



SAPIENZA  
UNIVERSITÀ DI ROMA

# mad architects

---

Laboratorio di Sintesi in Progettazione

Architettonica e Urbana

Prof. Arch. **Antonino Saggio**

Arch. **Marco Falasca**

MAD Architects

Arch. **Edoardo D'Angelo**

MAD Architects

Sapienza Università di Roma - 16.11.2023





SAPIENZA  
UNIVERSITÀ DI ROMA

# mad architects

---

Laboratorio di Sintesi in Progettazione

Architettonica e Urbana

Prof. Arch. **Antonino Saggio**

Arch. **Marco Falasca**

MAD Architects

Arch. **Edoardo D'Angelo**

MAD Architects

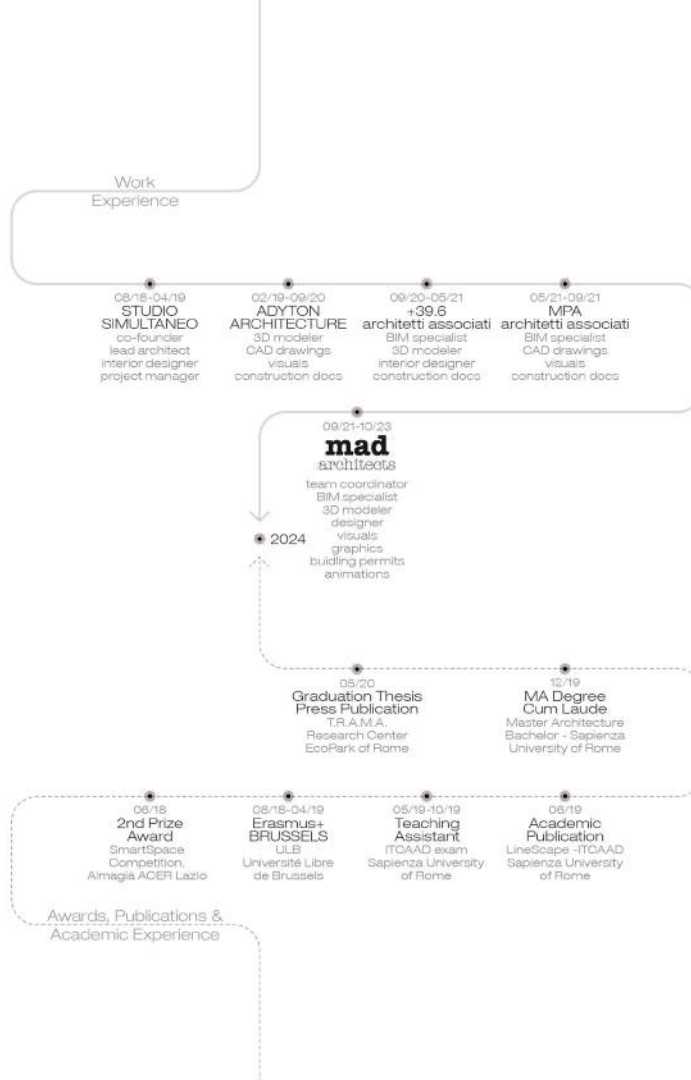
Sapienza Università di Roma - 16.11.2023

**Marco Falasca**  
MAD Architects

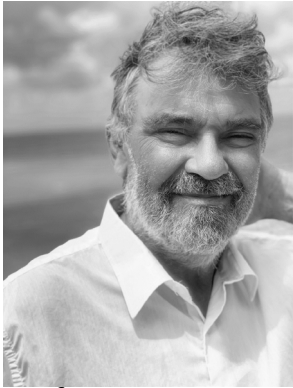
**Edoardo D'Angelo**  
MAD Architects



## Marco Falasca MAD Architects



**Laboratorio di Sintesi in Progettazione**  
**Architettonica e Urbana**  
Facoltà di Architettura "Sapienza" – Università di Roma



**Prof. Antonino Saggio**





## **MAD Architects**

Pechino – Los Angeles - Roma



**Arch. Andrea D'Antrassi**



## MAD Architects Unveils Hollywood-Inspired "Office of the Future"



Save this article



### ARCHITETTURA

## Mad Architects, da Roma la sfida di coniugare stile europeo ed estetica visionaria

Intervista ad Andrea D'Antrassi, partner di Mad Architects e direttore operativo della sede di Roma – la terza dopo Pechino e Los Angeles – da cui coordina i progetti attualmente in corso a Rotterdam, Roma e Milano, oltre a quello di Parigi, giunto a completamento nei mesi scorsi

di Antonella Gulli  
12 marzo 2021



domus

## MAD completes a remarkable experiment of land architecture in China

The brand new Yabuli Entrepreneurs' Congress Center is a building whose resolutely global aesthetics celebrates the achievements of Chinese entrepreneurship.



mad

dezeen

Follow:



MAD unveils sinuous conference centre nestled amongst Chinese mountains



Tendenze / Architettura

## Dentro una nuvola: la biblioteca di MAD Architects ad Haikou

10.000 libri custoditi in una grotta in cemento, modellata come spuma marina e costruita su un'isola nell'Oceano Pacifico. Apre al pubblico Cloudscape, l'ultima sfida del guru dell'architettura organica

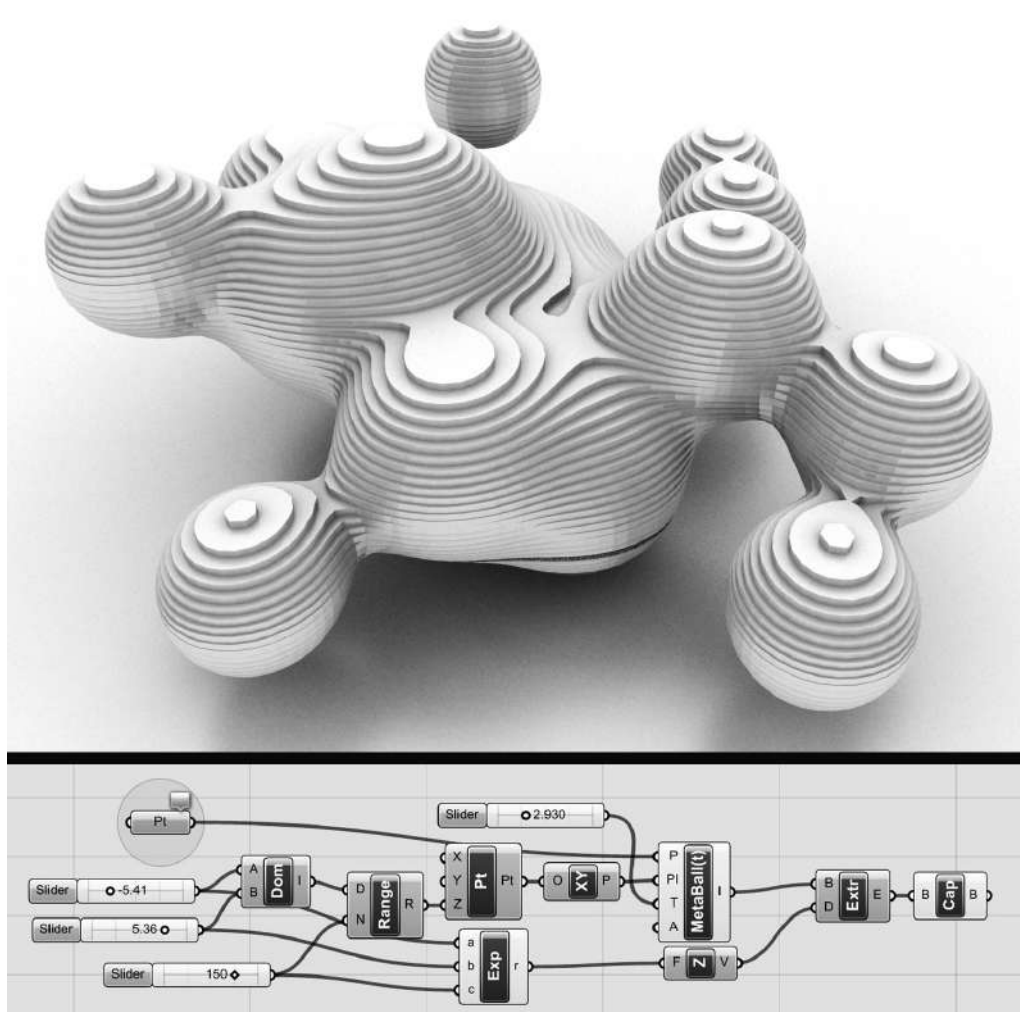
Testo Francesca Tagliabue - Foto Archivist



## Grasshopper

Grasshopper è un linguaggio e un ambiente di programmazione visuale che viene eseguito all'interno dell'applicazione CAD (computer-aided design) **Rhinoceros 3D**.

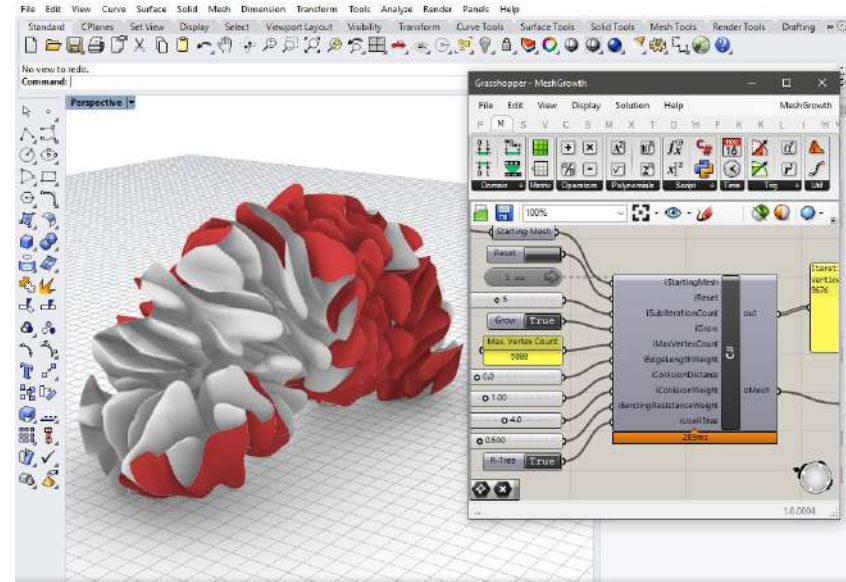
Il programma è stato creato da David Rutten presso **Robert McNeel & Associates**.



# Grasshopper

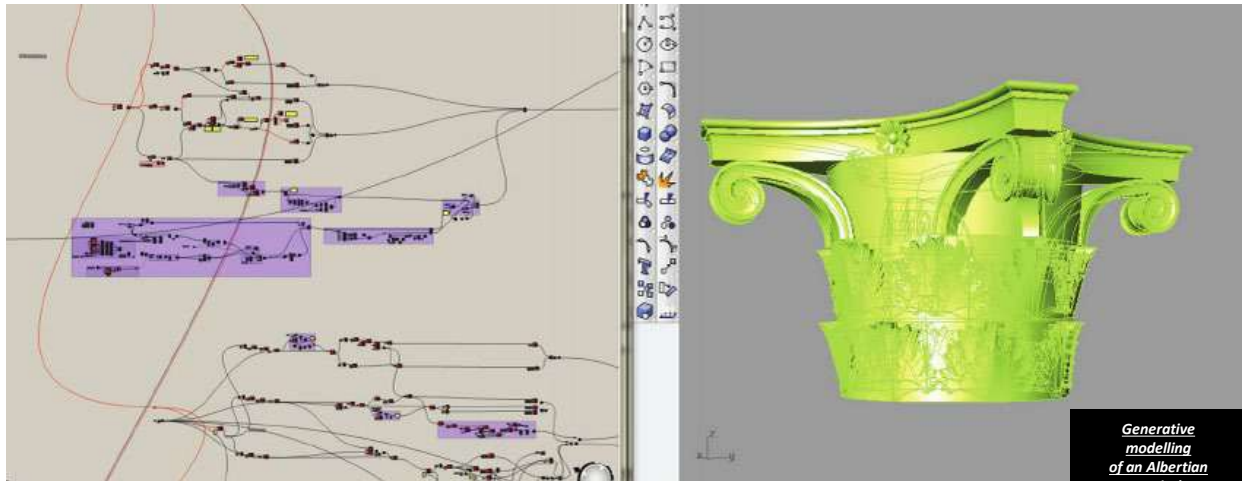
Grasshopper viene utilizzato principalmente per costruire **algoritmi generativi**, come per l'arte generativa. Molte delle componenti di Grasshopper creano geometrie 3D.

I programmi possono anche contenere altri tipi di algoritmi, tra cui applicazioni numeriche, testuali, audiovisive e aptiche.

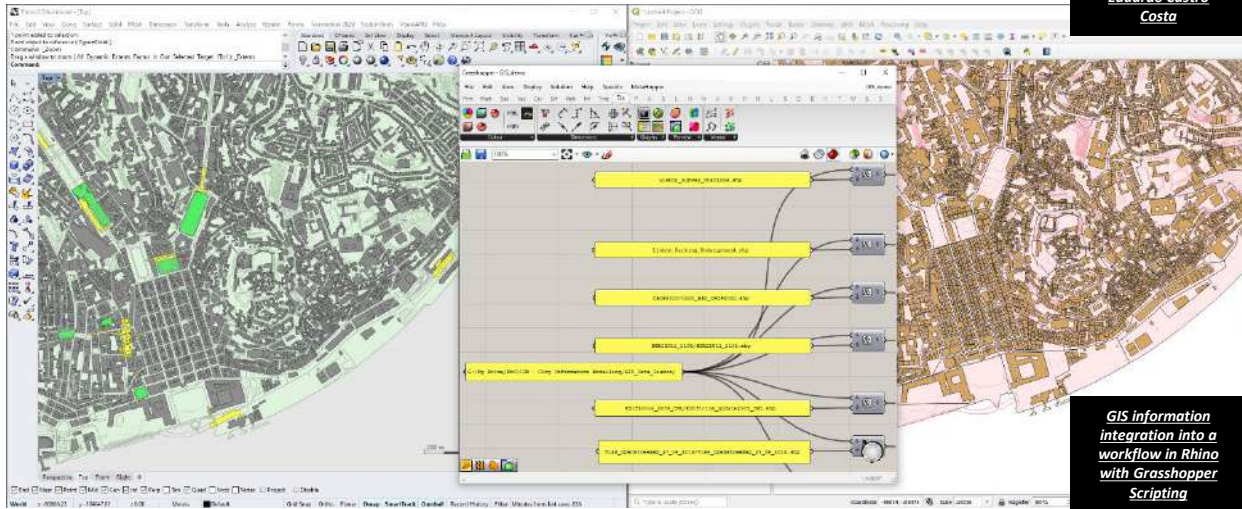






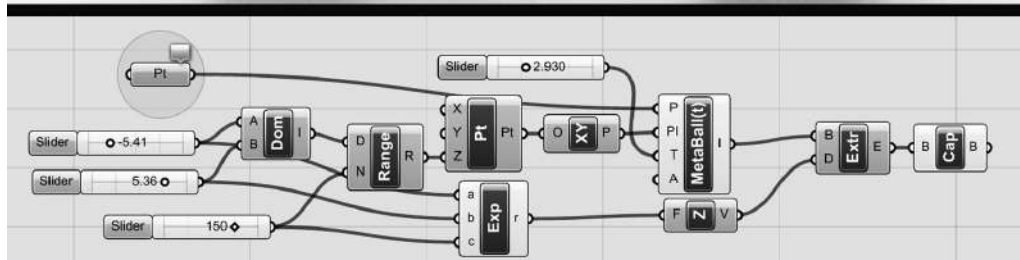
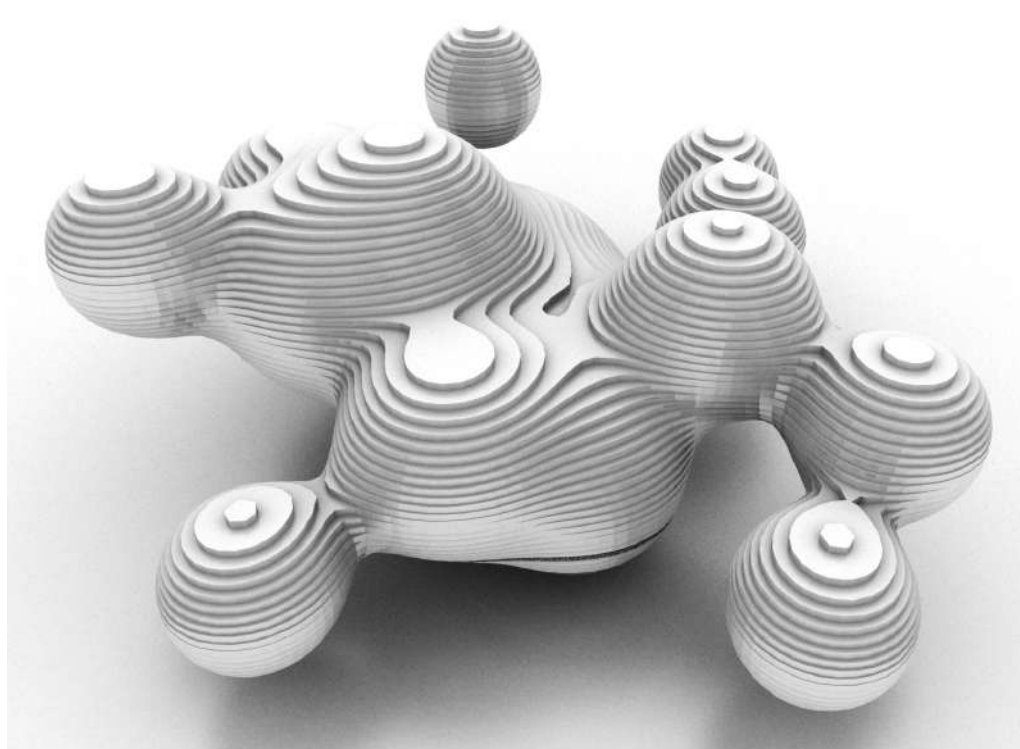


*Generative  
modelling  
of an Albertian  
capital  
Eduardo Castro  
Costa*



*GIS information  
integration into a  
workflow in Rhino  
with Grasshopper  
Scripting*

## Grassopper



ARTURO TEDESCHI

# AAD\_

ALGORITHMS-  
AIDED  
DESIGN

PARAMETRIC STRATEGIES USING GRASSHOPPER®

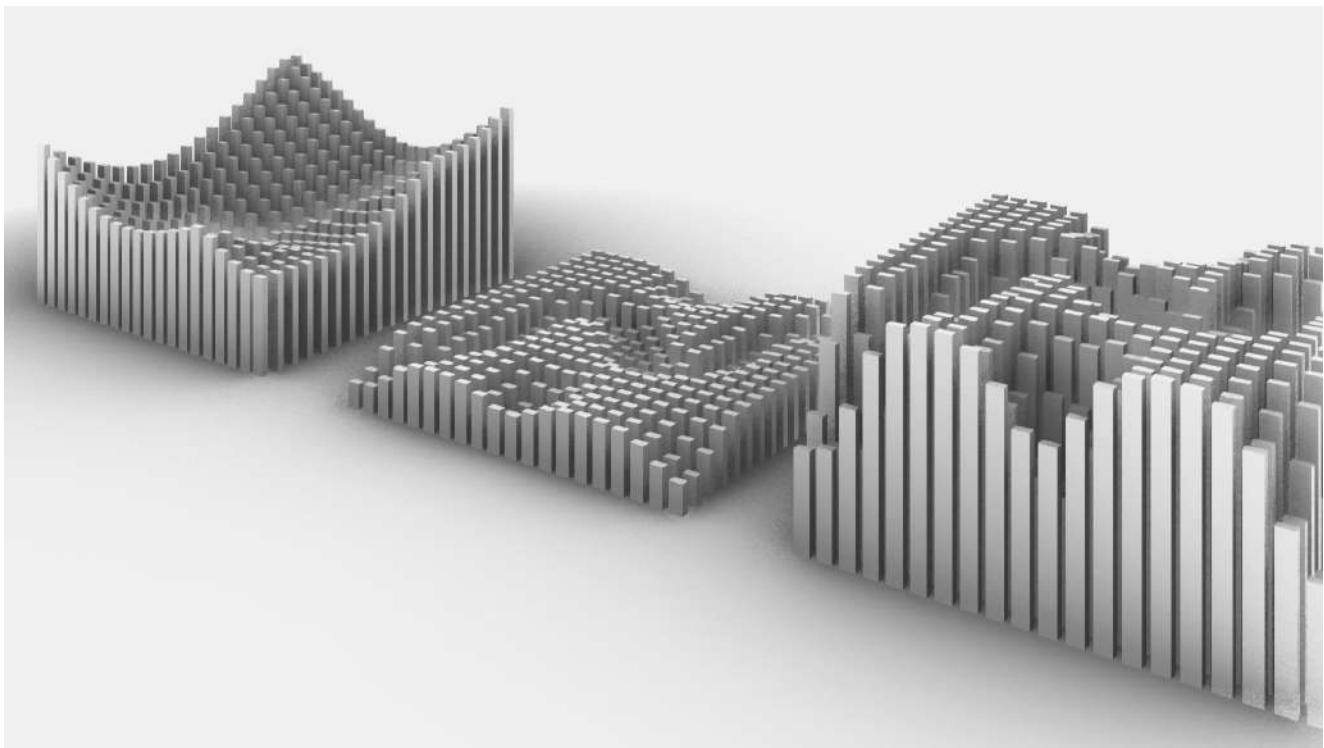
Foreword by Fulvio Witz

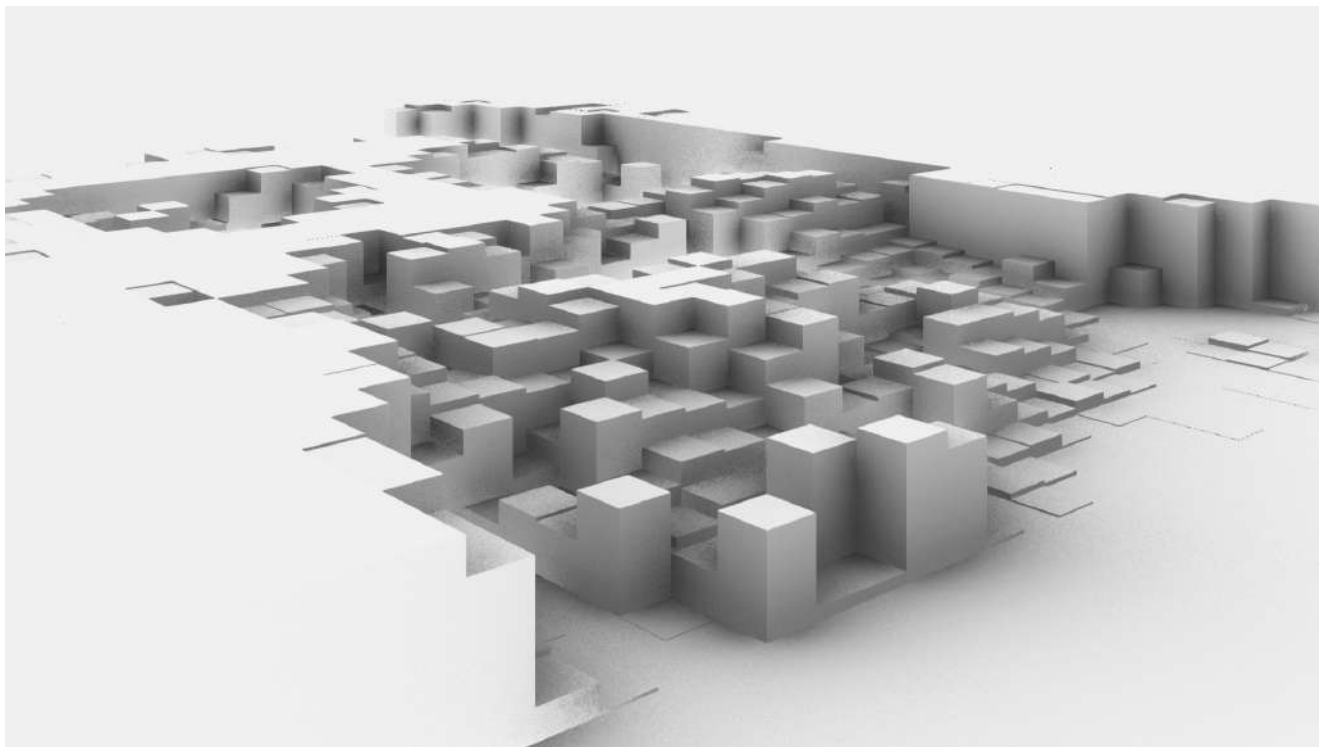
LE PENSEUR PUBLISHER

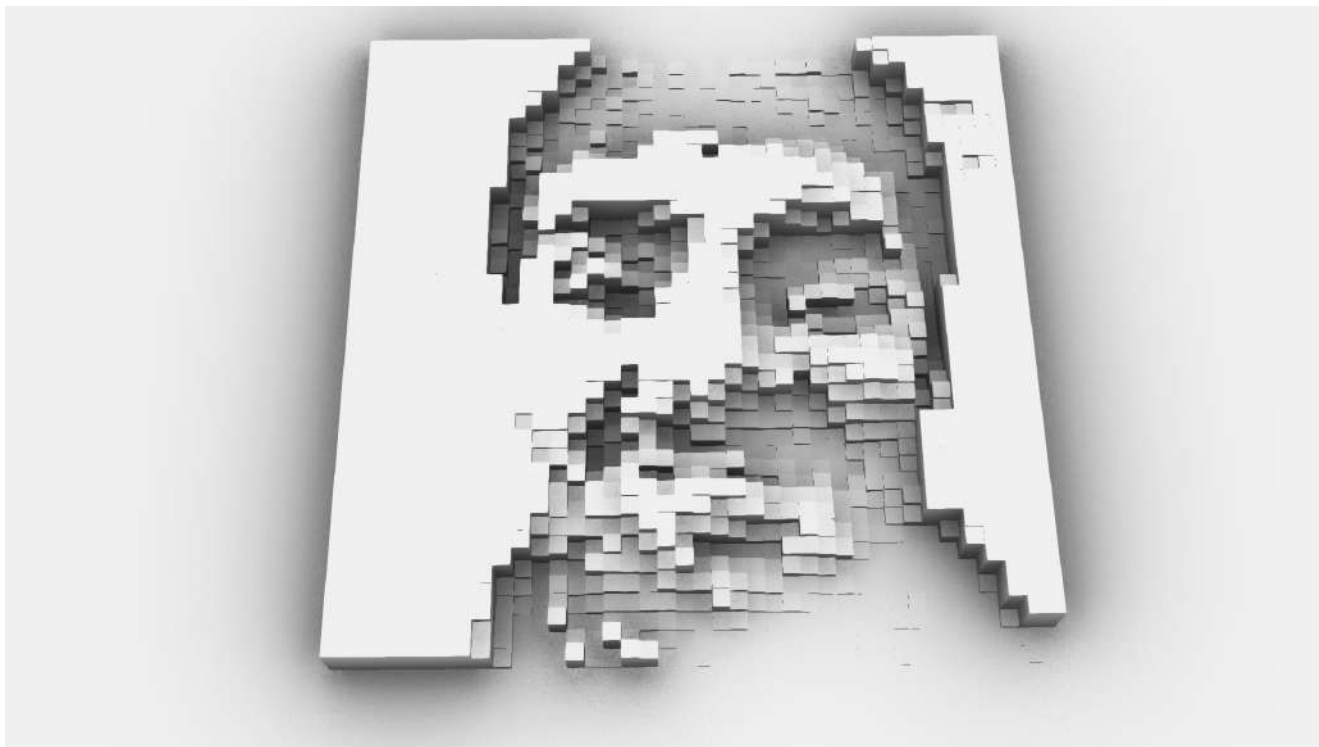


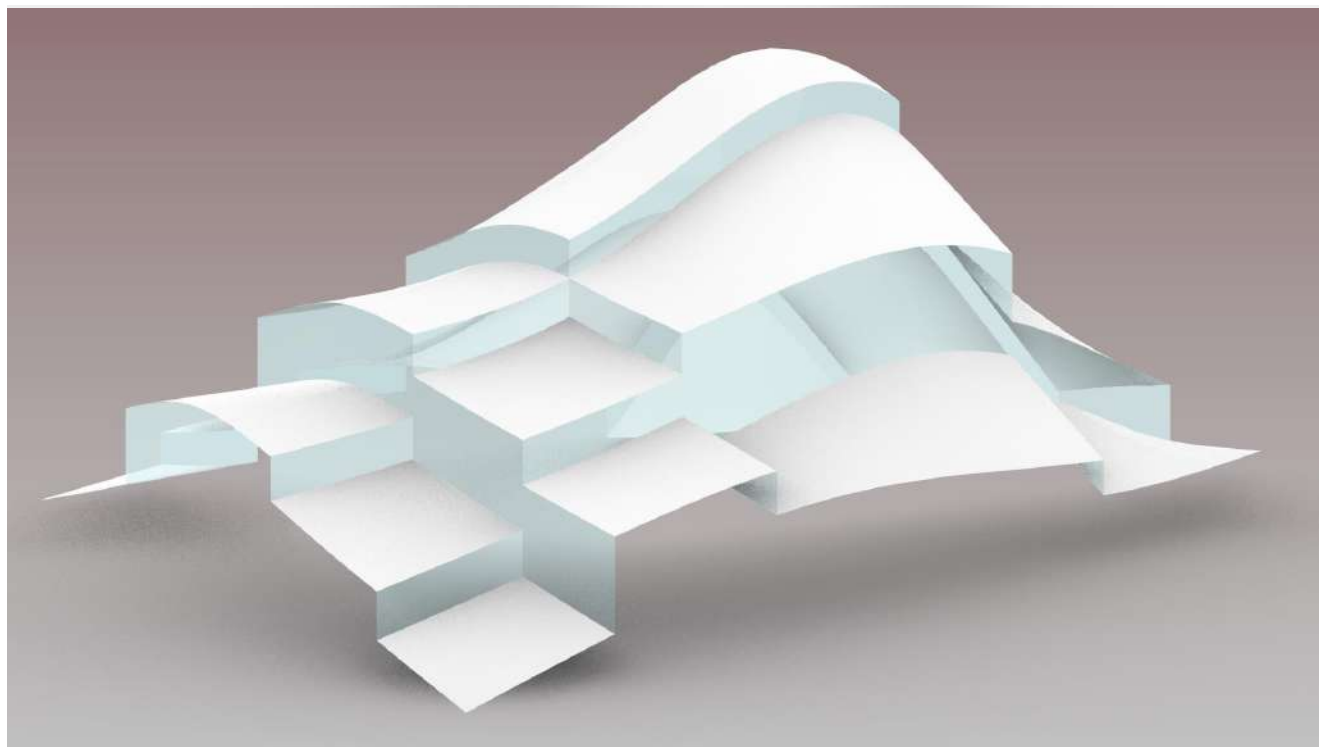
*Oyster Chair*  
*Arturo Tedeschi Design*



