

AT_Graz_Karmeliterhof

Image 01:

Exterior view

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Image 02:

Detail Façade view

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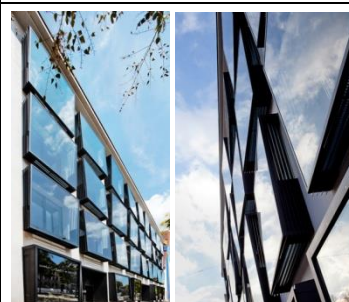
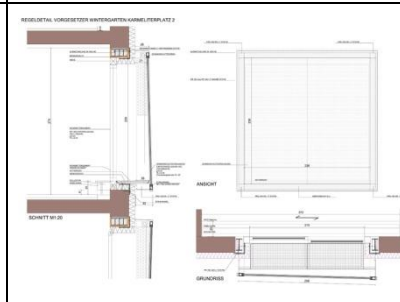


Image 03:

Detail Façade view

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Building Specifications

Address	Karmeliterplatz 2, 8010 Graz, Austria
Building Category	Office/Others
Year of Construction	2011
Special Qualities	n/a
Location	47° northern latitude, 15° eastern longitude, situated in the heart of Graz's old town, on the northern part of the Karmeliterplatz (Karmeliter Square) and at the foot of the Schlossberg (castle hill). Embedded between the City Park and the old town's center.
Climate	Dfb (Temperate climate snow, fully humid, warm summer (monthly mean temperature always under 22 °C, at least four month 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)

Evaporative Effects: A large water basin (144m²) and leaf tree planting in front of the building ameliorate the micro climate; The City park of Graz is located to the East of the building. Plants were added to the courtyard area, which had previously been used as a parking lot.

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

Form: The double-skin façade functions as a winter garden and is furnished with plants to ameliorate the internal climate.
Envelope: The facade is a climate façade, a double-skin façade with a fixed glass front made of solar control glass and a circumferential frame that features ventilation openings at the bottom and on the sides. The facade has a heat-collecting function in the energy management of the building. It improves energy consumption by allowing solar heat penetration during the day and reducing heat loss at night.
Construction & Material: Reinforced concrete construction provides thermal mass.

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

Airflow Guiding Components: Ventilation openings are situated at the bottom and on the sides of the windows of the exterior façade. Weather proof night ventilation through sliding doors, which can be opened manually, and mechanical night ventilation of the rooms.
Airflow Enhancing Components: Making use of the stack effect over 5 storeys via the courtyard.

IEA EBC Annex 62 Ventilative Cooling

Actuators, Sensors and Control Strategies
Control strategies are manually regarding window opening and automated in terms of mechanical extract ventilation.
Building Energy Systems (Heating, Ventilation, Cooling, Electricity)
Ventilation: mechanical ventilation system without heat recovery Cooling is only achieved by Ventilative Cooling.
Building Ownership and Building Facility Management Structures
Owned by LIG, Landesimmobilien Gesellschaft Graz, rented by the Government of Styria Architect: LOVE architecture and urbanism ZT GmbH
Acknowledgements
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