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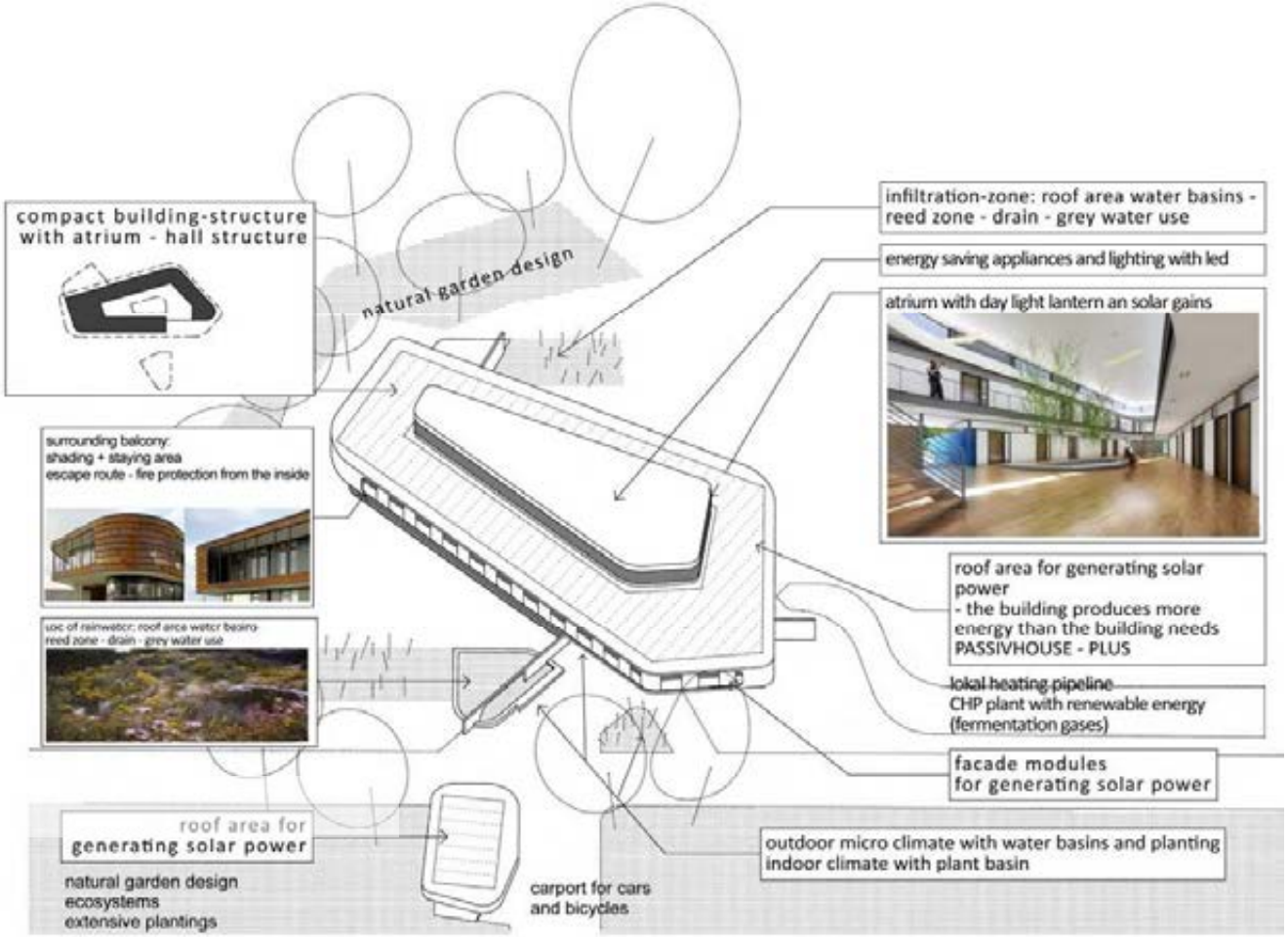
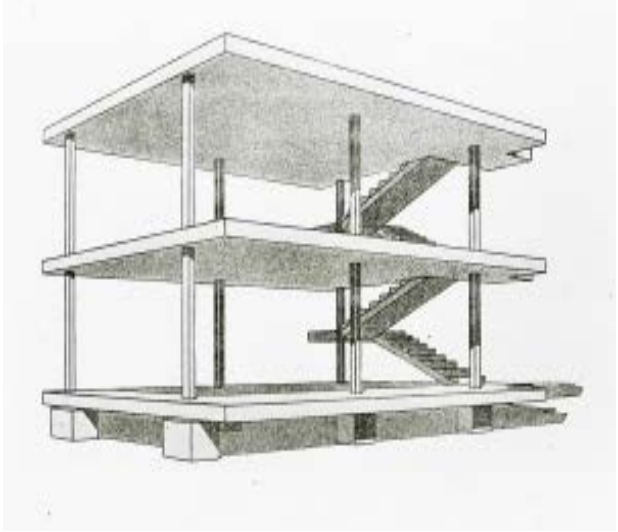
Active and Passive - a gently runded pentagonal building
Office building of the Wastewater treatment Company in Eitting

