

# P5 INFLATABLE DIGITAL PLAYGROUND



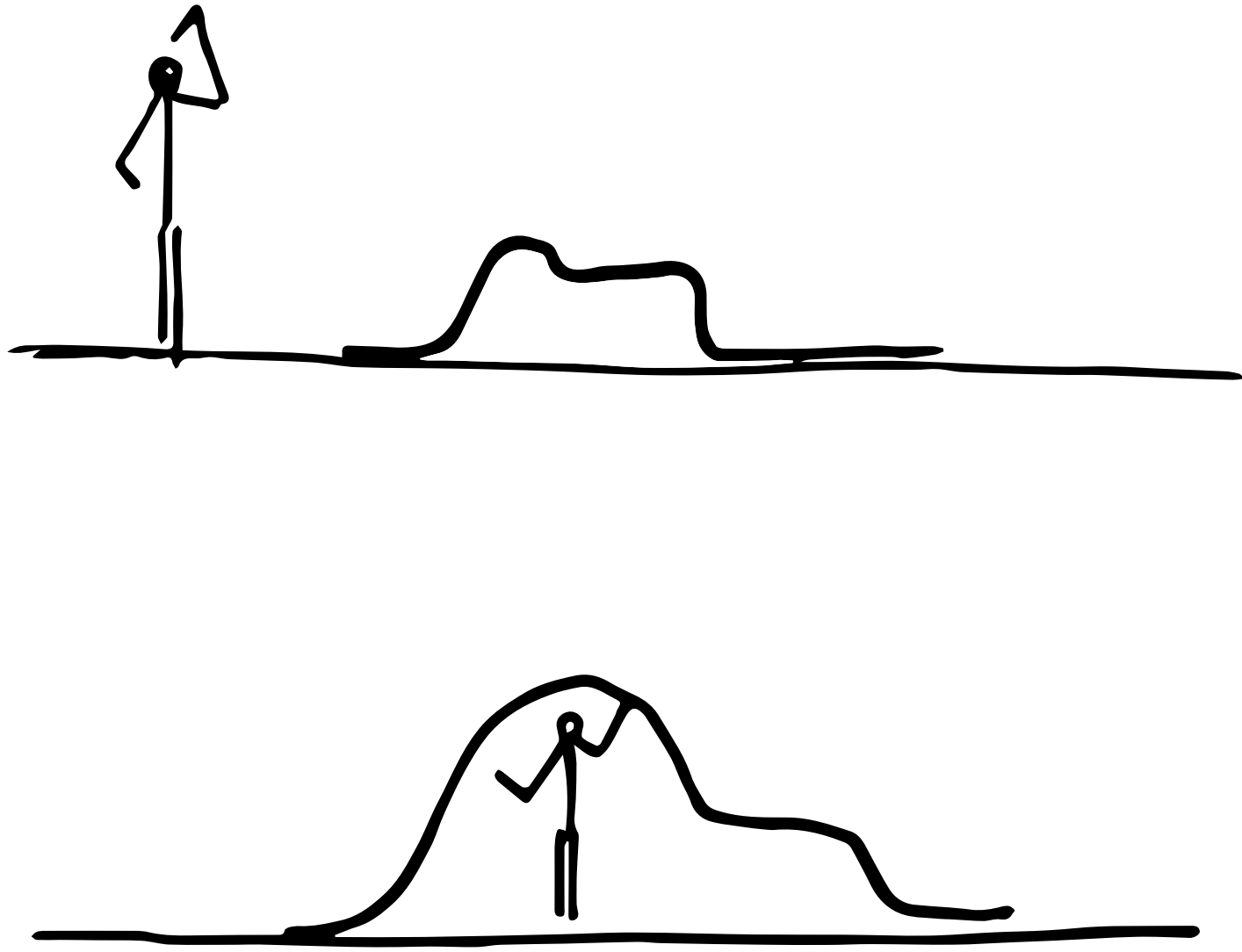


# Digital and evolutionary architecture

# Bits and bytes of evolutionary architecture

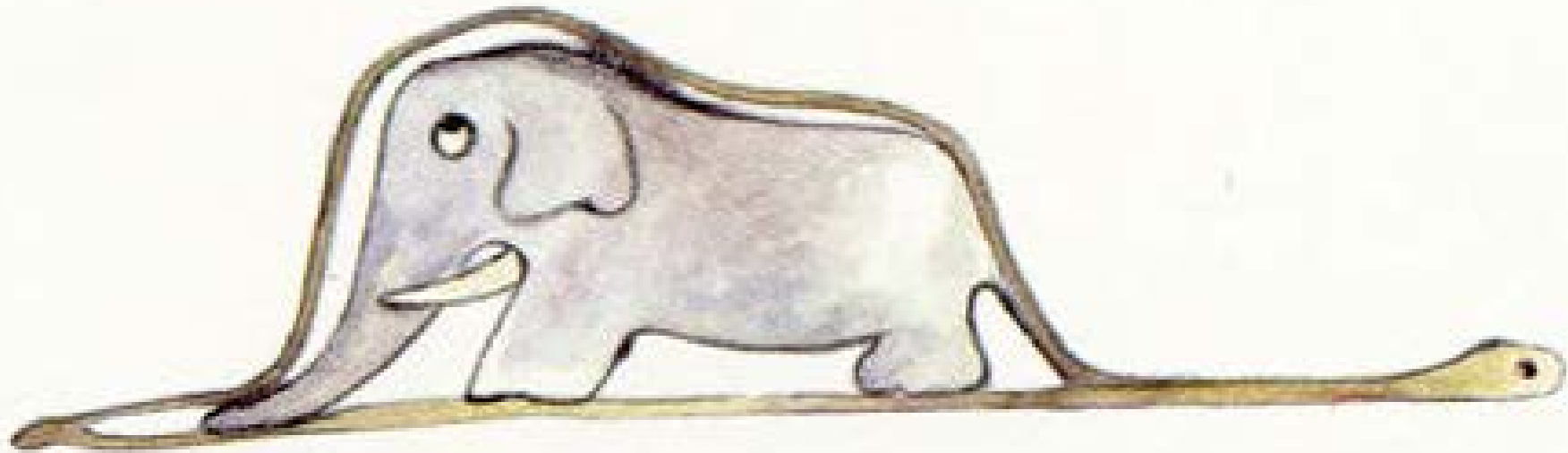
# Evolutionary architecture

# The physicality of Digital

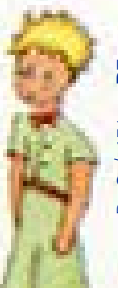




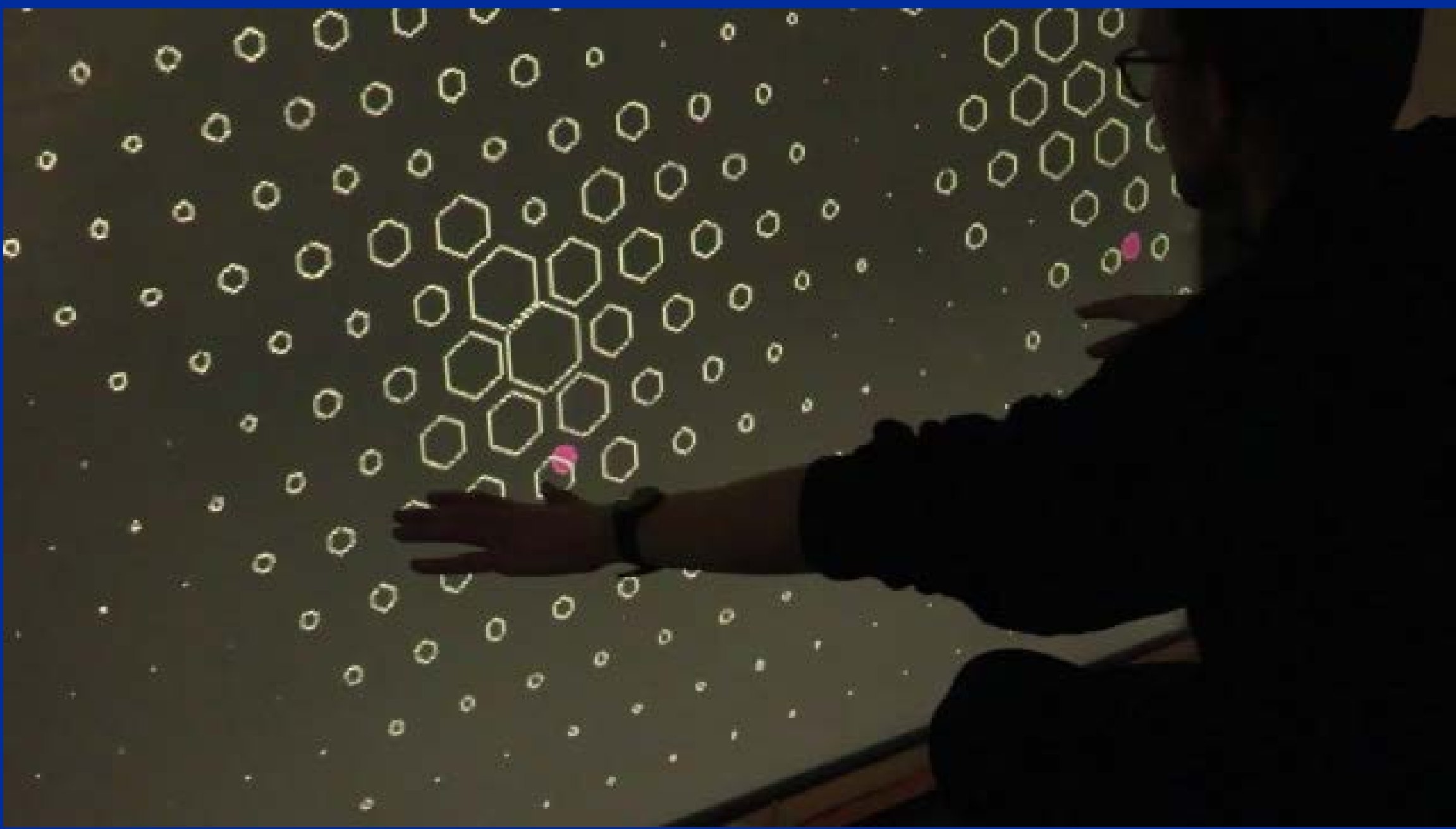
*Mon dessin ne représentait pas un chapeau. Il représentait  
un serpent boa qui digérait un éléphant*



*J'ai alors dessiné  
l'intérieur du serpent boa, afin que les grandes personnes puissent  
comprendre. Elles ont toujours besoin d'explications*





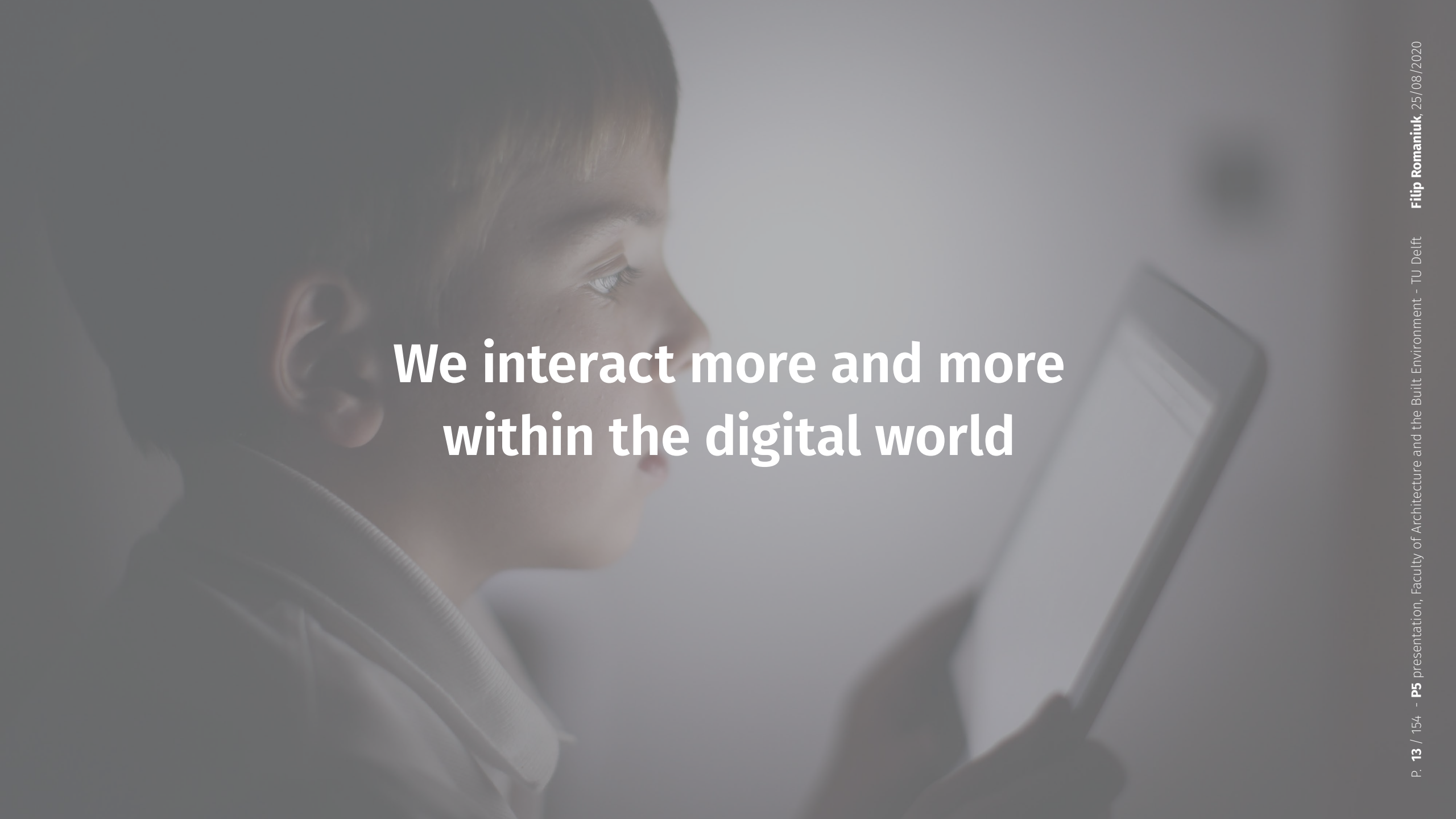


A photograph of Marina Abramović and Ulay in a performance. Marina is on the left, wearing a long red dress, sitting on a wooden chair. Ulay is on the right, wearing a dark suit and a red tie, sitting on a wooden chair. They are facing each other with a small wooden table between them. In the background, a group of people are standing and watching. The text "We all need interactions to understand ourselves" is overlaid in the center.

# We all need interactions to understand ourselves

Marina Abramović  
and Ulay

**Architecture is about interaction  
of people with their environment**

A young boy with short brown hair is shown in profile, looking intently at a tablet computer he is holding with both hands. The background is a soft, out-of-focus grey. The text "We interact more and more within the digital world" is overlaid in white, bold, sans-serif font.

**We interact more and more  
within the digital world**

# The Curious Industrial Robot

MIMUS Robot



Warren Chalk, Peter Cook, Dennis  
Crompton,  
Ron Herron  
"Control and Choice Dwelling"  
1967

# Control and Choice

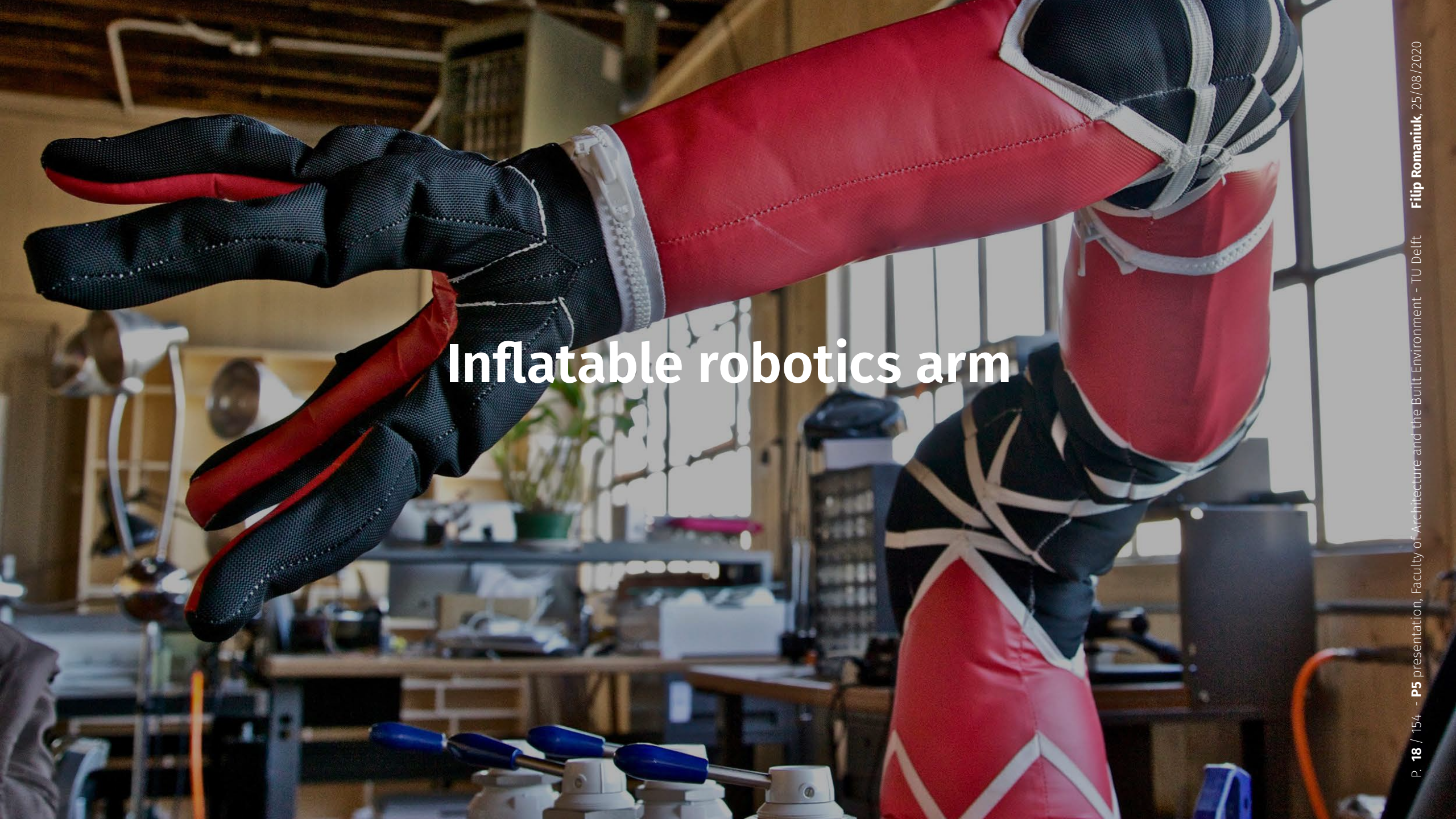


Warren Chalk, Peter Cook, Dennis  
Crompton,  
Ron Herron  
“Control and Choice Dwellings”  
1967

# Control and Choice

# Soft robotics



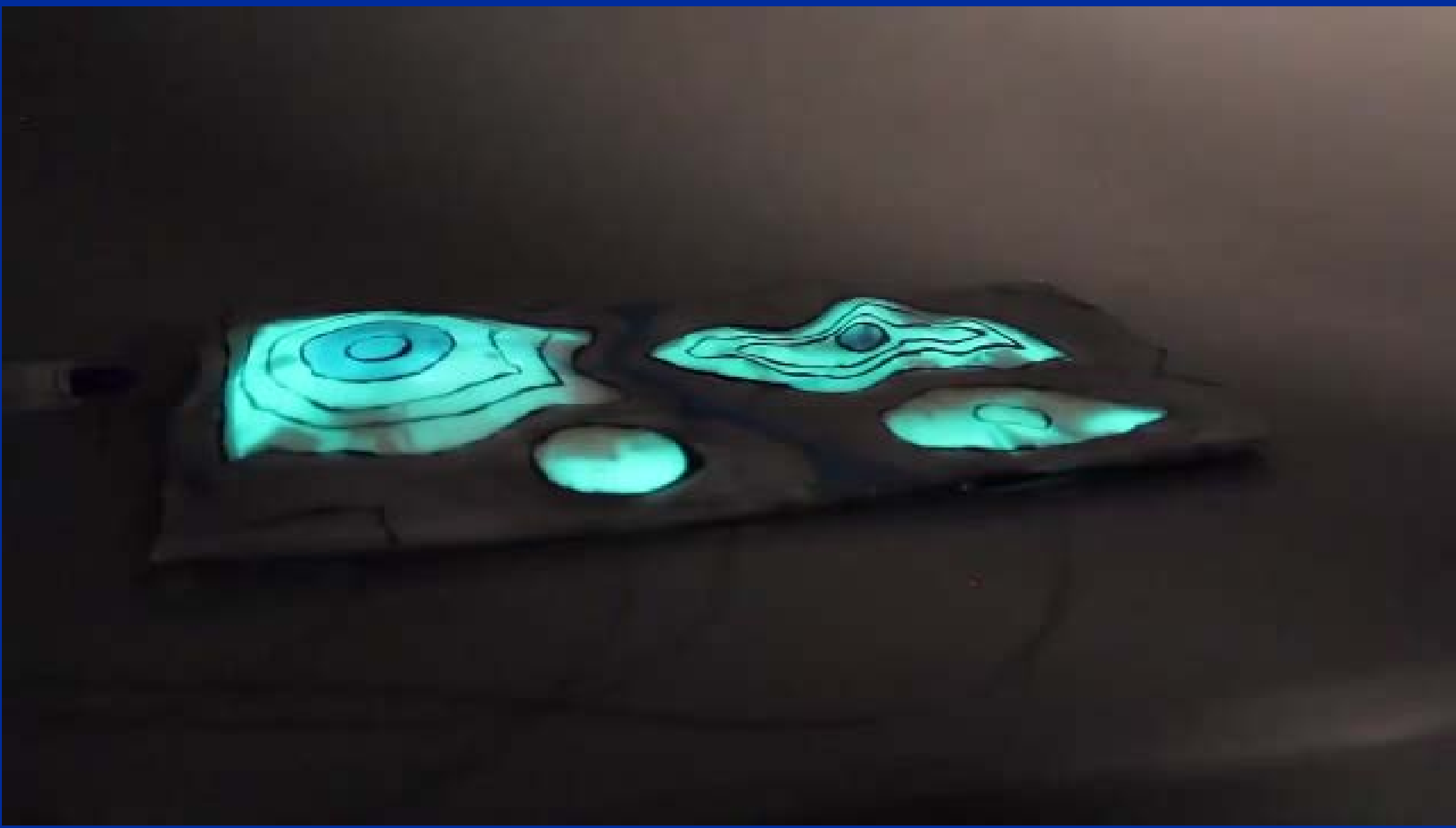
A photograph of a red and black inflatable robotics arm in a workshop. The arm is extended horizontally, with its hand open. The hand is black with red accents on the palm and fingers. The forearm is red with black and white straps. The background shows a workshop with various tools and equipment.

# Inflatable robotics arm



King Louie robot  
made for NASA

# NASA builds inflatable robots







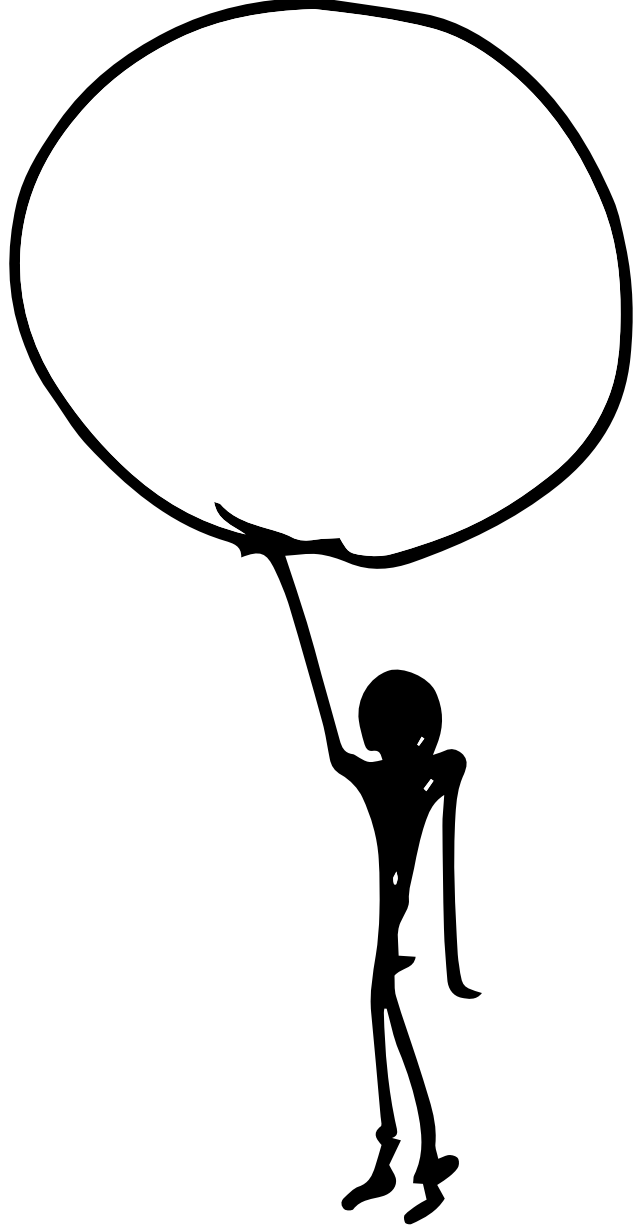


Breathing Pillows  
L/B - Lang/Baumann

breathing

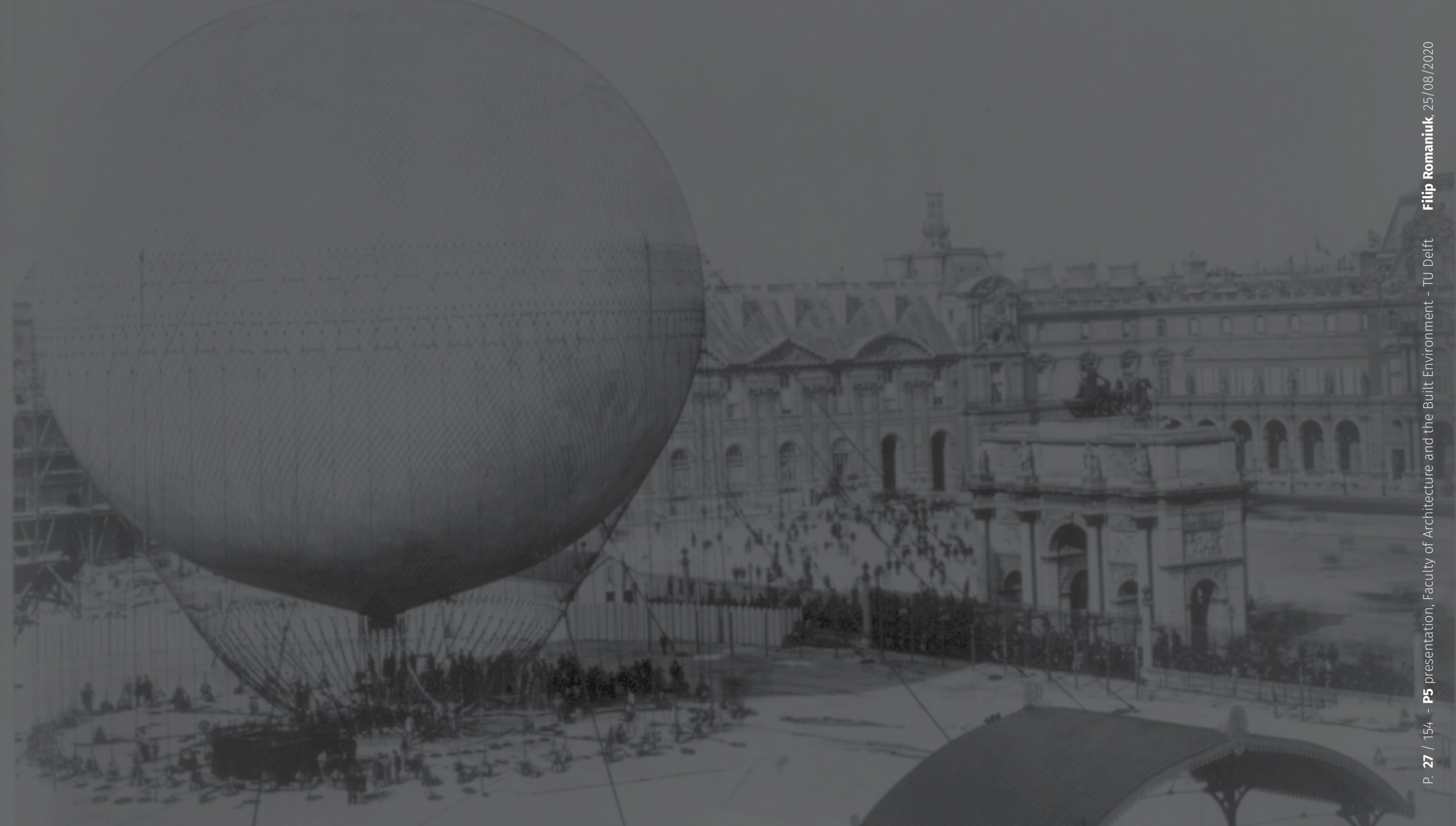
Another generosity  
Eero Lundén and Juulia Kauste

# Alive architecture





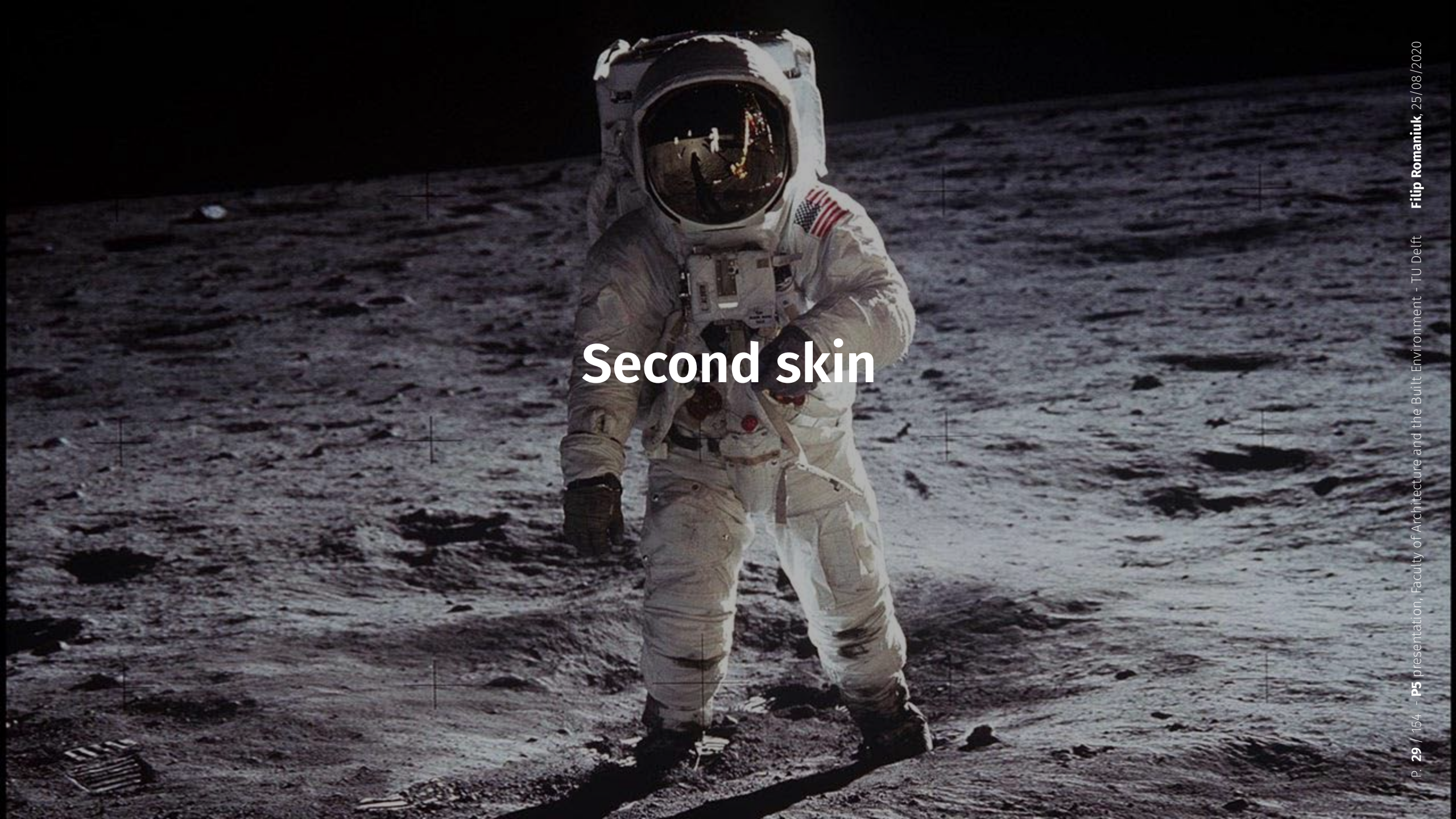




# Zeppelin





A full-page photograph of an astronaut in a white spacesuit standing on the lunar surface. The astronaut is wearing a helmet with a reflective visor and has an American flag patch on the right shoulder. The ground is dark, dusty, and covered in small rocks. The background is a dark, hazy horizon. The text "Second skin" is overlaid in the center in a white, sans-serif font.

# Second skin







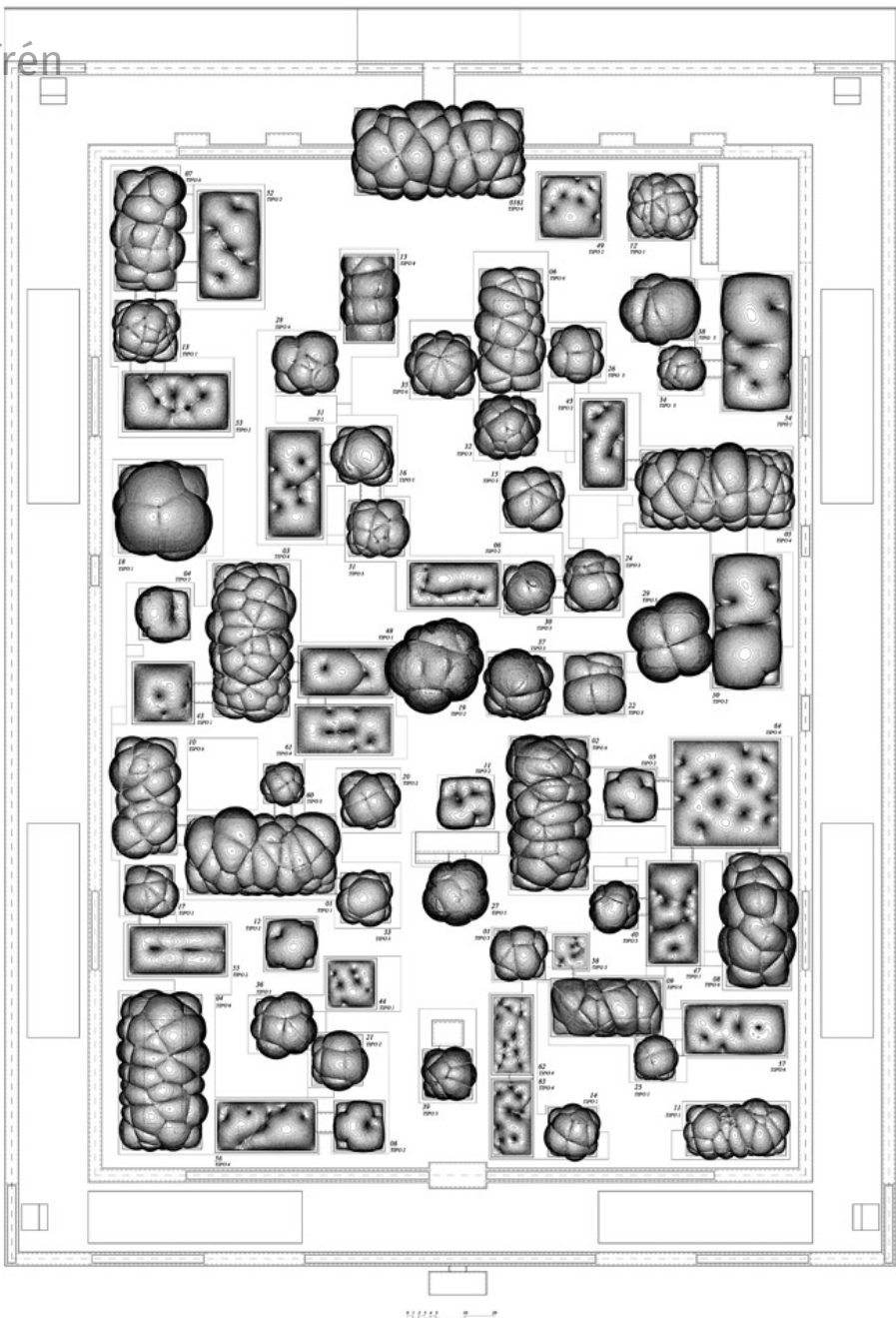
R. Buckminster Fuller  
"Dome Over Manhattan"





Archigram/Peter Cook's 'Blow-Out Village' (1966) proposal for a mobile hovercraft structure









Anish Kapoor





Big Air Package  
Christo



Void Seoul  
Numen / For use



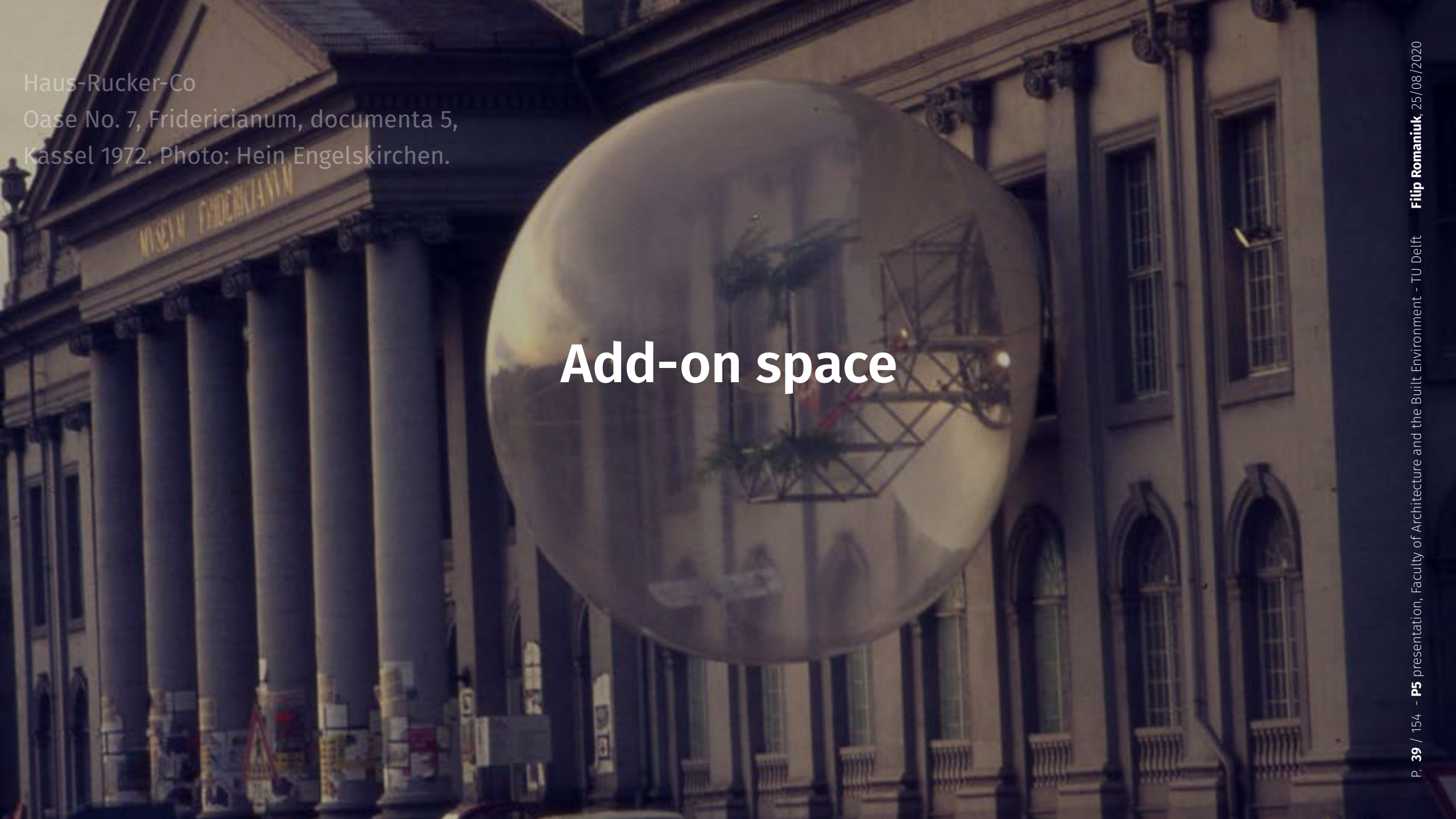




Arish Kapoor  
Grand Palais 2011  
Leviathan

filling space





Haus-Rucker-Co

Oase No. 7, Fridericianum, documenta 5,  
Kassel 1972. Photo: Hein Engelskirchen.

