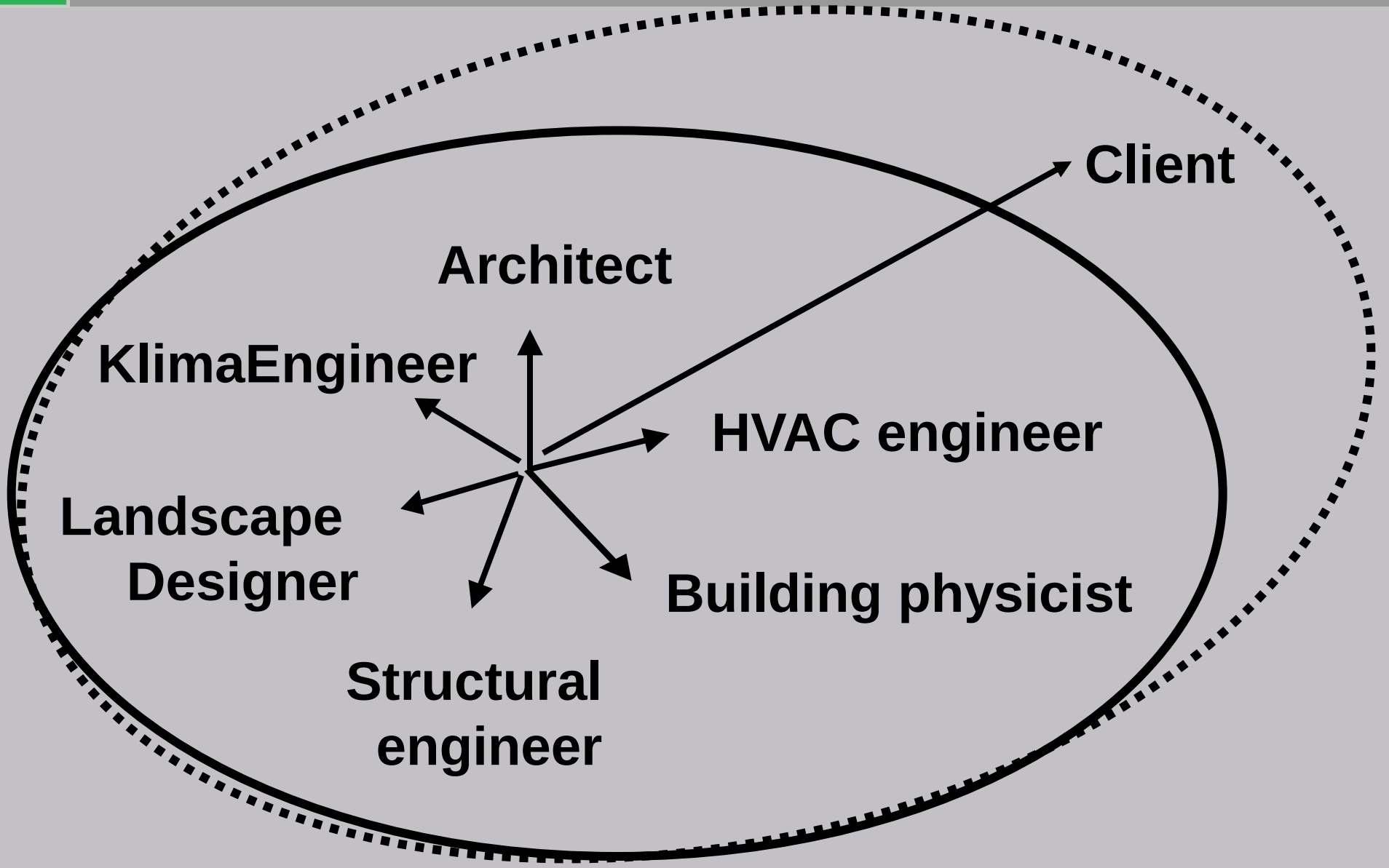


Erfolgsmodel –
Der Klima-Ingenieur als Design partner

Matthias Schuler
TRANSSOLAR
Stuttgart, Munich, New York, Paris


Client
Architect
KlimaEngineer
HVAC engineer
Landscape Designer
Building physicist
Structural engineer

Design team

Year of foundation: 1992

Managing directors: M. Schuler, T. Auer, S. Holst, V. Bleicher, H. Meyer, D. Schnelle, E. Olsen

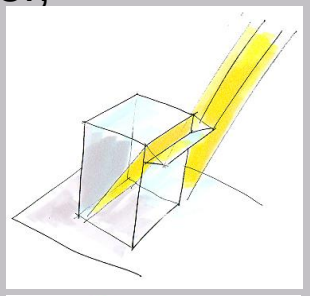
Turnover 2016: 7 Mio €

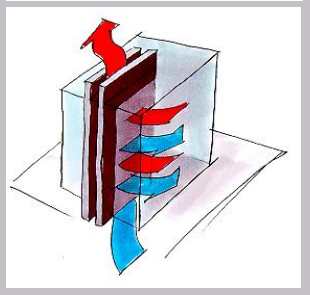
Number of employees and their specialist areas:

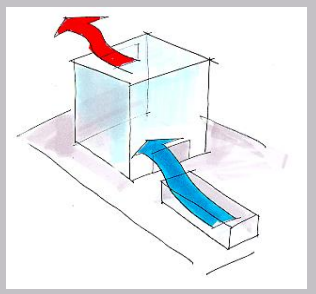
Number of employees:		
	1	1992
	65	2017

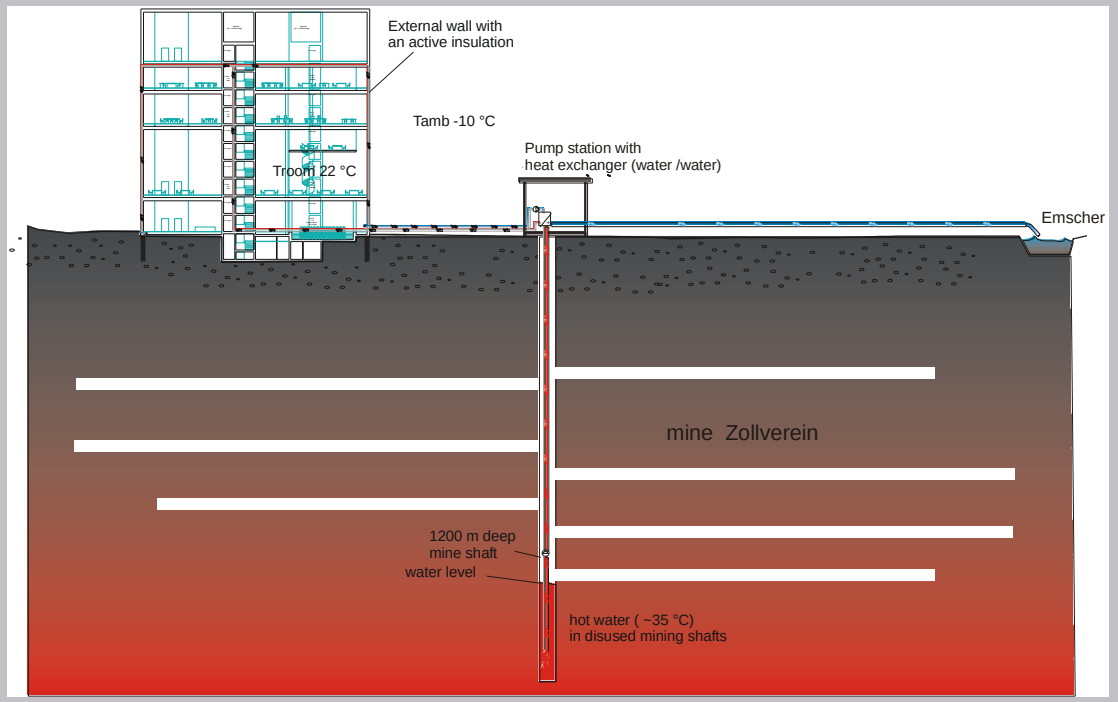
Qualification :
Mechanical engineer,
Physicist,
Industrial Process engineer,
Management expert,

Project locations:	
Germany	30%
other Europe	20%
Asia/Middle East	20%
North America	30%







