AT_Wien_Student house Molkereistraße

Image 01: Exterior view Molkereistraße ©e7, Margot Grim	**Image 02:** Exterior view of Facade ©Baumschlager Eberle	**Image 03:** Lightwell ©e7, Gerhard Hofer
		

Building Specifications

Address	Molkereistraße 1, 1020 Vienna, Austria
Building Category	Residential
Year of Construction	2005
Special Qualities	Passive house
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.

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

Due to limited space no extra elements for Ventilative Cooling were installed at the site. However, in front of the building big trees shade the building.

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

Form: Compact building form due to limited space and passive house concept.

Morphology: The inside of the house is especially designed for natural night ventilation. On both ends of the stair case two light wells function as chimneys for the night ventilation. These light wells bring day light into the hallways and reduce the need of artificial lighting.

Envelope: Well insulated walls and outer shadings made of metal

Construction: Massive construction without suspended ceilings

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

Passive Cooling Components: Decentralised ventilation systems with pre cooled air during summer time through an absorber register in the fundament. During night time increase of air change by two to three times to cool down the hallways

Actuators, Sensors and Control Strategies

Sensors and Control Strategies: The hygienic ventilation is controlled by a CO2 sensor. For the extended night-ventilation, it is controlled by a DDC control system with temperature difference between inside and outside.

Building Energy Systems (Heating, Ventilation, Cooling, Electricity)

Heating: Heating is mainly achieved from the ventilation system (waste heat, internal and solar gains). However, as the users are mainly international students, who stay just one or two semesters, it is possible to turn on an additional heating (supply by district heating).
Ventilation: decentralised ventilation system (always for two flats) with highly performing heat exchanger (seven ventilation systems merged for one heat exchanger).
Cooling: No extra cooling system except night cooling and extended ventilation
Electricity: Energy efficient lighting system with daylight regulation

Building Ownership and Building Facility Management Structures

Owner: OEAD Wohnraumverwaltungs GmbH
Architect: Baumschlager Eberle, Housing Technology: teamgmi

Aknowledgements

n/a

Datasheet Source:
Institute of Building Research & Innovation