Performing arts academy

generator of human well-being

complex projects

Maarten Abe Nijennuis

January 12th, 2022

introduction

research summary

design brief

concept development

implementation

design development

conclusion and reflection

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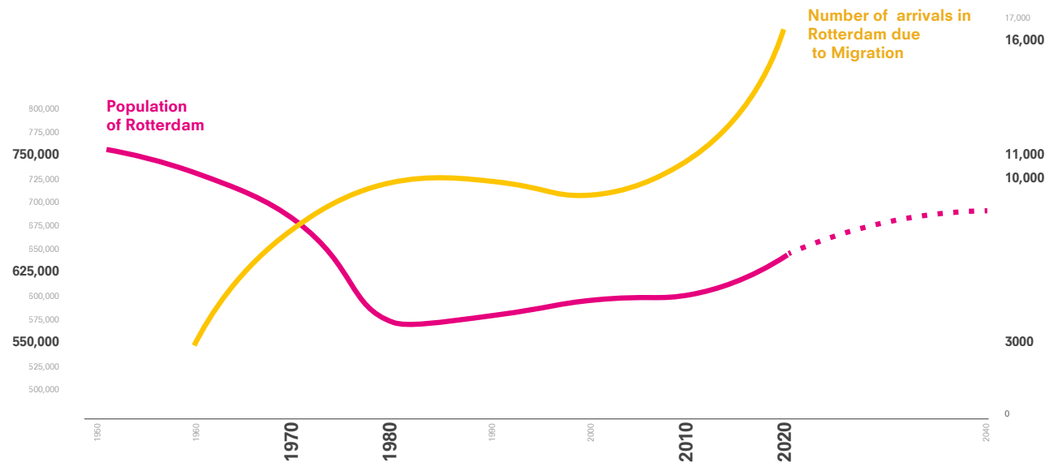

Global expansion of the port attracted migrant labourworkers
to Rotterdam and Feijenoord

from industrial port town

to a globally incentivized

social and sustainable economy

riverfront
commerce
Feijenpoort
mono functional
residential area

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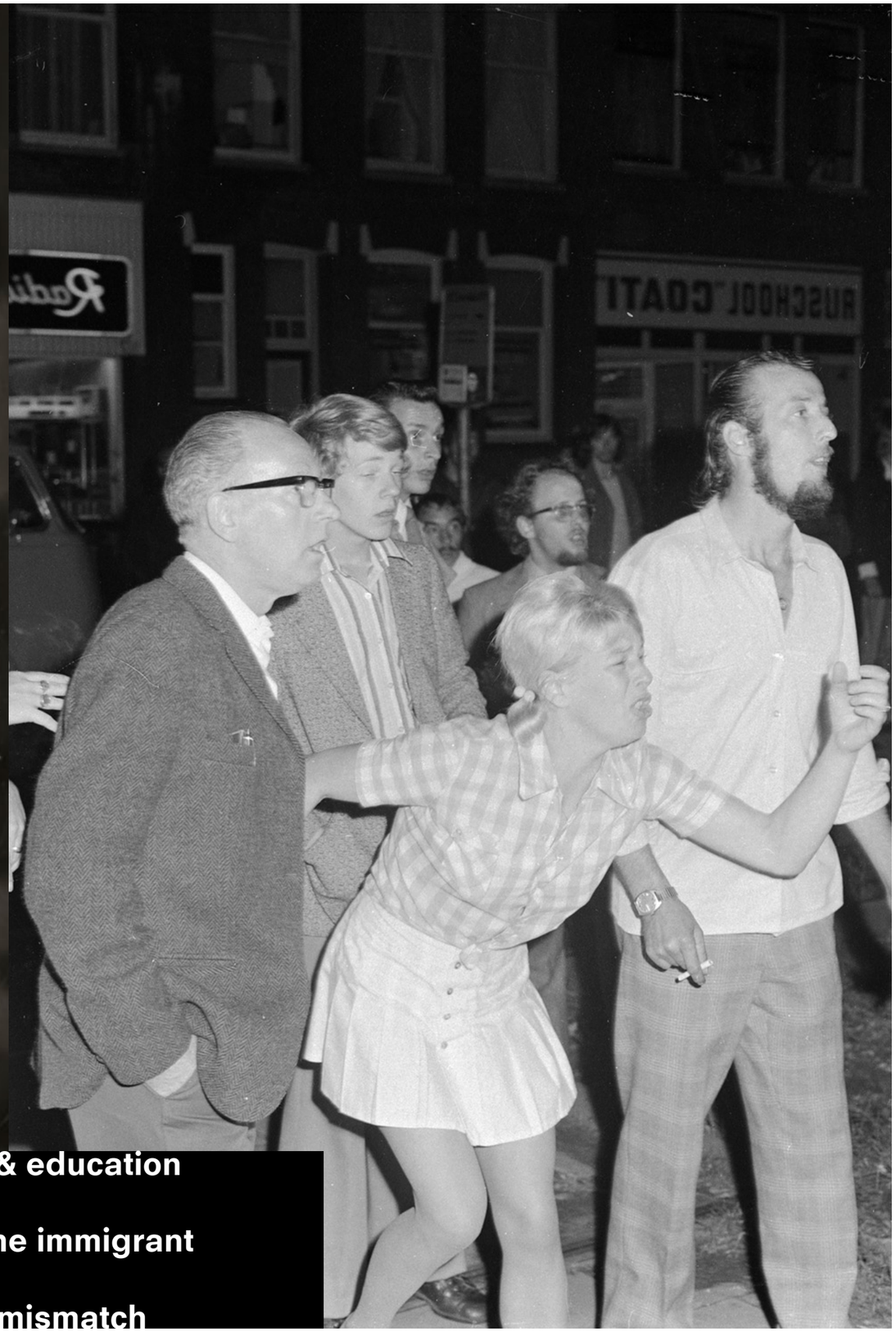
language & education

stigma of the immigrant



language & education

stigma of the immigrant

cultural mismatch

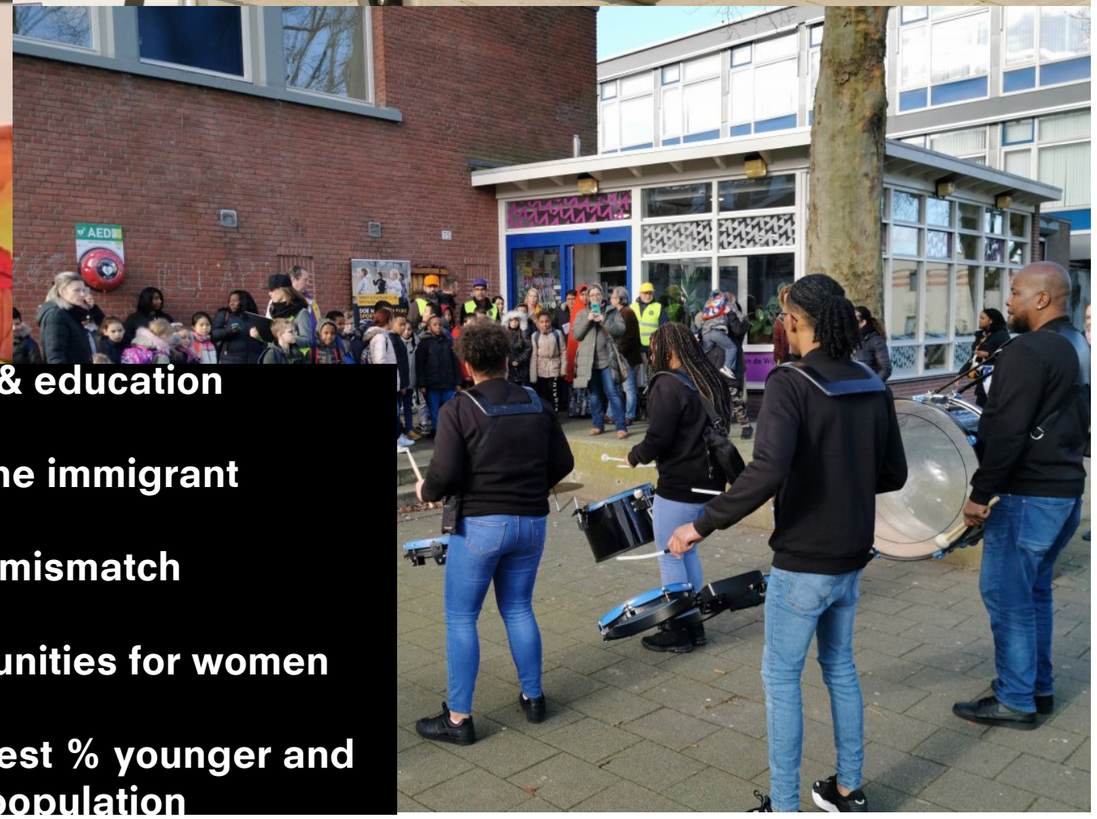
language & education

stigma of the immigrant

cultural mismatch

unequal opportunities for women

Rotterdam's highest % younger and elderly population



language & education

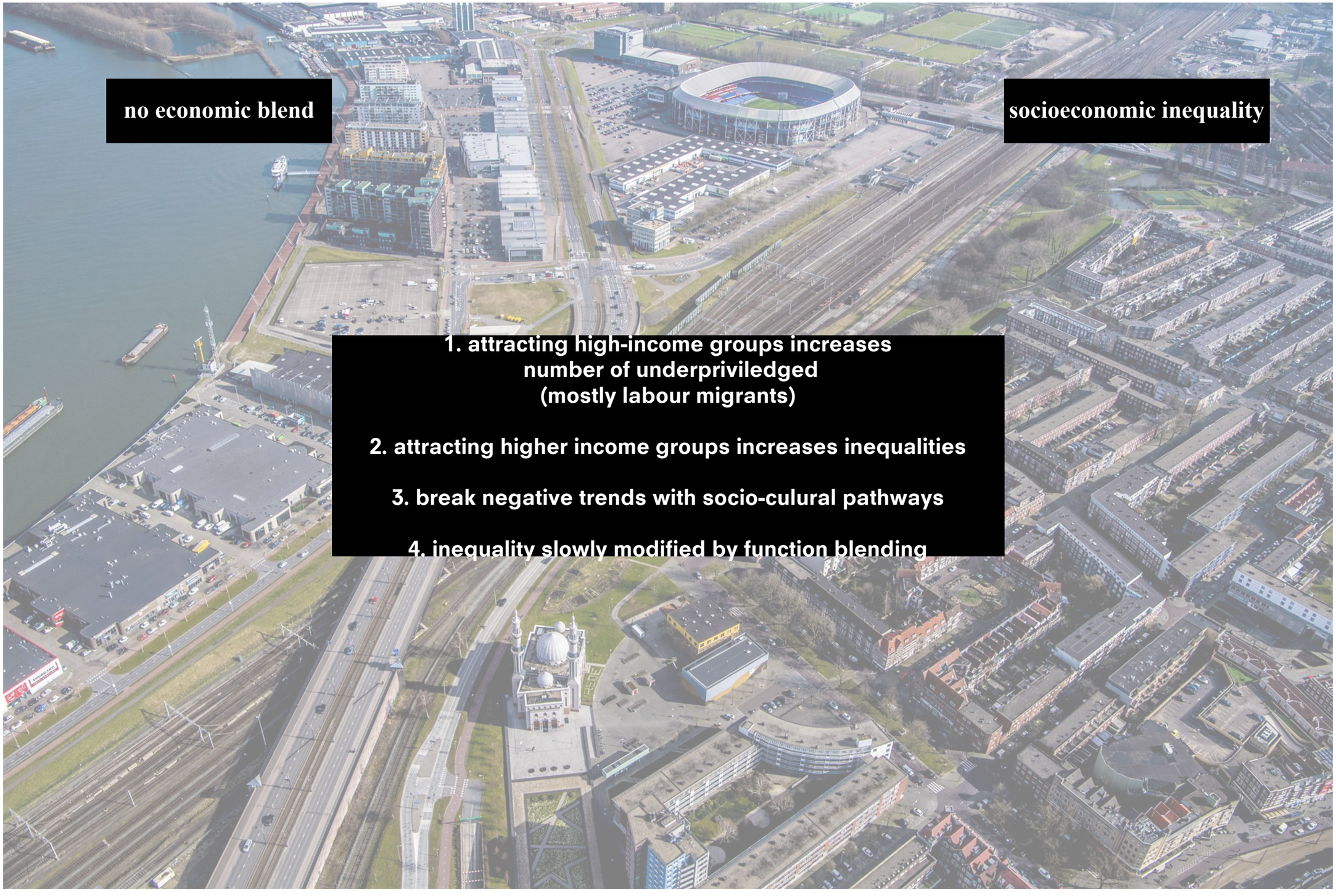
stigma of the immigrant

cultural mismatch

unequal opportunities for women

Rotterdam's highest % younger and elderly population

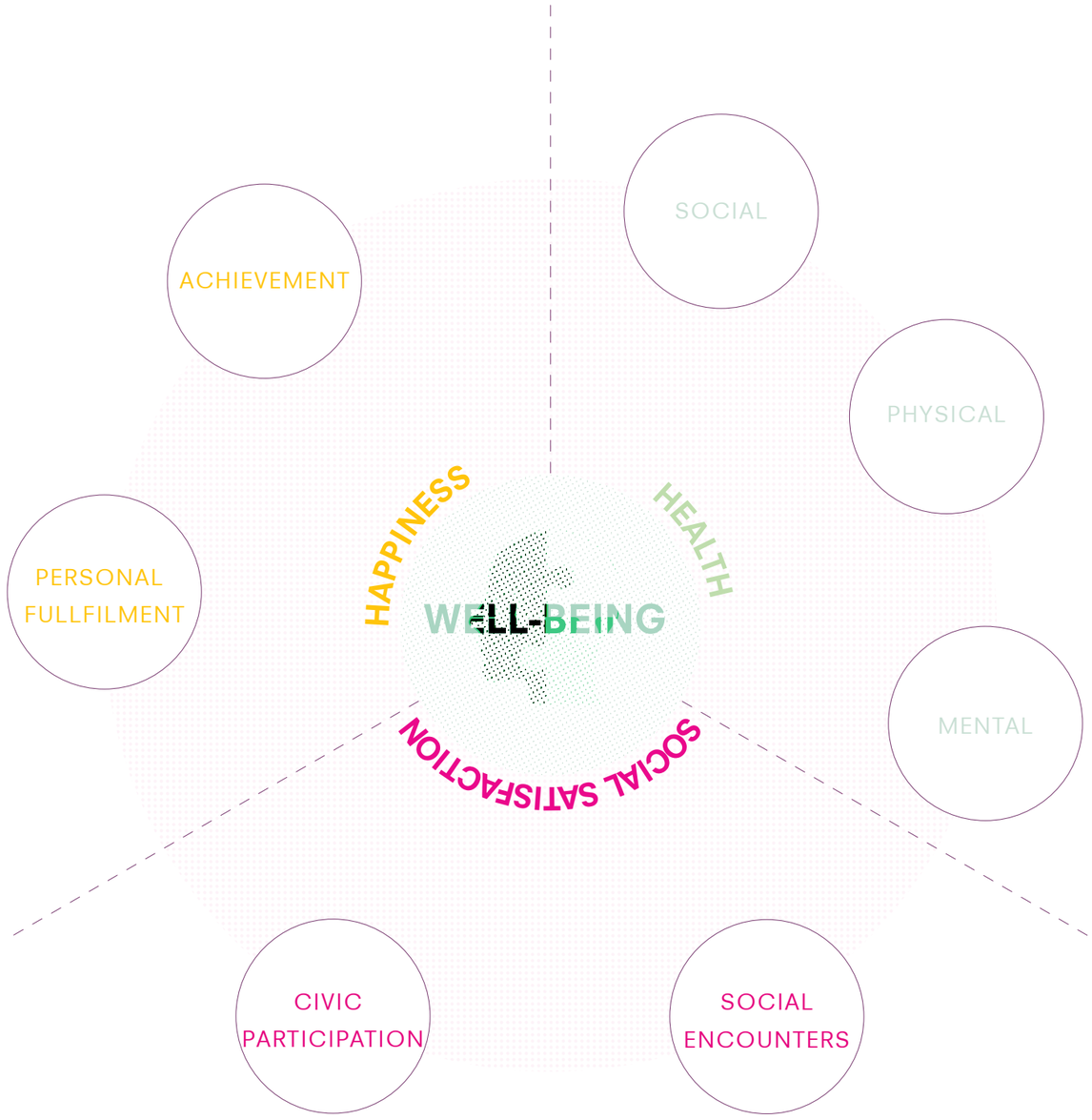
contradicting aesthetics of growth

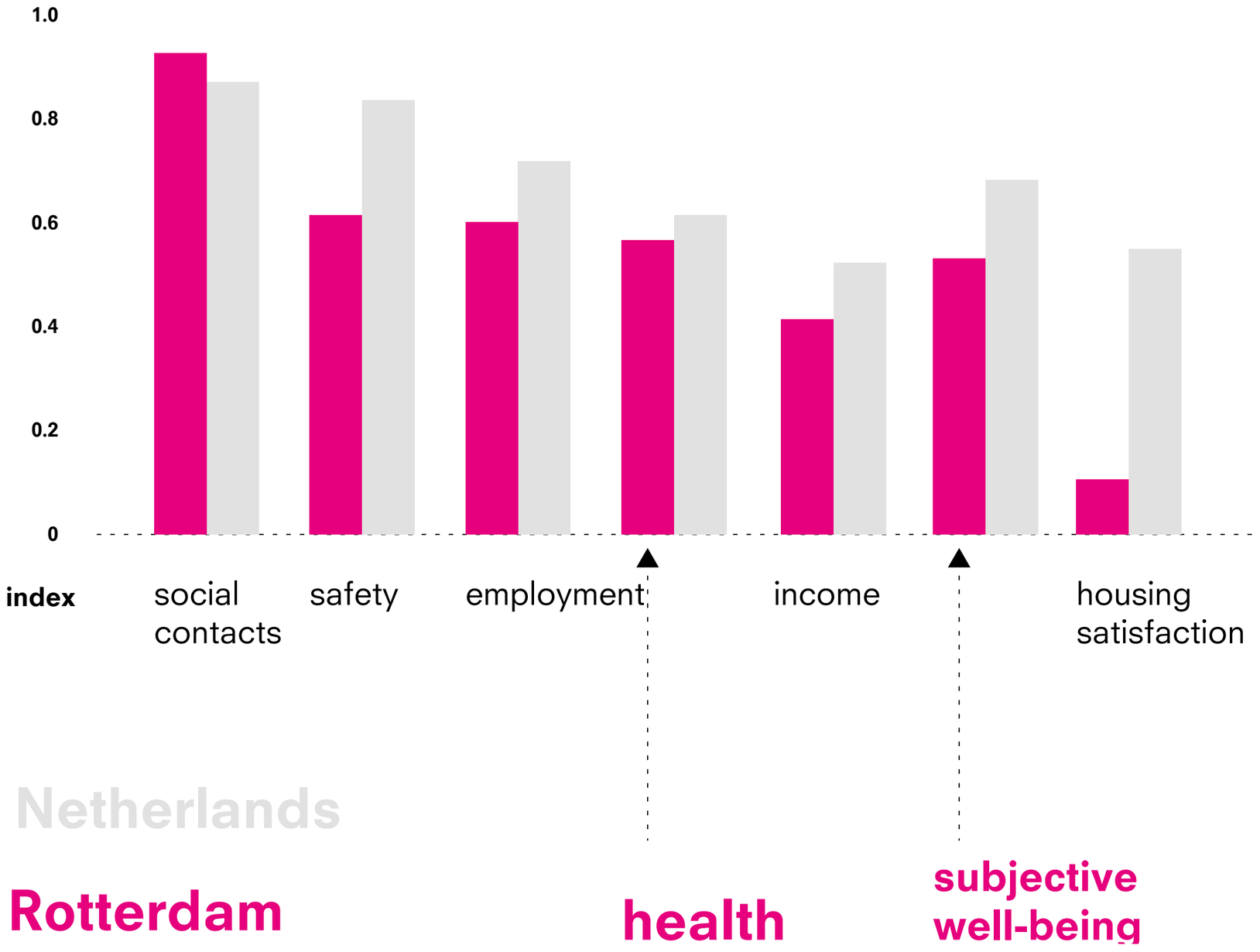


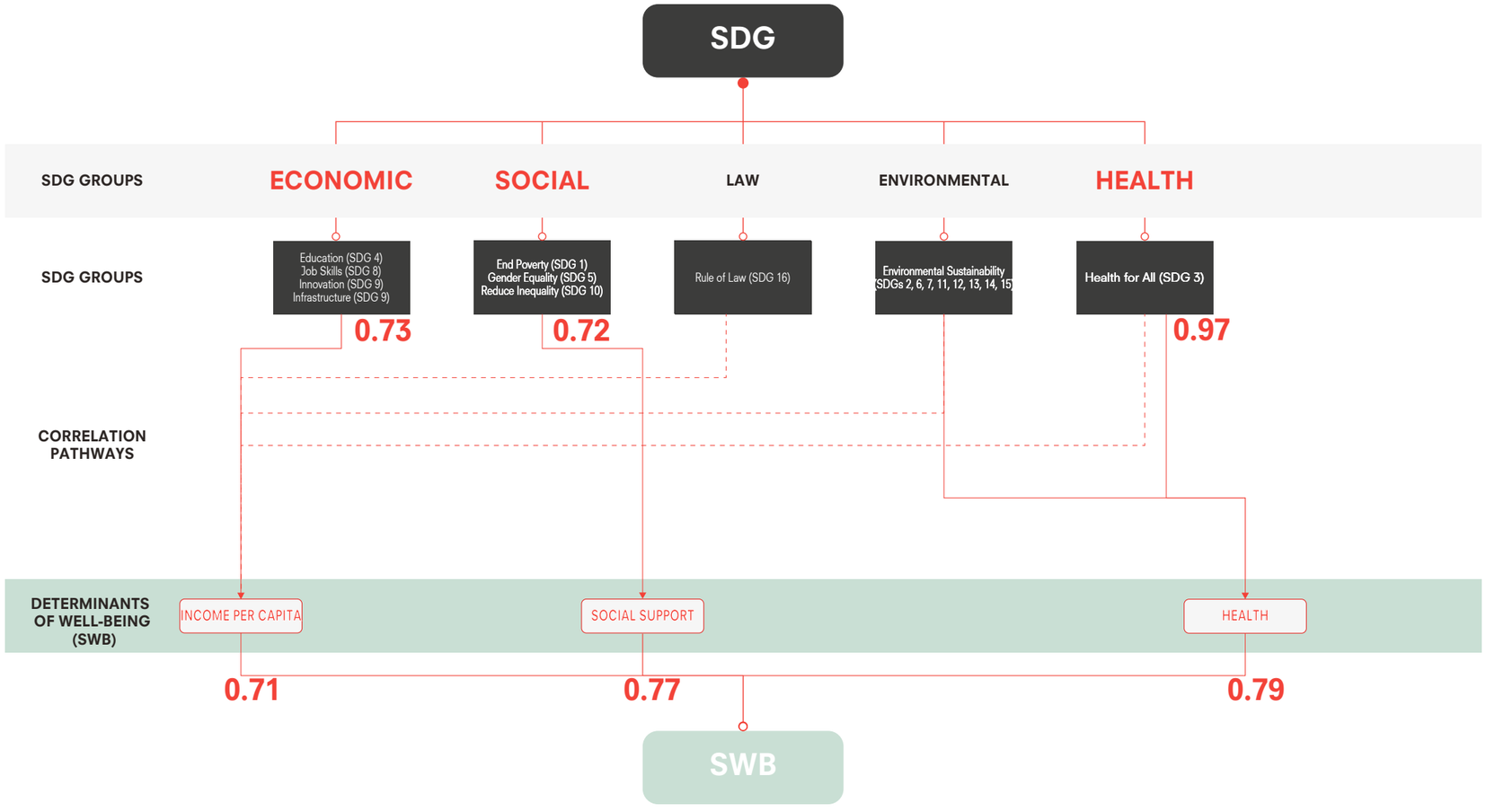
source: EVR 2019 Rotterdam

“the health of our children, the quality of their education
the beauty of our poetry
our wit, our courage, our wisdom our learning, our compassion

GDP measures everything except that which makes life worthwhile.”


ACHIEVEMENT
SOCIAL
PHYSICAL
PERSONAL
FULLFILMENT
HAPPINESS
HEALTH
WELL-BEING
MENTAL
SOCIAL SATISFACTION
CIVIC
PARTICIPATION
SOCIAL
ENCOUNTERS

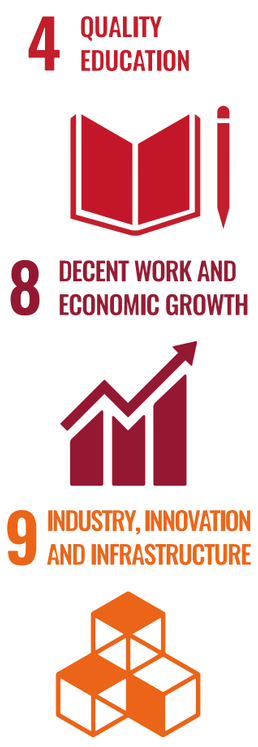

1.0
0.8
0.6
0.4
0.2
0
index
social contacts
safety
employment
income
housing satisfaction
Netherlands
Rotterdam
health
subjective well-being


SDG
SDG GROUPS
ECONOMIC
SOCIAL
LAW
ENVIRONMENTAL
HEALTH
SDG GROUPS
Education (SDG 4)
Job Skills (SDG 8)
Innovation (SDG 9)
Infrastructure (SDG 9)
End Poverty (SDG 1)
Gender Equality (SDG 5)
Reduce Inequality (SDG 10)
Rule of Law (SDG 16)
Environmental Sustainability (SDGs 2, 6, 7, 11, 12, 13, 14, 15)
Health for All (SDG 3)
0.73
0.72
0.97
CORRELATION PATHWAYS
DETERMINANTS OF WELL-BEING (SWB)
INCOME PER CAPITA
SOCIAL SUPPORT
HEALTH
0.71
0.77
0.79
SWB

perceived health status is lower amongst low income householdings

the Netherlands need more resilient students of varied socio-economic backgrounds.

unequal employment opportunities for women are an issue in the Netherlands



source: Huppert, F. A., & So, T. T. (2013)

source: https://eu-dashboards.sdgindex.org/countries/netherlands

Faculty & Research

New Research Shows How Arts and Culture Improve Health, Safety and Well-being

A New Study Shows How Arts and Culture Improve Health, Safety and Well-being in New York City's Less Prosperous Neighborhoods

Low- and moderate-income residents in New York City neighborhoods with many cultural resources are healthier, better educated, and safer overall than those in similar communities with fewer creative resources, according to a **groundbreaking study** by the School of Social Policy & Practice at the University of Pennsylvania. And the results hold true in all five of the City's boroughs.

The school's **Social Impact of the Arts Project (SIAP)** examined New York's "neighborhood cultural ecosystem" (e.g., creative nonprofits and for-profits, entertainment venues, news outlets,

Posted on March 9, 2017

SHARE THIS POST

People in the future need alternative ways to be happy, healthy and socially satisfied

RESEARCH QUESTION

how can well-being oriented spaces let city residents flourish in a context of sustainable city development?

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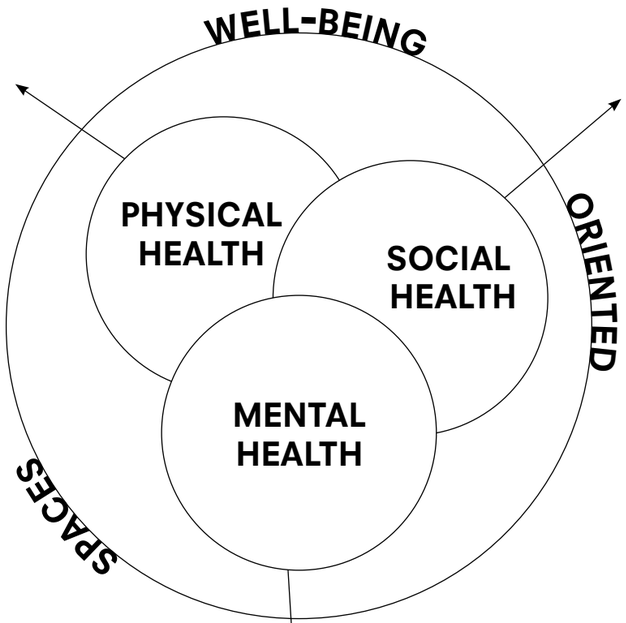
Career Opportunity

Spaces for Active Education

Flexible Spaces for public showcase



Natural Environment

Sustainable Materials

Montessori program for personal mental development , exploration and creativity

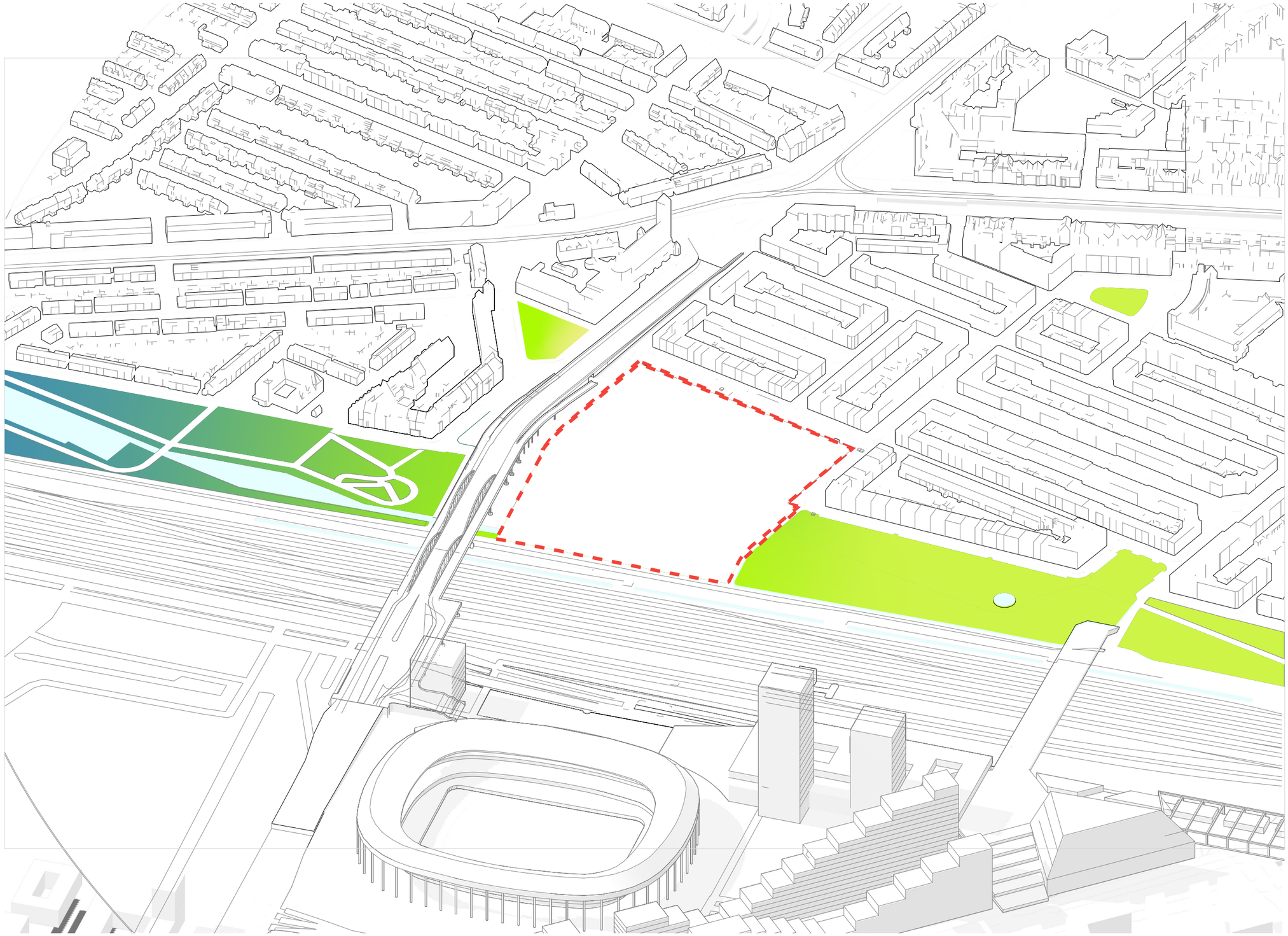
Conclusion 1: introduce amenity for contemporary art interests

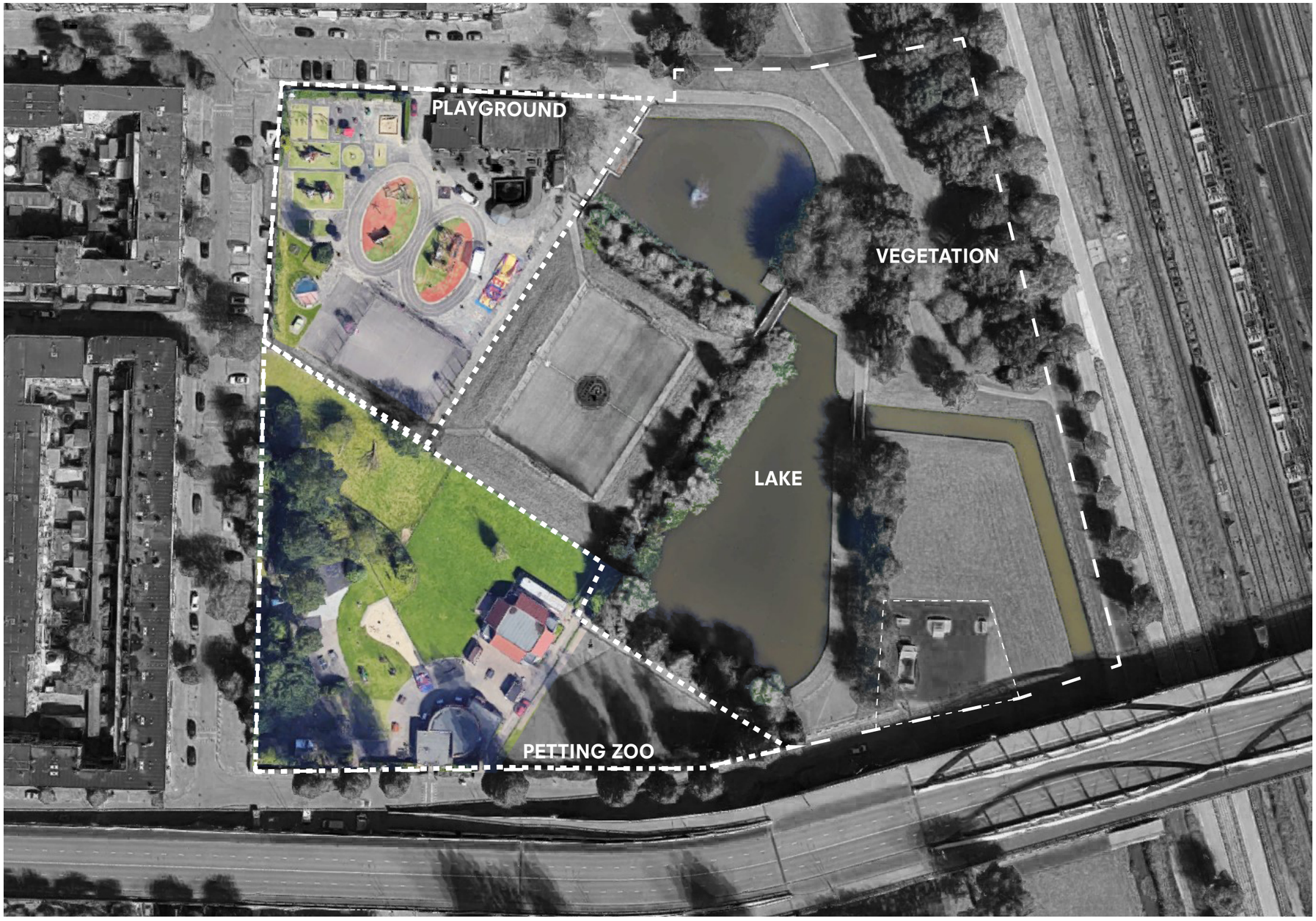
0 200 400 600 800 1000 m

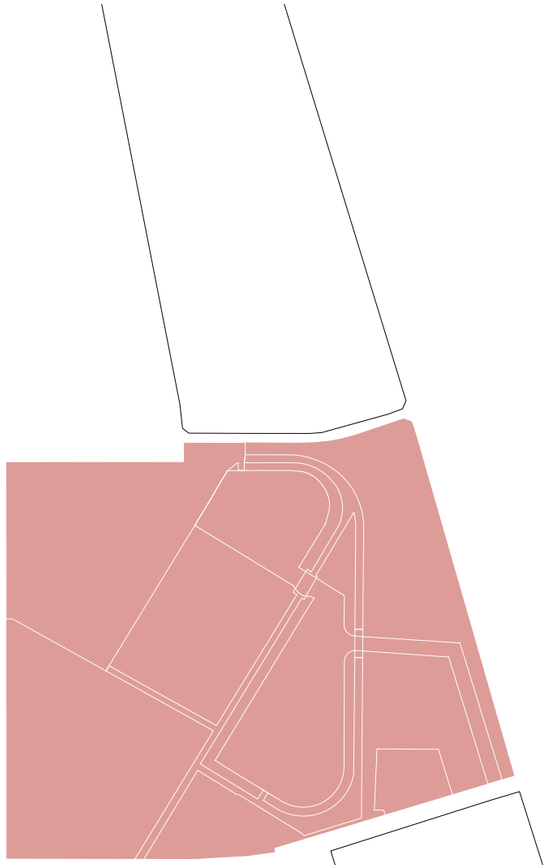
1:10.000

The green lung
environmentalized to human nature
greenery
as tool to
reduce
stress

