

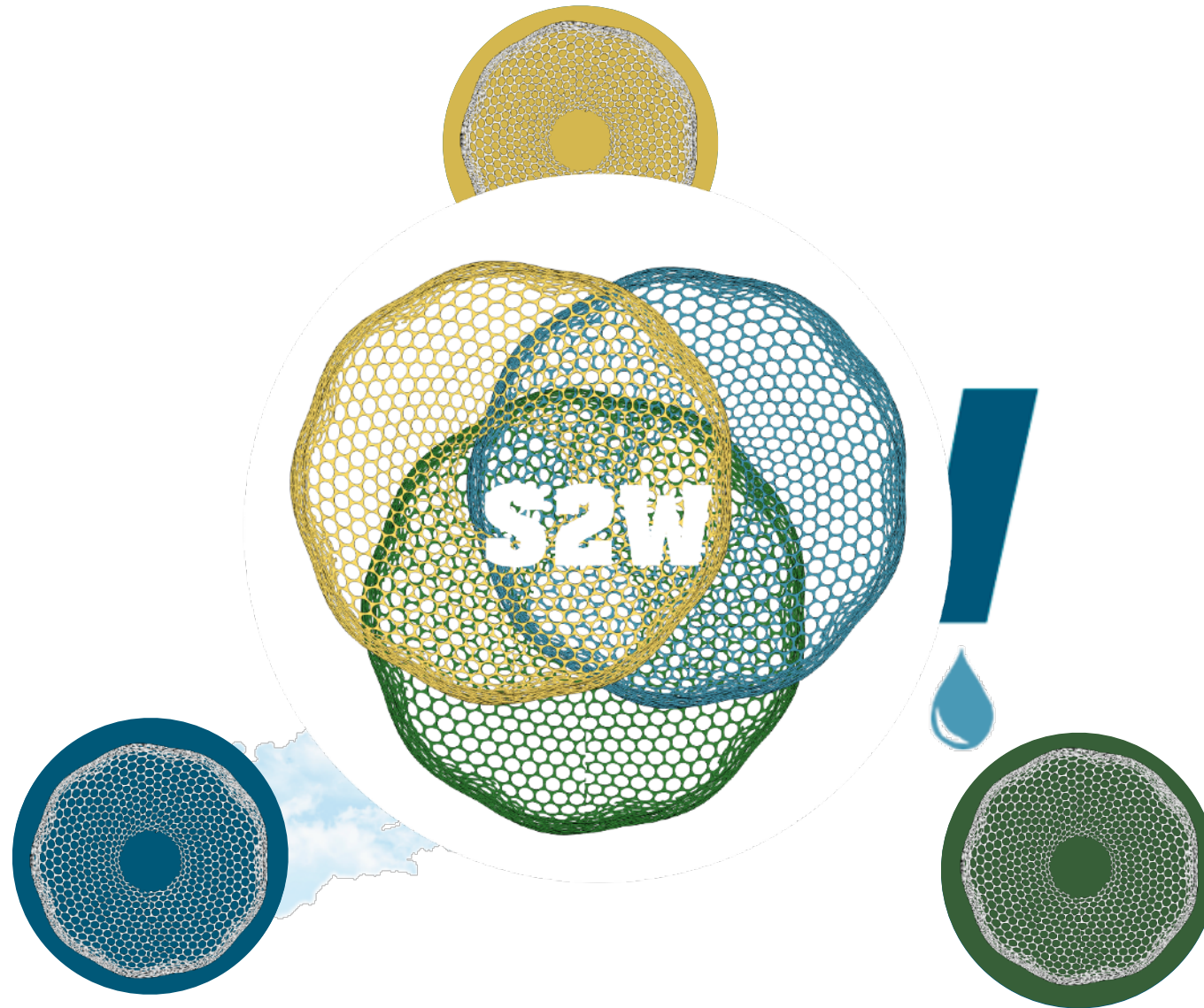
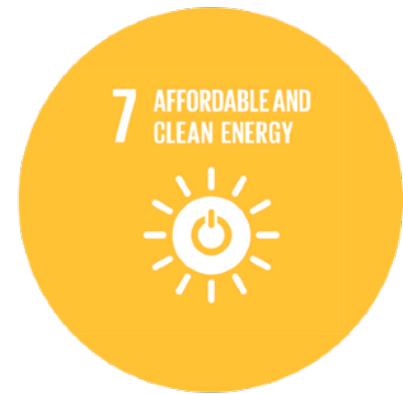


S2W

**SUPRUNIUK VERONIKA,
BELARUS, BSTU**



concept



concept



location of project



architectural decisions



TYPES OF MODULE



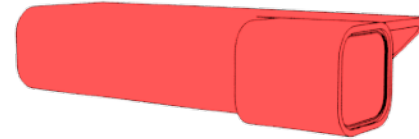
+3.300



+6.600

studio apartment

70m²



**one-room apartment
with cabinet**

76m²



level apartment

118m²

two-roomed apartment

70m²

two-roomed apartment

104m²

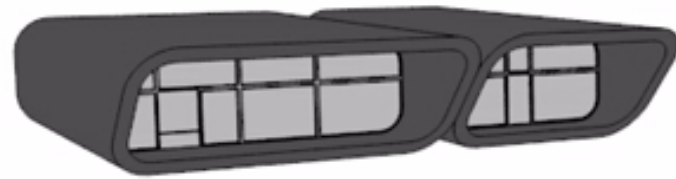
three-room apartment

94m²

reasons



1.DIFFERENT COMBINATIONS



76m²

118m²

70m²

70m²

104m²

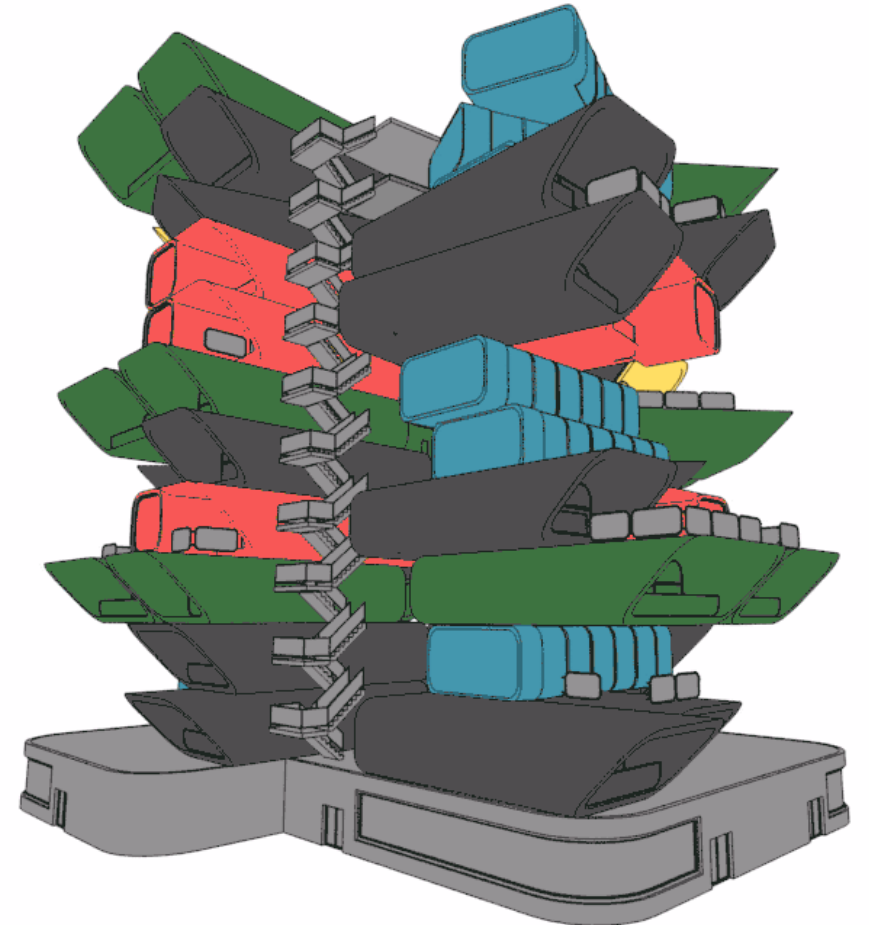
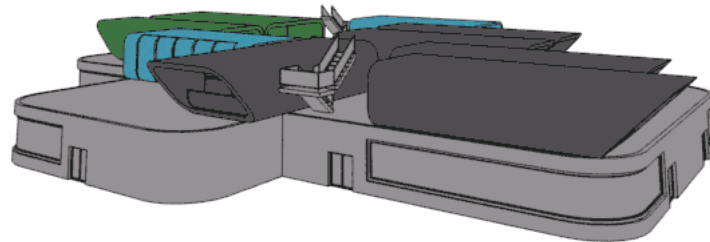
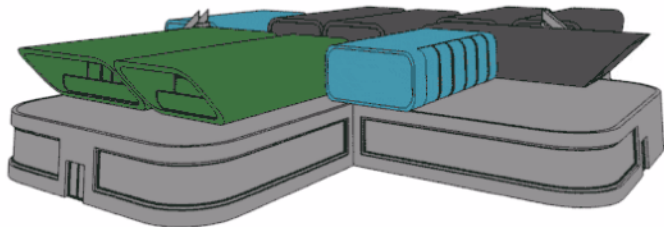
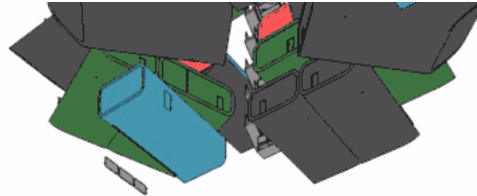
94m²