## Add-on space



Aeropolis / Iñaki Echeverría  
Plastique Fantastique

# architecture of an event



# architecture of an event



# architecture of an event



AIRGROUND

1968 Brighton, England

Jeffrey Shaw, Theo Botschuijver, Sean  
Wellesley-Miller

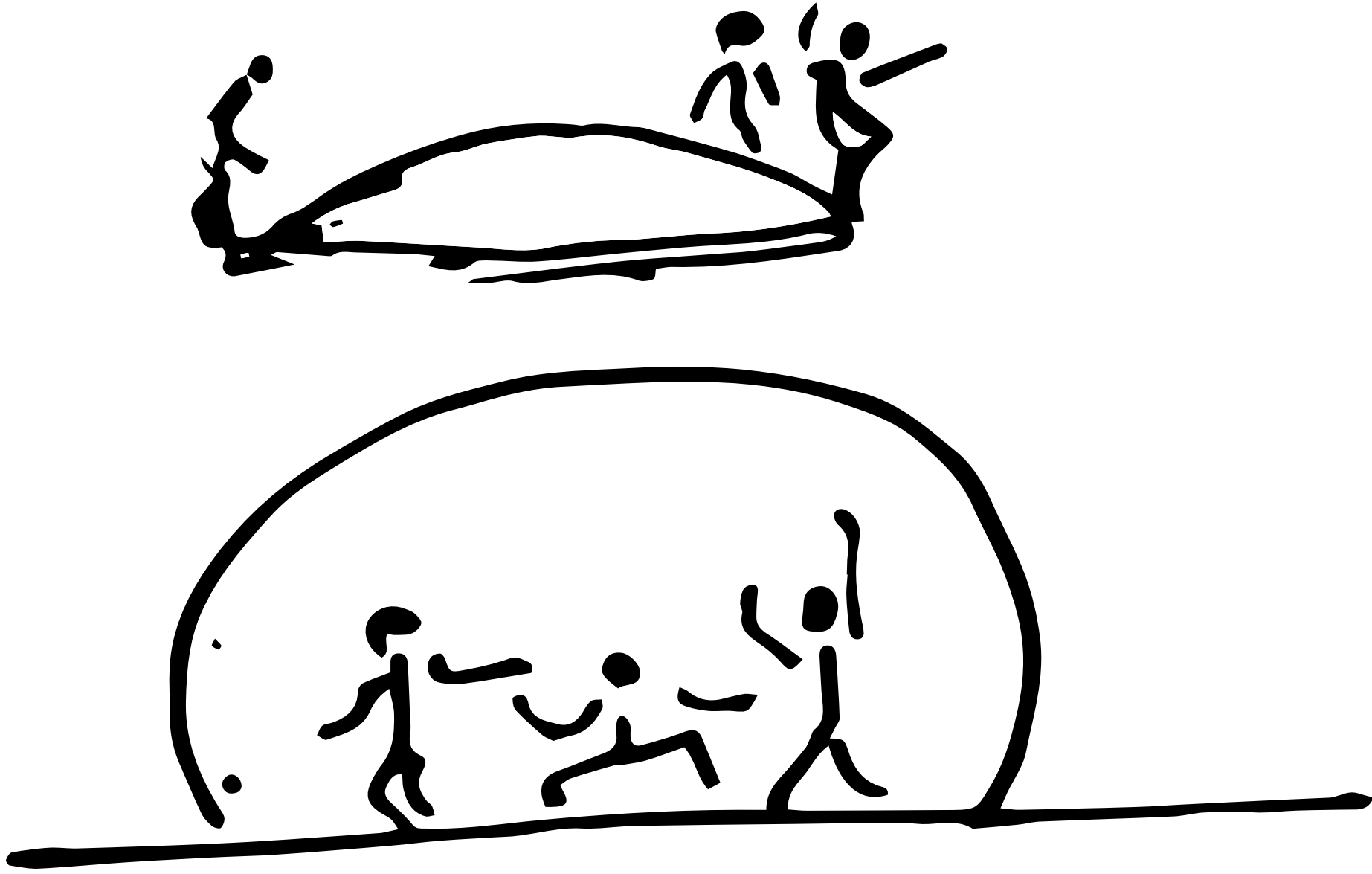
Production: Eventstructure Research  
Group, Amsterdam

# Inflatable playgrounds



# Inflatable architecture





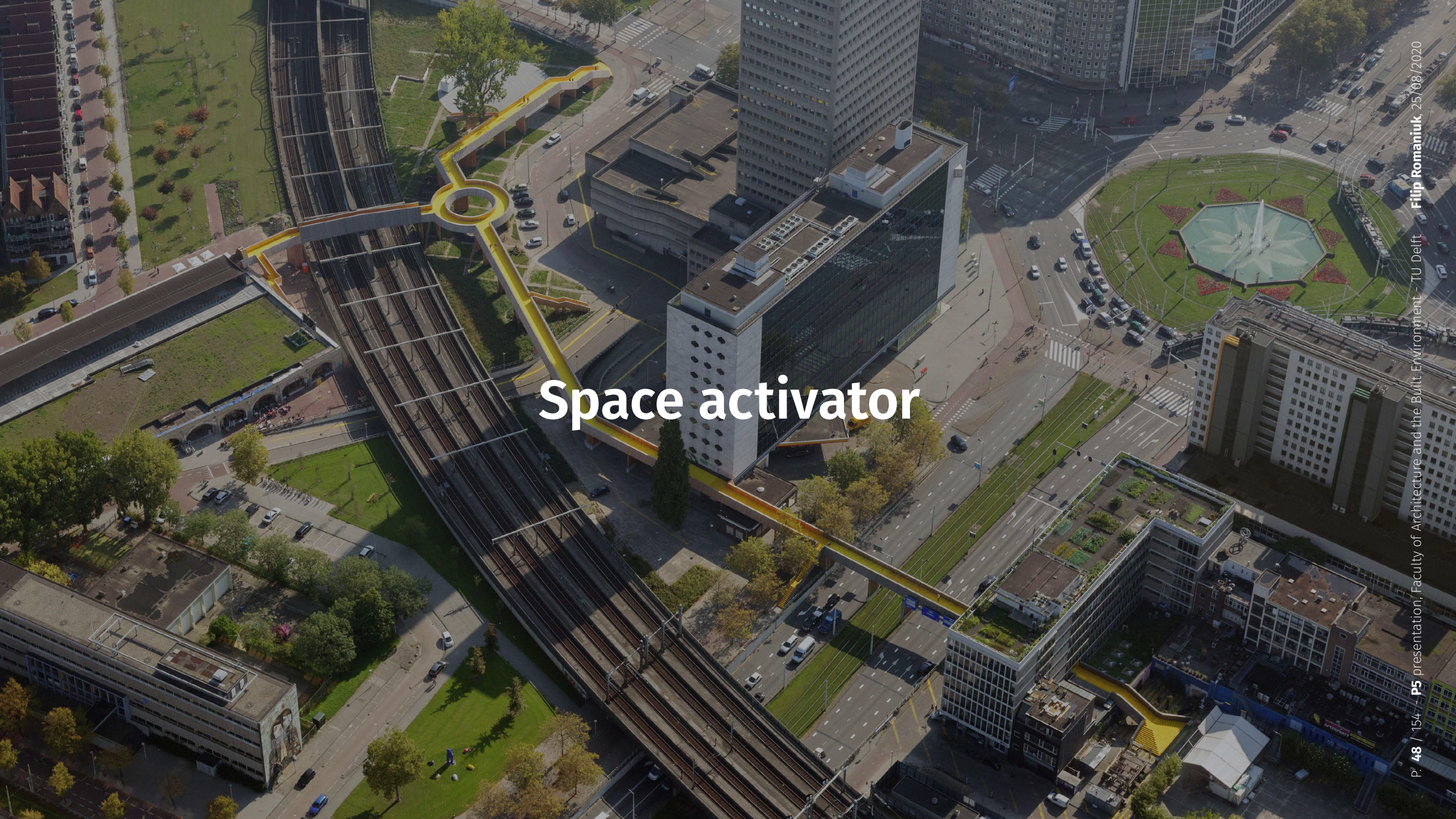






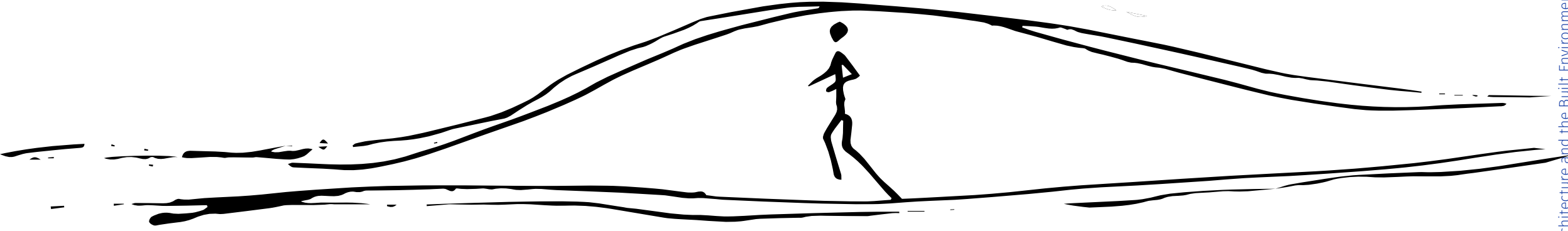
# Space activator

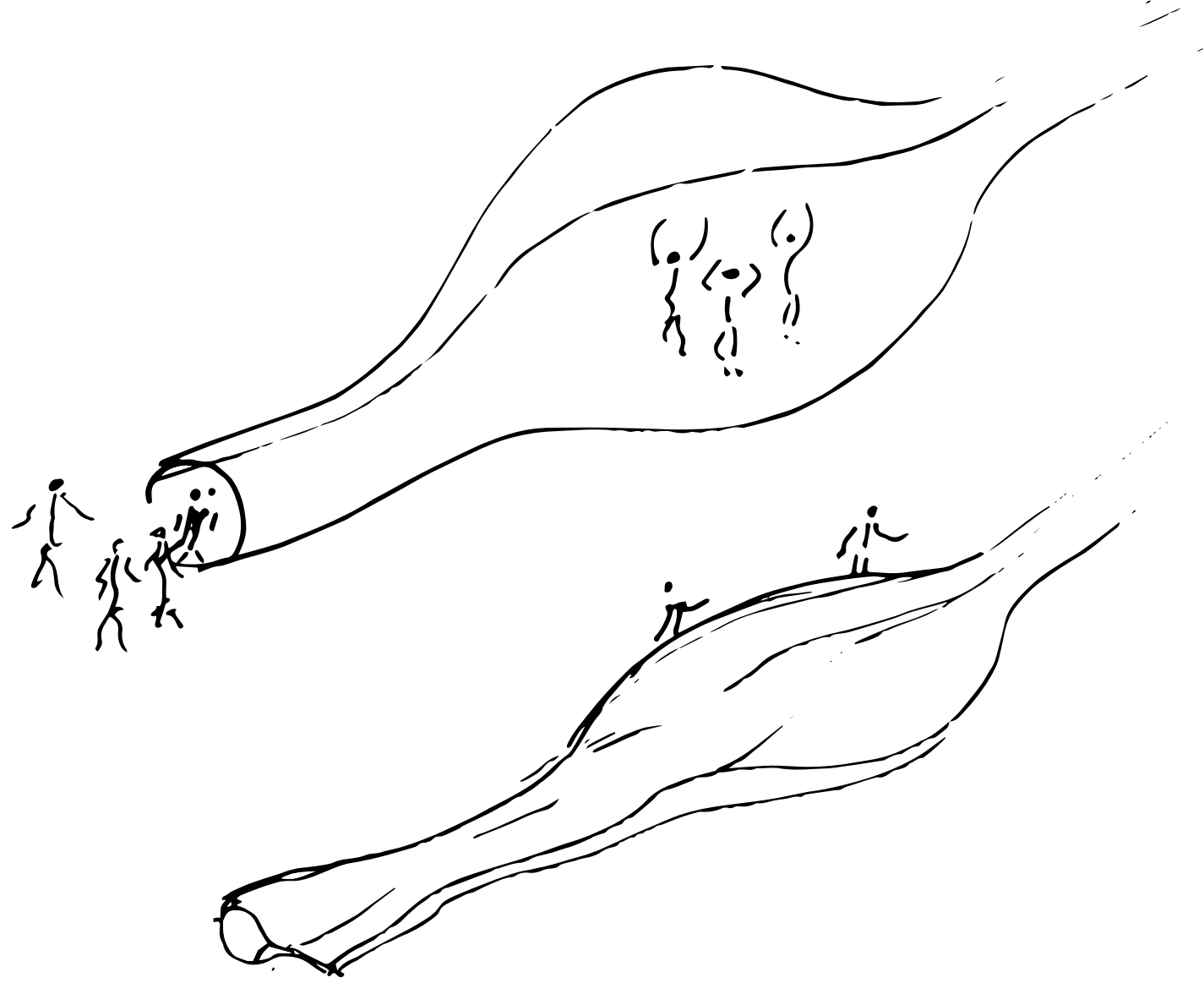


An aerial photograph of a city intersection in Delft, Netherlands. A prominent yellow pedestrian bridge with a circular loop crosses over a set of railway tracks. The bridge connects a green park area on the left to a modern building complex on the right. The building complex includes a tall, white, multi-story building with a grid of windows. To the right of the building is a large, green, circular plaza with a central star-shaped structure. The surrounding area includes various other buildings, streets with cars, and green spaces. The text "Space activator" is overlaid in the center of the image.

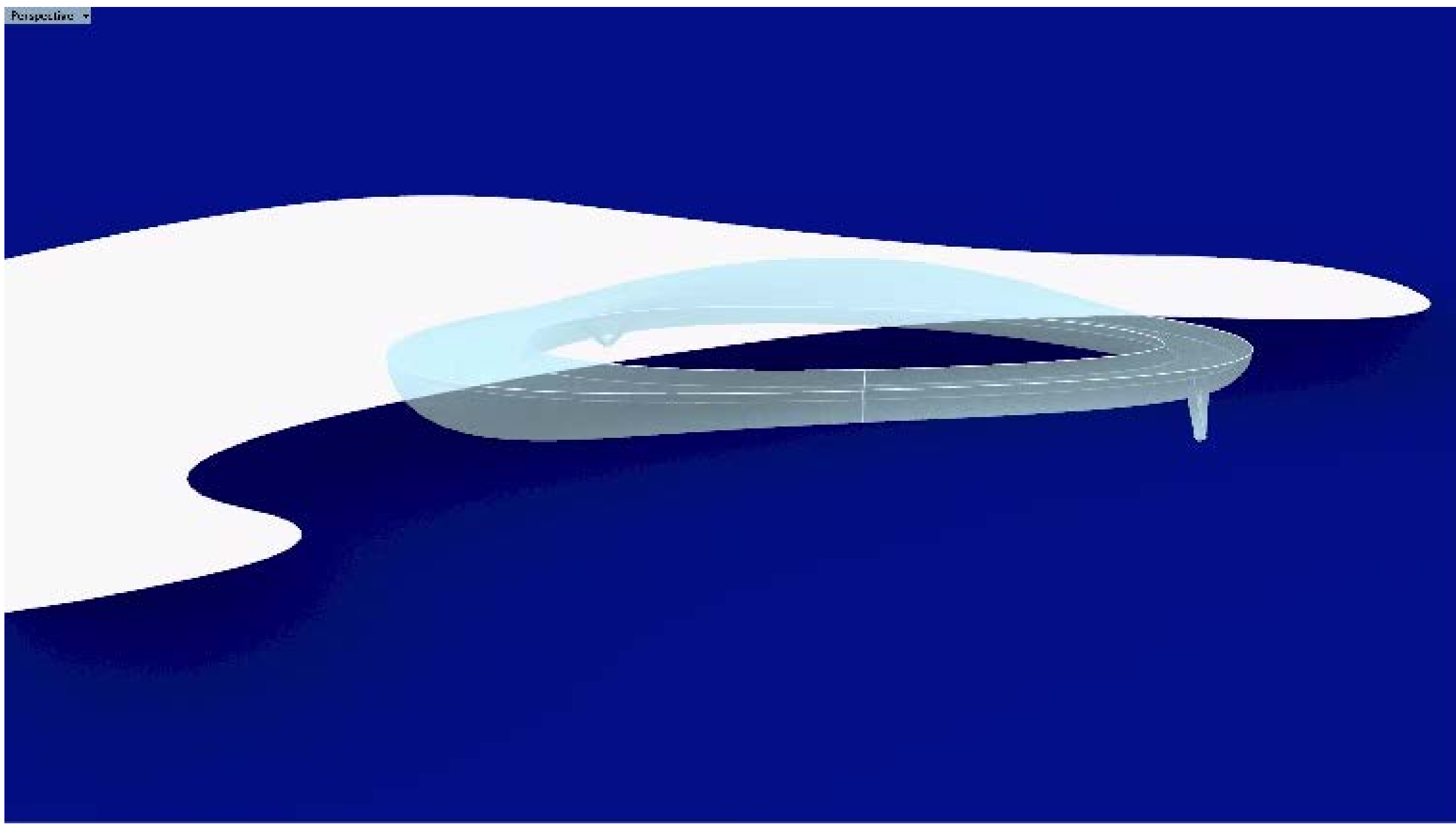
# Space activator

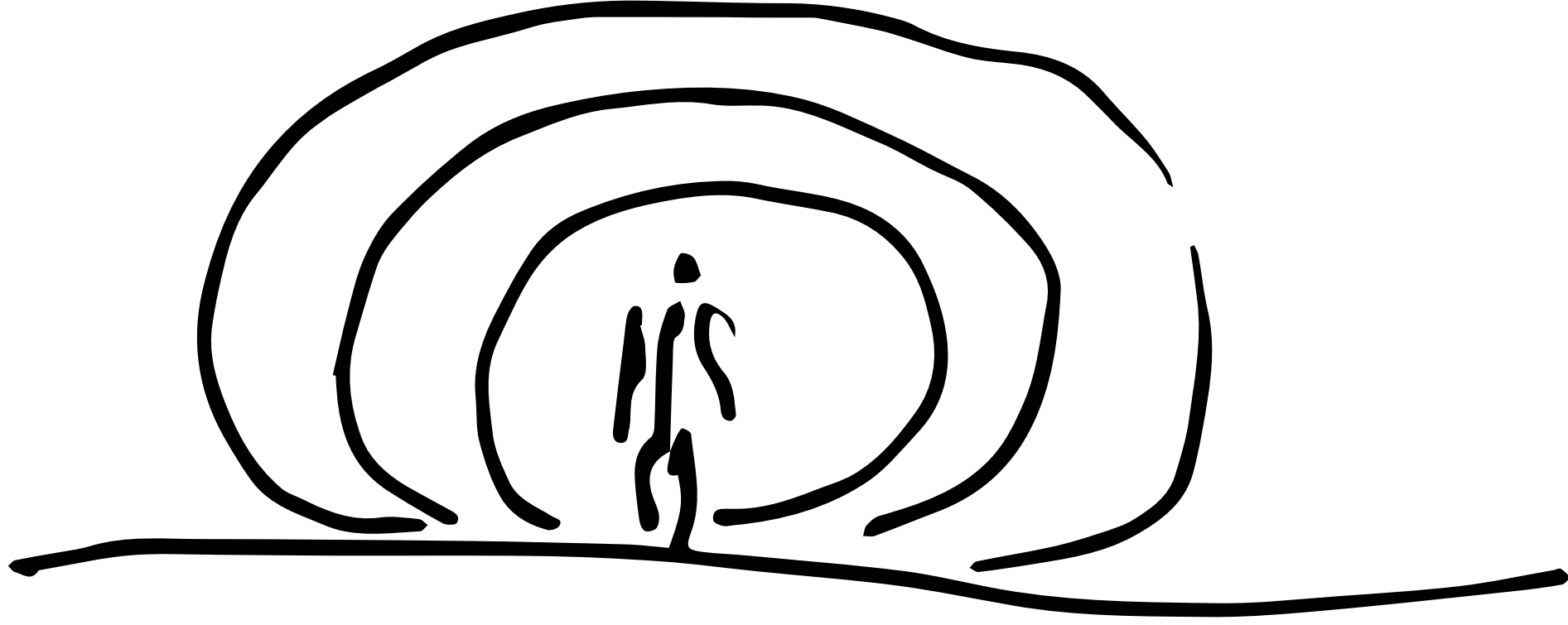
















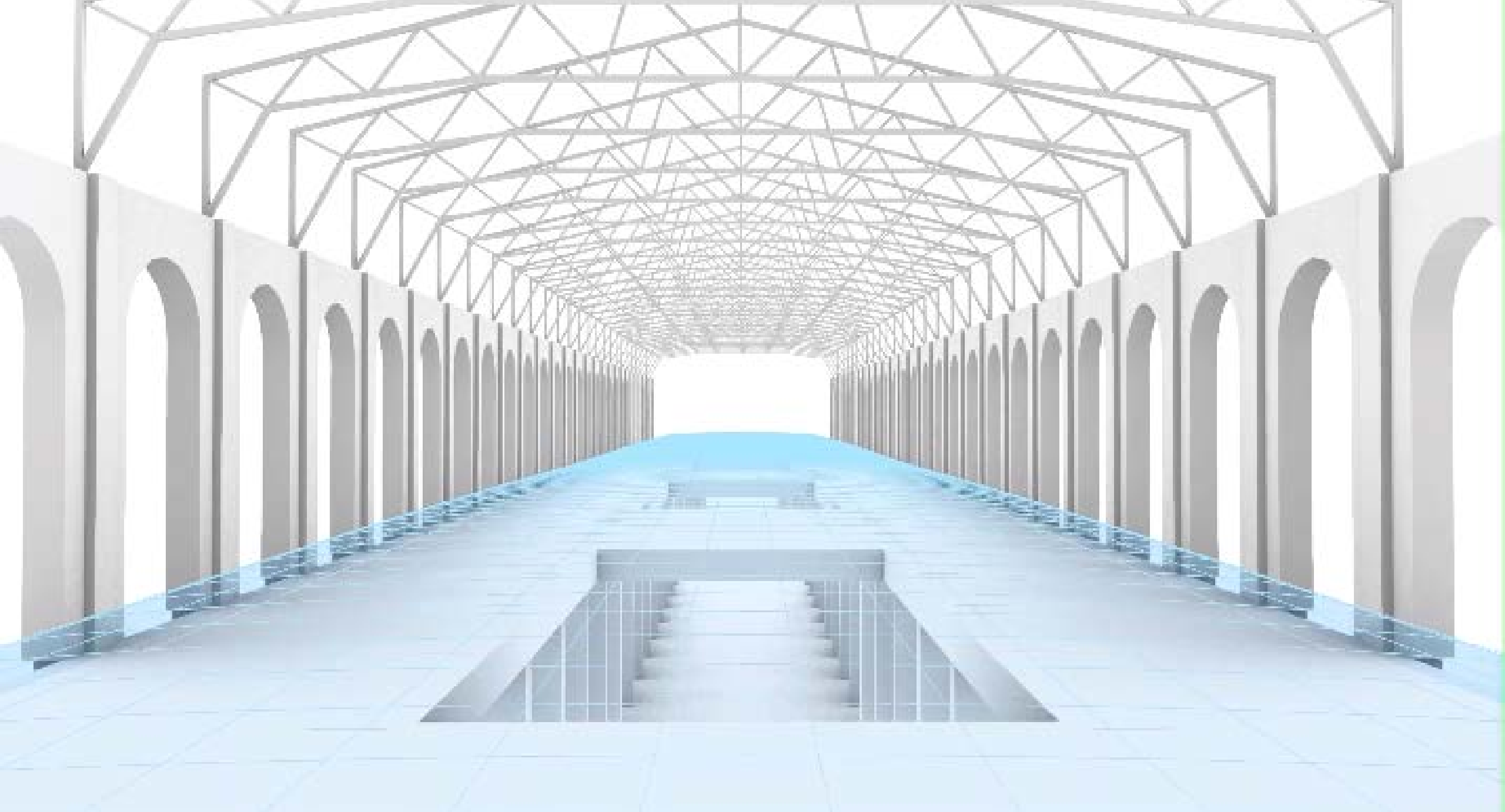


# FILLING SPACE



# Forgotten places

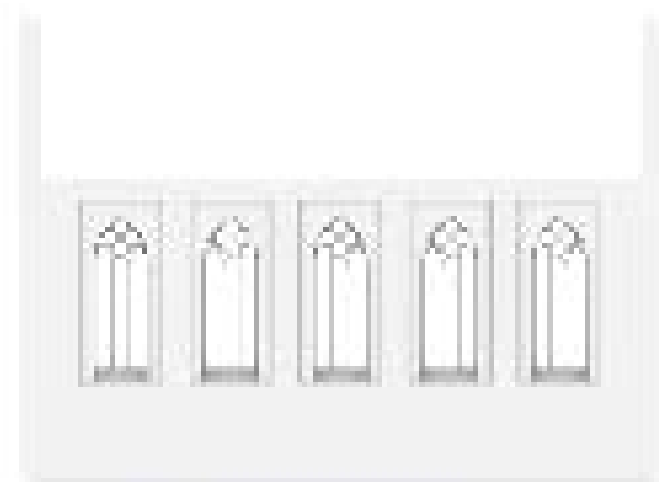
("Silesia" zinc smelter, Katowice, Poland)



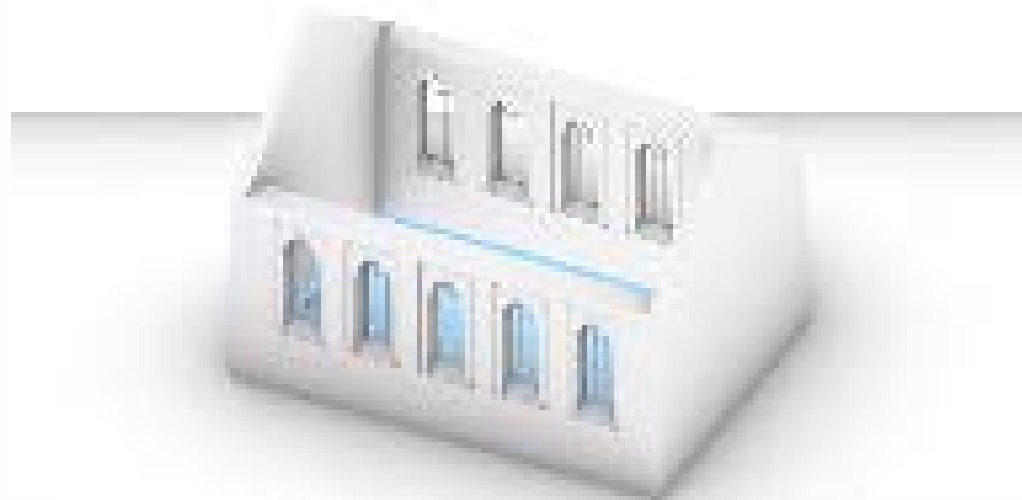




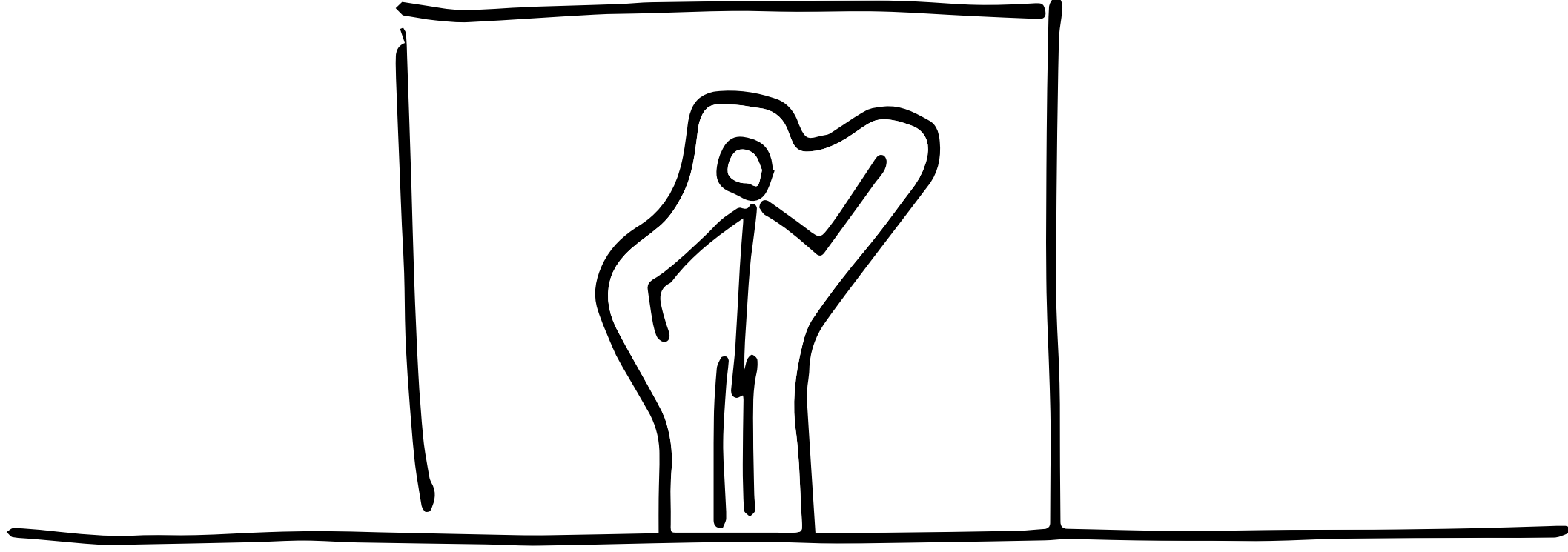
af. 100000 - Foto: arch. J. G. - Biblioteca de Arhitectură, Arhitectură, Arhitectură, Arhitectură

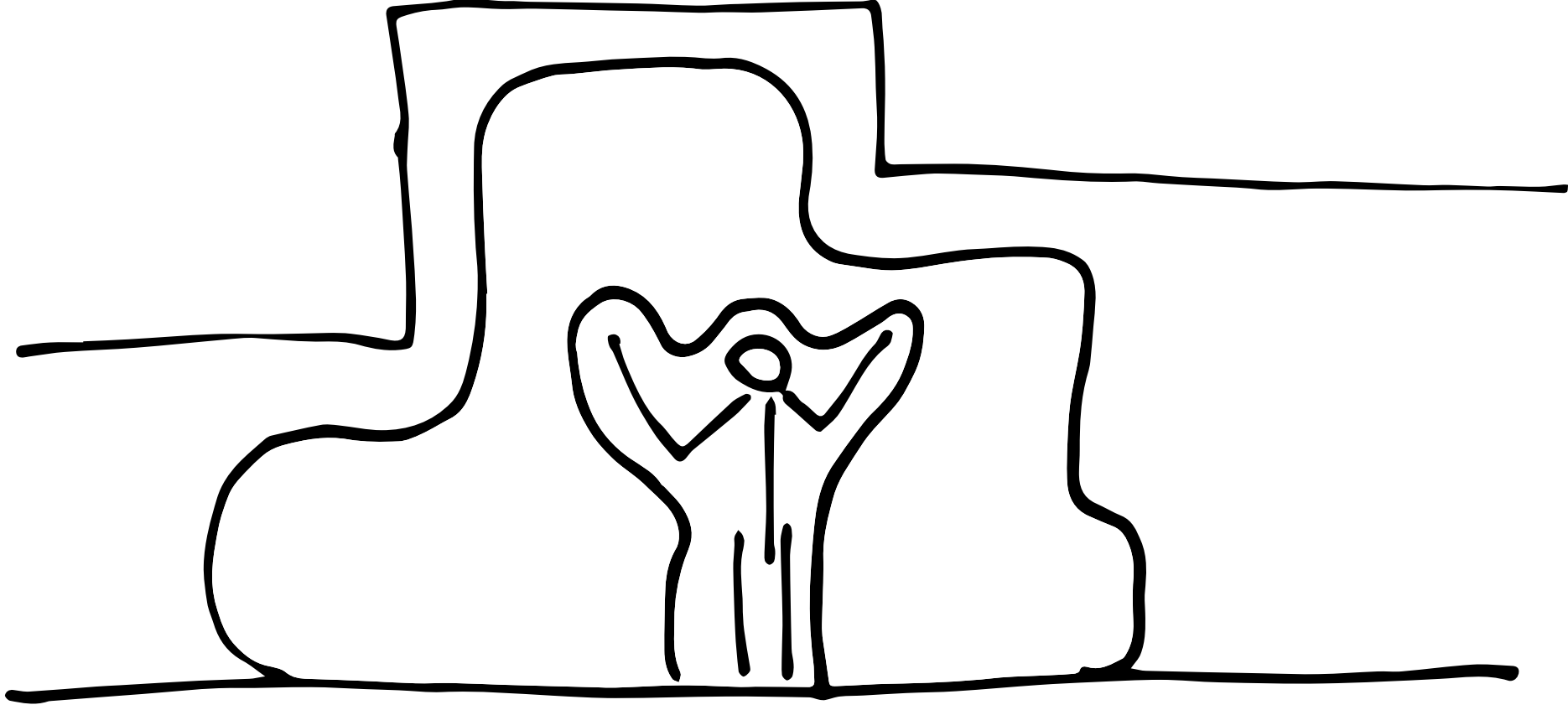


af. 100000 - Foto: arch. J. G. - Biblioteca de Arhitectură, Arhitectură, Arhitectură, Arhitectură



af. 100000 - Foto: arch. J. G. - Biblioteca de Arhitectură, Arhitectură, Arhitectură, Arhitectură



