



ROTTERDAM ATHLETIC CLUB

Casper Bovy
4369491

22/1/2021



complex projects

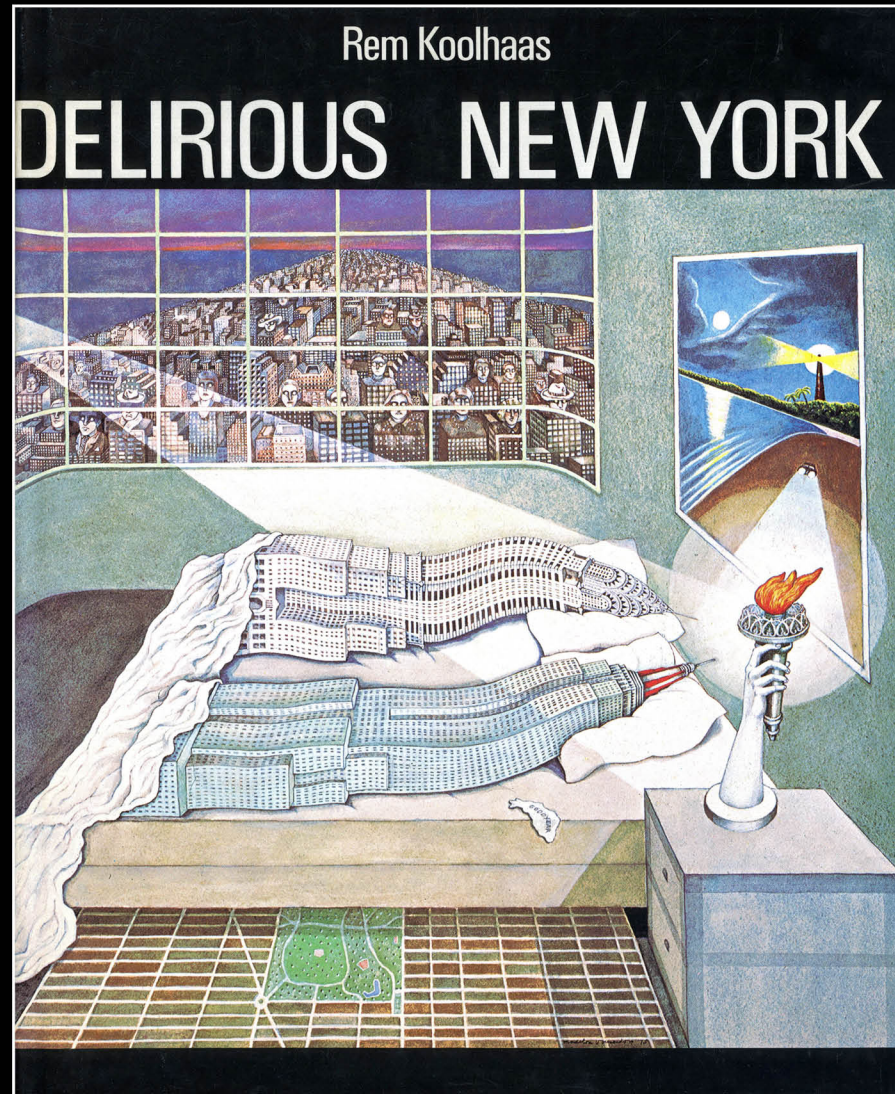
Jelmer van Zalingen
Hrvoje Smihiden



Sjap Holst
Dirk Dubbeling

“In the Downtown Athletic Club the Skyscraper is used as a Constructivist Social Condenser: a machine to generate and intensify desirable forms of human intercourse.”

ATHLETIC CLUB



ATHLETIC CLUB



ATHLETIC CLUB



SPORTS CLUB

+



SOCIAL CLUB

FOR THE ELITE

Introduction

ATHLETIC CLUB



Introduction

ATHLETIC CLUB



ATHLETIC CLUB



ATHLETIC CLUB



Introduction

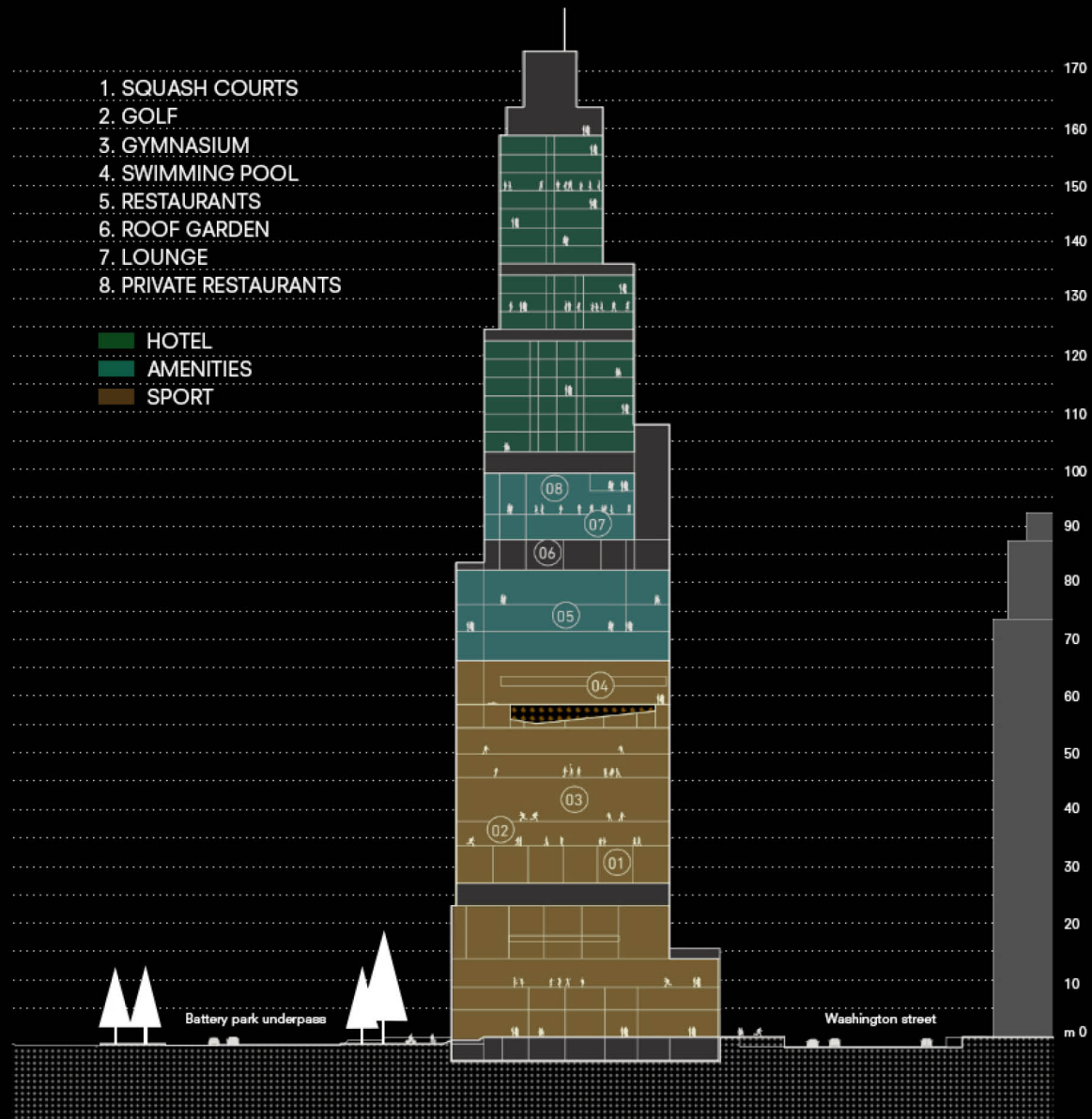
ATHLETIC CLUB



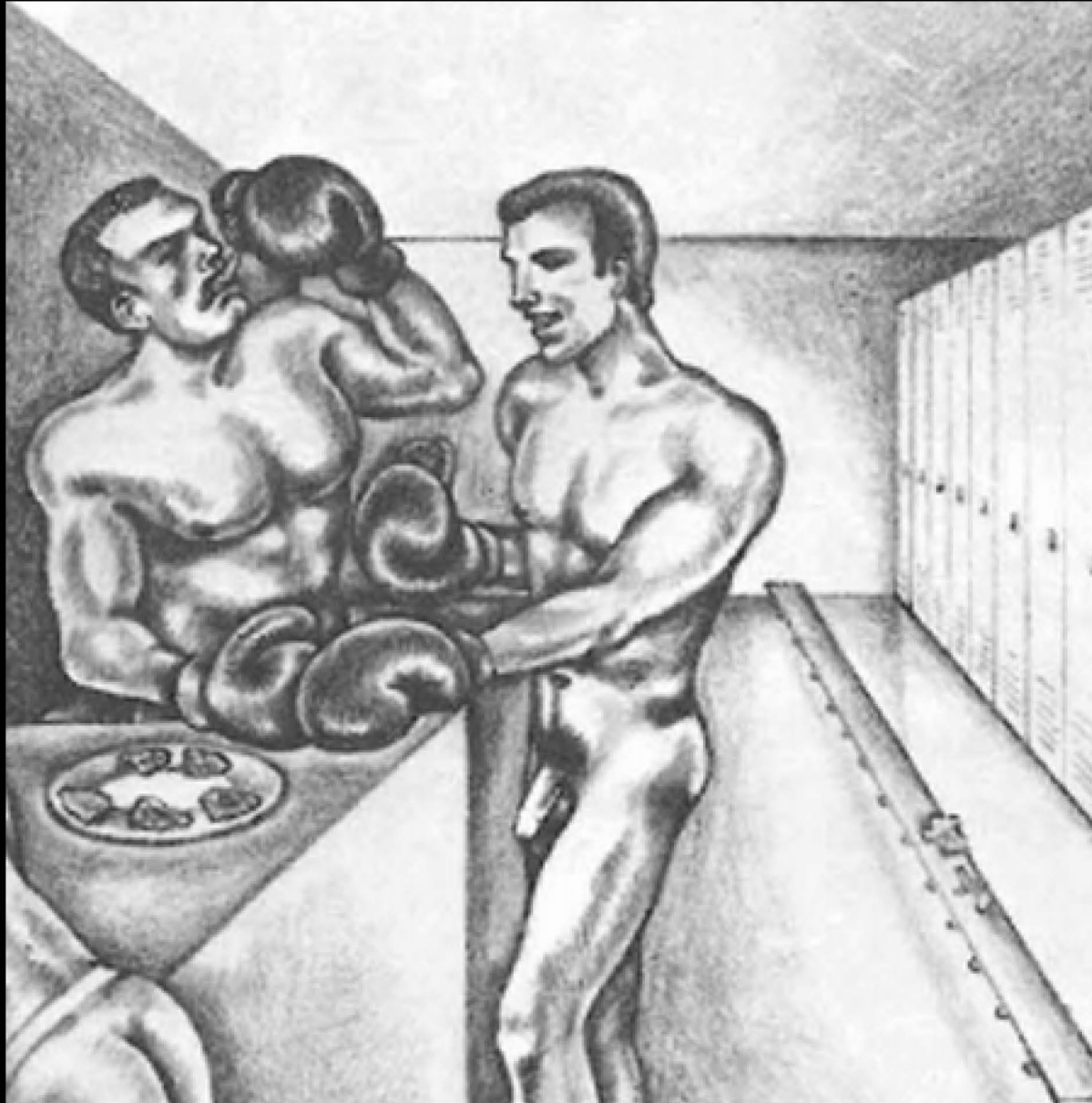
ATHLETIC CLUB

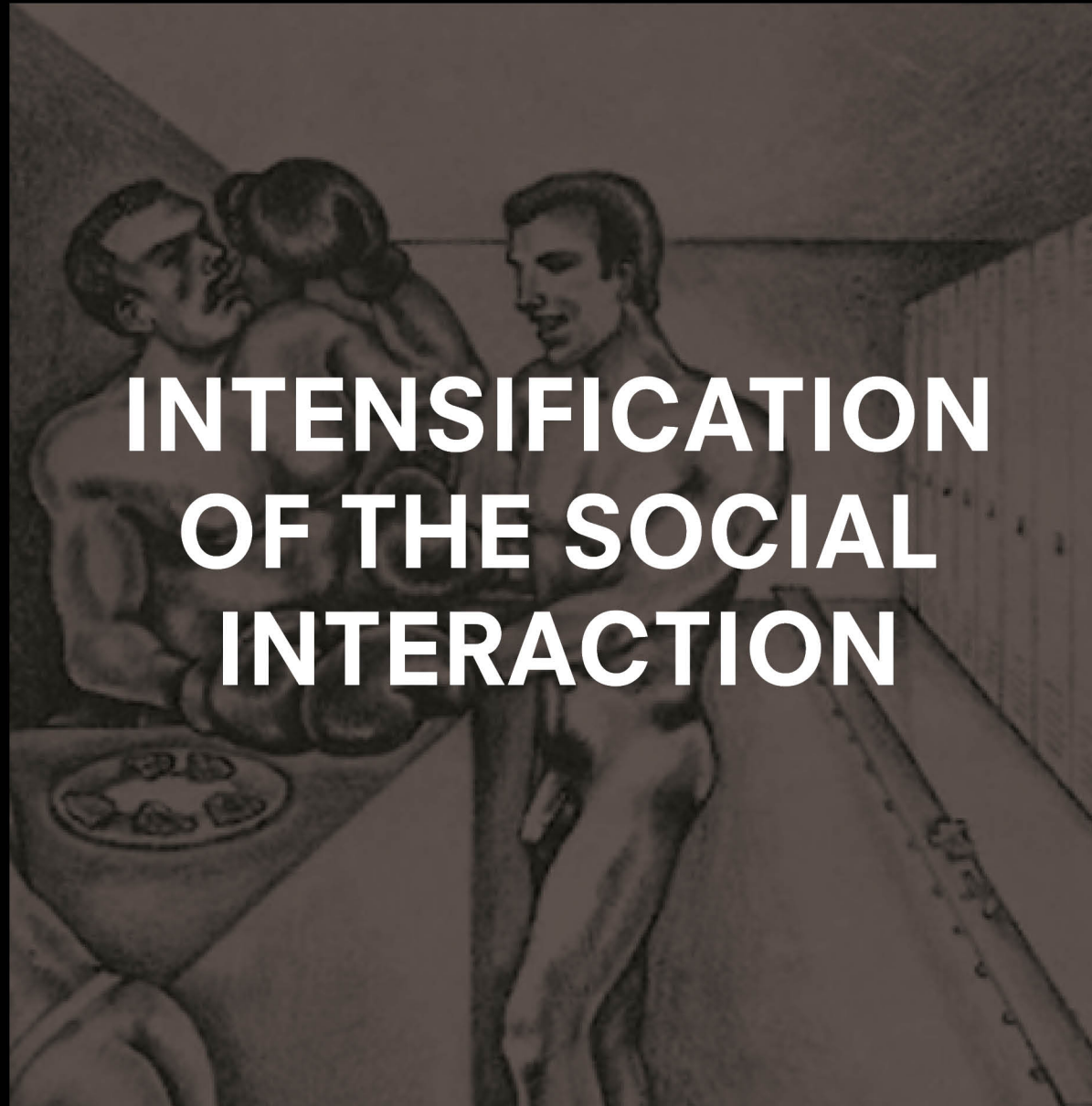


DOWNTOWN ATHLETIC CLUB



ATHLETIC CLUB





MIGRATION OF THE ATHLETIC CLUB?



ROTTERDAM ATHLETIC CLUB



Introduction

Research

Design Brief

Concept

Implementation

Development

Conclusion

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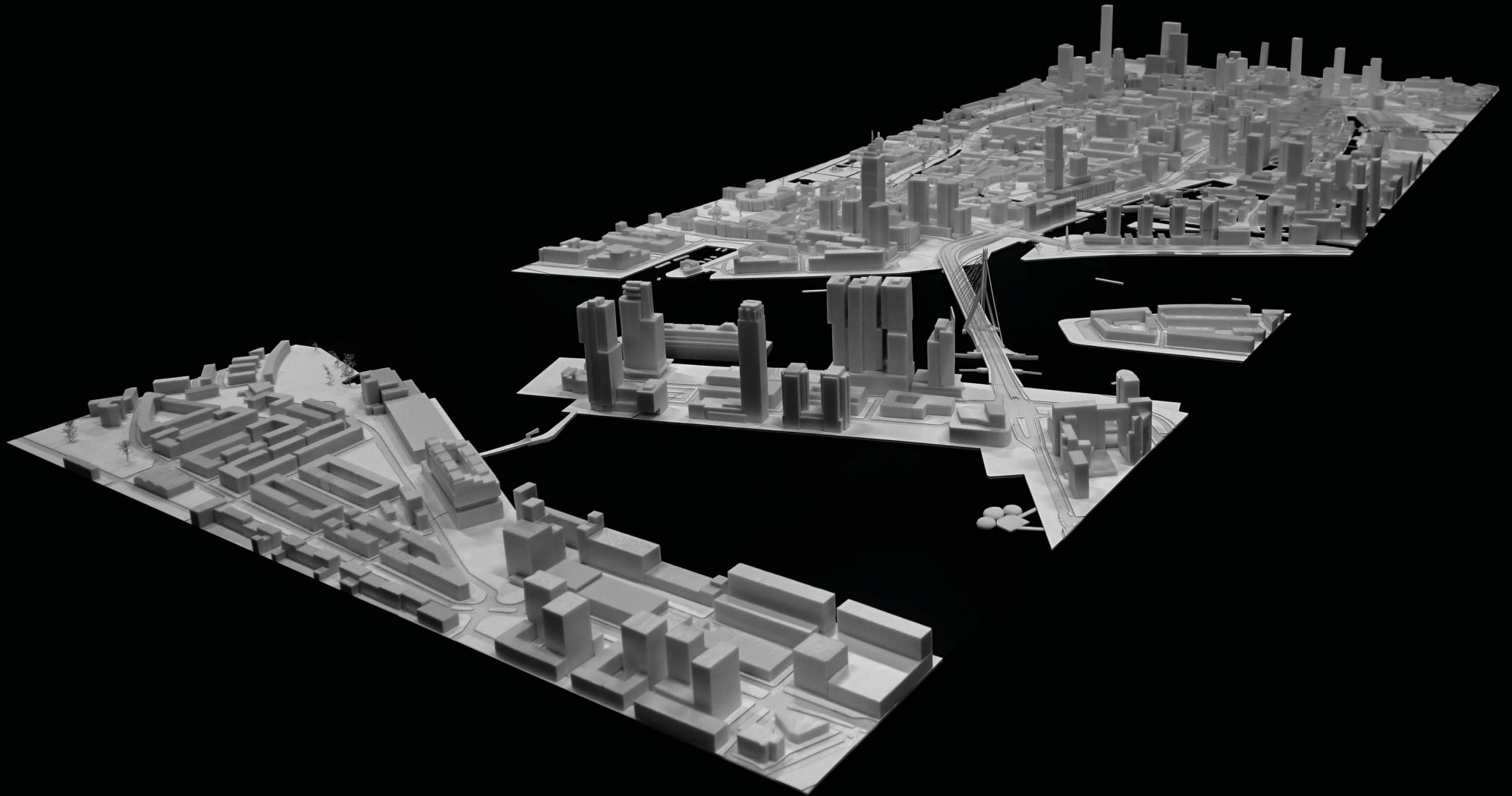
Research

START

WHY?



DENSIFICATION OF ROTTERDAM

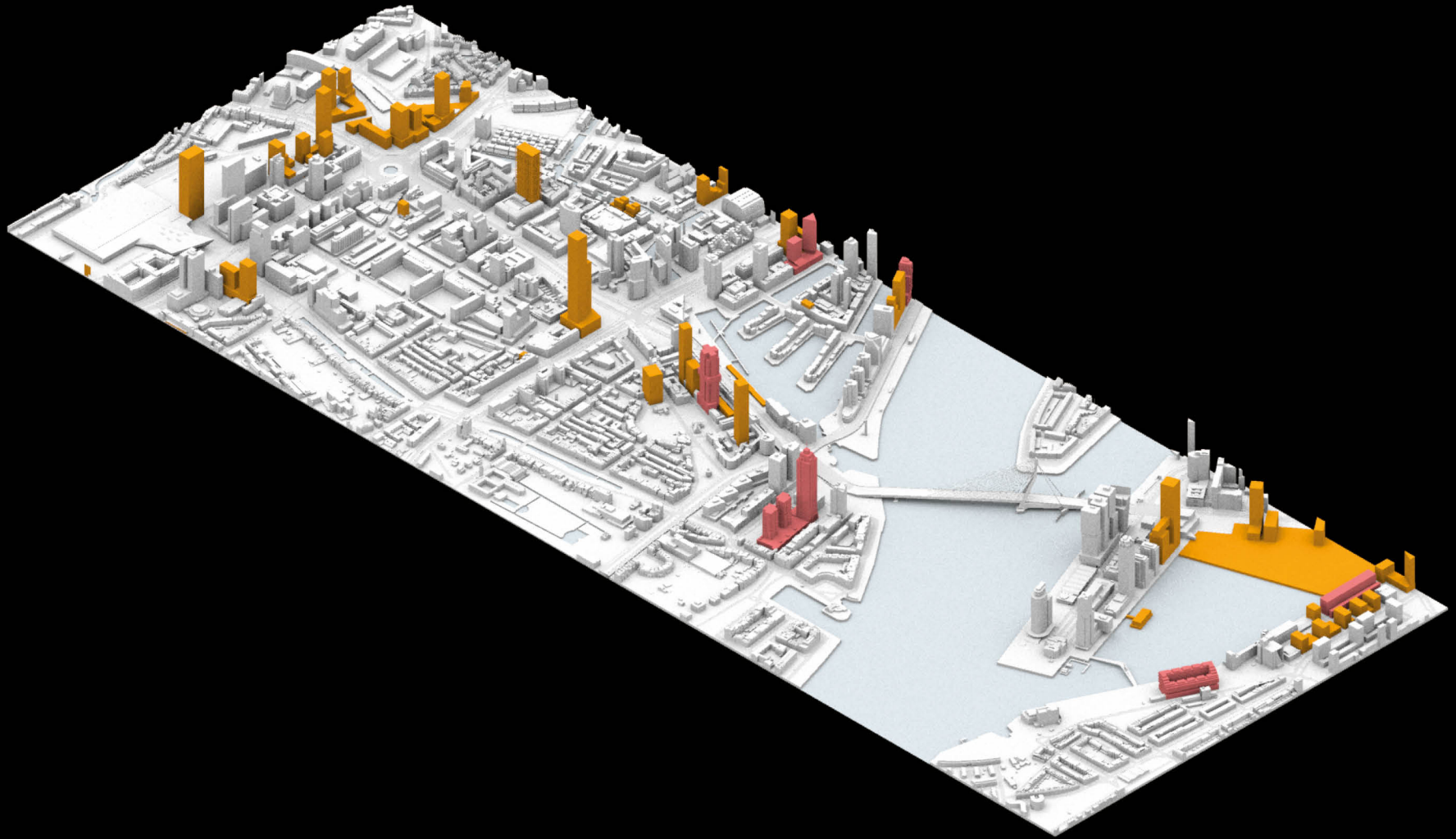


DENSIFICATION OF ROTTERDAM

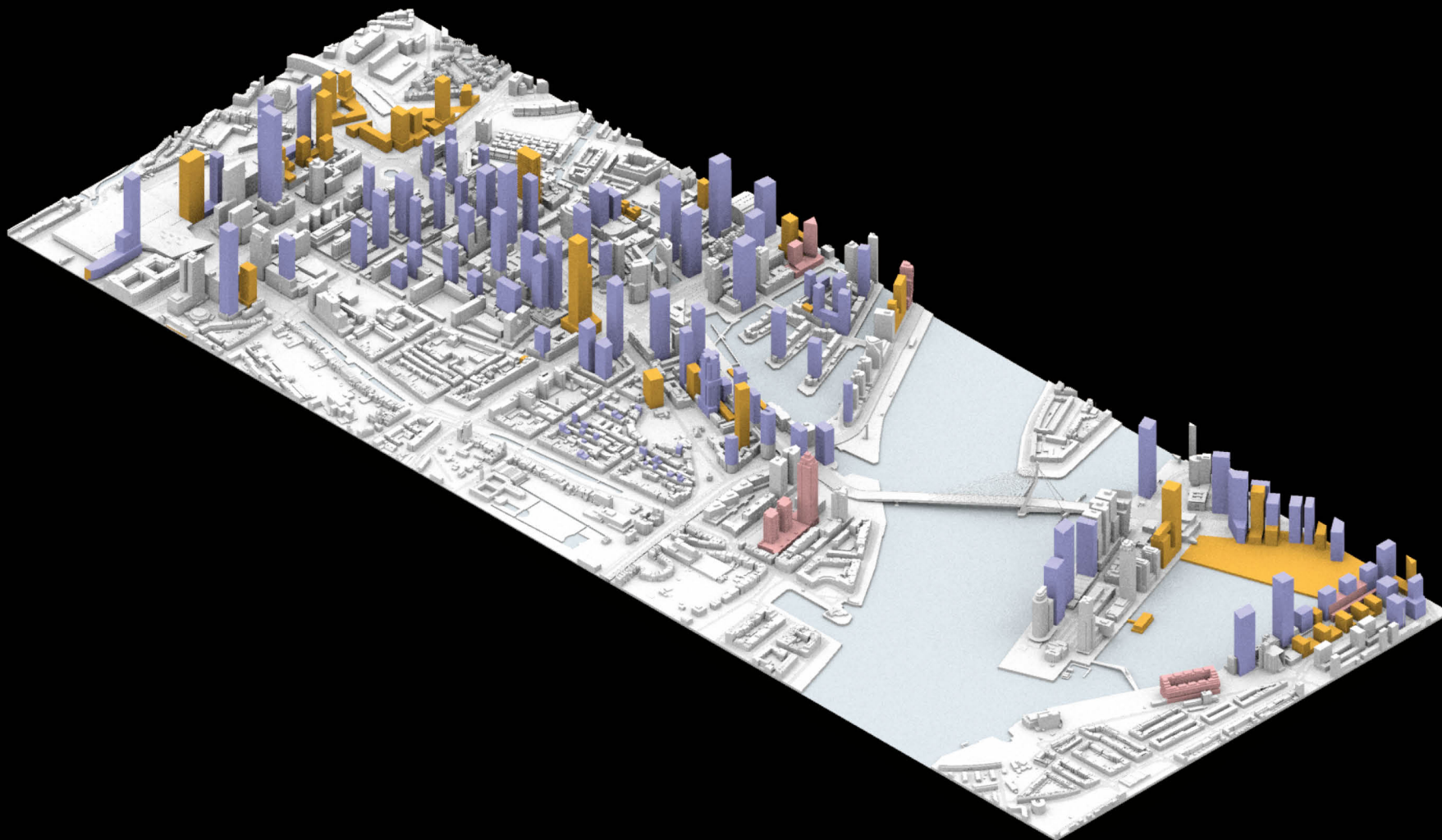
A 3D architectural model of Rotterdam, showing a dense urban layout with numerous buildings of varying heights. The model is rendered in a light gray color against a dark background. The buildings are arranged in a grid-like pattern, with some taller structures interspersed among shorter ones. The model is viewed from an elevated perspective, showing the overall shape of the city and its surrounding areas.

**HIGHRISE VISION ROTTERDAM:
+ 50.000 HOMES**

ROTTERDAM TODAY



ROTTERDAM TOMORROW?



NEED FOR NEW AMENITIES



NEED FOR SPORTS



SPORTS IN ROTTERDAM



LACK OF SPORT FACILITIES IN CITY CENTRE



HOW TO GET SPACE CONSUMING LEISURE SPORTS...



... INTO A DENSIFIED CITY CENTRE?



RESEARCH QUESTION

**HOW CAN SPACE CONSUMING LEISURE SPORTS
BE IMPLEMENTED IN A DENSIFIED CITY CENTER,
IN ORDER TO BE A SOCIAL CONDENSER?**

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Implementation

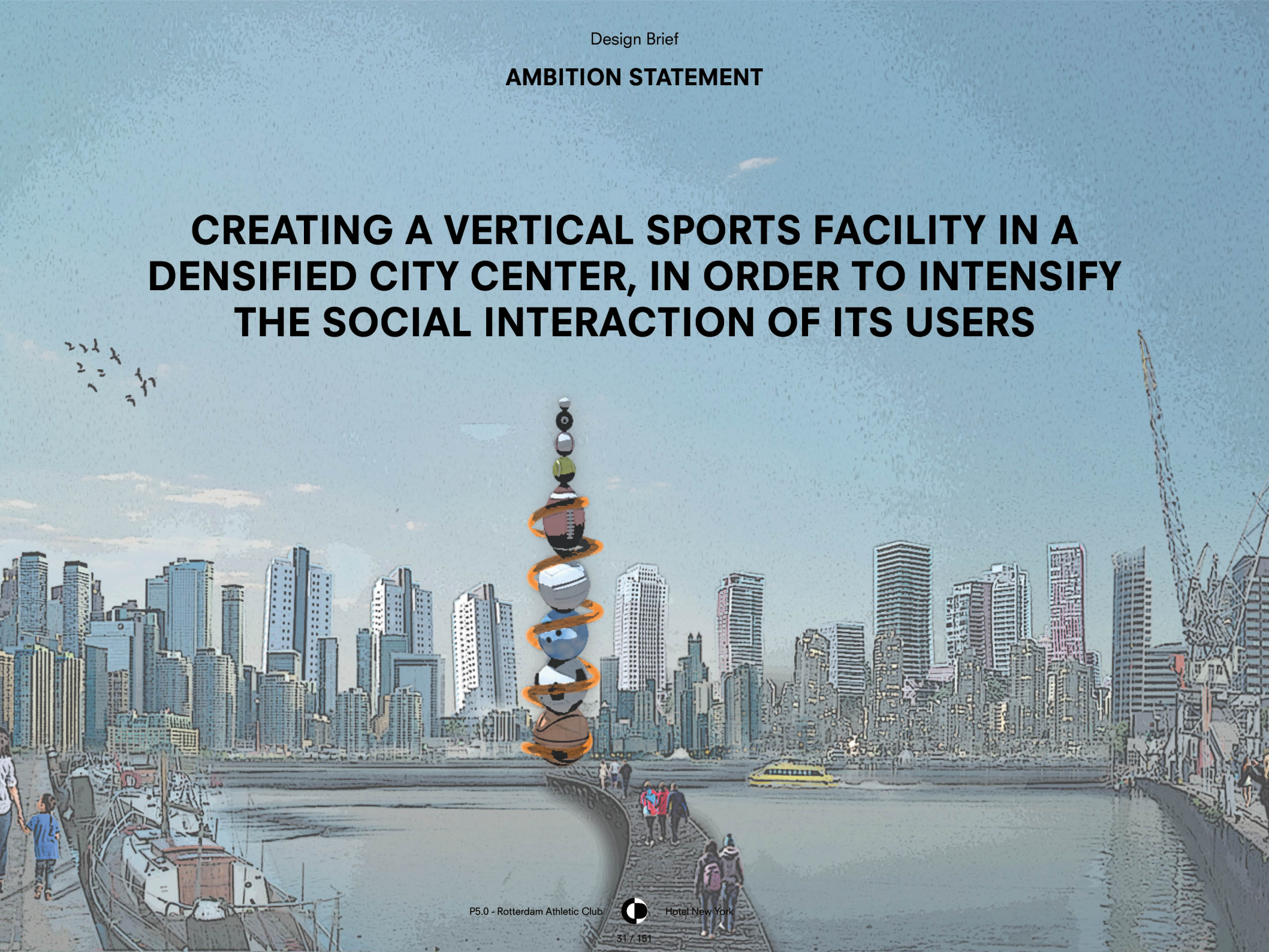
Development

Conclusion

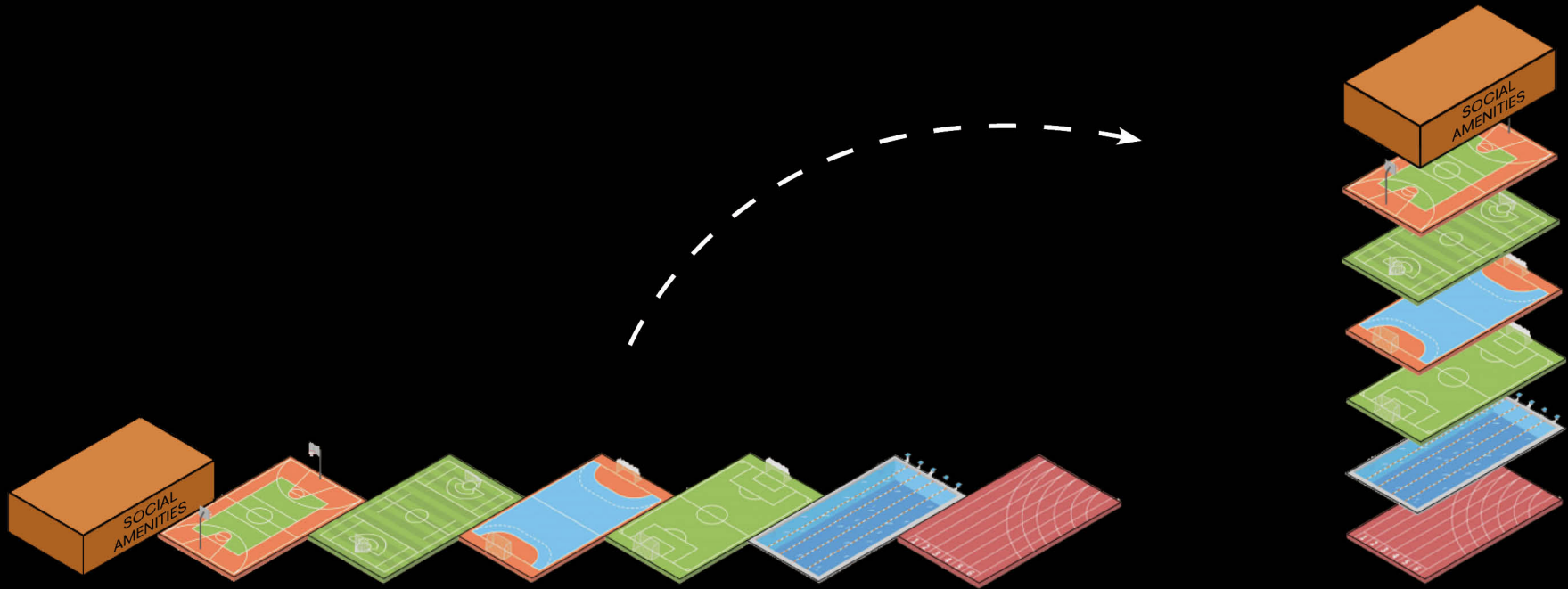
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AMBITION STATEMENT