architect: ArchitekturWerkstatt Vallentin GmbH – Munich

Characteristics

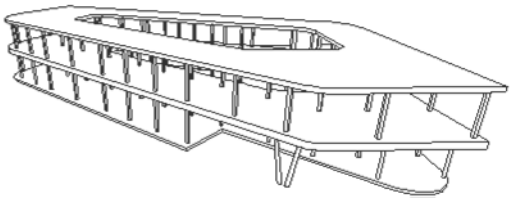




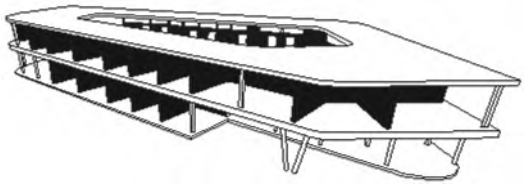
Corbusier – Maison Domino 1914-15

Construction principle

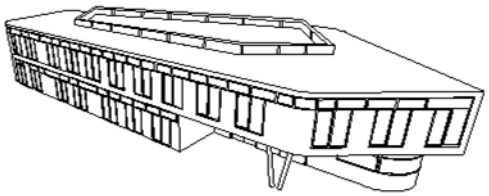
construction

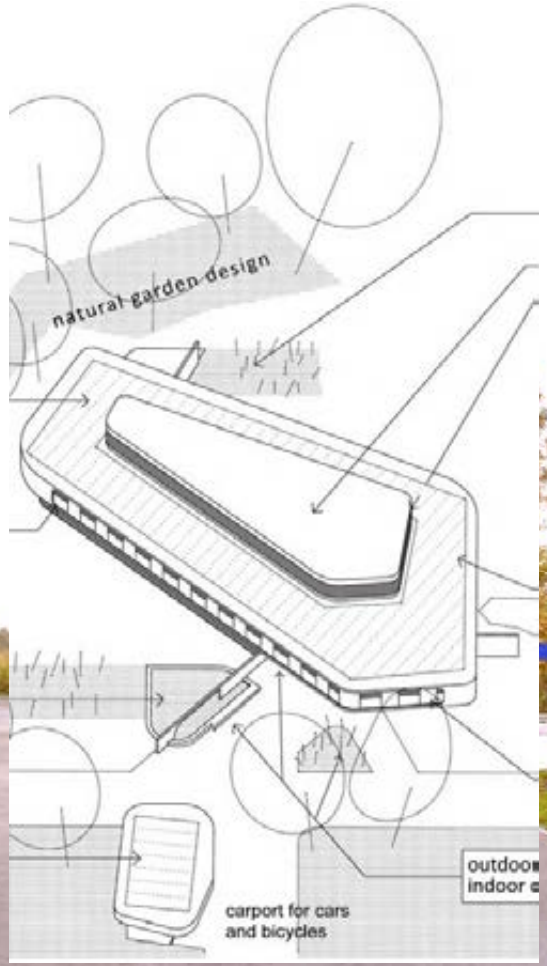


Flexible interior development



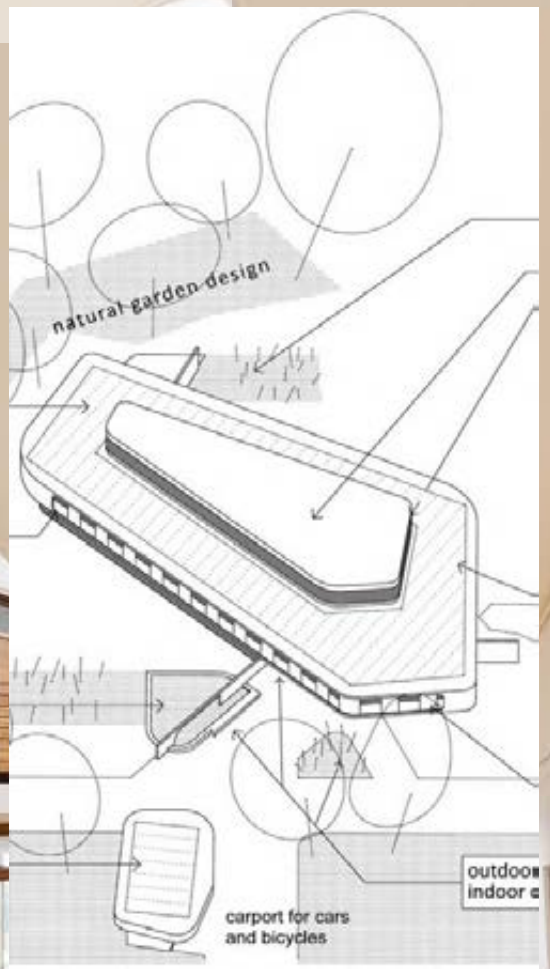
Outer shell



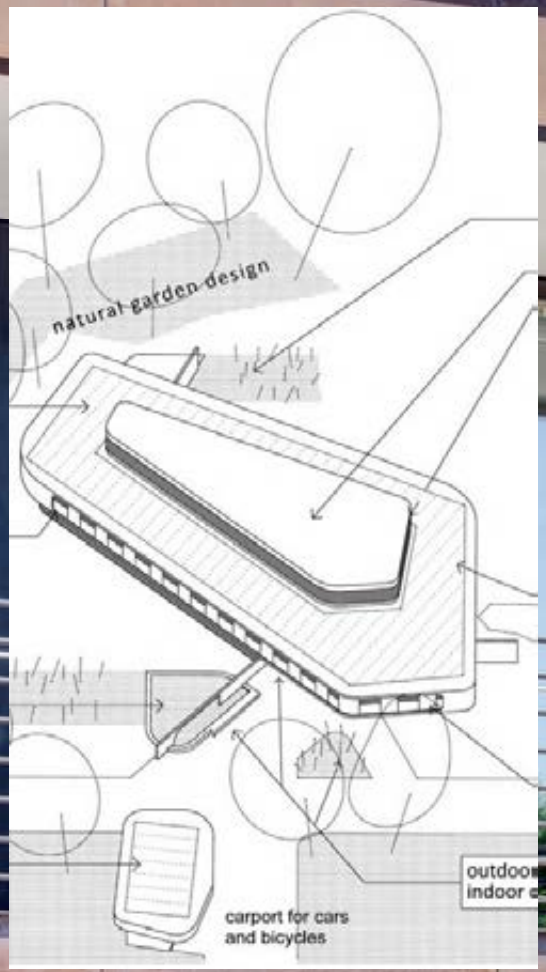


The balcony as the characteristic desingned fassade