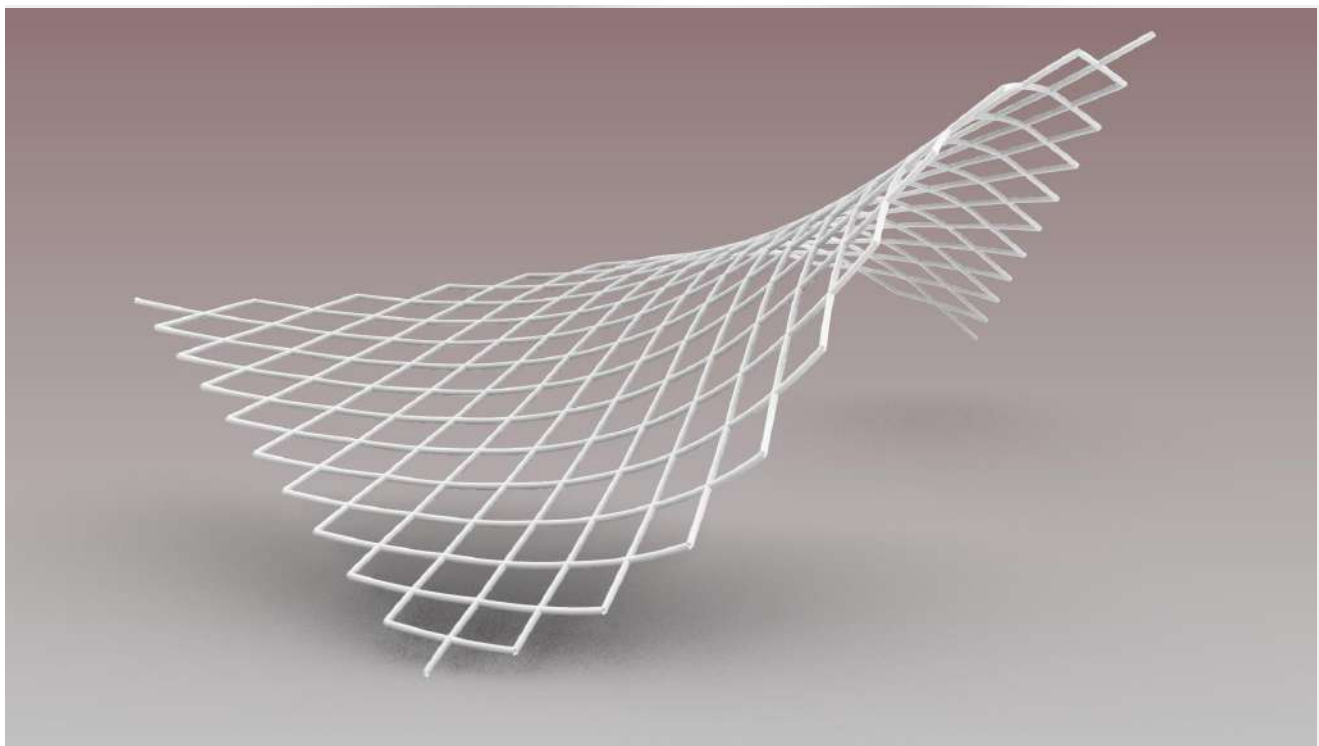


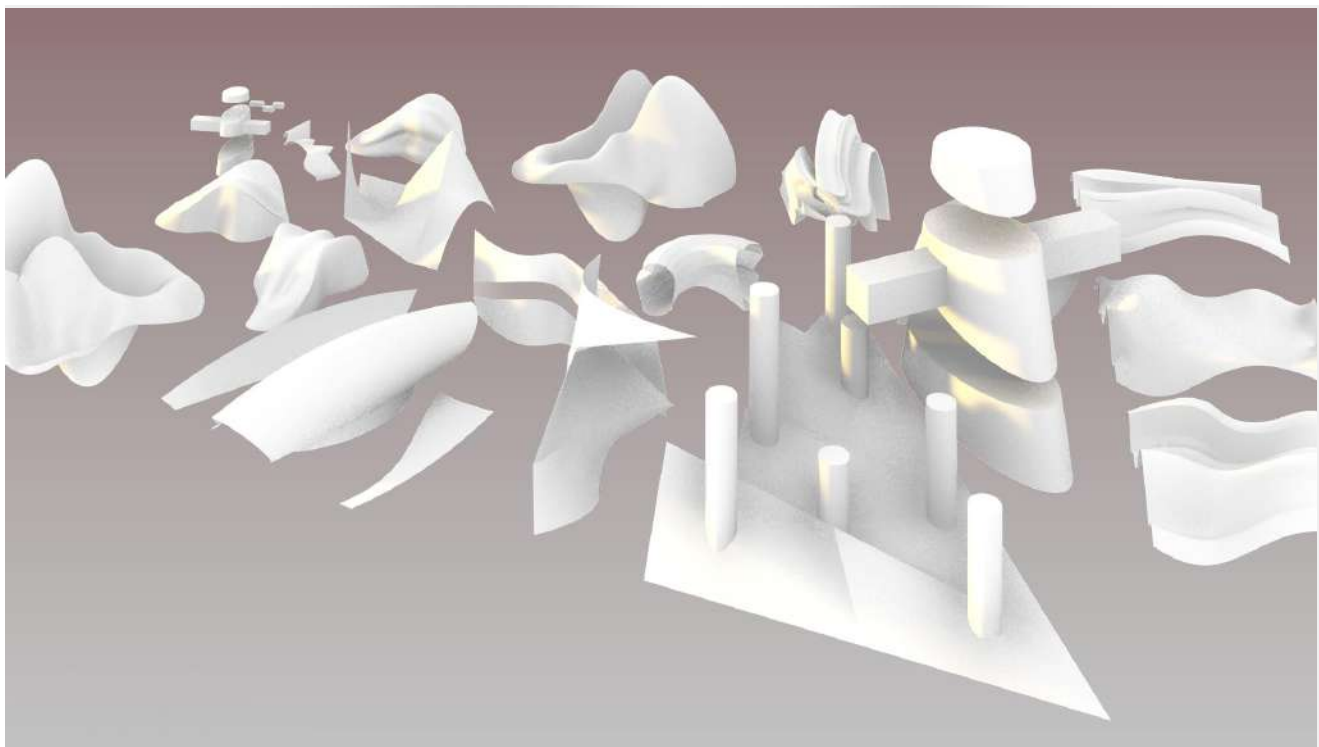


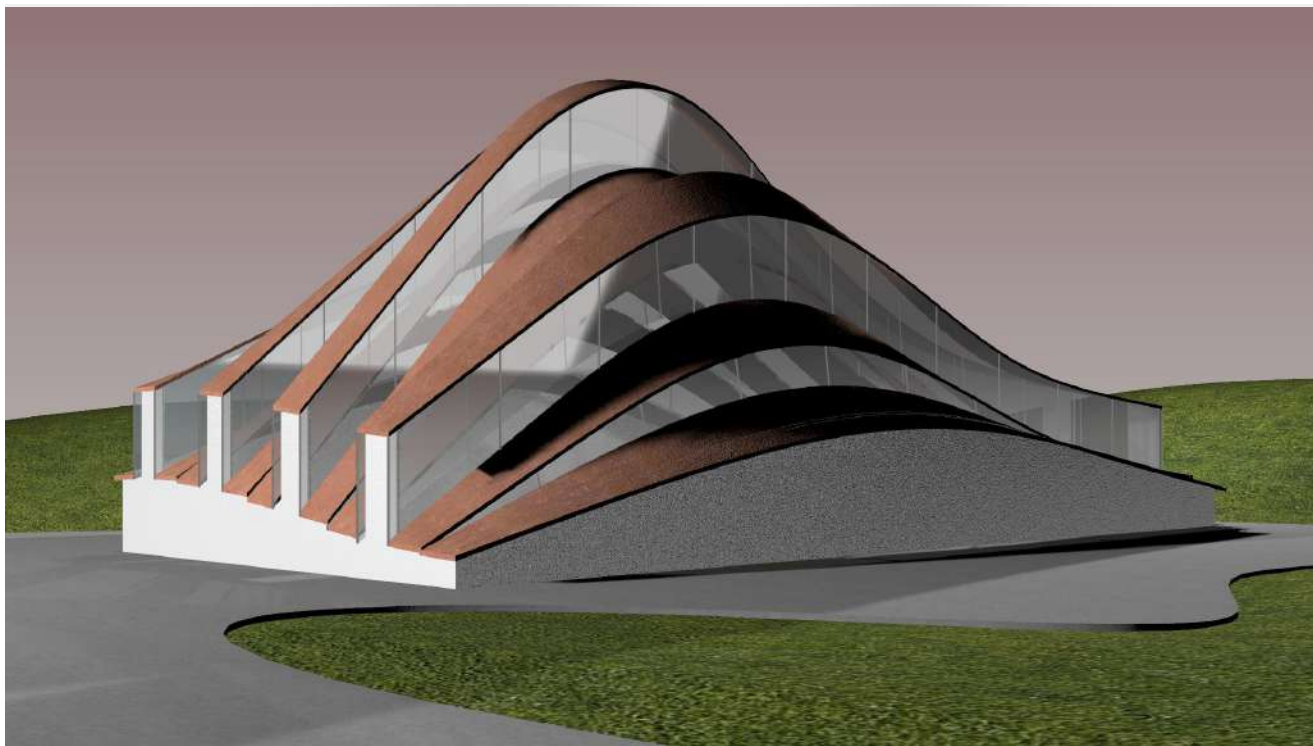


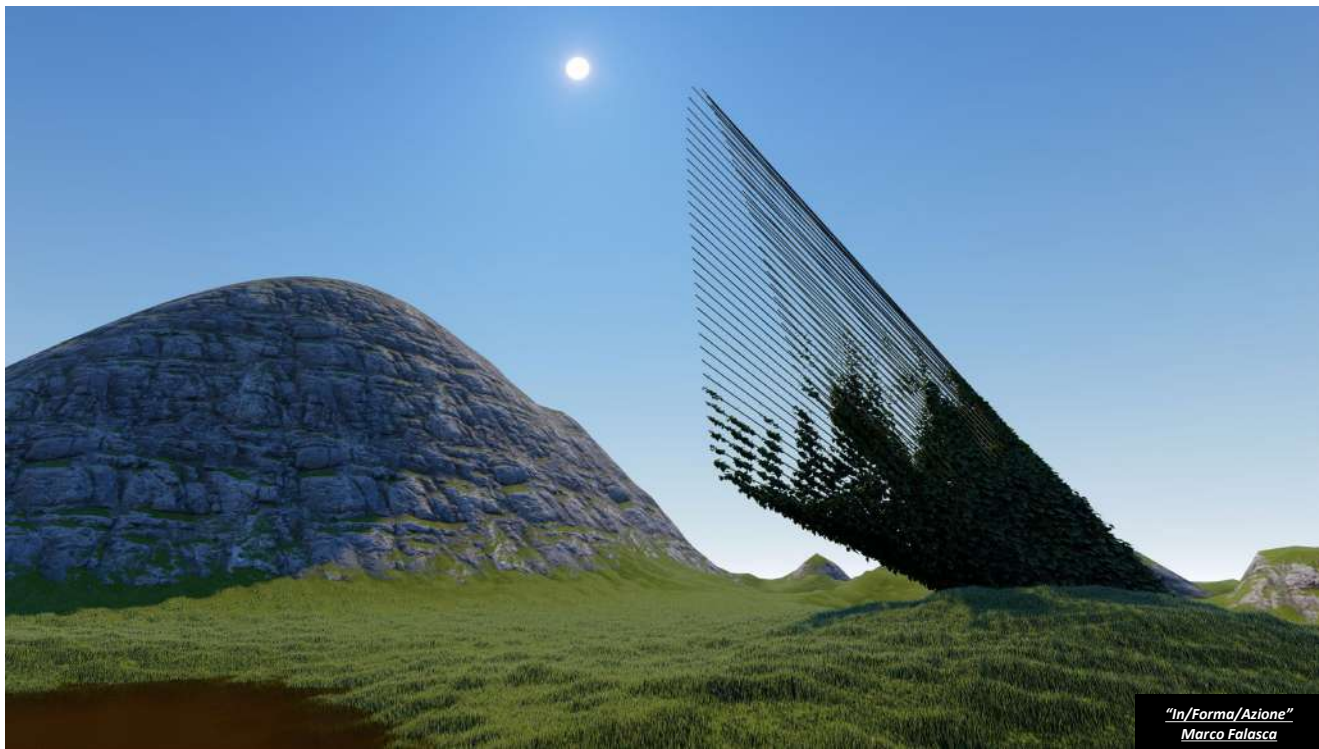






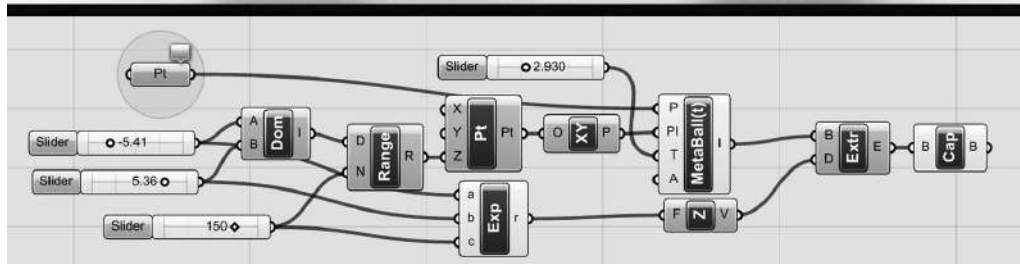
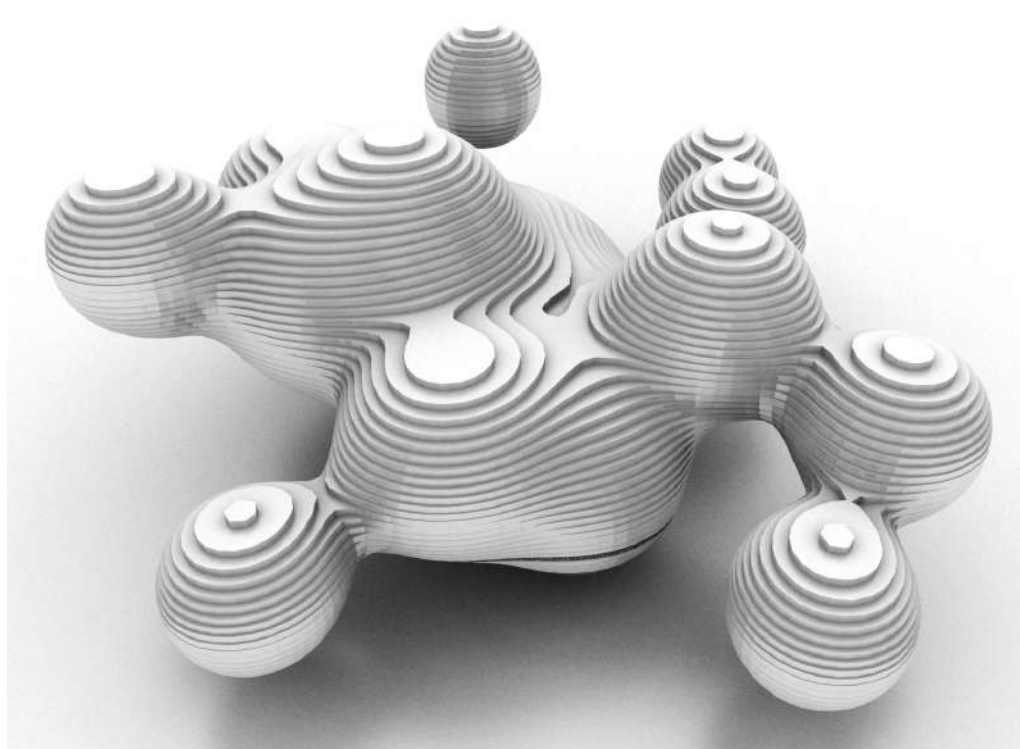




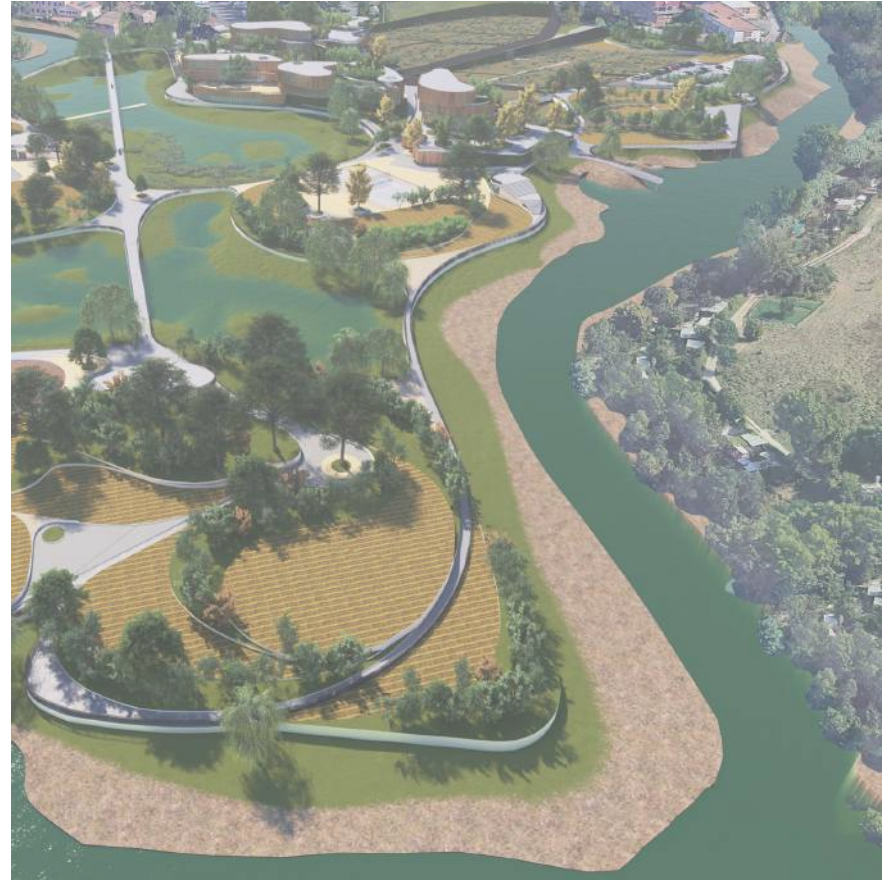
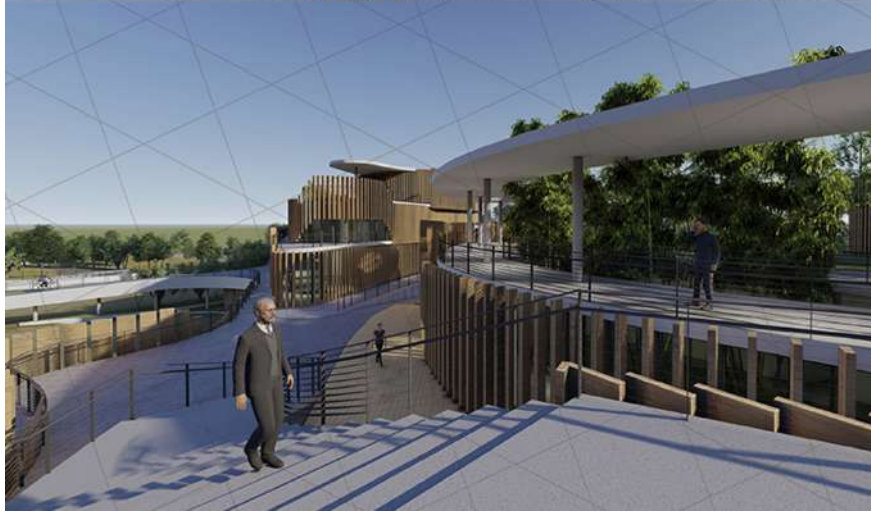


*"In/Forma/Azione"*  
Marco Falasca

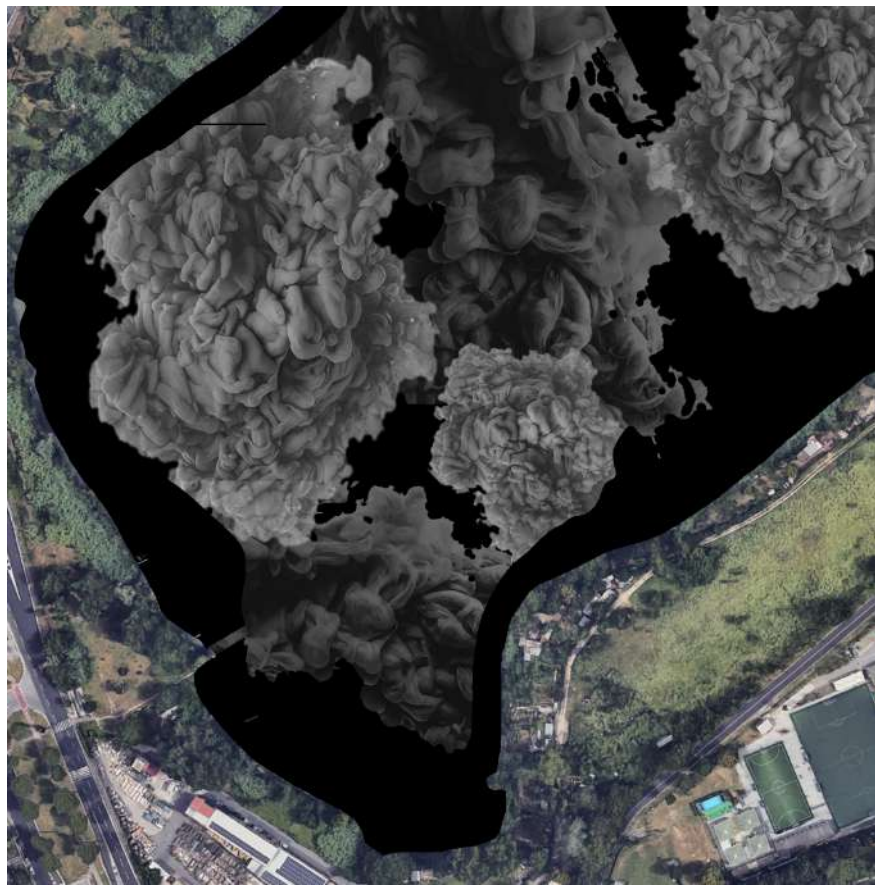
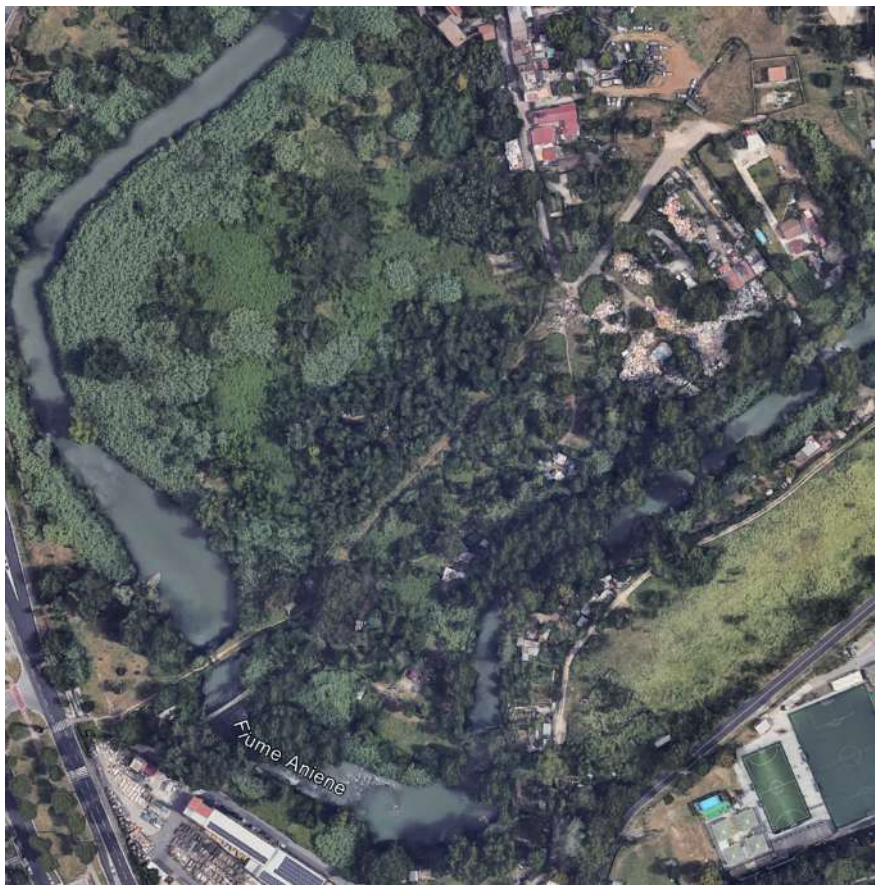
## Grassopper