Conclusion 2: greenery reduces stress + collective memory needs to be triggered

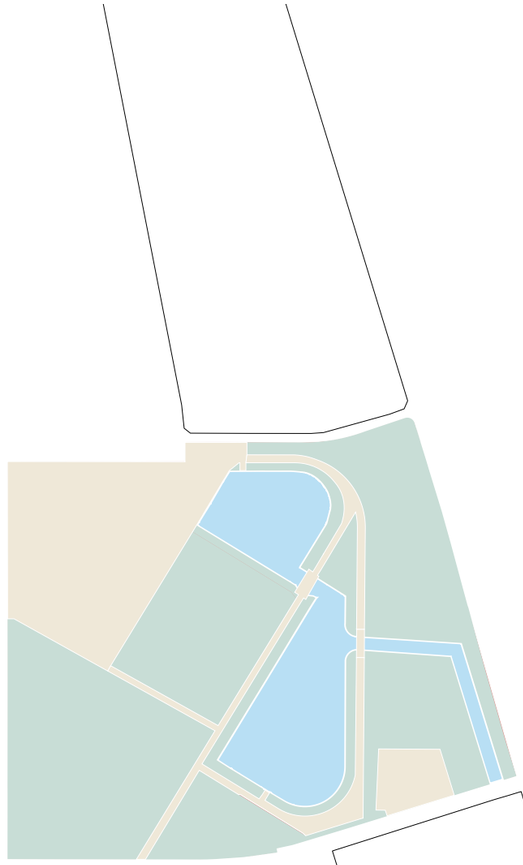



PLAYGROUND
VEGETATION
LAKE
PETTING ZOO



park
99.430 m2 (100%)

water
13.440 m2 (13.6%)



park
29.500 m2 (100%)

water
5.000 m2 (17%)

paved
7.460 m2 (25%)

green
17.000 m2 (58%)

dance

music

singing

theatre & film

design

craft

performing arts

visual arts

Het Nieuwe Instituut

Afrikaanderplein

New Luxor theater

Rotterdam AHOY

Willem de Kooning Academie

Theater Zuidplein

Codarts

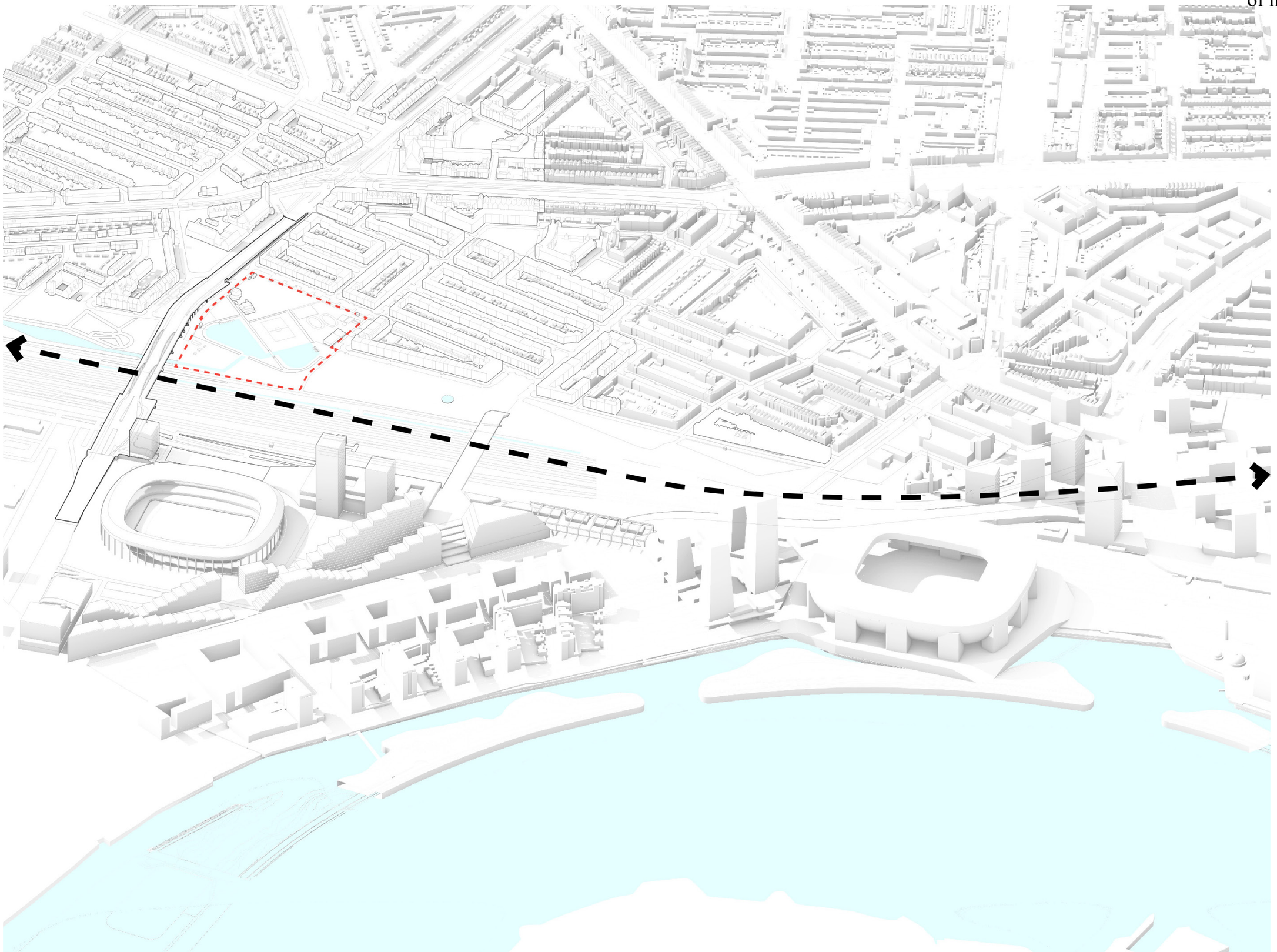
Maas theater en dans

Codarts Circus arts

Conclusion 3: introduce amenity for contemporary art interests

Untitled Map
Write a description for your map
Legend
N

MAKE IT

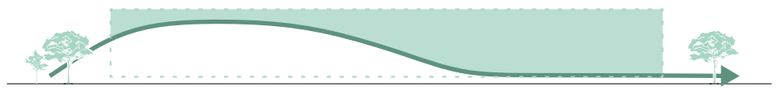


well-being flourishing

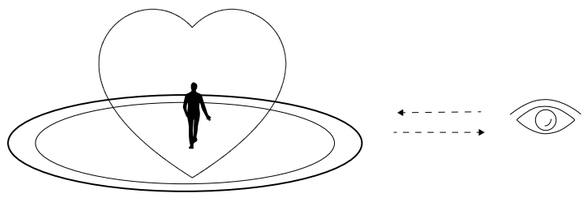
shape

park enhancement

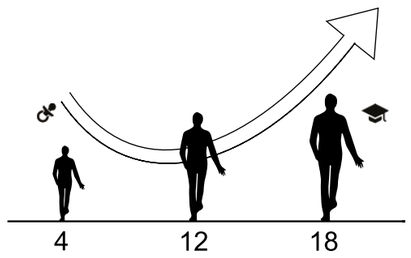
orientation
and recognition



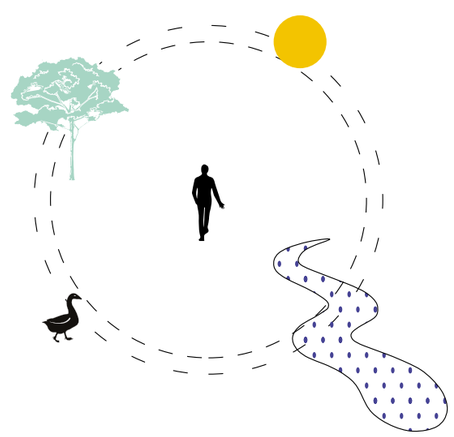
nature flows through
the spaces



physical and mental
health



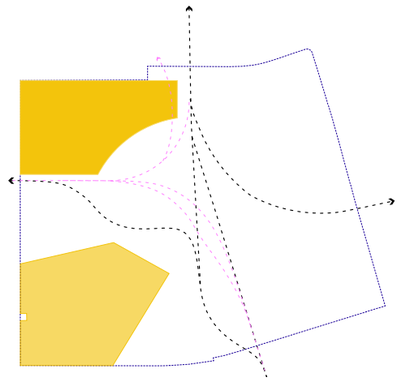
education



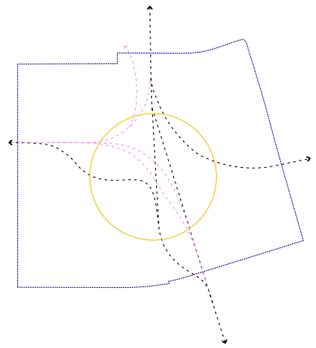
biophilic design

how to shape ambition of the art academy?

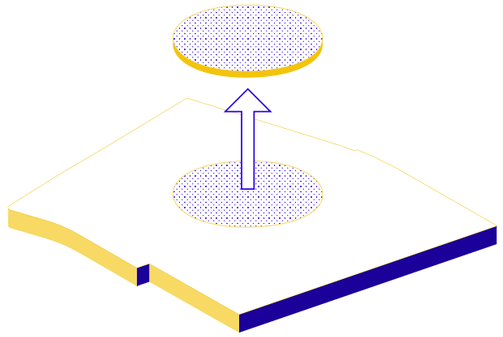
harmony



petting zoo relation



surroundings unified



park continuation + landmark

shaped by and
enhancing existing
vegetation

Salix babylonica ‘Tortuosa’
(Kronkelwilg)

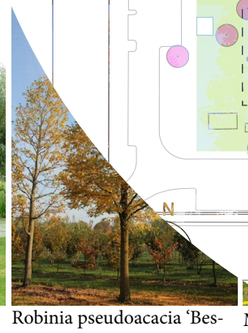
Cra‘
Sc
(‘

Prunus avium ‘Plena’
(Zoete kers)

Quercus cerris
(Turkse eik)

rpinus betulus
ewone haagbeuk)

Salix alba
(Schietwilg)

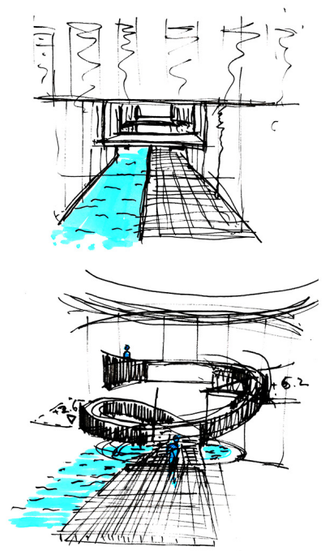


Robinia pseudoacacia ‘Bes-
soniana’
(Gewone acacia)

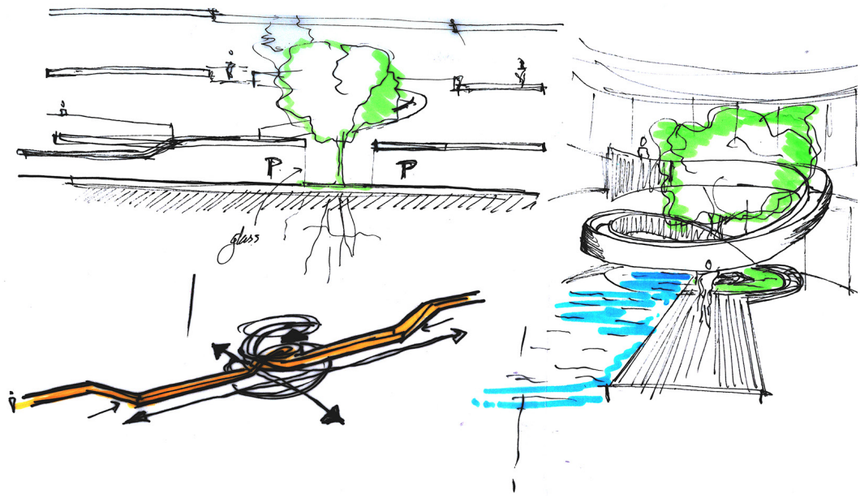
Malus do..
div. fruitsoorten (..

Malus ‘Liset’
(Sierappel)

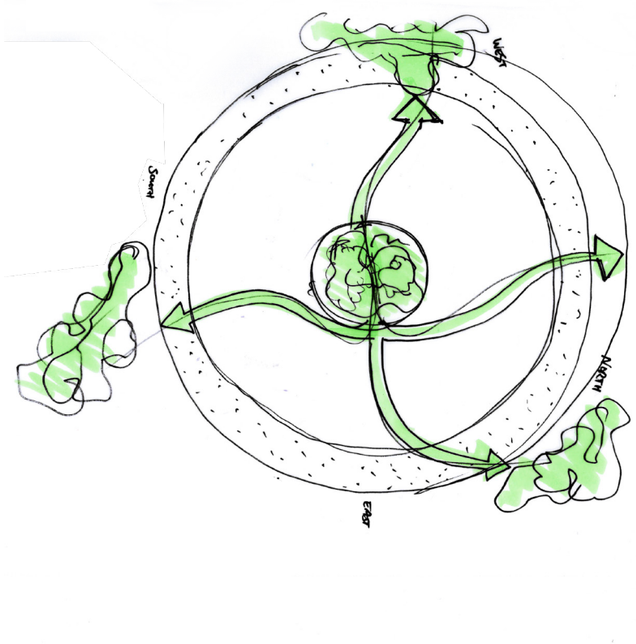
Quercus robur
(Zomereik)



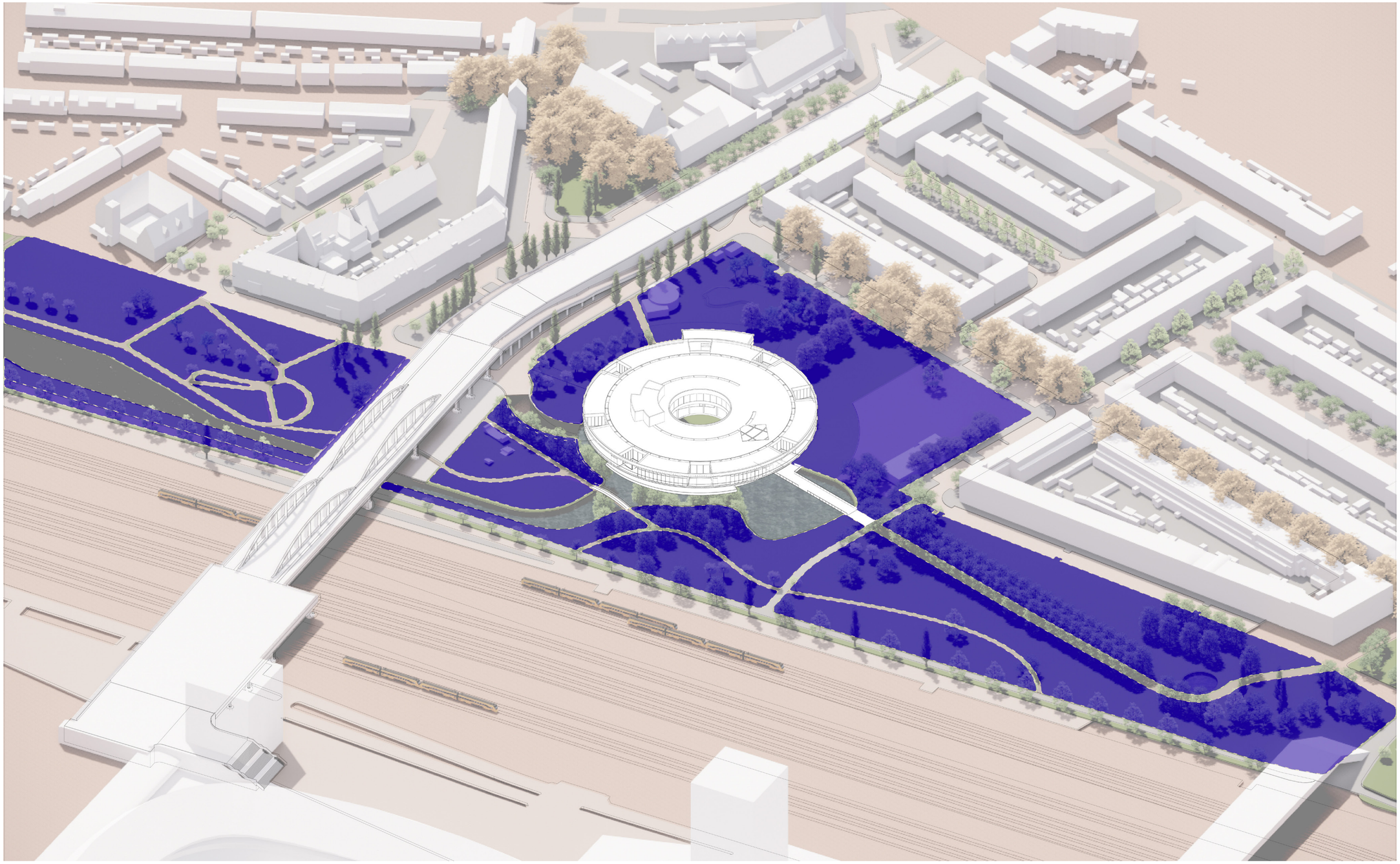
water as the guide inwards

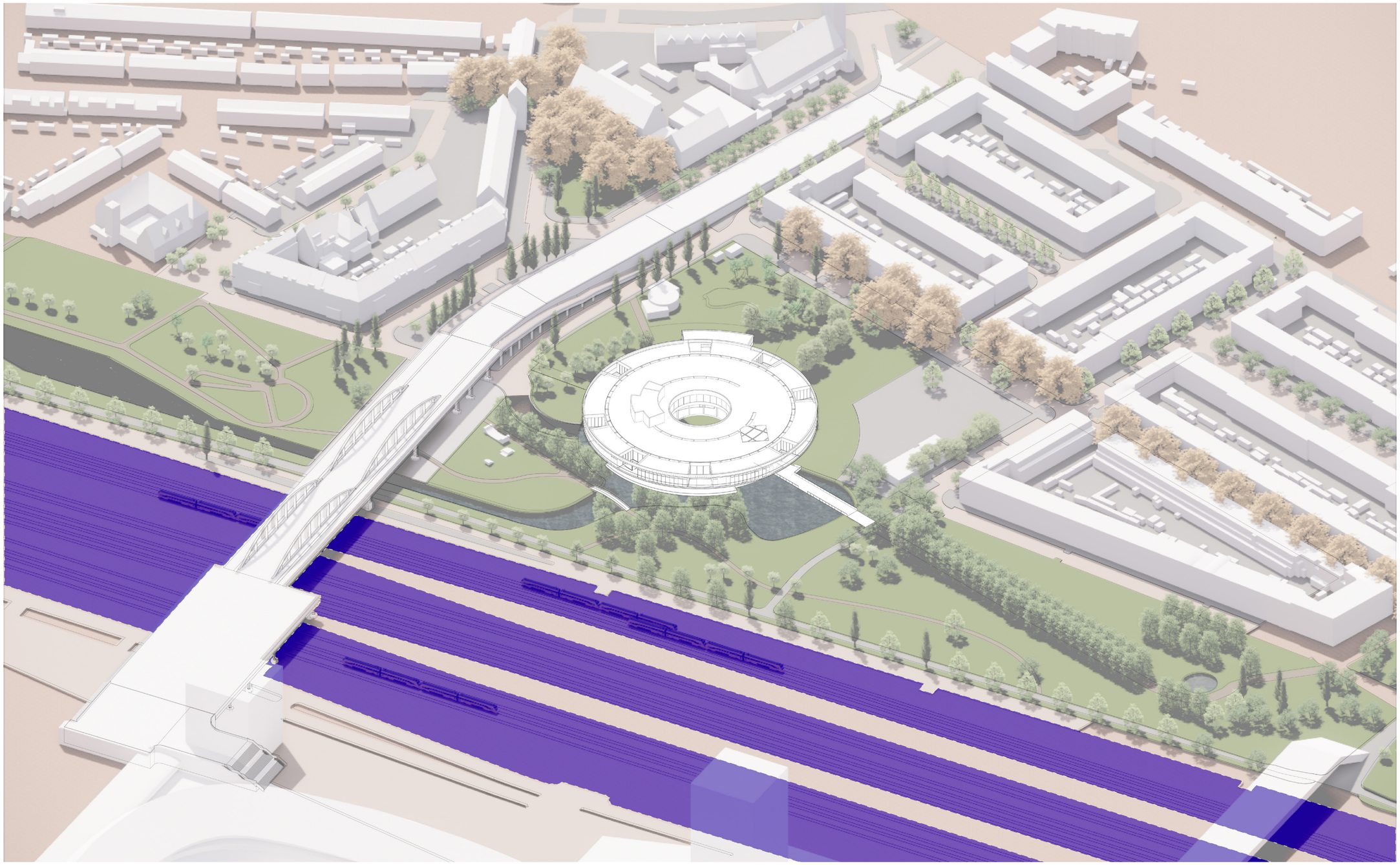


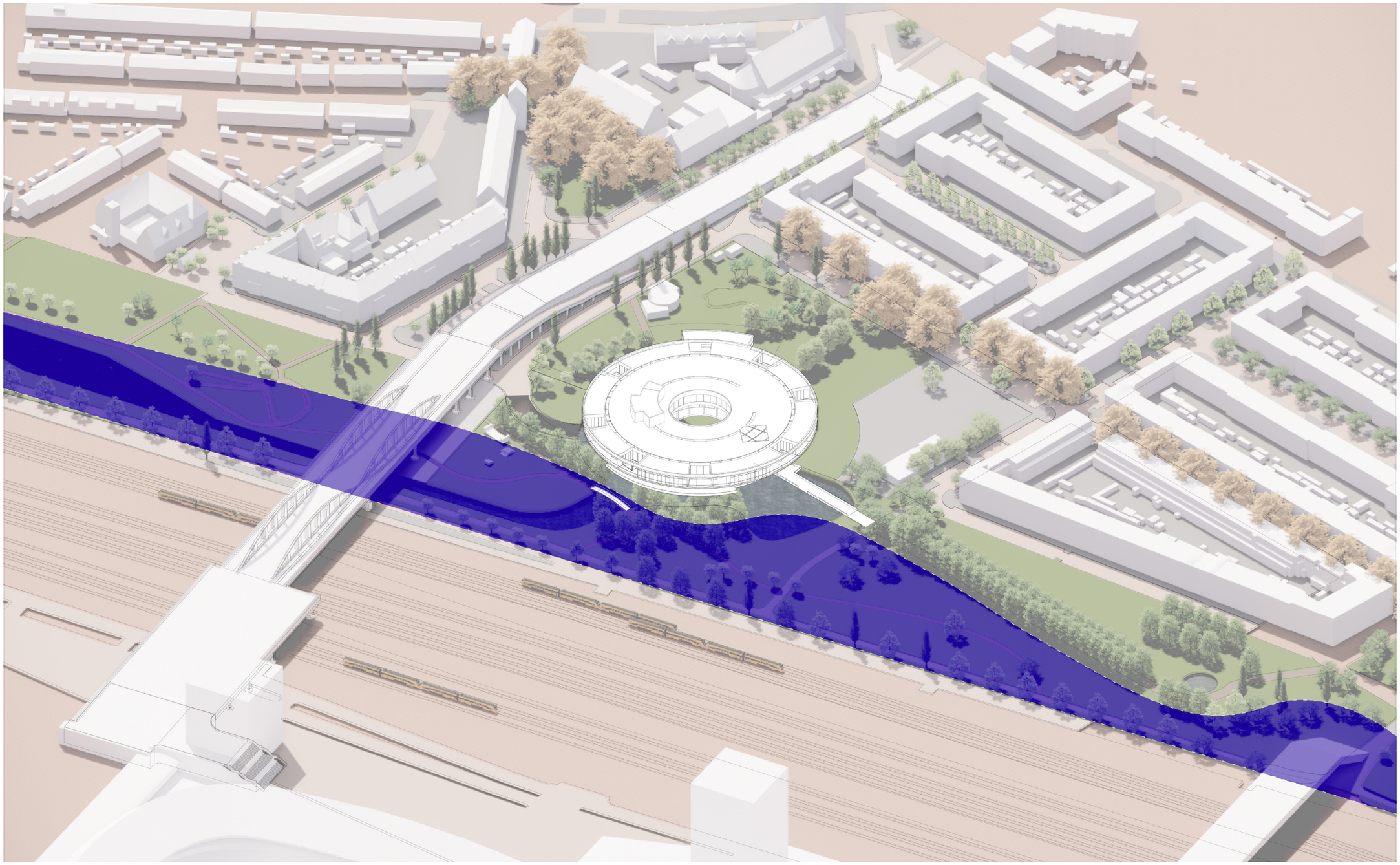
routing experience

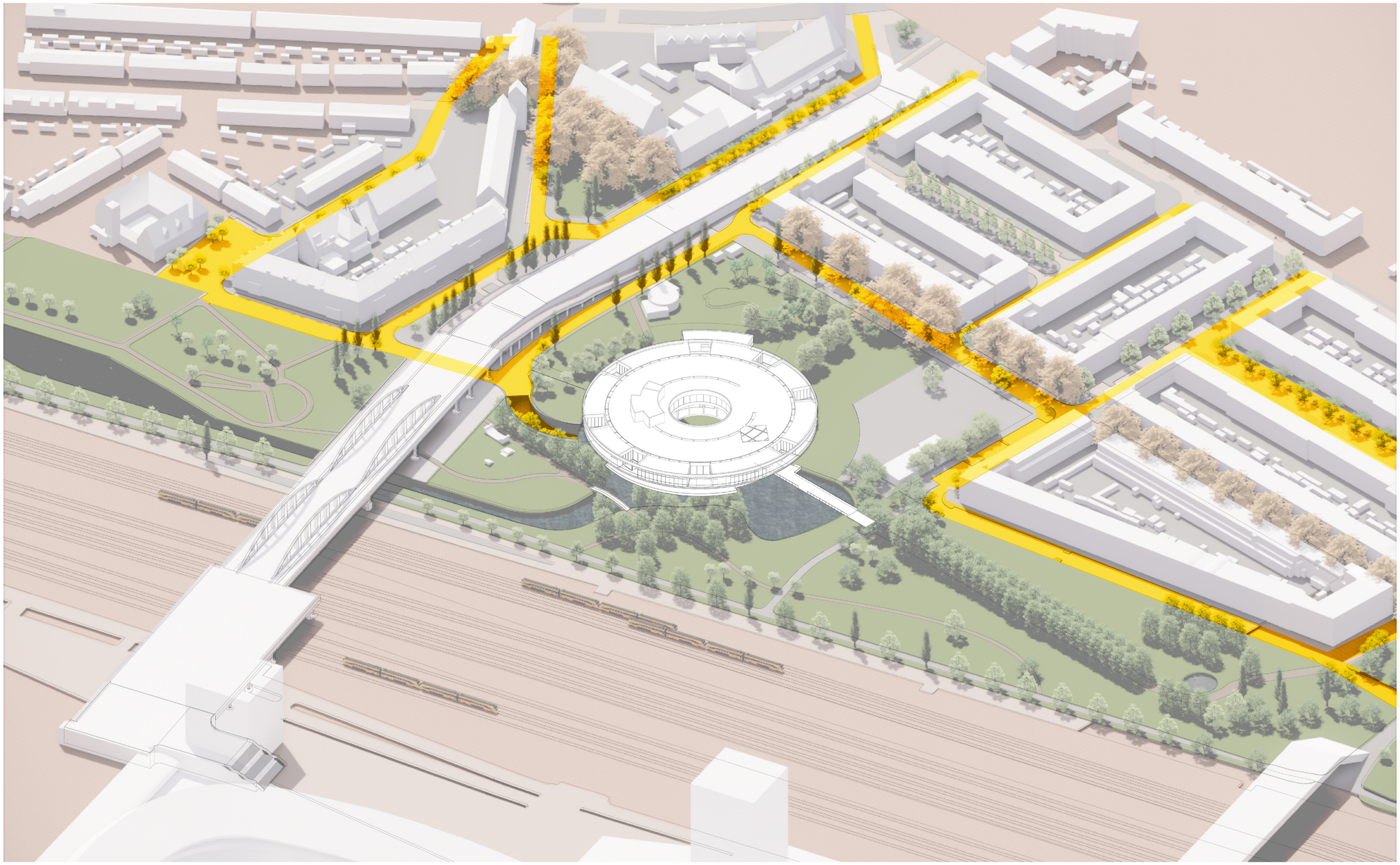


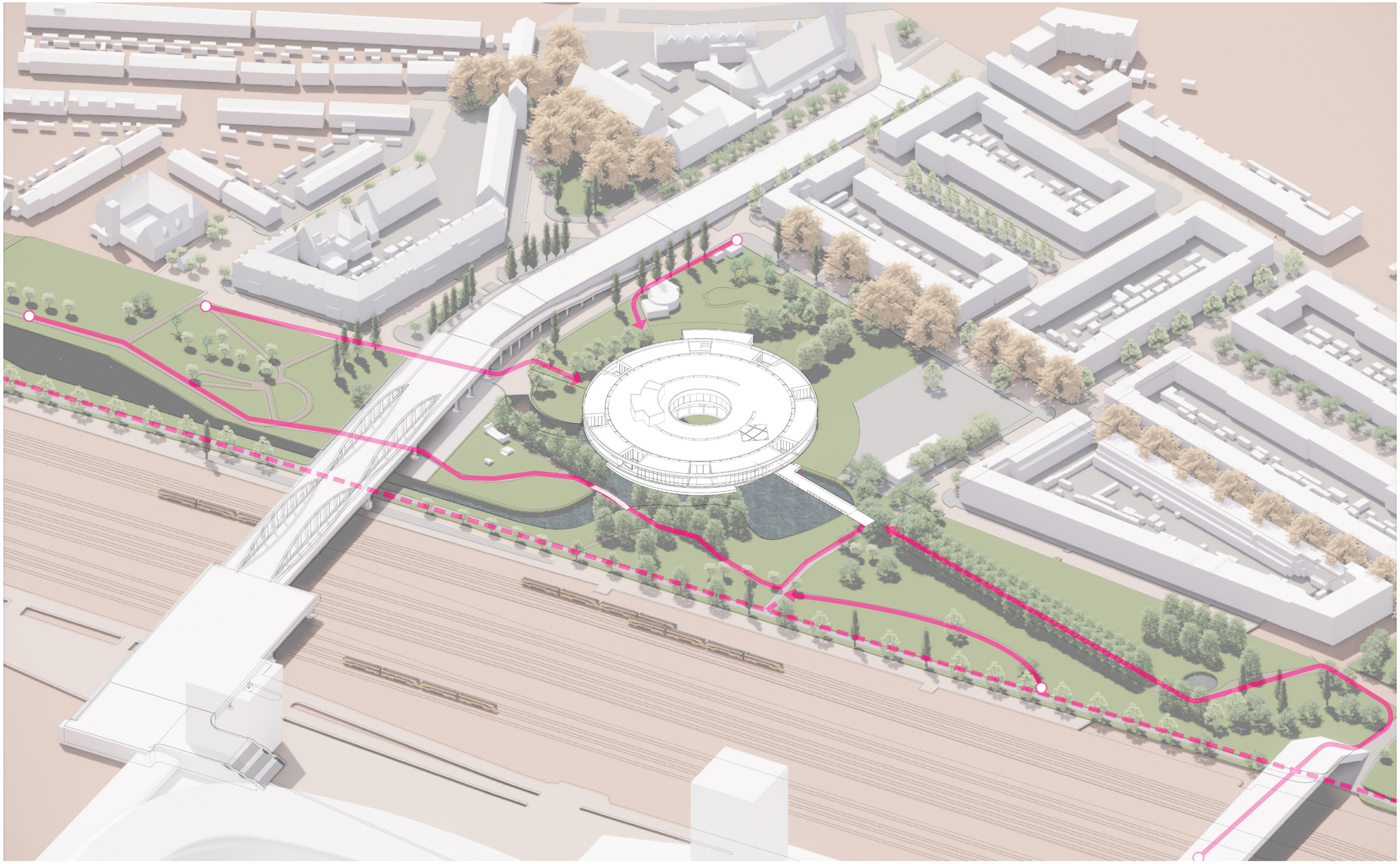
From the inside outwards

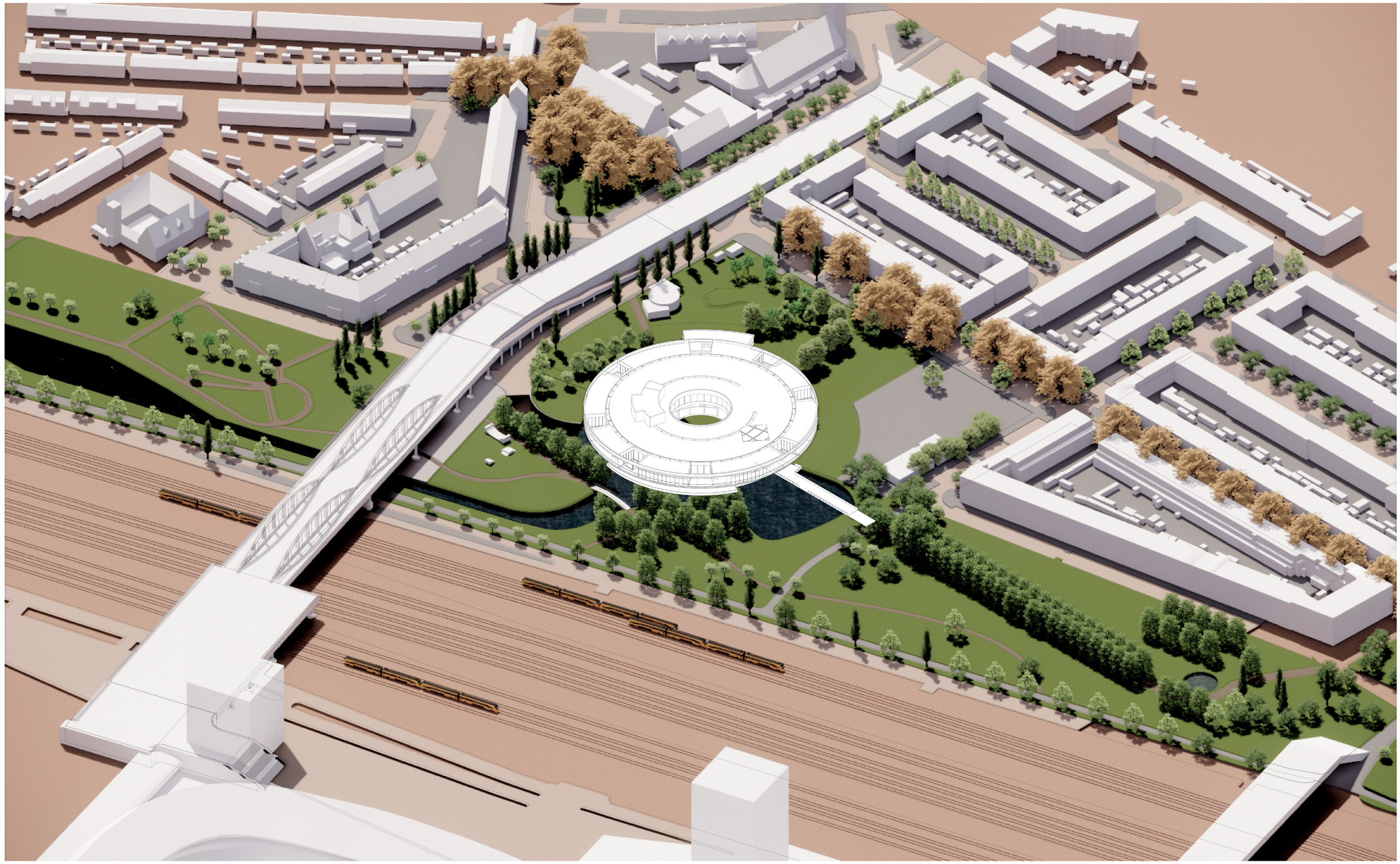


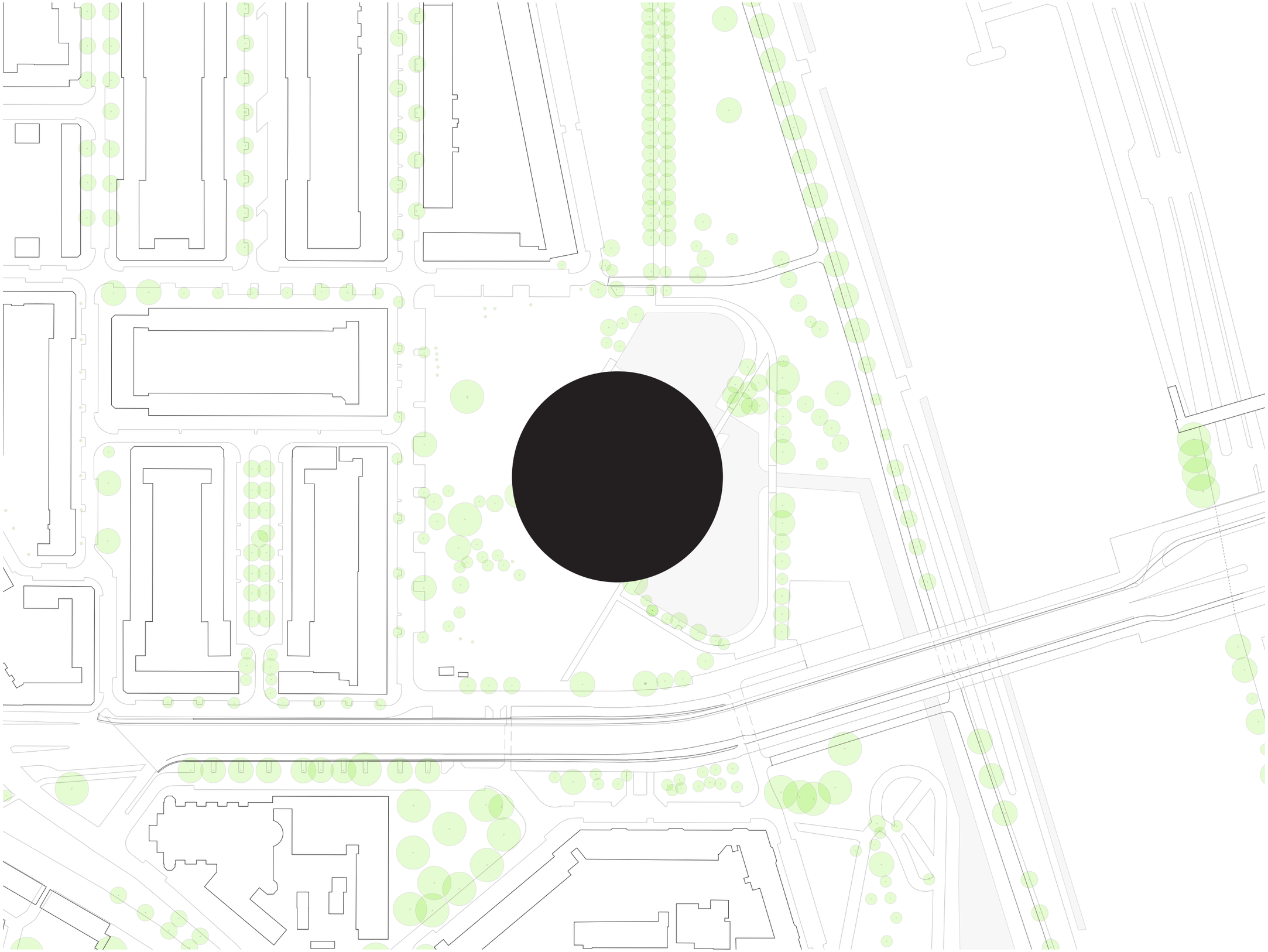




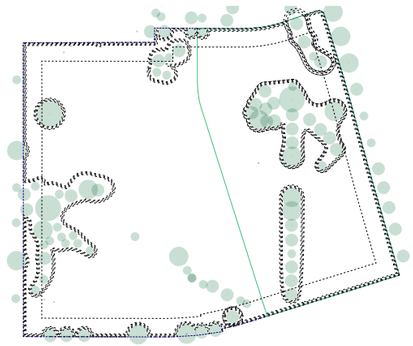




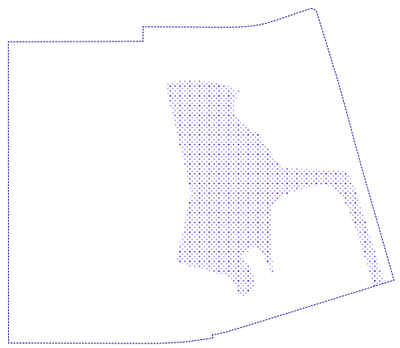




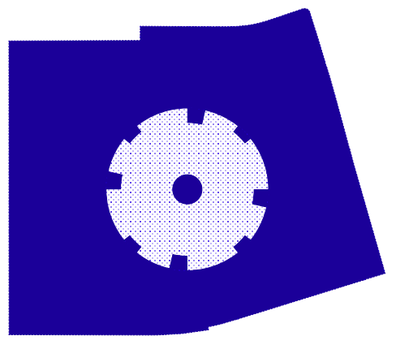
park enhancement
blurring interior and
exterior