CREATING A VERTICAL SPORTS FACILITY IN A DENSIFIED CITY CENTER, IN ORDER TO INTENSIFY THE SOCIAL INTERACTION OF ITS USERS



STACKED LEISURE SPORTS



HORIZONTAL
SPORTS
FACILITY

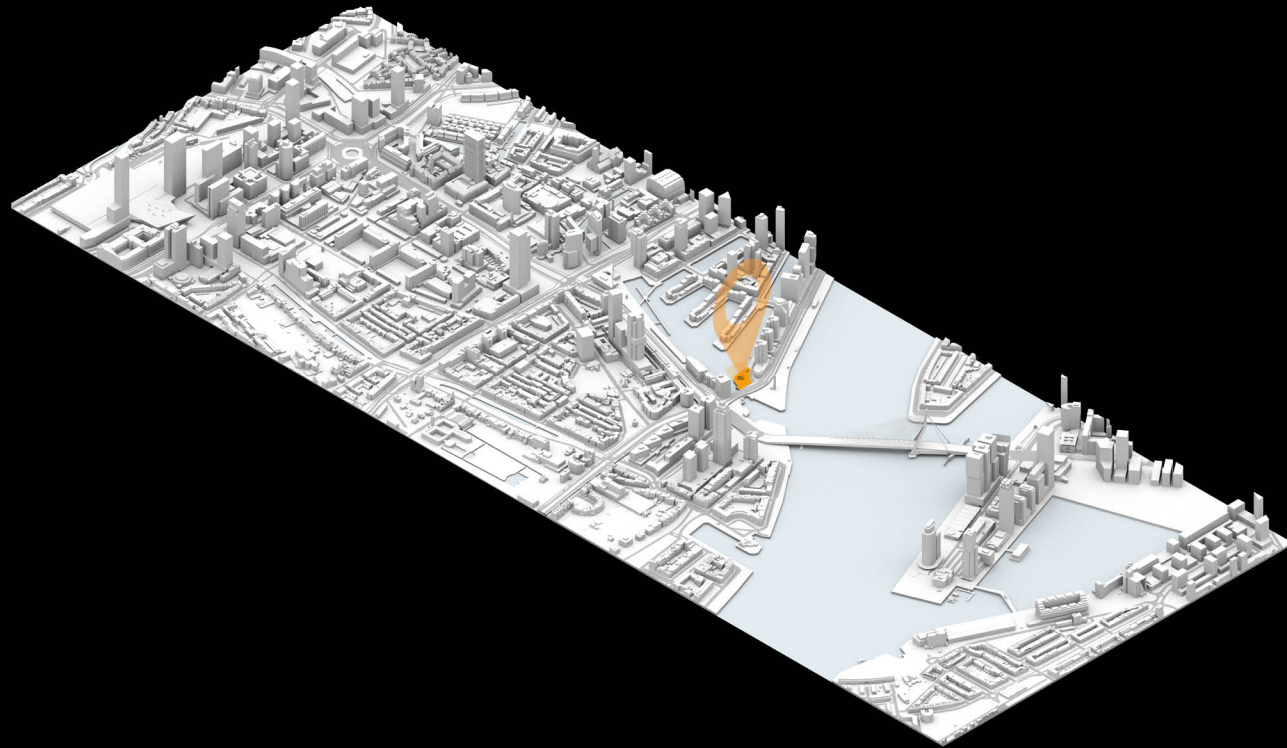
VERTICAL
SPORTS
FACILITY

LOCATION

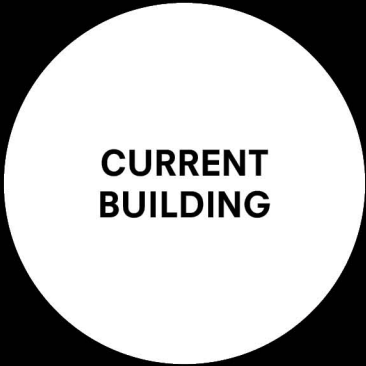
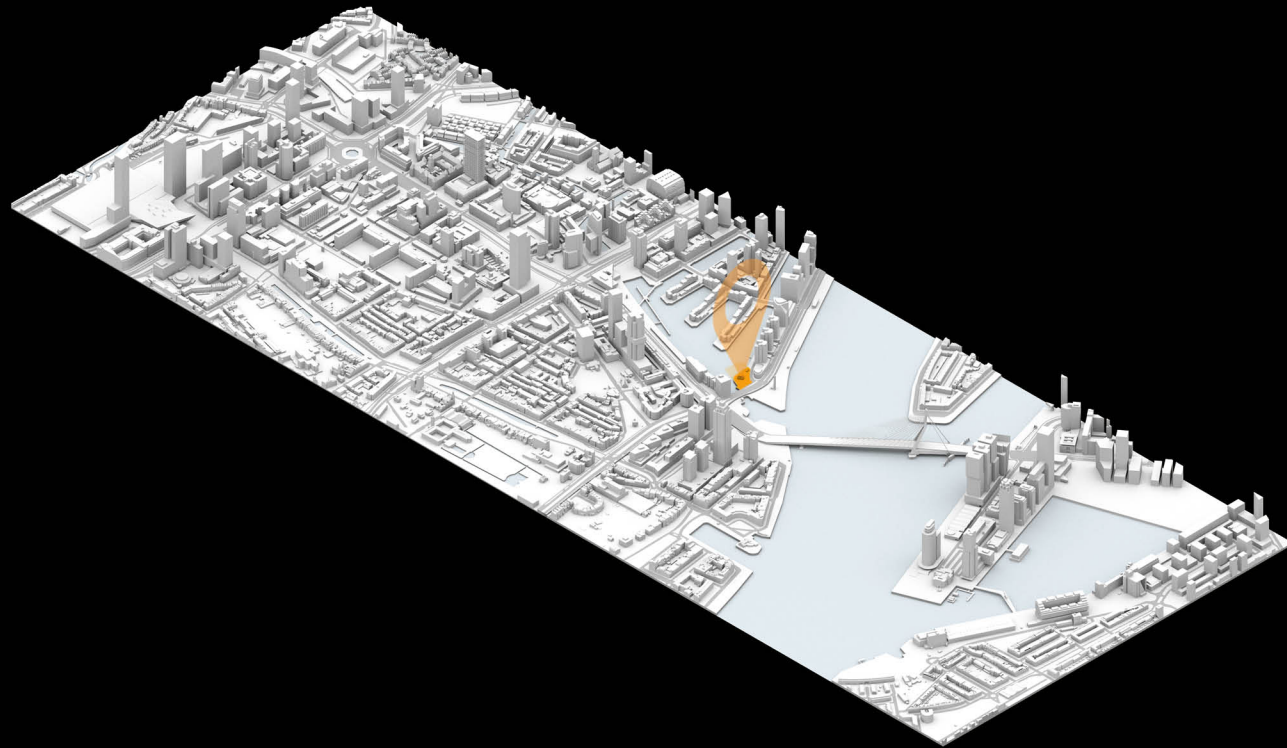


HIGH DENSITY
RESIDENTIAL AREA

LOCATION



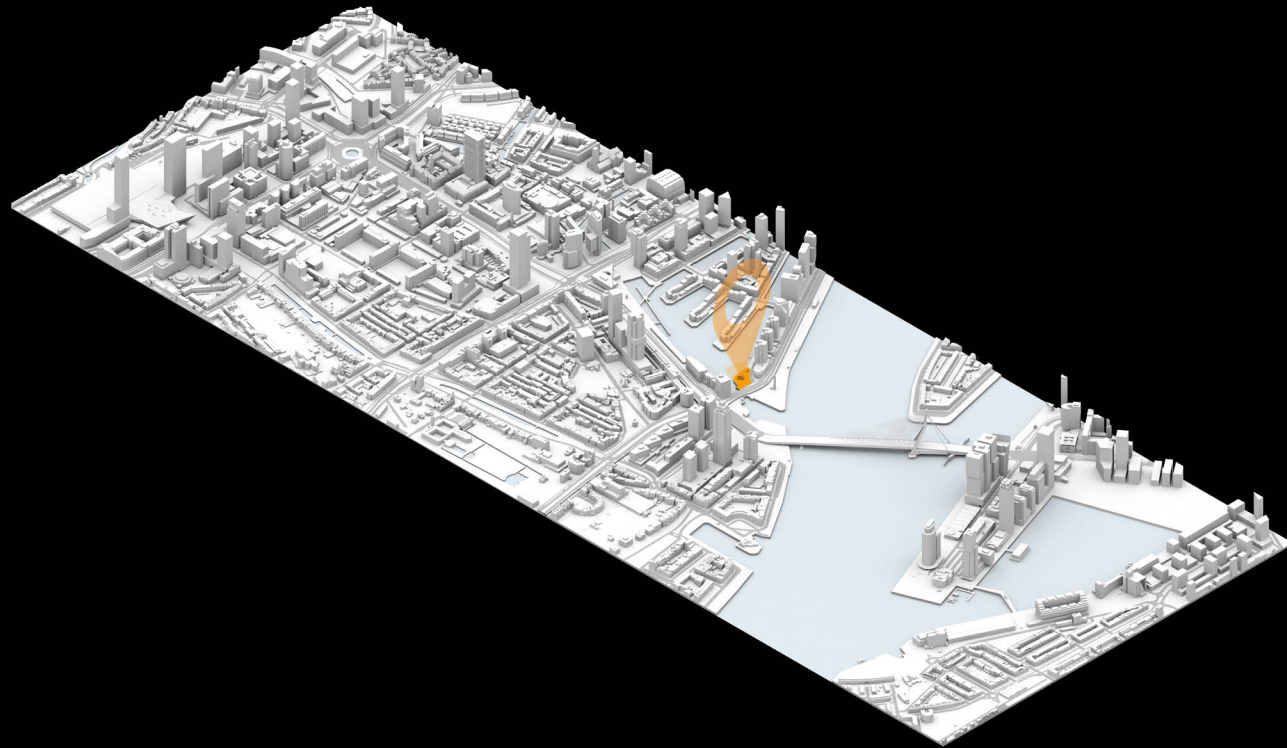
LOCATION



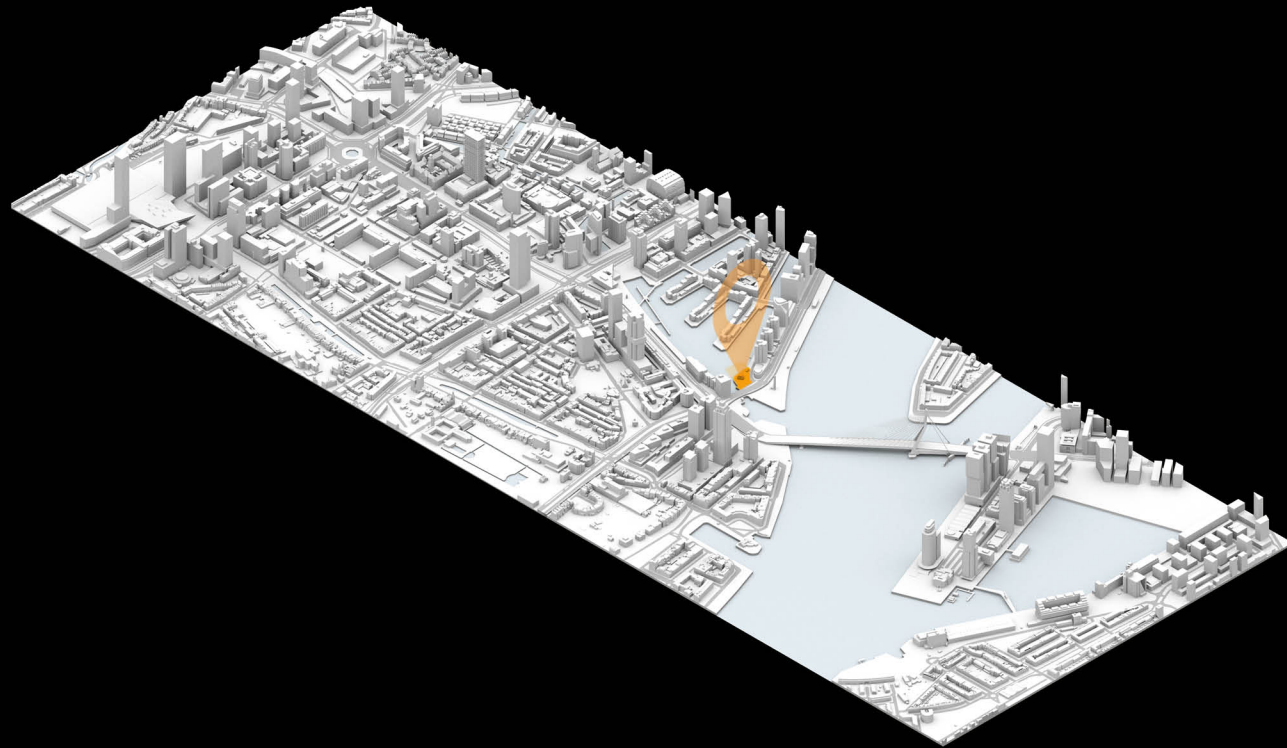
**CURRENT
BUILDING**



LOCATION



LOCATION

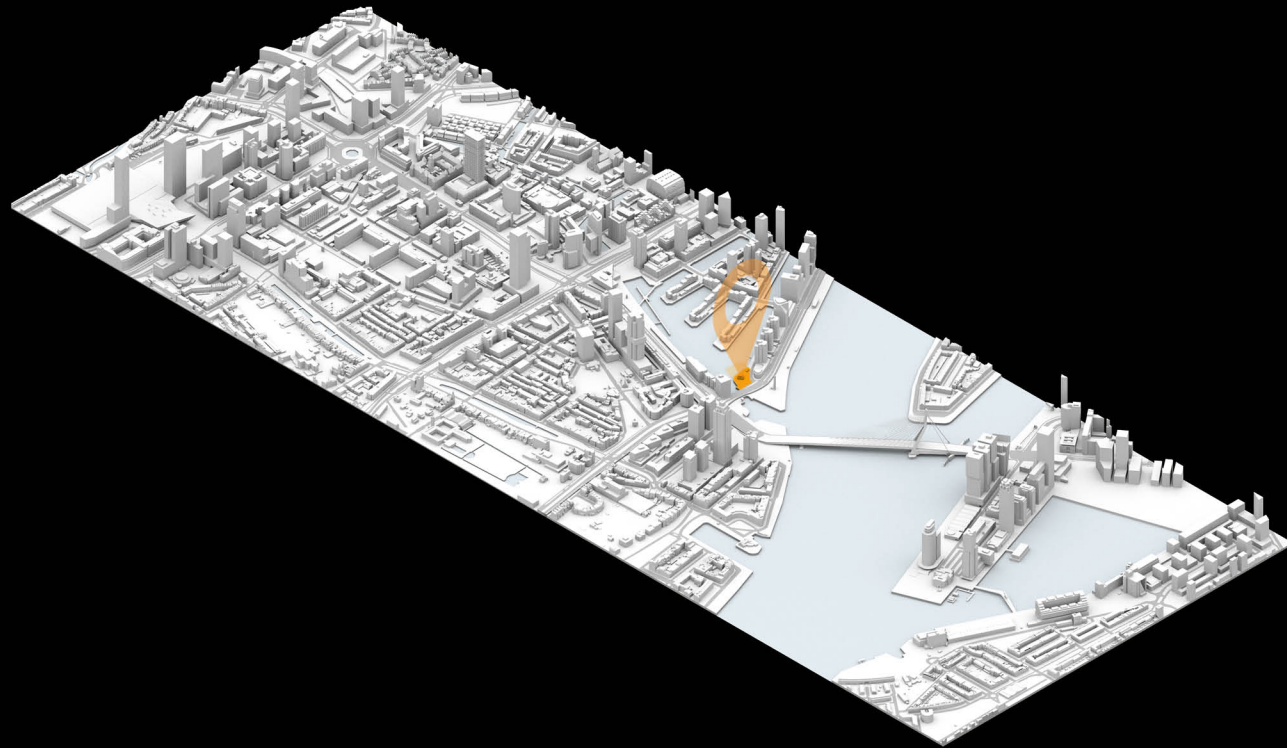


**CURRENT
BUILDING**

**POSSIBILITY
TO DENSIFY**

**ENCLOSING OF
LEUVEHAVEN**

LOCATION



**CURRENT
BUILDING**

**POSSIBILITY
TO DENSIFY**

**ENCLOSING OF
LEUVEHAVEN**

EYECATCHER

TYOLOGY STUDIE



Downtown Athletic Club
1931 - 25.220 m²



New York Athletic Club
1886 - 32.300 m²



Detroit Athletic Club
1915 - 13.400 m²



Remington YMCA
2016 - 9.600 m²



Toronto Central YMCA
1984 - 14.400 m²



Laurier Brantford YMCA
2018 - 11.150 m²



Southern Regional
2013 - 3.300 m²



Beacon of Light Building
2018 - 11.200 m²



Bill R Foster Rec Center
2012 - 10.000 m²



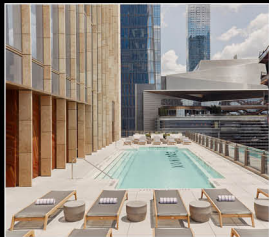
Sportcampus Zuiderpark
2017 - 33.000 m²



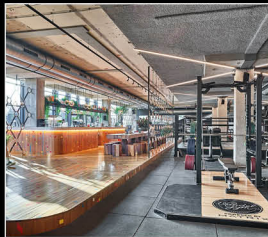
Clubhuis Varkenoord
2017 - 3.300 m²



Ronald McDonald Centre
2010 - 6.600 m²



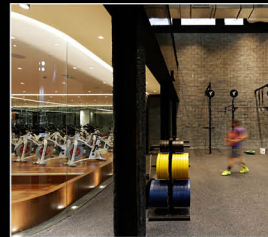
Equinox Hudson Yards
2019 - 5.500 m²



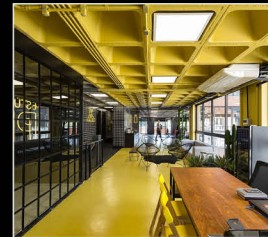
Vondelgym Zuid
2018 - 1.350 m²



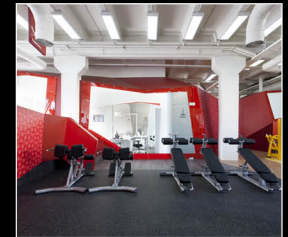
David Lloyd
2001 - 8.000 m²



The Burrow
2015 - 1.500 m²



Estúdio Pretto
2016 - 500 m²



Smena Fitness Club
2014 - 1.300 m²

PROGRAM BAR

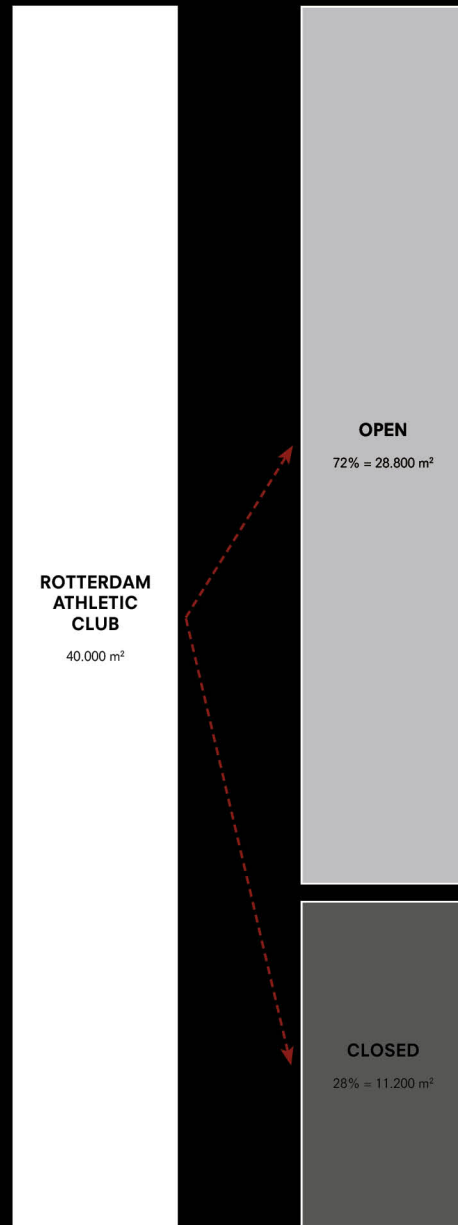


**ROTTERDAM
ATHLETIC
CLUB**

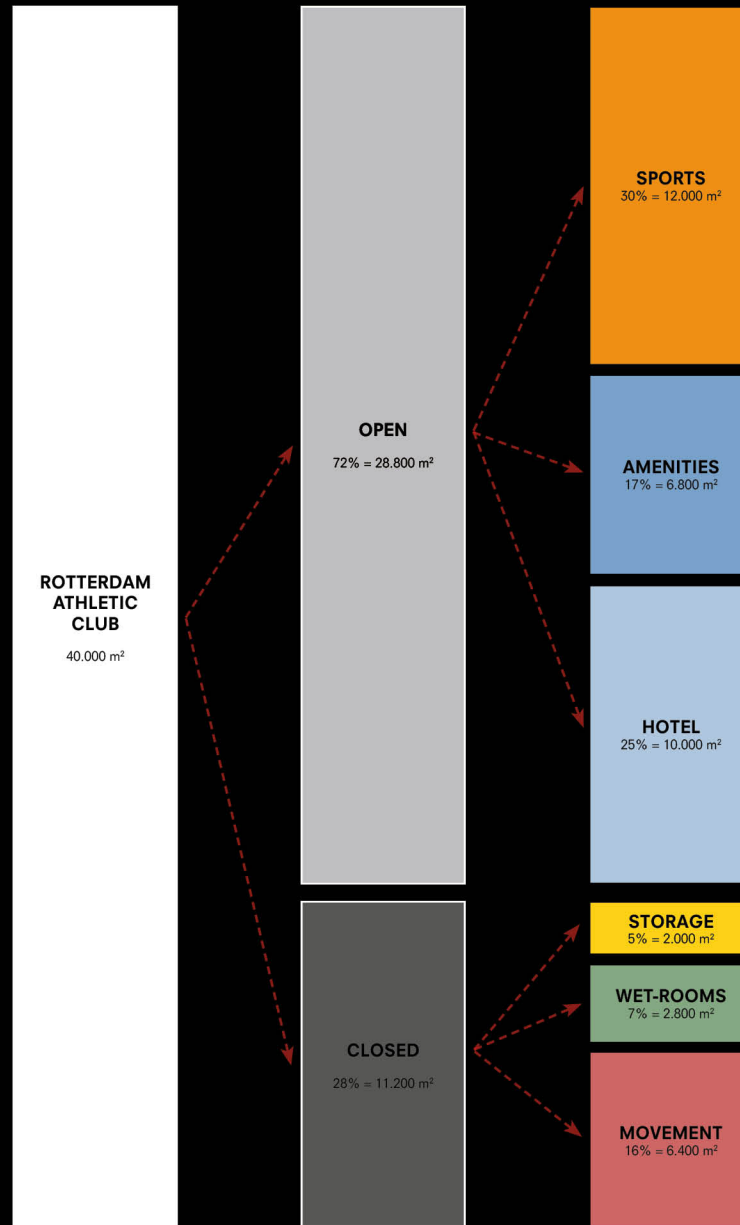
40.000 m²



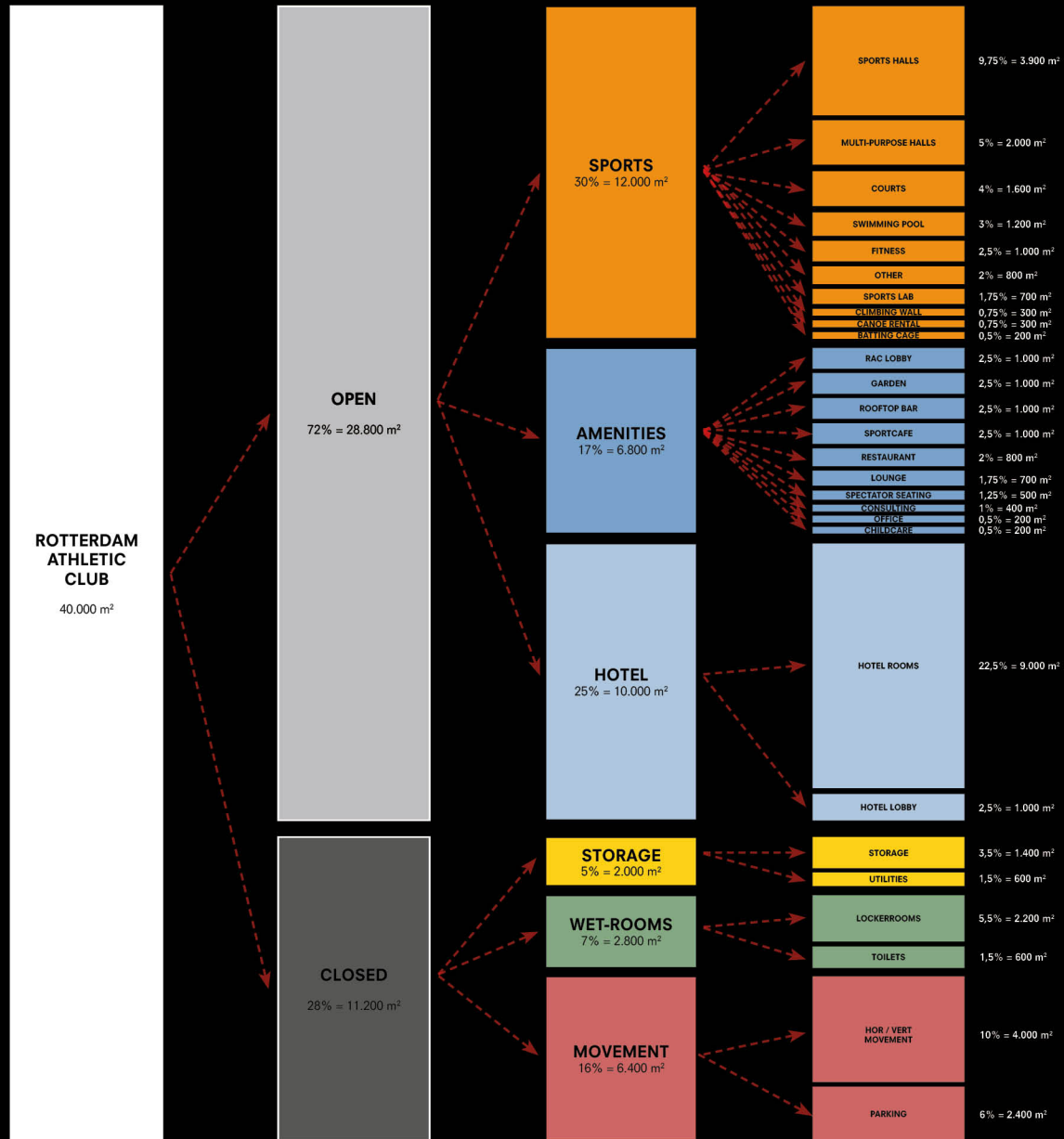
PROGRAM BAR



PROGRAM BAR



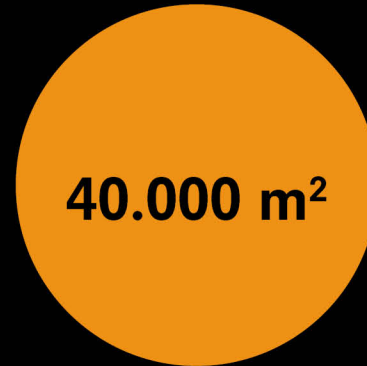
PROGRAM BAR



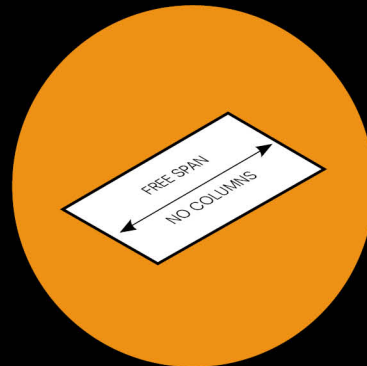
PROGRAM RULES



FIXED FOOTPRINT



FIXED BUILDING SIZE



FREE SPAN
SPORTS HALL



STACKED SPORT
FACILITY

URBAN RULES



HEIGHT DIFFERENCE
OF DIKE



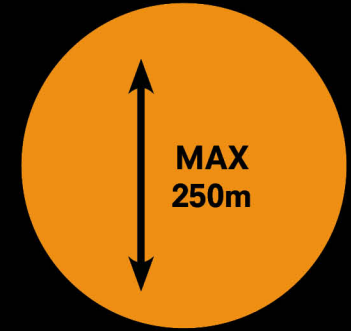
MINIMAL SHADOW
CAST



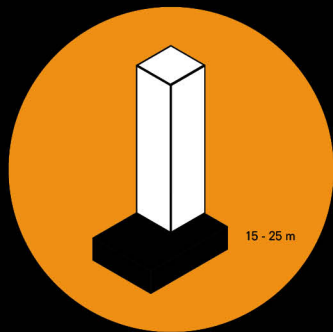
MINIMAL WIND
NUISANCE



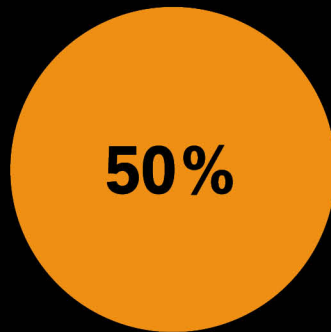
MINIMAL PARKING
NEED



MAX BUILDING
HEIGHT



ROTTERDAMSE
LAYER



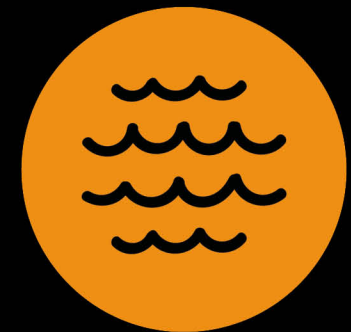
MAX 50%
TOWER



CONTRIBUTE TO
CLIMATE ASPECTS



CONNECTION WITH
NEW AMENITIES



USE OF THE
WATERFRONT

CHARACTER RULES



EXCLUSIVE
FEELING



EYECATCHER



VISIBILITY FROM
INSIDE + OUTSIDE



VISIBLE
STRUCTURE

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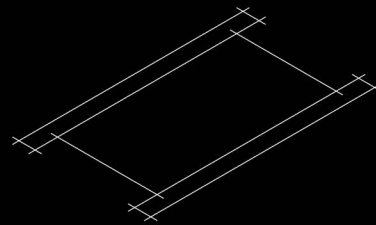
Concept

