

The DK1 company headquarters in Kravaře – a NED (Low-Energy House) building with electric heating

DK1 from Kravaře near Opava is a design and building company which apart from industrial buildings also specialises in family houses which can be classed as NED (Low-Energy Houses) according to their parameters. In these buildings, electric heating has proven to be the best option, thanks to the low heat loss, and not only from the point of view of acquisition costs but also from the standpoint of operational costs.

Since 1991 when DK1 was founded the company has added many houses equipped with electric heating to its list of projects, and with their regular monitoring the advantageousness of this system can be evaluated.

Development of the company resulted in there being a necessity to move into larger premises, and therefore a decision was made to build a new company headquarters. The whole construction was conceived as a low-energy building and thanks to the company's experience with family houses, electric heating was planned and implemented there as well.



Information about the building			
Brought into operation	06/2008	Heat loss	29 kW
Built-on area	1 274 m ²	Heat loss per m ²	32 W/m ²
Heated area	883 m ²	Installed wattage	37,5 kW

The new building provides space not only for the management of the company, planning engineers, construction technicians and foremen but also for a building materials shop, which is located on the ground floor. As in the shop it is important to have free space with no heating elements or distribution systems in the way, ECOSUN radiant panels were chosen for the heating of the construction materials area. They produce what is known as infra-red heating by which not the air but the building construction and the objects and people present are heated. Thermal comfort is therefore created at a lower temperature, and for publicly accessible areas in which a higher flow of people and more intensive air circulation can be expected, it is much more suitable than a standard convection system.



The division of the indoor area into individual offices is executed with the help of light prefabricated partitions which enable future changes to be made in the dispositions of the individual rooms in the building in case of need. This is also one reason why direct-heating ECOFLEX convectors were chosen: they are easy to demount and can be moved to a different location if needed or replaced by a different wattage.



The only exception is the company owner's office and a corner with a negotiation table where ECOFLOOR floor heating is installed.



As the working regimes of the individual employees differ greatly, local regulation was chosen. In each room, a programmable digital thermostat has been installed by which the users control the heating according to their needs. A programme ensures that the heating cannot remain switched on overnight by mistake and that it switches on by itself in the morning, but at the same time, the employees have the option to adapt the heating to their working regime.

Acquisition costs		
ECOSUN radiant panels		36 ks
Ecoflex convectors		22 ks
Ecofloor heating mats		2 ks

Acquisition costs

AUBE digital thermostats	22 ks
Acquisition costs - total:	165 859 CZK CZK without VAT
Exchange rate 24,07 CZK / € (10/2008)	

Operational costs of installed electric heating

As the building was made operational in June 2008, information about energy consumption is not yet available. As agreed, the operation costs of the building will be filed and gradually added here. However, even at the end of October, with the exception of two offices which are situated in the northern side of the building, the heating system wasn't yet in use. This shows that the thermal properties of the building are very good and that thanks to the operation of computers and the presence of the employees, the temperature hadn't yet sunk below the set level.

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