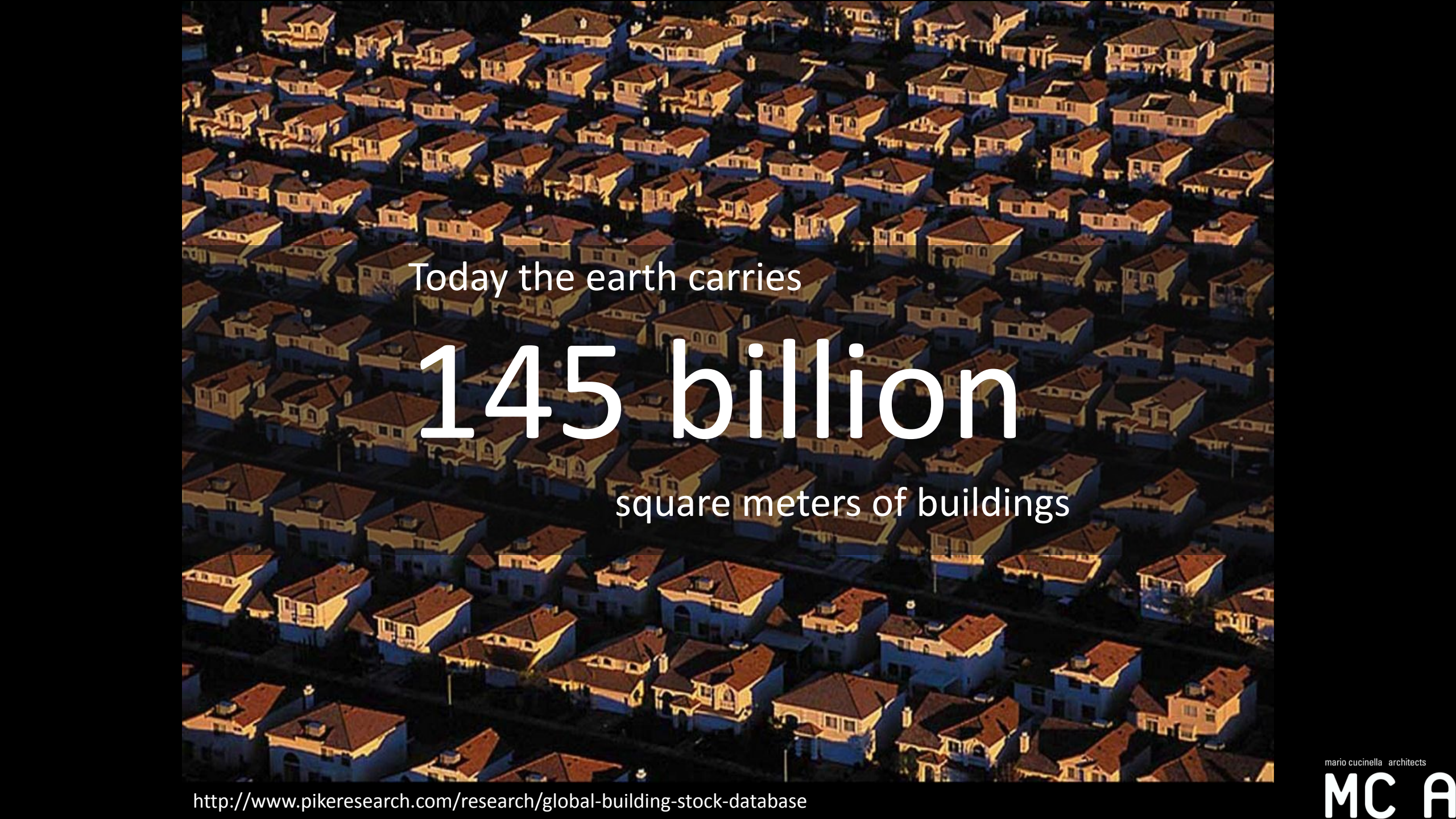


Progettazione di edifici sostenibili

Arch. Marco Dell'Agli
Mario Cucinella Architects

why buildings
are so important?

An aerial photograph of a densely packed residential neighborhood. The houses are mostly two-story structures with light-colored walls and dark roofs, arranged in a grid-like pattern. The perspective is from a high angle, looking down on the rooftops and the narrow streets between the buildings.

Today the earth carries

145 billion

square meters of buildings

<http://www.pikersearch.com/research/global-building-stock-database>

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that account for

15 gigaton/y

of CO2 production


47 %

of global greenhouse gases emissions

<http://earthobservatory.nasa.gov/Features/CarbonCycle/>
<http://www.pikersearch.com/research/global-building-stock-database>

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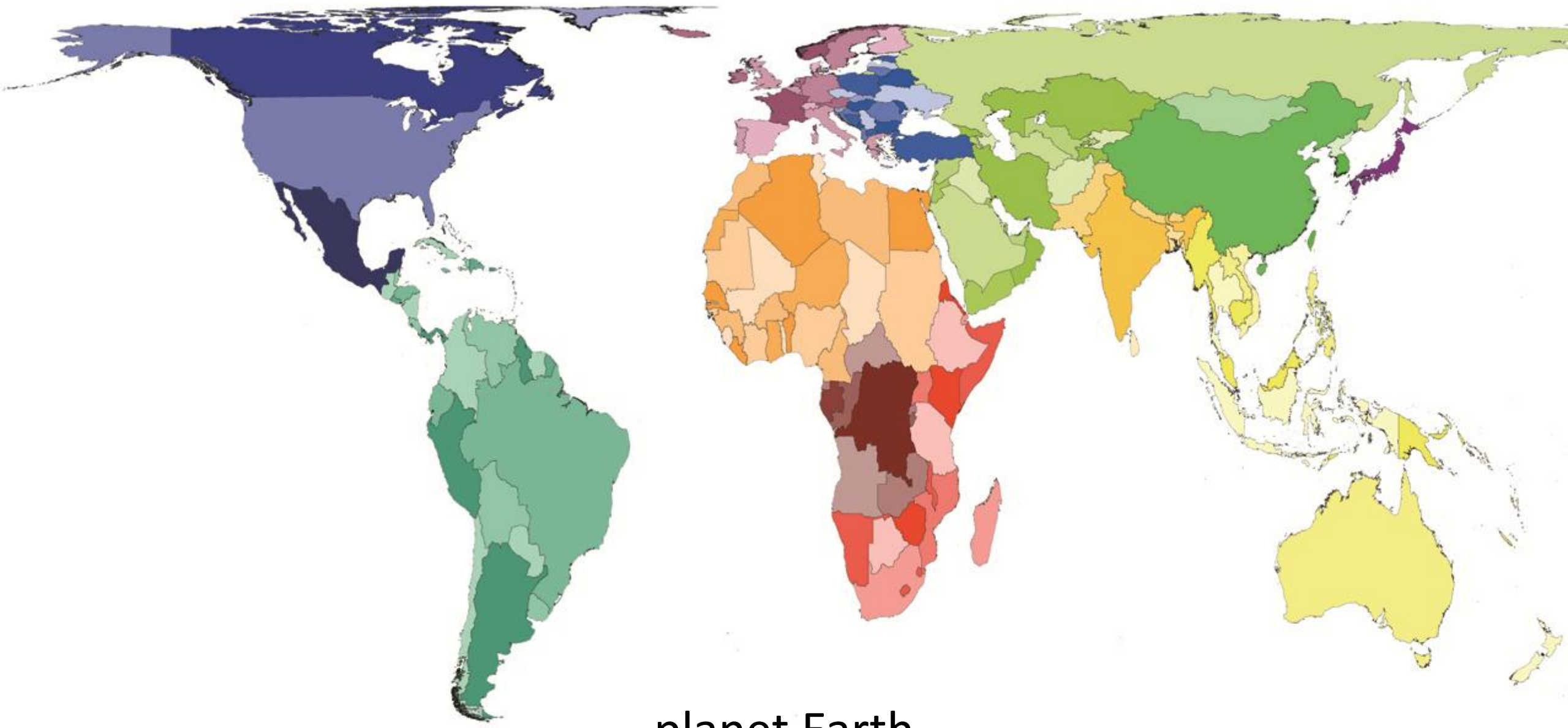
MC A



