Clever combination for energy-saving and comfort

In the heart of The Hague, Holland, stand two gleaming new 140 metre high tower blocks, connected by low-rise buildings. The office building has a floor area of 132,000 m², with 41 storeys and space for 4,050 workspaces. The Dutch Ministry of Justice and the Ministry of the Interior and Kingdom Relations will start moving into this imposing building from the beginning of 2013. To be able to offer these employees a comfortable temperature, Radson has supplied 7,400 radiators, which are specially designed for the 'JuBi' project.

The standard storeys in the towers will be heated with the use of concrete core activation* with a temperature range of 50/40°C, which is also connected to a district heating network. An air conditioning system will provide the buildings with fresh air. Concrete core activation offers many benefits, including a comfortable indoor climate and energy savings because of the low temperatures involved. However, there is also a drawback: the system responds slowly to rapid temperature changes. Radson supplied the ultimate solution to this problem.

PERSONAL TEMPERATURE CONTROL

To be able to heat the rooms quickly, low-temperature radiators on the exterior walls are used to supplement the basic concrete core activation heating. Users can turn on these radiators when the outdoor temperature falls rapidly, for example. In contrast with concrete core activation, the warmth from a radiator is felt quickly. What is more, the users can operate the radiators themselves. People generally find it very important to be able to influence the temperature in their own rooms. Another benefit is that the radiators provide warmth at the places in the building where it is needed most: close to the windows. These zones can become uncomfortable because of cold downdraughts. The combination of basic heating from concrete core activation and individual control through radiators offers users a high level of comfort.

THE LOGISTICS BEHIND JUBI

What makes the JuBi project so special is the logistics during construction. The building is a stone's throw from the central station, and is surrounded by tall office buildings. Because there is no storage capacity on the building site, materials are delivered on a just-in-time basis. Before they make their deliveries, suppliers receive a building site ticket for a specific date and time, within a fifteen-minute time slot. In this way the delivery of materials was highly organised. In partnership with Radson, wholesaler Technische Unie arranged the just-in-time delivery of around a hundred radiators a week, spread over a period of eighteen months.

CLEAN LINES WITH CONCEALED CONNECTING PIPES

The building was designed by the Prof. Hans Kollhoff architecture firm. They decided to use Radson's 'Integra' model; a slim, compact radiator that can be placed close to the wall, and can also have the control knob fitted on the left or the right. A special feature of the 'Integra' model is its concealed connecting pipes, which are integrated behind the front panel. The lower connecting pipes were specially designed for the JuBi project. The mounting consoles, with acoustic inserts, are hidden behind the radiator. Together with the concealed connecting pipes and neat finishing, this gives the 'Integra' model extremely clean lines.

HIGH POWER, EVEN AT LOW TEMPERATURES

The 'Integra' model utilises the '2-on-1' principle. A hot water channel with a wider diameter allows space for two welding points for the convector fins on the water supply channel. This means the radiator gives off high power even at low temperatures, so the user can be sure the space is heated quickly. In addition to its clean design and high power output, the Radson 'Integra' radiator is the only radiator in which all components are pre-assembled at the factory. This provides savings for the installer, because the assembly time is shorter and there are lower failure costs. The 'Integra' comes with a ten-year guarantee. ■

* Concrete core activation is a heating and cooling system that makes use of the mass of the building. Water pipes are laid in the core of the concrete floor (the concrete core), and these keep the floors/ceilings at a constant temperature. A condition for the use of concrete core activation is that efficient temperature exchange can take place, so suspended or open ceilings are not used. A water temperature regulator can ensure that the system responds to indoor and outdoor temperatures on the various exterior walls.

Imtech, together with Homij Technical Installations, were commissioned to construct all the building installations for the JuBi project. Imtech N.V. is a European technical service provider in the field of electrical engineering, ICT and mechanical engineering. Imtech specialises in combining electrical engineering, mechanical engineering and ICT (information and communication technology) across the full breadth and depth of the technological spectrum into one integral and multidisciplinary solution. This leads to an ability to integrate and creates added-value. Imtech is one of the strongest players on the GreenTech ('green' technology and sustainability) market in Europe. Approximately 30% of the total revenues are generated by this sector.