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ИСПОЛЬЗОВАНИЕ СТЕН ТРОМБА ДЛЯ ПОВЫШЕНИЯ ЭНЕРГОЭФФЕКТИВНОСТИ НАРУЖНЫХ КОНСТРУКТИВНЫХ БАРЬЕРОВ.

Аннотация: *В районах с мягкой зимой и солнечной зимой целесообразно использовать «солнцепроницаемые» стены.*

Ключевые слова: *теплозащитные стенки, стенка тромба, прозрачная, теплозащитный экран.*

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USE OF THROMBUS WALLS TO INCREASE THE ENERGY EFFICIENCY OF EXTERNAL CONSTRUCTION BARRIERS.

Annotation: *In areas with mild winters and sunny winters, it is advisable to use "sun- ransmitting" walls.*

Keywords: *heat retaining walls, Thrombus wall, transparent, heat shield*

In areas with mild winters and sunny winters, it is advisable to use "sun-transmitting" walls. The outer side of such walls will be coated with a glossy heat-insulating material, which has an open-cell structure and therefore reduces heat dissipation to the environment. The next layer is the solar energy-receiving layer, which heats the base material of the wall and transfers heat to the interior rooms through it. Thermal retaining walls and Thrombus wall belong to ordinary solar devices. On the outside of such walls is placed a thin layer of black, which absorbs sunlight, after which an air gap is formed, in which the air is heated in sunny weather, and the heated air rises to the top, through its holes or forced into the room . Through the bottom holes, cold air is supplied to the heated space, and the cycle is repeated.[1-5]

A technology has been developed that allows the installation of heat-protective and solar-absorbing layers on the walls. The construction based on such technology turns the wall into a passive solar element. In this case, the heat is transferred from the back surface of the massive wall inwards without the aid of a liquid or air heat carrier. Thermal protection made of glossy polycarbonate or special glass in the form of a thin conductive mass is one of the types of transparent thermal protection. It is advisable to use thrombus walls and glazed heat-protective walls primarily during their reconstruction in order to increase the energy efficiency of existing buildings. These walls are adapted to the mild and sunny winter weather conditions, with the help of which the buildings are effectively heated in the winter under the influence of winter sunlight.

Trombe wall is an "indirect-gain" system which works on the basic greenhouse principle that heat from the sun in the form of "shorter-wavelength & higher-energy U.V radiation" passes through glass panel in front of the wall and is absorbed by the wall. The air in between the wall and glass is heated through conduction. As air is heated, it passes through the top vent heating the room through convection and at the same time, the cold air is drawn in through the bottom vent heated by the sun and rises up again. [6-8] This creates a cycle of warm air flow. Trombe wall work differently in summers and winters as described below:

a) Trombe walls in the summer: In the summer season, the wall is shaded by the overhang and does not receive direct sunlight. When a Trombe wall is sheltered, it will remain cool and its intrinsic qualities will absorb heat to keep the rest of the place cooler. The immanent materials in such walls are responsible for gradual heat absorption and transfer. The overhang area blocks the summer sun from hitting the Trombe Wall. Objects within the thermal mass can be taken as heat batteries.

b) Trombe walls in the winter: In the winter, when the sunlight hits the wall, the wall gets „charged" up to warm the house by transferring the sun"s

heat inside. The thermal mass in the trombe wall will gradually boost as it absorbs heat energy, and then will gently release it. In winters, when the surrounding ambient air temperature drops in the night, the thermal mass will extend to release its stored heat energy which would help the construction to stay relatively warm after the sunset for a longer period of time. After liberating all the heat, it will be ready once again to absorb the heat next day.

The use of these walls achieves incomparable economic benefits and efficiency. While the heat loss to the surface is directly proportional to the scattering time of the sun's rays, the heat loss depends on the degree of coldness of the climate. The appropriateness of the use of heat-conducting walls depends on the specific climatic conditions of the construction site. Low sun and cold winter climate

In such conditions (such a climate is typical for the northern part of the territory of the Republic) it is advisable to use good thermal insulation walls.

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