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IMPROVING THE EFFICIENCY OF USING ENERGY-SAVING MATERIALS IN THE CONSTRUCTION OF RESIDENTIAL BUILDINGS

Abstract: The ways and details of ways to increase energy efficiency and rational use of buildings under construction are described, as well as the work carried out in this direction in Uzbekistan and around the world.

Key words: energy efficient house, energy sources, buildings, thermal insulation, energy consumption, energy audit.

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ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ ИСПОЛЬЗОВАНИЯ ЭНЕРГОСБЕРЕГАЮЩИХ МАТЕРИАЛОВ ПРИ СТРОИТЕЛЬСТВЕ ЖИЛЫХ ДОМОВ

Аннотация: Описаны пути и детали способов повышения энергоэффективности и рационального использования строящихся зданий, а также работы, проводимые в этом направлении в Узбекистане и странах мира

Ключевые слова: энергоэффективный дом, источники энергии, здания, теплоизоляция, расход энергии, энергетический аудит.

Energy conservation and efficiency are two important issues in modern society. It serves not only to save resources, but also to preserve the environment, gain economic benefits and achieve social progress. We can give several examples

of this: in the case of alternative energy sources, energy conservation, in particular, allows the development of alternative energy sources (solar, wind, biomass, etc.). This, first of all, reduces dependence on fossil energy storage and reduces environmental damage. Improving infrastructure allows infrastructure to be developed through energy conservation measures and the implementation of energy efficiency improvement projects. For example, new structures can be built by programming energy-efficient building materials and technologies. Legislation and incentives Many States are developing laws and regulations aimed at improving energy efficiency. This, in turn, creates commercial opportunities that promote energy conservation and creates new jobs. The first experimental energy-efficient building appeared in Manchester (USA) in 1974 after the global energy crisis. It was an office building requested by the Office of General Services to test and determine the best technical solutions for energy conservation. The energy consumption of the building was reduced due to the efficient use of solar radiation, double-layer enclosed structures and computer control of the building's engineering equipment. The implementation of this project has laid the foundation for the construction of energy efficient buildings around the world. Energy efficiency improvements are being successfully implemented in Europe. According to various sources, from 2 to 10 thousand such houses were built in Western European countries. Targeted government programs of Denmark, Germany and Finland have been developed for the construction of such energy-saving and energy-efficient buildings.

Today in our republic, the development of the rural lifestyle and housing construction based on standard projects are inextricably linked with the development of infrastructure and the construction of infrastructure facilities in rural areas. In accordance with the "program for the construction of affordable housing for updated standard projects in rural areas for 2017-2021", approved by Decree of the President of the Republic of Uzbekistan dated October 21, 2016 No. PP-2639, a large number of housing and apartments were built on the basis of

standard projects, and a family in need of improved housing conditions was provided with housing. Also in our country today, attention is being paid to the construction of energy-efficient, economical houses as one of the most important factors in the development of the construction industry, in particular, the main task is to enrich these features of residential buildings, buildings of social facilities built on the basis of standard projects in rural and urban areas within the framework of government programs. Decree of the President of the Republic of Uzbekistan dated November 14, 2018 No. PF-5577 "on additional measures to improve state regulation of the construction industry" also states that from January 1, 2020, housing construction facilities will be equipped with energy-efficient and energy-saving equipment at the stage of design, survey and construction and installation work. mandatory equipment is strictly defined. In this regard, our project "Promoting the development of energy-efficient rural housing in Uzbekistan", which has been implemented since 2017 with the cooperation of the Global Environment Facility and the Ministry of Construction of the Republic of Uzbekistan, deserves attention. The project is expected to lead to a reduction in energy consumption and greenhouse gas emissions in households. 800 three-bedroom low-carbon houses have been built in Samarkand, Surkhandarya, Ferghana, Khorezm and Bukhara regions as part of the project "Promoting the development of energy-efficient rural housing in Uzbekistan". In each of these houses, photovoltaic plants (FES) with a capacity of 300 watts are installed and operating for lighting needs. And ten of these houses have solar-powered water heaters with a capacity of 200 liters of water. However, this level of energy consumption in the building persists for 3 to 5 years, and then begins to grow again. Energy screening is necessary to identify the causes of reduced energy efficiency in this way. Therefore, it is recommended to conduct an energy audit on average once every four years. It is worth noting that as part of our project "Promoting the development of energy-efficient rural housing in Uzbekistan", together with the Global Environment Facility and the Ministry of Construction of

the Republic of Uzbekistan, photovoltaic plants (PV plants) with a capacity of 300 watts were installed in 800 energy-efficient houses built in 2019. The energy audit will be conducted in 60 houses selected from among the constructed buildings, as well as in simple standard houses built under the state program in 2018. This approach makes it possible to compare energy-efficient houses with conventional ones and analyze the efficiency of using energy-efficient and low-carbon technologies while reducing heat and electricity consumption in country houses. The widespread introduction of energy auditing and the use of renewable energy sources is one of the significant and not yet fully utilized reserves. It will help solve the problem of natural gas and oil shortages in the future and, according to experts, could double consumers' energy costs.

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