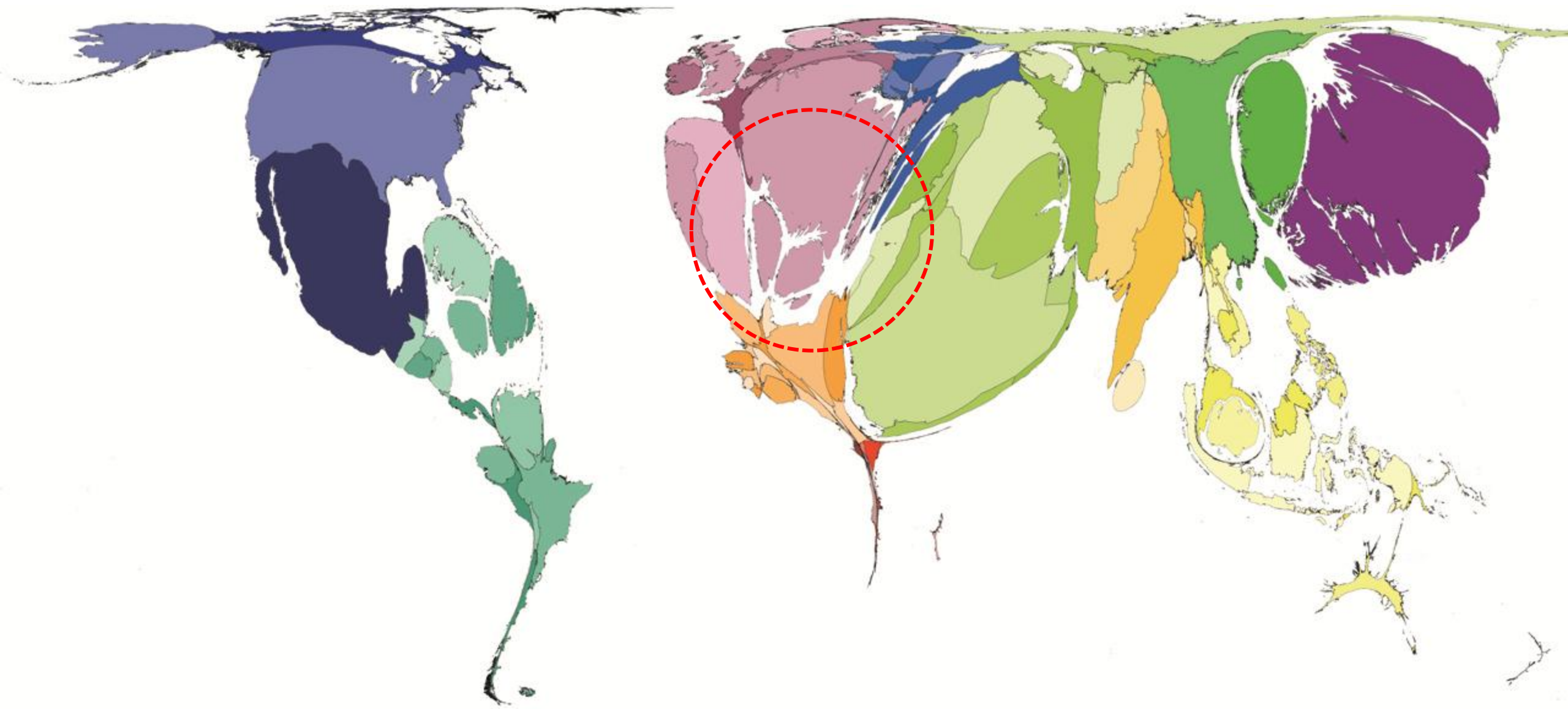
By 2030 we can expect

73 billion

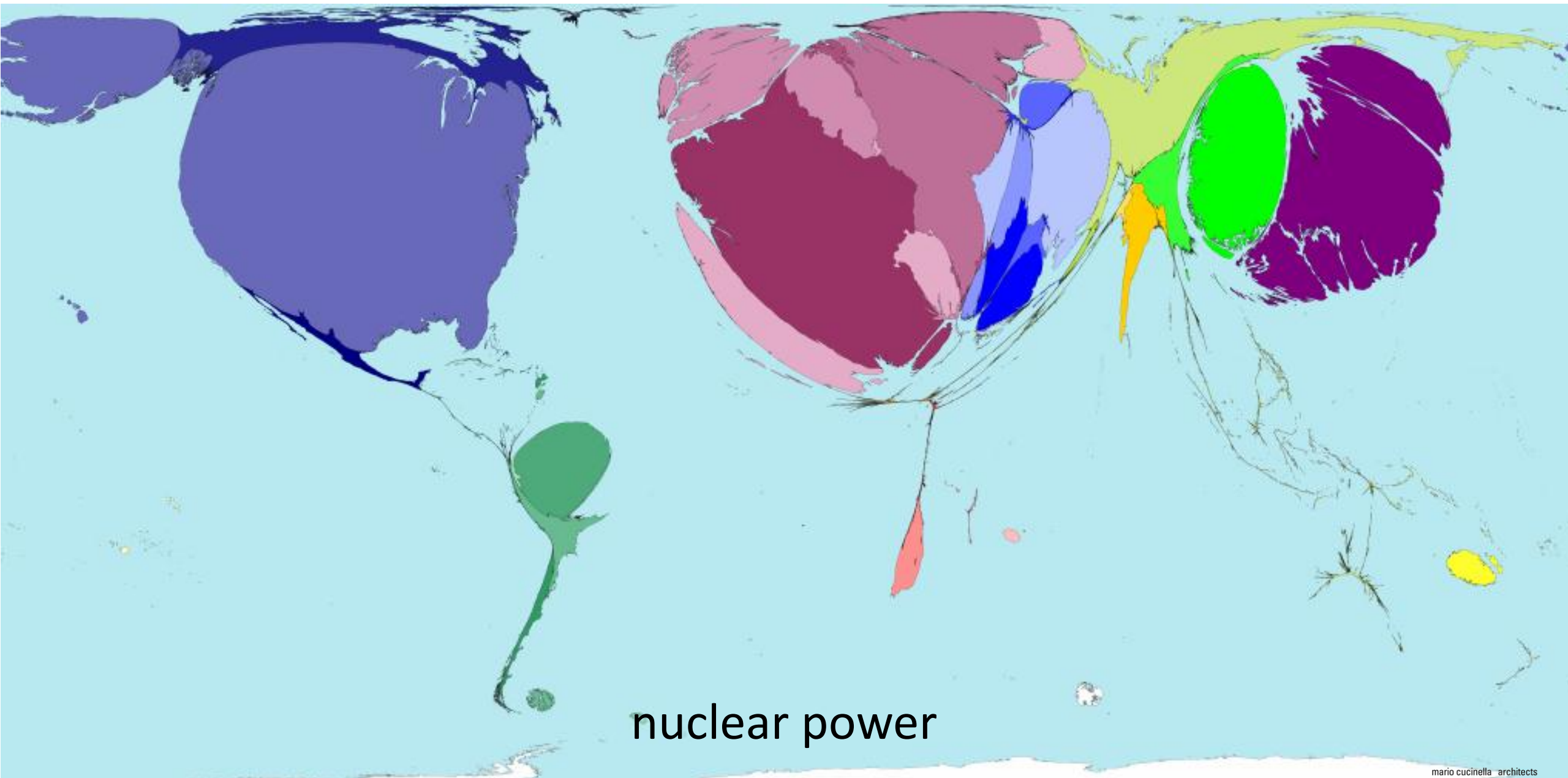
new square meters of buildings



planet Earth

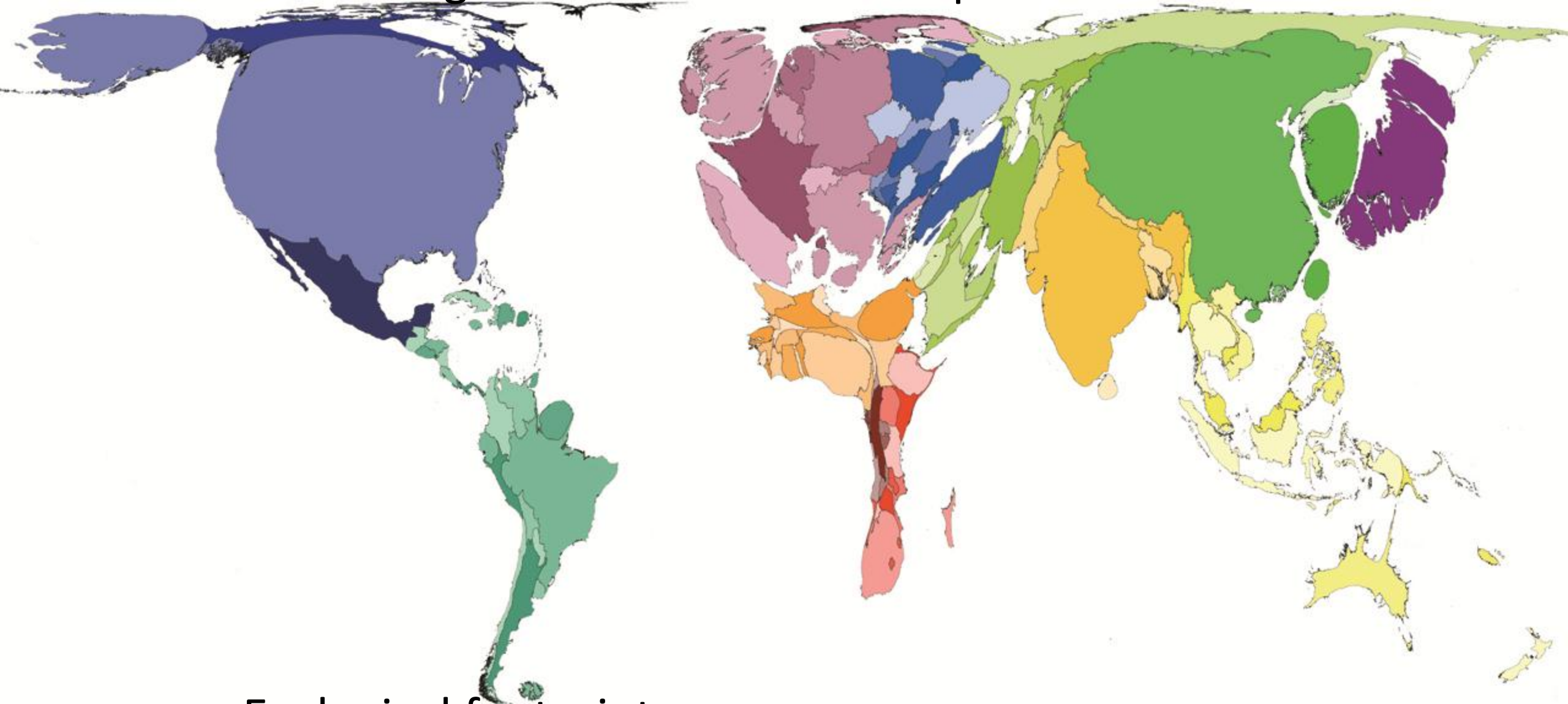


oil power



nuclear power

Looking Earth from a different point of view...



Ecological footprint

is related to **human demand** on the Earth's ecosystems. It measures how much land and water area a human population requires to produce the resource it consumes and to absorb its wastes, using prevailing technology.

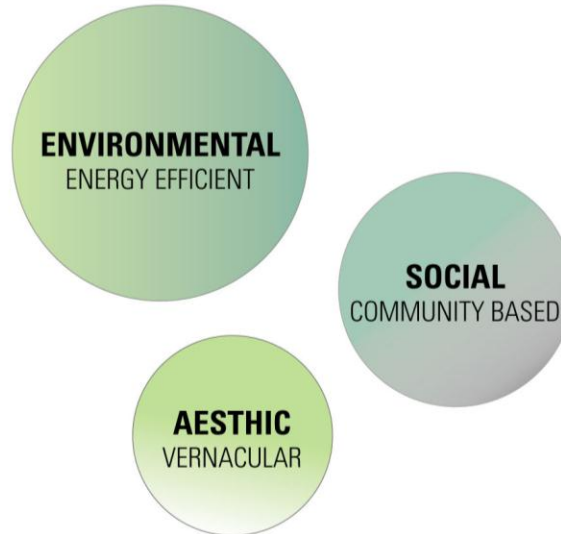
WHEN IS A BUILDING SUSTAINABLE?



“

We design projects that, through a solid **research**, the use of **innovative technologies** and the collaboration of **different professionals**, embody an ideal of architectural quality whose sustainability is not only environmental, but also social and aesthetic.

”