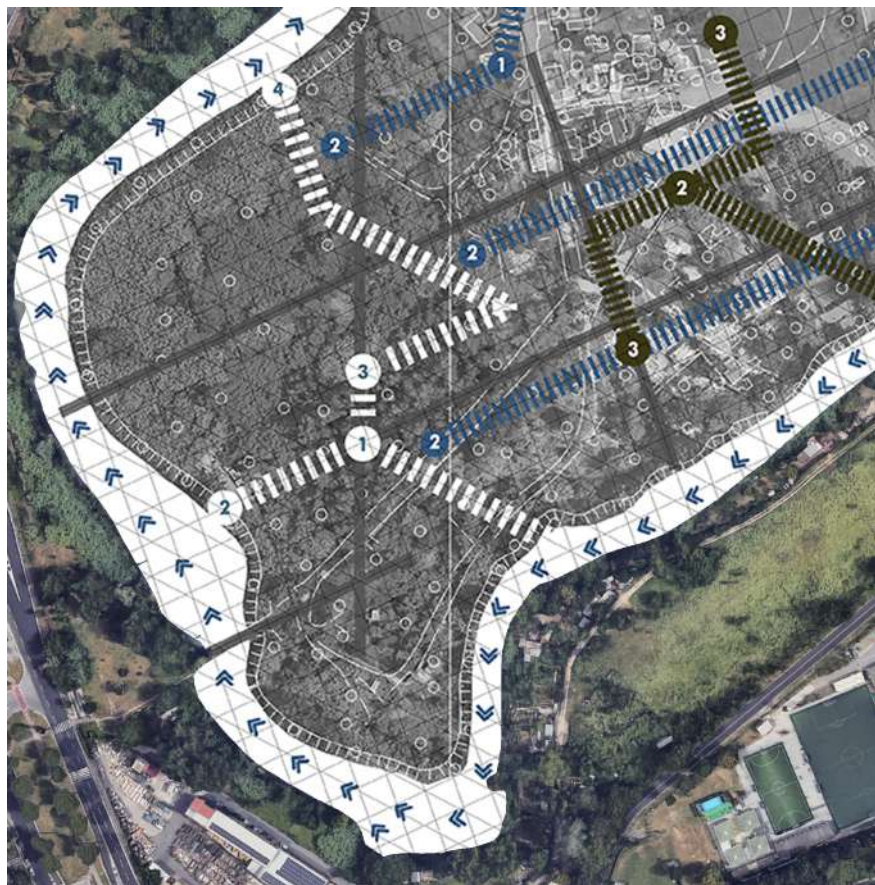






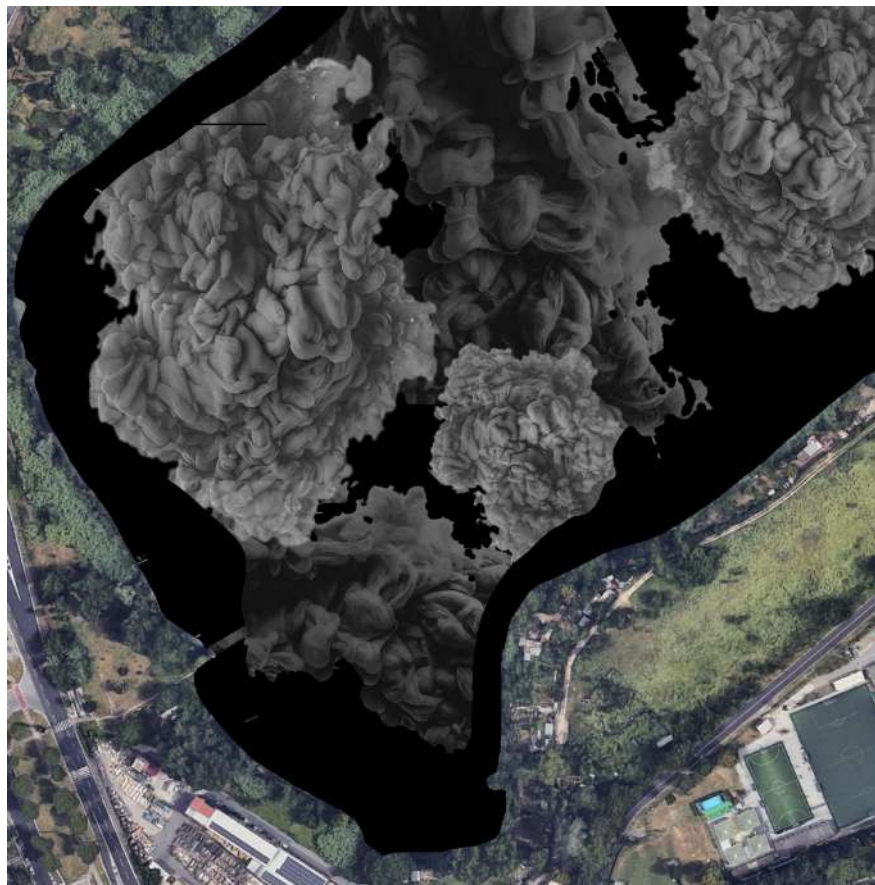




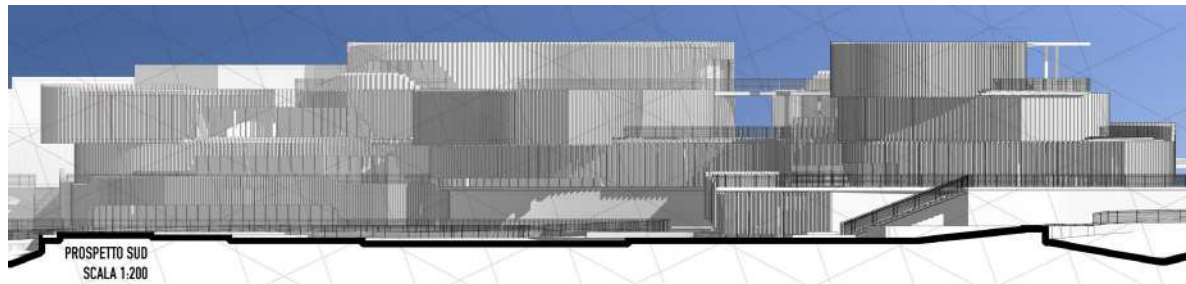








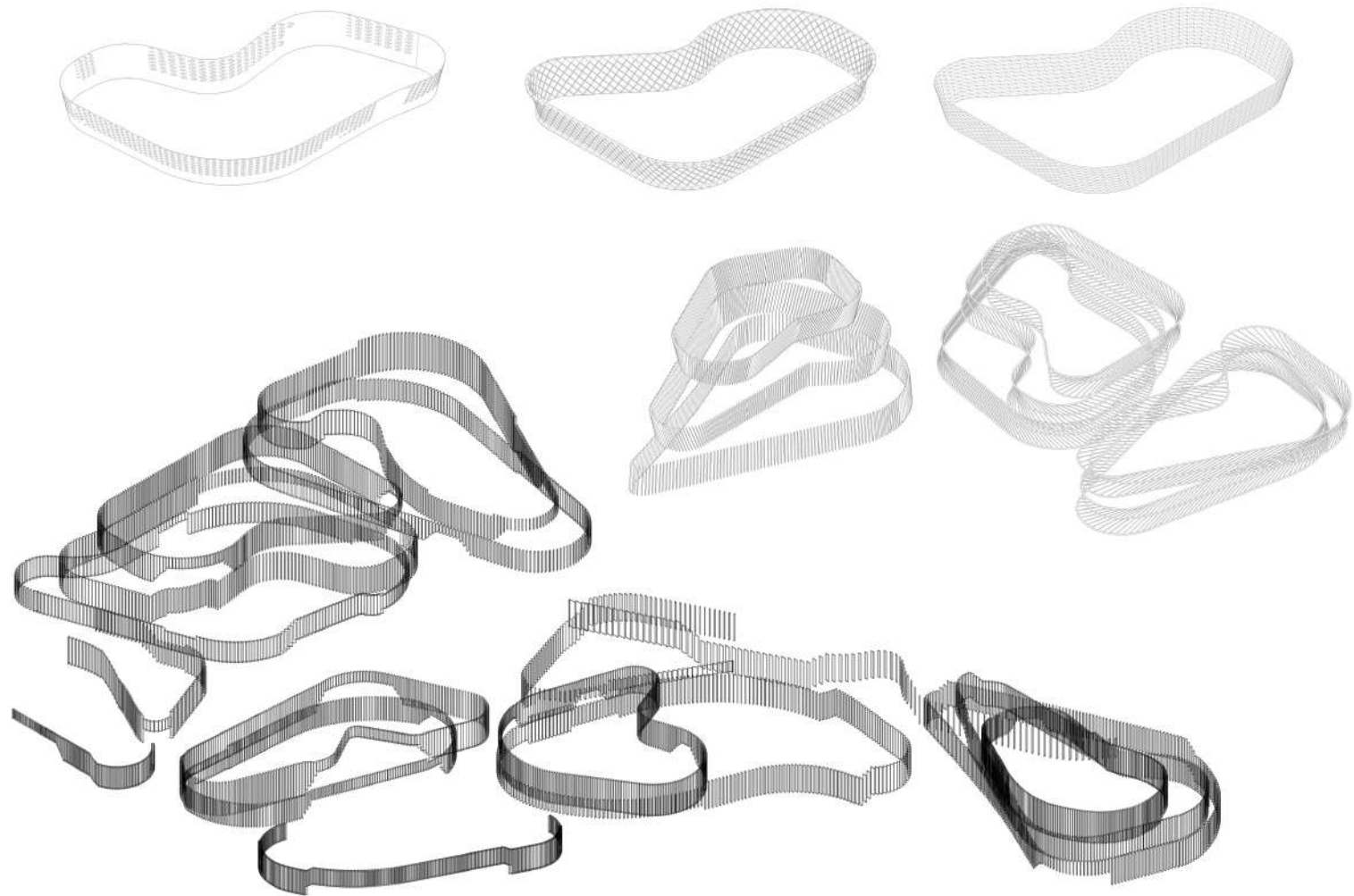










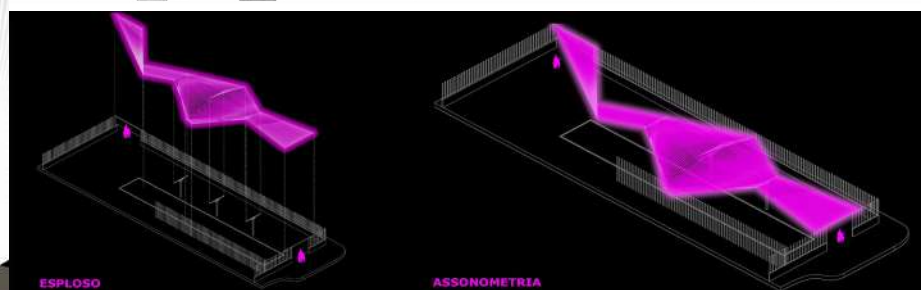
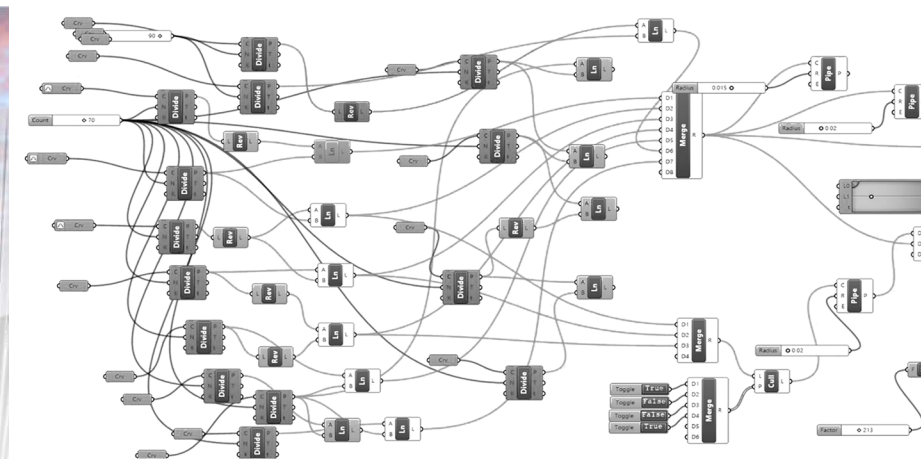
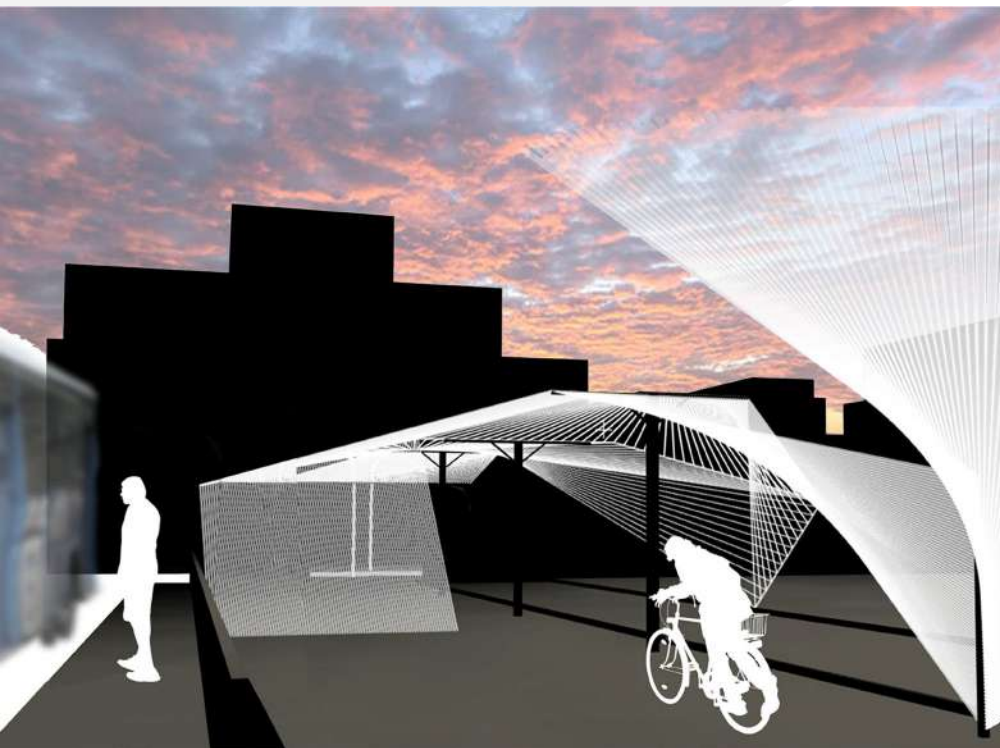








*"Lines-Scape"*  
Marco Falasca





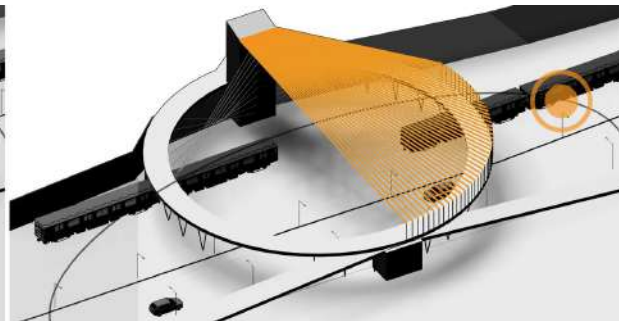
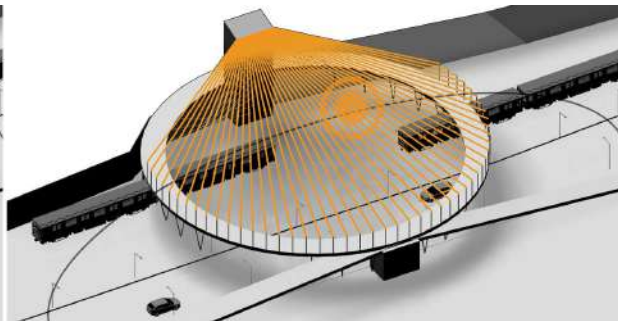
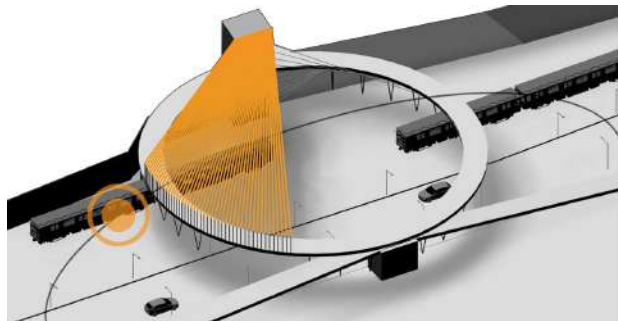
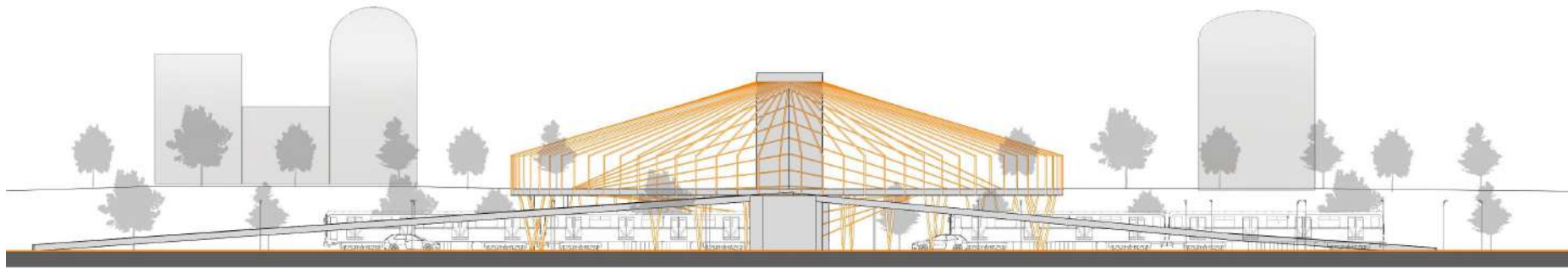


*"Lines-Scape"*  
Marco Falasca





*"Node-ON"*  
Marco Falasca







**mad**

SELECTED REALISED PROJECTS

山水之城



Shan Shui City





**Ma Yansong**  
**Founder & Principal Partner**

Beijing-born architect Ma Yansong is recognized as an important voice in the new generation of architects. He is the first Chinese architect to win an overseas landmark-building project. As the founder and principal of MAD Architects, Ma leads design across various scales. In recent years, many of Ma's designs follow his conception of the "Shanshui City", which is his vision to create a new balance among society, the city and the environment. Since designing the "Floating Island" in 2002, Ma has been exploring this idea through an international practice. At MAD, Ma has created a series of imaginative works, including Absolute Towers, Hutong Bubble 32, Ordos Museum, China Wood Sculpture Museum, Fake Hills, etc. In 2014, Ma was selected as the principal designer for Lucas Museum of Narrative Art in Chicago, which made him the first Chinese architect to design overseas culture landmark. Parallel to his design practice, he has also been exploring with the public the cultural values of cities and architecture through domestic and international solo exhibitions, publications and art works.



**Dang Qun**  
**Principal Partner**

Born in Shanghai, Dang Qun is a principal partner at MAD. She oversees project management and corporate operations of MAD Architects, a global architect firm with over 80 staff members. She is also a key member as other MAD principal partners are in MAD strategy development.

Dang is a steady practitioner and executor of MAD's design philosophy "Shanshui City" and has led technical innovation and green architecture for each project. Her outstanding abilities in cultivating a motivated team, driving operational efficiency, and her clear strategic direction enable projects to be realized with maximum respect to the firm's design aesthetic and ideology. Dang is closely involved in each process of MAD's series of projects, including the Absolute Towers, Ordos Museum, China Wood Sculpture Museum, Fake Hills, Chaoyang Park Plaza, Nanjing Zendai Himalayas Center, Harbin Cultural Island, and Lucas Museum of Narrative Art.

Dang holds a Master Degree in Architecture from Iowa State University and received a Certificate of Merit from the American Institute of Architects in 2000. Dang's academic career includes a visiting professorship in Pratt Institute, and assistant professorship in Iowa State University.



**Yosuke Hayano**  
**Principal Partner**

Born in Aichi, Japan, Yosuke Hayano is a first class registered Architect in Japan. Being a principal partner in MAD, Yosuke oversees and supervises all design works at MAD. His extensive professional experience and strict attention to detail and standards enable him to lead project teams on concept design, design development, materials selection, construction methods, techniques and time management. Yosuke assures all stages of design meet and exceed MAD's high standards as they are transformed from design concepts into built structures.

Yosuke received his Bachelor of Materials Engineering from Waseda University in Tokyo in 2000, Associate degree in Architecture at Waseda Art and Architecture School in 2001, and his post Master in Architecture at the Architectural Association of London in 2003. He was the winner of the 2006 Architecture League of New York Young Architects Award, 2011 Design for Asia award and 2011 Kumamoto Artpolis Award. He was a visiting lecturer at Waseda Art and Architecture School from 2008 till 2012 and at Tokyo University from 2010 till 2012.



## LIU HUIYING

Associate Partner

Liu Huiying is originally from Shanxi Province. He received his degree from Shenyang Architectural University in 2004. After graduation, he worked at the Shanxi Architectural Design and Research Institute.

He joined MAD in June, 2010 and has been responsible for various projects during their construction phases, namely Harbin Cultural Island, China Wood Sculpture Museum, Faka Hills, Conrad Hotel in Beijing, and Sanya Phoenix Island in Hainan.



## KIN LI

Associate Partner

Kin works closely with Ma Yansong from each project's earliest stages to translate the MAD design philosophy and language into vivid models. He is extremely talented in art and design, and highly synchronized with Ma's vision. His combination of artistry and technical expertise come together to produce complex 3-D models that provide a solid base for the rest of the design and architecture teams to develop. After September 2011 to join MAD, as an important designers, he involved multiple projects with the concept of "Shanshui City" design philosophy, including Pingtan Art Museum, Huangshan Taiping Lake Apartments, Nanjing Zendai Himalayas Center, Beijing Chaoyang Park Plaza, Lucas narrative Art Museum.



## ANDREA D'ANTRASSI

Associate Partner

Italy born architect Andrea D'Antrassi is a registered architect in Italy and Switzerland. He received his Master's Degree in Architecture from Accademia di Architettura di Mendrisio, Switzerland. With solid experiences gained from overseas projects in US, Italy, Australia and China, Andrea adds a valuable global vision to MAD.

Since he joined MAD in 2010, he has been involved with Boncompagni Residential Development in Rome Italy, Huangshan Mountain Village Development, Nanjing Zendai Himalayas Center, and recent Lucas Museum of Narrative Art. He also plays a key role in MAD's conceptual design competitions.



## LU JUNLIANG (DIXON)

Associate Partner

Dixon is Associate Partner at MAD Architects' Los Angeles Office. This is Dixon's second stint with MAD, having acted as Head of Operations for their Beijing office from 2008 to 2011. Dixon helped to conceptualize and organize the firm's installation in partnership with Olafur Eliasson, "Feelings are Facts" at UCCA.

Since returning to MAD in 2014, Dixon has project managed the firm's first US Project, a commission for mixed-use complex with luxury condominiums in Beverly Hills. He is the Los Angeles office's leader, managing operations, projects, and overall strategy.



● Completed

● Under Construction

● OnGoing Projects

● MAD Office





# ABSOLUTE TOWERS

2006-2012

Mississauga, Canada



# ABSOLUTE TOWERS

2006-2012

Mississauga, Canada

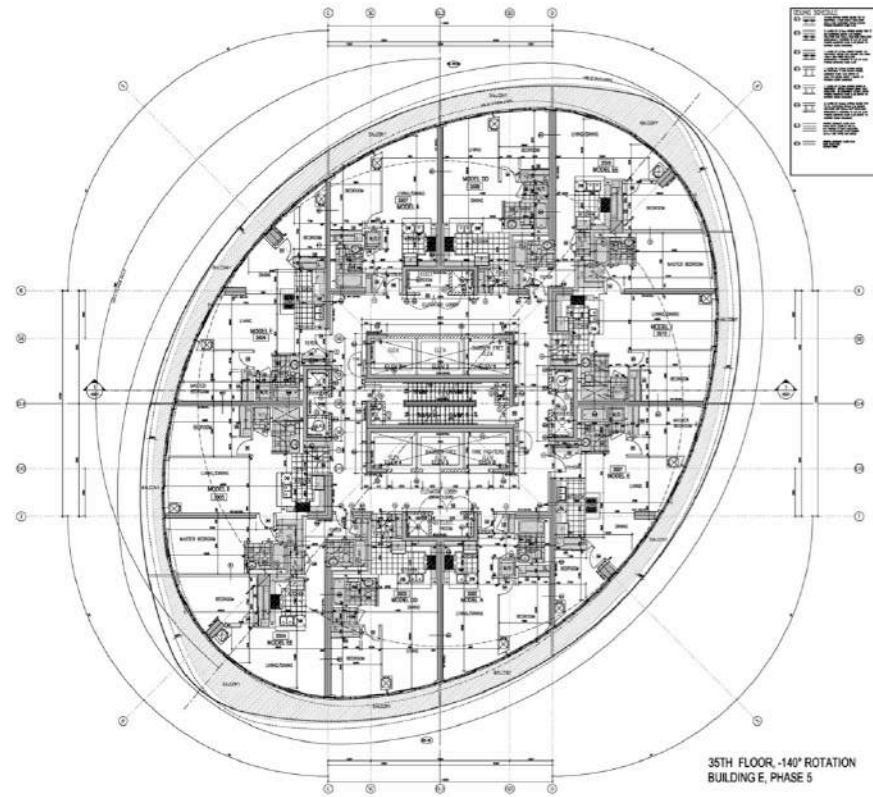


















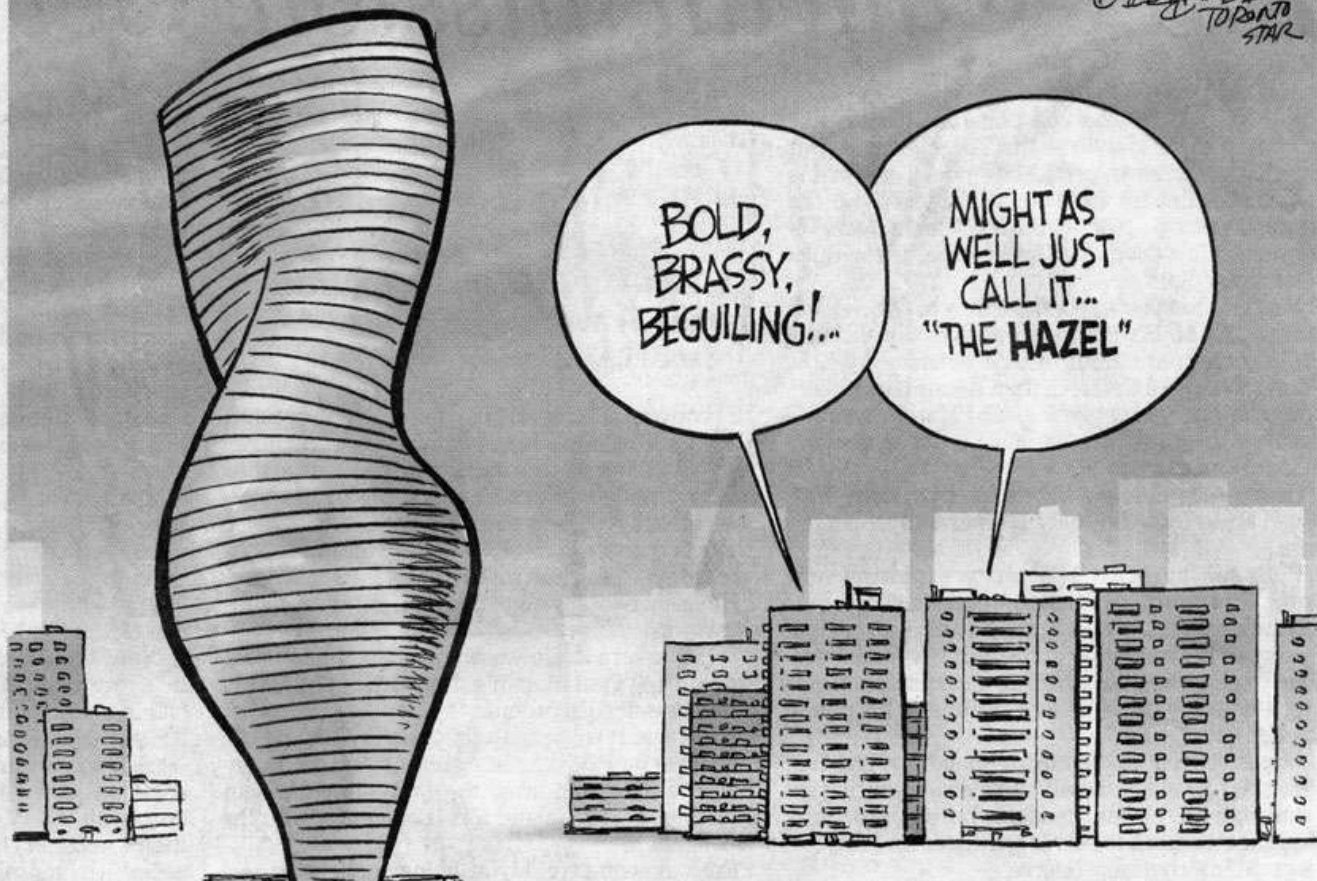


Hannah H. ♪



NEW MISSISSAUGA LANDMARK PLANNED...

