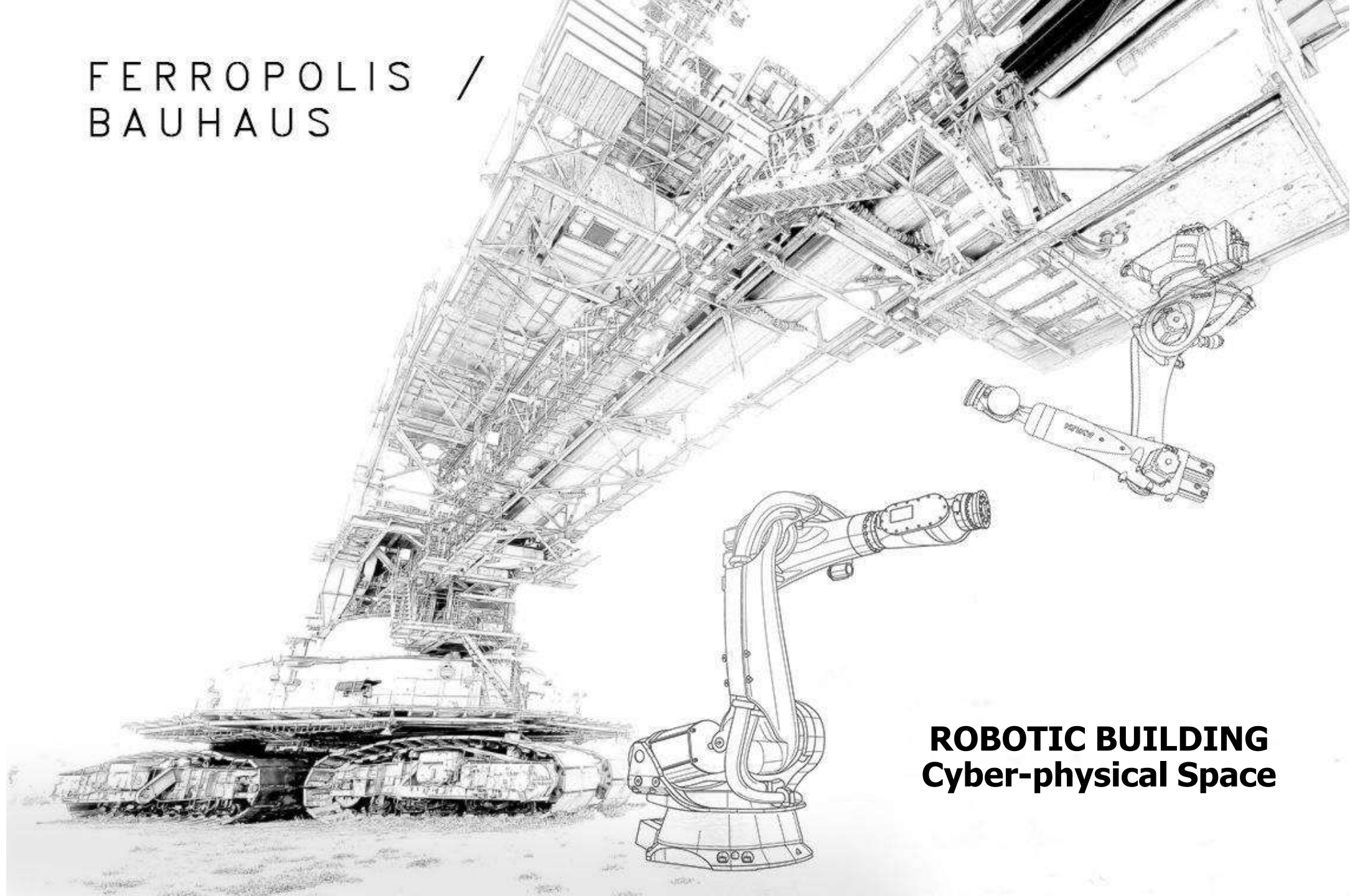


FERROPOLIS / BAUHAUS



ROBOTIC BUILDING
Cyber-physical Space

Dessau

- pop. approx. 77,000.
- The population has decreased to 20%.a reduction in the population by almost 50 % is expected in the near future.
- As a result of that, extensive vacant and wasted lands are not treated properly with the previous planning and traditional ideas.
- the city aims to stabilize the urban city core and re-brand the Bauhaus culture.



32 minutes 25km

PROPOSED SITES

18km

9km



BAUHAUS MUSEUM

SITE 1

100

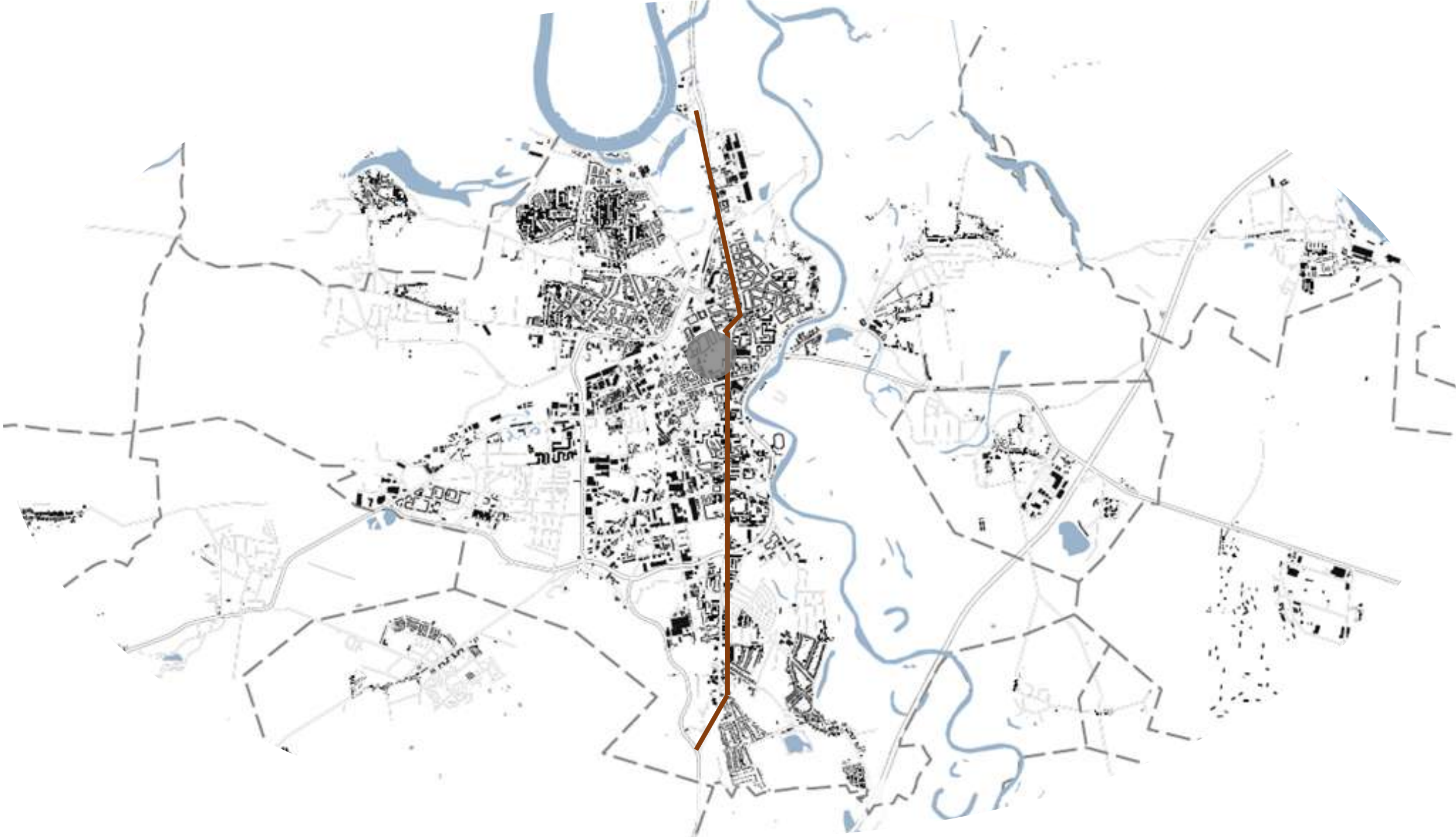
**jahre
bauhaus**

Bauhaus Museum – 1919 - 2019



- **Architect:** Gonzales Hinz Zabala.
- The Bauhaus features implemented i.e. the curtain wall, the 2-storey bridge and the overall impression of transparency, lightness and the plane surfaces.
- A Monumental, monolithic, black box under a shell of glass, can be described as a “low resolution”.





