Hotel DZŪKIJA in Druskininkai. Part of the Grand SPA Lithuania complex

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- Project type: Renovation
- Building Type: Hotel, boarding house
- Construction Year: 2009
- Climate zone: Nemoral
- Net Floor Area: 1 836 m²
- Construction/refurbishment cost: 225 633 €
- Number of Bedroom: 16 Bedroom
- Cost/m²: 123 €/m²
- Cost/Bedroom: 14 102 €/Bedroom

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// Description

Hotels, conferences, clinics and spa complex is an outstanding example in Lithuania in recent times, but in the whole independence period. The complex is characterized by social, economic and ecological sustainability. It has been approved with a number of innovative engineering and architectural solutions which, although partly have increased the initial investment, helps to reduce operating and maintenance costs.

With six different functions of the buildings planned the reconstruction carried out in stages every few years, while the whole complex operates and does not cause any appreciable adverse effect on the urban environment. All the buildings are basically of complementary uses, thus acting together creates a truly versatile as the city of Druskininkai resort to the needs of health, recreation are accommodation complex. These services are actively used by the residents themselves in Druskininkai, and many of them are reliable, well-organized, encouraging personal development workstation.

// Stakeholders
// Energy

Energy consumption

Primary energy need : 71.10 kWh PE/m²/m
Primary energy need for standard building : 200.00 kWh PE/m²/m
Calculation method : Primary energy needs
Final Energy : 118.27 kWh FE/m²/m
Initial consumption : 300.00 kWh PE/m²/m
Breakdown for energy consumption : Total energy consumption includes: heating, cooling, and hot water.
More information : All the information is on the actual consumption

// Renewables & systems

Systems

Heating system :
- Geothermal heat pump
- Radiant ceiling

Hot water system :
- Heat pump

Cooling system :
- Geothermal heat pump
- Radiant ceiling

Ventilation system :
- Double flow heat exchanger

Renewable systems :
- Heat Pump on geothermal probes

// Products
Capillary ceiling heating / cooling

Description:
Capillaries thermal ceiling fulfills two tasks: heats and cools. Thermal ceiling heating the spread (radiate) heat waves. From a heated surface of the radiant heat waves, namely electromagnetic waves (similarly as light, radio waves, X-rays) depends, in contrast to the heat conduction based heating (radiator, convector or aerial), quantum mechanics laws, such as the Planck (Max Planck envelopes. Max Karl Ernst Ludwig Planck 1858) radiation law. Heat waves emitted by the human body is taken as a very warm and comfortable. Since ancient times people use and feel emitted by the sun, fire or stove heat. Thermal water circulates through the capillaries in ceiling and emits a gentle-wave rays similar to the sun. Heated directly outside the room air, which is "hanging in" space at the top and for the most part remain unused. Thermal heat waves from the ceiling, with virtually no losses comes down and warms the floors, walls, furniture, appliances, which are then in turn releases heat ambient air and of course people. In this way, the ceiling uses extremely low cost to ensure a very pleasant interior climate without causing drafts and dust. http://www.tenko.lt/images/pdfai/kapiliarai2012.pdf

// Costs

Construction and exploitation costs

Renewable energy systems cost : 225 633,00 €

// Urban Environment

Urban environment: Building complex urban solution gives a sense of the complex as a city block concept. Different sides of the block were resolved by using different measures of urbanity. The contiguous built-up areas focused conferences center and clinics buildings are taller and further are city architecture. In the park, to the Nemunas River and Ratnyčėlė stream are oriented block border with Dzūkijos Hotel and Spa are openwork buildings, with green inserts and place forming buildings - lower, plastic forms with transparent nature reflecting planes.