*Cartoon*  
TORONTO  
STAR





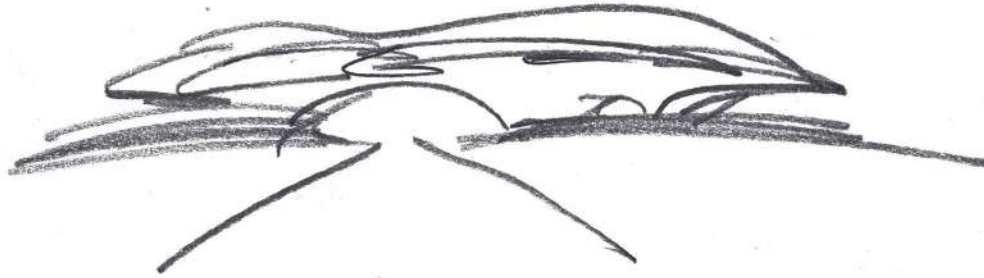






# LUCAS MUSEUM OF NARRATIVE ART

Under construction  
Los Angeles, USA



# LUCAS MUSEUM OF NARRATIVE ART

Under construction  
Los Angeles, USA





















# HARBIN OPERA HOUSE

2010-2015

Harbin, China





# HARBIN OPERA HOUSE

2010-2015

Harbin, China



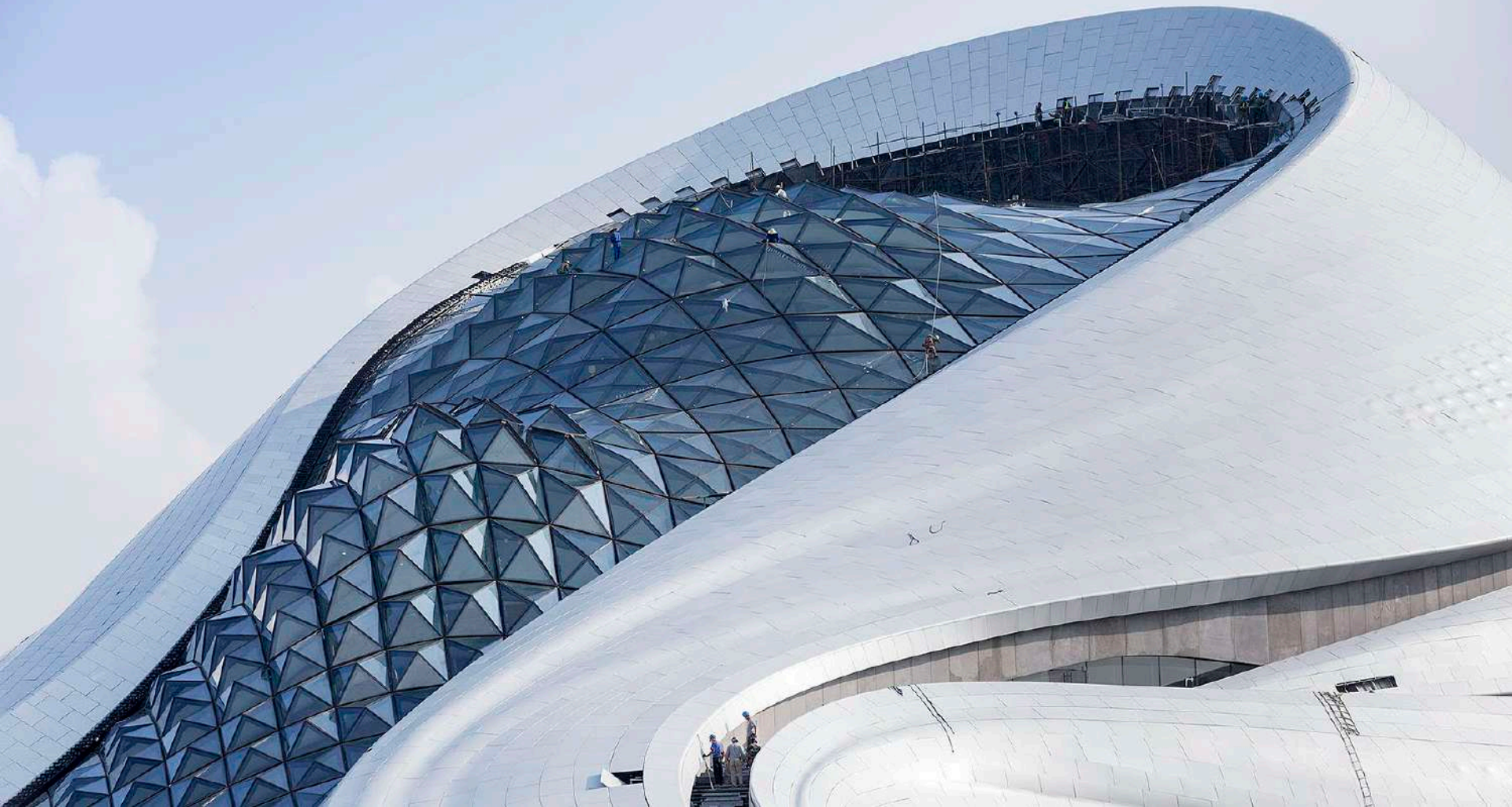




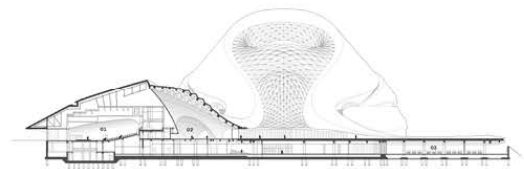












01 Small Theatre  
02 Lobby  
03 Parking



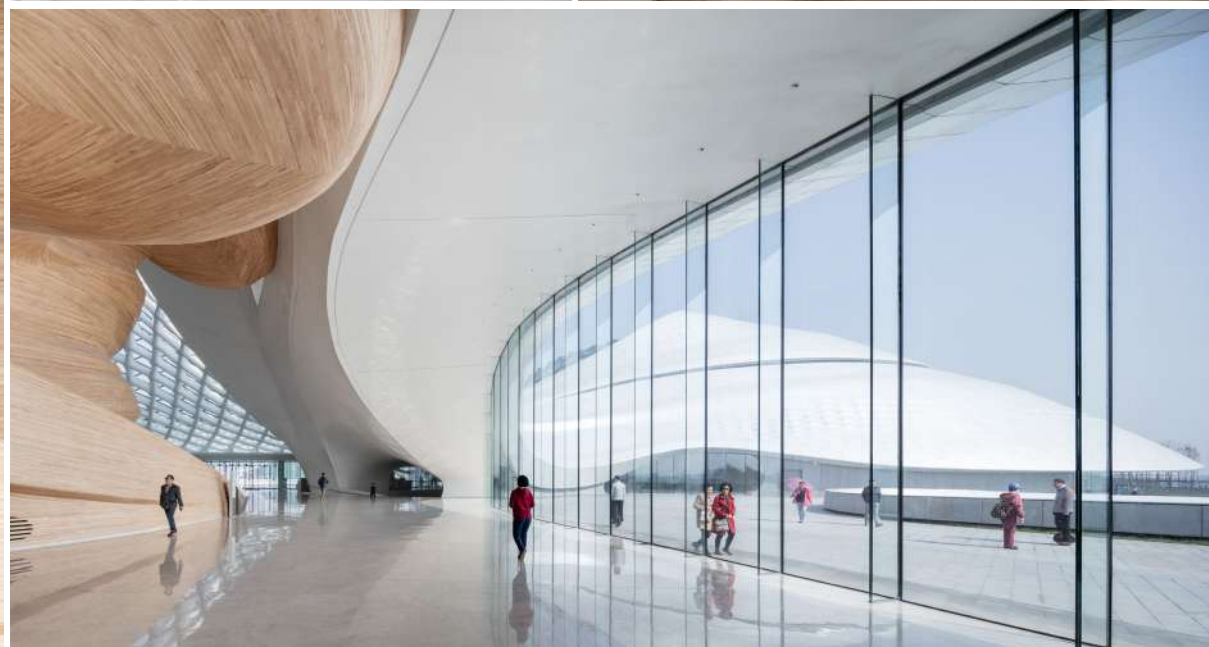






























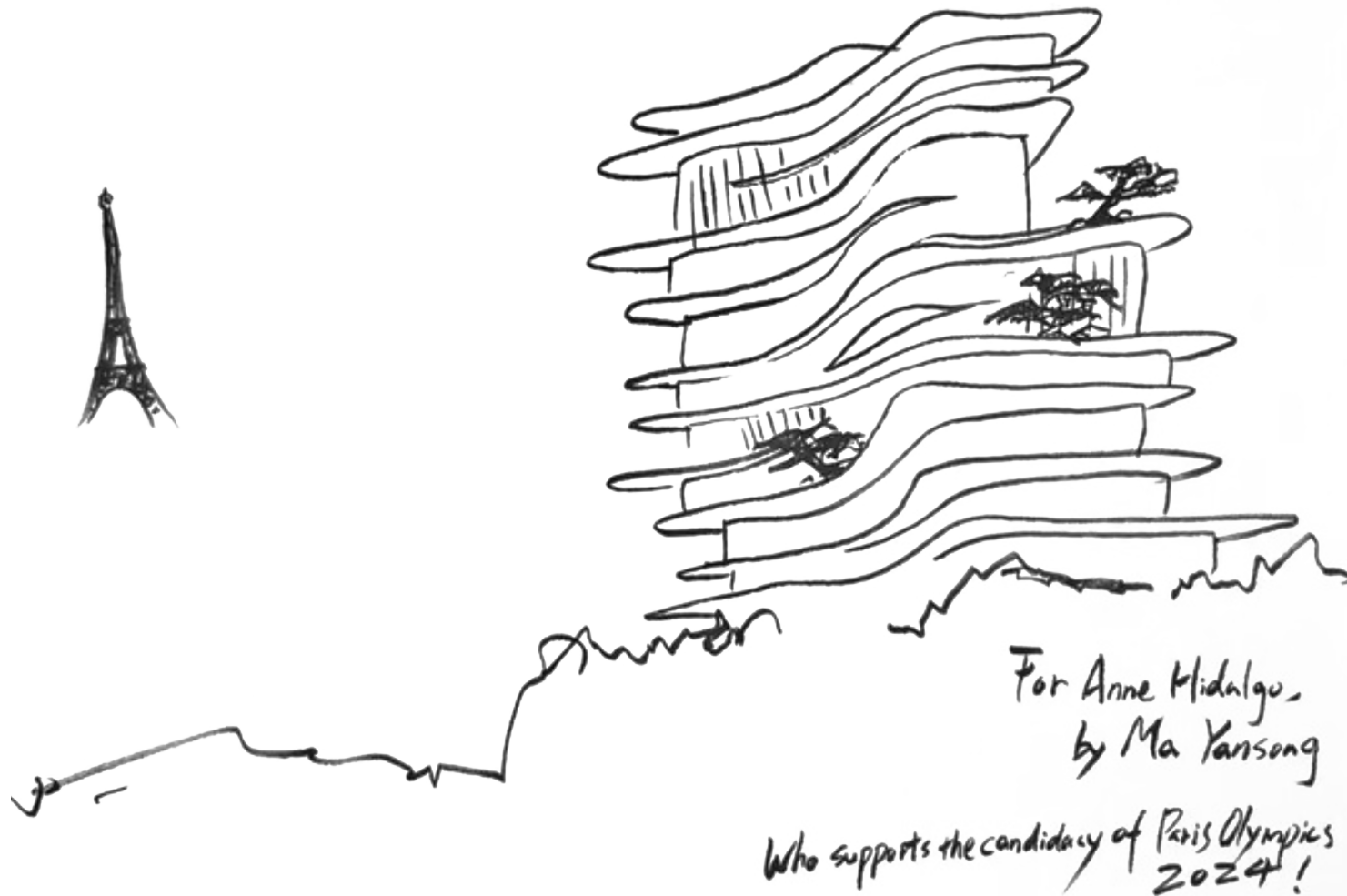




**UNIC**

2012-2021

Paris, France





**UNIC**

2012-2021

Paris, France

















# CHAOYANG PARK PLAZA

2012-2017

Beijing, China





# CHAOYANG PARK PLAZA

2012-2017

Beijing, China

































































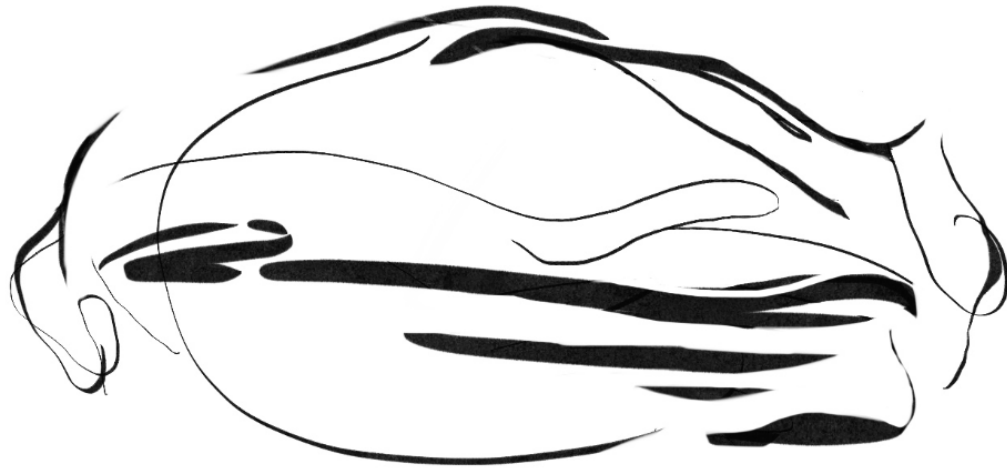




# ORDOS MUSEUM

2005-2011

Ordos, China





# ORDOS MUSEUM

2005-2011

Ordos, China

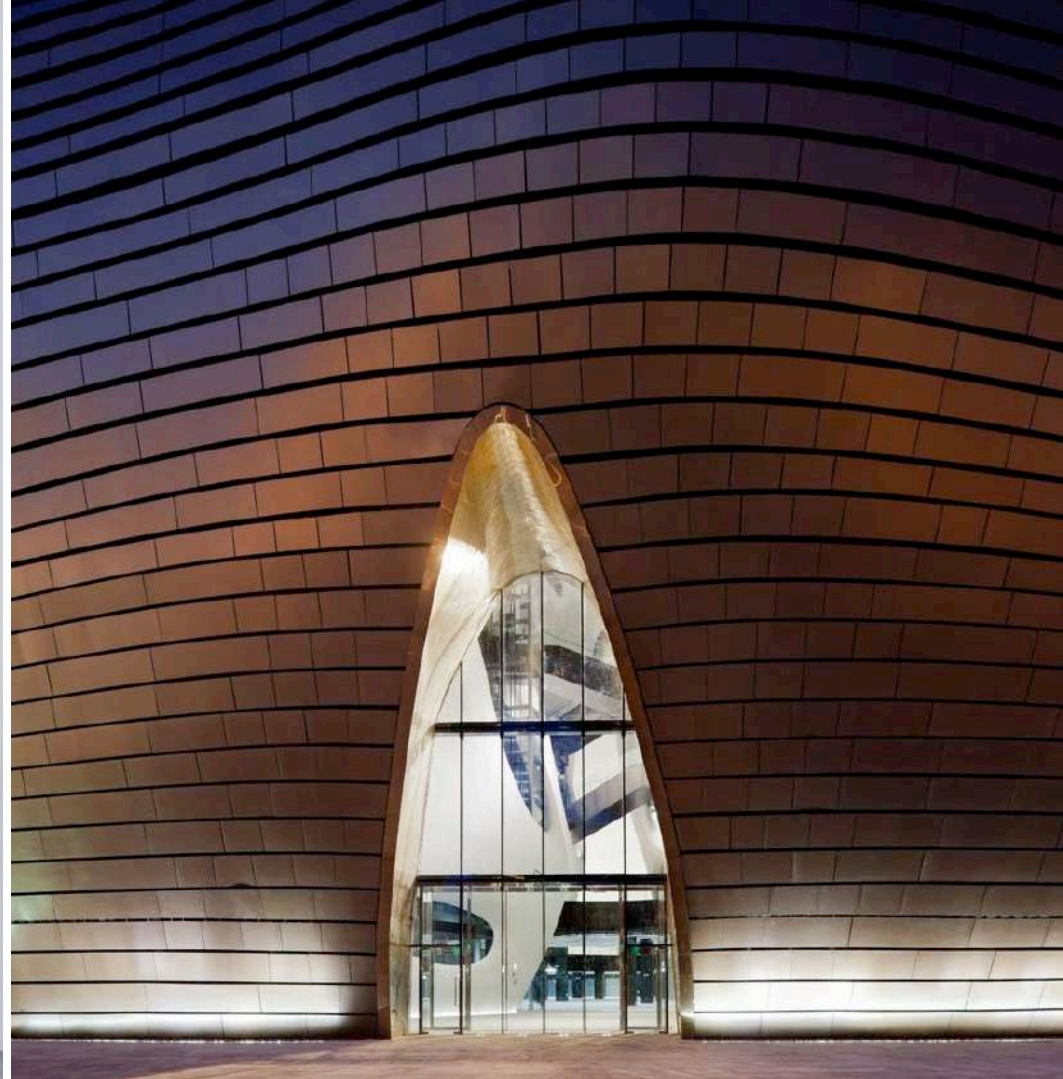














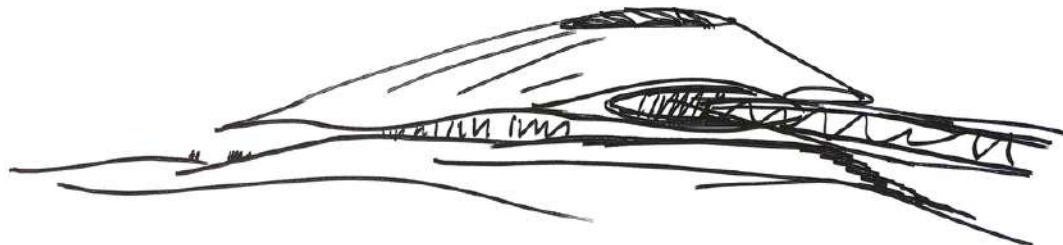




# YABULI CONGRESS CENTER

2015-2022

Yabuli, China





# YABULI CONGRESS CENTER

2015-2022

Yabuli, China

























**mad**

ART INSTALLATION

# AUDI FIFTH RING

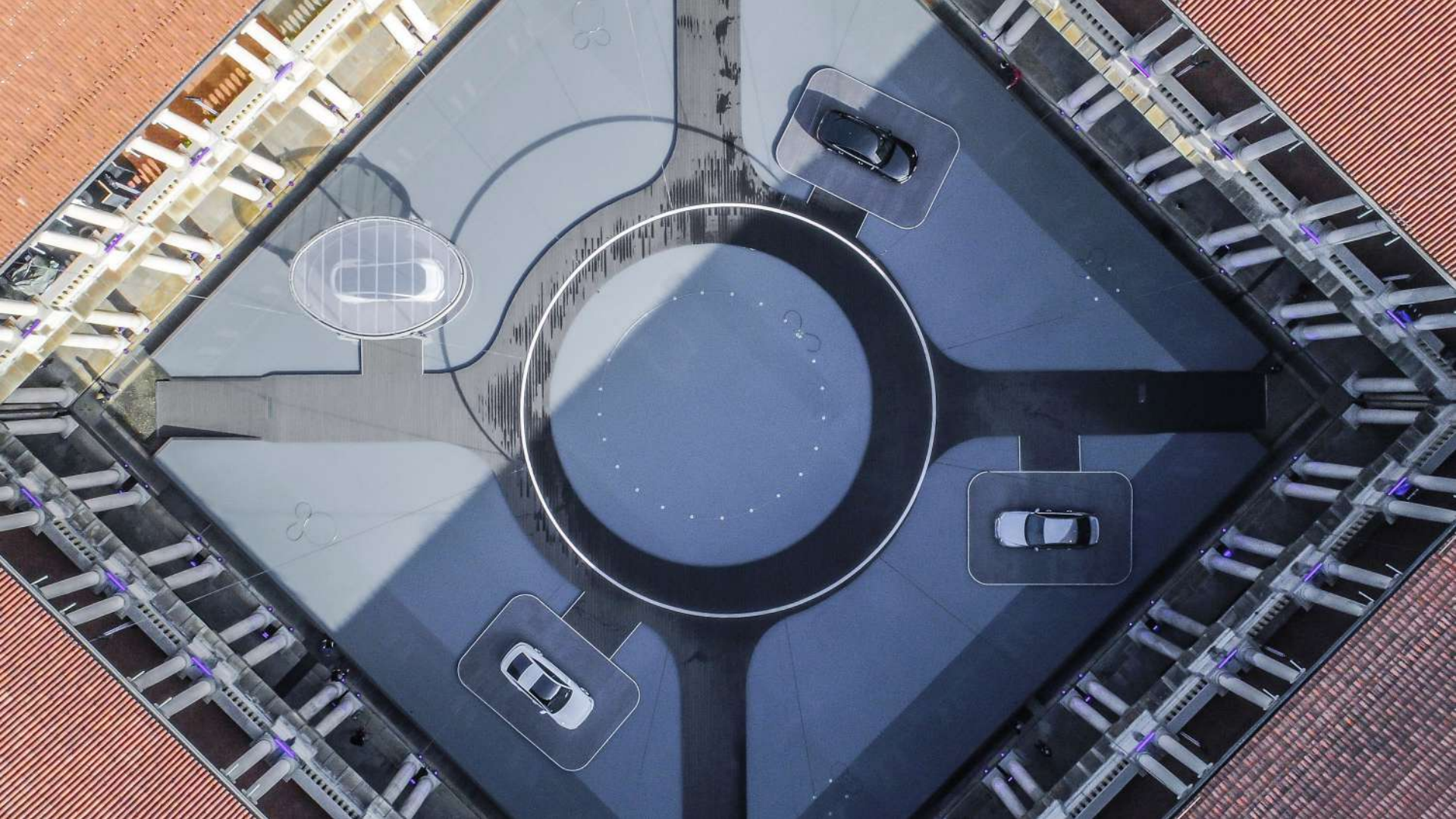
2018

Milan, Italy

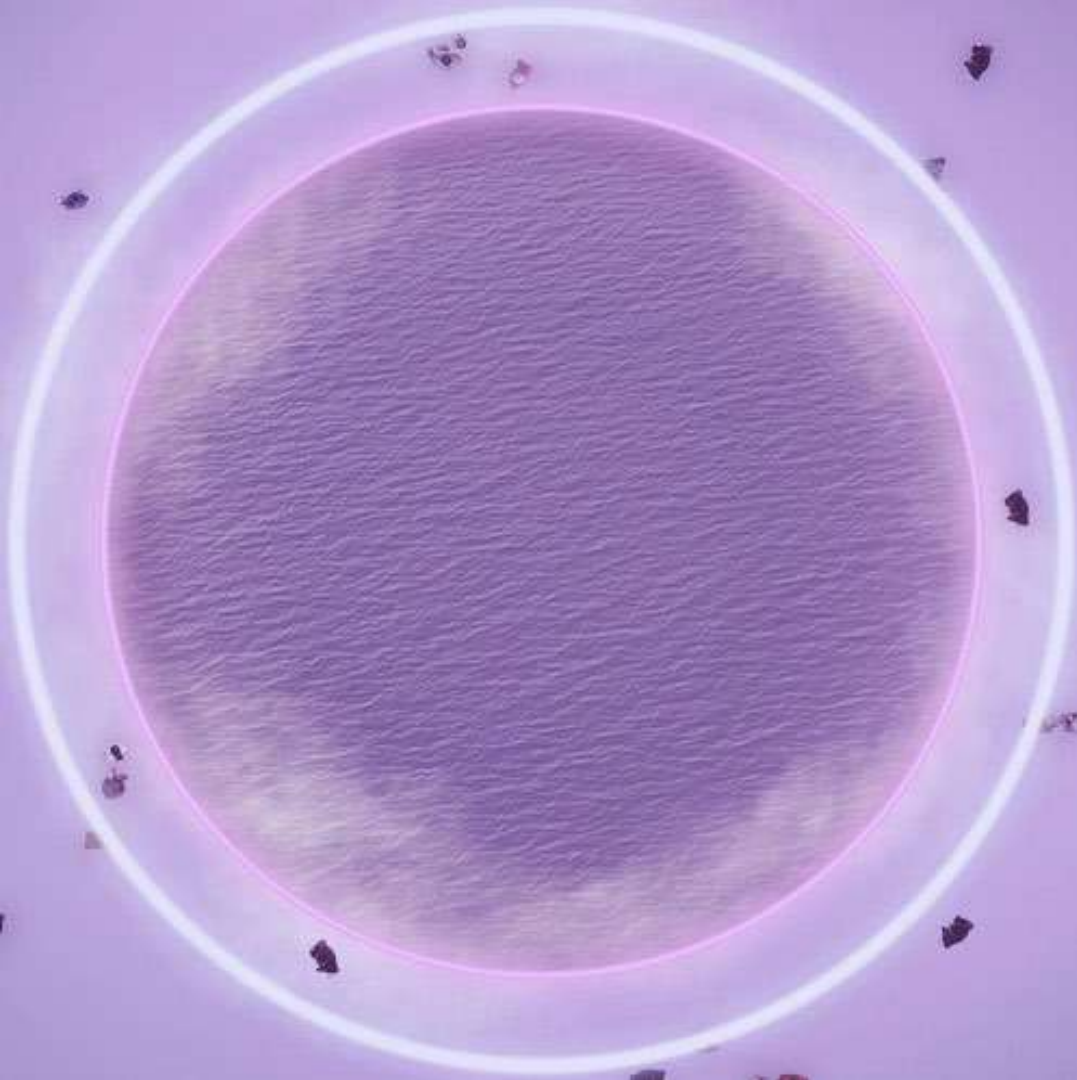
























# INVISIBLE BORDERS

2016

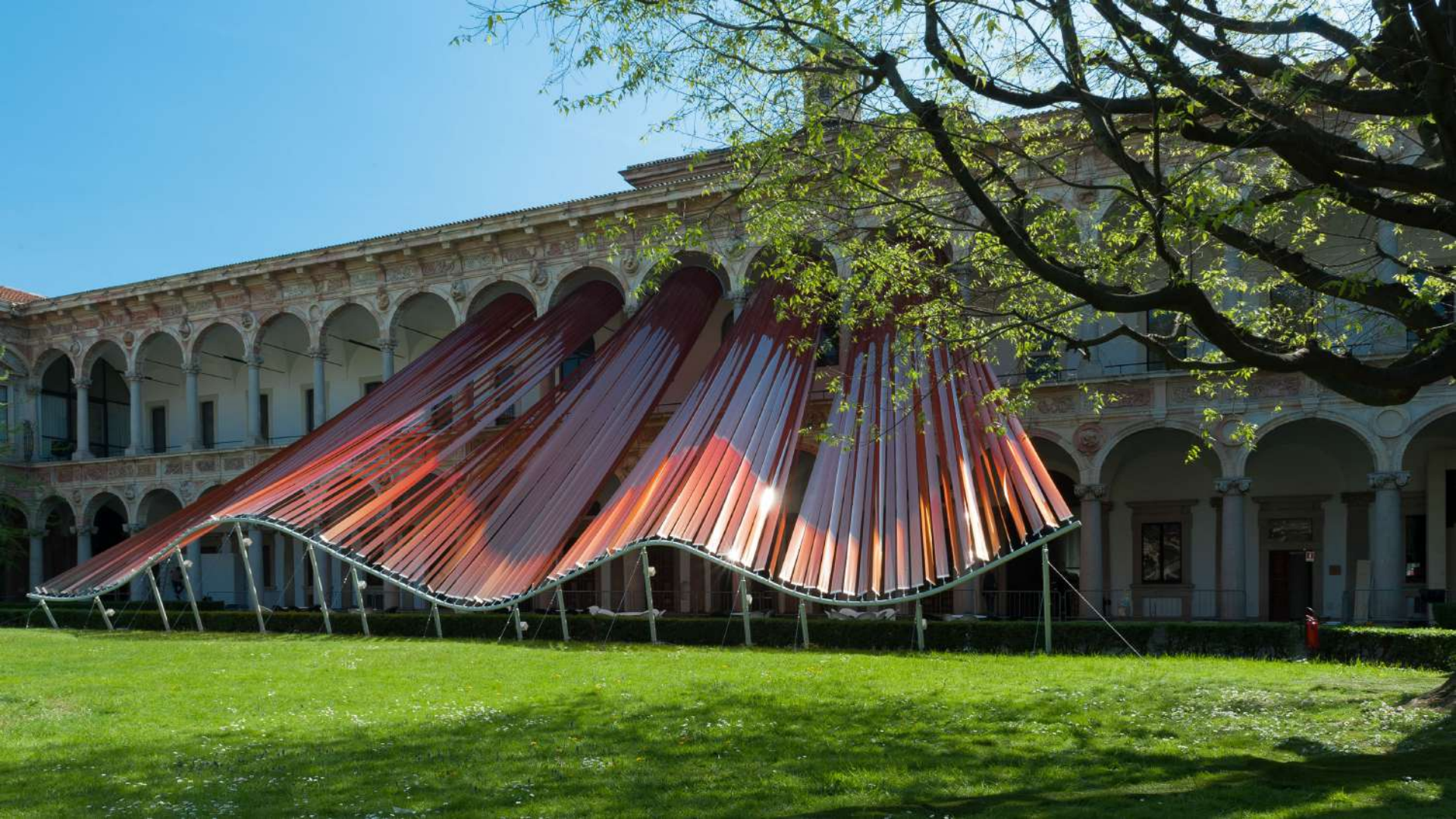
Milan, Italy







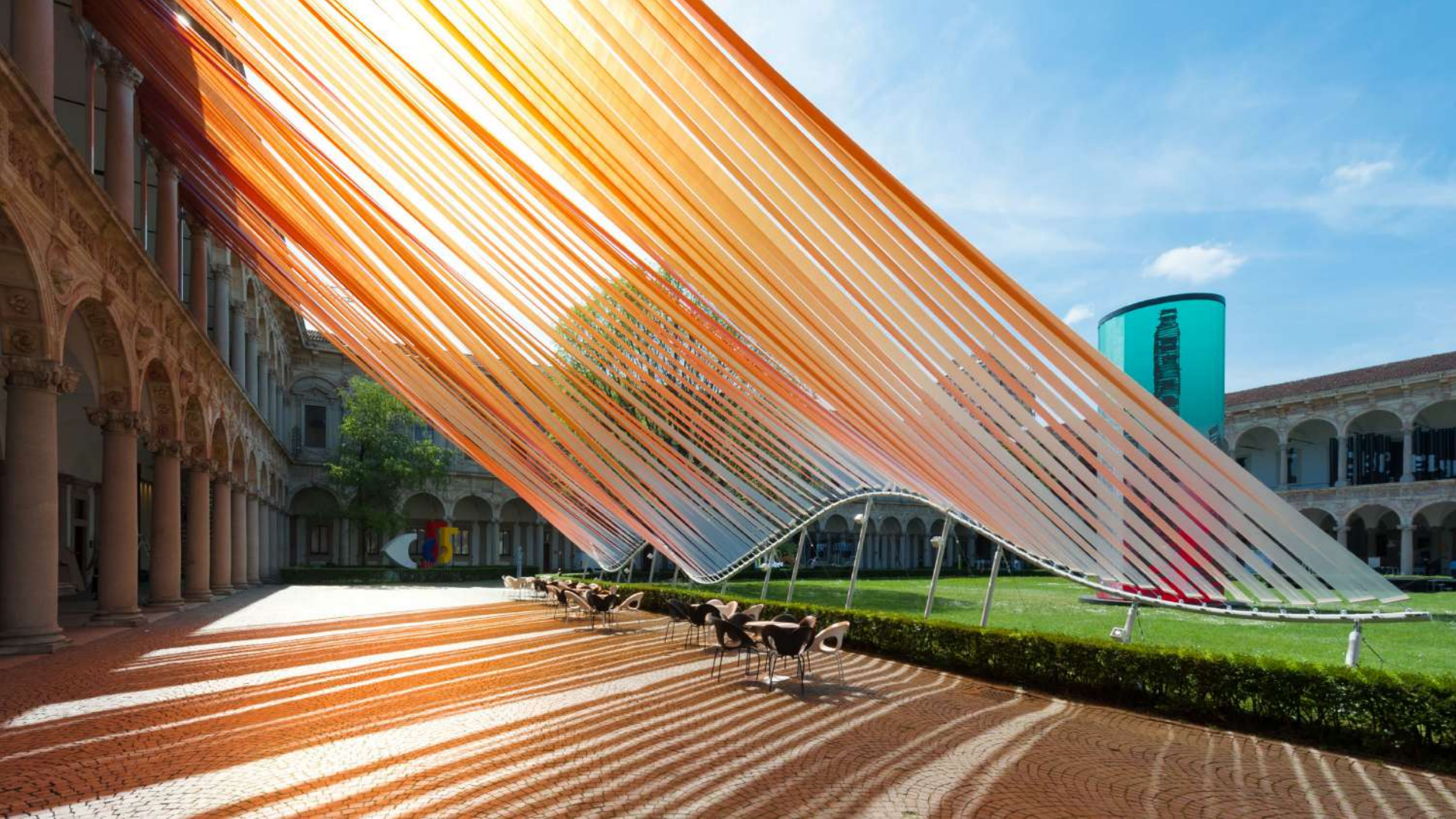




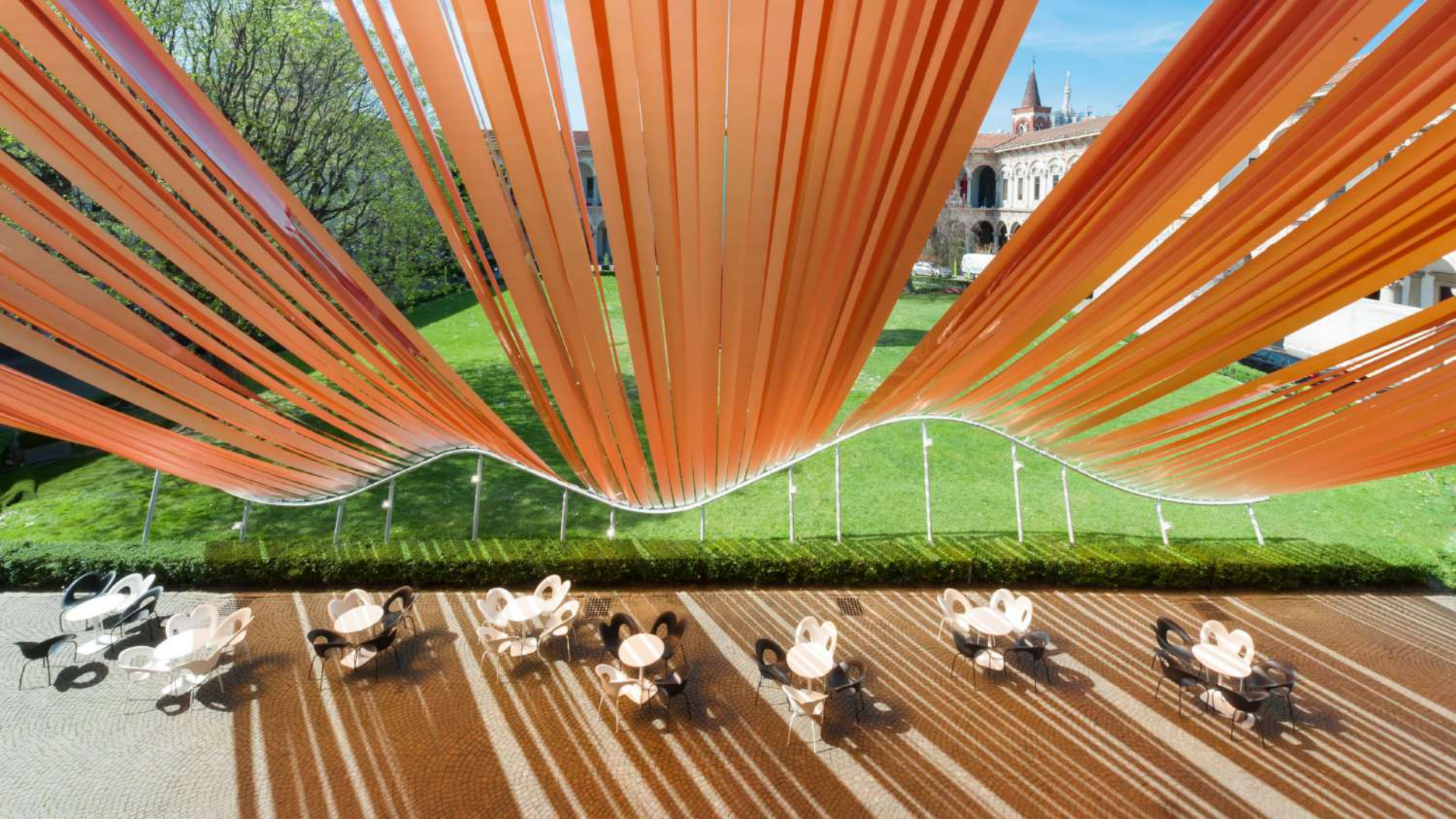


















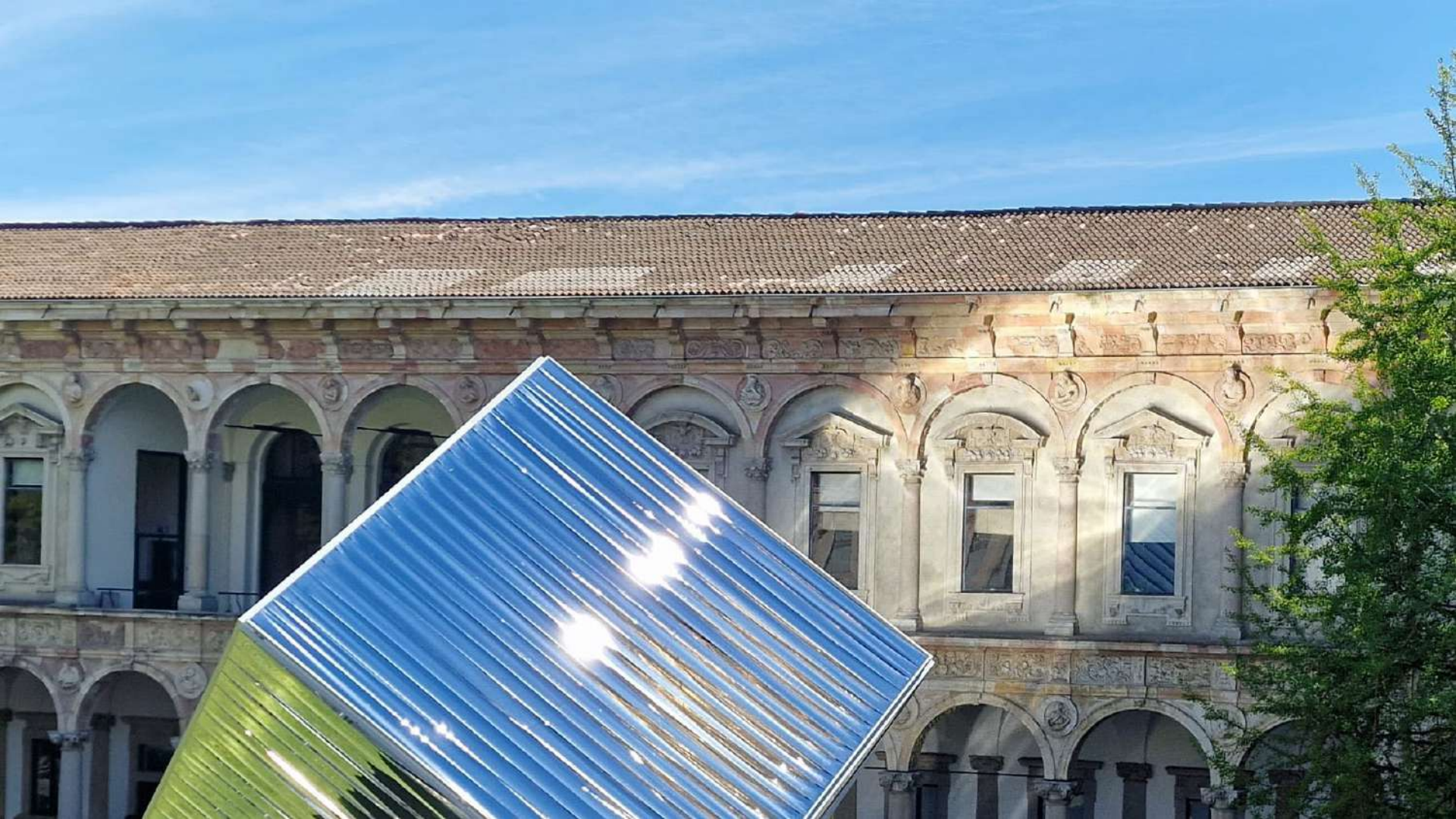
# MOMENTUM

2023

Milan, Italy























**mad**

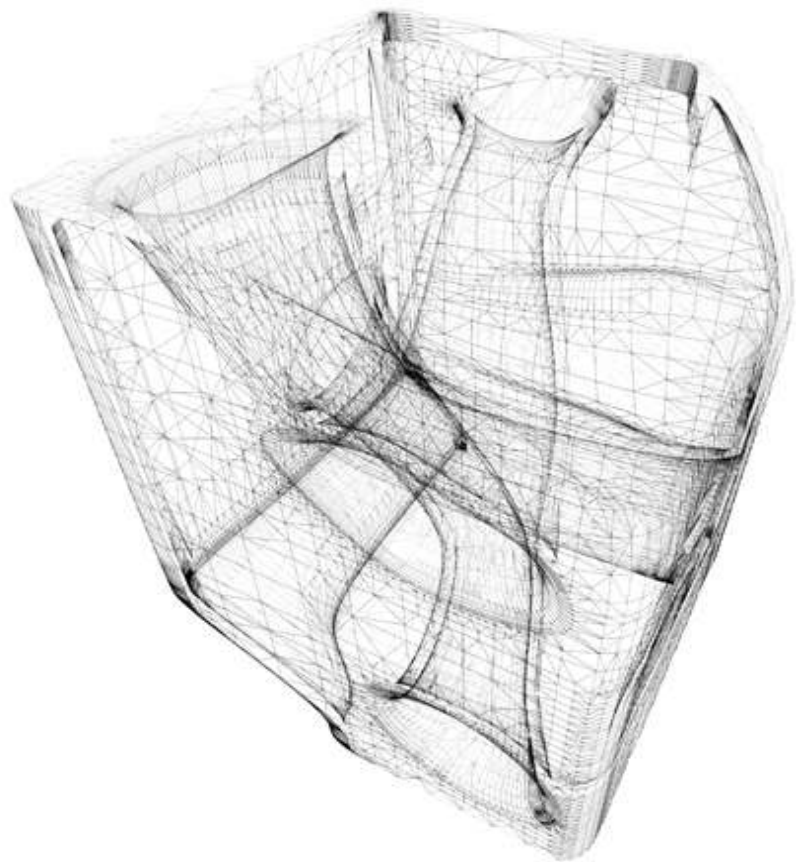
PRODUCT DESIGN

FISH TANK













**MARILYN**

2016

Olivari











# GU CHAIR

2022

Sawaya Moroni









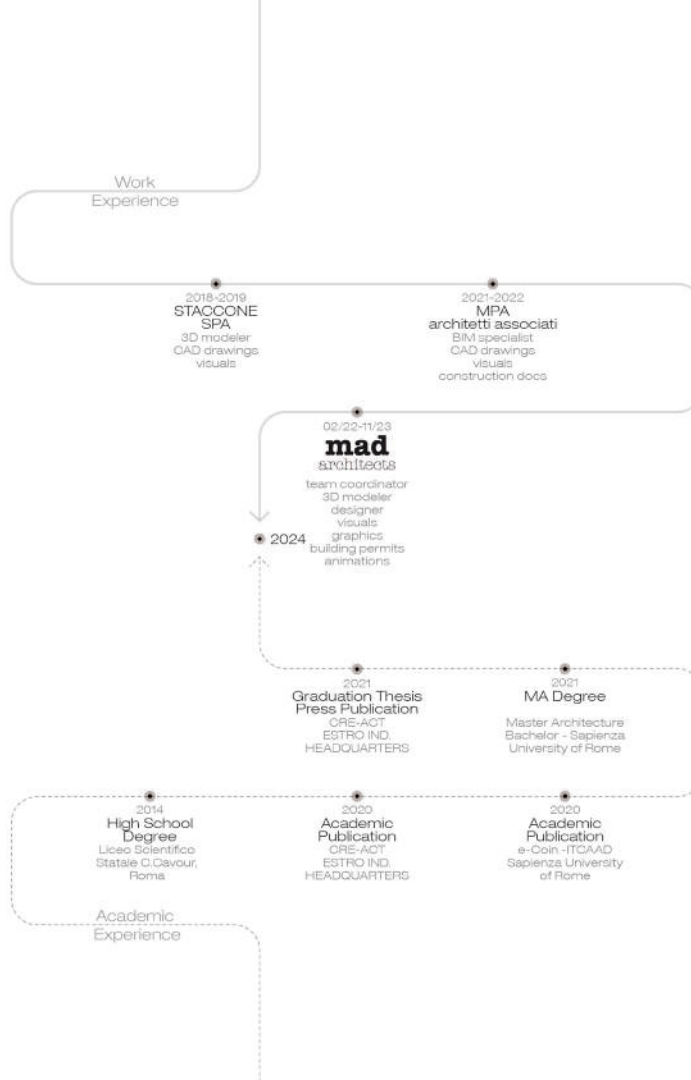






## Edoardo D'Angelo

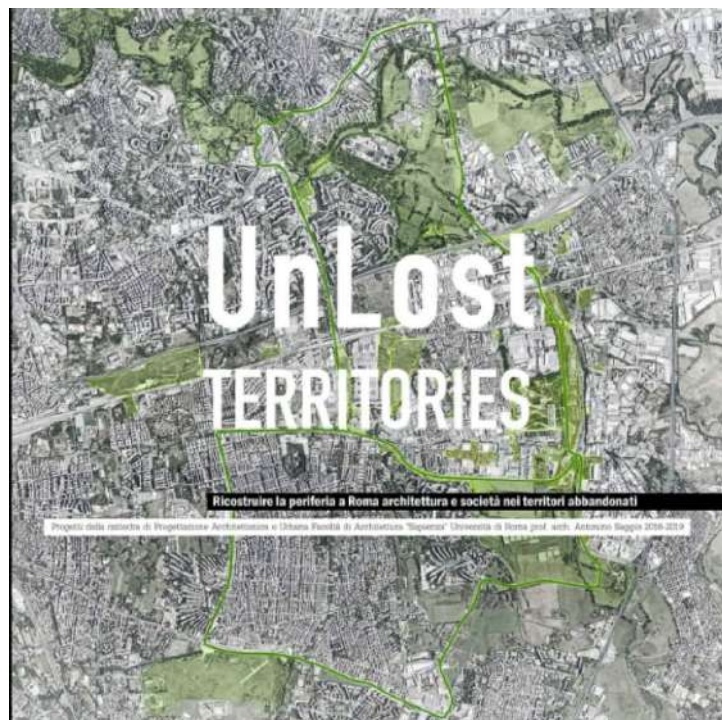
MAD Architects





## LABORATORIO SINTESI 2019

Questo Laboratorio di Sintesi ha lo scopo di coinvolgere gli studenti nella progettazione di un edificio di media-alta complessità inserito in un vuoto urbano della città di Roma. La particolarità del Laboratorio di sintesi consiste nel rapporto che si deve instaurare tra il programma, l'area di progetto, i committenti, i previsti occupanti e l'insieme di aspetti teorici e pratici della progettazione architettonica e urbana. Da questo punto di vista il Laboratorio anticipa metodi di sviluppo del progetto che avranno la loro più completa elaborazione nell'ambito di una tesi in progettazione.



### INQUADRAMENTO AREA



### QUADRO UNIONE PRG 2003

11

### FOGLIO CATASTALE

269

### ZONA URBANISTICA

Conca d'oro

### MUNICIPIO

3

### PRG 2003

Parchi e istituti e tenuta di Castel Porziano

### DIMENSIONI AREA

AREA 8000mq

PERIMETRO 465m