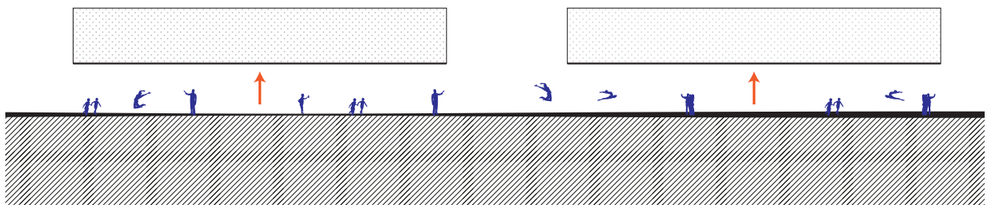
respecting vegetation



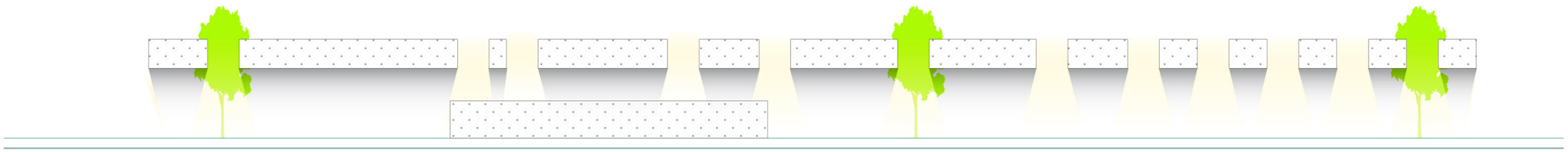
biodiverse +
purifying lake



green inlets



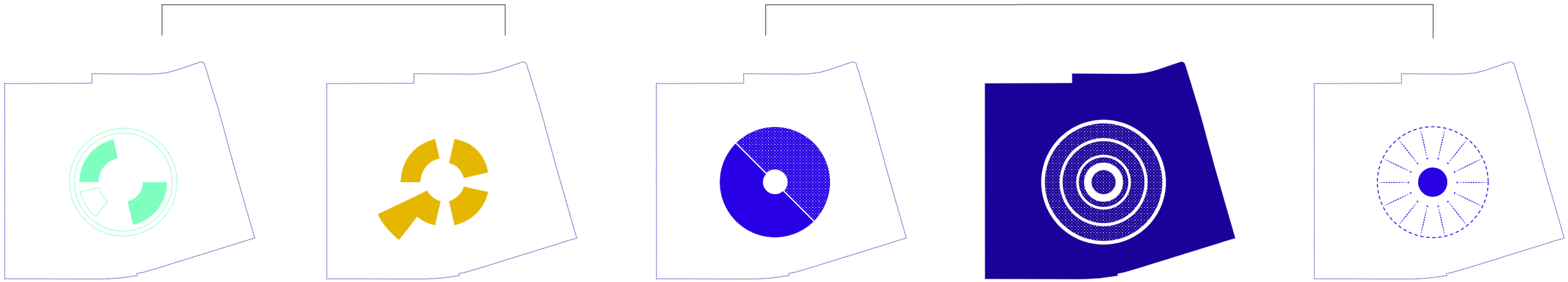
lifted extravertness



open up the building to vegetation

ground floor

first floor



performing art

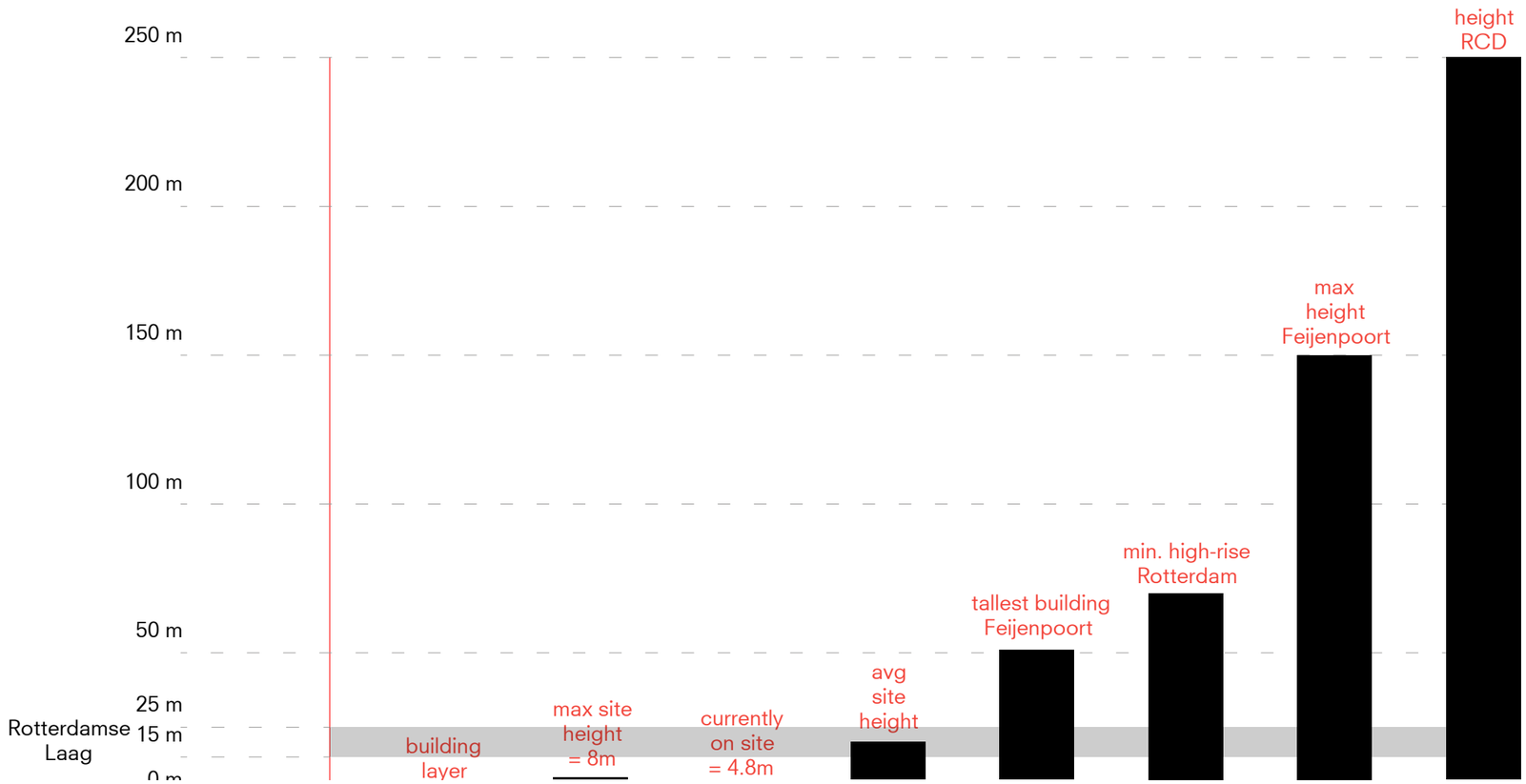
fragmentation

function split

circulation rings

centrality

an inclusive and open performing art education facility



max height = 17m

Suggested program

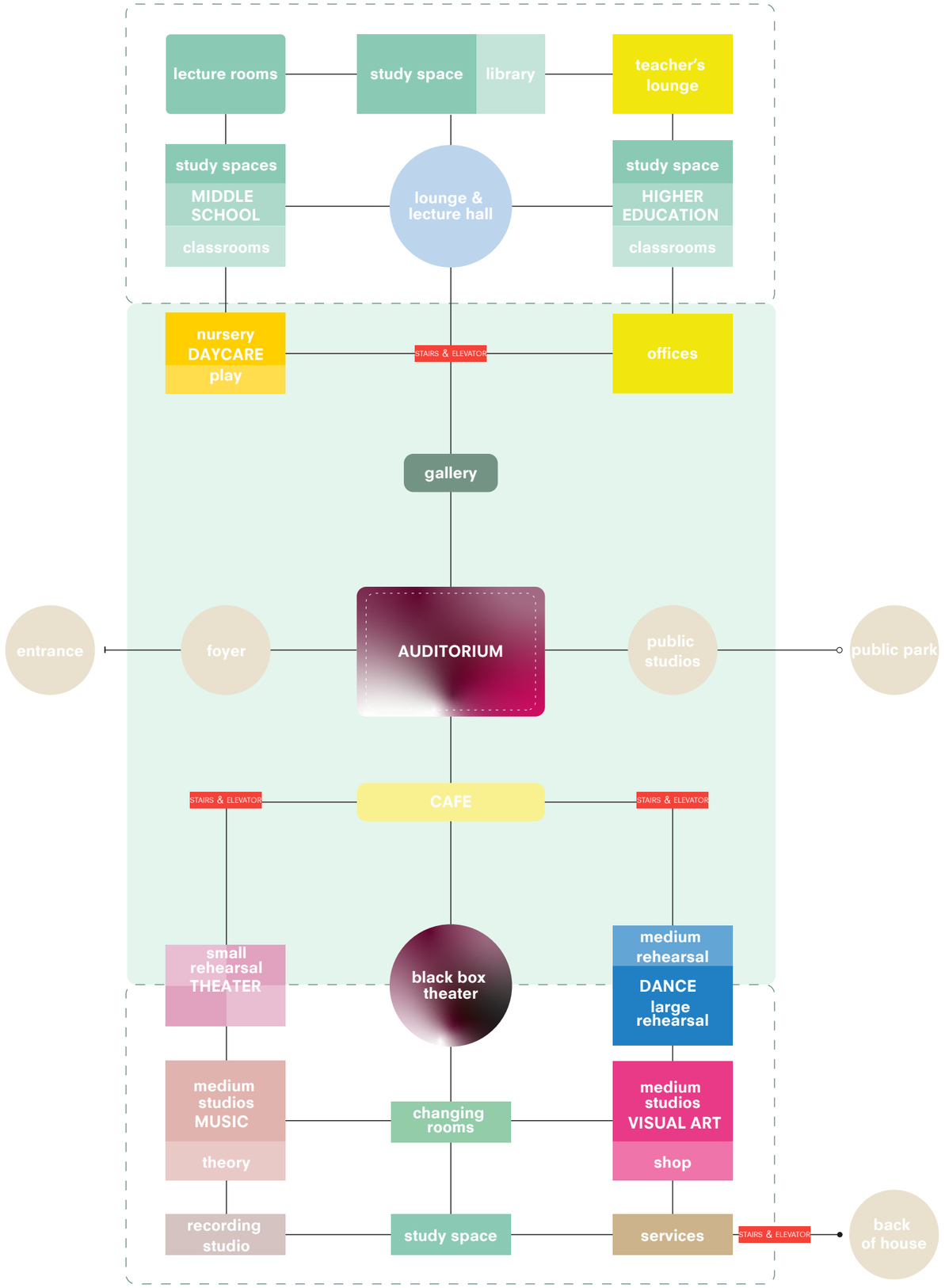
total : 7570 m2

29 %	PERFORMANCE ART 2160 m²	11 %	850 m²	MUSIC RELATED	drum kit studios medium rehearsal studios small rehearsal studios theory classrooms library vocal training recording studios
		11 %	850 m²	DANCE RELATED	large rehearsal studios medium rehearsal studios small rehearsal studios
		3 %	230 m²	VISUAL ARTS RELATED	medium studios workshop & kilns
		3 %	230 m²	CHANGINGROOMS	male female staf
21 %	EDUCATION 1545 m²	8 %	620 m²	ACADEMIC EDUCATION	classrooms student gallery teacher's lounge
		5 %	385 m²	KINDER GARTEN	playroom nursery staffroom
		4 %	310 m²	OFFICES	offices
		3 %	230 m²	CAFETERIA	cafe common lounge
15 %	PUBLIC 1160 m²	15 %	1160 m²	THEATER RELATED	arts auditorium black box theaters green room rehearsal studios storage control room
35 %	CIRCULATION 2700 m²	25 %	1930 m²	CIRCULATION	circulation foyer gardens courtyard
		5 %	385 m²	VERTICAL CIRCULATION	vertical circulation
		5 %	385 m²	SERVICES	staging/loading docking toilets technical storage
		2 %	155 m²	PARKING	parking drop off zone

EDUCATION

PUBLIC

PERFORMANCE



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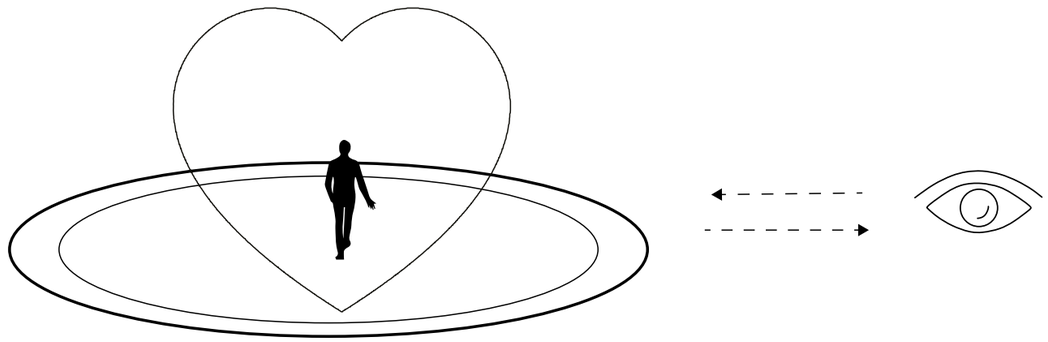
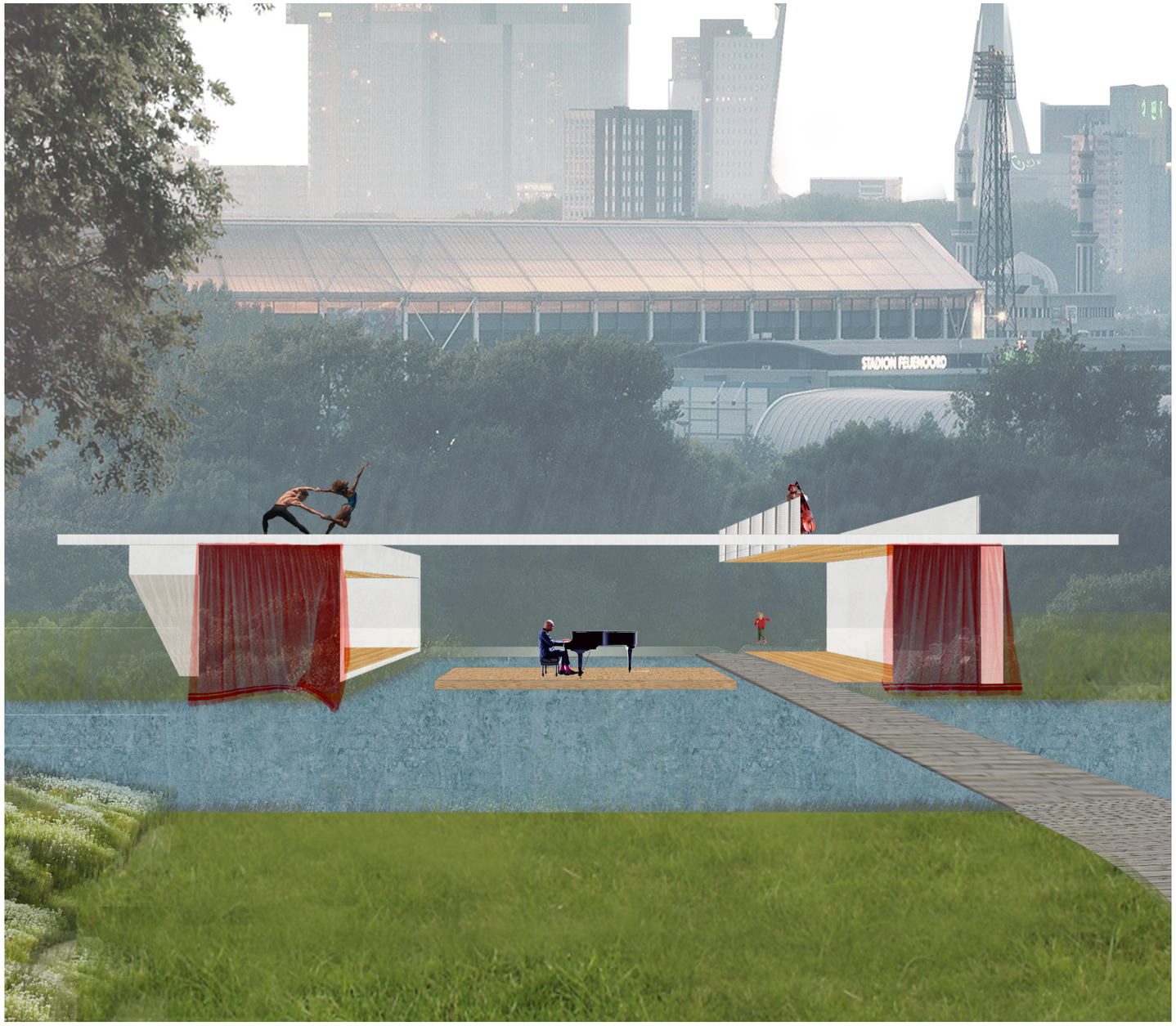