DESSAU

Proposed site

Legend

- site dessau



Google Earth

1000 ft

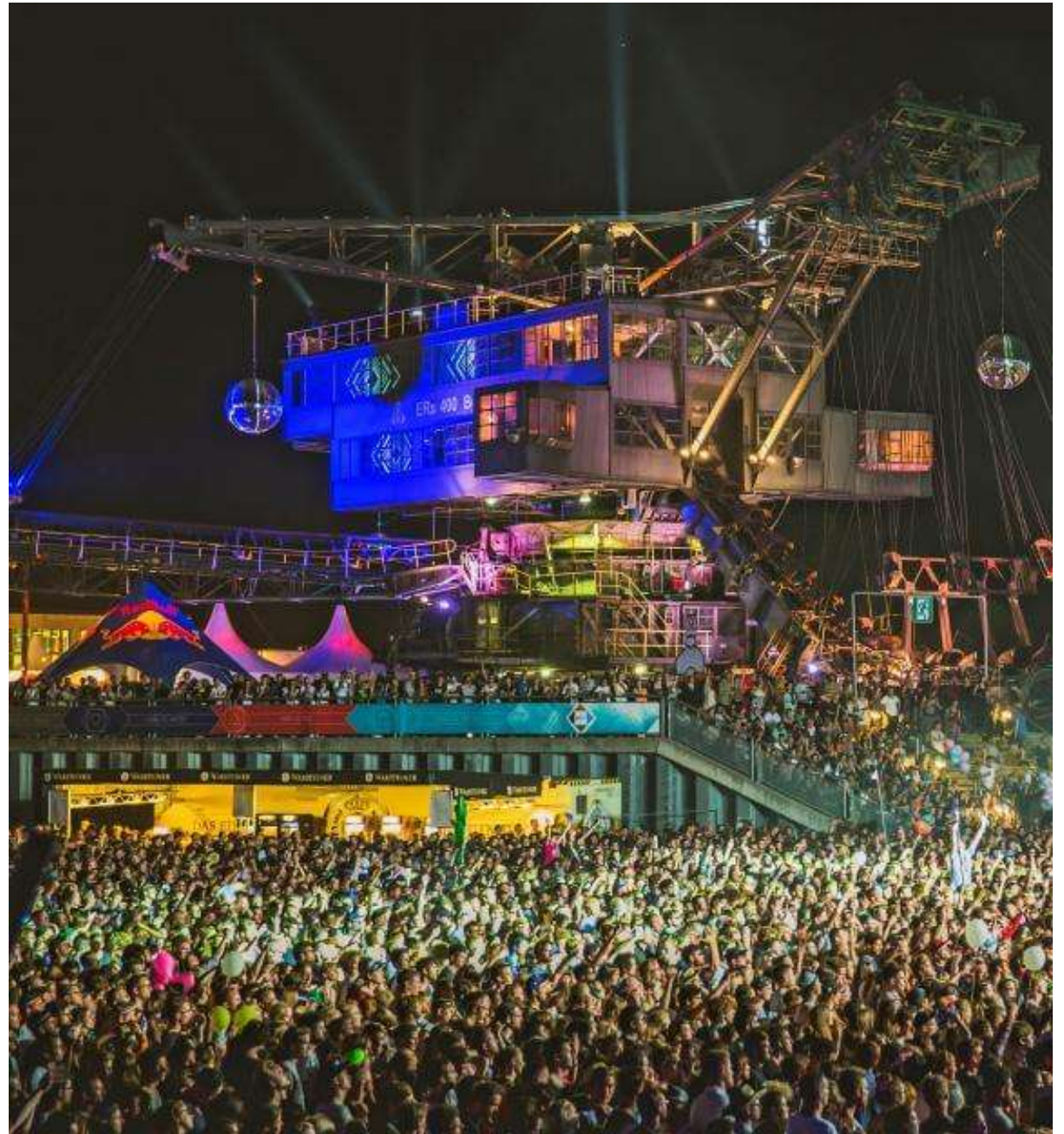




Ferropolis / MELT Festival

SITE 2









FERROPOLIS - City of Iron



S.w.o.t.

Strength

Weakness

Opportunities

Threats

FERROPOLIS



BAUHAUS NEW MUSEUM



FERROPOLIS

S t r e n g t h

- Spectacular view “Landscape”
- Natural Scenery
- Privacy
- Known for several reasons
- It contains a total of giant machines which represent the industrial side of this country

BAUHAUS NEW MUSEUM

- Center of Dessau city
- Reachable
- Multiple facilities
 1. Dessau center
 2. Rathaus center
 3. Hauptbahnhof
- It will be a place that reflect the history of Bauhaus and the Greatest of these landmark of art

FERROPOLIS



Arena

The 25,000-person arena has also developed international appeal in recent years. The tension between music, light, nature and the steel relics of the former industrial region creates a unique atmosphere.

The arena offers perfect acoustics in an exciting setting. Every year tens of thousands attend concerts, festivals and events in FERROPOLIS.

The arena was inaugurated on 16 July 2000 as part of the EXPO by a concert by Mikis Theodorakis and light installations by Gerd Hof.

**CONSTRUCTION YEAR**

1984

MANUFACTURER

TAKRAF (Heavy Machinery
Lauchhammer)

MASS

1718 tons

DIMENSIONS

Height 31 m, length 74.5 m

LOCATIONS

Goitzsche, open pit Golpa Nord, TB
Gröbern

CREW

3 - 5

BIG WHEEL

[1521 SRs 1300]

The junior under the mining equipment. It looks almost like a lighthouse on the eastern edge of the island. The most striking feature is the huge, 8.4 meter high conveyor wheel, which also serves as a name giver.

**CONSTRUCTION YEAR**

1962

MANUFACTURER

VEB conveyor systems Köthen

MASS

1250 tons

DIMENSIONS

Height 27.6 m, length 79.2 m

LOCATIONS

Open pit Schlabendorf-Süd, open-
cast Golpa-Nord

CREW

3 - 5

MAD MAX

[651 Is 1120]

This excavator is equipped with forty huge buckets. With them, he used to be able to produce 1920 cubic meters of earth per hour. MAD MAX limits the arena to the lake side and provides an impressive backdrop for concerts.



CONSTRUCTION YEAR
1941

MANUFACTURER
Maschinenfabrik Buckau /
Magdeburg R. Wolf

MASS
792 tons

LOCATIONS
Open pit Golpa II, open pit
Muldenstein, open pit Golpa-Nord,
opencast mining Gröbern

CREW
3 - 5

MOSQUITO [197 ERs 400]

He is considered the compact among the excavators. With now 68 years, he is the oldie of FERROPOLIS, but the heavy equipment is still fully functional.



CONSTRUCTION YEAR
1958

MANUFACTURER
VEB conveyor systems Köthen

MASS
1980 tons

DIMENSIONS
Height 30 m, length 125 m, length
boom 60 m

LOCATIONS
Open pit Muldenstein, open pit
Golpa-Nord

CREW
6 - 8

GEMINI [1022 A2s 2240]

The heaviest and most powerful of the five excavators consists of two main parts with a pick-up and drop-off unit. Gemini is open to visitors and offers both interesting views and charming views.

BAUHAUS NEW MUSEUM



FERROPOLIS

- After the distance, as it is about 25 km away from the center of the city and the diversity of transport means to the place
- In the music festivals the maximum capacity is 25,000 people, making the process of increasing the number difficult
- The presence of giant machines in the place is specific to the location of the theater and its difficulty in re-dividing the place
- Lack of basic services such as :shops, hospitals... etc.

Weakness

BAUHAUS NEW MUSEUM

- The size of the place is so small that it is difficult to organize large events
- Its occurrence in the middle of the city can create a state of confusion on the streets surrounding it
- Lack of location for camping features such as can be found in Ferropolis

FERROPOLIS

- The nature of the place makes it a variety of activities that can be easily established in this place such as sports, musical and cultural activities
- It is possible to take advantage of the annual festival which is held annually from several areas of the city of Dessau economically and culturally and change the Bauhaus idea from the classic framework to the modern framework

Opportunities

BAUHAUS NEW MUSEUM

- Reflects the history of the great Bauhaus and is the destination of artists in their various arts
- Revitalize the business movement by setting up events that bring a number of visitors to the site of the new museum

FERROPOLIS

T hreats


- Difficult to reach the place due to the distance of the place from the center of the city
- The lack of attendance at the festival because of the lack of a popular difference
- Climate changes such as rain, which determine the nature of materials used in the construction of the theater
- Security risks for the existence of the place in an isolated area

BAUHAUS NEW MUSEUM

- The theater that is intended to hold the visitors to the museum should be blocked
- That causes the local residents to disturb the city
- Visitors have a different interest

Precedent Study 1

OMS Stage / 5468796 Architecture



Client: Exchange District BIZ + City of Winnipeg
Status: complete
Year: Phase 1 - 2010 | Phase 2 - 2013
Budget: \$1M
Project Type: public performance venue
Size: 28'x28'x28'
Select Awards: 2015 Premier's Design Award of Excellence
2014 Governor General's Medal in Arch
2014 Mies Crown Hall Prize | Shortlist
2011 RAIC Award of Excellence
2010 AR Award for Emerging Architecture

'The Cube' is an open-air performance venue situated in Old Market Square, an iconic green space and summer festival hub in Winnipeg's historic Exchange District. In 2009, 5468796 won an invited competition with a multi-functional design that throws out the old bandshell concept on the grounds that when a conventional stage is not in use it looks forlorn - especially through the city's long winters.

A concrete structure enclosed by a flexible metal membrane, The Cube functions as a multipurpose environment. The membrane is composed of 20,000 identical hollow aluminum pieces strung together on aircraft cables. The orientation of the pieces alternates, forming a malleable and shimmering curtain that can stand like a wall, be pulled in to reveal the performance space, or function as a light-refracting surface - allowing it to morph into a projection screen, concert venue, shelter or sculptural object. When the stage is closed, the membrane's diamond extrusions capture and refract internal lighting or projections to their outer surface, creating a unique pixel matrix for artists to appropriate at will.