### ANALISI STORICO MORFOLOGICA

#### ANALISI VIABILITÀ

Gli assi principali sono Via Delle Valli e La Via olimpica insieme alle due linee ferroviarie Flumicino-arte e Roma Firenze. La pista ciclabile lambisce l'area.

#### ANALISI QUARTIERI

L'area 85 si trova tra due quartieri molto importanti di Roma, il quartiere XVII e il Nuovo Salario. I due margini dei quartieri sono rispettivamente la stazione della metro di Conca D'oro, che collega poi alle zone di Jonio, Val Melaina, Tufello ecc., e Piazza Condor che collega il quartiere Africano, Nomentano e tutto il costruito fino a Viale Regina Margherita, Salario e quartiere Parioli. Inoltre ci sono i quartieri serviti dalla Via Nomentana che non sono direttamente collegati all'area, ma comunque limitrofi come Piazza Sempione che collega il Nomentano a MonteSacro.

### DRIVING FORCE

La driving force del progetto è il "Centro culturale".

### GRAFICI MIXITè

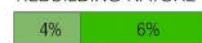


#### LIVING 30%



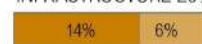
-Spazi esterni d'esibizione 20%  
-Aree ristorazione 10%

#### REBUILDING NATURE 10%



-Spazi esterni d'esibizione 4%  
-Percorsi per il fiume 6%

#### INFRASTRUCTURE 20%



-Connessioni città fiume 14%  
-Percorsi d'accesso all'area 6%

#### CREATING 10%



-Laboratori 8%  
-Aree ricreative 2%

#### EXCHANGE 30%

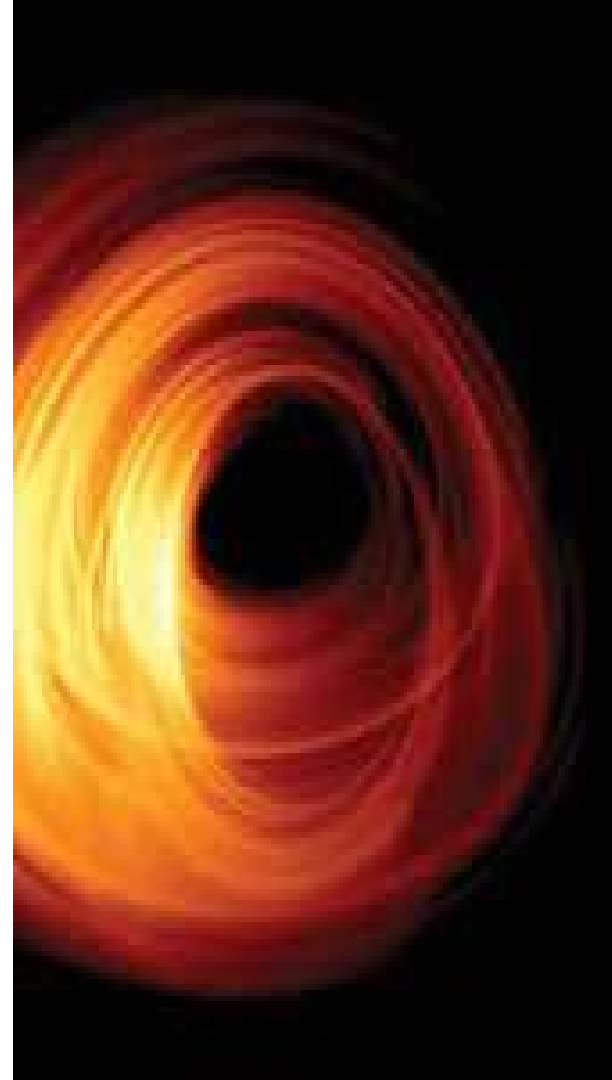


-Palcoscenico esterno 13%  
-Aree commerciali 17%

## BLACK HOLE CONCEPT

L'universo, secondo le ultime scoperte, e secondo la teorizzazione di Einstein nei primi del '900, è permeato da un tessuto (spazio-Tempo) che noi conosciamo come Gravità. Quest'ultima infatti è come se costituisse i percorsi dell'universo, in cui dove è più presente, devia l'andamento degli elementi che percorrono lo spazio. Ci sono alcuni punti in cui però queste forze di attrazione sono molto forti. Se i materiali attratti, tramite processi chimici, riescono ad equilibrare queste forze dette di gravità, nascono le comunemente chiamate "stelle". Se le forze di attrazione sono troppo forti si crea una sorta di falla nel tessuto dell'universo, un errore che porta alla creazione di buchi neri.

La gravità in essi è talmente forte da distorcere il tessuto dello spazio-tempo nell'intorno, così forte da non far scappare nulla, nemmeno la luce.







ITCAAD

19/20



Autoritratto - frammentazione

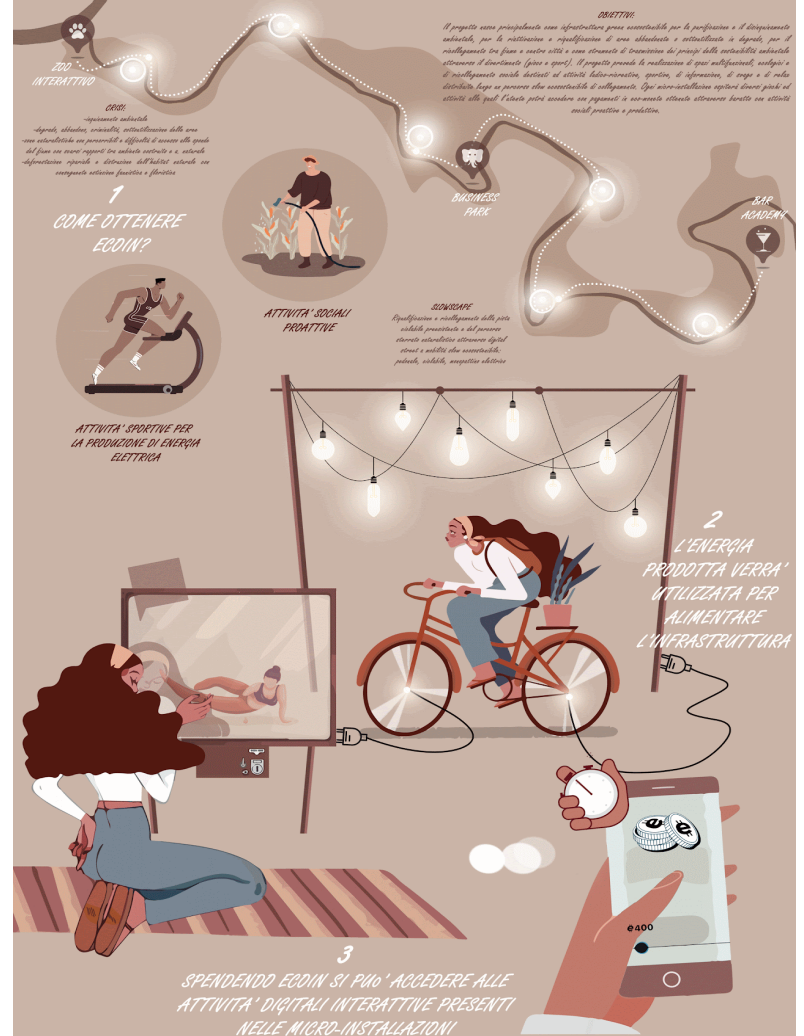




Logo itcaad – decomposizione

# Earn ECO-in with social proactivity

## Spend it in I.A. Attractions















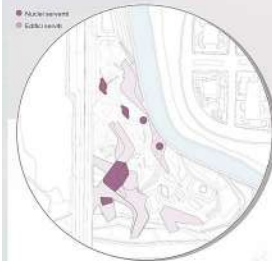
● ACCESSI E PERCORSI

- Pedonale
- Ciclabile
- Percorso



● DISTRIBUZIONE

- Nuclei serviti
- Edificandi



● SERVIZI E PIAZZE

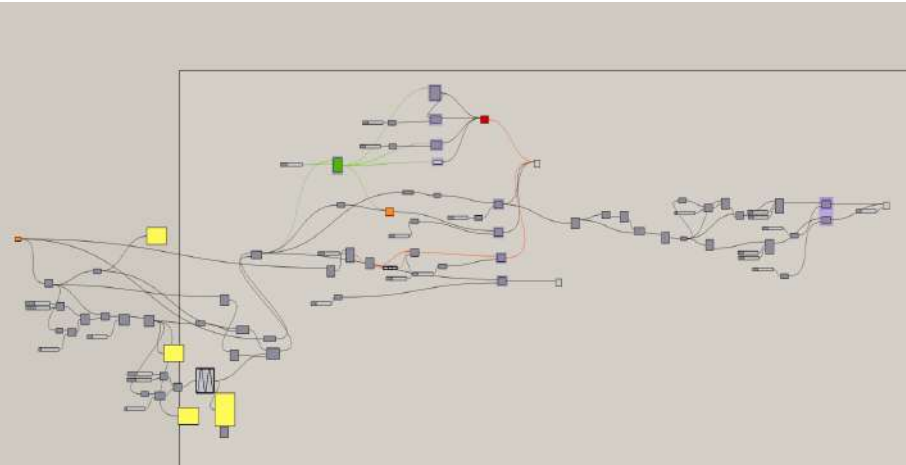
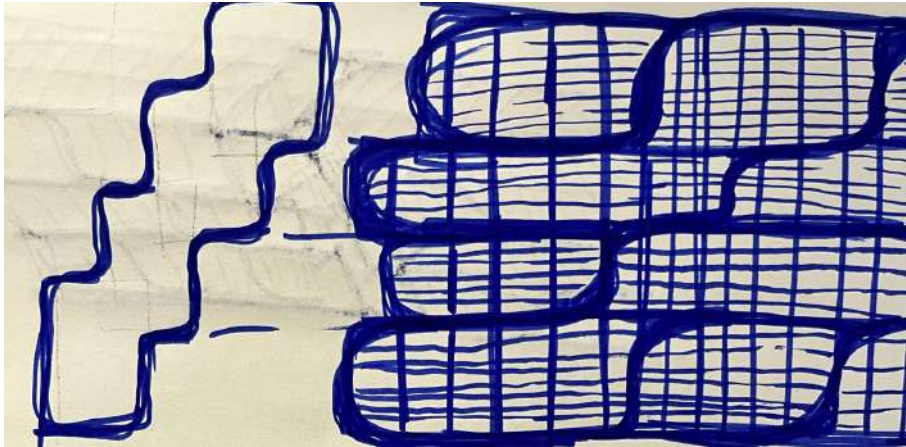
- Servizi
- Piazze



SEZIONE A-A' 1:500



SKETCH INIZIALE – SCRIPT - RENDER



TURBINE OLED: INTERATTIVA, SOSTENIBILE, ESTETICA.

