References

Rivergate



Uponor involvement

50000

Rivergate

The RIVERGATE office building in Vienna, Austria, was certified as a Green Building by the EU andrelies on the efficient Contec ON concrete surface activation.

Project Facts:

Location	Completion
Wien, Austria	2010
Vrsta objekta	Product systems
Office building	Površinsko grejanje i hlađenje
Address	Project Type
Objekt Office Center Handelskai Immobilienerrichtungs-gmbH & Co KG	New building

Partners

Architect
Auer Weber

Situated on the banks of the Danube, the RIVERGATE office building provides a unique architectural accent on the Vienna

waterfront. Inside the building, an optimised air conditioning, climate and energy concept has been thoroughly implemented. The use of natural resources, such as geothermal energy and groundwater, is of primary importance in this regard. In the case of the RIVERGATE, this concept saves around 35% on primary energy costs in comparison with conventional buildings and reduces CO2 emissions by up to 280 t annually. One important part of the energy concept is the thermal activation of building components using Uponor's Contec ON concrete surface activation. This system heats the building on cool days and cools it down on warmer days.

The Contec ON solution has replaced conventional displacement ventilation in the RIVERGATE building with a silent air-conditioning system. Contec ON modules were installed over an area of around 22,000 m². The advantages of Contec ON lie in the efficient use of geothermal energy. The system uses both a heating pump and cool groundwater. The frost-resistant glycol mixture in the Contec ON pipes is brought to a flow temperature of 14°C using a heat exchanger. The return flow temperature is 16°C. When combined with a heat pump to generate energy, groundwater covers cooling needs of 84 W/m².

The cost and comfort of the radiant heating and cooling system were also taken into account in addition to the energy savings and ecological efficiency on offer. The Contec ON pipe matrices were installed at a highly effective depth of 16 mm under the concrete undercover to facilitate the desired rapid responses to load fluctuations and to achieve the larger (relative to conventional thermally active building structures) energy spectrum required to heat and cool. The oxygen-tight and high-pressure cross-linked PE-Xa pipe in use has a nominal width of 14 mm x 2 mm. In addition to providing for cooling, Contec ON is able to meet the building's heating load of 25 W/m².

The combination of the heat pump and renewable geothermal energy is energy-efficient and therefore cost-effective, using mild heat radiation with a low flow temperature of just 35°C and a return flow temperature of 25°C (four-conductor system). The RIVERGATE can also be heated using additional convector heaters to compensate for peak values during long periods of frost. The prefabricated Contec ON support modules were quickly mounted to the on-site ceiling formwork. The technicians appreciated the automatic spacers in the Contec ON modules. This feature allows the reinforcement to be laid directly on the modules. Thanks to proven Uponor pressing technology, the modules were reliably and securely connected to the distribution and collector pipes of the MLC composite pipe without any special tools.

A total of 50,000 metres of Uponor's MLC composite pipe were laid to provide distribution pipes to connect the Contec ON modules in the ceilings from the first to the twelfth floor. The large dimension MLC composite pipe system offers the additional advantage of ergonomic installation. The system has a modular, flexible design, and no overhead work is required. Only 27 components are required for the installation. It is not necessary to use the reducer fittings required for conventional composite pipe systems.