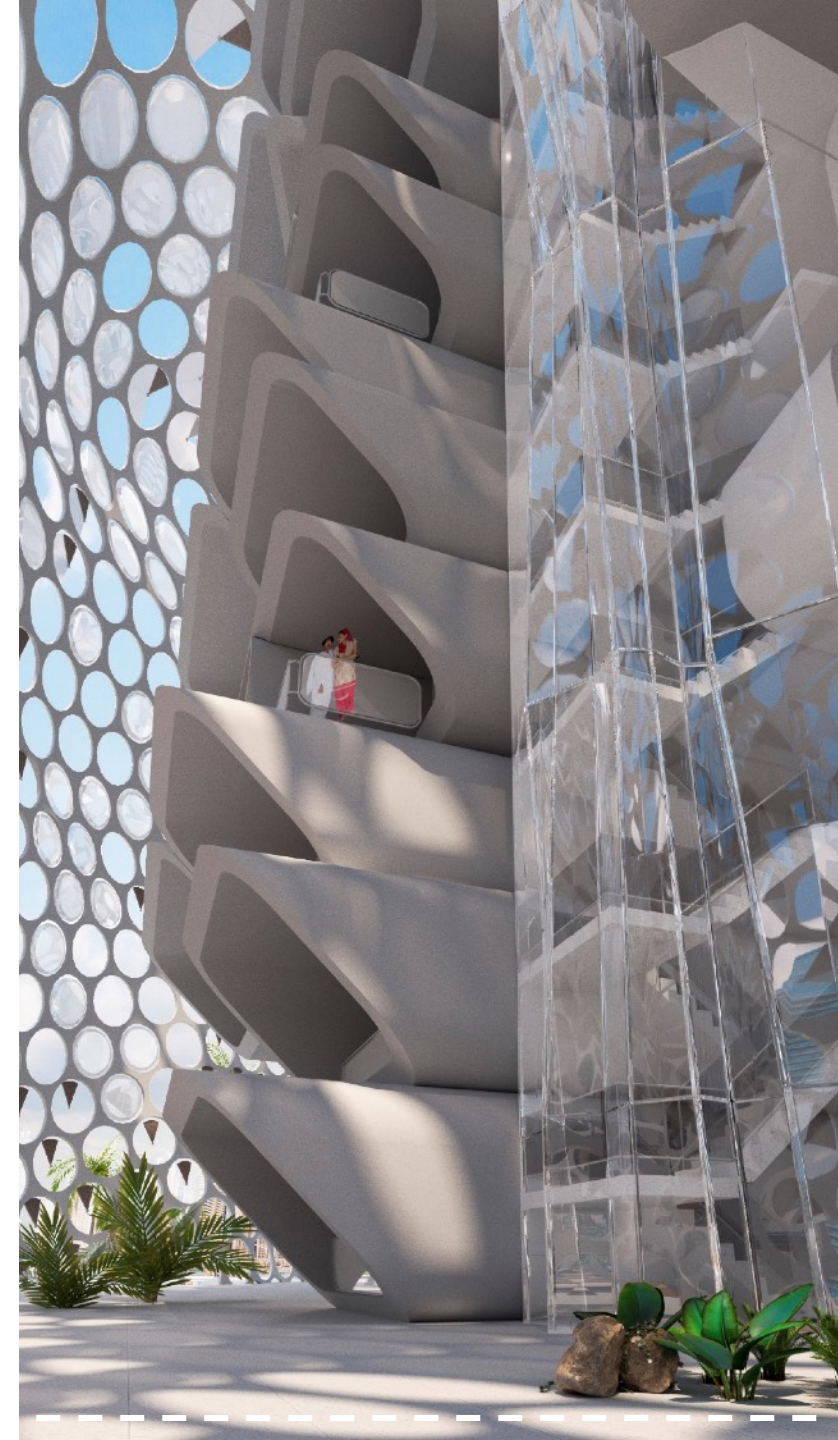
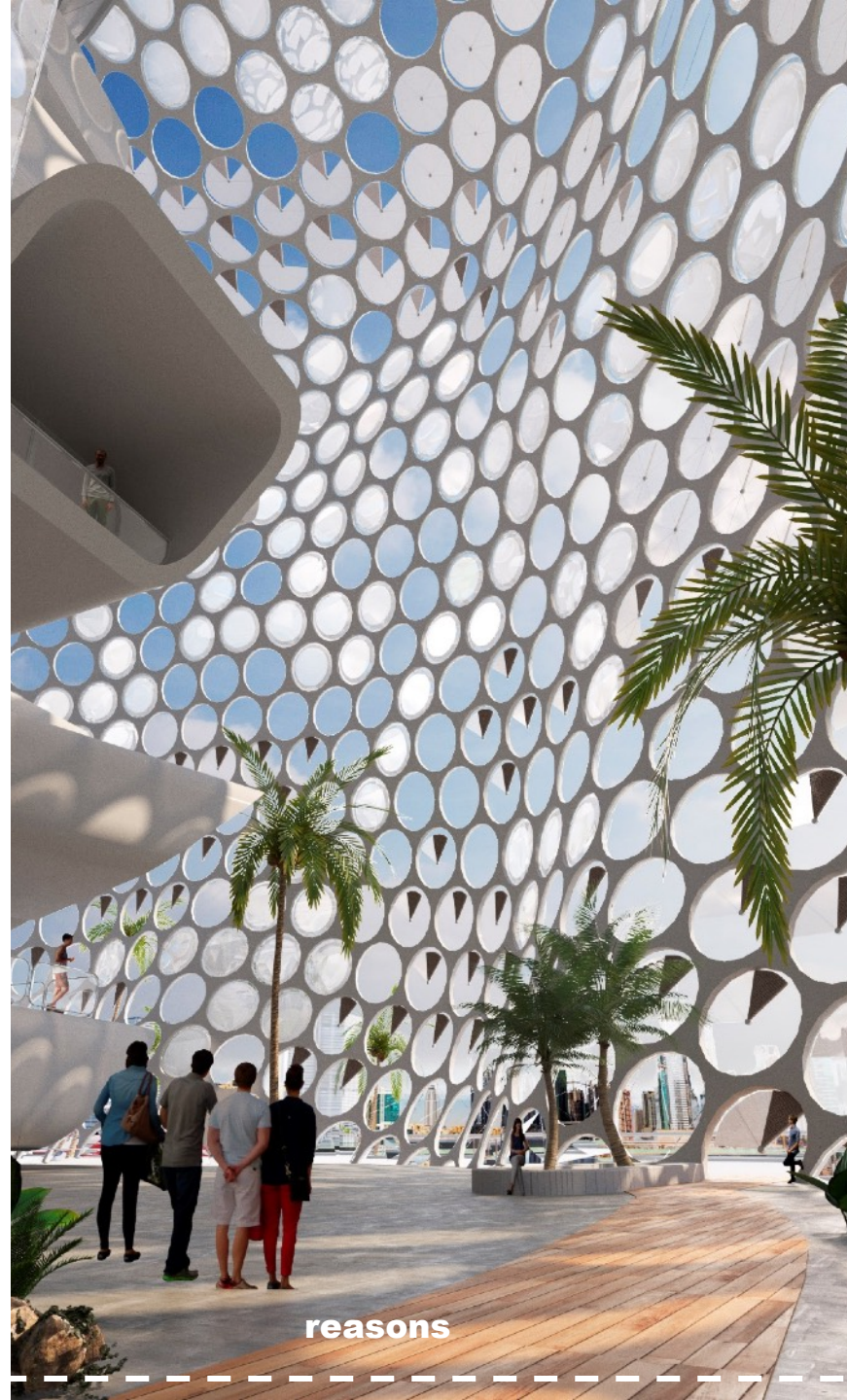
reasons



