



A PATH TO THE FUTURE





National School of Architecture Fez, Morocco



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Team : 11



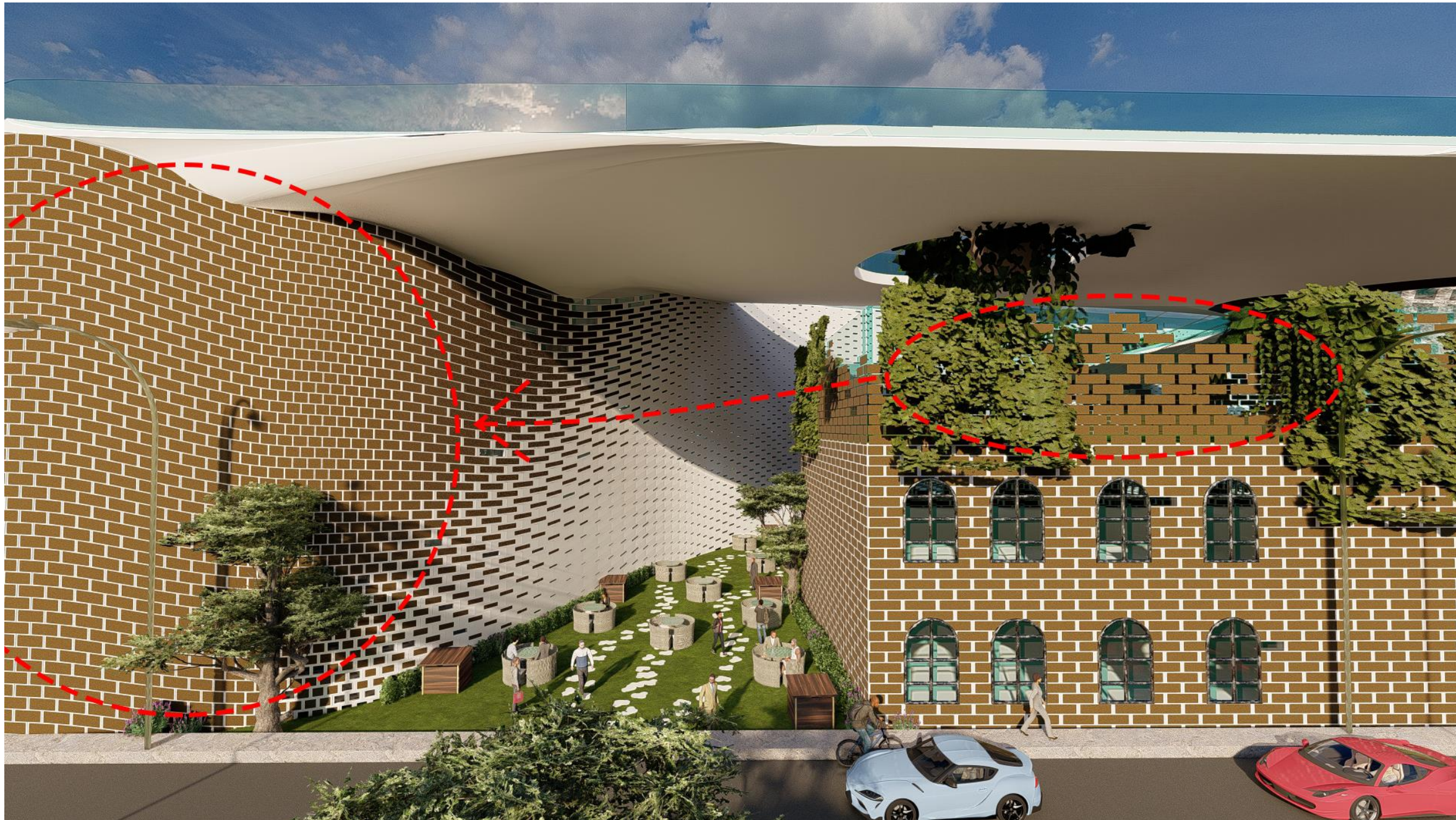
Inspiration

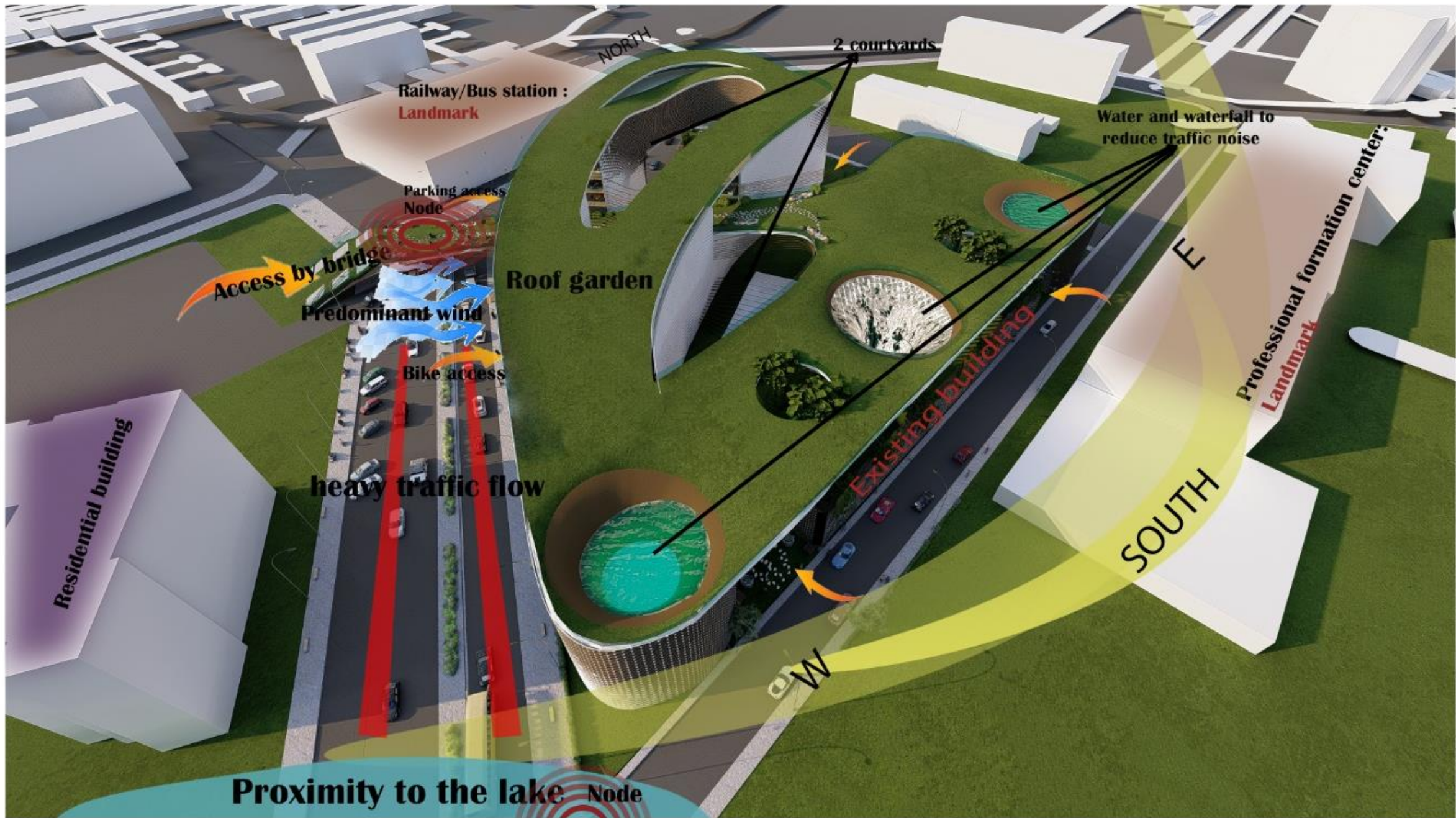


Warsaw, Poland 1941

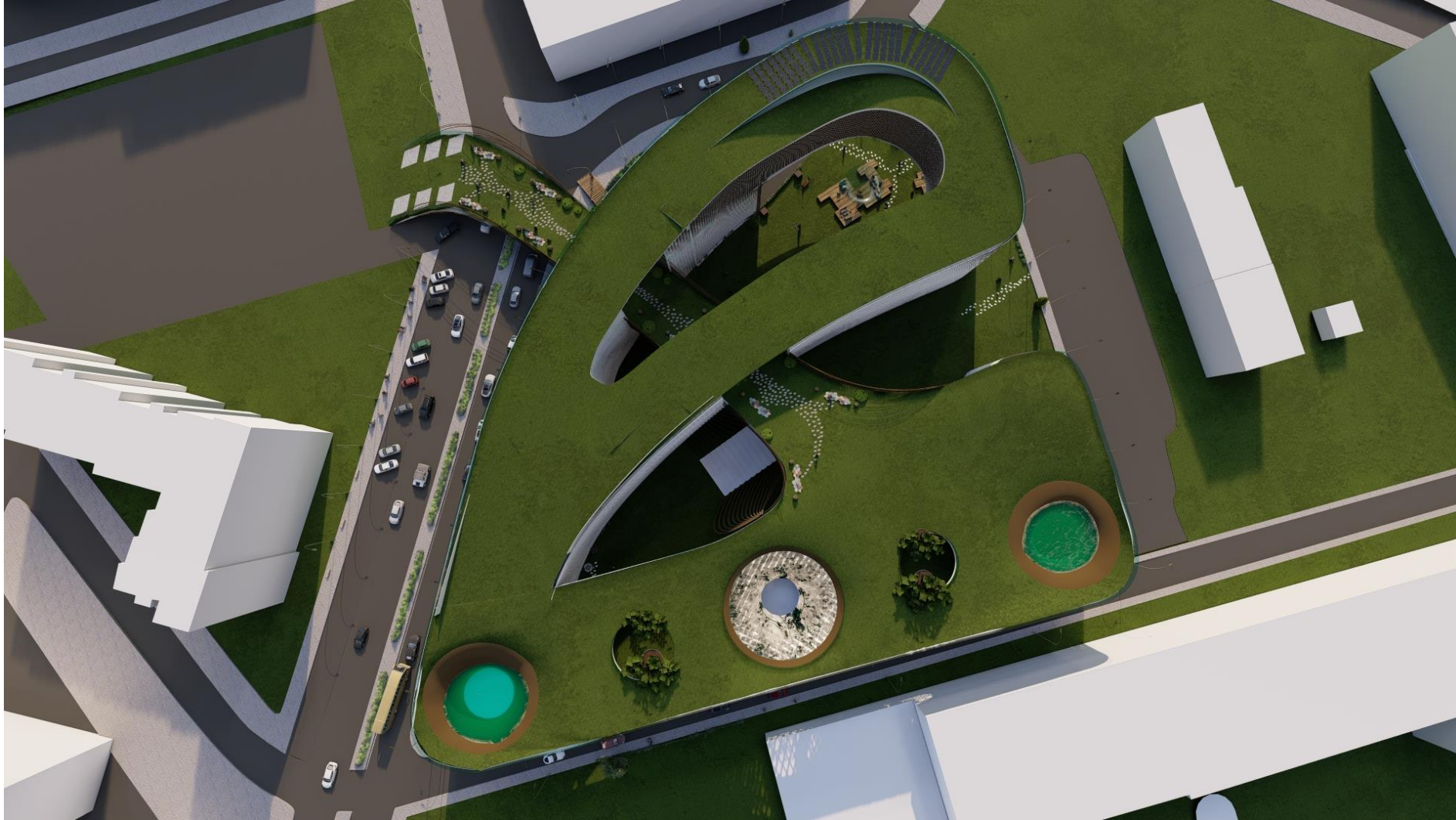


Phoenix





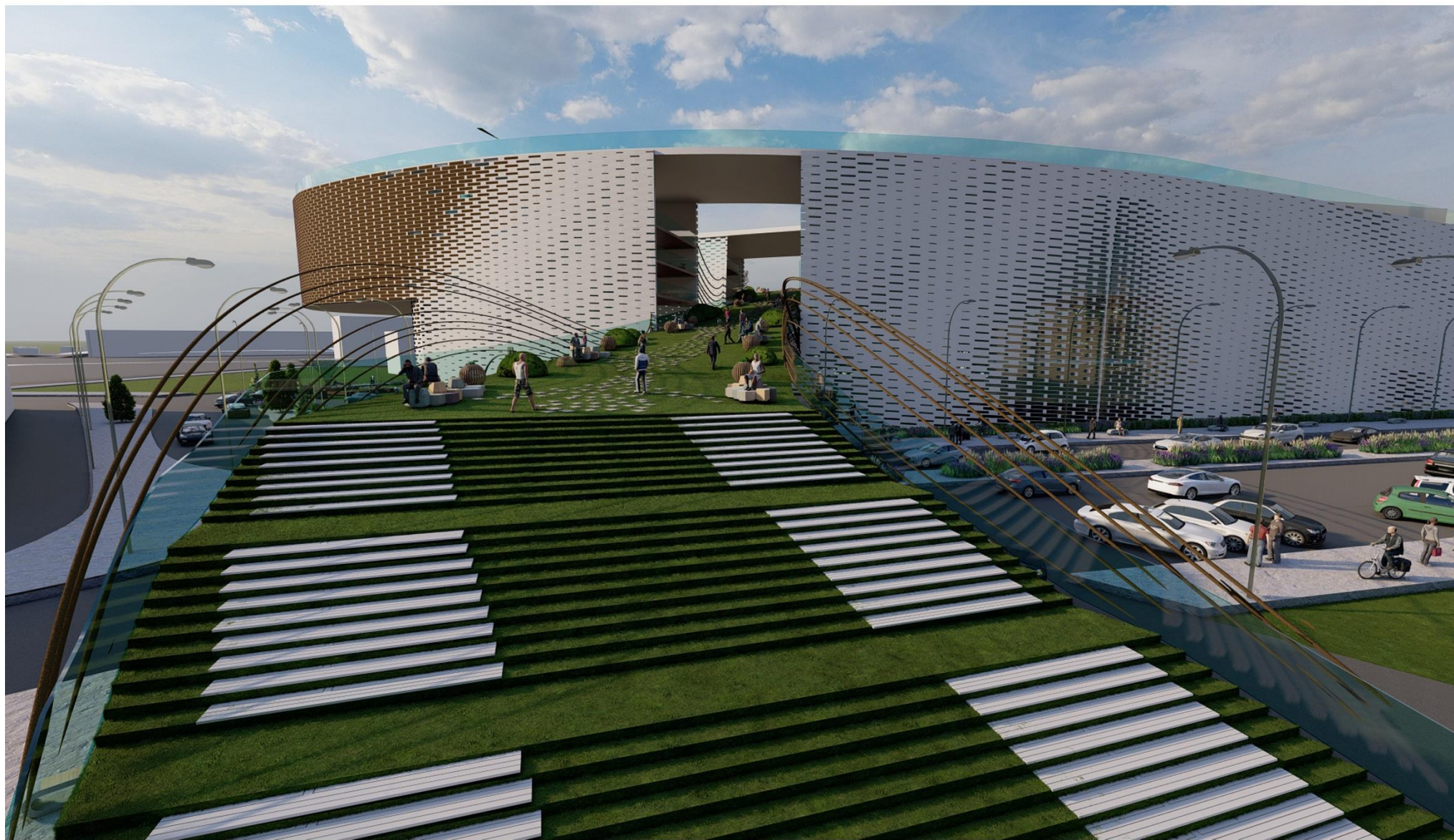
Master plan :