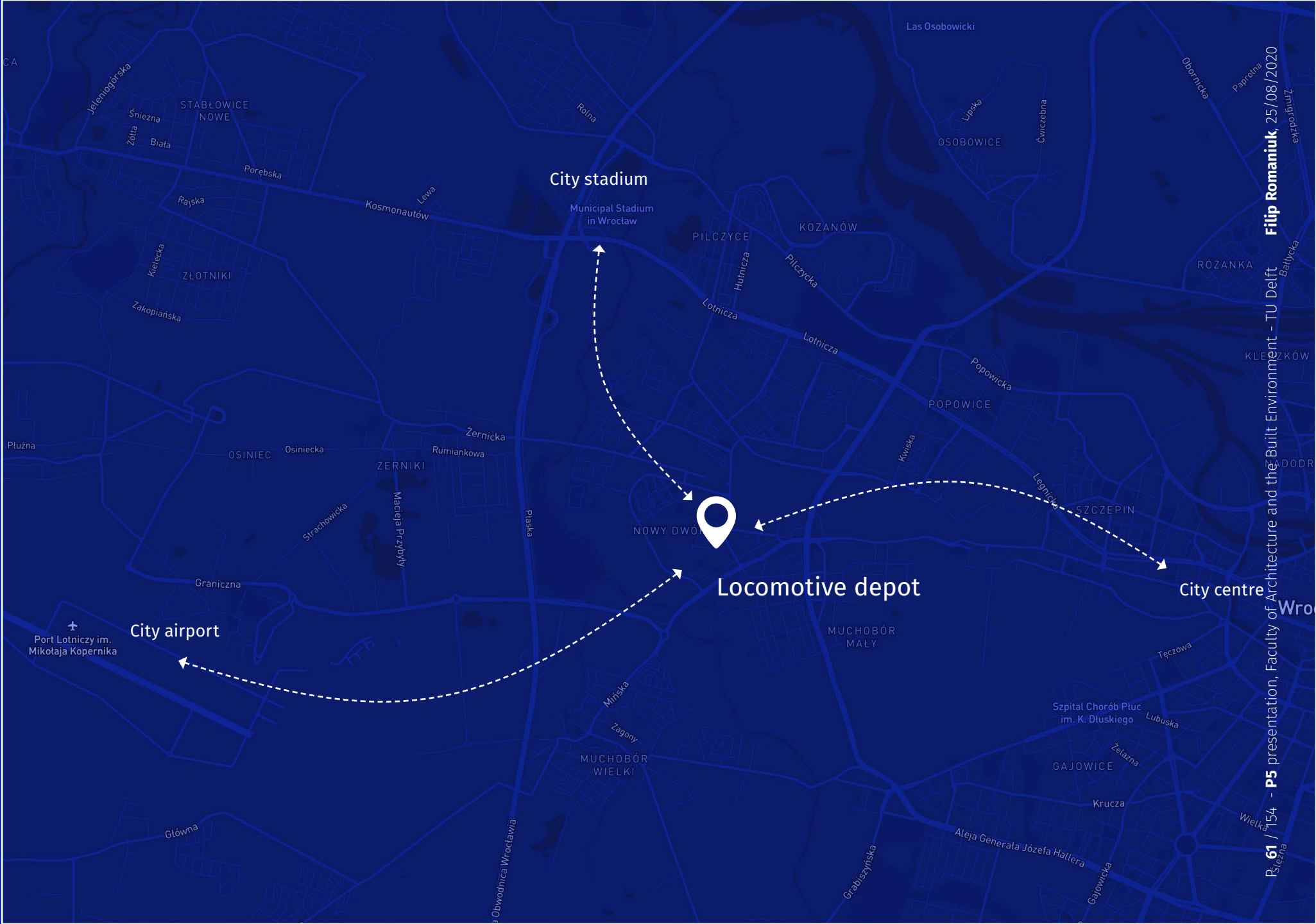




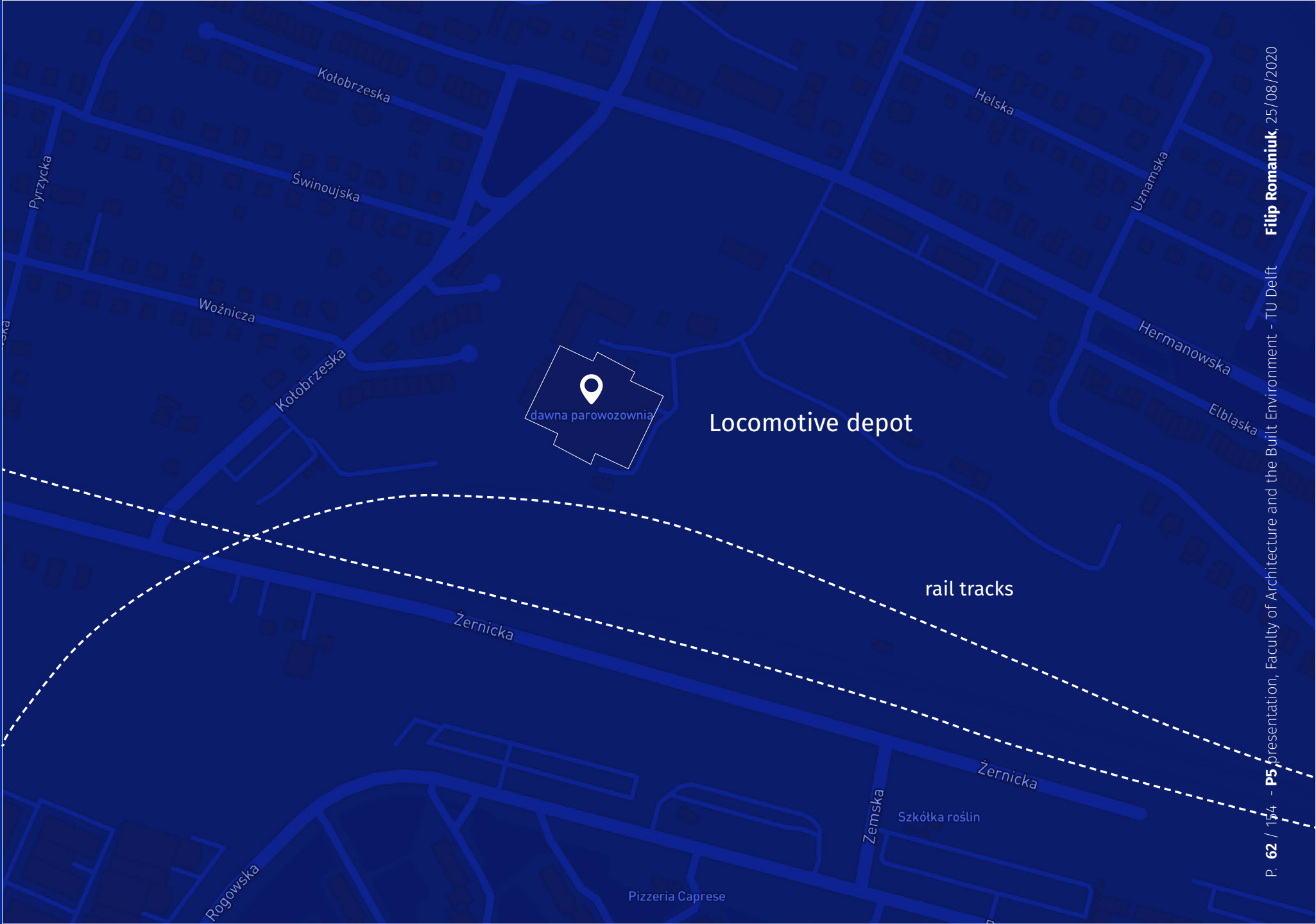
# Locomotive depot

## Wrocław, Poland

Location



Location





An aerial photograph showing a large, rectangular, brick building with a dark roof, identified as an abandoned locomotive depot. The building is situated in a city, surrounded by dense green and yellow trees. In the foreground, there are railway tracks and a forested area. The background shows a residential neighborhood with houses and a church with a tall spire.

# Abandoned Locomotive depot



# The depot desperately needs a new function





# New plans for the neighbourhood

(The property is now on sale)





Depot interiors



Depot interiors

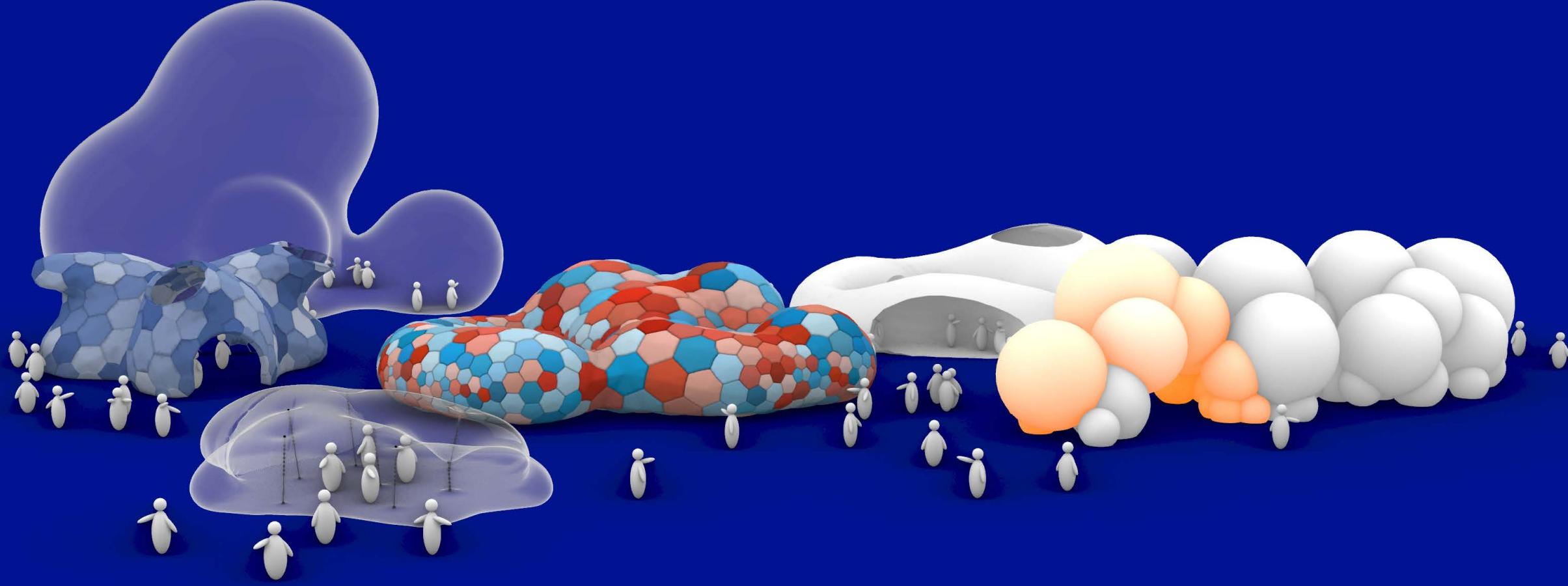
# Digital playground



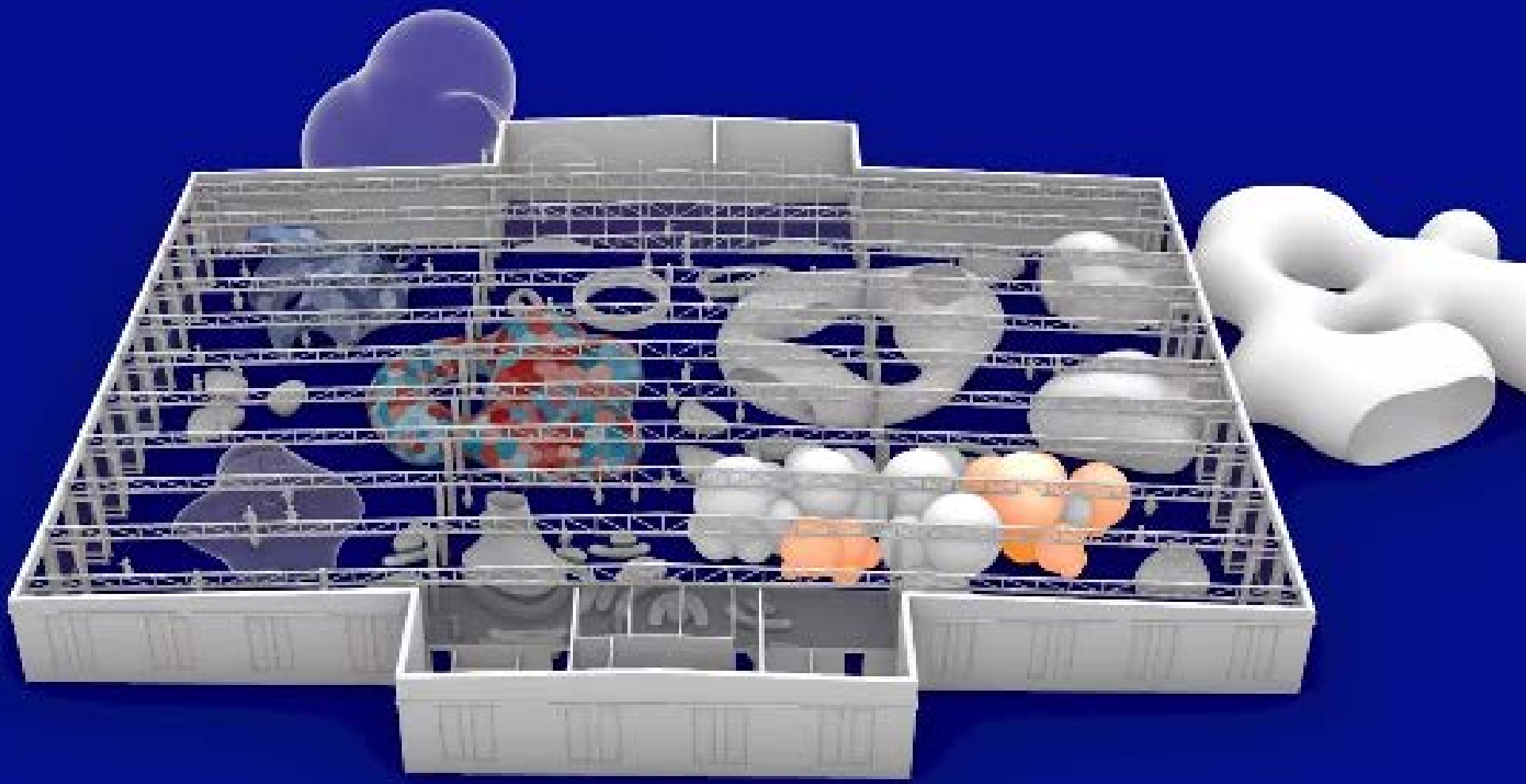


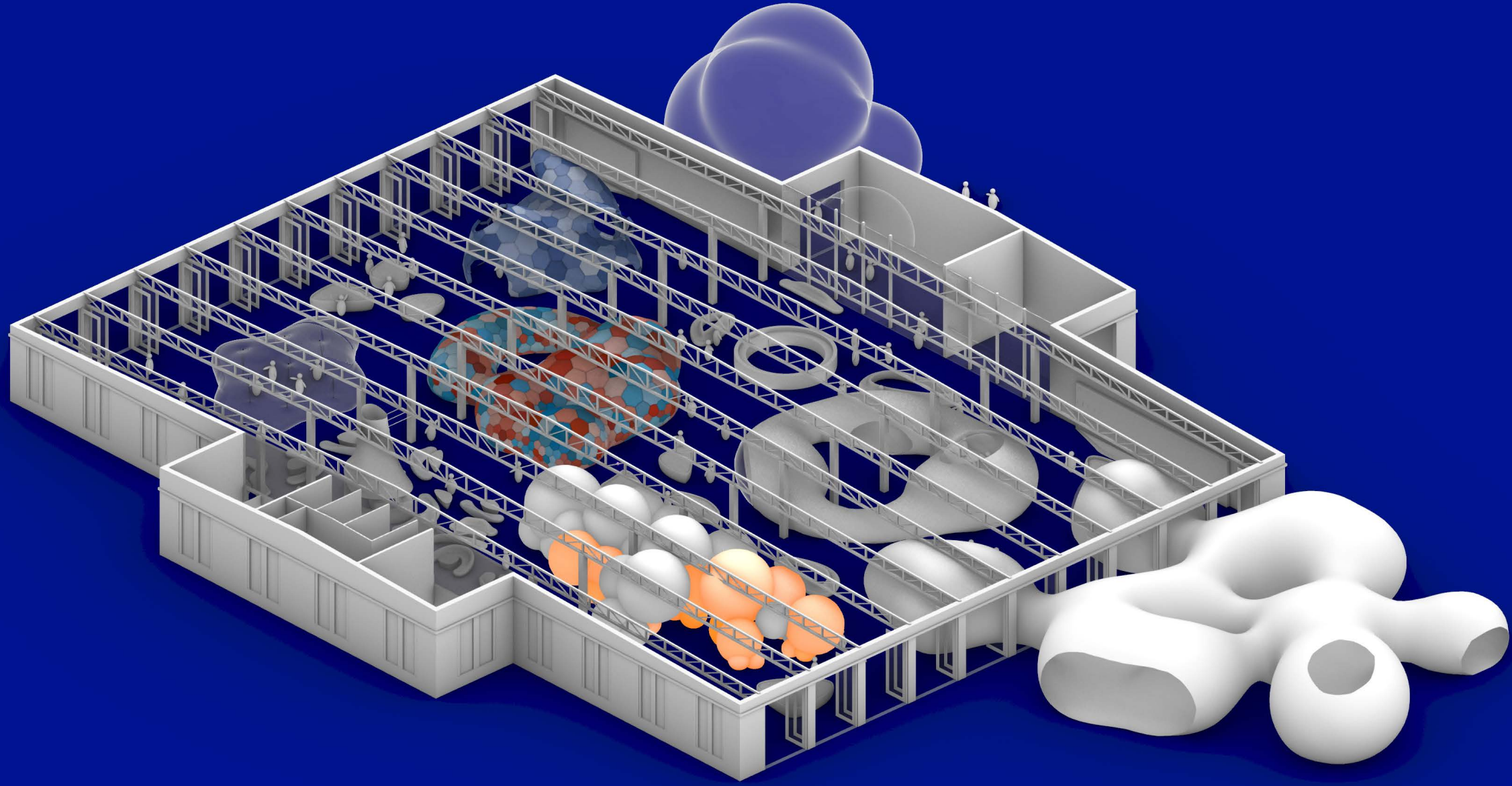


IN BETWEEN

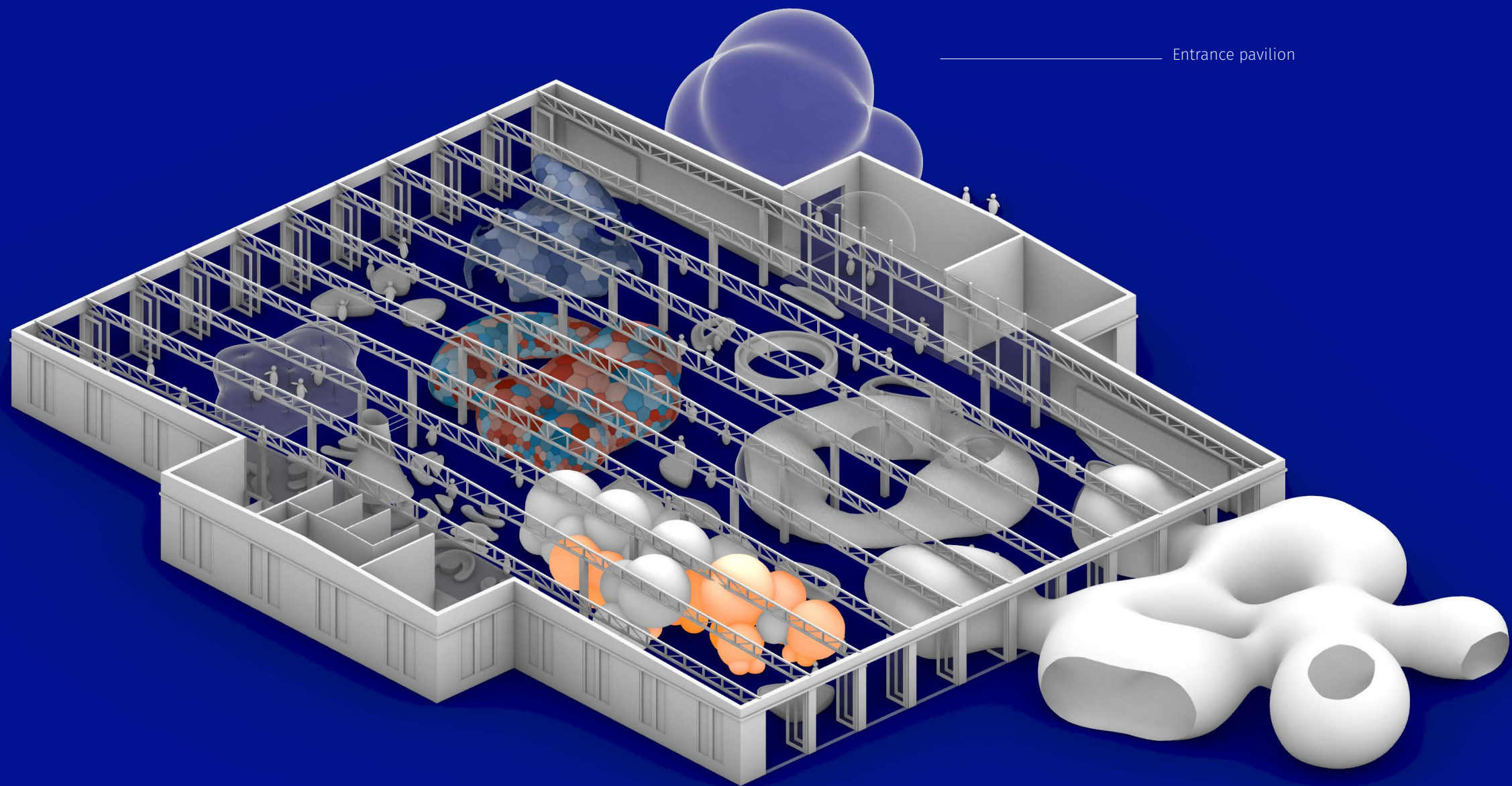






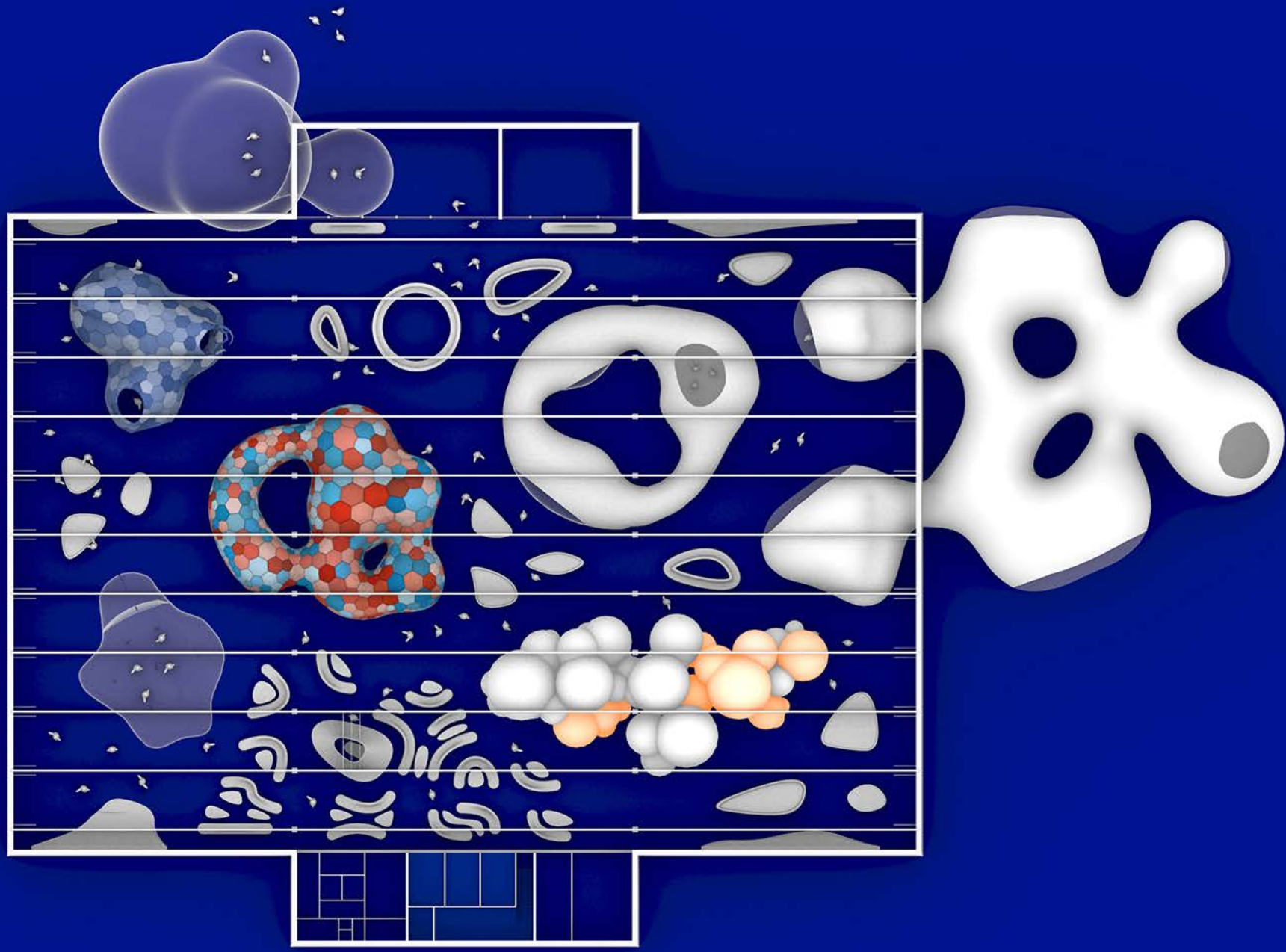


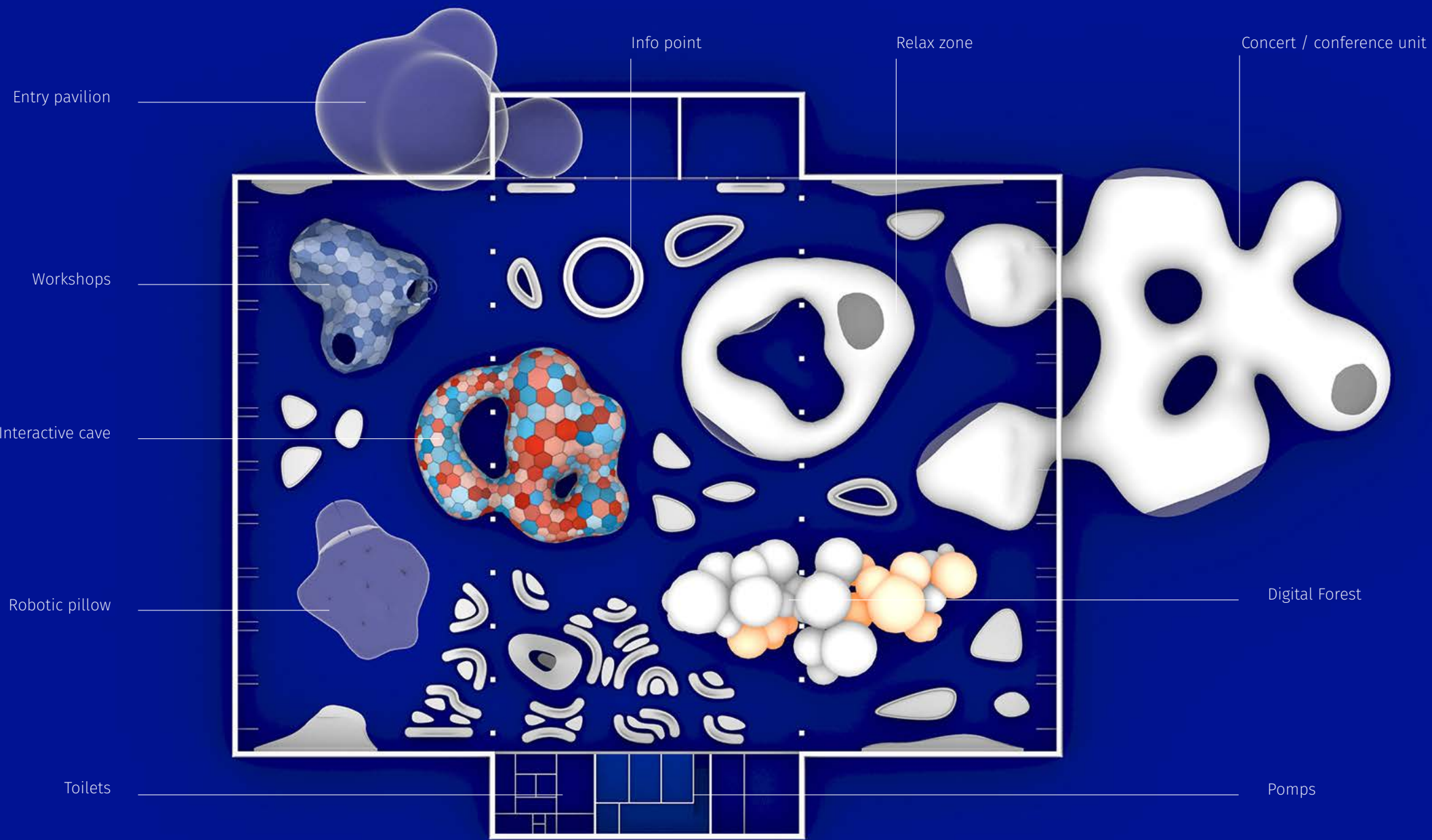


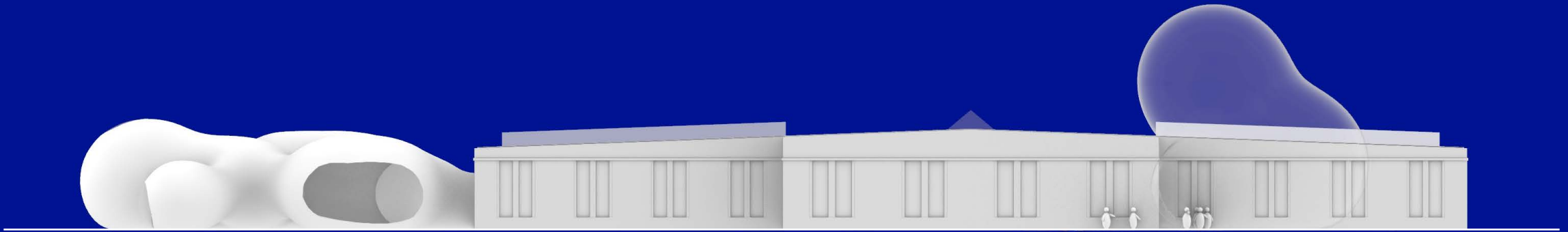


Entrance pavilion









North elevation



\*Robotic pillow  
337 m<sup>2</sup>  
368 m<sup>3</sup>

2635 m<sup>2</sup>  
3662 m<sup>3</sup>

741 m<sup>2</sup>  
807 m<sup>3</sup>

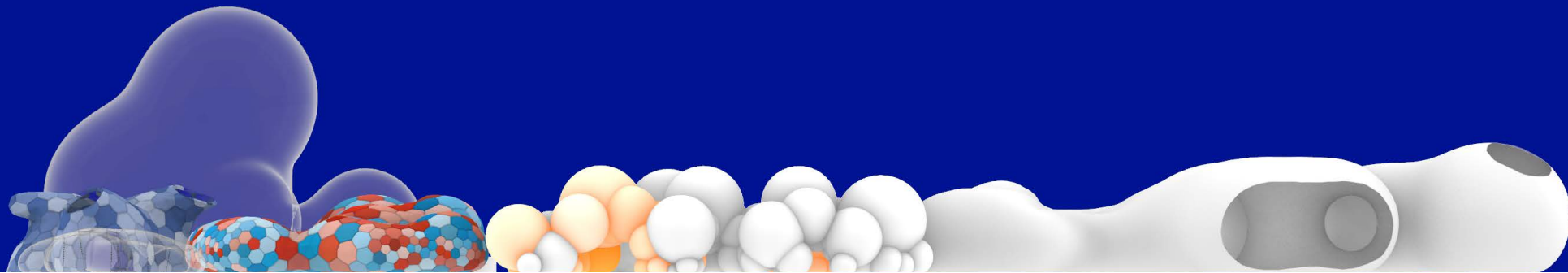
1137 m<sup>2</sup>  
1065 m<sup>3</sup>

2084 m<sup>2</sup>  
237 m<sup>3</sup>

1226 m<sup>2</sup>  
3019 m<sup>3</sup>

807 m<sup>2</sup>  
97 m<sup>3</sup>

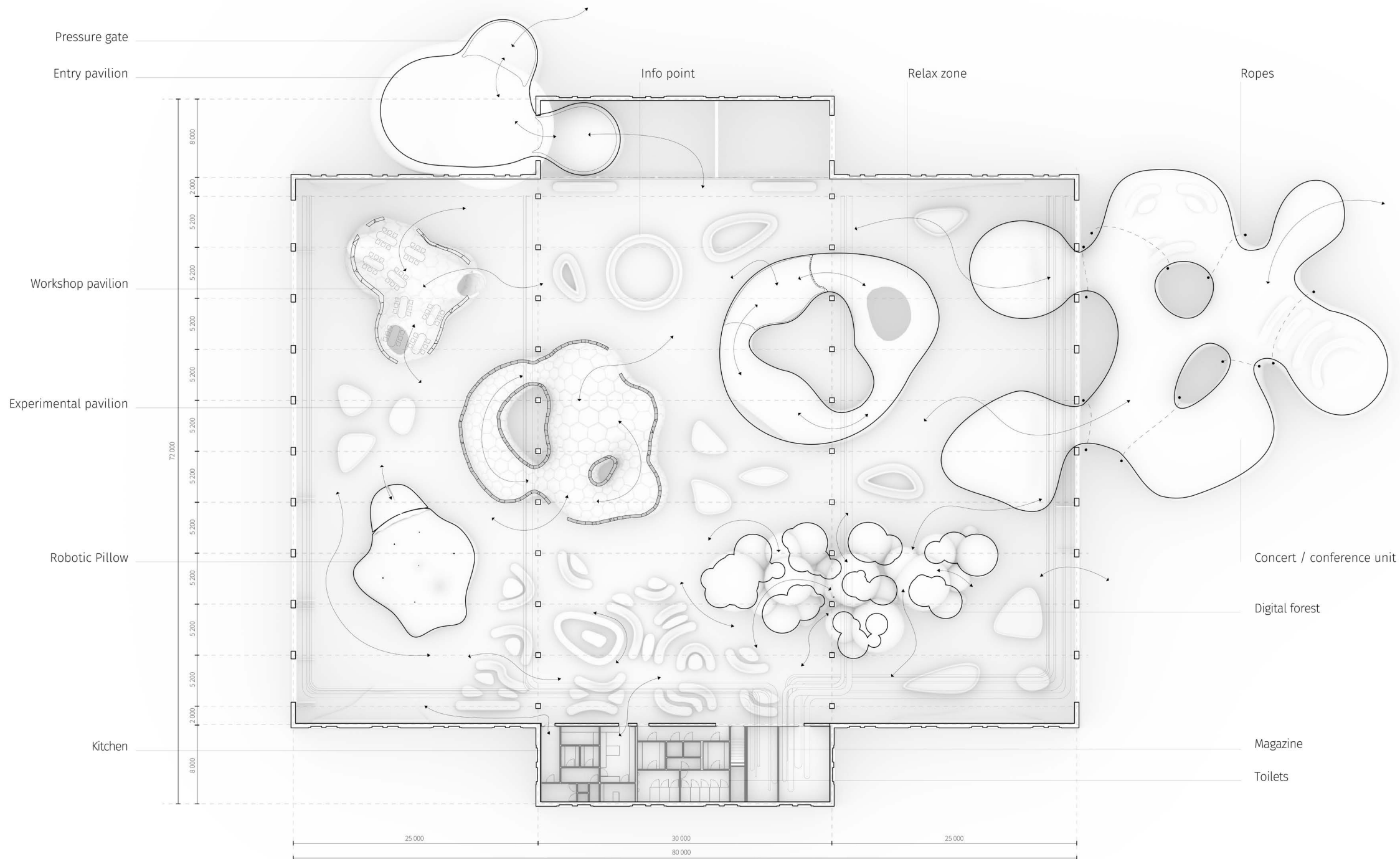
North elevation (family of inflatables)



South elevation (family of inflatables)