2.ANY NUMBER OF STOREYS AND SHAPES

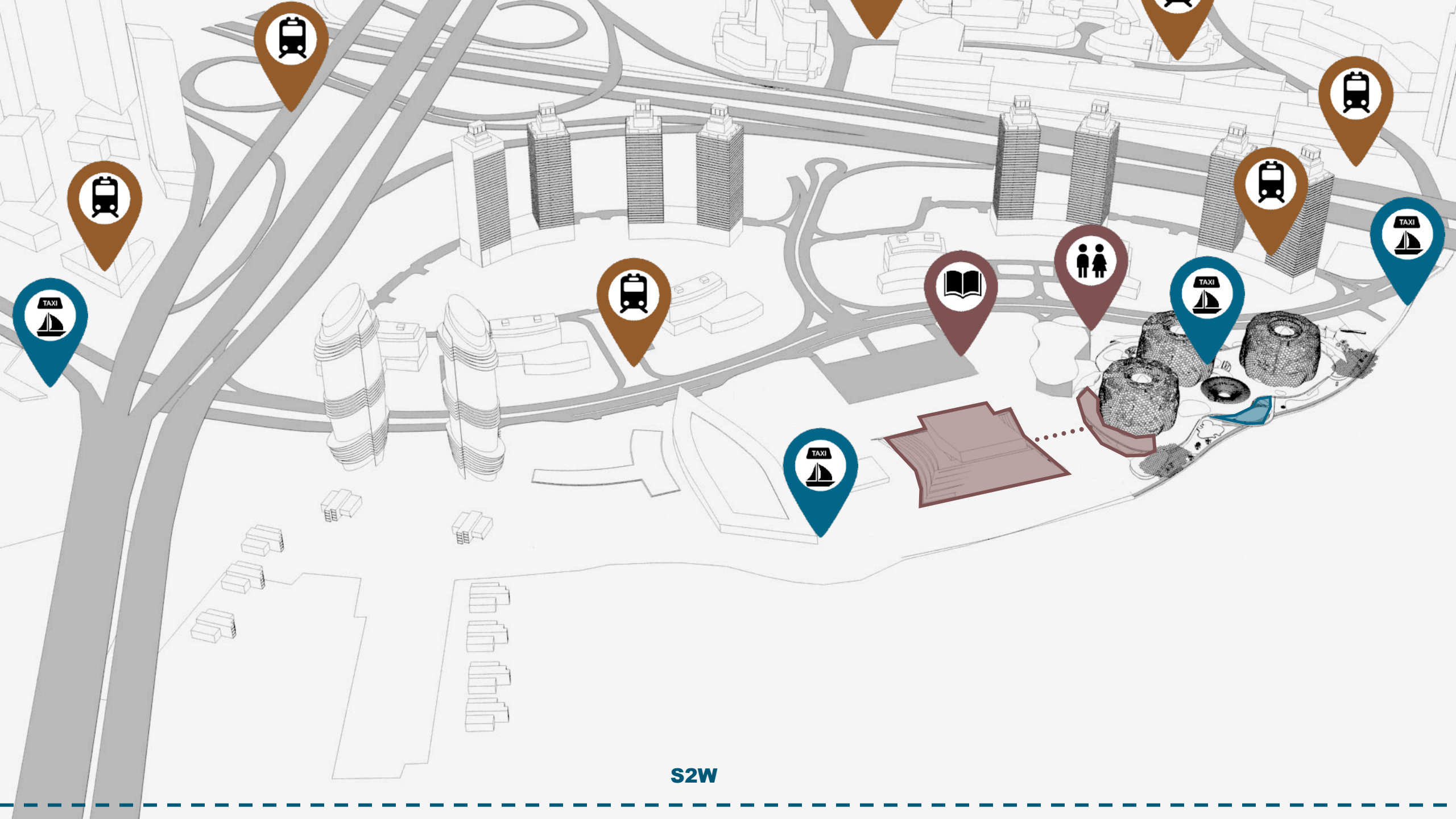


reasons

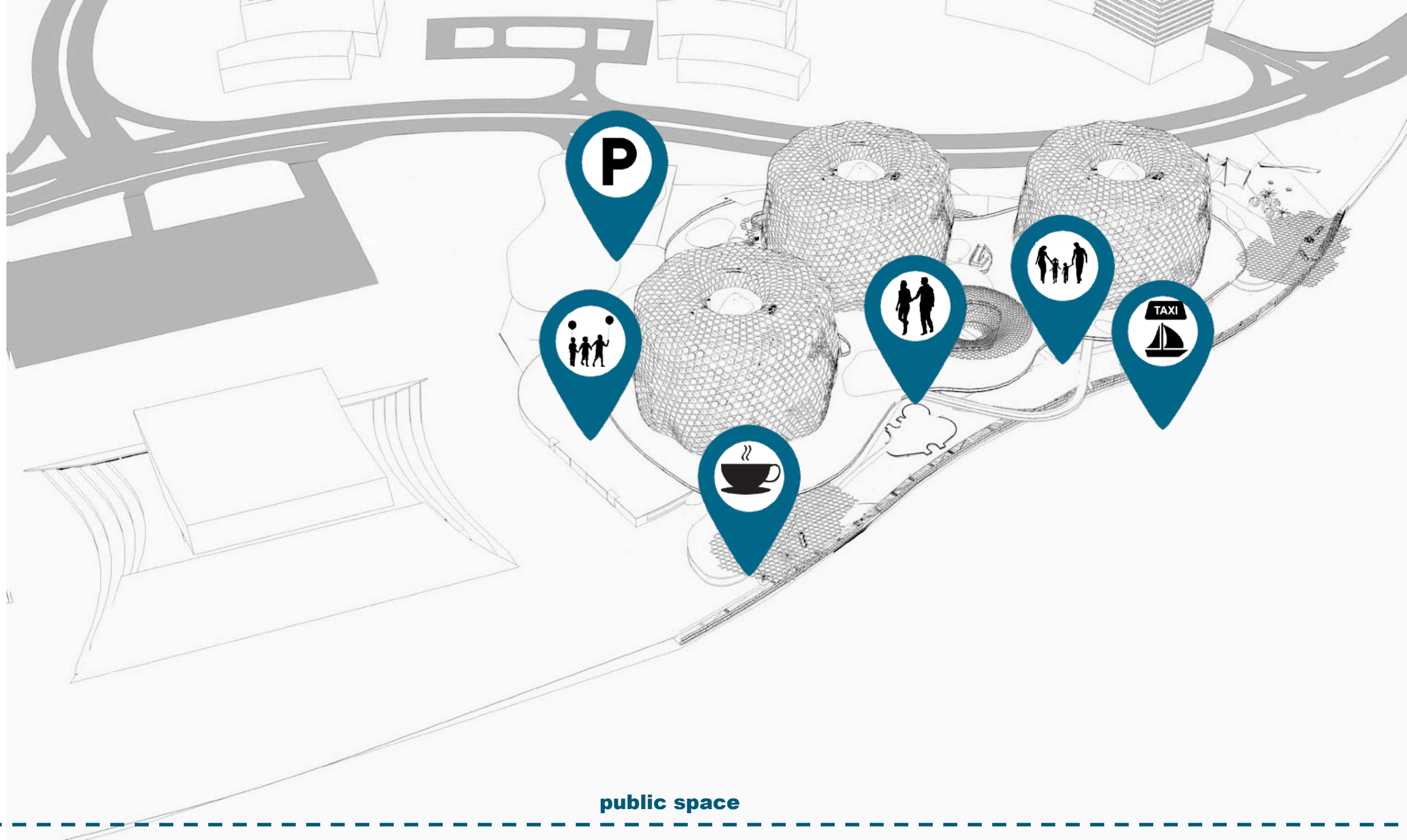




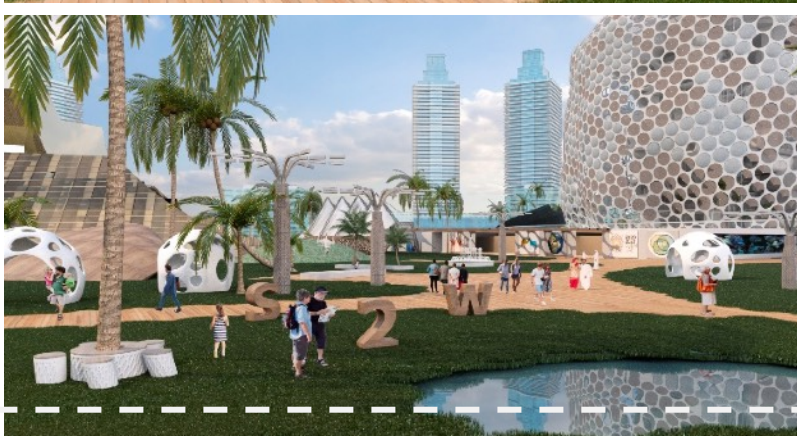
public space



S2W



public space





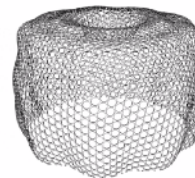
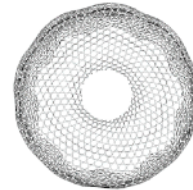
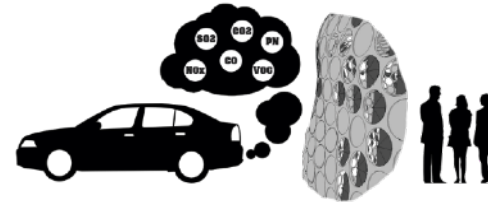
technical aspects



DEPOLLUTING TECHNOLOGY - THE MODULES ARE COATED WITH A SUPERFINE TITANIUM DIOXIDE (TIO₂). IT IS REDUCING THE POLLUTION OF 1,000 CARS PER DAY.