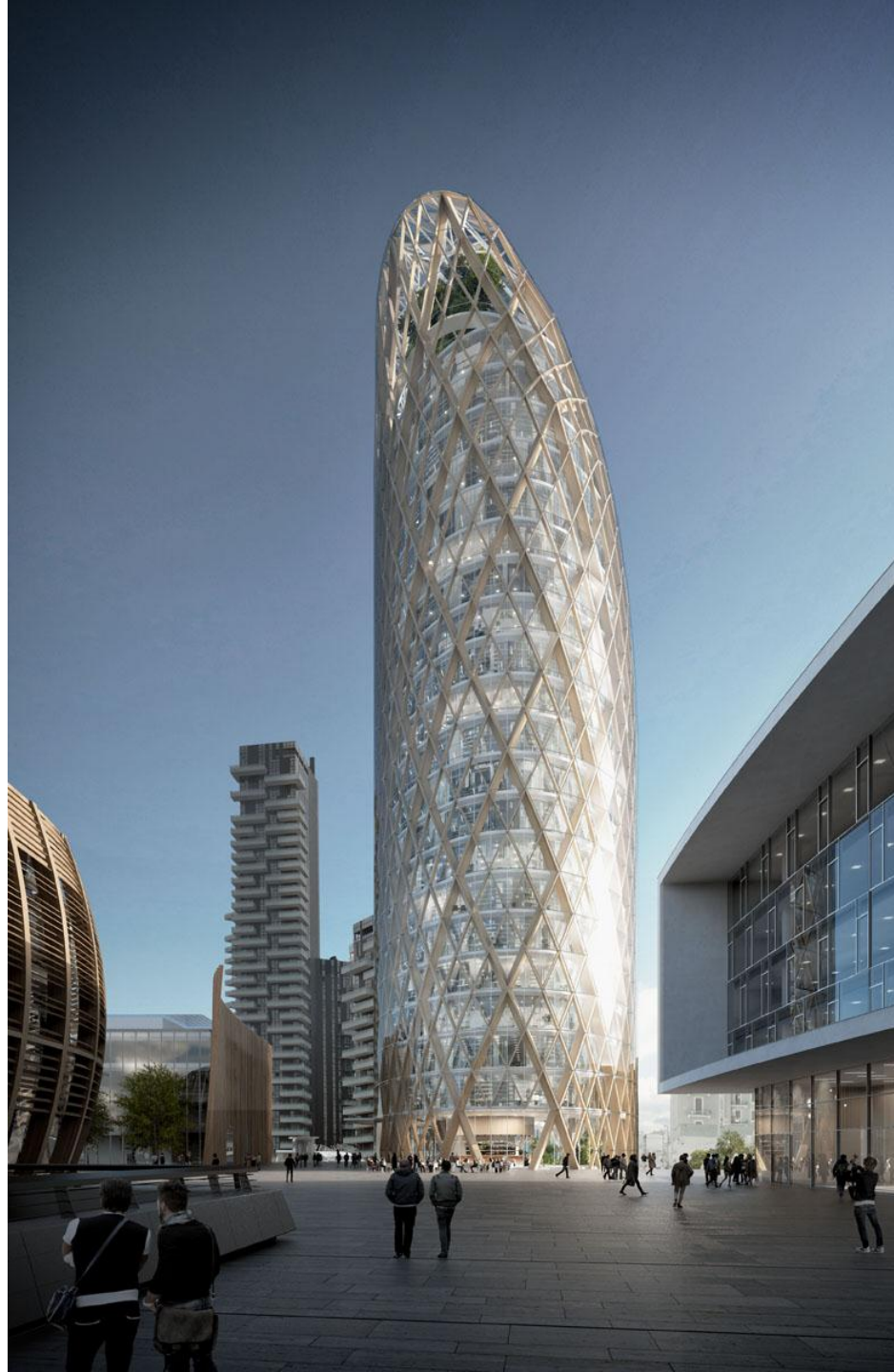




UNIPOLSAI TOWER

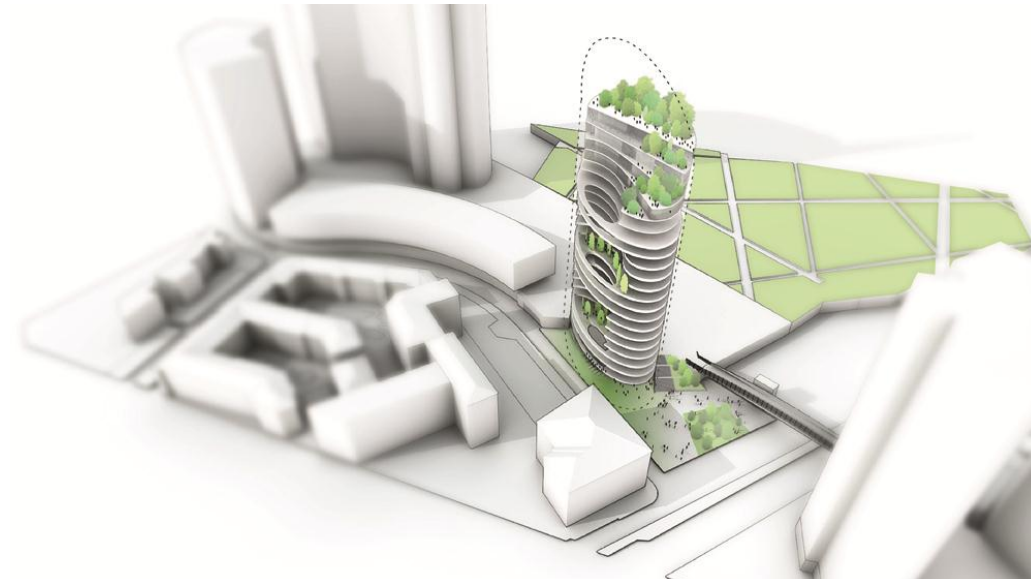
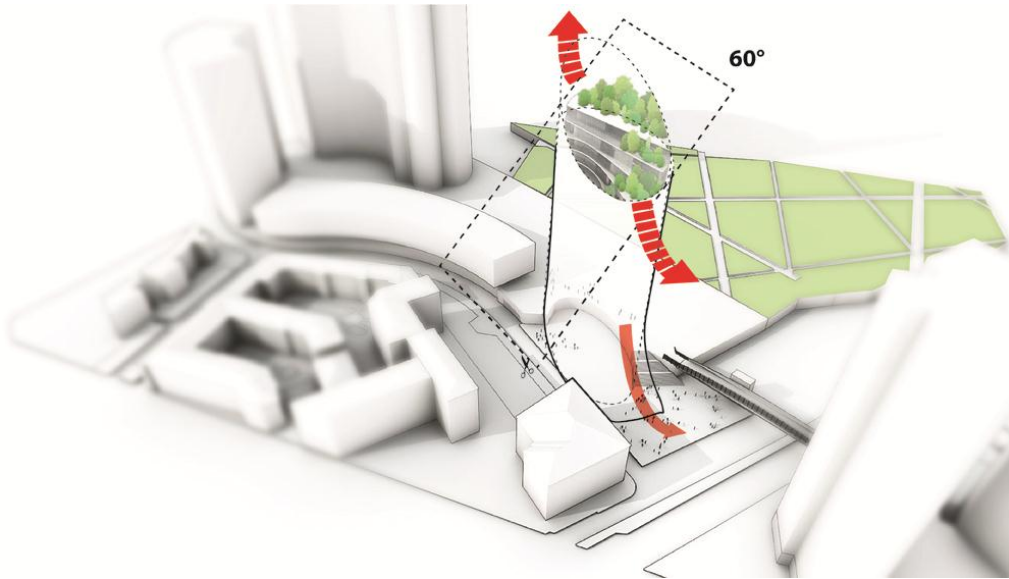
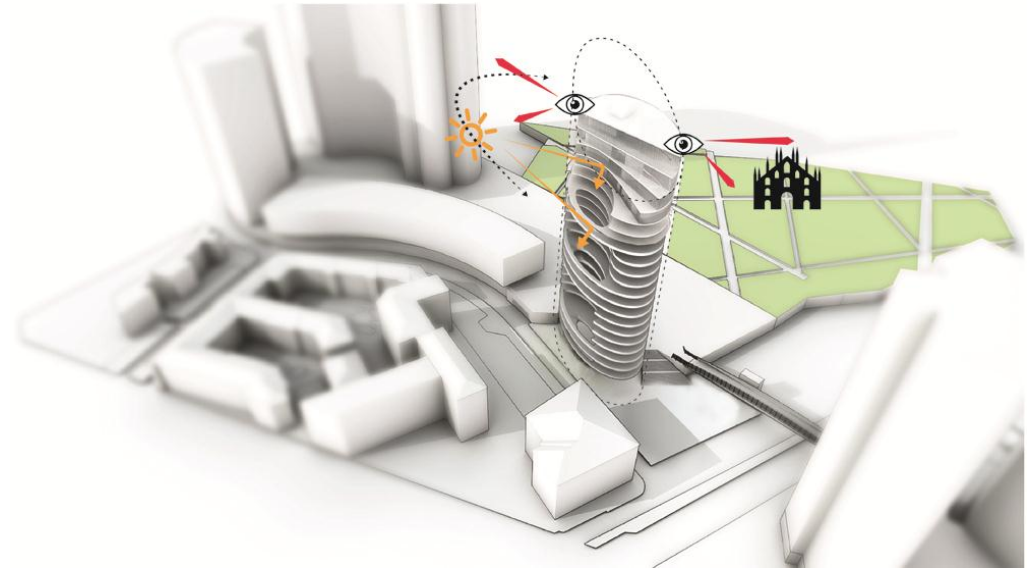
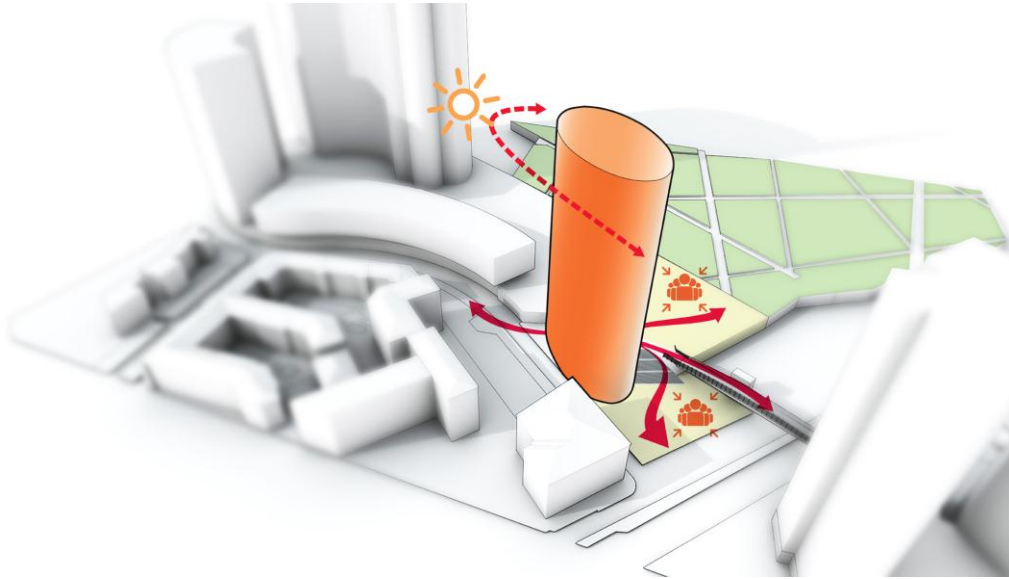
Headquarter in Milan

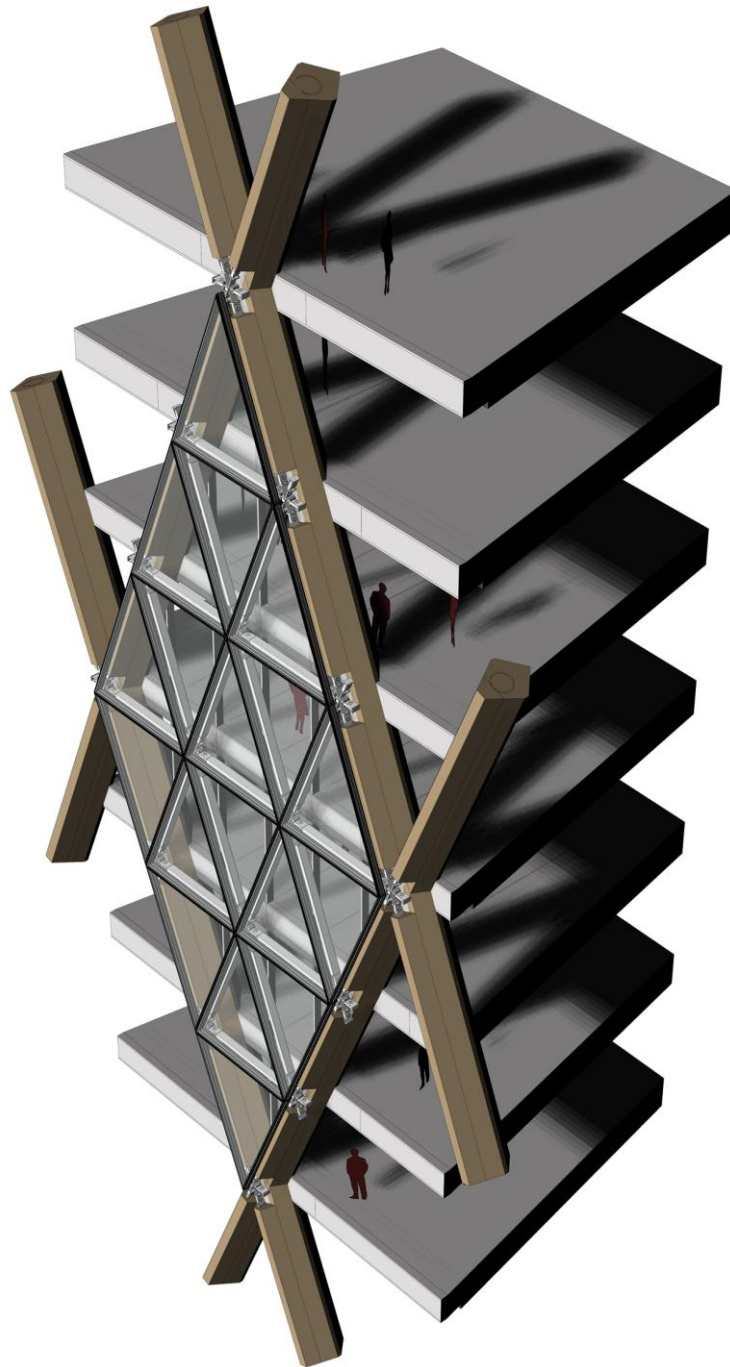
Urban integration and shape relationship



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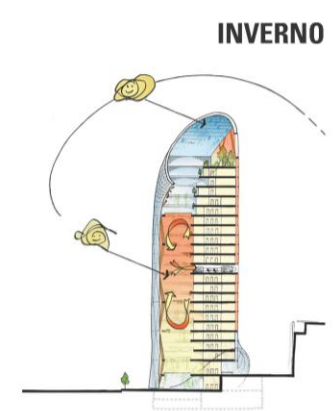
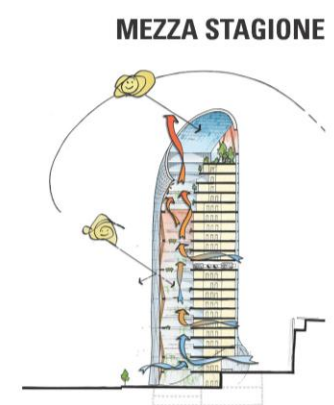
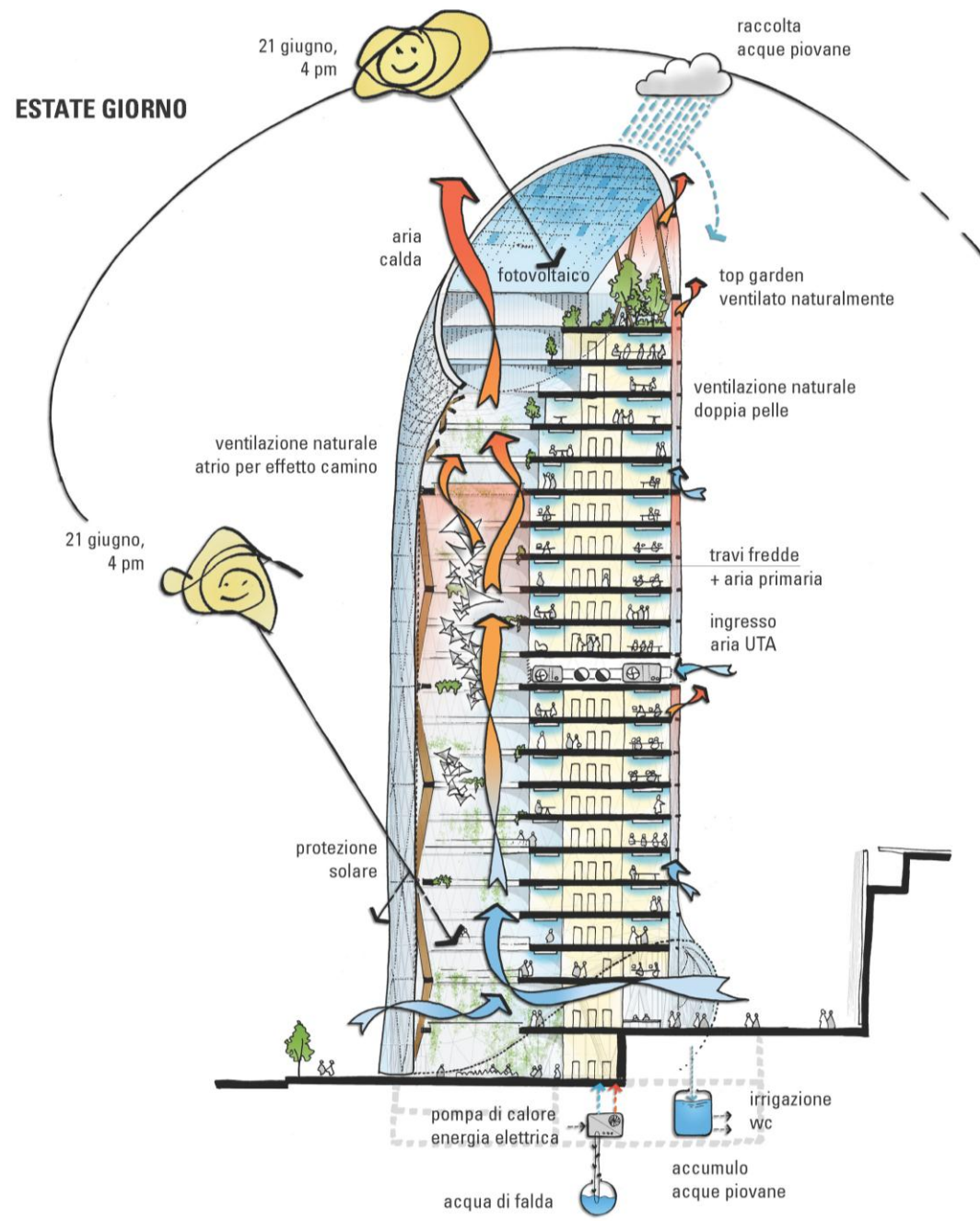