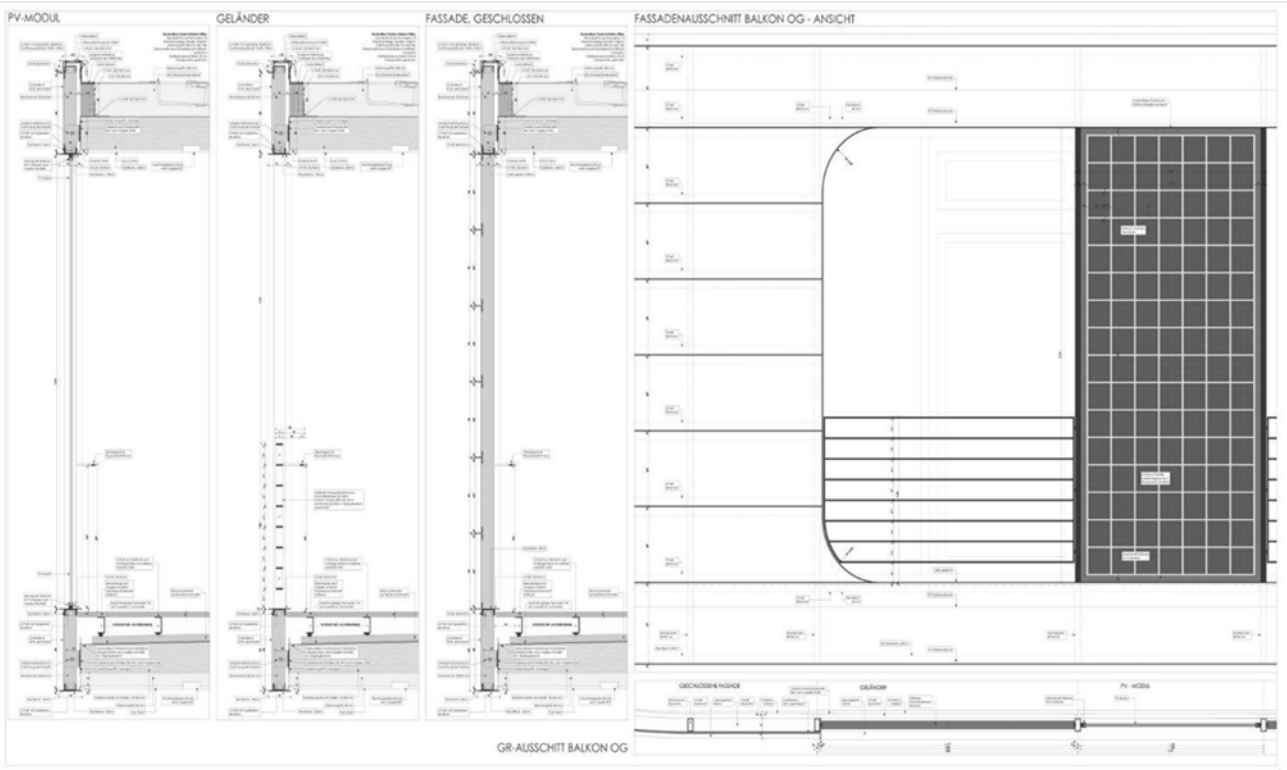
Atrium:
A large scaled aeraway lets the daylight into the middle of the building



Plants helps to improve the inner climate



Material of patina - corten steel in combination with photovoltaikpannels



Integration of the photovoltaikpannels into the fassade


The Plus standard is reached by the PV Modules
on the top of the roof

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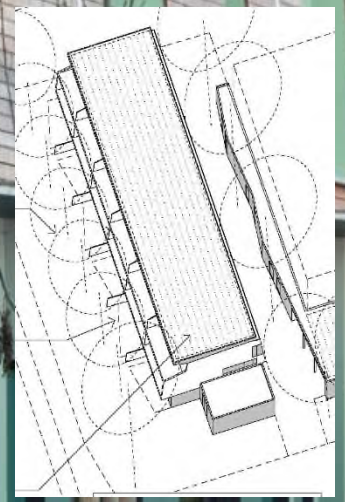
ARCHITECTURE NATURE