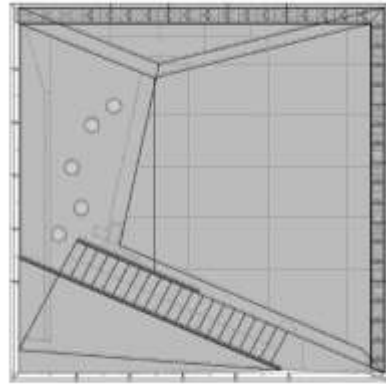
*All photographs by **James Brittain Photography** unless noted.



BEACON



FRONT STAGE



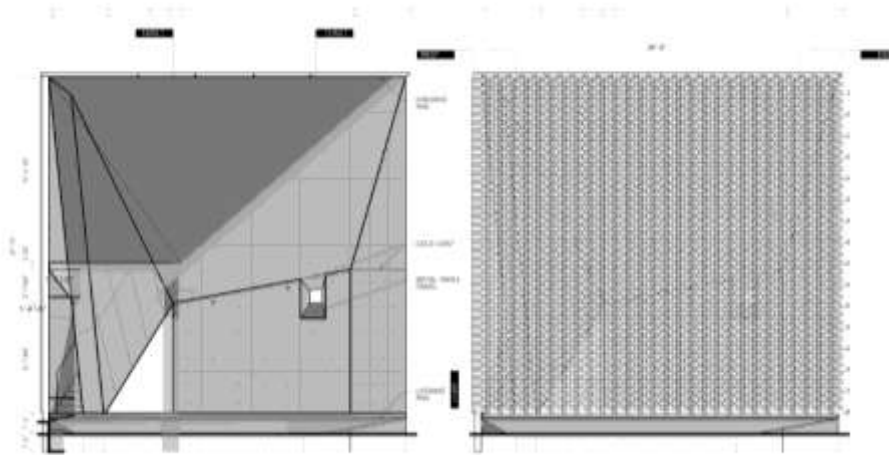
FLOOR PLAN



EXHIBITION SPACE



INTERIOR STAGE



DEPTH ELEVATION W/O SCREEN

DEPTH ELEVATION WITH SCREEN



ROOFTOP STAGE



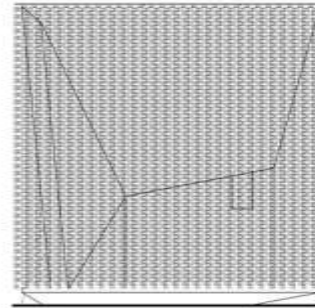
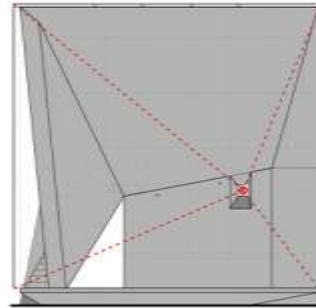
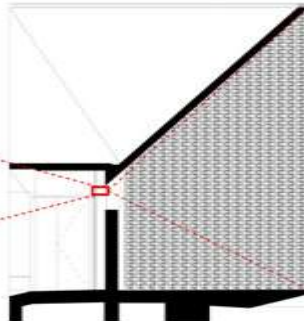
SIDE STAGE



PROJECTION

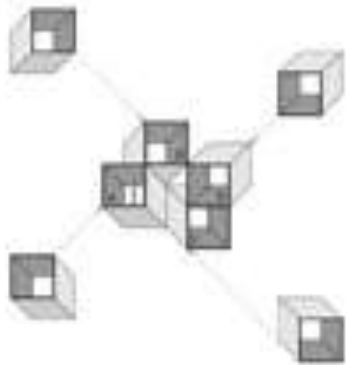


HIBERNATING...