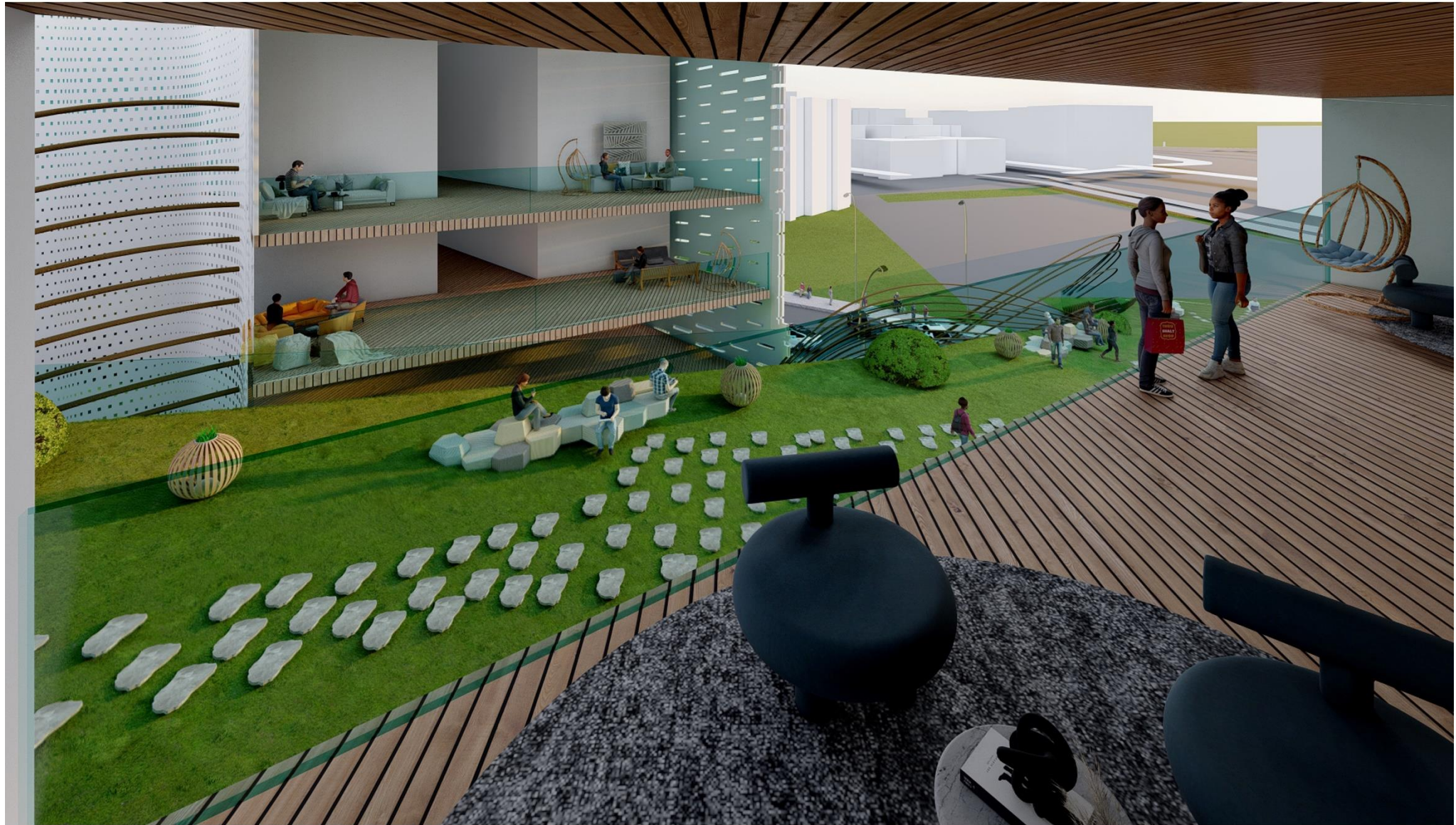


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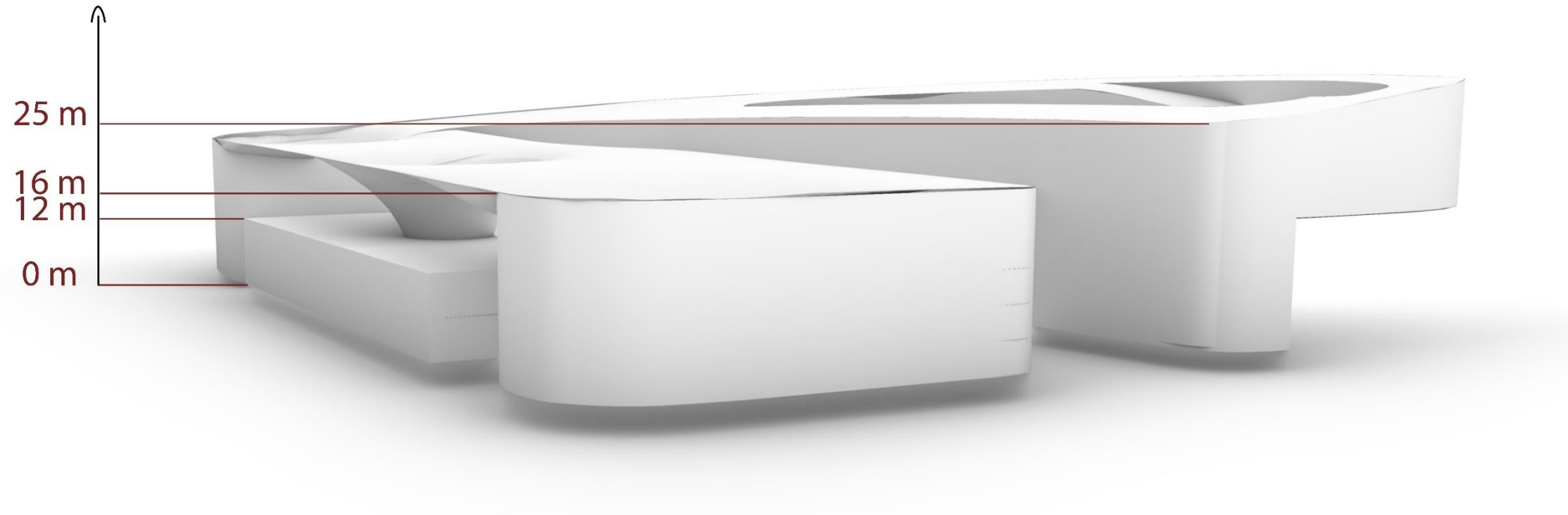


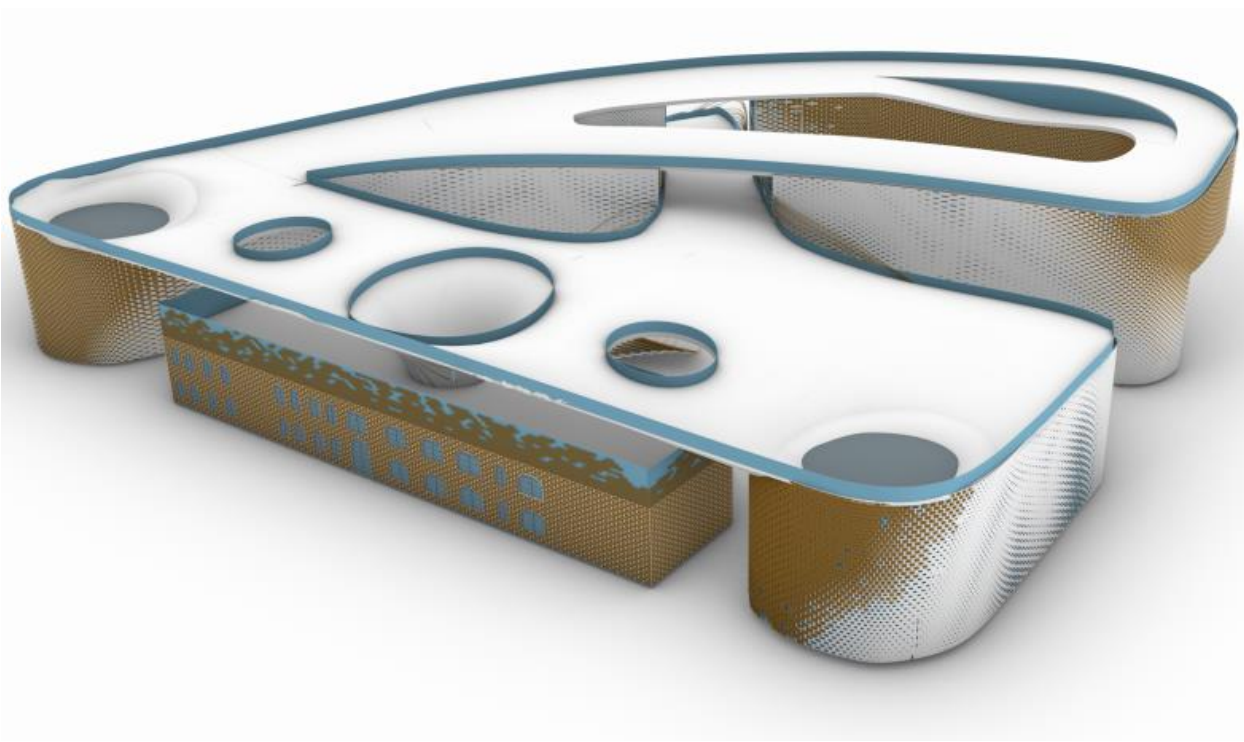




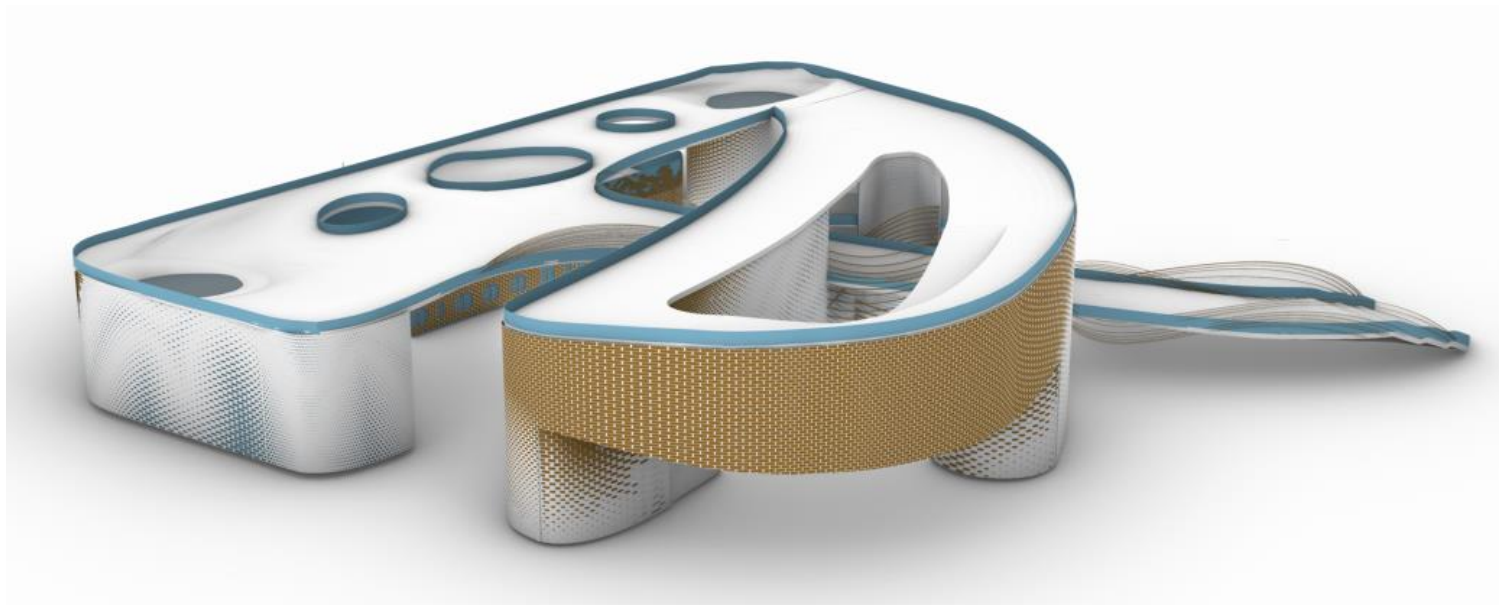


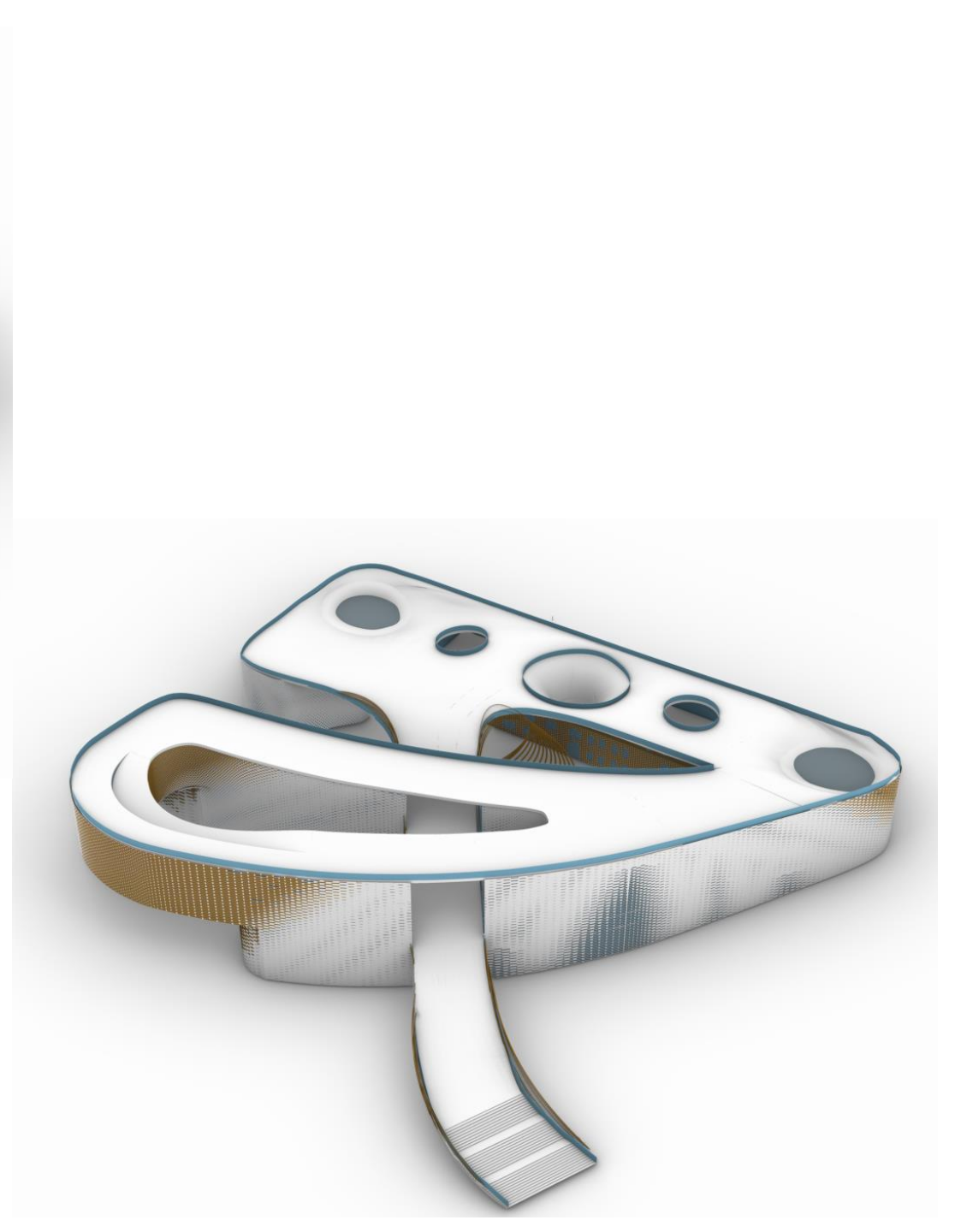
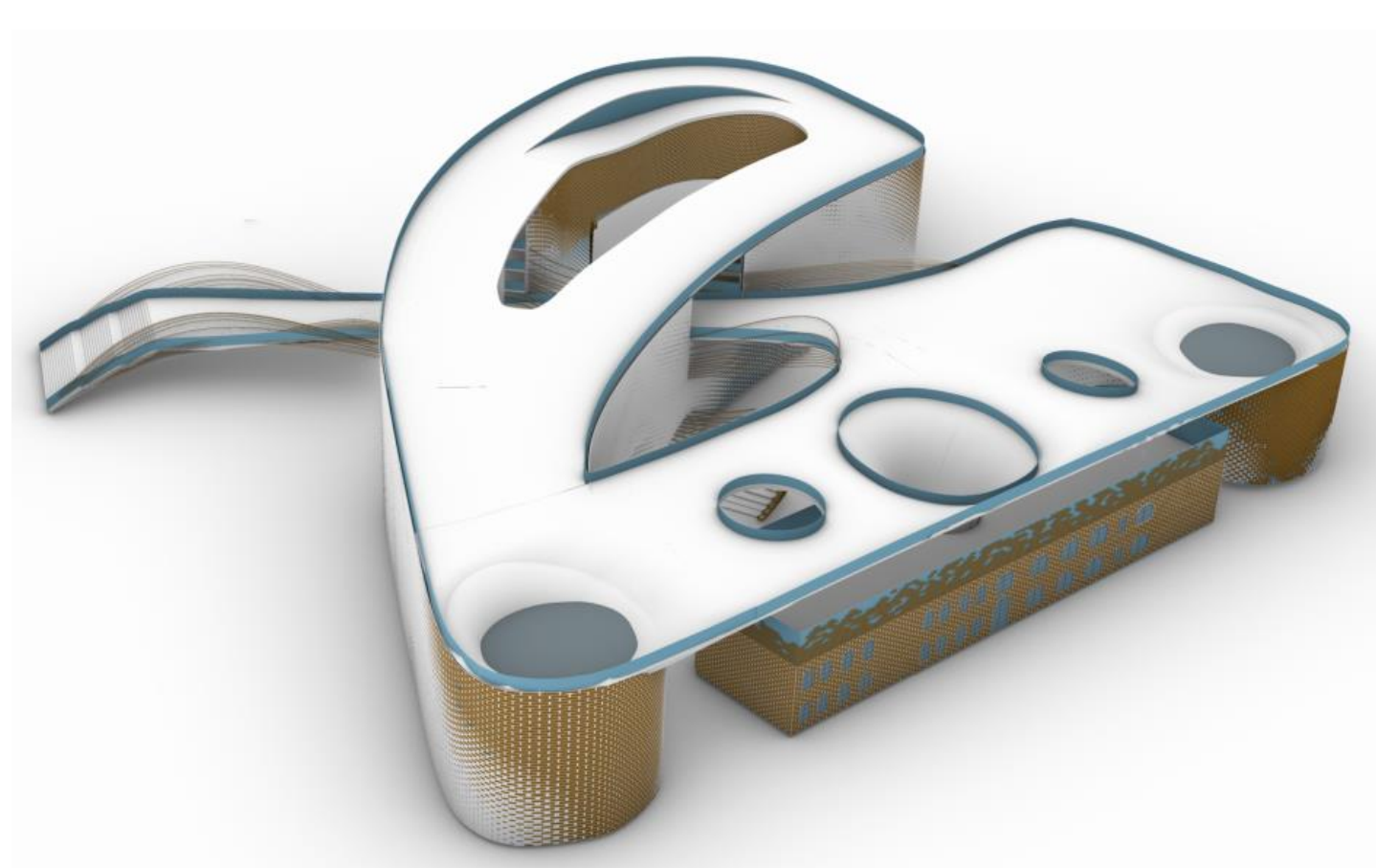
Difference of altitude between the components of the building





