References

Sieben Welten



Uponor involvement

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Experience Asia, Africa, Andalusia, Mexico, Arabia, India and Japan – Uponor supports the energy use concept of the 'Sieben Welten Therme & Spa Resort'.

Project Facts:

Location	Completion
Fulda / Künzell, Germany	2010
Building Type	Product systems
Sports facilities	Radiant Heating & Cooling
Address	Project Type
Sieben Welten Therme & Spa Resorts	New building

Partners

contractor
Ing. Büro Dietmar Ludwig
Hahlweg 2a 36093 Künzell
GERMANY

"When planning the new resort, a certain amount of variety was necessary when selecting the suitable materials and systems

for the building services. The range available from the system manufacturer Uponor, with its Tecto and Minitec radiant heating and cooling systems, accommodated our needs perfectly'', said Bettina Langanke from the Dietmar Ludwig engineering firm in Künzell, the planning office responsible for the project.
When selecting the remaining systems, it was essential that the newly installed panel heating systems be brought up to date with the latest building service technology through a smooth renovation process. For this reason, a total of 990 m² of the Uponor Minitec radiant heating and cooling system was installed. In large areas, the system was installed as floating panel heaters on Knauf underlay matting. The edge insulation strip was installed first with foil skirting, so that the edge joints of the existing bottom construction were transferred to the height of the new levelling layer and the new floor covering material. Specialist contractors were then able to immediately lay the only 12 mm high self-adhesive foil elements of the Minitec system. After the simple process of laying out the foil elements, it was possible to lay the 9.9 mm x 1.1 mm high-pressure cross-linked and oxygen-tight polyethylene pipe (PE-Xa) directly into the prefabricated nubs of the foil elements. The project was completed with the installation of a special Knauf level coat for the wet areas without plaster, covering the nubs to around 20 mm. Tecto came highly recommended for both the transitions between existing floor superstructures and areas which were newly constructed.
For the Africa Experience, the Tecto nub foil system was installed over an area exceeding 1,000 m² in combination with 14 mm and 17 mm heating pipes. It was possible to maintain the desired construction pace by simply pressing the nub plates over one another to make edge connections, and offcuts were also relatively low. Tecto proved its value by making it simple to lay the appropriate heating pipes at a 45° angle.DIN 16833 certified Uponor plastic-aluminium composite pipe systems were installed in sizes up to 63 mm as cooling ducts in the wall and ceiling. Both indoors and outdoors, the Uponor composite pipe is coated with a layer of highly heat-resistant polyethylene which permanently and securely bonds with the underlying aluminium layer through an intermediate adhesive agent, thus retaining both bendability and pressure/temperature resistance.Of course, the energy supply to the approximately 30,000 m² Sieben Welten Therme & Spa Resort adheres to the latest environmental and economic guidelines. Two gas turbines rated at 126 kW each, and in the future also a new gas-fired condensing boiler rated at 1,200 kW, will supply sufficient heat for efficient and consistent distribution through the Uponor radiant heating and cooling systems. ''We use optimal flow temperatures for the radiant heating and cooling systems, for example for Minitec a flow temperature of only 35°C is sufficient'', stated Bettina Langanke regarding the energy use concept. Cooling absorbers, cooling units and a cooling tower rated at 350 kW will work in addition to the gas-fired boiler to ensure efficient use of the required energy and meet associated efficiency concerns. For the new construction of a connected exclusive bungalow park, the new wireless single room controller with dynamic energy management is planned for controlling the radiant heating and cooling system.

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