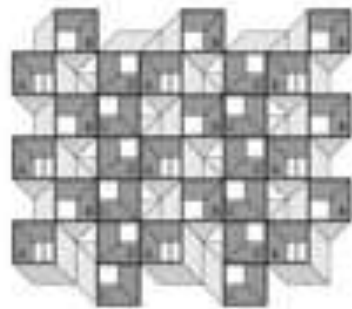




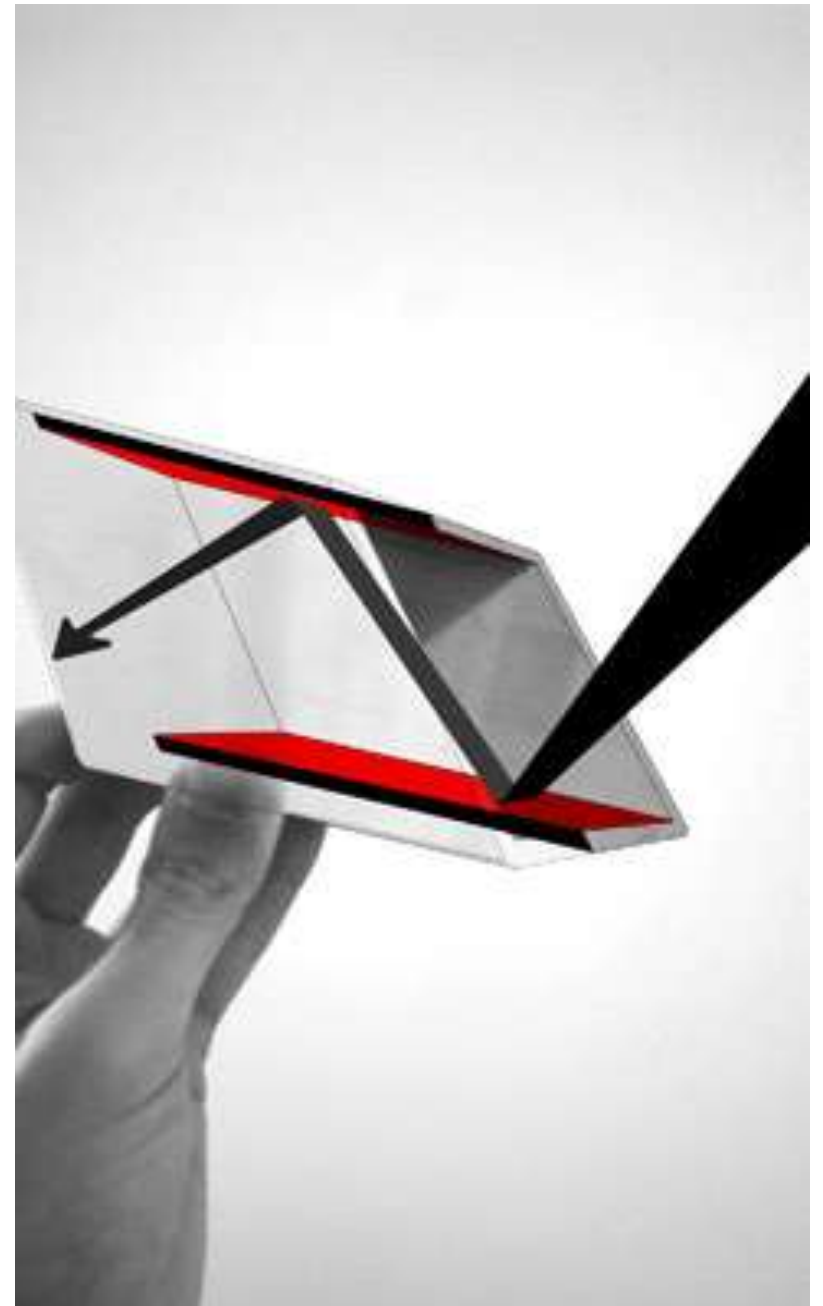
ALUMINUM EXTRUSION

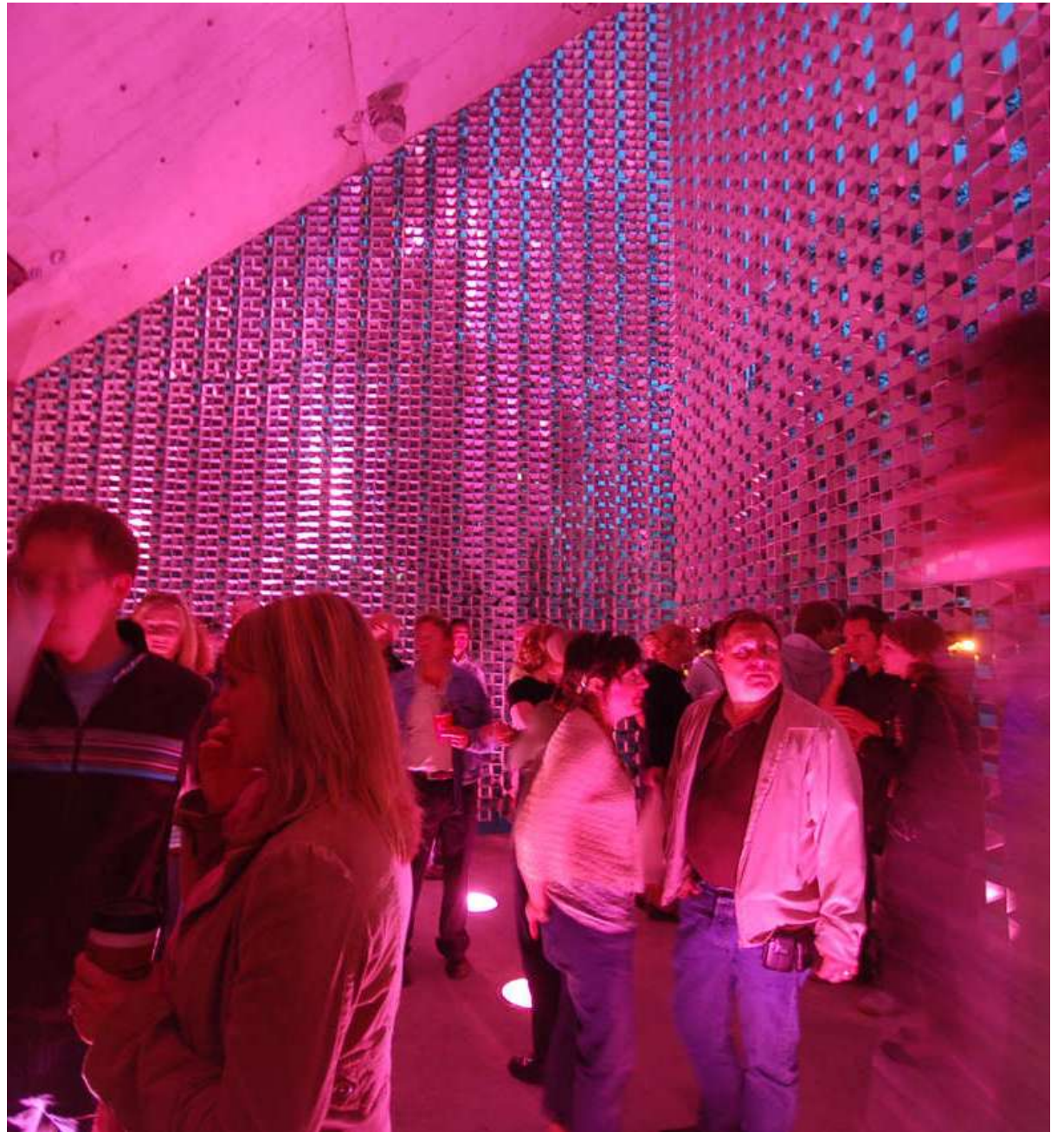


4-PIECE COMPONENT



REPEATED PATTERN



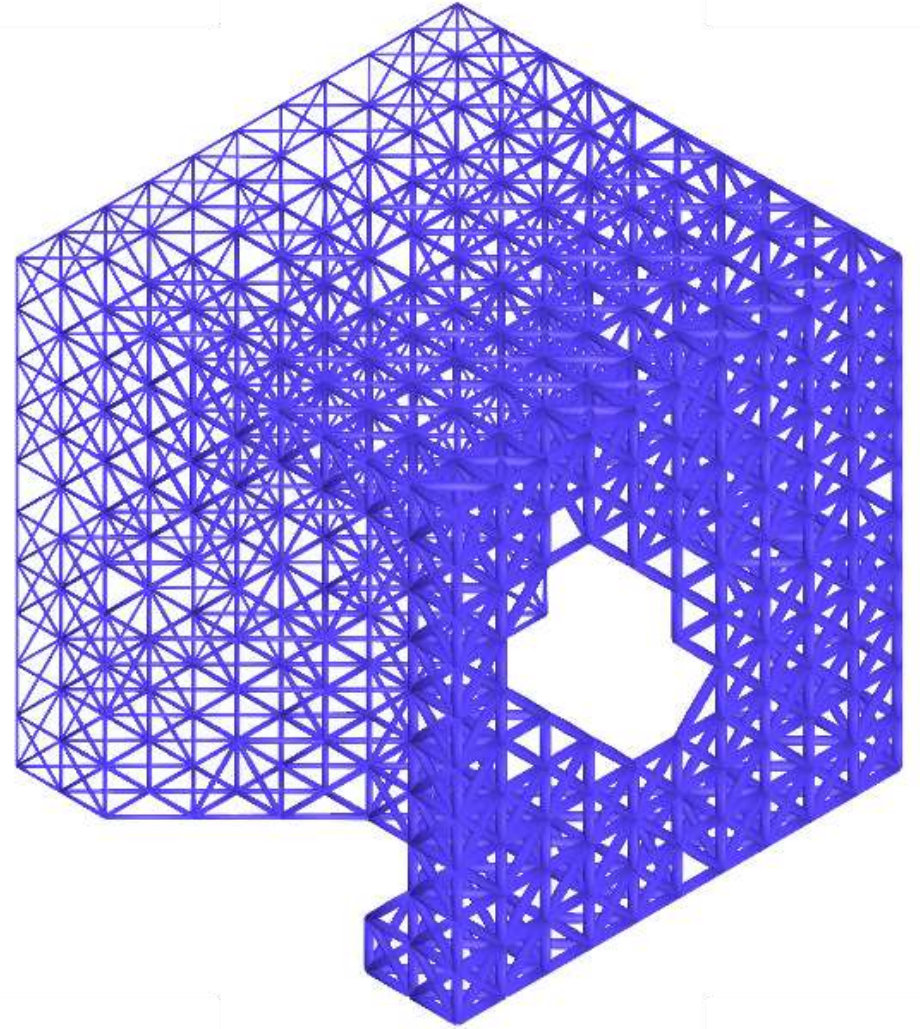
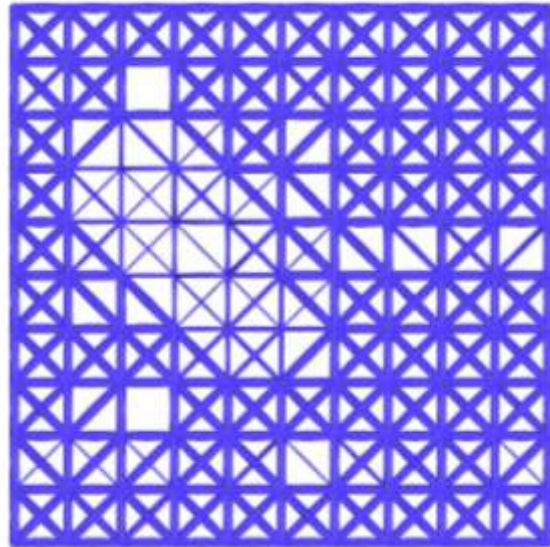
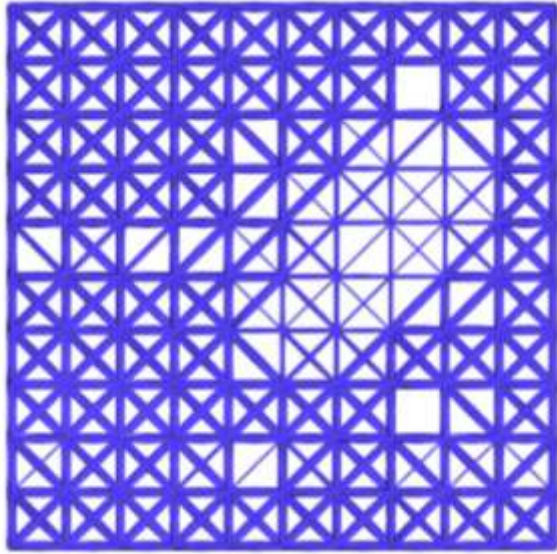
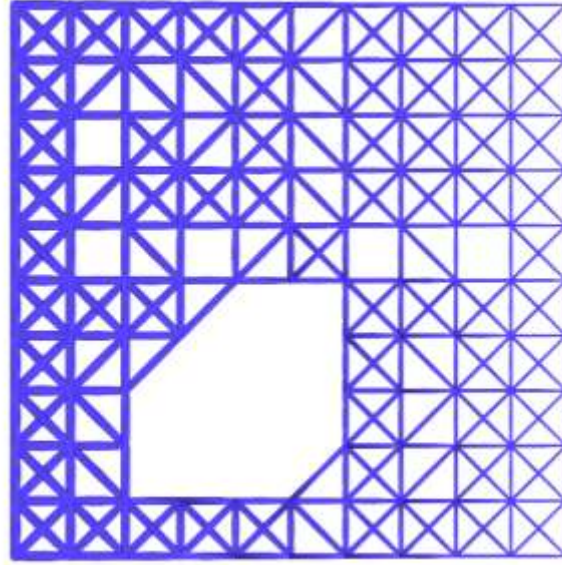
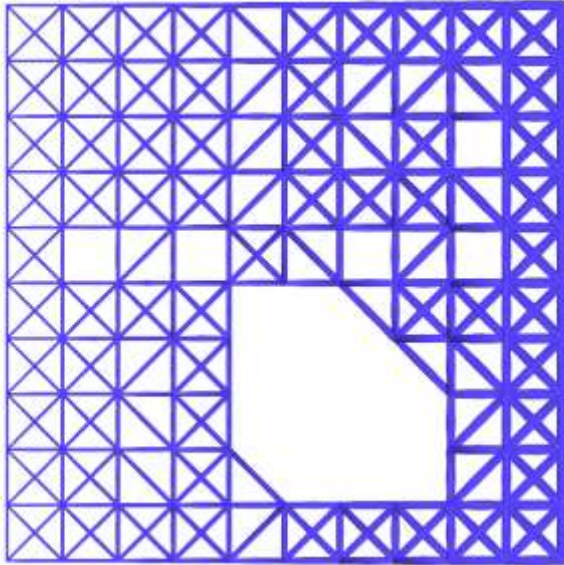