mental health

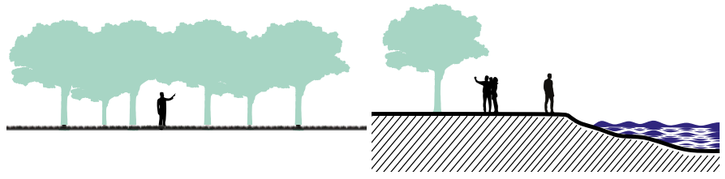
physical health

social health


STADION FEIJENOORD

concept
development

biophilic design
concepts to increase
well-being



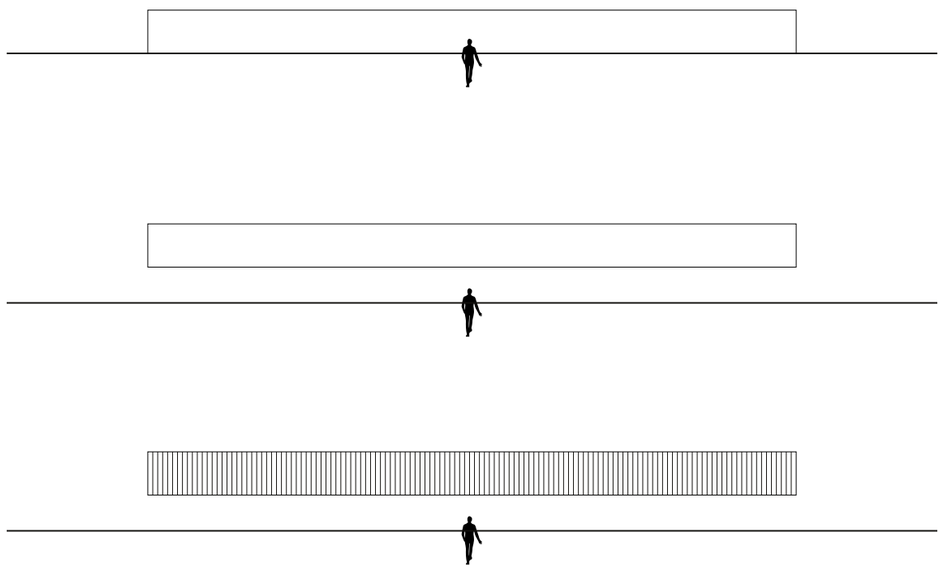
presence of green

presence water

materials natural to
the senses

use of indirect light

organic shapes



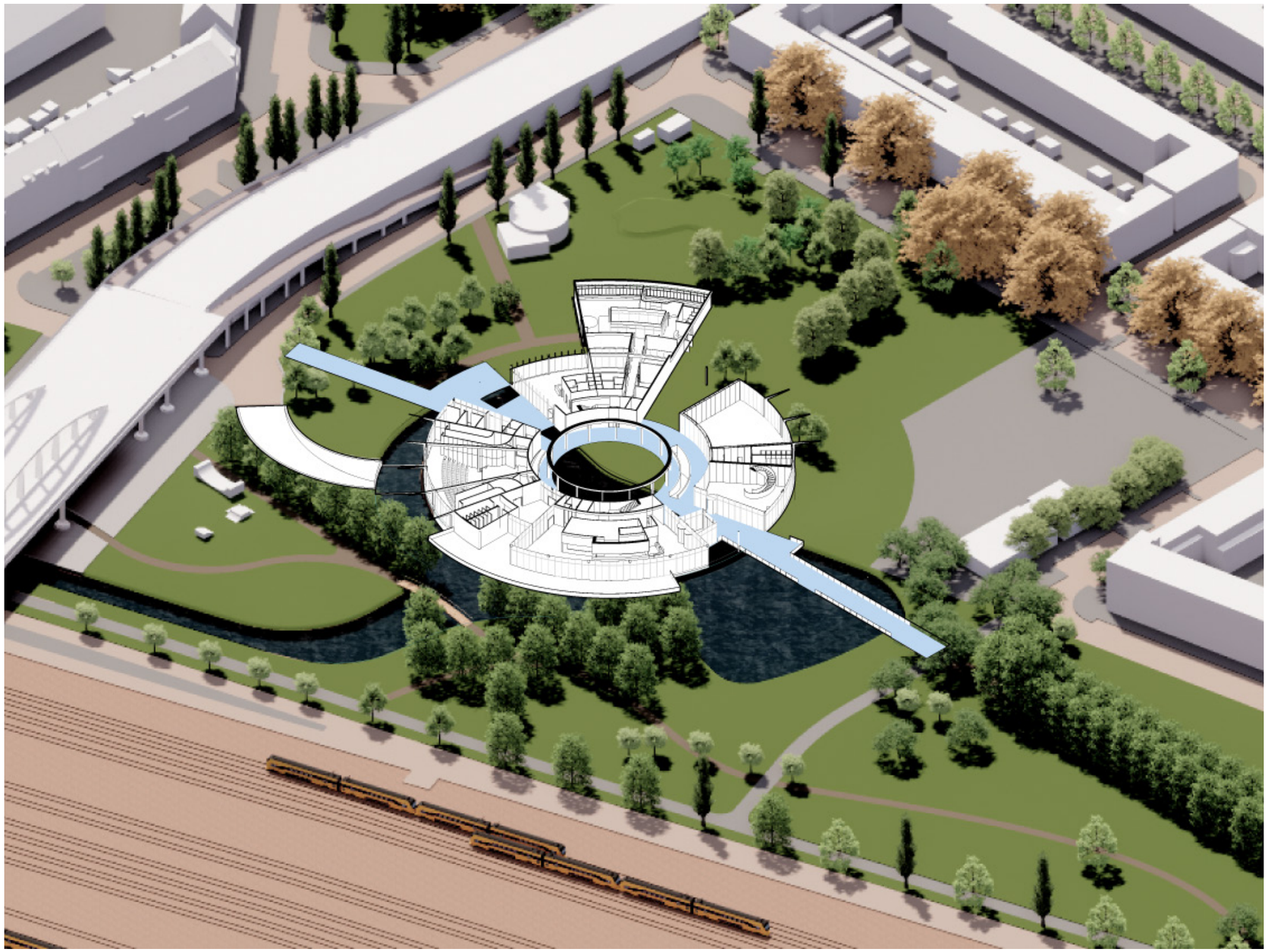
1 volume

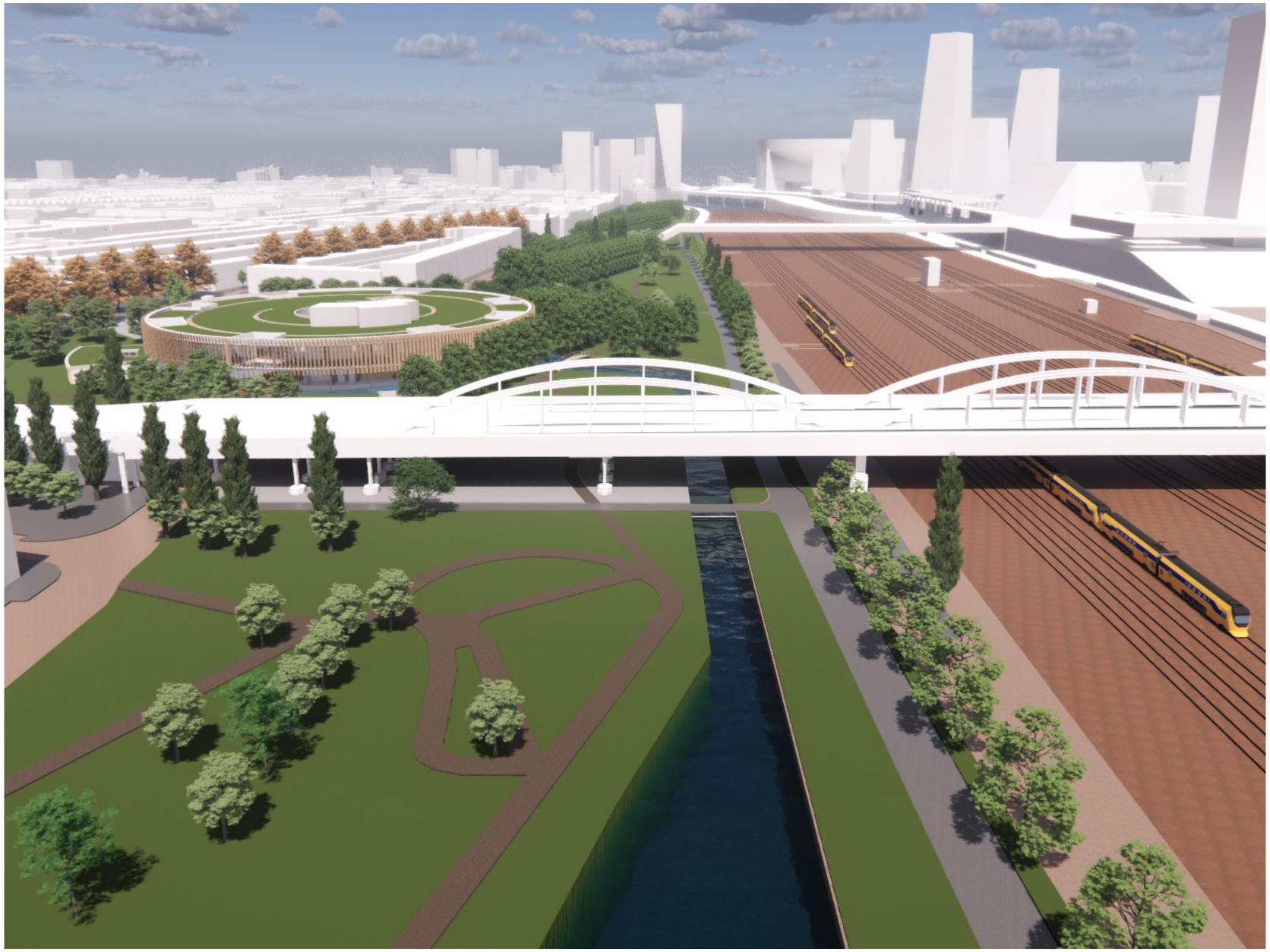
shelter

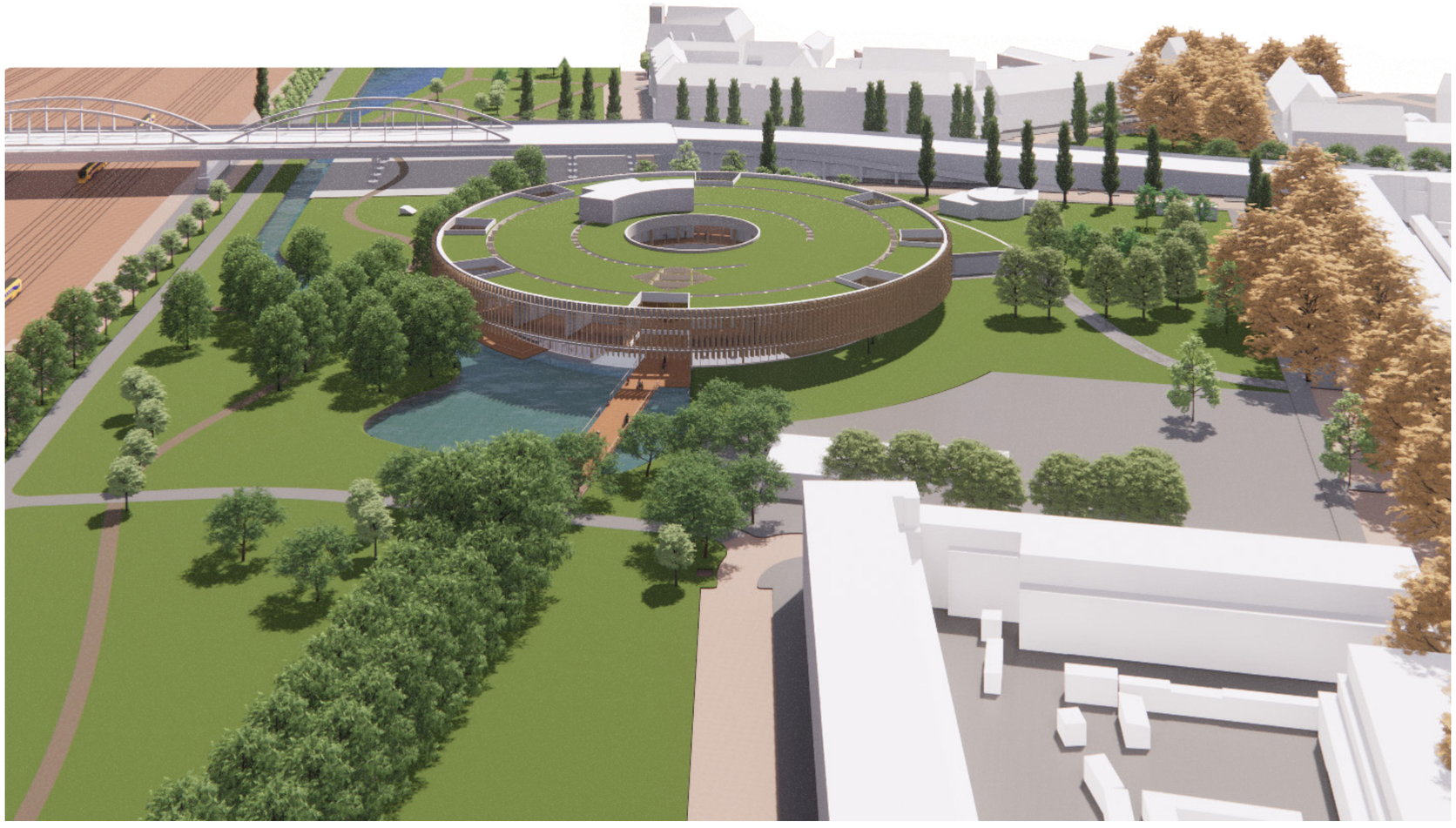
rythm

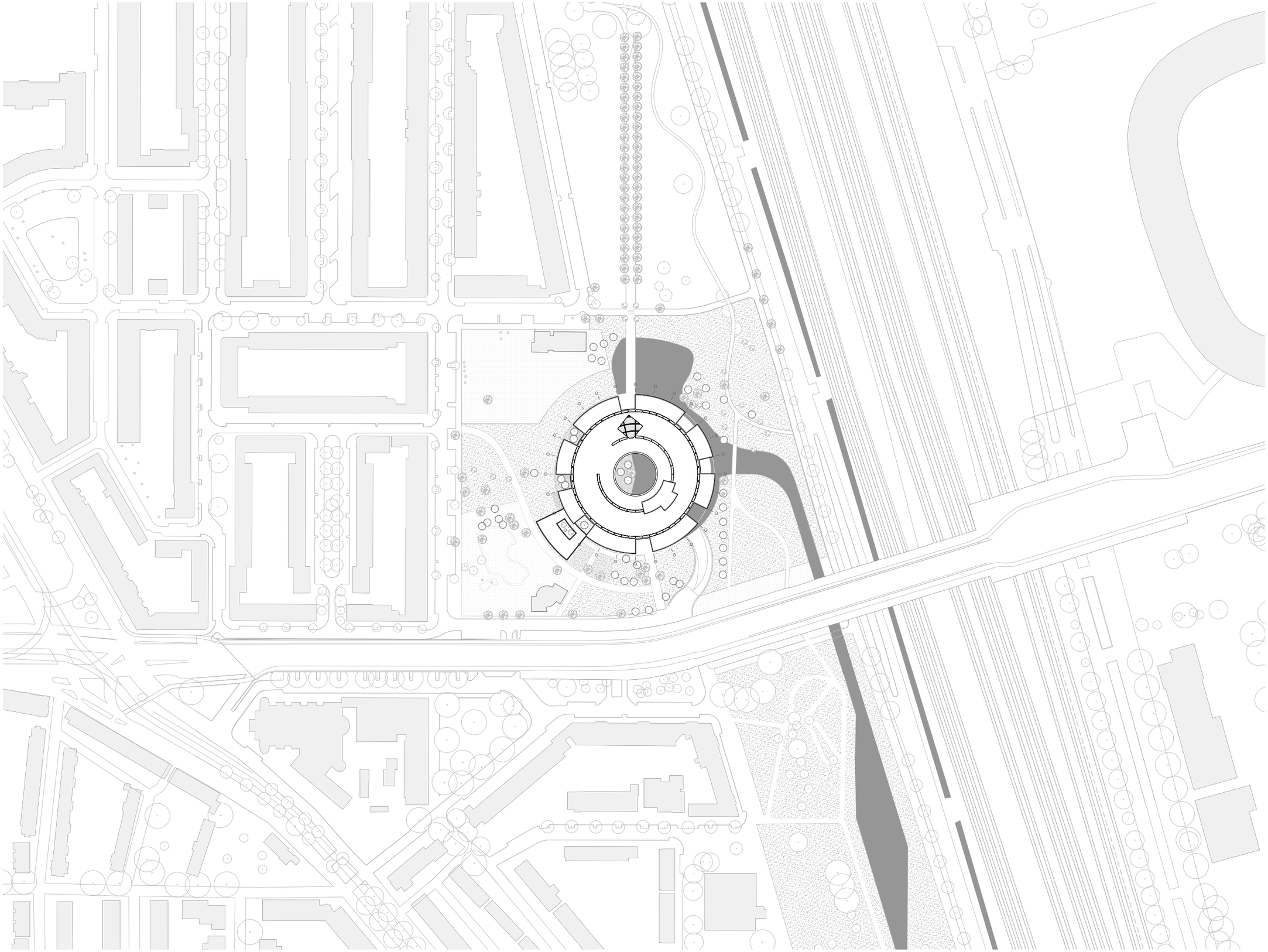
unobstructed

passage



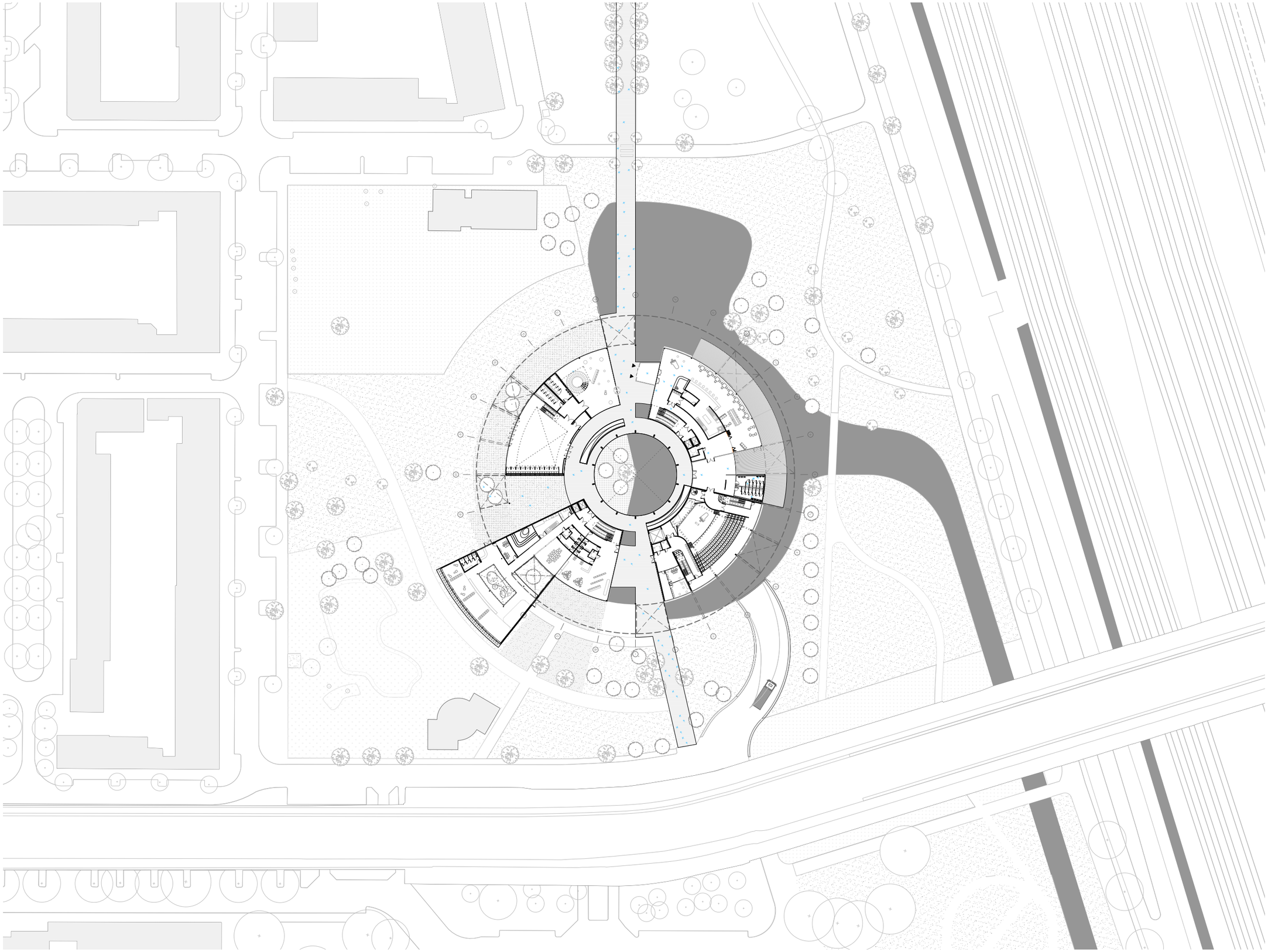






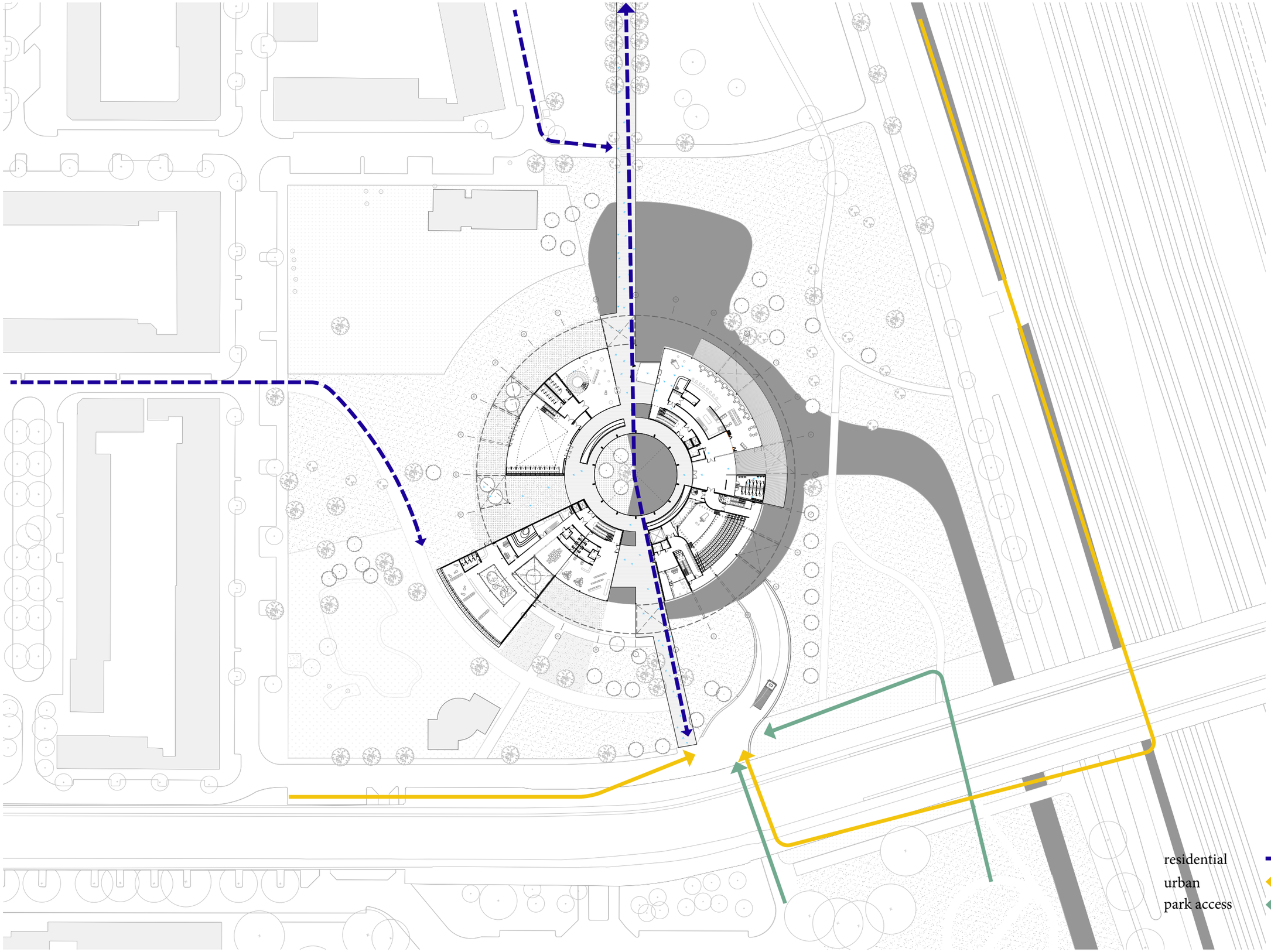
0 20 40 60 80 100 m

1:1000



0 10 20 30 40 50 m

1:500



0 10 20 30 40 50 m

1:500

introduction

research summary

design brief

concept development

implementation

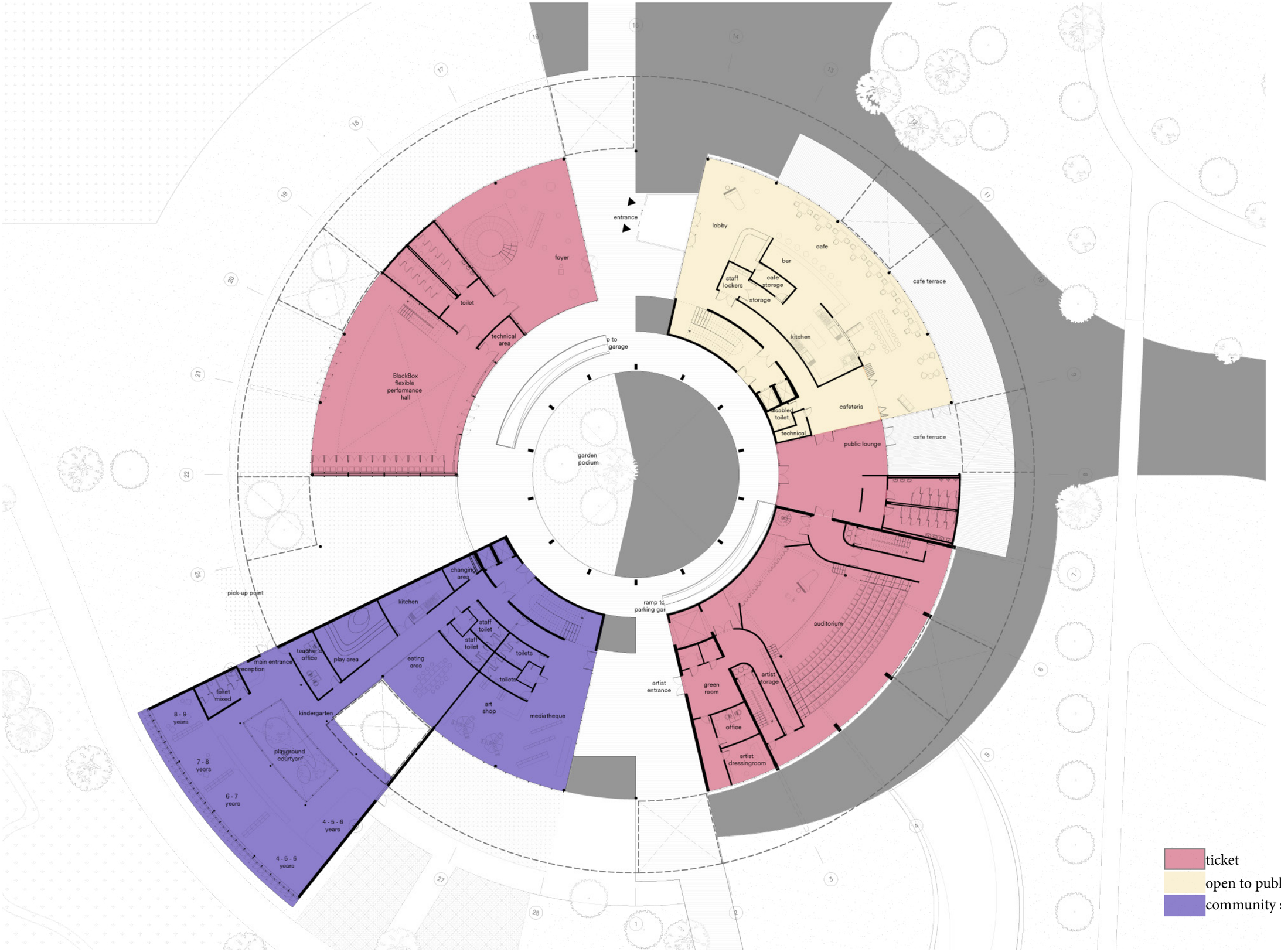
design development

conclusion and reflection

0 ground floor

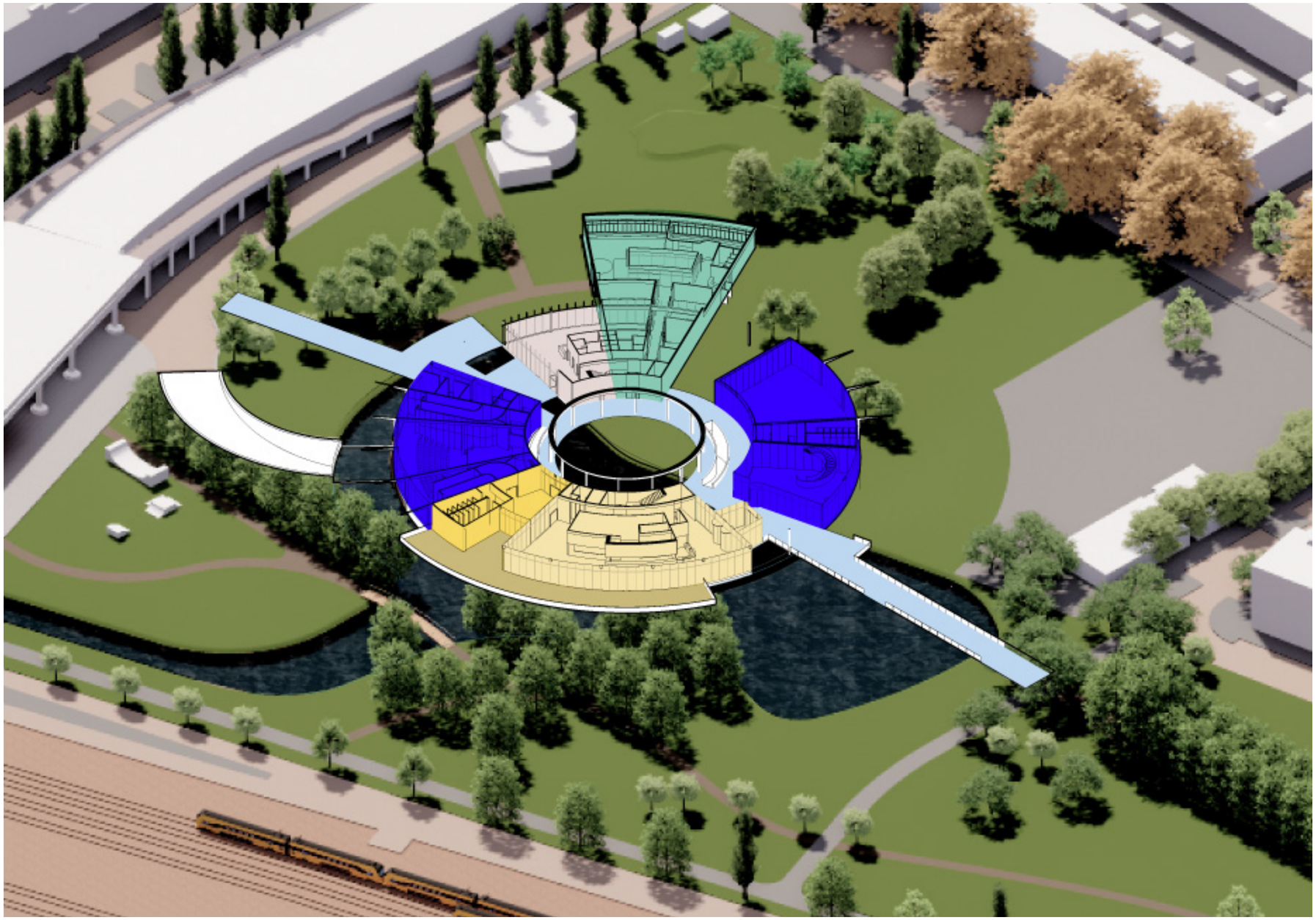
1:200 plan

0 ground floor



0 5 10 15 20 m

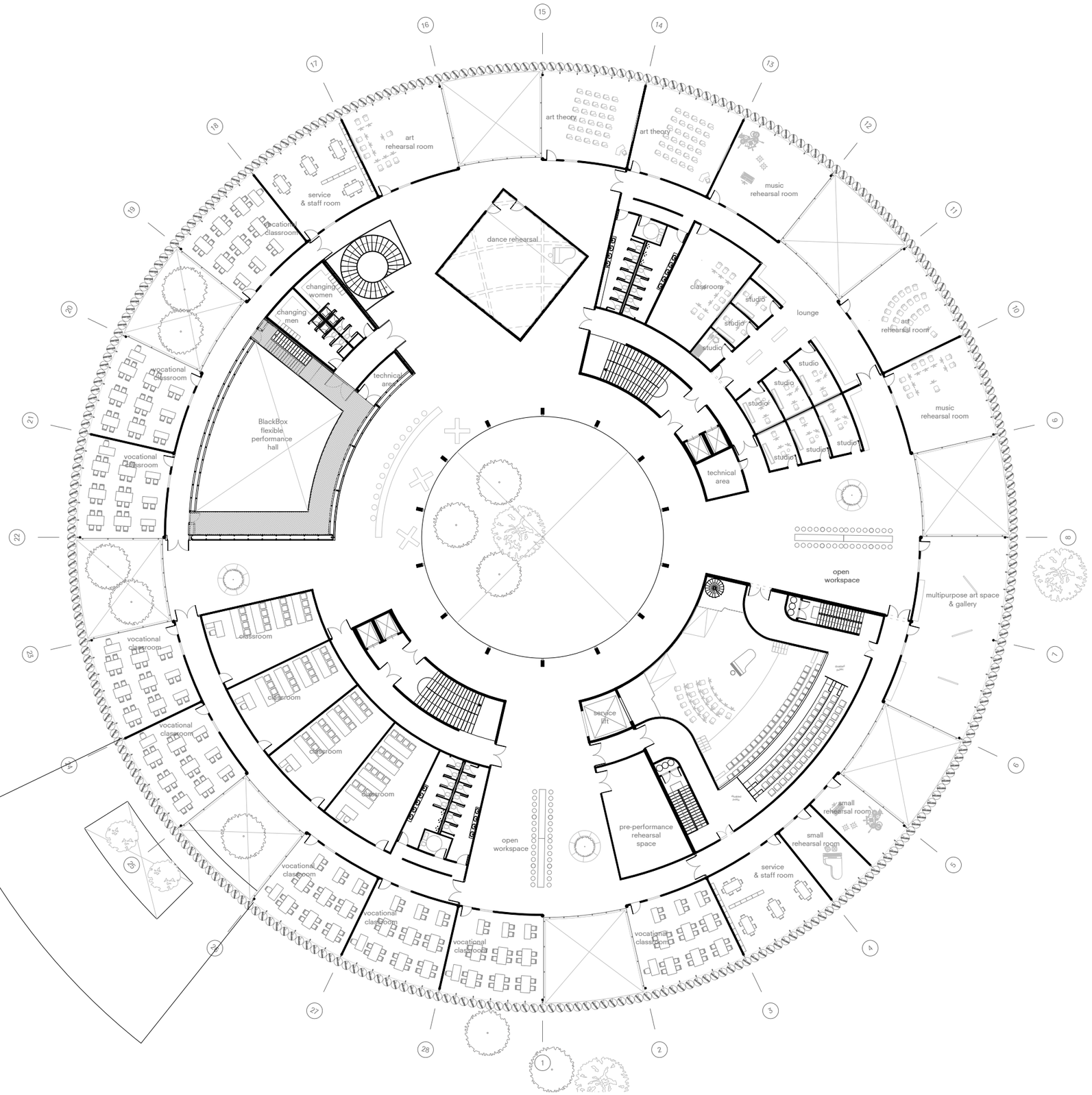
1:200



cafe public
cafe deck
performing art stages
foyer
mediatheque
kindergarten

+1 first floor

1:200 plan



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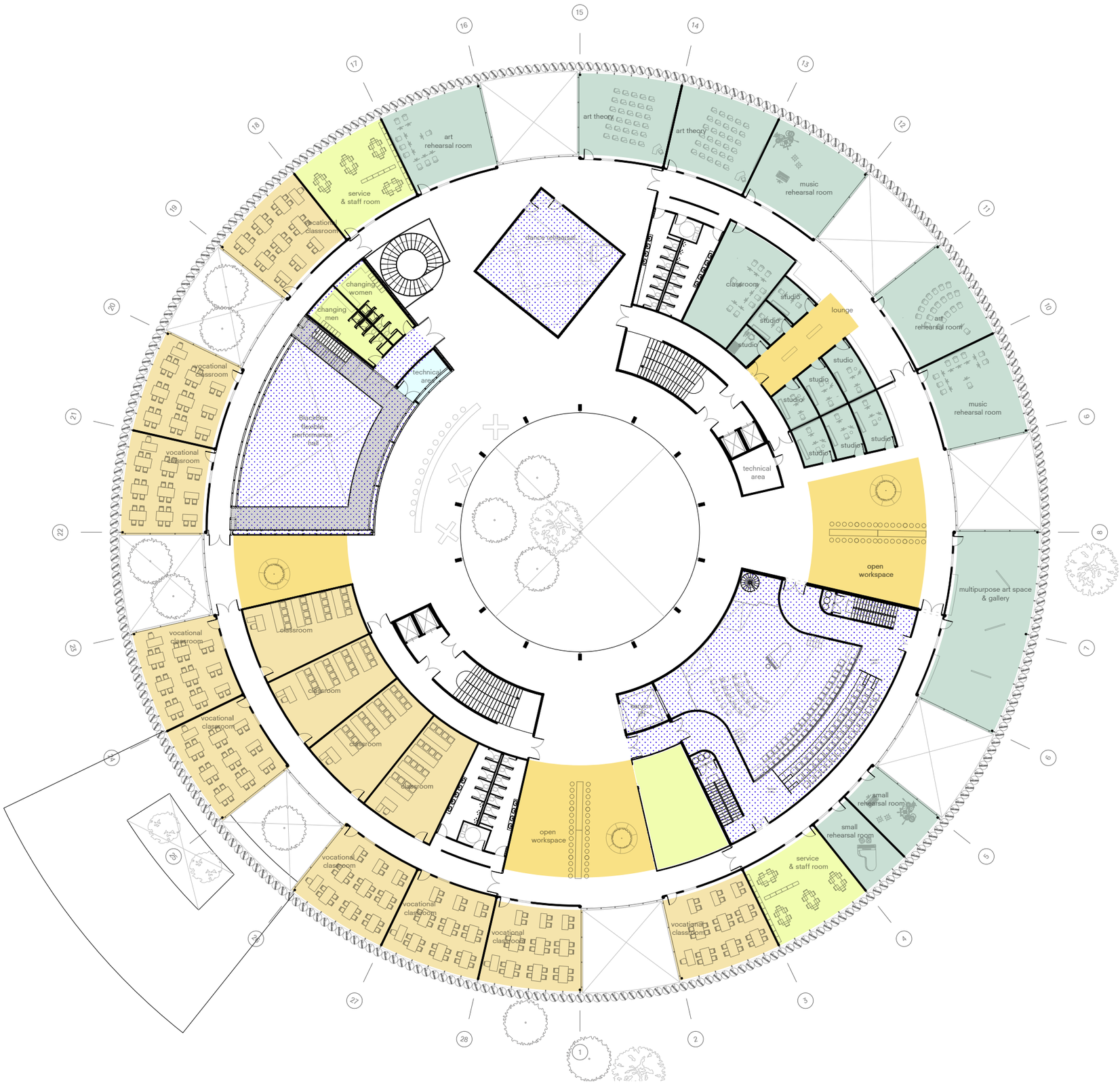
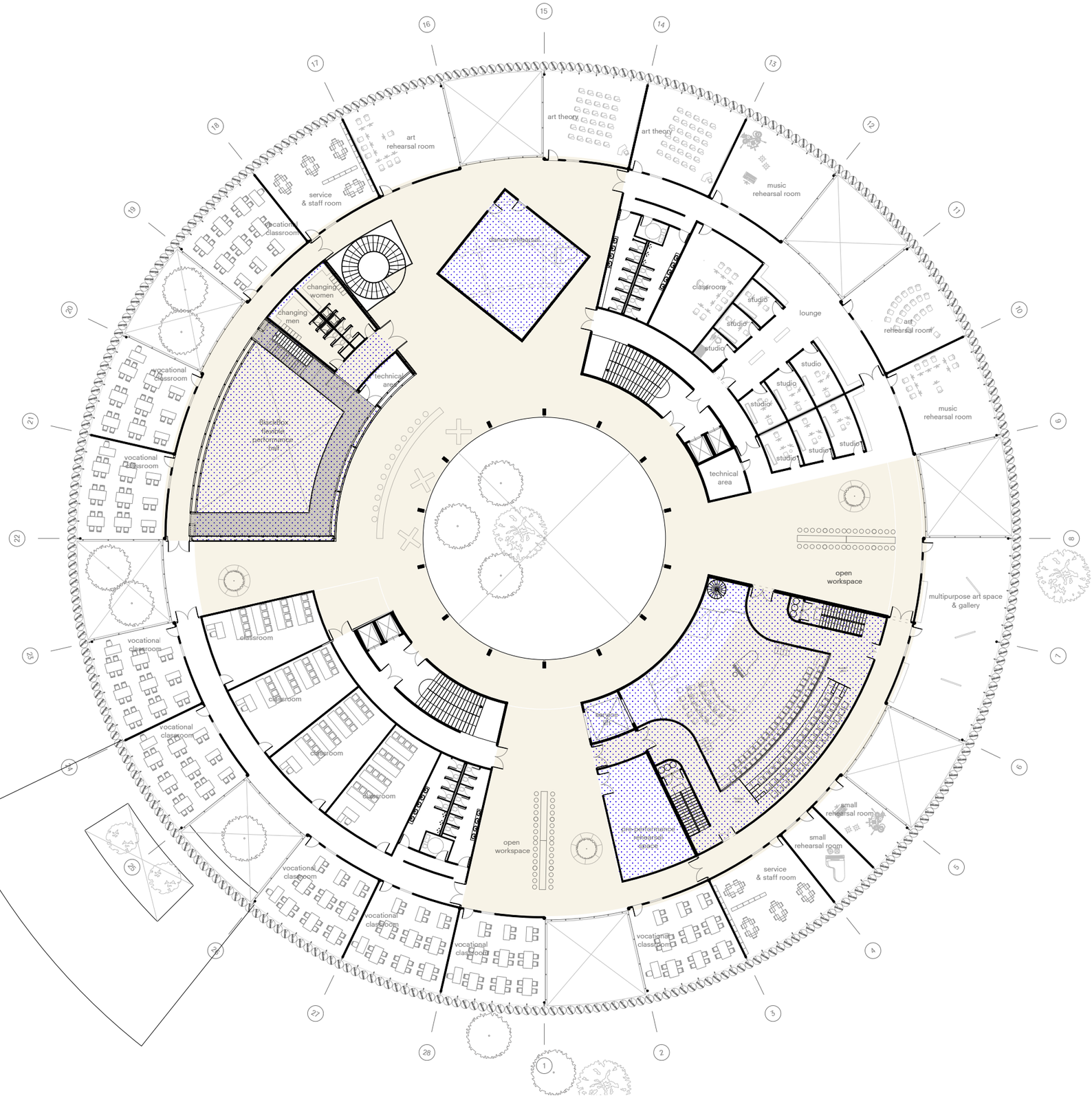
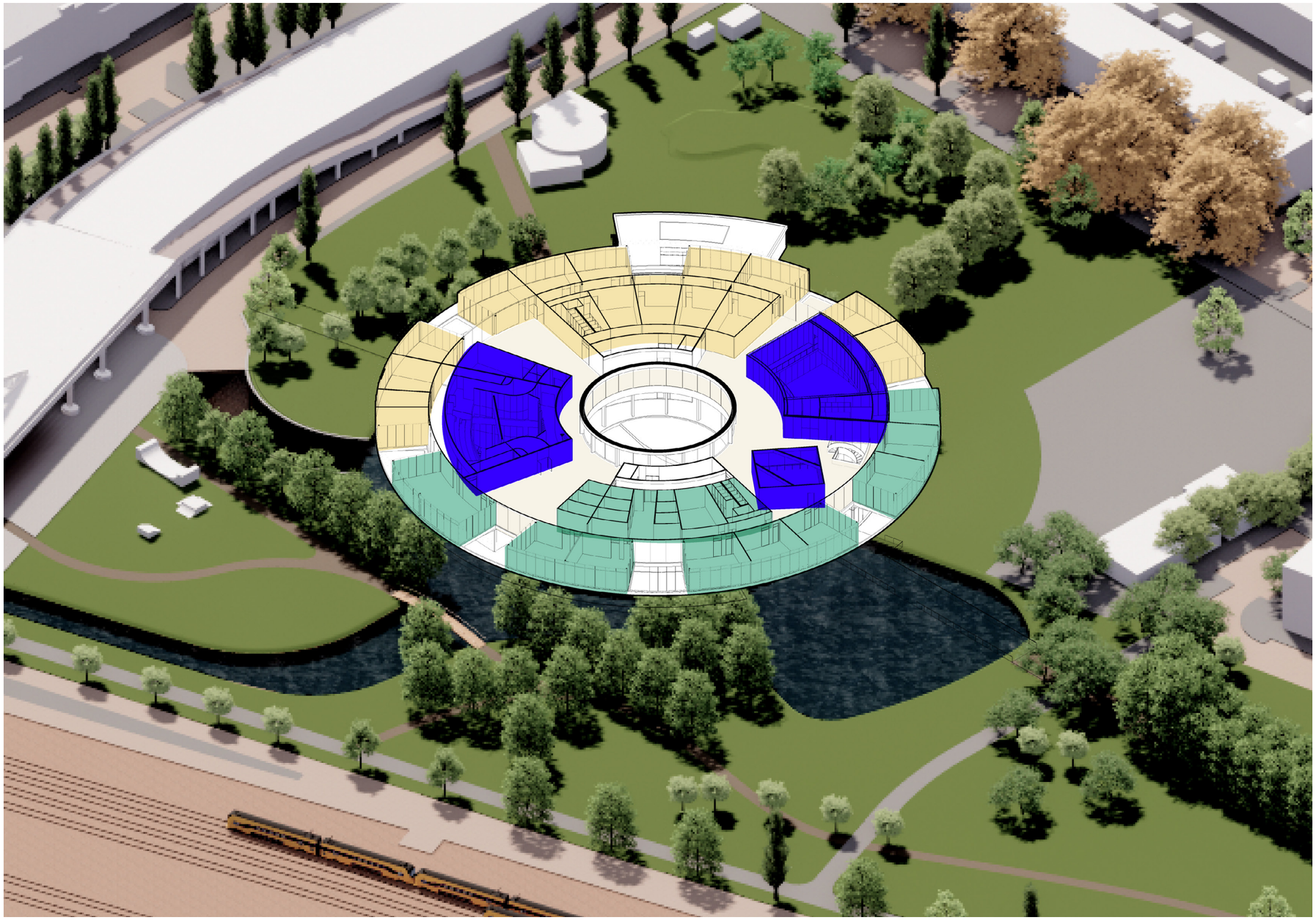