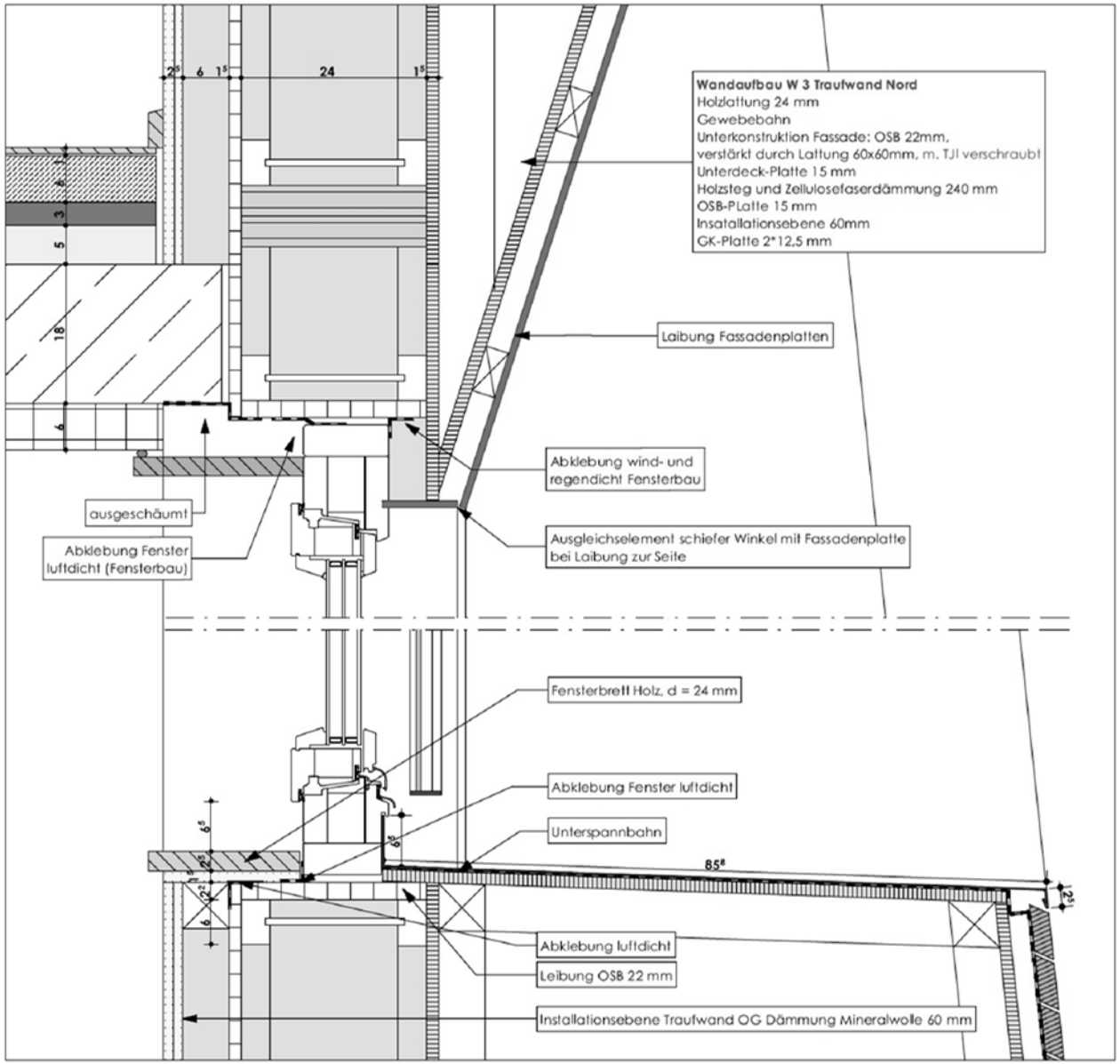
Sustainable Architecture as „Brigde into Plus Energie“

architect:
ArchitekturWerkstatt Vallentin GmbH – Munich




LoHaS-konzept - regenwasser nutzung


LoHaS-konzept - passivhaus plusenergiekonzept


Wandaufbau W 3 Traufwand Nord
Holzlattung 24 mm
Gewebebahn
Unterkonstruktion Fassade: OSB 22mm,
verstärkt durch Lattung 60x60mm, m. TJI verschraubt
Unterdeck-Platte 15 mm
Holzsteg und Zellulosefaserdämmung 240 mm
OSB-Platte 15 mm
Insatallationsebene 60mm
GK-Platte 2*12,5 mm
Laibung Fassadenplatten
Abklebung wind- und regendicht Fensterbau
ausgeschäumt
Abklebung Fenster luftdicht (Fensterbau)
Ausgleichselement schiefer Winkel mit Fassadenplatte bei Laibung zur Seite
Fensterbrett Holz, d = 24 mm
Abklebung Fenster luftdicht
Unterspannbahn
Abklebung luftdicht
Leibung OSB 22 mm
Installationsebene Traufwand OG Dämmung Mineralwolle 60 mm

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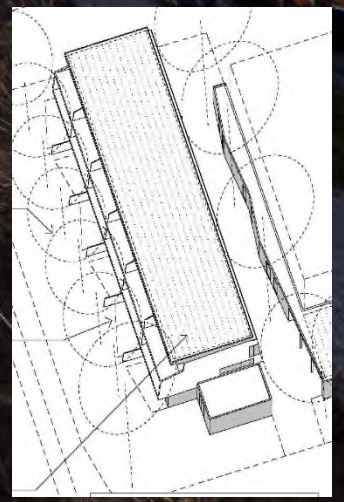