Performance Stage / Pavilion

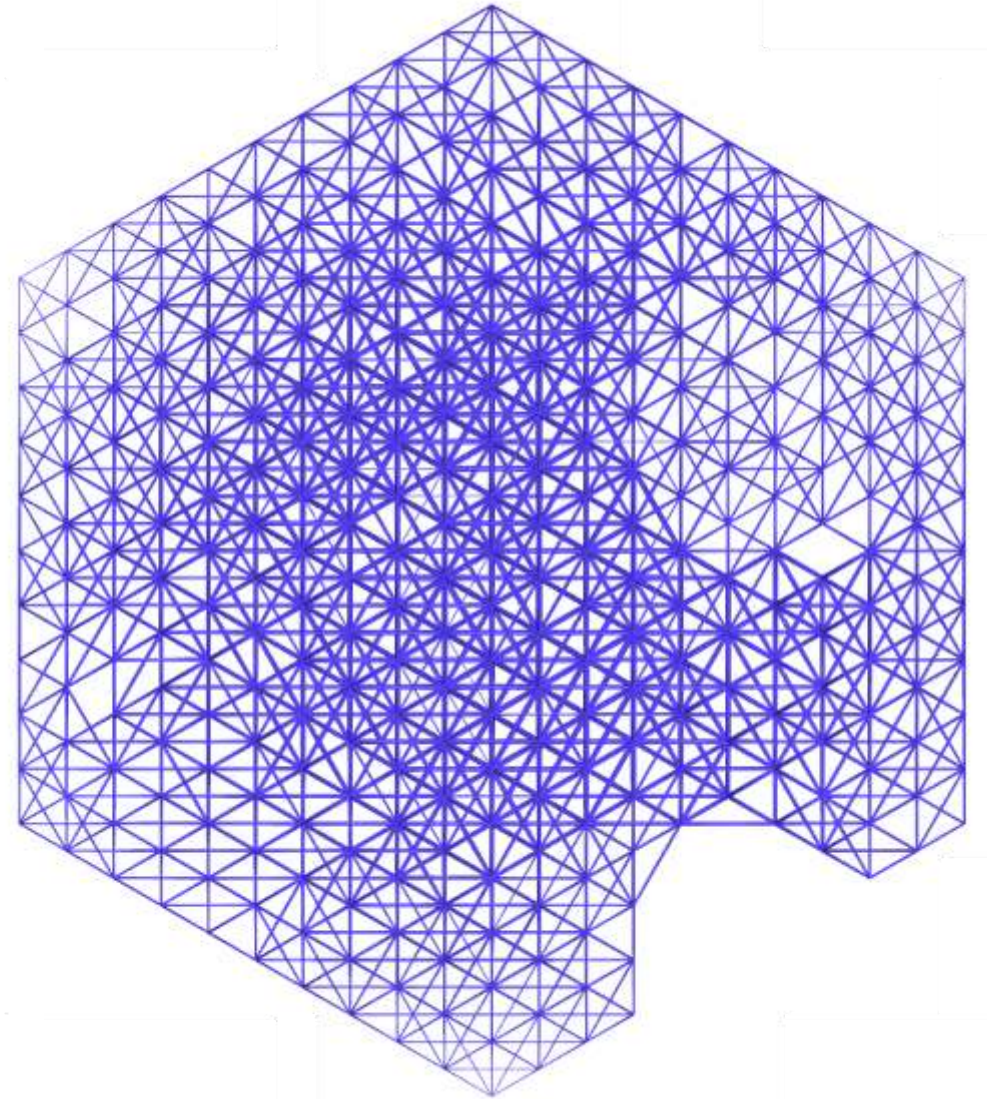
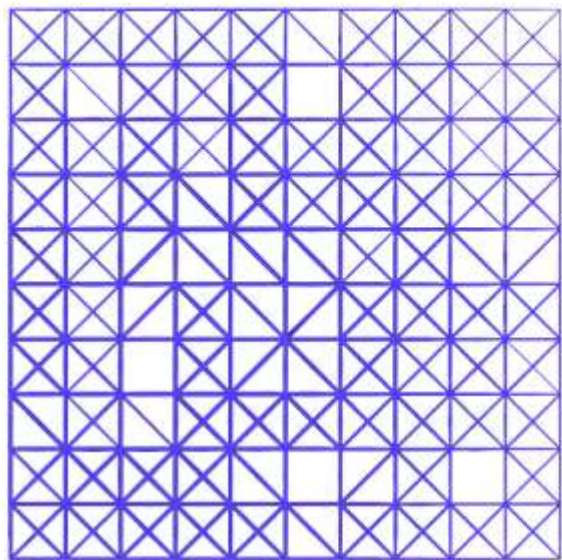
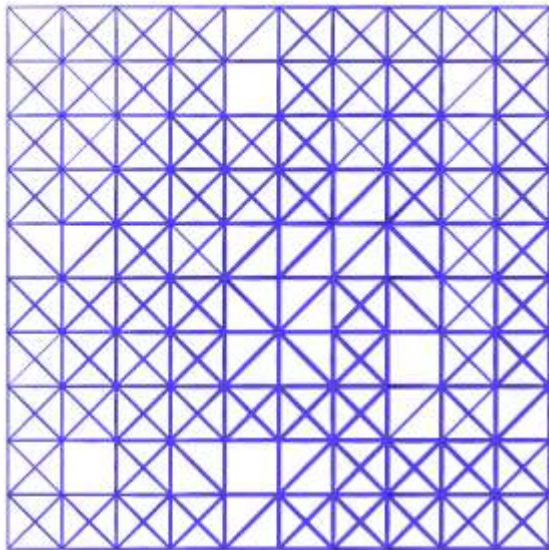
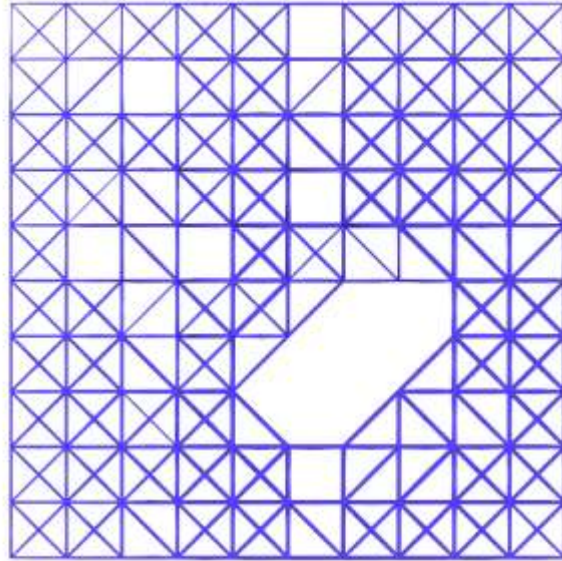
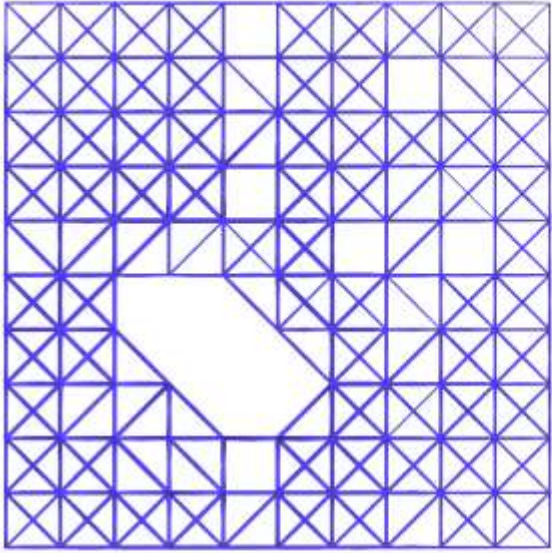
Keywords