ROTTERDAM ATHLETIC CLUB



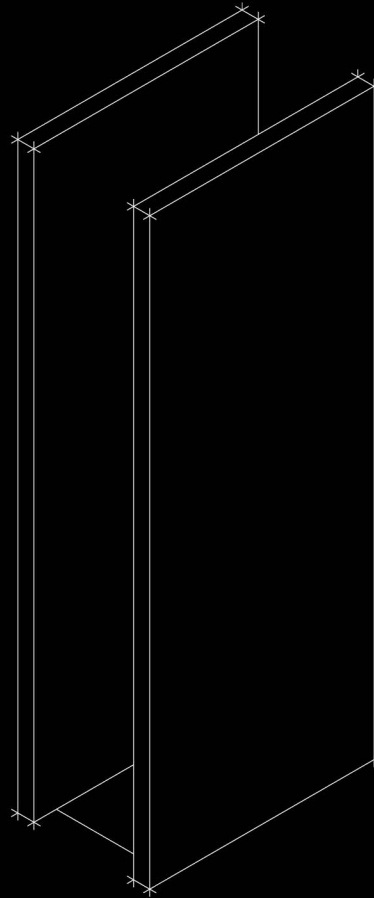
Concept

FOOTPRINT



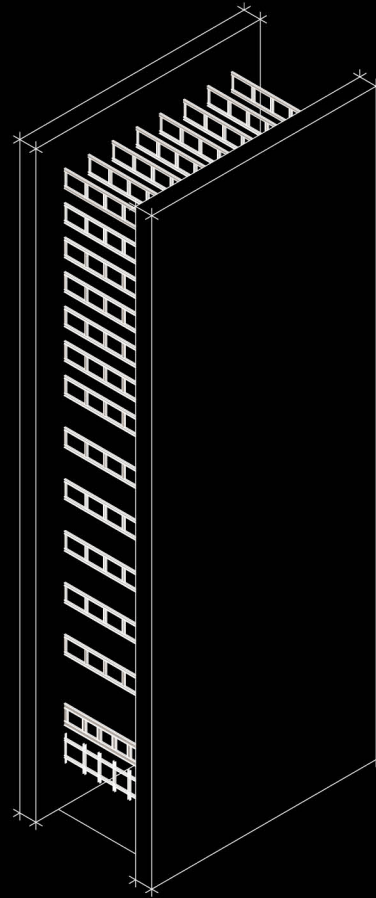
Concept

STRUCTURAL SLABS



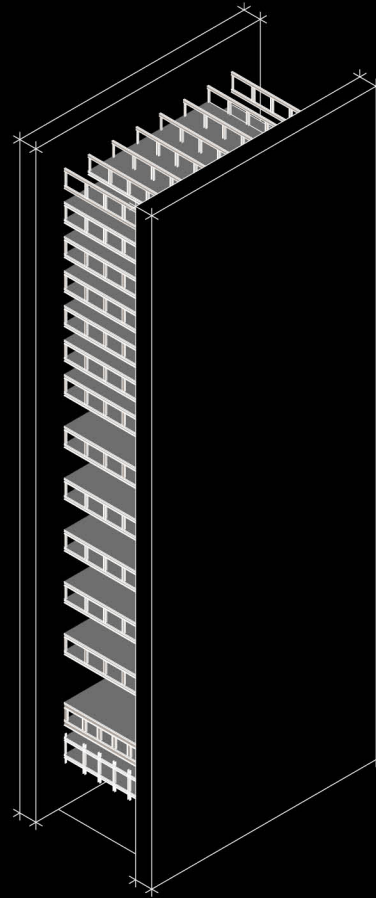
Concept

VIERENDEEL TRUSSES



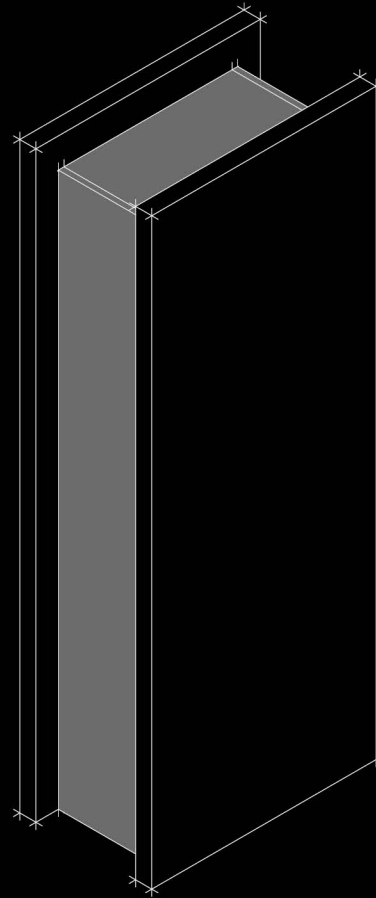
Concept

FLOORS



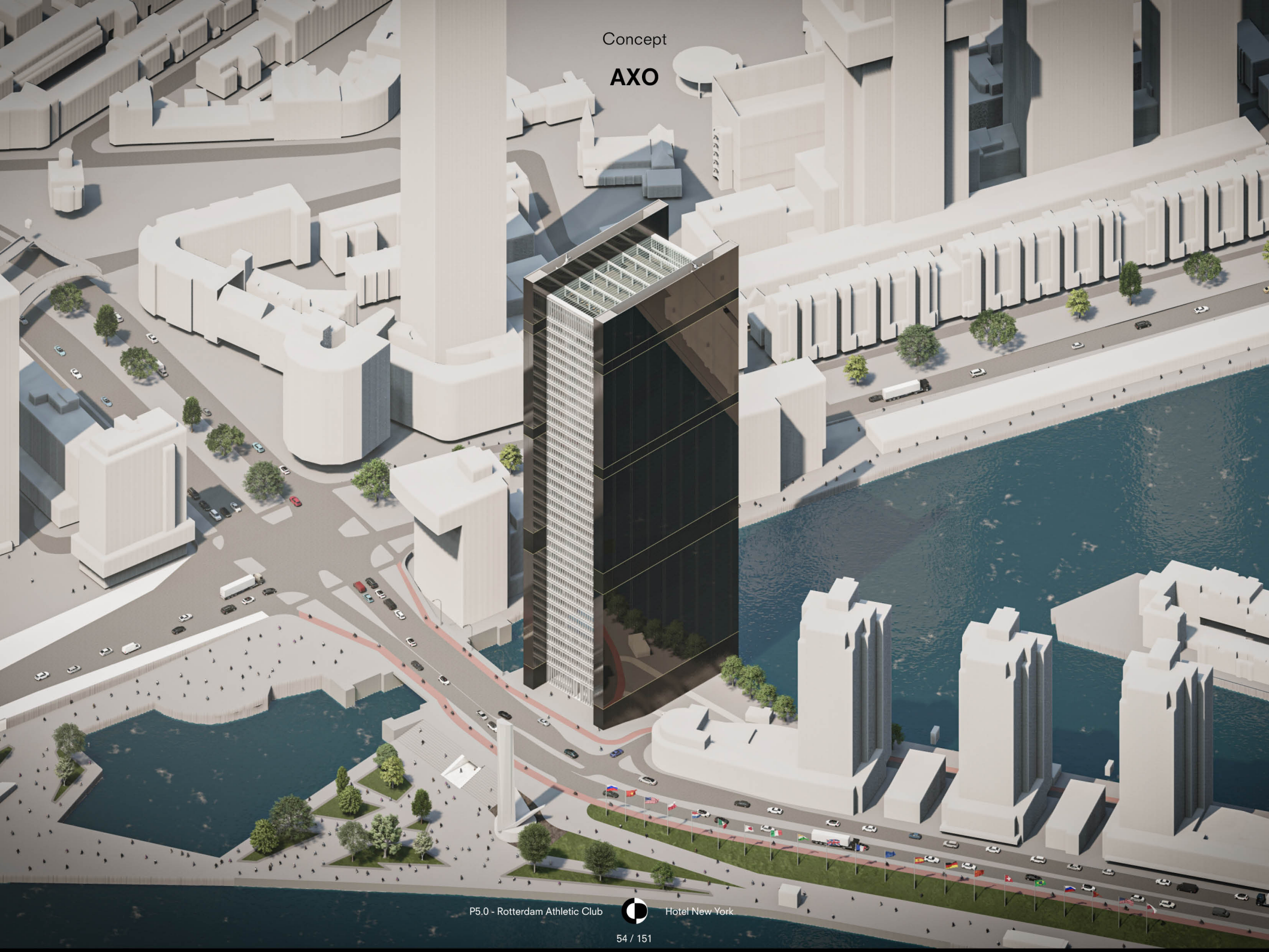
Concept

DOUBLE SKIN FACADE



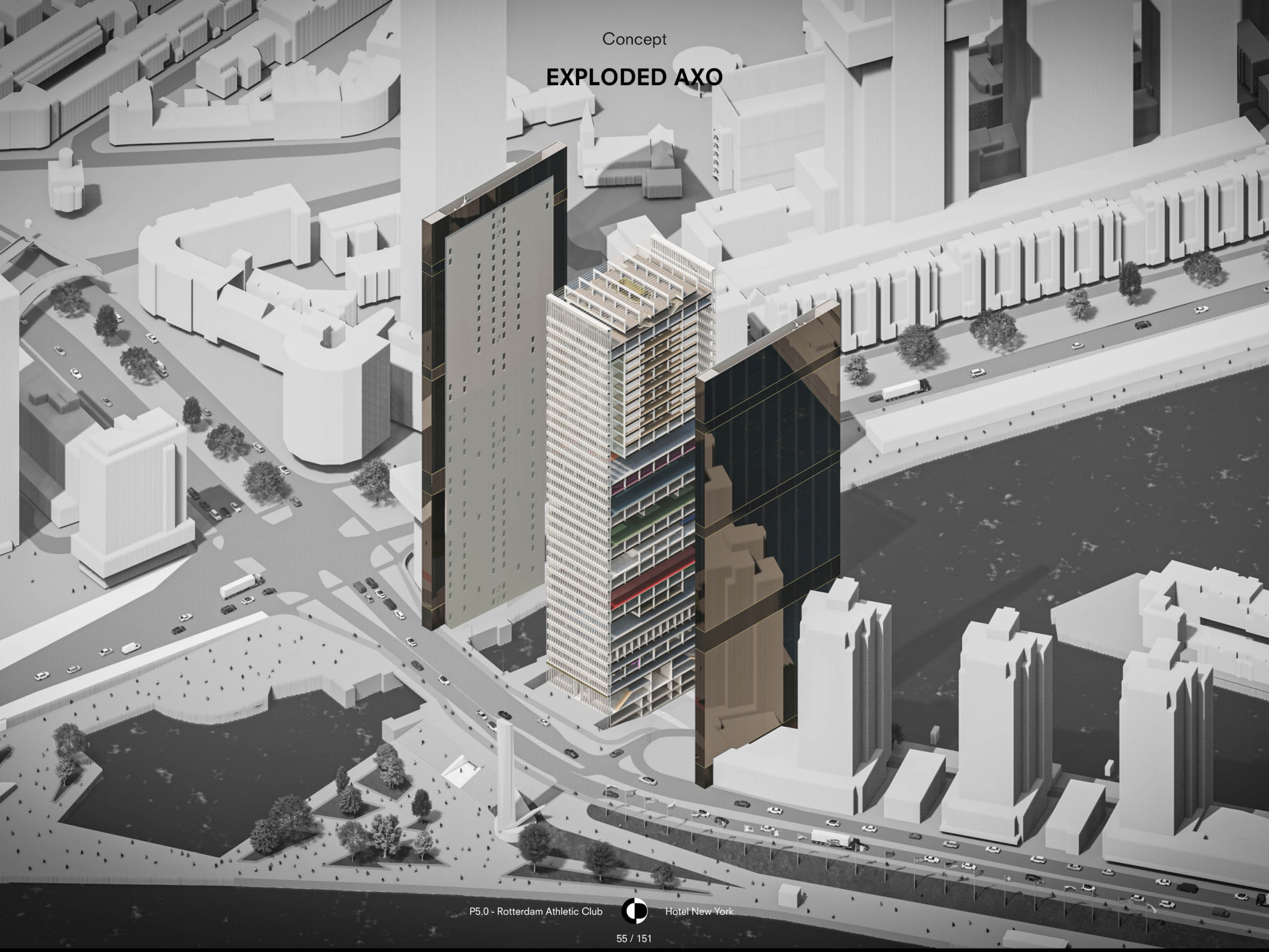
Concept

AXO



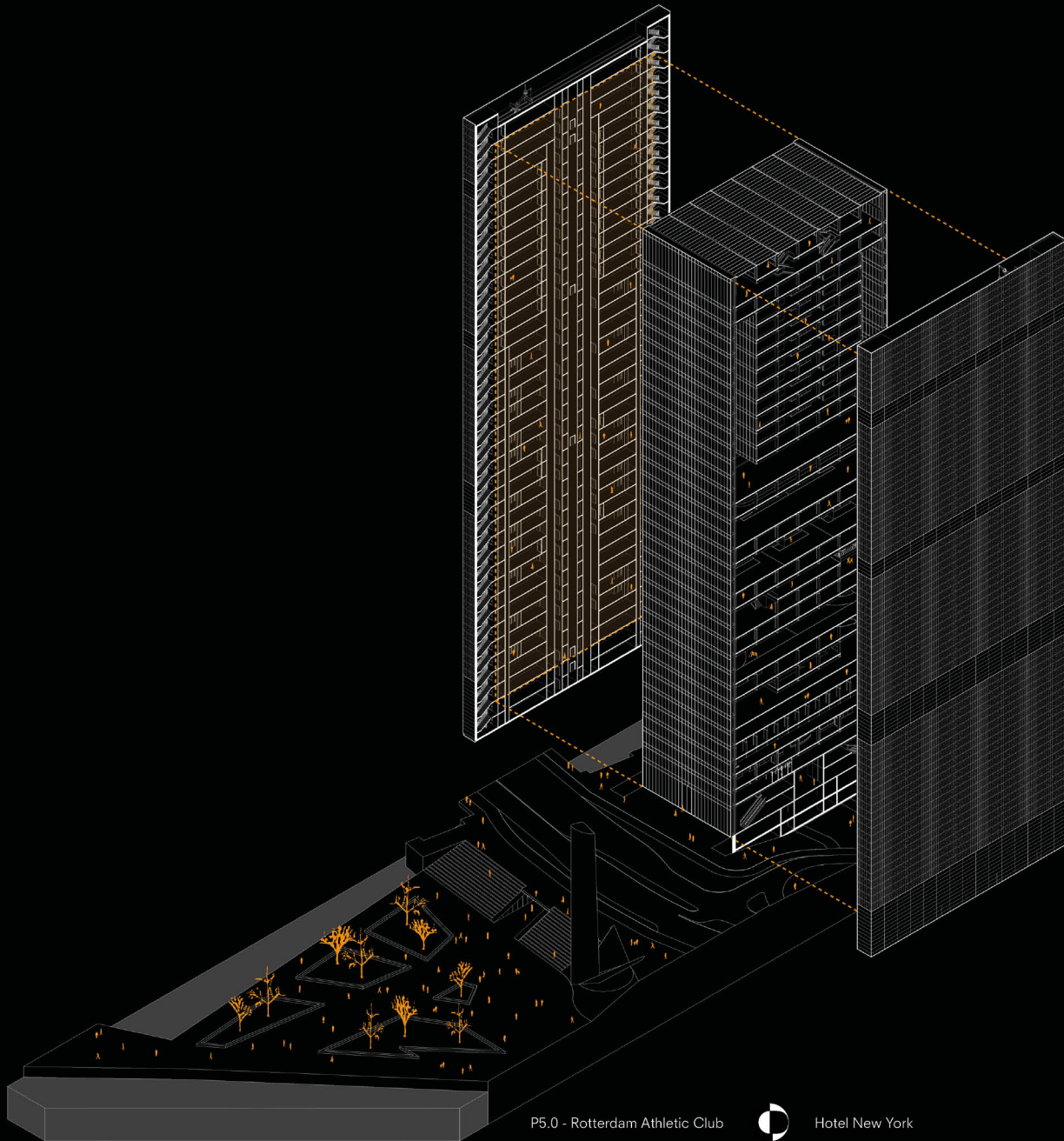
Concept

EXPLODED AXO

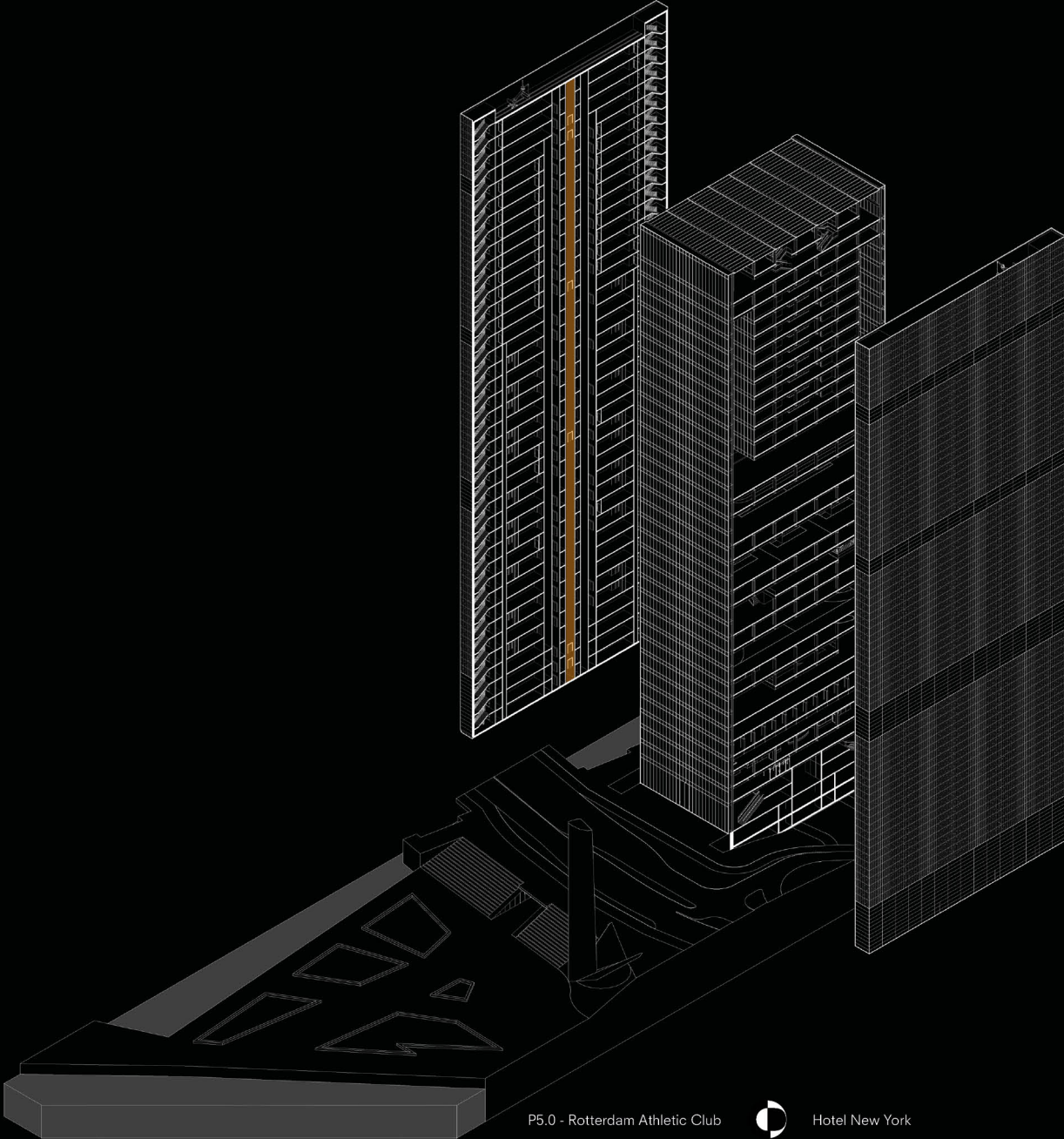


Concept

EXPLODED

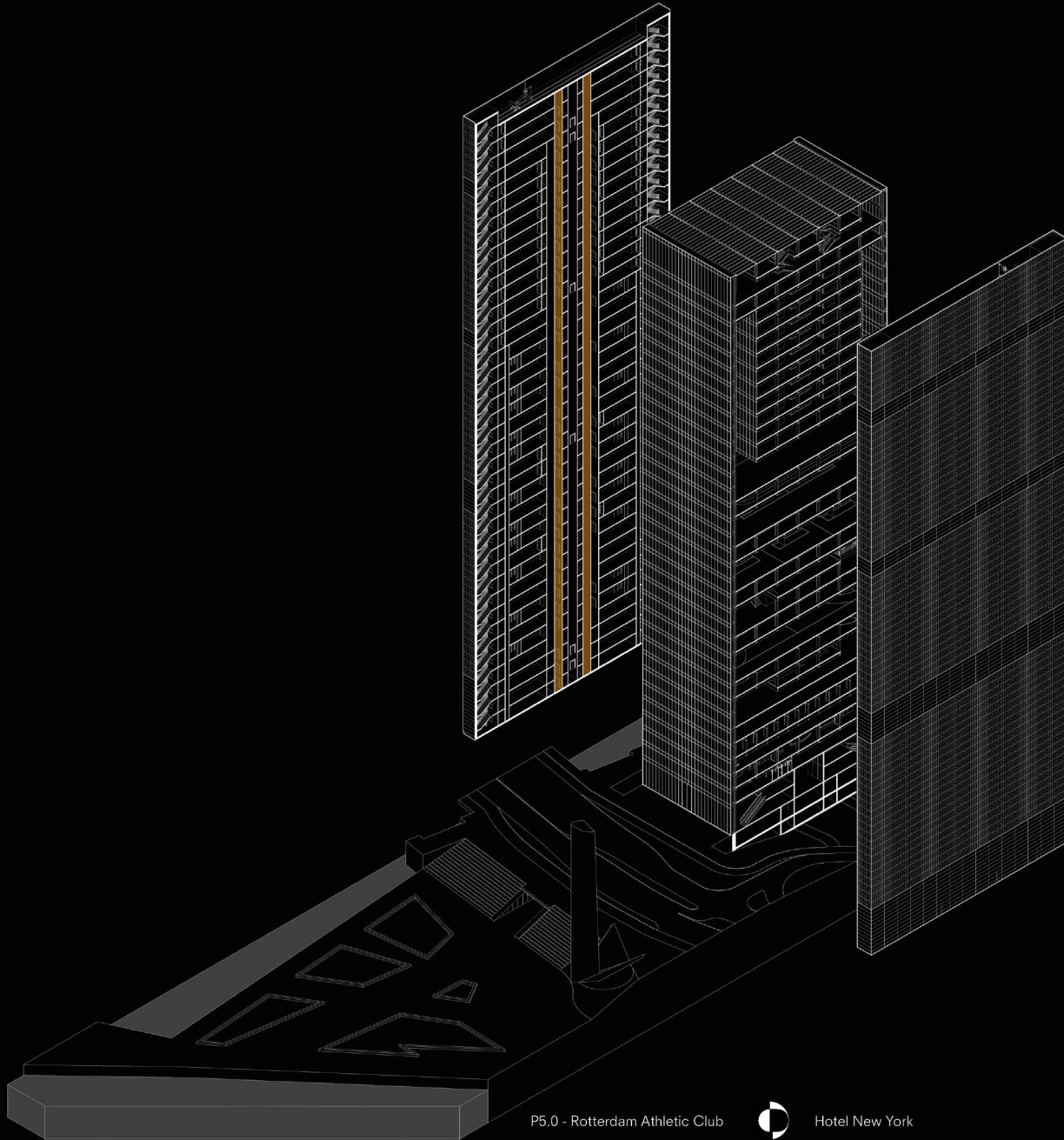


HIGH SPEED ELEVATOR



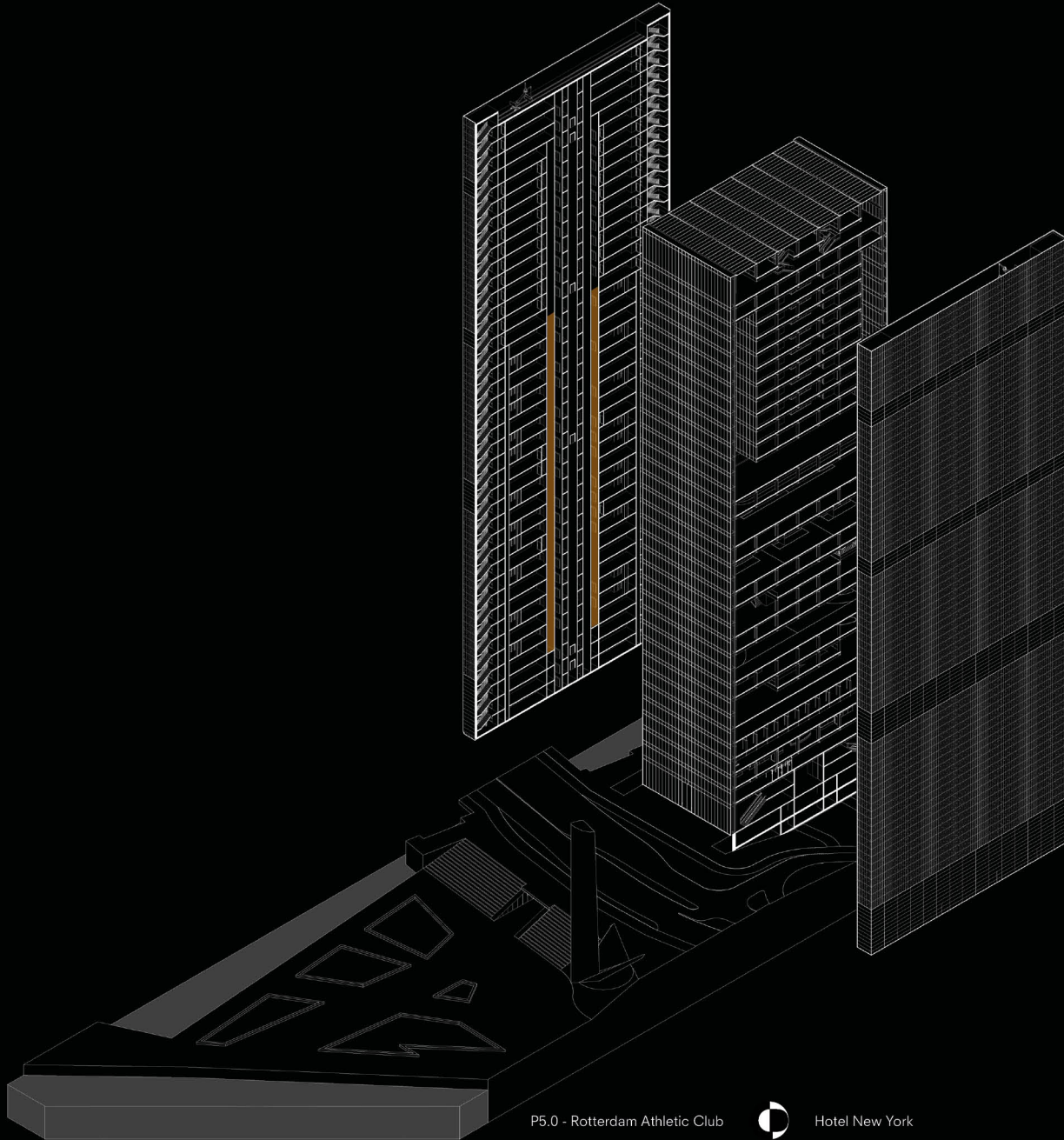
Concept

SERVICE / VISITOR ELEVATORS



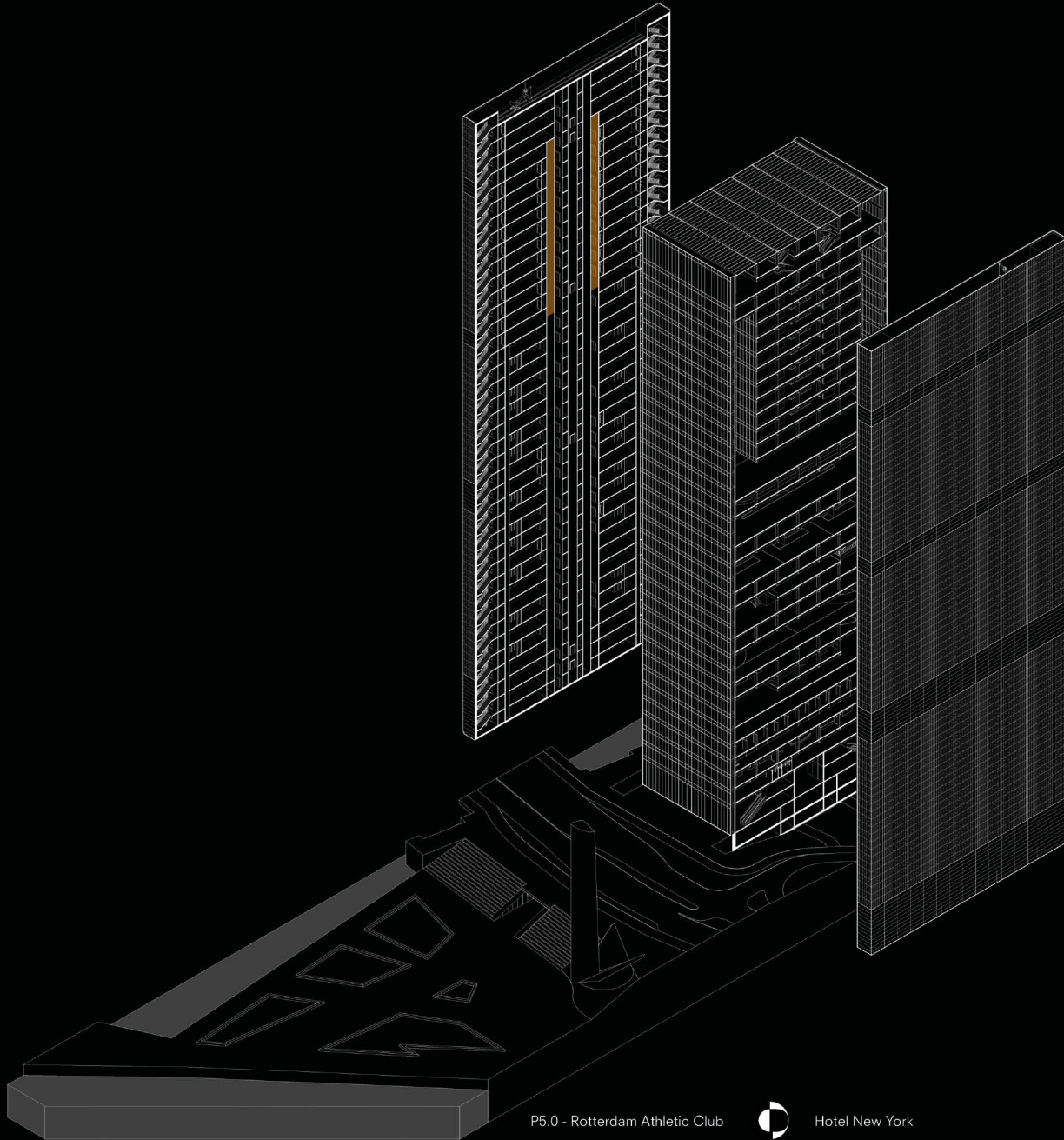
