
Transsolar
KlimaEngineering
Einfach, klimagerecht!
Thomas Auer, Transsolar / TU München

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CO_2 TO ZERO
IN OPERATION AND Construction

2



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BIG unveils twisted skyscraper designed "in the tradition of Flatiron"



Quelle: https://www.dezeen.com/2022/11/14/vancouver-house-skyscraper-big-canada/

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BIG unveils twisted skyscraper designed "in the tradition of Flatiron"

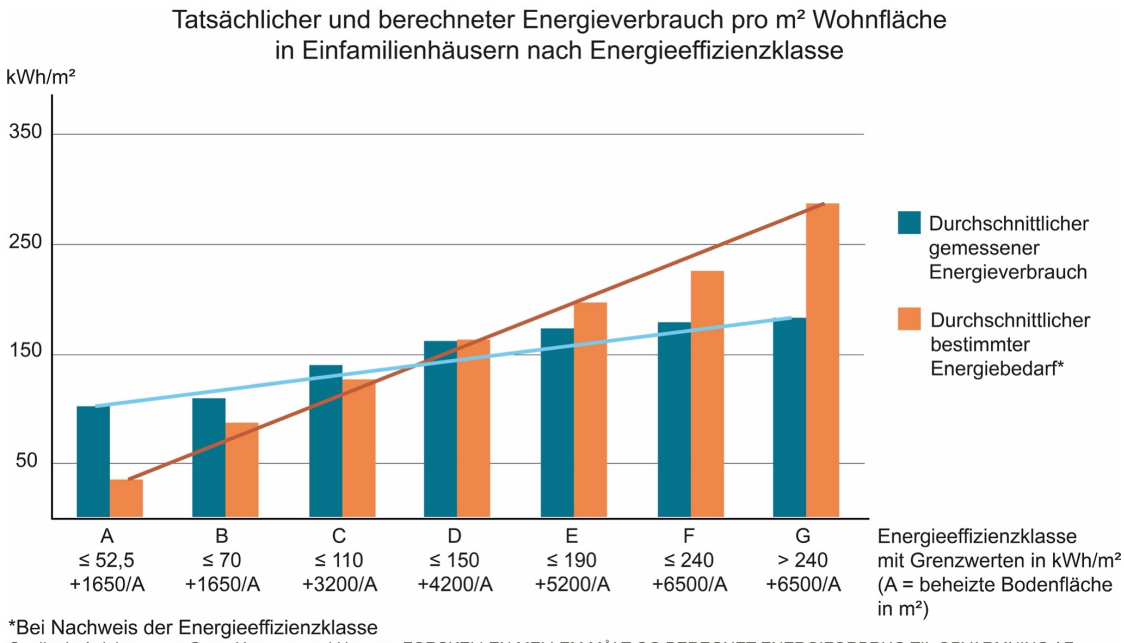


Quelle: https://www.dezeen.com/2022/11/14/vancouver-house-skyscraper-big-canada/

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*Bei Nachweis der Energieeffizienzklasse

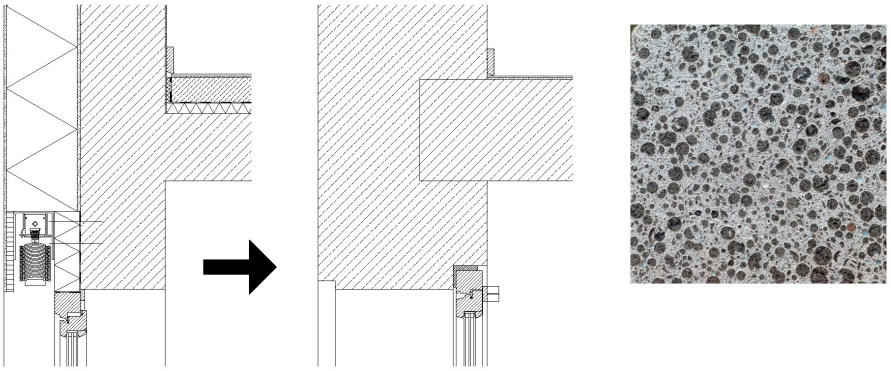
Quelle: In Anlehnung an Gram-Hanssen and Hansen, FORSKELLEN MELLEM MÅLT OG BEREGNET ENERGIFORBRUG TIL OPVARMNING AF PARCELHUSE, 2016