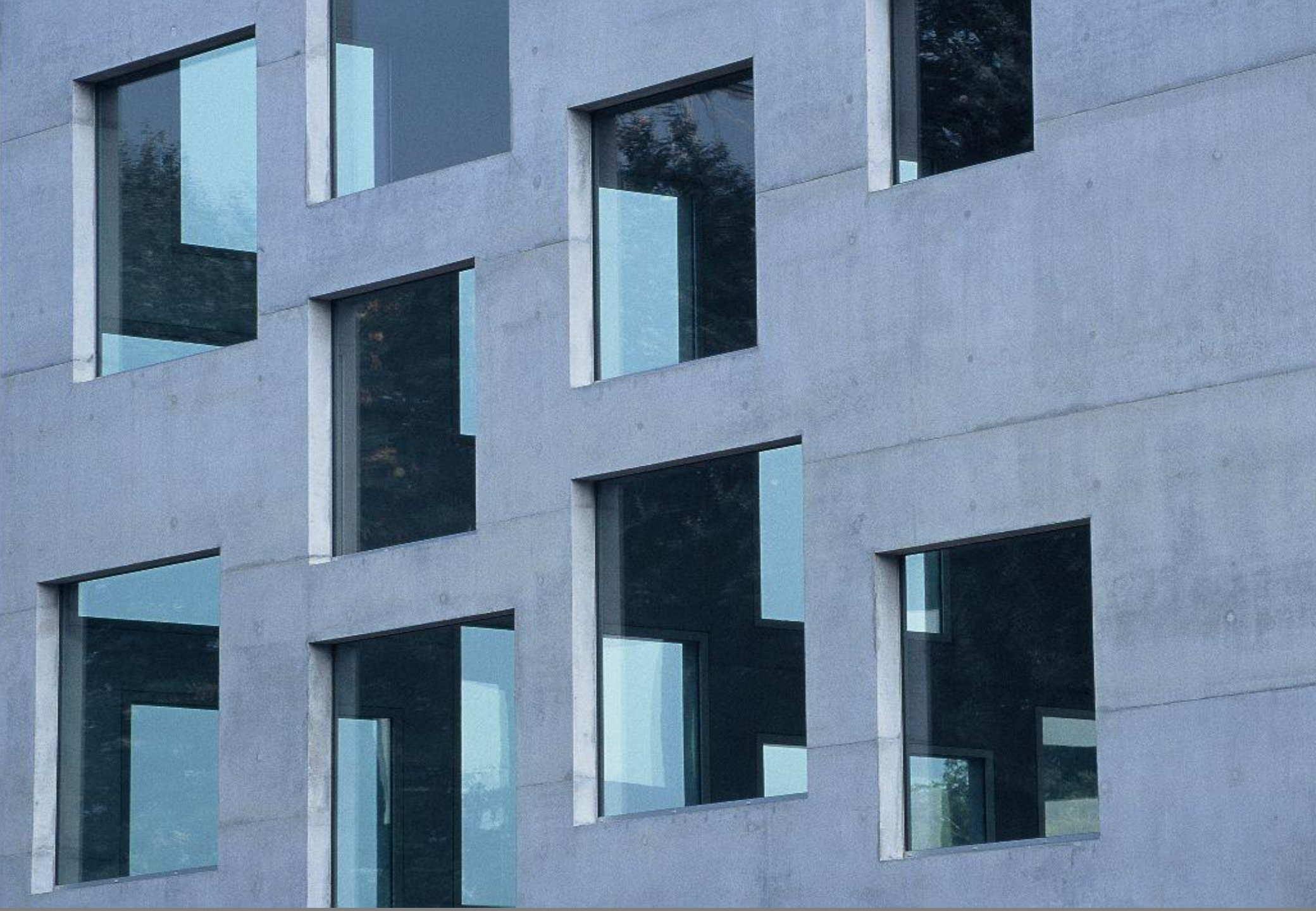


Zollverein School, Essen

Architect: SANAA, Tokyo

Active insulation under construction - Zollverein School, Essen

Cavity slab to reduce the dead weight by 35% with thermal activation

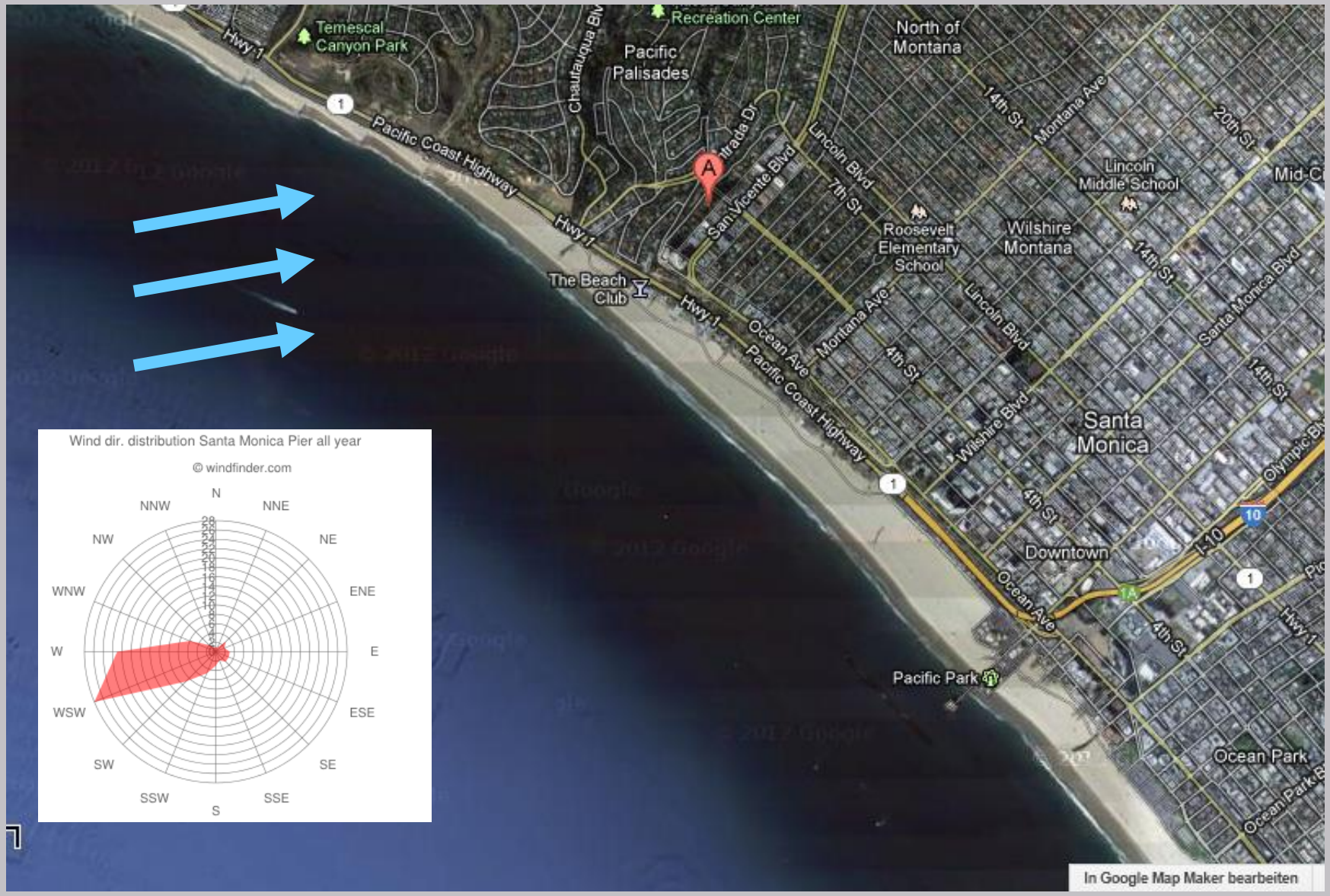


Architect: Murphy/Jahn

Example for large membrane structures, New Bangkok International Airport

Low-e coated membrane - Bangkok International Airport, Murphy/Jahn Architects

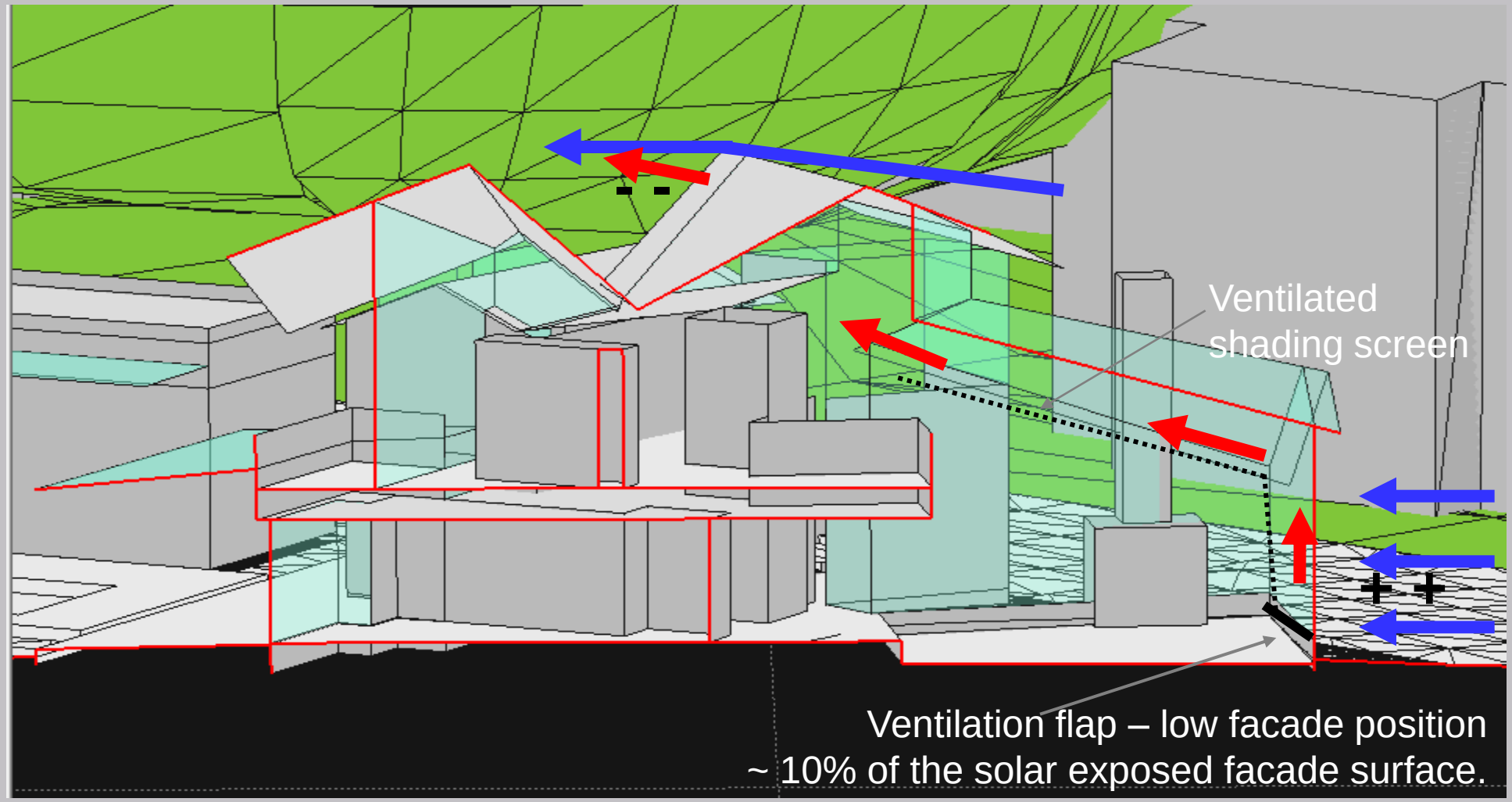
Floor cooling as a heat sink - Bangkok International Airport, Murphy/Jahn Architects



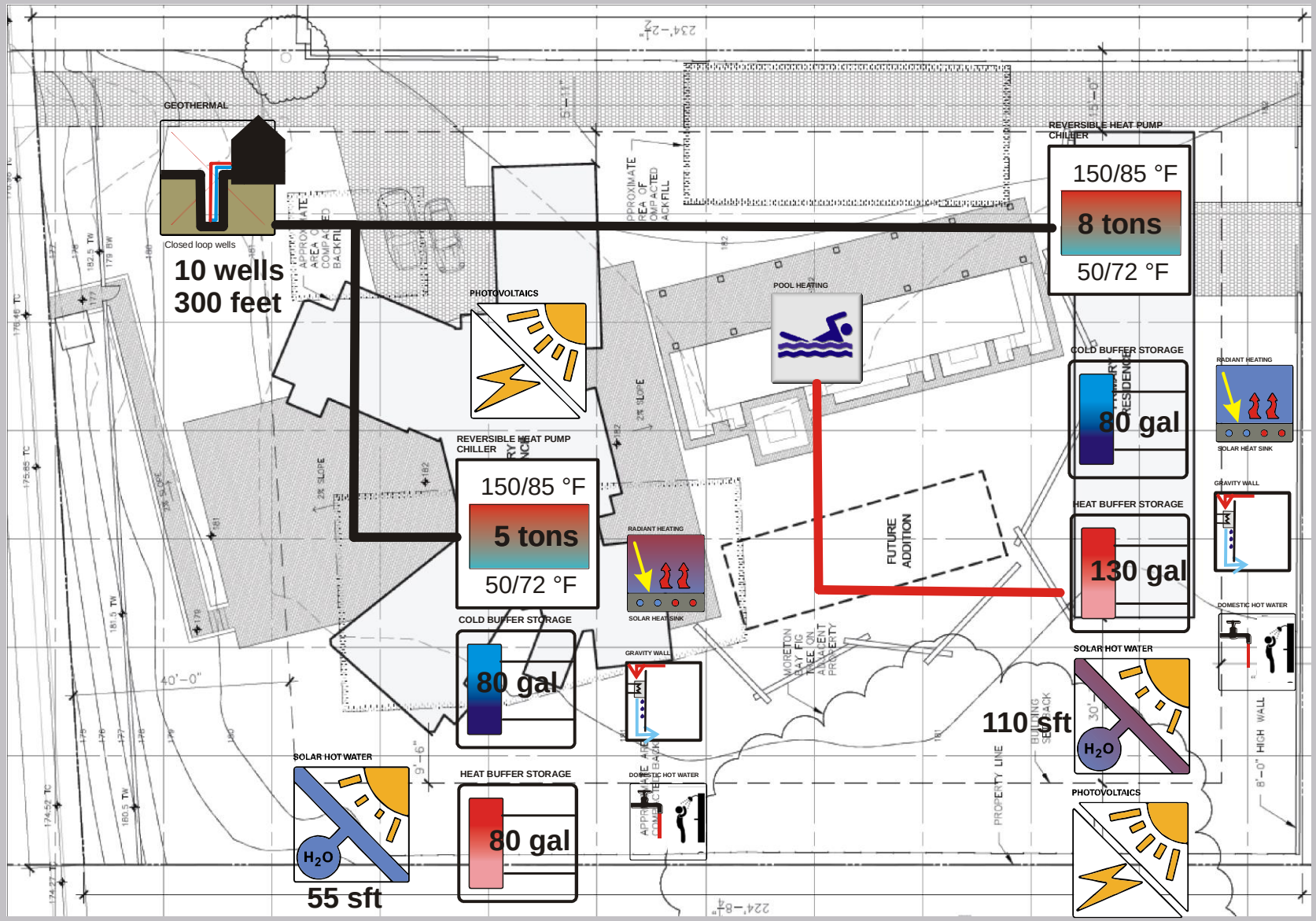
316 Adelaide Drive, Santa Monica, CA, Frank and Sam Gehry