Concept

RAC ELEVATORS

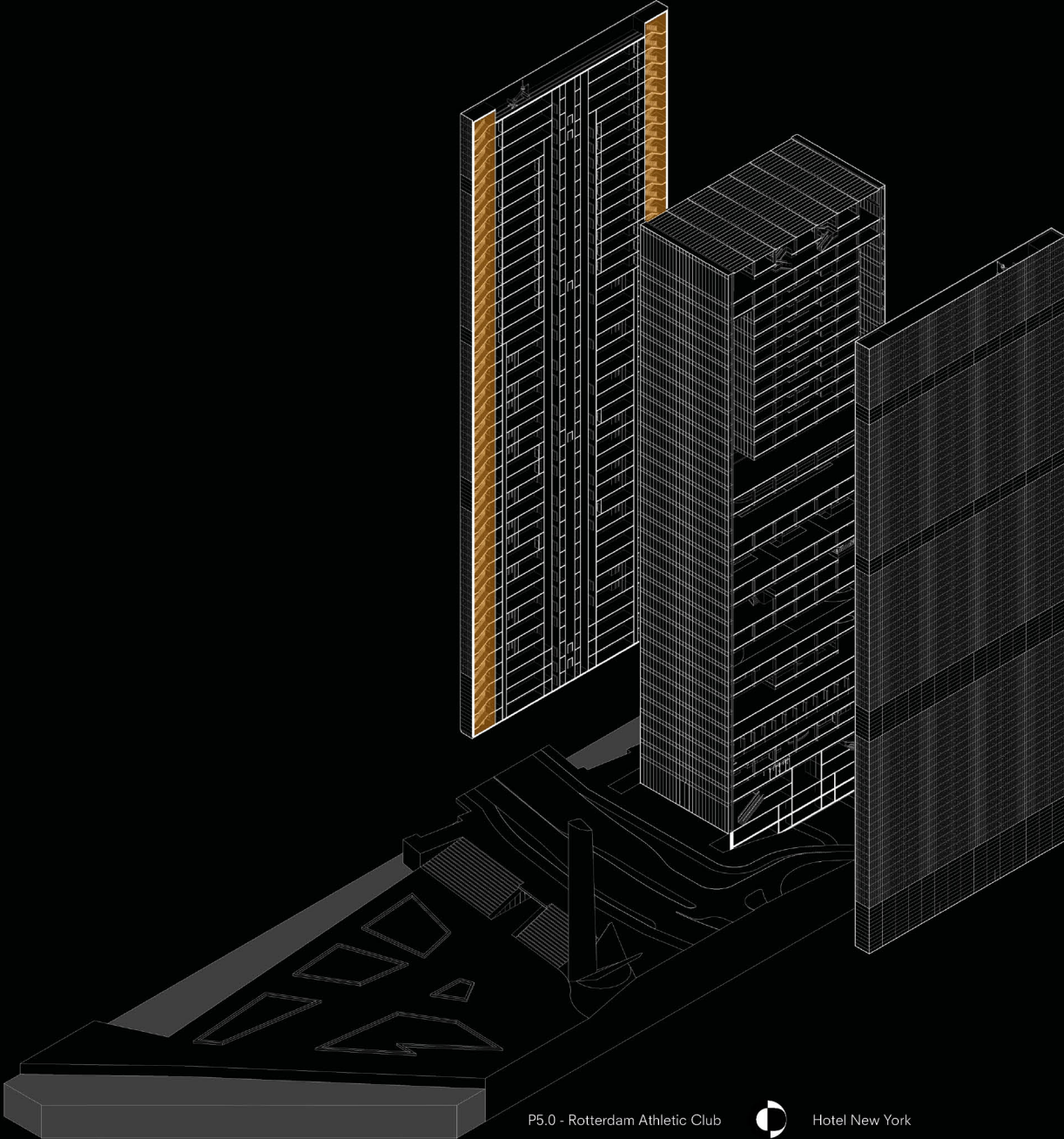


Concept

HOTEL ELEVATORS

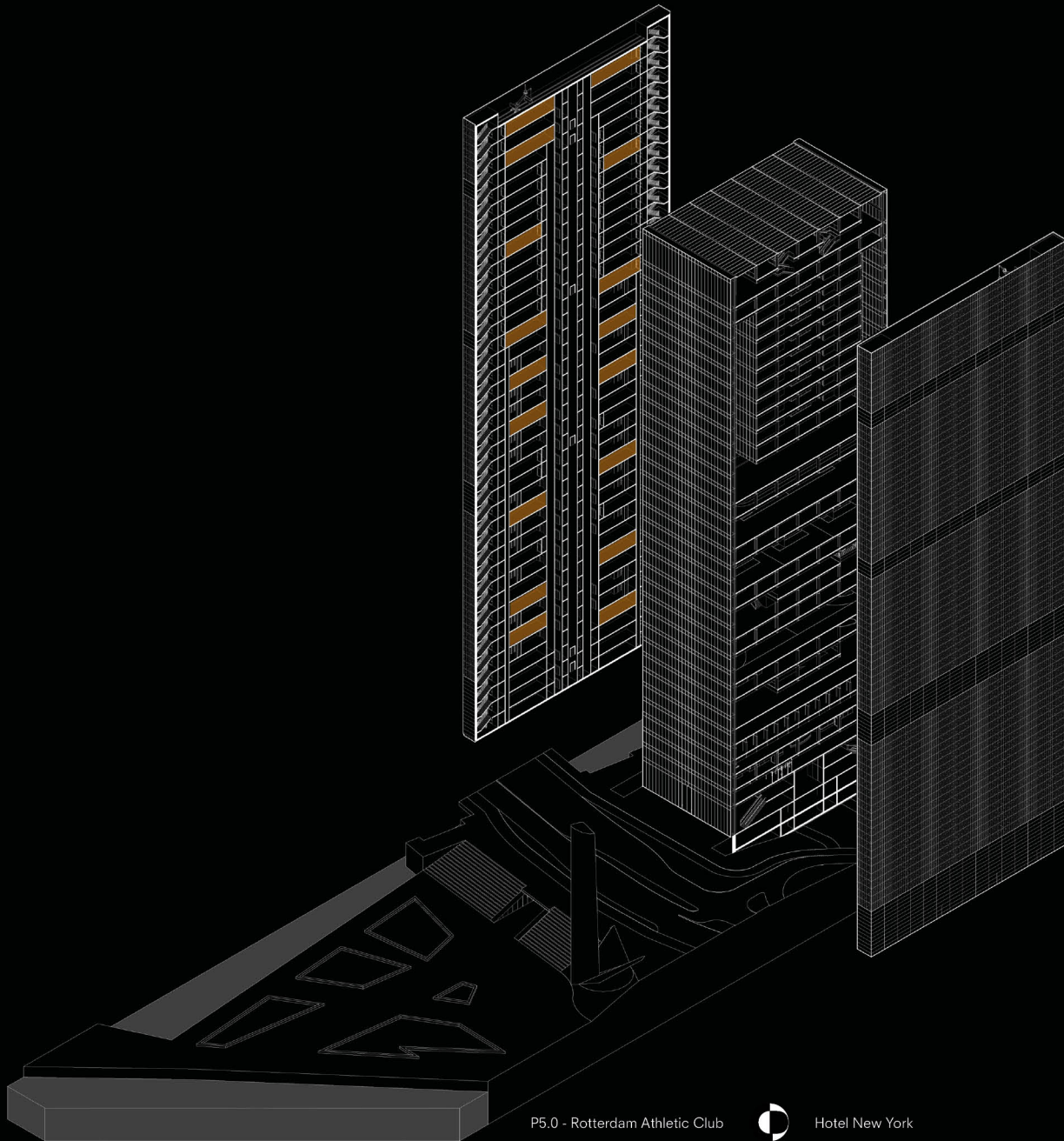


EMERGENCY STAIRS



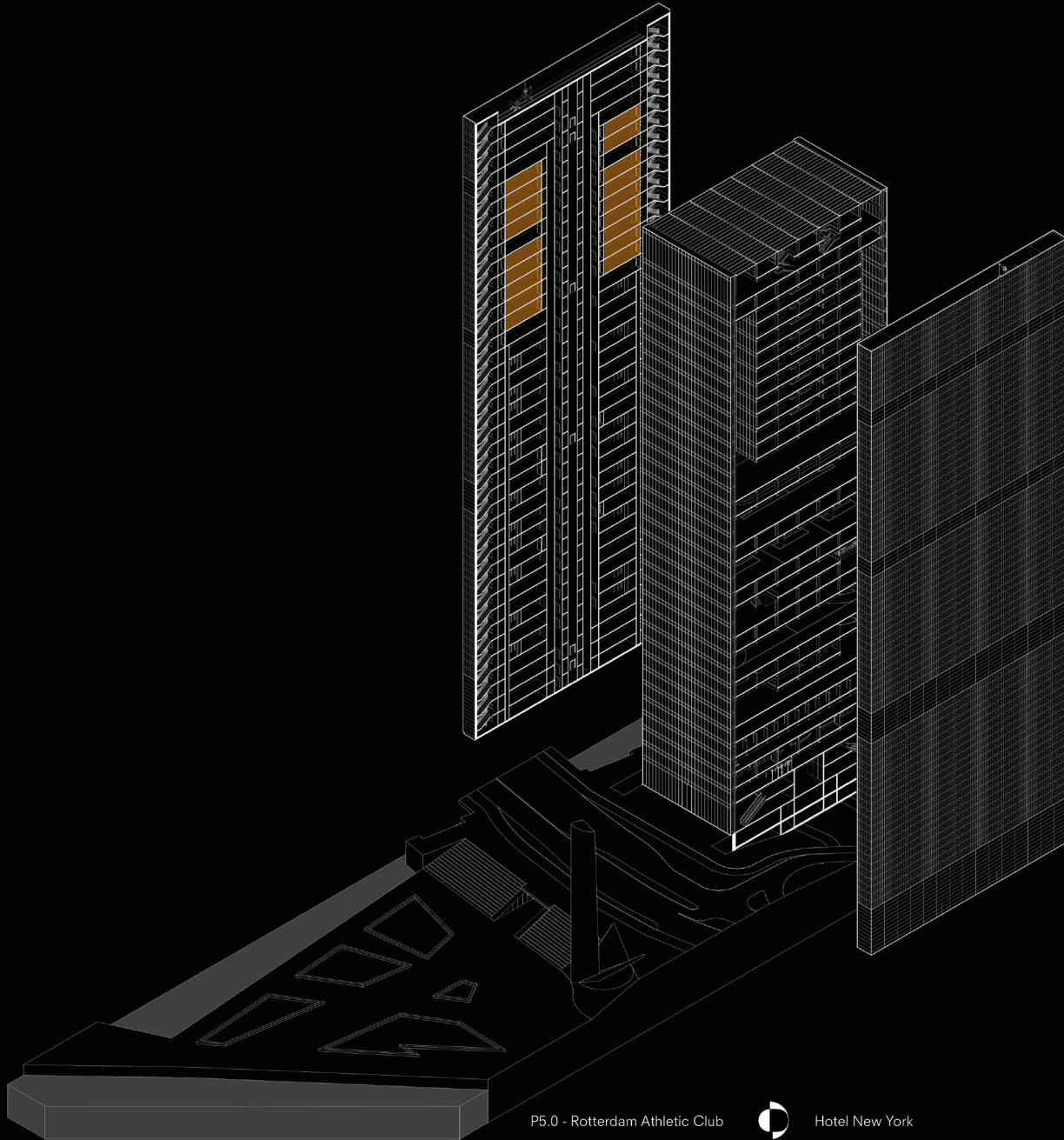
Concept

TECHNICAL



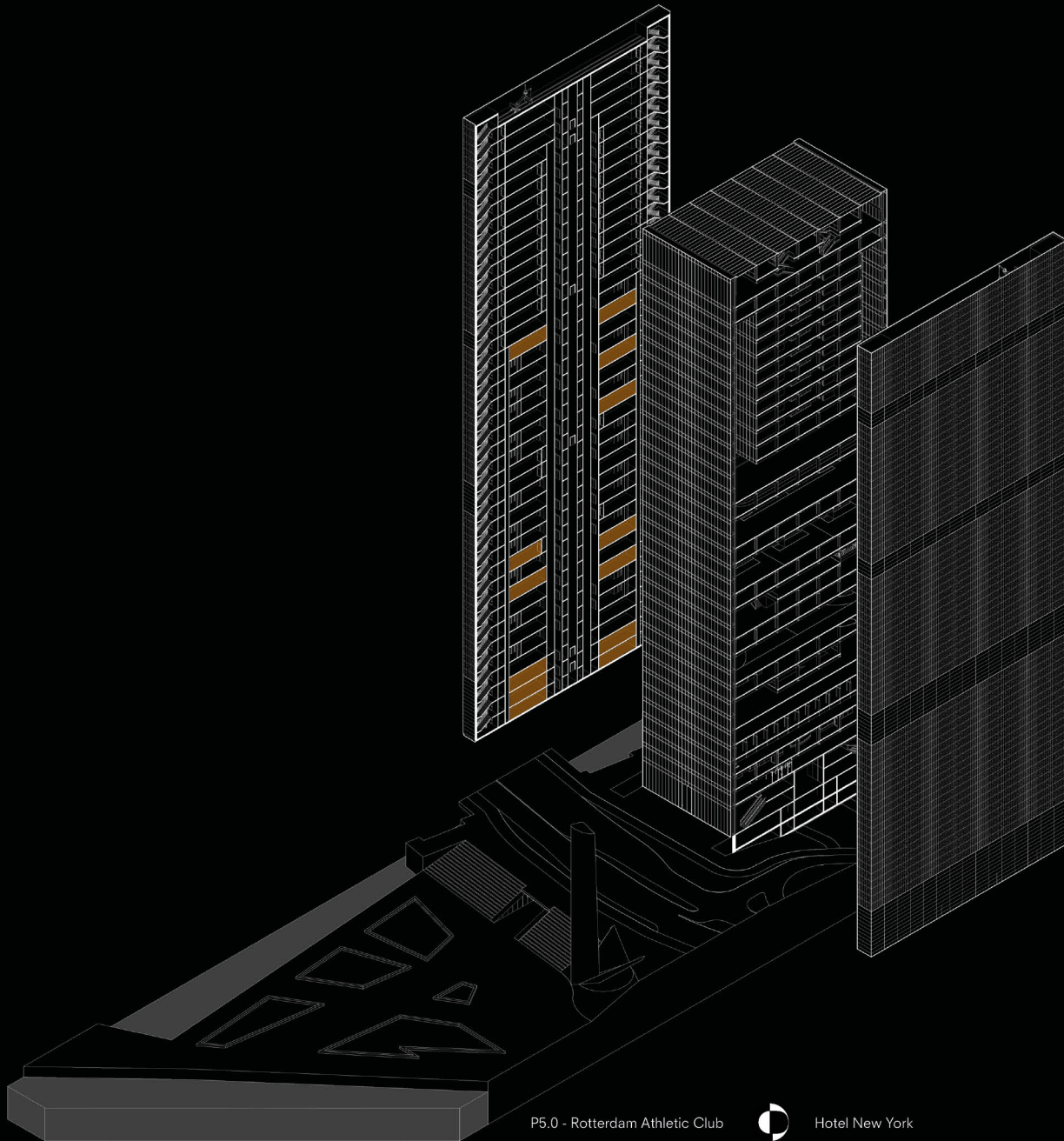
Concept

HOTEL SERVICES



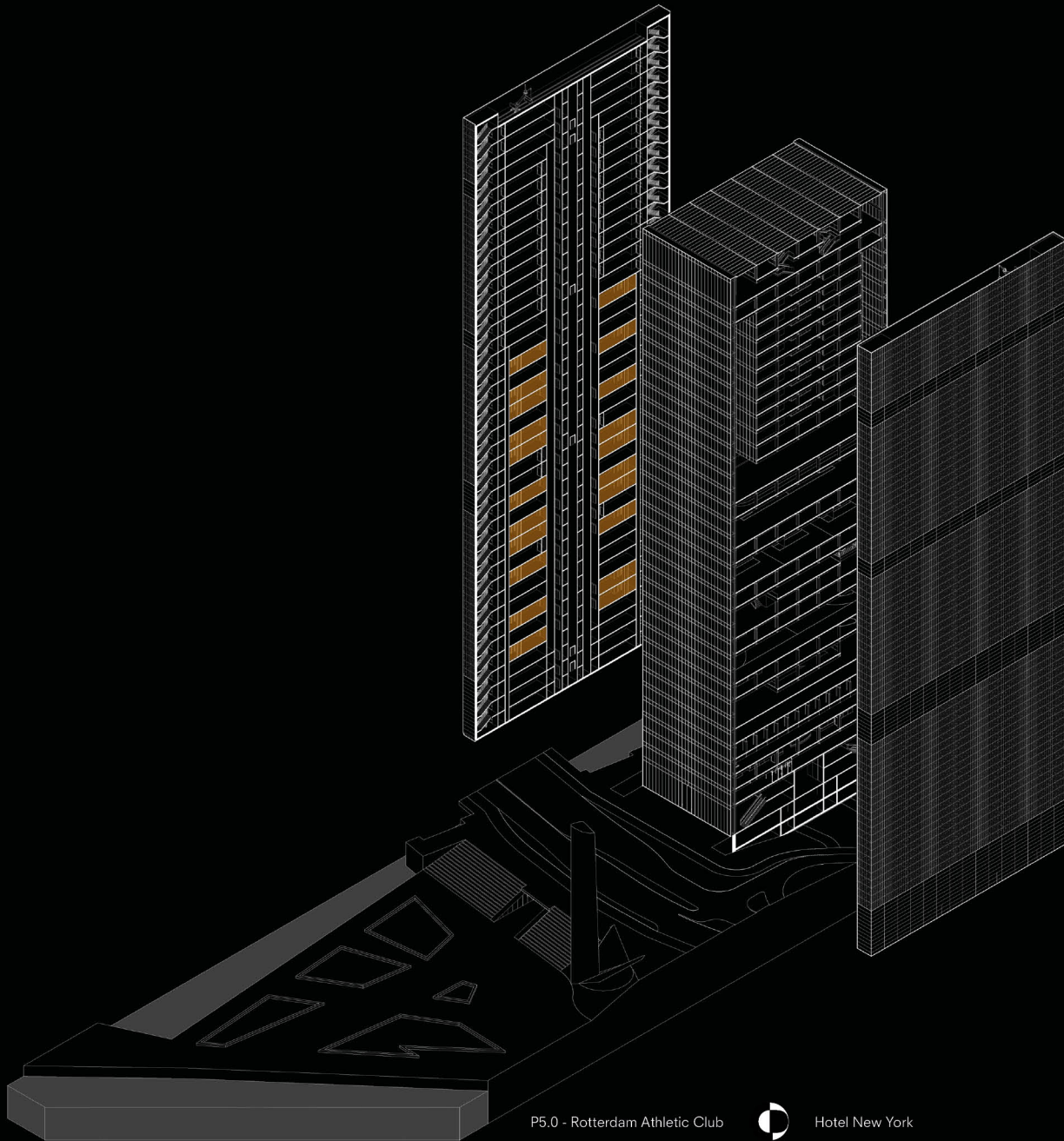
Concept

STORAGE



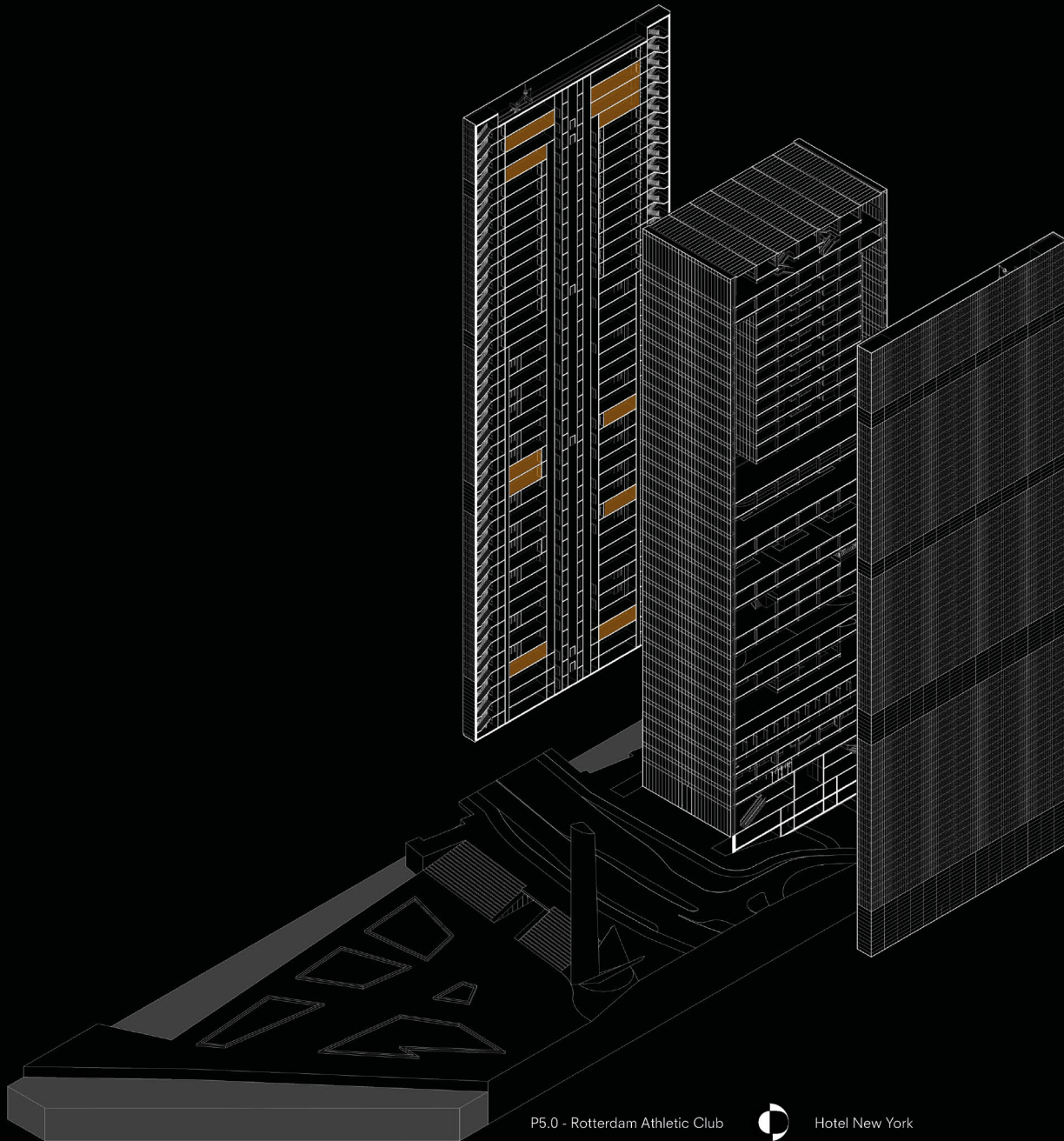
Concept

LOCKERROOMS



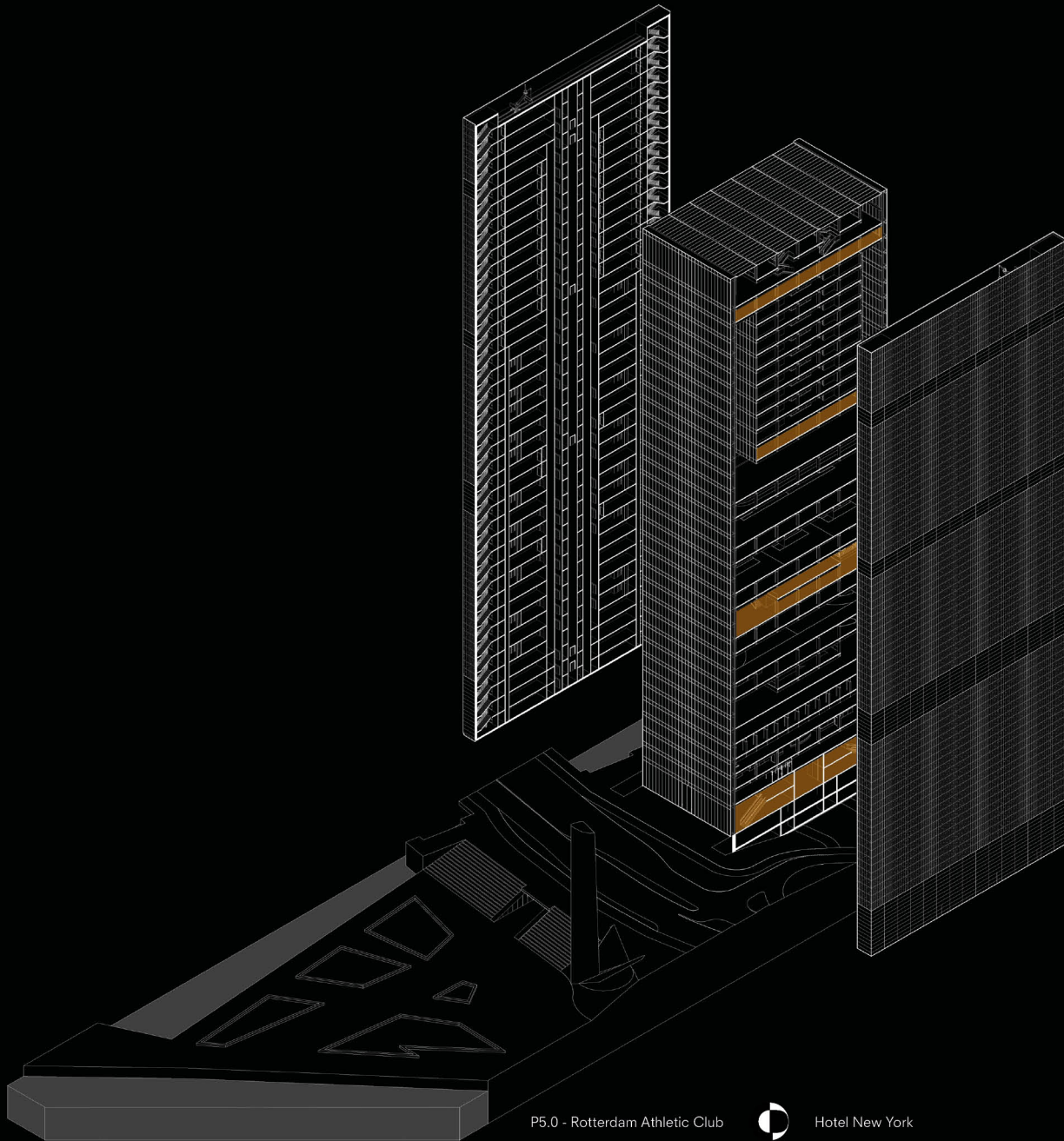
Concept

UTILITIES



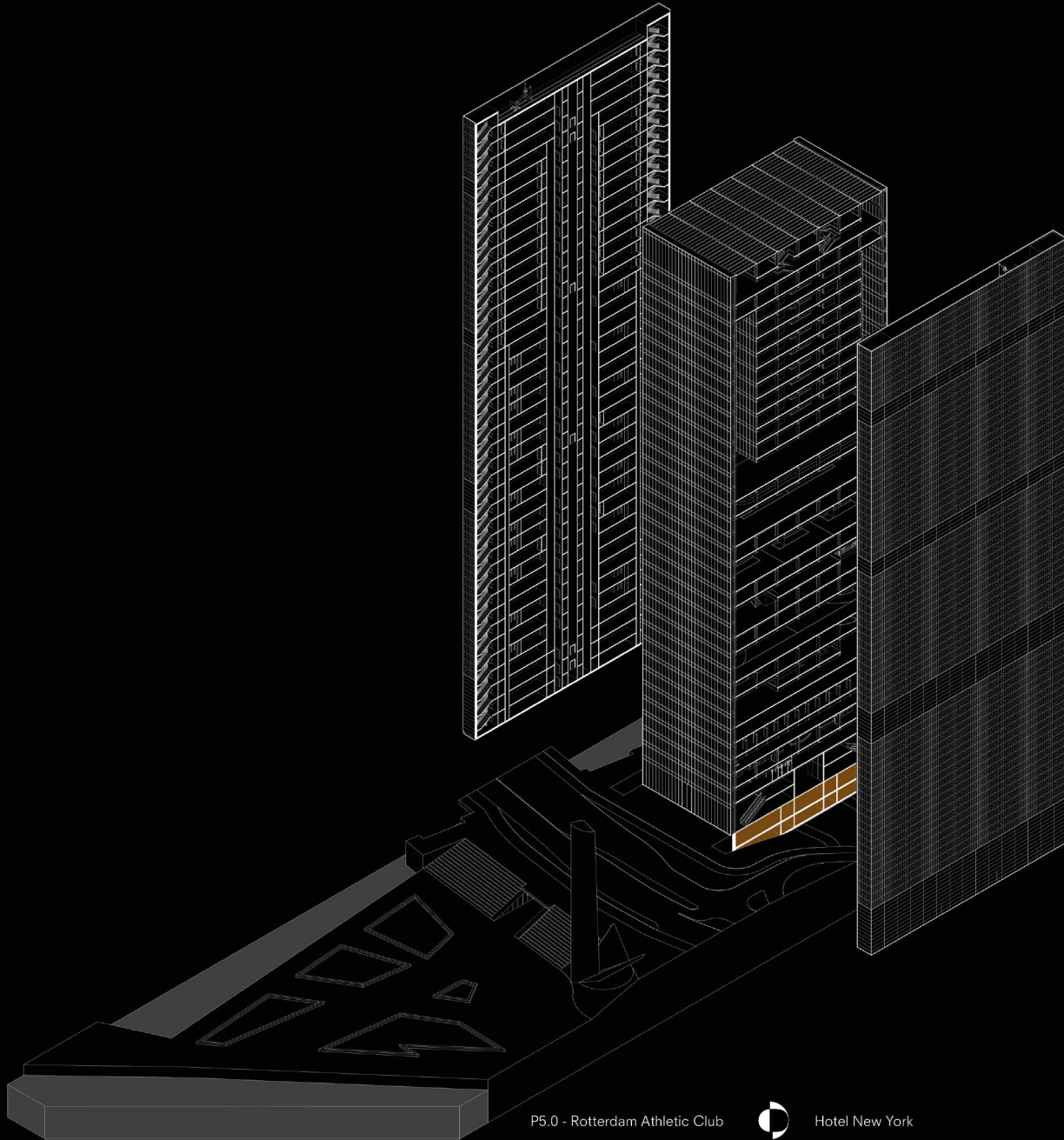
Concept

LOBBY



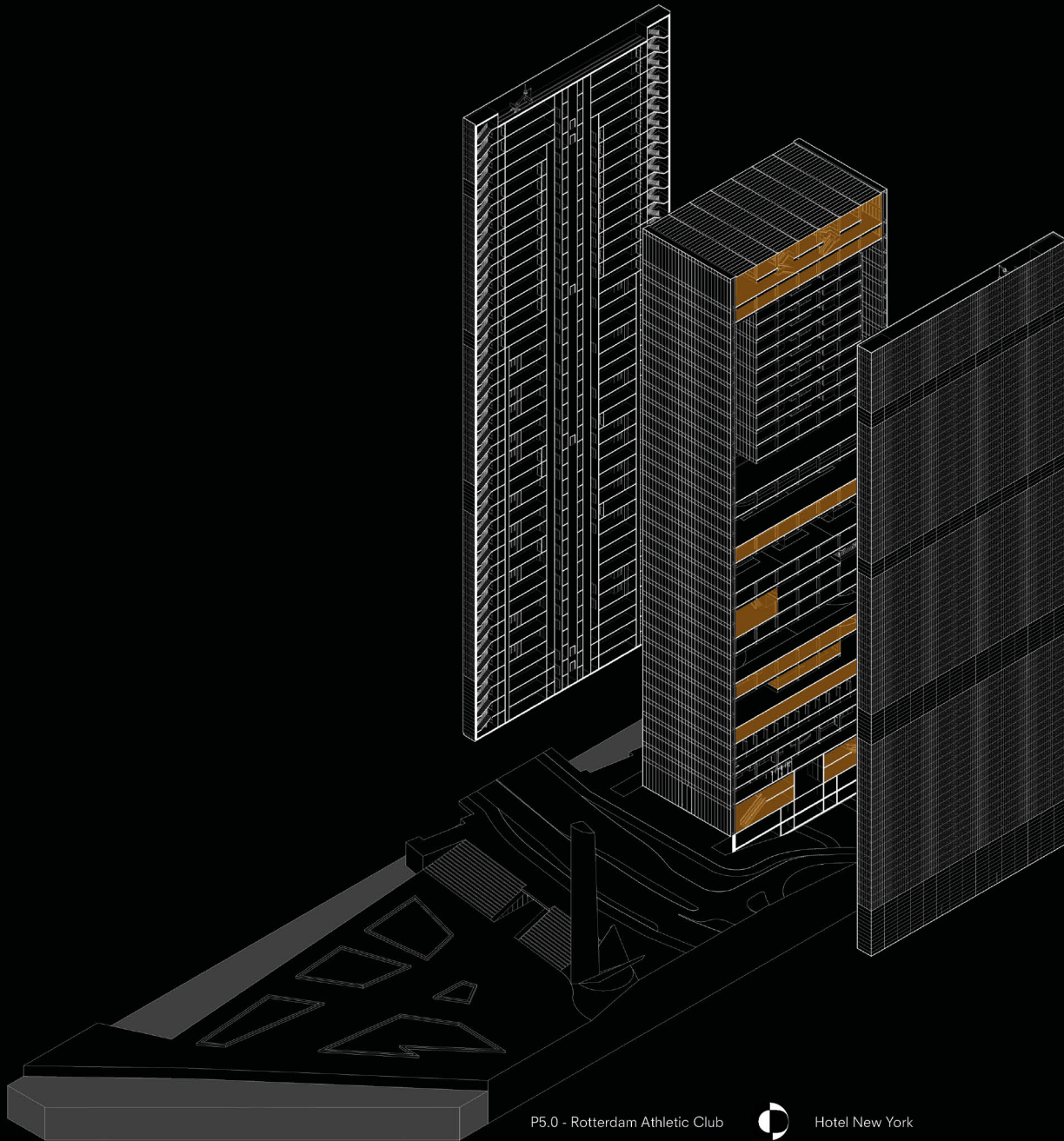
Concept

PARKING



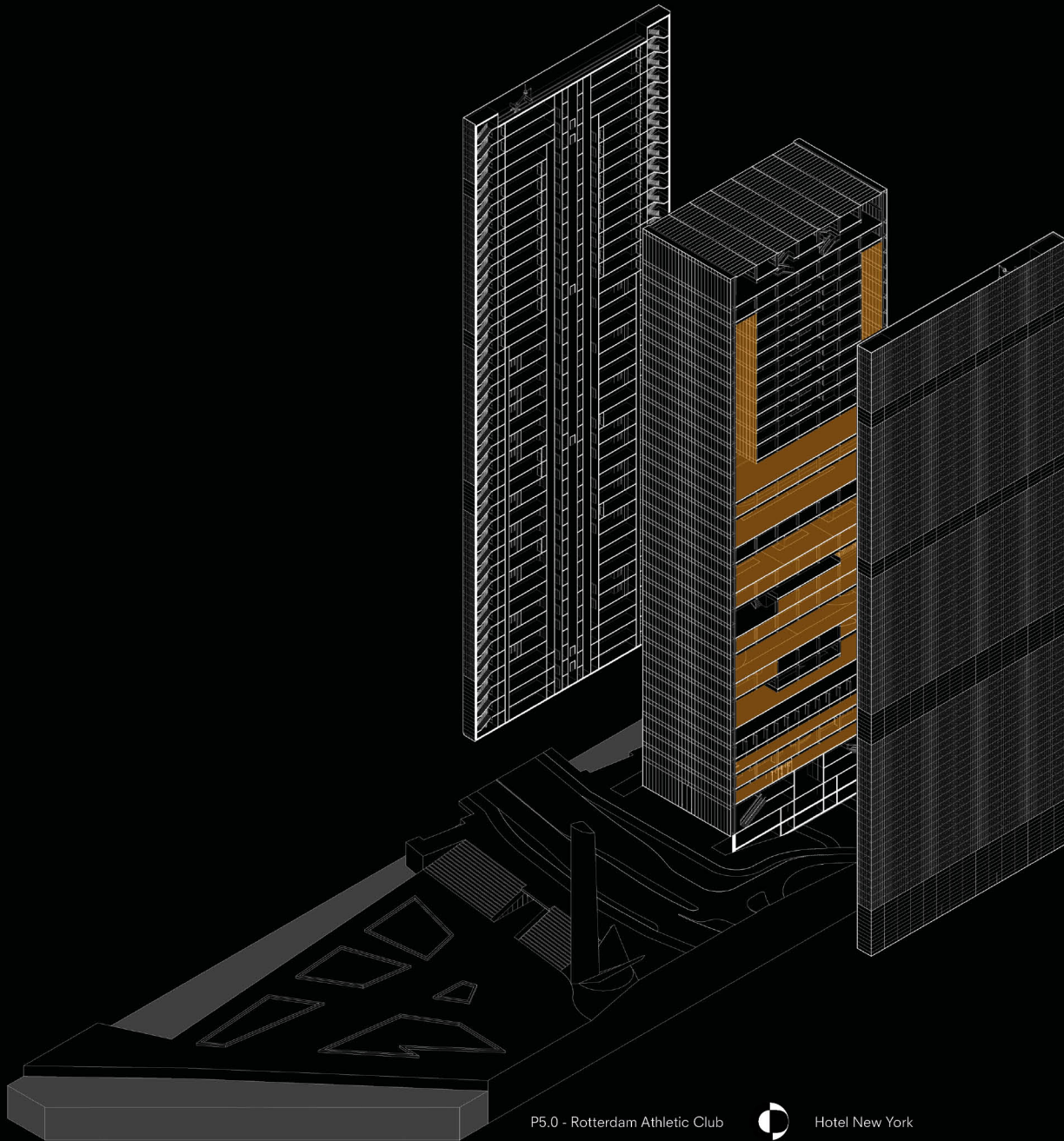
Concept

SOCIAL AMENITIES



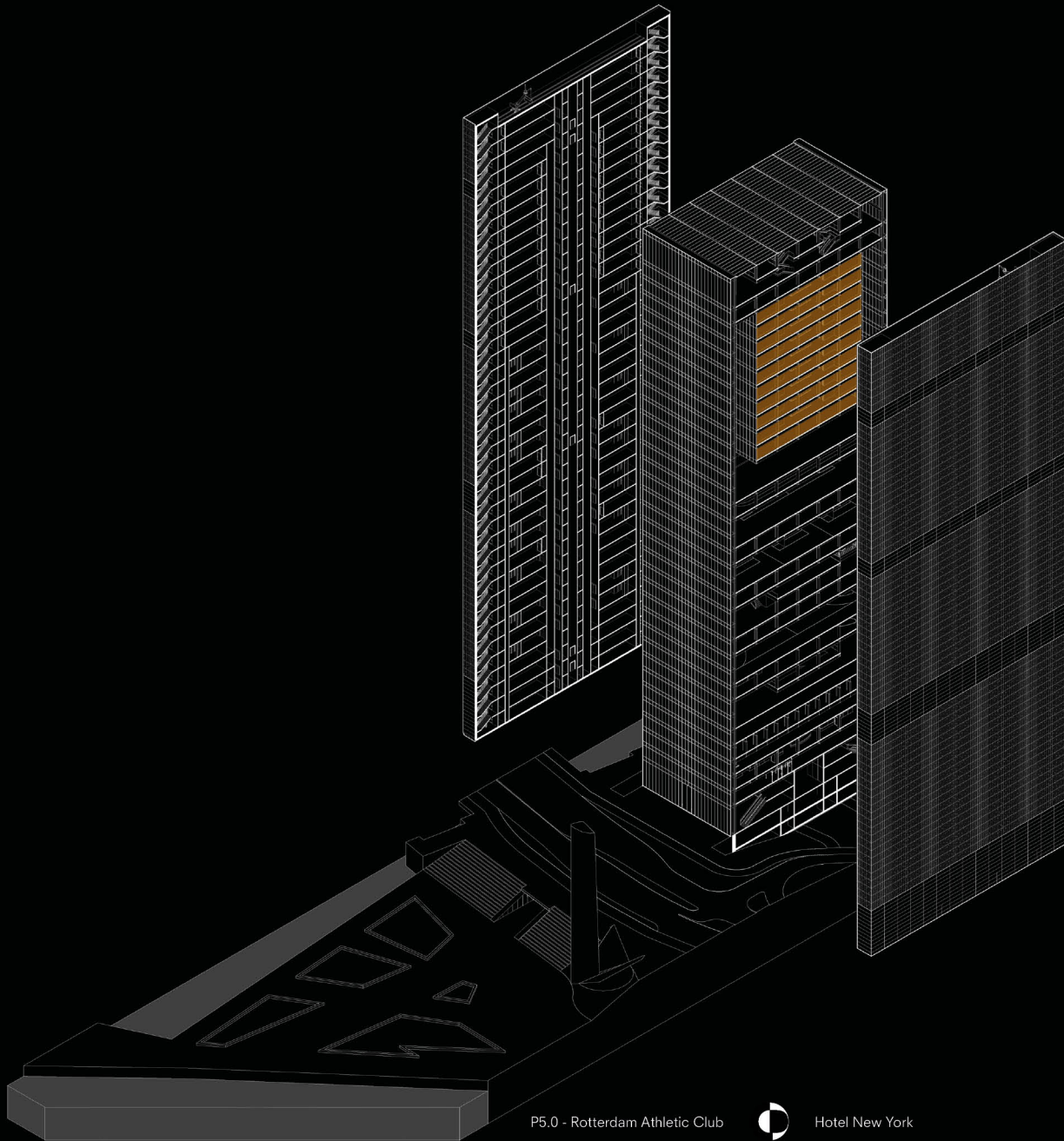
Concept