Elevation / Section

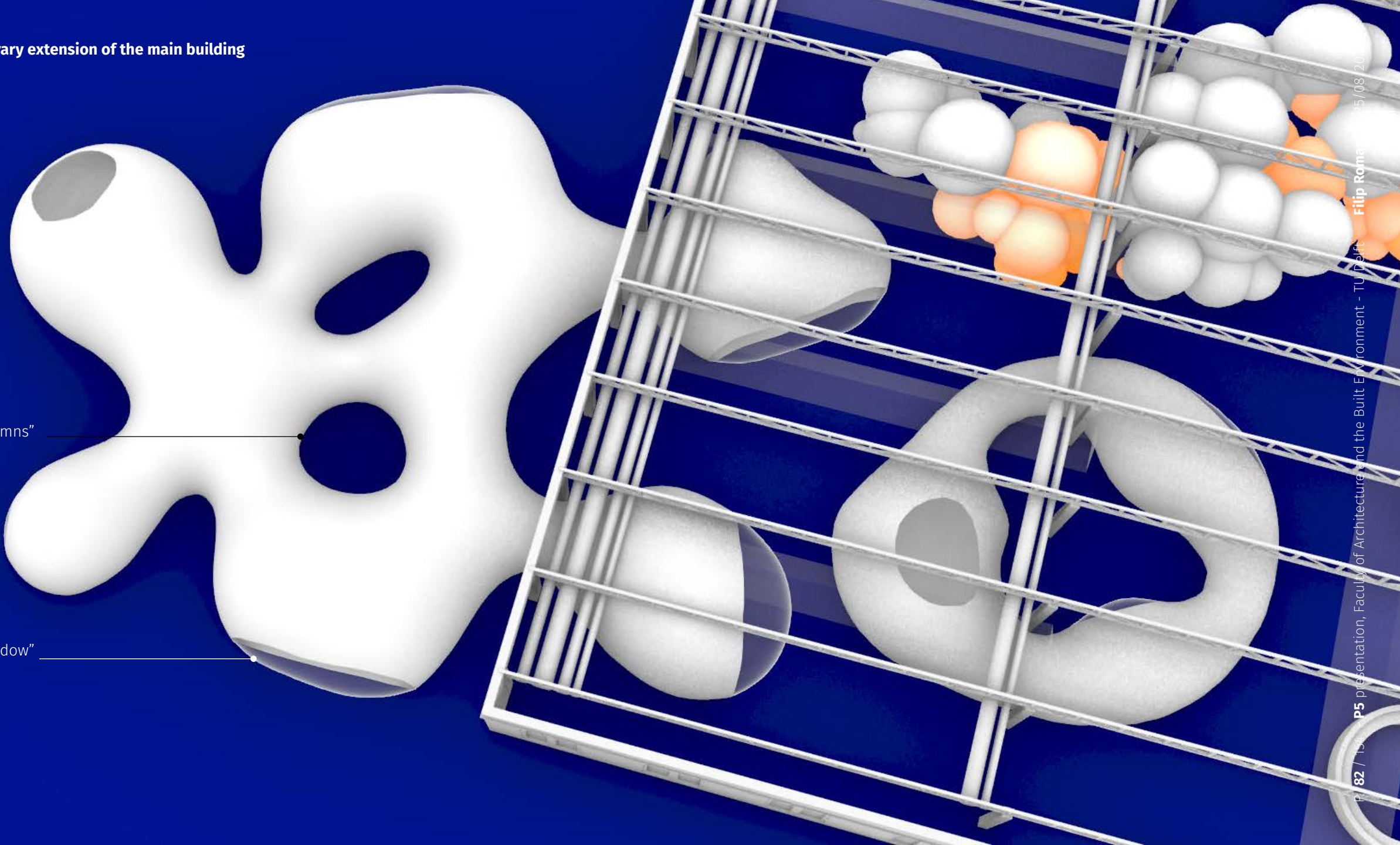




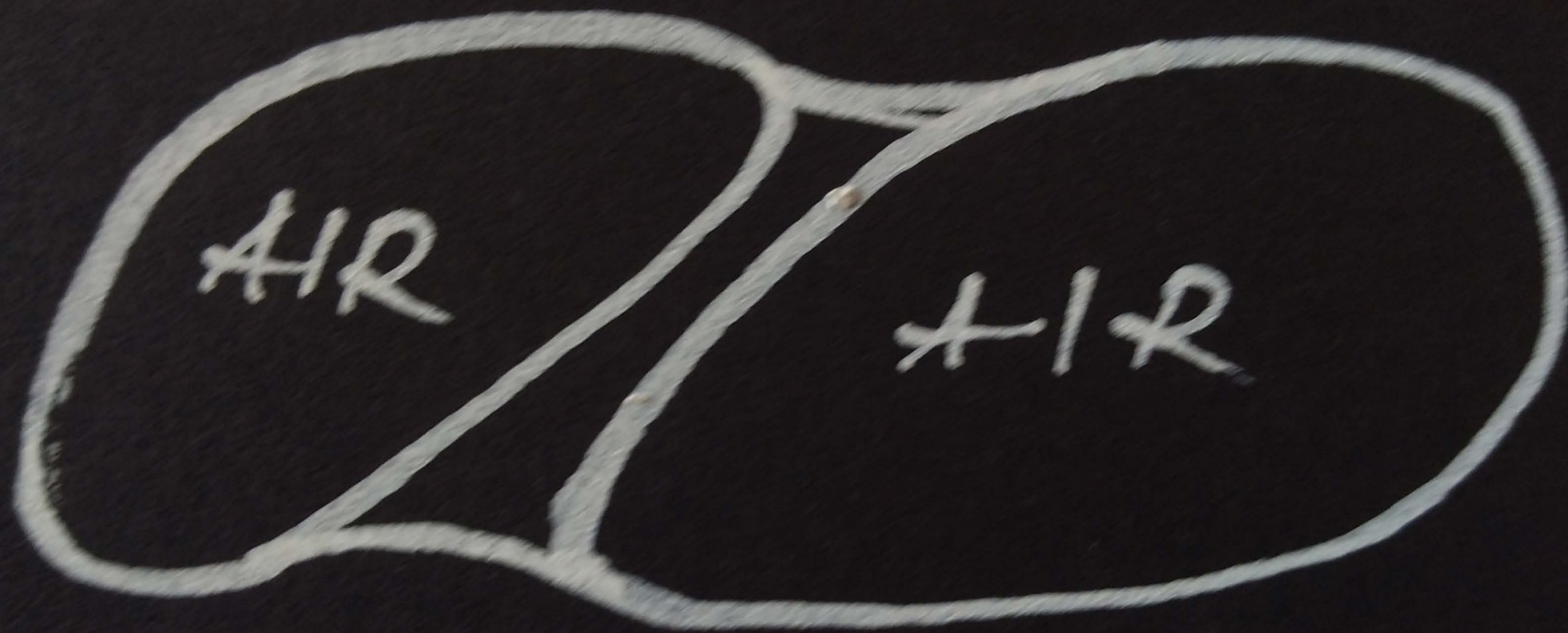
Temporary extension of the main building

“columns”

“window”