Adelaide Residence – Concept model

Wind Scoop / Solar Chimney Concept Approach



**Wind and sun driven cross ventilation to protect the fully glazed spaces from overheating.
A unique local solution for Santa Monica, with a natural ventilated internal screen.**

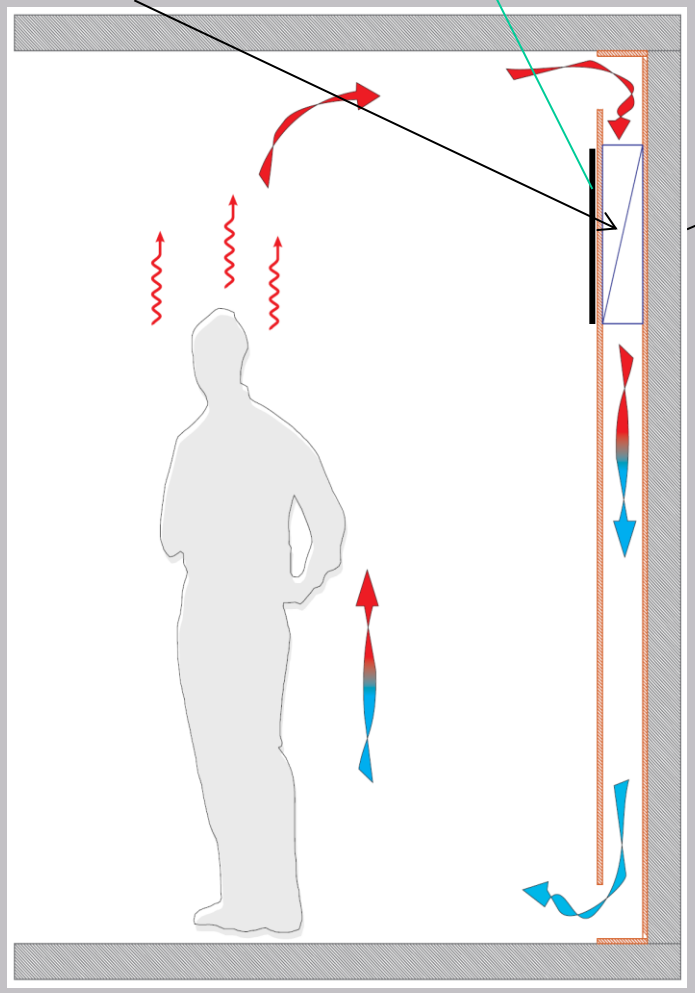


System sizing for a zero energy balance house

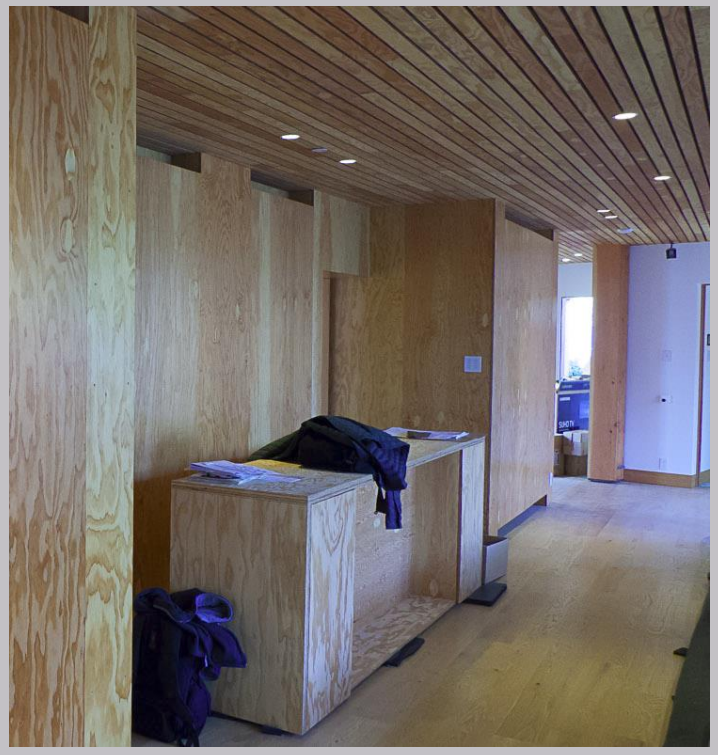
- Easy to combine with natural ventilated buildings