3D model of the project





Architectural styles



- Gothic architecture



- Neoclassical architecture

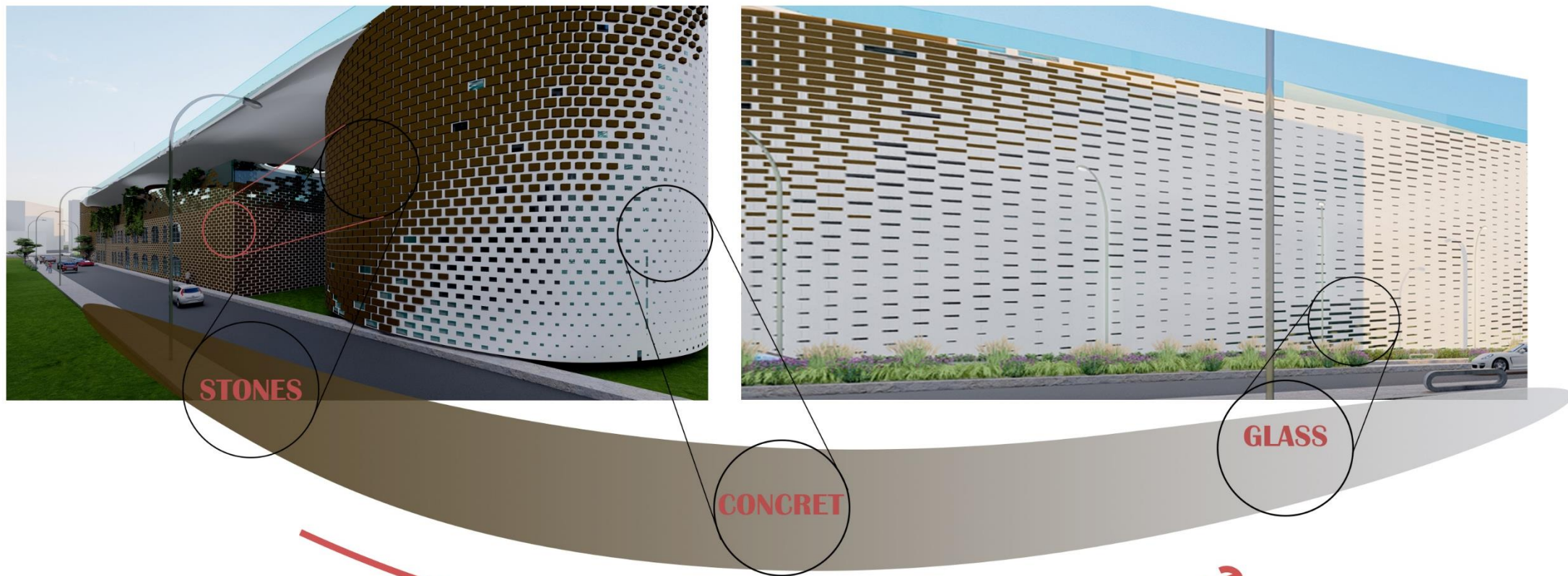


- Baroque architecture



- Contemporary architecture

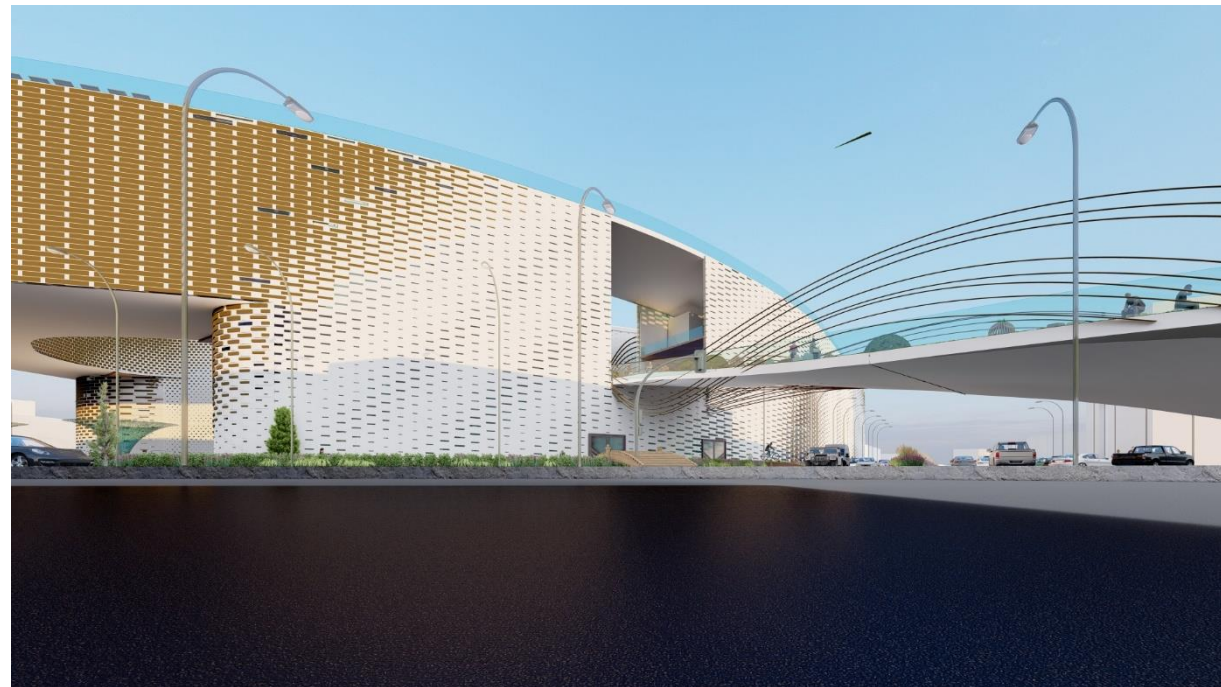
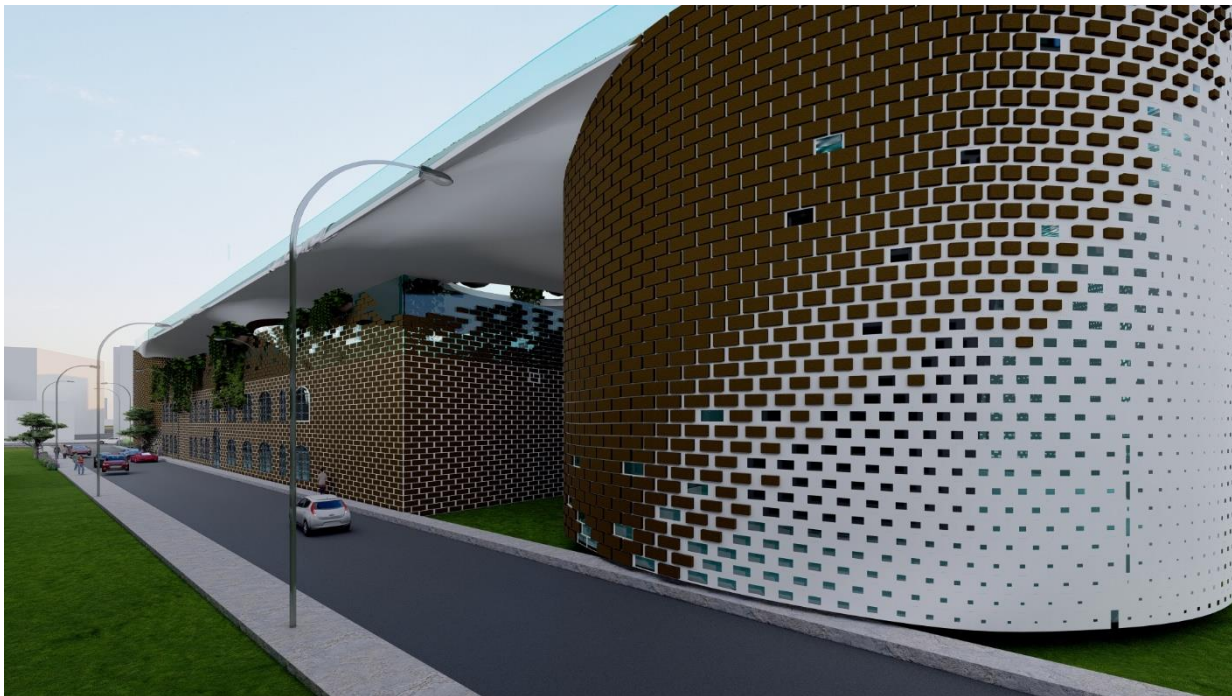




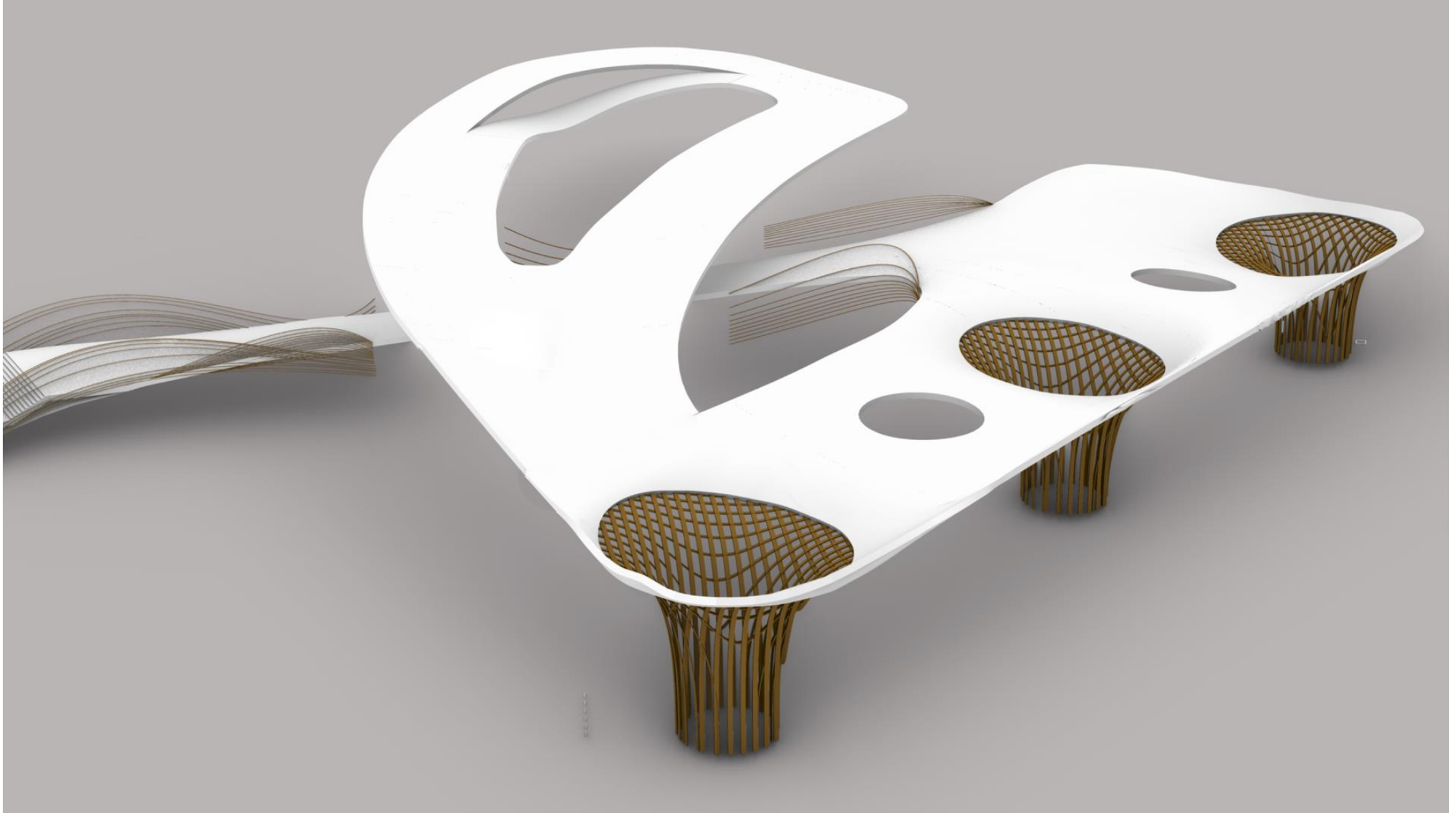
Degradation from existant historical building to the new constructions