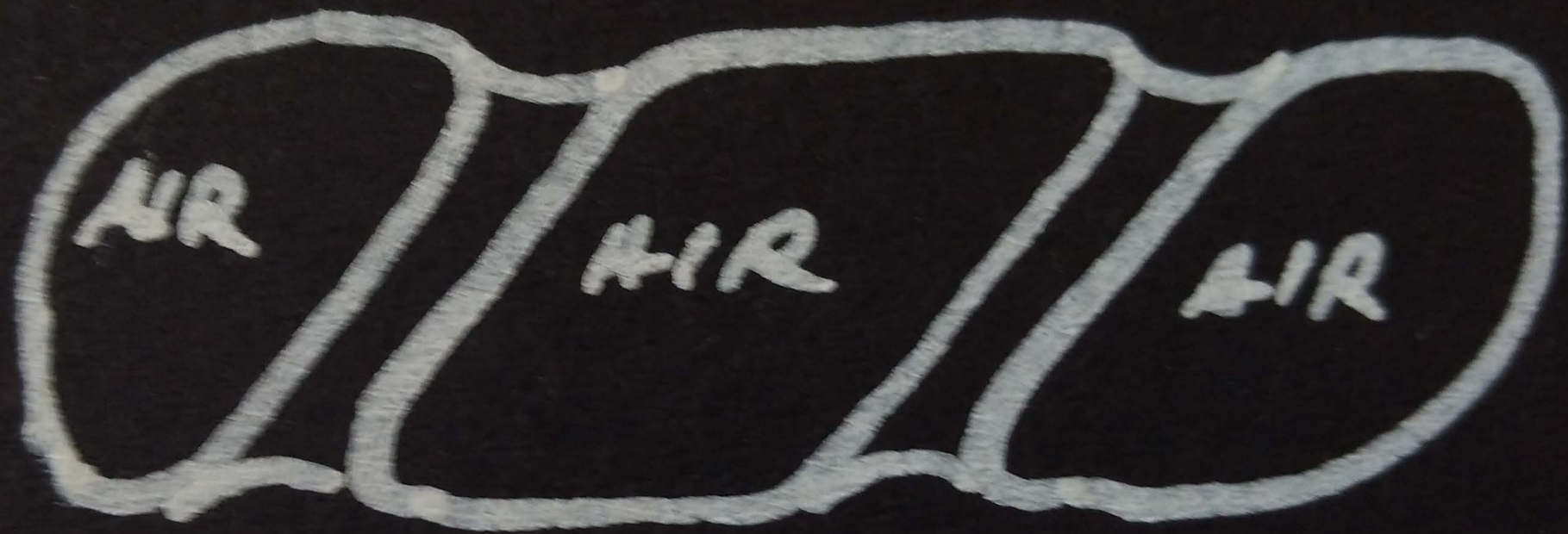




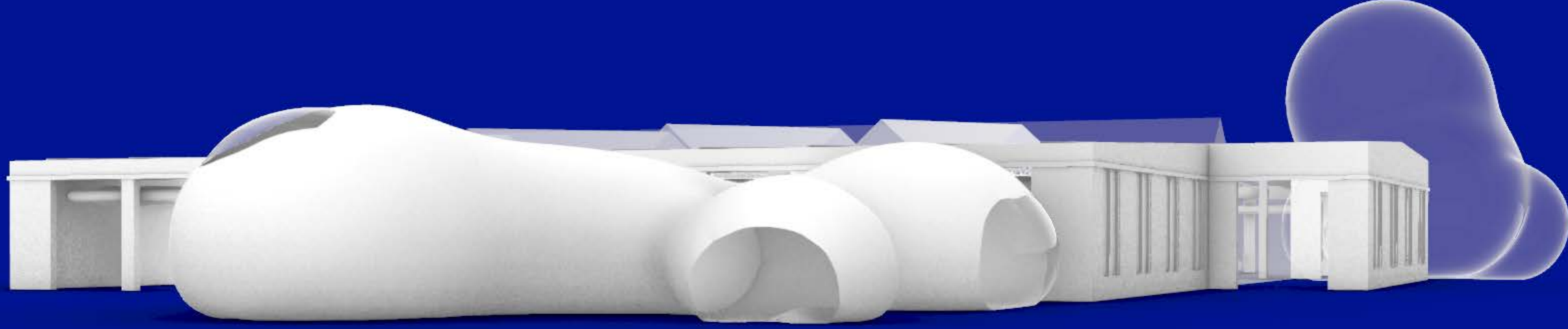
SECTION

Digital lab



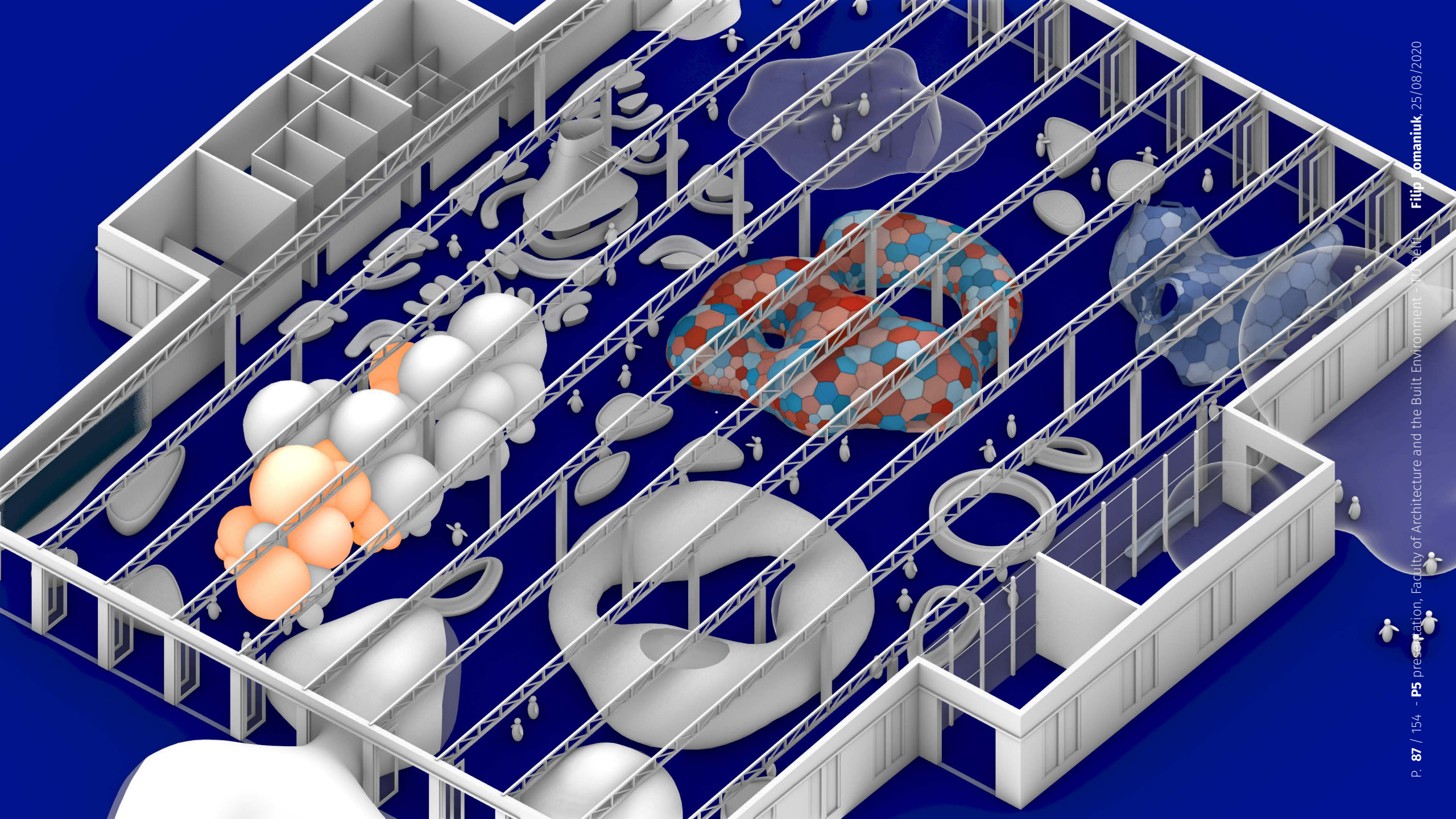


SECTION









# Electromagnetic wave detox





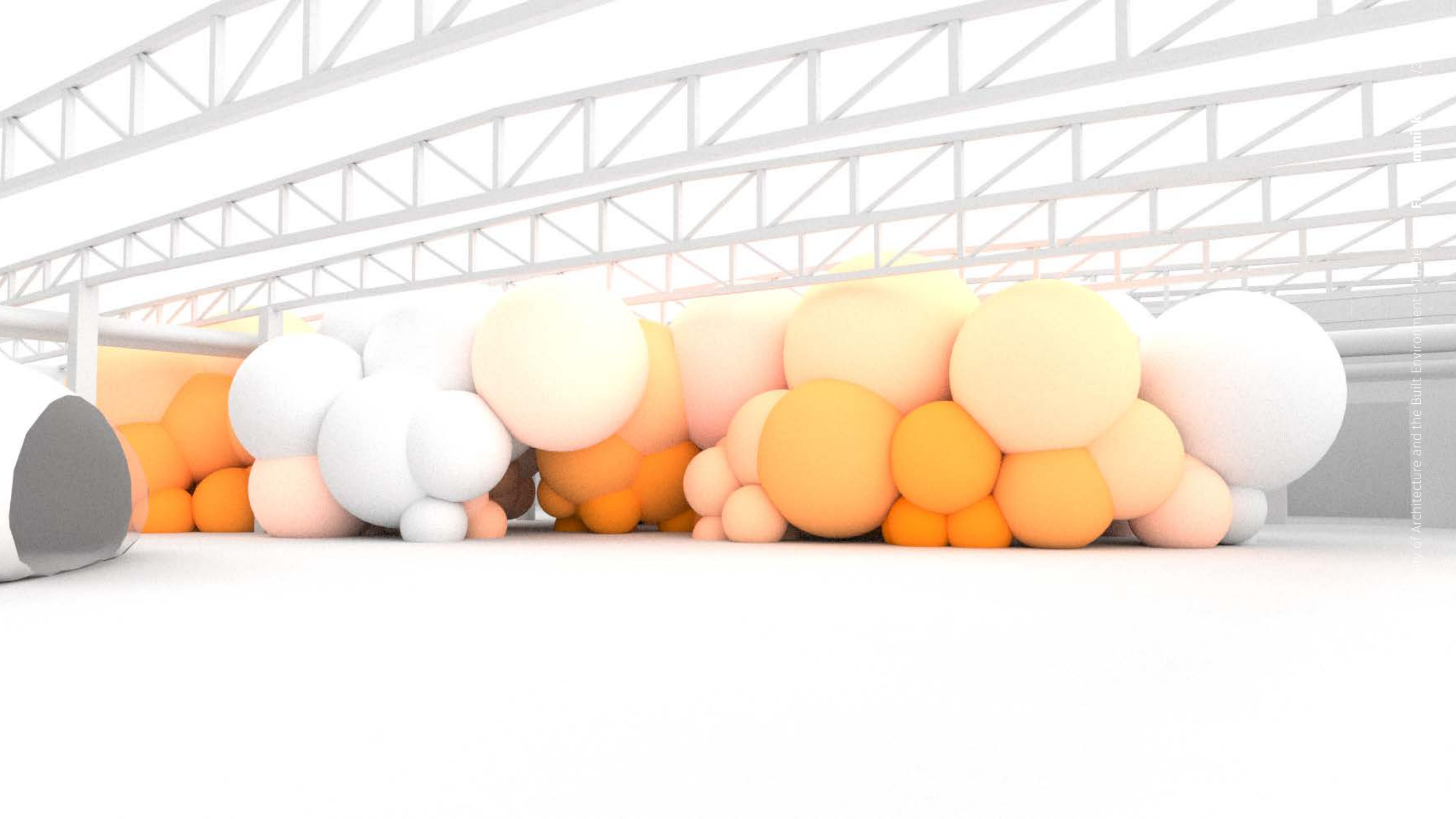
View to the inside

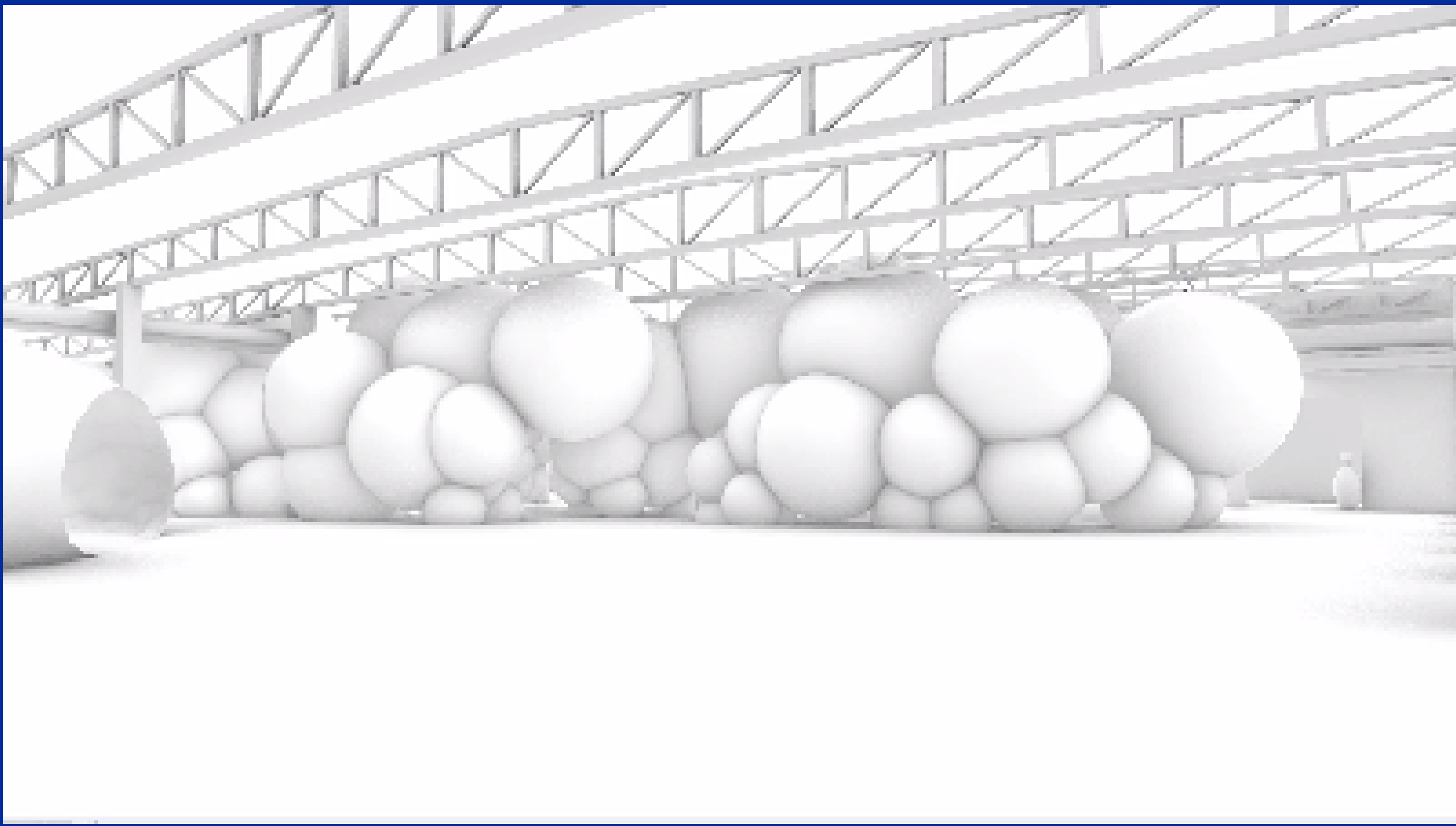
View to the top

View to the outside



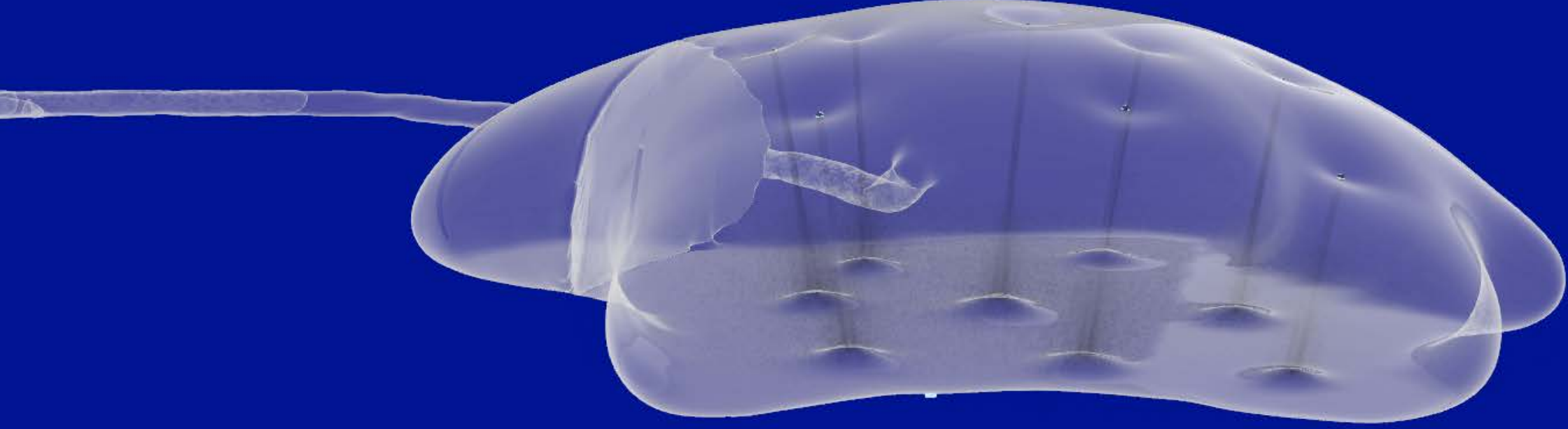
# Digital forest

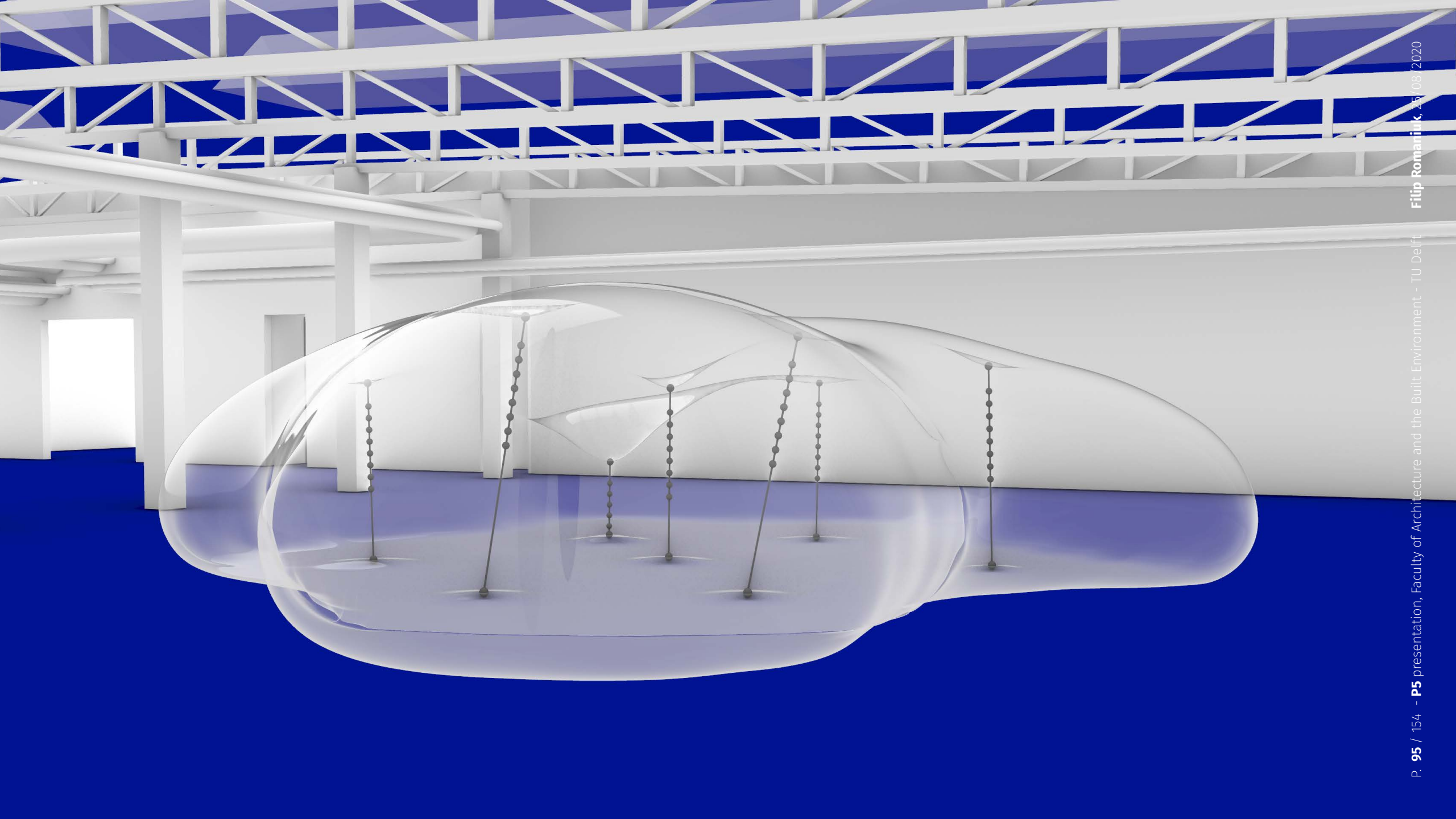




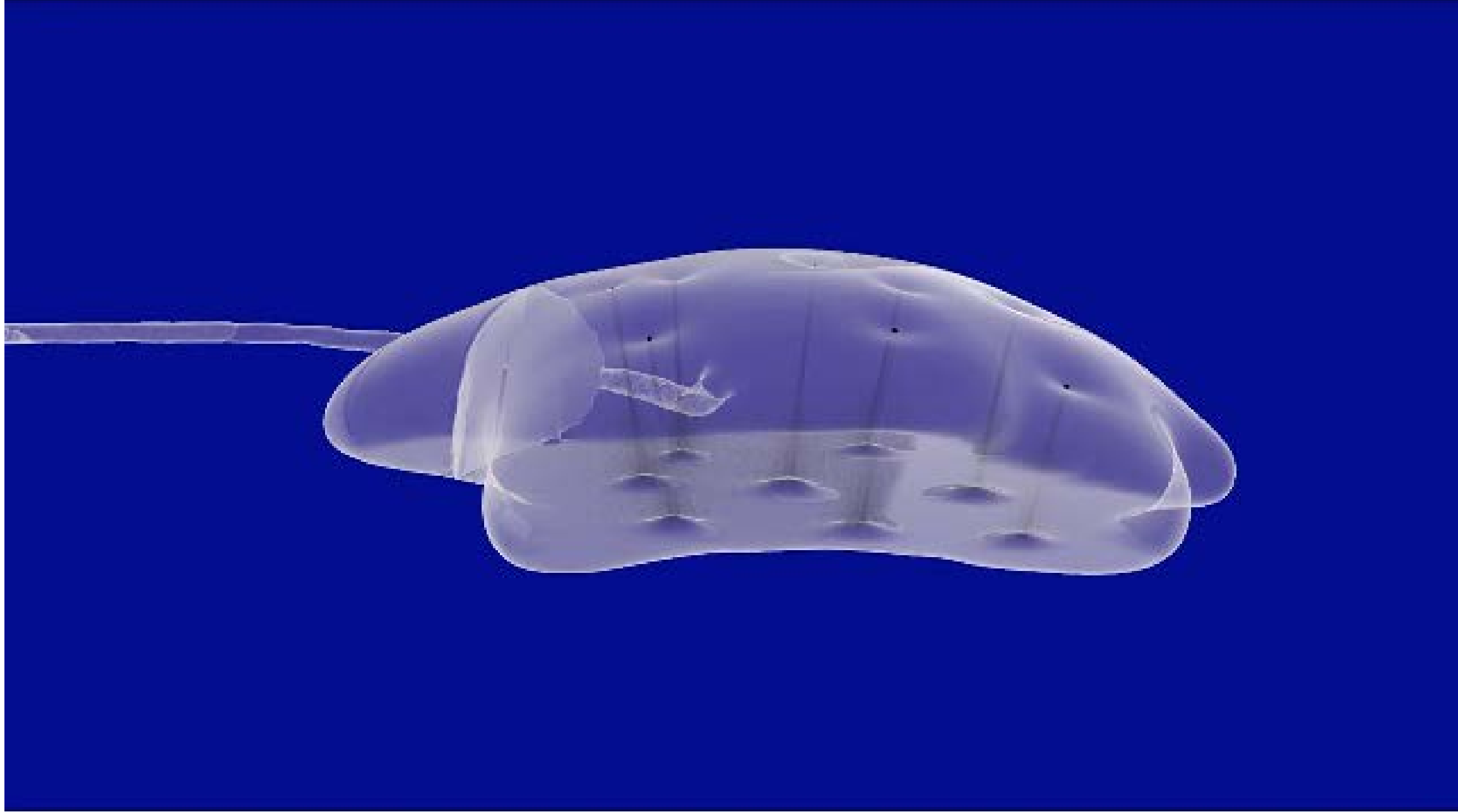


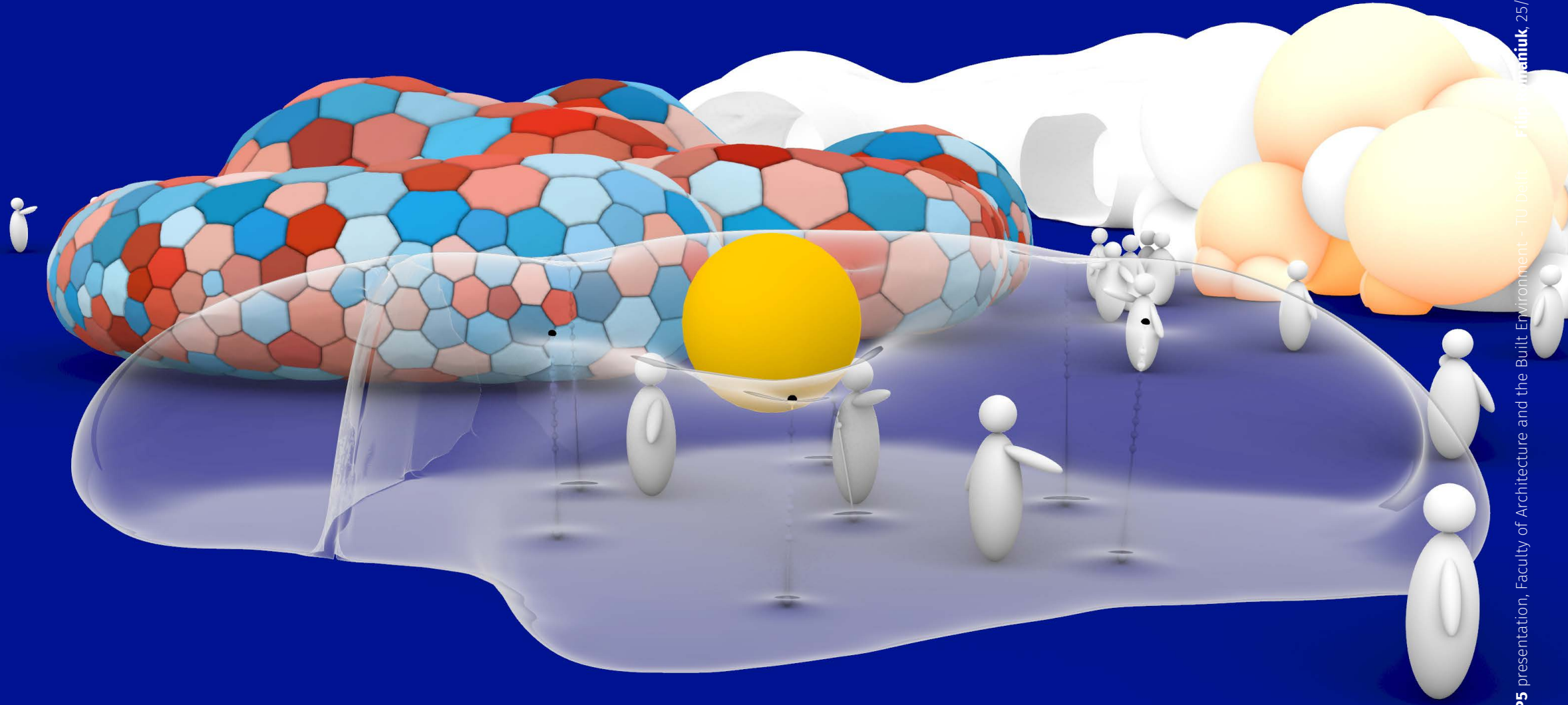
# Robotic pillow

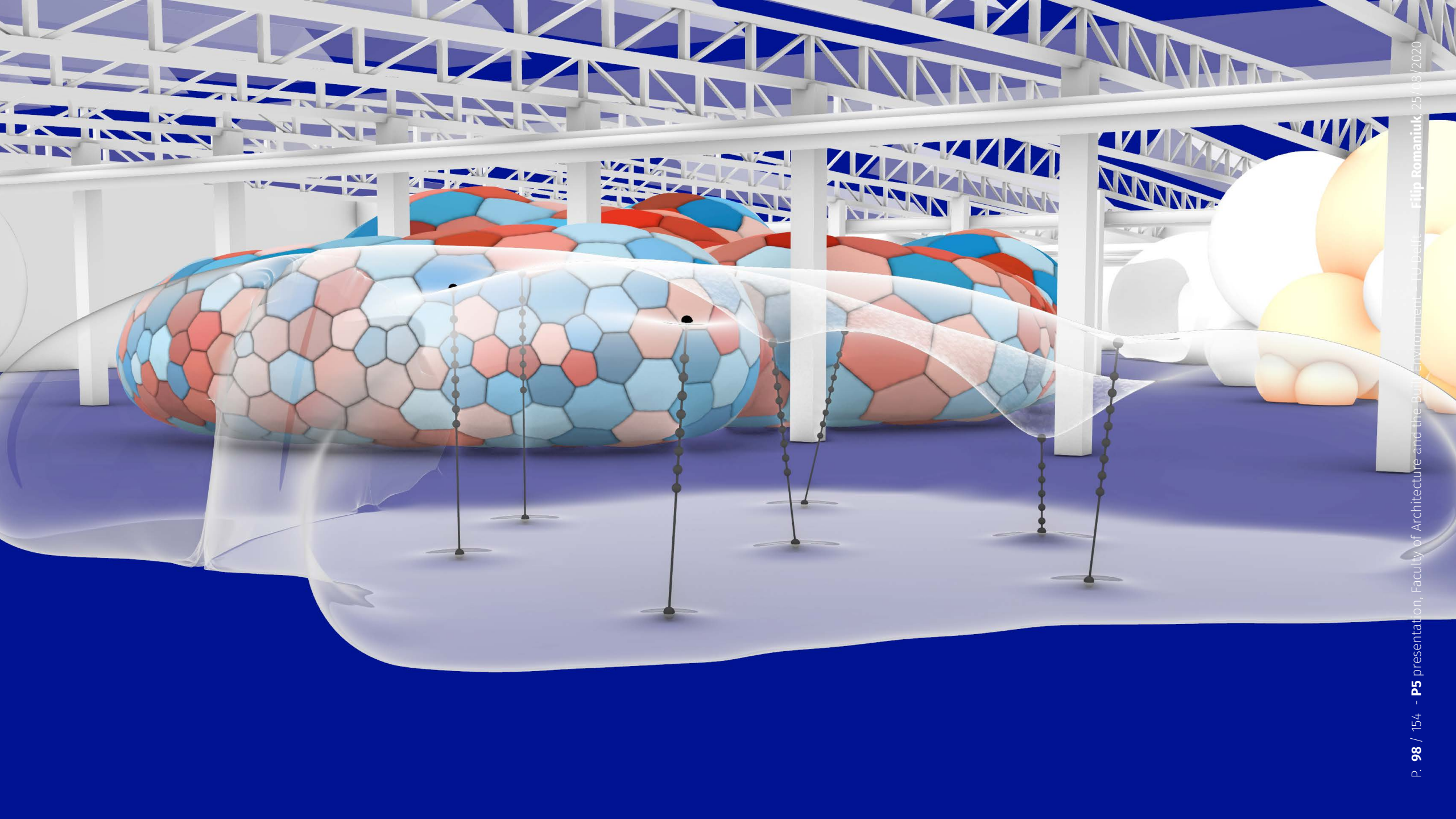






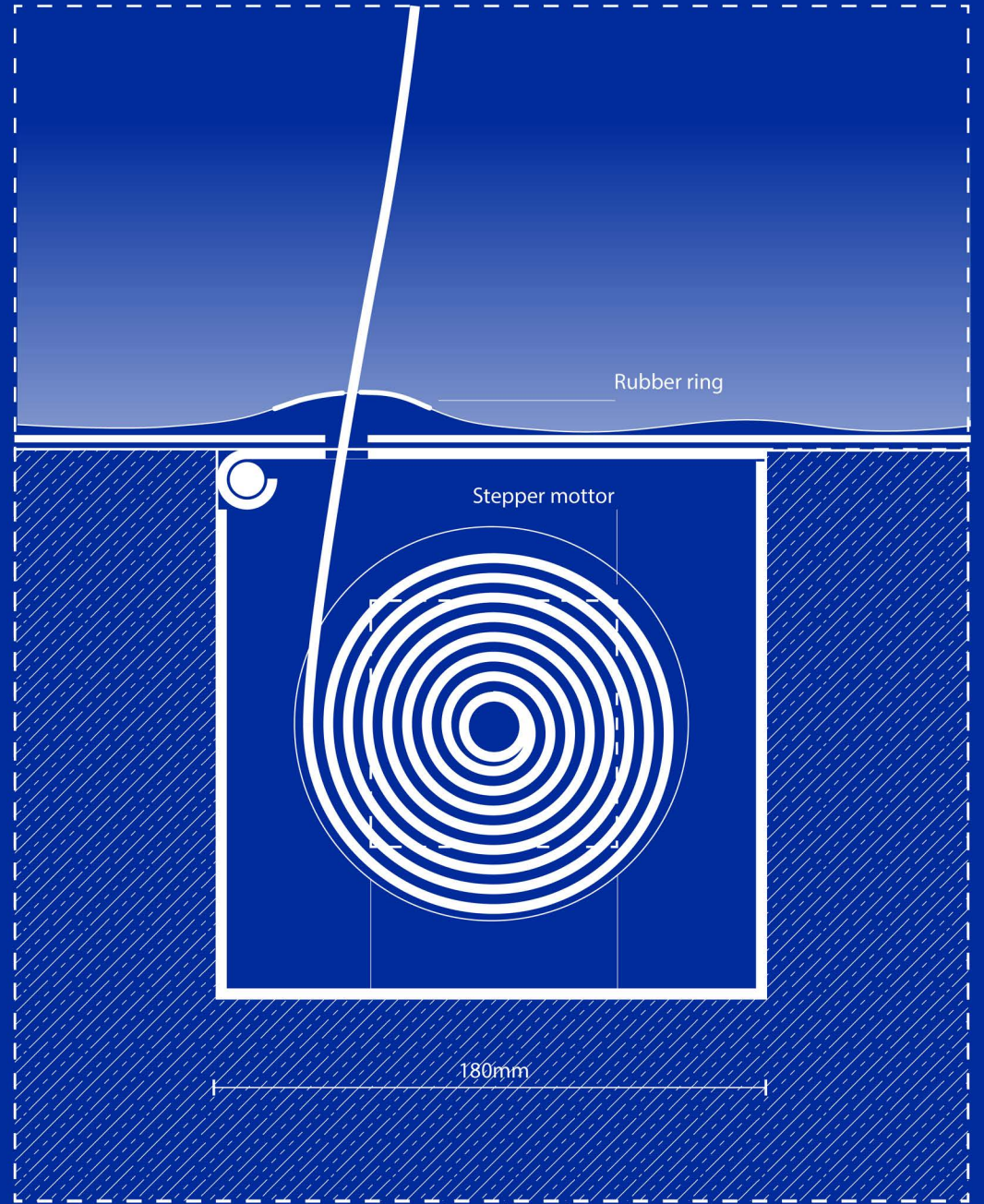
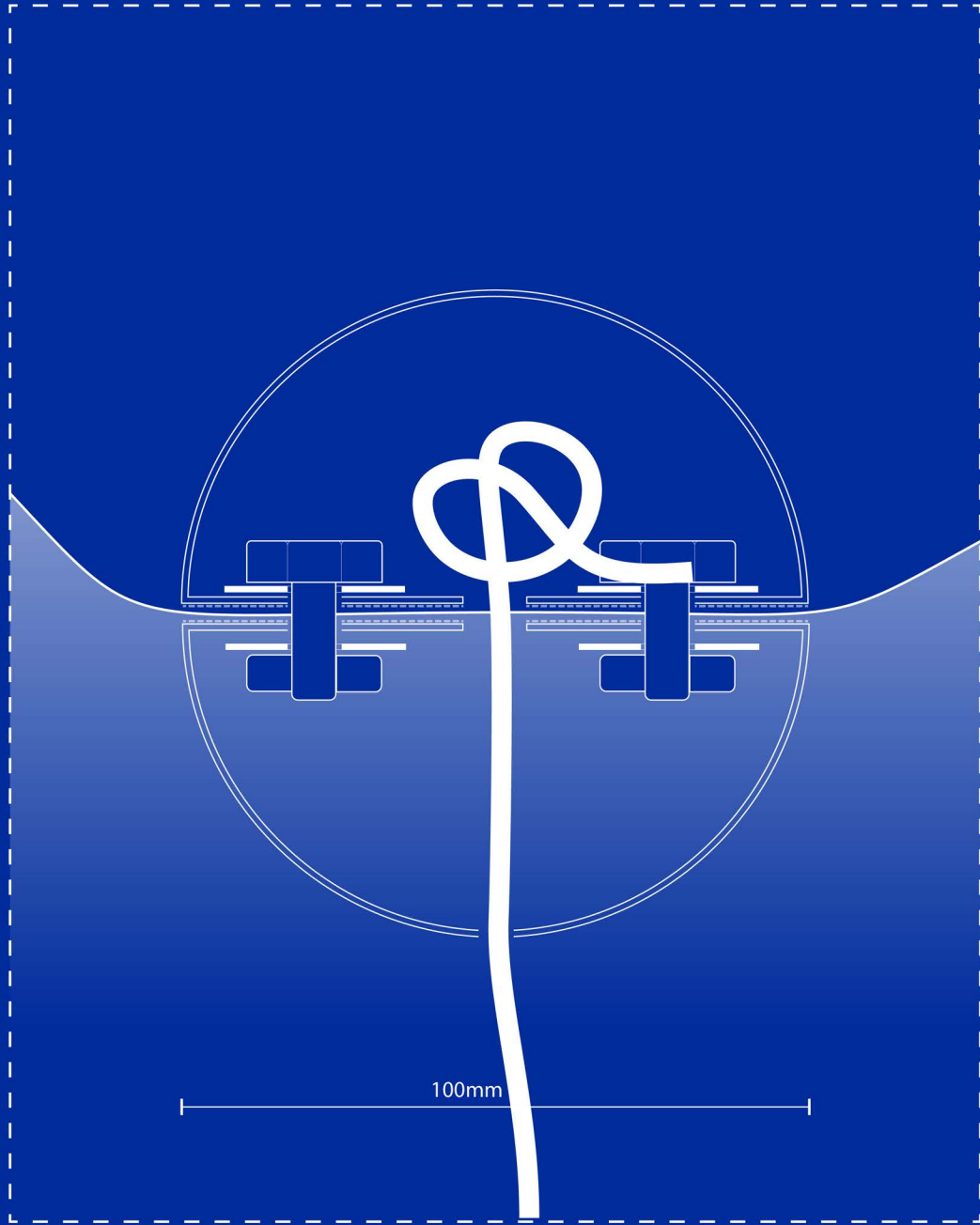




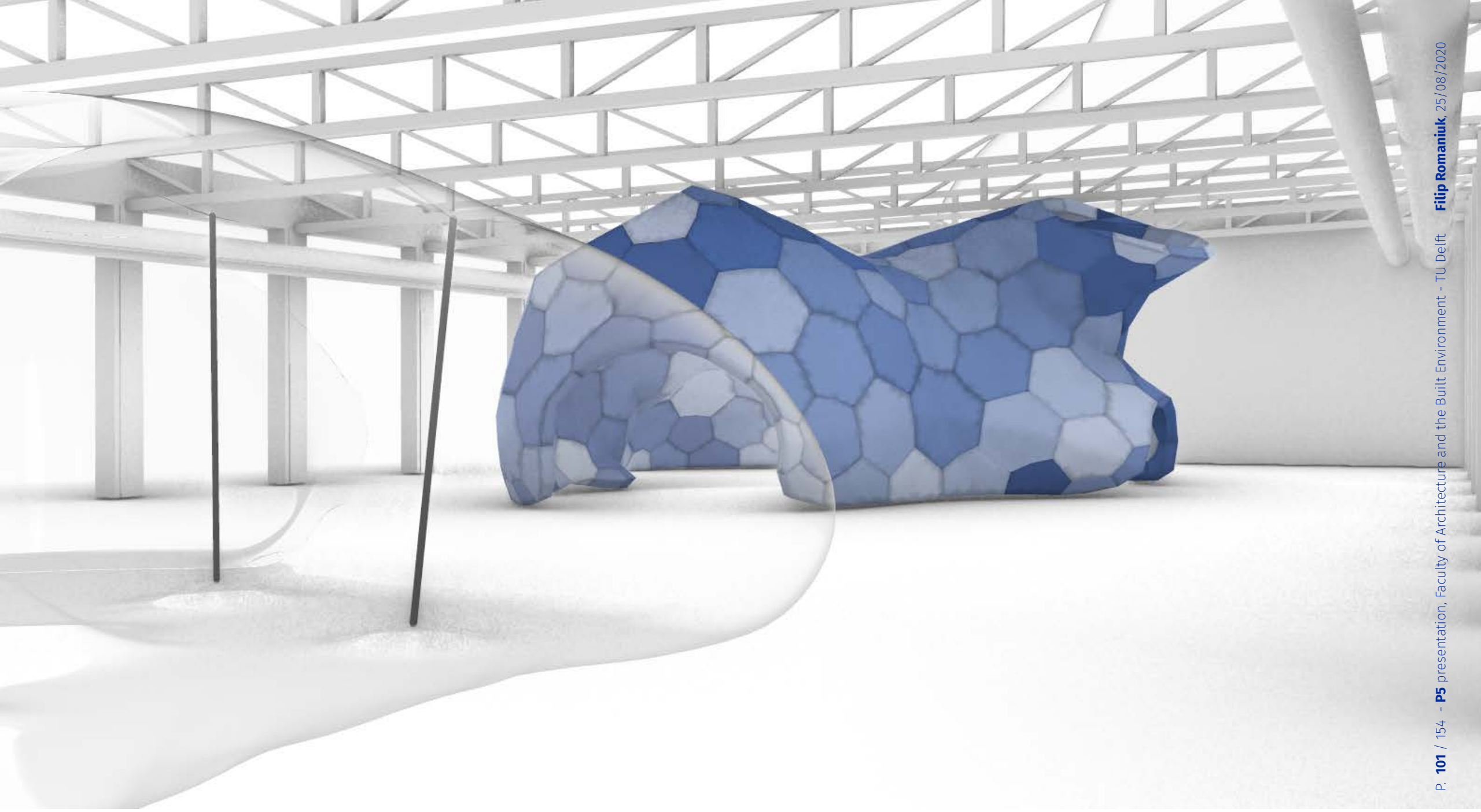




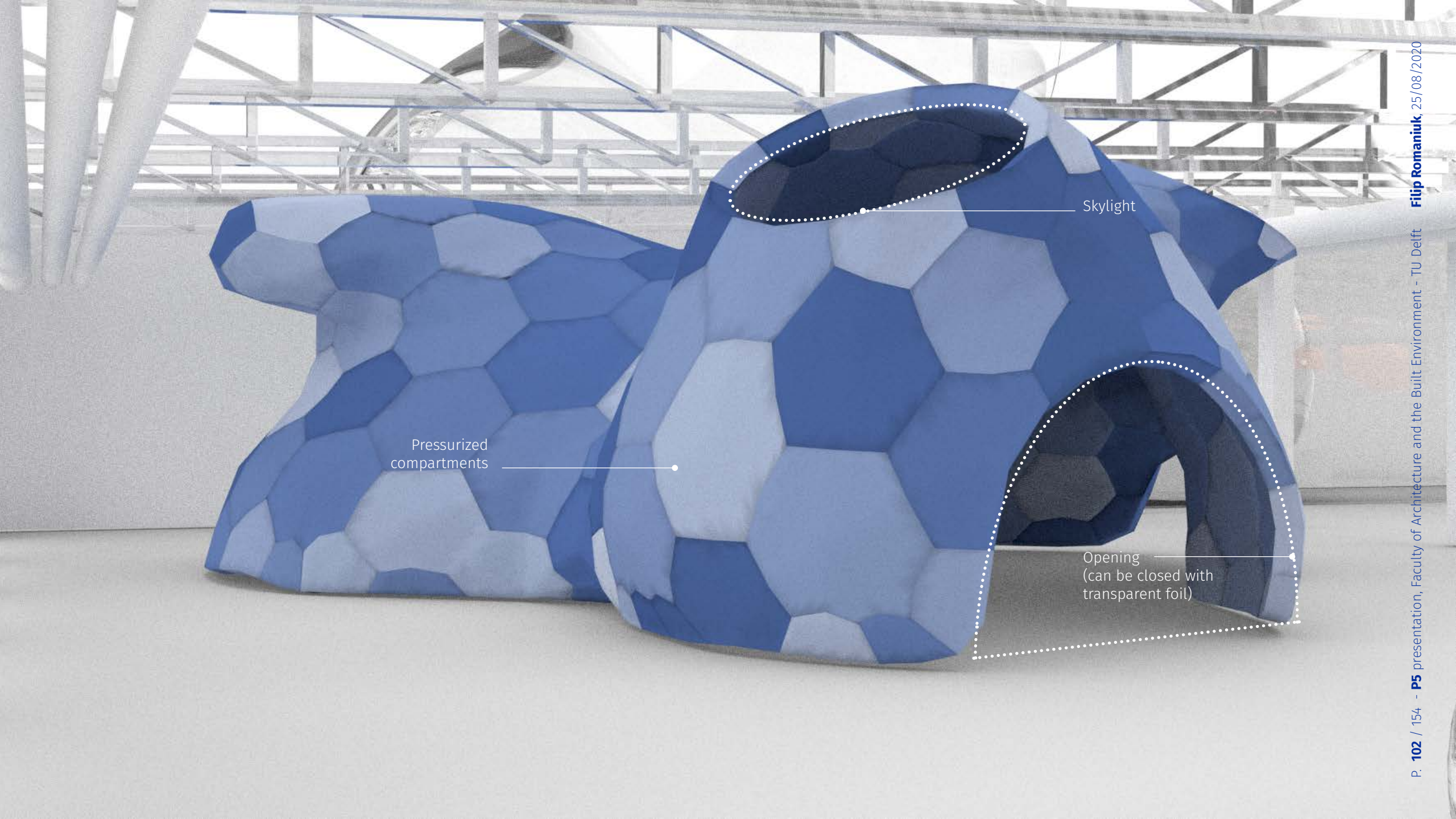
## ROBOTIC PILLOW DETAILING



# Computational logic & Workshop unit





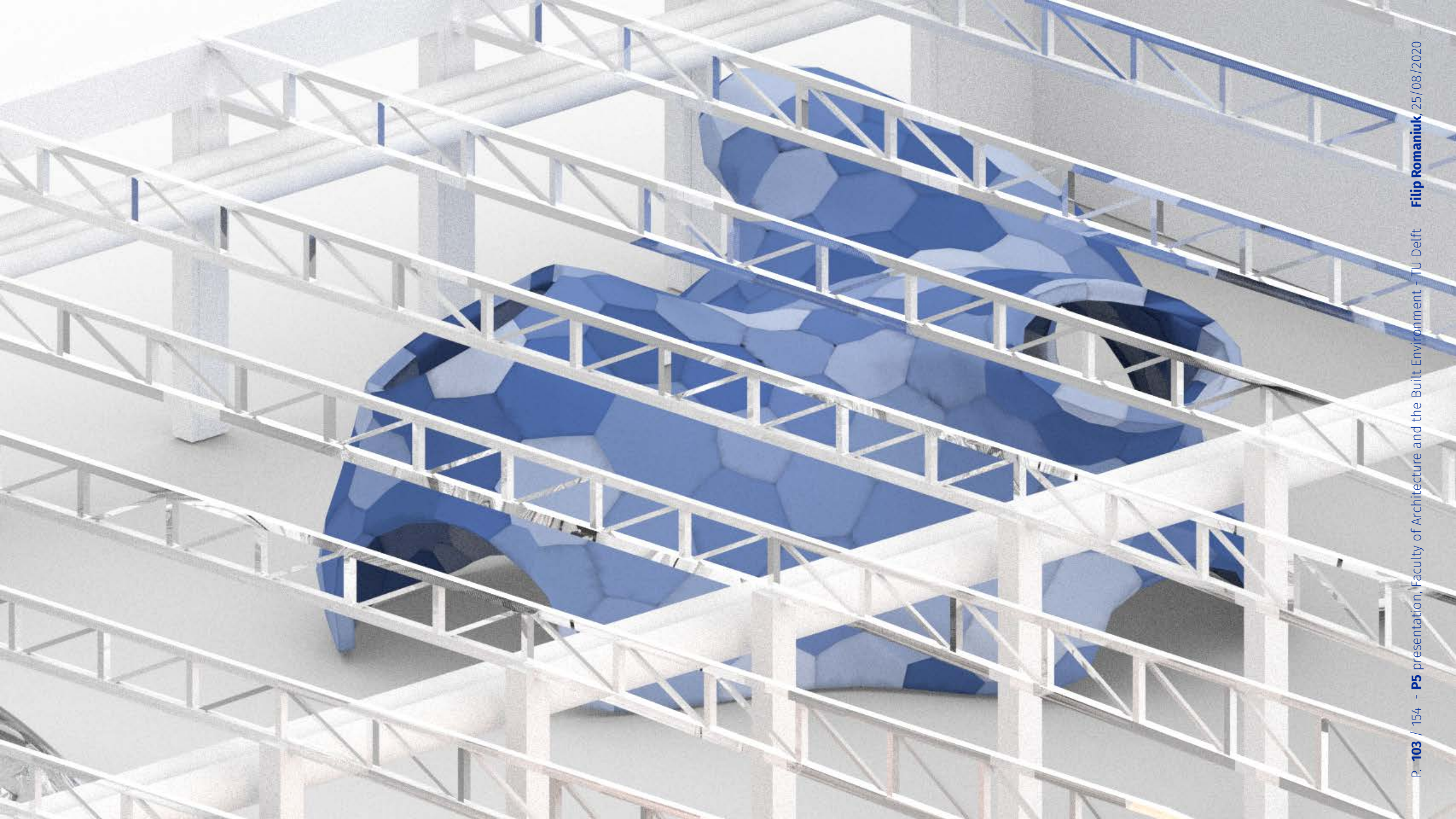


Pressurized  
compartments

Skylight

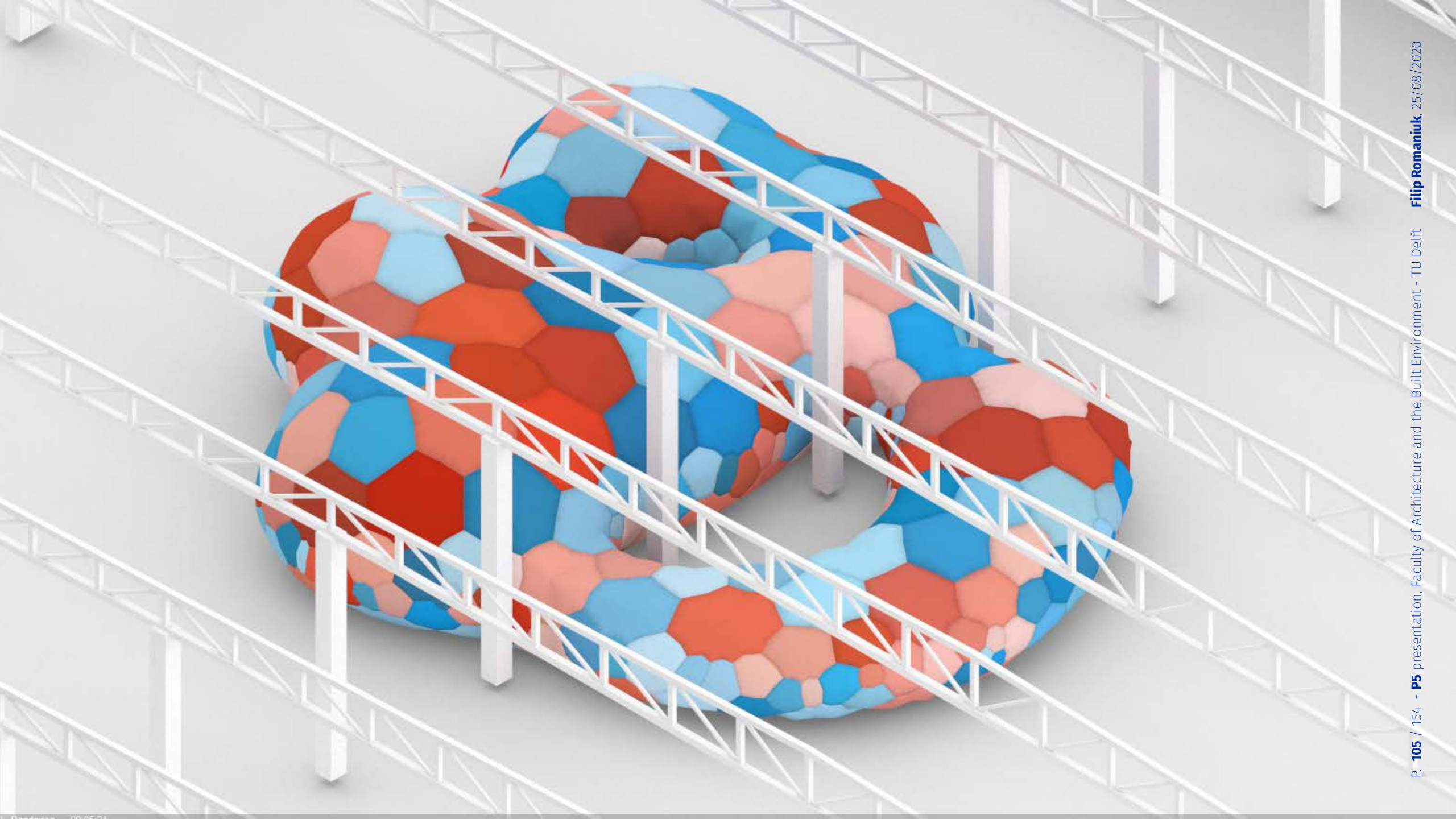
Opening  
(can be closed with  
transparent foil)

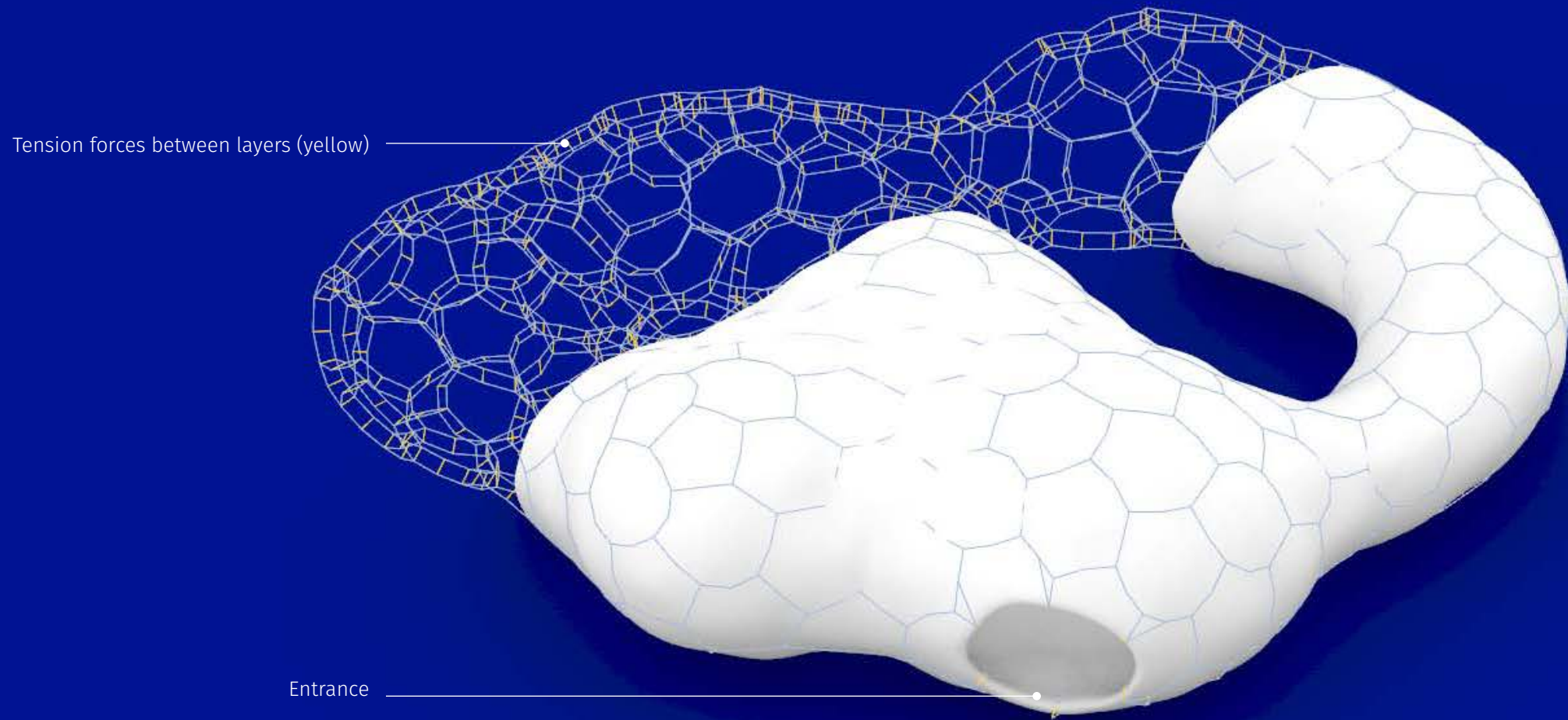




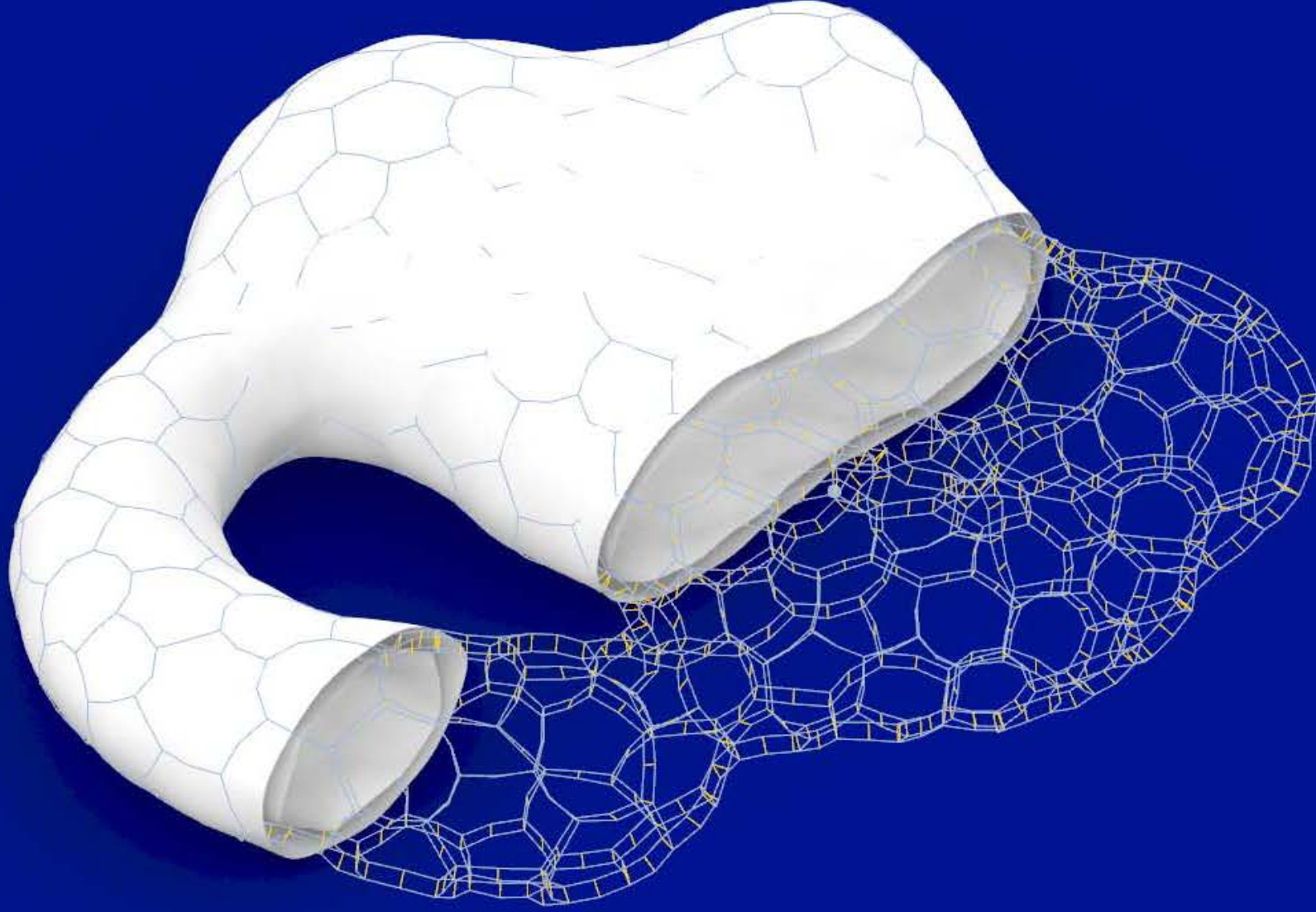
# Interactive cave



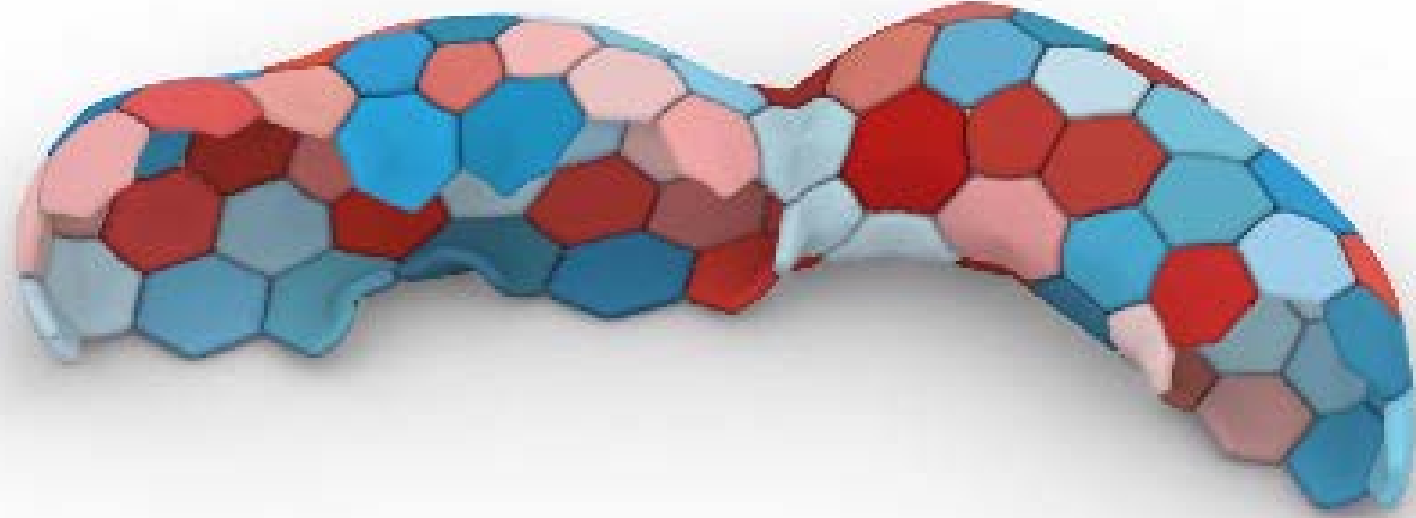


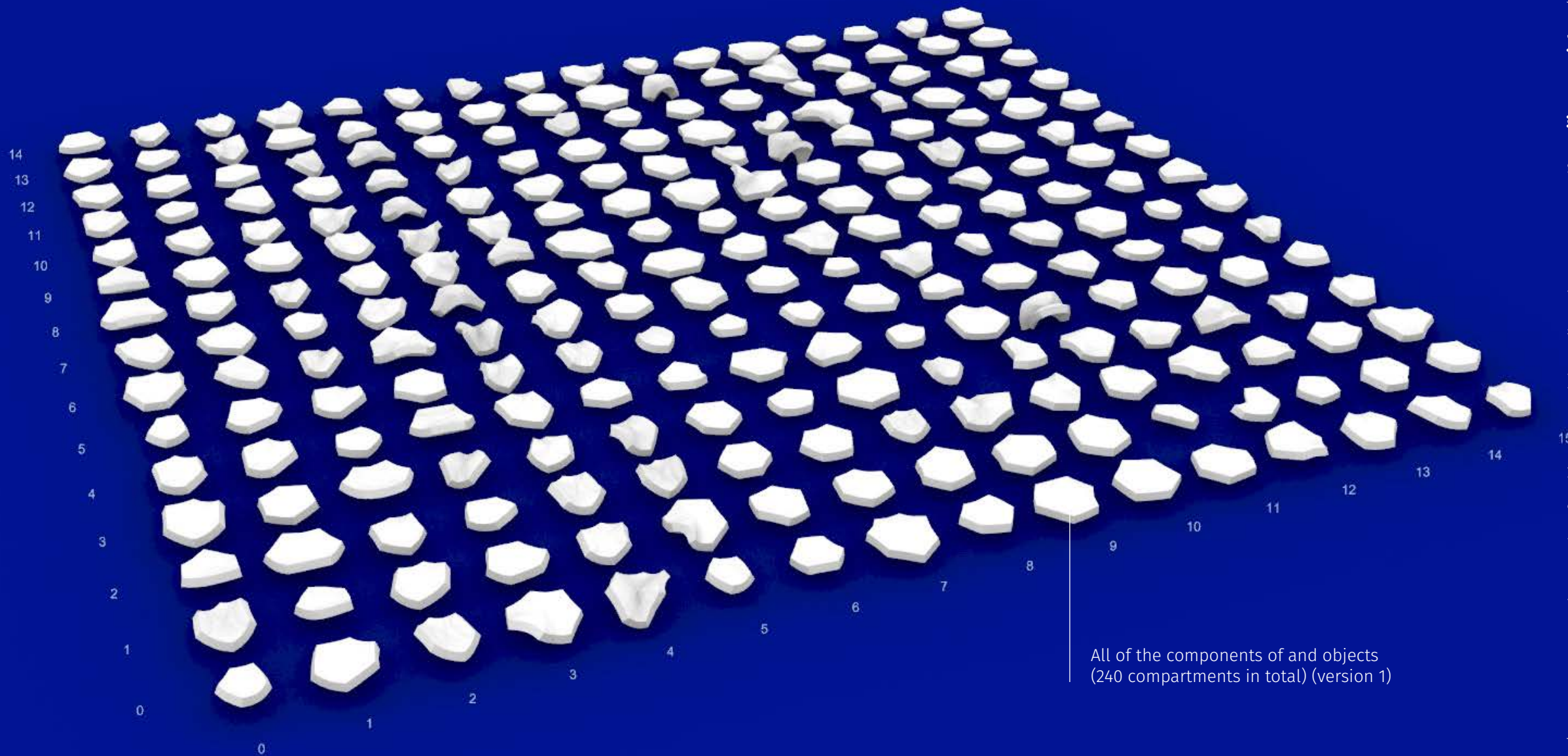




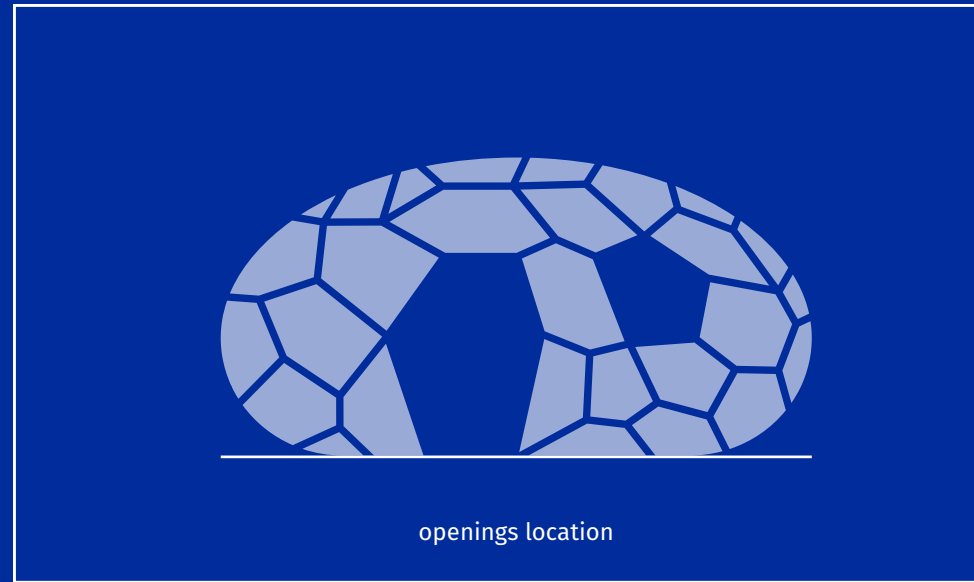
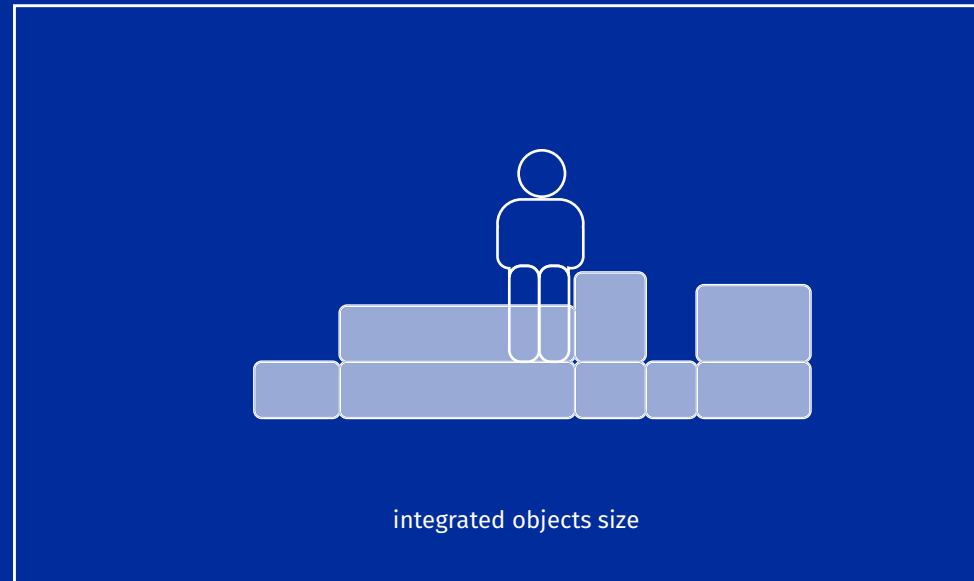
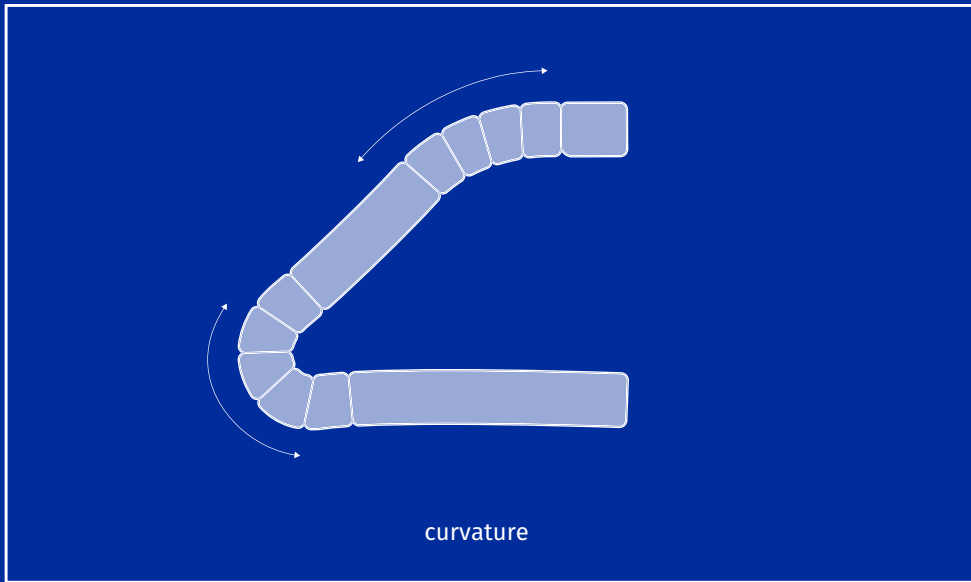
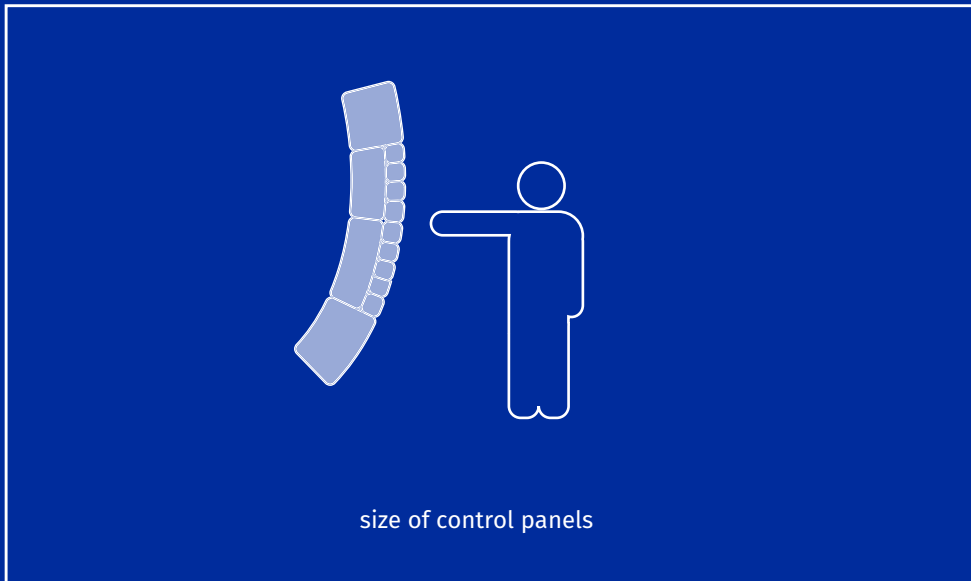