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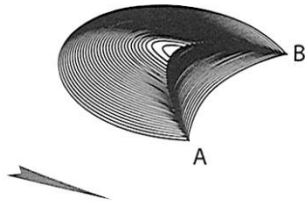




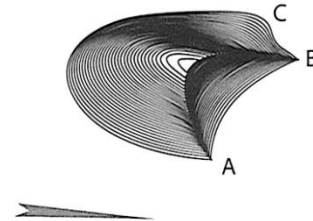
ALGERI

Algerian Post and Telecommunications Authority
Headquarter

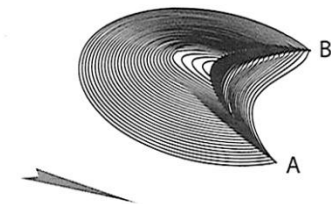
Stage 1



Stage 2



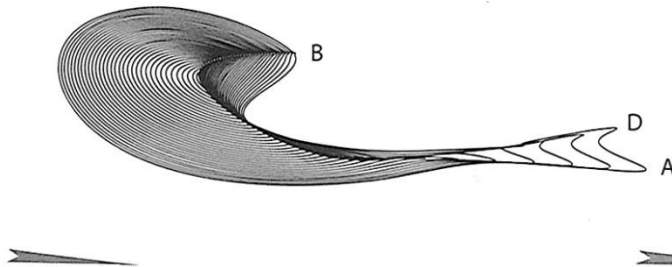
Stage 3



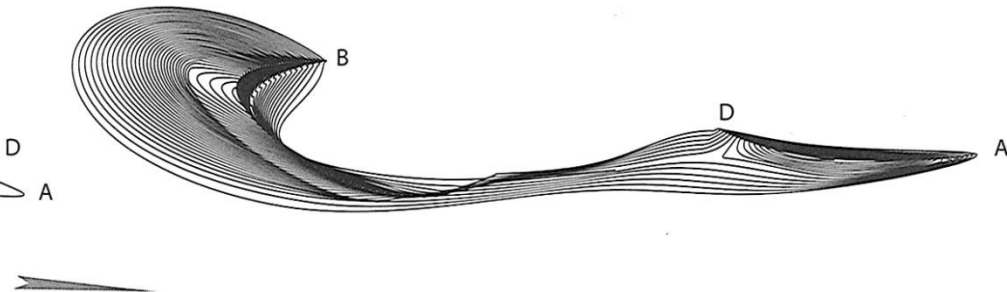
EMPATHY WITH THE ENVIRONMENT

natural and cultural

Stage 4



Stage 5

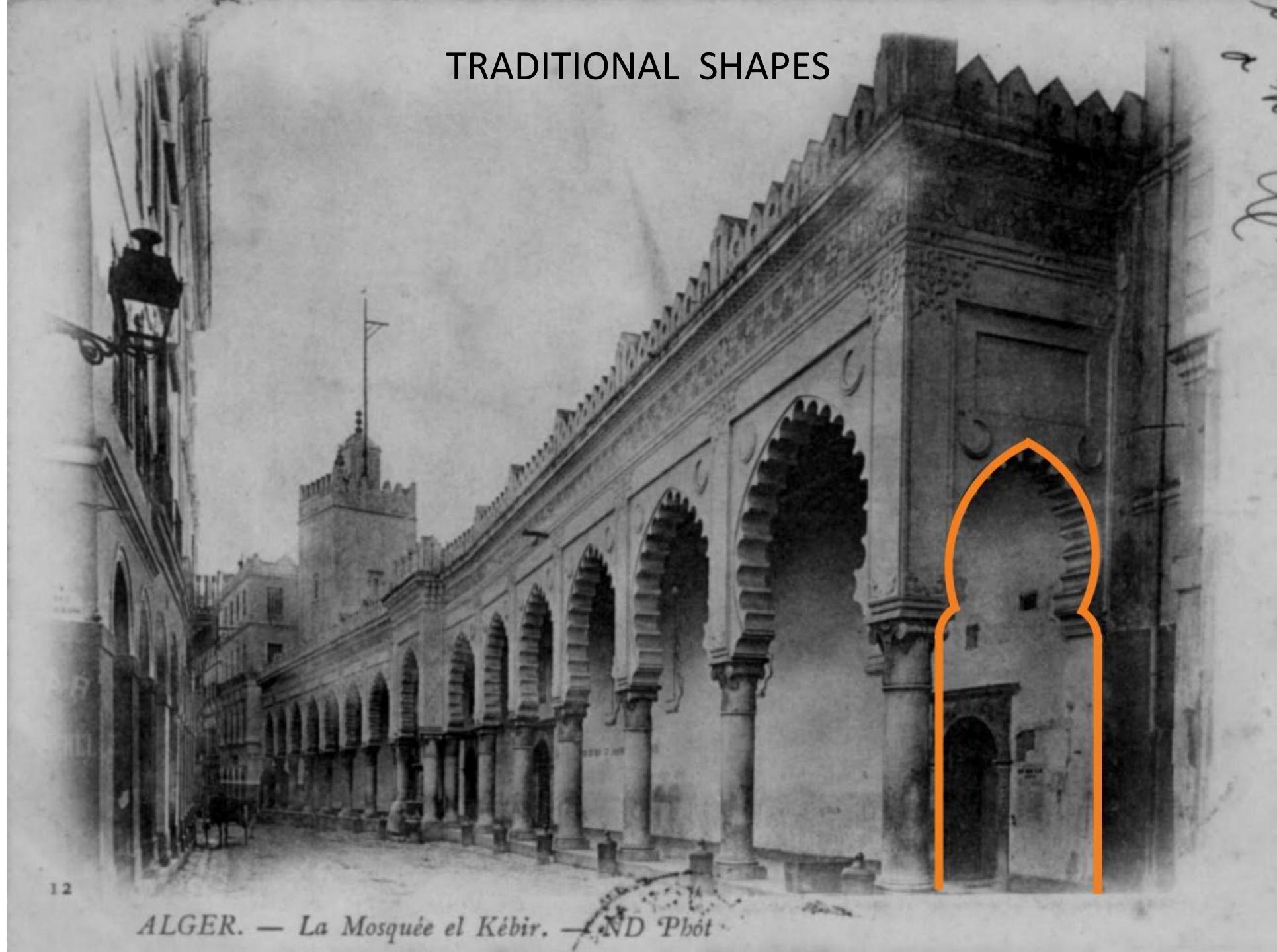


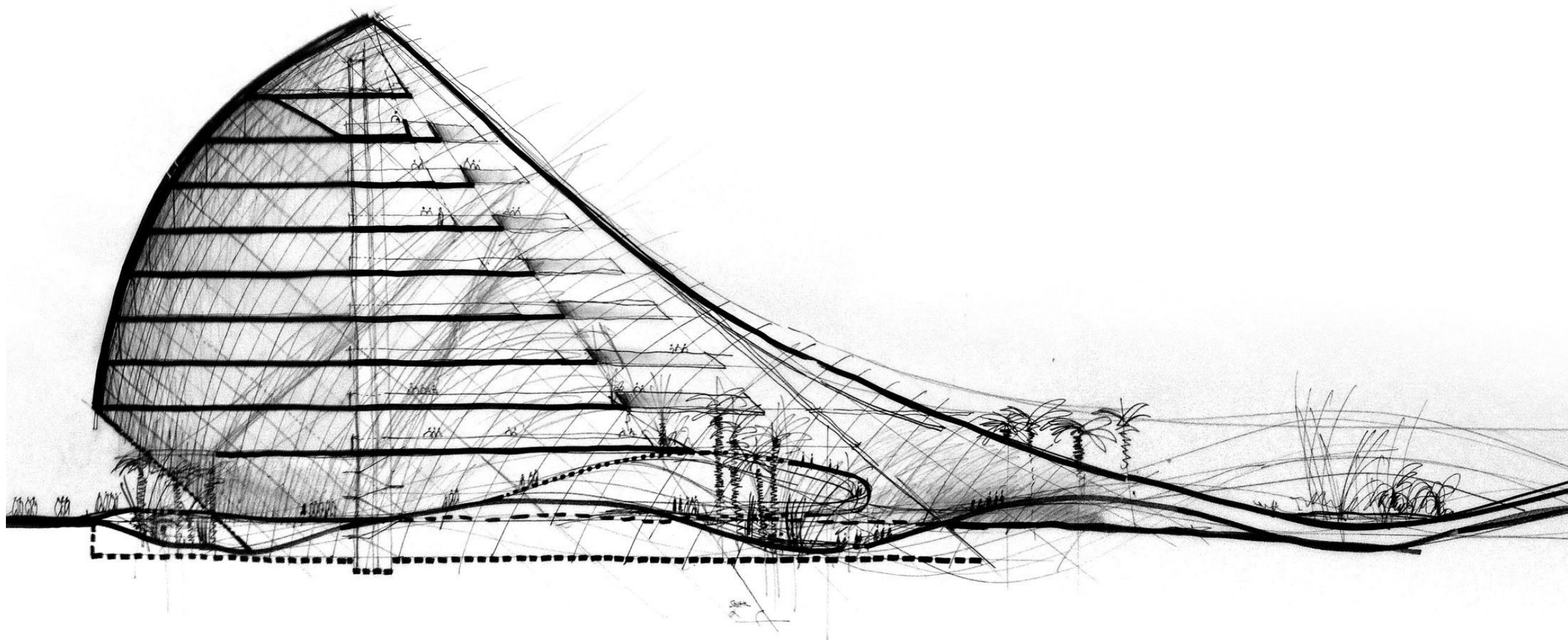


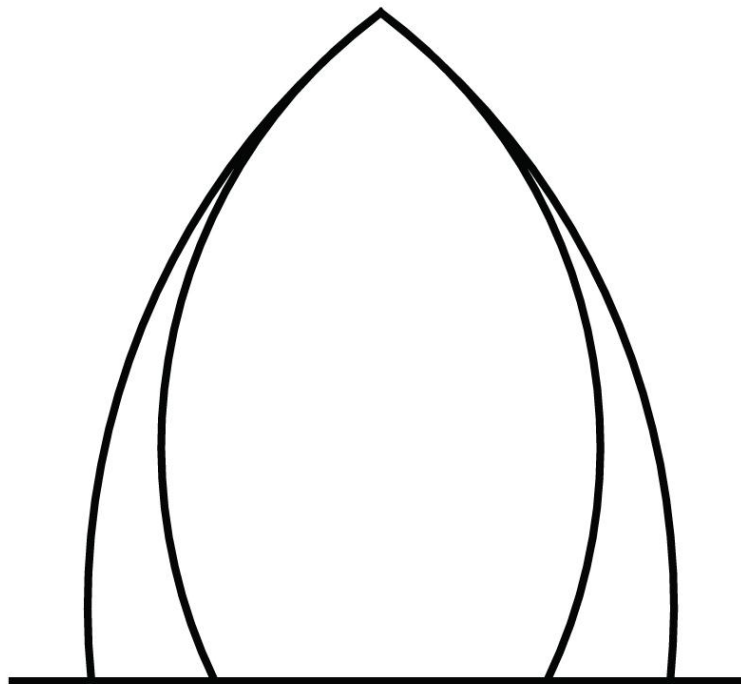
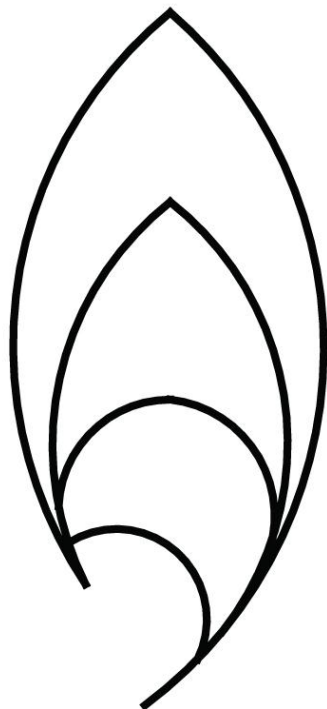
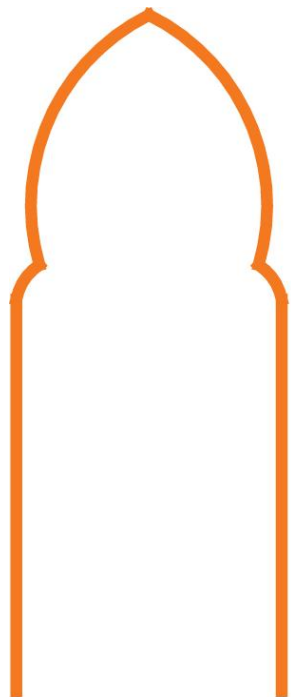
Bellezza and Vernacular Innovation