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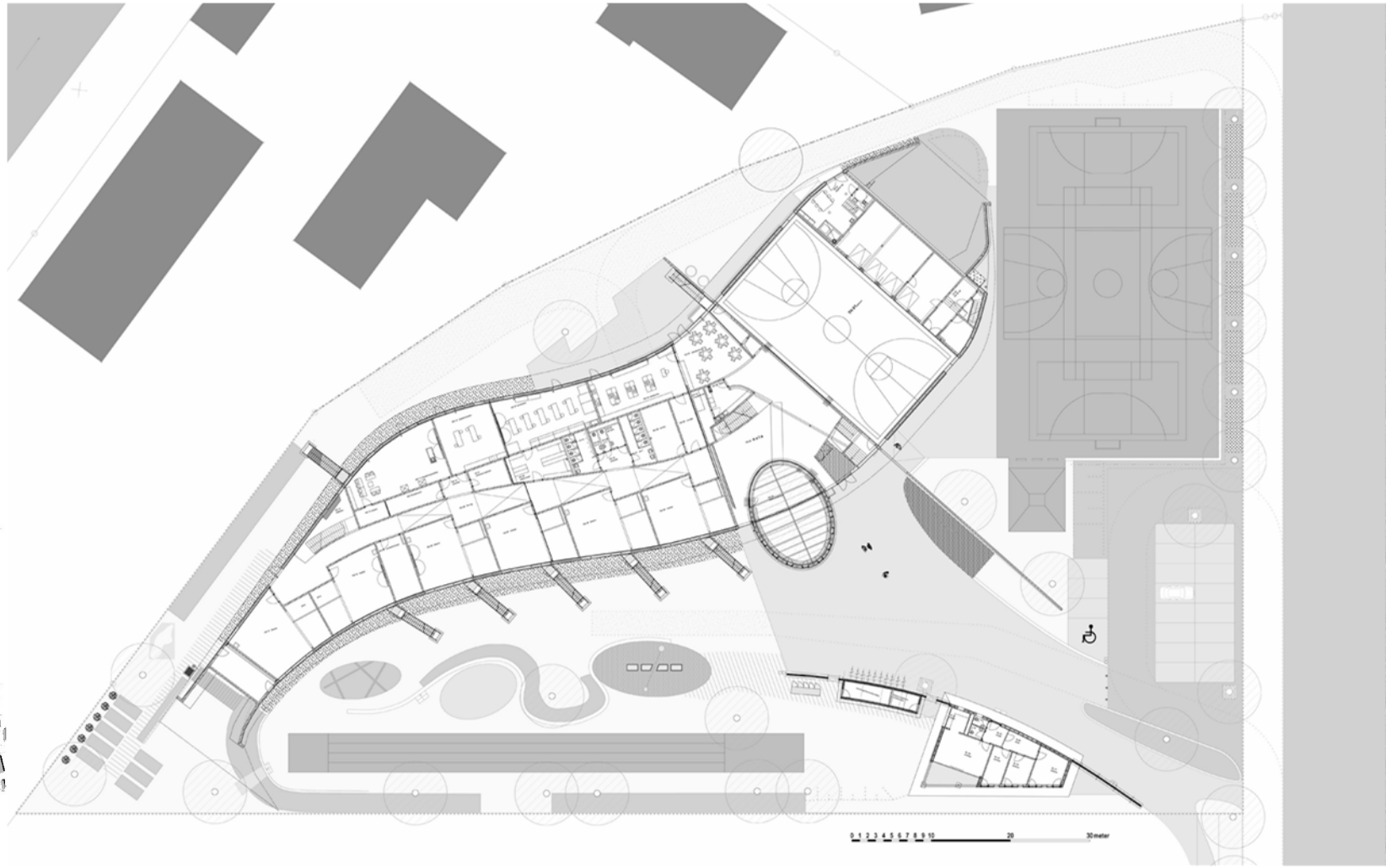
LOW BUDGET - PASSIVHOUSE STANDARD
The first certified passive house school word wide
Montessori school in Aufkirchen

architect: ArchitekturWerkstatt Vallentin GmbH – Munich

Economic building (construction) in passive house standard

Montessorischule in Aufkirchen

useful area	3.649 m²
gross cubature	18.486 m³
thermal heat demand	13 kWh/m²a
primary energy requirement	89 kWh/m²a
air-tightness test	0,09 –h
building expenses	5.702.000 €
Parameter Building expenses/floor area	1.563 €m²
(identification mark BK 2009	5.745.000 €)
Total expenses	8.401.000 €
costs FAG	8.200.000 €
Building time	2003-2004



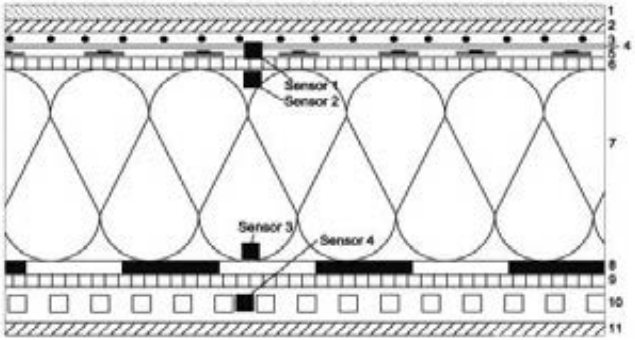
Energetical design of the ground floor:
Compactness + Zoning

Inner Street with a Inner Façade
Light from above

no outlook - concentration to the inside

Roof construction

Parts (elements) of the building – roof
In case of the roof elements the construction strength and the use of wooden supporting beams higher costs should be expected. Comparisons with other structures however reveal that no additional costs are to be expected. In our case, by the absence of secondary structure of the roof, a low cost construction was caused (possible) The construction of high static strength was needed! Investigations in a change to the next construction strength showed even a slight reduction in the costs per square meter because of the optimized static construction (instead of 356 mm now 406 mm) which was more favorable than the necessary increase of the insulation (increasing of the roof panels from 406 to 456 led to cost reduction of about 10 Euro per square meter). The installation of a leak detection system leads on the one hand to a very safe roof construction (as it will be continuously reviewed to external and internal leaks), on the other hand, the roof could be build as a wooden construction at a lower price.



1. Begrünung
2. Schutzmatte
3. EPDM-Abdichtung
4. smartex Vlies
5. smartex Module
6. OSB Platten
7. Holzstegträger mit Dämmung/Zellulose
8. Feuchteadaptive Dampfbremse
9. OSB Platten
10. Lufttattung (Luftdichte Ebene)
11. Trägerplatte
- Temperatur und Feuchte Module

More is lower priced

The Montessori School is realized as a passive house with no extra cost:

Compact design and an optimized mixed construction leads to a very cost-effective building.

