


coolregion

WP 3 - D19 (Gertec, Germany) - Best practice example No. 2

General data

Name of building	Passive office building Lamparter
Building type	Office
Country	Germany
Adress	Bahnhofstraße 4, 73235 Weilheim a.d. Teck
Google Earth coordinates	48°37 North, 9°32 East
Building owner/user	Ing.- und Vermessungsbüro Lamparter GbR

Building information

Picture of the building	
Highlights	<ul style="list-style-type: none"> - Passive house with 30-35 workplaces; (A/V: 0,4m⁻¹) - Reinforced concrete frame construction with massive ceilings and columns; enclosing wall construction: Lightweight element with 24 cm mineral wool insulation and a rear ventilated shuttering; lean-to roof and flat roof: massive concrete-substructure and 35 cm thermal insulation - Triple glazed timber frame-window - Mechanical ventilation with heat recovery + condensing gas boiler (18 kW) - 70 m² PV (8 kW_{Peak}) und 4 m² solar thermal plant - All roofs are vegetated. - Rainwater is collected in a 9 m³ capacious cistern and used for toilets and outdoor facilities.

	<ul style="list-style-type: none"> - Annual heat demand: approx. 12 kWh per m² useable surface - Integral planning process
Year of construction	1999
Total net area (m ²)	1.488 (useable surface: 589 m ²)
Volume (m ³)	5.540
No. of floors	3
Glazed surface level	27%

Cooling concept

Colled area (m ²)	1.000 m ²
Cooling approach	<ul style="list-style-type: none"> - Efficient sunscreen and storing construction materials for ceilings and floors - Free ventilation at night: cool air flows into all offices through skylights, open doors and a automatically controlled flow-off-aperture in the highest point of the attic permits the necessary air draught. The users open the door and skylights on their own. - In exceedingly warm periods the supply air for the offices is cooled down by two 90 m long PE-earth-channels in 2,8 m depth (1.900 m³/h) (decrease of temperature of 8 - 9°C).
Annual electricity consumption (kWh _{el} /m ²)	0
Installed capacity (kW)	No active colling


Building concept

Comfort	Moderate to excellent
Solar protection	Efficient external sun protection with two-tier navigation by BUS-system
Lighting performance:	<p>The room depth and the arrangement of the windows are designed that artificial light during daylight-hours is made unnecessary (skylights at the ceilings and 40 cm lightsaber). Corridors in the centre of the building get indirect daylight through the skylights in the partition wall to the offices. Two suspended lights in every room with a high ration of diffused light illuminate the workstations. A sensor (BUS) in one of the lights controls the illumination.</p>
Office equipment:	n.s.
Regulation:	Central BUS-system

Figures

Figures from http://www.solarbau.de/monitor/doku/index_0.htm Portrait No. 9

Bauwerkskosten Brutto, Stand Kostenberechnung

Bezug	Baukonstruktion DIN 276: KG 300	Technische Anlagen DIN 276: KG 400	Bauwerkskosten KG 300+KG 400
 BruttoRauminhalt DIN 277	450 DM/m ³	75 DM/m ³	525 DM/m ³
 NettoGrundfläche DIN 277	1.675 DM/m ²	280 DM/m ²	1.955 DM/m ²