Remove wall part for cleaning

Heat exchanger



Condensate collection



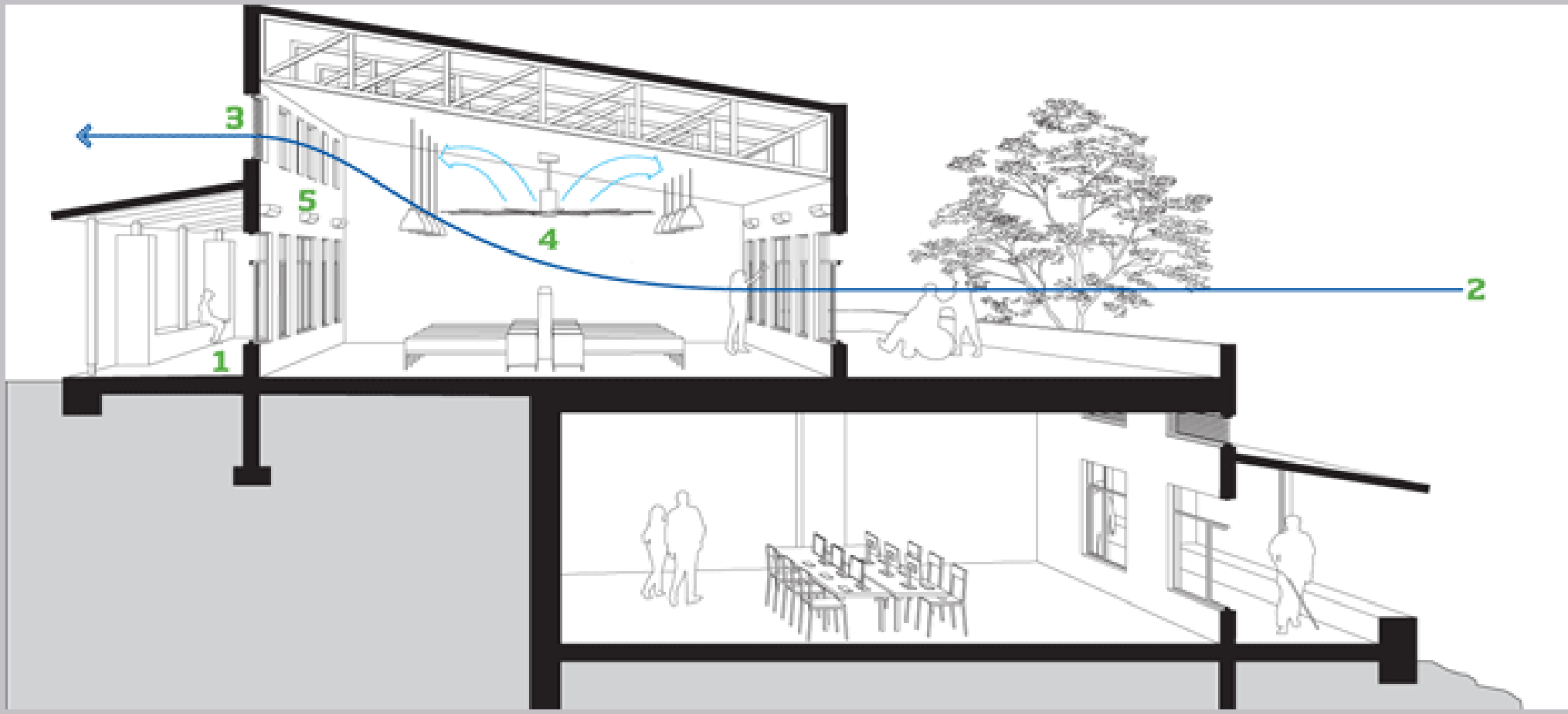
View from West

View from South

Solar system on the guest house

Dining room facing Northwest

Butaro Hospital, Rwanda, by MASS Design Group



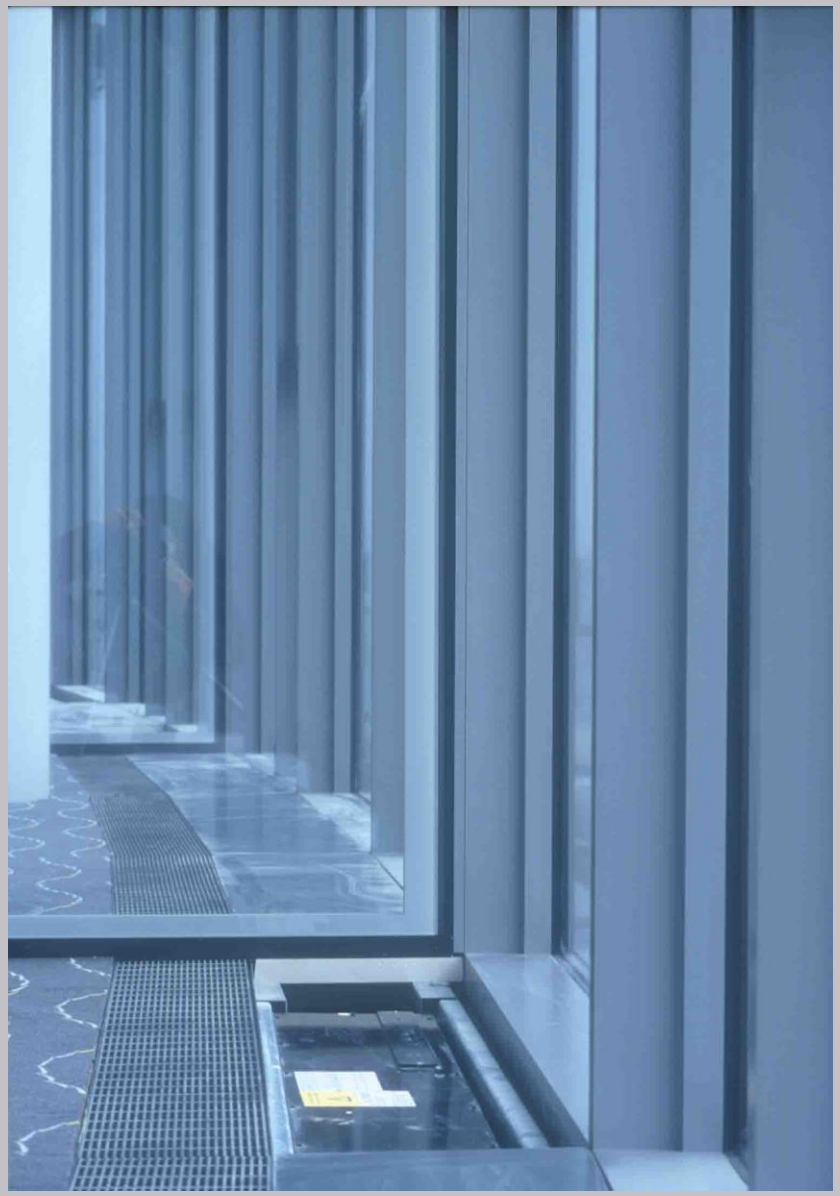
1 Exterior Circulation
2 Cross-Ventilation
3 Vents
4 Industrial Fans
5 Ultraviolet Germicidal Lights

Functional section Butaro Hospital – wind driven cross ventilation

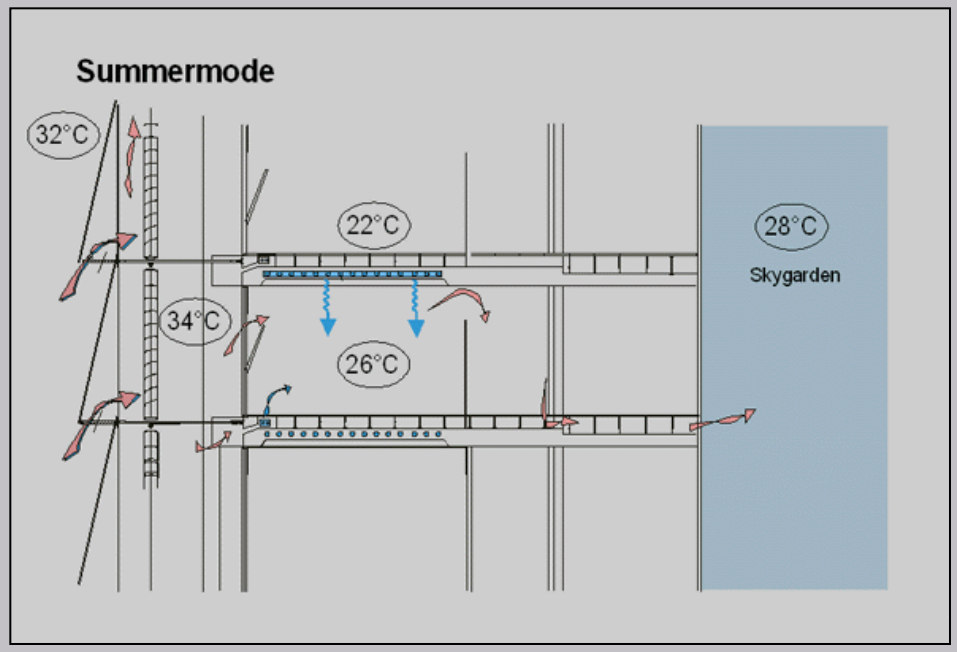
Pediatric ward with natural cross ventilation

Nianza Hospital, Rwanda

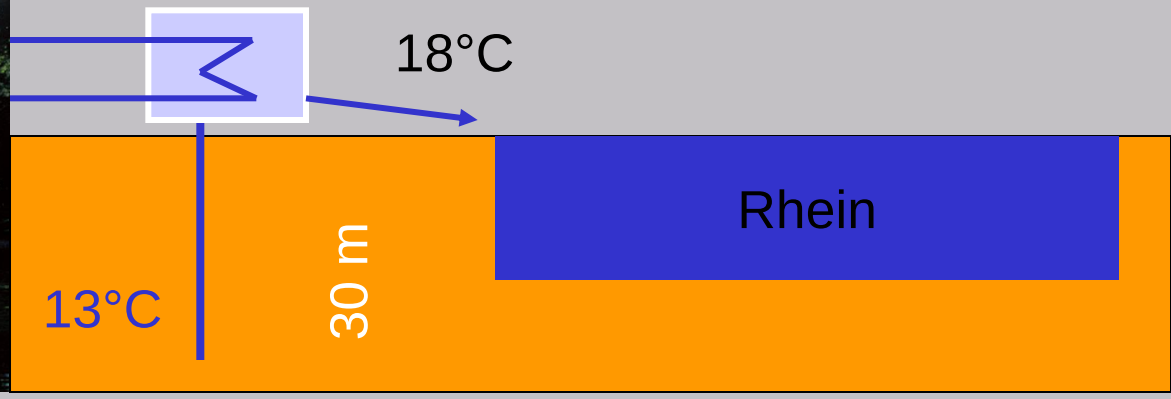
ENTRY AND RECEPTION



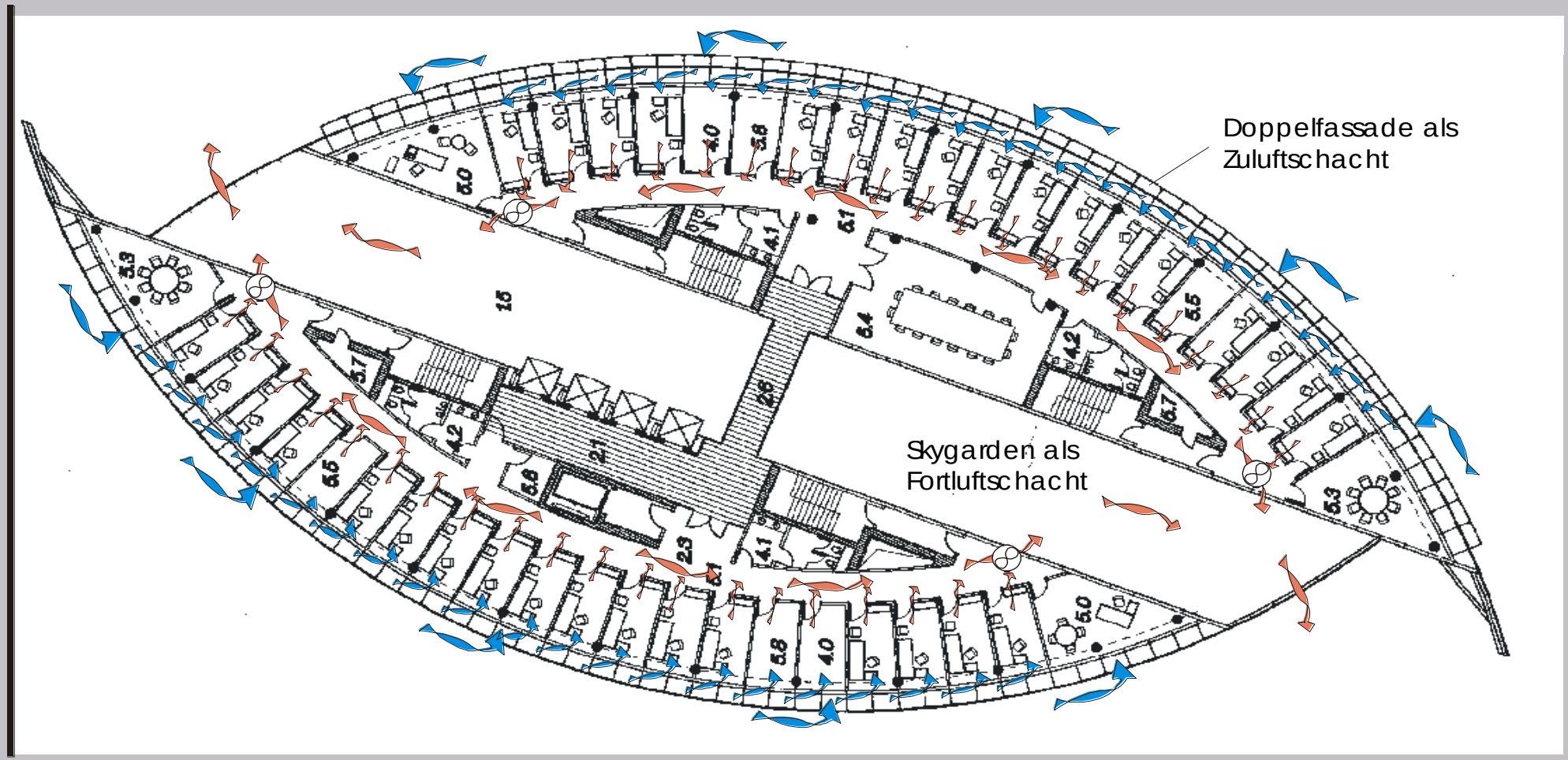
Decentralized ventilation systems – Post Tower, Bonn, by Helmut Jahn