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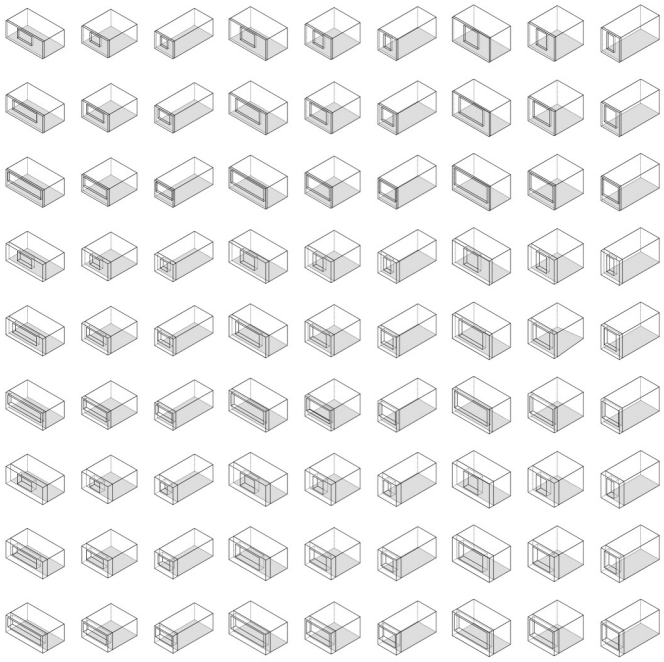


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Building Component: Insulating Concrete



