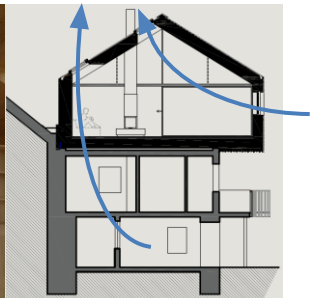
AT_Willendorf_Venus garden house

Image 01: Exterior View: north elevation ©Jörg Seiler	**Image 02:** Interior View: attic floor ©Jörg Seiler	**Image 03:** Section plan ©Volker Dienst/Christoph Feldbacher
		

Building Specifications

Address	Willendorf 35, 3641 Willendorf in der Wachau, Austria
Building Category	Residential
Year of Construction	2013
Special Qualities	AH
Location	48° northern latitude, 15° eastern longitude, 220 m above sea level, wide river valley, in the center of a small village
Climate	Cfb (Maritime temperate climate, fully humid, warm summer), strong influence of the Danube river

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

Extension in accordance to the existing building, longitudinal alignment parallel to the riverbank in main wind direction.

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

Form: Three storeyed building, elongated in direction north to south

Morphology: The internal spatial arrangement enhances the internal airflow from the ground floor to the attic by connecting the ground floor main corridor with the rooftop windows via a staircase. The attic is designed as an one room flat, thus the air can move free

Envelope: wide open window surfaces to the north to avoid overheating, selective and sparing fenestration to the east and the south, no windows in the western façade. Roof windows located near the roof top to enforce the stack effect

Construction & Material: Massive wood construction in the attic and natural stone and brick masonry in the base

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

The ventilation of the house is adjusted to the seasons:

During the heating period the controlled decentralized ventilation with heat recovery ventilates the building.

During the other time of the year automatic window ventilation, which can be manually overruled, is being carried out. The windows are opened and closed automatically using chain actuators.

Actuators, Sensors and Control Strategies

Sensors measure the CO2 concentration of the room air and operate the windows accordingly. During summer, the ventilation system is equipped with Bypass flaps to not overheat the building with the heat recovery (rotary regenerative heat exchanger) in general post-heating coils, pocket filter, ventilation louvers are used.

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

Heating: Wood boiler for heating and warm water preparation, in case combined with an existing oil boiler that will be removed at the end of its life cycle.
Ventilation: Controlled decentralized ventilation system with heat recovery.

Building Ownership and Building Facility Management Structures

Building Ownership: private
Architect: Volker Dienst/Christoph Feldbacher

Acknowledgements

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Datasheet Source:
Institute of Building Research & Innovation