empathy with culture and history

TRADITIONAL SHAPES









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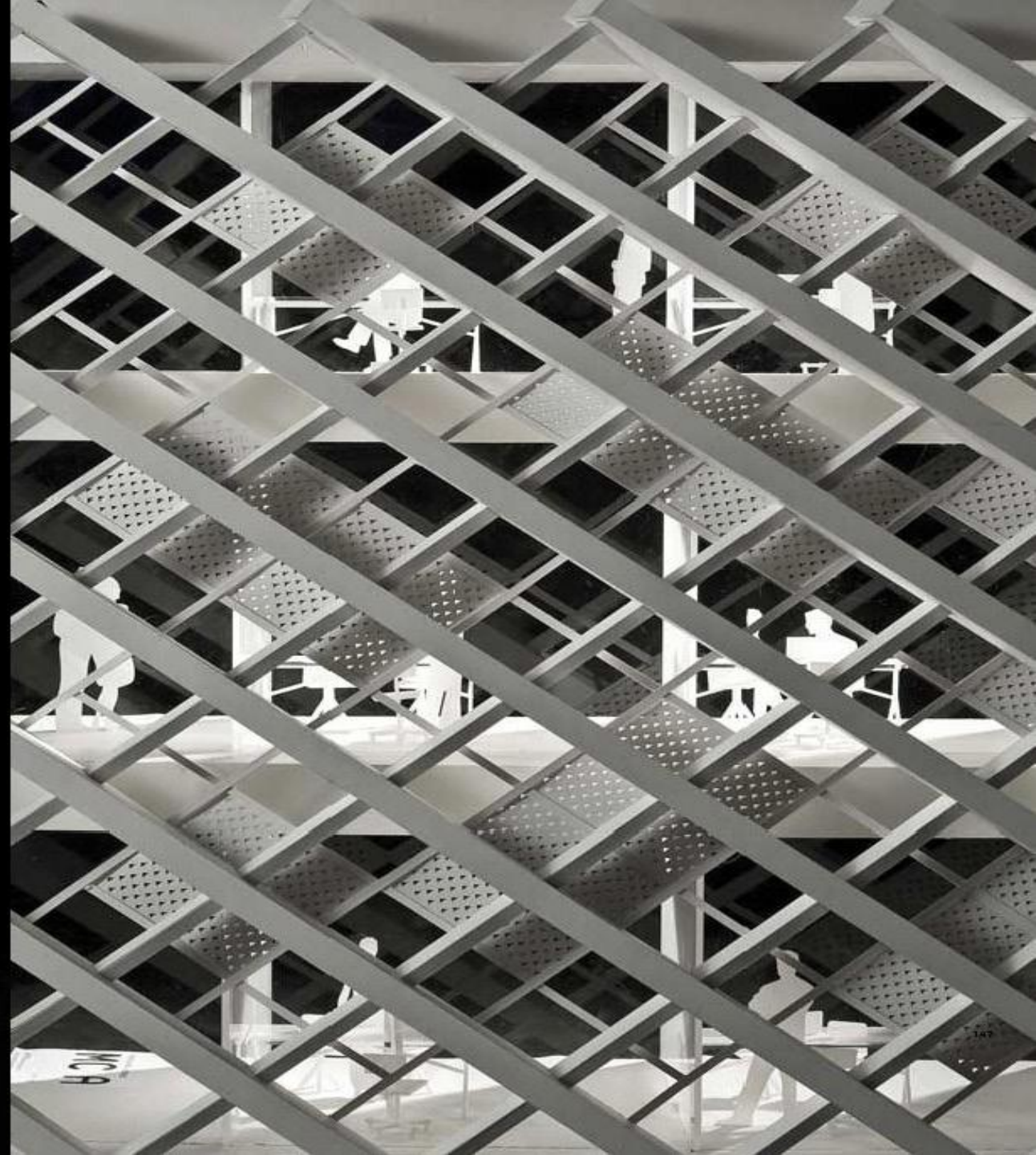
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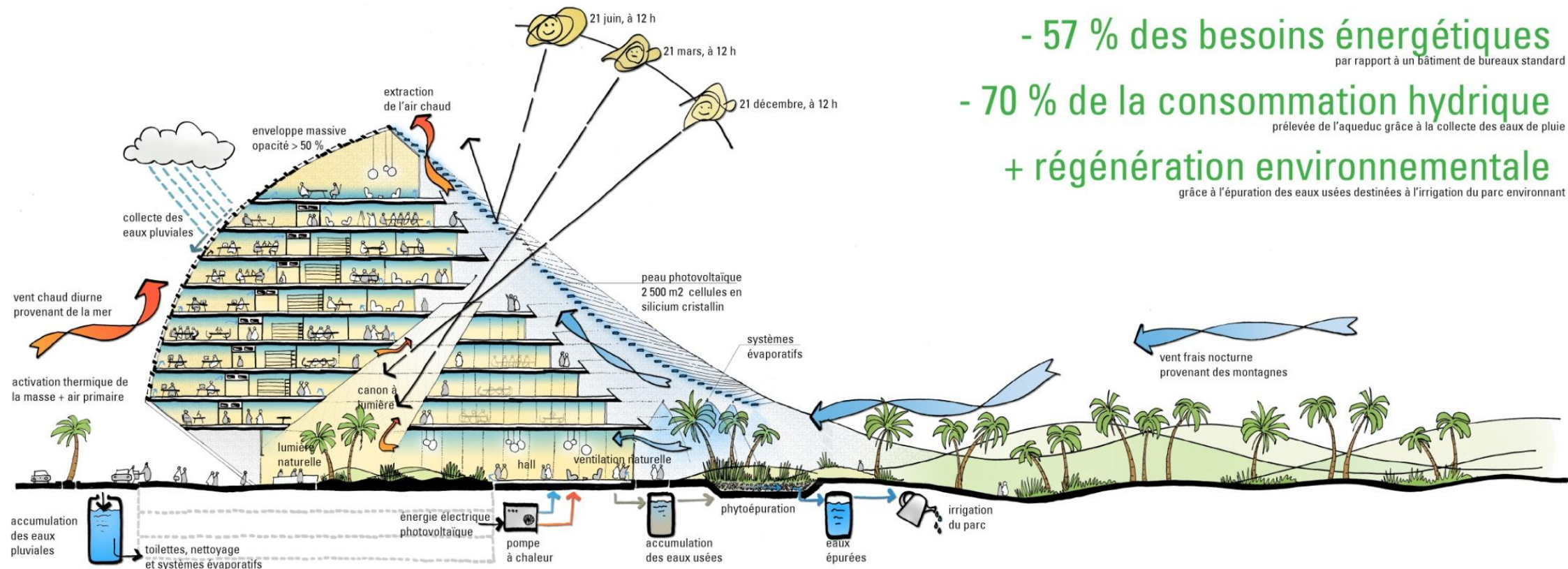


