




AT_Krems_Niederösterreich (Lower Austria) -Haus		
Image 01: Exterior view ©FM Plus, Photographer Michael Rzepa	Image 02: Linear actuator ©FM Plus, Photographer Peter Wagner	Image 03: Interior view of openings in atrium ©FM Plus, Photographer Peter Wagner
		
Building Specifications		
Address	Drinkweldergasse 15, 3500 Krems	
Building Category	Office	
Year of Construction	2011	
Special Qualities	Passive house	
Location	48° northern latitude, 16° eastern longitude, 203 m above sea level, located near the center of a city with a population of approximately 24.000 people, 100 m away from the Danube river.	
Climate	Cfb –with warm-hot summers and cold winters, highest measured temperature between 1971-2000 was 36.8 °C in June and the lowest -22.8 °C in January. The average annual temperature is 9.4 °C, warmest month is July with an average of 19.5 °C and the coldest January with -0.6 °C. low annual precipitation with approximately 500 l / m ²	
Vent. Cooling Site Design Elements (Solar Site Design and Wind Exposure Design, Evaporative Effects from Plants or Water)		
The Niederösterreich-House Krems is located in the middle of the Old Town therefore the orientation and structure was predetermined. In terms of Ventilative Cooling, no special site design was undertaken.		
Vent. Cooling Architectural Design Elements (Form, Morphology, Envelope, Construction&Material)		
<p>Form: Due to the site, the form was more or less predetermined. The building is a passivehouse with reduced windows (25% of glas in the envelope). An automatically outer shading system – controlled by solar radiation and daylight – reduces solar gains.</p> <p>Envelope: The roof features an extensive green which improves the microclimate.</p> <p>Construction & Material: Consisting mainly of ferroconcrete the building carries a lot of thermal mass.</p>		

IEA EBC Annex 62 Ventilative Cooling

Vent. Cooling Technical Components (Airflow Guiding Components, Airflow Enhancing Components, Passive Cooling Components) –
Airflow Guiding Components: Depending on the outside temperature, the windows in the hallways as well as the windows for the smoke and heat venting system open automatically – controlled by the central building control system. Airflow Enhancing Components: Ventilative Cooling uses natural night ventilation as well as a mechanical ventilation system, which is pre-cooled and pre-heated (during winter) by a ground collector.
Actuators, Sensors and Control Strategies
Sensors and Control Strategies: The building is equipped with a comprehensive building control system.
Building Energy Systems (Heating, Ventilation, Cooling, Electricity)
Heating: district heating Ventilation: centralised ventilation system. The ventilation system is pre-cooled by a ground collector. Additionally the exhaust air is cooled by adiabatic sprinkling before the heat recovery unit.
Building Ownership and Building Facility Management Structures
Building Owner: NÖ Landesimmobiliengesellschaft mbH (LIG) Facility Manager: FM-Eco Facility- und Immobilienmanagement GmbH Architect: AllesWirdGut Architektur ZT GmbH
Aknowledgements
ÖGNB (nachhaltiges Bauen), klima:aktiv (Gebäudequalitätszeichen), GreenBuilding (Award 2012), NÖ Baupreis 2012, Staatspreis Architektur und Nachhaltigkeit 2012 BauXund (avoidance of pollutants)
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