

<b>AT_Innsbruck_Faculty of Technical Sciences</b>	
<b>Image 01:</b> Exterior view ©Jantscher	<b>Image 02:</b> Exterior view ©Jantscher
	
<b>Image 03:</b> Special designed air overflow between rooms and core ©PHI, Malzer	
	
<b>Building Specifications</b>	
Address	Technikerstraße 13, 6020 Innsbruck, Austria
Building Category	Office
Year of Construction	2014
Special Qualities	Renovation - NZEB
Location	47° northern latitude, 11° eastern longitude, 574 m above sea level
Climate	Dfc – moderate climate with alpine character
<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 there were no possibilities to change the building orientation. The University Campus around the building was still under construction, but so far, no elements to support Ventilative Cooling existed.	
<b>Vent. Cooling Architectural Design Elements</b> (Form, Morphology, Envelope, Construction&Material)	
Form: Before the renovation big balconies encircled the whole building. They were taken down to reduce thermal bridges which resulted in loss of shading. This was the reason for the development of special windows. Envelope: The main Ventilative Cooling element is the special invented window. The three-pane window with an additional plate to protect the outer shading opens automatically during night. Within the renovation a passive house envelope was realised.	
<b>Vent. Cooling Technical Components</b> (Airflow Guiding Components, Airflow Enhancing Components, Passive Cooling Components)	
Airflow Guiding Components: The building automation controls the openings of the window during night. During this time, the exhaust ventilation transports the warm air out of the building. Above the inner doors a special designed glass element enables the airflow from the window to the building core. This glass element also lets in daylight to the building core while limiting noise infiltration.	
<b>Actuators, Sensors and Control Strategies</b>	
Sensors and Control Strategies: A well designed building automation operates night time ventilation. Several different sensors – like temperature, CO2, humidity, rain, solar, presence and wind – are implemented and control the timed night ventilation.	

## IEA EBC Annex 62 Ventilative Cooling

<b>Building Energy Systems</b> (Heating, Ventilation, Cooling, Electricity)
Heating: The building is connected to district heating Ventilation: The ventilation of the façade faced rooms is mainly achieved by windows. The existing ventilation system of the building core was extended to the office rooms via overflow windows. (See figure above) Cooling: Pre-Cooling of air by active cooling unit on the roof
<b>Building Ownership and Building Facility Management Structures</b>
Building Owner: Federal building owner BIG Facility Manager: The user is the Technical University of Innsbruck, who is in charge of the facility management Architecture and building technology: ATP; Building physics: PHI Innsbruck
<b>Aknowledgements</b>
Project of Haus der Zukunft Plus; Second best renovation project of the sustainability certificate TQB/ÖGNB
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