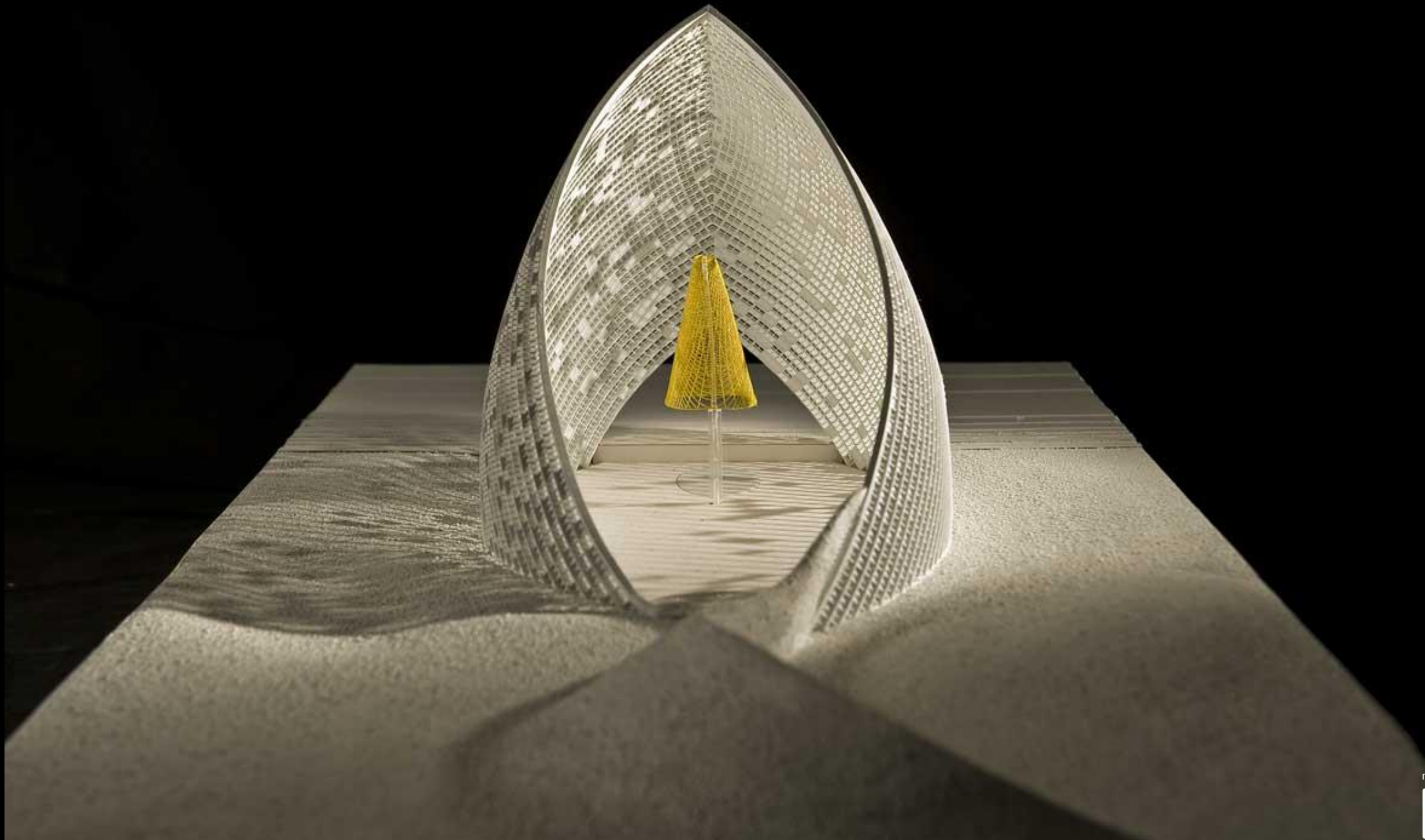


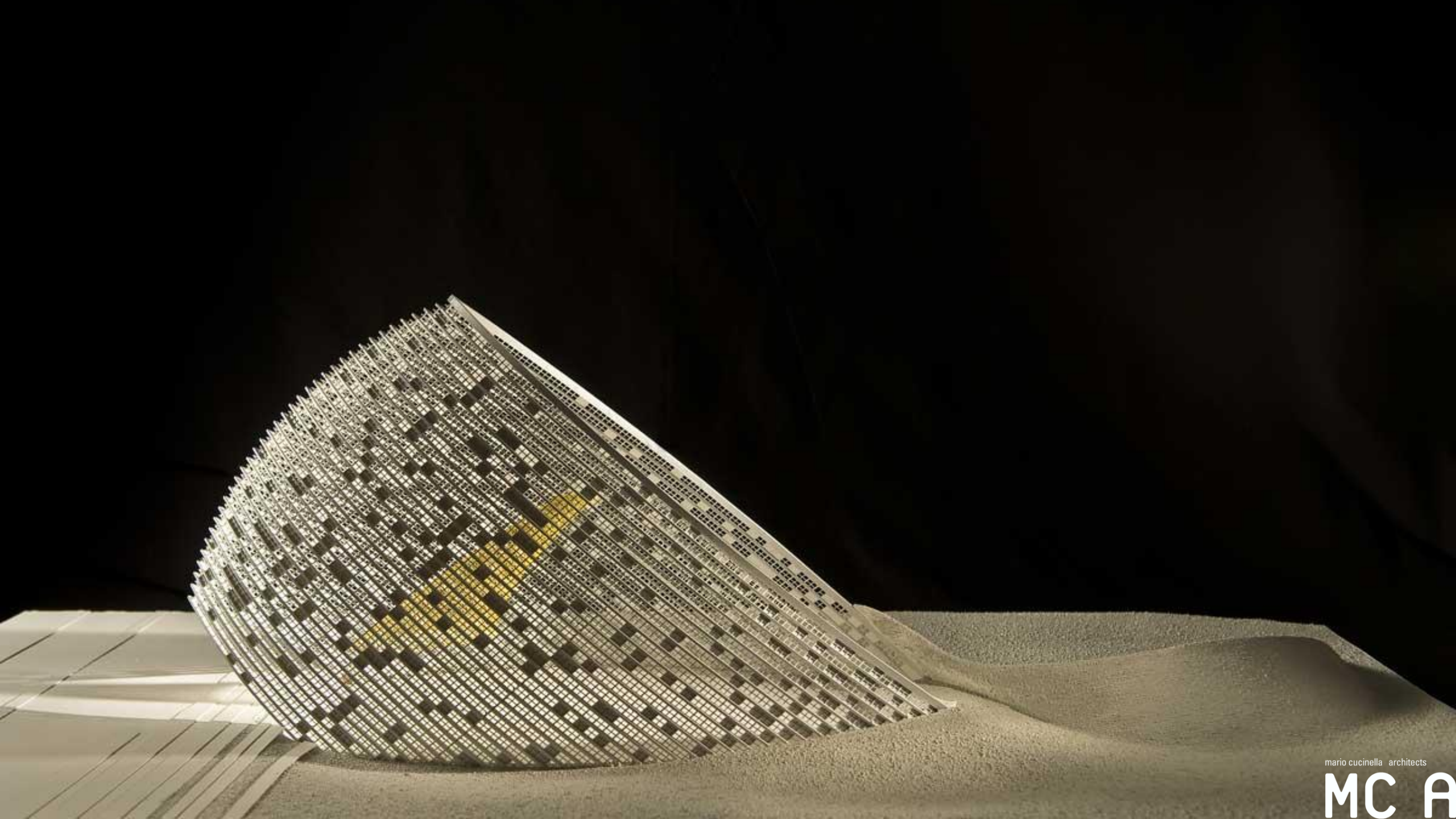
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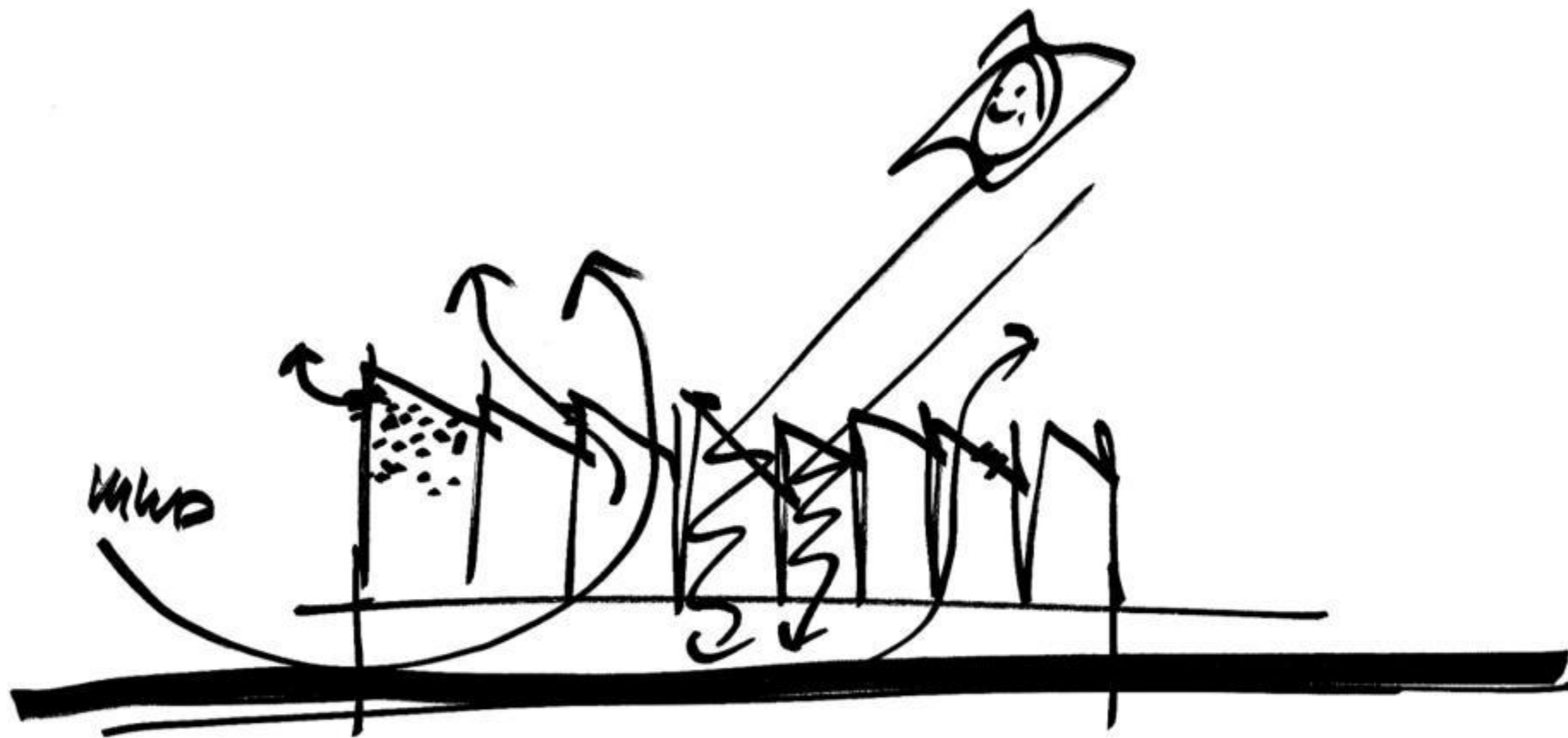
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ARPA

New headquarters for the Regional Agency
for Prevention and the Environment

Ferrara





WINDCATCHER

natural ventilation

Hyderabad, Sindh, Pakistan, the windcatchers city

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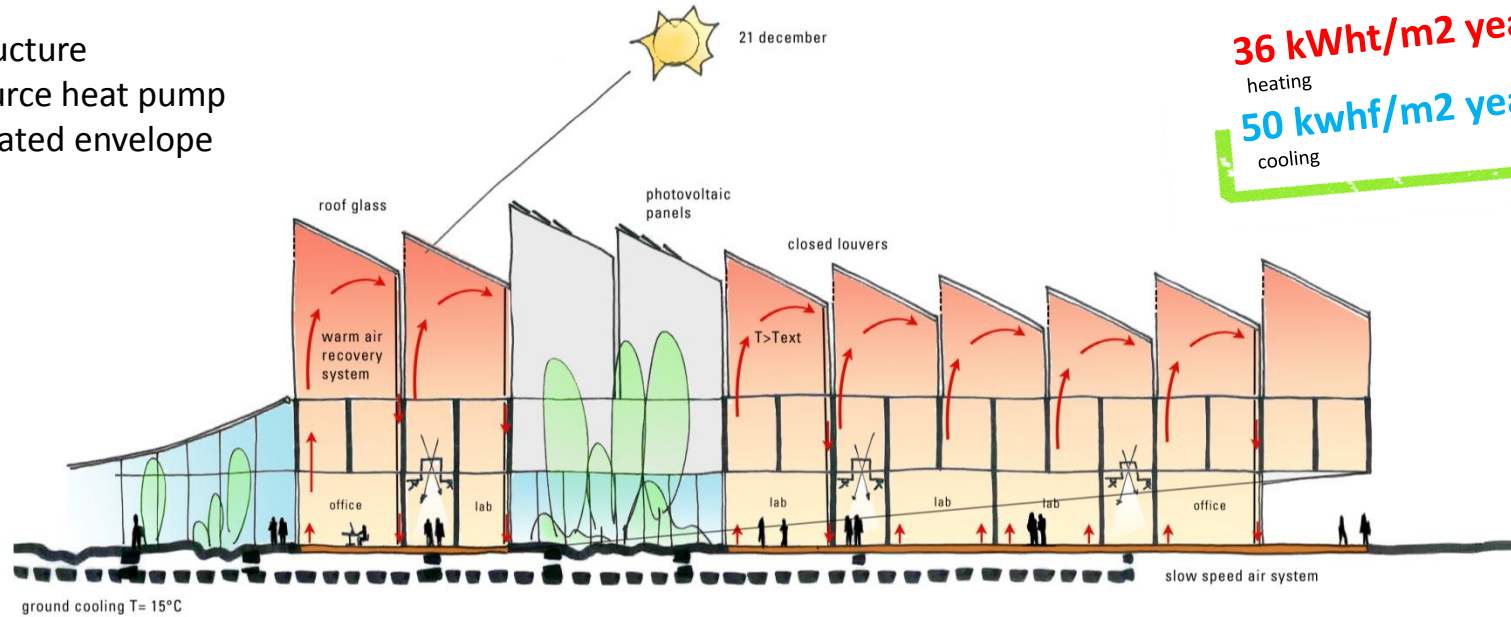


solar chimney
greenhouse effect
daylight
wood structure
water source heat pump
well insulated envelope

