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# Migration and extension of the HVAC system for enhanced comfort

Waterschapsbedrijf Limburg, Roermond/Netherlands

Waterschapsbedrijf Limburg (WBL) is the executive organization of the regional water authorities "Peel en Maasvallei" and "Roer en Overmaas". These water authorities are responsible for flood prevention and for clean and sufficient water supplies in the province of Limburg. Siemens provided advanced HVAC products to satisfy the comfort needs of WBL's employees.

WBL with its 220 employees ensures the improvement of water quality in the provincial area of Limburg. Seventy percent of their workforce are in the Roermond office while thirty percent look after one of the eighteen water cleaning plants located in the provincial area of Limburg.

The former HVAC system of the WBL building did not satisfy the needs of the building users in terms of room comfort. Wim Tosserams, project leader of WBL says: "People in the office complained all summer about high room temperatures. We therefore wanted a new room climate

control system with sufficient cooling capacity during hot summers, featuring individual working space temperature setpoints. Our office in Roermond consists of a tall building and a lower building, which made it difficult to provide an optimal working space climate in both buildings with one control system. Huygen Installatie Adviseurs, our consultant in Maastricht, developed a specification based upon Siemens' Synco™ technology, in which the existing air conditioning units and the refrigeration machine for the lower building could be maintained."

Answers for infrastructure.



### Waterschapsbedrijf Limburg, Roermond

The WBL building is a seven-floor office for one section and a three-floor section with a laboratory on the first floor and offices on the two other floors. With the old control system, it was not possible to satisfy the user's specific comfort needs. The different types of building construction and differences in usage made this a difficult job. Together with the renovation, the laboratory was changed into open-plan offices, calling for other room climate conditions in this area. The walls of the building and the radiator heating system were maintained. The former air handling system delivered cold supply air in the summer but was not designed to cool down the rooms. The disadvantage of this solution was the lack of setpoint adjustment per room, one of the most severe complaints of the users during summer periods. Also, the control system was more than twenty years old so that spare parts were no longer available and maintenance and repairs became more and more difficult.

### Ideal room temperature thanks to chilled ceilings

Chilled ceilings were installed to cool the rooms. These ceilings operate with a "high temperature cooling" flow of 18 to 19 °C. In each working space, the temperature setpoint (normally 21 °C) can be lowered or increased by 3 degrees to meet individual needs. In addition to the chilled ceilings, a ventilation system was installed, supplying clean (fresh) air.

### User-friendly operation

The Synco control system supplied by Siemens facilitates central operation and monitoring on a PC or laptop with the ACS service and operating software and/or a Web browser. All controls and sensors together form one system within the building management system. The rooms and components in the building are visualized on the screen and can be operated digitally. Any fault status messages from essential plant components are automatically forwarded to the connected alarm service, preventing emergency situations in due time. Faults that have less or no impact can be displayed on a screen and handled the next (working) day.

### Highlights

- Pleasant working climate in the whole building thanks to Synco
- Individual settings for every working space and room
- Easy operation and monitoring on PC with ACS or via Web browser
- Automatic alarm reporting to the connected alarm service for improved reliability
- Existing air conditioning system and refrigeration machine could be maintained