SPORT FACILITIES



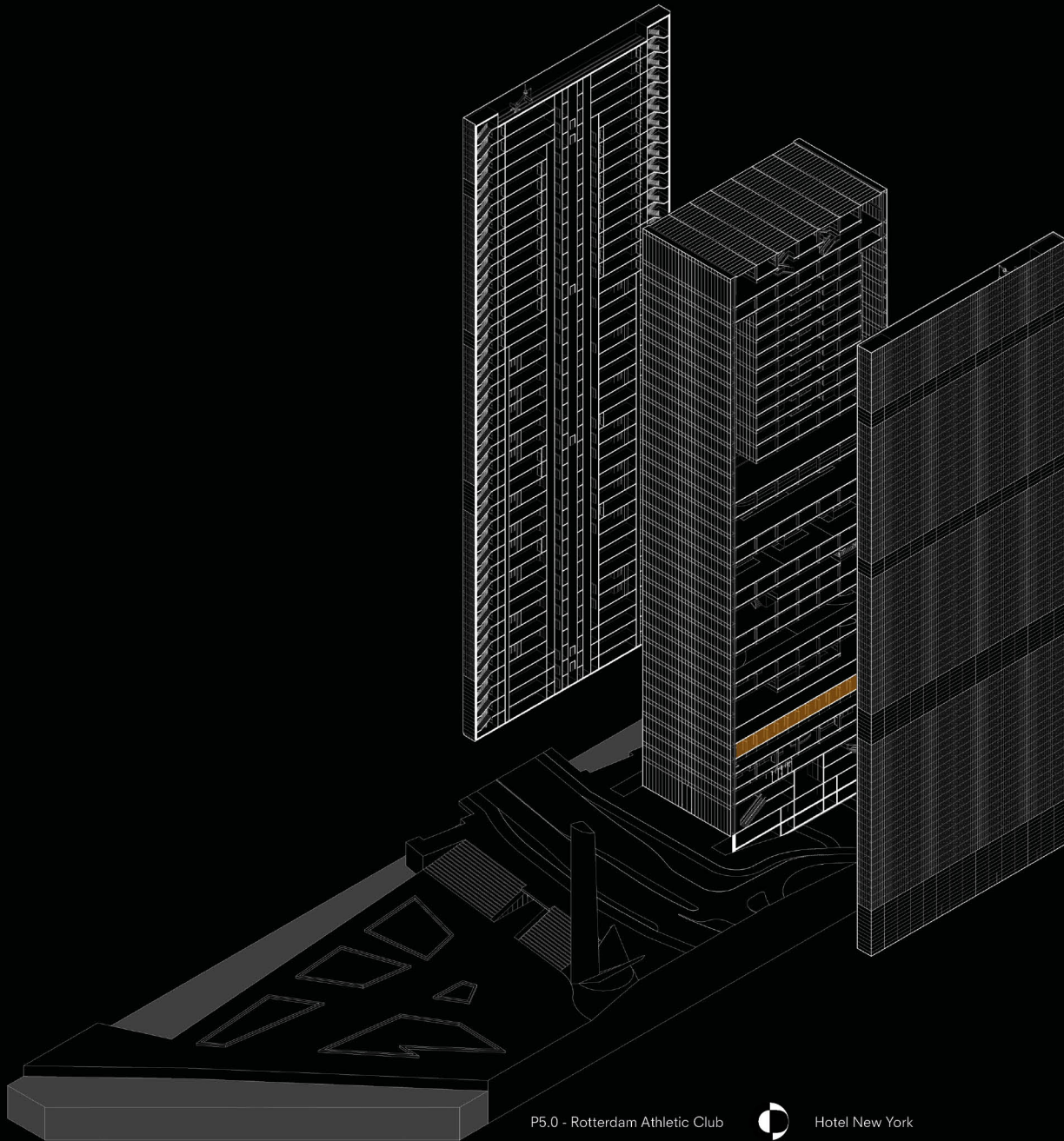
Concept

HOTEL

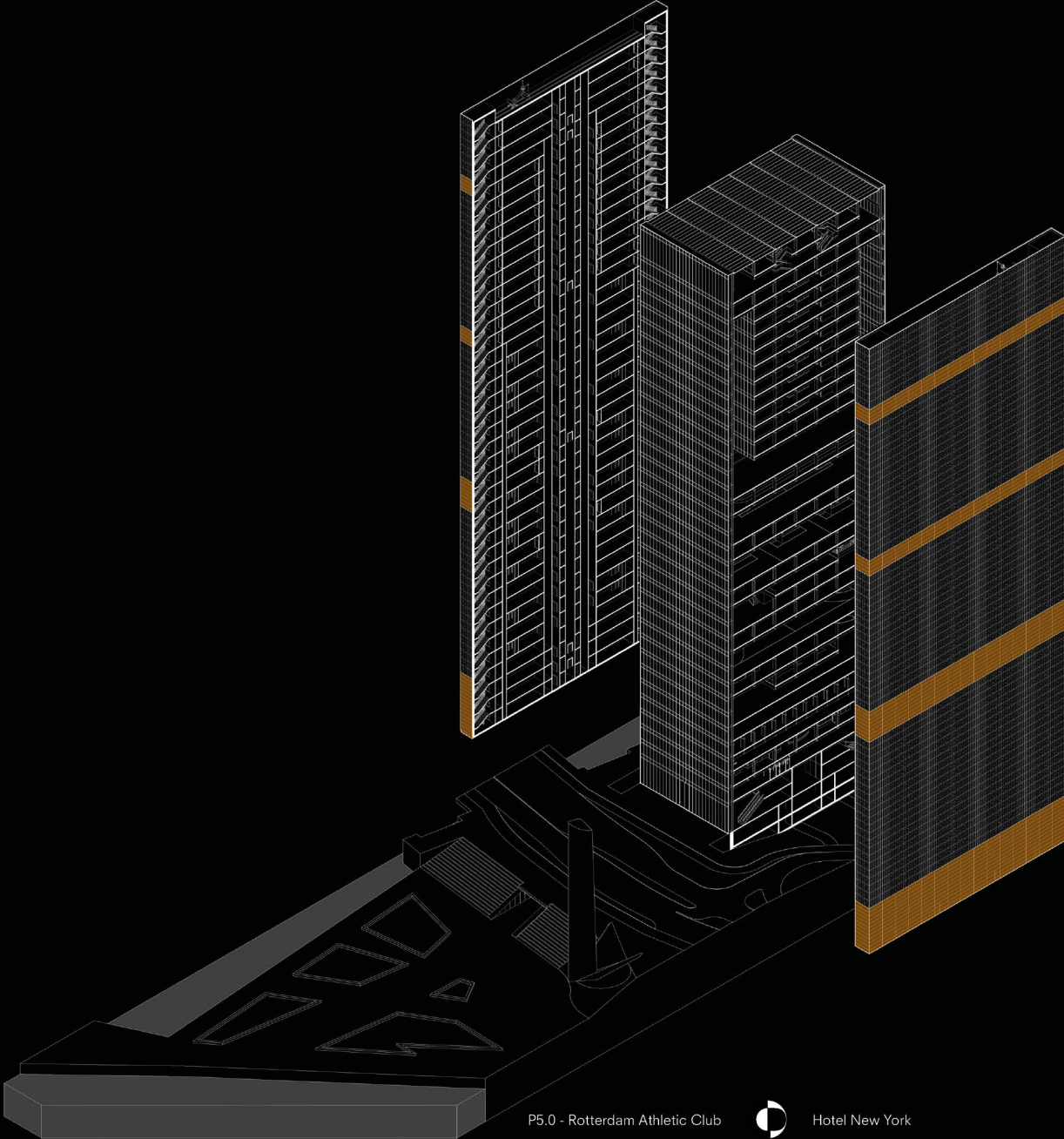


Concept

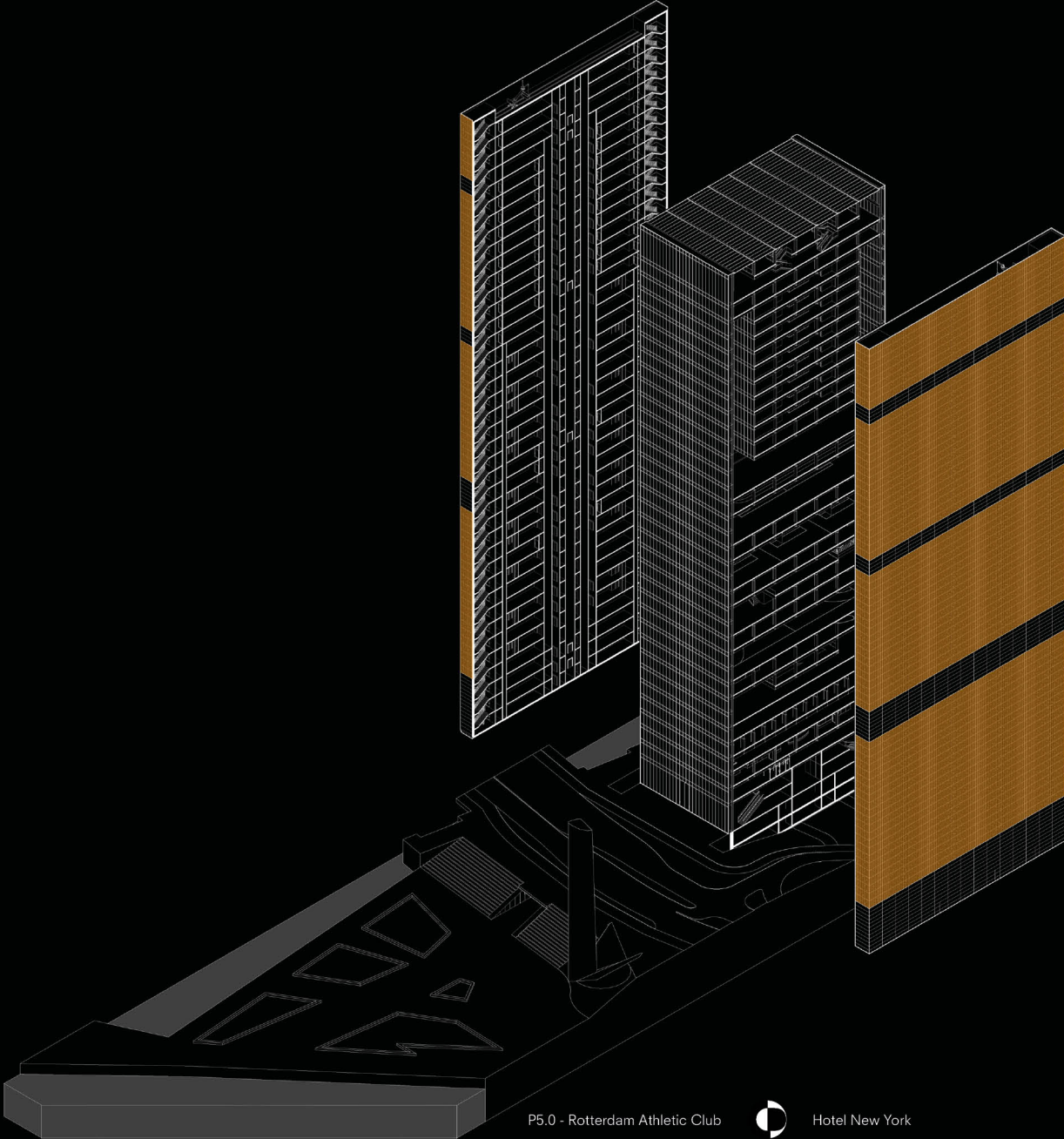
TECHNICAL



MARBLE FACADE CLADDING

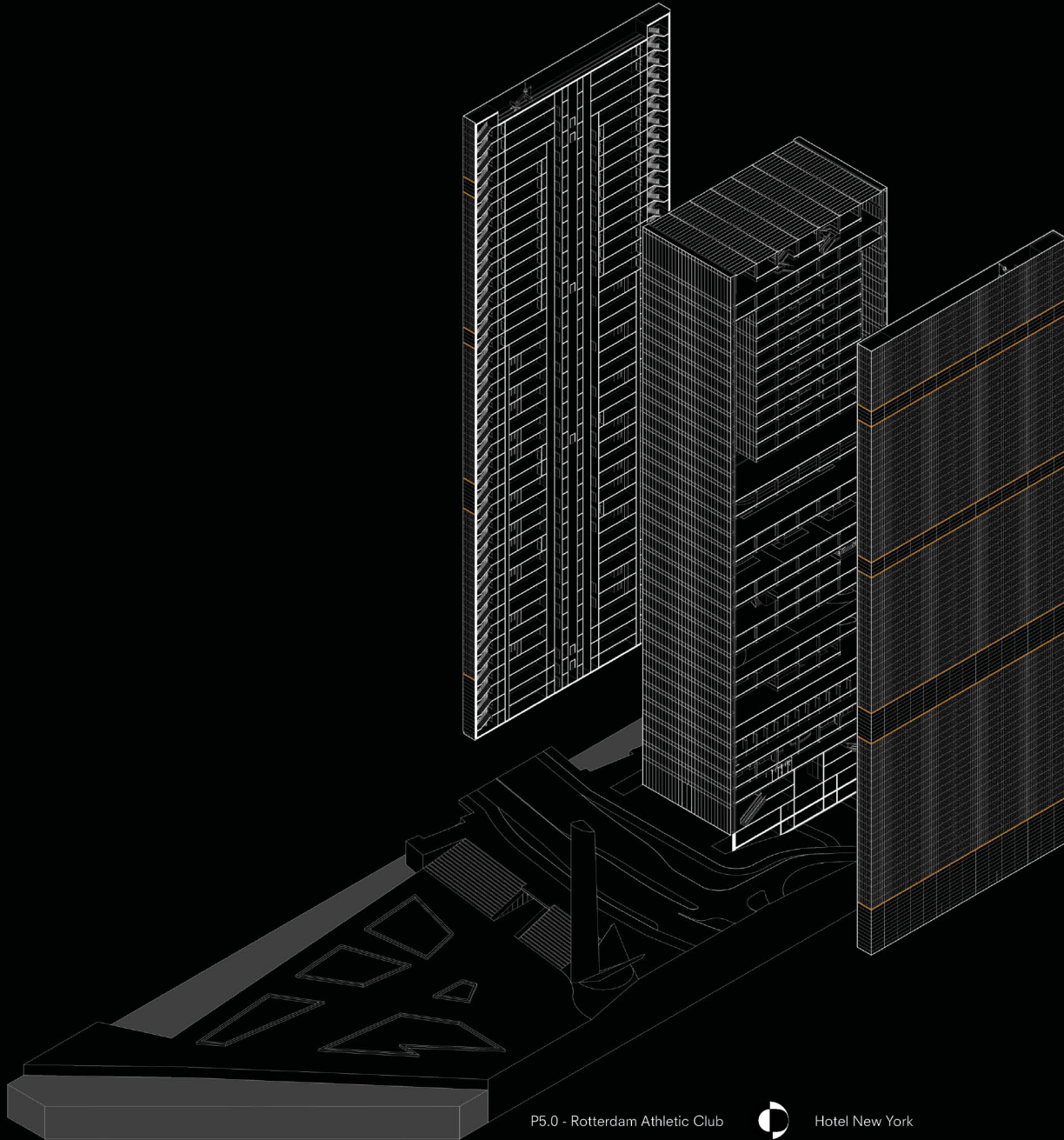


PV FACADE CLADDING



Concept

GOLD TRIM WITH LIGHT STRIP



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THE UNFINISHED CITY



BEURS AREA

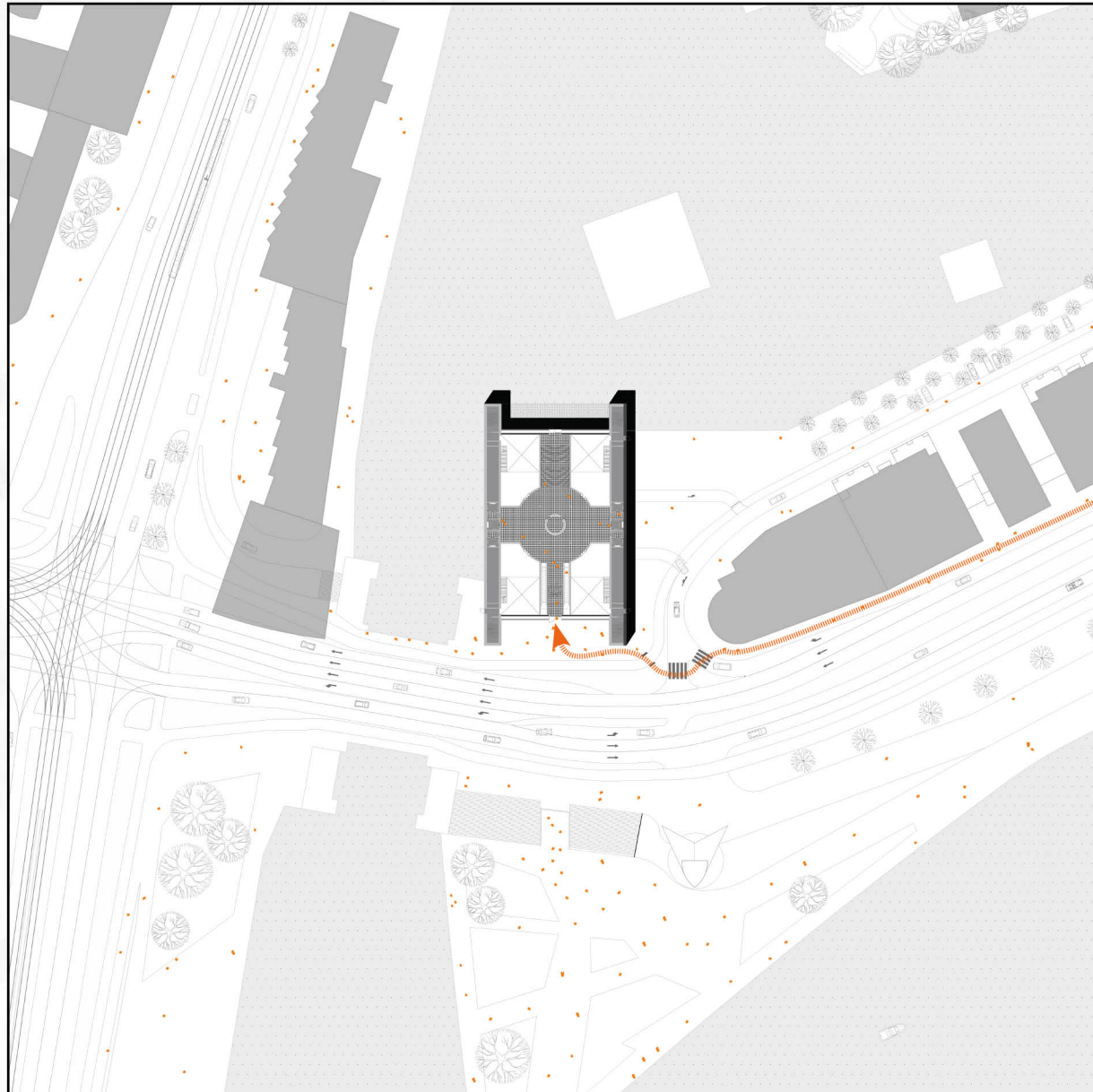


COLLABORATION BETWEEN NEW AMENITIES

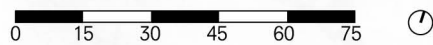


Implementation

MAIN ENTRANCE



ground floor
+ 0 m





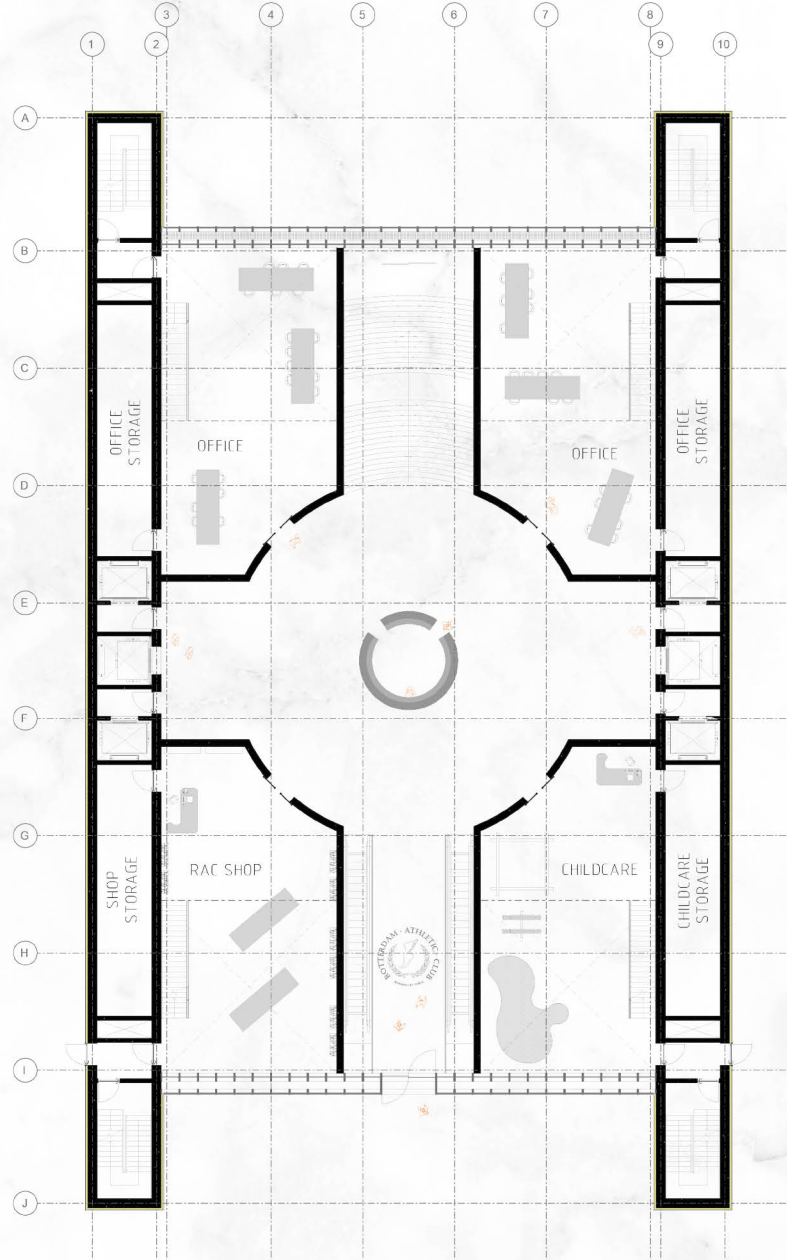
OF NINTH FLOOR: EATING OYSTER WITH BOXING GLOVE, NAKED ON THE NINTH FLOOR... - REM KOWLHAS - DELI