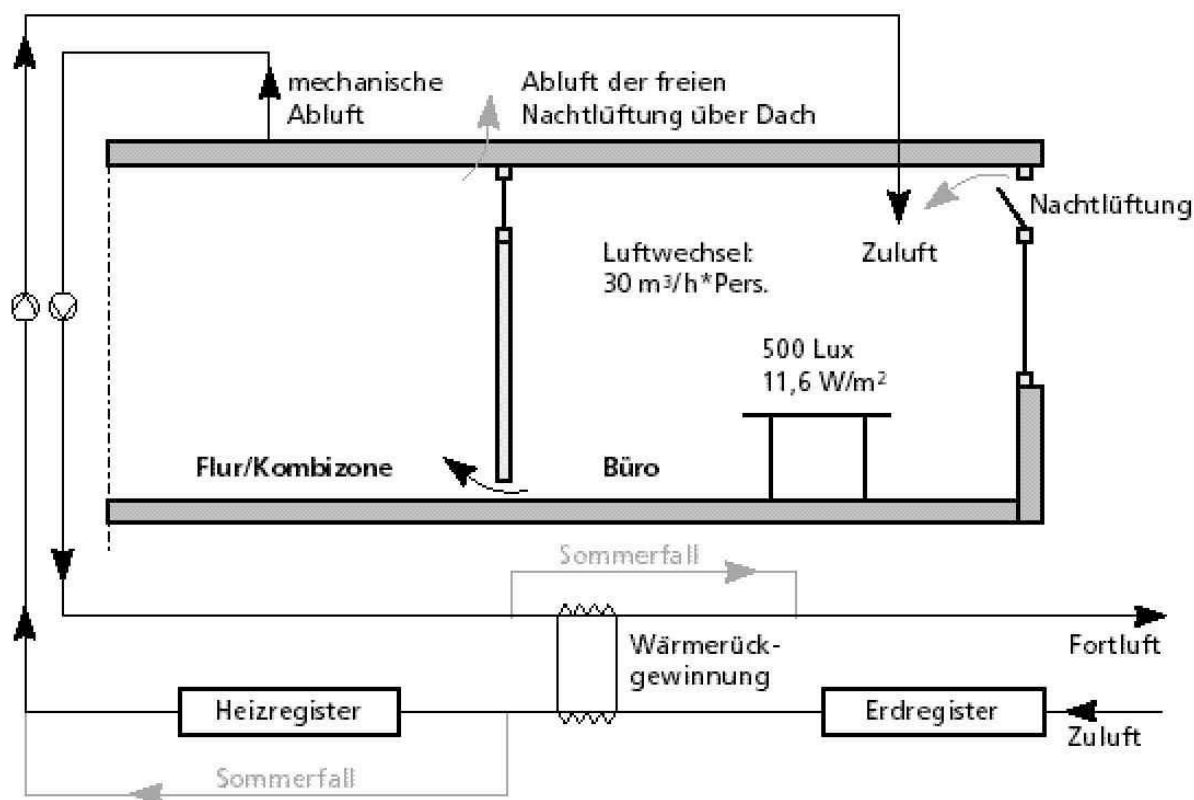


Figure 1: Air-conditioning concept

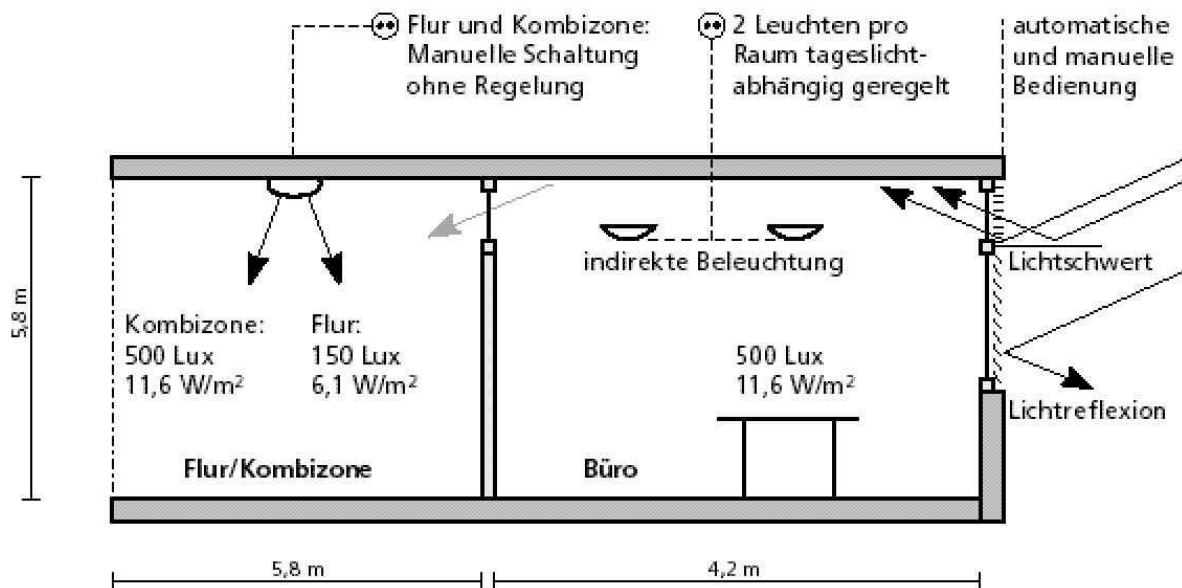


Figure 2: Lighting concept

Contact

User & Project manager

Ingenieur- und Vermessungsbüro

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