0 5 10 15 20 m

1:200

vocational education
art education
performing education
offices and performers

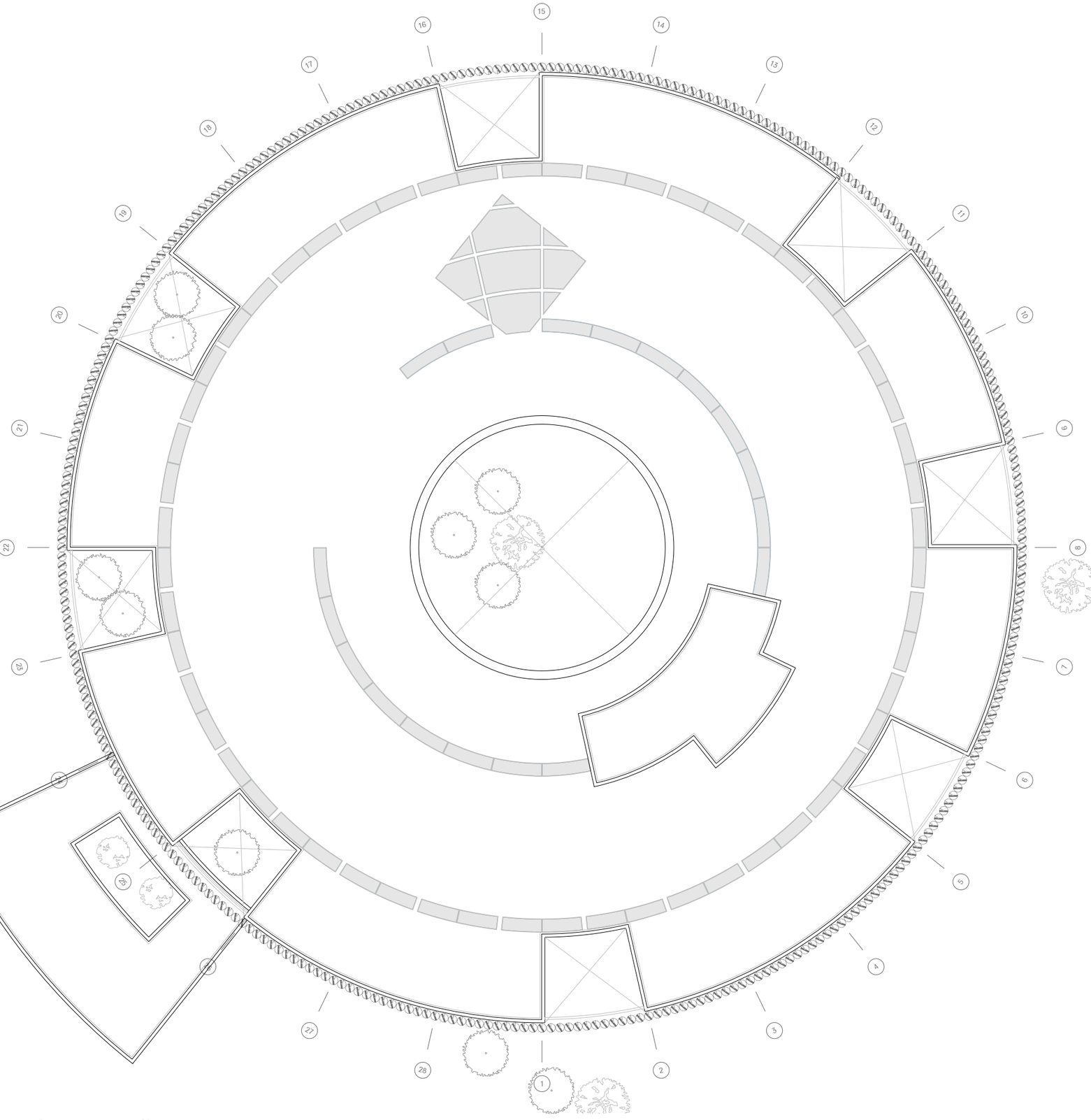

art theory
art theory
art rehearsal room
service & staff room
music rehearsal room
vocational classroom
dance rehearsal
changing women
changing men
classroom
studio
lounge
art rehearsal room
vocational classroom
technical area
studio
studio
studio



vocational education
art education
performing education
offices and performers

+2 roof

1:200 plan

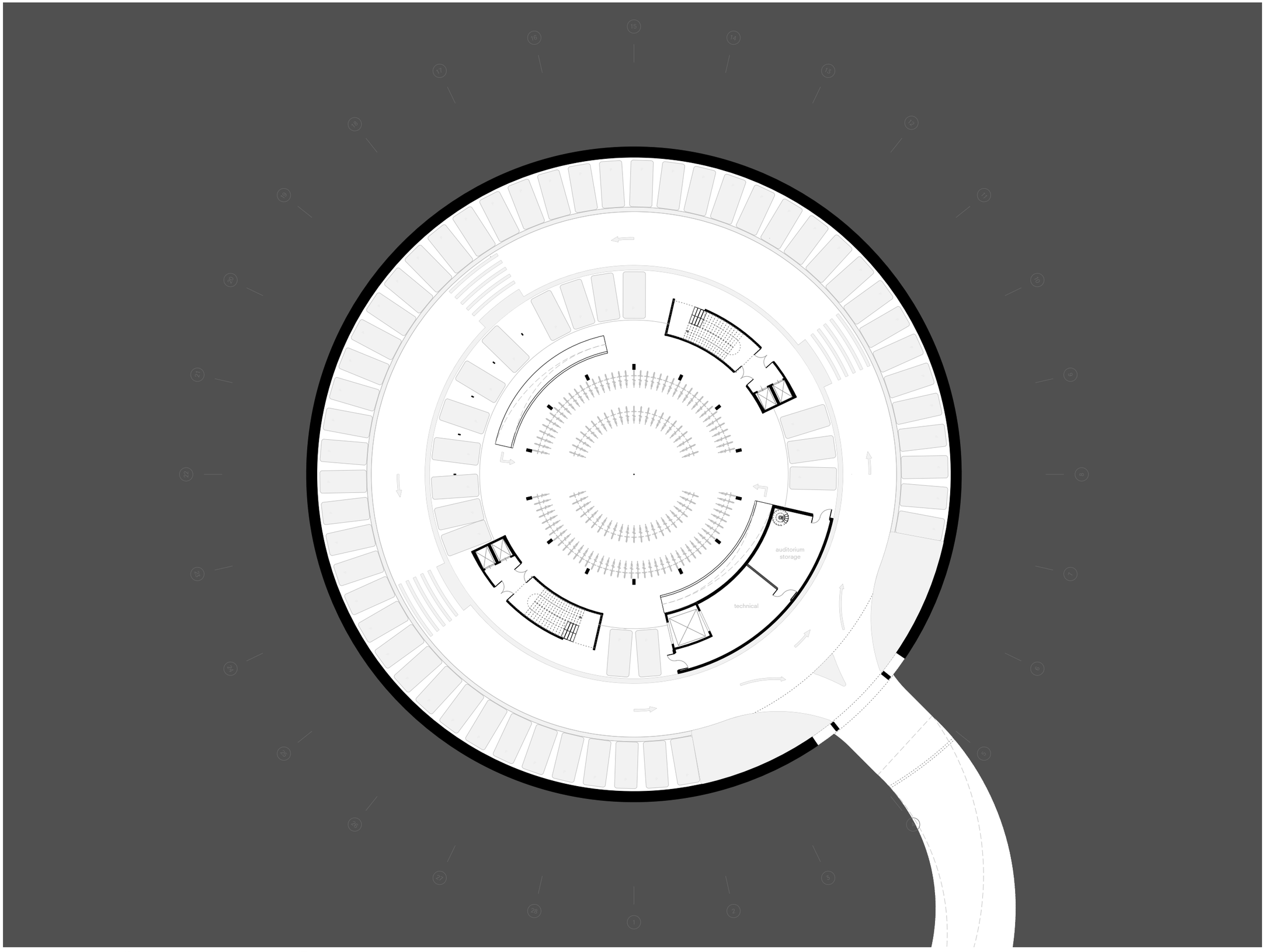


0 5 10 15 20 m

1:200

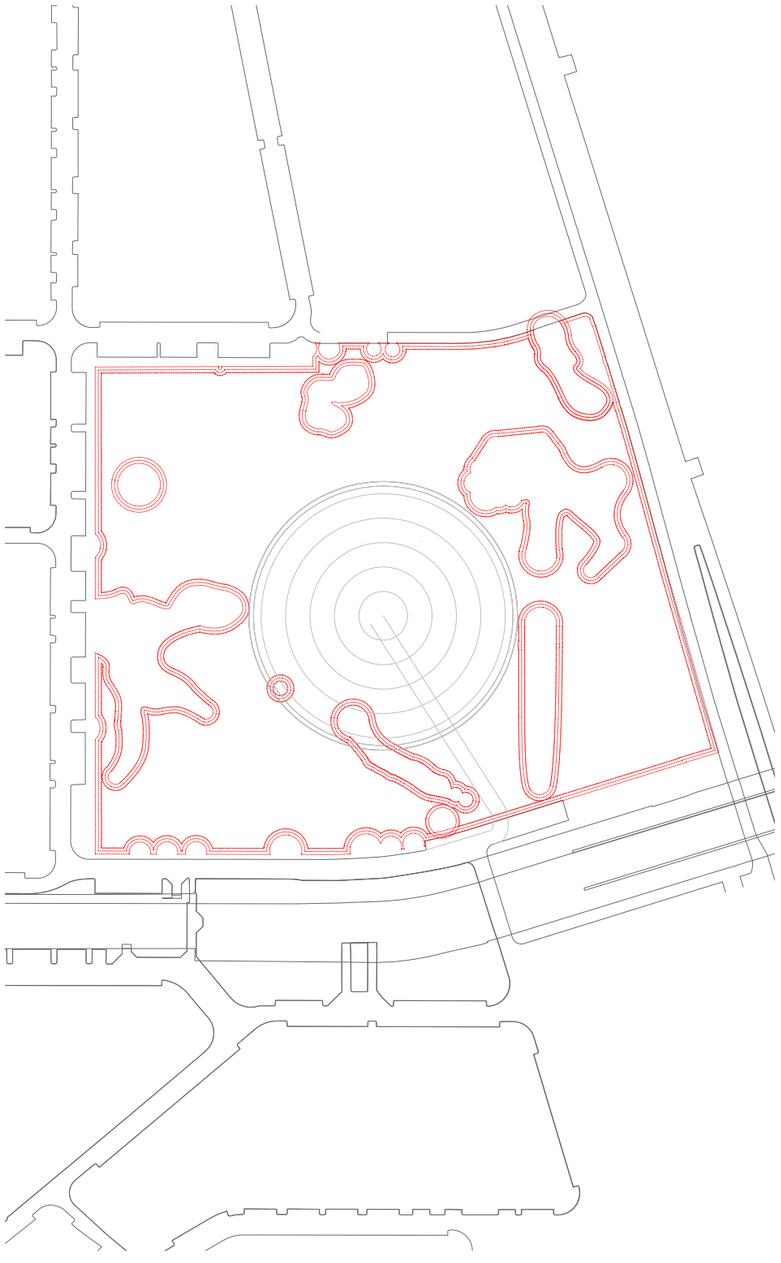
+2 roof

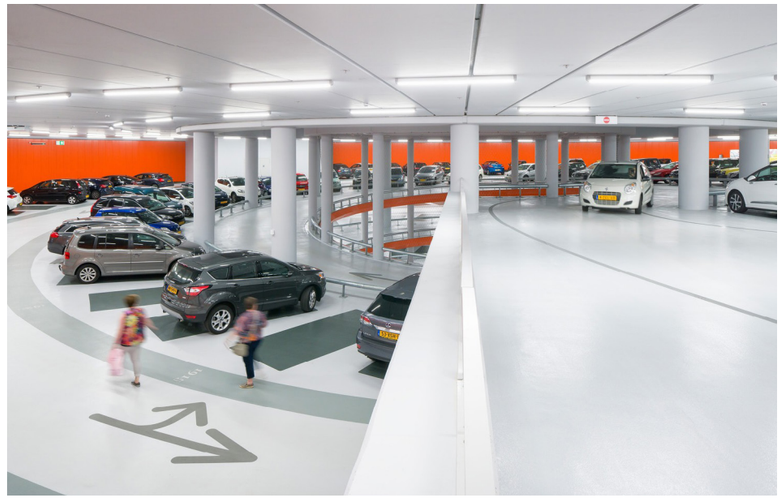
1:200 plan



0 5 10 15 20 m

1:200

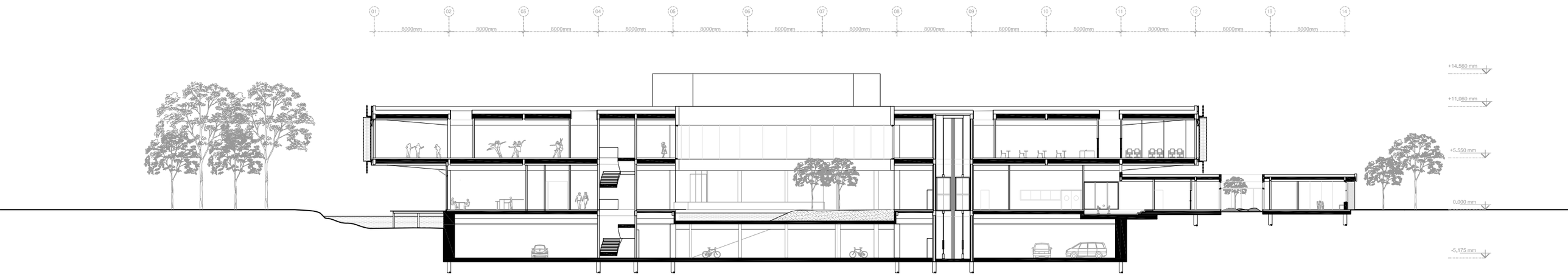




goal:
- provide 200 P spots for public event visits
- use structural system of buildings
- provide storage to theater
- respect vegetation
- make garage phase 1 of visiting thepark by exiting to the perimeter of the building on the water

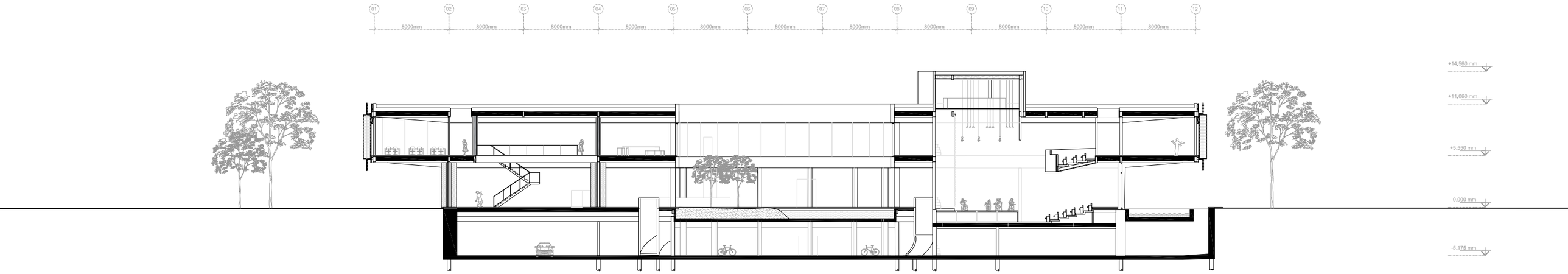
section B

1:200

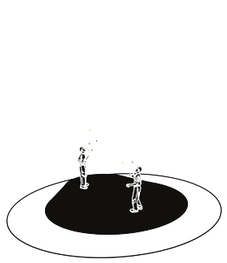


section A

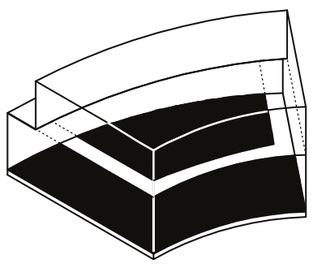
1:200



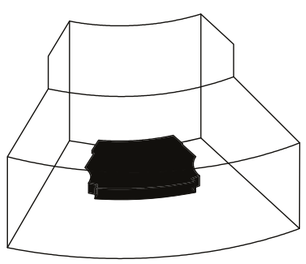
mental health increase
through performing art
interaction



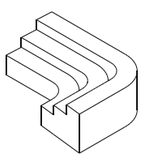
courtyard stage



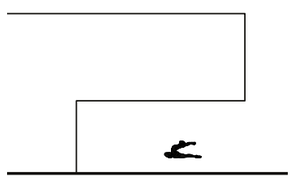
blackbox



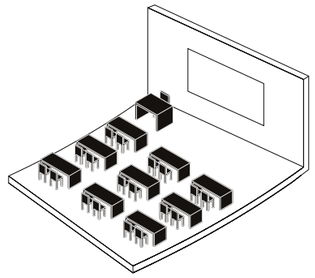
auditorium



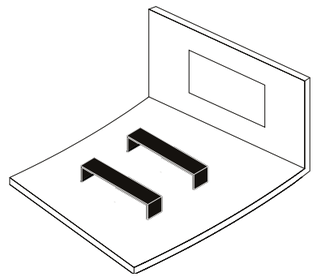
kindergarten
landscape



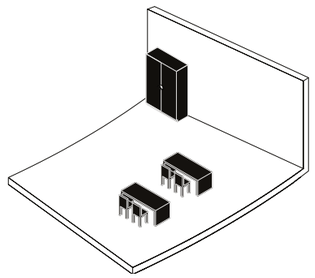
cantilever:
urban dance



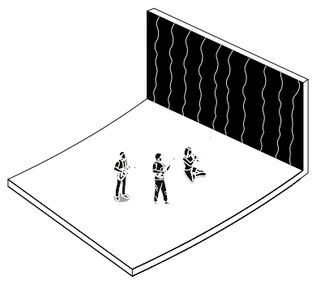
vocational



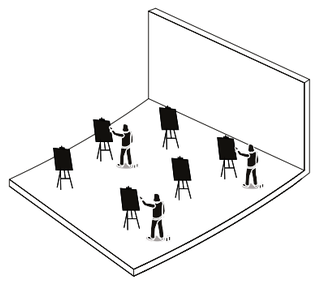
art education



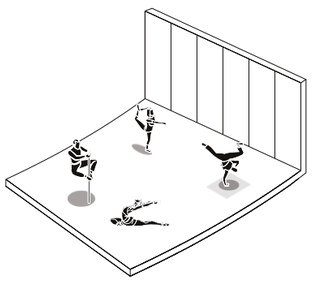
office



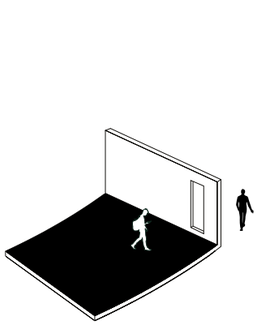
music/band



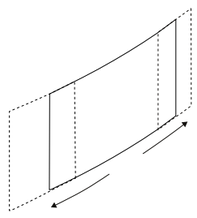
craft



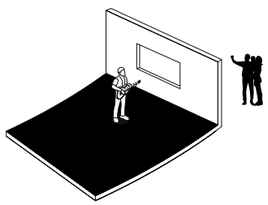
theatre/dance
rehearsal



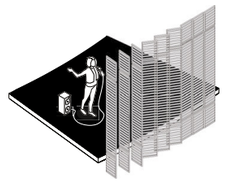
student visitor



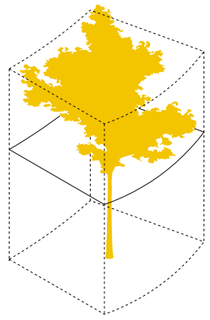
outdoor indoor



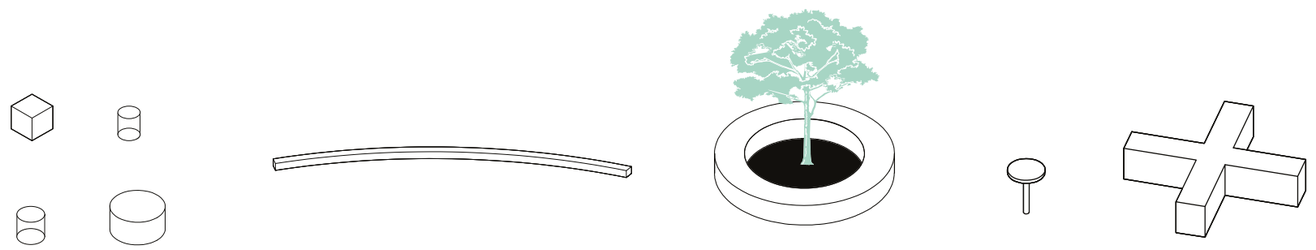
performer visitor



performer outside



user nature

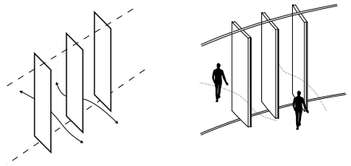


foyer

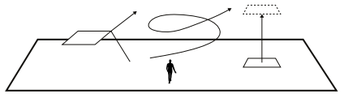
restaurant seating

break

free study areas

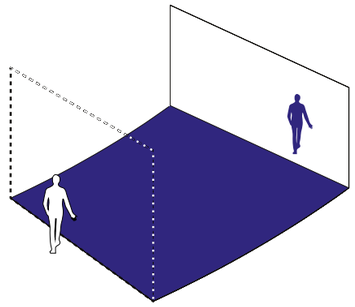


configurable
elements

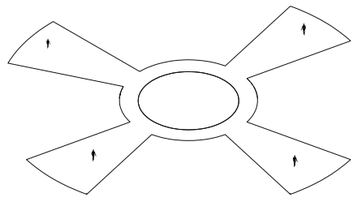


attractive routing
elements

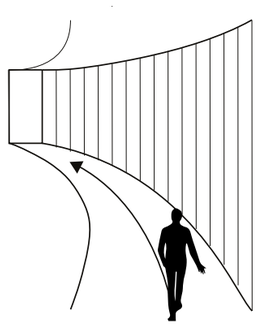
performing art areas:
freedom to express



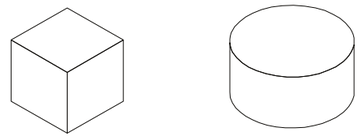
visible functions



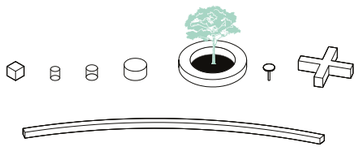
social encounters



orienting

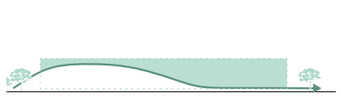


contrasting shapes

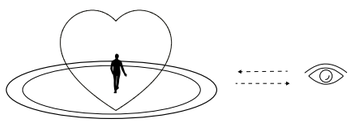


soft/organic furniture

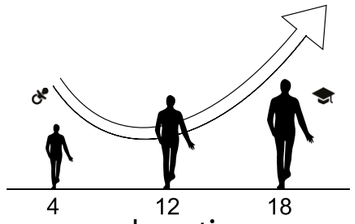
well-being flourishing



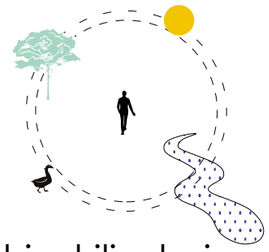
nature flows through the spaces



physical and mental health

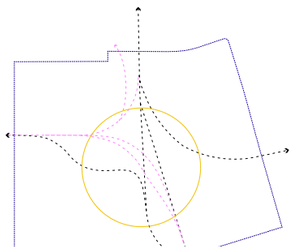


education

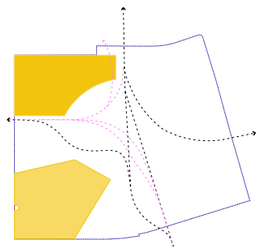


biophilic design

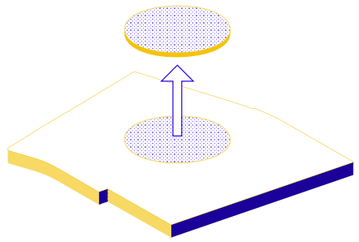
shape



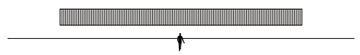
axial directions unified



petting zoo relation

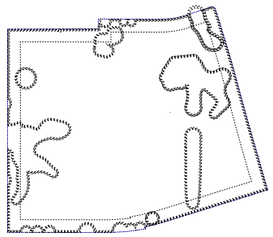


volume by context

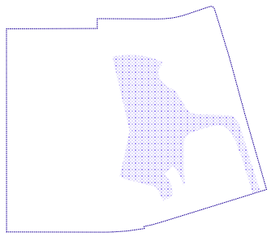


harmony

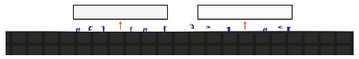
park enhancement



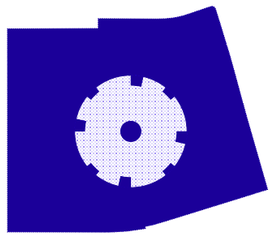
respecting vegetation



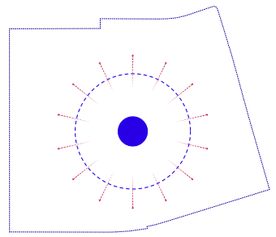
biodiverse + purifying water ring



lifted

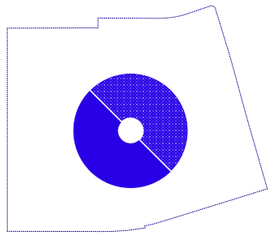


facade invites park presence

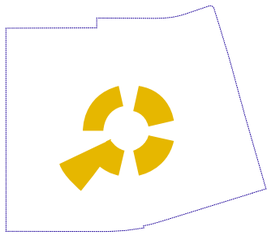


views out

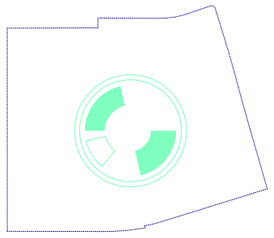
orientation and recognition



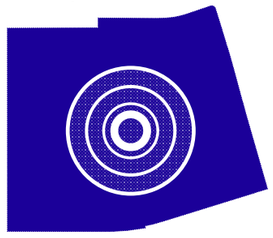
function split



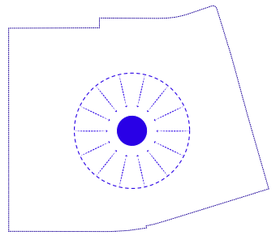
fragmentation



performing art



circulation rings



centrality

introduction

research summary

design brief

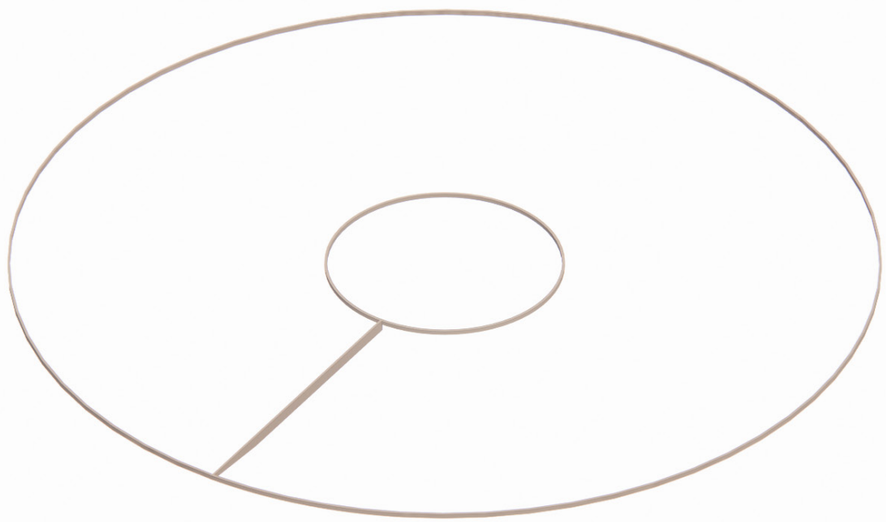
concept development

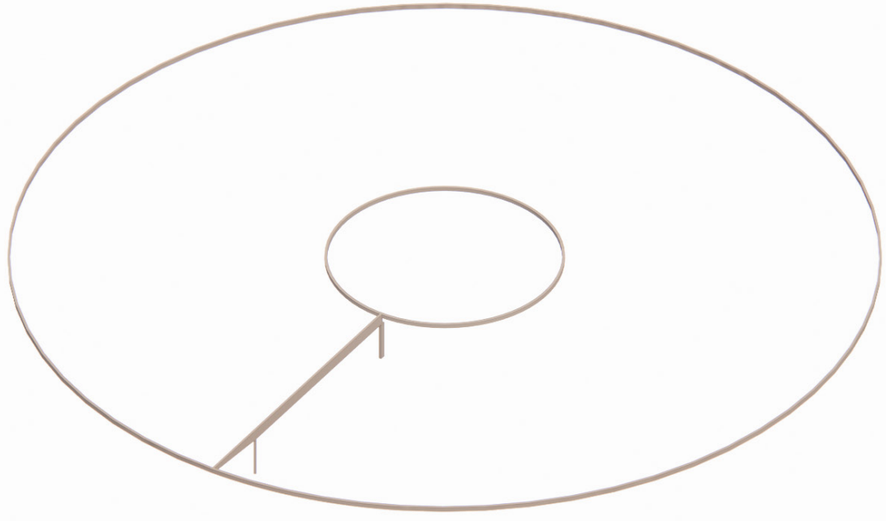
implementation

design development

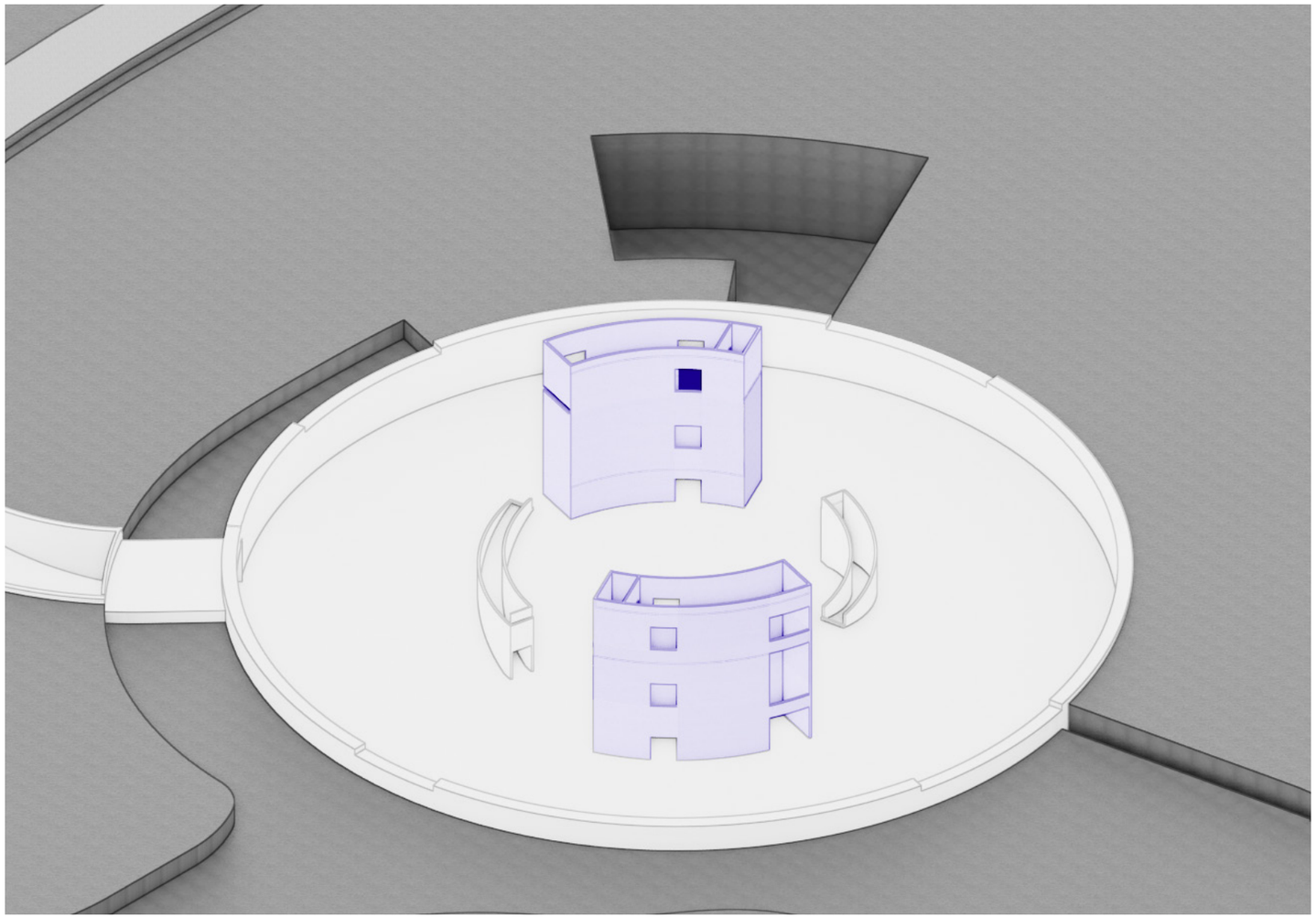
conclusion and reflection

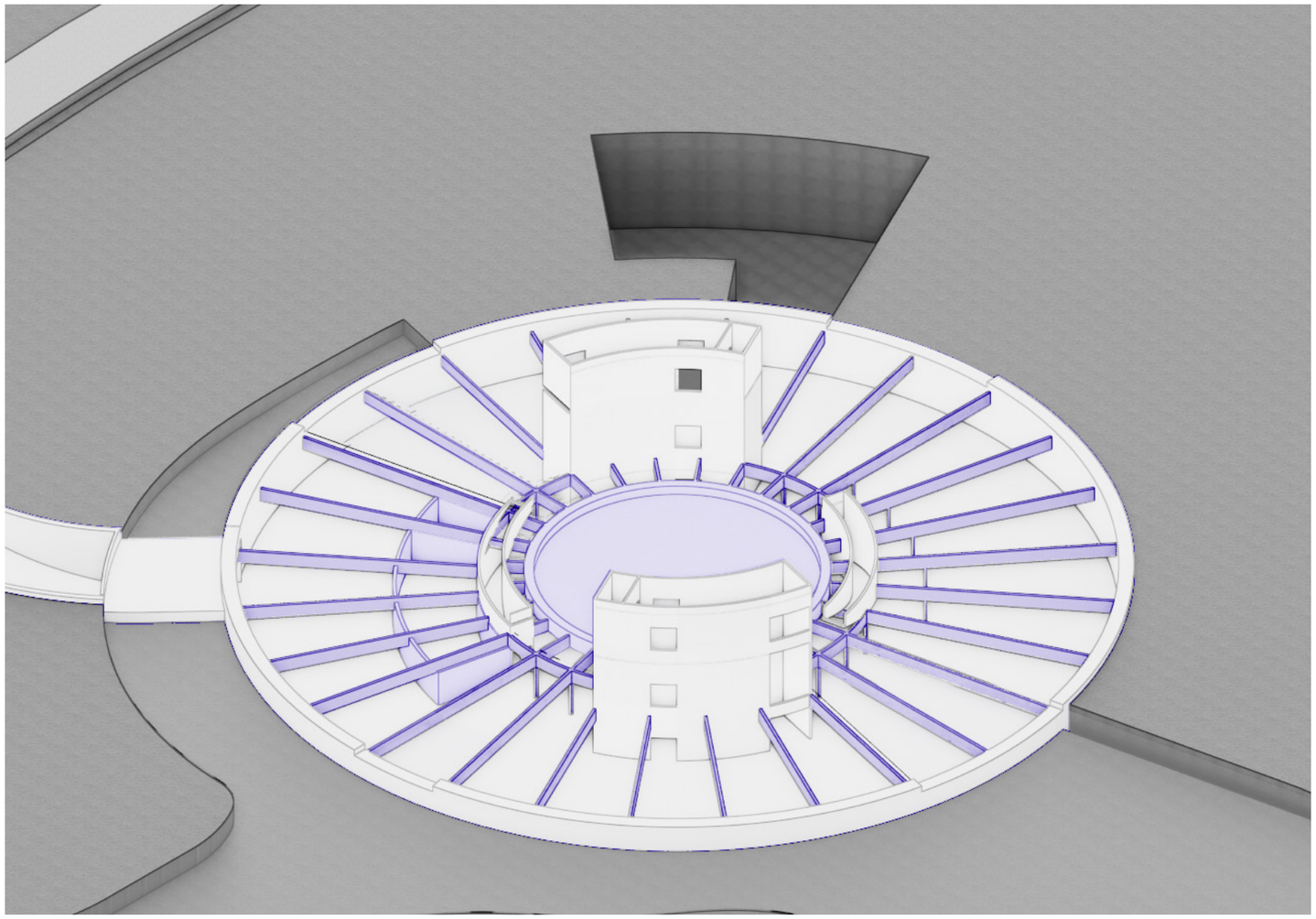
steel column and large span trussbeam
structure finsihed with LVL plating