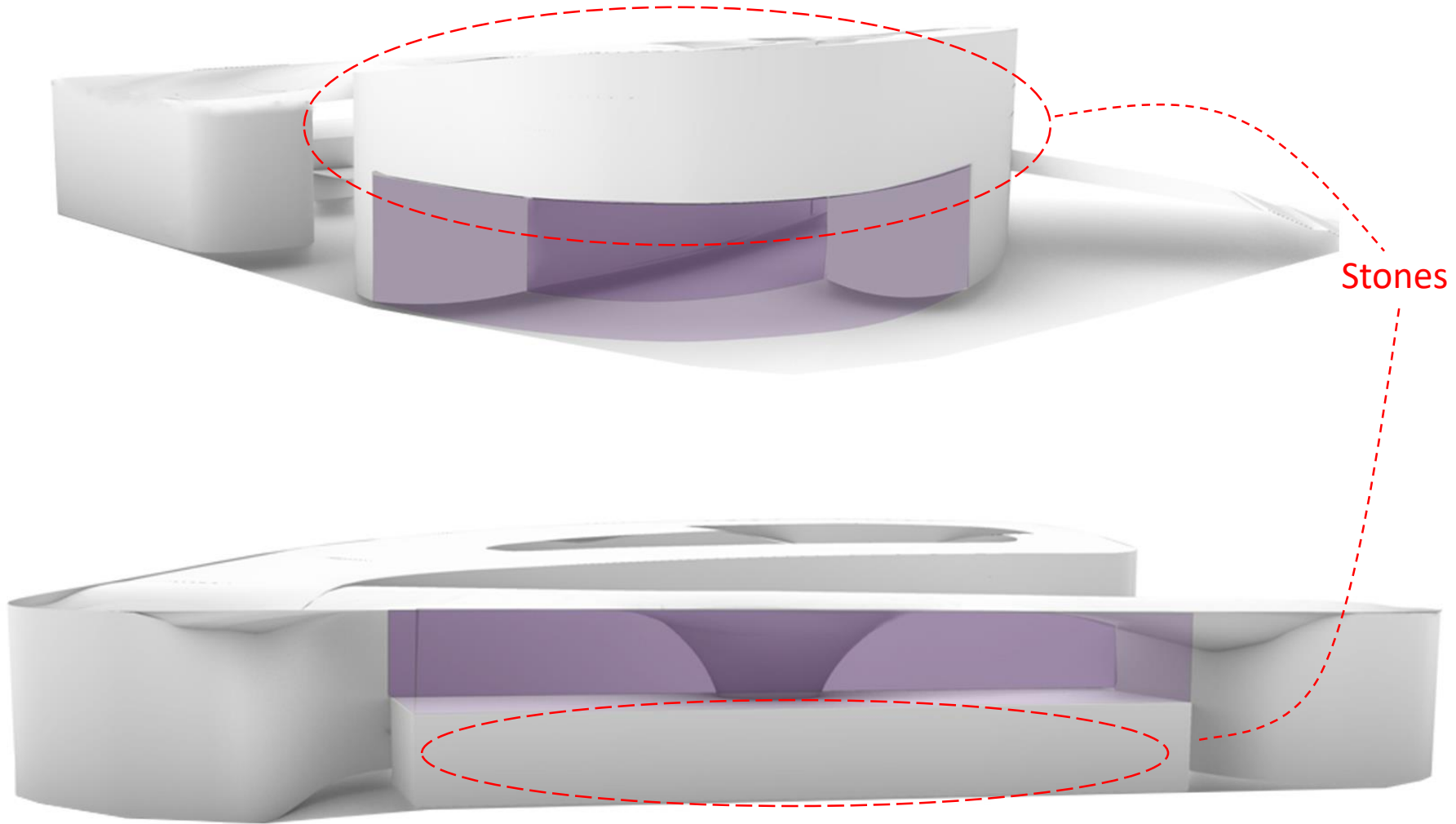




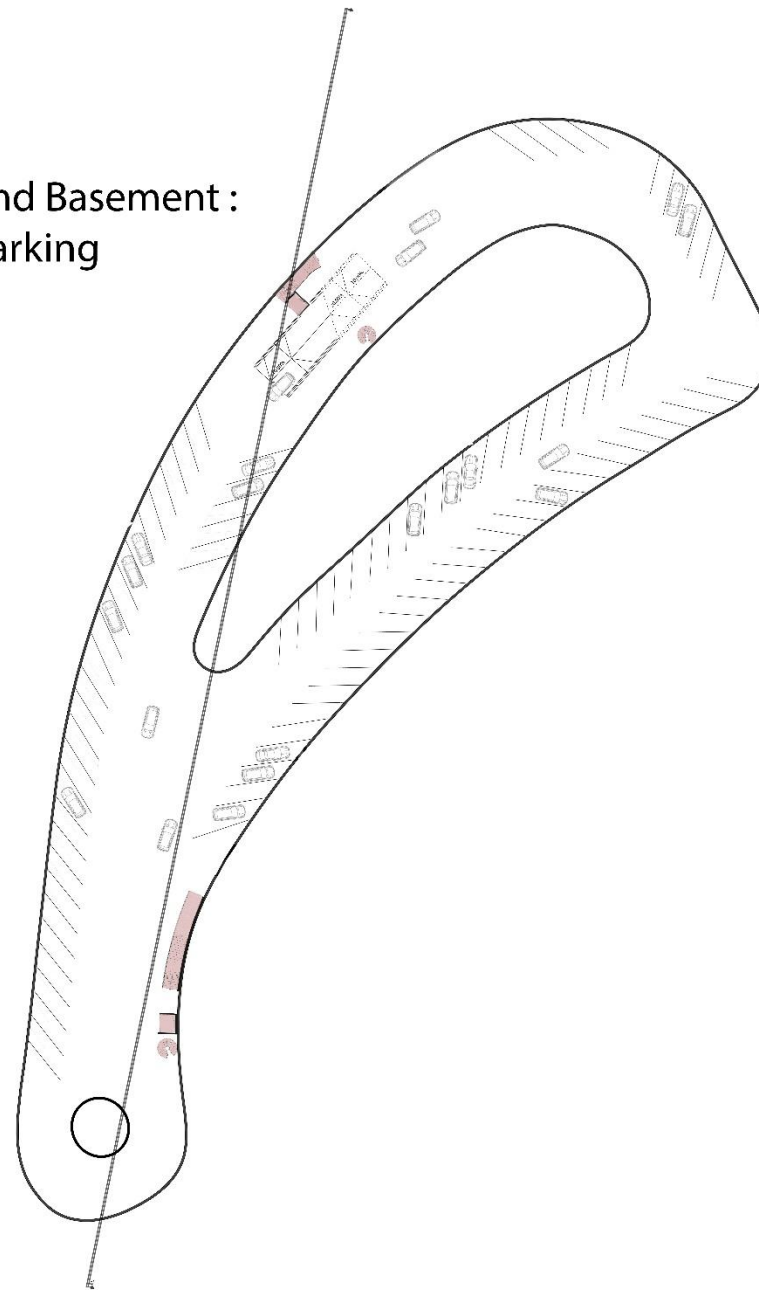
Mushroom shaped structure



Solid and void



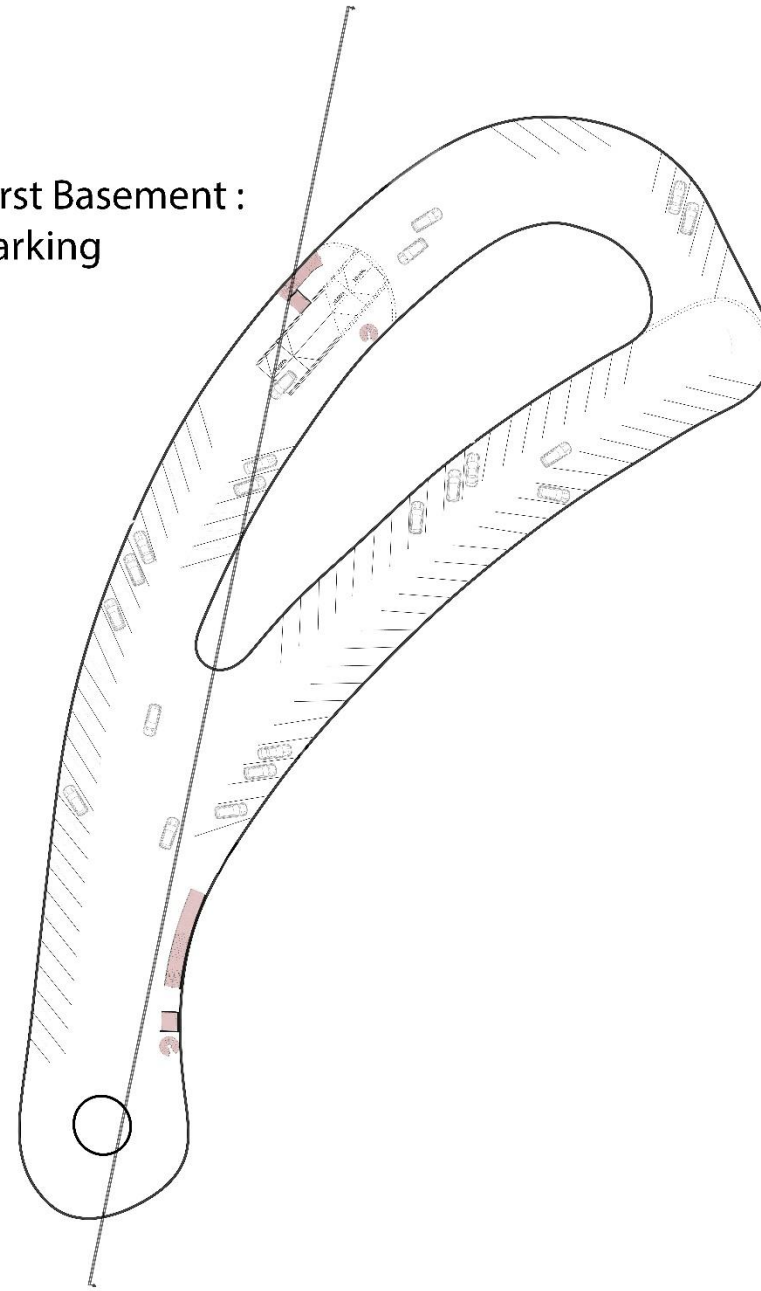
2nd Basement :
Parking



1 m



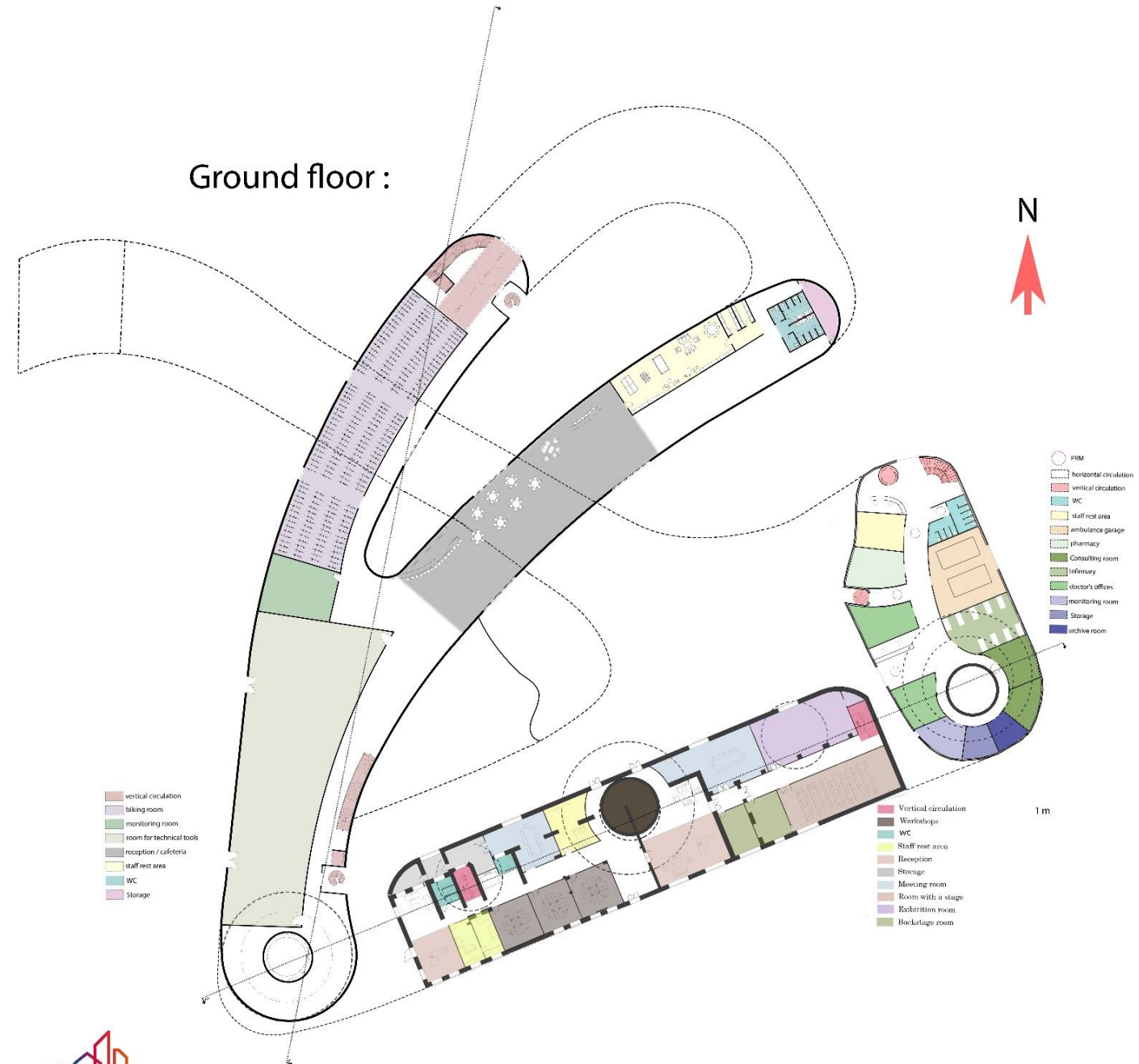
First Basement :
Parking



1 m

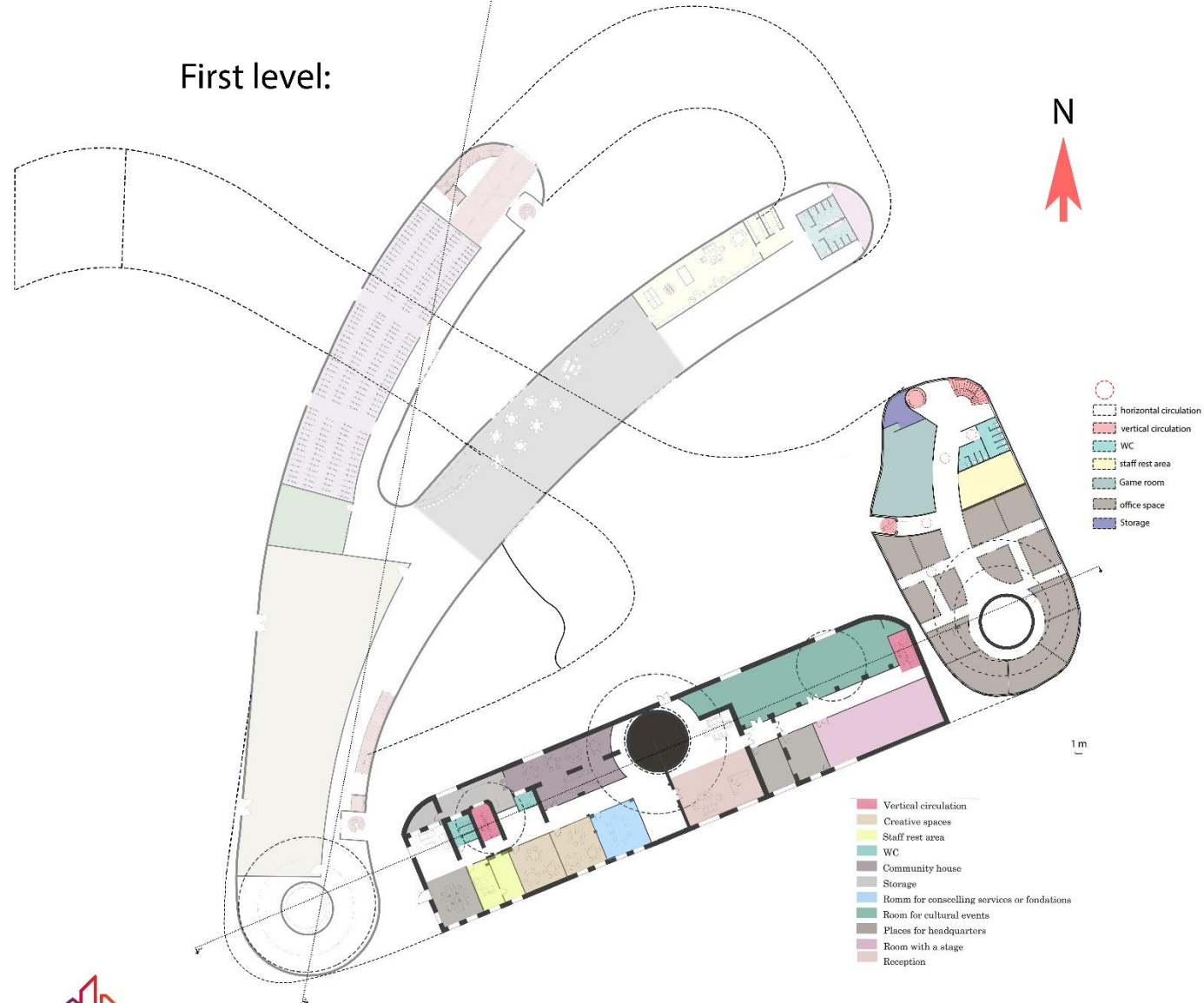


Ground floor :

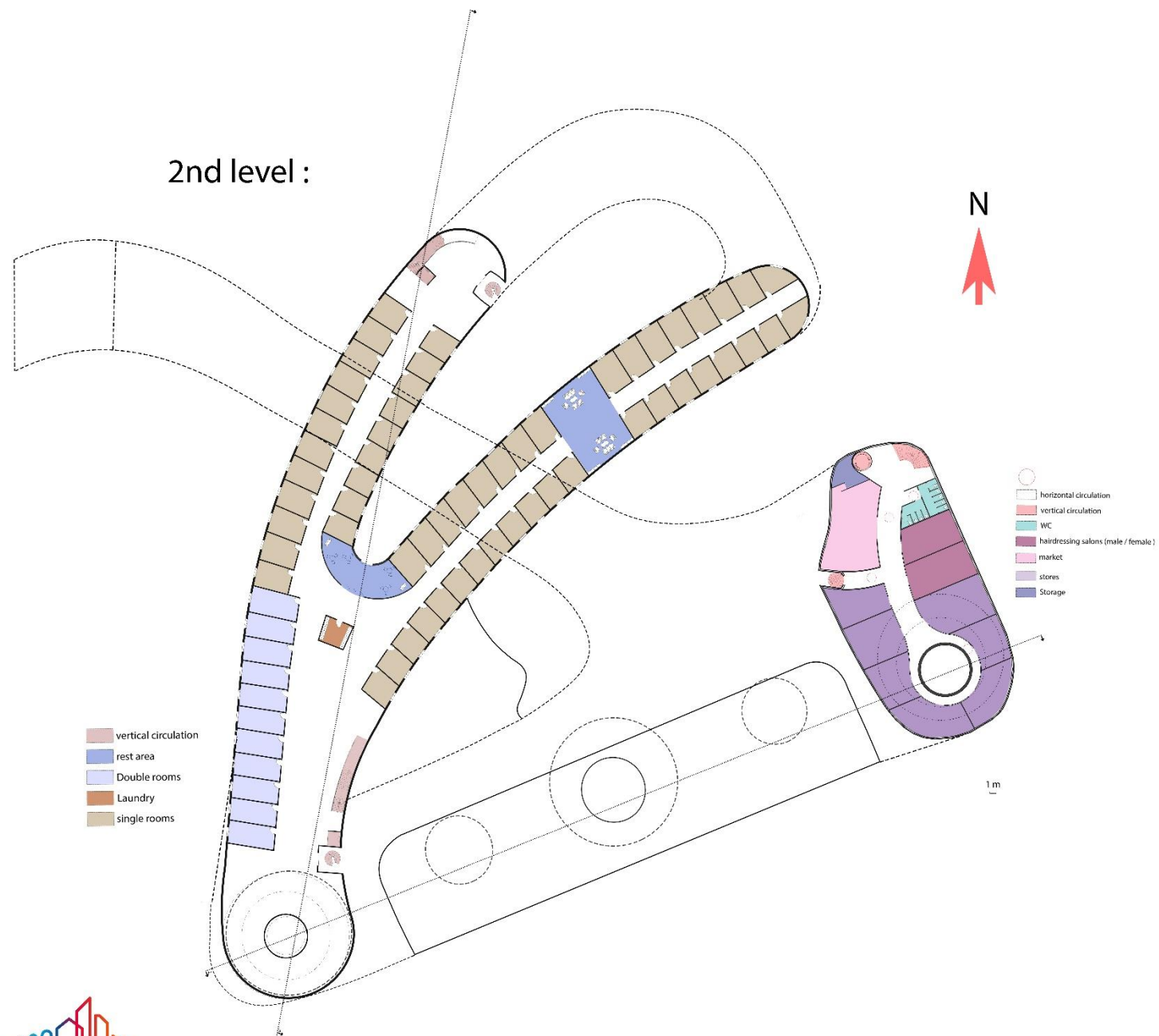


First level:

