

KfW Ostarkade

**Revitalization of the Kreditanstalt
für Wiederaufbau KfW
Palmengartenstraße 5-9
60325 Frankfurt am Main**

Data

Construction period: 2001-2002
Floor Area (Brutto): 16,600 m²

Client

Kreditanstalt für Wiederaufbau KfW
Frankfurt am Main
www.kfw.de

Design

RKW Rhode Kellermann Wawrowsky
Architektur + Städtebau
Frankfurt am Main
www.rkw-as.de

Planning Capacity

Technical-ecological concept,
technical controlling

Publications

www.solarbau.de
AIT Architektur Innenarchitektur
Technischer Ausbau, 12/2003, pg. 138
LPI Leuchten Pro-In, 5/02
SolarBau:MONITOR 2003,
Portrait Nr. 15

The new office building for the KfW provides high standards of comfort with a very low use of primary energy for the mechanical systems. On the upper floors are apartments which consist of approximately 20% of the building's total floor area. For this building an innovative system for ventilation and night cooling was realized consisting of a central ventilation court combined with hydraulically optimized regulation of the individual rooms. With this system a large percentage of the office spaces can be kept within the thermal comfort range without the use of active cooling. A „ceiling sail“, developed especially for this project, combines the functions of artificial lighting, movement detection, cooling (optional), daylight reflection and acoustics. A wood pellet furnace provides almost CO₂-free heating of the building. The water use concept with vacuum technology and grey water recycling is pathbreaking. The achievement of the energy consumption objectives is being monitored over two years as part of the BMWI's program „Optimized Solar Building“.

■ Planning ip5

- Development of the energy and water concepts
- Thermodynamic simulations and calculations using the simulation software TRNSYS 15
- Daylighting simulations using the simulation software RADIANCE
- Technical and economical control for the duration of the planning and building of the project
- Consultant for artificial and natural lighting

- Planning of the natural ventilation
- Development and control of a goal catalogue for the use of primary energy for mechanical systems
- Consultant for the design of the facade regarding ventilation, sun and glare protection, insulation and daylight use
- Development of a monitoring concept for the validation of the projected energy use
- Economic feasibility calculations
- Control of measures for energy optimization after the building was put into use

Energy and Water Concept

- Free night cooling over a central atrium
- Optimization of the facade in regard to natural light use, ventilation and thermal performance
- Minimized internal loads through daylighting and presence sensing artificial lighting
- Monitoring and regulating algorithms optimized in regard to user comfort and energy use
- Fresh water cooling through heat transfer to drinking water
- Wood pellet heating
- Vacuum toilets and grey water use