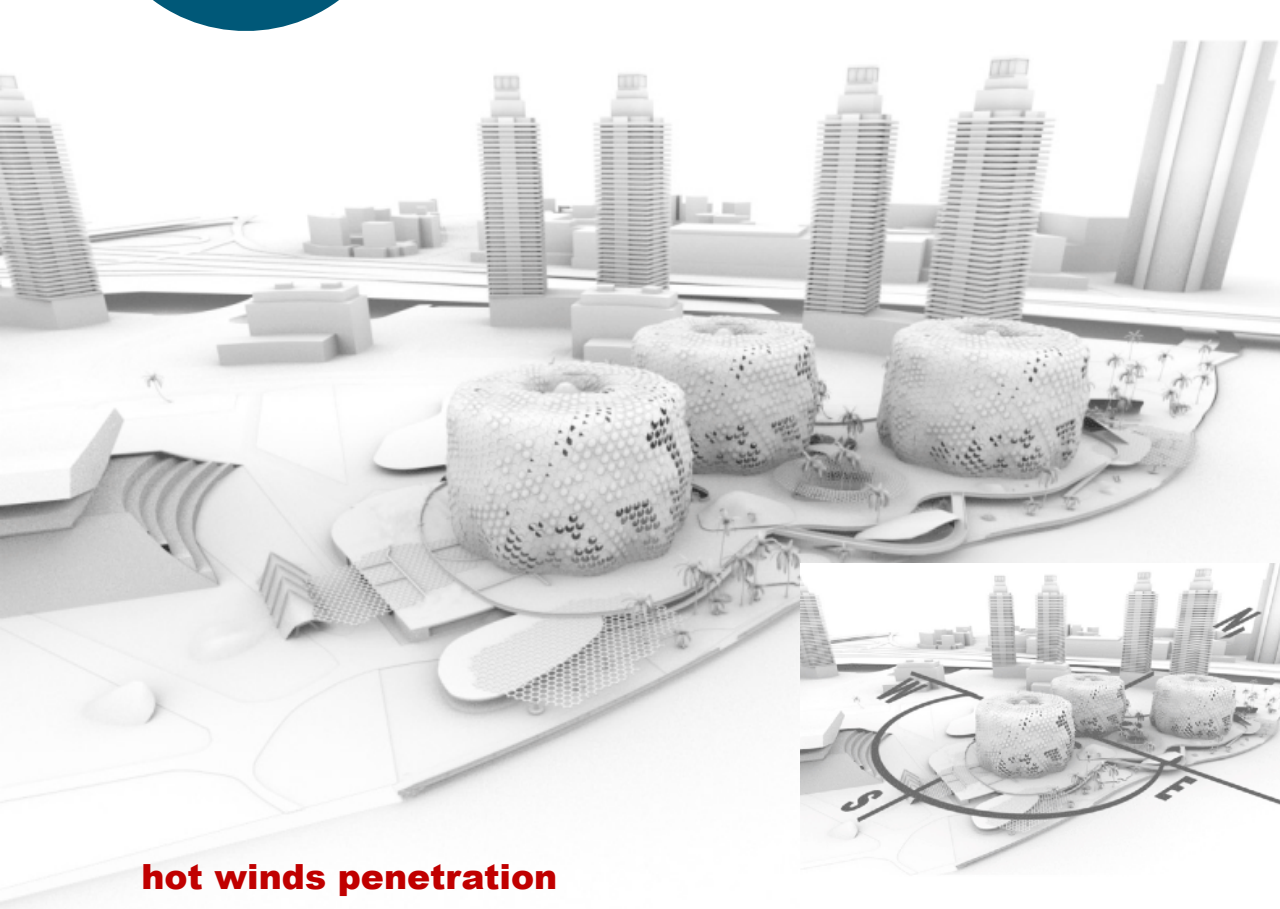
PRISE OF 1 MODULE
2,37kg = 31,8\$



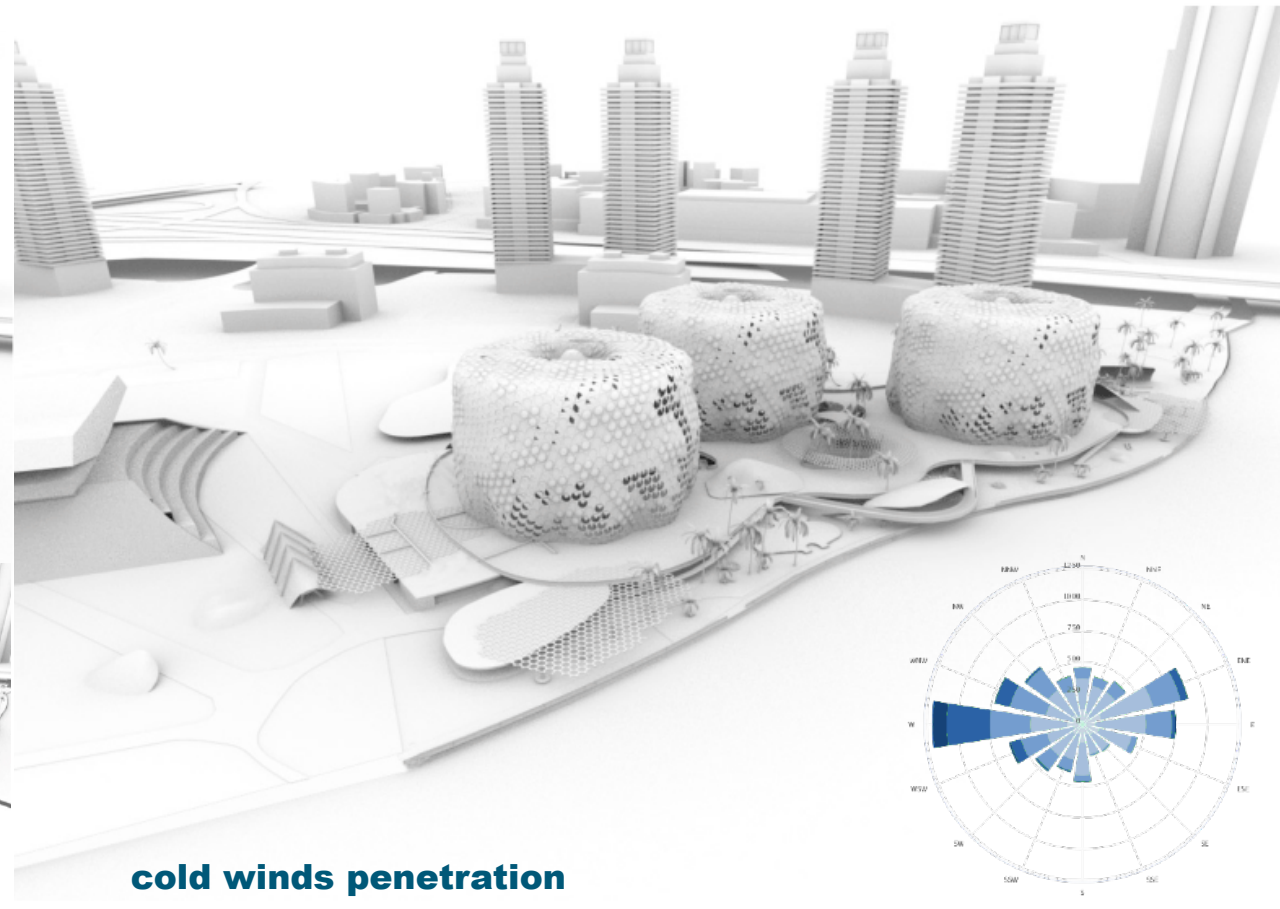
S2W - envelope



PROTECTION FROM WIND AND SAND

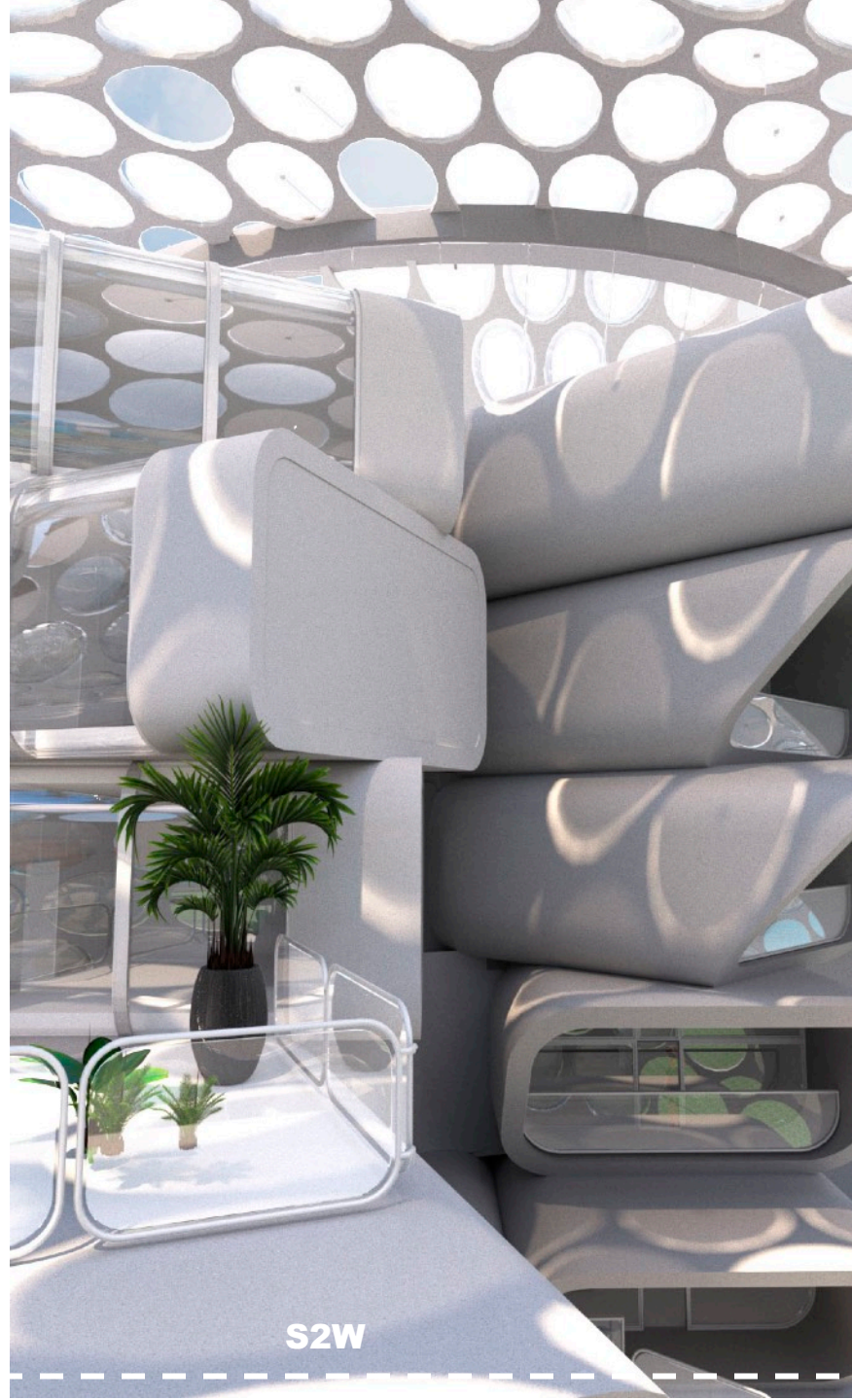


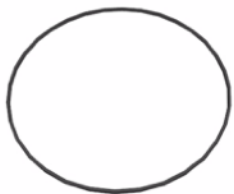
hot winds penetration