9



81 Geometries

x

4 Orientation

x

3 Building Materials

x

3 Glass Types

=

2.916 Versions

10



11



12



13

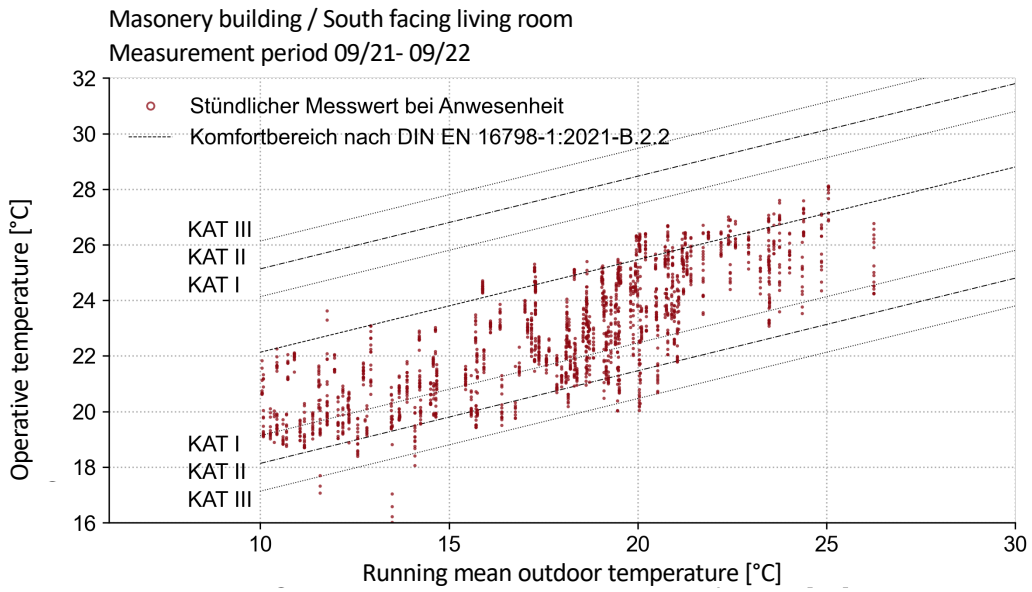


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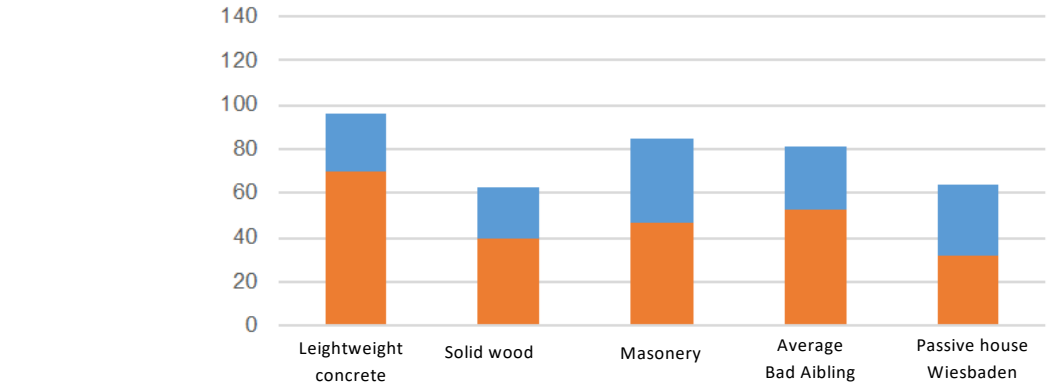
Thermal Comfort



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Energy Consumption (therm.+el.)

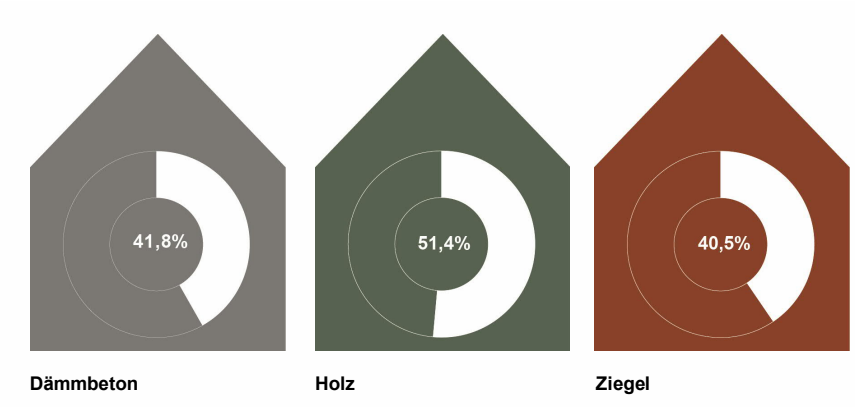


	Leightweight concrete	Solid wood	Masonery	Average Bad Aibling	Passive house Wiesbaden
Stromkennwert Zähler [kWh/a*m2 WF]	26	23	38	29	32
Wärmekennwert Zähler [kWh/a*m2 WF]	70	39	47	52	31

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Luft nach oben…



Anja Rosen: **„Urban Mining Index – Planungs- und Bewertungsinstrument für zirkuläres Bauen“**

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Forschungsgebäude B & O Gruppe, Bad Aibling
Florian Nagler Architekten

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Alnatura Arbeitswelt
Darmstadt, DE 2019
Architekt: Haas Cook Zemmrich Studio 2050