- Transferable
- Adaptive
- Lightweight
- Dynamic
- Transparent

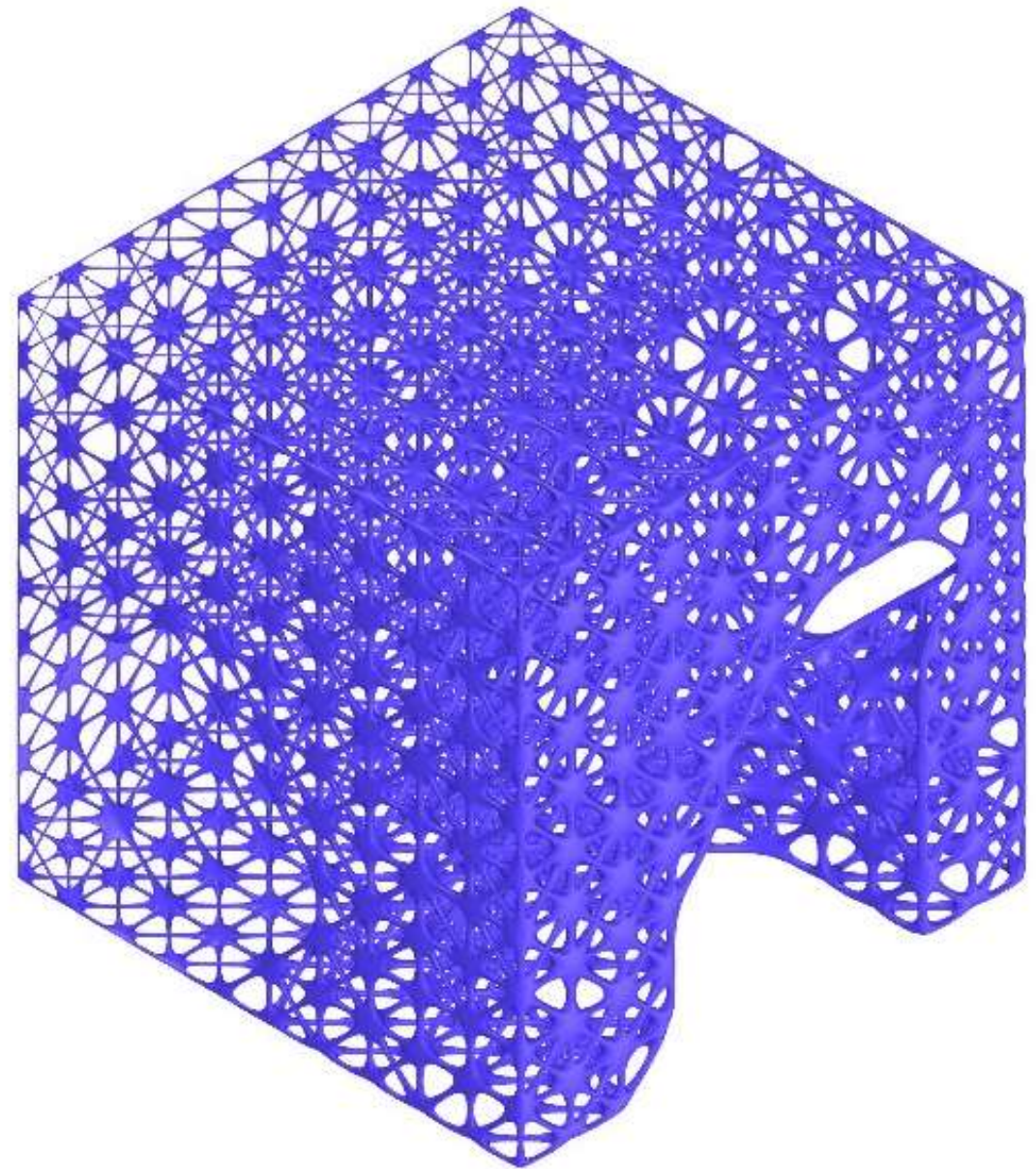
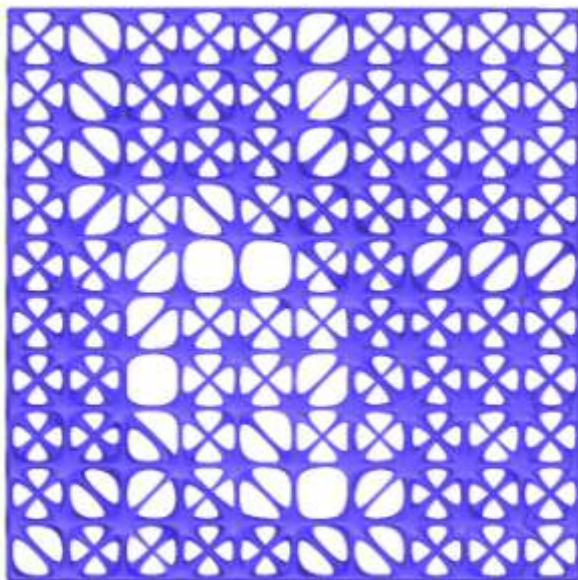
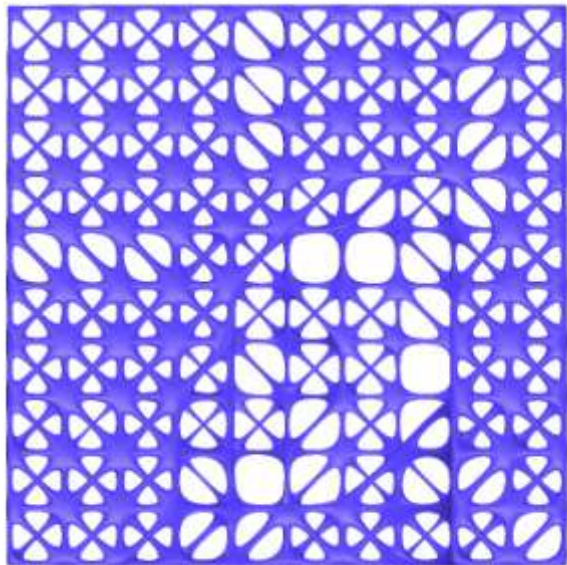
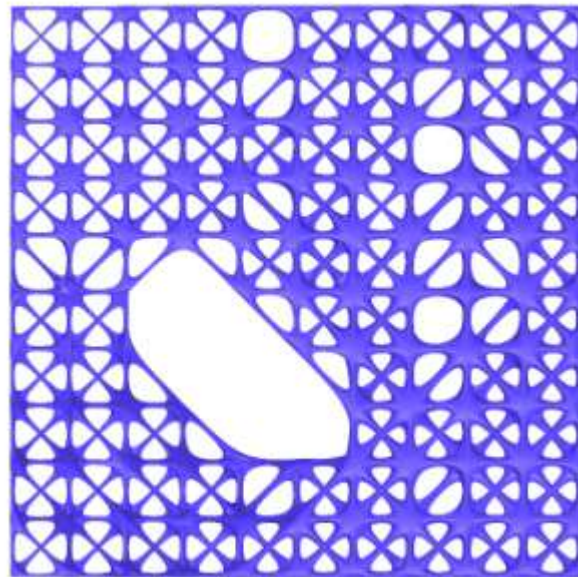
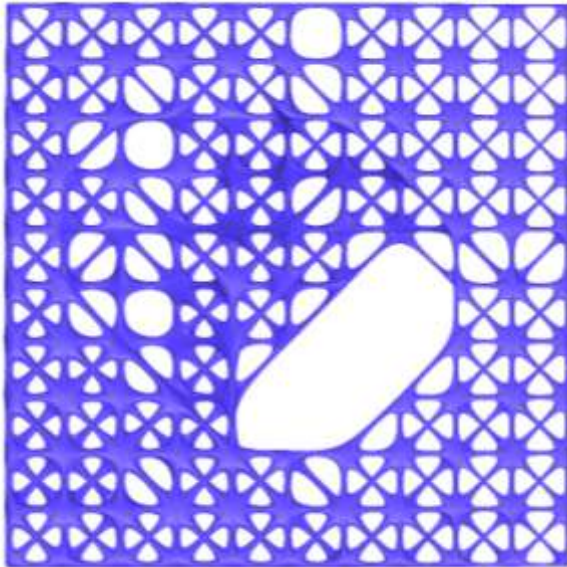
Conceptual Diagrammatic 1



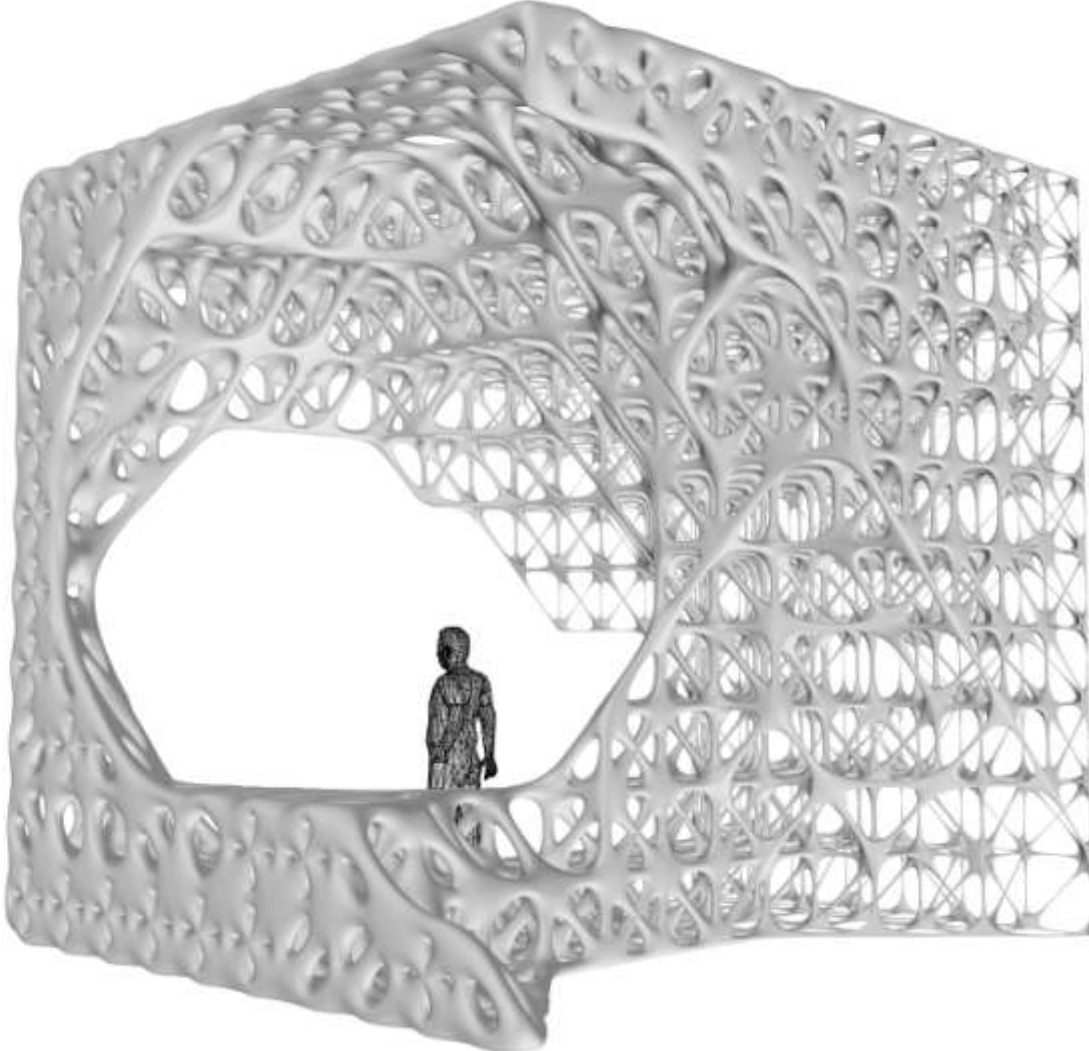
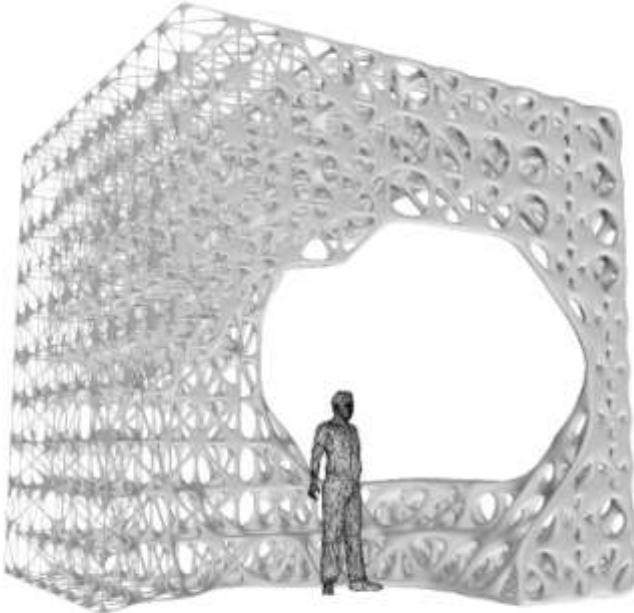
Conceptual Diagrammatic 2

