References

Passive building with high energy efficiency



Uponor involvement

The building is equipped with Uponor underfloor heating and cooling | There is no radiator in the building and in summer it is cooled by the floors | Smatrix automation is used for automatic system control.

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Aloja municipality is one of the first in Latvia which implemented low-energy building and used wood as a basic construction material in the construction of public building. Heat energy consumption during operation per heated area will not exceed 14.6 kWh / m2 per year.

Project Facts:

Location Aloja, Latvia	Completion 2016	
Building Type Office	Product systems Radiant Heating & Cooling	Number of floors 1
Address Liepu iela 3, Ungurpils, Alojas pagasts, Alojas novads, LV-4064	Website https://www.sala.lv/	Project Type New building

Partners

Customer:
Aloja County Council

Project author:
SIA "HUMA architectural studio"

General contractor:
SIA "MONUM"

Construction supervisor:
SIA "Firma L4"

Short description

Business Support Center - library SALA is intended for several functions. The building consists of three main functional blocks - a library, large seminar hall and study rooms. All the blocks are located on the only floor of the building. Each block has autonomous access.

The technical design of the building was developed in 2015, construction works began at the end of February 2016. The building has strip-shaped foundations, on which a slab 250 mm thick is supported, above which a thermal insulation layer 300 mm thick is built. The foundation exhibition took 2 months. A diverse range of materials was used in the construction of the building - concrete, wood, metal, etc. Wood is very widely used - both as a frame and as a finishing material. There are two reasons for this: firstly, great emphasis was placed on the use of natural materials, and secondly, it is with the special woodworking technique that the design concept can be achieved. Local materials were mostly preferred.

One of the characteristics of the building is the high energy efficiency of the building. To ensure this, the architectural solution of the building fully meets the energy consumption criteria of a passive building. The calculation was performed using the Passive House Planning Package program.

The heat source of the heating system and hot water supply uses a heat pump with geothermal heat supply from deep well probes. It is equipped with automation and control elements. There are no radiators in the building, nor does it have air conditioners. In summer, the building is cooled using floors.

The object can be assessed as relatively complex, because the goal was to build the building in accordance with the standards of passive construction. During the construction process, it required a much closer look at the construction of the units, the density of the constructions, controlling the quality at each stage of construction. The clay soil also complicated the construction of the drainage system planned for the project.

Object in numbers
Number of floors: one
Construction time: February 2016 to September 12
Building height: 5.22 m
Building volume: 1982 m3
Total area of the building: 625.1 m2

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