65.000 m²
44 floor highrise

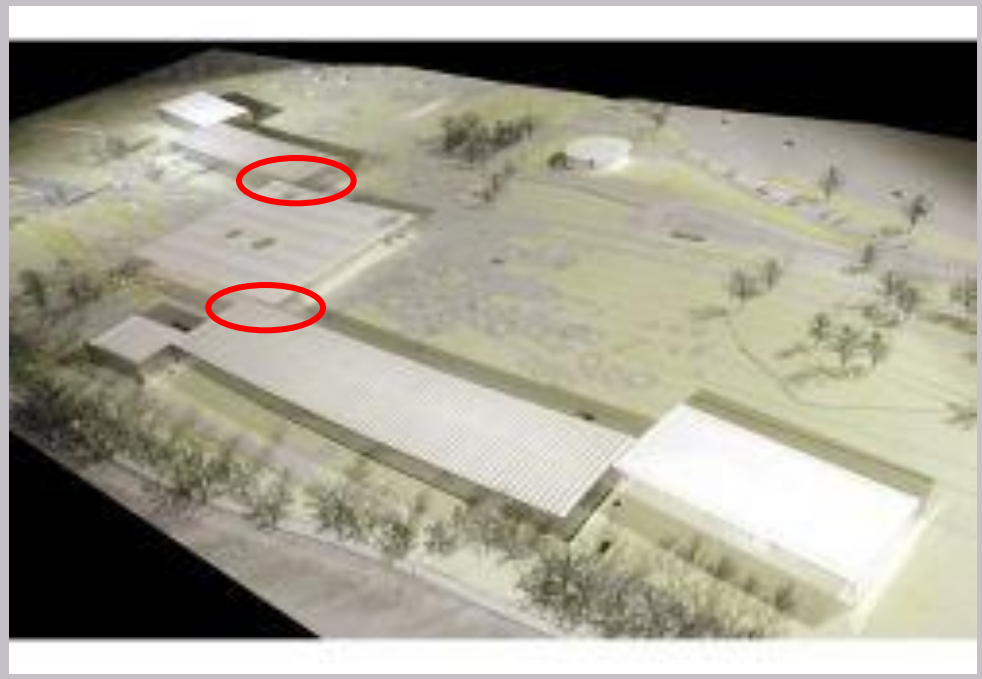


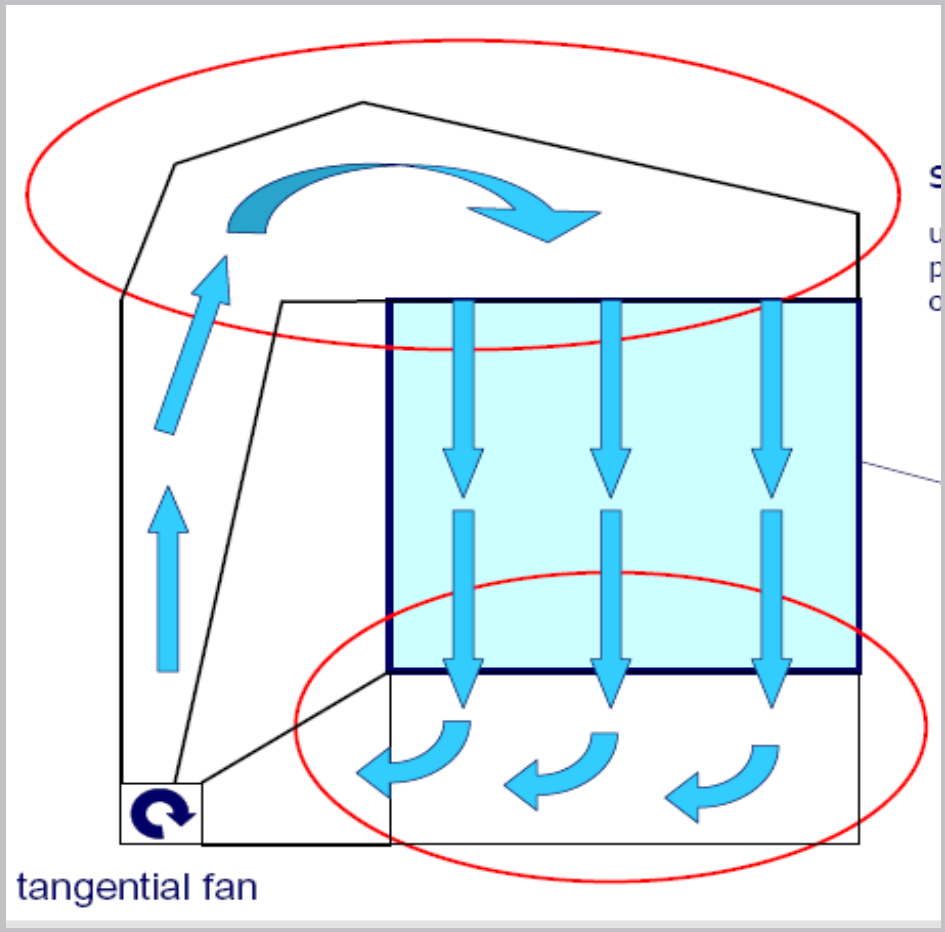
Deutsche Post Headquarter, Bonn, with Murphy/Jahn