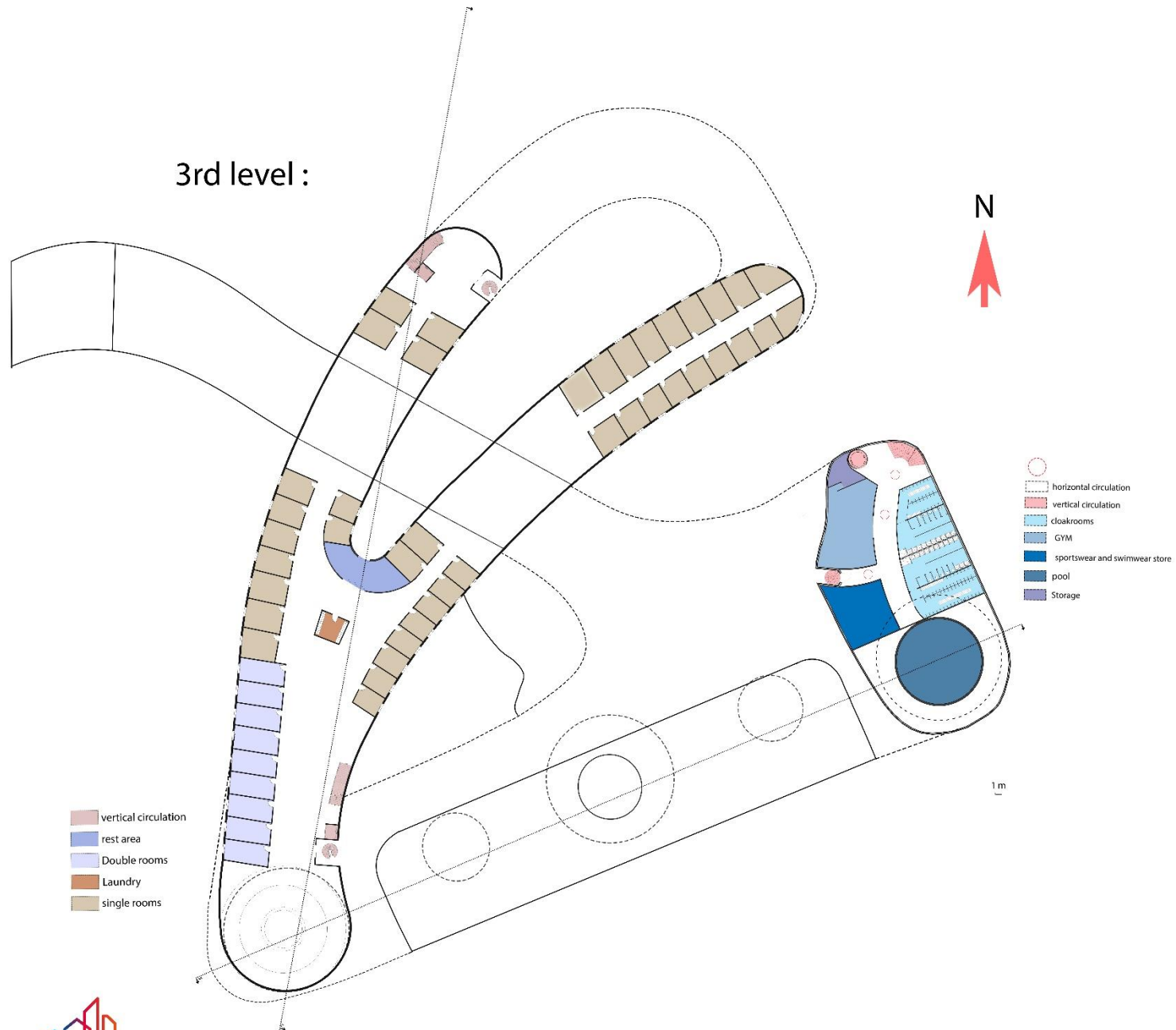
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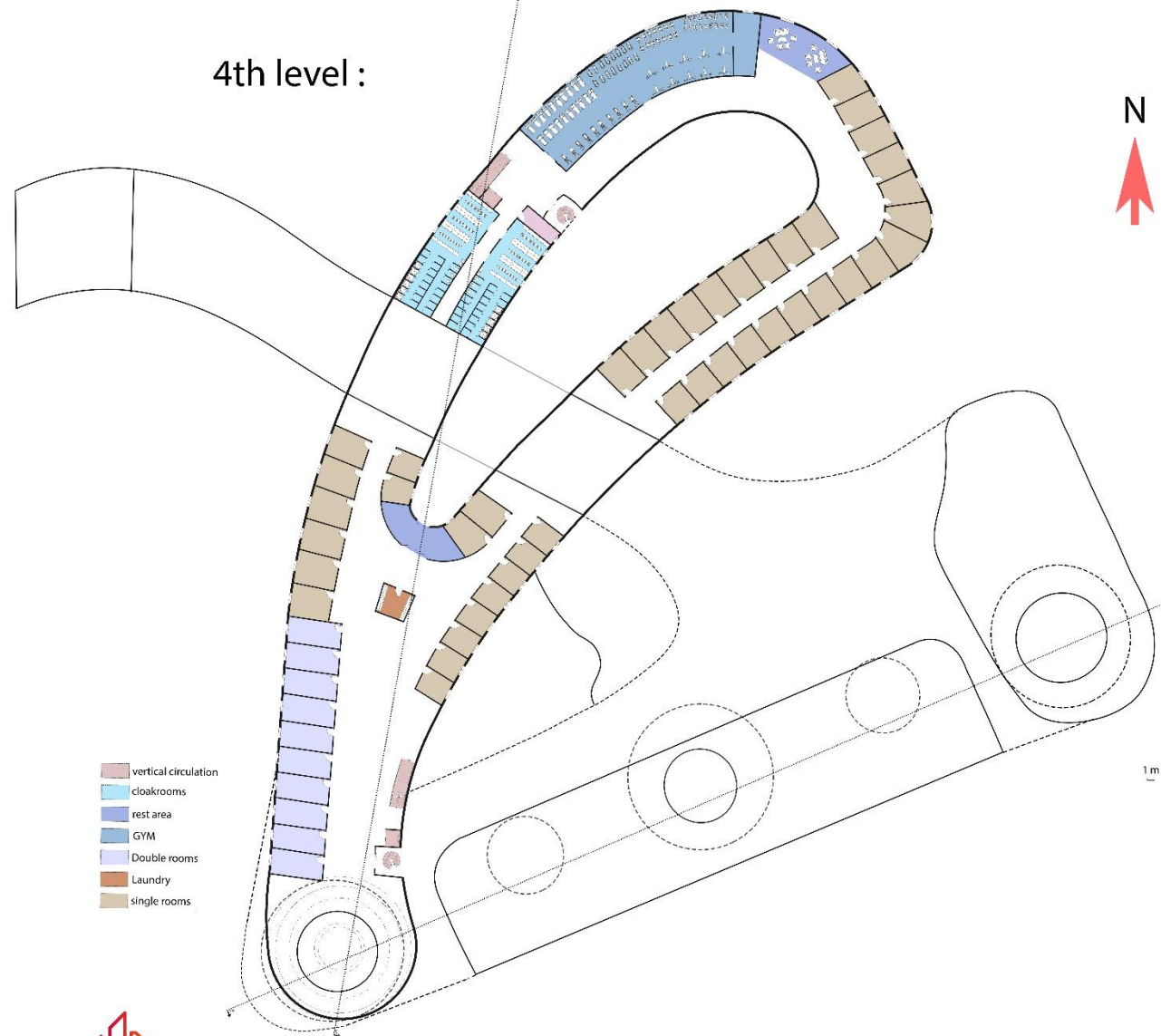
2nd level :



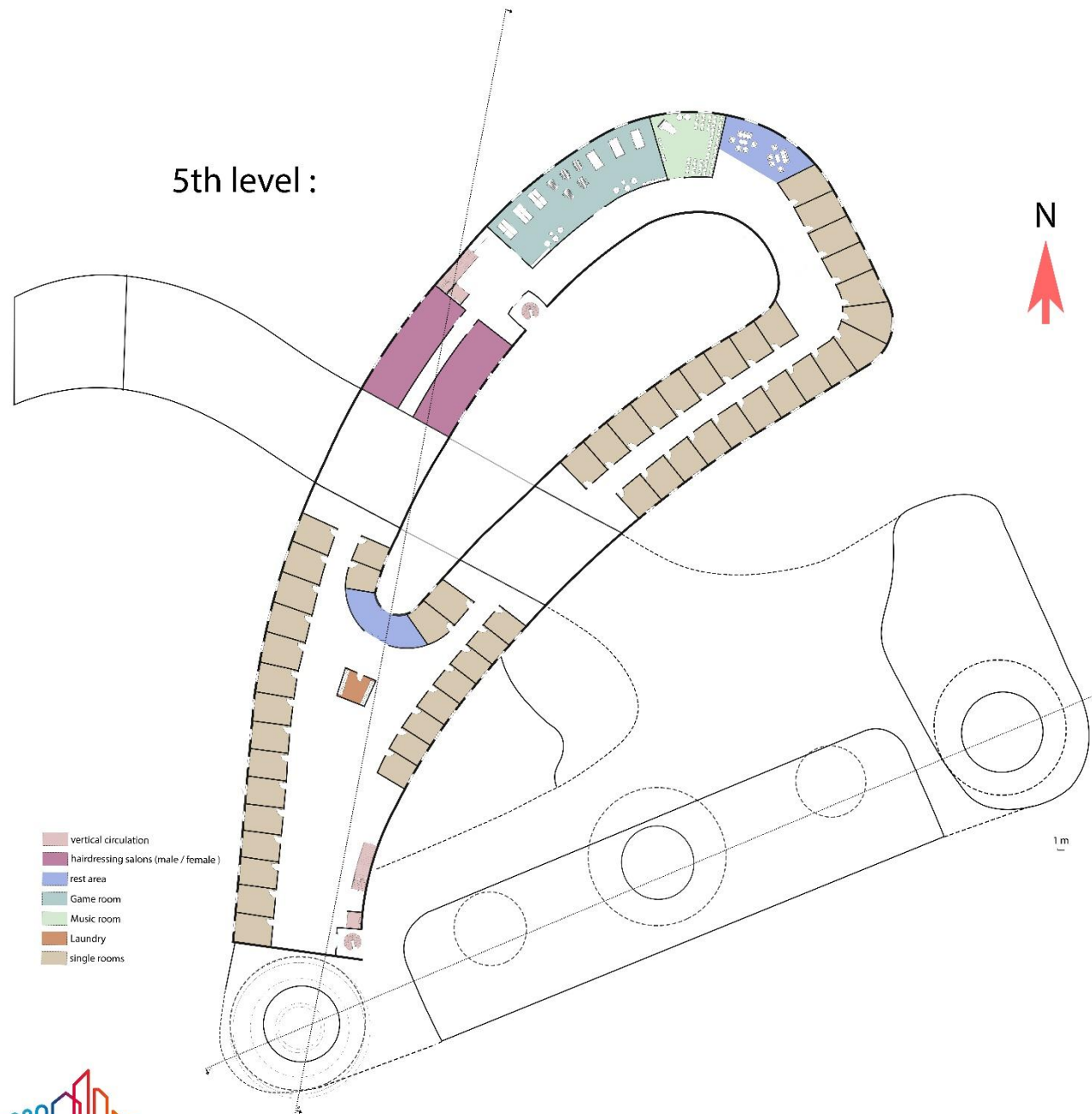
3rd level :



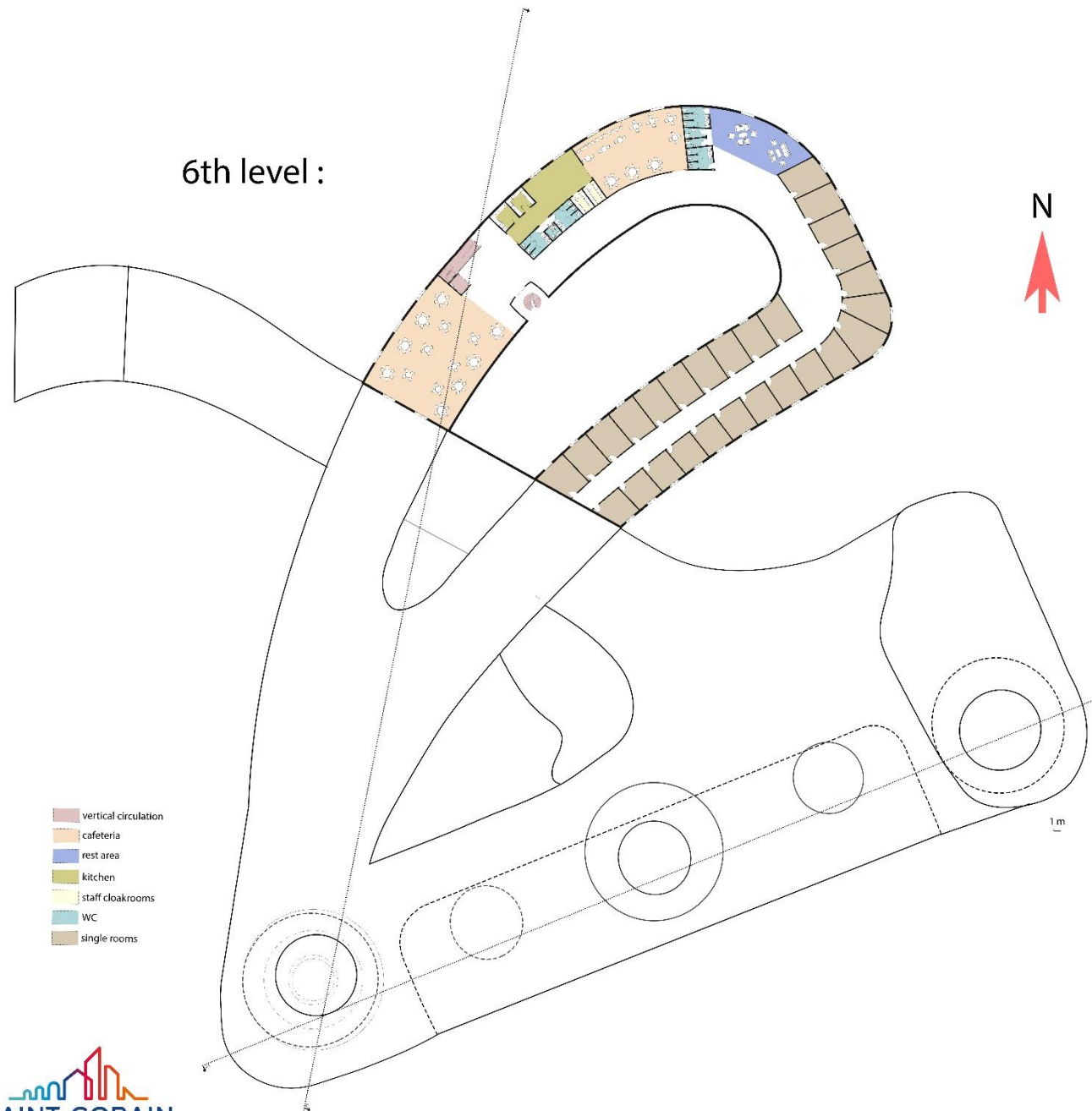
4th level :