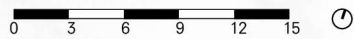


Implementation

MAIN LOBBY

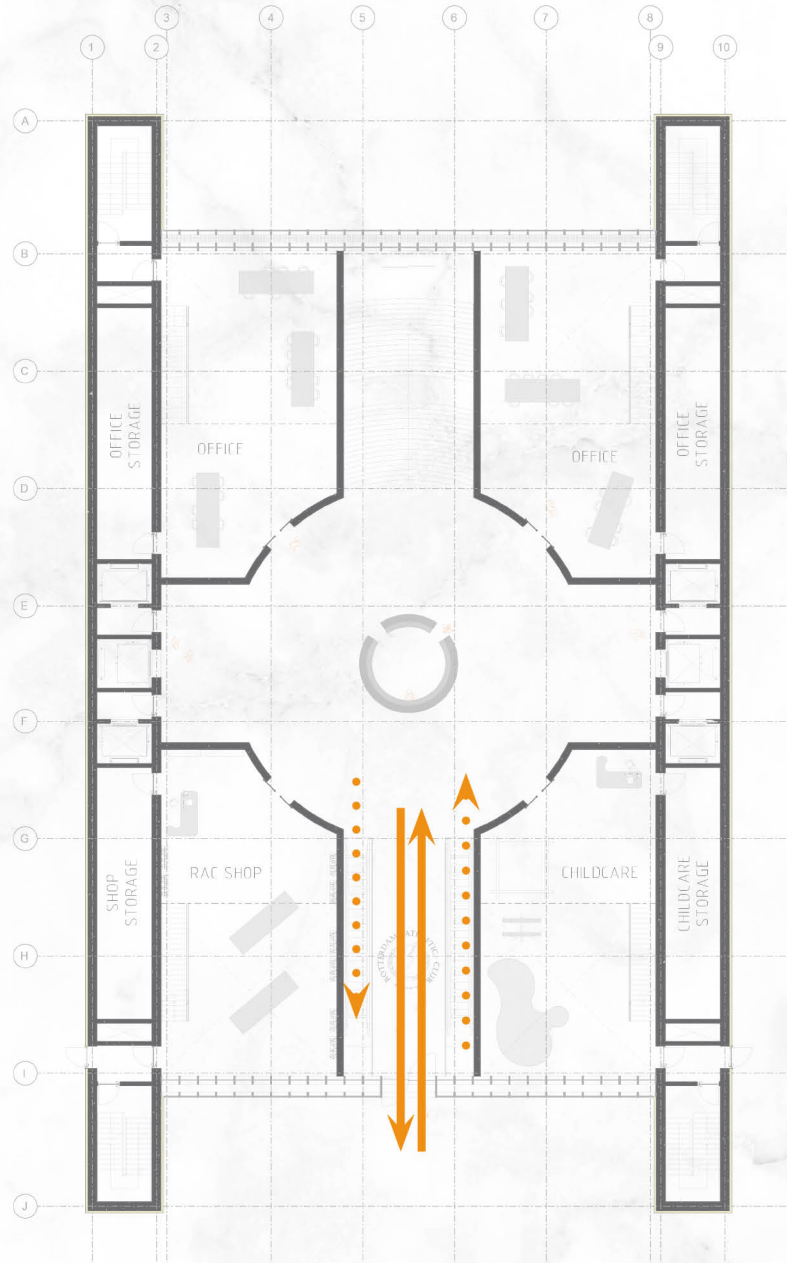


ground floor
+ 0 m

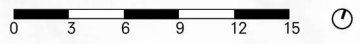


Implementation

MAIN LOBBY

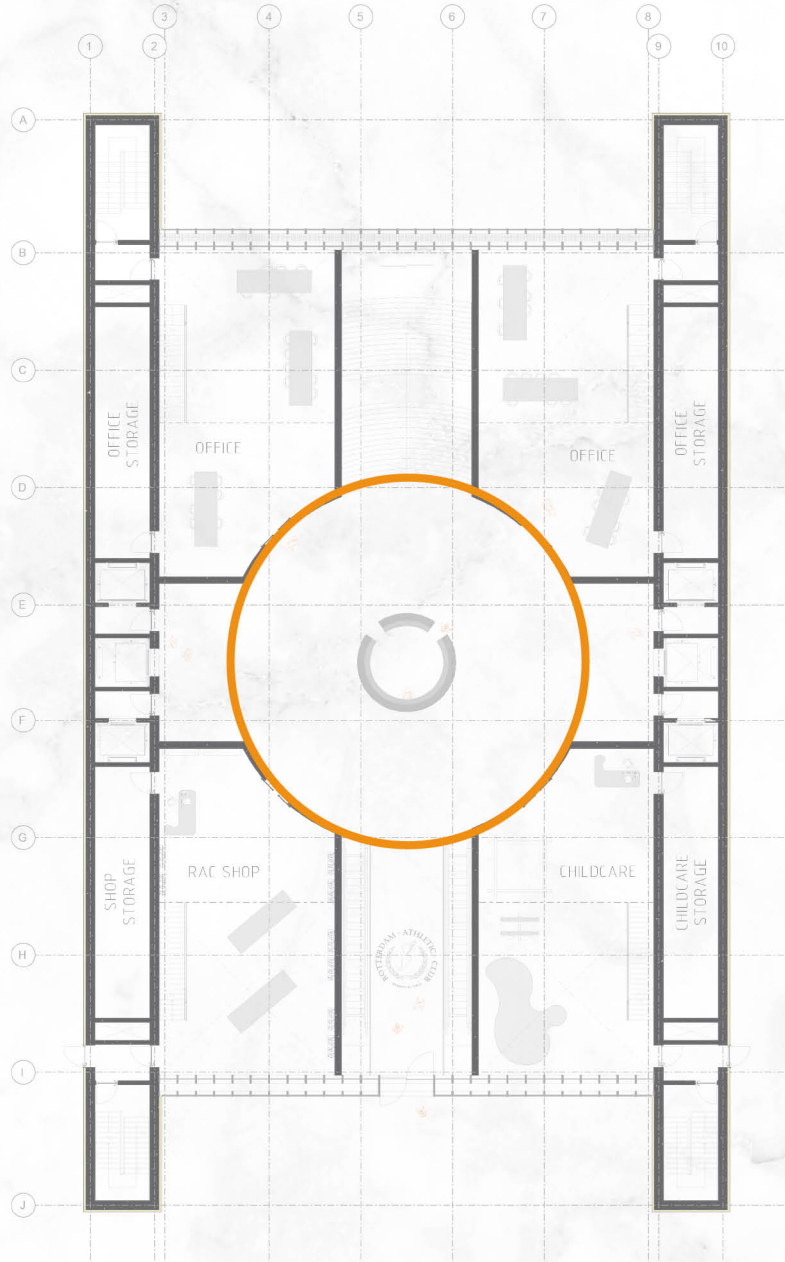


ground floor
+ 0 m

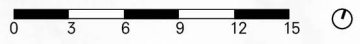


Implementation

MAIN LOBBY

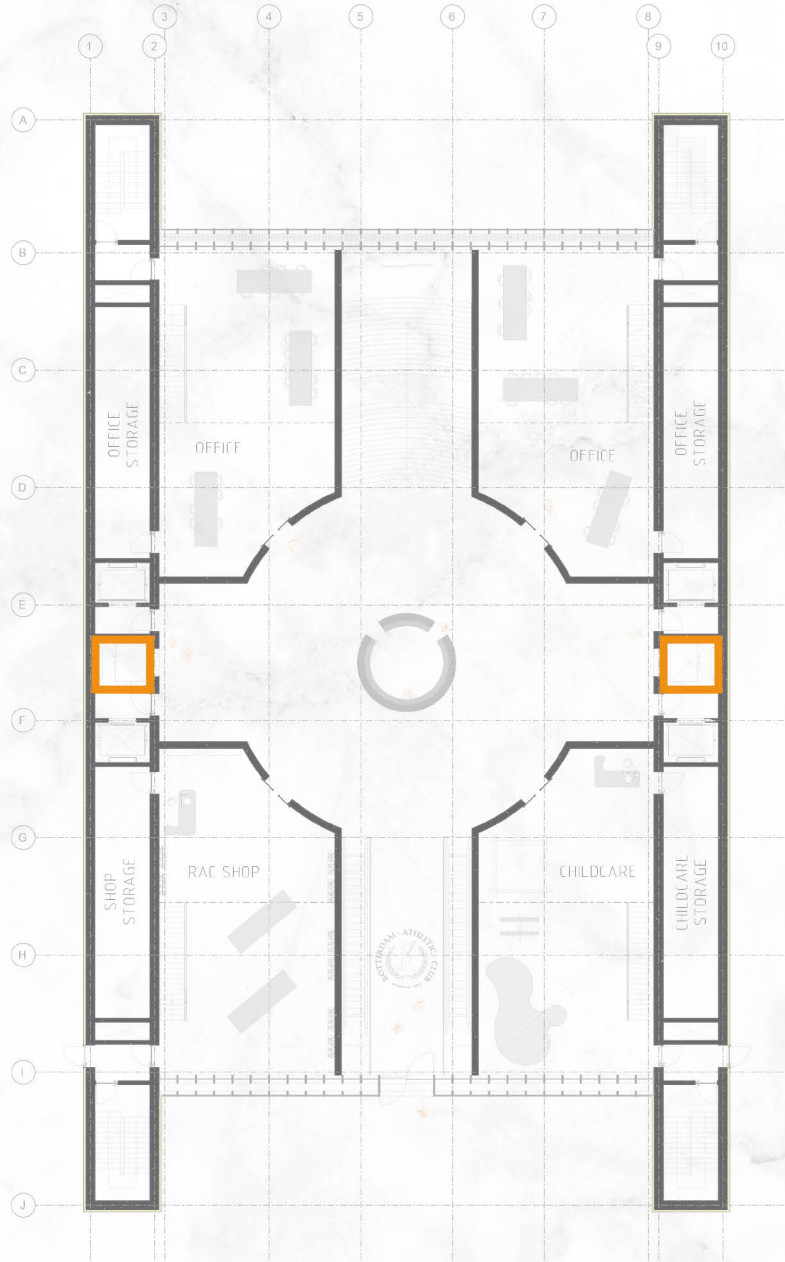


ground floor
+ 0 m

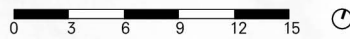


Implementation

MAIN LOBBY



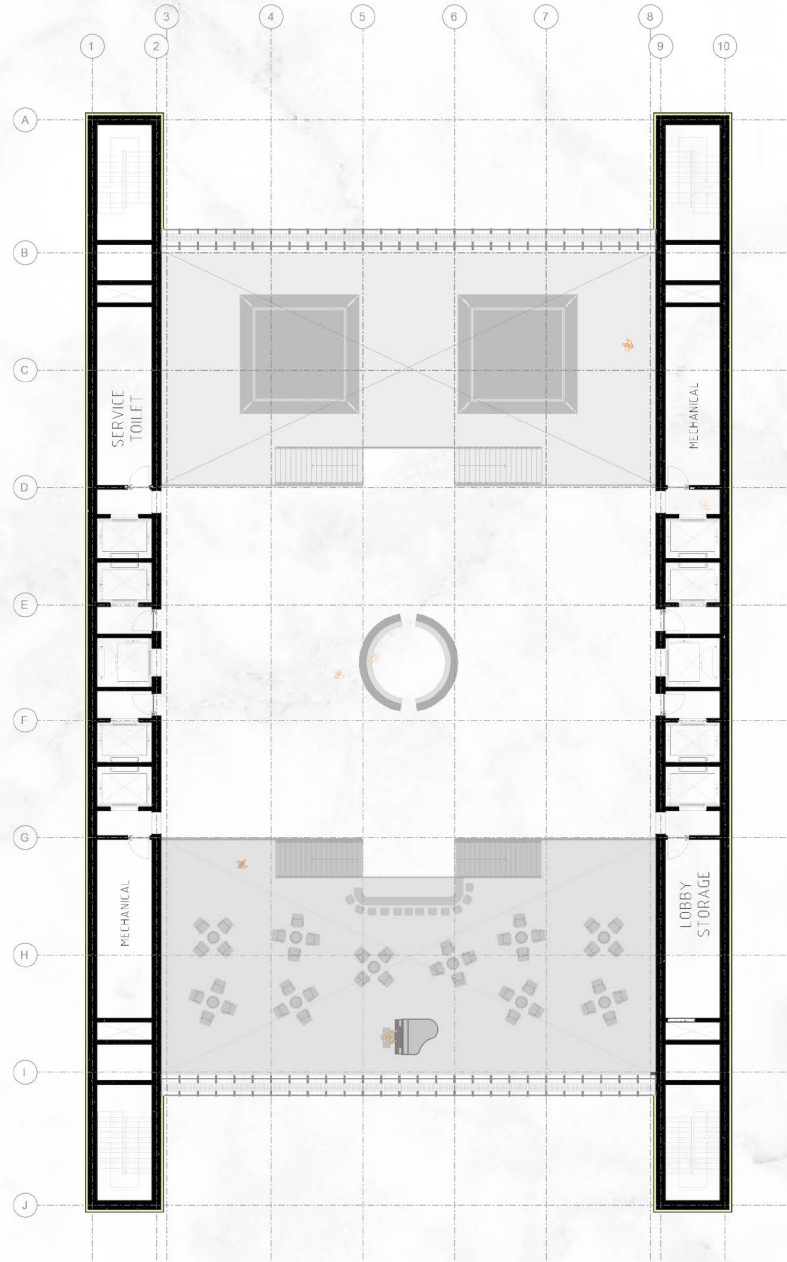
ground floor
+ 0 m





ROTTERDAM ATHLETIC CLUB
POWERED BY YMCA

Implementation
RAC LOBBY

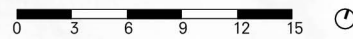
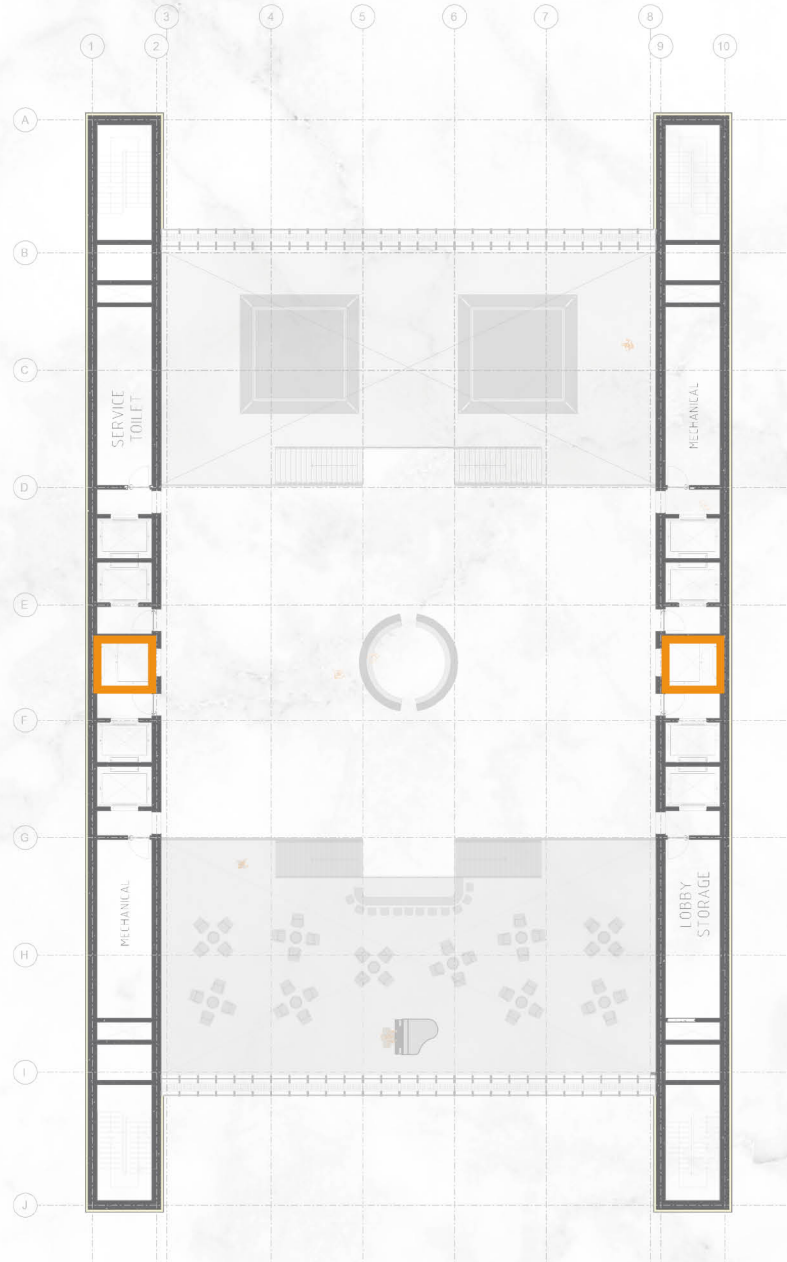


level 13
+ 56 m





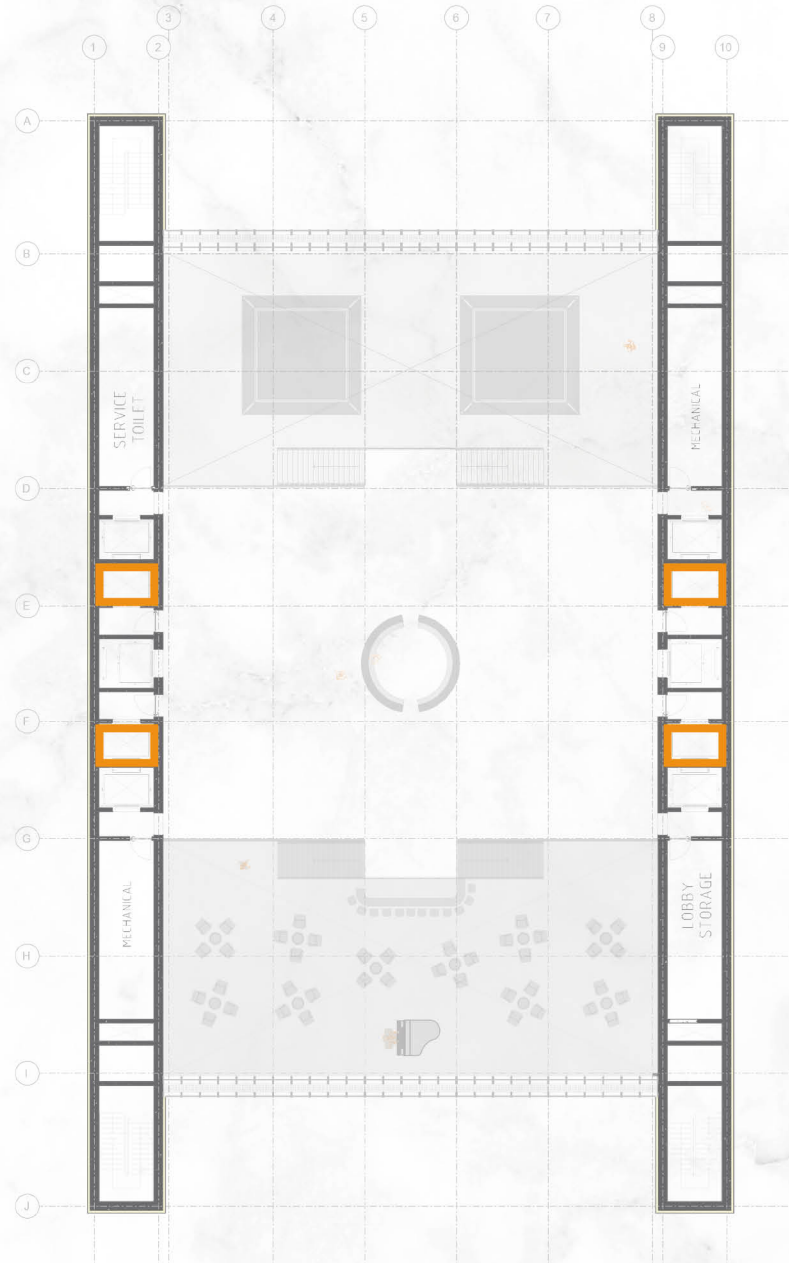
Implementation
RAC LOBBY



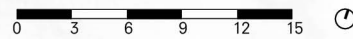
level 13
+ 56 m



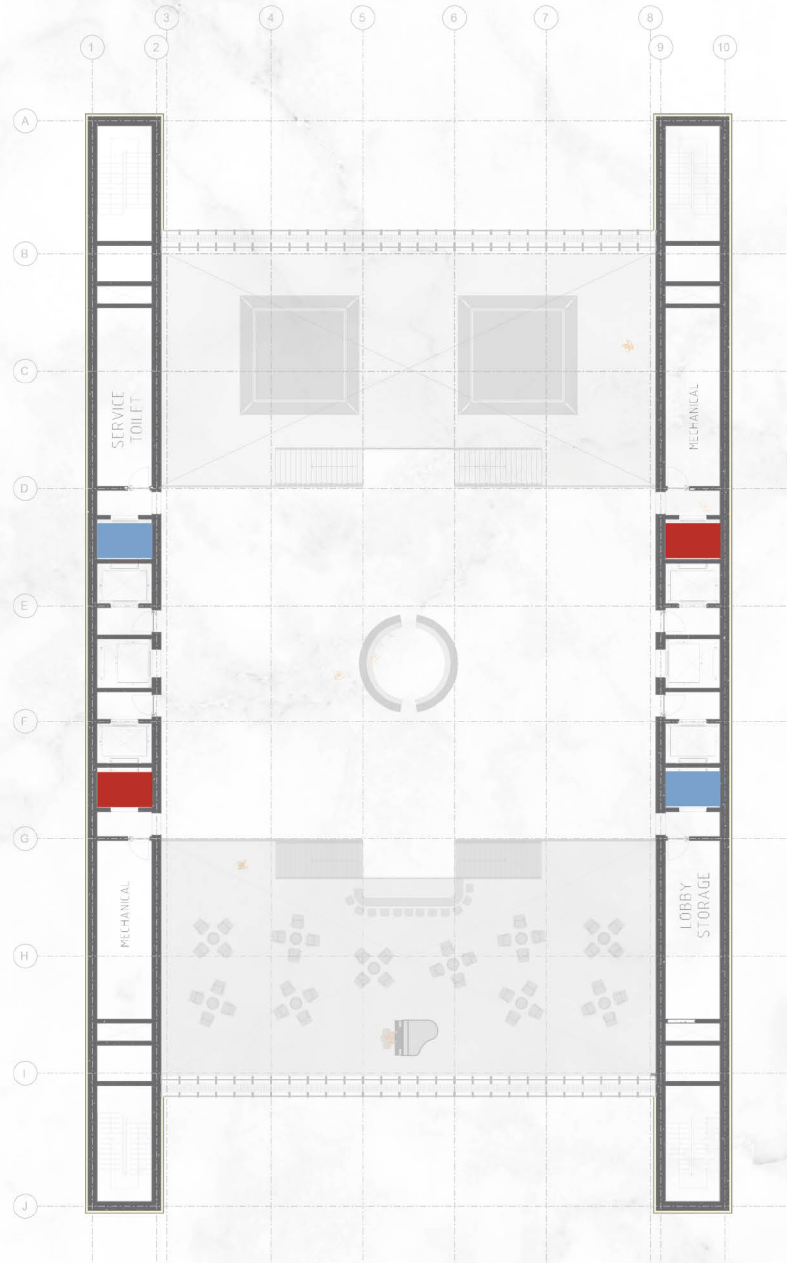
Implementation
RAC LOBBY



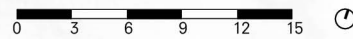
level 13
+ 56 m



Implementation
RAC LOBBY

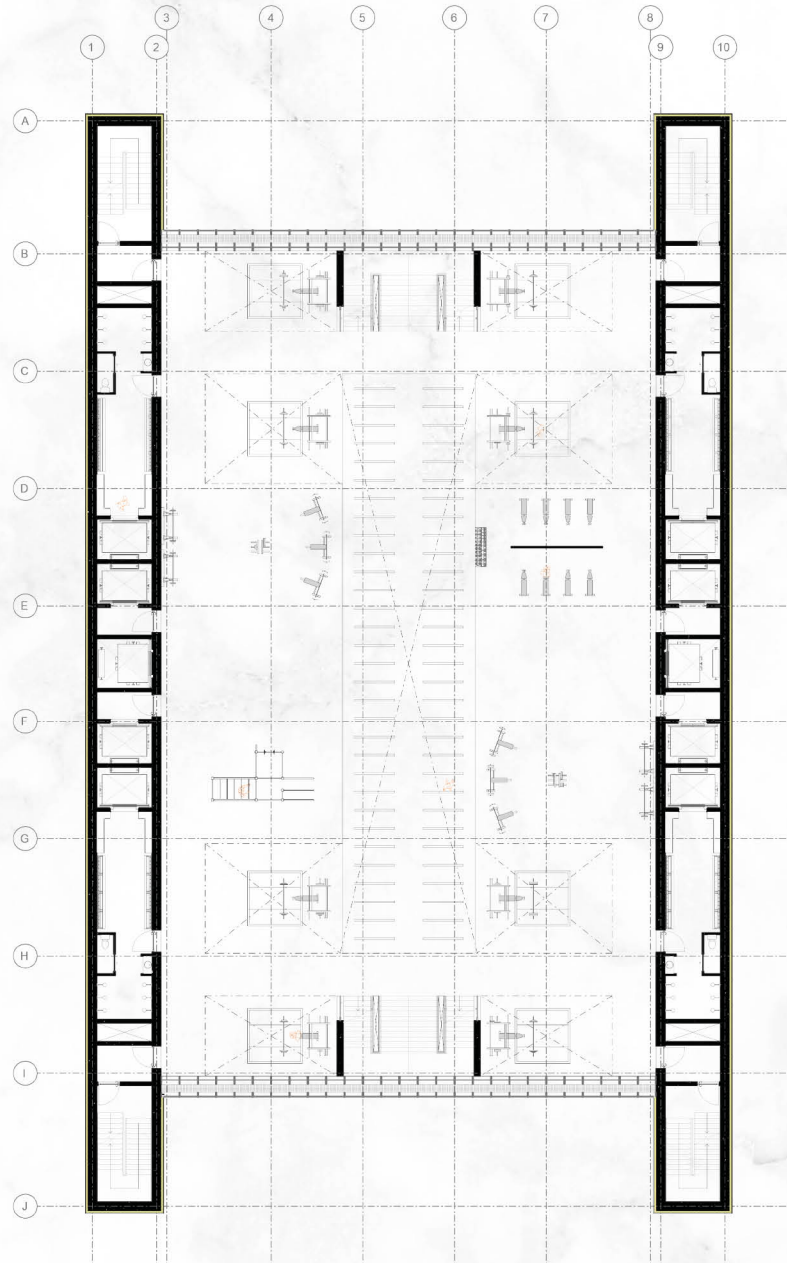


level 13
+ 56 m

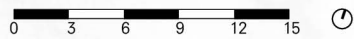


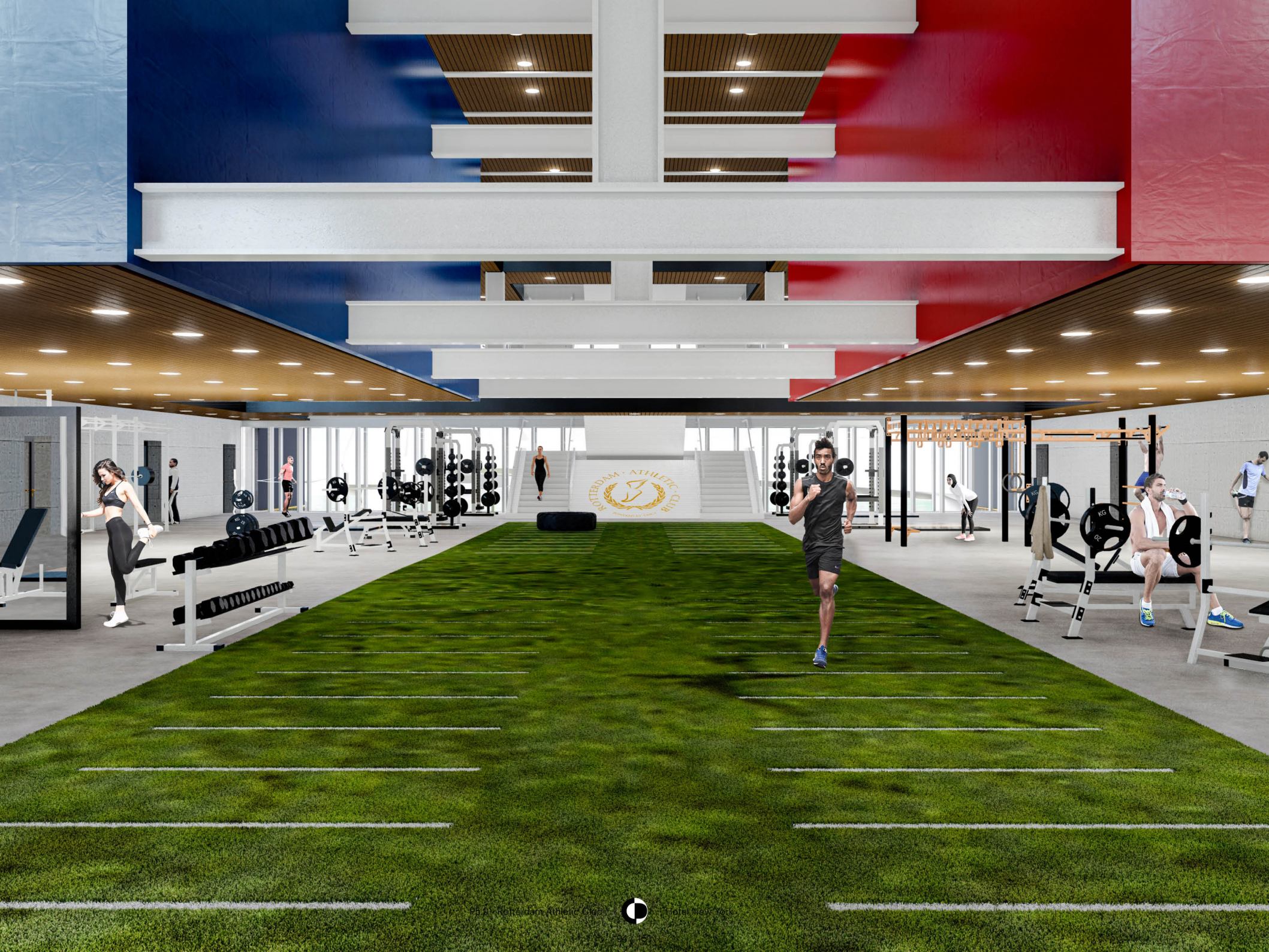
Implementation

GYM



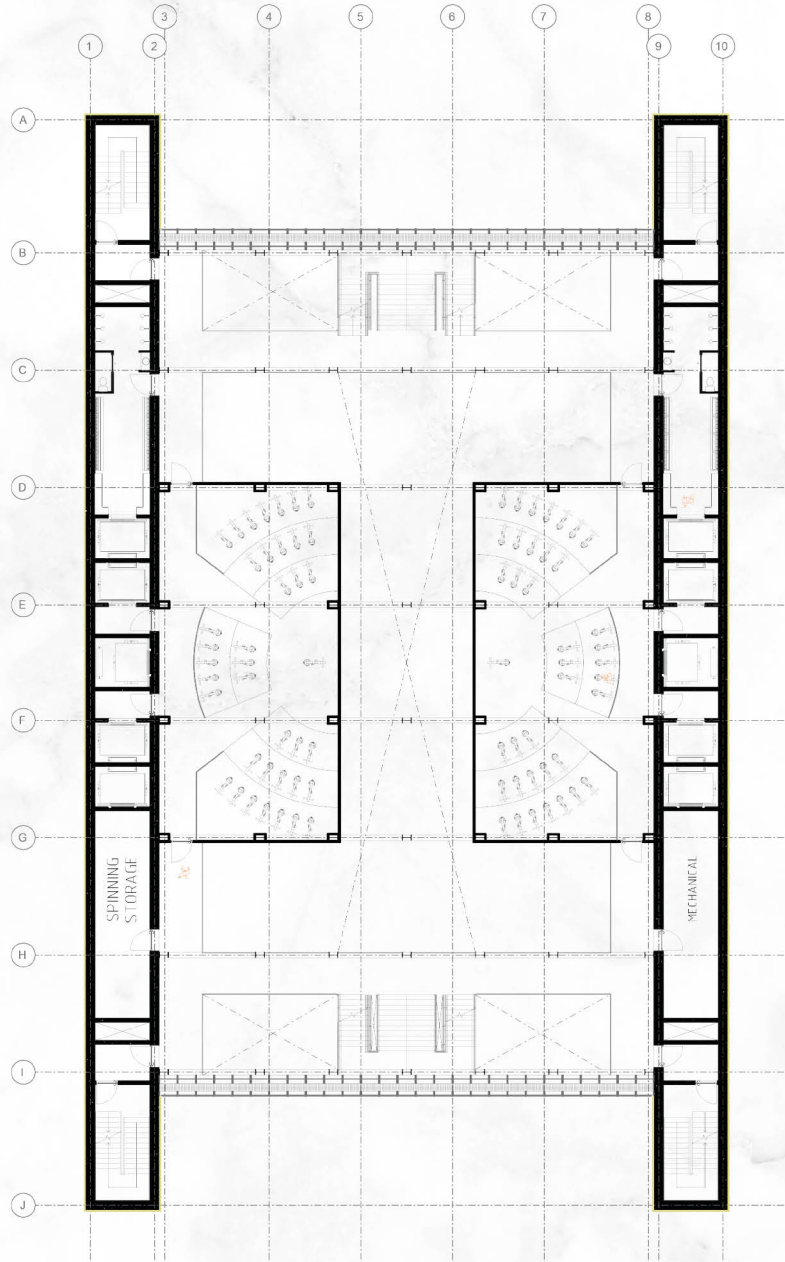
level 1
+ 8 m



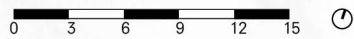


Implementation

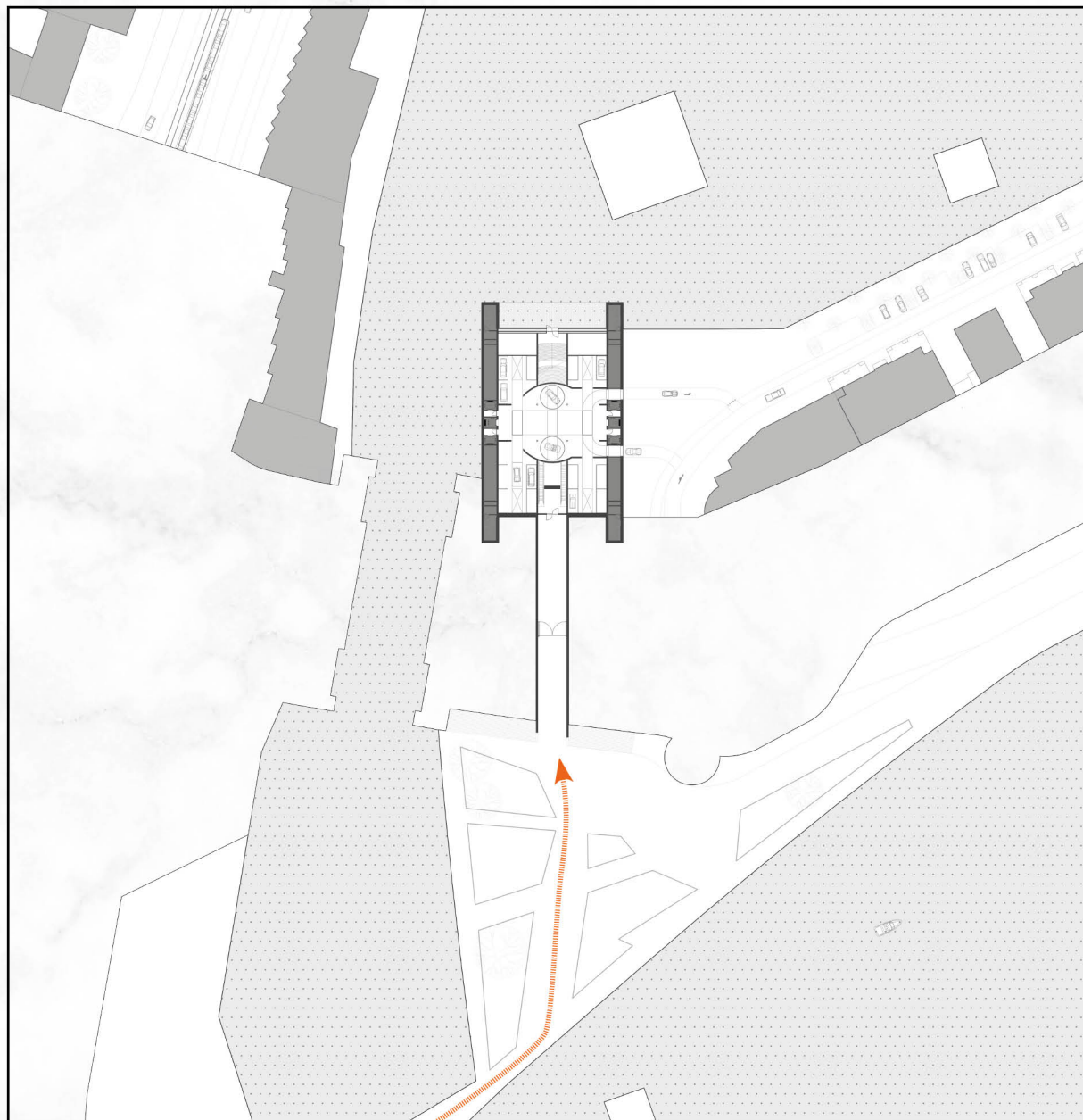
SPINNING



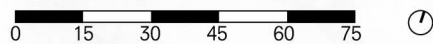
level 2
+ 12 m



ENTRANCE BOOMPJESKADE

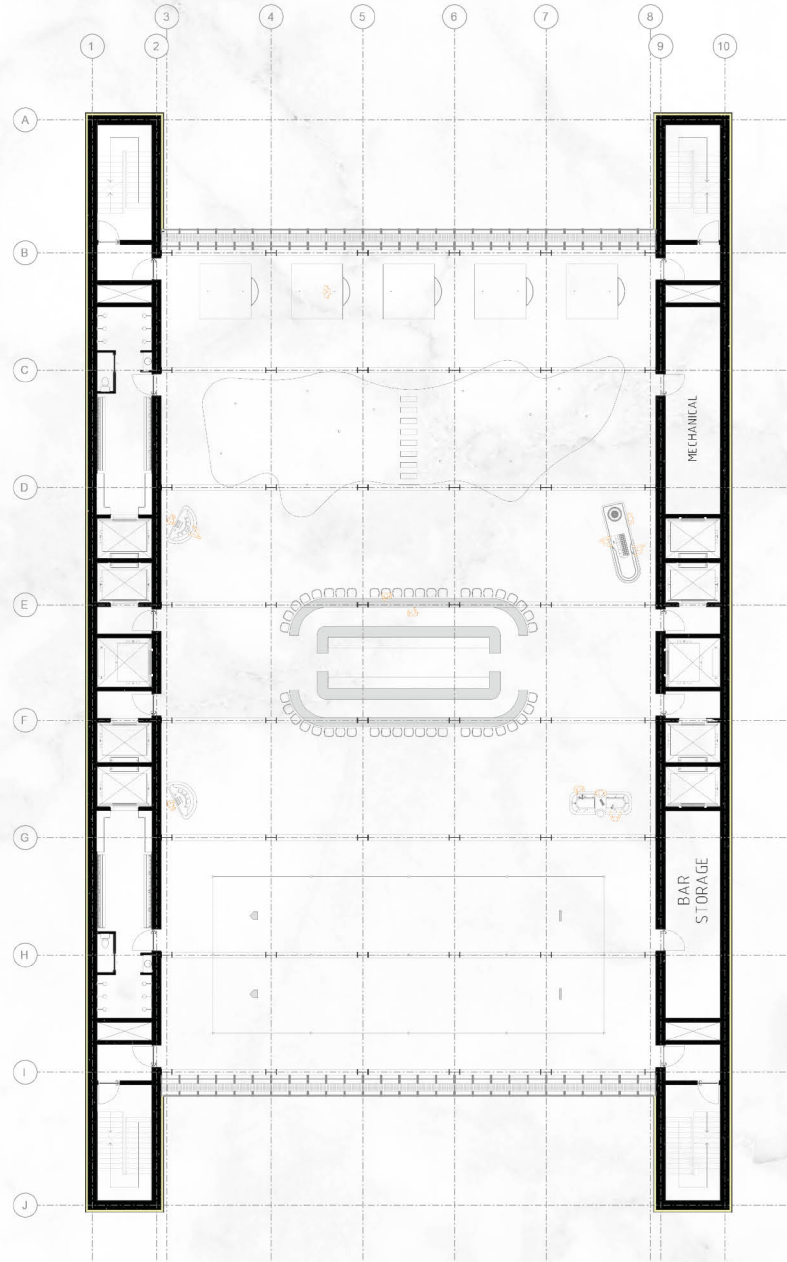


level -1
- 4 m

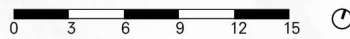


Implementation

SPORTS BAR

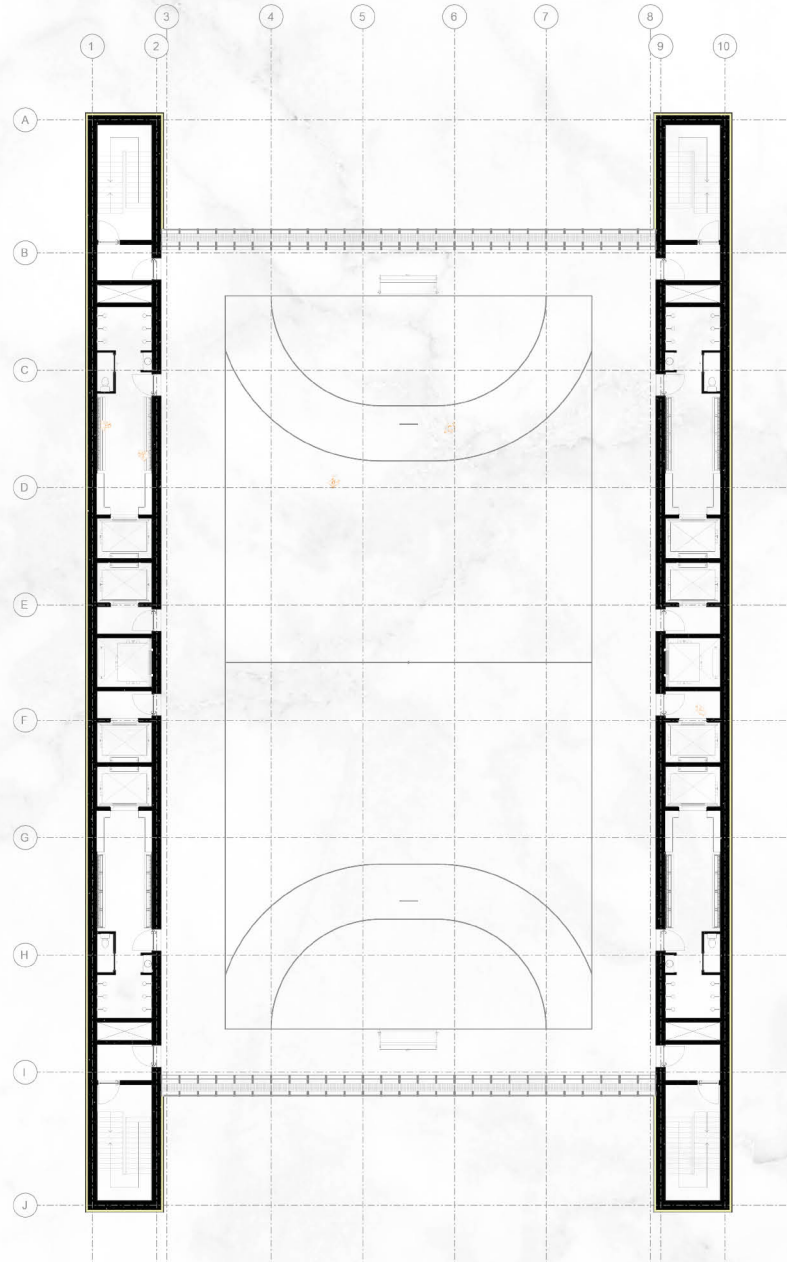


level 8
+ 36 m

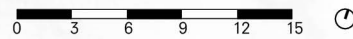


Implementation

SOCCER



level 9
+ 40 m





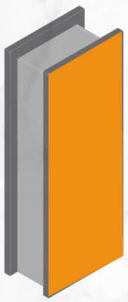
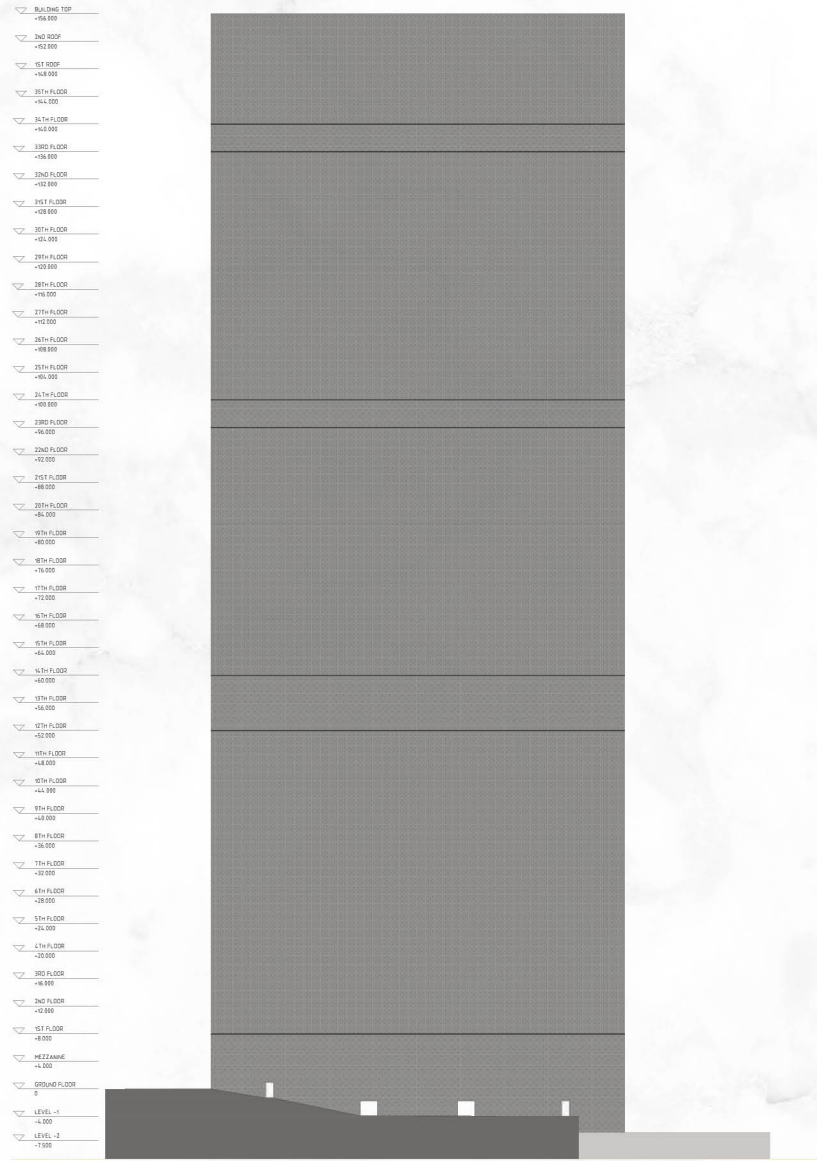
ENTRANCE TERWENAKKER