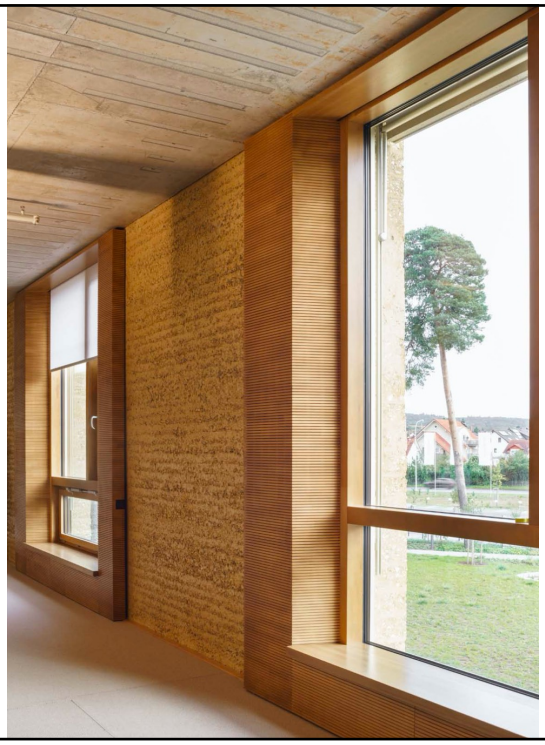
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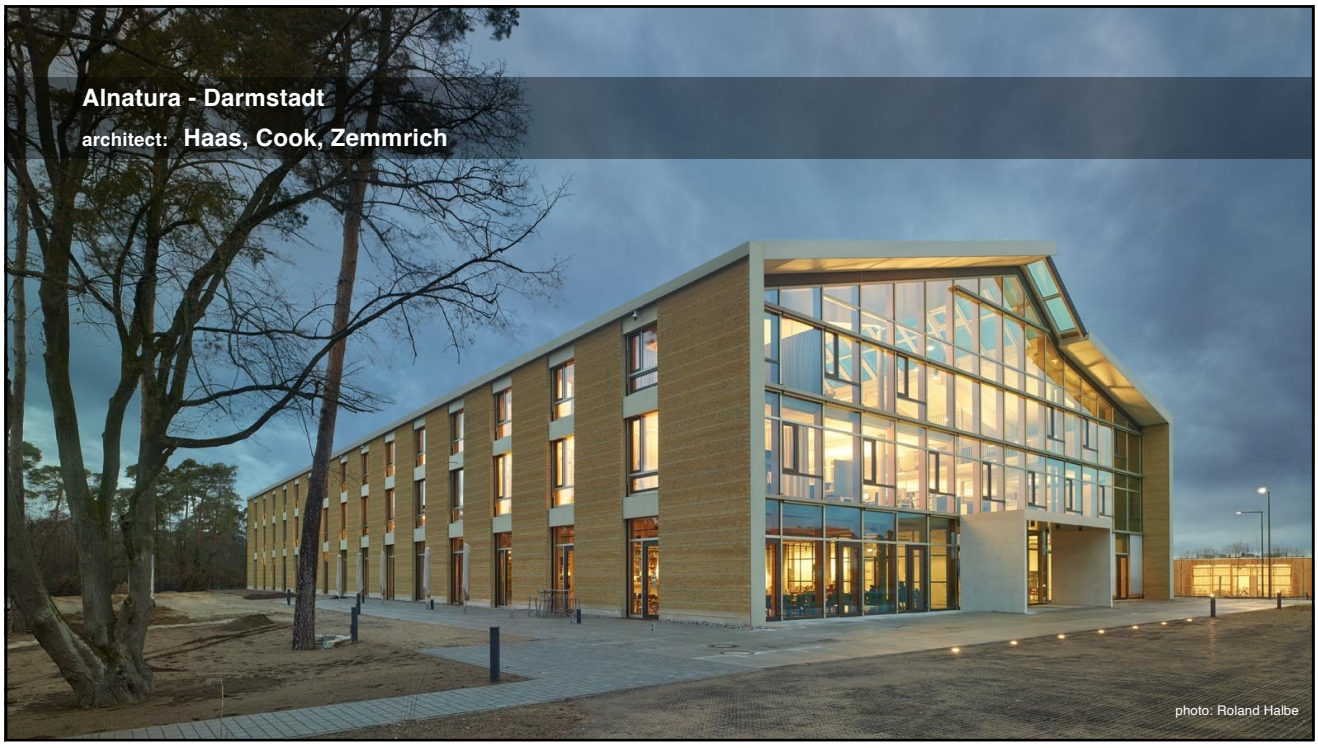


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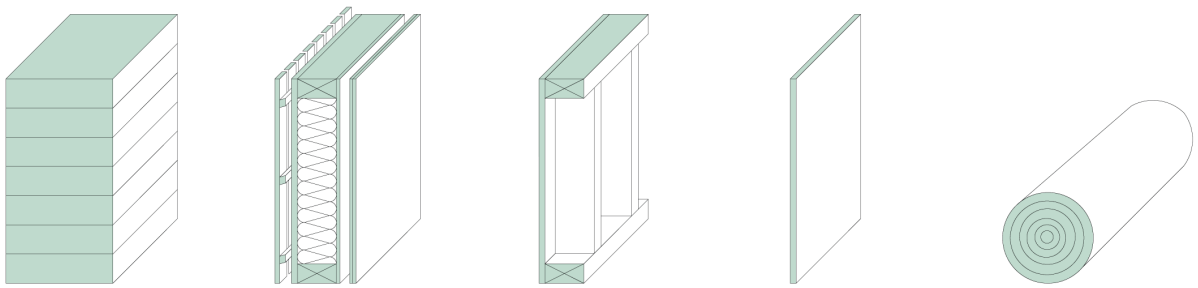