passivhouse school in aufkirchen: additional and reduced costs

KG 300+400	additional costs	reduced costs	total
insulation base plate	9.000,0 €		
insulation fassade	8.900,0 €		
insulation roof		-23.000,0 €	
absence of thermal bridges	0,0 €		
triple-glazing windows	29.400,0 €		
air-tightness	0,0 €		
ventilation	107.000,0 €		
heating system		-130.000,0 €	
blower-door	600,0 €		
total	154.900,0 €	-153.000,0 €	1.900,0 €

a low budget project works with minimal architectural means of design

a low budget project works with minimal architectural means of design

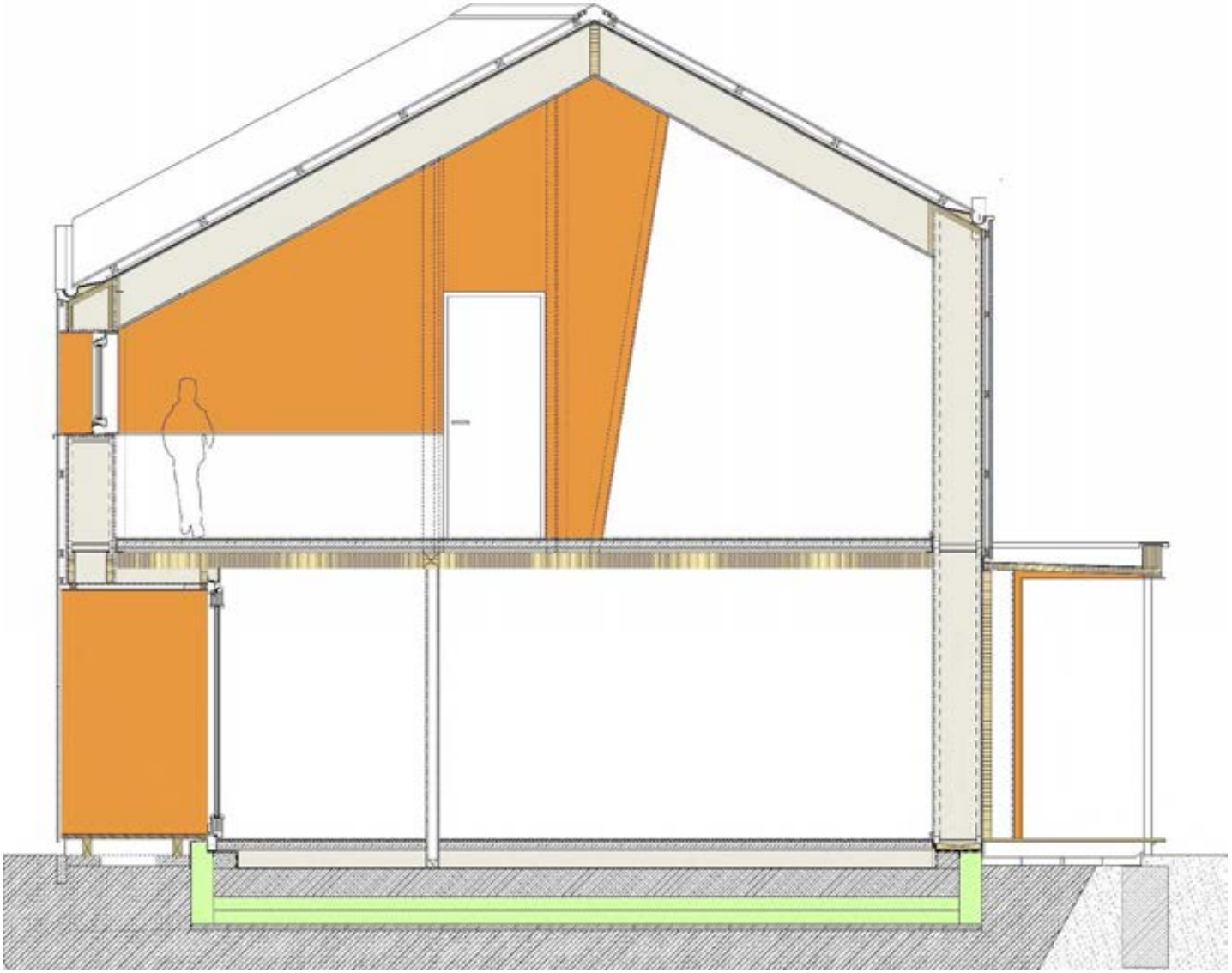
passivhaus dorfen hermann-hatz-weg

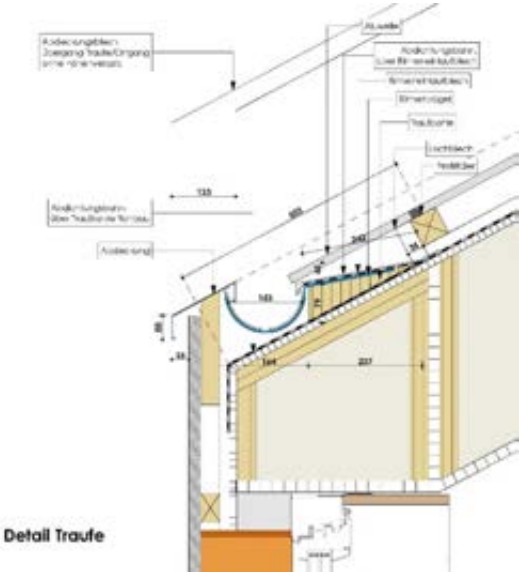
Bauherr: Michael Gühs

KOSTENBERECHNUNG 20.04.2010

ECONOMIC HOUSE BUILDING BY USING PASSIVE HOUSE STANDARD – RESIDENTIAL HOUSE IN DORFEN

Floor area	154 m²
Cubature	626 m³
Heat demand (PHPP)	15 kWh/m²a
Primary energy demand (PHPP)	85 kWh/m²a
Air-tightness-test	0,28 –h
Building expenses	148.000 €
Parameter Building expenses/floor area	961 €/m²
Total expenses	221.000 €
Parameter total expenses/floor area	1.435 €/m²
Building time	2009