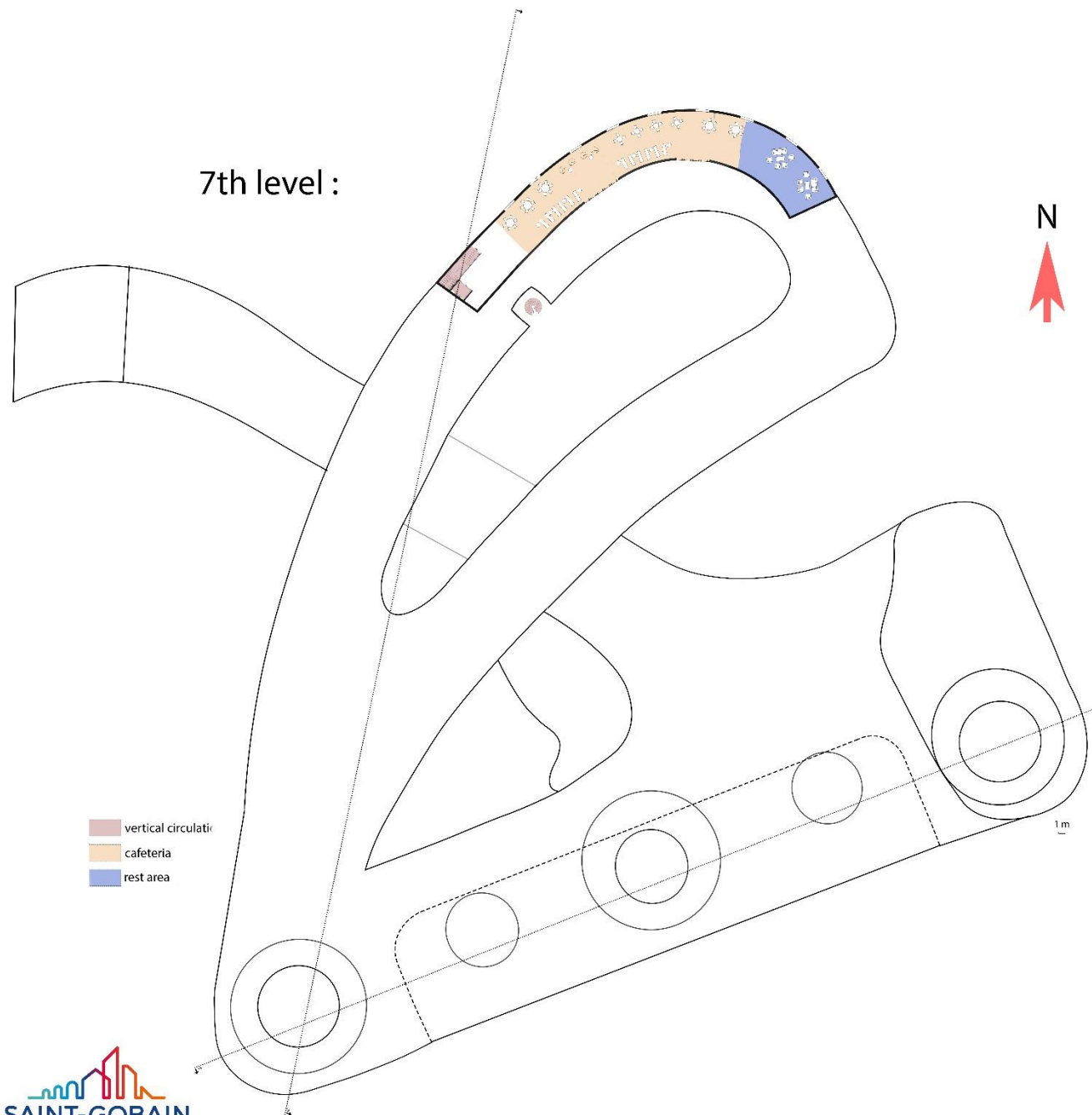
5th level :



6th level :

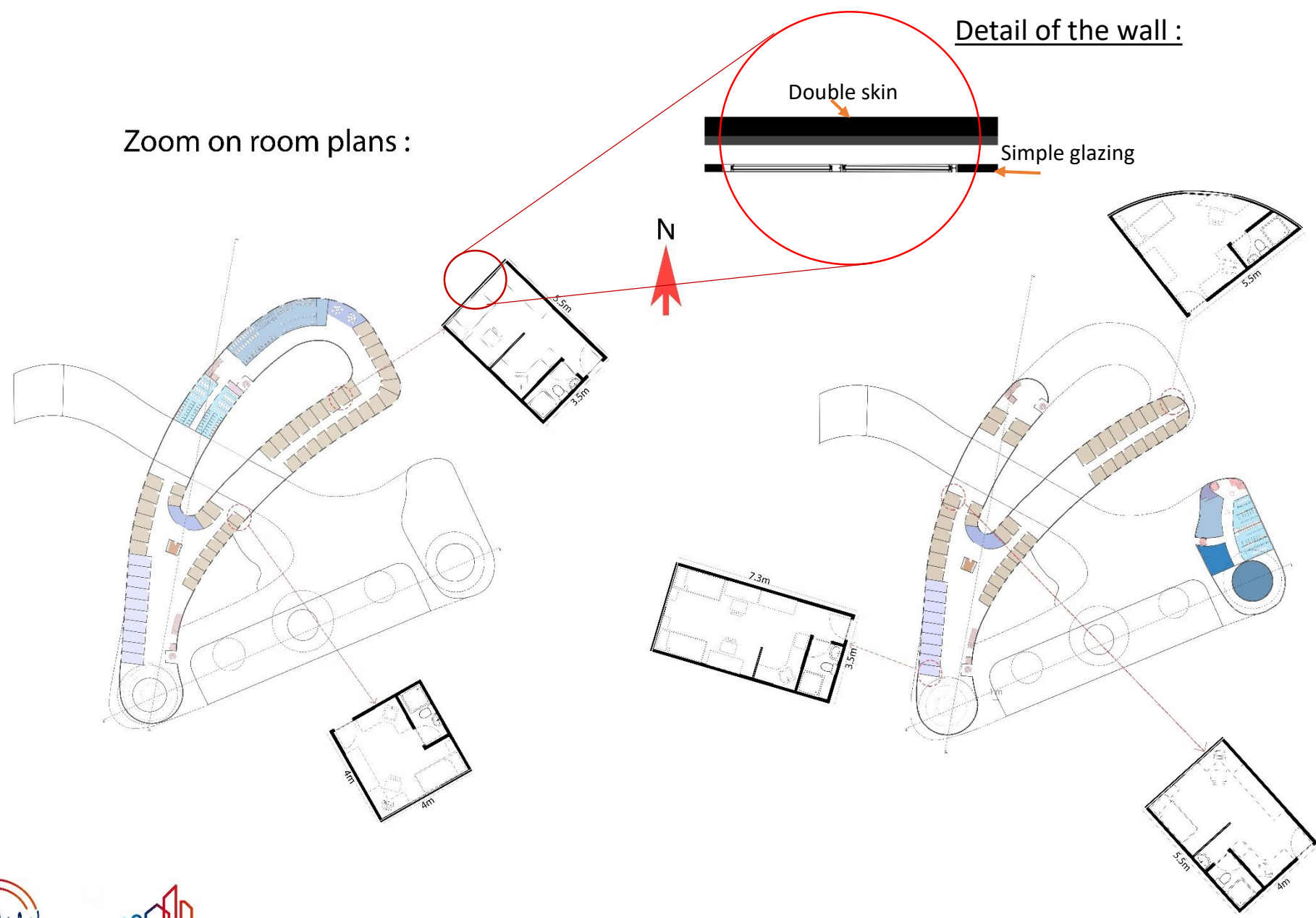


7th level :

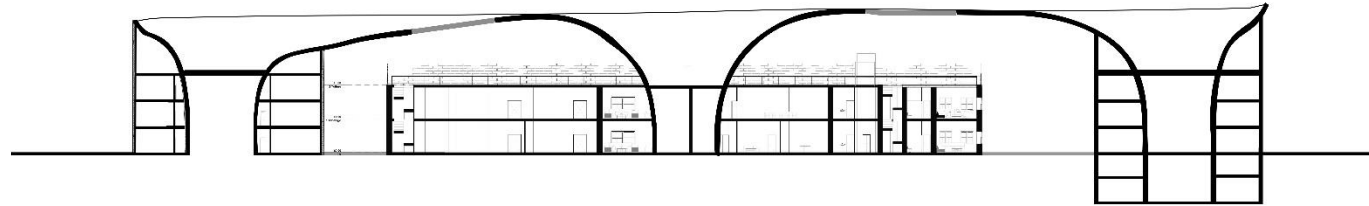


Zoom on room plans :

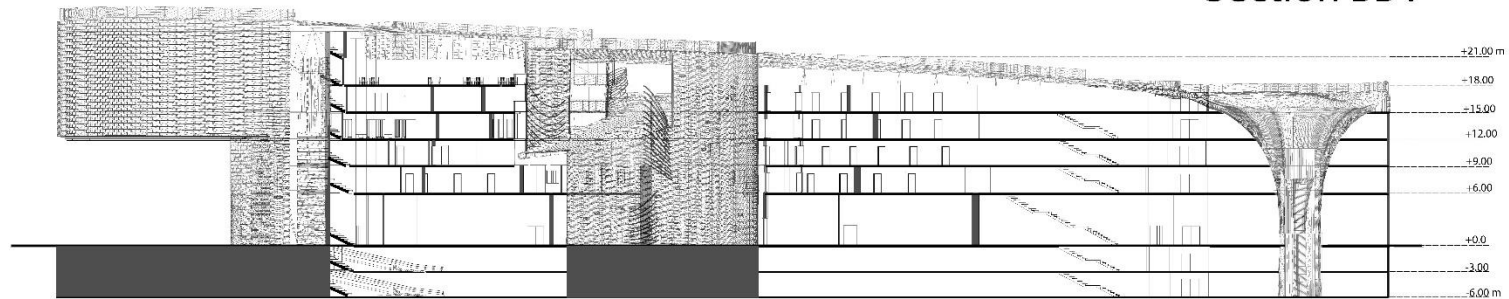
Detail of the wall :



Section AA :

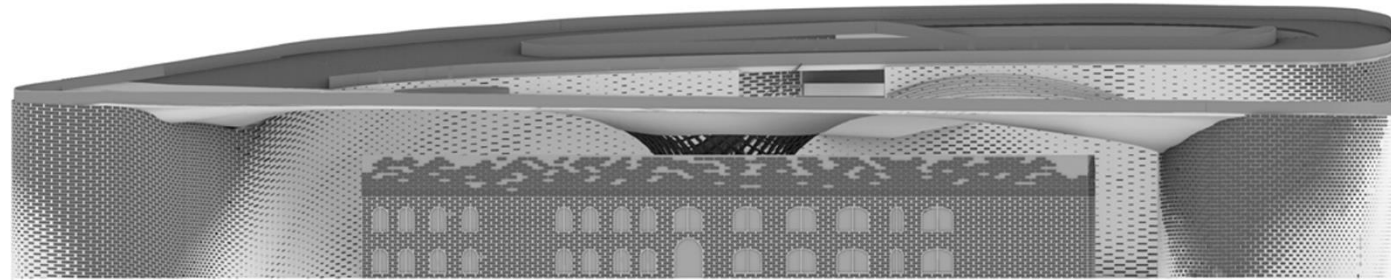


Section BB :

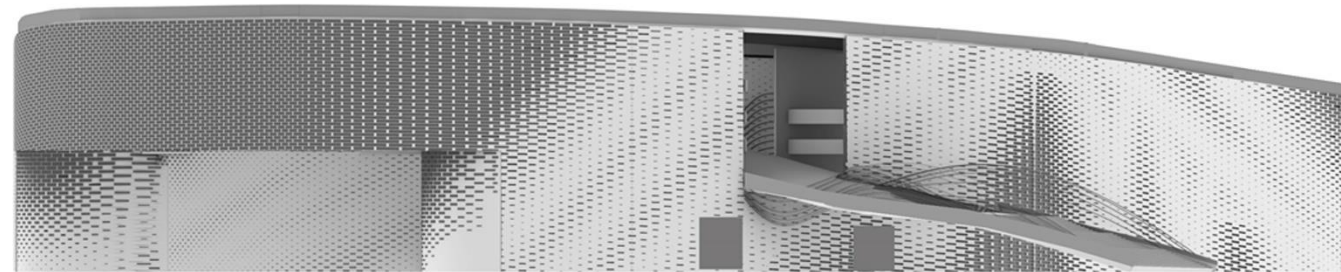


1 m

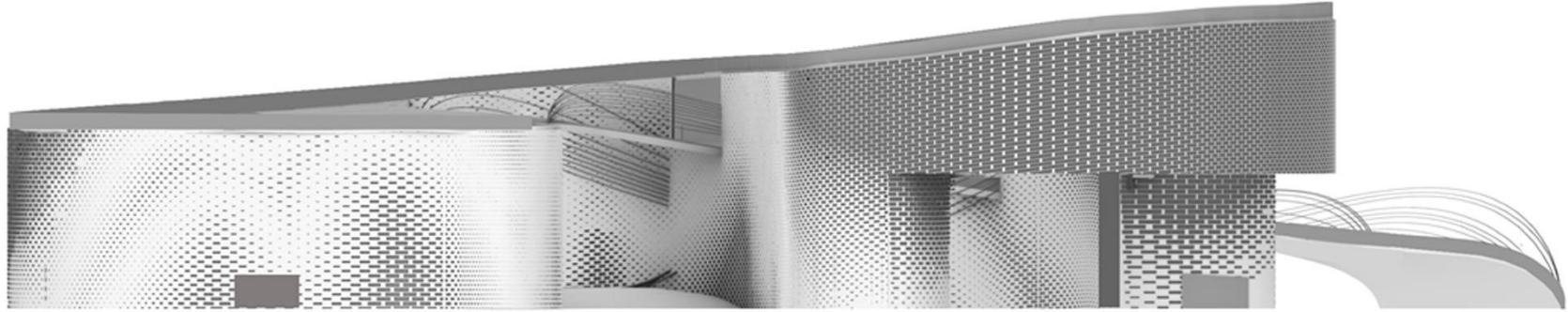
Front elevation :



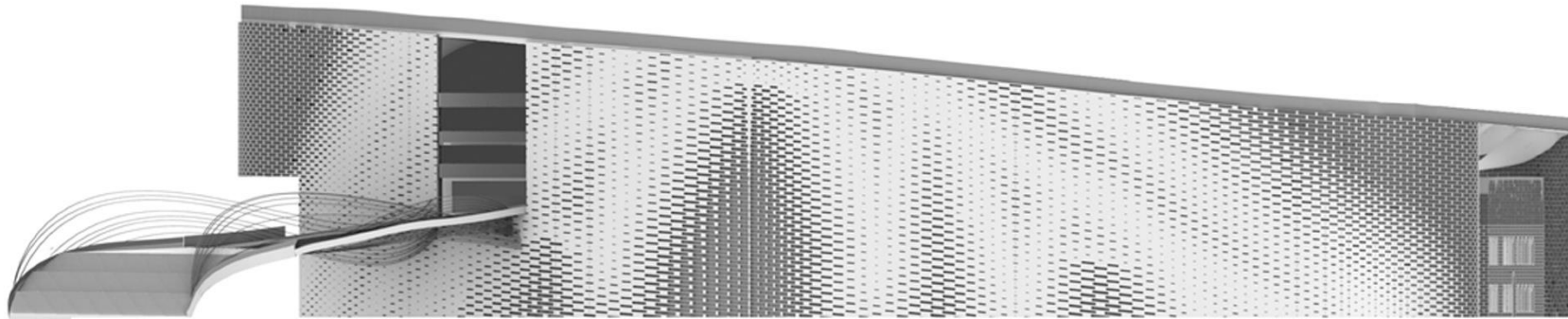
Rear elevation :

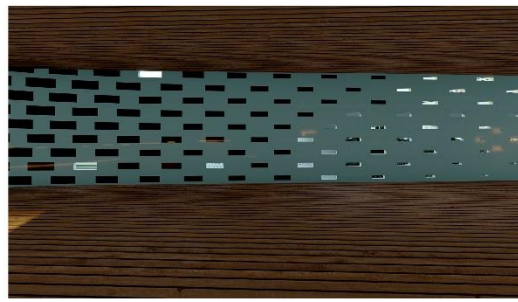


Right side elevation :



Left side elevation :



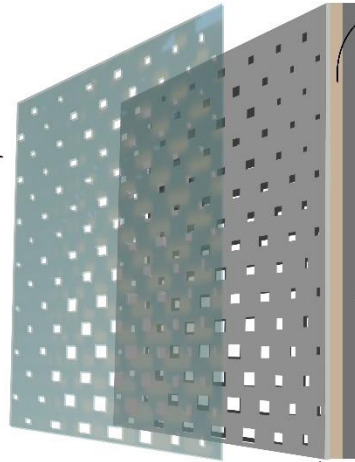


PLANISTAR SUN

- Single glazing: SGG PLANILUX
- Solar factor: $g = 0,38$
- 62 % Of solar energy does not penetrate to the building
- Low emissivity: 1%
- Thickness: 5mm
- Weight: 12,51
- Standard dimensions: 6000x3210
- Coefficients U_g : 5,8 W/(m².k)
- Easy to maintain
- Light factor TL : 89%
- R_{ext}: 8%
- Solar factor: 0,84 g

PLACO PHONIQUE BA13

- Reduces noise by 50%
- Thickness: 12,5 mm
- Weight: 11,8 kg
- Essential component : plaster
- Thermal resistance: 0,04 m².k/W

