




AT_Krems_Bundesrealgymnasium Kremszeile	
Image 01: Exterior view of entrance ©trafo Kirchmayr & Nöbauer GesbR	Image 02: Exterior view of court yard ©trafo Kirchmayr & Nöbauer GesbR
	
Image 03: General view ©trafo Kirchmayr & Nöbauer GesbR	
	
Building Specifications	
Address	Rechte Kremszeile 54, 3500 Krems an der Donau, Austria
Building Category	Educational
Year of Construction	2015
Special Qualities	n/a
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 (warm temperate, fully humid, warm summer), monthly mean temperature below 20 °C, at least seven 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)	
n/a	
Vent. Cooling Architectural Design Elements (Form, Morphology, Envelope, Construction&Material)	
<p>Form: The center of the building features a covered courtyard, called <i>Klimagarten</i> (<i>climate garden</i>). It is used as an unheated buffer zone for the associated rooms.</p> <p>Morphology: The rooms are connected with each other and the ventilation openings by noise-reduced overflow openings. Most rooms have access to inner courtyards via windows.</p>	
Vent. Cooling Technical Components (Airflow Guiding Components, Airflow Enhancing Components, Passive Cooling Components)	
<p>Airflow Guiding Components: Two types of windows enable natural ventilation, upright side hung windows may be operated manually, flaps in the upper part of the glazed façade as well as in the roof of the inner courtyard are operated automatically. The classrooms are equipped with noise-reduced overflow openings to allow cross ventilation.</p> <p>Airflow Enhancing Components: Utilization of the courtyard as an atrium; The ventilation openings and the overflow openings allow cross ventilation.</p>	
Actuators, Sensors and Control Strategies	
<p>Sensors: CO₂-, In- and exterior temperature sensors.</p> <p>Control Strategies: The flaps are controlled by the buildings DDC (Direct Digital Control) depending on the CO₂-concentration and temperature in the classrooms as well as the exterior temperature.</p>	

IEA EBC Annex 62 Ventilative Cooling

Building Energy Systems (Heating, Ventilation, Cooling, Electricity)
Heating: The energy of the groundwater is used via heat pumps and distributed utilizing panel heating. Cooling: Partial cooling is possible by free cooling utilizing the groundwater and the panel heating system.
Building Ownership and Building Facility Management Structures
The building is owned and run by <i>BIG – Bundesimmobiliengesellschaft</i> . Architect: trafo Kirchmayr & Nöbauer GesbR; Building physics: Bauklimatik GmbH
Aknowledgements
Modern and new pedagogic concepts are considered in the architecture and planning of the building.
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