**● FACCIATA RICERCA E SVILUPPO: TURBINE OLED - ALIASING**

L'idea originaria di questa facciata è stata sviluppata da un gruppo di architetti e ingegneri che hanno voluto creare una facciata interattiva, sostenibile e estetica. Il risultato è un edificio che si evolve e si trasforma in base alle esigenze e alle preferenze degli utenti.

**● Funzionamento pannelli OLED** (David Obata Architects Technology)

**1 POSIZIONAMENTO**

Il pannello OLED è posizionato in modo da essere visibile e accessibile a tutti gli utenti. La sua forma e la sua posizione sono determinate da una serie di fattori, tra cui la luce, il suono e il movimento.

**2 MECCANICA**

Il pannello OLED è montato su una struttura meccanica che gli permette di muoversi e di trasformarsi in base alle esigenze degli utenti. La sua meccanica è progettata per essere robusta e duratura.

**3 STOCCAGGIO**

Il pannello OLED è dotato di un sistema di accumulo di energia che gli permette di funzionare anche quando non è collegato alla rete elettrica. Questo sistema è progettato per essere efficiente e sicuro.

**4 DINAMICA**

Il pannello OLED è in grado di rispondere in tempo reale alle esigenze degli utenti. La sua dinamica è progettata per essere fluida e intuitiva.

**● Espone struttura di ancoraggio dei pannelli a tubo spirale**

Il pannello OLED è ancorato alla struttura dell'edificio attraverso un sistema di tubi a spirale. Questo sistema è progettato per essere robusto e sicuro.

**● Istruzioni pannelli e creazione Pattern**

Il pannello OLED è dotato di un sistema di istruzioni che gli permette di creare pattern e di rispondere alle esigenze degli utenti. Questo sistema è progettato per essere intuitivo e facile da usare.

**● Dettaglio assonometrico ancoraggio pannelli OLED**

Questo dettaglio assonometrico mostra come i pannelli OLED sono ancorati alla struttura dell'edificio. La sua forma e la sua posizione sono determinate da una serie di fattori, tra cui la luce, il suono e il movimento.

**TURBINE OLED**

Tubo Ø600

Profilo LPM 30x20x4

Profilo scissor Ø100x2

Profilo scissor Ø100x2

Angoli inclinati di 10°

Angoli inclinati di 20°

Angoli inclinati di 45°

DESIGN PARAMETRICO

**● GRASSHOPPER E IL RUOLO DELL'INFORMAZIONE**

Grasshopper è un software di design parametrico che permette di creare modelli 3D e di rispondere alle esigenze degli utenti. La sua interfaccia è progettata per essere intuitiva e facile da usare.





# **mad**

DESIGN APPROACH PRINCIPLES

# It all starts with a gesture

- Studio del progetto
- Elaborazione
- Comunicare con un gesto



Sketch Fenix - Rotterdam





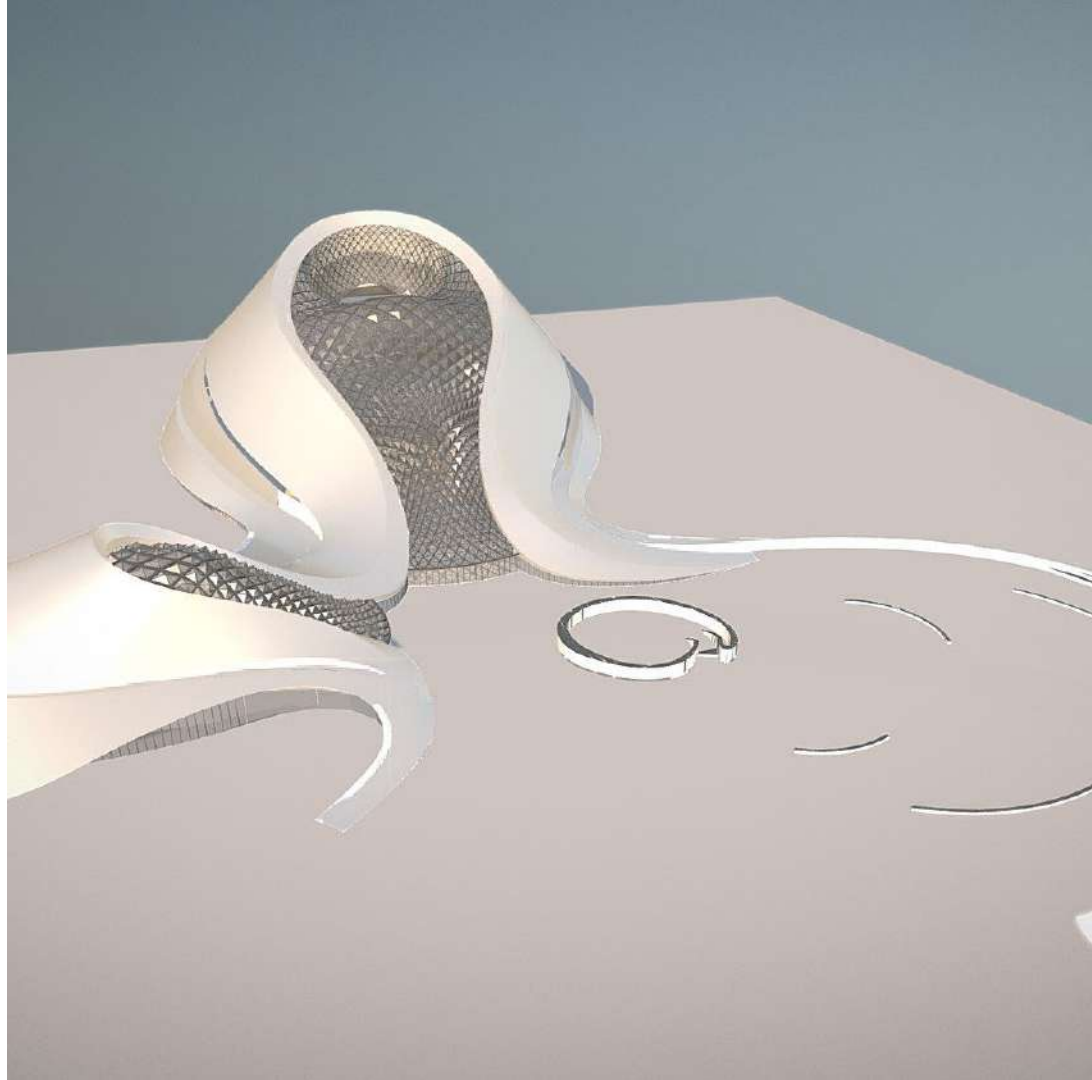




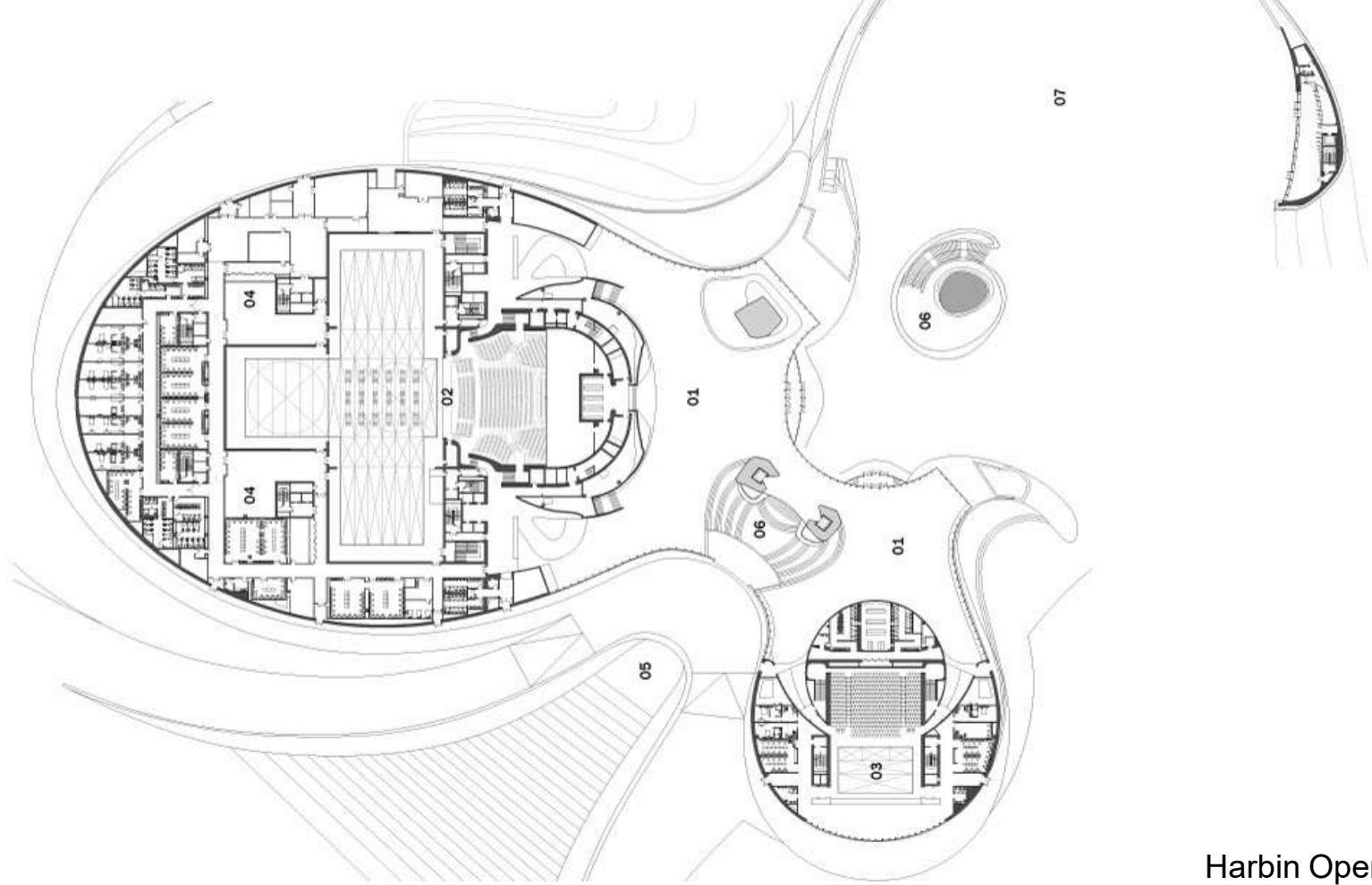


# Massing studies

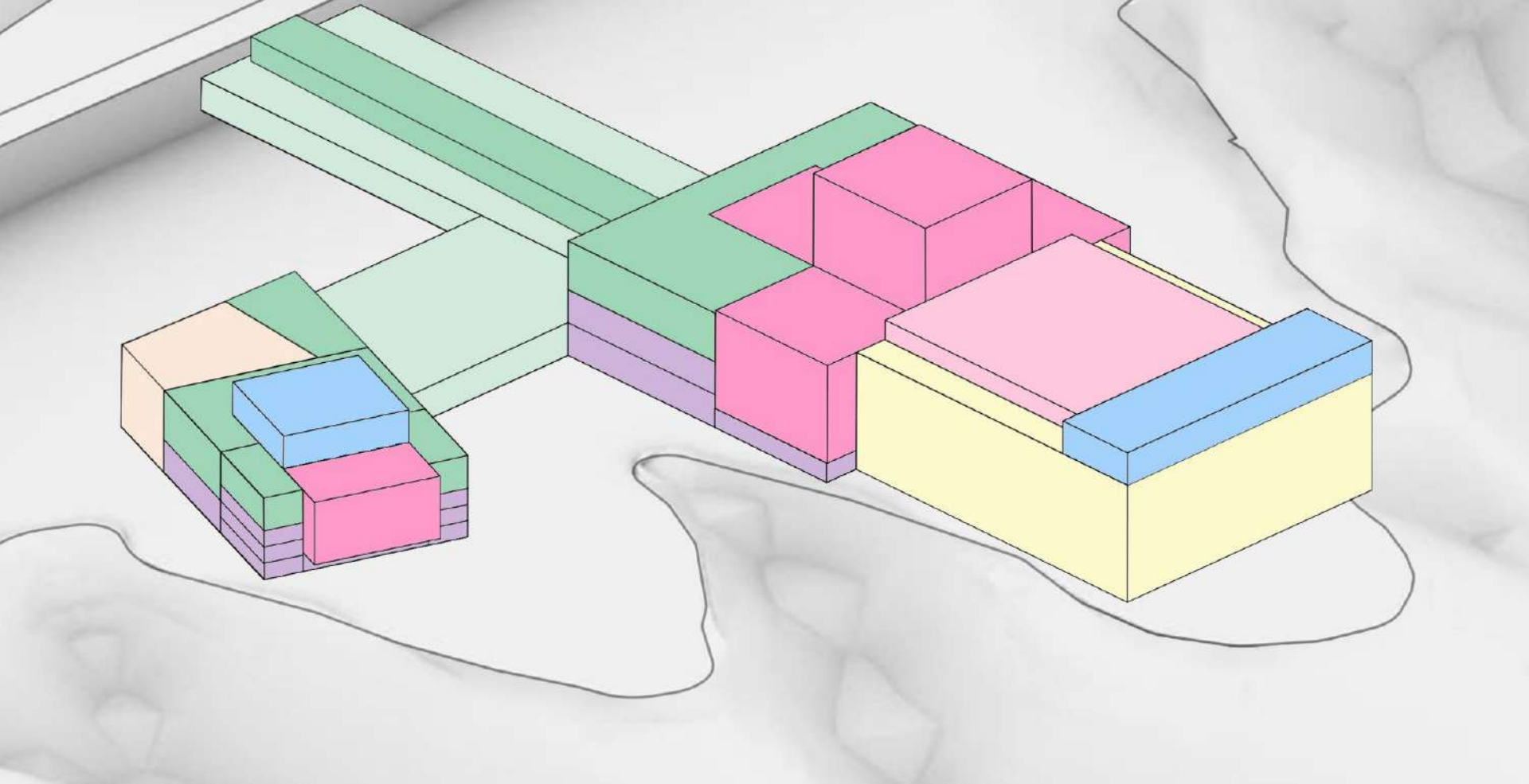
- Analisi delle funzioni
- Traduzione numeri in volumetrie
- Elaborazione del massing







Harbin Opera house











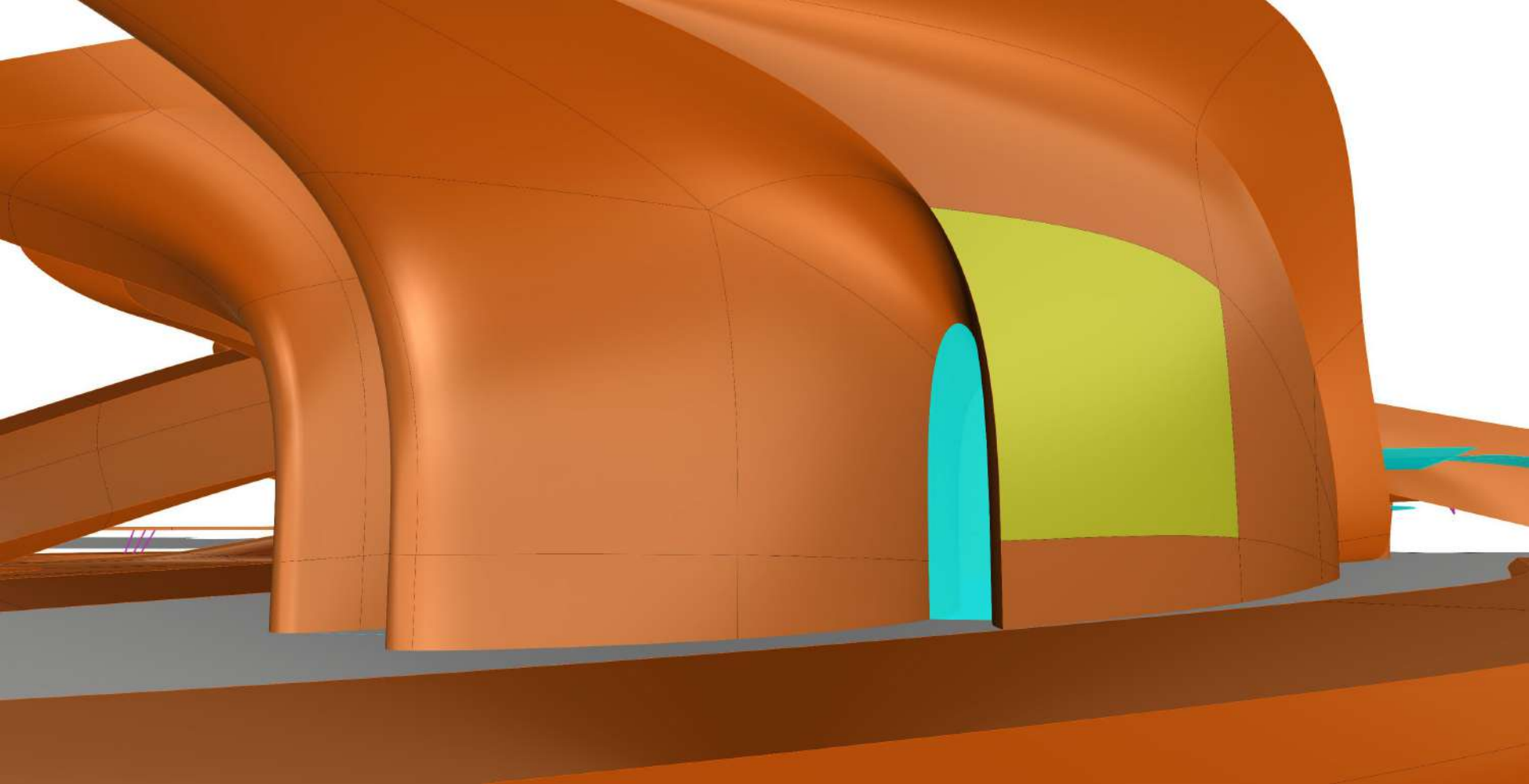


# Design process

- La fase di Shaping (Rhino, SubD, Maya)
- Studio della Facciata
- Percezione e modellazione degli spazi

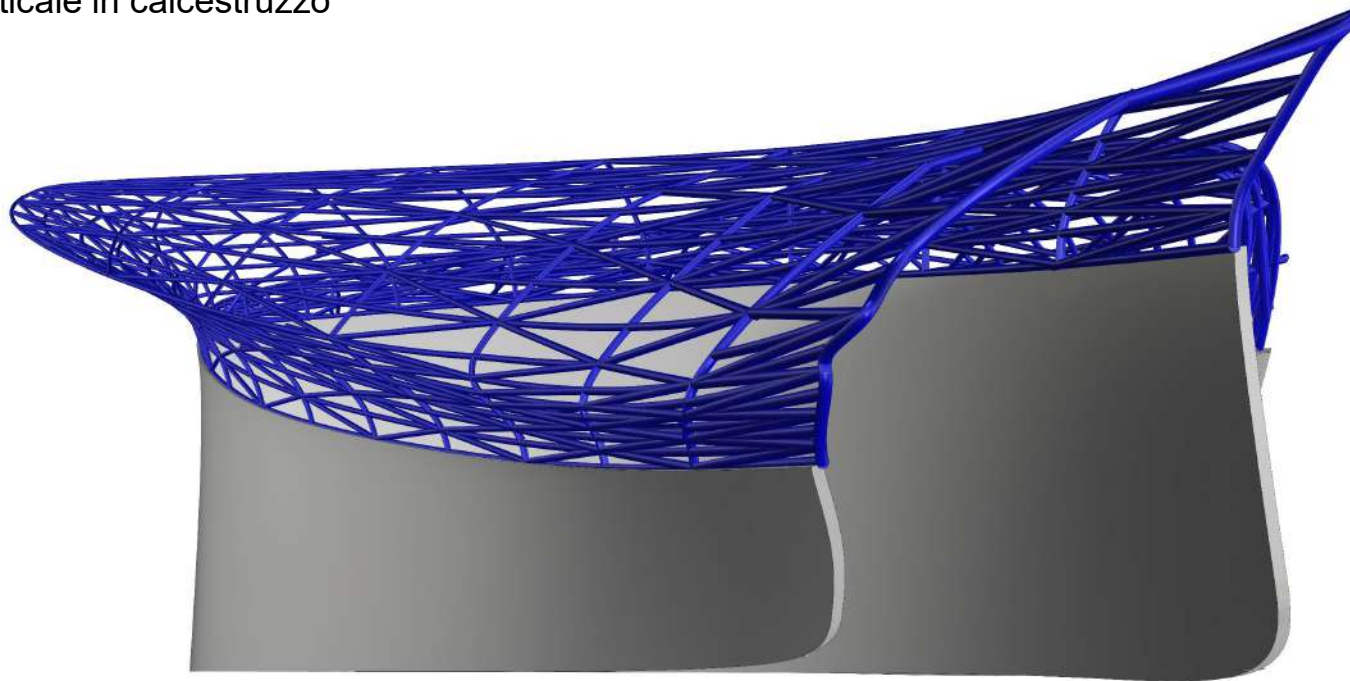
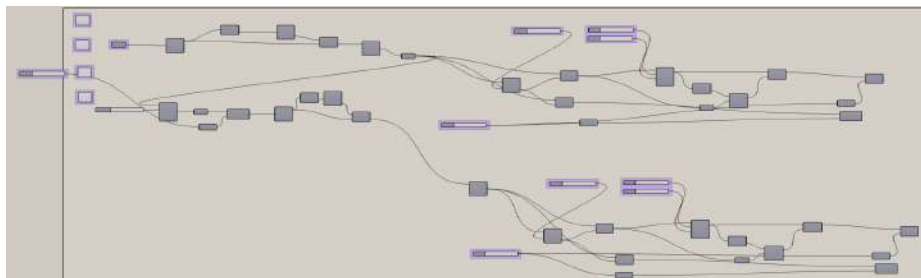






# Struttura

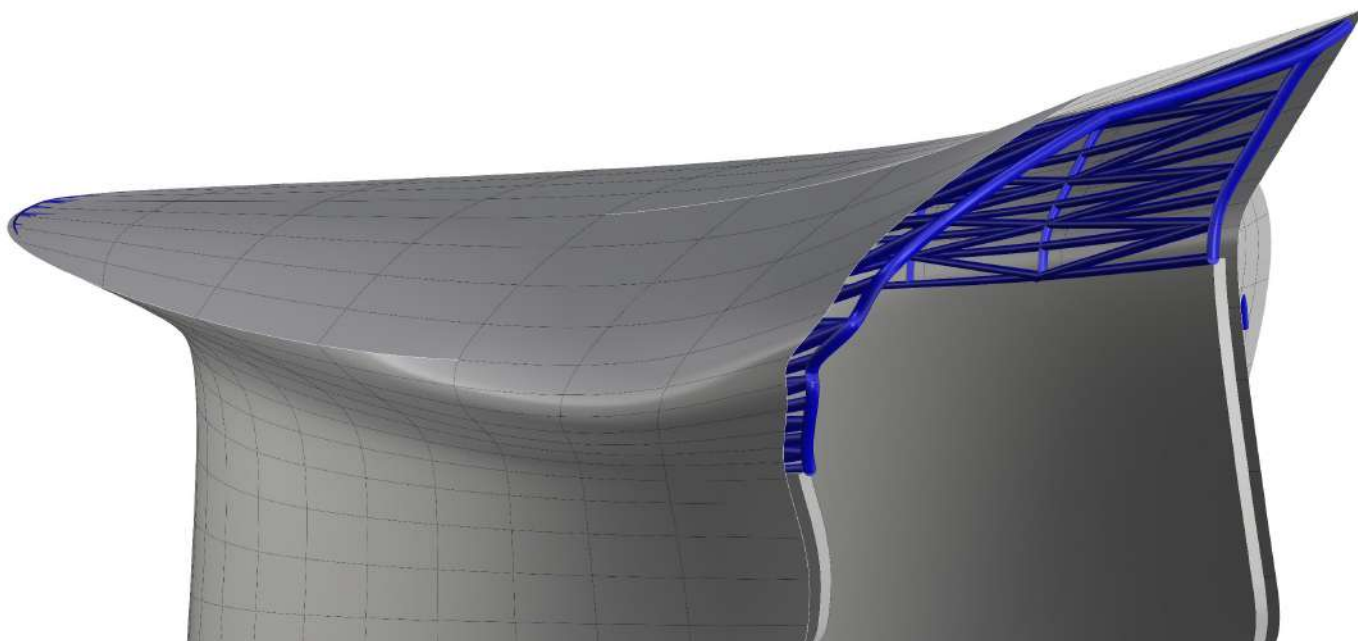
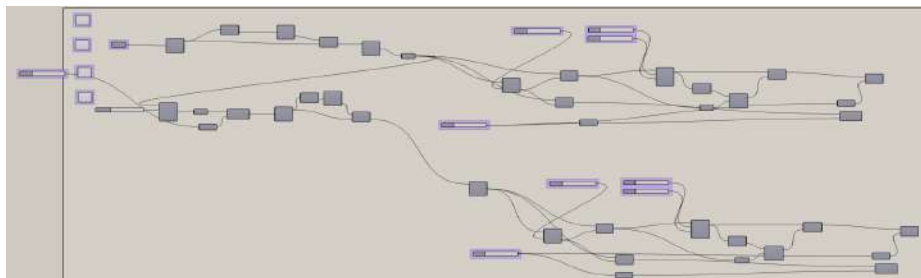
- Script di Grasshopper che Permette il controllo della struttura
- Modello di sezione verticale in calcestruzzo e telaio in acciaio





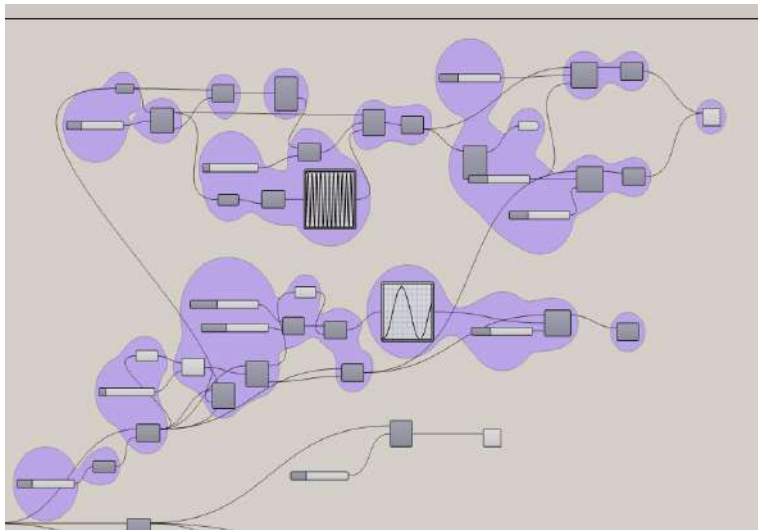
# Paneling

- Script generatore per Paneling
- Modello per ingegnerizzazione struttura ancoraggio pannelli



# Facciata

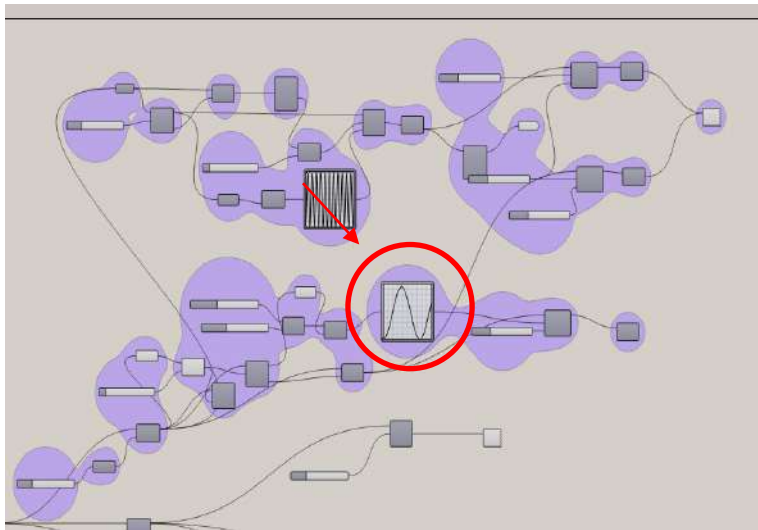
- Script generatore facciata Unic Parigi
- Realizzazione Facciata