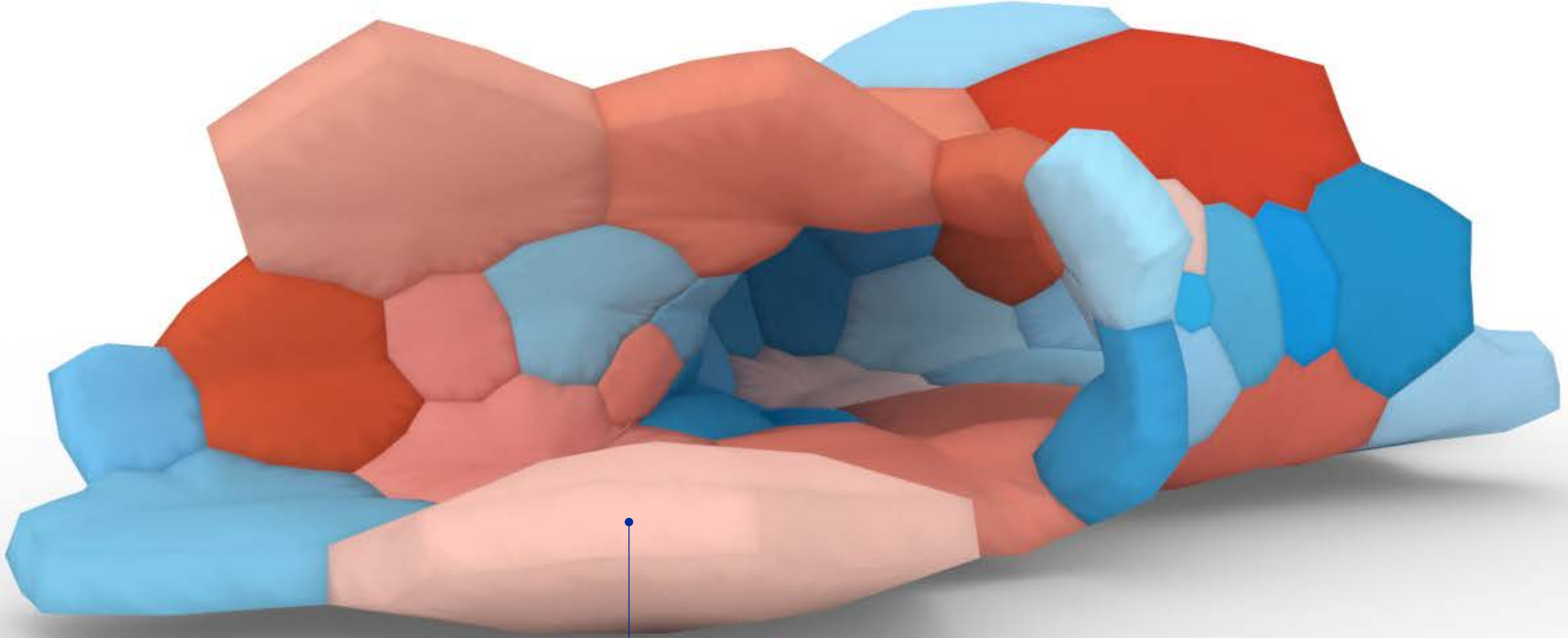




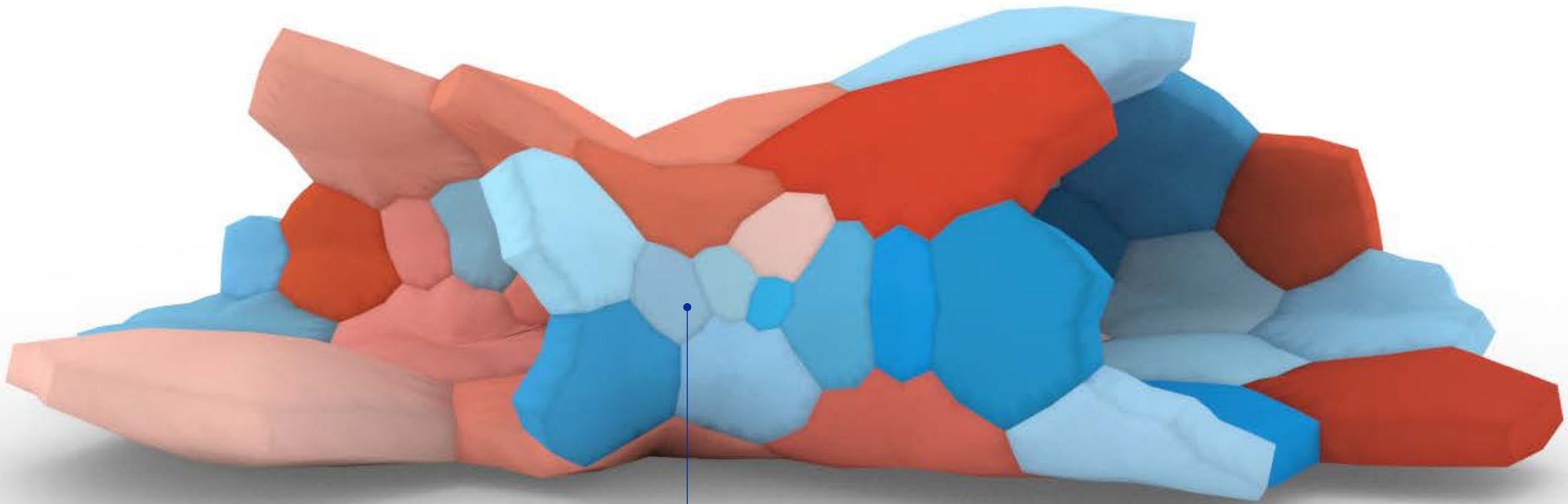
# FACTORS DEFINING THE CELL RESOLUTION OF A SURFACE



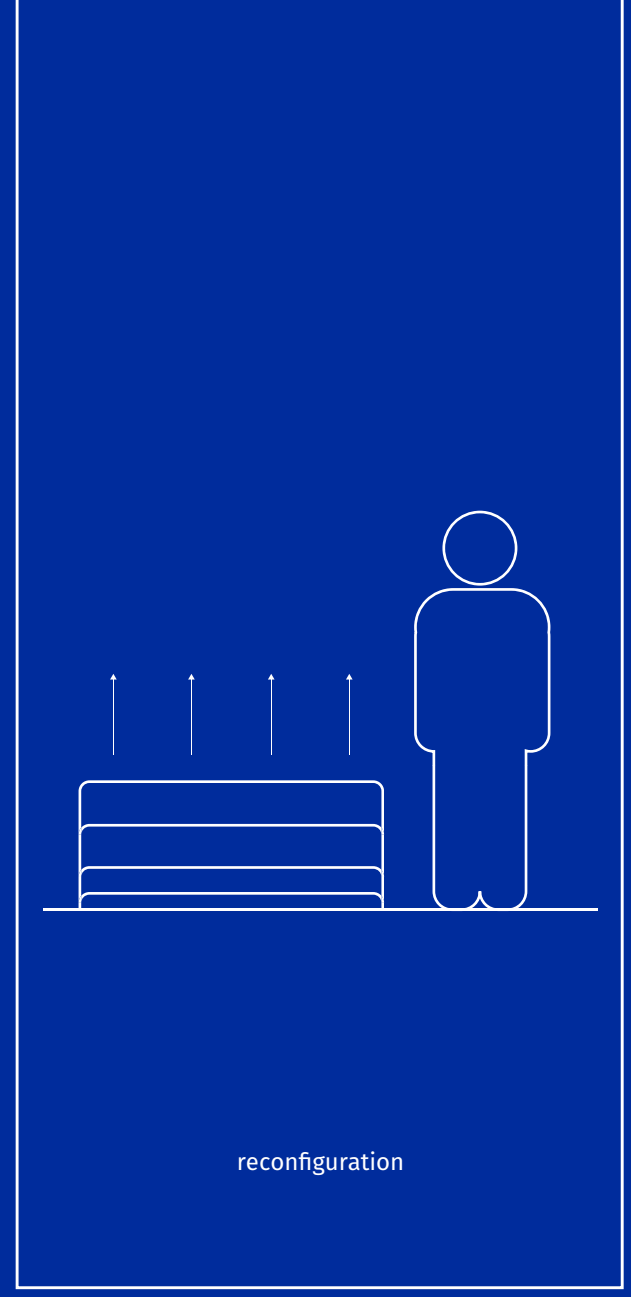
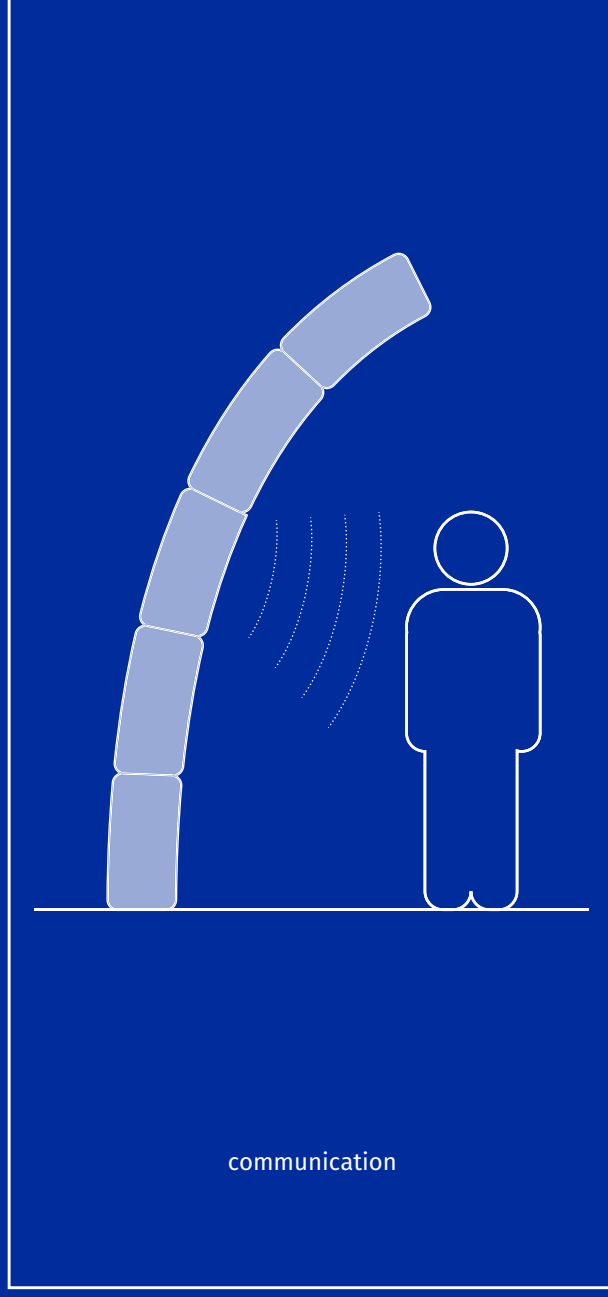
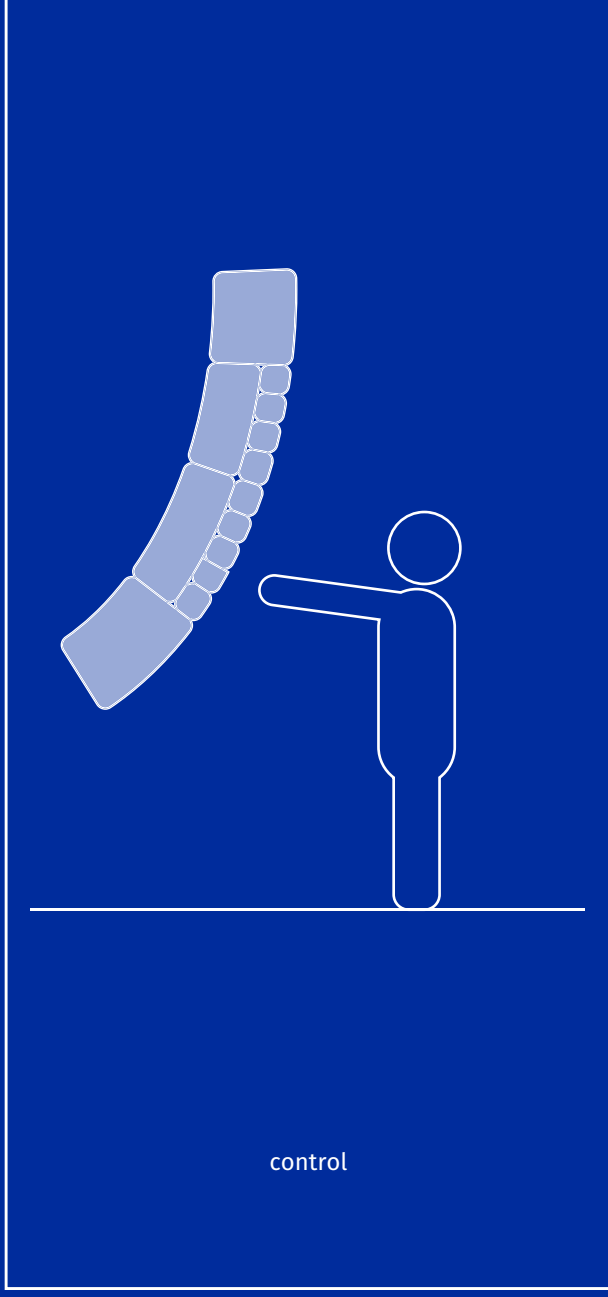