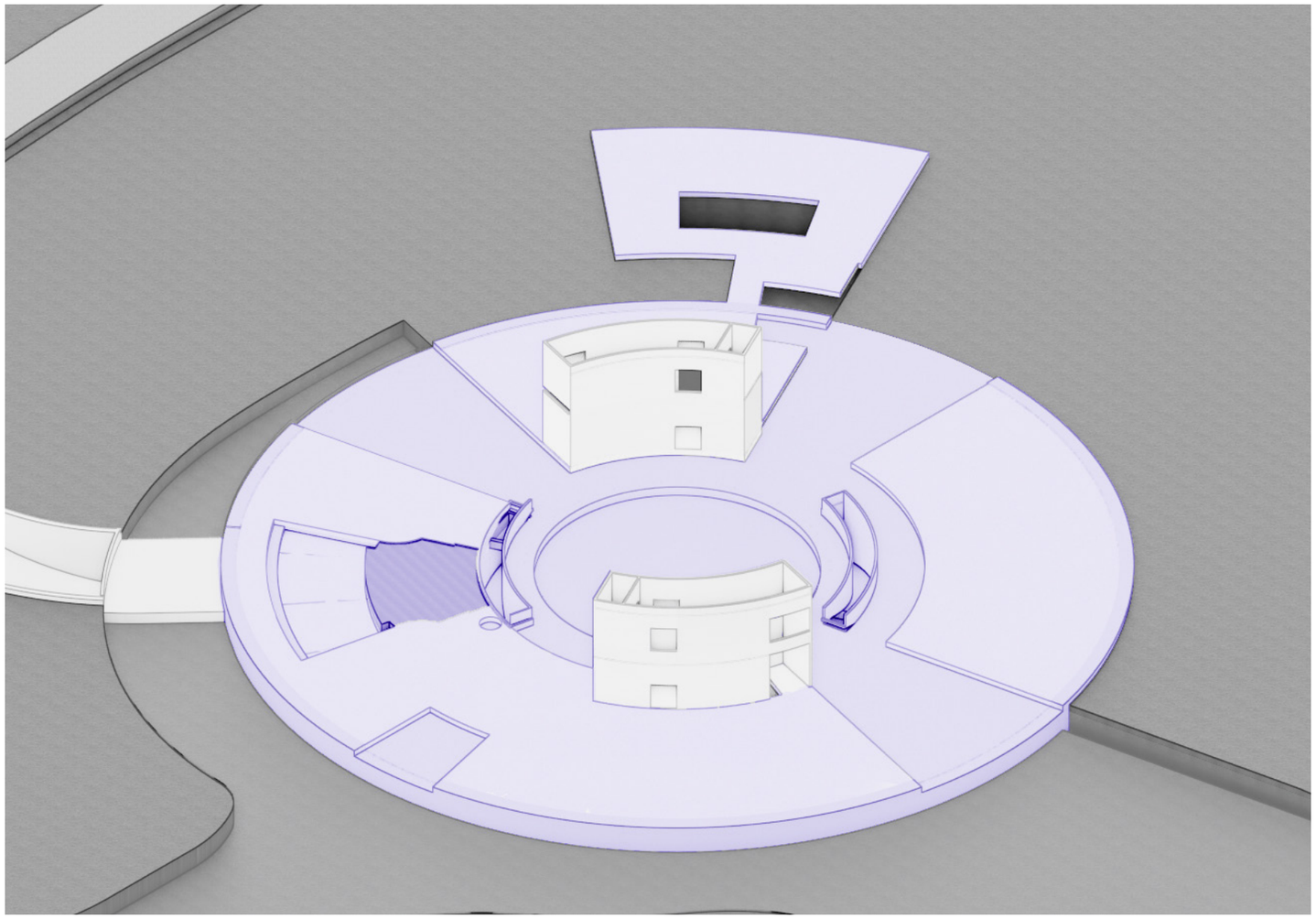


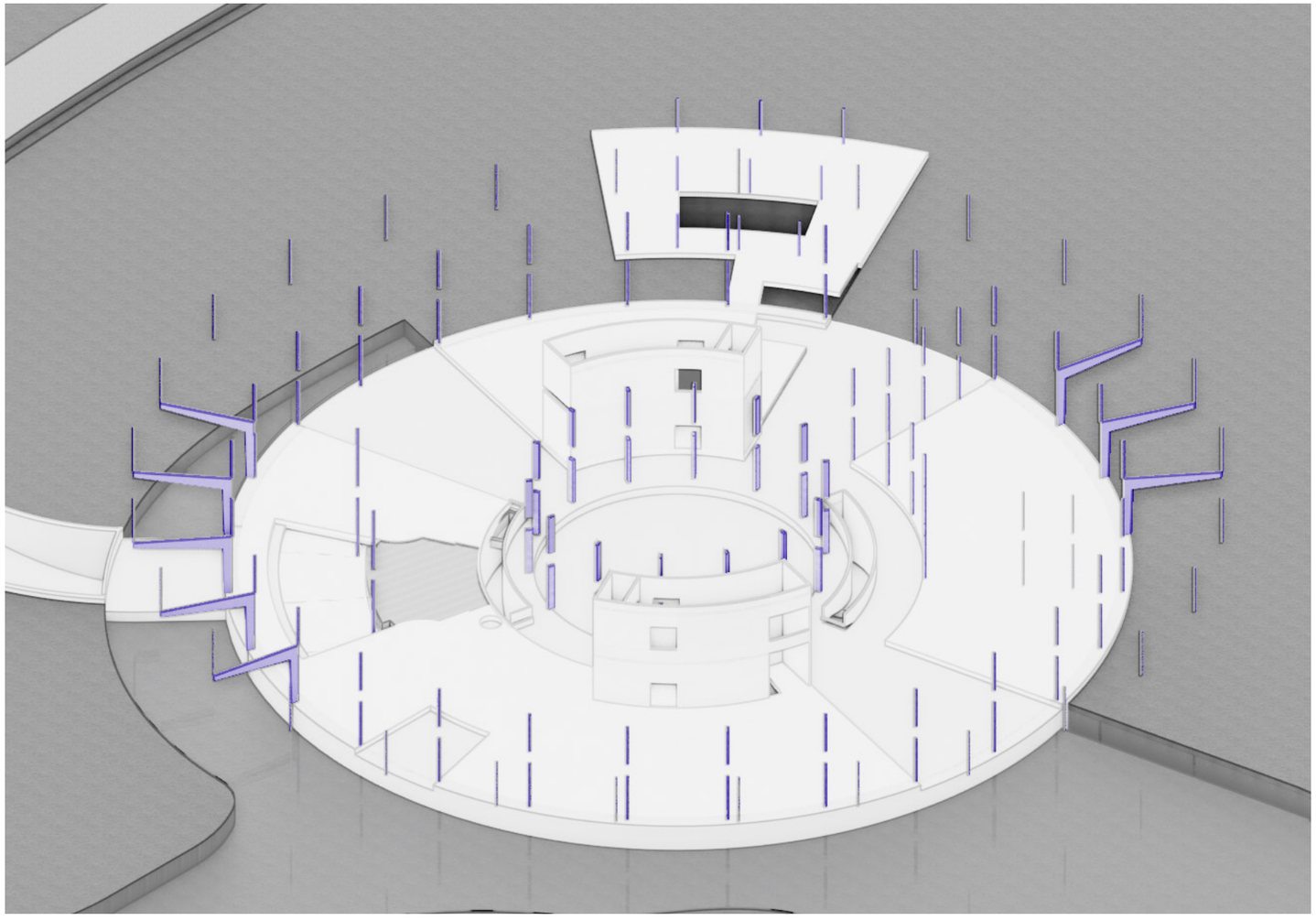


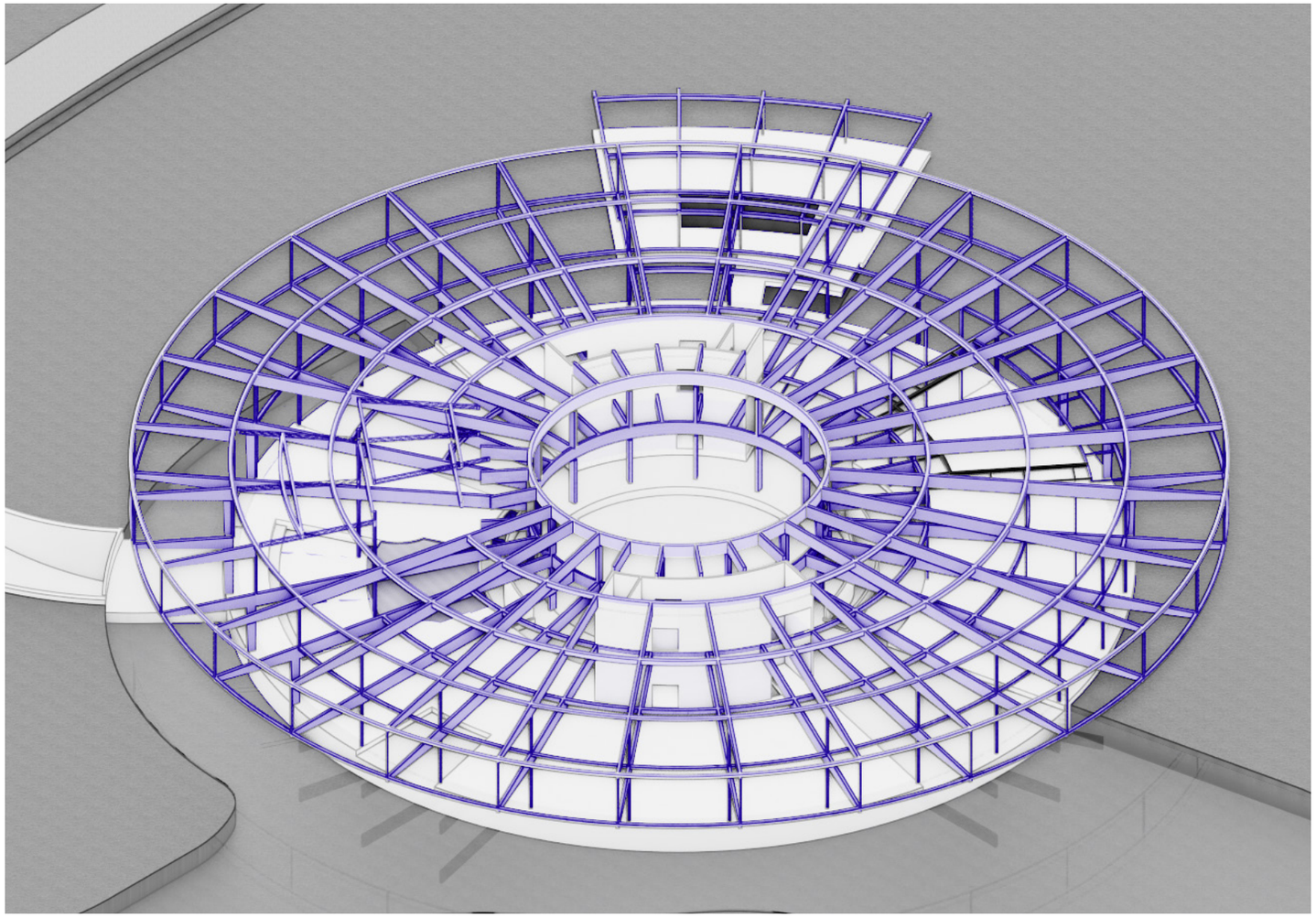
anchored to continuous ringbeams

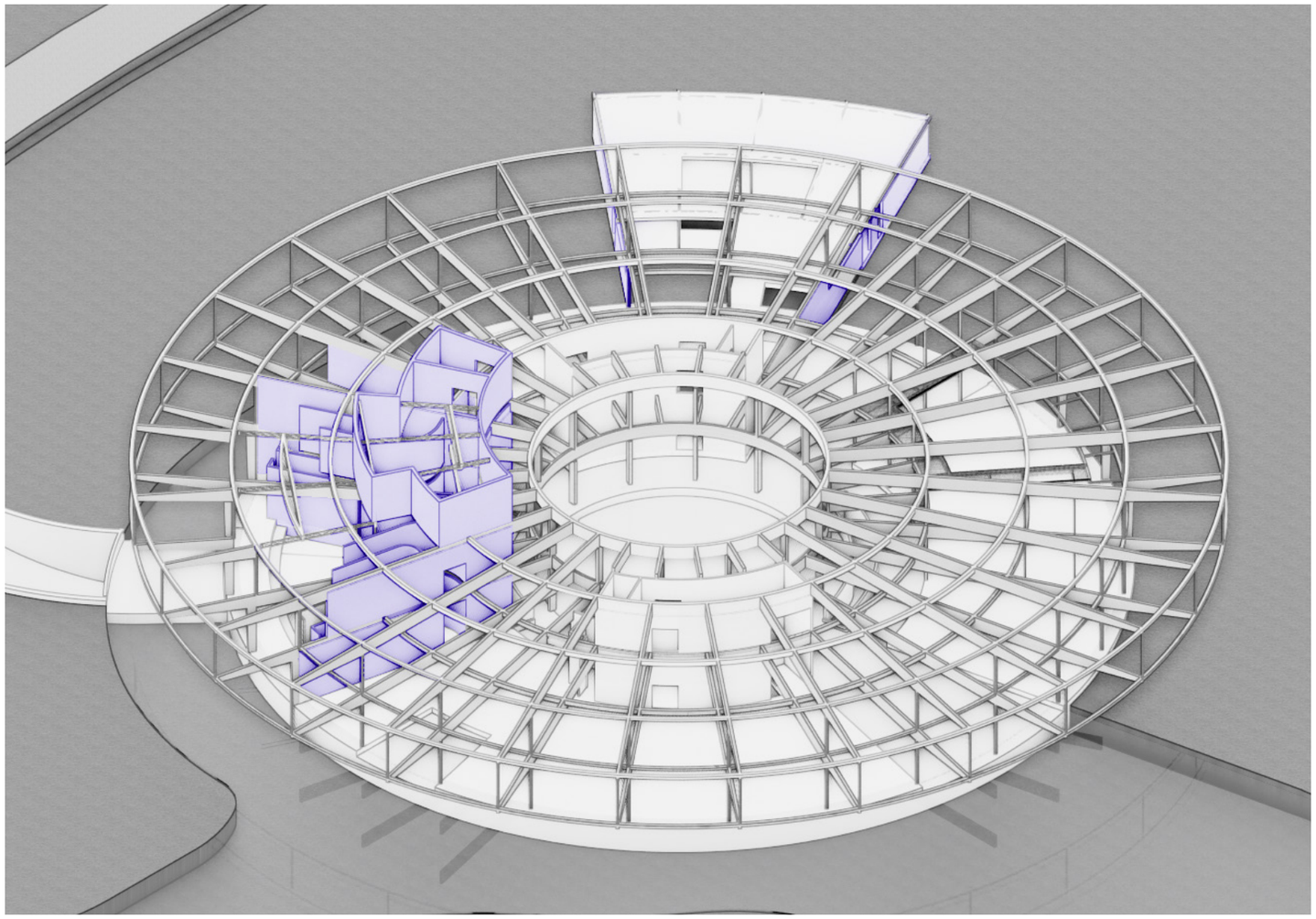




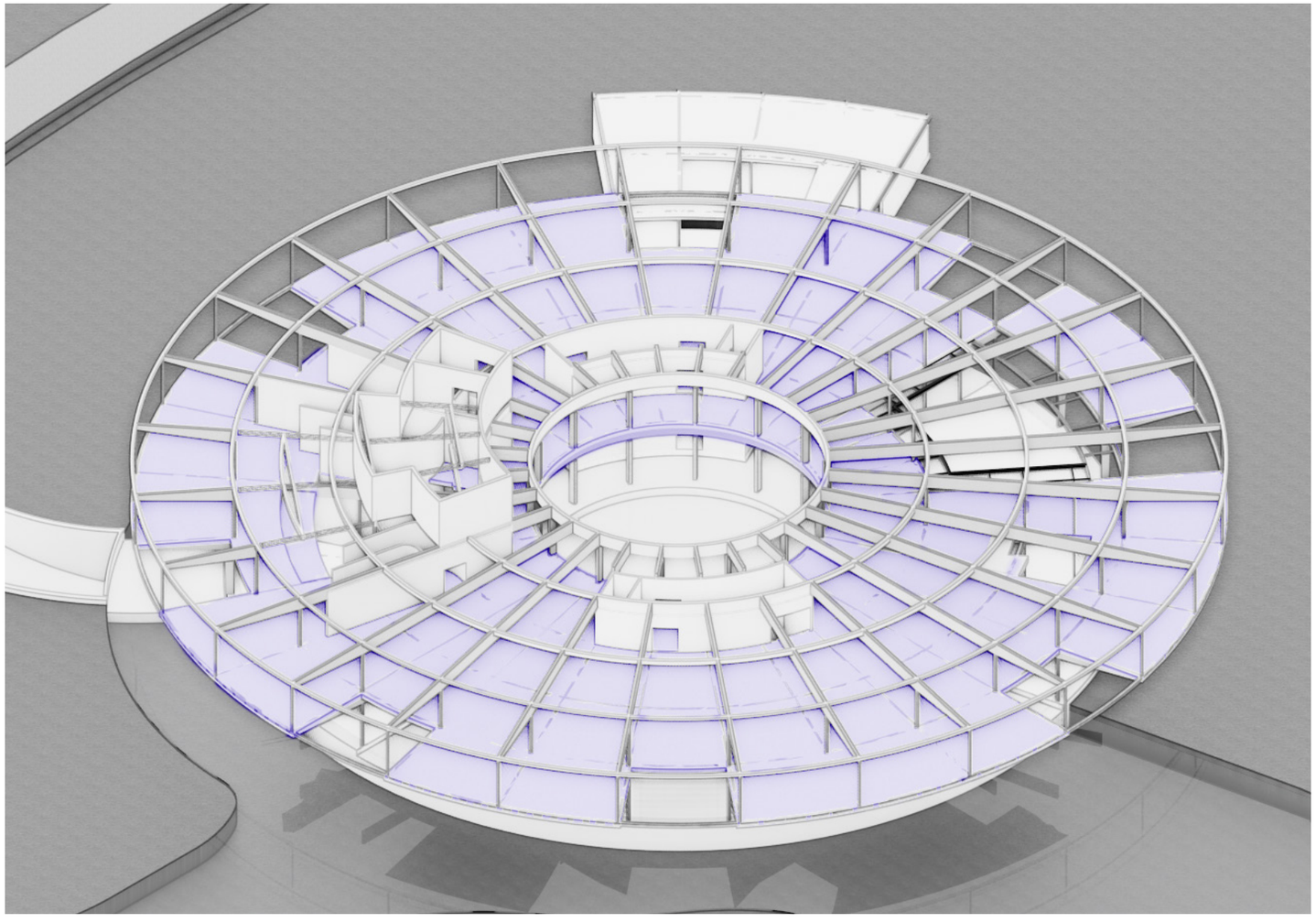


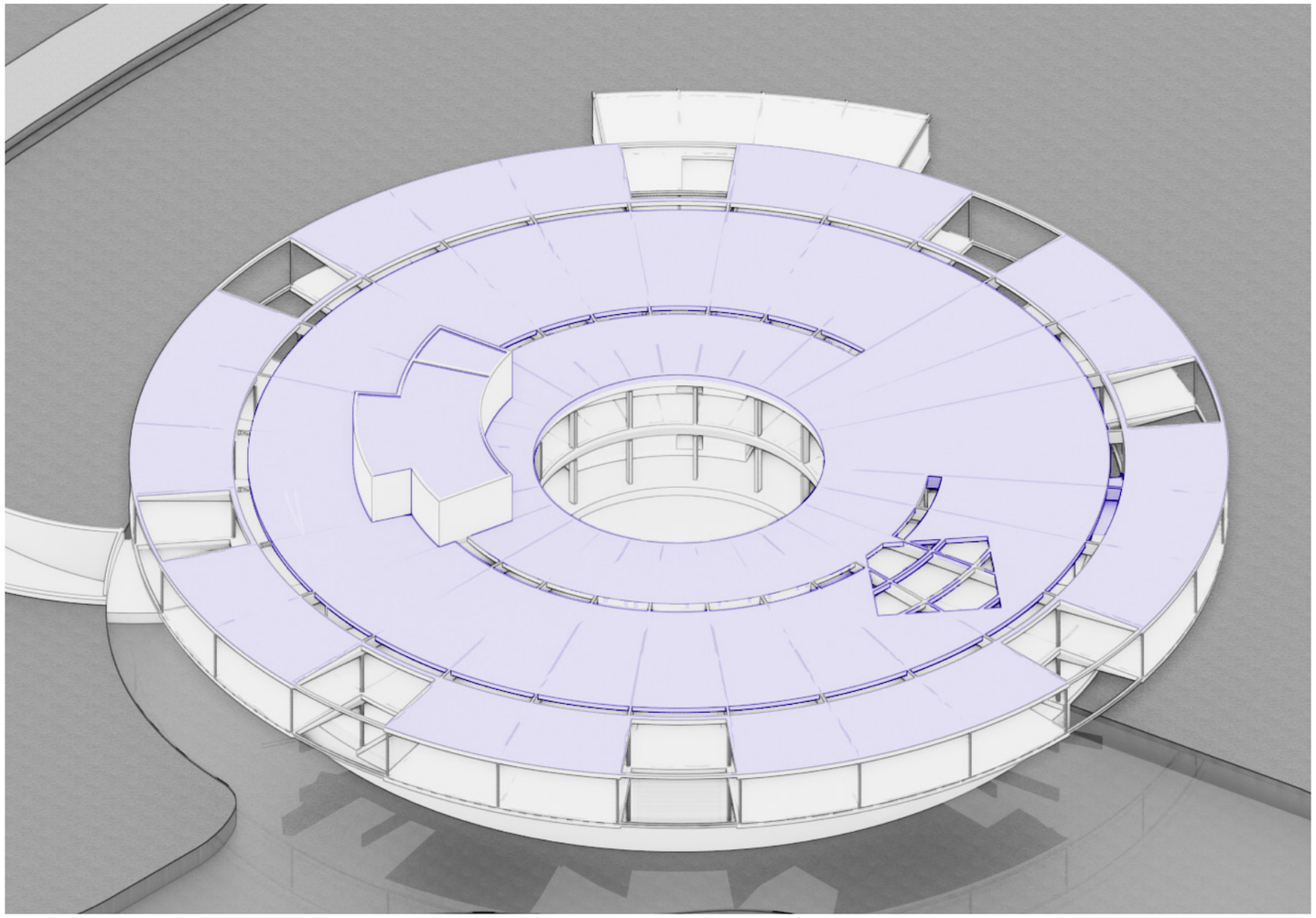


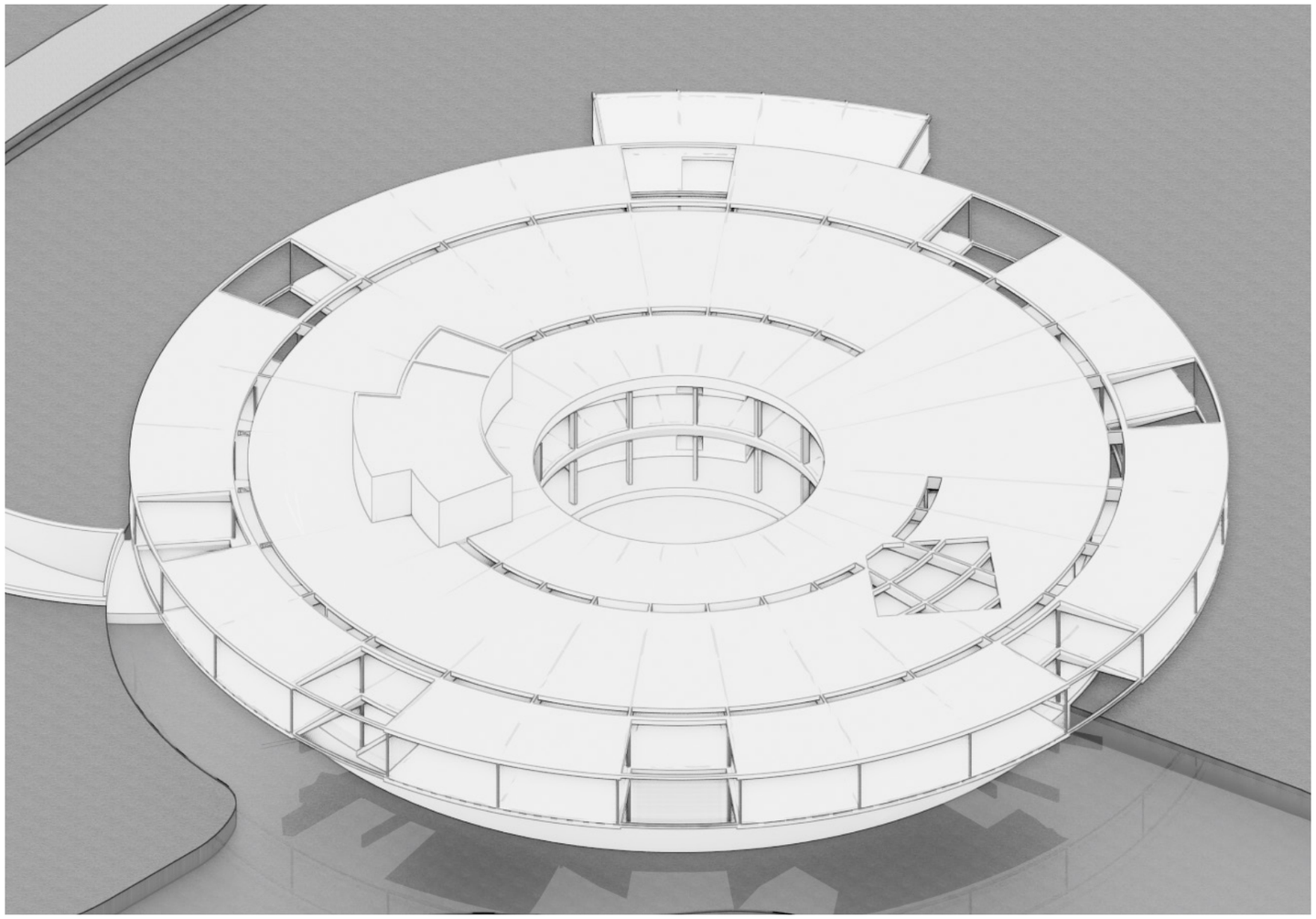




structural laminated
veneered lumber floor
plates







natural acoustics

soothing and durable

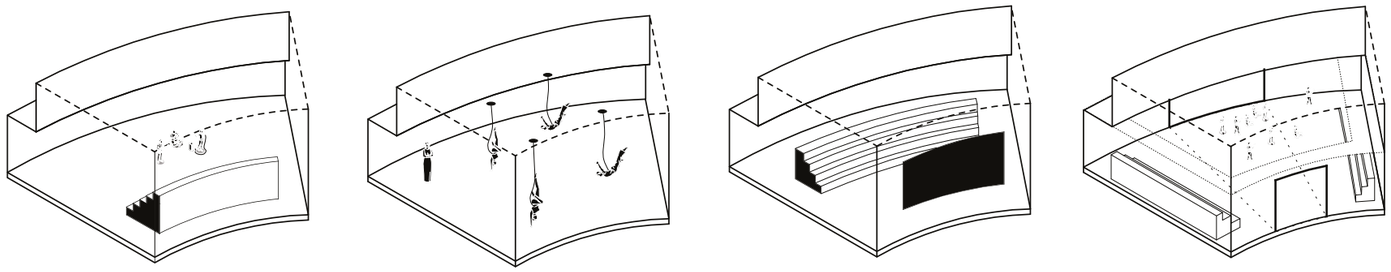
encouragement

blank canvas

dampening

robustness

+1 flexible studying zones

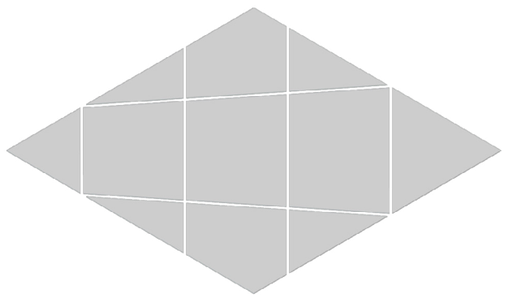


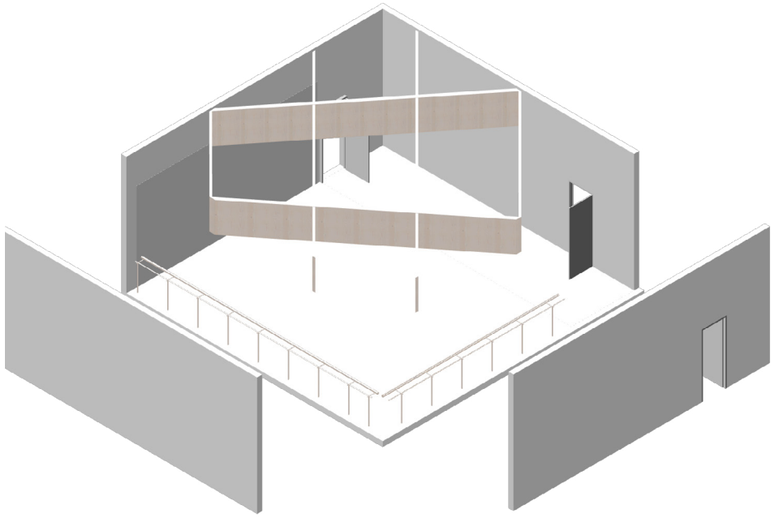
music theater

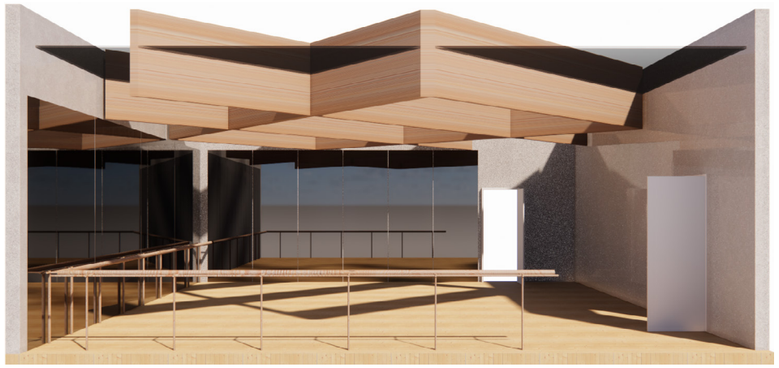
dance performance

cinematographic performance

natural performance







development

indoor air renewal

Mechanical ventilation systems and ducts blows fresh air into the building. Facade windows can be operated autonomously by the users to let cool air in.

solar energy

Integrated photovaltic cells on the louvers and solar panels on the roof supply energy to the energy system

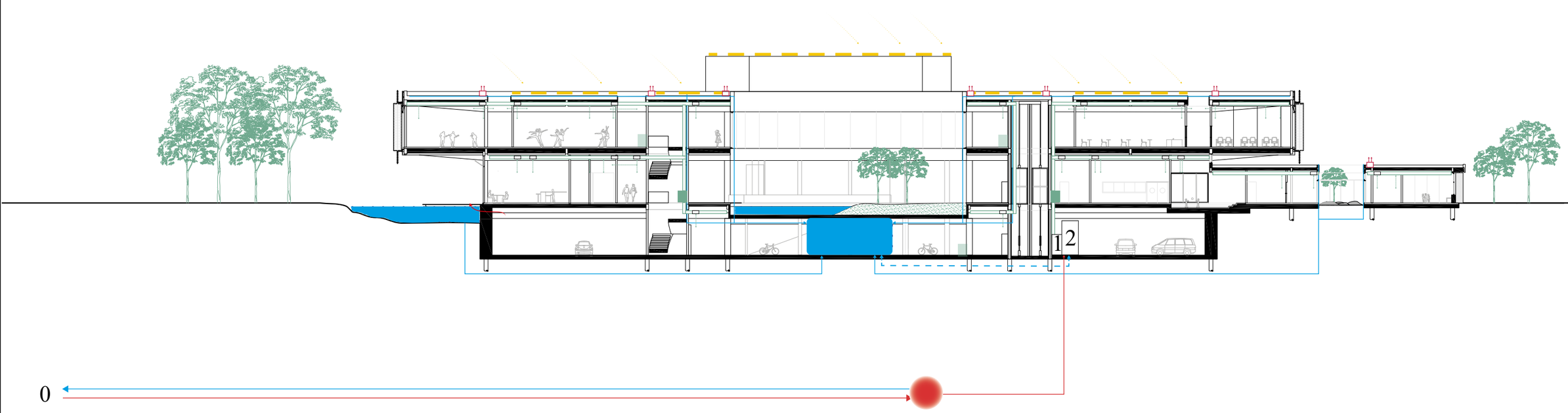
passive ventilation

Openings at high points in the facade create a current to push hot air outward.

passive cooling

Through nighttime cooling by ventilating with windows

0 urban heat network
pre-heating unit
1 mechanical ventilation unit with heat recoveery
2 water source heatpump
liquid floor heating
air handling unit
ventilation shafts
hot air
fresh air
foul air
exhaust duct
rain water collection
grey water storage
solar panels



daylight

Indirect daylight is utilized by combining the existing lake with large openings in the facade and a large atrium.
Mechanically operated louvers control the amount of daylight in the facades

water cycle

The green roof and immediate surroundings collect, filter and retain rainwater in the heliophyte philter from which it is transported and re-used in the toilets and irrigation of vegetation

energy

The energy strategy is based on linking heat recovery systems with natural cooling from the direct green environment

development

indoor air renewal

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solar energy

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passive ventilation

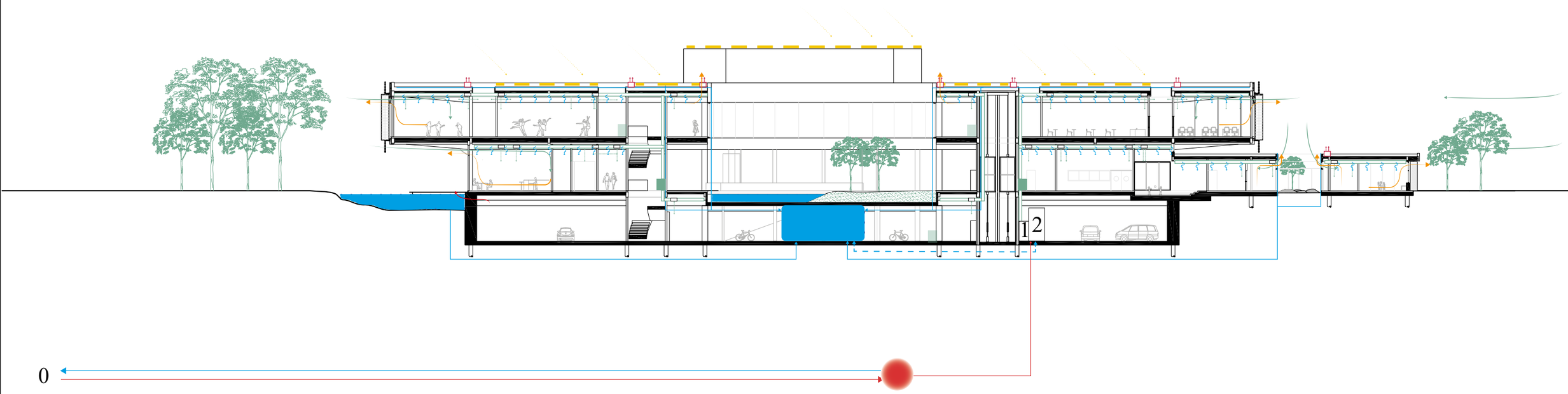
Openings at high points in the facade create a current to push hot air outward.

passive cooling

Through nighttime cooling by ventilating with windows

climate strategy
summer

0 urban heat network
pre-heating unit
1 mechanical ventilation unit with heat recoveery
2 water source heatpump
liquid floor heating
air handling unit
ventilation shafts
hot air
fresh air
foul air
exhaust duct
rain water collection
grey water storage
solar panels



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The energy strategy is based on linking heat recovery systems with natural cooling from the direct green environment

development

indoor air renewal

Mechanical ventilation systems and ducts blows fresh air into the building. Facade windows can be operated autonomously by the users to let cool air in.

ventilated heating

Warm air is re-used by the heat recovery sytem and climatized to supply hot air through ducts and vents

floor heating

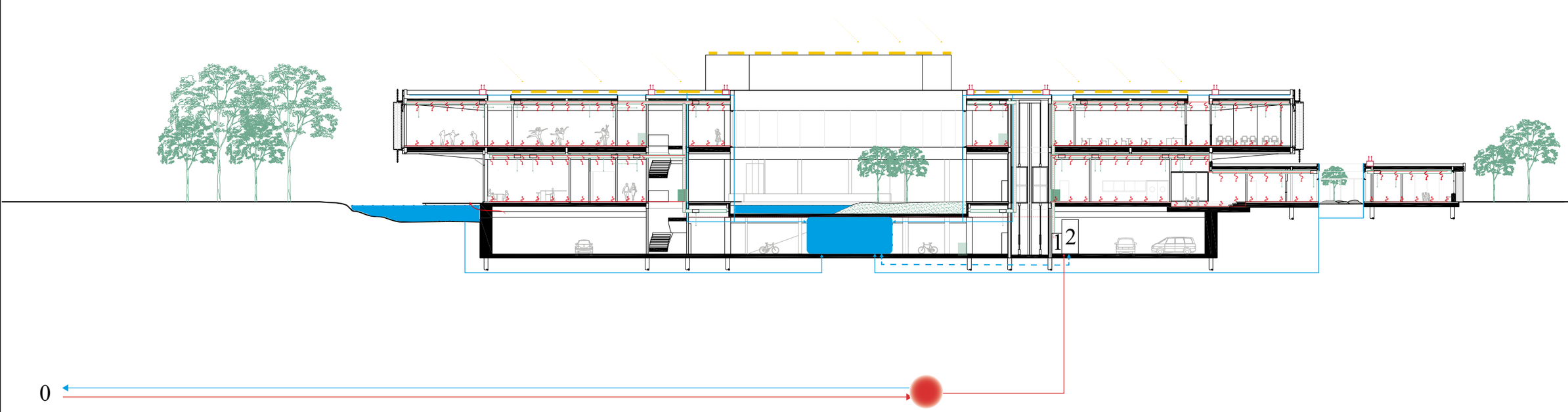
The building uses the urban network to heat the building through underfloor heating system

thermal mass

The structure's mass retains the heat to decrease the energy demand during cooler periods.

climate strategy
winter

0 urban heat network
pre-heating unit
1 mechanical ventilation unit with heat recoveery
2 water source heatpump
liquid floor heating
air handling unit
ventilation shafts
hot air
fresh air
foul air
exhaust duct
rain water collection
grey water storage
solar panels



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Mechanically operated louvers control the amount of daylight in the facades

water cycle

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energy

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development

climate strategy
solar energy

indoor air renewal

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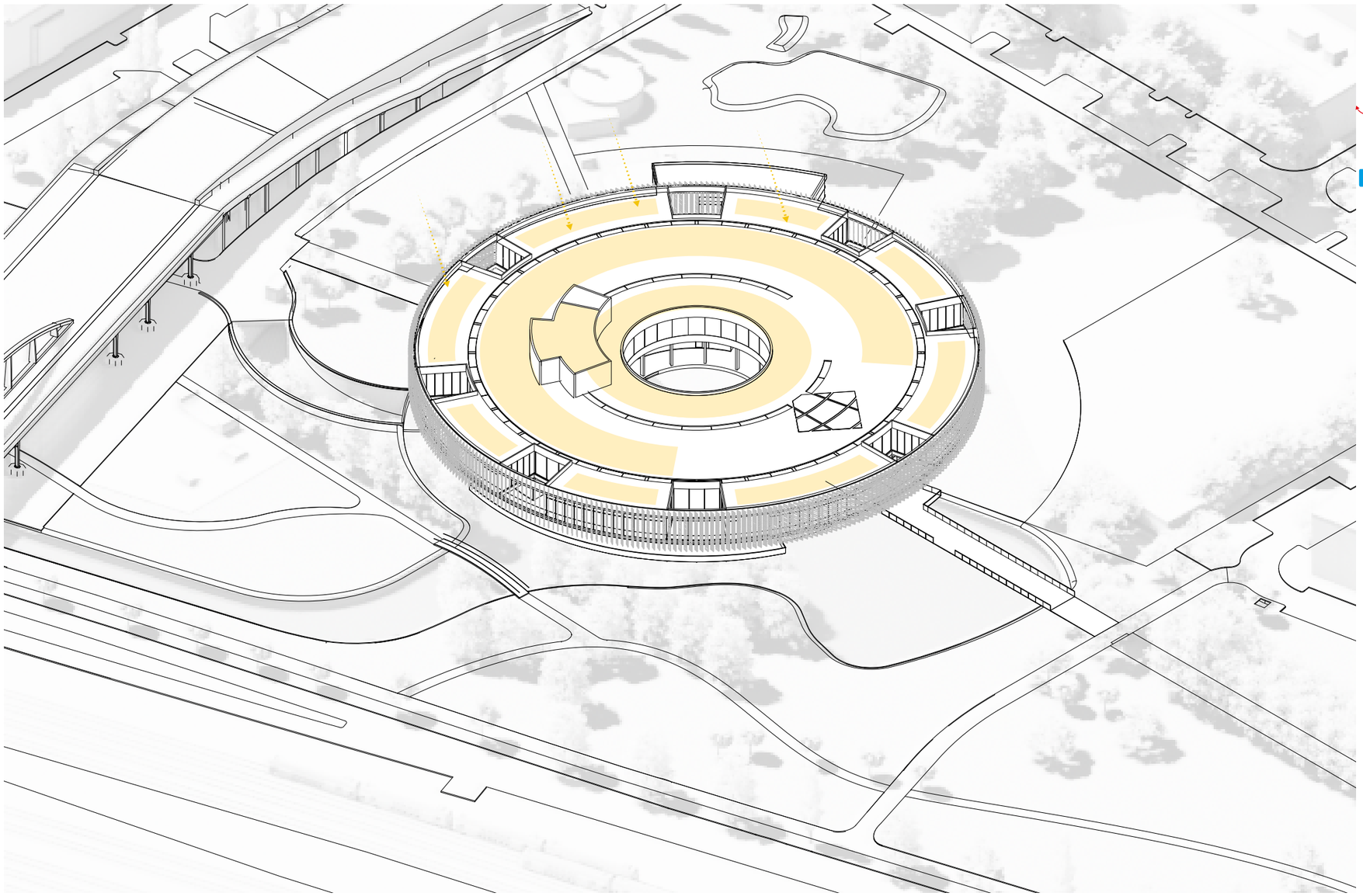

