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THE RELEVANCE OF GREEN ROOFS IN UKRAINE

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Problem statement. Today, the problem of energy saving in the construction of buildings is one of the most relevant and the issue of improving the environmental situation in megacities is quite burning. One of the options to address these issues is the use of green roofs in the latest construction. The article considers the feasibility of using energy efficient green roofs in modern construction.

Energy-efficient construction is gaining momentum due to the rapid growth of technological progress. A striking example is green construction, namely "green roofs", which are one of the types of inversion roofs. The first "green roofs" are by no means the newest heritage of mankind, as evidenced by the well-known Gardens of Semiramis – one of the seven wonders of the world, which are located in Babylon. From ancient times the people insulated the roof with turf and moss, as a result of which such a combination grew well and kept the house warm in early spring and late autumn. Thus, the "green roof" is an ancient architectural tradition that has its continuation and development in the modern world, which attracts architects and customers.

Purpose of the study is to prove, by an analytical method, the relevance of the use of the "green roof" structure based on the views of experts and specialists.

Main results. Advantages and disadvantages of using green roofs. A number of foreign and domestic researchers and specialists in this field agree that green structures increase the energy efficiency of buildings [1].

For example, Doctor of Technical Sciences, Professor of Kyiv National University of Construction and Architecture T. Tkachenko gives a number of advantages over a green roof [2; 3]: creation of additional thermal insulation; ability to absorb rainwater, which reduces the load on the city storm sewer system; ability to cool the roof surface due to evaporative cooling.

Moreover, other specialists [4] usually add a significant increase in the service life of the structure, which is achieved due to the vegetation on the roof, which serves as a natural protective "shield" against temperature fluctuations, mechanical damage and exposure to ultraviolet radiation. Also, an important component is the simplicity of installation, low risk of rapid spread of fire on the roof, an additional source of oxygen, higher level of sound insulation, additional space for rest and aesthetic expressiveness of the roof structure.

Based on the experience of specialists and taking into account a number of these advantages, we can say that the "green roof" guarantees the preservation of heat energy in winter, and in the hot summer season, such a roof does not overheat. The authors think, it would be logical to arrange such roofs on some new buildings in Dnipro, not only for design reasons, but also in terms of eco-friendly issues.

But can we say unequivocally that this is enough to arrange a green roof on new buildings? Joseph Lstiburek, a well-known foreign expert and director of the Building Science Corporation, expressed his views on this issue in some detail, saying that a "green roof" is a rather controversial idea if there is something more efficient and less expensive, namely film and membranes that reflect the thermal layer. For almost every of these benefits, he has his own point of view, which simplifies the technology and design of the roof. "Water

accumulation must be prevented – “build on a slope” is his main advice as an expert for designers and builders [5].

Of course, there are many ways to avoid installing a green roof and it can be much cheaper. Roof with a slope against the accumulation of water, membranes that reflect heat to prevent overheating of the roof, etc. But in the XXI century, in the era of technological progress, when one of the priorities of mankind is the environmental safety of the planet, the arrangement of green roofs is a key to addressing such issues – increasing the number of greenery, creating additional environmentally friendly recreation areas in the city, cooperation with nature. rather than its inappropriate use.

The results obtained have shown a good example of the introduction of green roofs by the School of Art Design and Media in Singapore, built by the architectural firm CPG Consultants, where the roof is used not only to spend time with students, but also to collect rainwater for landscaping. The Waldspiral residential complex [6], designed by the architect Friedensreich Hundertwasser, is covered not only with lawns and flowers but also with shrubs and trees.

Analyzing similar construction in Ukraine, we can give an example with the involvement of a green roof structure on Villa Olympia in our city, Dnipro, which was included in the international catalogue ZinCo, as well as the "green roof" of "Cascade Plaza" shopping center [7].

Conclusion. As a result of analytical research, it is possible to conclude that today the "green roof" is not only a green decoration but also an important functional part of the city, which aims to make life in a modern metropolis much more comfortable and environmentally friendly. Therefore, it is definitely worth introducing "green roofs" into the "green" construction of Ukraine, which will allow adapting European approaches to the design of energy efficient buildings in the country.

In the future, it is planned to develop a method of rational design and calculation of the operated "green roof" with the use of modern materials and design, as well as technological features of the arrangement of such finishing works.

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