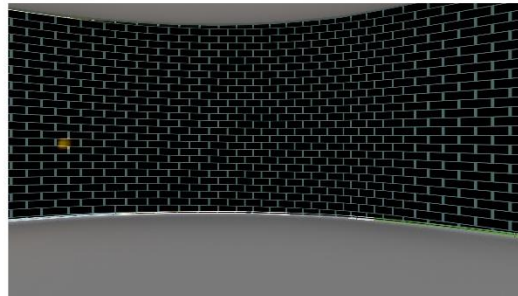
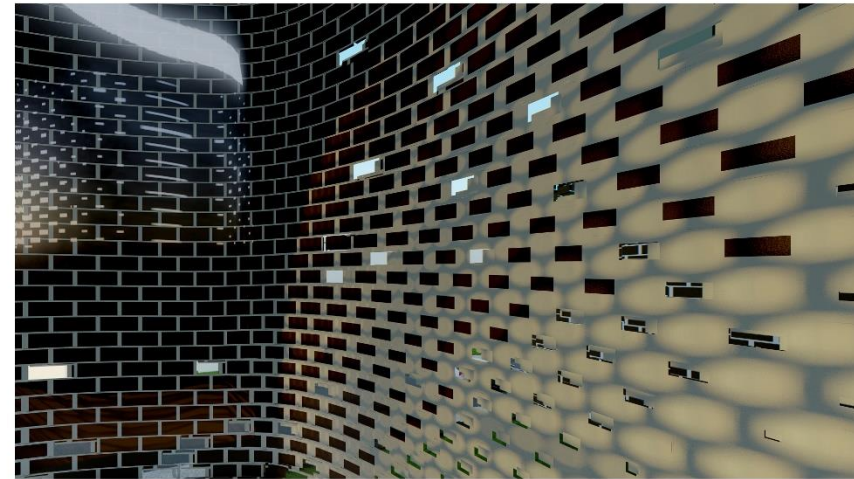
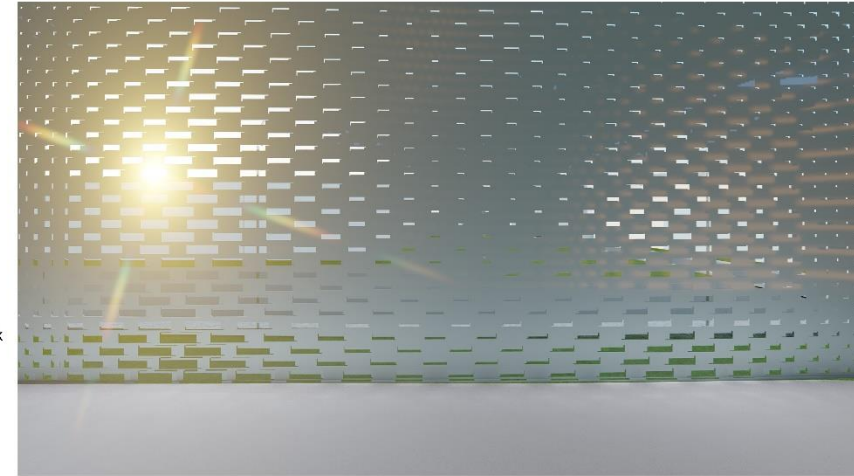


Expanded polystyrene (EPS):
Containing 98%air
LAMBDA varies between 0.038 à 0.030 W/(m.k)



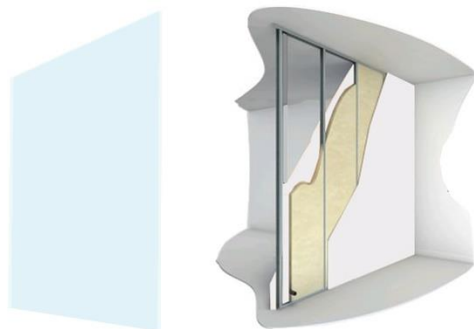
Low carbon concrete

- Ultibat green premium
- Consumption : 20kg/m²/Cm
- Mixing rate: 2,8 _3,5 L/25 kg
- Granulometry : 10 mm



Partition walls

GLASSOLUTIONS
SGG STADIP SILENCE
Single glazing
-Thickness : 6 mm
-sound insulation index:
Rw : 35 dB



ISOVER
SAINT-GOBAIN

AR PHONIC (glass wool)
Ecological and 100% recyclable
Thermal conductivity 0,040 W/(m.k)
Short term water absorption: <1 kg/m² in 24h
Air flow resistance: 4 kPa.s/m²
Thickness: 85mm

PLACO PHONIQUE BA13

POINT.P

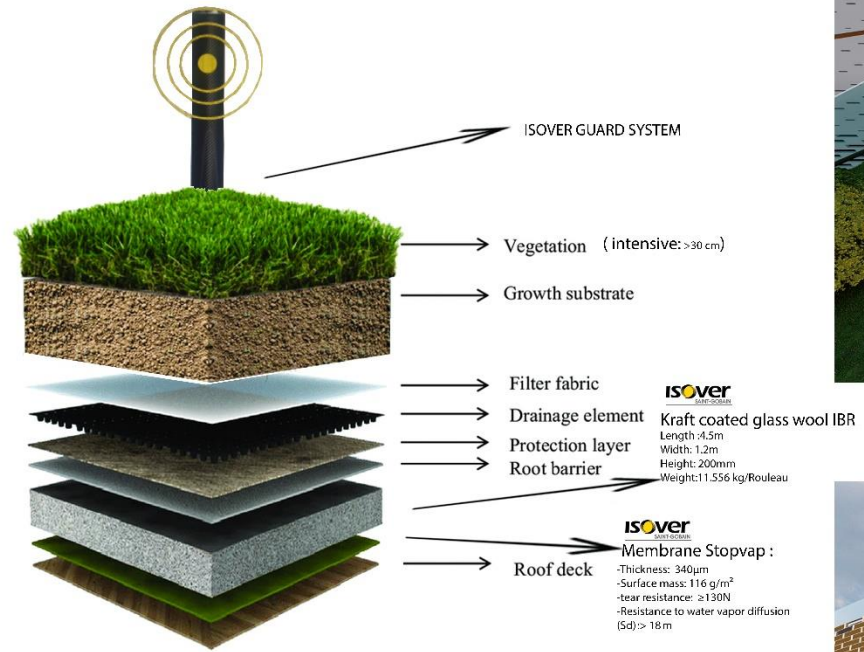


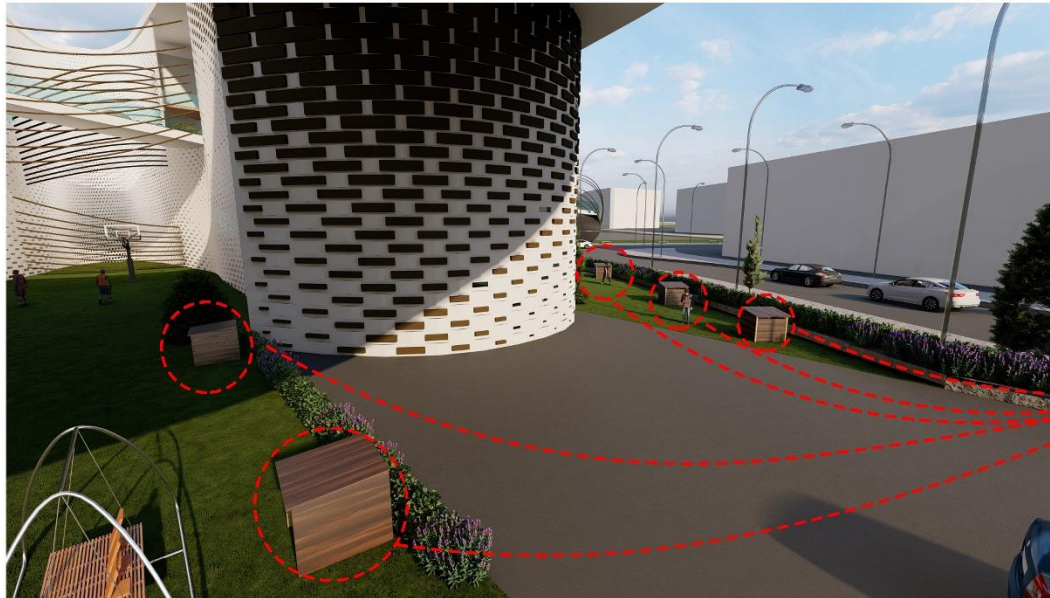


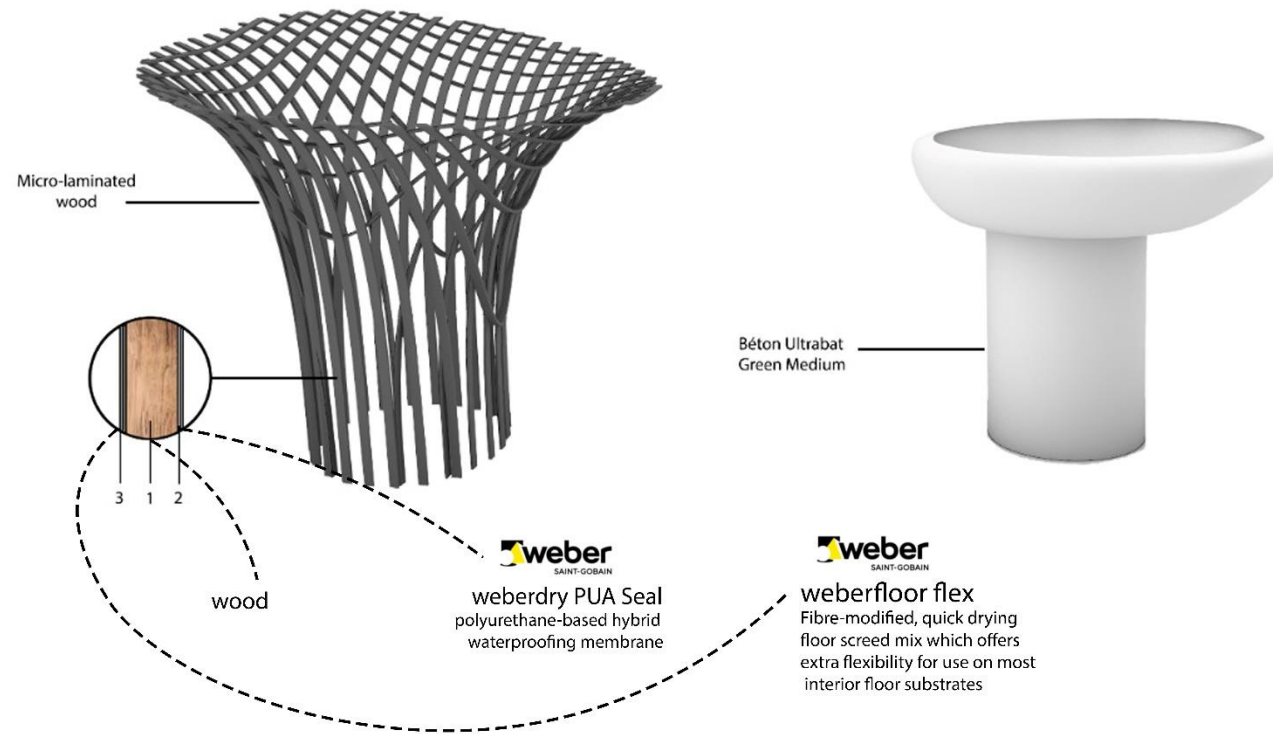


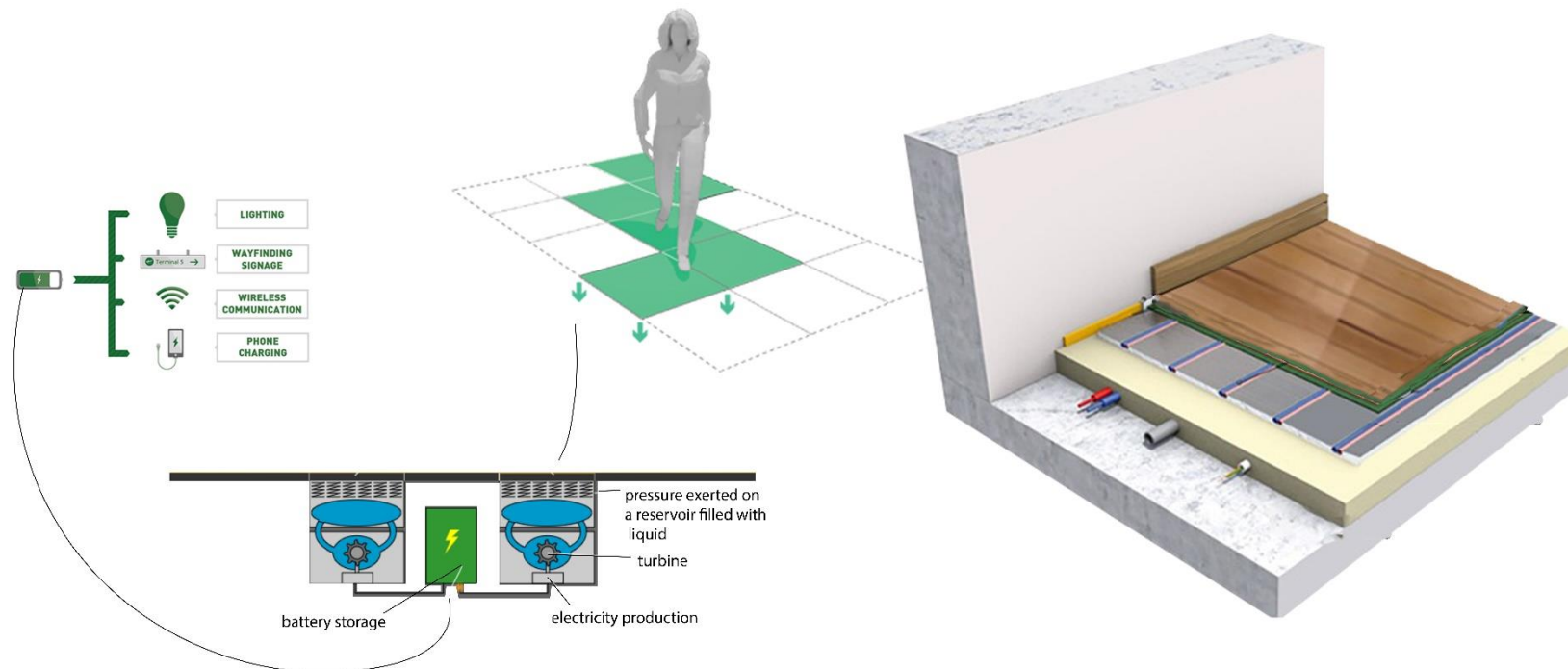
weber SAN PRESTO: recovery system









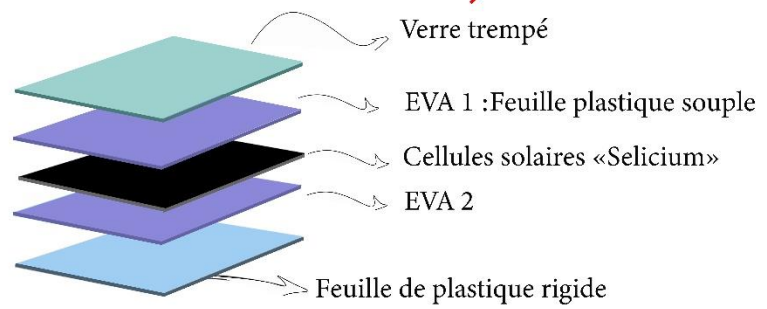


weber
SAINT-GOBAIN
weberfloor flex
Fibre-modified, quick drying
floor screed mix which offers
extra flexibility for use on most
interior floor substrates

Heating floor
Polystyrene foam 2-3 cm
ISOVER
SAINT-GOBAIN

POINT.P
Low carbon concrete
Ultibat green premium
Consumption : 20kg/m²/Cm
Mixing rate: 2,8 _ 3,5 L/25 kg
Granulometry : 10 mm





Phytopurification :

The traitement of water

Pre-traitemment of water

A planted filtre of Reed plants
with a vertical flow

A planted filtre of macrophytes
with an horizontal flow



Ductile iron pipe for renewable energy : HYDROPAM(PAM) Hydroelectric central



in order to take advantage of the lake that existe near the project we decided to opt for an Hydroelectric solution.

Groupe of solutions :pipes, fittings, gaskets, faucet parts...

to preserve the velocity of the water without alteration.

The pipes are provided with two types of security systems :

Exterior Cladding

Interior Cladding


These pipes are provided too with a specefic locking system with the minimum number of joins used and the maximum level of security at the same time.