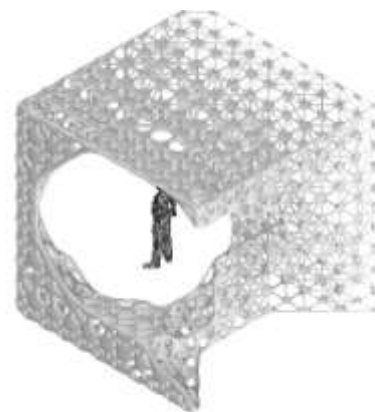
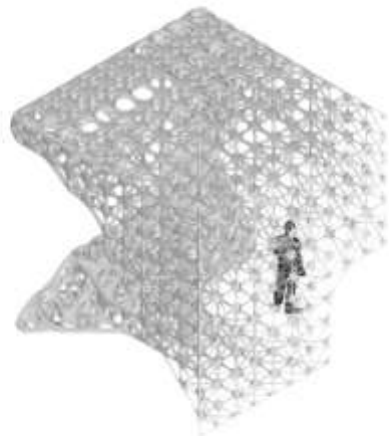
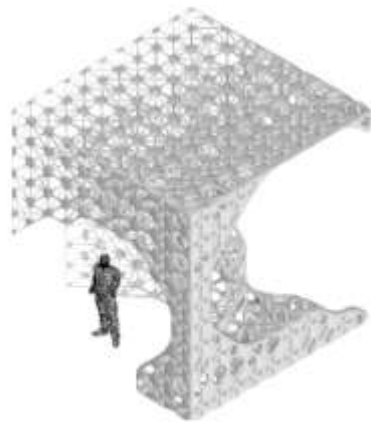
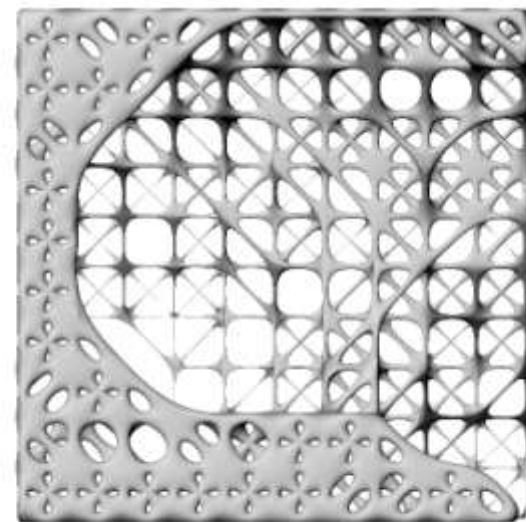
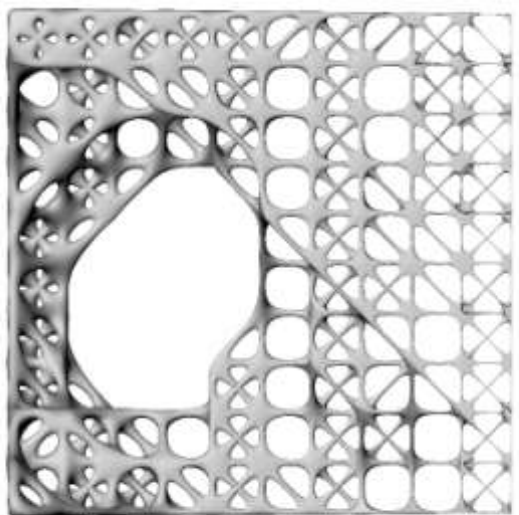
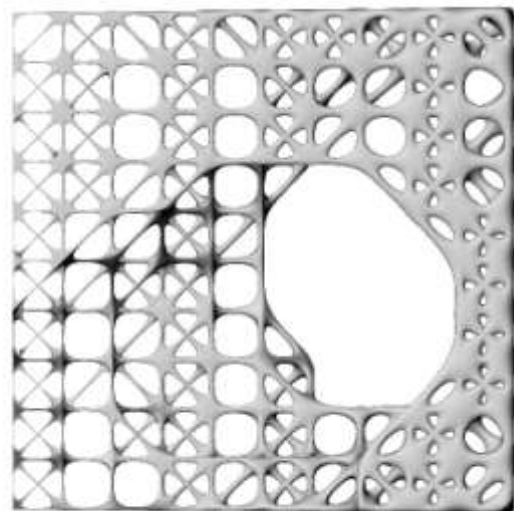
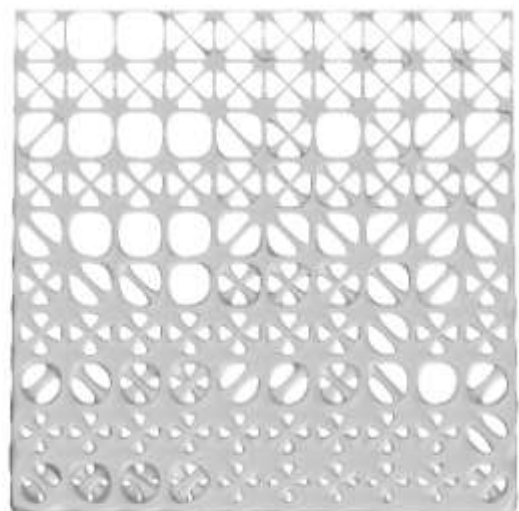


Conceptual Diagrammatic 3



Conceptual Diagrammatic 4





Precedent Study 2

ATELIER ROBOTIQ / ICD ITKE

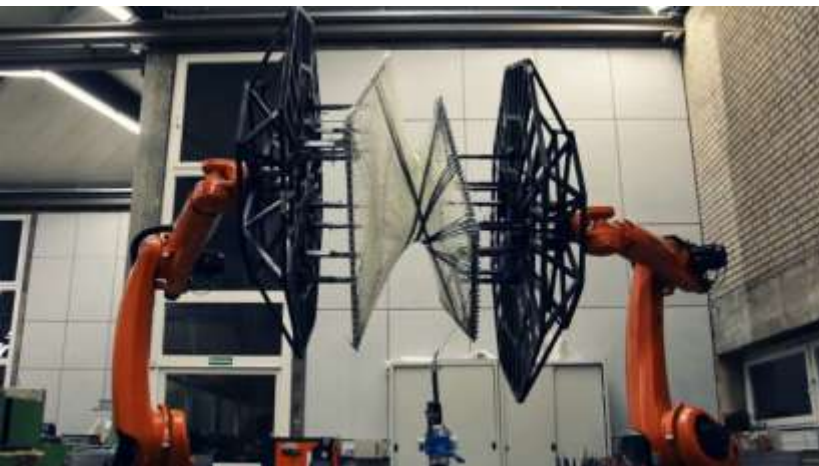
ATELIER ROBOTIQ

The Fiber Pattern Lamps are a series of lights following from our experiments with robotic fiber weaving techniques. The technology is based on an Aerospace technology for making lightweight composite parts, such as rocket cases or fuel tanks. Seeing the beautiful geometrical fiber patterns on these industrial products inspired us to use these patterns in lighting and furniture designs. The first product we designed was the UFO, which is so light and open that it almost seems to float in the air. Inspired by its lightness we designed a special edition for the Salone in Milan 2016. This design is made with an Iridescent Black fiber, which has different colors from different view angles, mimicked from the Iridescent wings of the Dragon Fly. For the Salone 2017 we released a new design, the 'Out of Order'. The concept behind the Out of Order is that robots are always seen as the perfect workers, who follow our instructions. But what would happen if the robot at some day shows human like behavior and drifts away while working.....The fiber pattern of the Out of Order visualizes this transition showing a regular pattern at first, which slowly becomes more and more irregular until its completely out of order.