# Facciata

- Script generatore facciata Unic Parigi
- Realizzazione Facciata







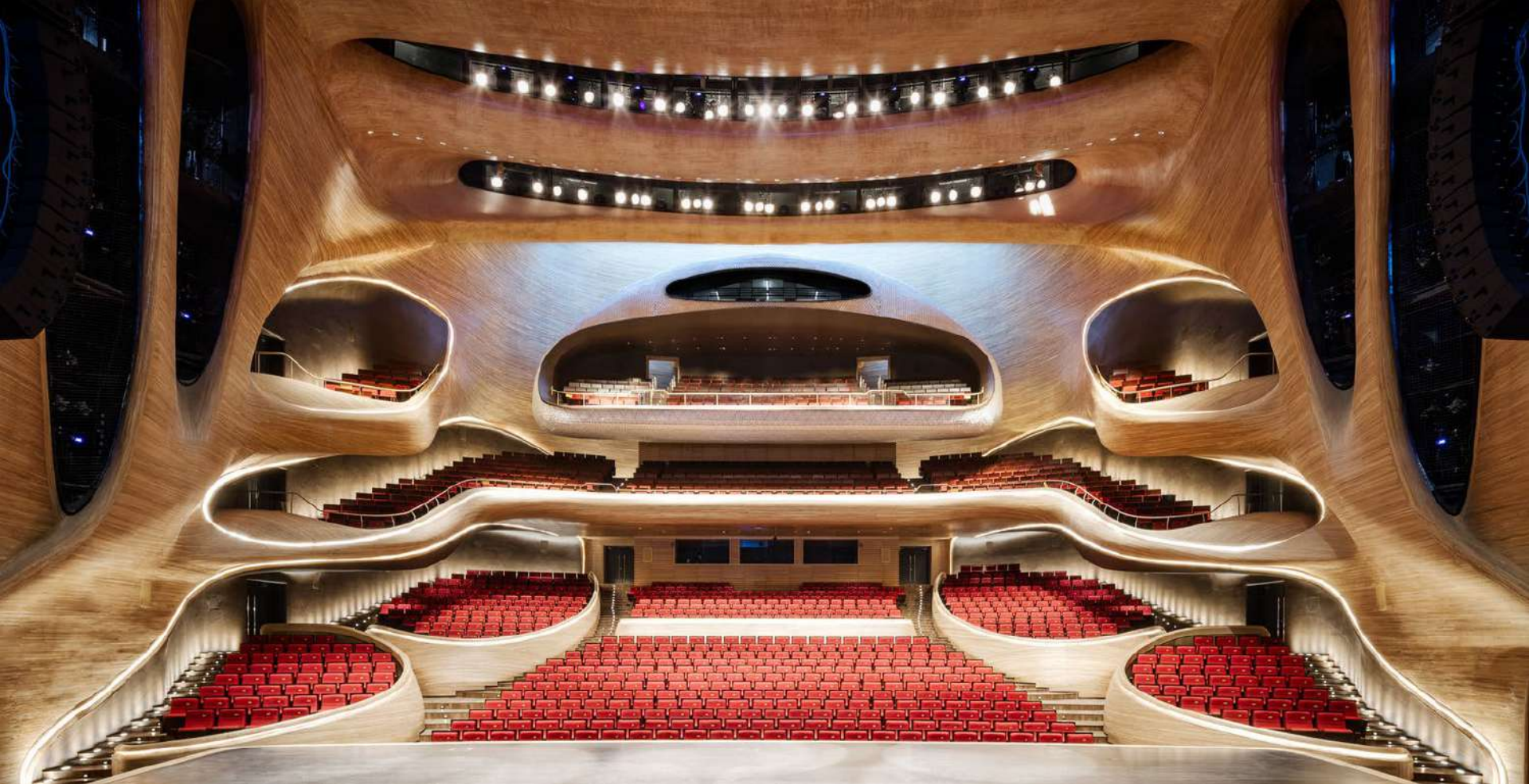
# Gli spazi

- Studio della percezione dello spazio
- Empatia degli ambienti
- Progettazione degli interni









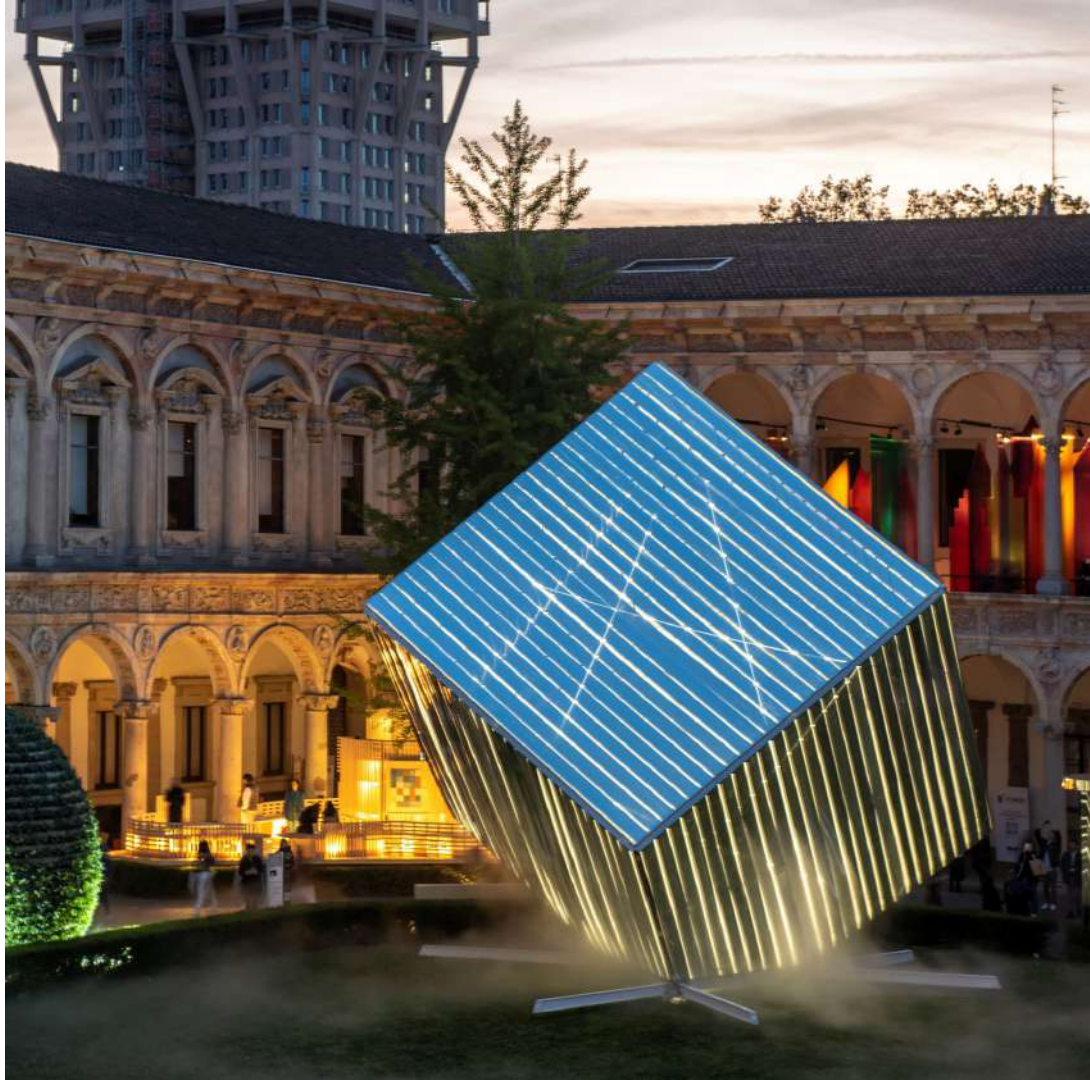






# Nuovi strumenti

- Realtà aumentata
- Intelligenza Artificiale





# Realtà aumenta

- Un nuovo modo di interagire con gli spazi



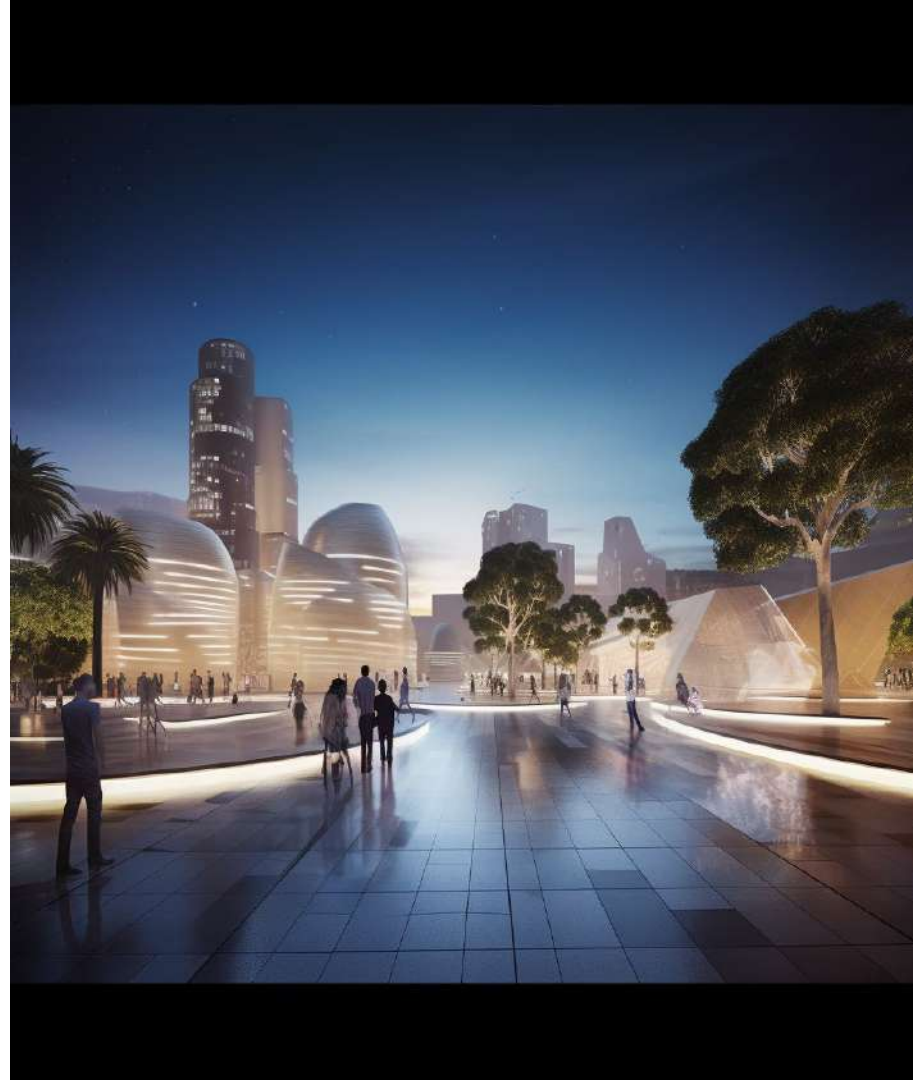
# Intelligenza Artificiale

- Possibilità di indagare diversi processi creativi
- Un linguaggio di comunicazione adeguato
- Non controllare gli output finali









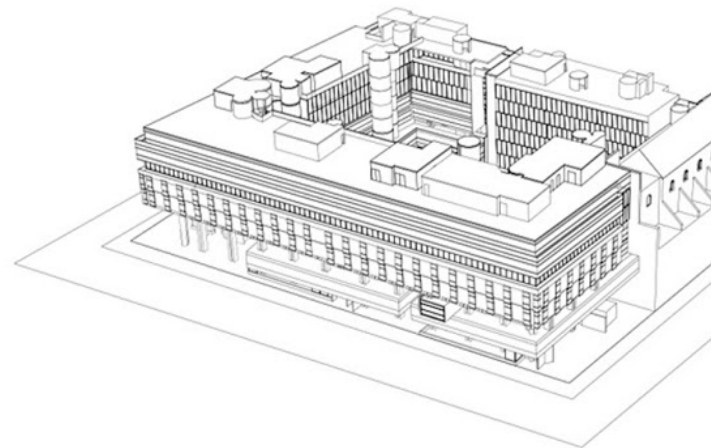
**mad**

EUROPE

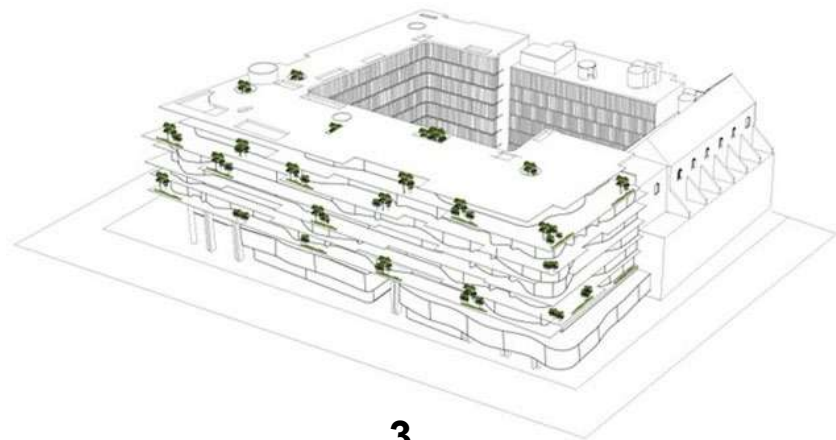
# 71 VIA BONCOMPAGNI

2011-2025

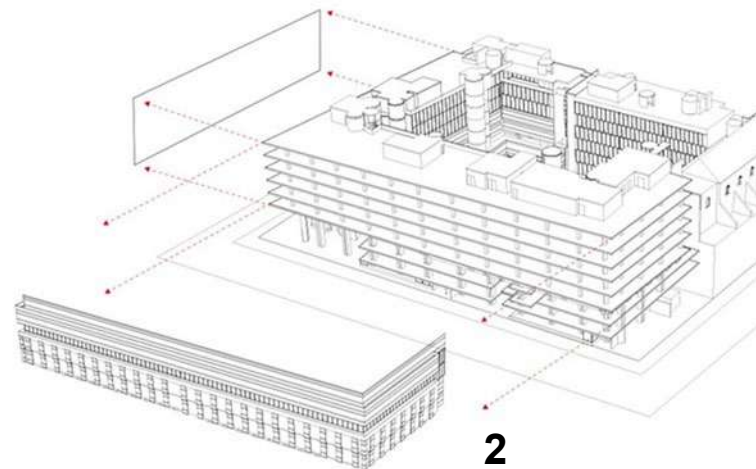
Rome, Italy



1



3



2



# 71 VIA BONCOMPAGNI

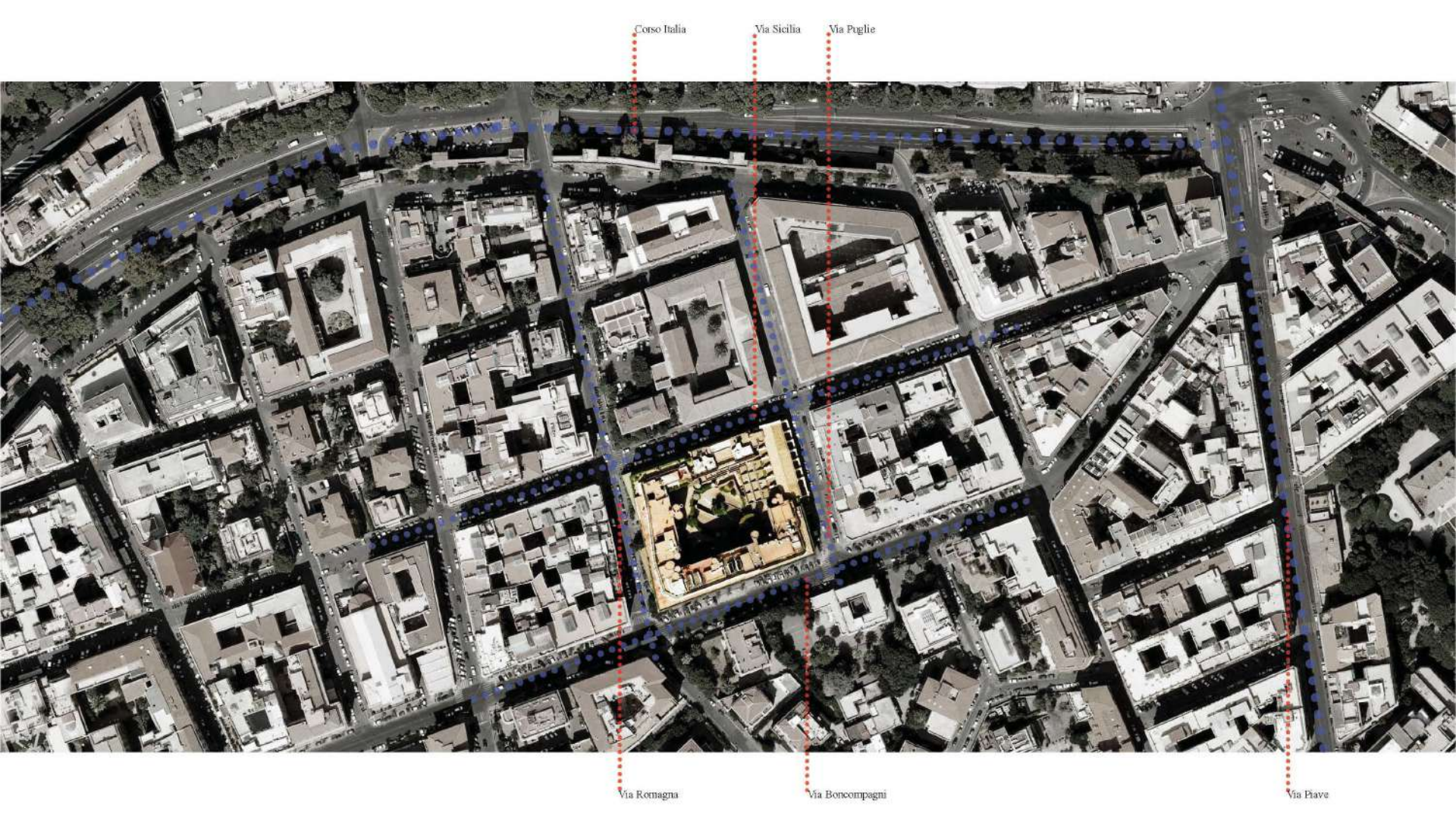
2011-2025

Rome, Italy









Corso Italia

Via Sicilia

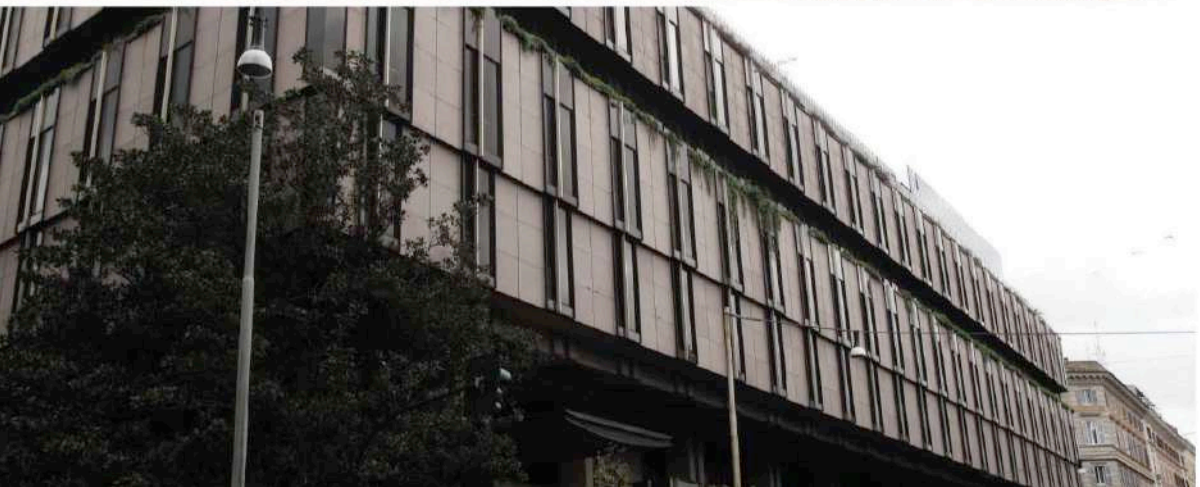
Via Puglie

Via Romagna

Via Boncompagni

Via Piave





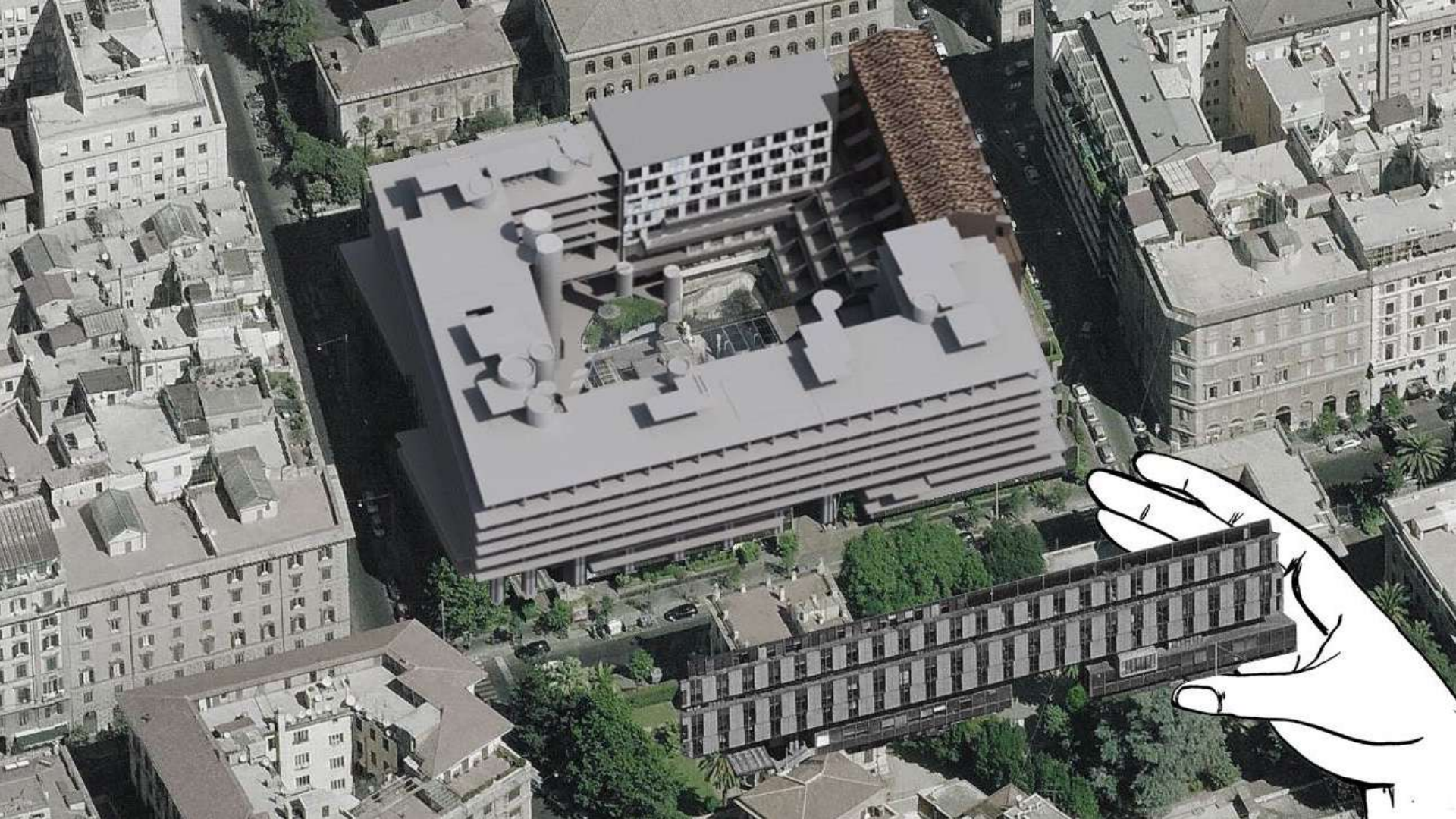










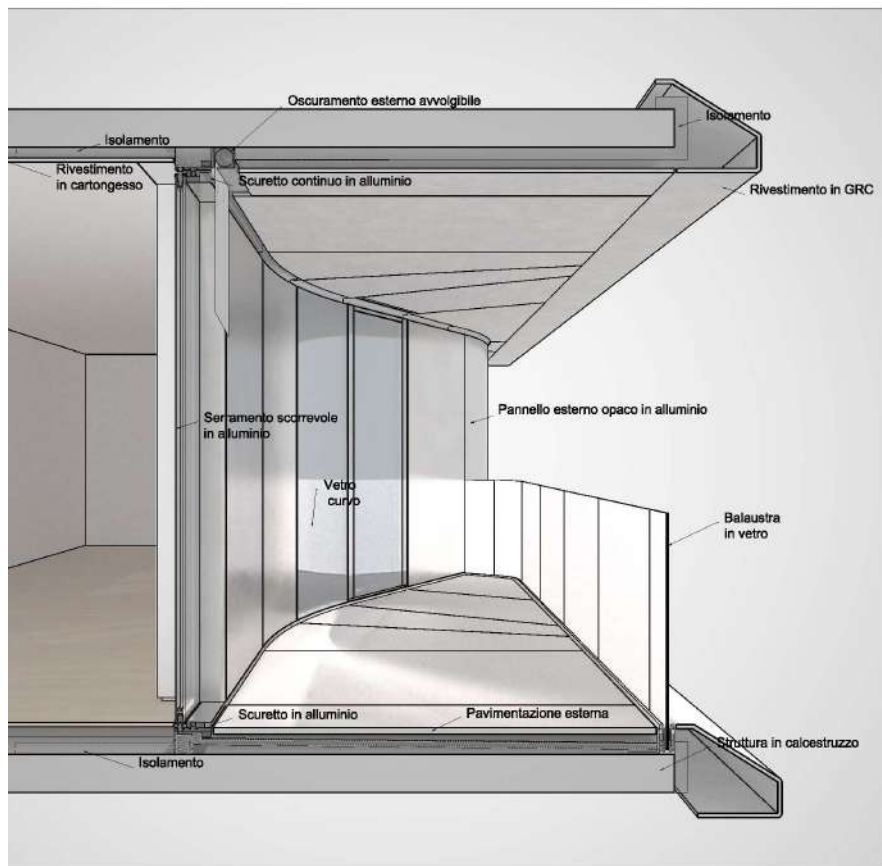












**1** GENERAL DIAGRAM FLOOR FROM 3th TO 5th FLOOR

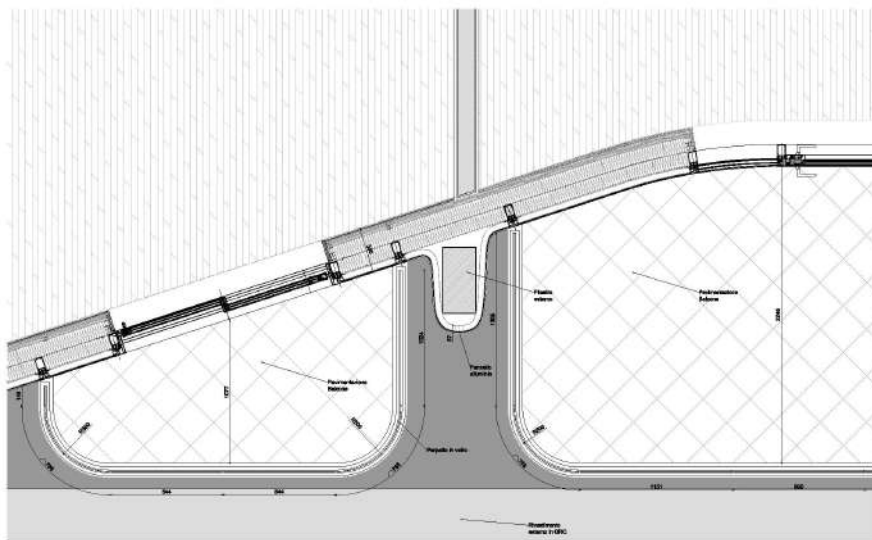
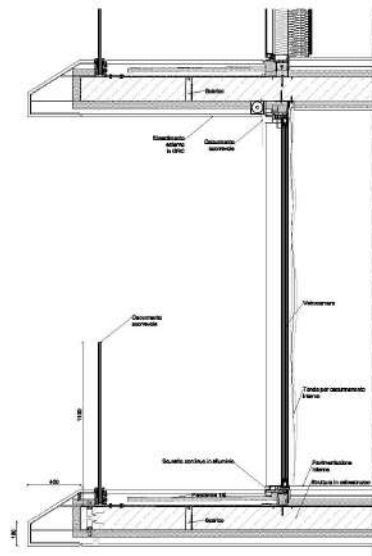
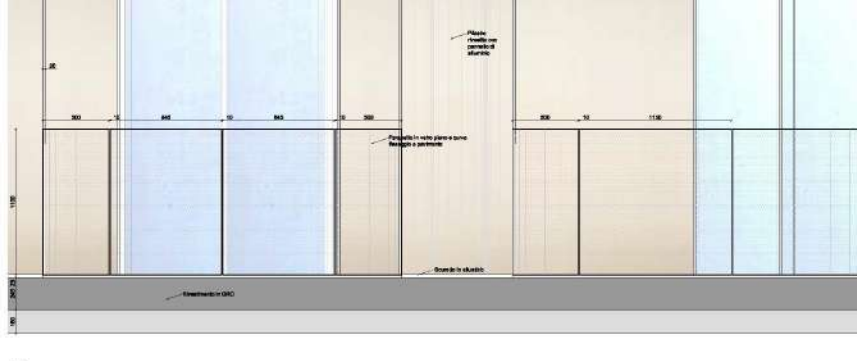