cold winds penetration

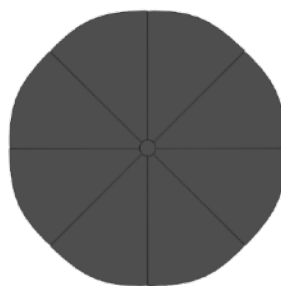
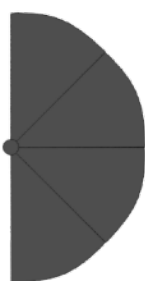
reasons





**Saint-Gobain –
SHEERFILL®
SGM Shade Mesh
SGM-30**

fan opening



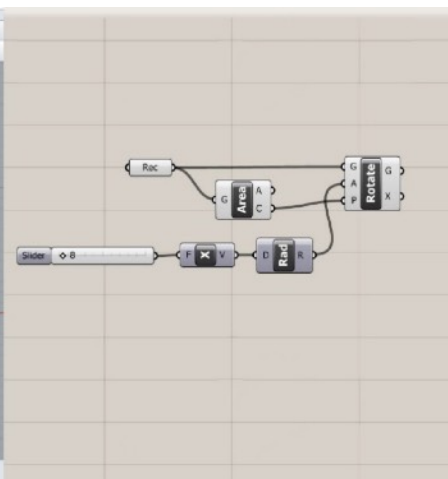
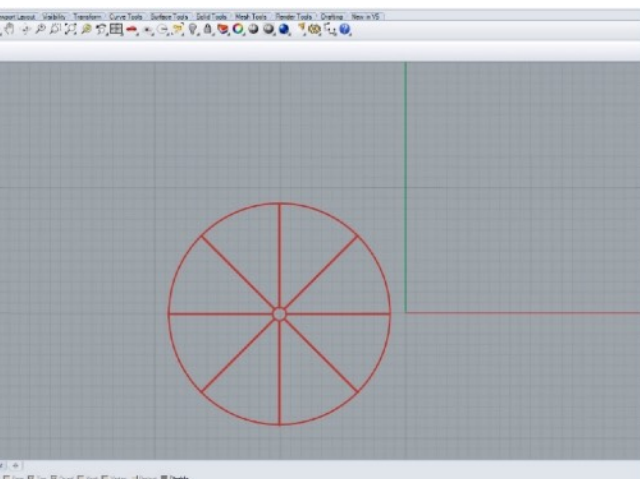
12.5%