HYDROPAM

Life cycle analysis:

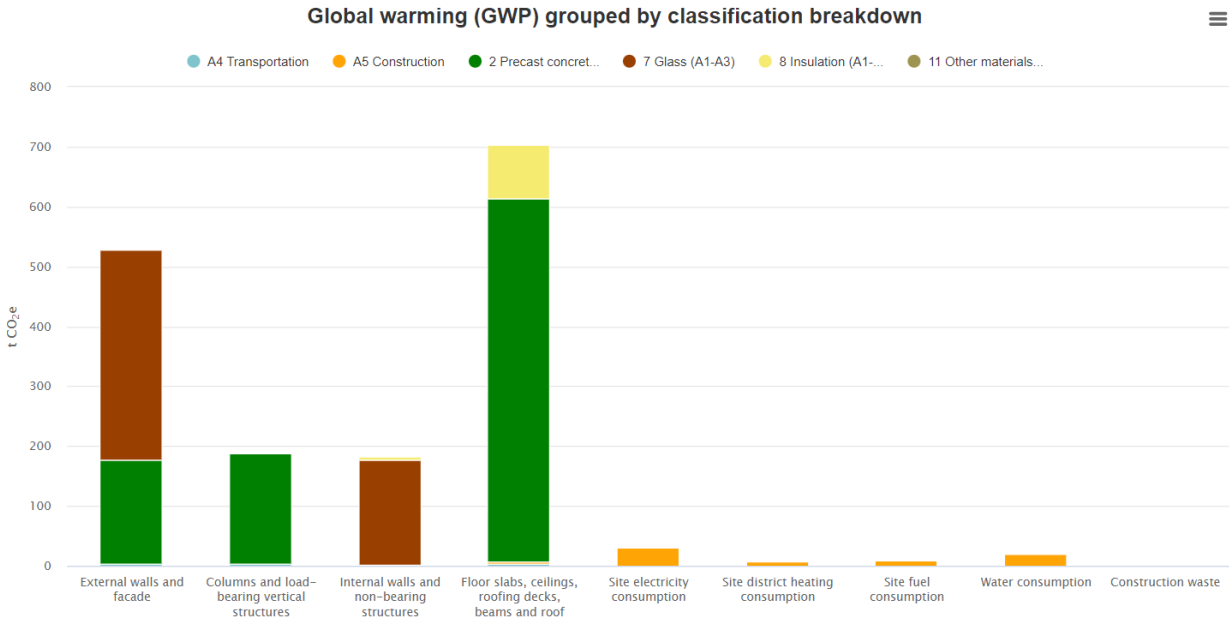
 1 670 Tons CO₂e 

 83 479 € Social cost of carbon 

Embodied carbon benchmark

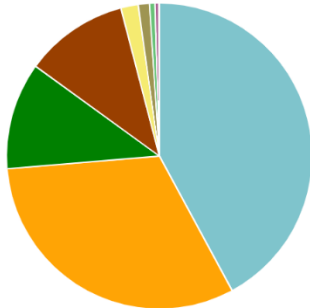
Cradle to gate impacts (A1-A3)	kg CO ₂ e/m ²
(< 263) A	 304
(263-338) B	
(338-413) C	
(413-488) D	
(488-563) E	
(563-638) F	
(> 638) G	

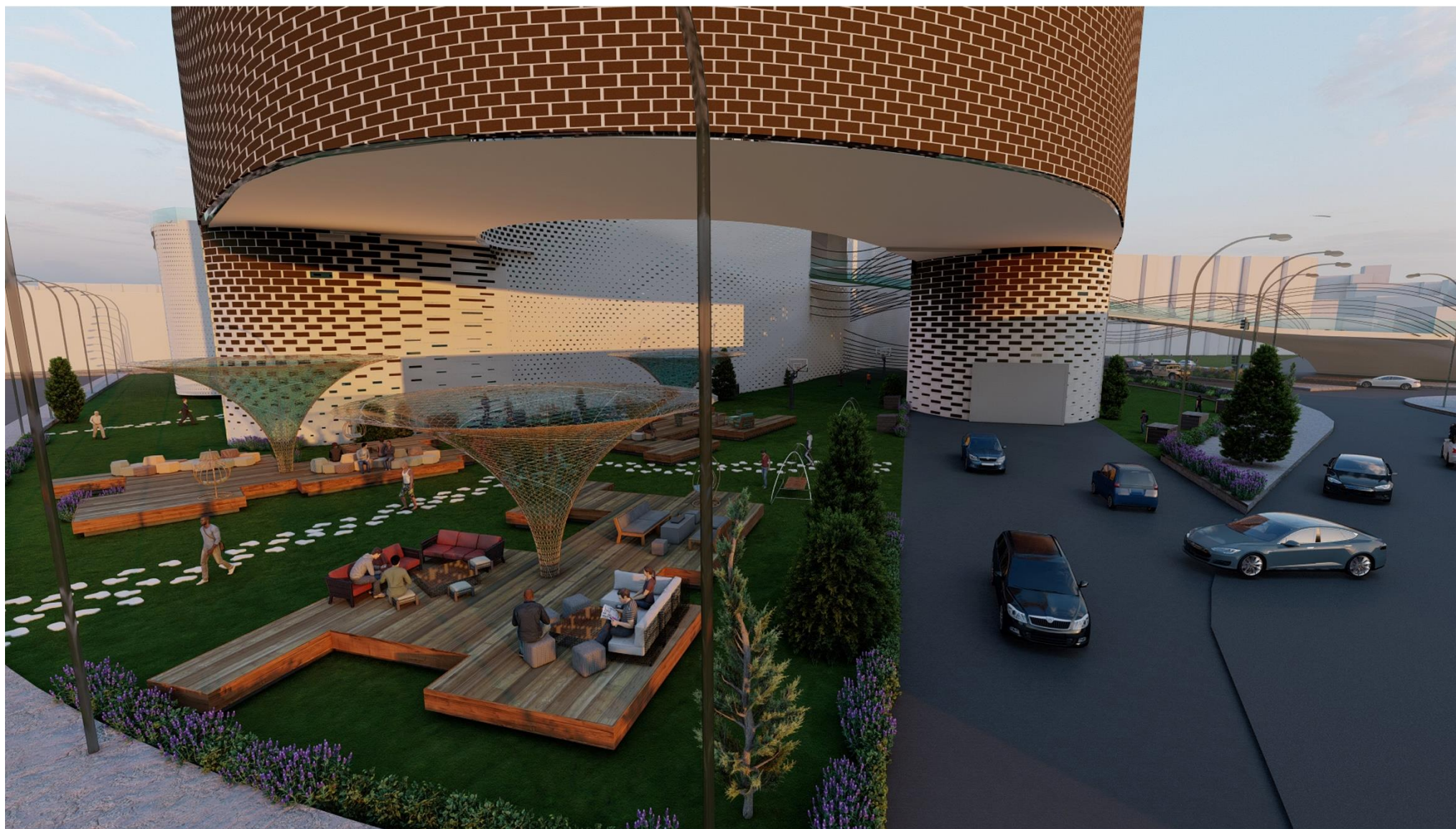
CH Q3 2021 Poland 



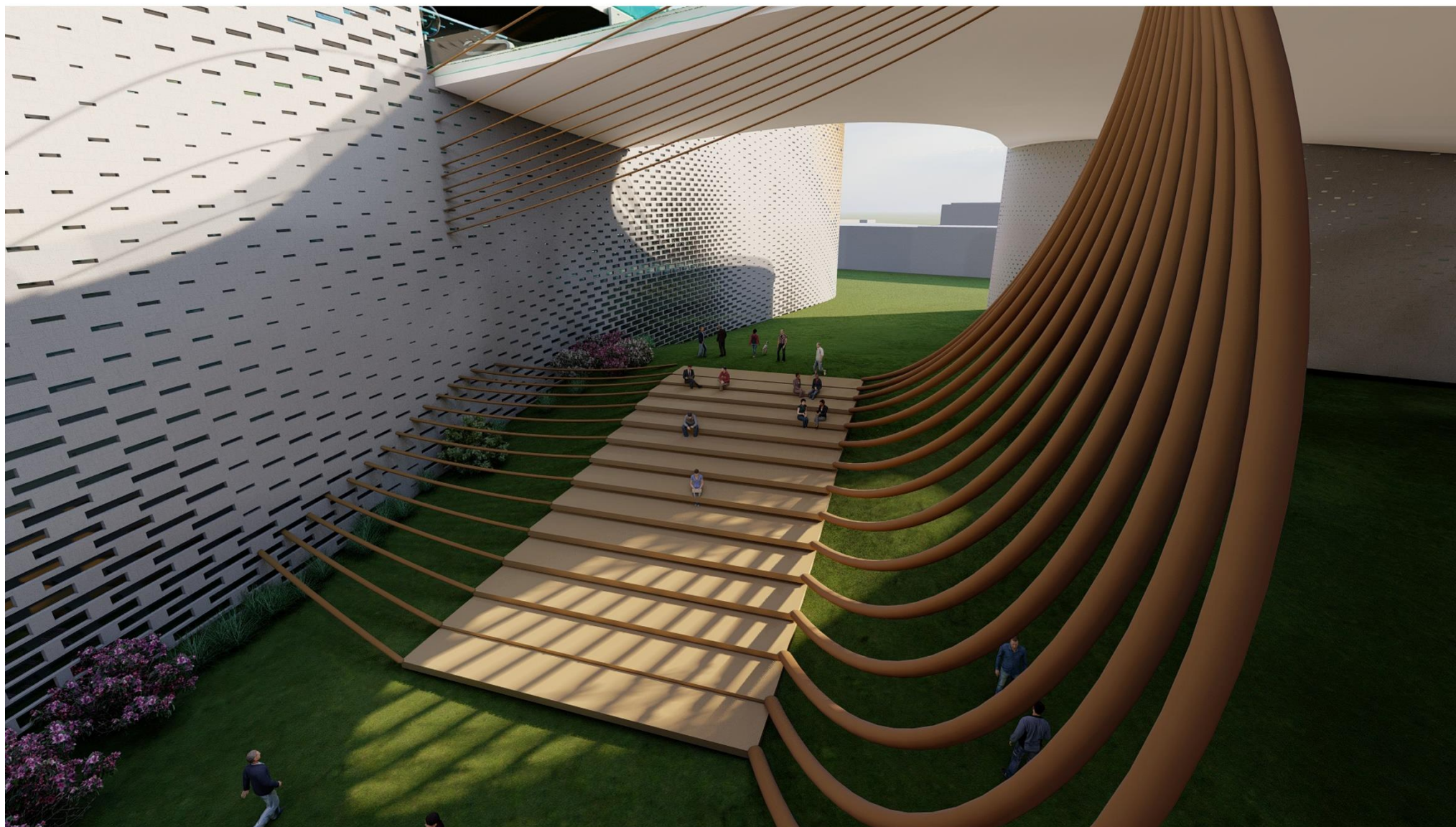
Global warming t CO₂e - Classifications

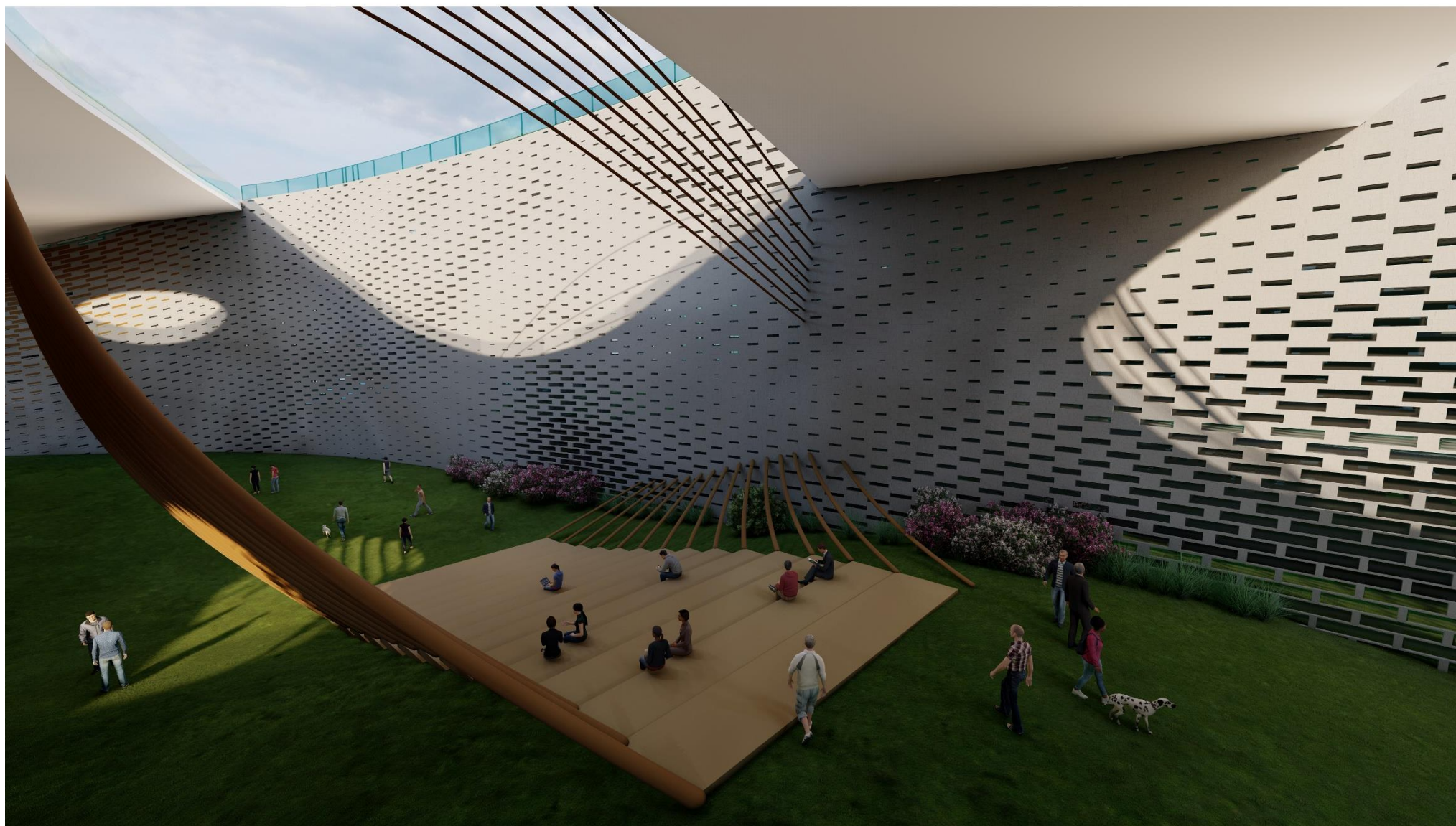
- Floor slabs, ceilings, roofing decks, beams and roof - 42.1%
- External walls and facade - 31.6%
- Columns and load-bearing vertical structures - 11.3%
- Internal walls and non-bearing structures - 11.0%
- Site electricity consumption - 1.8%
- Water consumption - 1.2%
- Site fuel consumption - 0.6%
- Site district heating consumption - 0.4%
- Construction waste - 0.0%



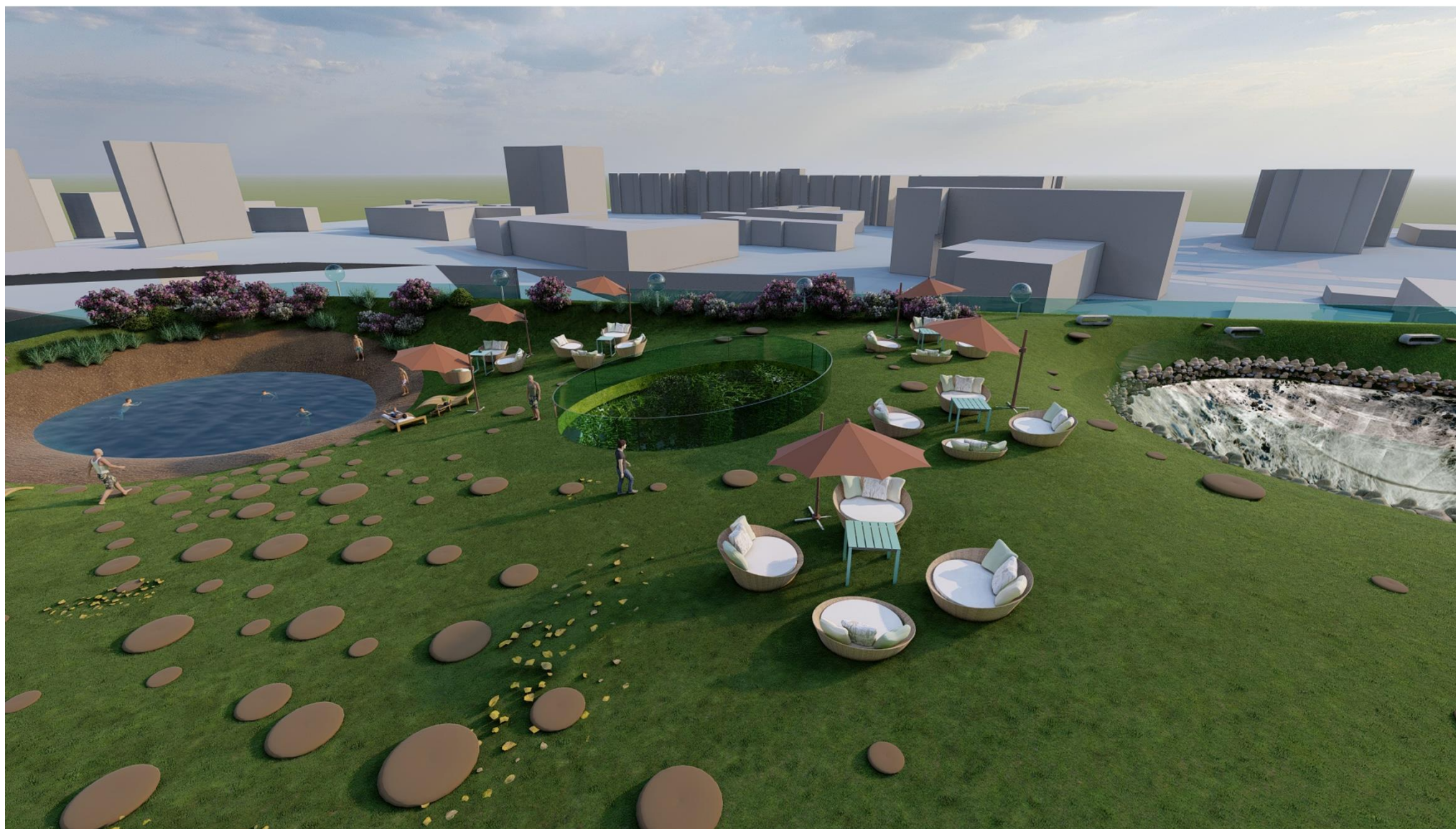














Thank you