

ERGO Tower

**Construction of an Office Tower
For Victoria Versicherung
Am Victoria-Turm 2
68183 Mannheim, Germany**

Data

Construction period: 2001
Floor Area (Brutto): 25,800 m²

Client

Victoria-Versicherungen, Mannheim

Design

Albert Speer & Partner
Frankfurt am Main
www.as-p.de

Planning Capacity

Technical-ecological concept

Victoria-Versicherungen planned the realization of a resource saving skyscraper with office zones ventilated exclusively by wind-ows. Through thermodynamic simulation coupled with airflow modelling, it was proved that the office spaces could be kept within the thermal comfort zone solely through the use of night cooling over the double facade which had been optimized in regard to sound absorption, sun protection, ventilation and daylight use. The double facade, which had been especially developed for this project, delivers better sound absorption while allowing considerably better thermal comfort than conventional double facades.

Planning ip5

- Modelling for the thermodynamic simulation of a complete floor with the exact depiction of airflow relationships between zones (in cooperation with Stahl Buero fuer Sonnenenergie, Freiburg)
- Quantitative analysis of wind data on the basis of building airflow for the calculation of effective pressure on doors and windows
- Consultants for the planning of the facade in regard to thermal, lighting and sound absorbing qualities
- Creation of experiment plans and observation of laboratory experiments for the determination of ventilation and sound absorptive characteristics of the double facade
- Creation of process diagrams for the monitoring and control of the night cooling system

- Monitoring of temperatures to determine the thermal relationships in the fully glazed stairways
- Thermodynamic simulations coupled with airflow modelling in order to optimize thermal conditions and air pressure in the fully glazed stairways
- Calculation of ventilation openings for the fire escape stairs
- Consultants for Sun protection and shading

Energy Concept

- Natural ventilation and free night cooling of the office zones over a specially developed double facade
- At the wish of the client, an additional comprehensive concrete core tempering system was planned, supplied by a compressive cooling unit
- The building is heated by a gas thermal furnace and window sill radiators