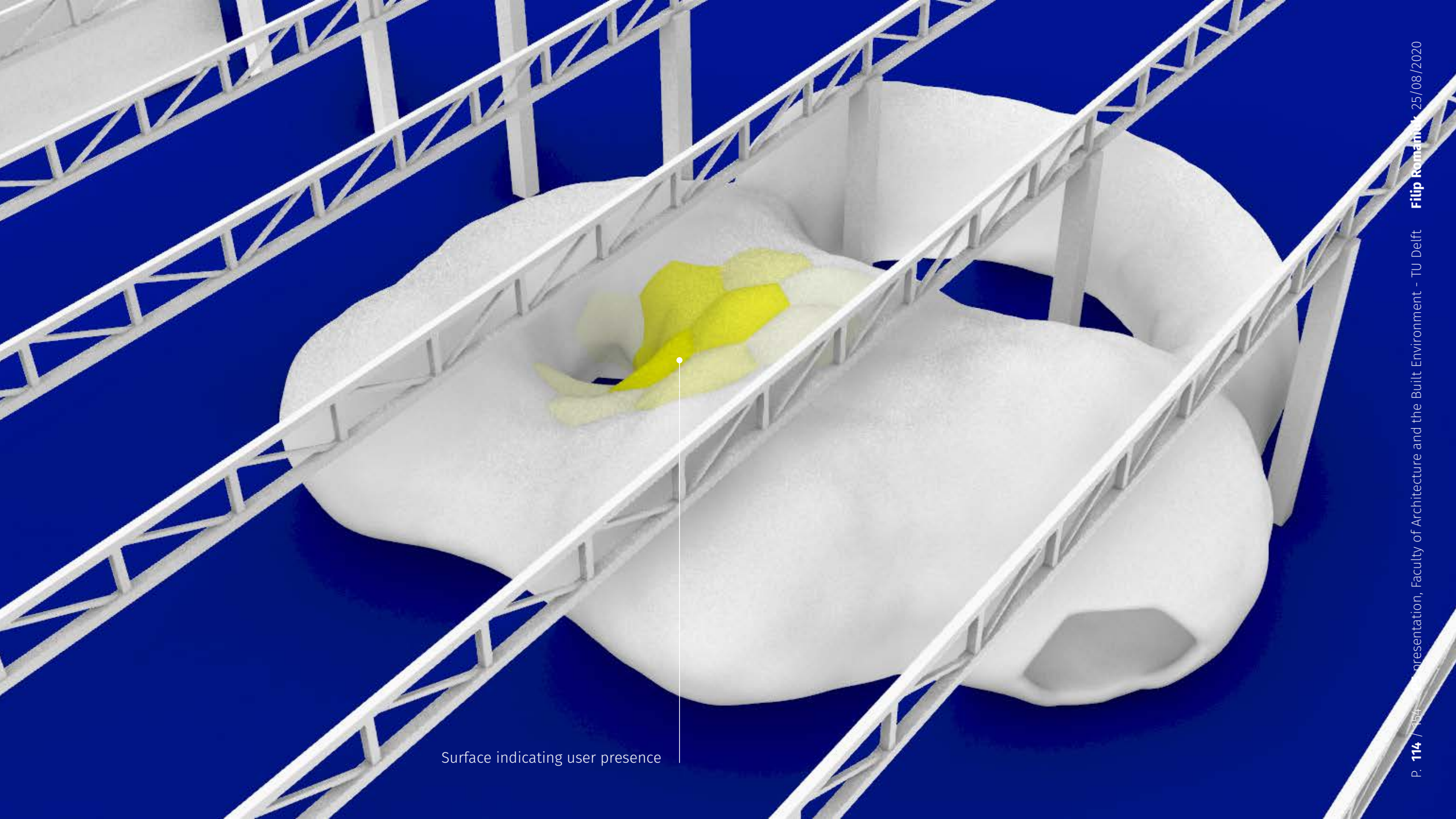
Smaller resolution on floor and roof



Bigger resolution in place of bigger curvature

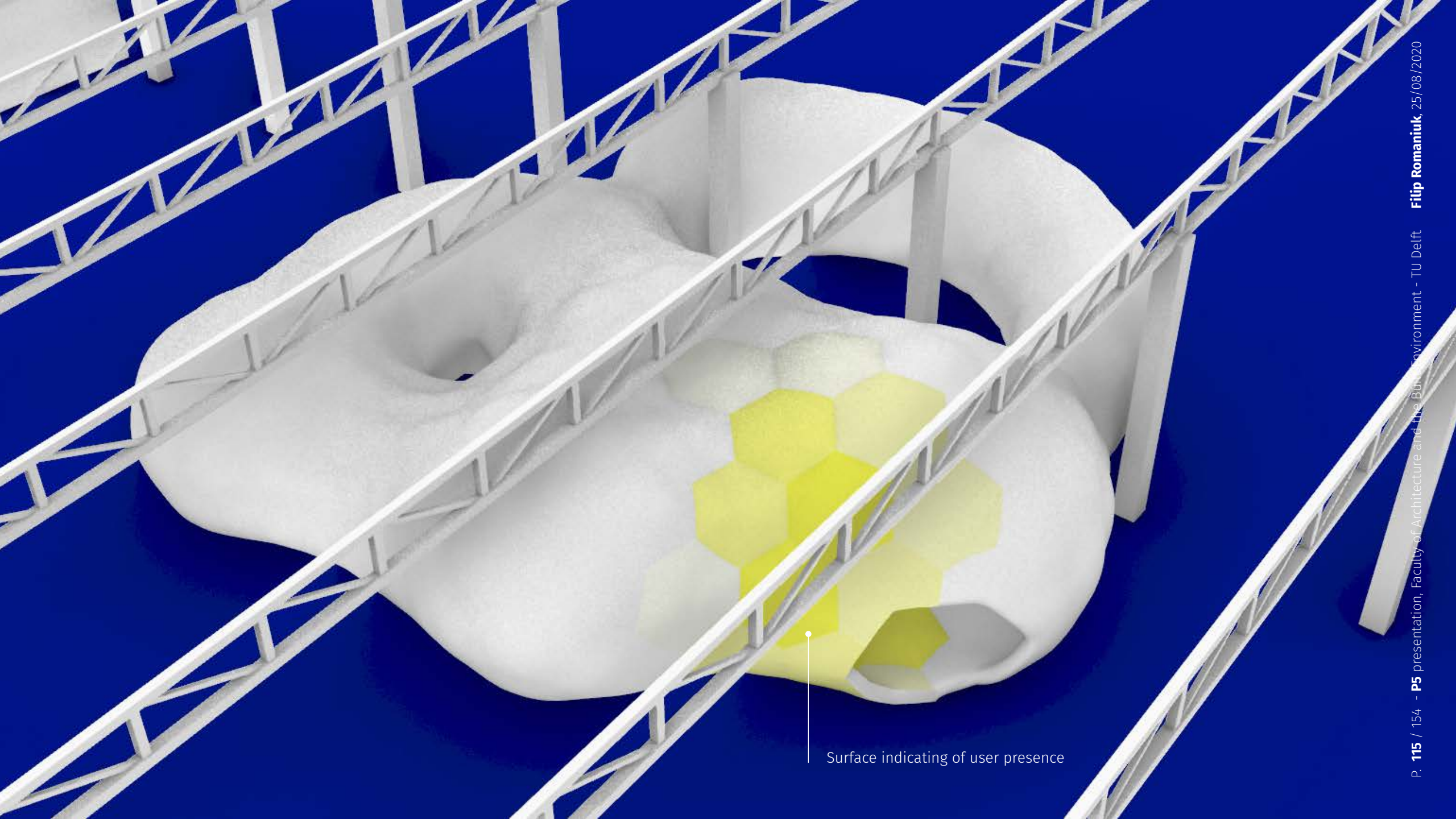




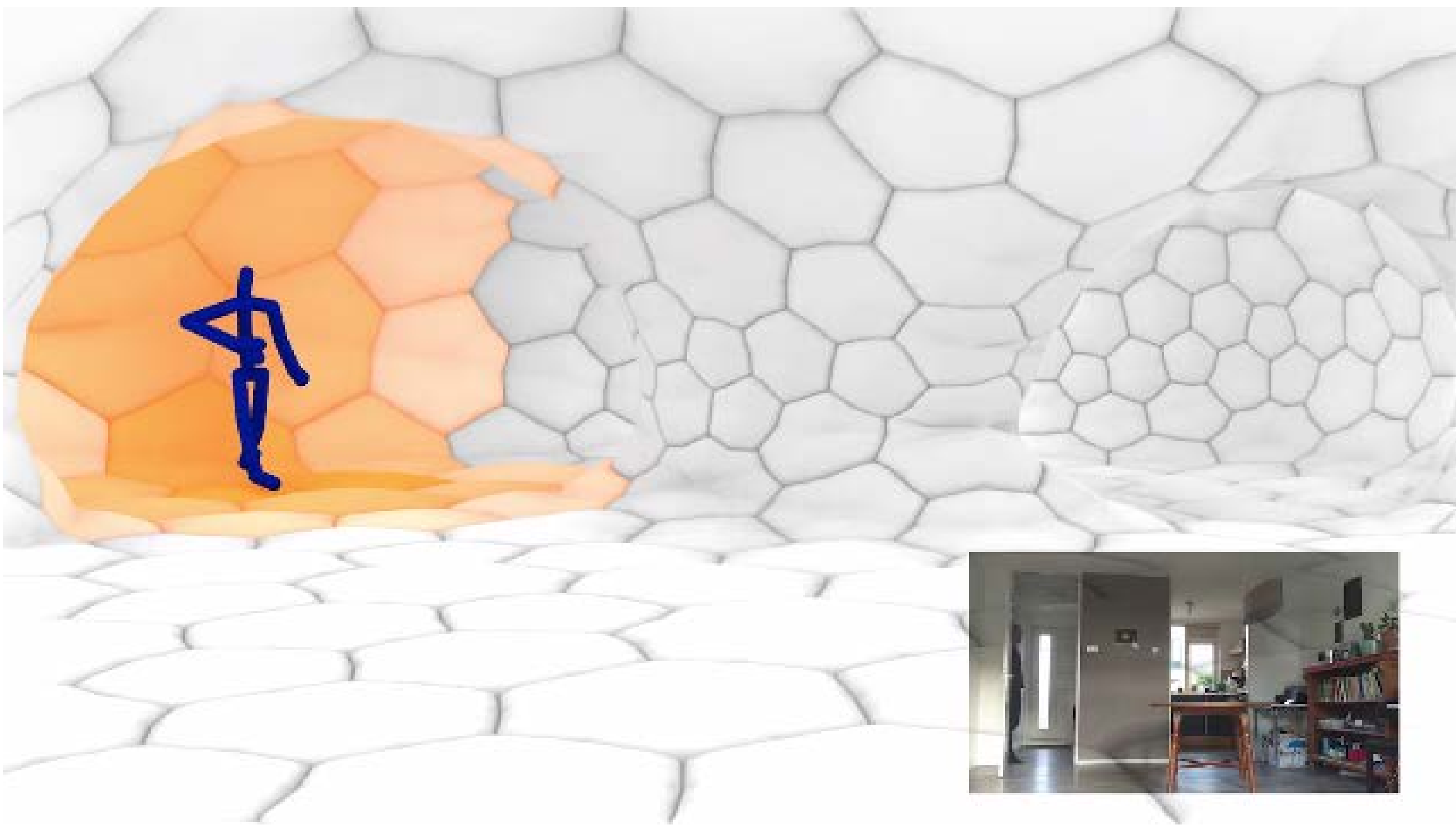


Surface indicating user presence

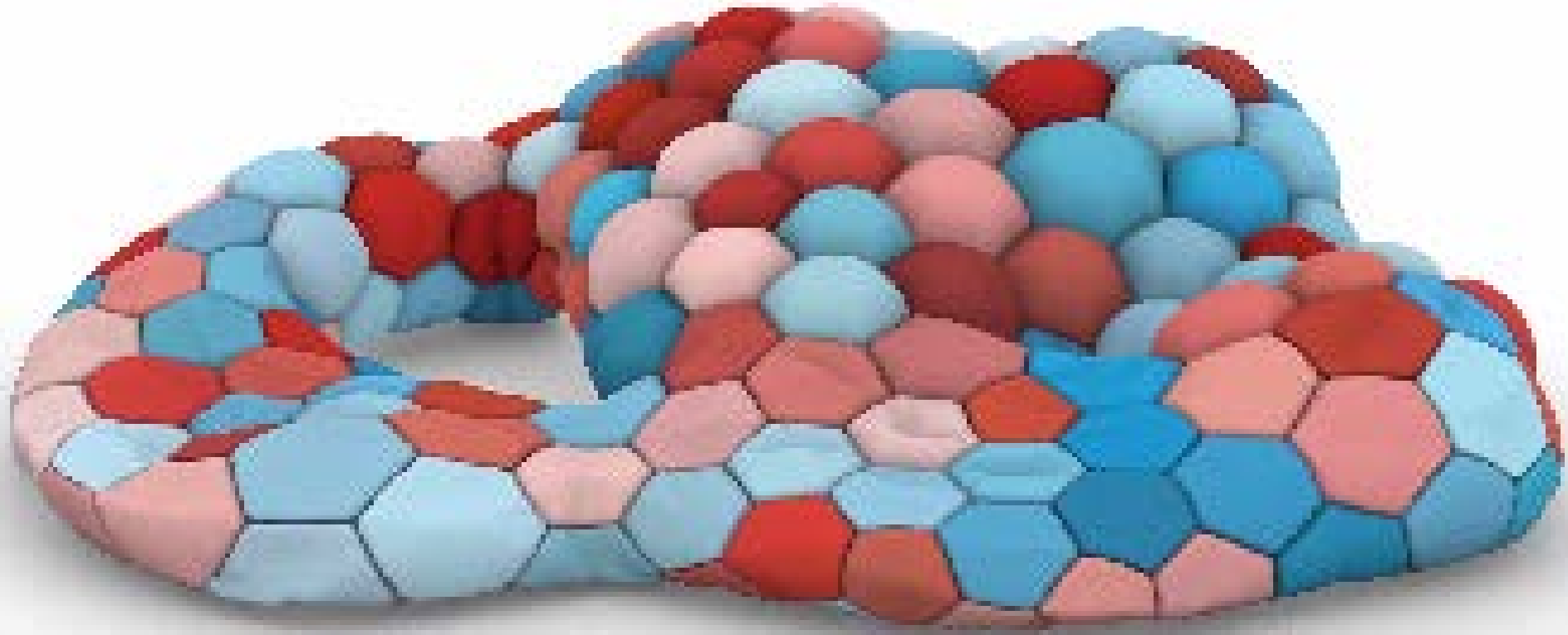


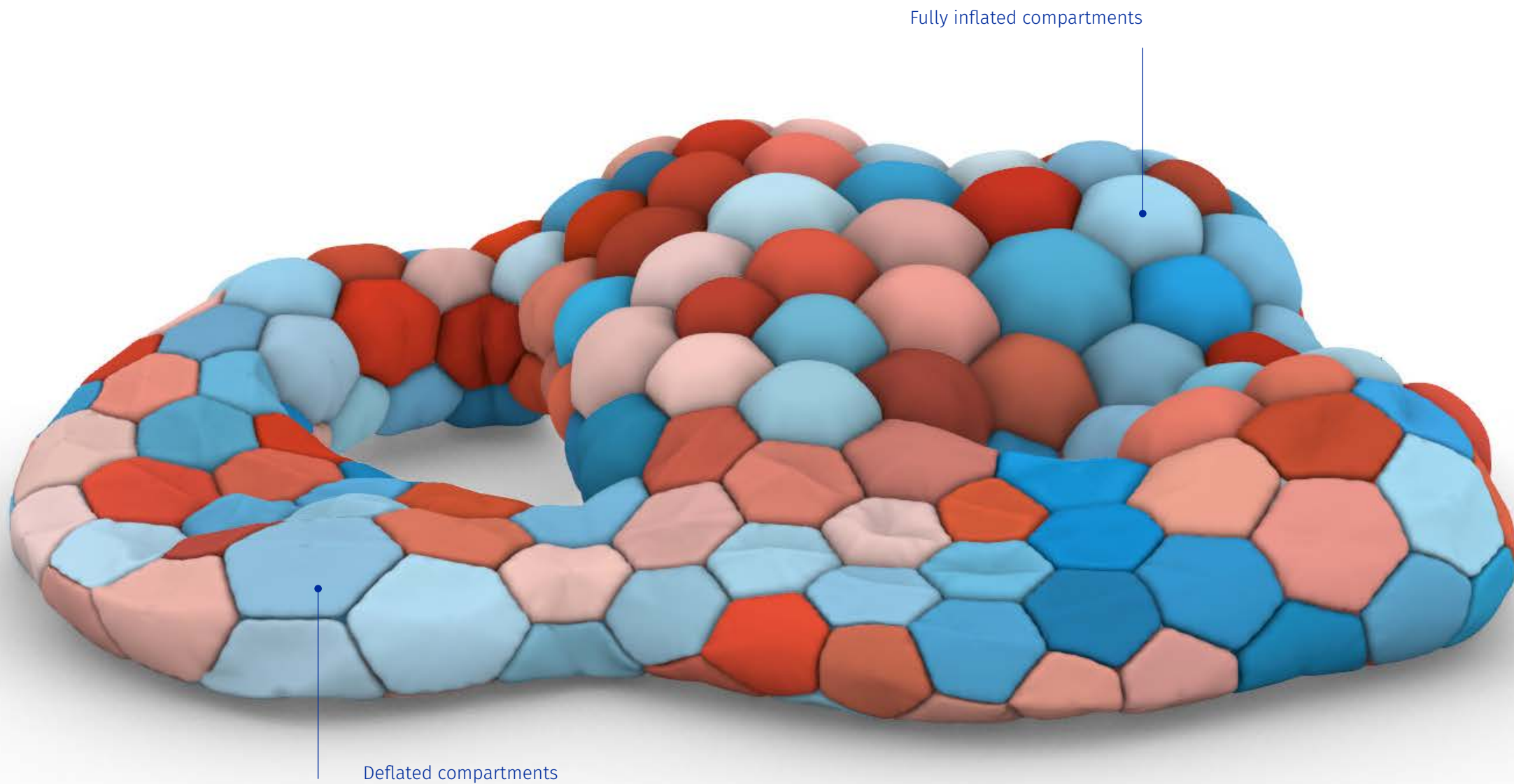


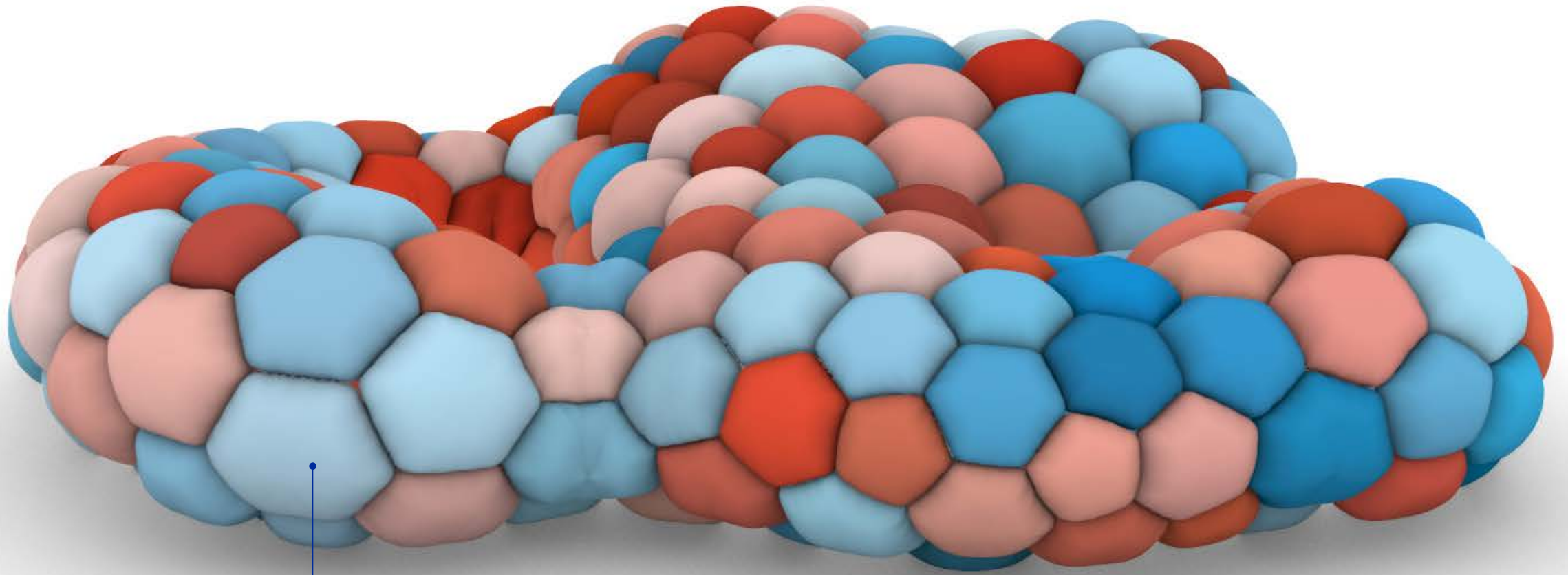
Surface indicating of user presence





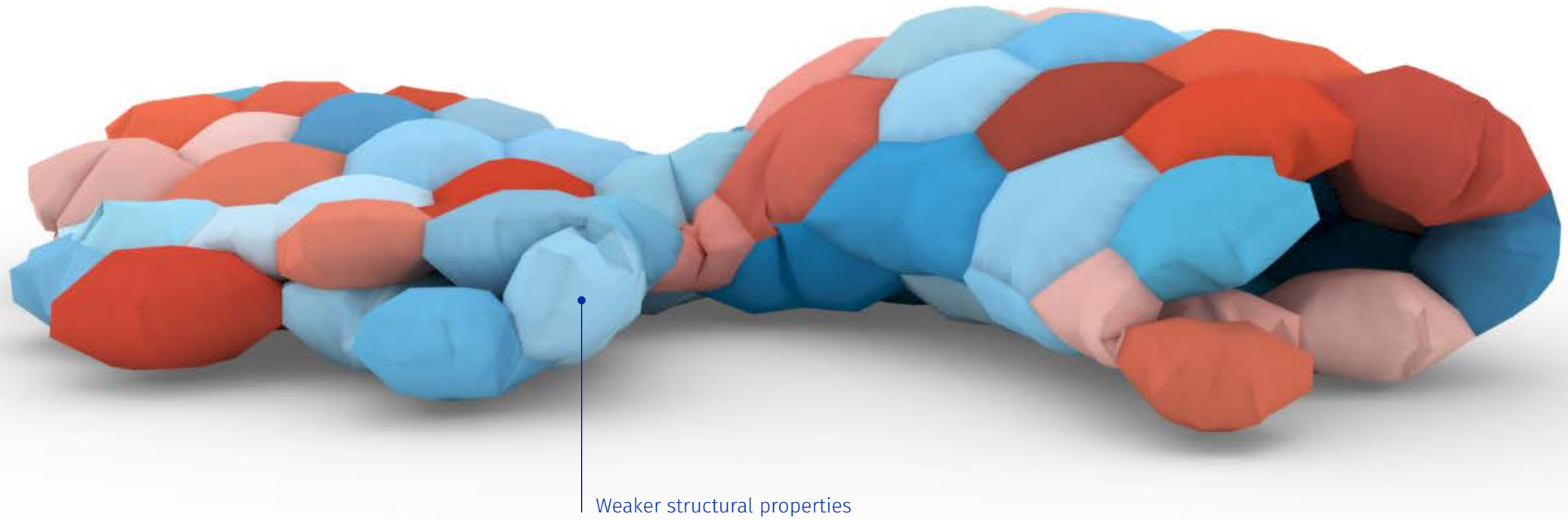


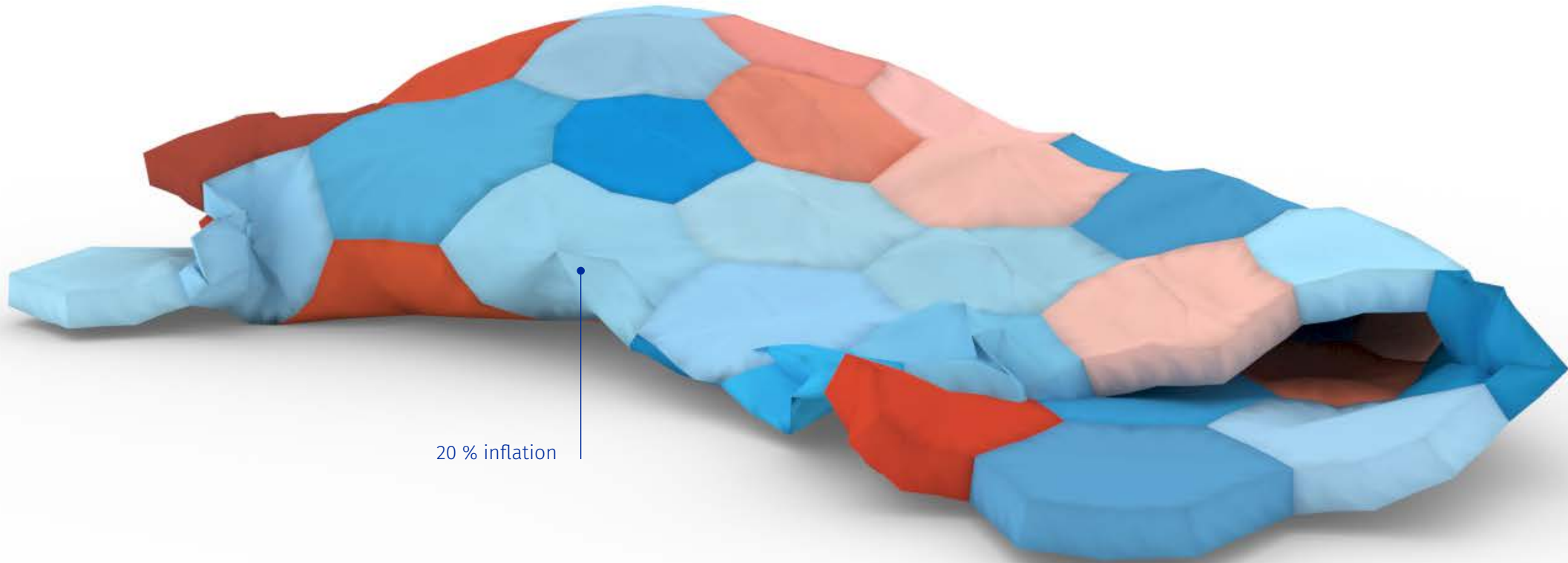




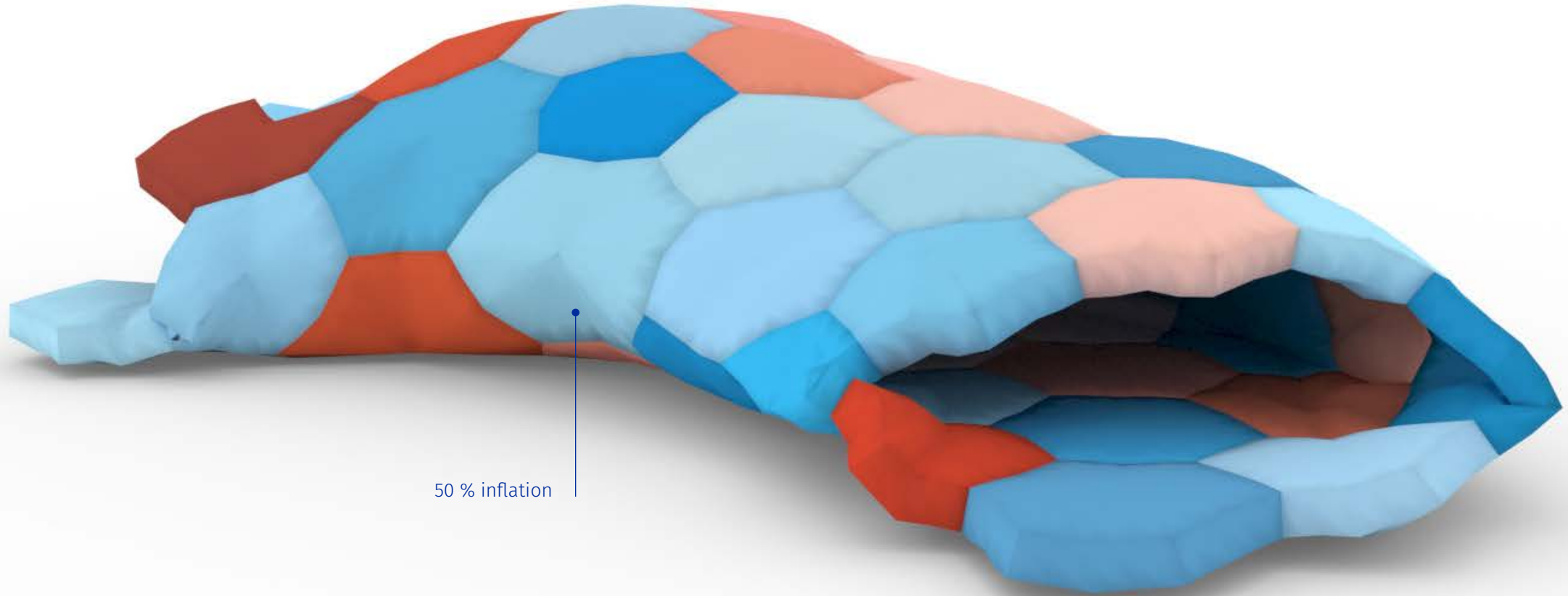
All compartments fully inflated





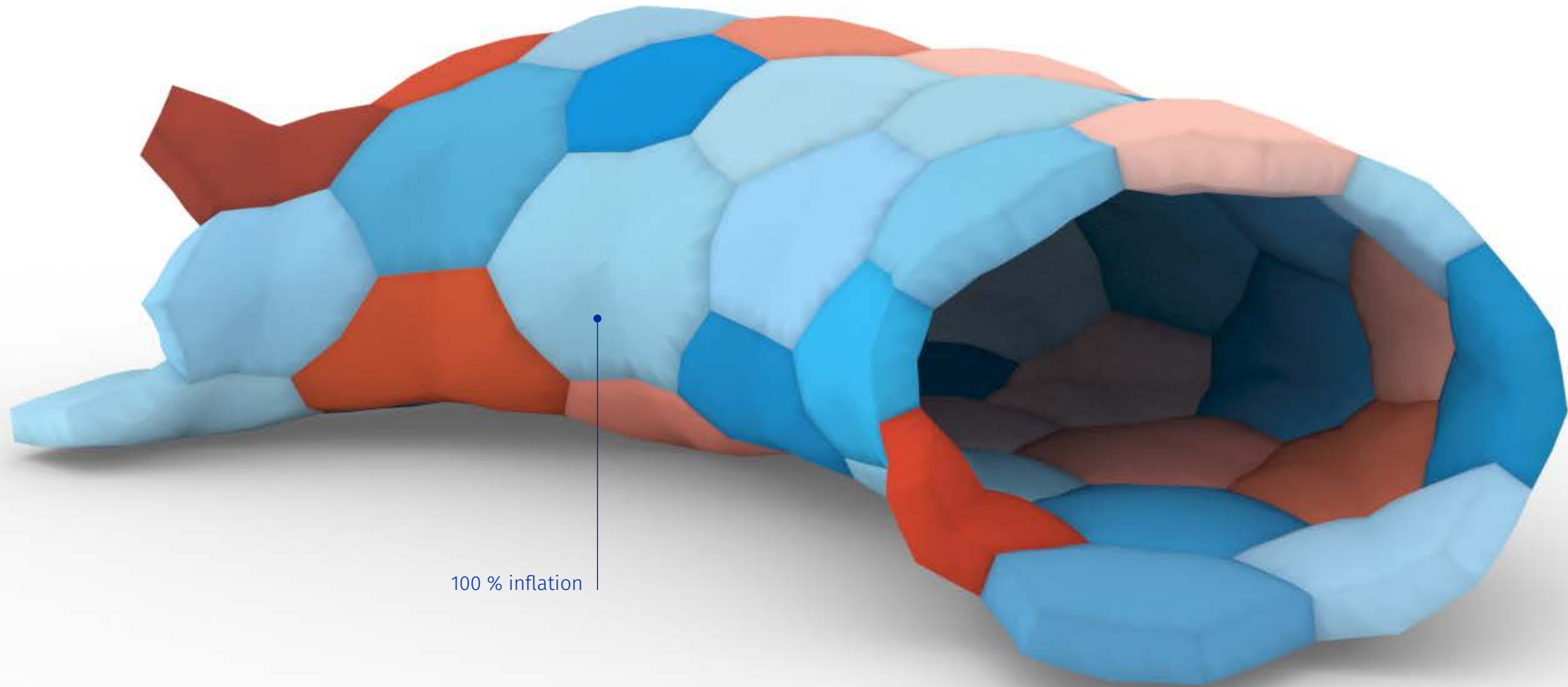


20 % inflation



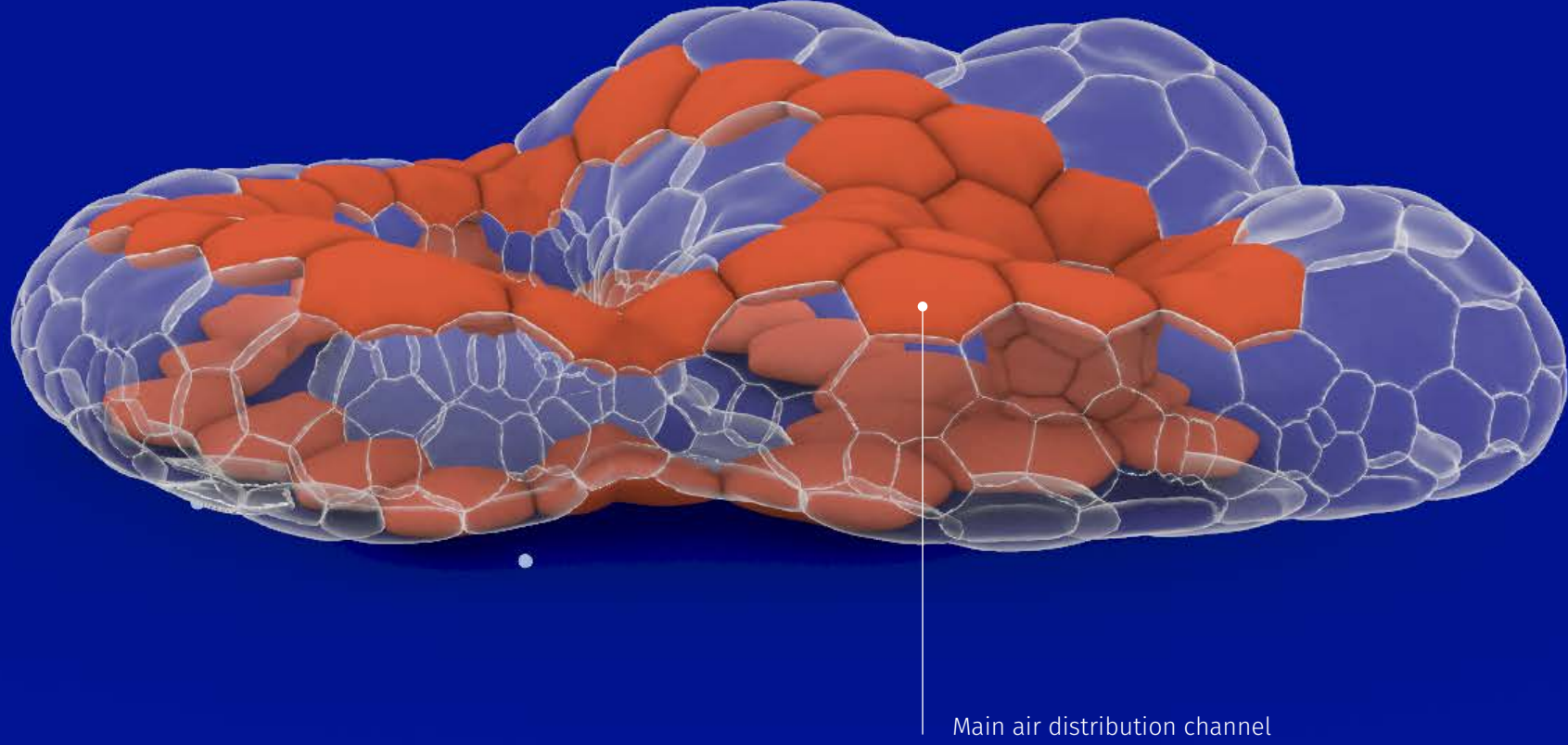
50 % inflation



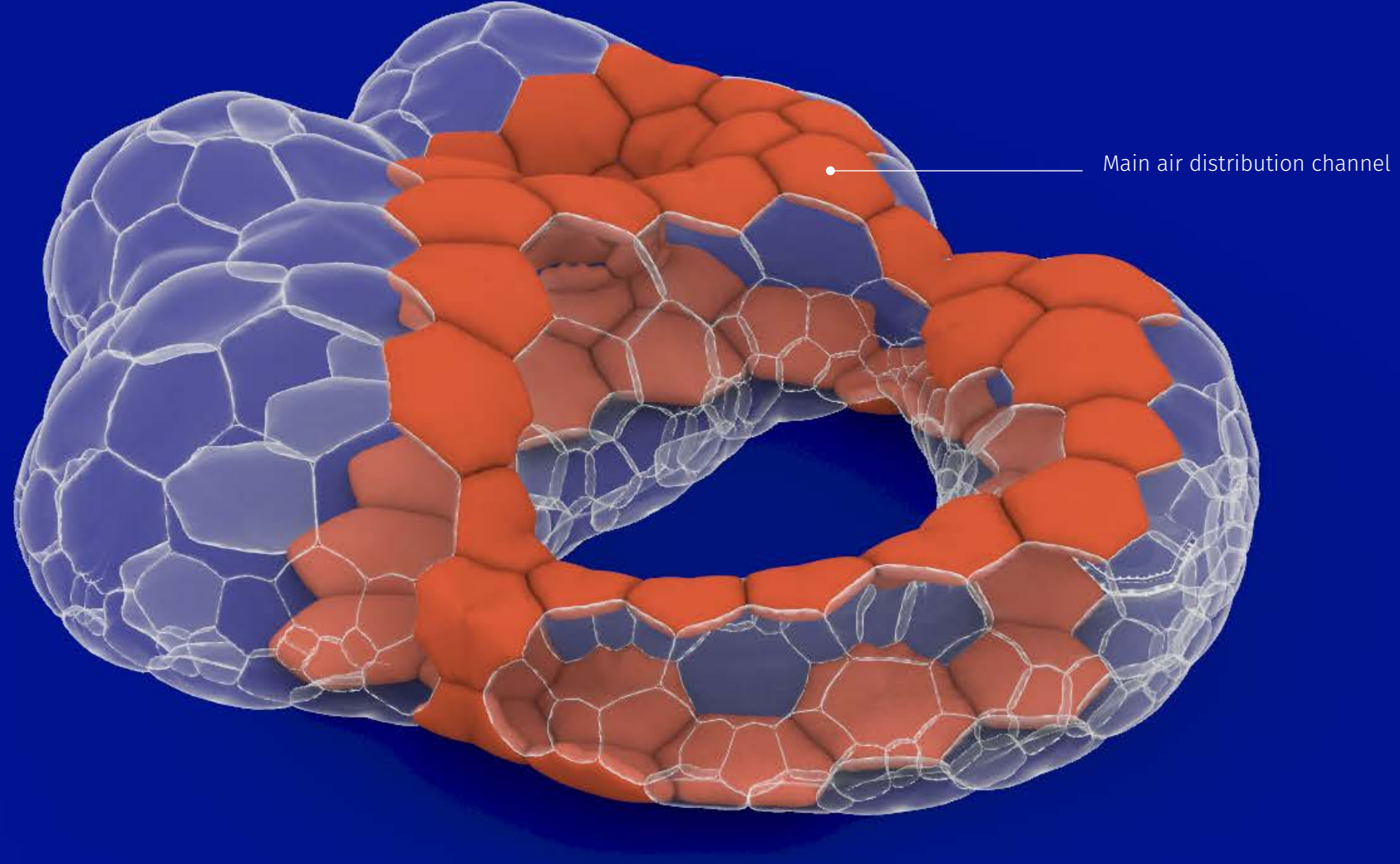


100 % inflation

# Structure

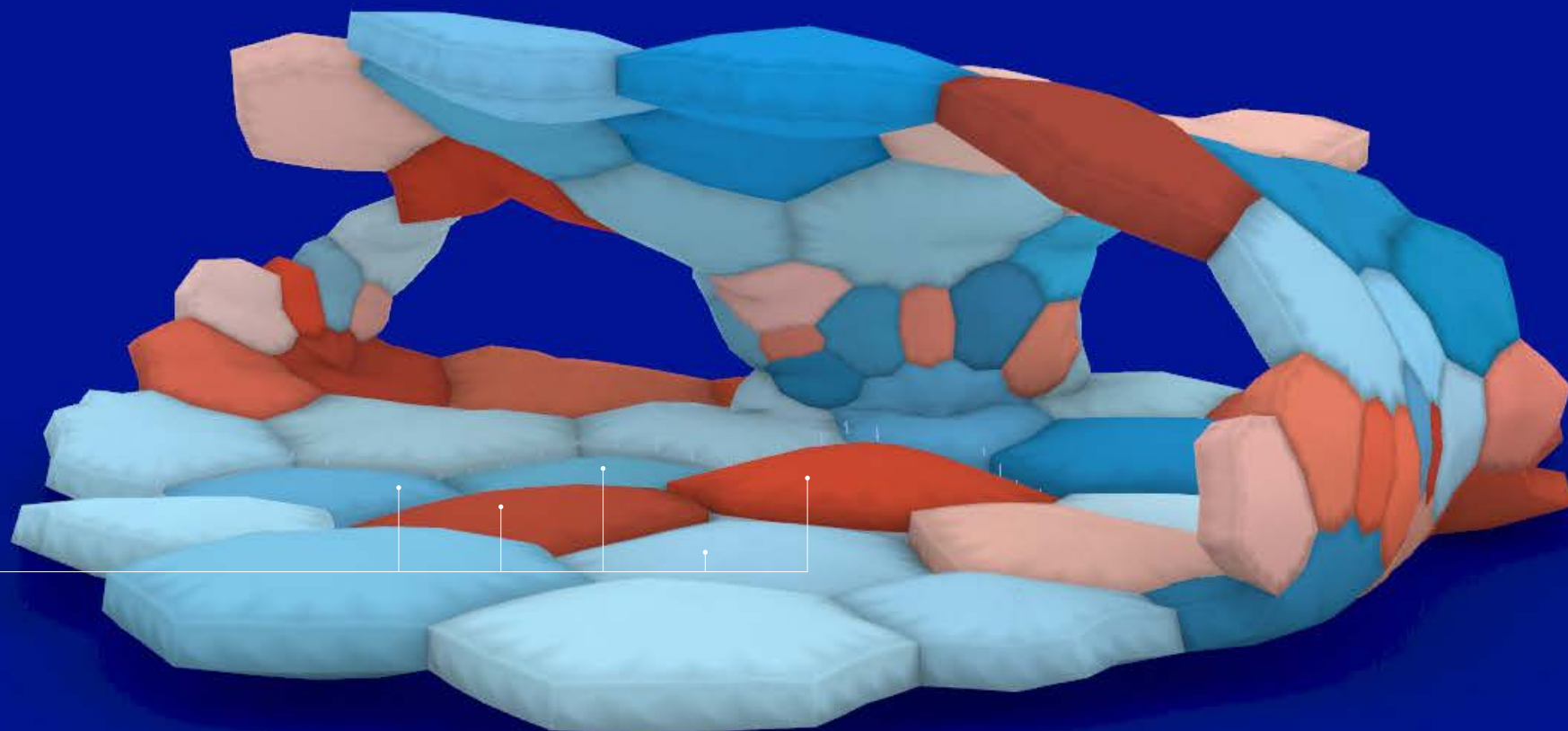






# Reconfigurable surface

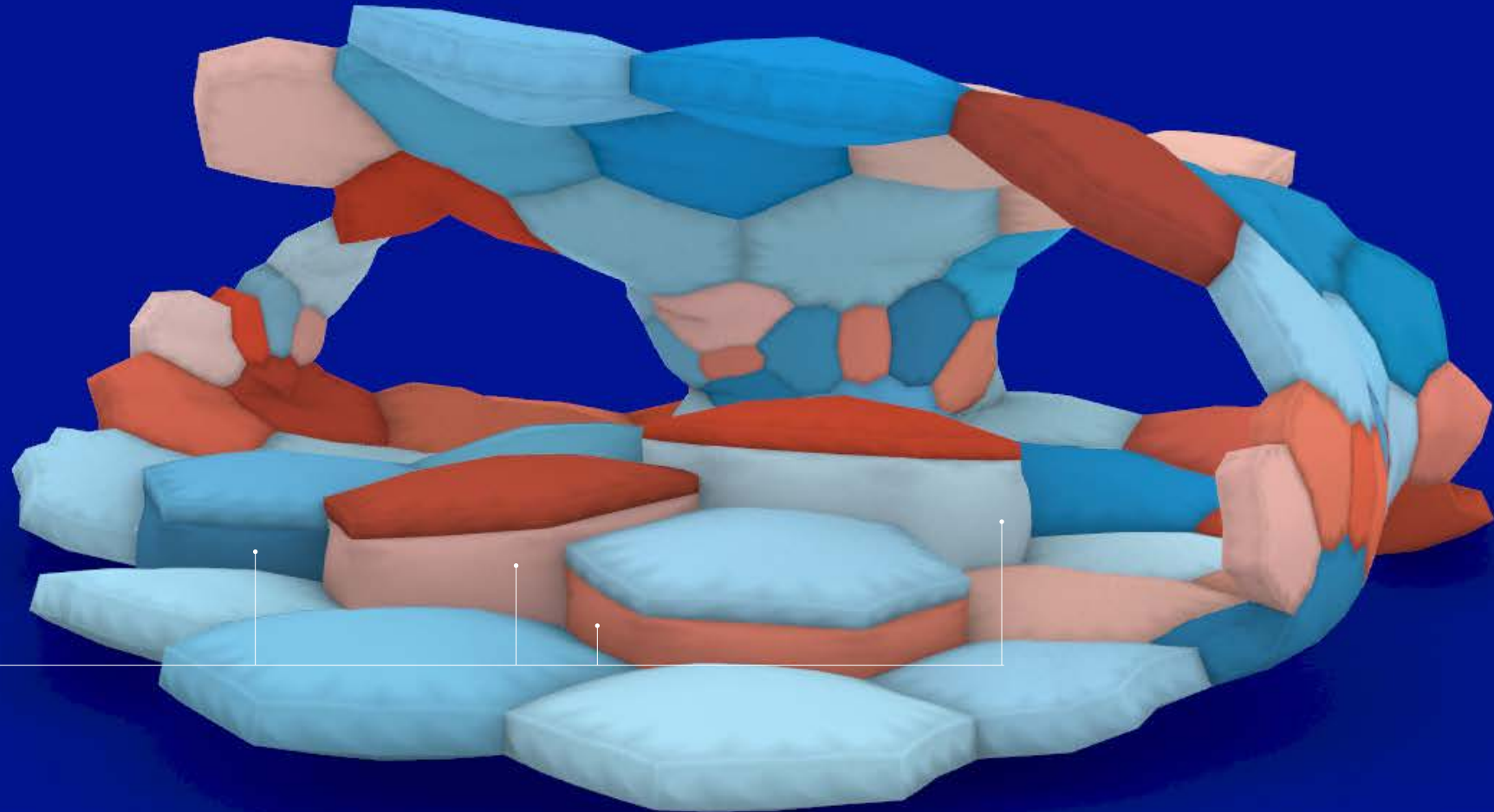
Reconfigurable  
floor elements



Reconfigurable surface (fragment of main object)

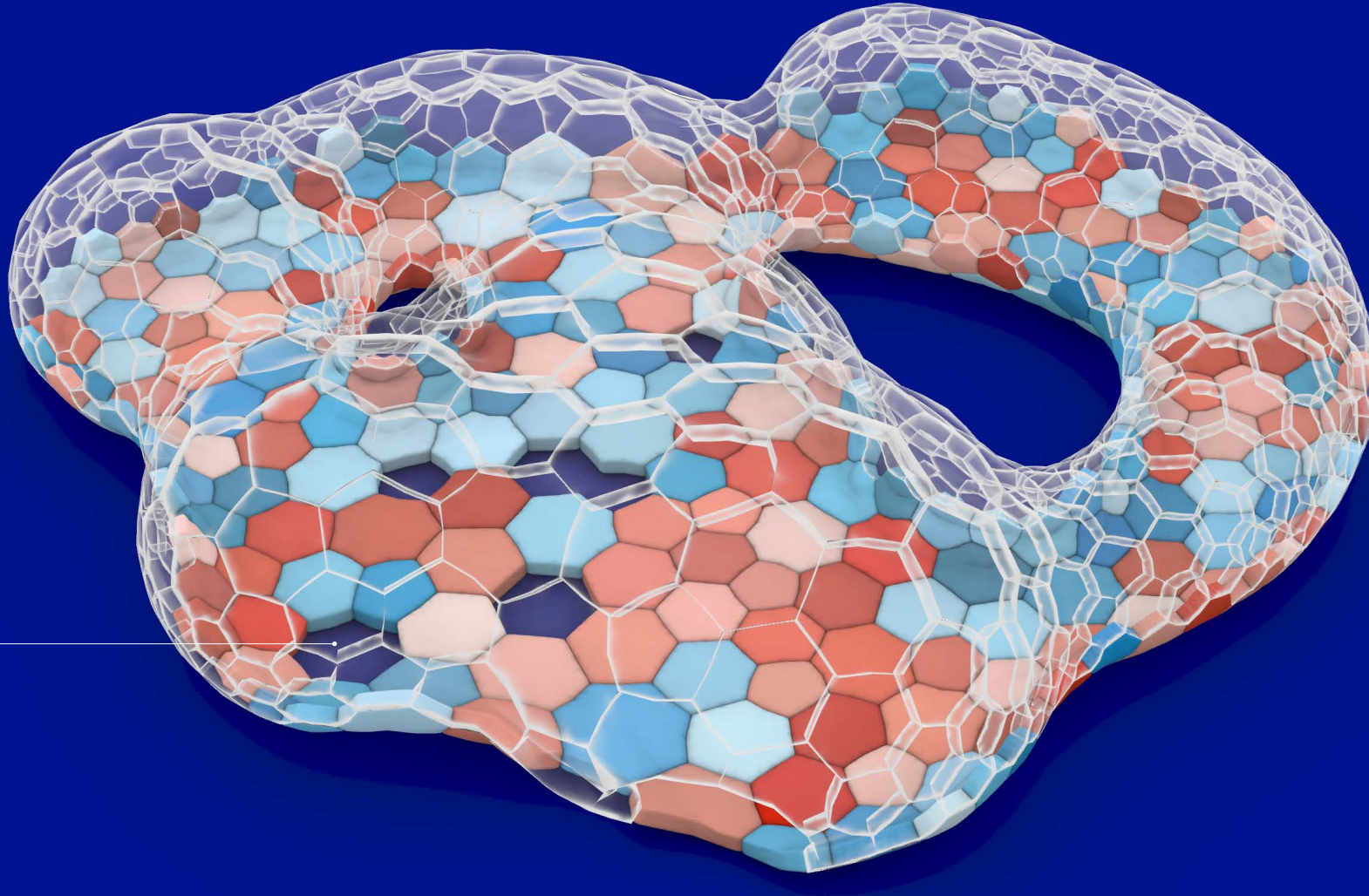


Inflated floor  
elements



Reconfigurable surface (fragment of main object)