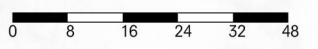
level -1
- 4 m



CLOSED FACADE EAST

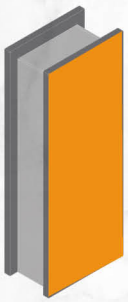
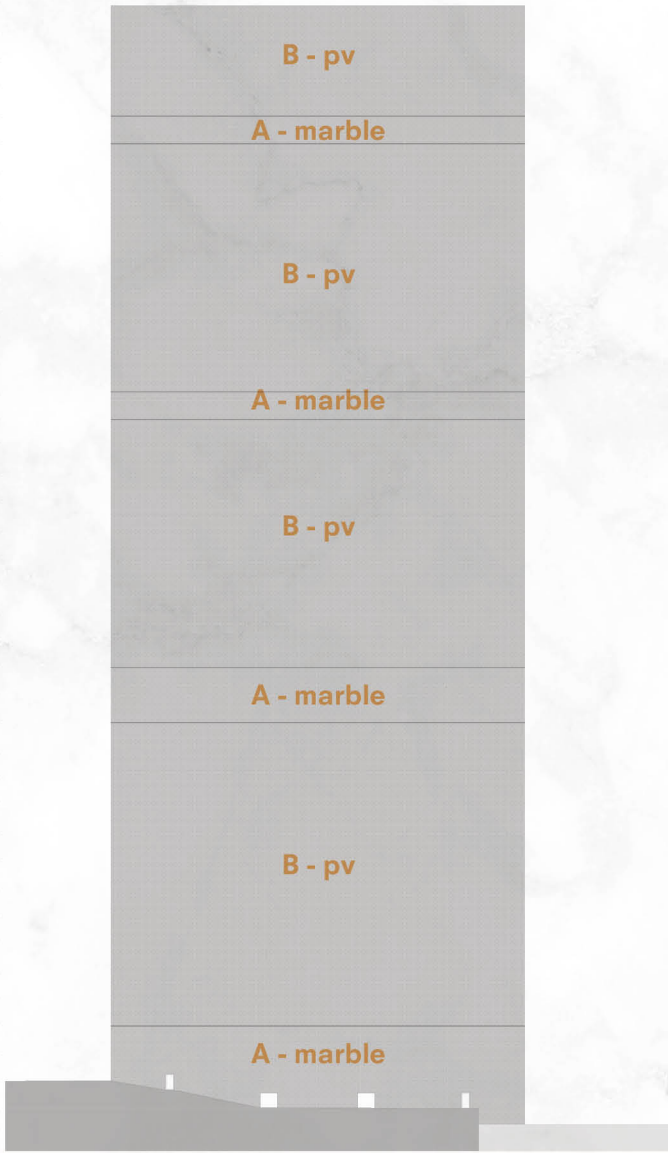


east facade

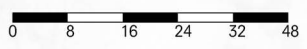


CLOSED FACADE EAST

BLVD SIGN TOP	+04.000
2ND ROOF	+02.000
1ST ROOF	+01.000
35TH FLOOR	+04.000
34TH FLOOR	+03.000
33RD FLOOR	+02.000
32ND FLOOR	+01.000
31ST FLOOR	+00.000
30TH FLOOR	-01.000
29TH FLOOR	-02.000
28TH FLOOR	-03.000
27TH FLOOR	-04.000
26TH FLOOR	-05.000
25TH FLOOR	-06.000
24TH FLOOR	-07.000
23RD FLOOR	-08.000
22ND FLOOR	-09.000
21ST FLOOR	-10.000
20TH FLOOR	-11.000
19TH FLOOR	-12.000
18TH FLOOR	-13.000
17TH FLOOR	-14.000
16TH FLOOR	-15.000
15TH FLOOR	-16.000
14TH FLOOR	-17.000
13TH FLOOR	-18.000
12TH FLOOR	-19.000
11TH FLOOR	-20.000
10TH FLOOR	-21.000
9TH FLOOR	-22.000
8TH FLOOR	-23.000
7TH FLOOR	-24.000
6TH FLOOR	-25.000
5TH FLOOR	-26.000
4TH FLOOR	-27.000
3RD FLOOR	-28.000
2ND FLOOR	-29.000
1ST FLOOR	-30.000
MEZZANINE	-31.000
GROUND FLOOR	-32.000
LEVEL -1	-33.000
LEVEL -2	-34.000
LEVEL -3	-35.000



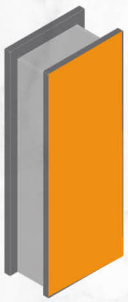
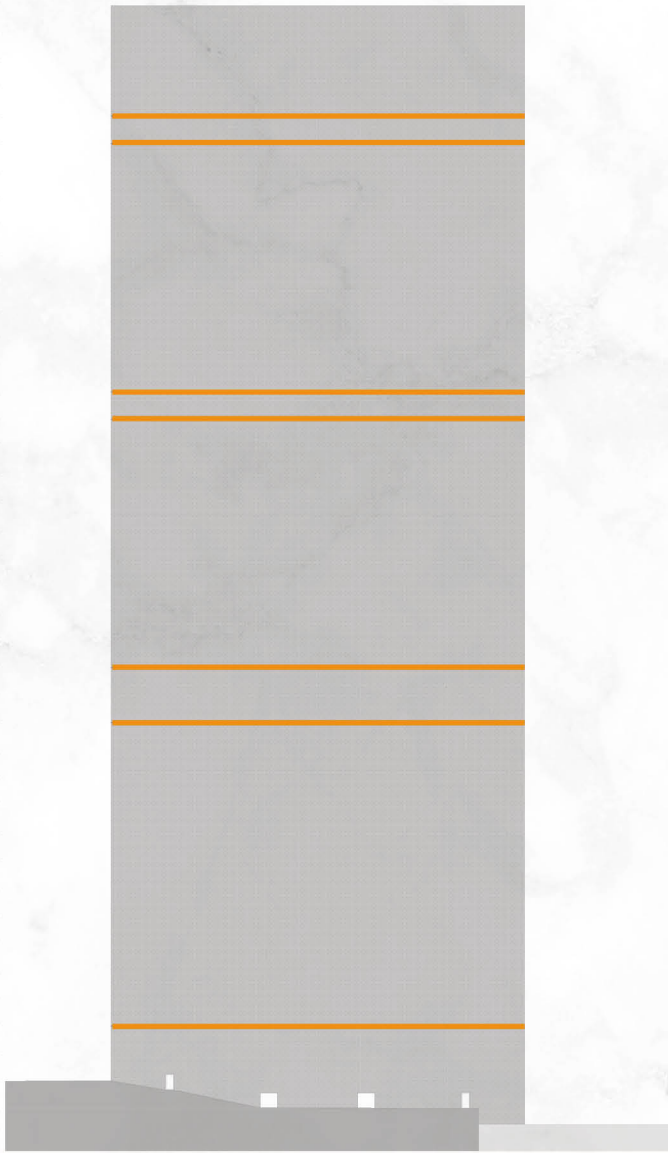
east facade



Implementation

CLOSED FACADE EAST

- BLVD SIGN TOP
- 2ND ROOF
- 1ST ROOF
- 35TH FLOOR
- 34TH FLOOR
- 33RD FLOOR
- 32ND FLOOR
- 31ST FLOOR
- 30TH FLOOR
- 29TH FLOOR
- 28TH FLOOR
- 27TH FLOOR
- 26TH FLOOR
- 25TH FLOOR
- 24TH FLOOR
- 23RD FLOOR
- 22ND FLOOR
- 21ST FLOOR
- 20TH FLOOR
- 19TH FLOOR
- 18TH FLOOR
- 17TH FLOOR
- 16TH FLOOR
- 15TH FLOOR
- 14TH FLOOR
- 13TH FLOOR
- 12TH FLOOR
- 11TH FLOOR
- 10TH FLOOR
- 9TH FLOOR
- 8TH FLOOR
- 7TH FLOOR
- 6TH FLOOR
- 5TH FLOOR
- 4TH FLOOR
- 3RD FLOOR
- 2ND FLOOR
- 1ST FLOOR
- MEZZANINE
- GROUND FLOOR
- LEVEL -1
- LEVEL -2
- LEVEL -3



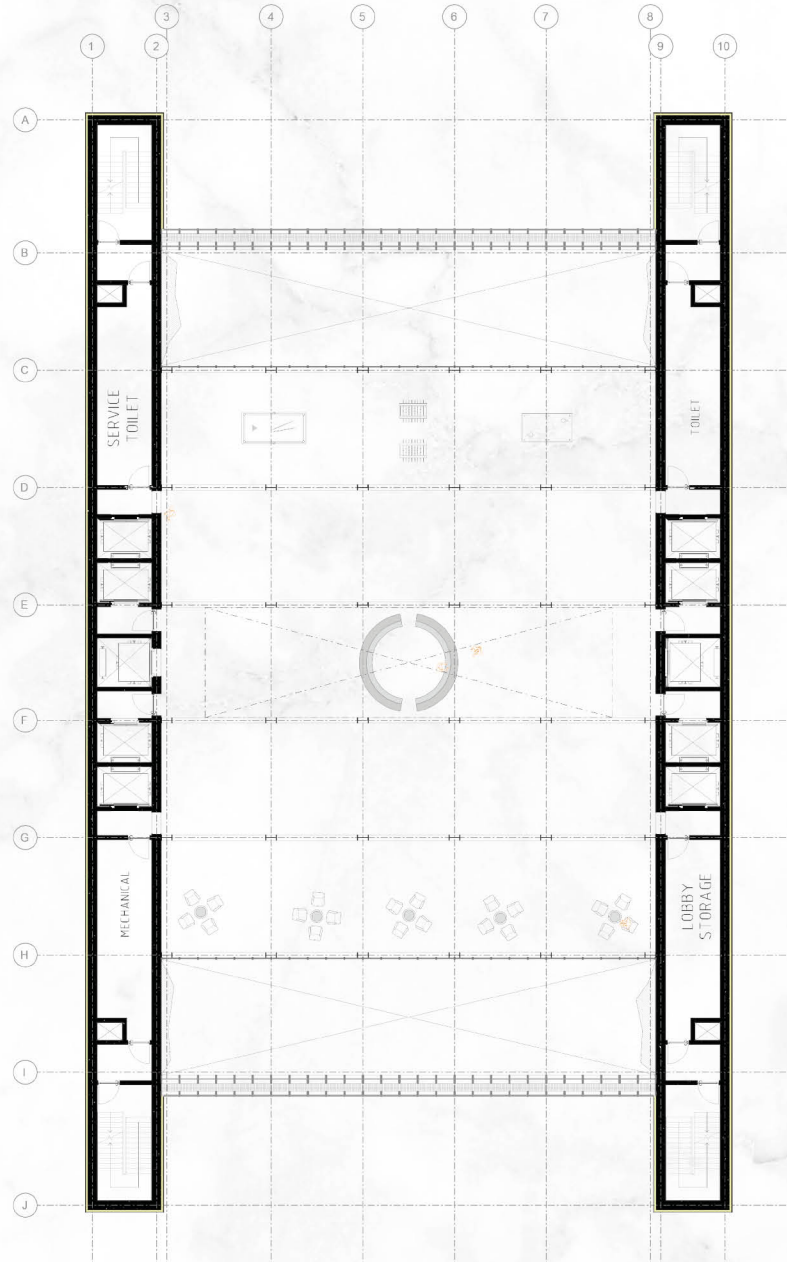
east facade



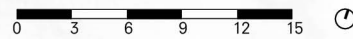


Implementation

HOTEL LOBBY



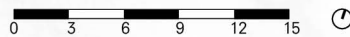
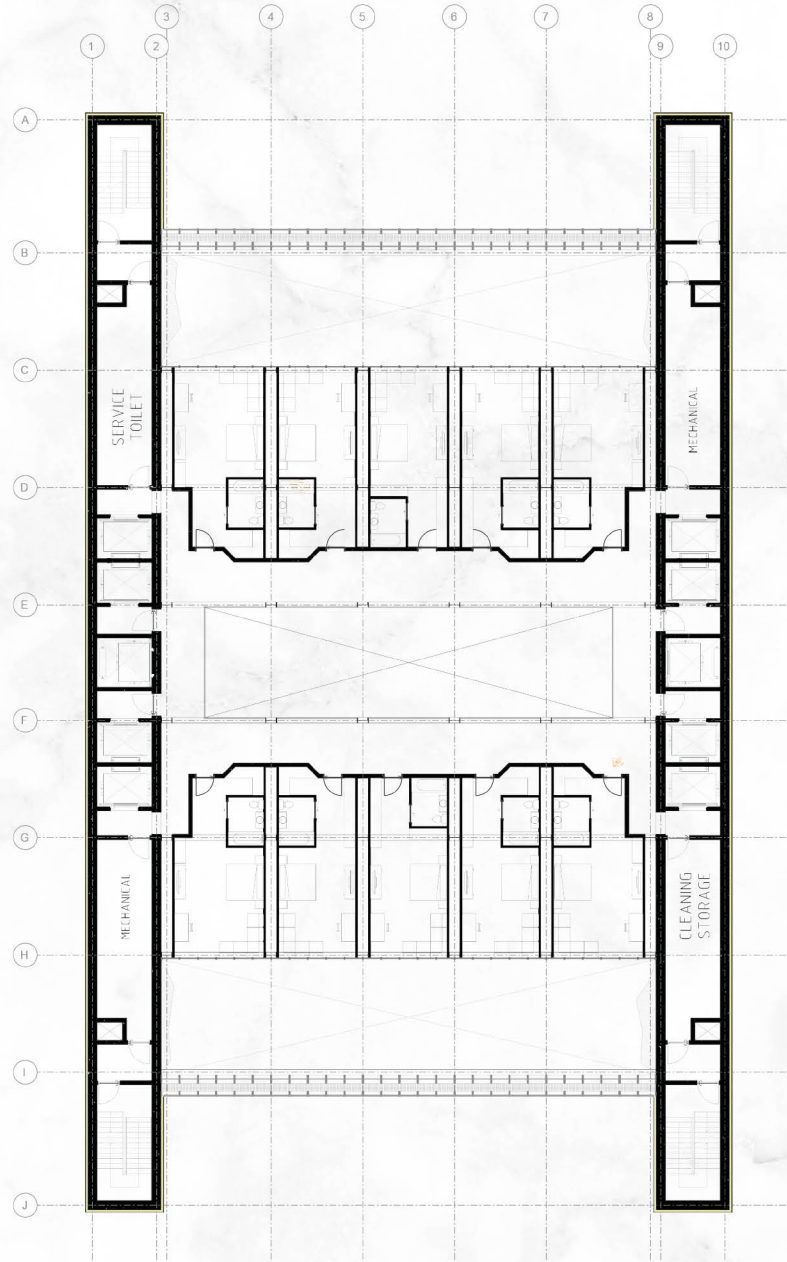
level 23
+ 96 m





Implementation

HOTEL ROOM



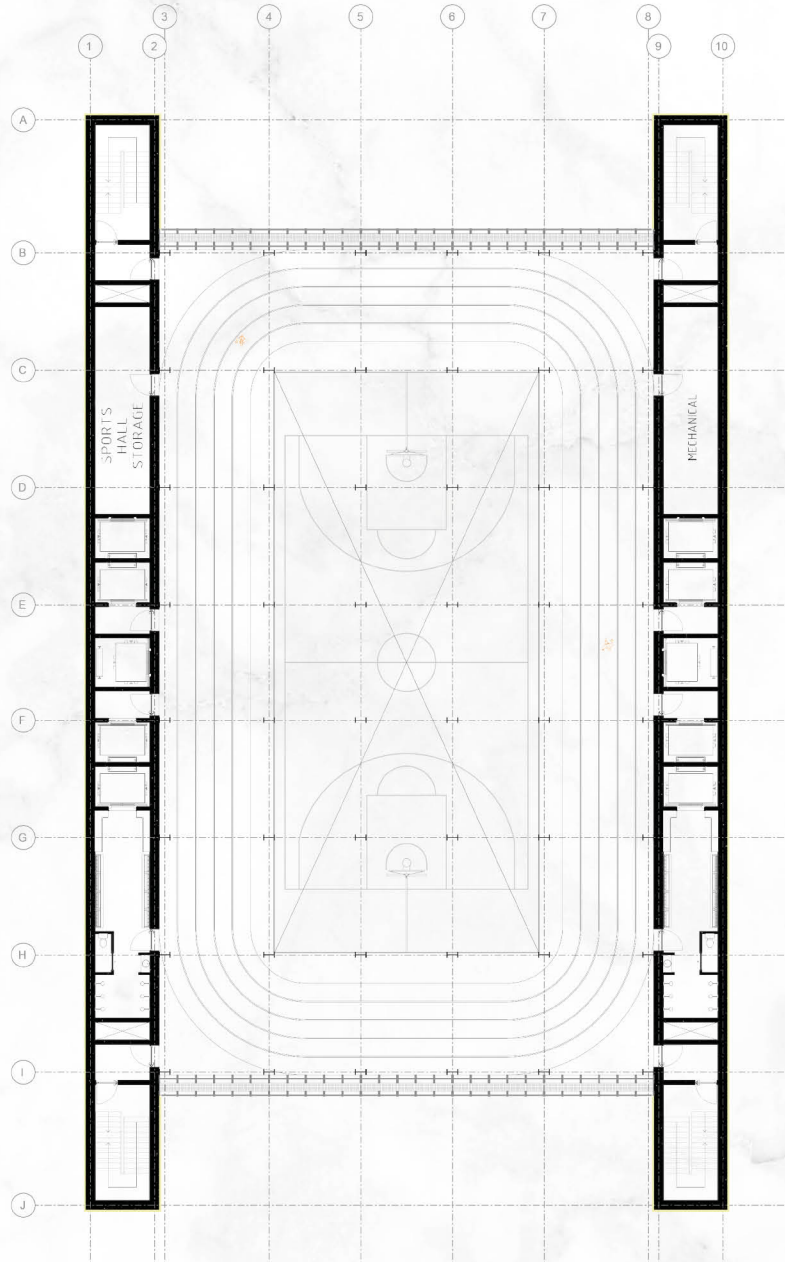
level 29
+ 120 m





Implementation

RUNNINGTRACK



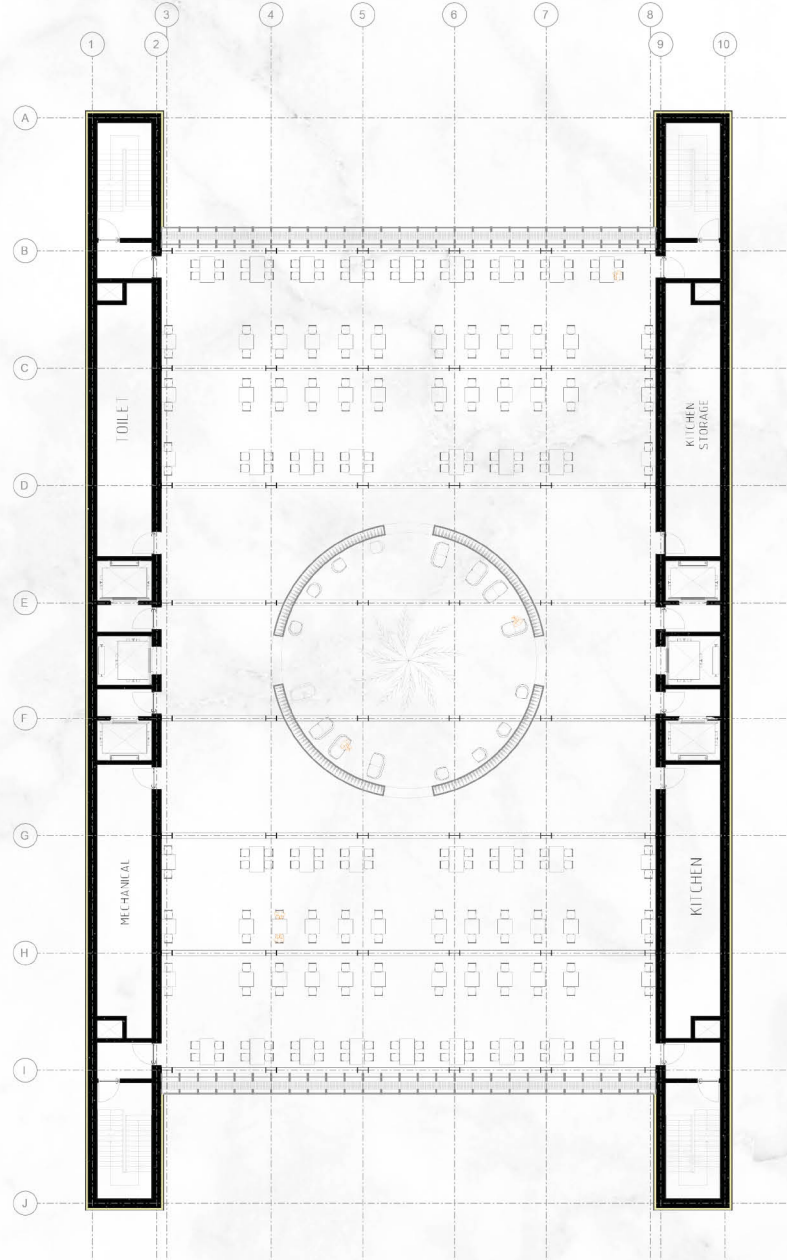
level 20
+ 84 m



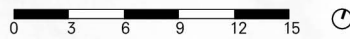


Implementation

RESTAURANT



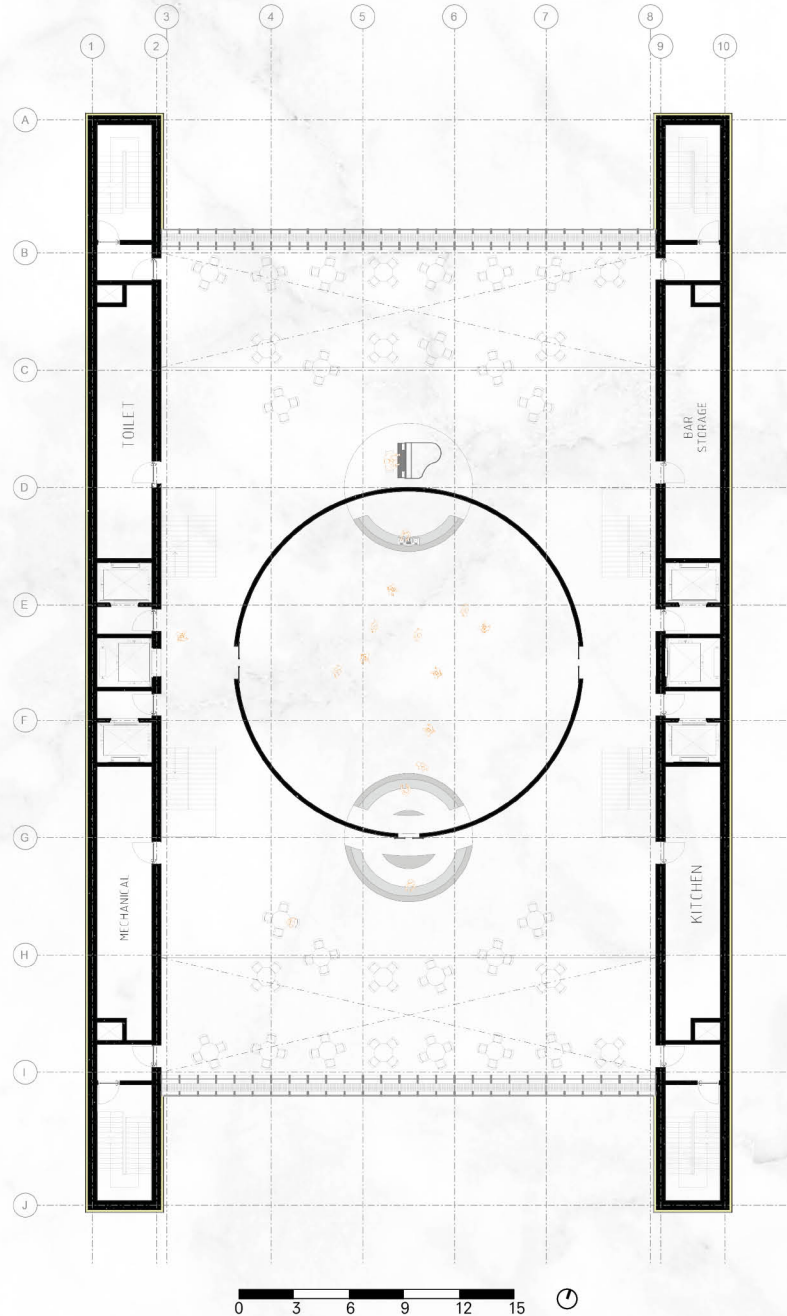
level 33
+ 136 m





Implementation

ROOFTOP BAR

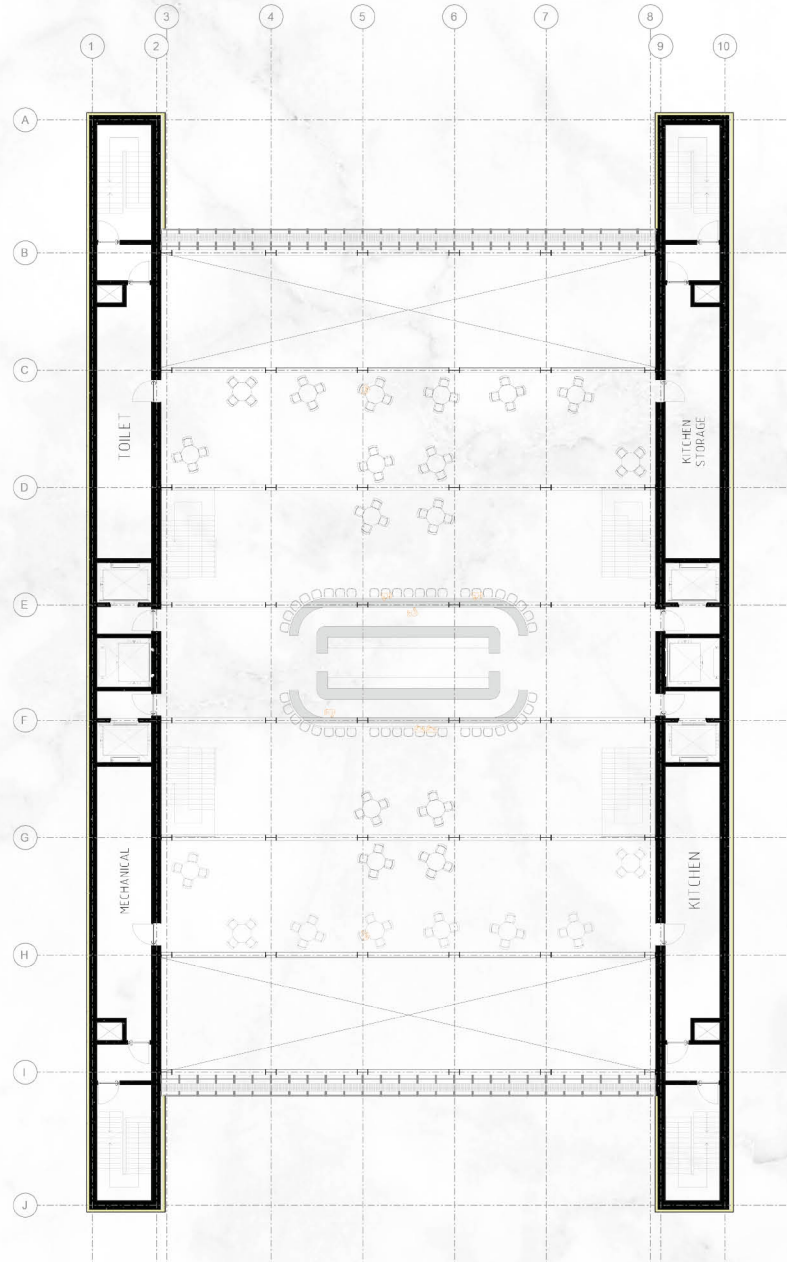


level 34
+ 140 m

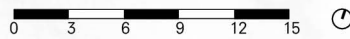


Implementation

ROOFTOP BAR



level 35
+ 144 m





Introduction

Research

Design Brief

Concept

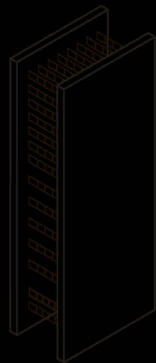
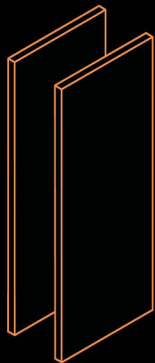
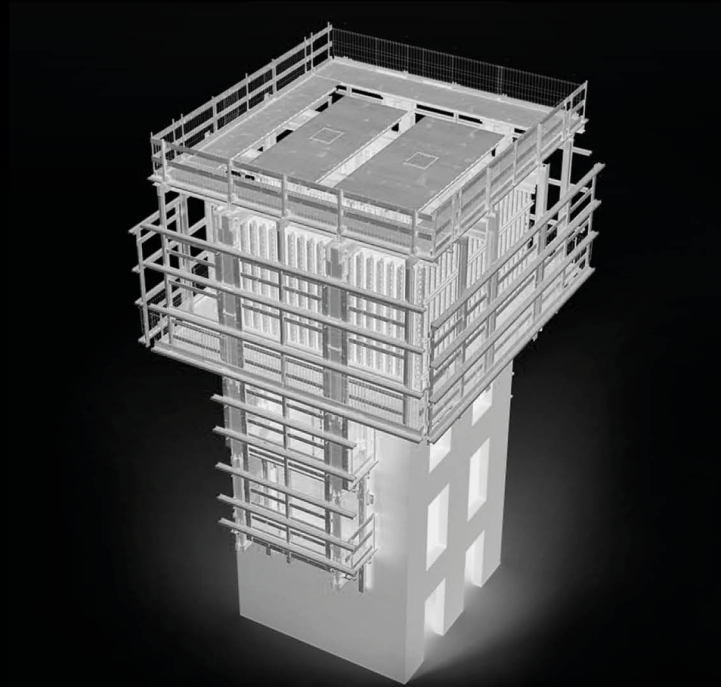
Implementation