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Alnatura - Darmstadt
architect: Haas, Cook, Zemmrich
photo: Roland Halbe

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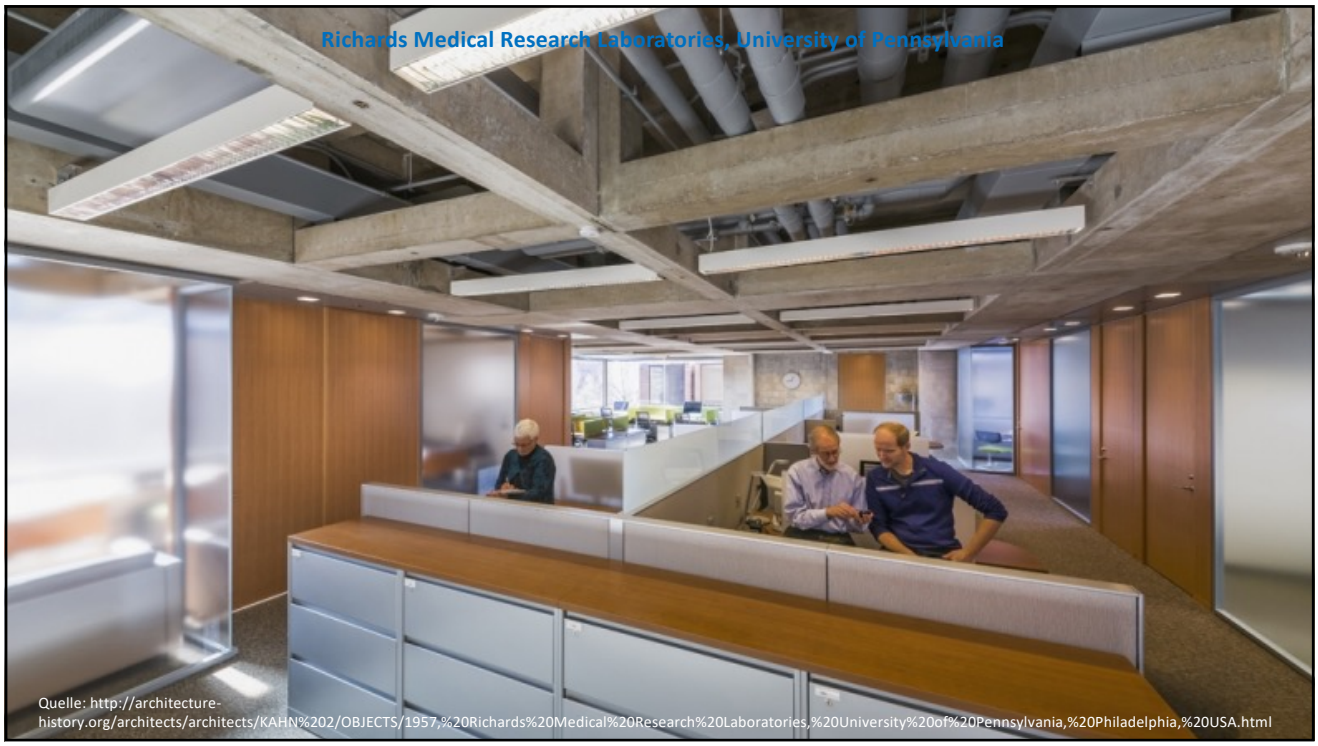
↗Gebäude	↗Bauteil	↗Bauelement	↗Komponente	↗Material
Nutzungsflexibilität und Veränderbarkeit, bedeutet Langlebigkeit der Grundrissstruktur	Zerstörungsfreie Demontierbarkeit des standardisierten Bauteils garantiert Wiederverwendung an anderer Stelle/ in anderen Bauwerken	Demontierbarkeit aus der Bauteilebene erlaubt die Anpassung an Austauschzyklen	Reversible Verbindungen garantieren die Trennbarkeit aus der Bauelementebene sowie die Wieder- und Weiterverwendung der Komponenten	Kreislauffähig im biologischen und/ oder im technischen Kreislauf