Detail Traufe

**simple materials provides
the economic realization of the
passive house standard**


simple materials provides
the economic realization of the
passive house standard

Interior surface design is OSB - oblique ridge creates interesting room atmosphere

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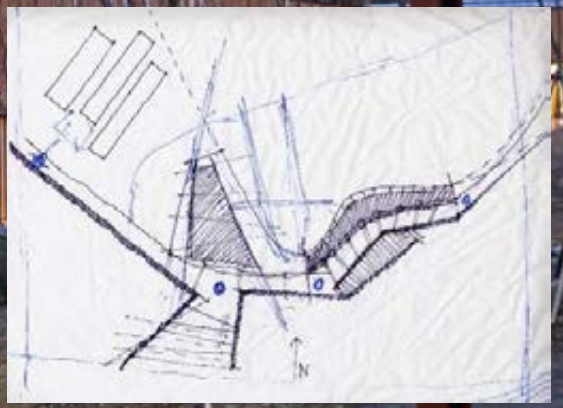
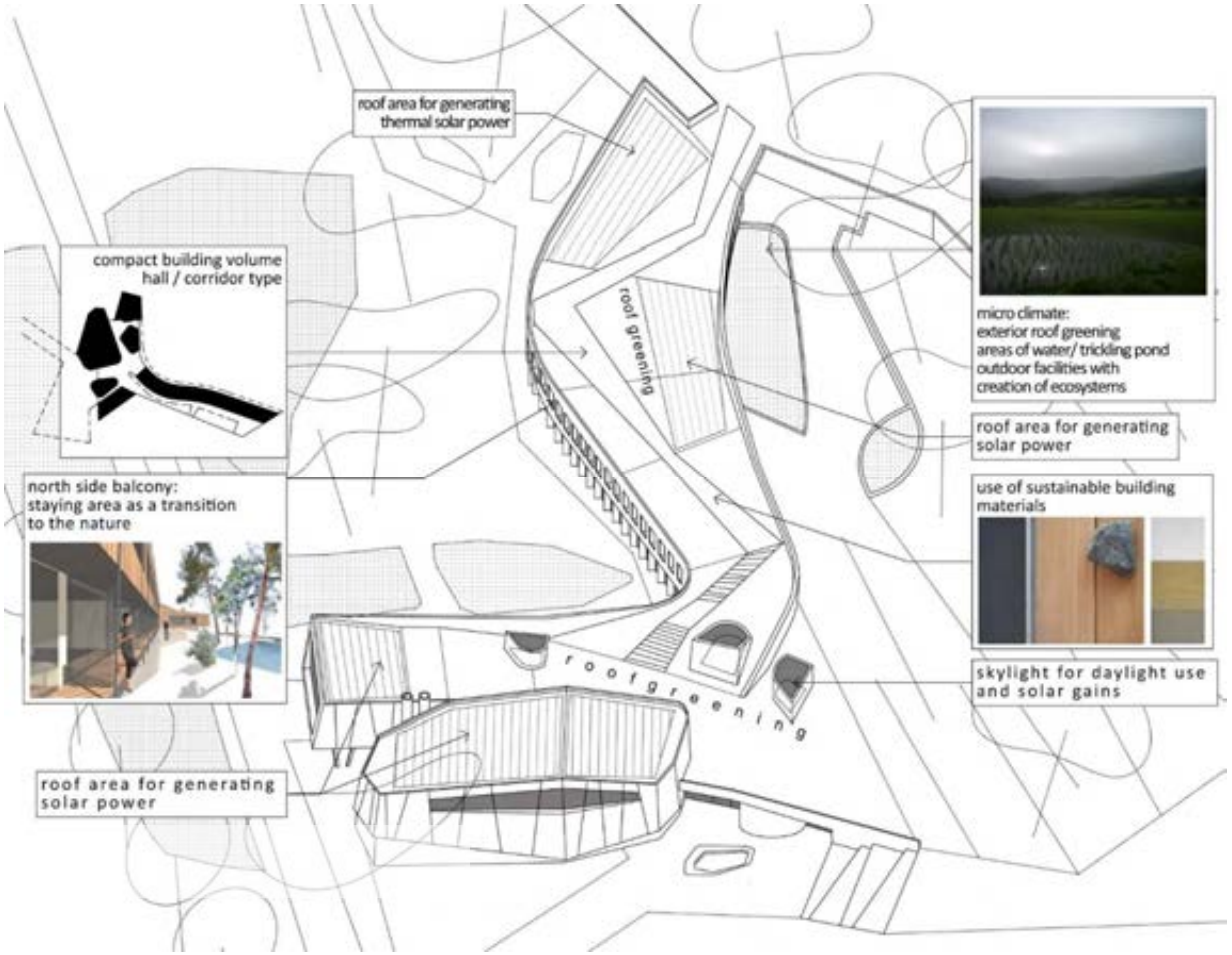
Architecture Nature – a building that is part of the landscape with forms adapted from the topography

