

AT_Großwilfersdorf_Oststeiermarkhaus

Image 01:
 Exterior view south-east
 ©Harald Eisenberger

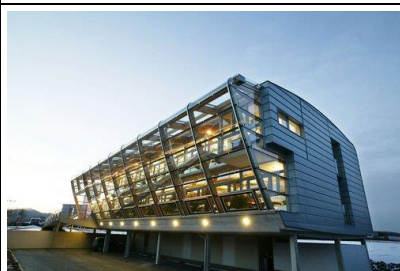
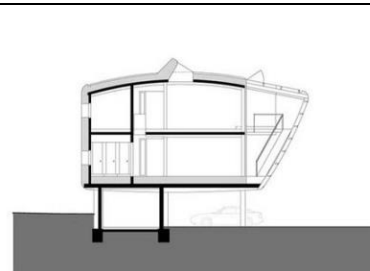


Image 02:
 Exterior view south
 ©Harald Eisenberger



Image 03:
 Section
 ©Erwin Kaltenegger



SCHNITT M 1:200

Building Specifications

Address	Radersdorf 62, 8263 Großwilfersdorf, Austria
Building Category	Office
Year of Construction	2005
Special Qualities	Passive house
Location	47° northern latitude, 15° eastern longitude
Climate	Cfb (warm temperate, fully humid, warm summer) (monthly mean temperature below 19 °C, at least five months with a monthly mean temperature above 10 °C)

Vent. Cooling Site Design Elements (Solar Site Design and Wind Exposure Design, Evaporative Effects from Plants or Water)

The design process was led by finding the ideal form and orientation to reduce solar gains and to increase daylight comfort. As the surroundings are rural, no explicit measures for Ventilative Cooling were taken.

Vent. Cooling Architectural Design Elements (Form, Morphology, Envelope, Construction&Material)

Form & Morphology: The form and the morphology of the building follow the idea of a very energy efficient building.. The location of the offices is towards south to the winter garden – which acts as a buffer for the building. Fixed photovoltaic-elements on top of the winter garden provide transparent shading and prevent the summer sun to heat up the winter garden. The meeting and service rooms are oriented towards the north.

Envelope: The winter garden is the main element for Ventilative Cooling. The envelope meets passive house standards to reduce solar gains and heat losses in winter.

Vent. Cooling Technical Components (Airflow Guiding Components, Airflow Enhancing Components, Passive Cooling Components)

Airflow Guiding Components: At the bottom and on the roof of the winter garden windows open automatically for night cooling. In the winter garden, also plants ameliorate the indoor micro climate. Windows open for night cooling in the offices. Special designed doors enable the circulation in the whole building.

Actuators, Sensors and Control Strategies

Sensors and Control Strategies: A BUS-system controls all functions in the whole building. The natural ventilation in the winter garden and the offices is controlled by this BUS-system by temperature and time and can be changed if necessary.

IEA EBC Annex 62 Ventilative Cooling

Building Energy Systems (Heating, Ventilation, Cooling, Electricity)
Heating & Cooling: biomass district heating; Precooling and preheating of air by air-soil-heat exchanger Ventilation: mechanical ventilation with 90% heat recovery. Electricity: 130 m ² PV elements
Building Ownership and Building Facility Management Structures
Building Owner: Haas Fertigbau, Holzbauwerk GmbH & CO KG Facility Management: Haas Fertigbau Holzbauwerke GmbH & Co KG Architect: Erwin Kaltenegger, Building Technology: Wagner GmbH
Acknowledgements
n/a
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