25%

50%

75%

100%

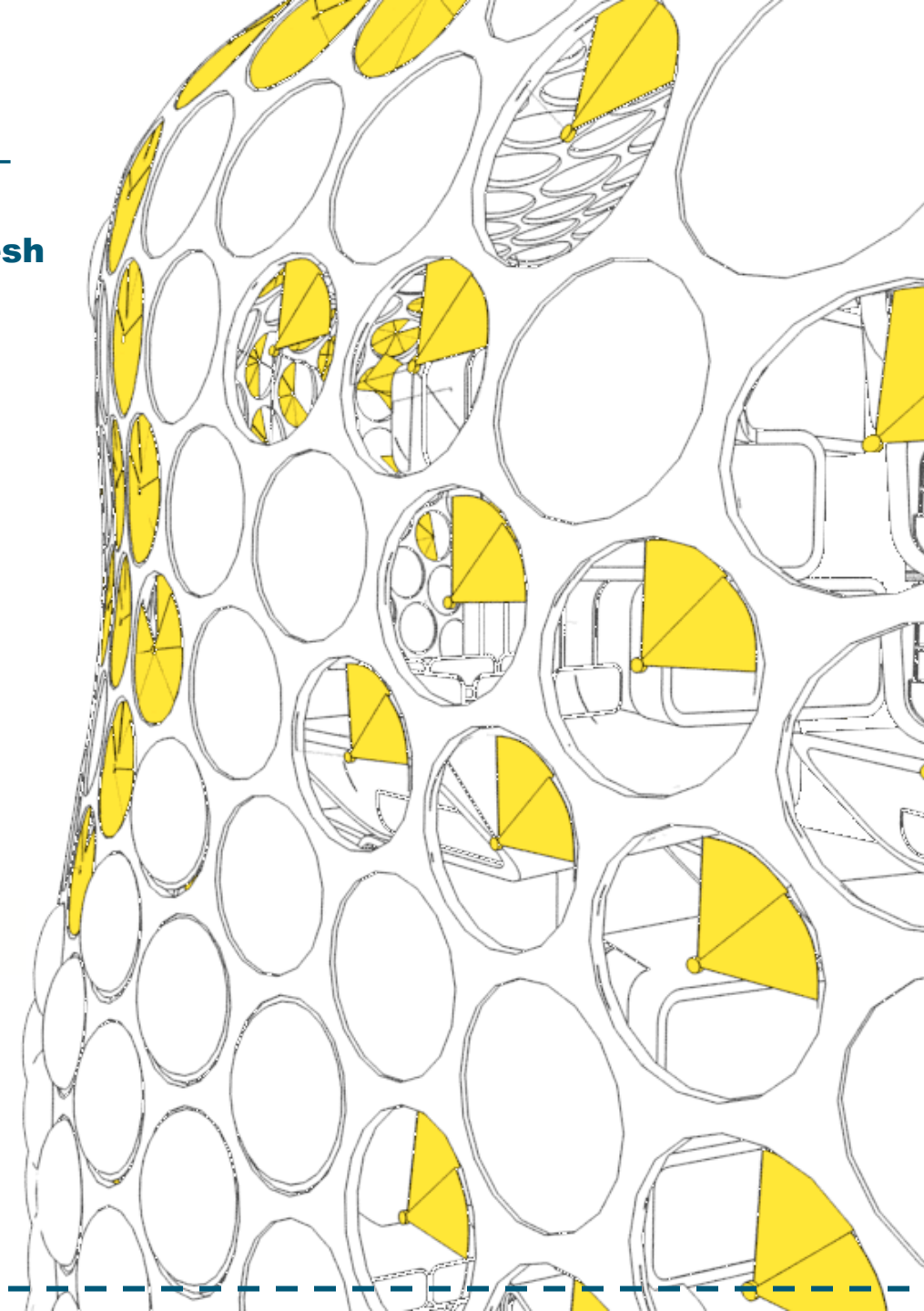


grasshopper



RhinoCeros®
NURBS Modeling for Windows

S2W - fan





1

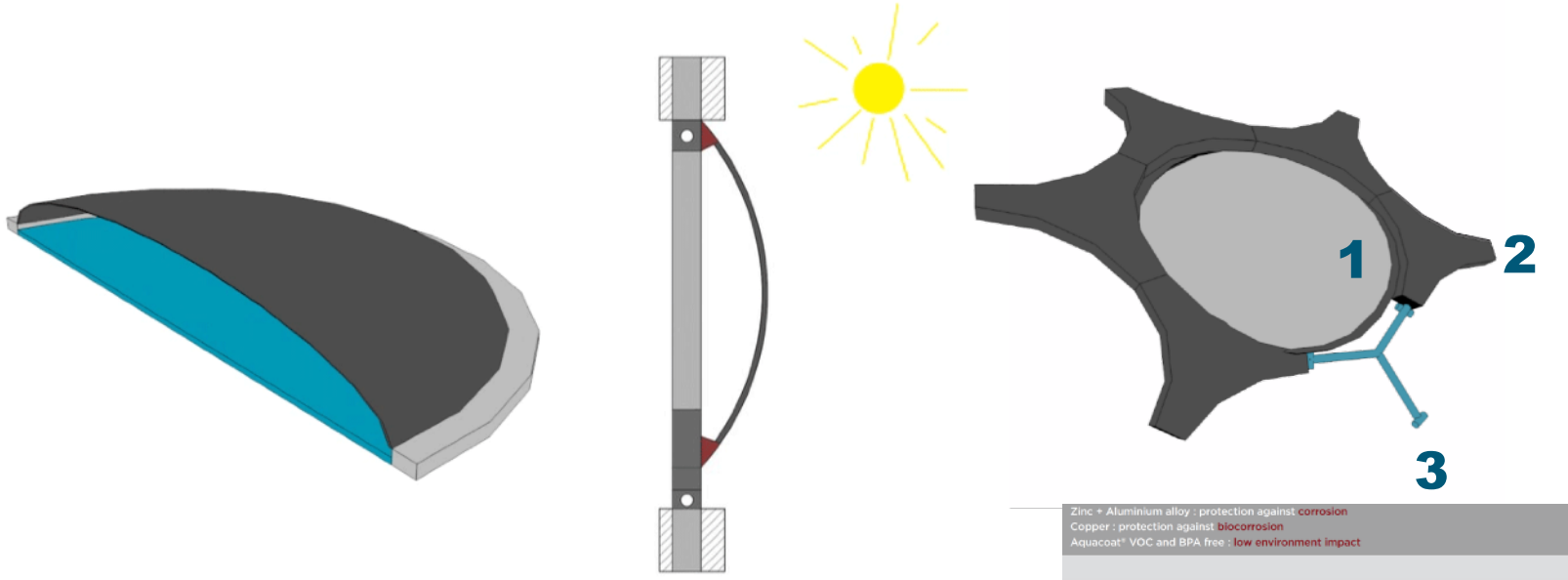


Saint-Gobain Performance
Plastics Specialty Films—
The Americas

Zitex® Porous PTFE Membranes

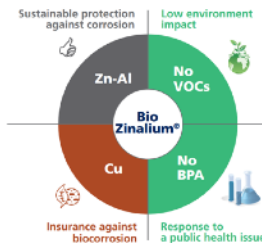
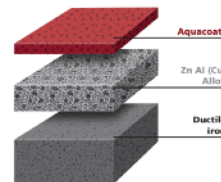
- For venting, diffusion, filtering and sealing
- 100% PTFE
- High vent rates
- Self-supporting membrane
- Hydrophobic

2 DEPOLLUTING TECHNOLOGY – the modules are coated with a superfine titanium dioxide (TiO_2)



Zinc + Aluminium alloy : protection against corrosion
Copper : protection against biocorrosion
Aquacoat® VOC and BPA free : low environment impact

3



S2W - capsule

50 - 70

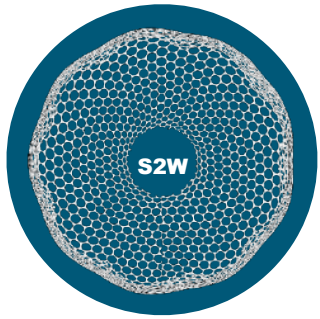


liters of water from 1 capsule,
depending on location





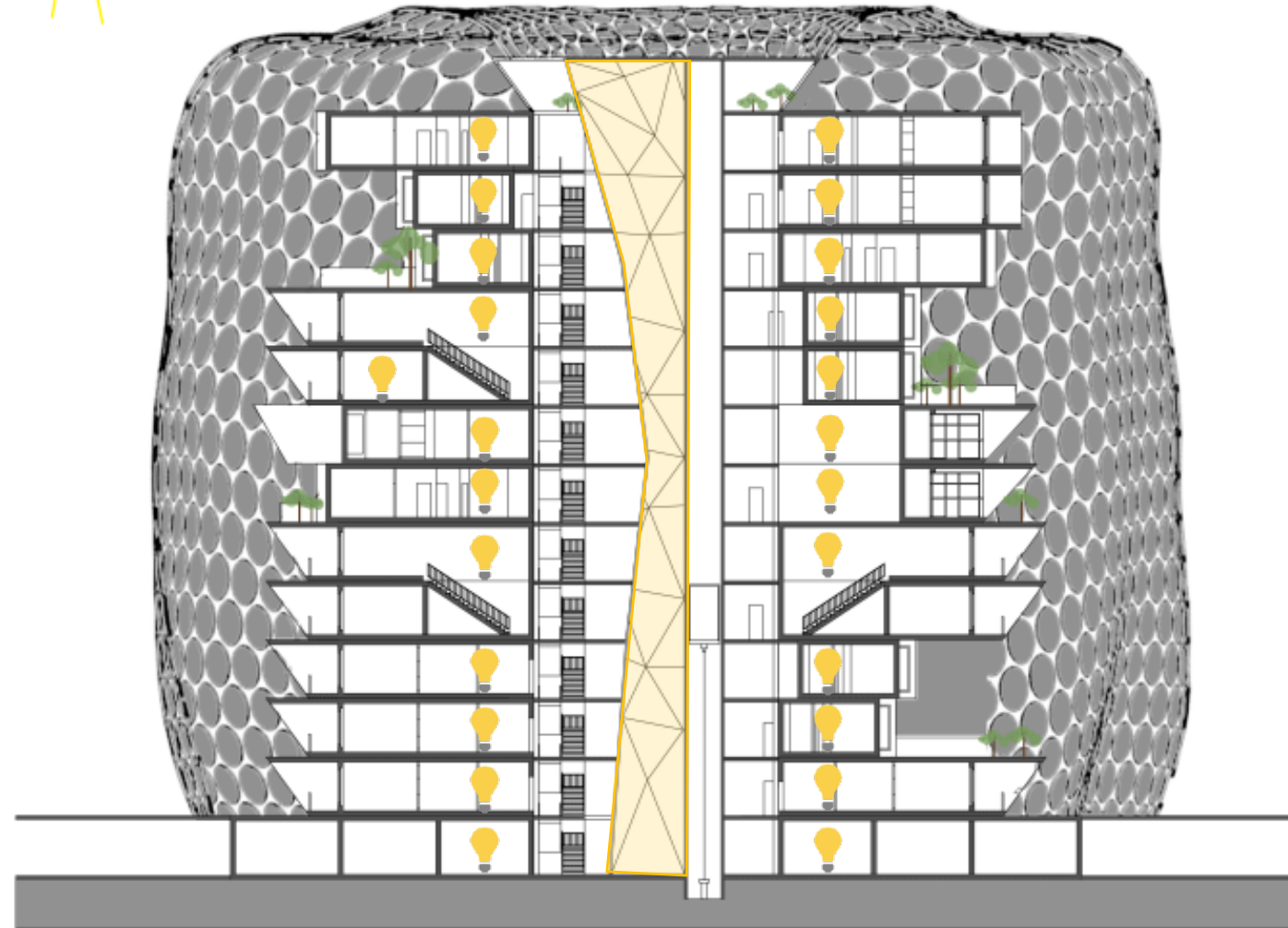
S2W - capsule



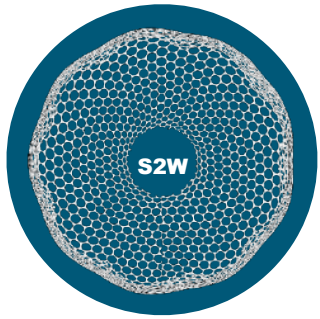
Saint-Gobain Performance
Plastics Specialty Films—
The Americas