winter

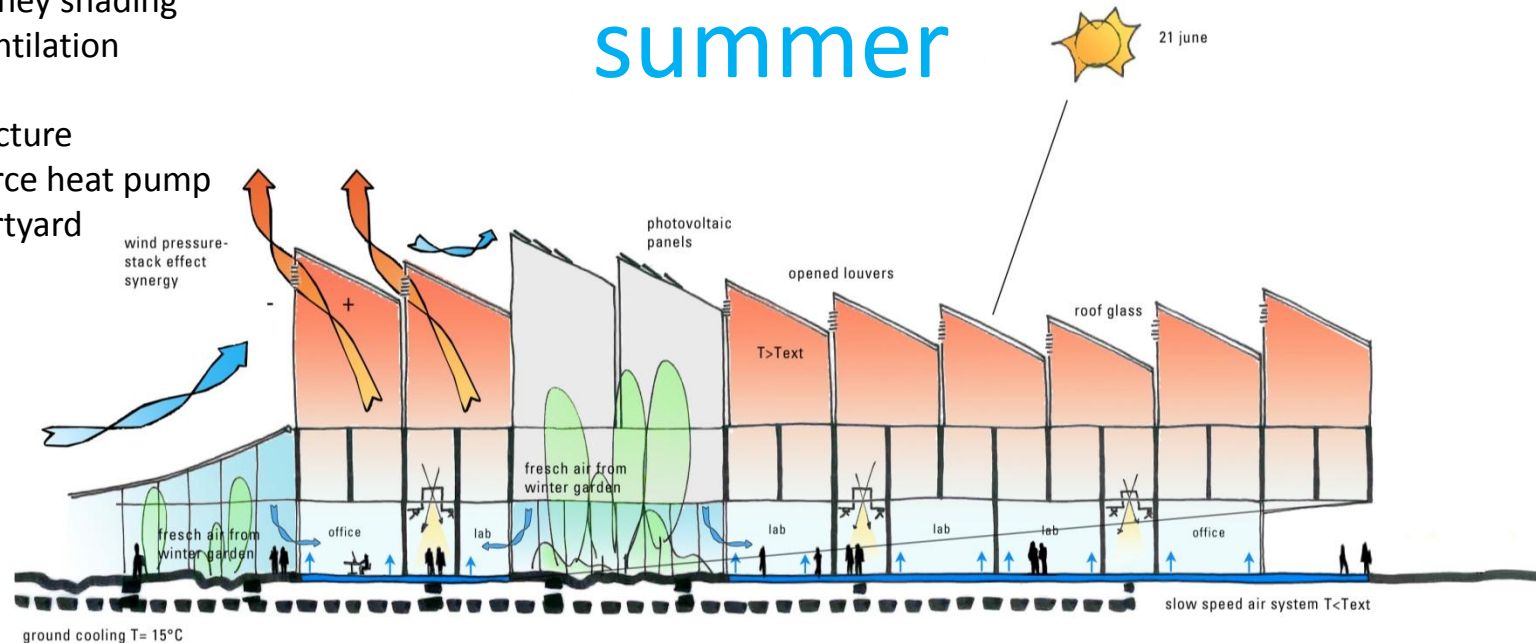
ARPA. FERRARA, ITALY

36 kWh/m² year
heating
50 kWh/m² year
cooling

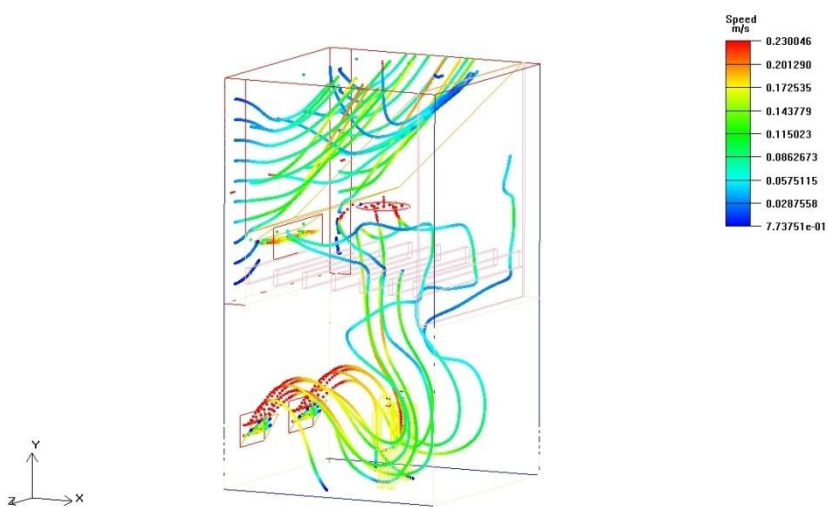
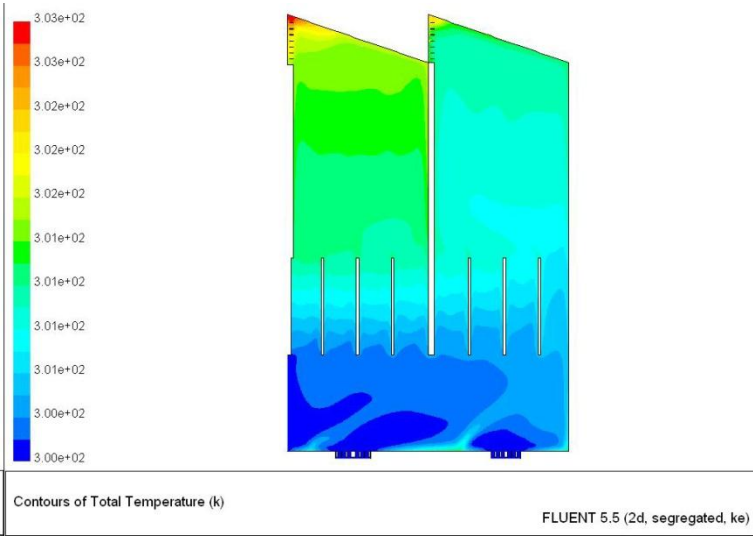
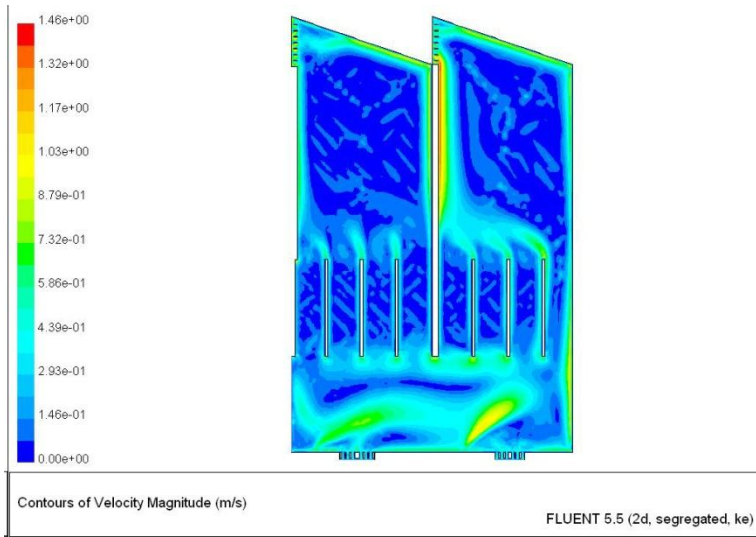
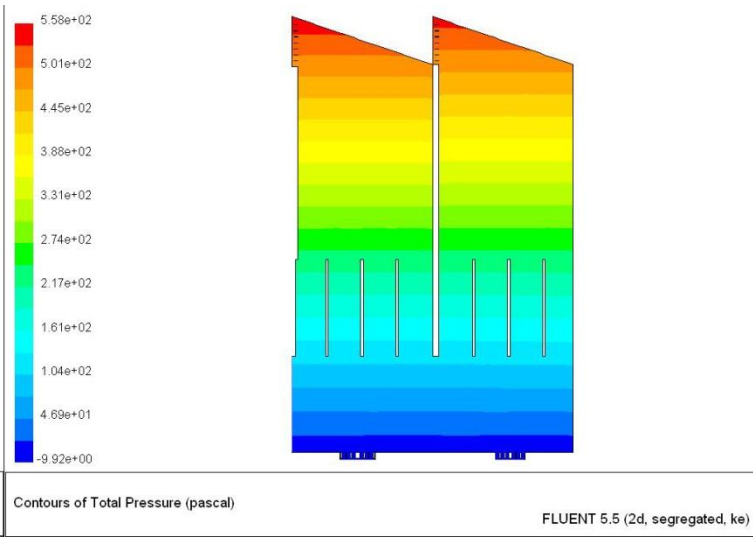


solar chimney shading
natural ventilation
daylight
wood structure
water source heat pump
green courtyard

