TROX® TECHNIK
The art of handling air

POST TOWER - BONN (GERMANY)

l'aperçu

Domaine d'utilisation	Type
Bâtiments de bureaux	Référence

The Post Tower in Bonn, at 163 m, is the highest office building in North Rhine-Westphalia. This elliptical building is equipped with a cavity facade. The external fully glazed front denotes openness and innovative strength, and is opened or closed depending upon conditions of temperature and pressure. Between the two halves of the Tower, large plantings in "sky gardens" are arranged to symbolize the ecological and environmental friendliness of the building project. The interior facade was also realized with room-high glazing.
Among the owner's needs is the combination of various requirements regarding energy conservation, flexible use and workplace comfort. In order to manage this and implement a flexible organization of the offices, it was necessary to employ decentralized building engineering. This enables many room variations without changes to cabling and installation and without losing comfort.

The air conditioning of the building is implemented using decentralized FSL under floor units (air supply type) (see photo on left). Using these devices, outside air in the façade gap is sucked in, conditioned and directed to the interior. Air arrives through doors and corridors into the secondary rooms on the inside. The office exhaust air is passed on for heating into the sky gardens and centrally exhausted from there. Apart from air conditioning, the underfloor units also take over the temperature regulation function in the offices. The basic load of heating and cooling is guaranteed by the concrete core activation used, while the variable portion is furnished by the underfloor panel devices.

Cooling is done in both cases with groundwater. The workspaces in the outer offices are individually supplied with fresh air in this way, since the underfloor units are separately adjustable for each office for air conditioning, heating and cooling. In the building phase, only every second axis was equipped with active underfloor unit equipment. The remaining axes are equipped with a dummy panel, so that it would be simple to install equipment at a later date.

The decentralized underfloor units bring a crucial cost advantage to the owner. The floor height could be reduced by using custom-developed devices, since equipment closets, air ducts and suspended ceilings were all unnecessary. This means that with same building height more full floors can be used. User acceptance was encouraged due to the individual room regulation. Each user can adjust the temperature and the fresh air intake individually using room controls. Windows can also be opened at any time.

This innovative air conditioning solution is the best combination of human well-being, economic aspects and high user comfort.