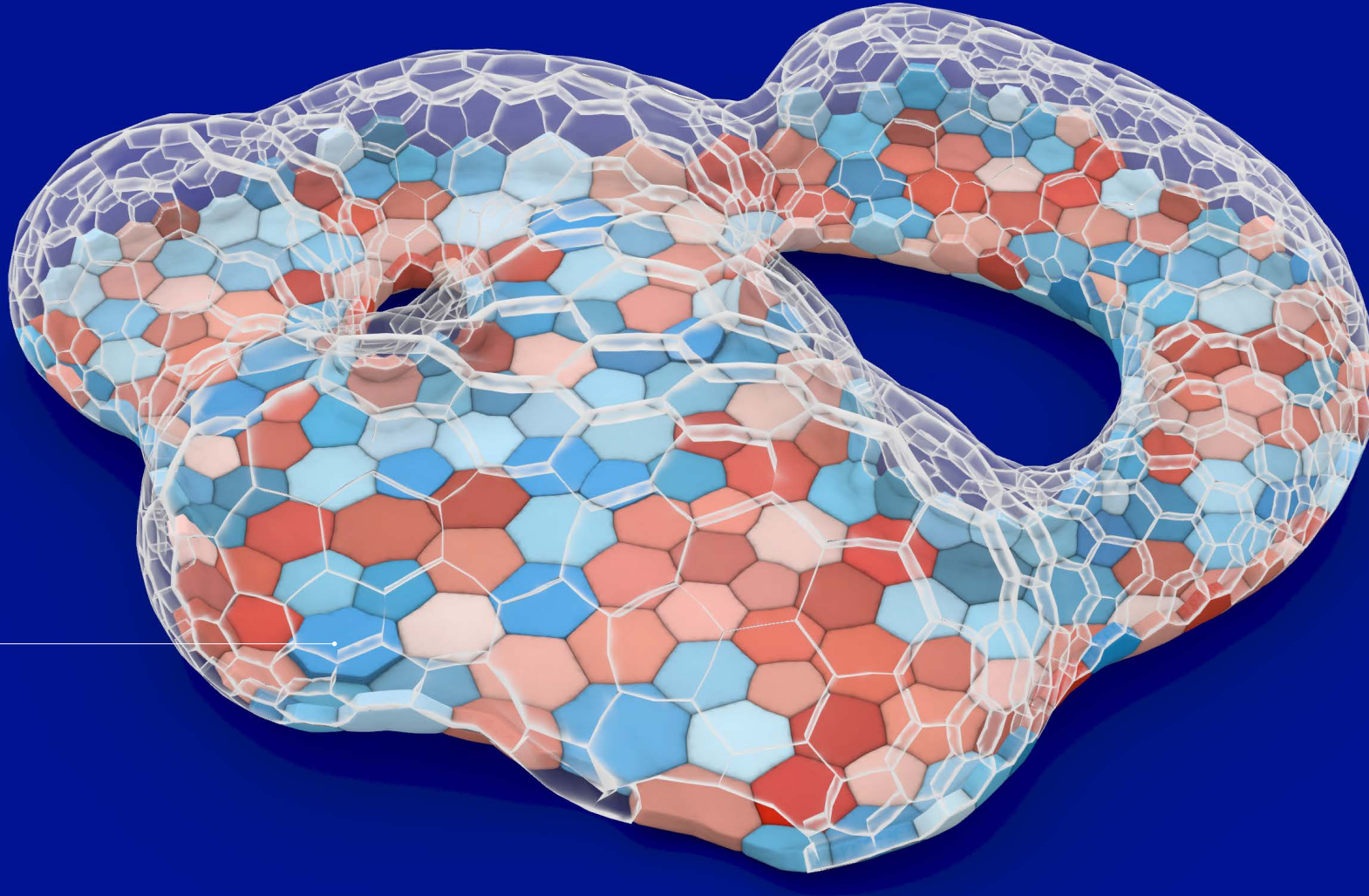
Reconfigurable  
element



Reconfigurable surface



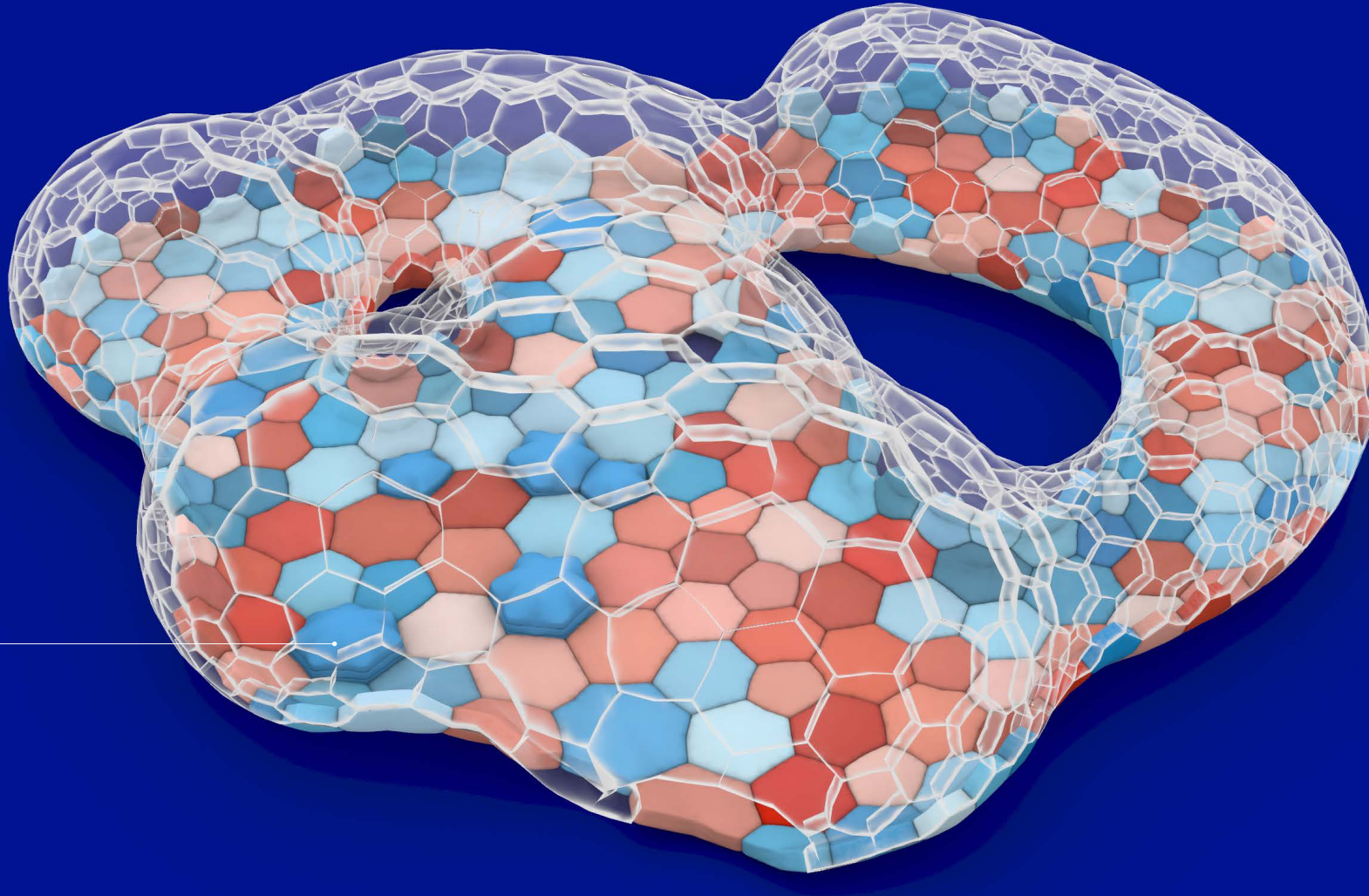
Reconfigurable  
element



Reconfigurable surface

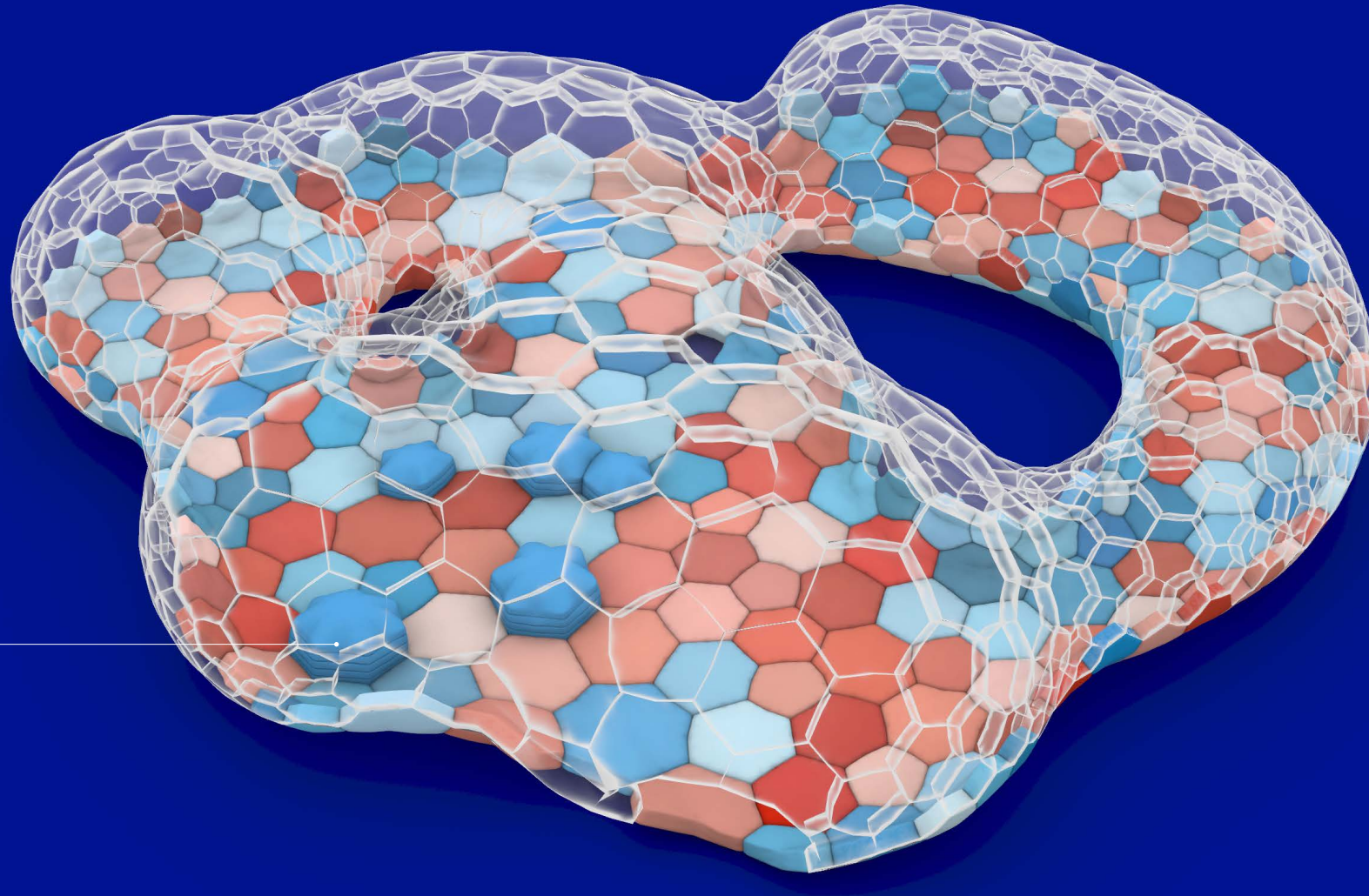


Reconfigurable  
element



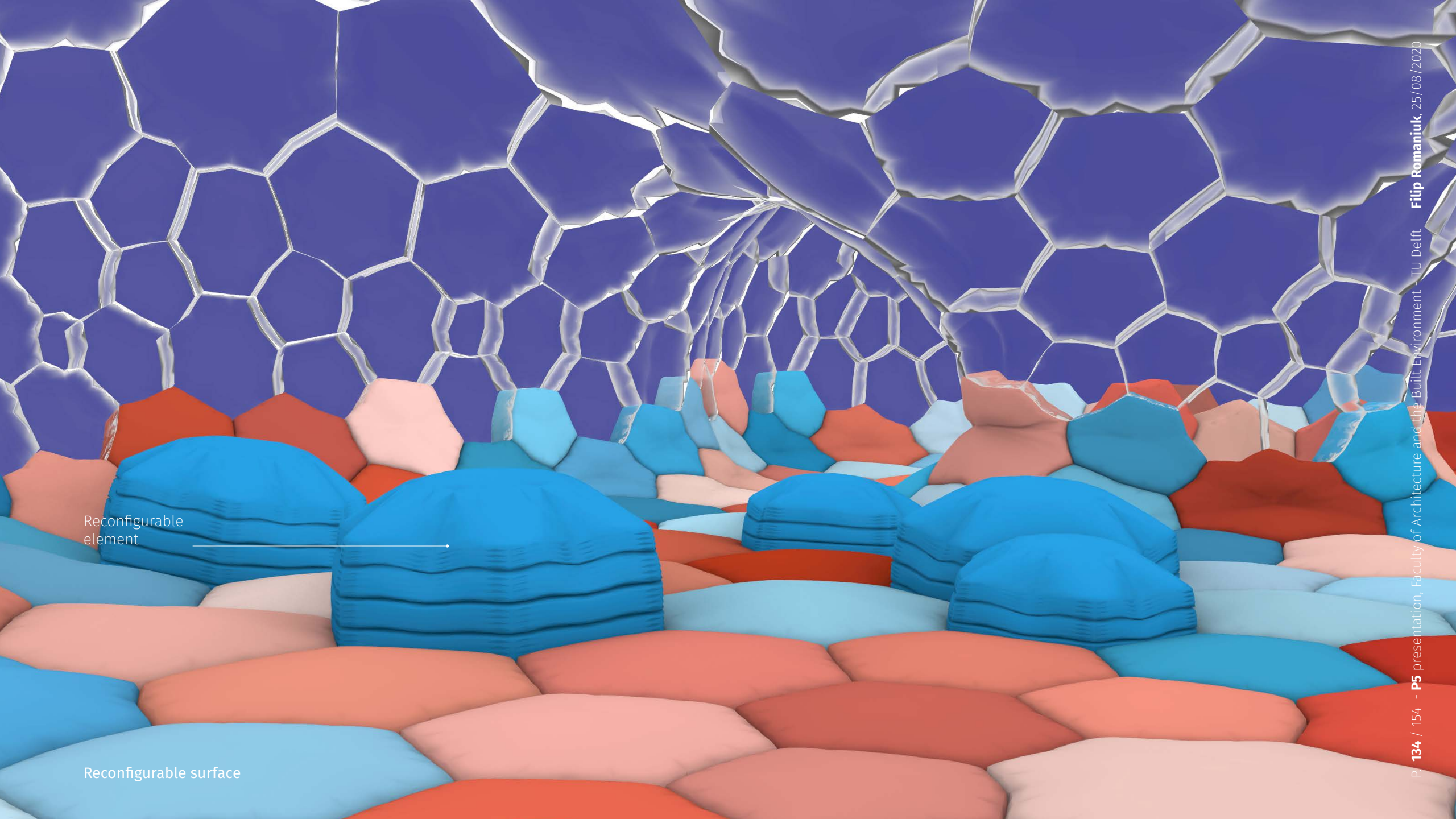
Reconfigurable surface

Reconfigurable  
element



Reconfigurable surface



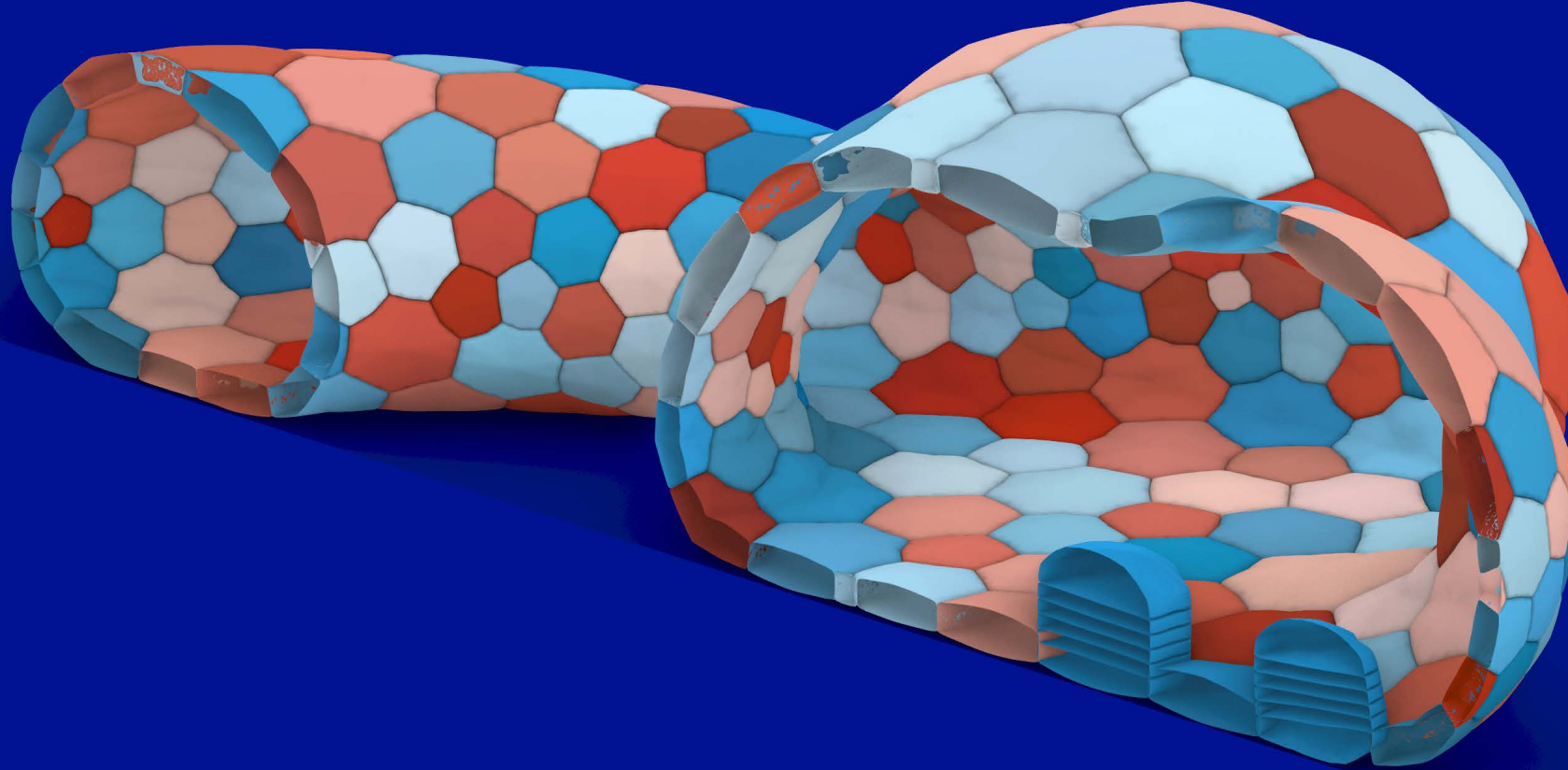


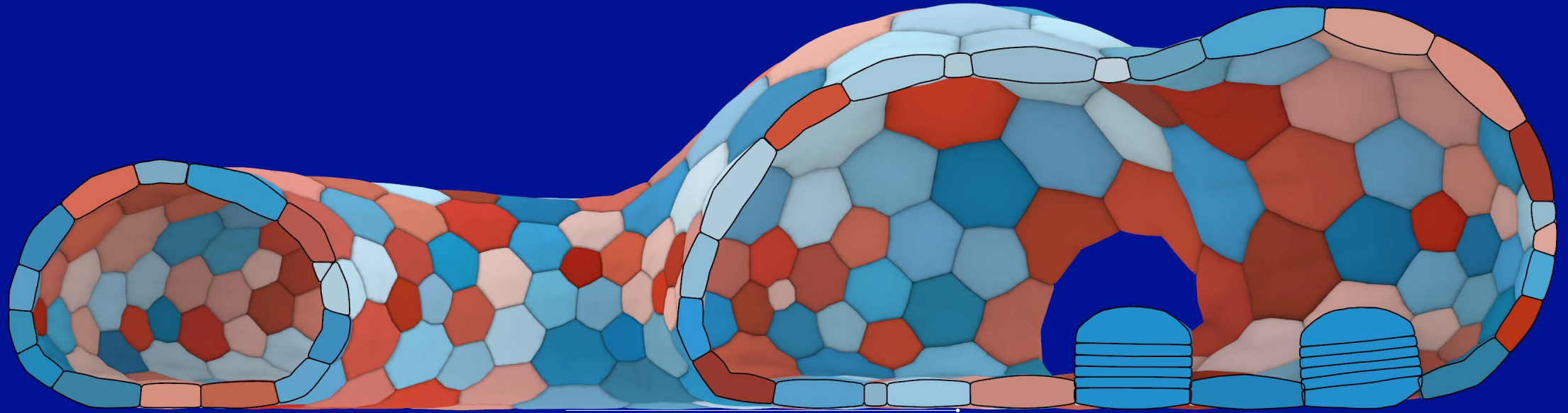
Reconfigurable  
element

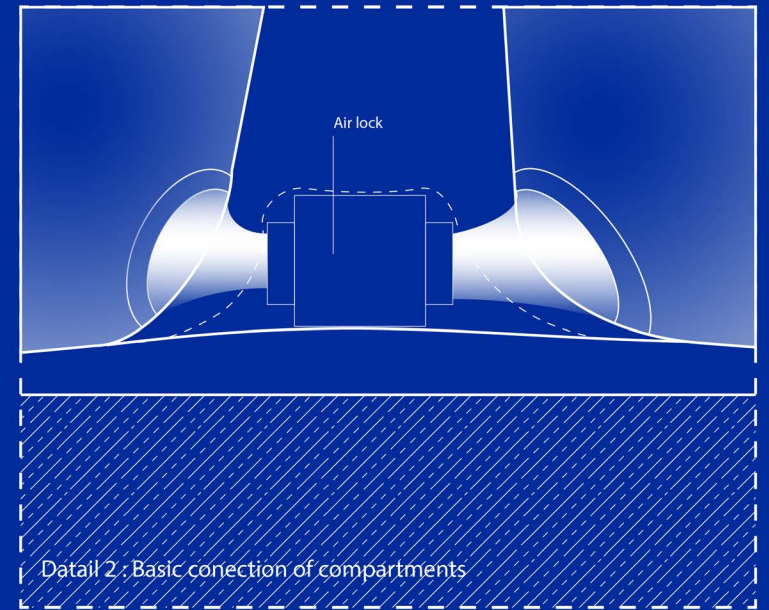
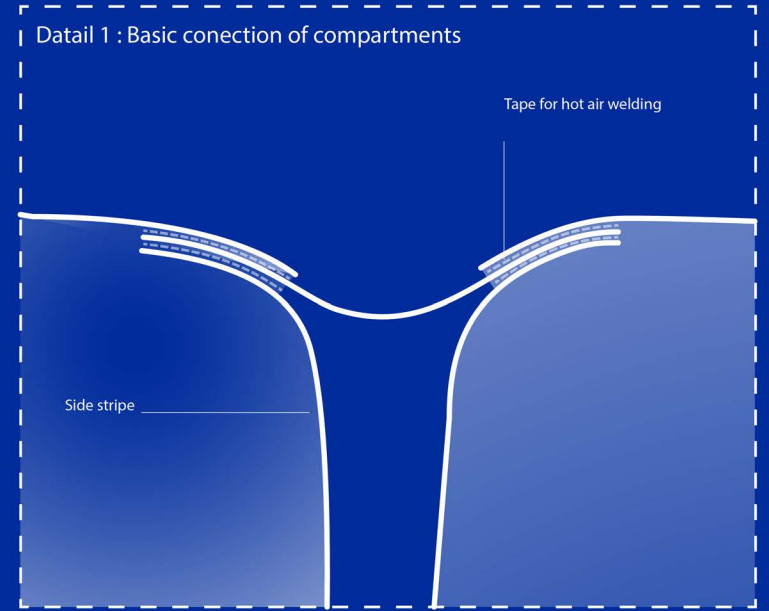
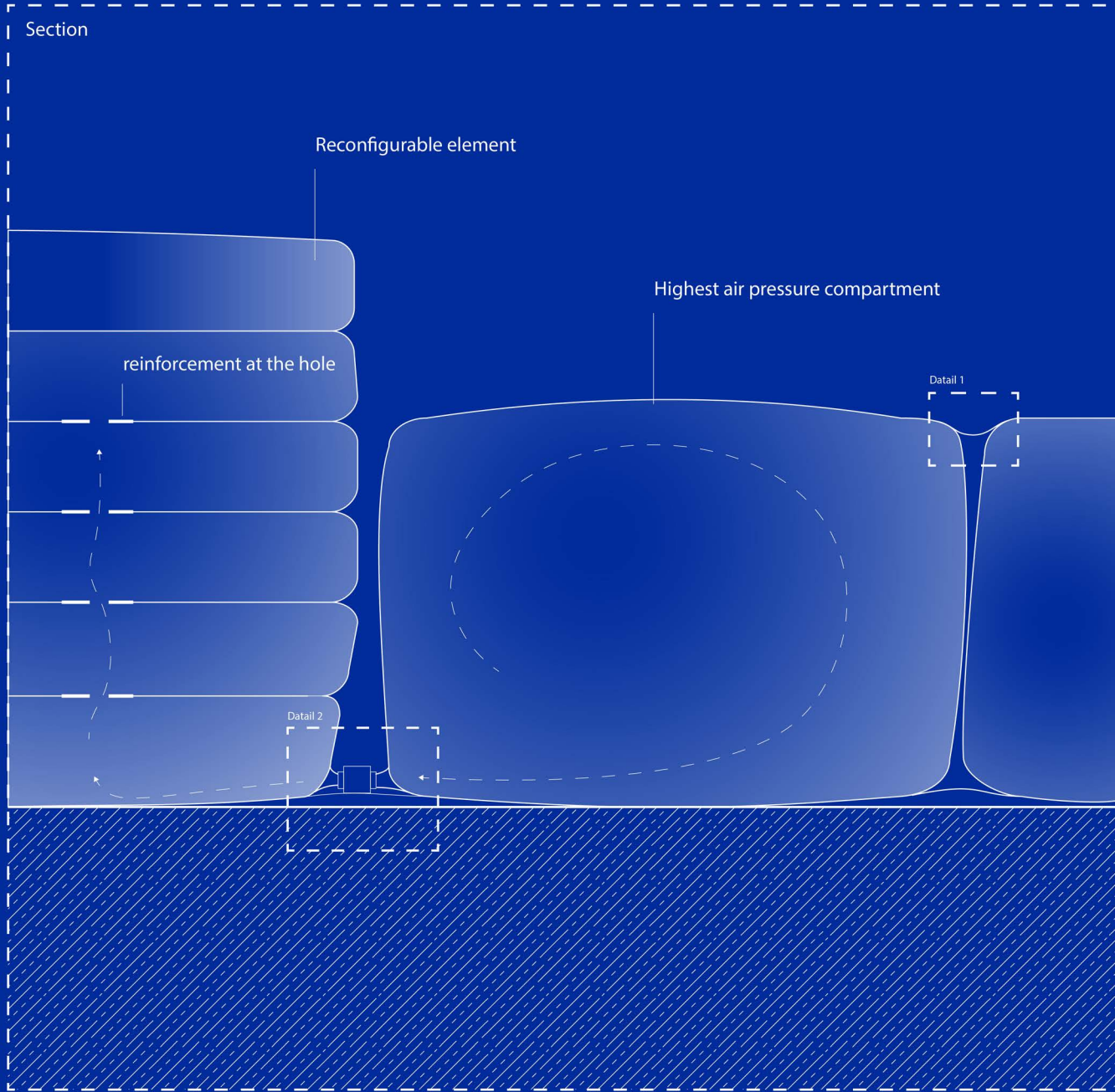
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Reconfigurable surface











# Reconfigurable surface











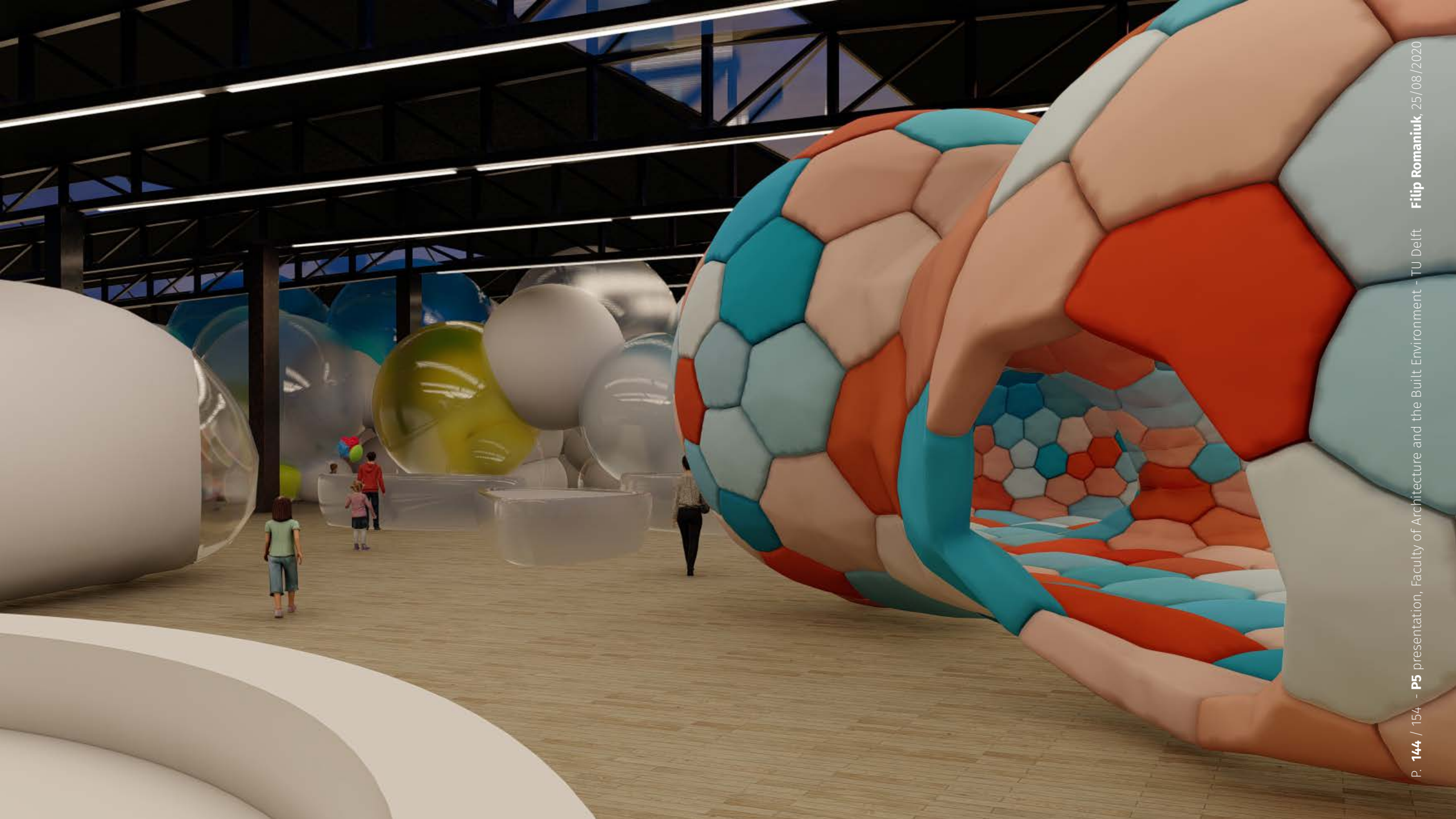












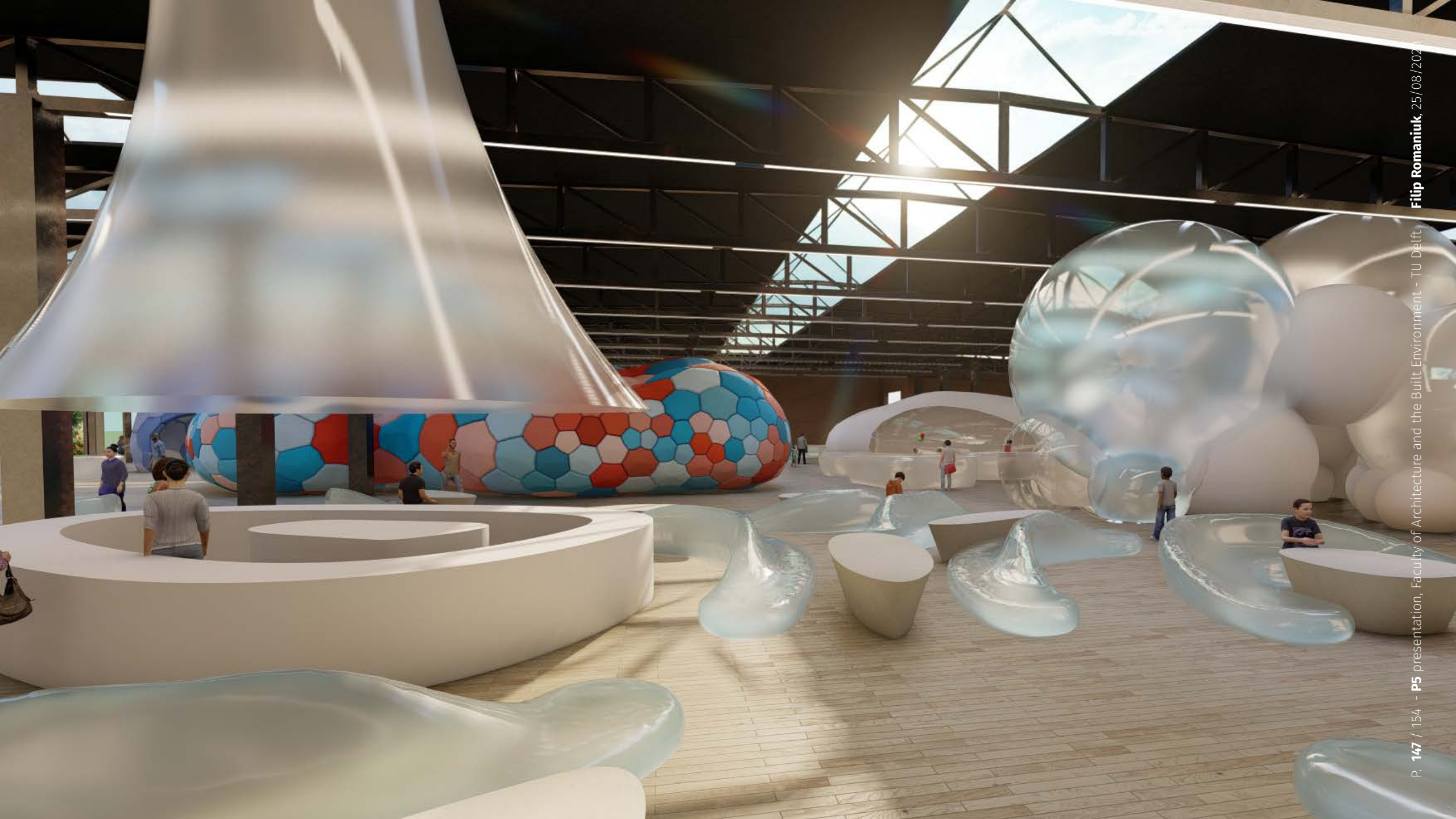












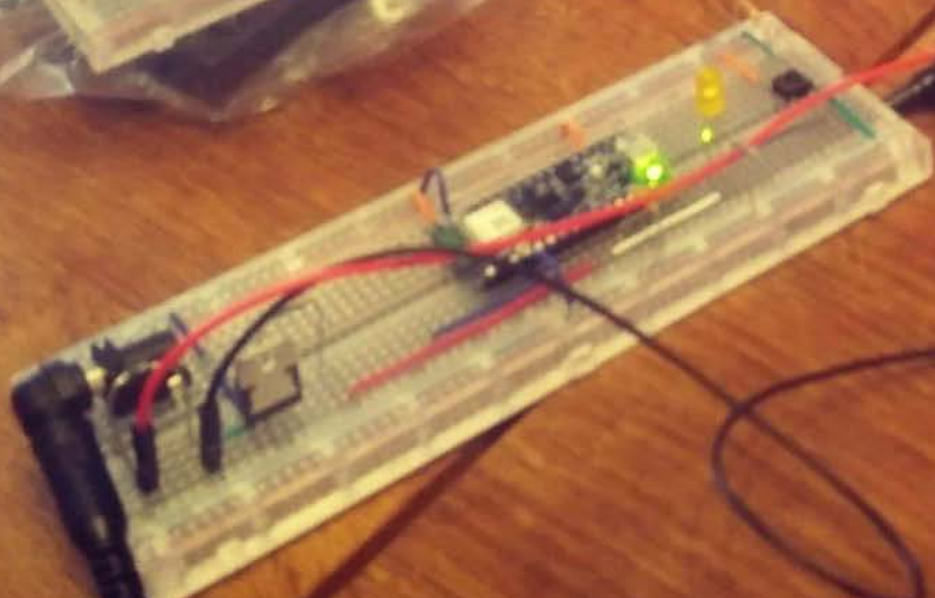
# Prototyping



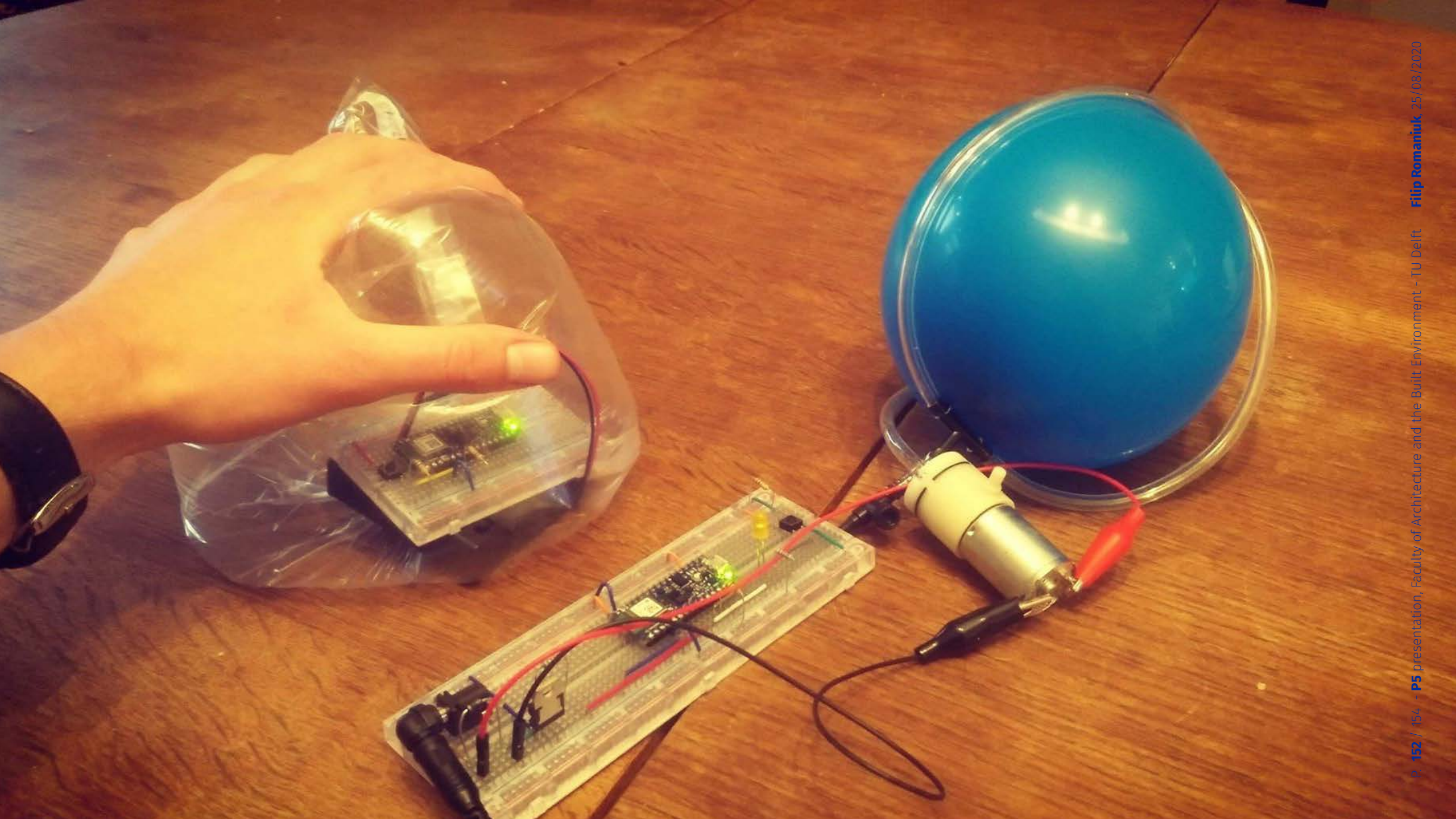


## PROTOTYPE 2

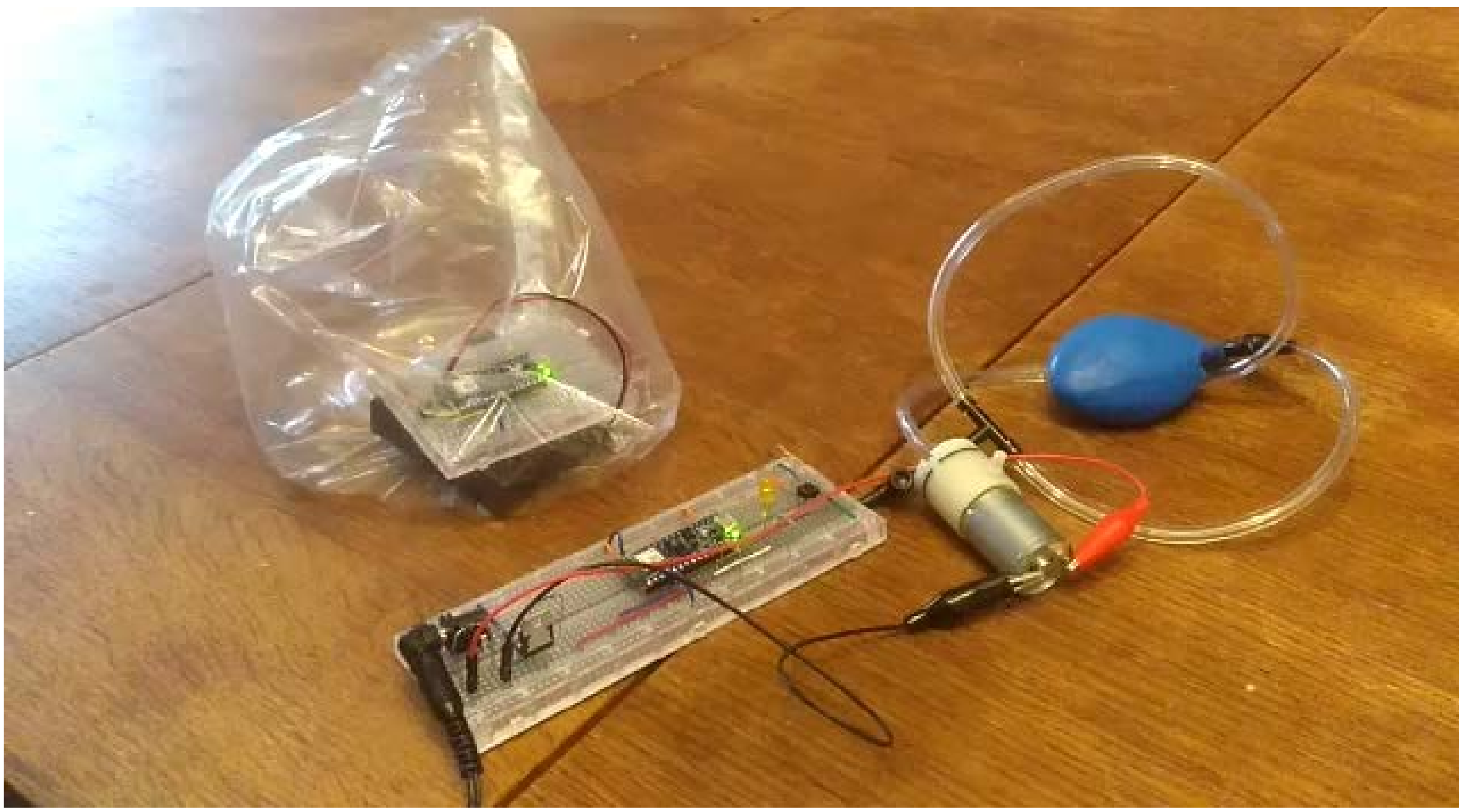












# Thank you!

student

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