Youth Seminar Building for Pulmuone in Goesan/Korea

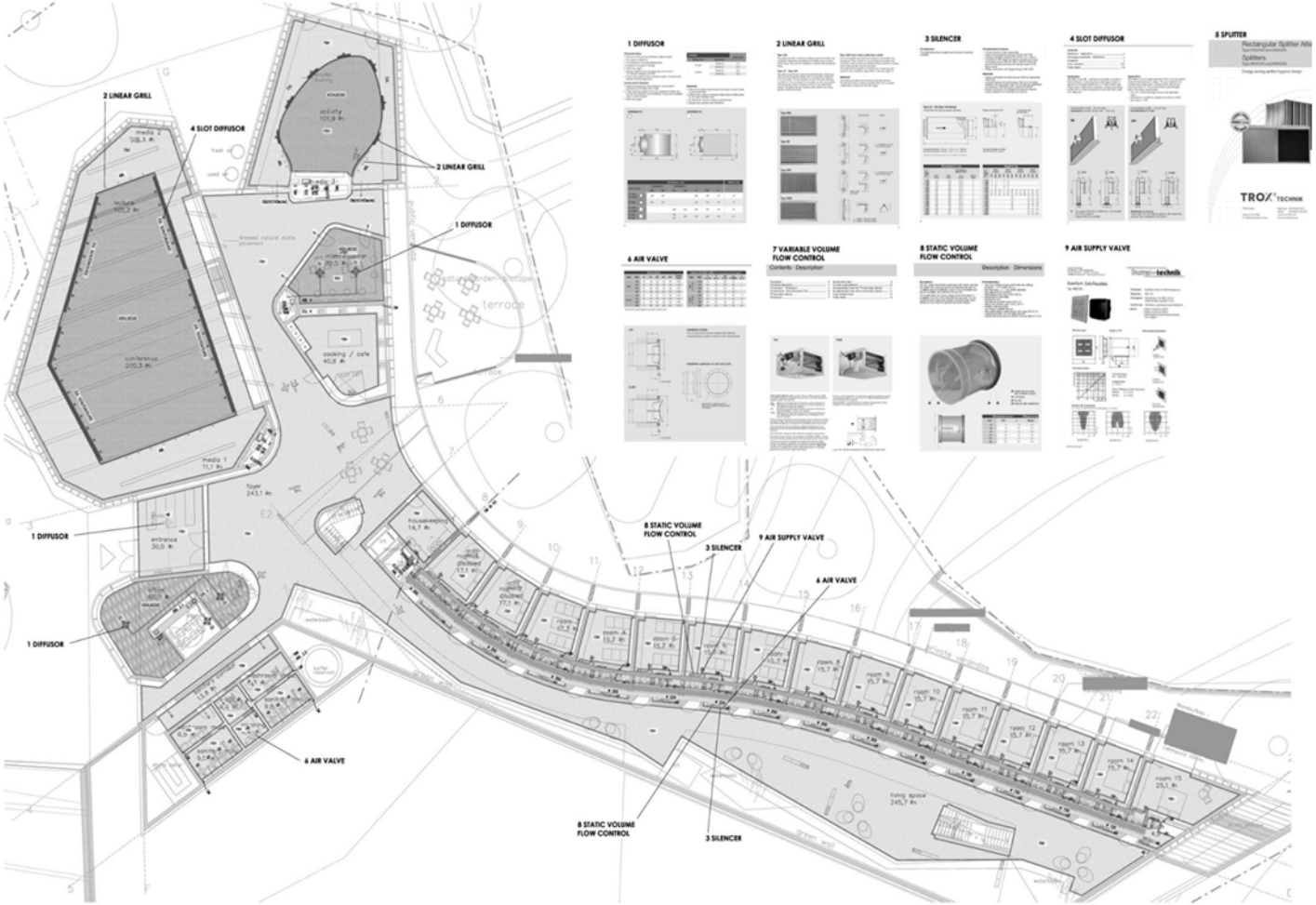
architect: ArchitekturWerkstatt Vallentin GmbH - Munich



Characteristics

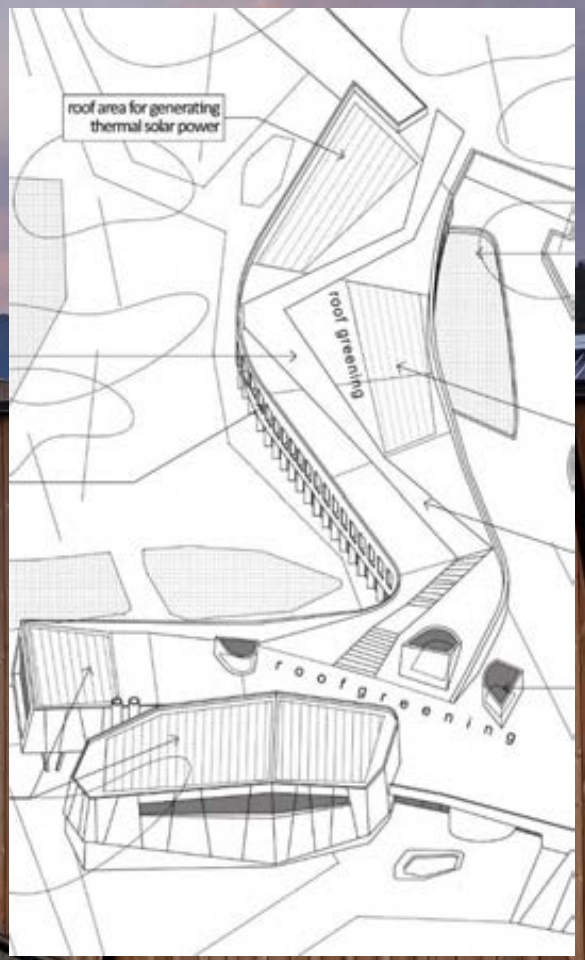


heating - cooling – dehuminification is part of the building concept




Pulmuone


Free and open areas
Light and "green wall"


roof area for generating
thermal solar power
roof greening
roofgreening

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„NEUBAU NACH ENEV 2014 UND PASSIVHAUS IM VERGLEICH"

Kriterien für verschiedene Baustandards mit Ausblick auf das von der EU ab 2021 geforderten Niedrigstenergiehaus

Gernot Vallentin Dipl. Ing. Architekt
Deutscher Werkbund Bayern
Zertifizierter Passivhausplaner