Doppelfassade als
Zuluftschacht
Skygarden als
Fortluftschacht

The building as a statement for innovation

Air Door“ – air based climate separation

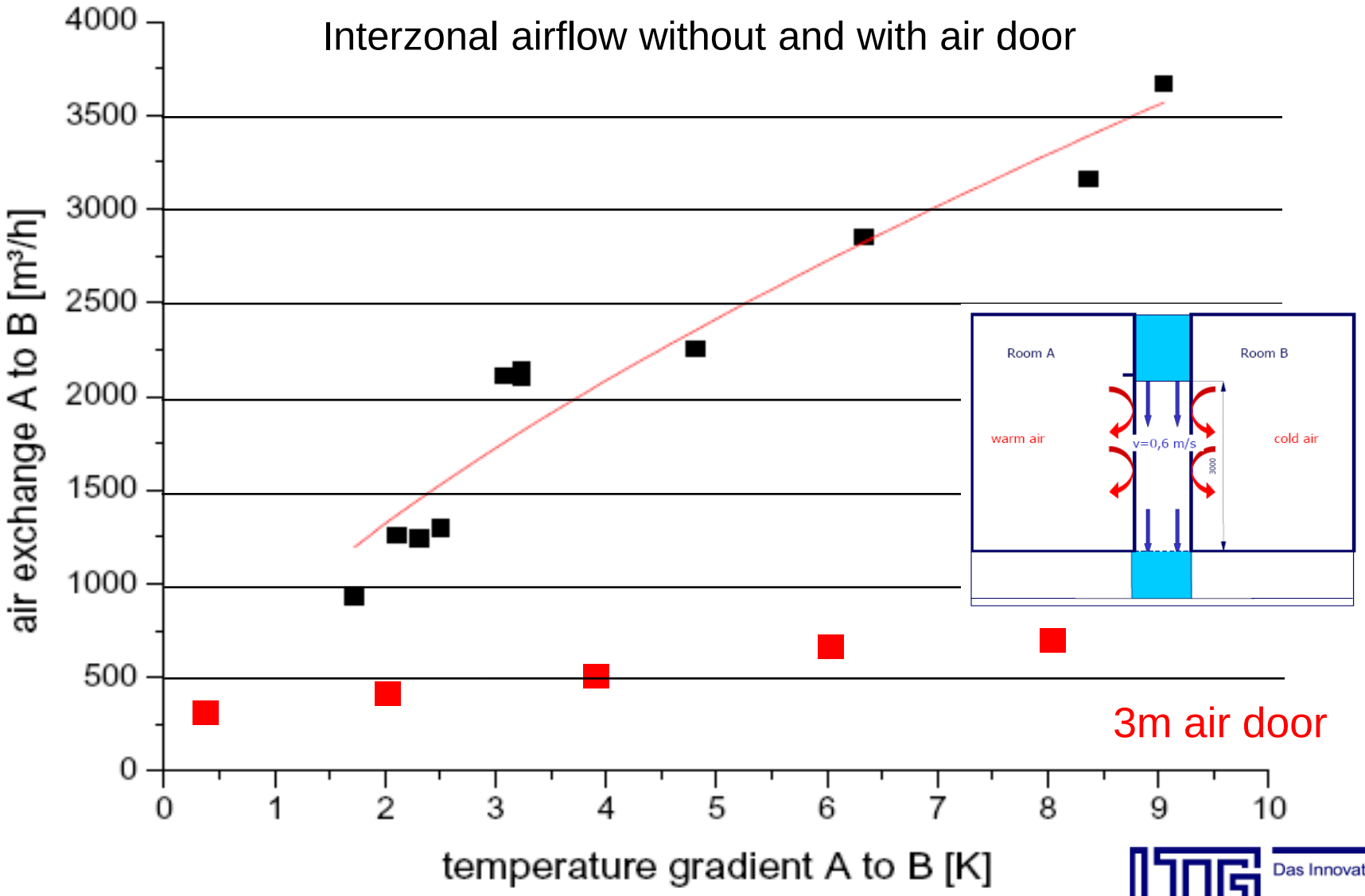


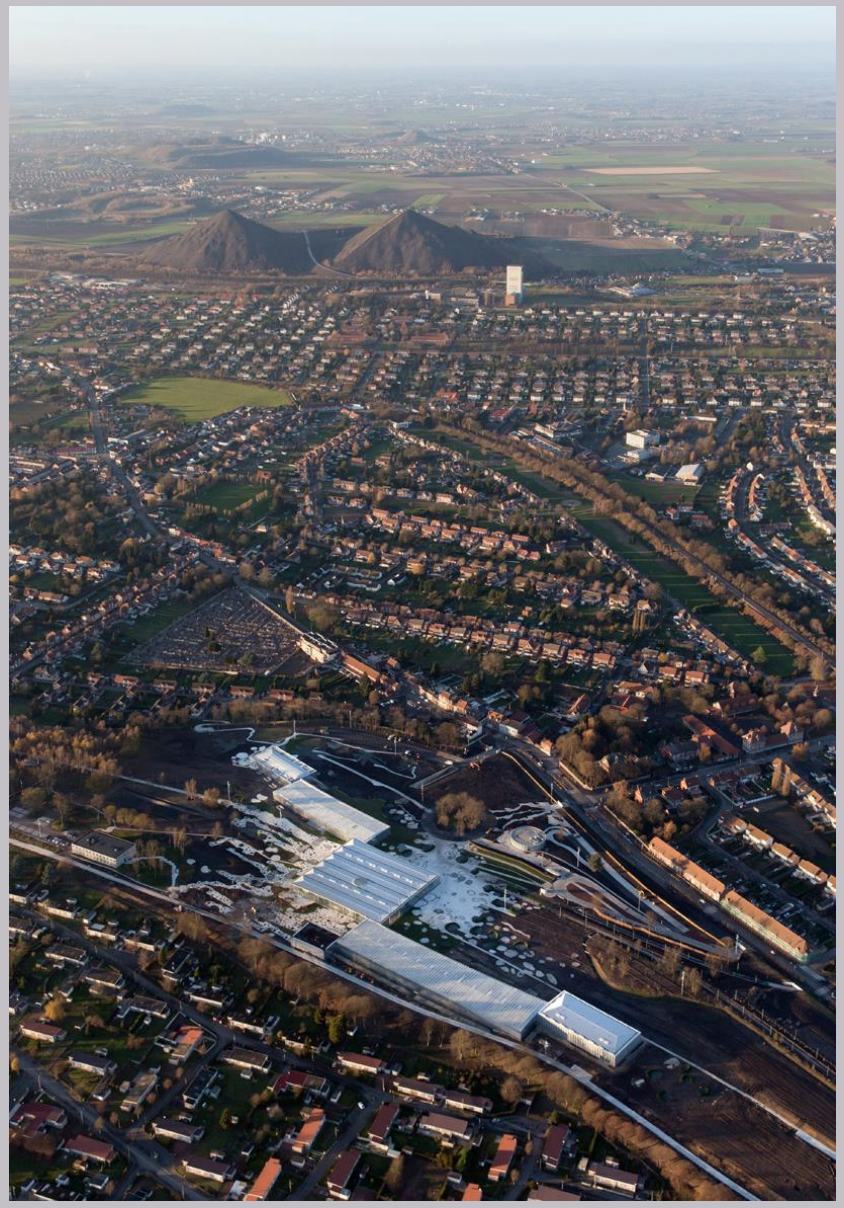


Das Innovationsunternehmen
LTG Aktiengesellschaft

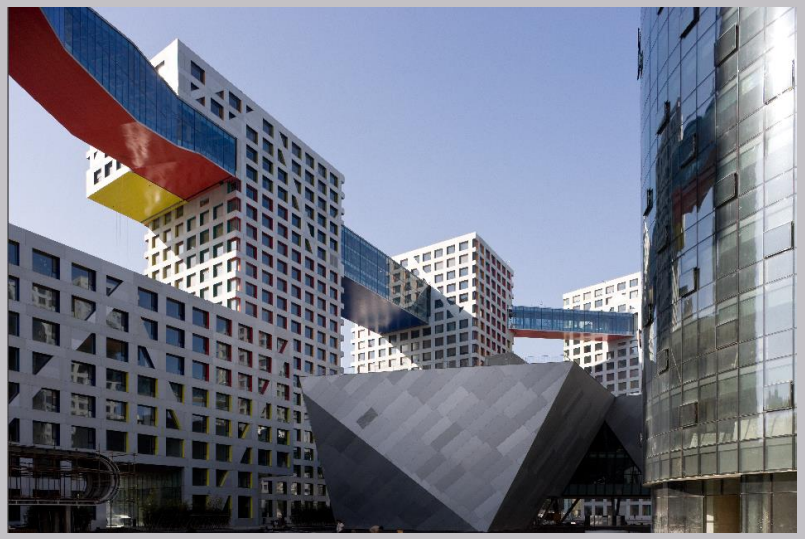
Air door idea and mockup

Interzonal airflow without and with air door



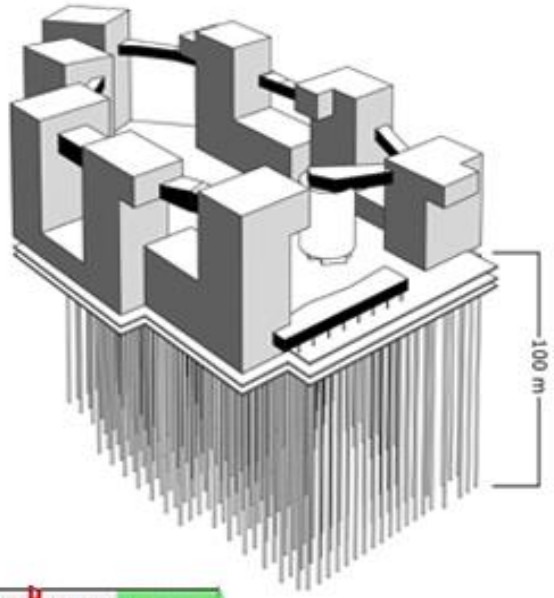


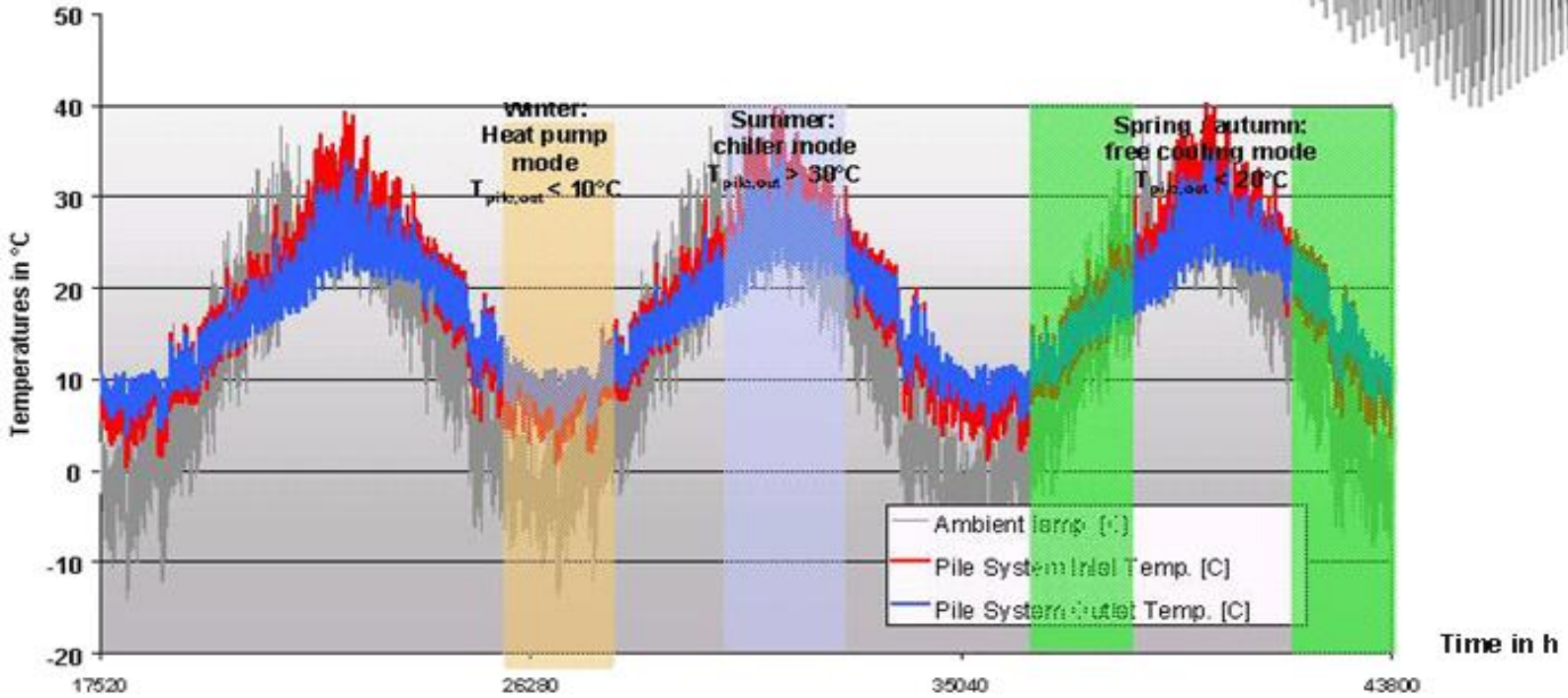
Louvre a Lens, by SANAA, with air doors at gallery entrances



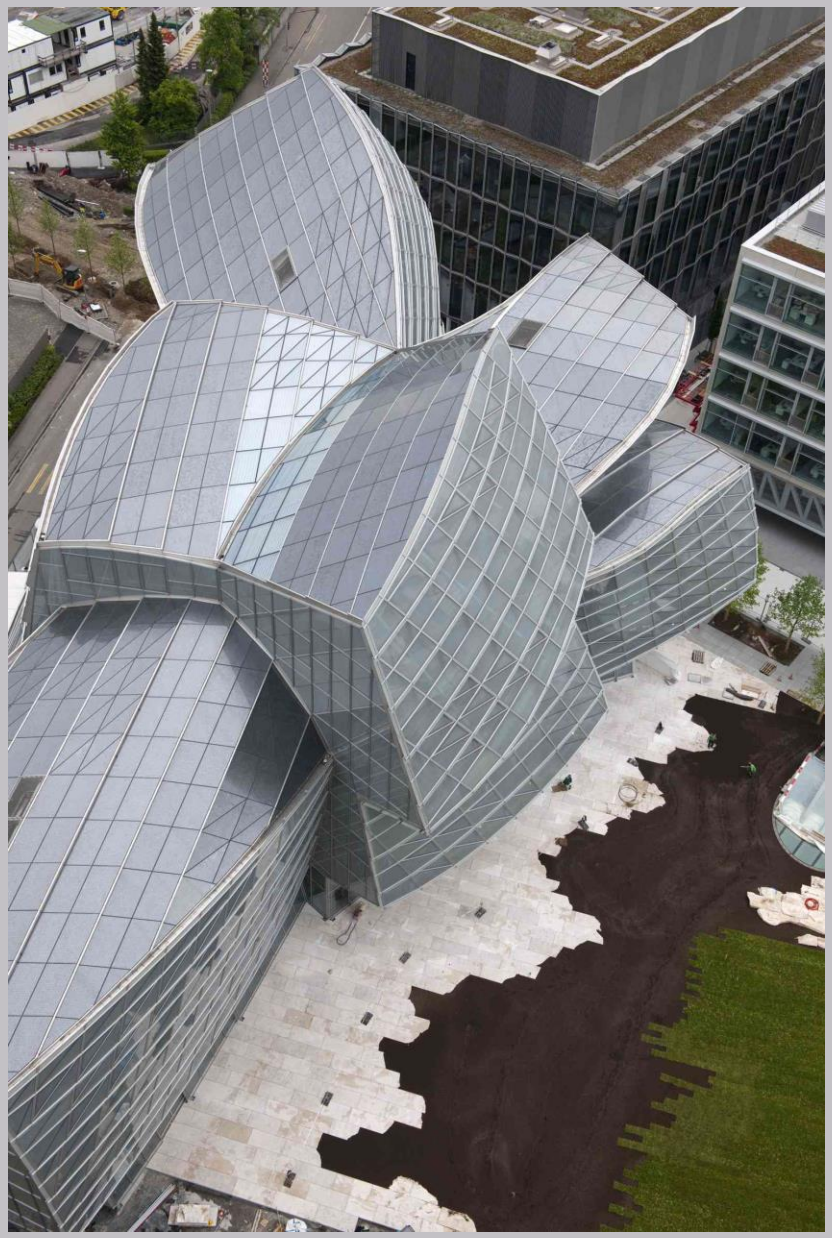
Looped Hybrid Project, Beijing, Steven Holl Architects, 165.000 m²

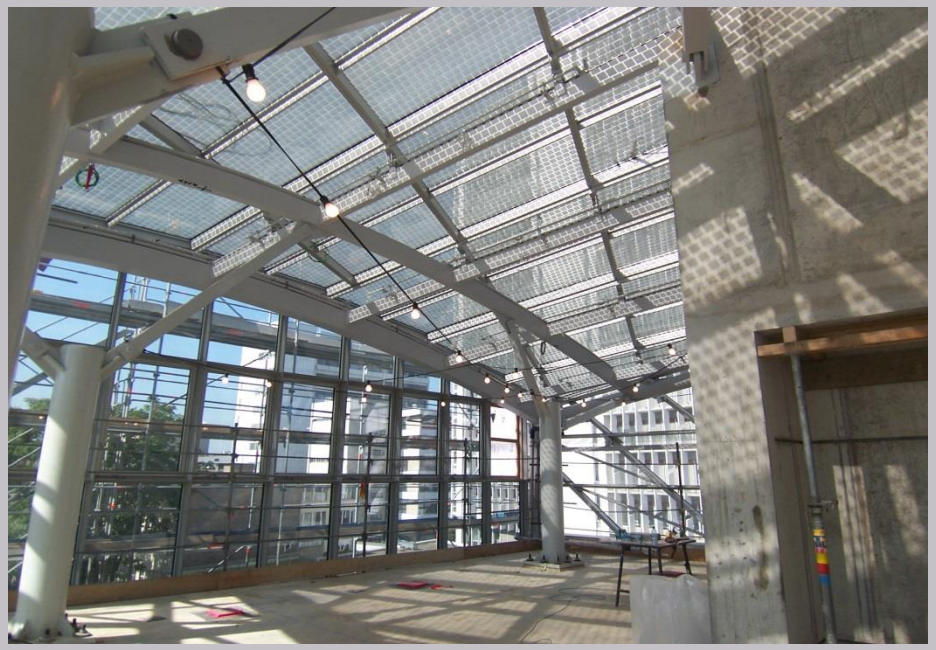
Geothermal System with Borehole heat exchanger, cooling tower, chiller(summer) and heat pump(winter) system Temperatures 3rd to 5th year