**2** RENDER FACADE - VIA BONCOMPAGNI



**3** RENDER TYPICAL FACADE

























# FENIX MUSEUM OF MIGRATION

Under construction

Rotterdam, Netherlands





# FENIX MUSEUM OF MIGRATION

Under construction

Rotterdam, Netherlands

























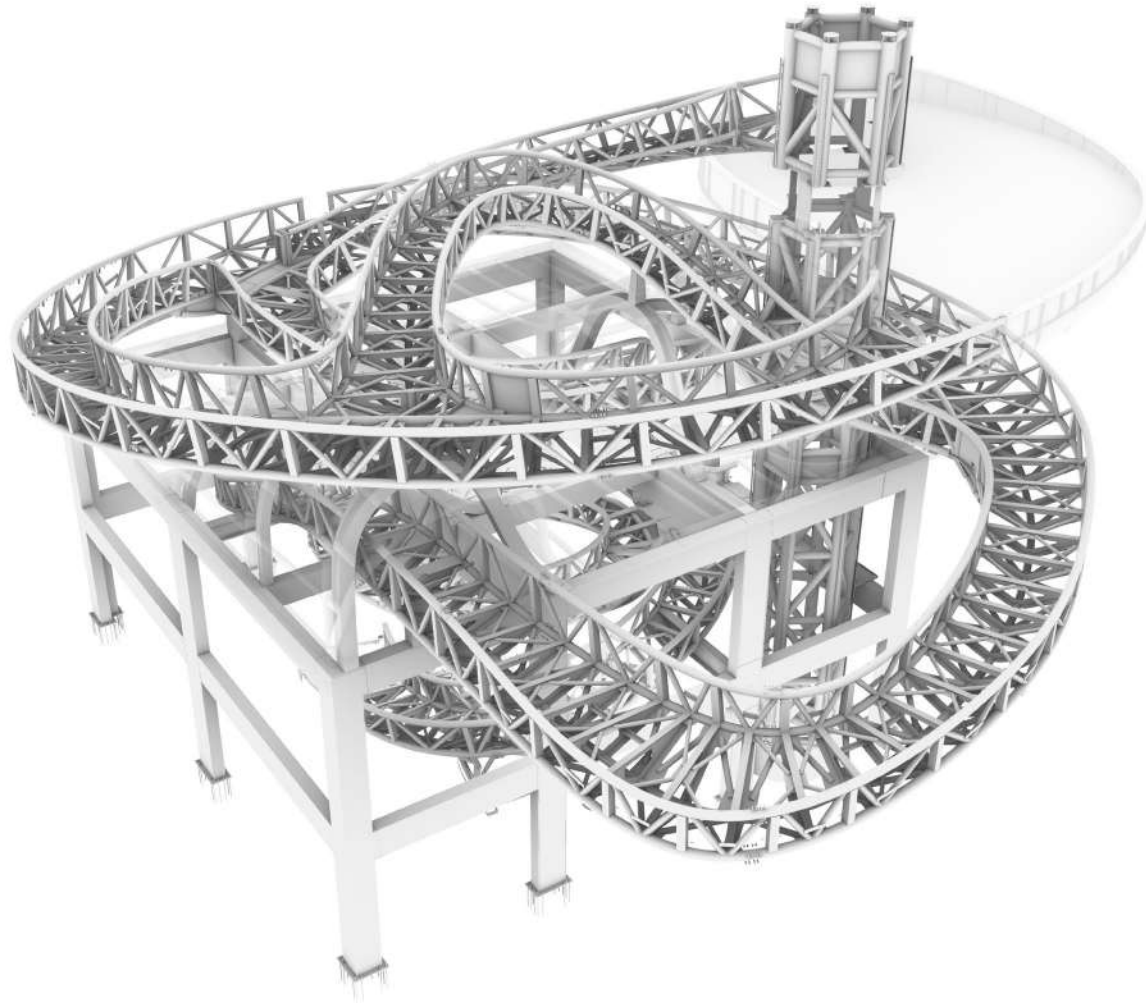








**LOBBY BOX**  
**LIFT SHAFT**  
**SPACEFRAME**









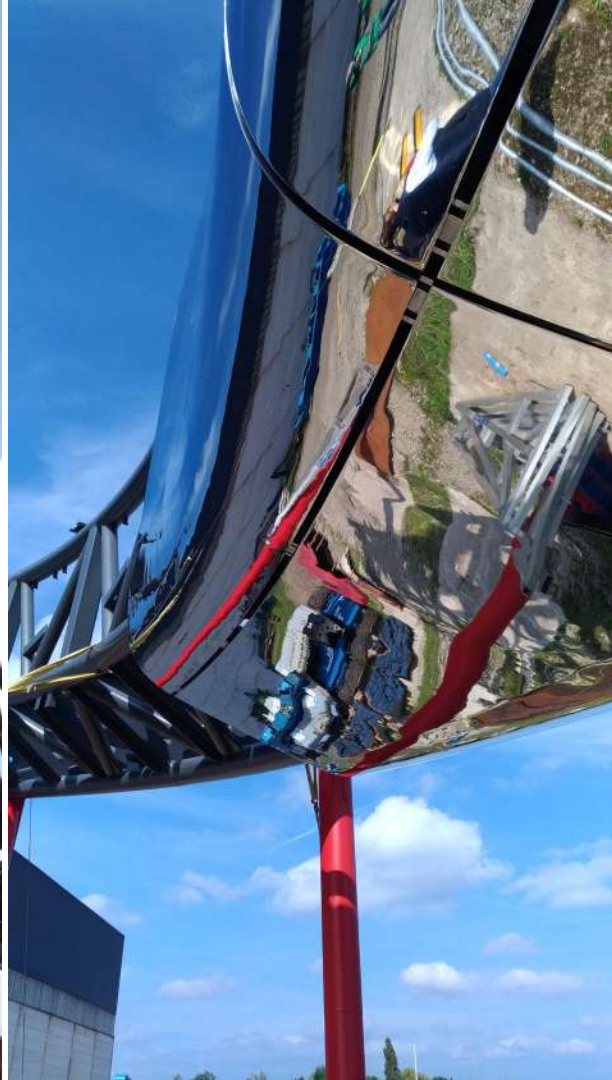










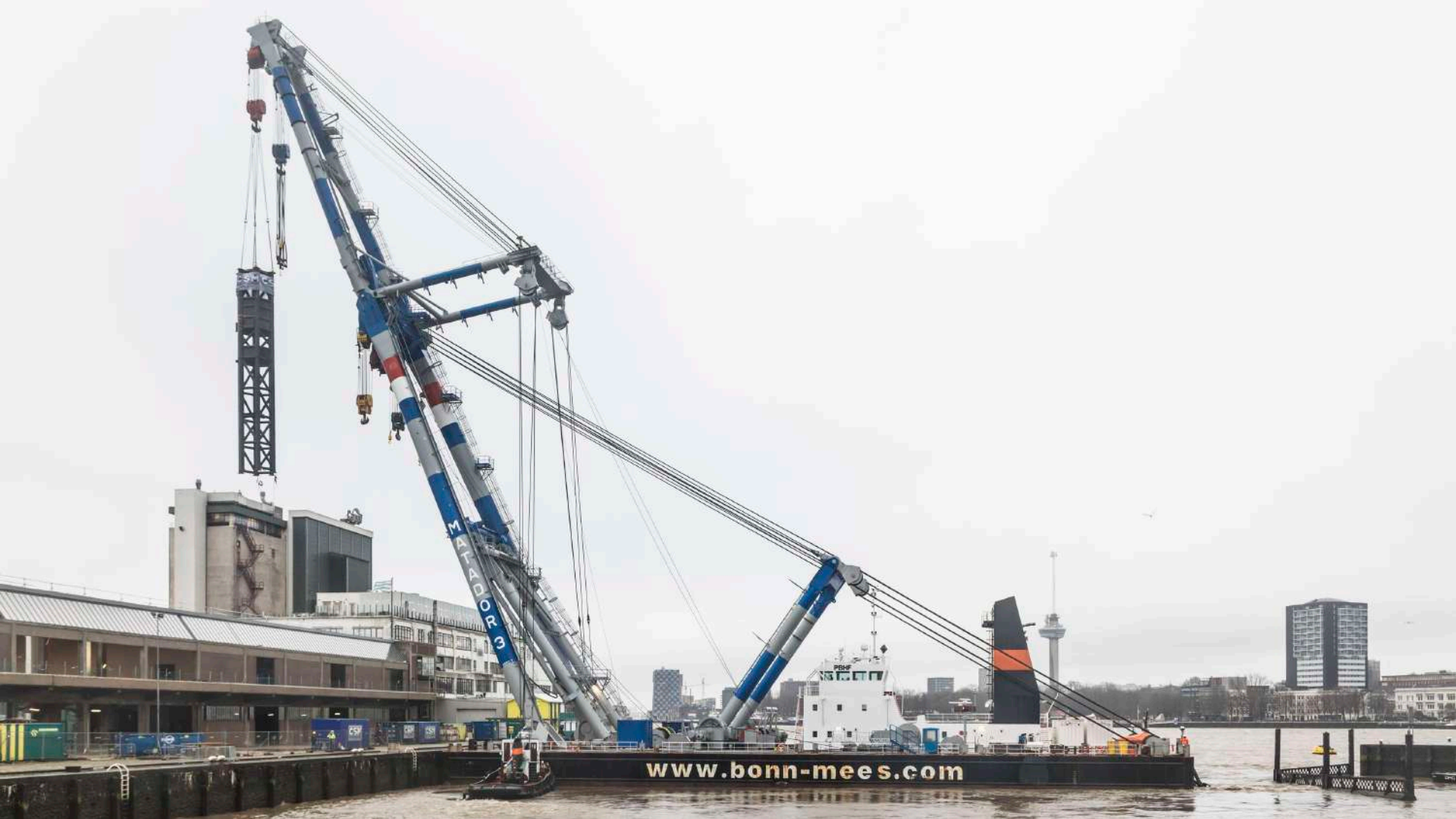




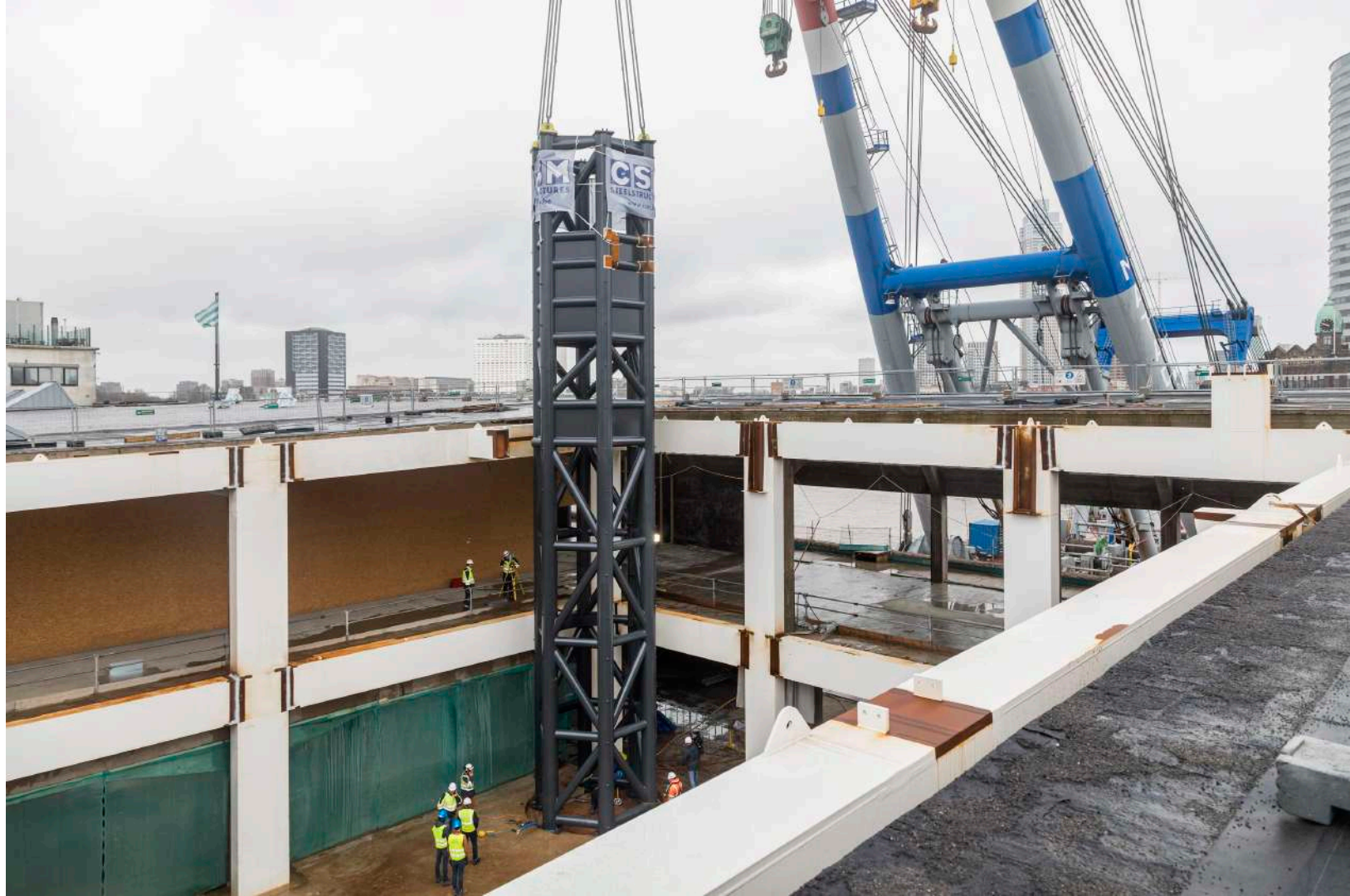




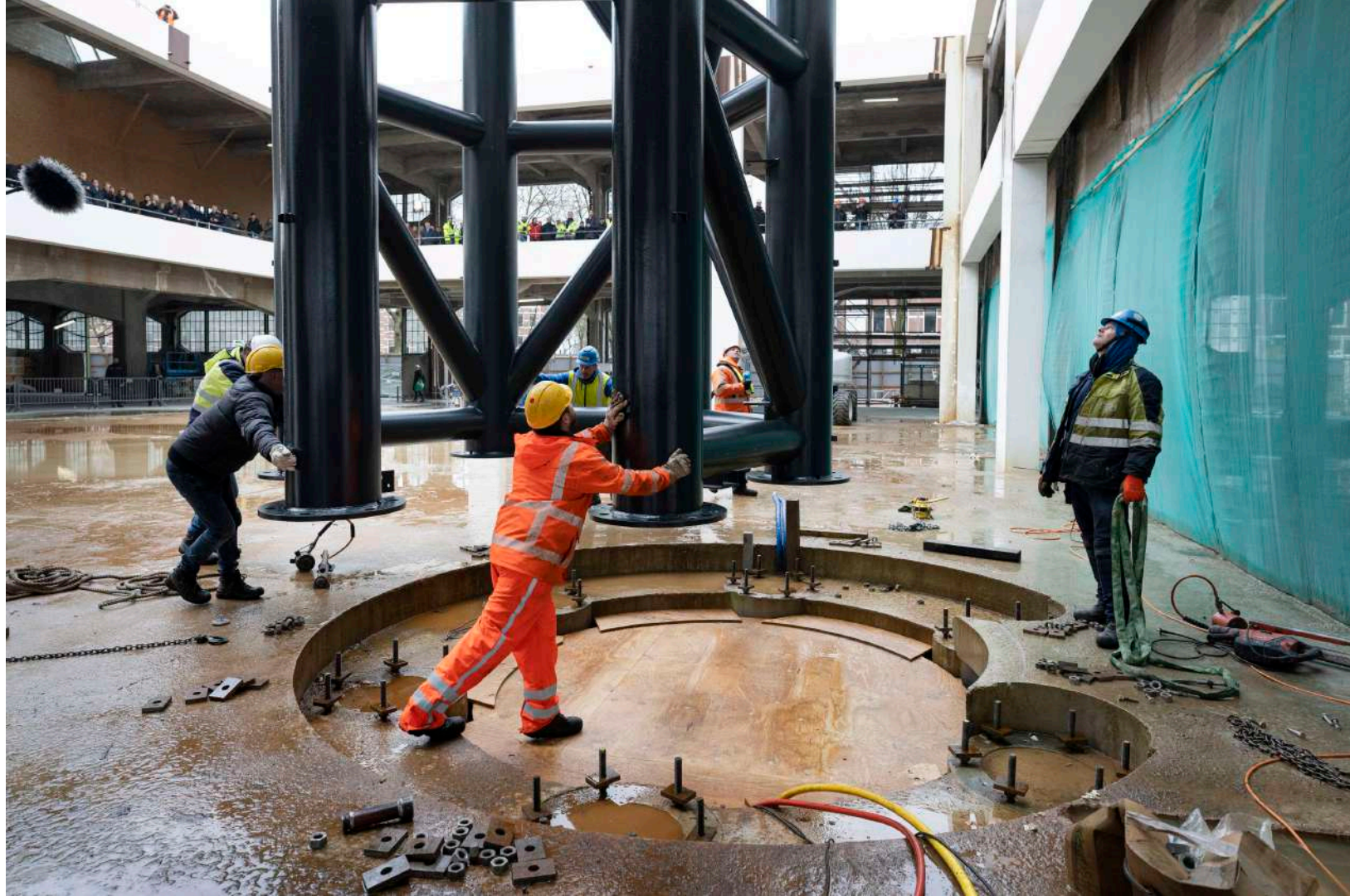




[www.bonn-mees.com](http://www.bonn-mees.com)







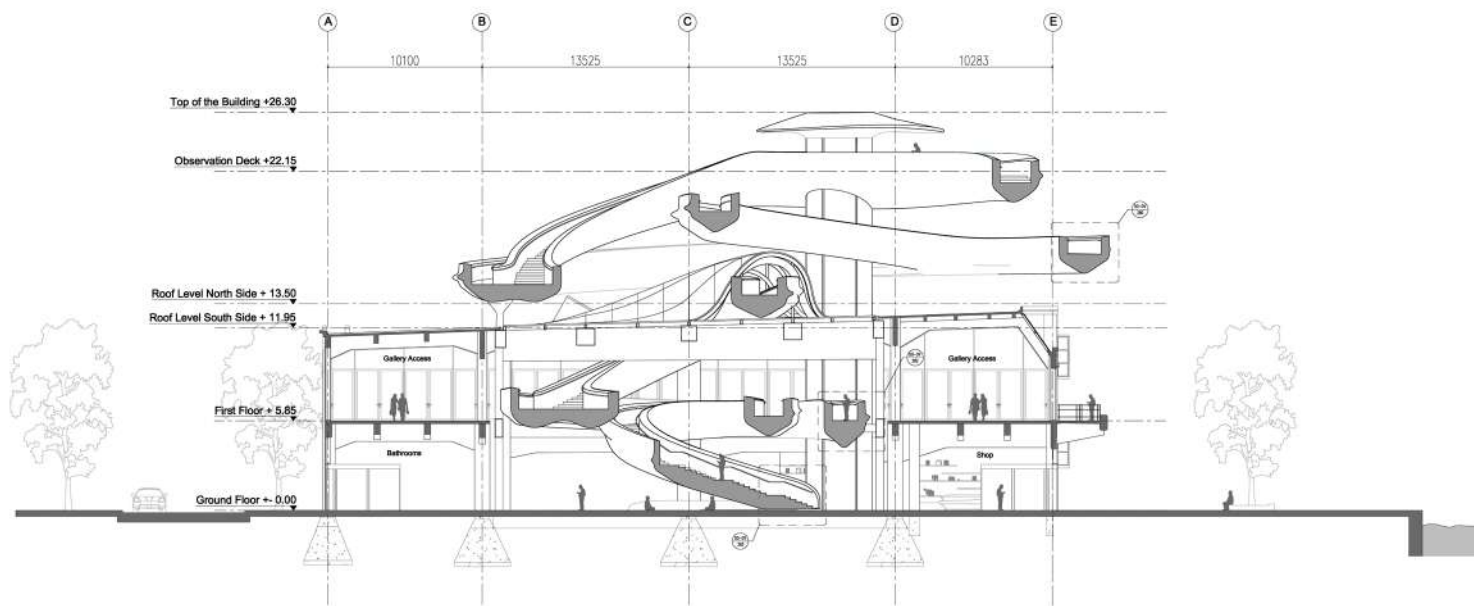


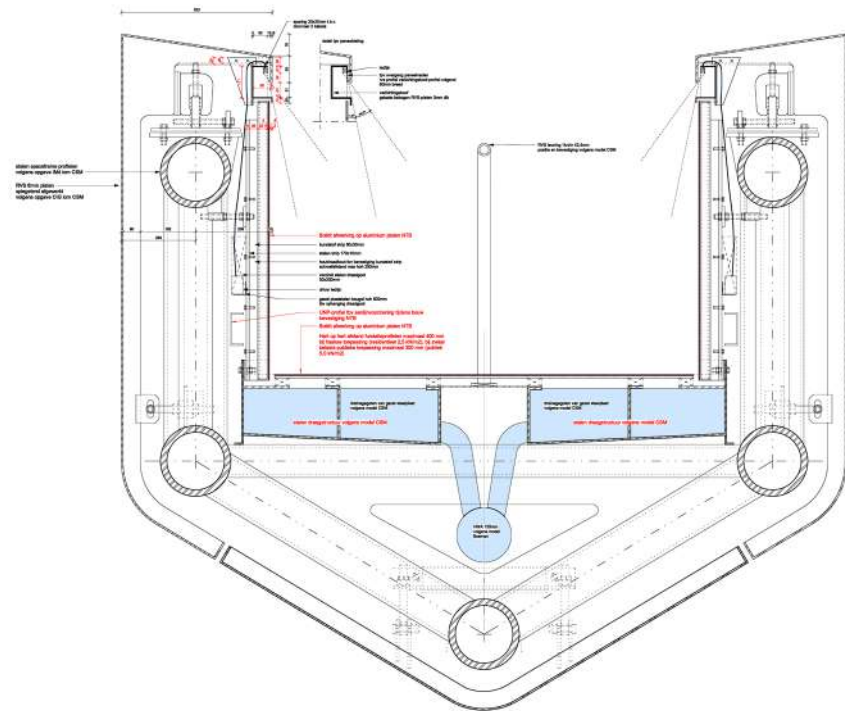












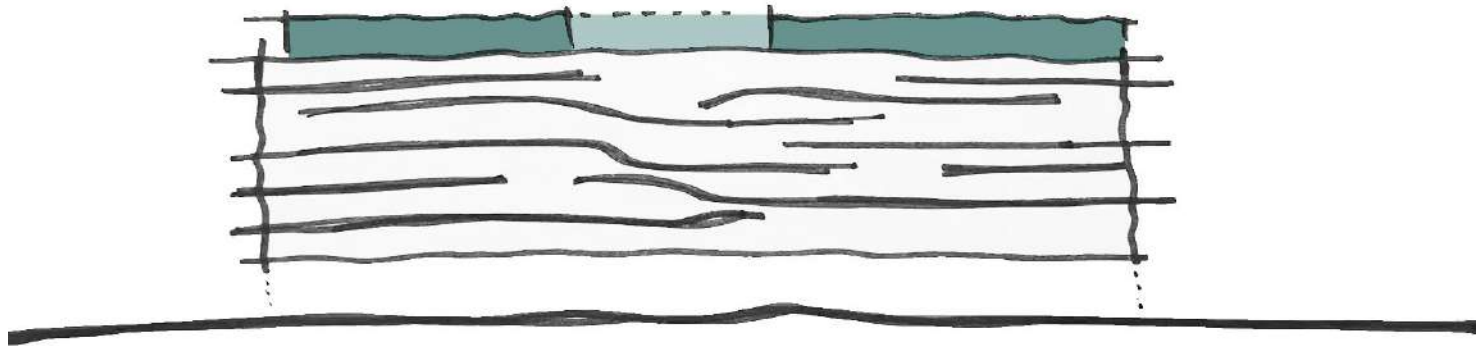




# MoLo | Mobility and Logistic hub

Design Proposal

Milano, Italy





# MoLo | Mobility and Logistic hub

Design Proposal

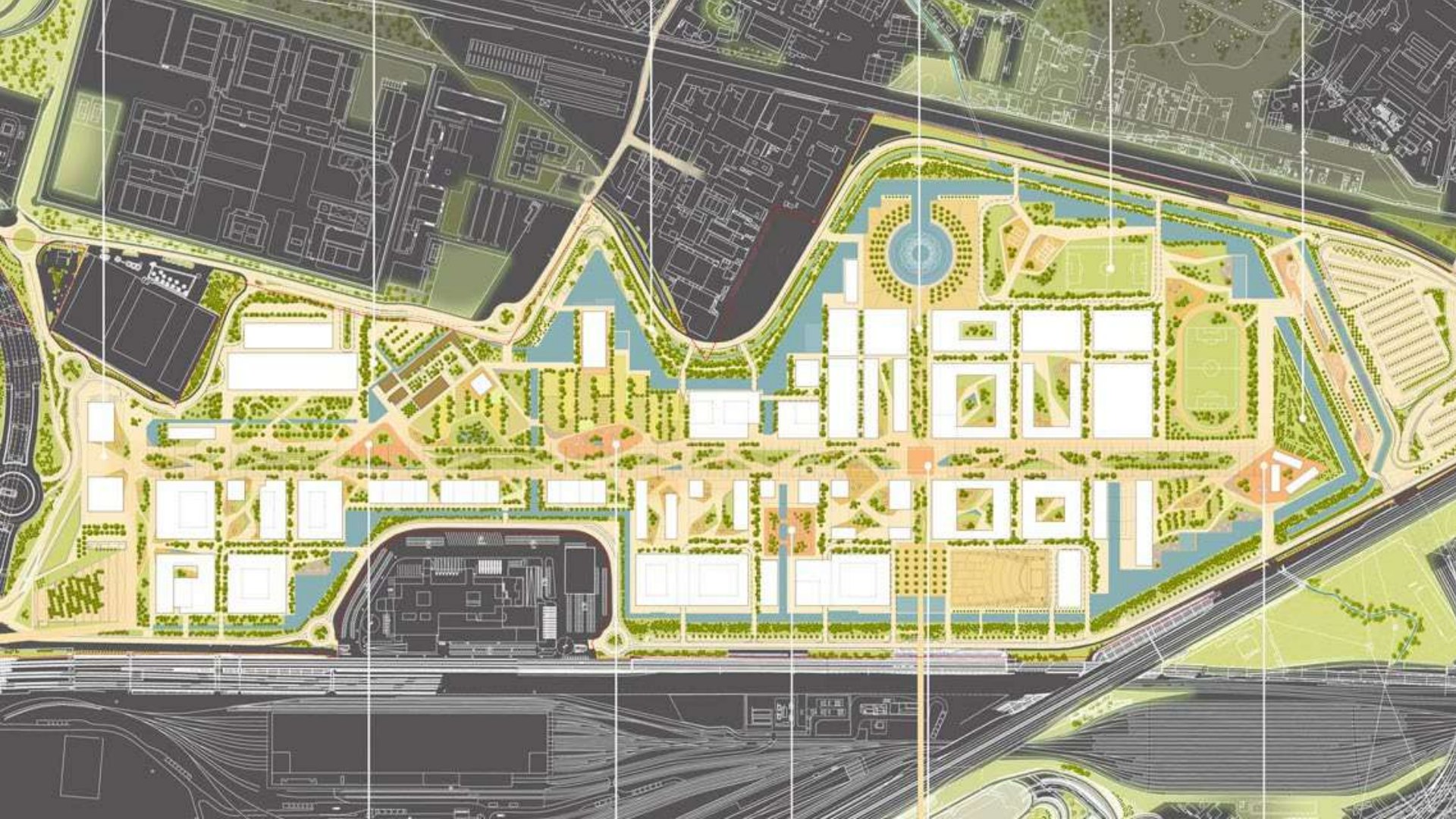
Milano, Italy



























**mad**

ARCHITECTS

THANK YOU!