PV panels on the building roof

Centrally/decentrally controlled operable parallel opening windows in order to allow fresh air to come into the building.

Natural Ventilation

The large surface area of the floor detracts warmth out of the room air.

Concrete Core Activation

Insulation layers applied on the outer part of "Sealed" Module

"Sealed" Module

Louvres integrated within the cavity of the climate facade: fixed angle of 25 degrees in order to block the summer sunlight.

Sun shading devices

Ventilated cavity of the climate facade

During summer, the lower and upper operable parallel opening windows are open in order to extract the heat from the cavity of the climate facade, which helps in reducing the overall heating of the upper volume.

Upper volume as a shading medium for the lower volume.

Passive stack ventilation

Operable Skylight

The upper volume is positioned in such a way that it prevents the unwanted overheating of the lower volume.

Building climate facade: fixed angle of 25 degrees in order to block the summer sunlight.

Shaded courtyard and air movement due to temperature difference.
Concrete Core Activation

An axial flow fan (with impeller) is installed in the core of the building for cooling of the interior. The fan must be designed to ensure the proper distribution of air throughout the building. A special design of the fan allows for the cooling of the interior of the building in a balanced manner.

Hollow slab floor system with integrated hydronic pipes for cooling of the concrete. The large surface area of the floor detracts warmth out of the room air.

PV panels on the building roof

Total covered area: 7630 square meters
Solar energy potential: 1423 kWh/year
Building production: 1.51 million kWh/year
Annual production: 1.51 million kWh/year
PV panels energy needs coverage: 30% annually

A coverage of 60% with sufficient distance between panels and appropriate mounting depth will secure both acoustic performance and thermal efficiency. Some general statements are summarized in the table below.

Acoustic panels

Performance and thermal efficiency. Some general statements are summarized in the table below.

Louvers for sun shading

Sun study performed in order to specify the right angle/distance/length of the horizontal louvers.

Coverage of ceiling with acoustic panels (60% coverage)

Climate design: Winter Situation
Upper volume-Office
Facade sun shading - Scale 1:20

Climate design: Summer Situation
Perpendicular Section through double height lobbies - Scale 1:100

Natural Ventilation

Equinox - 49 degrees
Double glazed facade closed

Acoustic panels
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