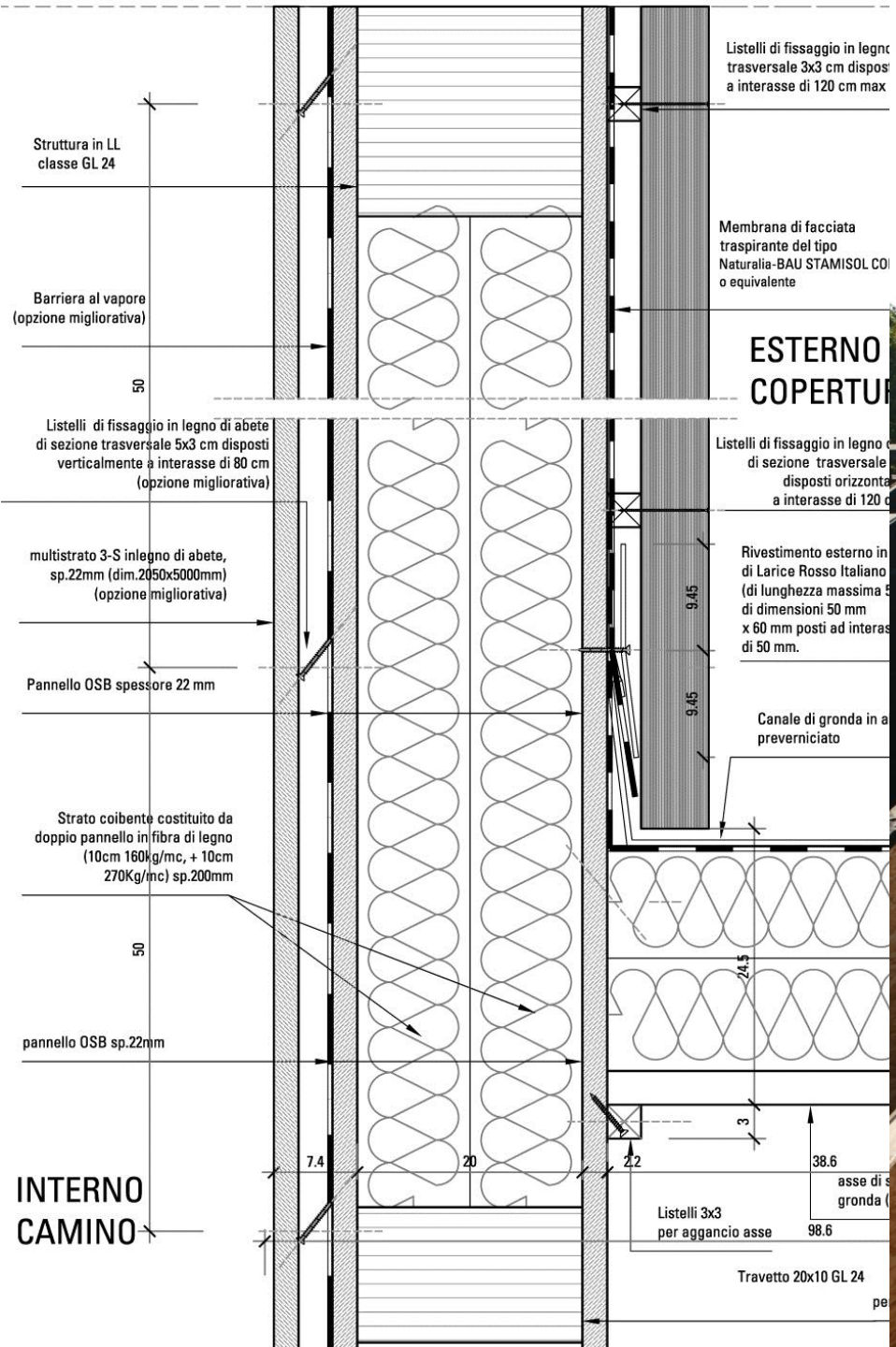
summer



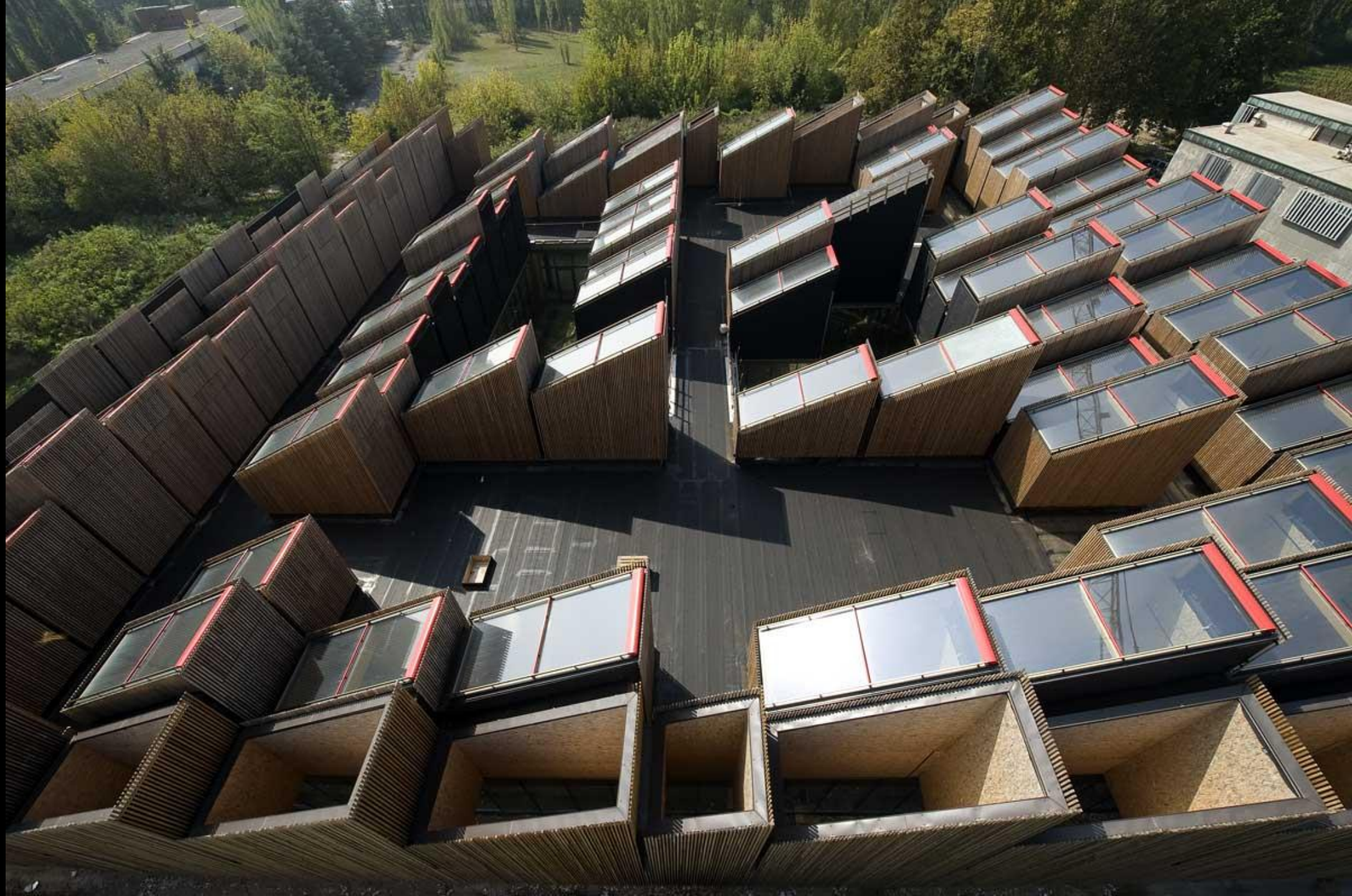
CFD analysis



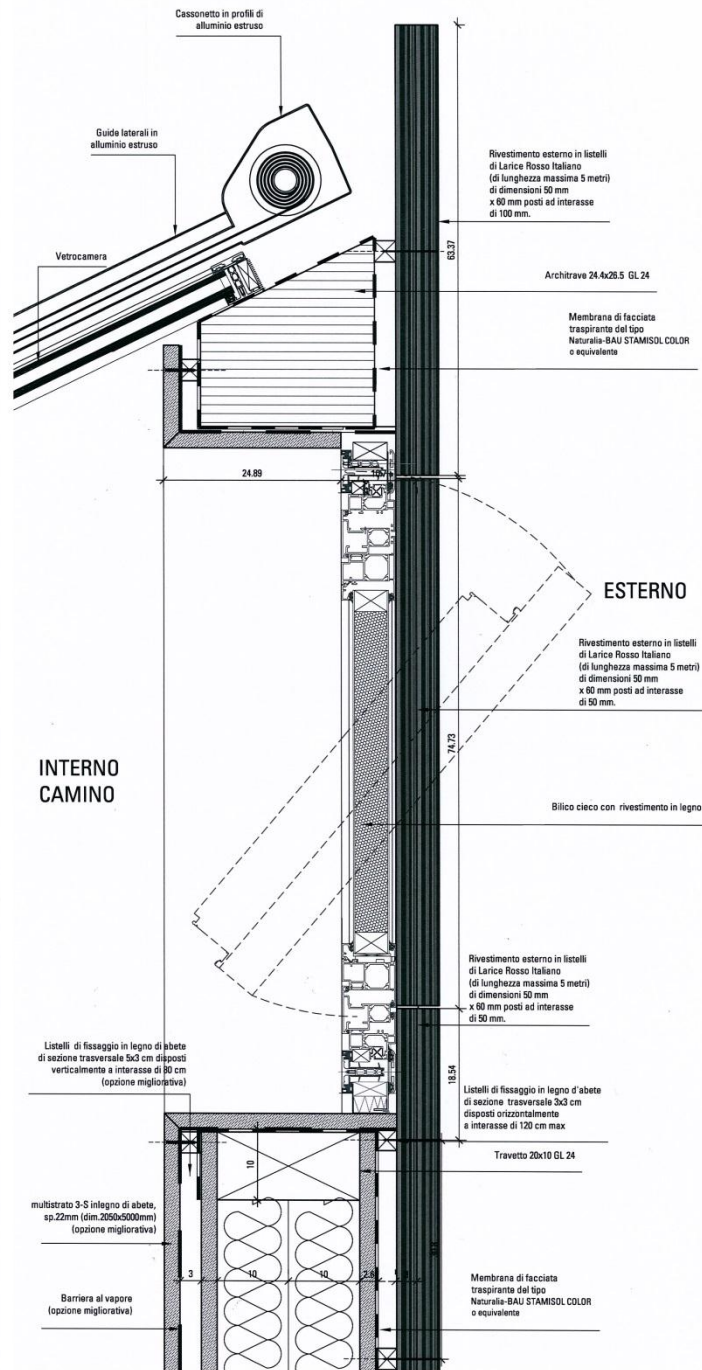














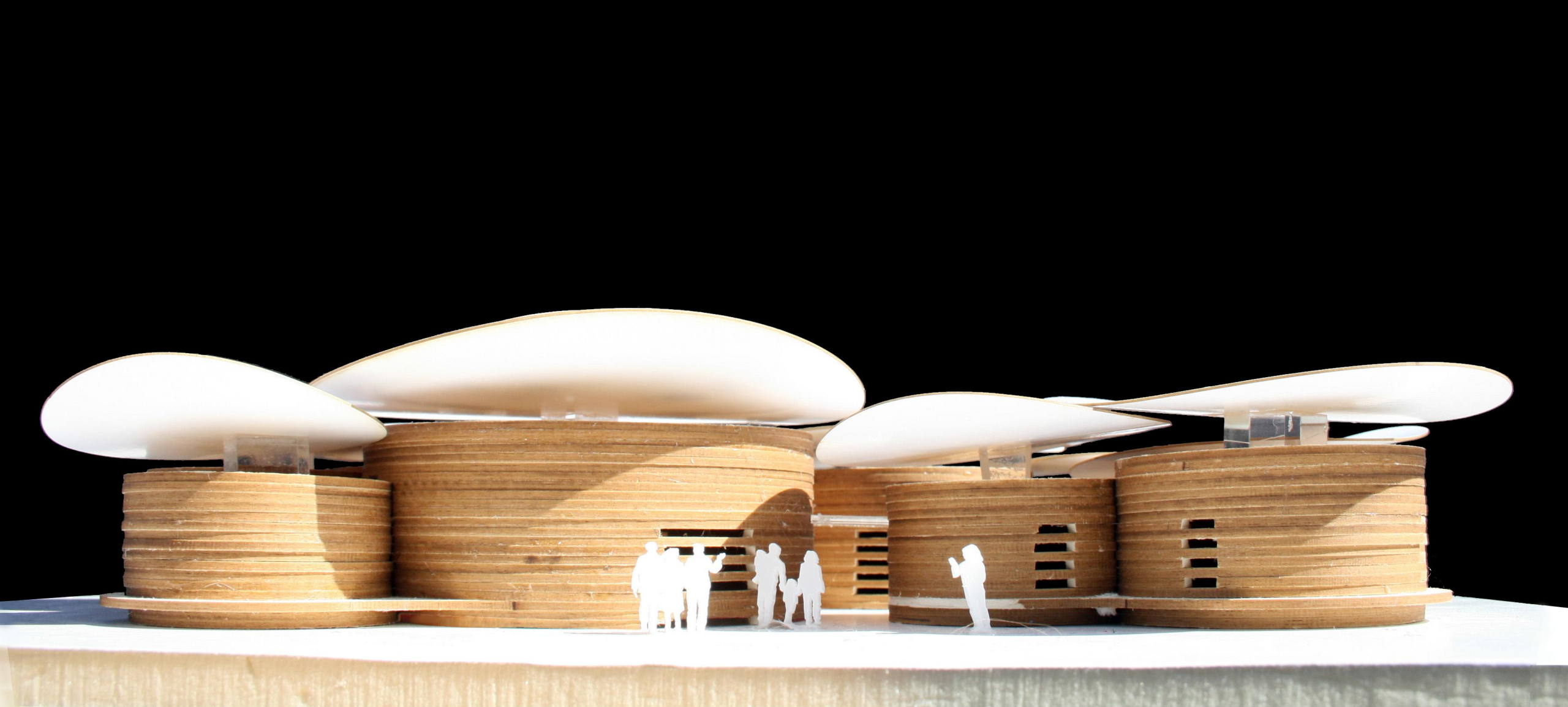
Casa della Musica

Pieve di cento (BO)



















CLASSE ENERGETICA A

secondo quanto previsto dal Piano Energetico Regionale e la DGR 1368/11

-35% DI FABBISOGNO ENERGETICO

EPi di progetto rispetto al valore limite riportato dal DAL 156/08

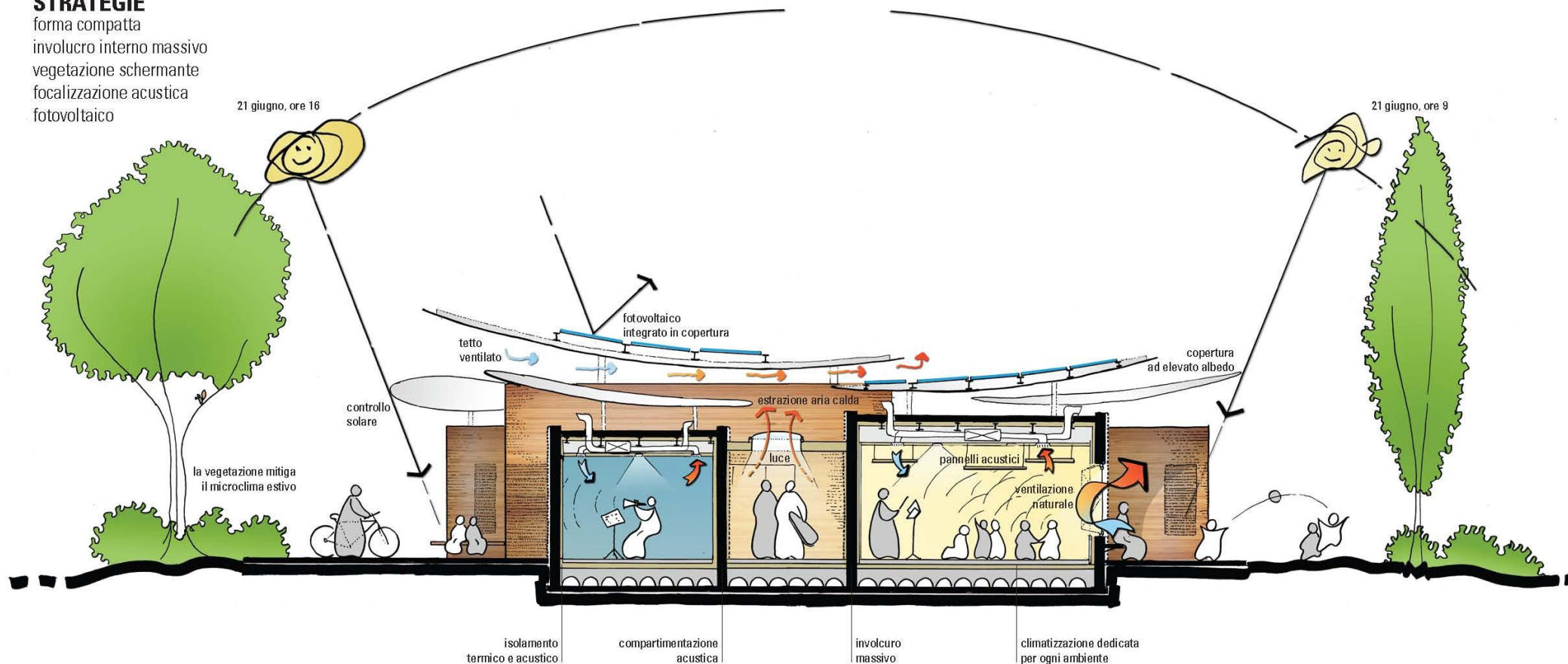
28% DI ENERGIA RINNOVABILE

per la climatizzazione, grazie al contributo del fotovoltaico installato in copertura

STRATEGIE

forma compatta
involucro interno massivo
vegetazione schermante
focalizzazione acustica
fotovoltaico

STRATEGIA BIOCLIMATICA











NIDO
GUAS
TALLA

**According to a study at Stanford University
light and air, shape and colour are the main
issues in primary schools and childcare.
Design has positive effects
on learning and education**

PINOCCHIO

DI
C. COLLODI

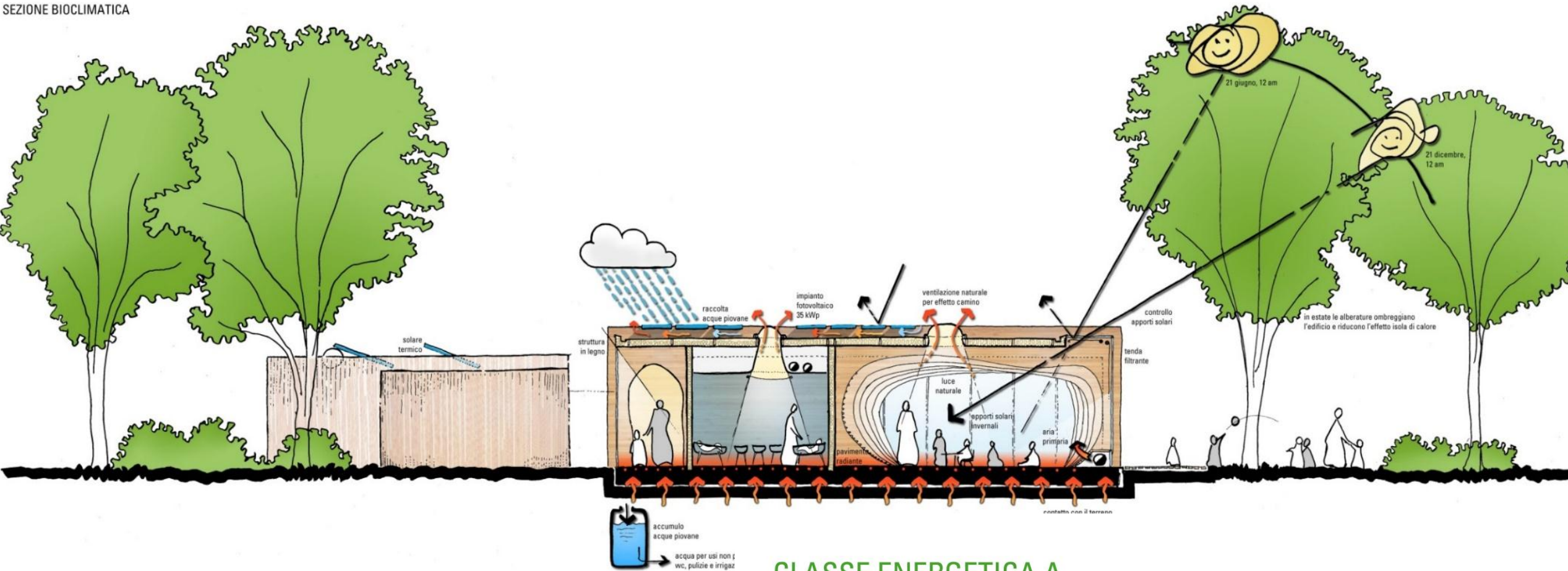








SEZIONE BIOCLIMATICA



CLASSE ENERGETICA A

secondo quanto previsto dal Piano Energetico Regionale e la DGR 1366/11

40.5% ENERGIA RINNOVABILE

grazie al contributo del fotovoltaico e del solare termico installati in copertura

-57% DOMANDA IDRICA

grazie al recupero delle acque piovane e all'uso di rubinetterie a basso consumo, rispetto al fabbisogno idrico standard stimato in 3125 litri/giorno



















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MCA

