References

Zero emissions maximum comfort



Uponor involvement

- Thermally active building systems (TABS) with 7,500 metres of Uponor Comfort Pipe PLUS pipes
- Support with HEAT2 simulation software from Uponor to find out best way to use TABS within the building

Zero emissions, maximum comfort

Maximum comfort for a net-zero energy office building
Greenspace PCTG in Asturias, Spain, is the first net-zero energy office building in the region and one of the few of its kind in the whole country. An impressive achievement made possible by a combination of highly efficient active energy and passive systems. Spanish architects EMASE Arquitectura worked with engineering firm SvR Ingenieros to create a sustainable, environmentally friendly design. It uses solar panels for keeping solar loads out of the building on one hand and to generate more energy than the building consumes on the other hand. In order to minimise the building's energy use, the project partners turned to Uponor and its thermally active building systems (TABS) for heating and cooling.

Project Facts:

Location Gijón, Asturias, Spain	Floor space 1,500 square metres	Completion 2020
Building Type Office	Product systems Radiant Heating & Cooling	Number of floors 3
Address Parque Cientifico Tecnologico de Gijón	Project Type New building	

Partners

"With the support of Uponor's technology, EMASE Arquitectura and SvR Ingenieros were able to determine the ideal size for the solar panels and enery distributions systems." Ramón van Riet, SvR Ingenieros.

Architects: Emase Arquitectura, Madrid
https://www.emase.info/

Consultancy and LEED certification: Arup, Madrid
https://www.arup.com/

Project management and LEED commissioning: SvR ingenieros, Asturias
http://www.svringenieros.es/

Promoter: GesyGes Innovación en la Edificación

Between the basement, the three above-ground floors and the roof, Greenspace covers a total area of 1,500 square metres. Since it was opened in Gijón Technology Park in July 2020, it has hosted a range of start-ups and other companies with a focus on innovation and digital technology.

Minimising energy consumption

Greenspace has a positive energy balance: this means the building generates more power than it uses thanks to extremely efficient active and passive energy systems. The passive systems include, for example, insulation or natural lighting. The active systems involve the solar panels, the indoor climate solutions through the TABS and the radiant floor heating, as well as the monitoring and control of the building services.

Uponor provided the thermally active building system (TABS) which makes use of the thermal inertia of the building's concrete structures. A network of 7,500 metres of Uponor Comfort Pipe PLUS was built into the structure of the building, using concrete core activation to store and release both heat and cold. The pipes carry water for the building's heating and cooling systems and provide comfortable temperatures all year round. With the HEAT2 simulation software from Uponor, the project partners in Gijón were able to analyse the building's static and dynamic thermal behaviour over time. This was the key to finding out the best way to use TABS.

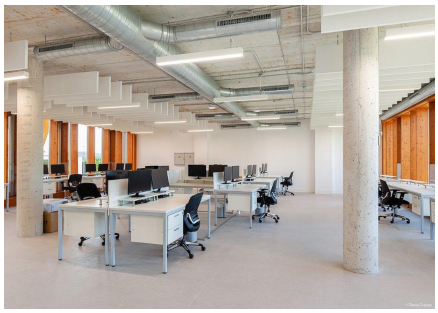
Internationally certified

The energy concept includes much more, for example 134 solar panels, a lift that uses the energy of this panels or low-energy LED bulbs, controlled by intelligent sensors. The result of all these measures: a very pleasant working environment fostering creative thinking and high productivity. The range of energy efficiency and bioclimatic design measures employed, together with the use of renewable energy, healthy architecture, and low-emission materials, has seen Greenspace earn gold certification from LEED. This certification places Greenspace among the most sustainable buildings in the world.

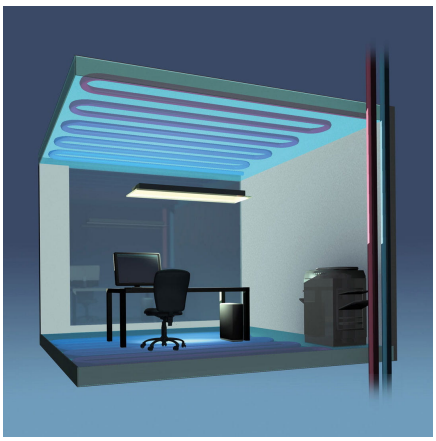
Zero emissions, maximum comfort

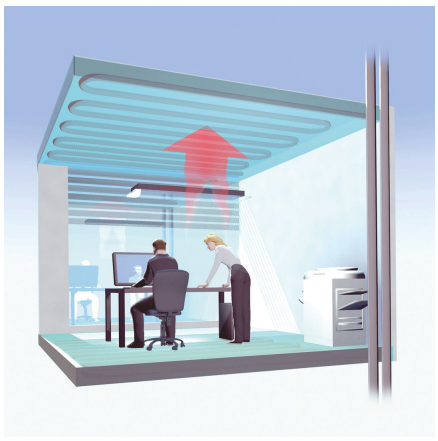












> “We needed a heating and cooling system that was tailored to the building structure while also being energy-efficient enough to fit in with our energy calculations and hydraulic design requirements,” says Ramón van Riet from SvR Ingenieros.

Gold certification from LEED, U.S. Green Building Council.

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