- **HIGHLY TRANSLUCENT
MEMBRANE**
- **LIGHT ALL DAY**
- **PRICE OF THE MEMBRANE**
575,2 m² = 478200\$
- **CALCULATION OF THE
AMOUNT OF ELECTRICITY
FROM MEMBRANE:**
1 m² = 1,2 kW
575,2 m² = 690,24 kW



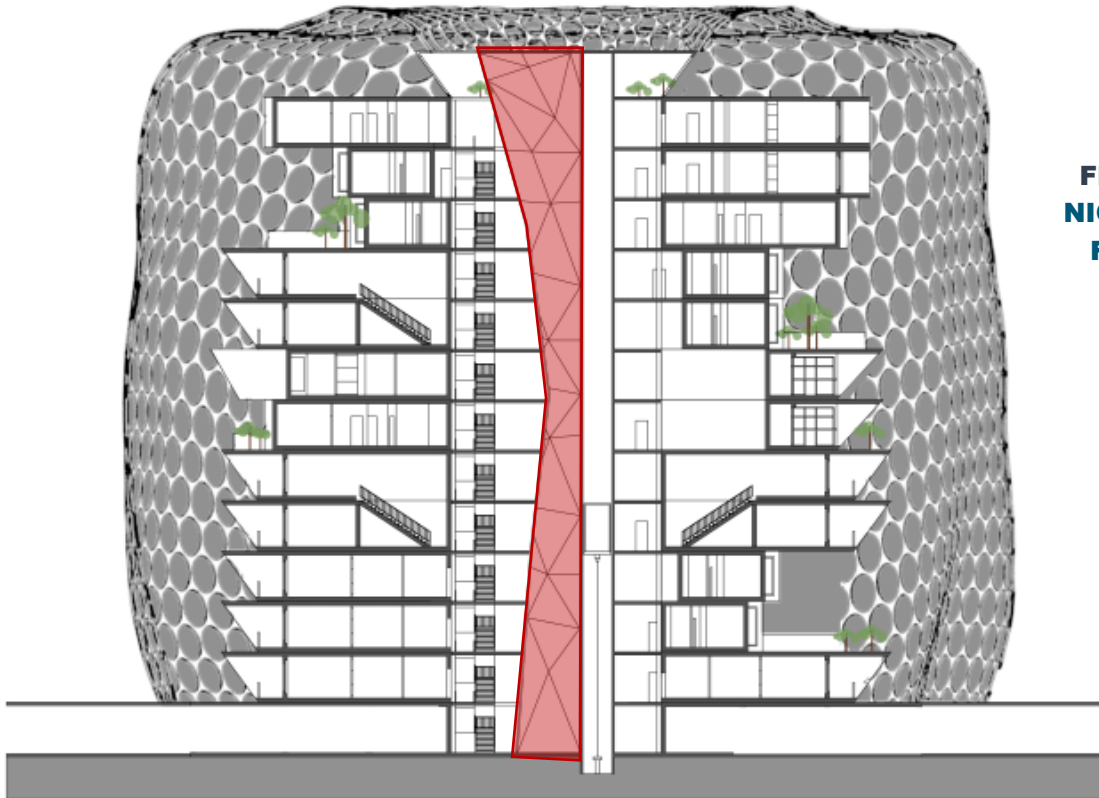
natural light



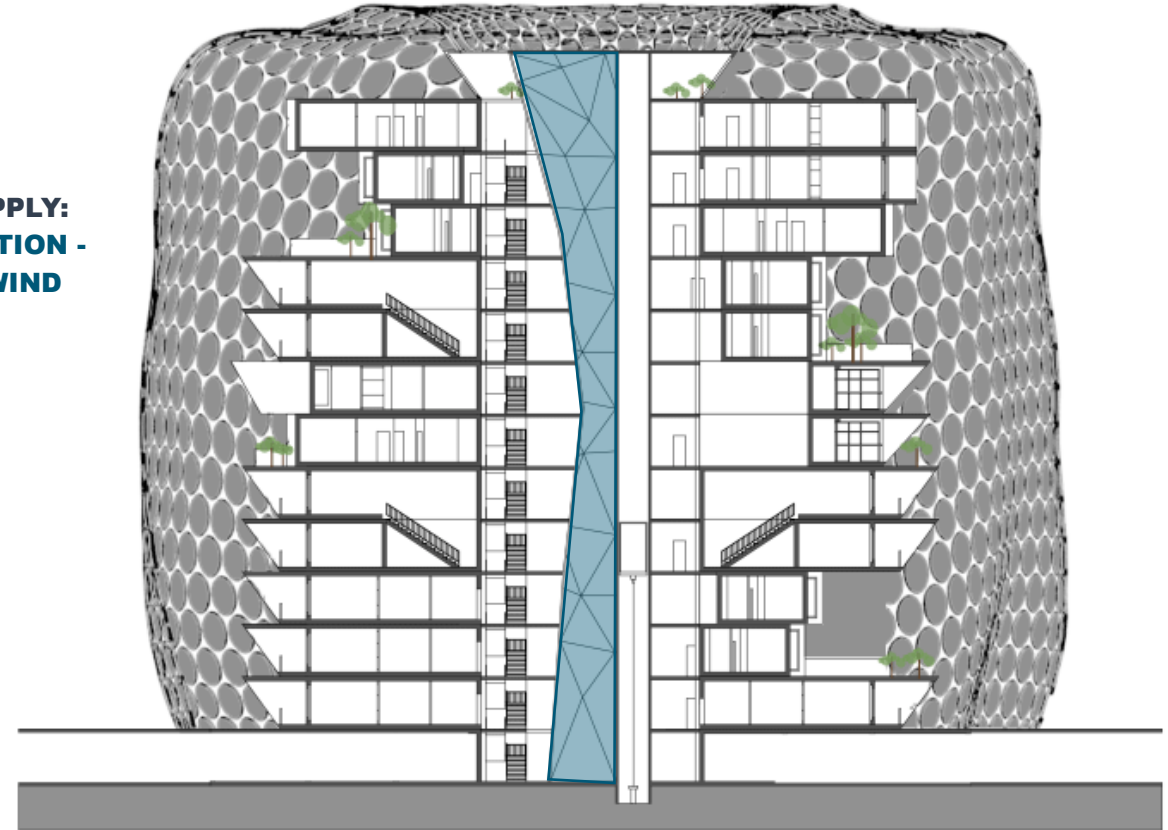
hot air


SAINT-GOBAIN
CHEMFILM®
Saint-Gobain Performance
Plastics Specialty Films—
The Americas