Quelle: Birk S, Graf J et al. (2024) Ebenen der Kreislauffähigkeit

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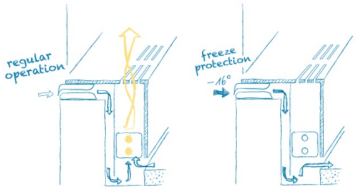
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Bundesgeschäftsstelle Deutscher Alpenverein DAV, München, Deutschland





Simply (with) physics – comfortable, quiet, robust

Bauherr Deutscher Alpenverein **Fertigstellung** 2021
BGF 6.300 m² **Architekt** ELEMENT A, hiendl_schineis
Fotos PK Odessa: Lanz, Scheis (1-4,6-7); DAV/ Bendt (5)

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Hild und K
München Berlin

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Hild und K
München Berlin

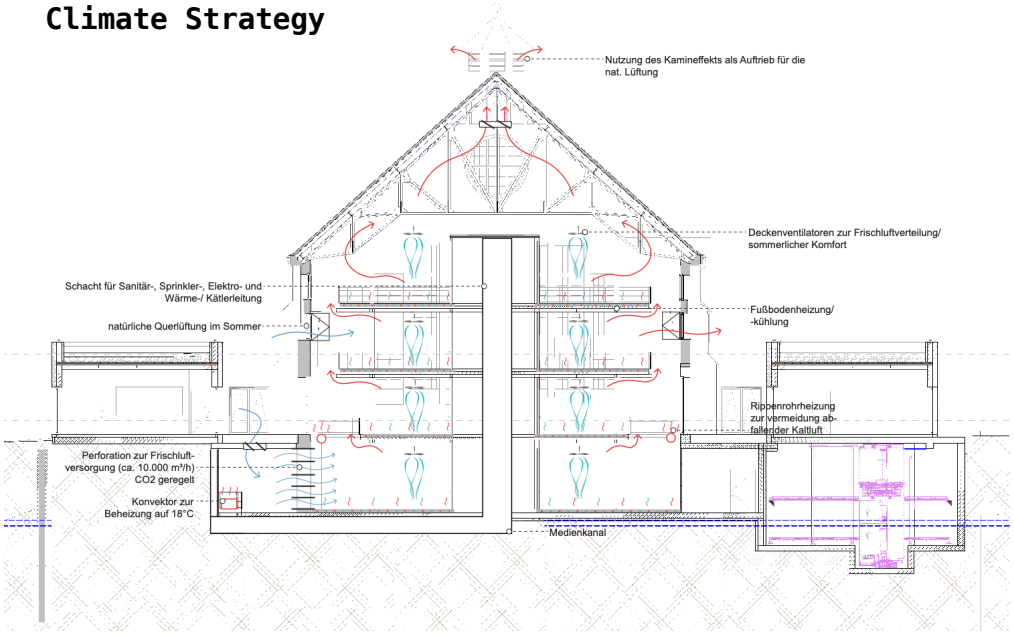
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Hild und K
München Berlin

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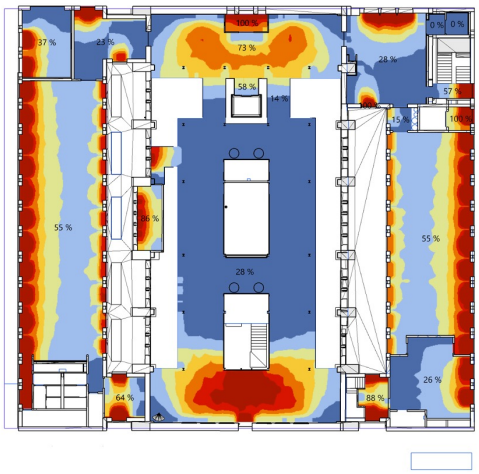
Climate Strategy

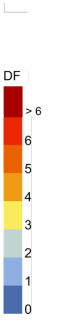


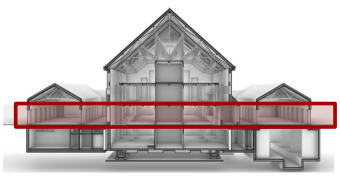
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Daylight Performance

Daylight Factor (Cloudy Sky)







Section

Ground Floor

The value displayed in the center represents the percentage of area with a Daylight Factor (DF) greater than 2%, indicating high-quality daylighting suitable for workspaces.

