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PREFABRICATED CLOSED TYPE BUILDINGS HAVING FRAMES MADE OF VENEER WASTE PRODUCTS

The major territory of Siberia is occupied by underexplored, hardly accessible areas having unstable or frozen soils. Development of these territories is hampered for a number of reasons, including poor weather and soil conditions, lack of infrastructure, roads, networks, and remoteness from industrial enterprises. Traditional building methods are rather expensive. The latter circumstance calls for new types of residential and public buildings, with the main requirement being their transportability (by air and land transport), higher degree of prefabrication (including foundations), light weight of structures, fast assembly, possibility of assembly and installation of large components without the use of heavy machinery, application of local materials, structural reliability, especially in the conditions of unstable soils. Construction operations on permafrost soils are not to alter the soil properties.

The proposed structure of low-rise buildings is aimed at the attainment of the followings objectives: assimilation of hardly accessible areas of Siberia, development of low-rise housing, and secondary use of veneer waste products.

A prefabricated building of the closed type consists of a foundation plate, as well as walls and coverings arranged in the form of a spatial framework united into a single manifold system. Beam elements of a prefabricated building are to be made of timber-based materials and assembled into a single bolted mountable and dismountable structure by means of a system of shaped metal node elements.

Advantages of new low-rise buildings include their higher transportability due to the compactness of individual items and reduction of the overall weight, smaller construction term; increase in the building reliability on weak, unstable and frozen soils; expansion of the area of architectural design; development of a new method of recycling of large-size veneer waste products. The above features can make the new type of low-rise buildings highly competitive.

Key words: prefabricated building, closed type, framework spatial system, manifold system, structure, connector, veneer waste product, economic effect, increased reliability, low-rise building.

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