Regeneration to keep the system in balance





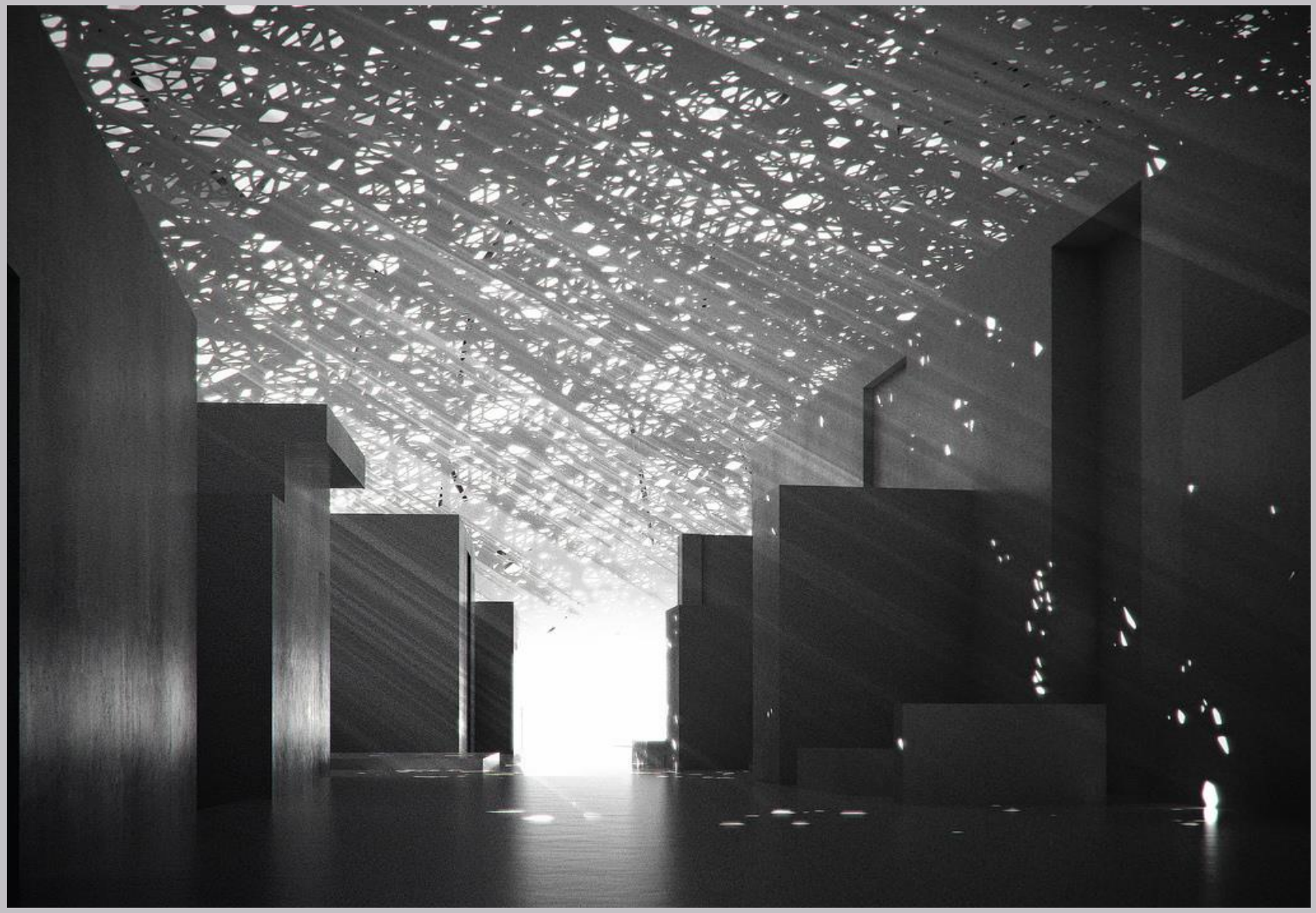
Novartis Campus, Building WSJ 124, Basel, Gehry Partners LLP, Minergie P

Cells with 8% perforation
gaps between the cells
total 15% transmission

triple glazed, gas filled

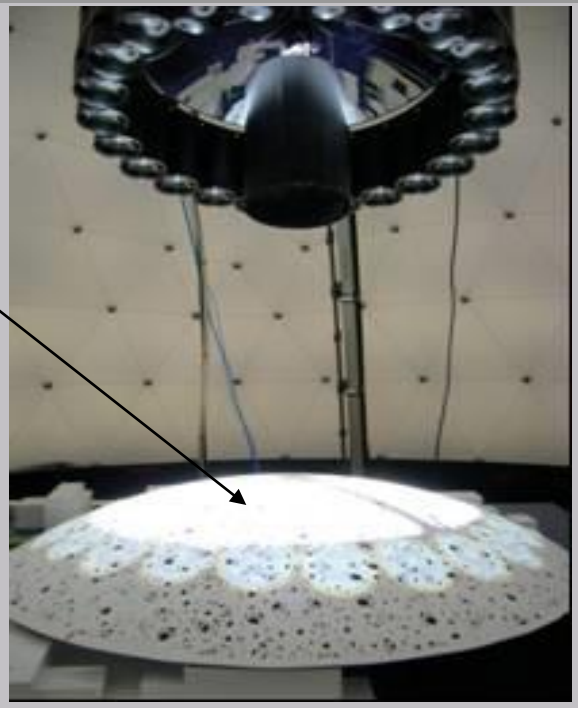
Transparent colored solar cells, WSJ158, Novartis, Frank Gehry Architects

Louvre Abu Dhabi, Atelier Jean Nouvel

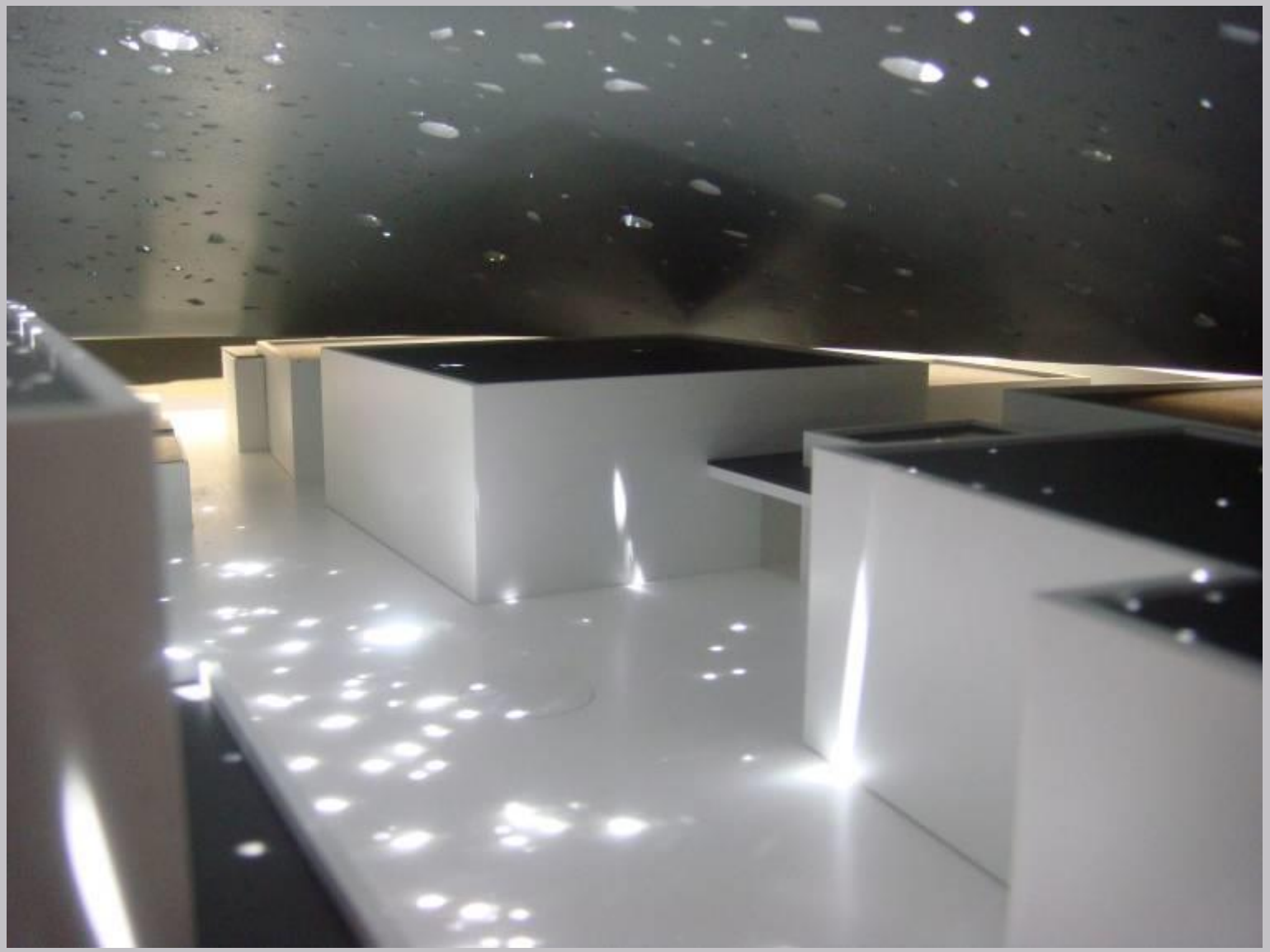


Light filtering into the dome – “the rain of light”