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Hild und K
München Berlin

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Theaterhaus Stuttgart
plus+ bauplanung GmbH



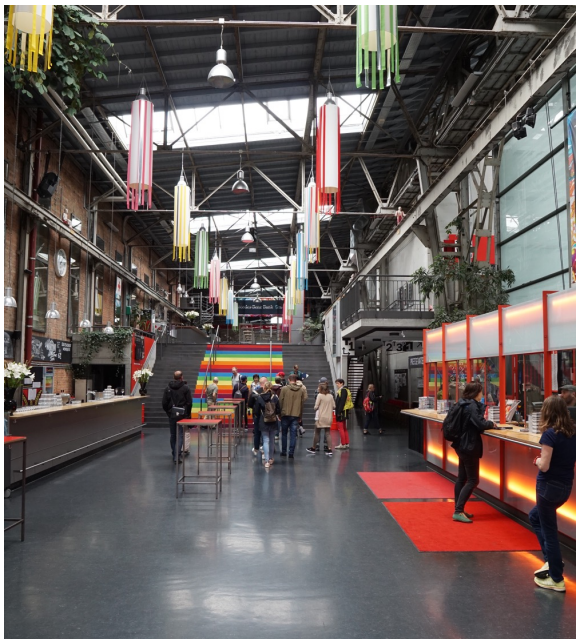
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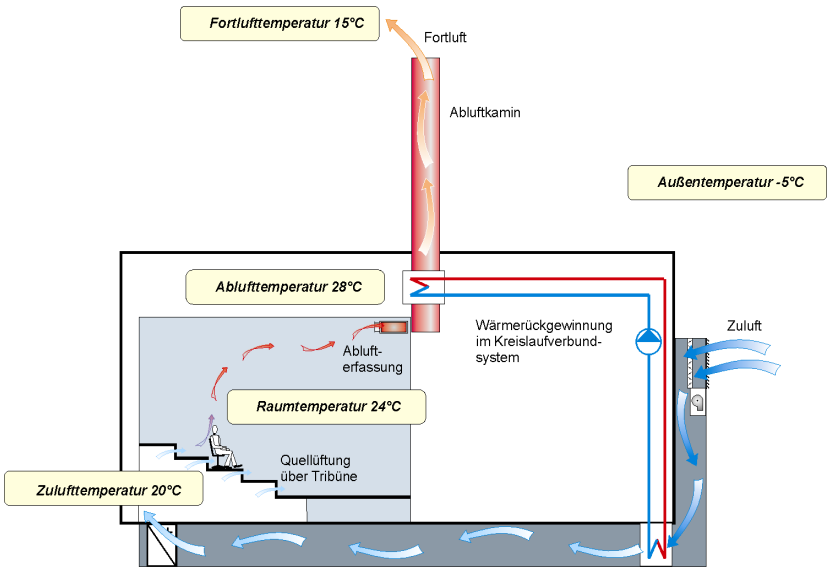




Source: https://www.plus-bauplanung.de/project/theaterhaus-stuttgart-e-v/; Access: 07.07.2020

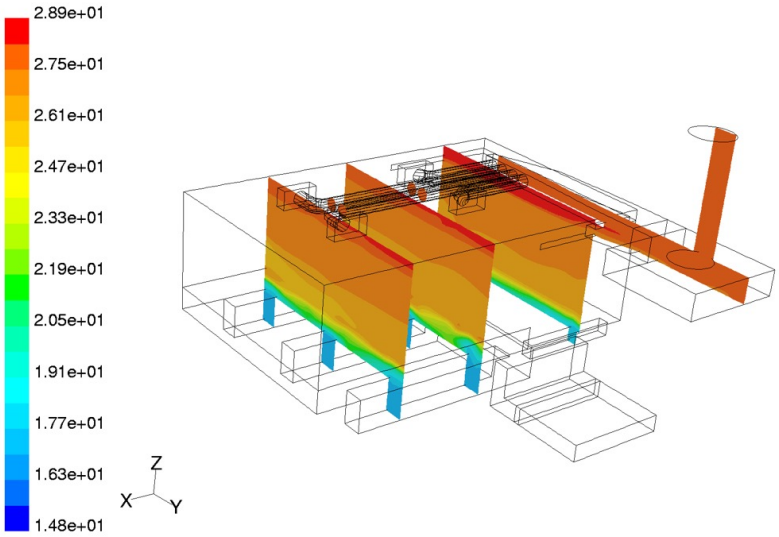
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Ventilation Concept Winter - Natural