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pre-heating unit
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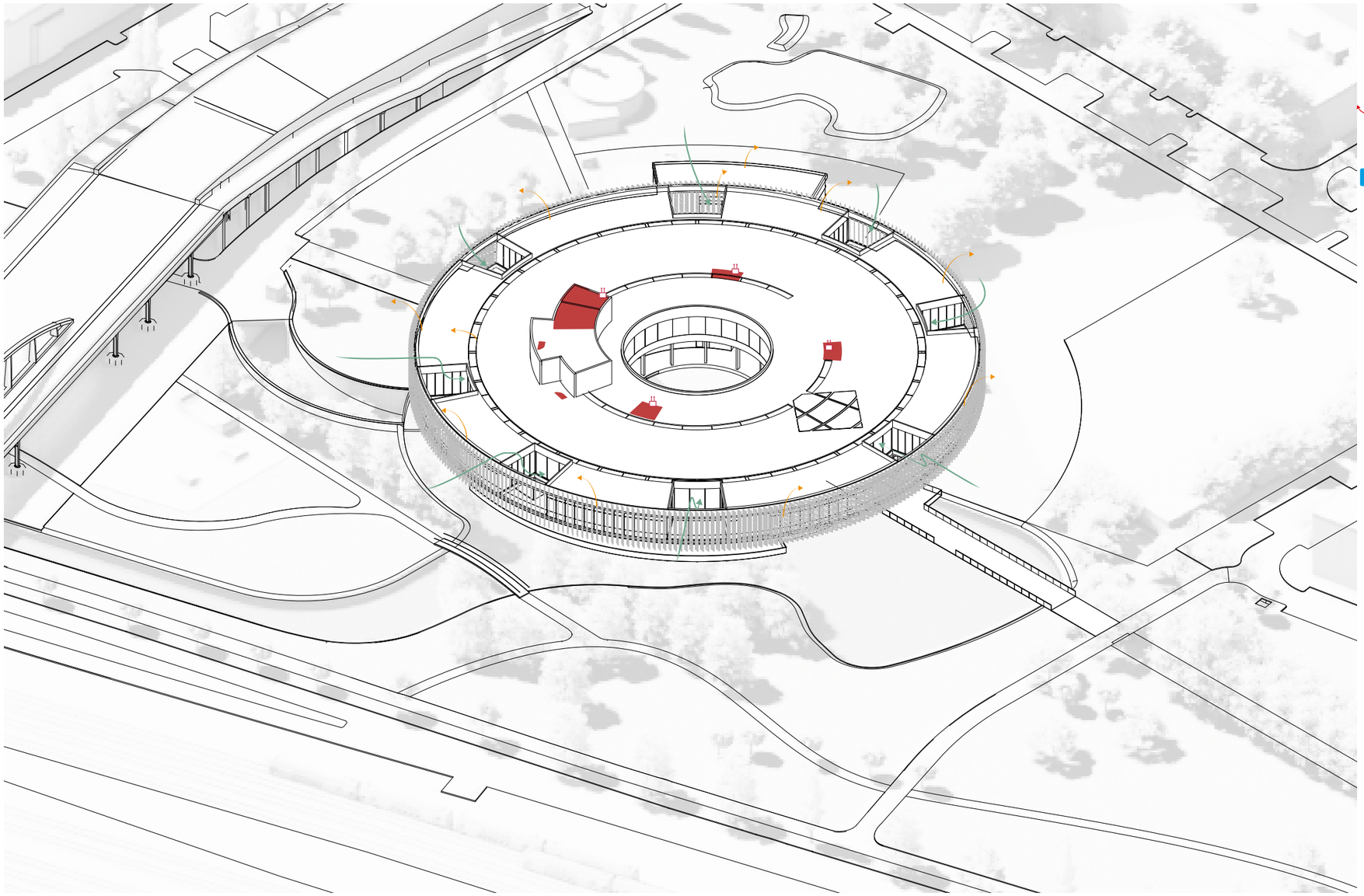
climate strategy
ventilation



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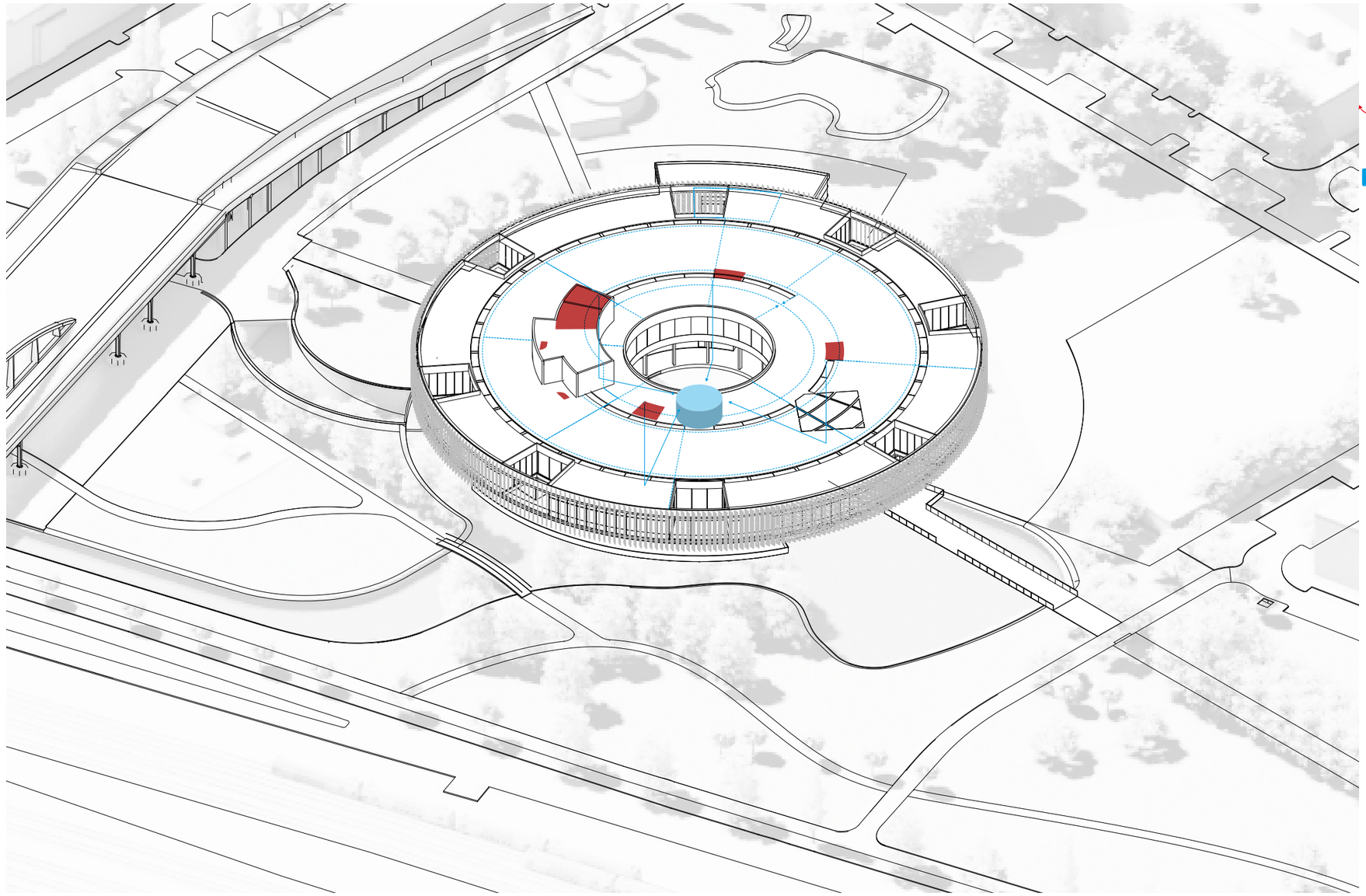
climate strategy
water collection



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energy

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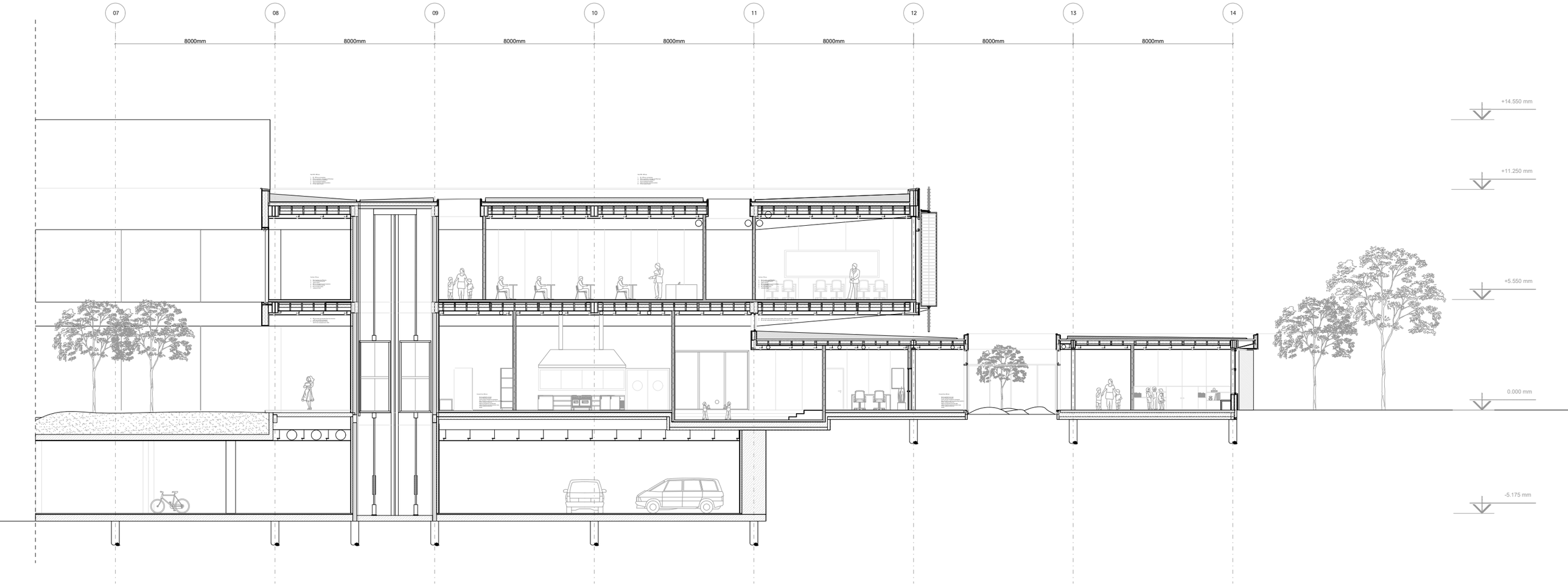
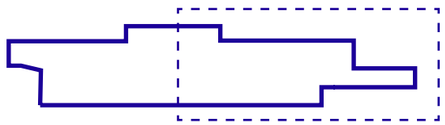
interior fragment

1:50





0 1 2 3 4 5 m

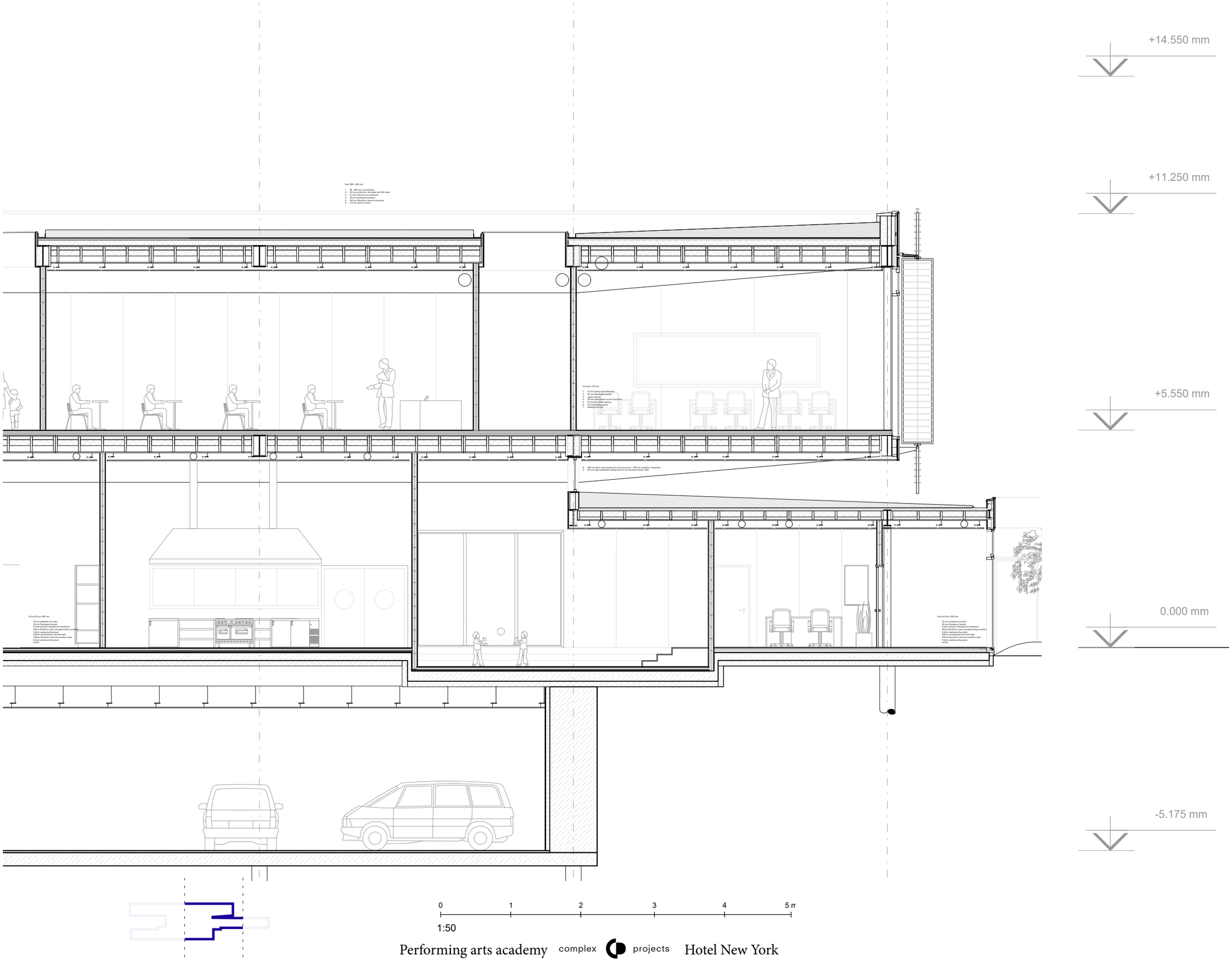
1:50

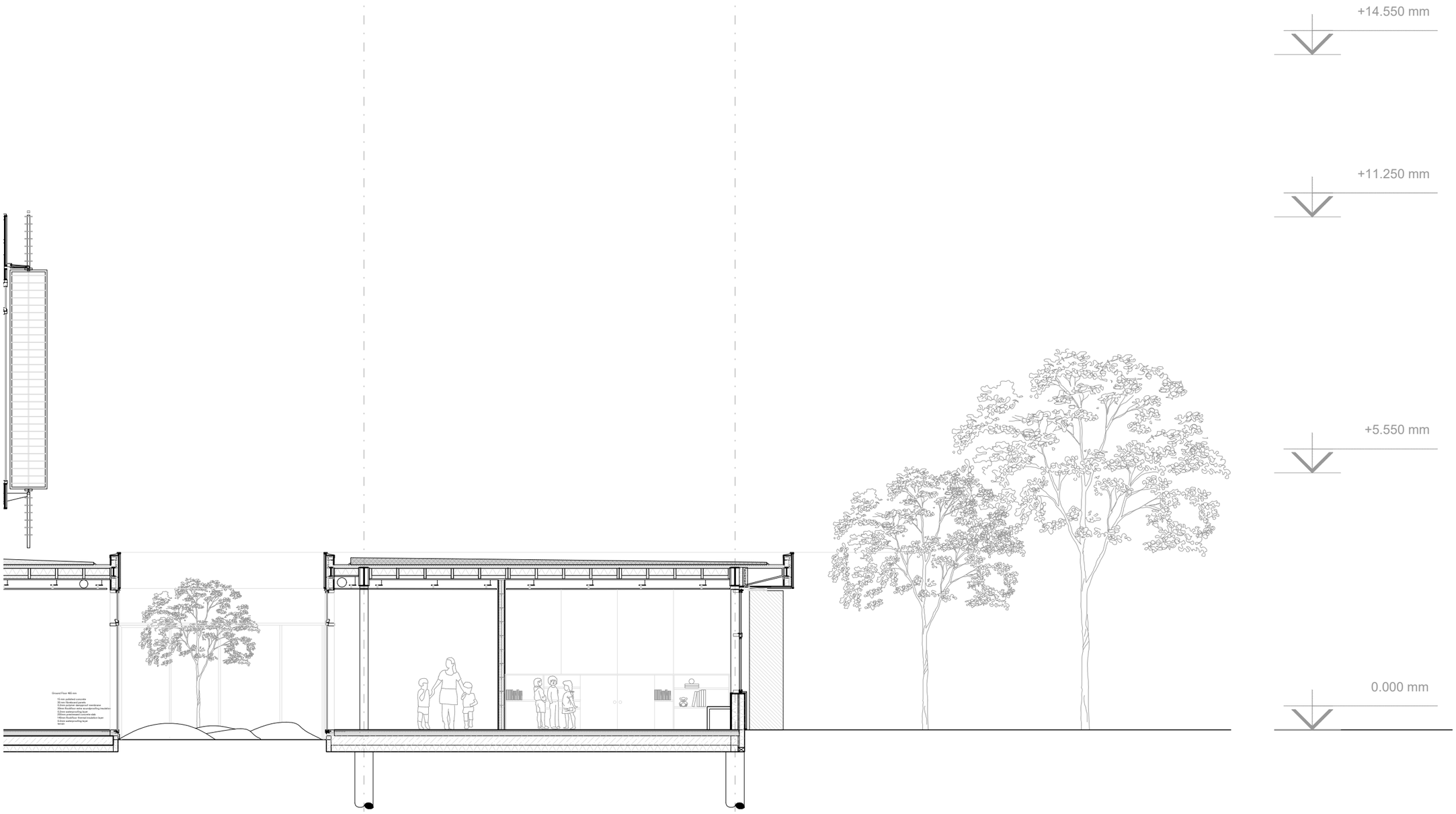
interior fragment

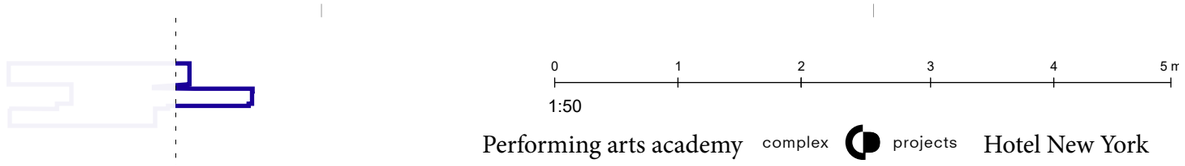
1:50

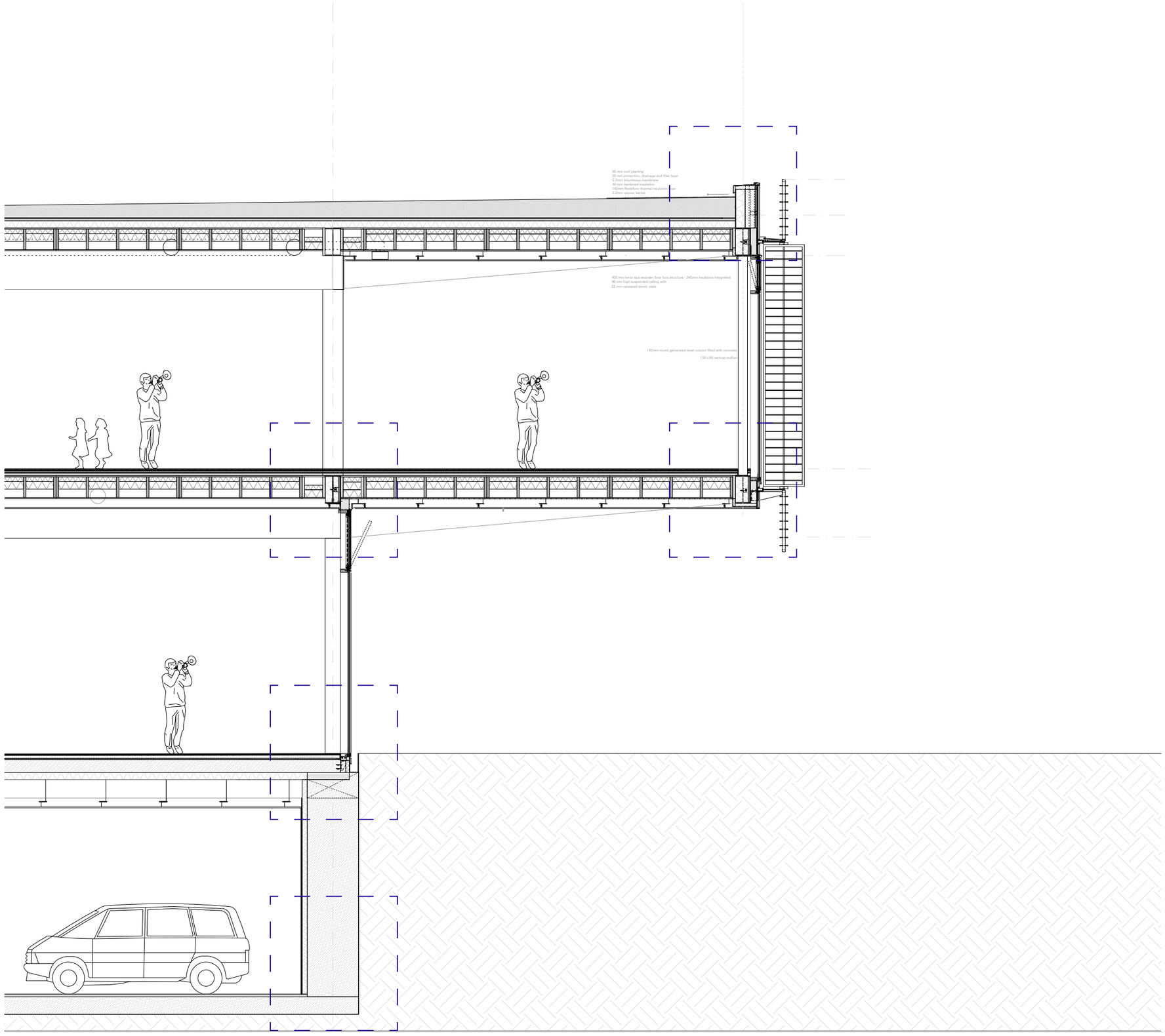
interior fragment

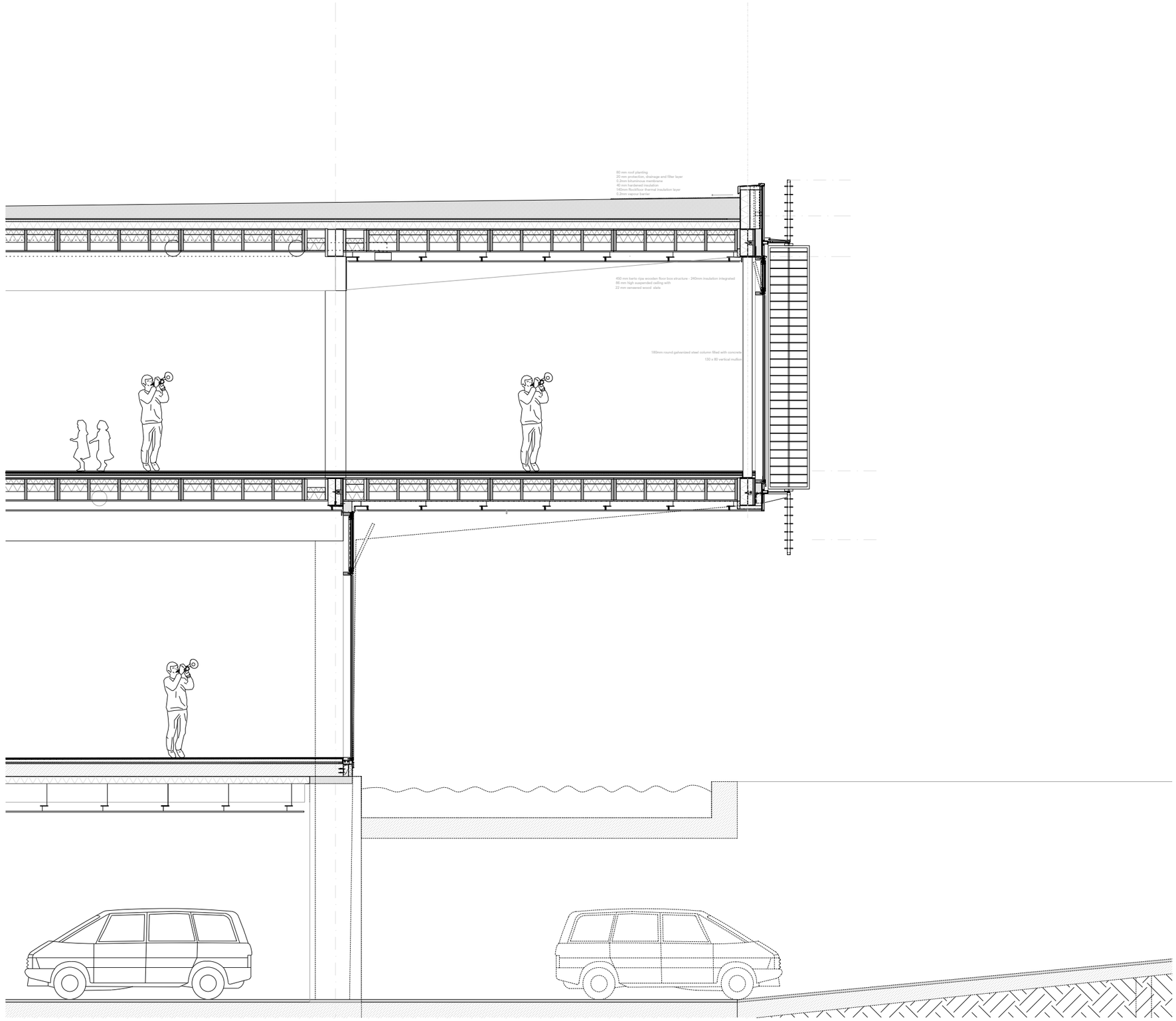
1:50




+14.550 mm
+11.250 mm
+5.550 mm
0.000 mm
-5.175 mm


0
1
2
3
4
5 m
1:50


80 mm roof planting
20 mm protection, drainage and filter layer
0.2mm bituminous membrane
40 mm hardened insulation
140mm Rockfloor thermal insulation layer
0.2mm vapour barrier
450 mm kerto ripa wooden floor box structure - 240mm insulation integrated
95 mm high suspended ceiling with
22 mm veneered wood slats
180mm round galvanized steel column filled with concrete
130 x 80 vertical mullion
0
20
40
60
80
100
200 cm
1:20

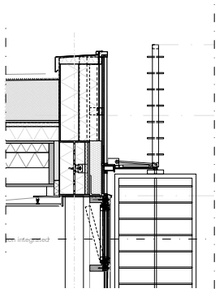


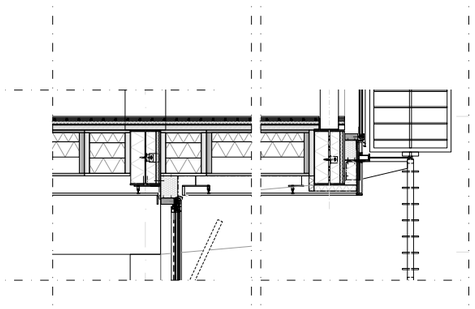
0 20 40 60 80 100 200 cm

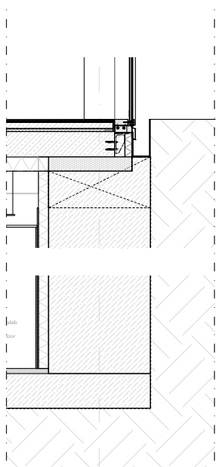
1:20

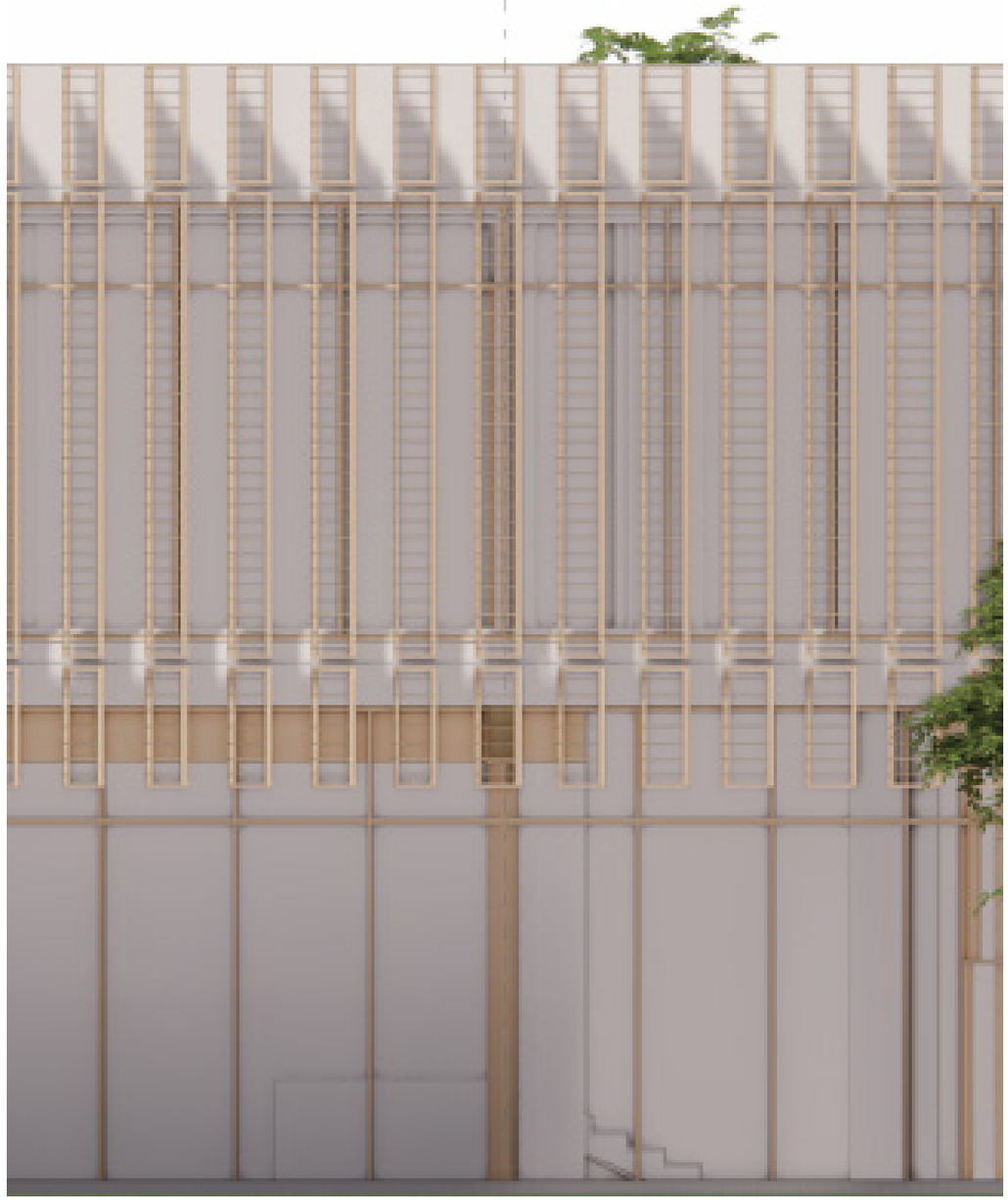
envelope fragment

1:20









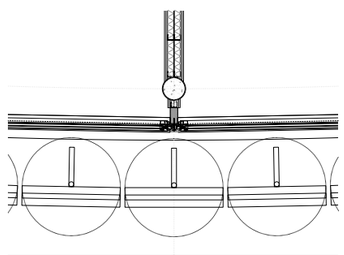
11.250 mm

10.250 mm

5.550 mm

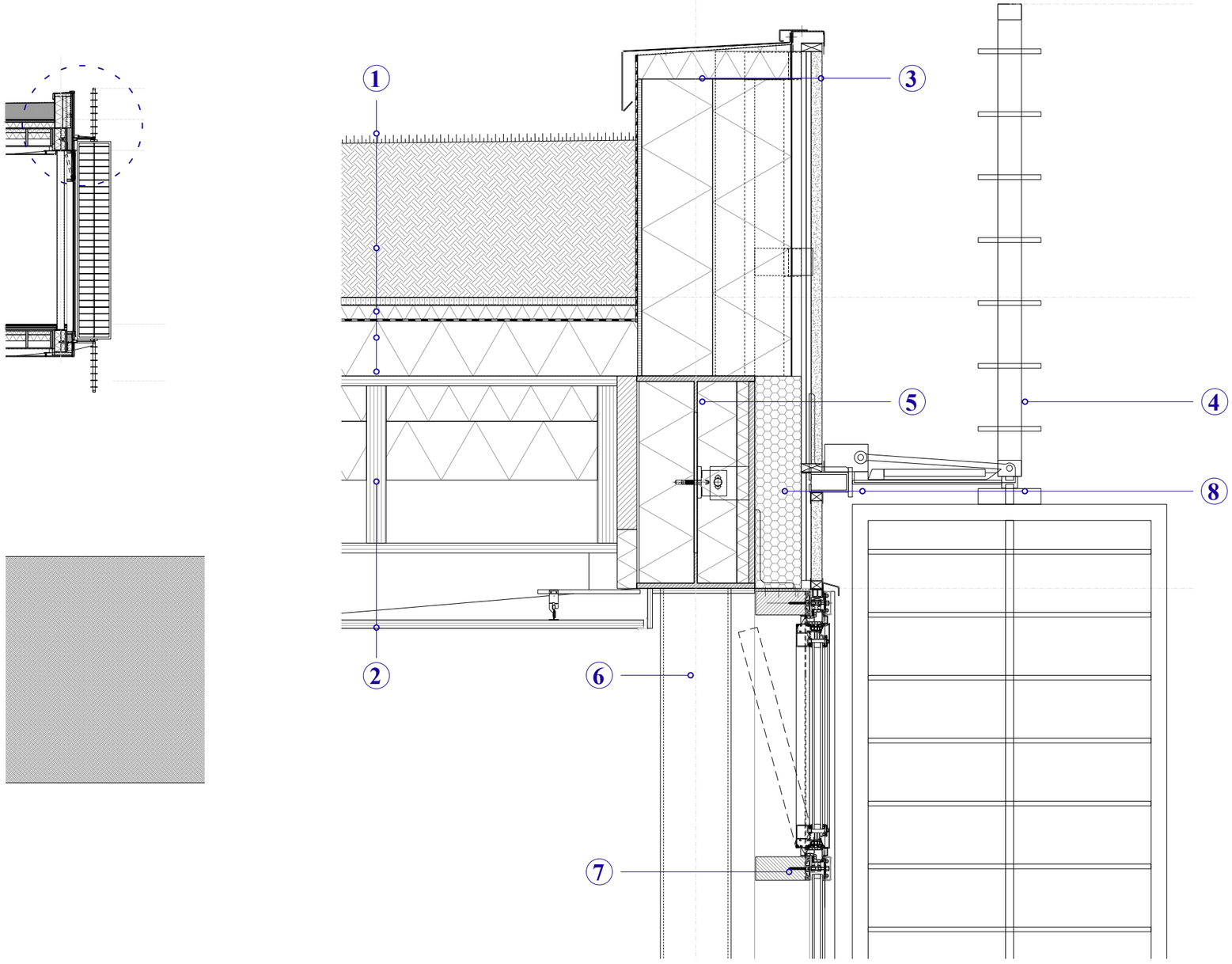
0.000 mm

-5.175 mm



0 20 40 60 80 100 200 cm

1:20



1 roof planting 80 mm
protection, drainage and filter layer 20 mm
bituminous membrane
hardened insulation 40 mm
Rockfloor thermal insulation layer 140 mm
vapour barrier 0.2 mm