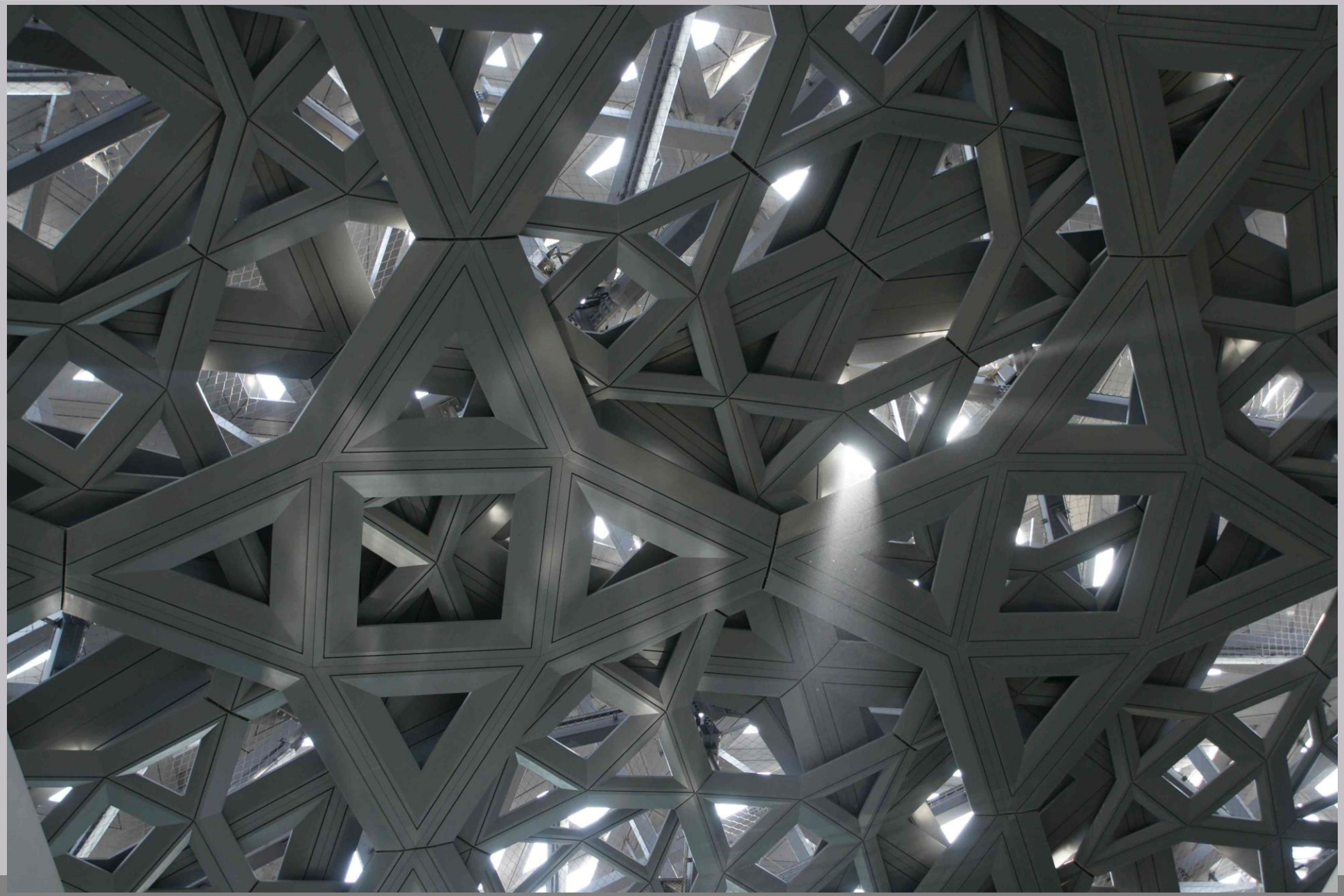
Up to 120.000 Lux

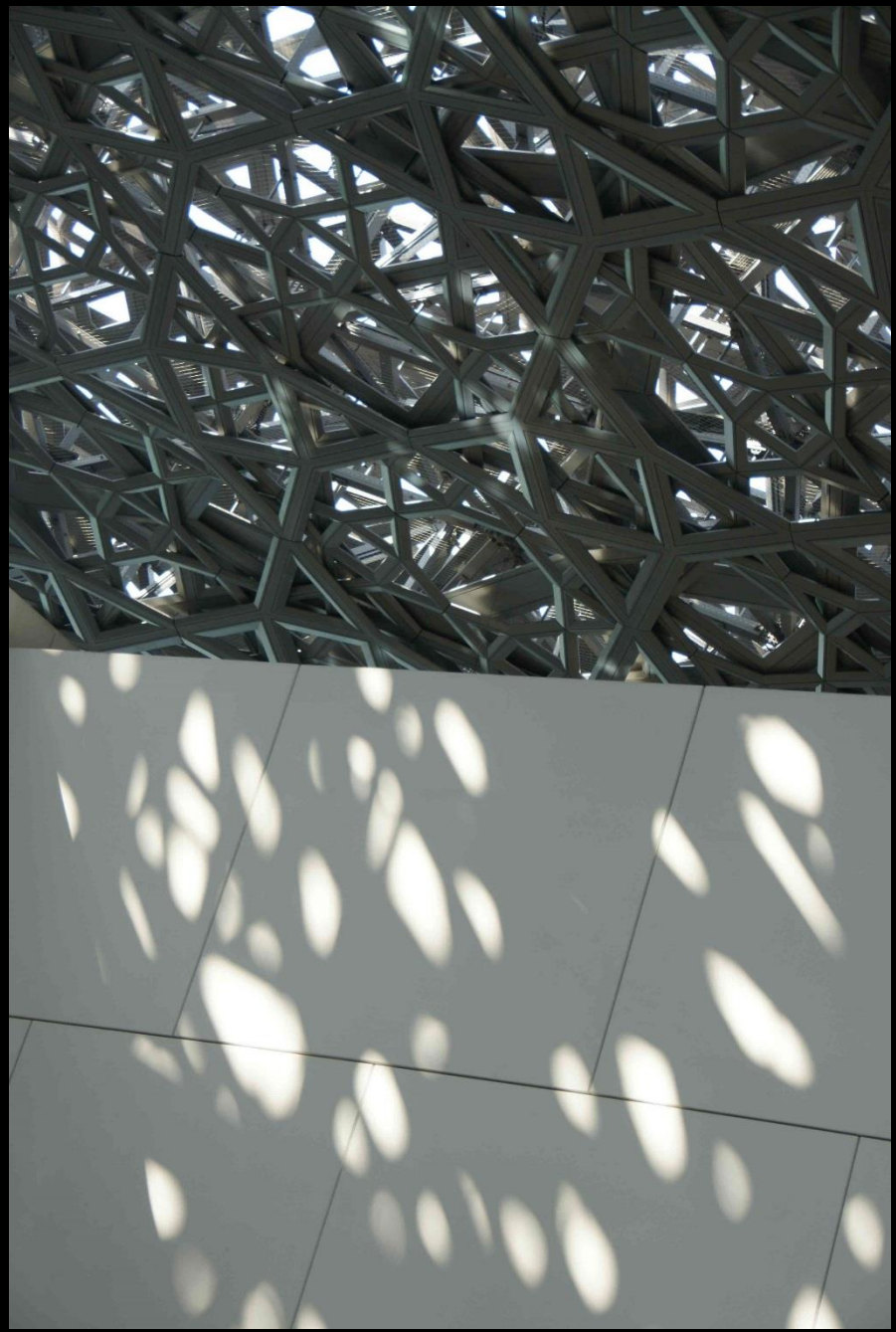


Artificial and outdoor sky model tests 1:200 – FHT Stuttgart

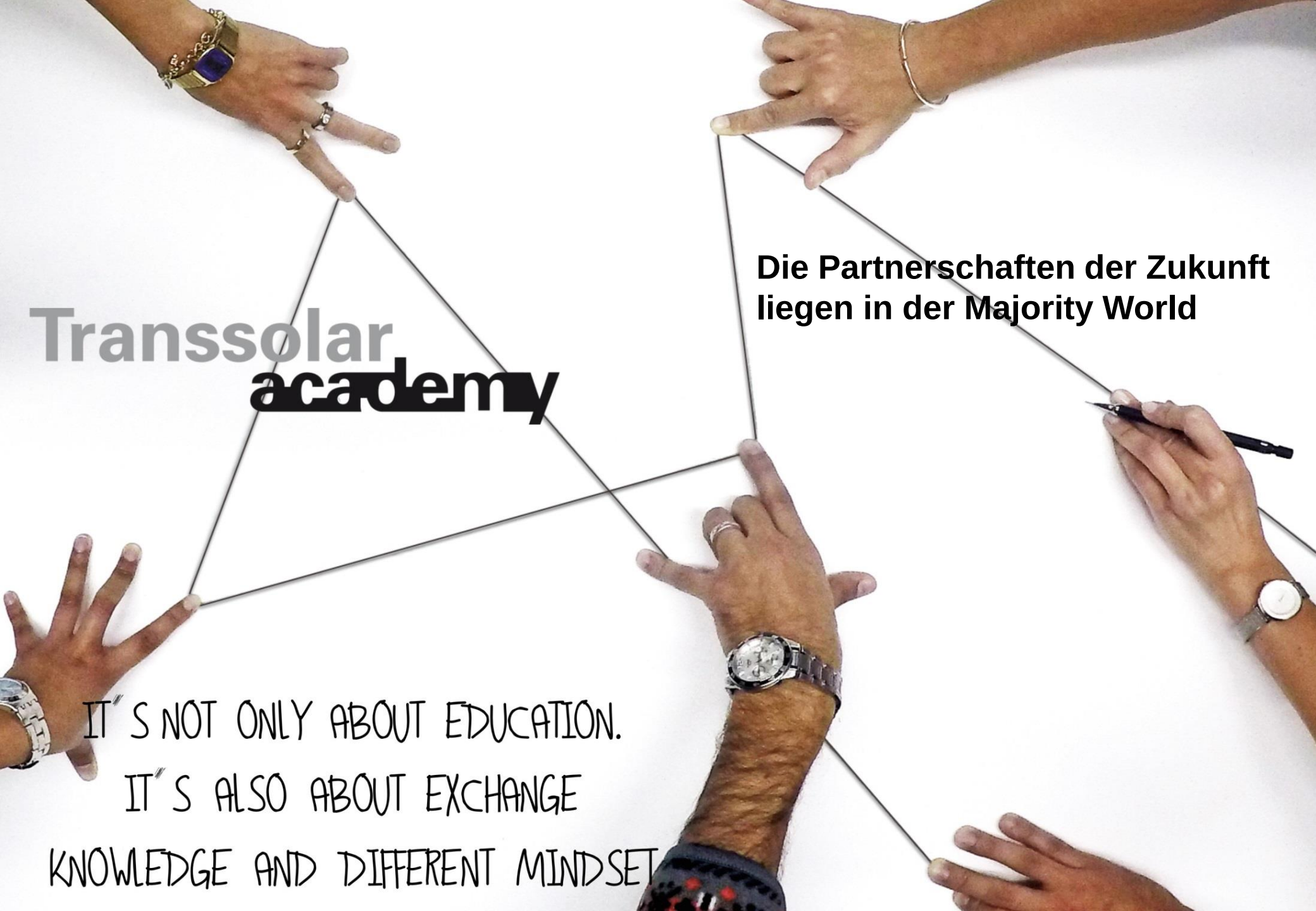


The client below the „rain of light“





The „ rain of light“ is a fragil and unstable art piece


Transsolar
academy
Die Partnerschaften der Zukunft
liegen in der Majority World
IT´S NOT ONLY ABOUT EDUCATION.
IT´S ALSO ABOUT EXCHANGE
KNOWLEDGE AND DIFFERENT MINDSET

- Komplexe Aufgabenstellung sind nur als Team lösbar – integrales Design

- Energie braucht Nachbarschaft - in der Stadt und der Nachbarschaft liegen die Lösungen

- Nachhaltiges Bauen erfordert keine eigene Architektursprache aber eine eigene Planungskultur