
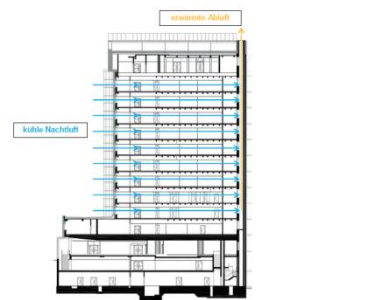



<b>AT_Wien_Plus-Energie-Bürogebäude am Getreidemarkt der TU Wien</b>			
<p><b>Image 01:</b>                      Exterior view of eastern facade                      ©Architekten Kratochwil-Waldbauer-Zeinitzer</p>	<p><b>Image 02:</b>                      Section plan showing night ventilation                      ©Architekten Kratochwil-Waldbauer-Zeinitzer</p>	<p><b>Image 03:</b>                      Plan of groundfloor                      ©Architekten Kratochwil-Waldbauer-Zeinitzer</p>	
			
<b>Building Specifications</b>			
Address	Getreidemarkt 9, 1060 Vienna, Austria		
Building Category	Office		
Year of Construction	2014		
Special Qualities	Renovation - Active House, Plus Energy		
Location	48° northern latitude, 16° eastern longitude 315 m above sea level		
Climate	CfB - The city has warm summers with average high temperatures of 24 to 33°C with maximum exceeding 38°C and lows of around 15°C. Winters are relatively dry and cold with average temperatures at about freezing point. Spring and autumn are mild.		
<b>Vent. Cooling Site Design Elements</b> (Solar Site Design and Wind Exposure Design, Evaporative Effects from Plants or Water)			
Due to the fact, that the building was an existing building in the middle of Vienna, there were no possibilities to improve the surroundings. The building is east-west orientated.			
<b>Vent. Cooling Architectural Design Elements</b> (Form, Morphology, Envelope, Construction&Material)			
Envelope: To realise the plus energy standard several architectural elements were realized, which enable Ventilative Cooling, controlled outer shading, passive house building envelope Construcion & Materials: Massive ceilings in office rooms act as thermal buffer			
<b>Vent. Cooling Technical Components</b> (Airflow Guiding Components, Airflow Enhancing Components, Passive Cooling Components)			
Airflow Guiding Components: one big window (1,53 m <sup>2</sup> ) on each floor which opens automatically during nights and enable airflow though the building core towards two exhaust shafts, glas walls between corridors and offices allow temperature exchange Passive Cooling Components: Concrete core cooling in the floor supports the cooling. Central ventilation system for the offices enables office users to keep windows closed during hot days.			
<b>Actuators, Sensors and Control Strategies</b>			
Sensors and Control Strategies: The outer shading is integrated into the building control system. Three temperature sensors to average the temperature on each floor to control the opening of the window for Ventilative Cooling.			

## IEA EBC Annex 62 Ventilative Cooling

<b>Building Energy Systems</b> (Heating, Ventilation, Cooling, Electricity)
Heating: waste heat utilization of servers, district heating Cooling: high efficient cooling unit (Quantum) with highly efficient pumps Ventilation: seven ventilation systems (two offices with heat and humidity recovery, five with heat recovery) Electricity: 328,4 kWp Photovoltaic on roof and facade, use of very efficient appliances and lighting
<b>Building Ownership and Building Facility Management Structures</b>
Building Owner: The building belongs to the federal building owner BIG Building User/Facility Management: The user of the building is the Technical University of Vienna, who paid the additional costs of the renovation towards the plus energy building and is in charge of the facility management Architect: Architekten Kratochwil-Waldbauer-Zeinitzer
<b>Aknowledgements</b>
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