ITKE /ICD

The pavilion is the outcome of four years of ground-breaking research on the integration of architecture, engineering and biomimicry principles. The "Elytra Filament Pavilion's" components have been fabricated by a robot at the University of Stuttgart. The 200m² structure is inspired by lightweight construction principles found in nature – the fibrous structures of the forewing shells of flying beetles known as elytra. Experimental architect Achim Menges together with Moritz Dörstelmann, structural engineer Jan Knippers and climate engineer Thomas Auer have pioneered a unique robotic fabrication technique developed by the University of Stuttgart's Institute for Computational Design (ICD) and the Institute of Building Structures and Structural Design (ITKE). This technique, developed by the team over several years of research, involves a novel way of winding composite materials. The innovative winding method has been designed to harness carbon fibres and give them strength as woven structural components. A series of these individual cell-like modules has been used to create the pavilion's distinctive shape, integrating the processes of design and engineering. The project explores the impact of emerging computational and robotic technologies on these disciplines.

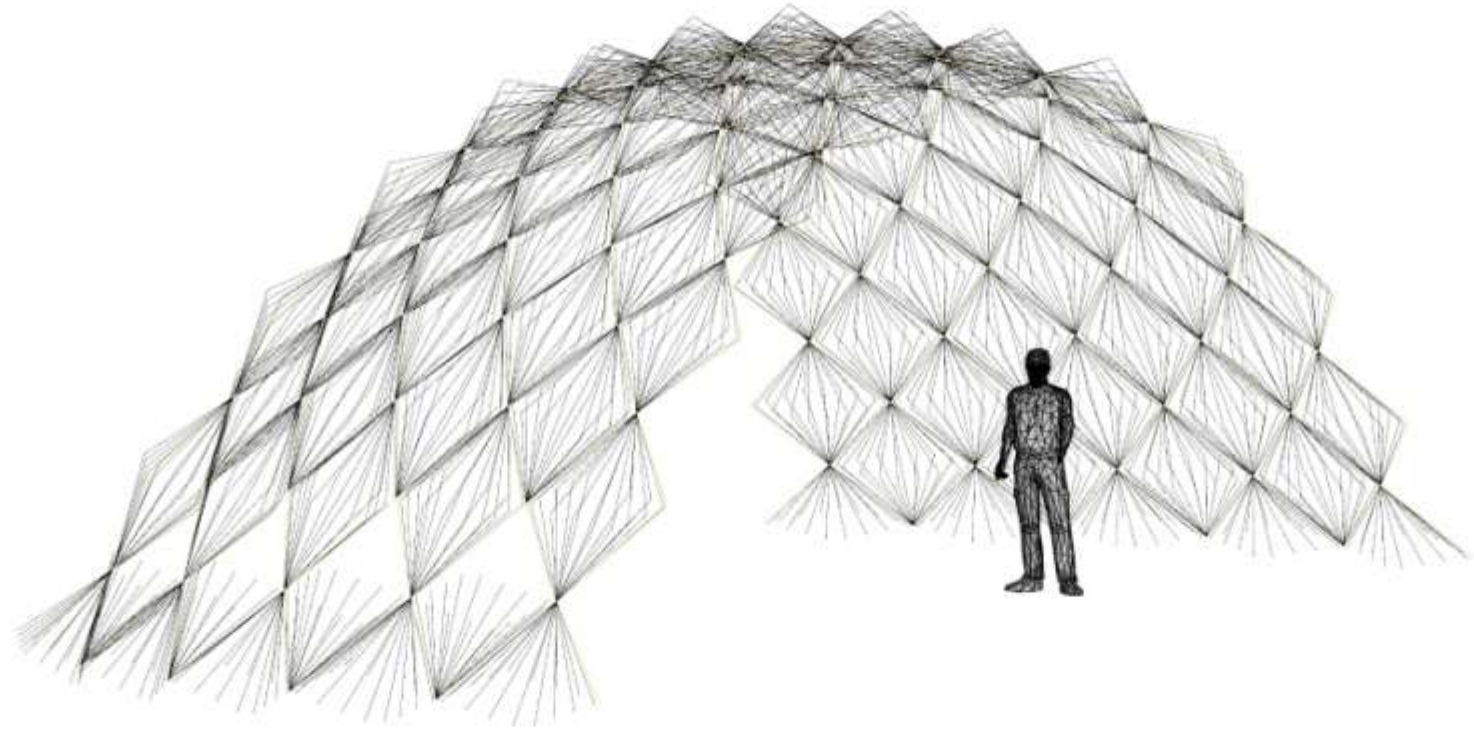


Woven Performance Stage / Pavilion

Keywords

- Transferable
- Lightweight
- Dynamic
- Transparent

Woven Nest





1



2



3

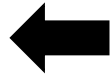


4

Fabrication Logic

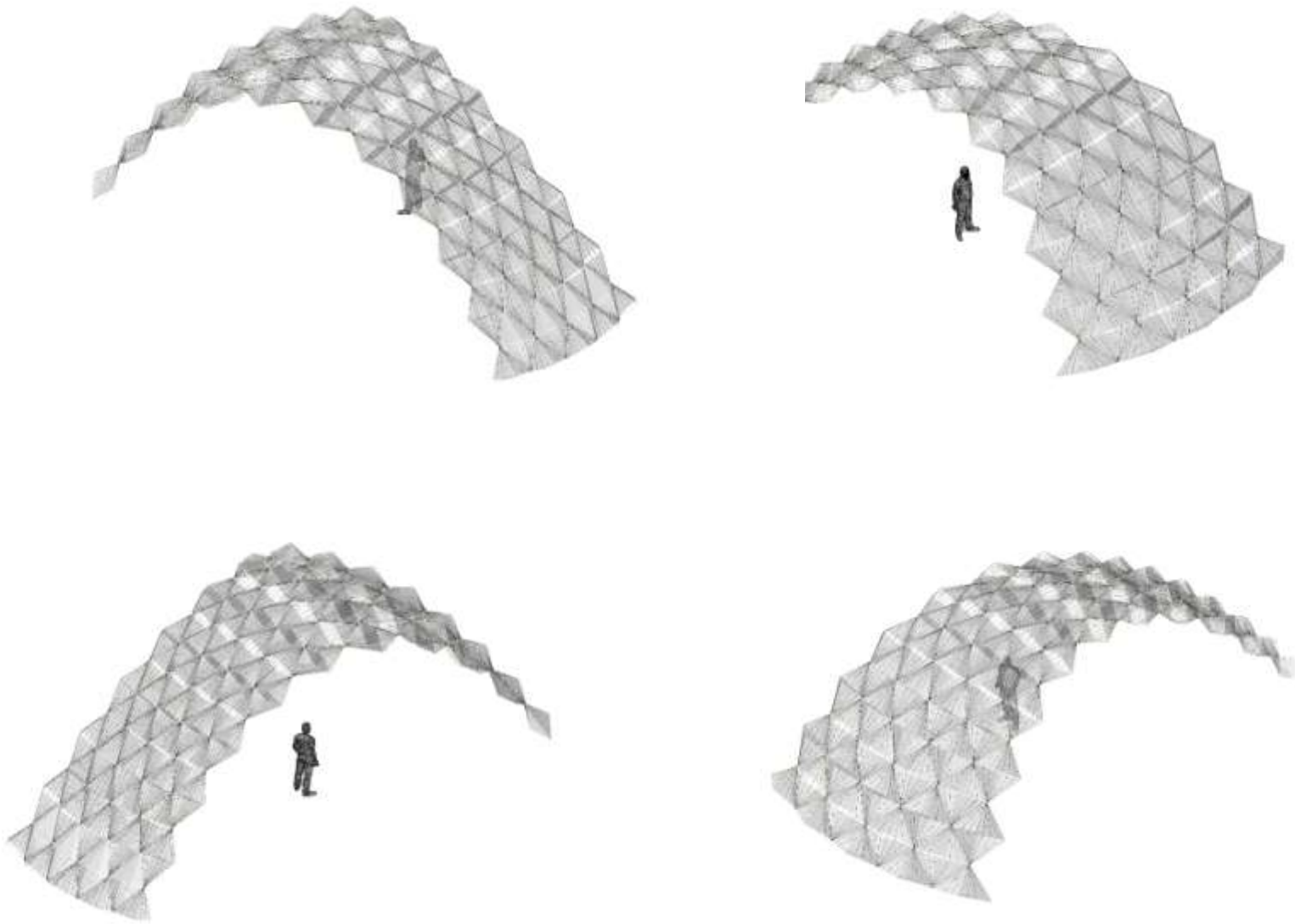


Woven Material on surface



Hot Wire cut EPS

Isometrics



Elevations