2 kerto ripa wooden floor box h = 450 mm
integrated insulation 240 mm
suspended ceiling 86 mm high,
22 mm fir veneered panels

3 facade cladding panel with plastered finish
1100 x 1600 mm
fixed to horizontal and upstanding
rectangular steel profile

4 spruce timber louver panel 1200 x 800 mm
- fixed

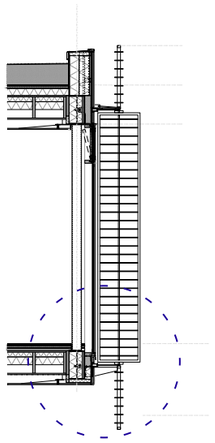
5 castellated steel ringbeam h = 540 mm

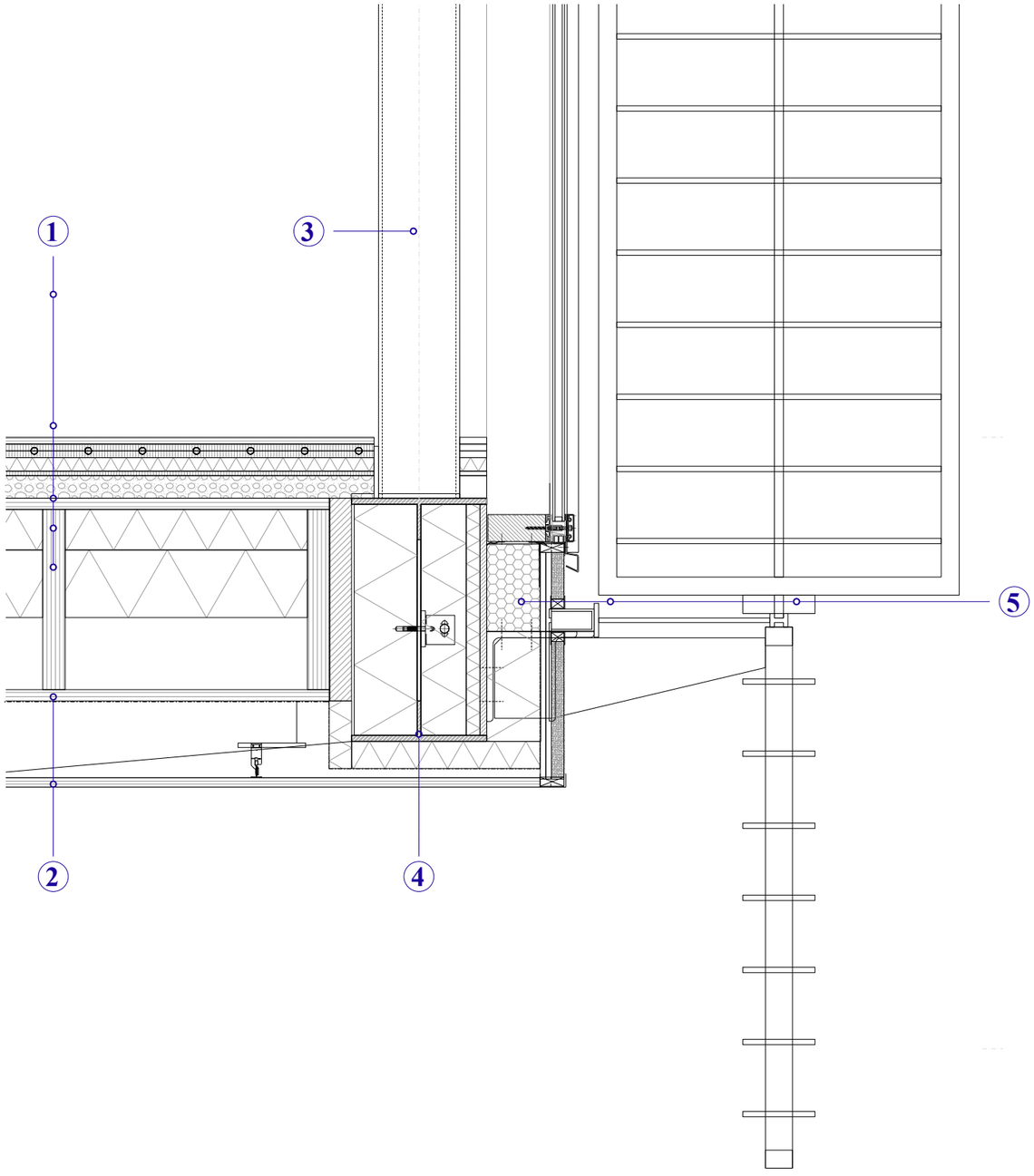
6 column round section galvanized steel filled
with concrete 180 mm

7 wooden vertical window frame mullion
130 x 80 x 4300 mm

8 isokorf insulation 140 mm
steel support profile
mechanically operable wooden louver
4720 x 800 mm

0 5 10 15 20 25 30 40 50 cm
1:5





1 Dry floor
spring wood flooring 15 mm
fibreboard panels 30 mm
underfloor heating
vapour barrier
mineral wool soundproof insulation 30 mm
wood fiber plating 10 mm
leveling grains 50 mm
waterproof layer

2 kerto ripa wooden floor box structure,
integrated insulation 240 mm
suspended ceiling 22 mm, 86 mm high
fir veneered panels

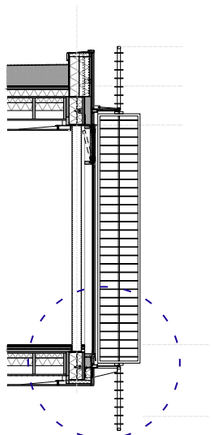
3 column round section galvanized steel filled with concrete 180 mm

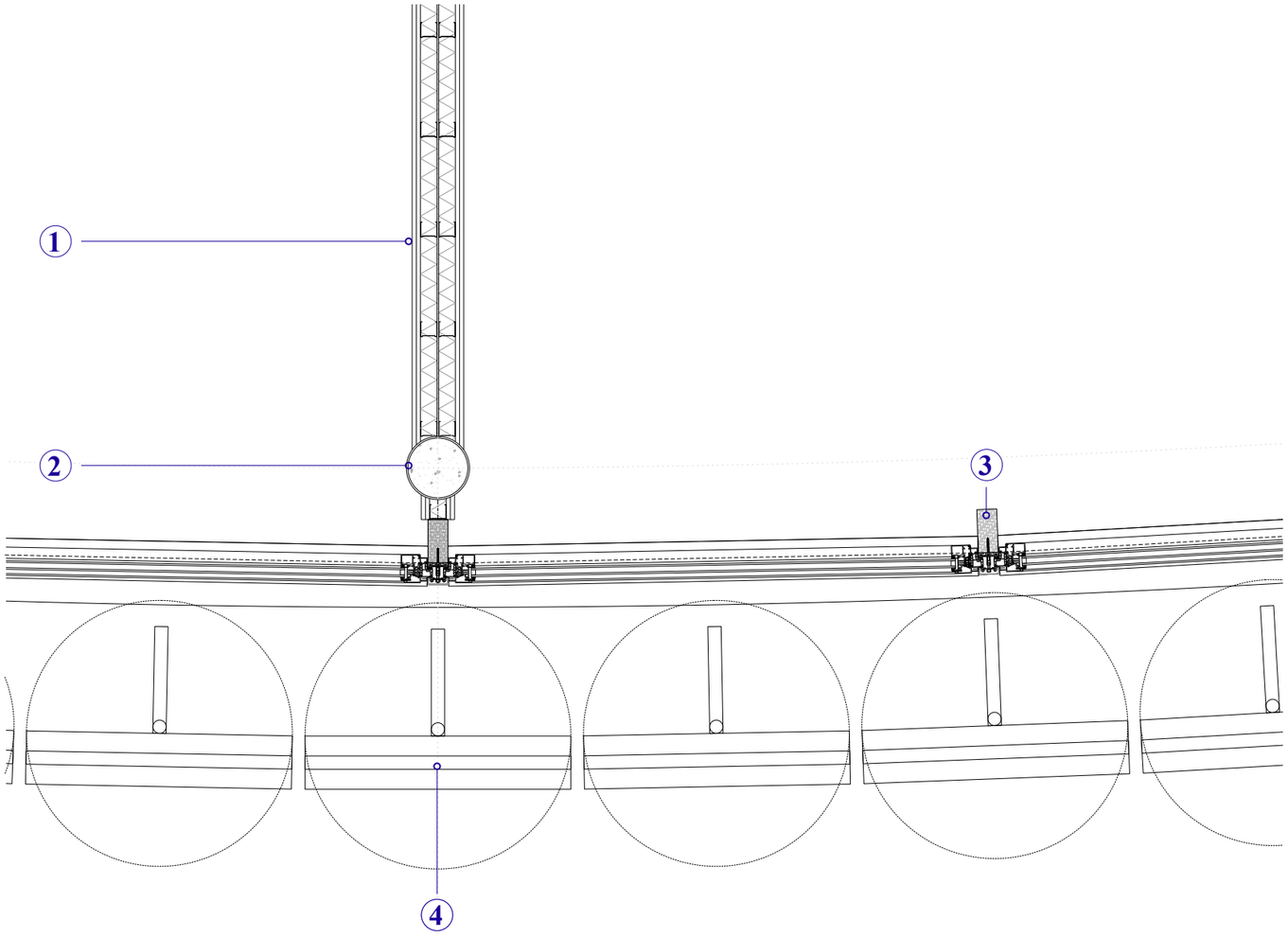
4 castellated steel ringbeam h = 540 mm

5 isokorf insulation 140 mm
steel support profile
mechanically operated wooden louver 4720 x 800 mm
fixed wooden louver 1200 x 800 mm

0 5 10 15 20 25 30 40 50 cm

1:5





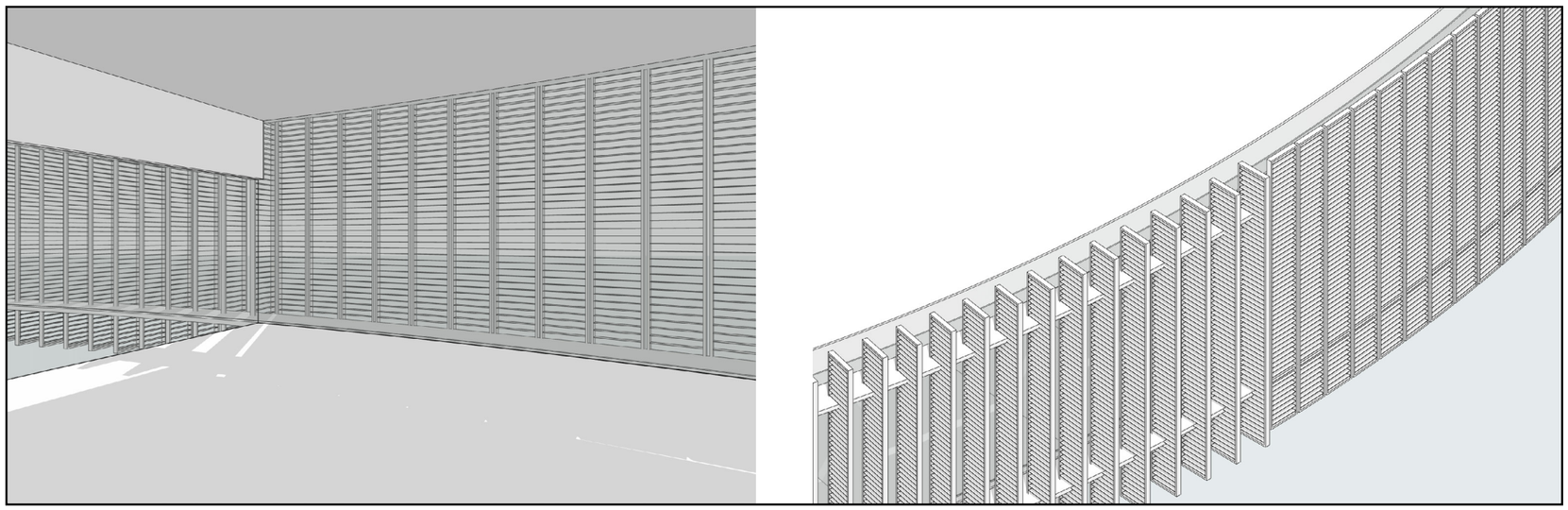
1 metalstud framed partition wall t = 155 mm
pine fir finish 15 mm

2 column round section galvanized steel filled
with concrete 180 mm

3 wooden vertical window frame mullion
130 x 80 x 4300 mm

4 steel extrusion profile to hang louvers
steel guiding rail
mechanically operated shading louver
panels of fir timber 4720 x 800 mm
and lamellae 720 x 160 x 12 mm

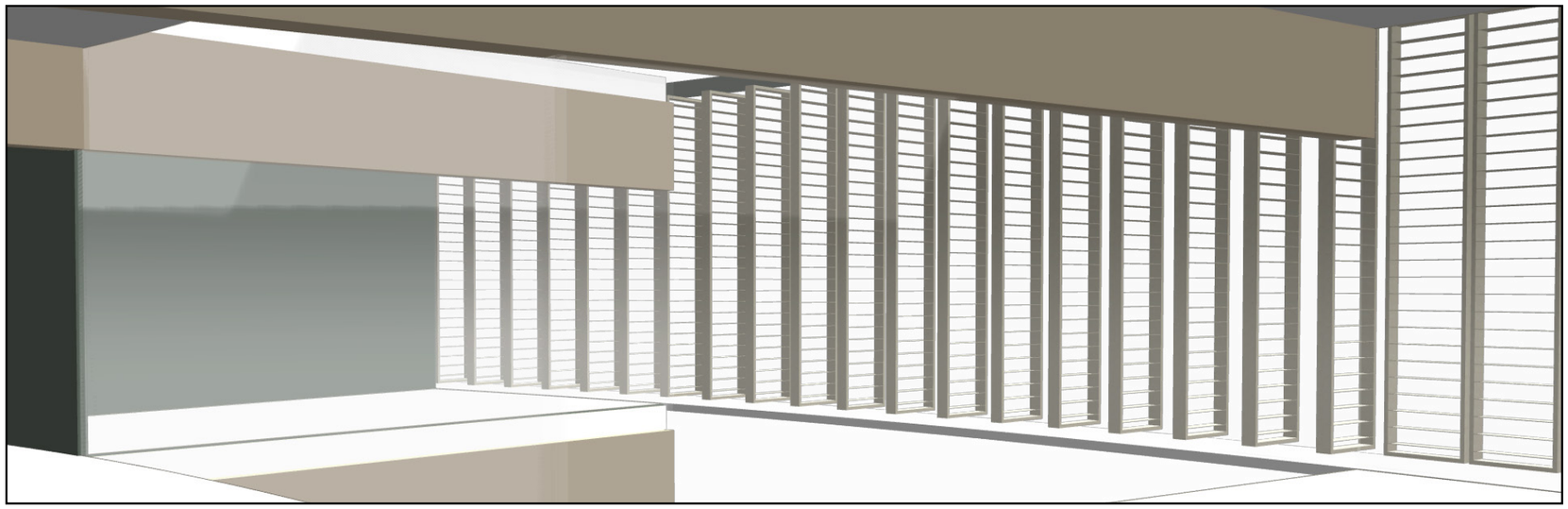
0 5 10 15 20 25 30 40 50 cm
1:5



louver principle: kinetic wooden panel slats
spacing: 800 mm

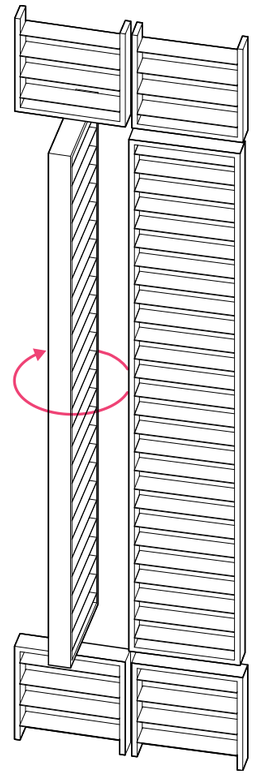
verticality but also intimacy

shut

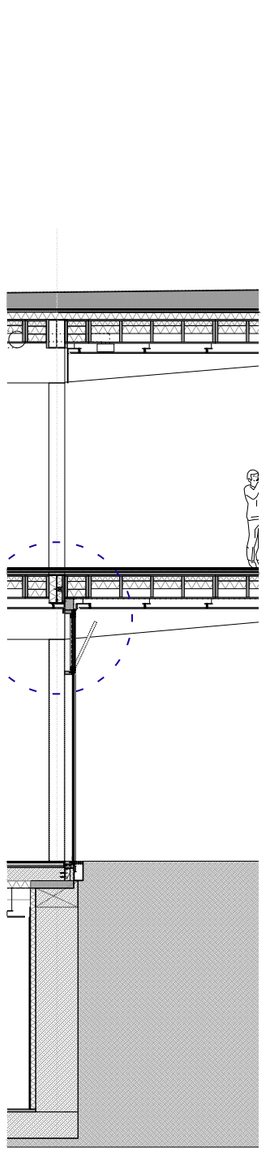


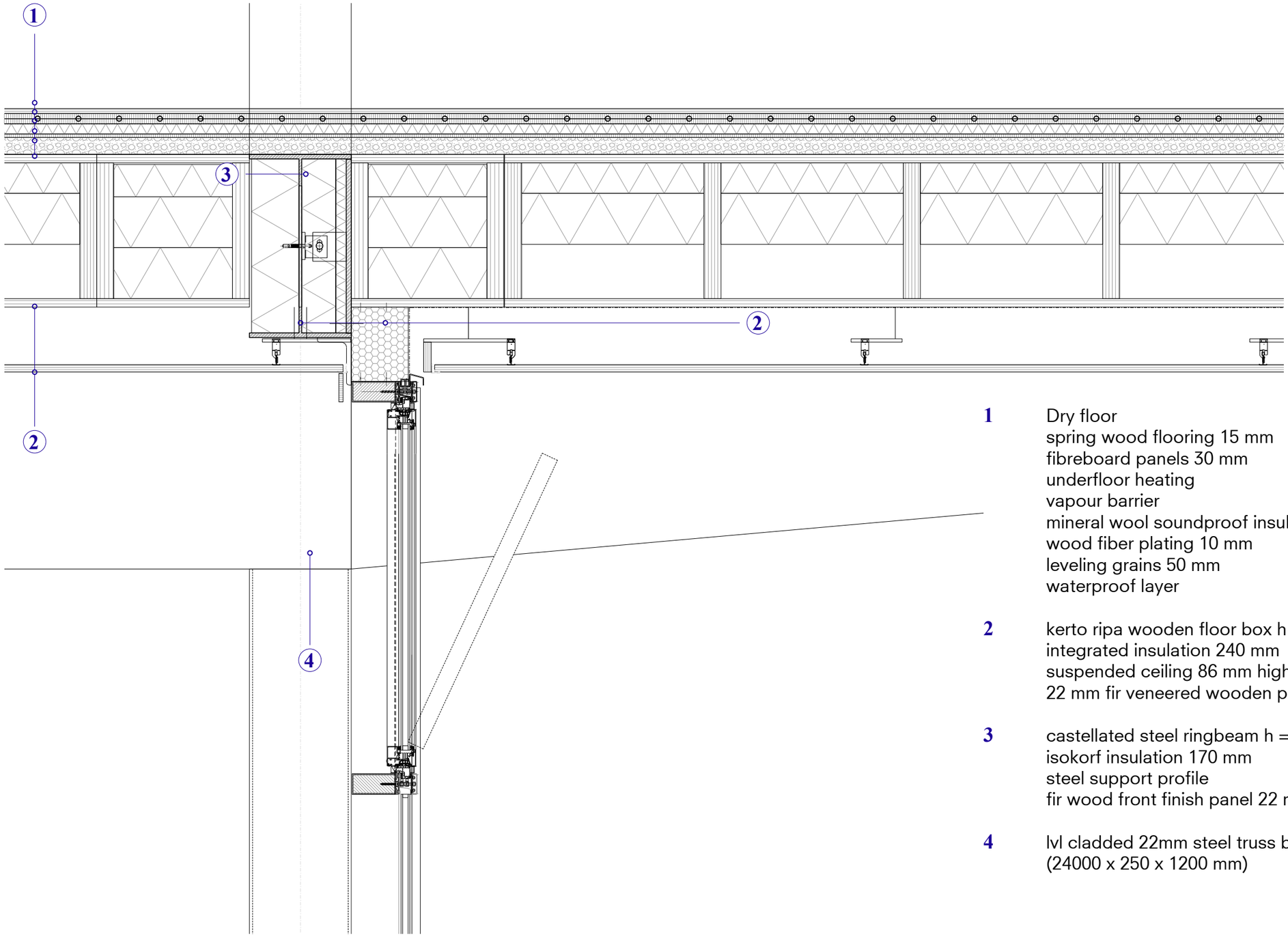
louver principle:

kinetic wooden panel slats



open





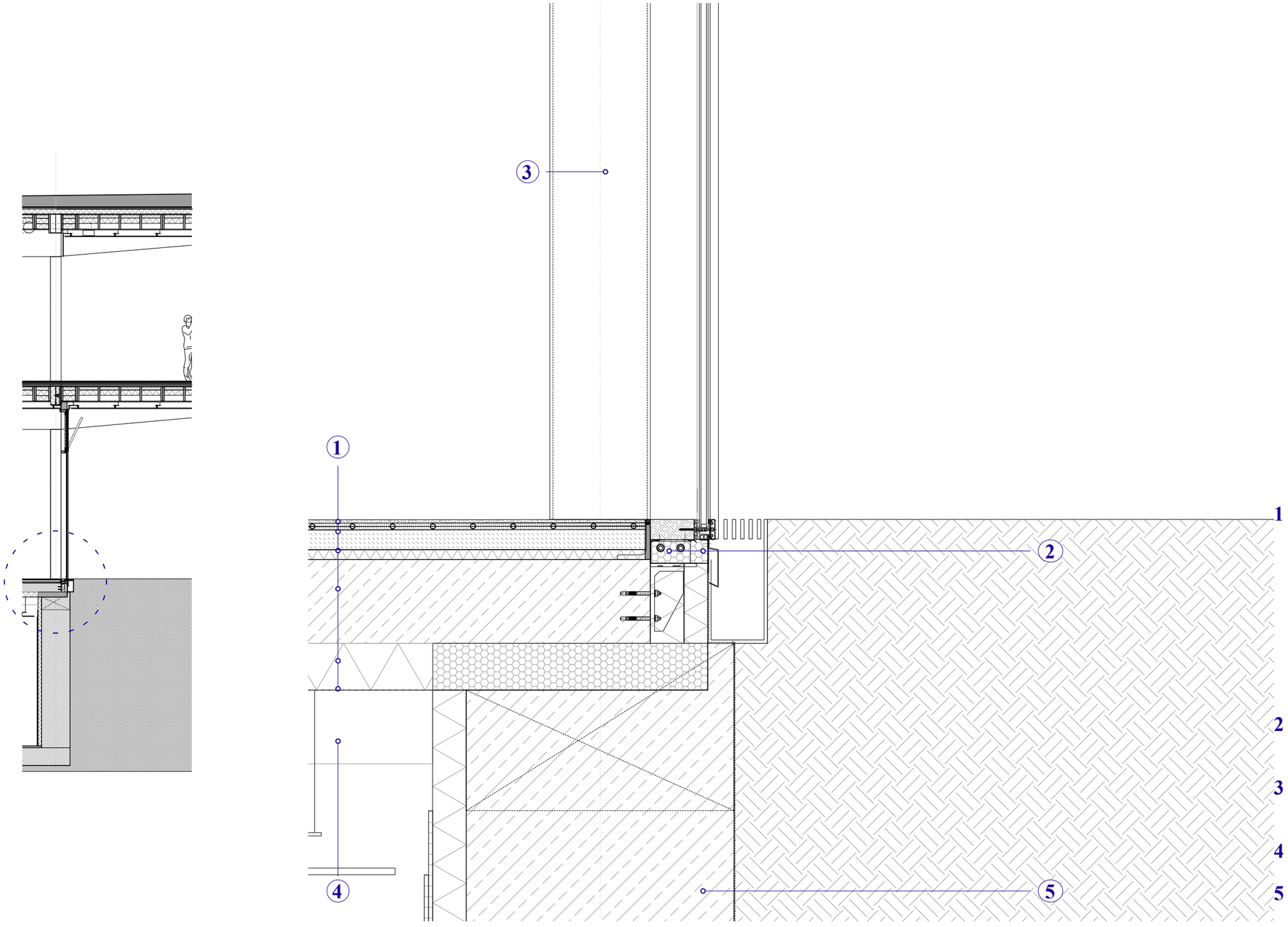
1 Dry floor
spring wood flooring 15 mm
fibreboard panels 30 mm
underfloor heating
vapour barrier
mineral wool soundproof insulation 30 mm
wood fiber plating 10 mm
leveling grains 50 mm
waterproof layer

2 kerto ripa wooden floor box h = 450 mm
integrated insulation 240 mm
suspended ceiling 86 mm high,
22 mm fir veneered wooden panels

3 castellated steel ringbeam h = 540 mm
isokorf insulation 170 mm
steel support profile
fir wood front finish panel 22 mm

4 lvl cladded 22mm steel truss beam
(24000 x 250 x 1200 mm)

0 5 10 15 20 25 30 40 50 cm
1:5



1 terrazzo finish 15 mm
fibreboard panels 30 mm
polymer dampproof membrane 0.2 mm
Rockfloor extra soundproofing insulation 30 mm
waterproofing layer 0.2 mm
prestressed concrete slab 250 mm
Rockfloor thermal insulation layer 140 mm
waterproofing layer 0.2 mm

2 curtain wall double glazed
rigid insulation 170 x 70 mm

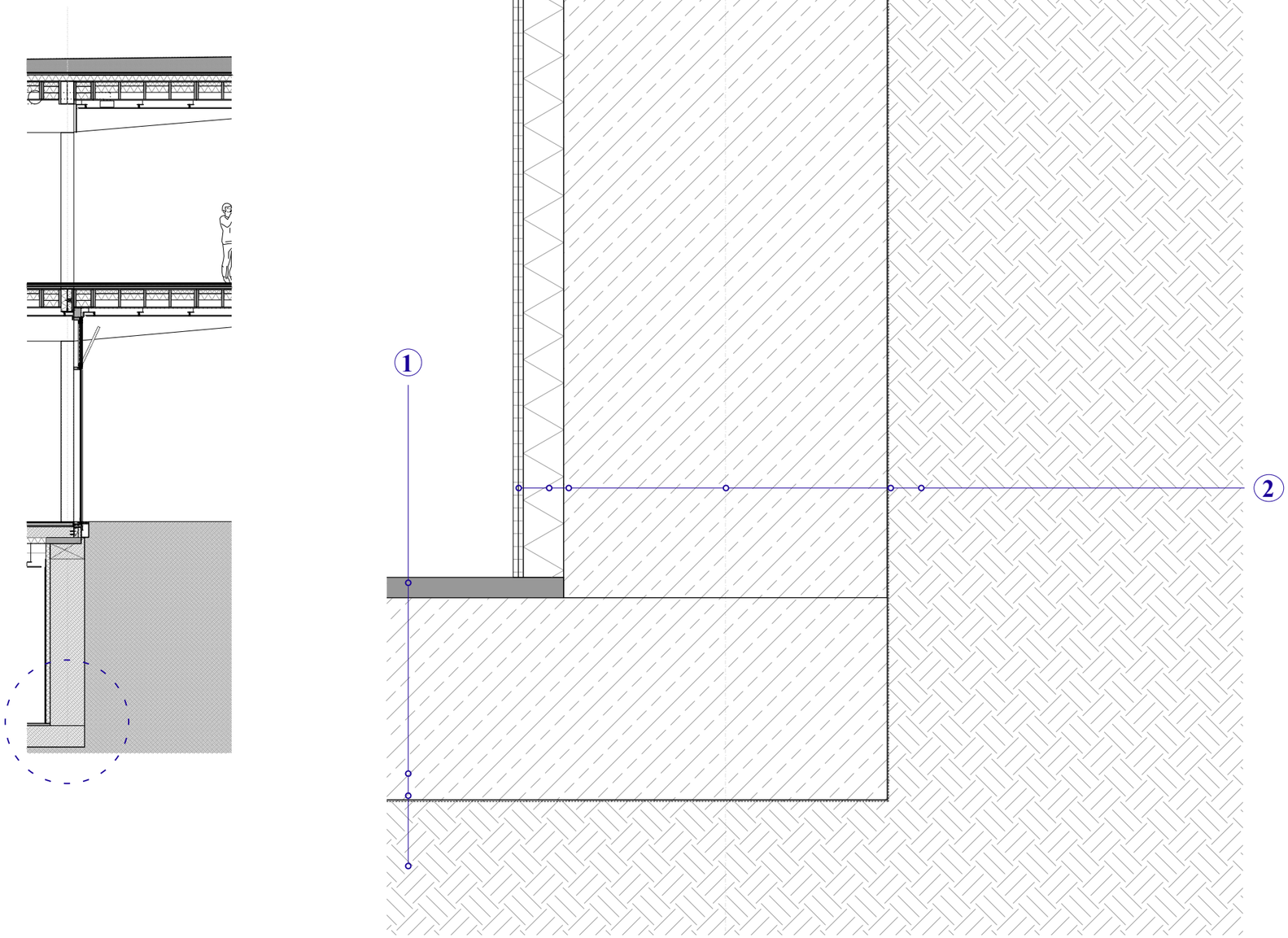
3 column round section galvanized steel filled with concrete 180 mm

4 steelfiber concrete wall t = 800 mm

5 pre-stressed concrete beam h = 350 mm

0 5 10 15 20 25 30 40 50 cm

1:5



1 soundproof plaster finish
gypsum board 2x 12.5mm
insulation
dampproof layer
steelfiber concrete wall 800mm thick
waterproof layer
soil

2 in situ cast concrete slab 50mm
steelfiber concrete floor h = 500mm
waterproof layer
soil

0 5 10 15 20 25 30 40 50 cm

1:5

introduction

research summary

design brief

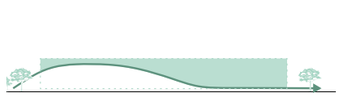
concept development

implementation

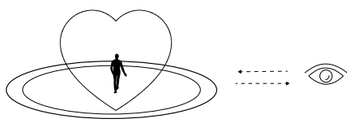
design development

conclusion and reflection

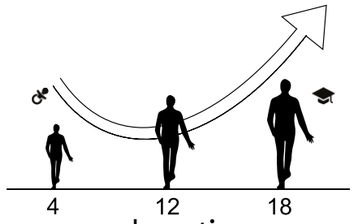
well-being flourishing



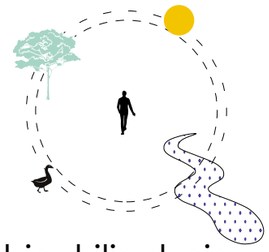
nature flows through the spaces



physical and mental health

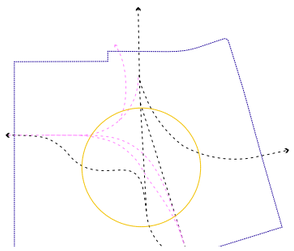


education

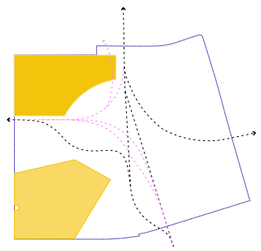


biophilic design

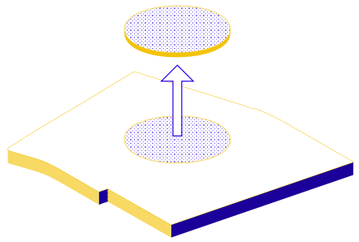
shape



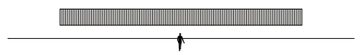
axial directions unified



petting zoo relation

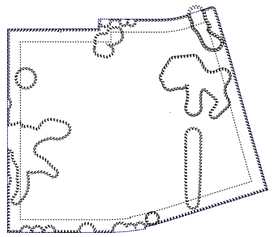


volume by context

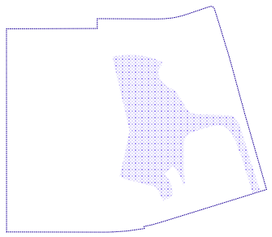


harmony

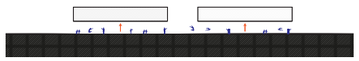
park enhancement



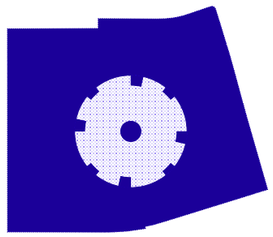
respecting vegetation



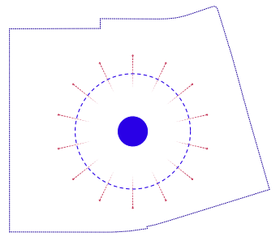
biodiverse + purifying water ring



lifted

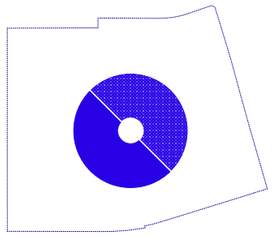


facade invites park presence

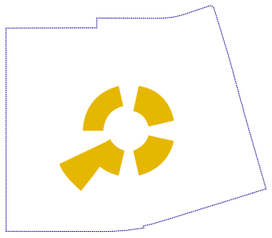


views out

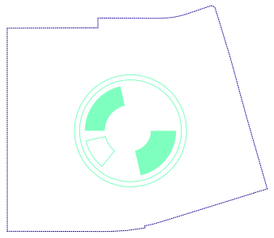
orientation and recognition



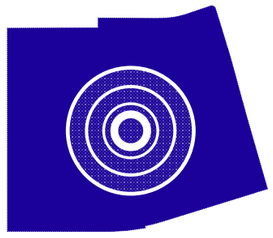
function split



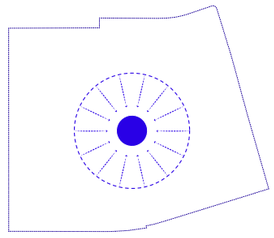
fragmentation



performing art



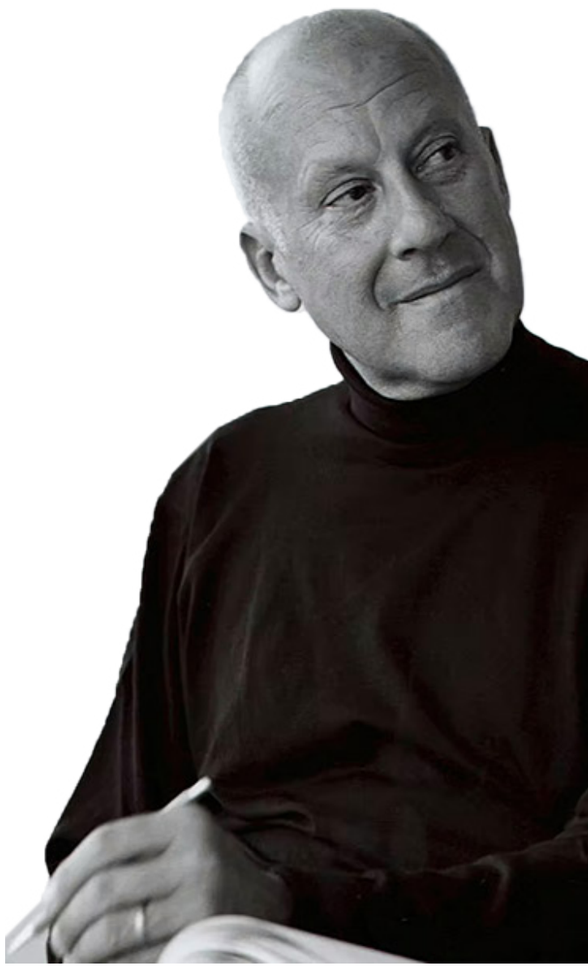
circulation rings



centrality

“well-being”

Using buildings, businesses and communities to **create environments where health and wellness are increased to optomise well-being**



Foster

“Befindlichkeit”

The fundamental way in which we mortals exist on the earth under the sky.
This understanding of well-being can do without architecture as the art of building places for human dwelling (1954)

Heidegger

“velbefindende”

Dwellers of architecture remain connected to their surroundings and are invited to partake in forming their own setting for existence. Relation between objects, surroundings, places with people will influence human flourishing (2008)

Jørn Utzon

envisioning the
individual and the
collective perceoption
of well-being.

the project's premise to benefit the well-being of the city is manifested when someone in the future uses the project in an unforseen way; flourishing the individual along with the site

thank you