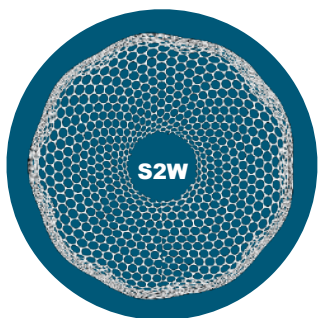
cold air



**FRESH AIR SUPPLY:
NIGHT VENTILATION -
FULLY OPEN WIND
+(25%)1h**



natural ventilation



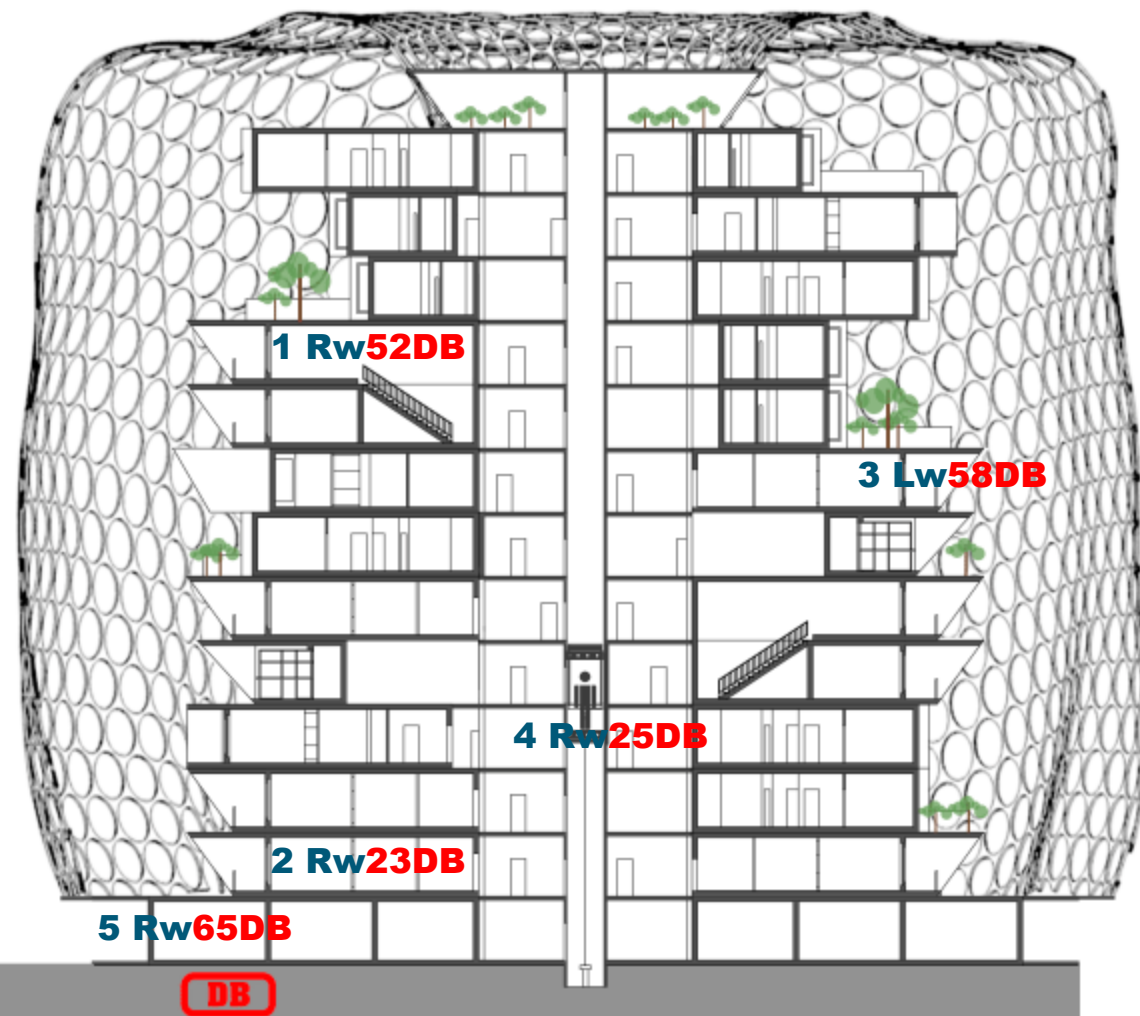
**1.SAINT GOBAIN ELECTROCHROME
SAGEGLASS, SG PRIVA-LITE, 52DB**

**2.SOUND ABSORBING SUSPENDED
CEILING ACOUSTIC TP1, 23DB**

**3.ISOVER SOUND
PROTECT, 58DB**

**4.ISOVER ACOUSTIC EP5,
25DB**

**5.EXTERIOR SOUND
INSULATION, 65DB**

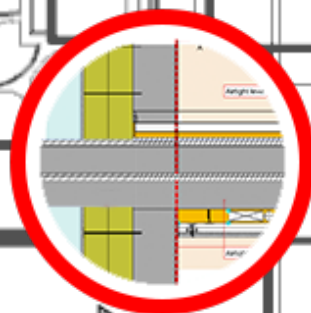


acoustic

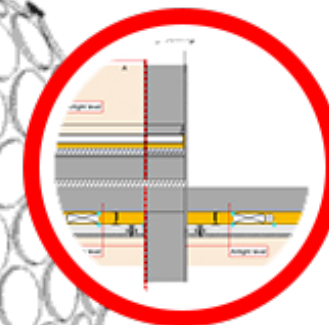


construction details

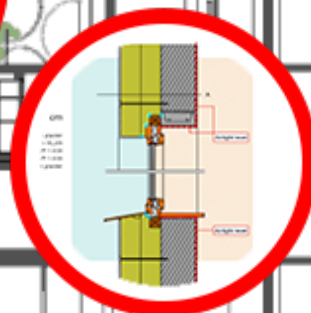
U= 0.11
W/(m2K)



U= 0.19
W/(m2K)



U= 0.12
W/(m2K)



U= 0.73
W/(m2K)

U= 0.16
W/(m2K)



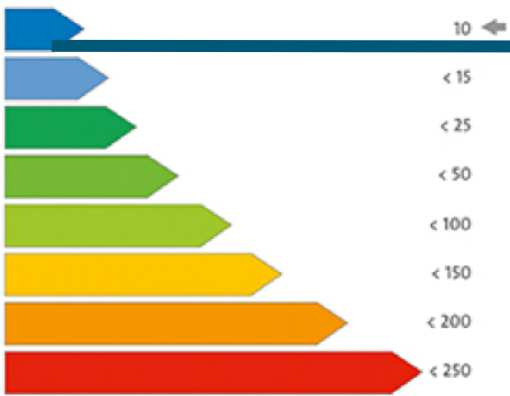
construction details



J. Cooling Demand Calculations

Negative Heat Loads:	866.17
Ventilation Heat Losses:	-788.78
Total Heat Losses:	77.39
Internal Heat Gains:	3.53
Available Solar Heat Gains:	31.90
Usefull Heat Losses:	16.04
Usefull Cooling Demand:	61.35
Specific Annual Cooling Demand:	64.8

Energy efficiency classes



Addresses

Object:	S2W
Street:	cultural village
ZIP/Town:	Dubai
Country:	United Arab Emirates

Average U-Values

Windows:	0.73 W/(m2K)
Doors:	0.80 W/(m2K)

Average U-Values

Pitched roof/mono pitched:	---- W/(m2K)
Roof flat:	0.11 W/(m2K)
Wall against air:	0.11 W/(m2K)
Wall against ground:	---- W/(m2K)
Wall against neighbour:	---- W/(m2K)
Wall against unheated cellar:	---- W/(m2K)
Slab against ground:	---- W/(m2K)
Slab against unheated cellar:	0.16 W/(m2K)

Airtightness

Airtightness Rate:	1.00
--------------------	------

Thermal Bridge - Free:

Yes

Type of Construction

Construction:	New Building
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Usage

Building Type:	Residential
Usage	For living
Design Temperature	20°

Total Heated Space Area

Heated Space Area:	70.00 m2
--------------------	----------

Total Heated Space Volume

Heated Space Volume:	231.00 m3
----------------------	-----------

System Performance

Heat Recovery Systems :	95.00 %
Subsoil Heat Exchanger:	0.00 %

Specific Heat Demand

Transmission Heat Losses:	34.65 kWh/a
Ventilation Heat Losses:	6.86 kWh/a
Total Heat Losses:	41.51 kWh/a
Internal Heat Gains:	17.64 kWh/a
Solar Heat Gains:	31.90 kWh/a
Total Heat Gains:	37.26 kWh/a
Annual Heat Demand:	4.25 kWh/a
Specific Heat Demand:	5.1 kWh/(m2a)



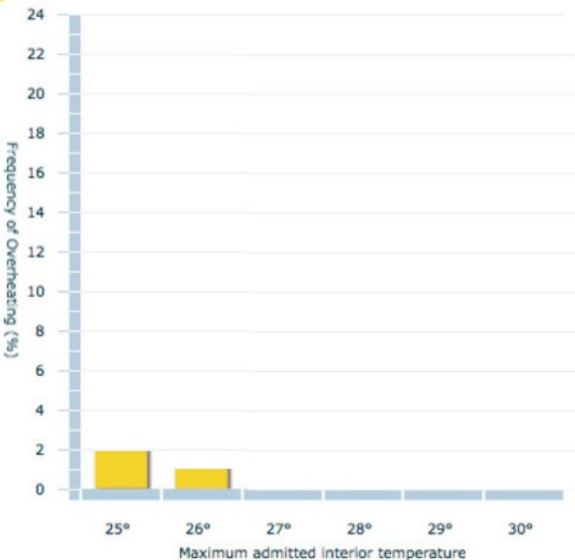
SPECIFIC ANNUAL HEAT DEMAND:

5,1 kWh/(m²a)

SPECIFIC ANNUAL COOLING

DEMAND: 64,8 kWh/(m²a)

OVERHEATING FREQUENCY : 8.33%
calculations





S2W



**SUPRUNIUK VERONIKA,
BELARUS, BSTU**