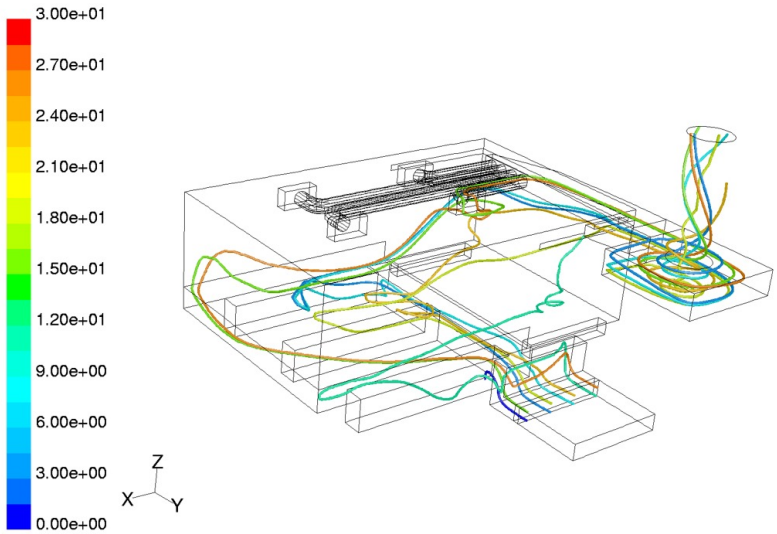
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Ventilation Concept - Temperatures

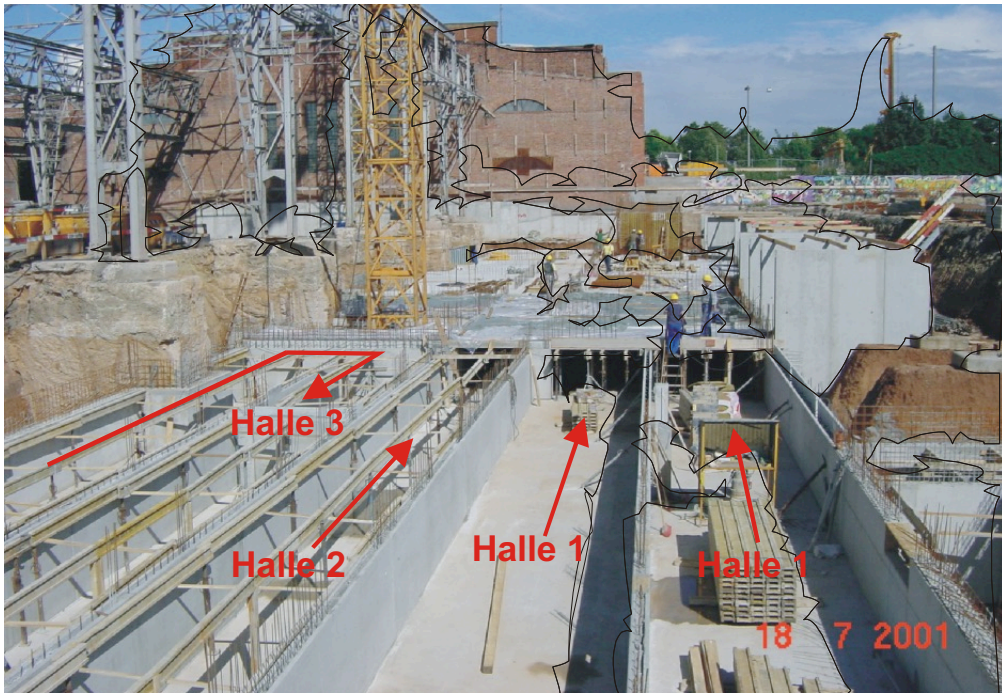


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Ventilation Concept - Air Distribution



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Theaterhaus Stuttgart



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Installation Exhaust Air Chimney





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