHNOLOGICAL INNOVATIONS IN CONSTRUCTION AND THEIR IMPACT ON MODERN PROCESSES

Construction is an industry that always strives for development and progress. With the advent of new technologies, construction becomes more efficient, environmentally sustainable and dynamic. The construction sector is improving its methods, processes and materials in order to provide quality and environmentally friendly solutions. Population growth, migration processes create new challenges, which

the construction industry responds to by developing innovative housing concepts. Construction and innovation are deeply interconnected and important to the modern world.

A key factor contributing to the development of the construction industry is technological innovation. One of the bright directions is the introduction of digital technologies and information systems. The use of the BIM (Building Information Modeling) system allows you to create three-dimensional models of buildings and objects, providing more accurate planning and project management. This allows you to reduce construction time and costs, as well as improve interaction between project participants [1].

Another innovation that is actively being implemented in construction is 3D printing. With the help of 3D printers, you can create building elements and details with complex geometry, which allows you to speed up the construction process and reduce its cost. Also, 3D printing allows you to use environmentally friendly materials and reduce construction waste [2].

A promising area of innovation in construction is the use of "smart" materials and systems. For example, self-cleaning surfaces, self-installing materials or solar panels integrated into building structures. These technologies make it possible to create more efficient and environmentally sustainable buildings [3].

It is also necessary to note the importance of innovations in the field of construction management. The use of the project management system, data analytics and artificial intelligence allows to optimize the planning, control and coordination of construction works. This reduces risks and increases the efficiency of projects [4].

Construction and innovation are inextricably linked. Innovations bring significant changes to construction processes, increasing efficiency, sustainability and quality. The introduction of digital technologies, 3D printing, the use of "smart" materials and systems, as well as innovations in construction management open new perspectives for the industry. In addition the development of innovations has a significant potential to improve the quality of life of people, provide them with comfort and strengthen the sustainability of buildings.

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USING ARTIFICIAL INTELLIGENCE TOOLS IN CALCULATIONS AND DESIGN OF METAL STRUCTURES

At present, the use of artificial intelligence can bring the solution to problems of calculation and design of metal structures to a new level. There are many uncertainties in such tasks which are associated with creating descriptions of the existing object and the design of a new one. There is a need to agree on conflicting criteria for ensuring strength and reliability, cost-effectiveness, safety, installation speed and