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AIR EXCHANGE SYSTEM IN ENERGY-EFFICIENT BUILDINGS

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Annotation
This article is a brief overview of the ventilation system of buildings, the importance of ensuring air exchange. Energy-efficient methods of air exchange of buildings. It was told about the concept of air exchange, their advantages and disadvantages. Brief information about the types of air exchange is given..

Keywords: ventilation, natural ventilation, artificial ventilation, air exchange, plate air exchanges , rotary air exchanges , recirculation water air exchanges, roof air exchanges .

Annotatsiya
Ushbu maqola binolarning shamollatish tizimi, havo almashinuvini ta'minlashning ahamiyati haqida qisqacha ma'lumot berilgan. Binolarning havo almashinuvining energiya tejaydigan usullari, unda havo almashinuvi tushunchasi, ularning afzalliklari va kamchiliklari haqida so'z yuritildi. Havo almashinuvining turlari haqida qisqacha ma'lumot beriladi.

Kalit so'zlar: shamollatish, tabiiy shamollatish, sun'iy shamollatish, havo almashinuvi, plastinka havosi almashinuvi , aylanma havo almashinuvi , aylanma suv havosi almashinuvi, tom havosi almashinuvi .

Аннотация
Данная статья представляет собой краткий обзор системы вентиляции зданий, важность обеспечения воздухообмена. Энергоэффективные методы воздухообмена зданий. Было рассказано о концепции воздухообмена, их преимуществах и недостатках. Дана краткая информация о типах воздухообмена..

Ключевые слова: вентиляция, естественная вентиляция, искусственная вентиляция, воздухообмен, пластинчатый воздухообмен, ротационный воздухообмен, рециркуляционный водный воздухообмен, воздухообмен на крыше.

Introduction

In the premises, over time, the air changes in a negative direction, both physically and chemically, the reason is that heat, water vapor, carbon dioxide and various odorous substances are released into the

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external environment through the human skin, respiratory organs, due to the processes of equipment operation and other ways. Adults at a temperature of 20 ° emit 22-40 liters of carbon dioxide, 100-200 kcal of heat and 50 g of water vapor into the external environment in 1 hour. A person suffocates when the air changes in closed rooms. The ventilation system of the premises plays an important role in creating moderate conditions for living, working and relaxing people. In areas with a hot climate, including in Central Asia, the importance of the ventilation system is very high. That is why our ancestors, masters, ancient architects paid special attention to ventilation of premises. Latticed grilles in the upper part of doors and windows, open chimneys on the roofs of kitchens, bakeries performed the function of screwing.

There are two types of ventilation: natural and artificial. With natural ventilation, rooms are ventilated through windows, doors, and in industrial premises-with ventilation lights. Special devices are used for artificial ventilation.

Currently, air exchanges are widely used for artificial ventilation of premises. Recurrence means getting something back. The return in relation to the air exchange system is understood as the return of thermal energy leaving the ventilation system. The usefulness of air exchange lies in the fact that the rooms are ventilated, while maintaining the temperature of the air in the rooms. Another advantage of this tool is that it is easy to set up. To understand the operation of the air exchanges, imagine a square-shaped pipe in which the air coming out of the room moves in the longitudinal direction, and the air coming from the street moves in the transverse direction. At the same time, two different air flows separated by heat-conducting plates do not interfere with each other.

Below we will look at the types of registrars.

Plate air exchange. Such registrars are the most common. Plate recorders are simple and inexpensive in design termo; the useful operating coefficient is 40% - 65%. Also another advantage is that no electrical energy is required to use the regenerator. The only drawback of this is that in severe winter frosts it can freeze in the form of condensate.

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Air exchange with a rotor. In these air exchange there is a part of the electronics that runs on electric current. In it, the optimal rotation speed of the rotor is determined automatically and controlled

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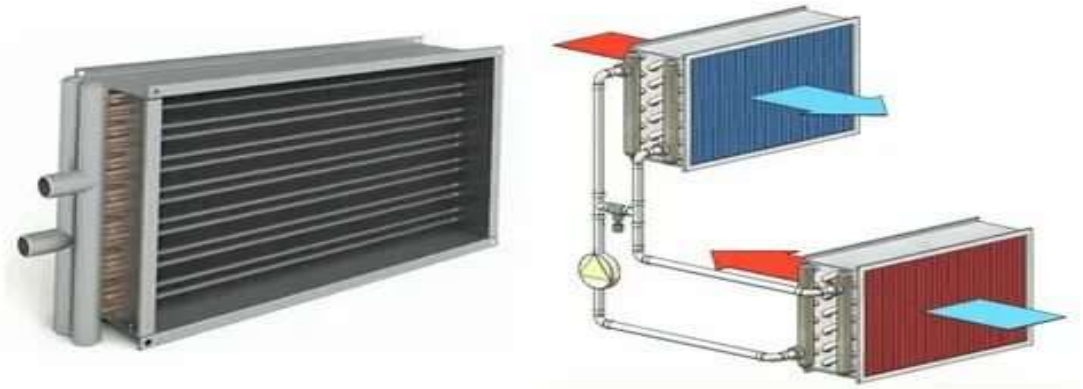
electronically based on the temperature difference between indoor and outdoor air. These air exchange do not freeze in winter, and the coefficient of its useful work can increase to 87%. Another advantage of these air exchange is that they also partially return room humidity.

Recirculation water air exchange. The efficiency of such air exchange is 50-65%, as in plate air exchange, only the difference from it lies in the complexity of the design. Water or antifreeze acts as an intermediary in the heat exchange. The advantage of recirculation water air exchange is that individual components can be installed in different locations.



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Air exchange installed on the roof. Such air exchange is not used in residential premises. They are mainly used in industrial buildings, workshops, workshops and utility rooms. The efficiency of air exchange installed on the roof is 55-68%.

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Currently, an important task facing the construction industry is the introduction of technical solutions aimed at improving energy efficiency by improving the air exchange systems of existing buildings.

When comparing the effectiveness of the use of air exchange in single-storey buildings with different levels of thermal protection, it was found that the higher the level of thermal protection of the building, the higher the efficiency of the use of air exchange.

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