Development

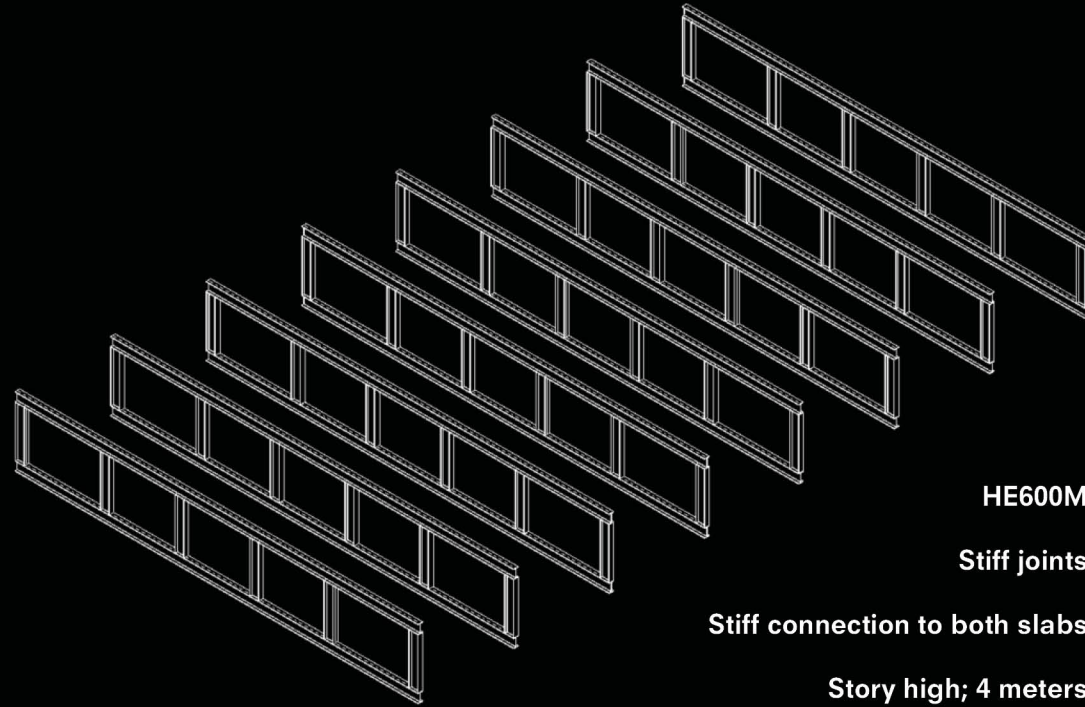
Conclusion

INDEX

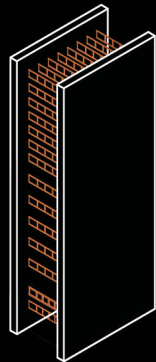
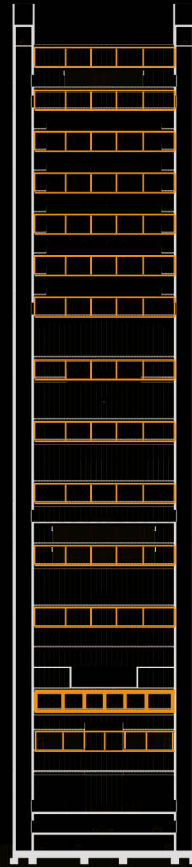
STRUCTURE - SLABS



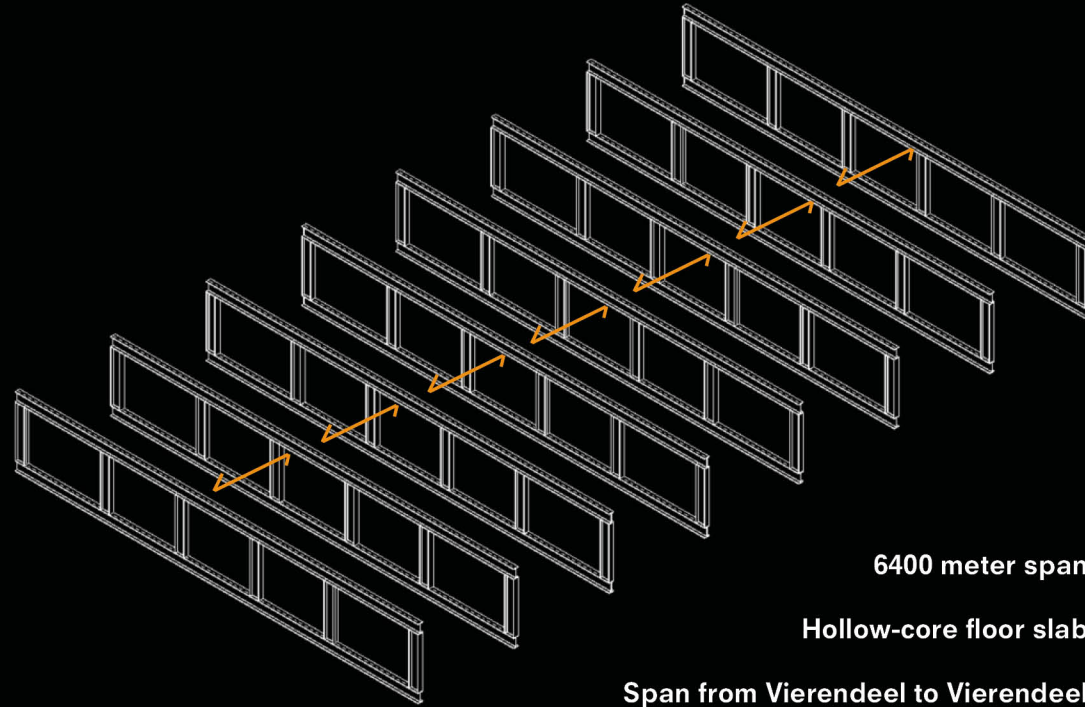
STRUCTURE - VIERENDEEL TRUSS



STRUCTURE - VIERENDEEL TRUSS



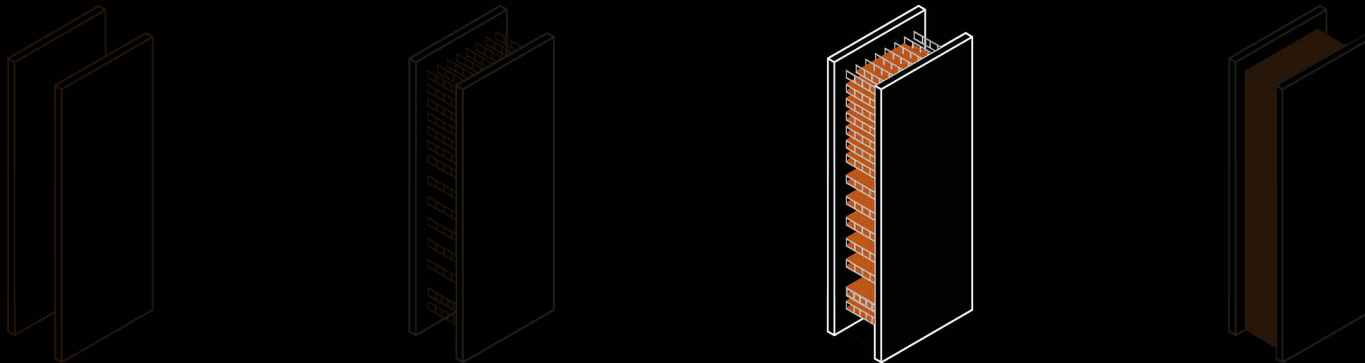
STRUCTURE - FLOORS



6400 meter span

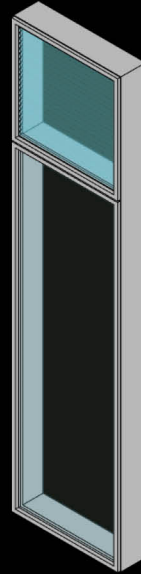
Hollow-core floor slab

Span from Vierendeel to Vierendeel

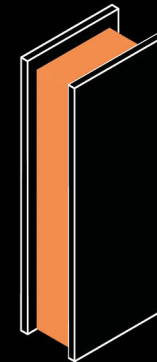
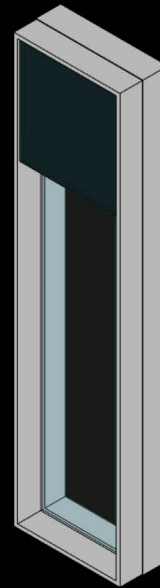


STRUCTURE - FACADE

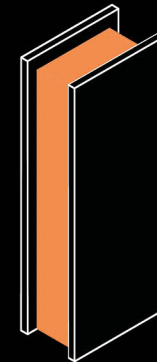
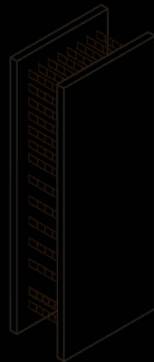
outer element
(top) transparent ventilation grille
(bottom) structural glass



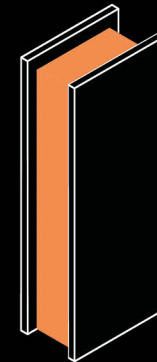
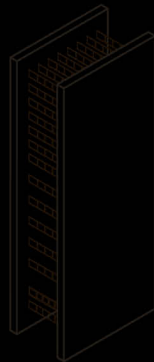
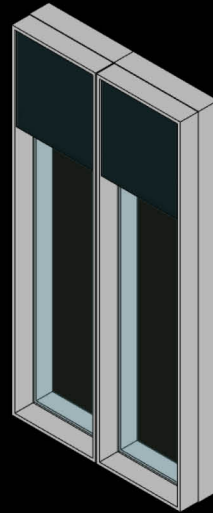
inner element
integrated shading (top)
structural glass (bottom)



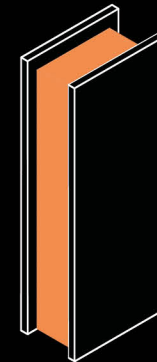
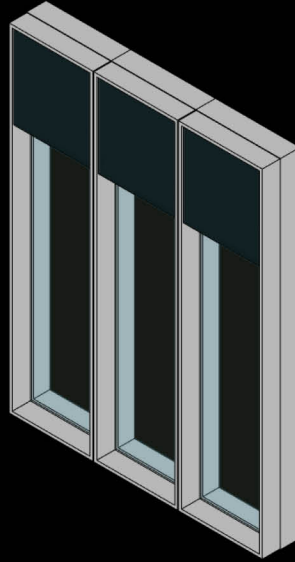
STRUCTURE - FACADE



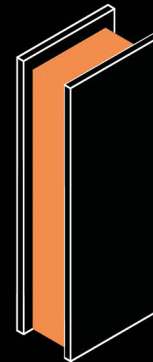
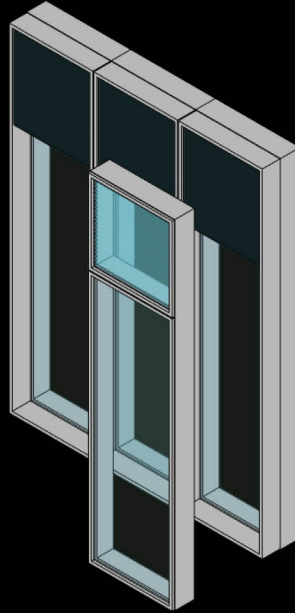
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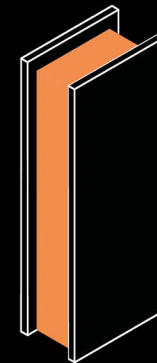
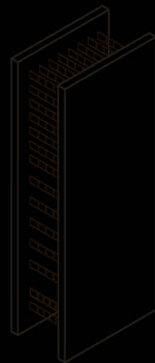
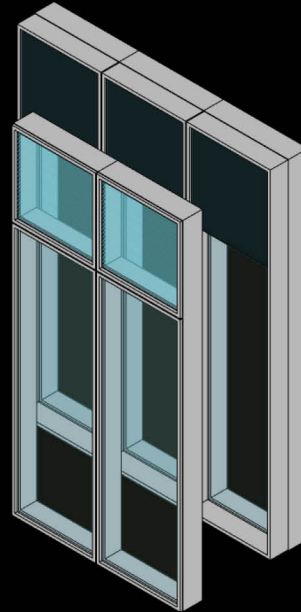
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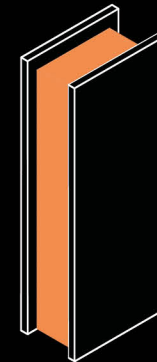
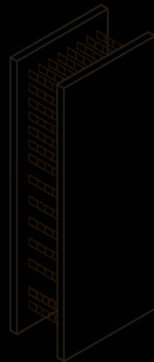
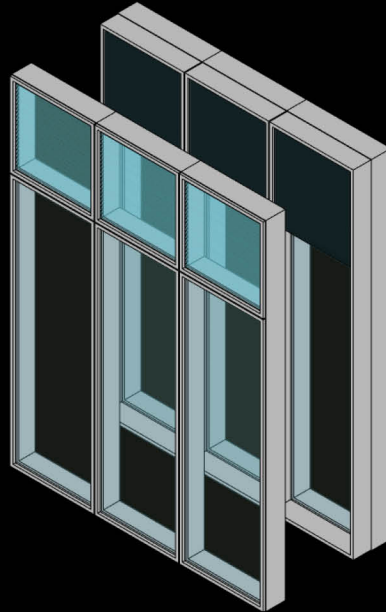
STRUCTURE - FACADE



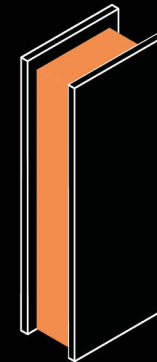
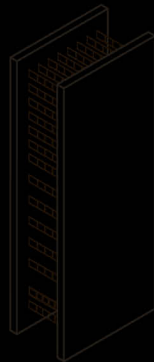
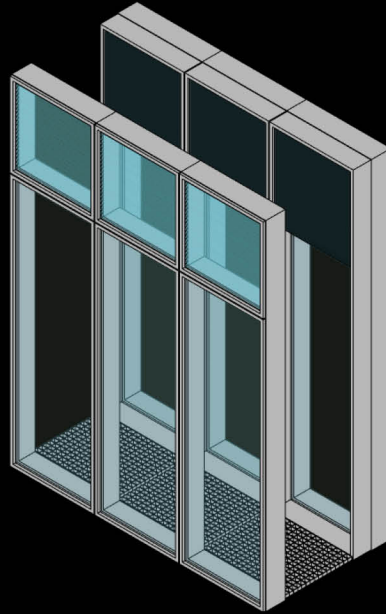
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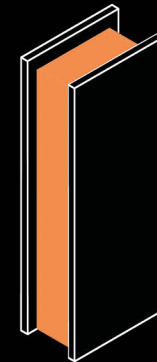
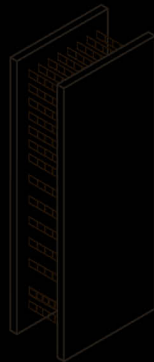
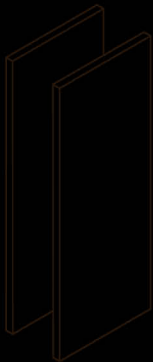
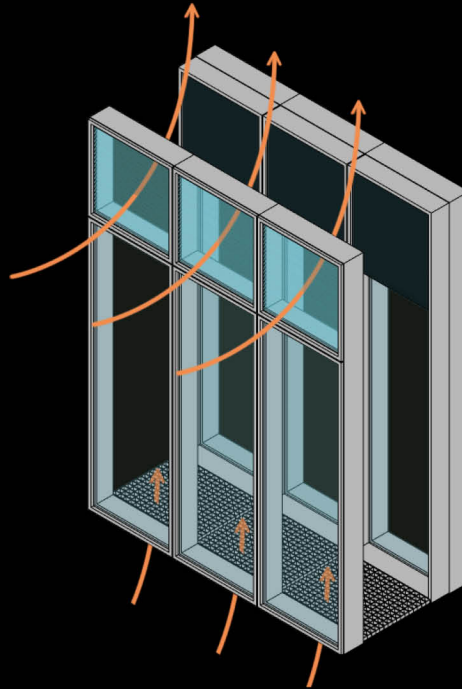
STRUCTURE - FACADE



STRUCTURE - FACADE

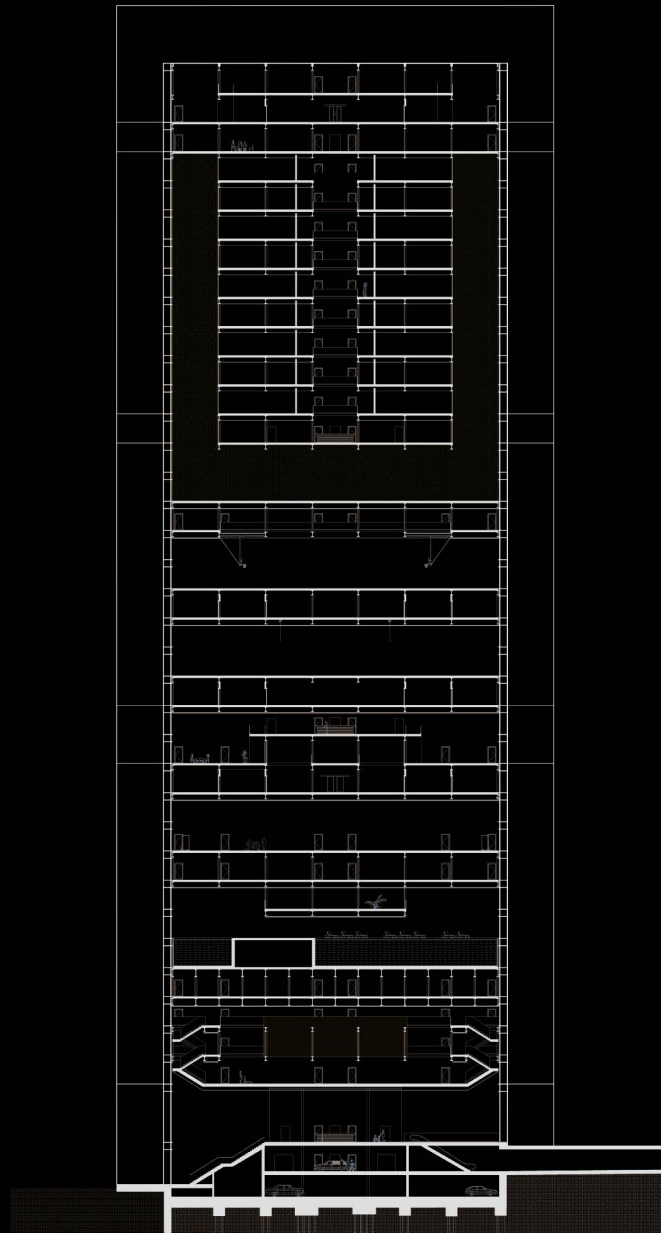


CLIMATE - FACADE



Development

CLIMATE



Ground-coupled heat exchanger

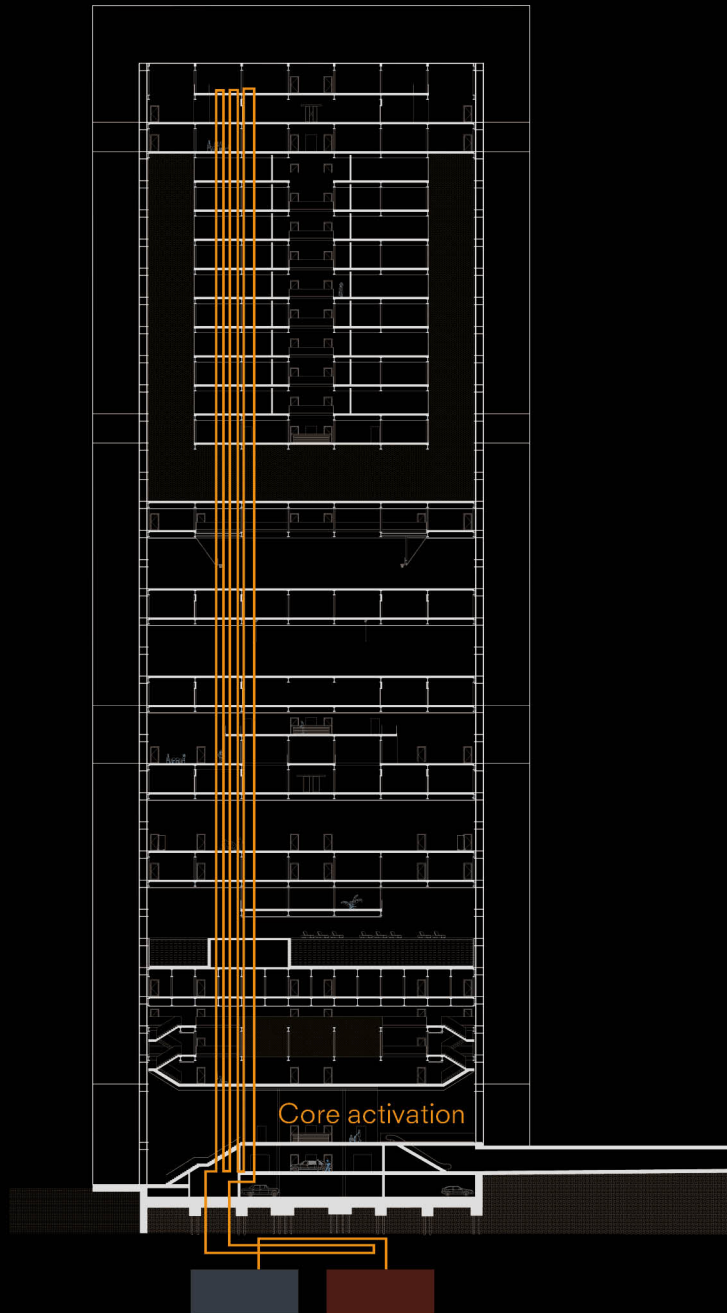


CLIMATE



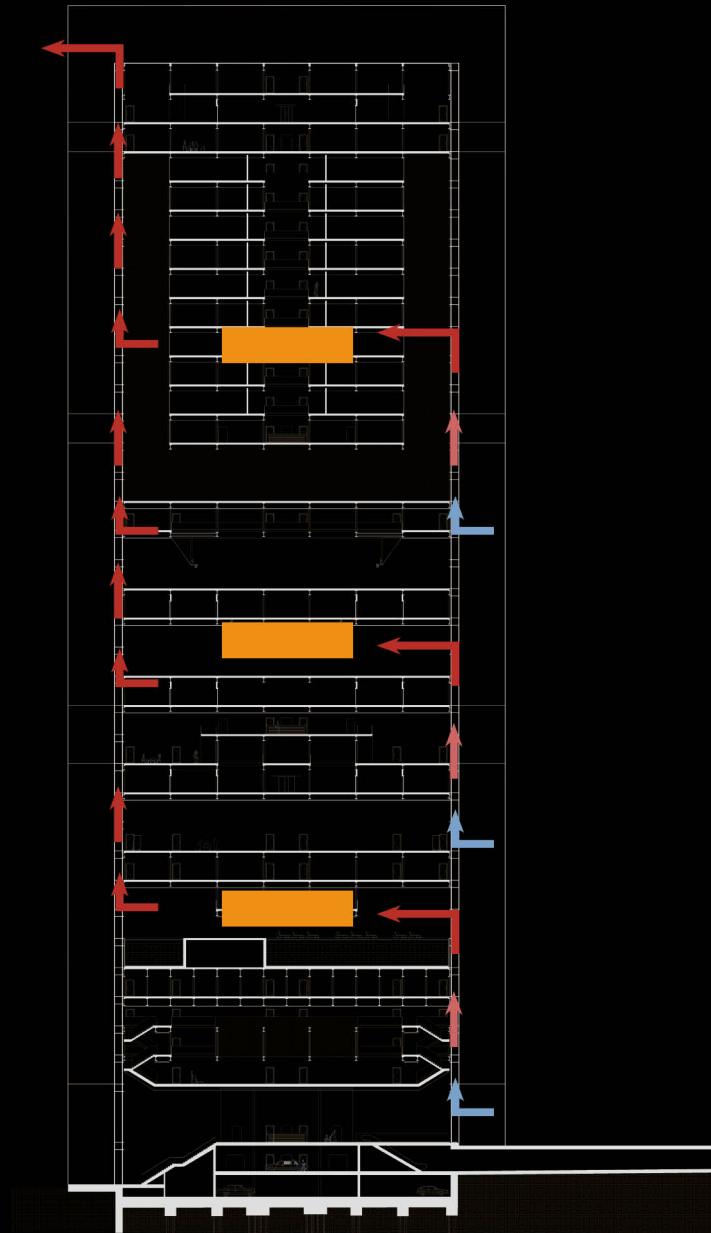
Development

CLIMATE



Development

CLIMATE

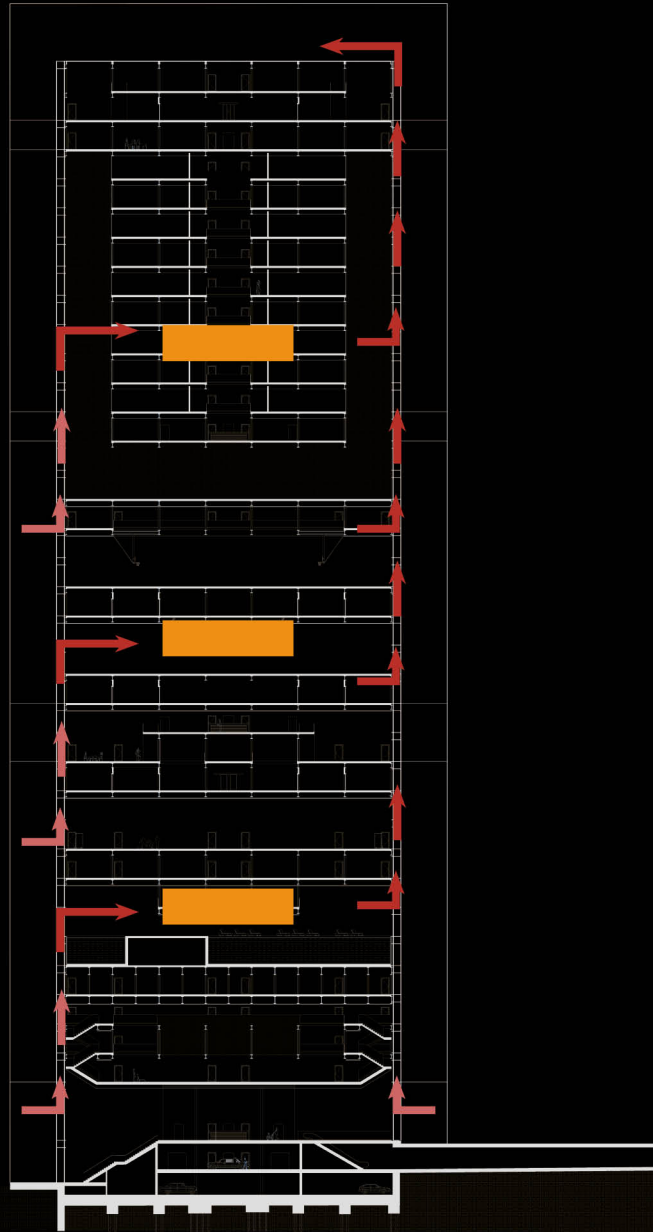


Ventilation - winter



Development

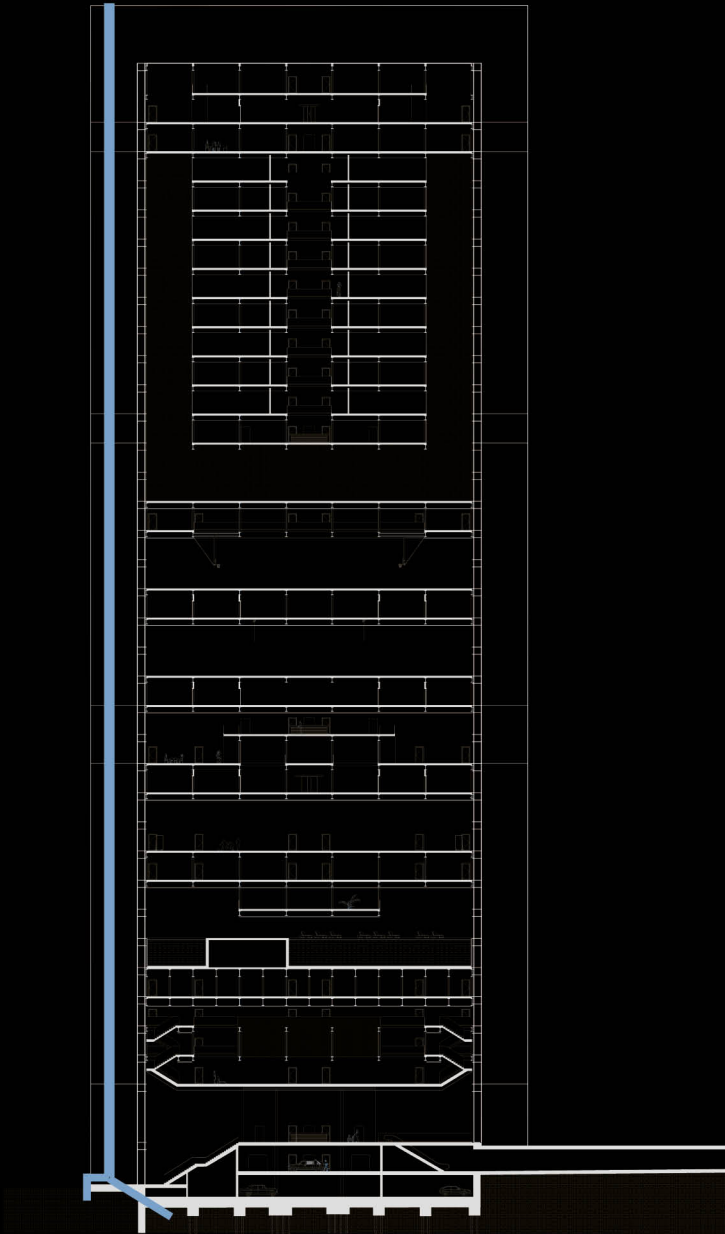
CLIMATE



Ventilation - summer



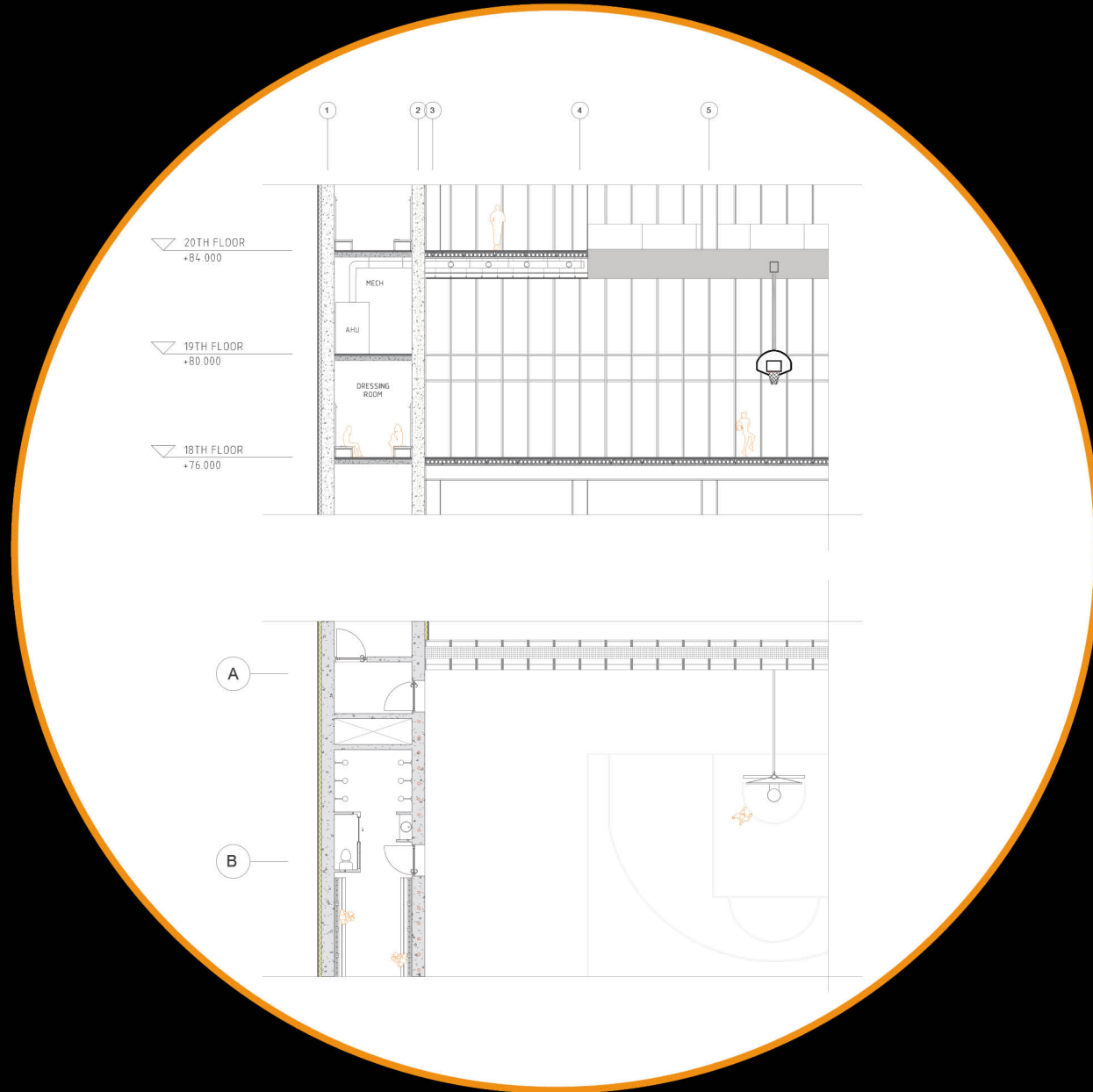
CLIMATE



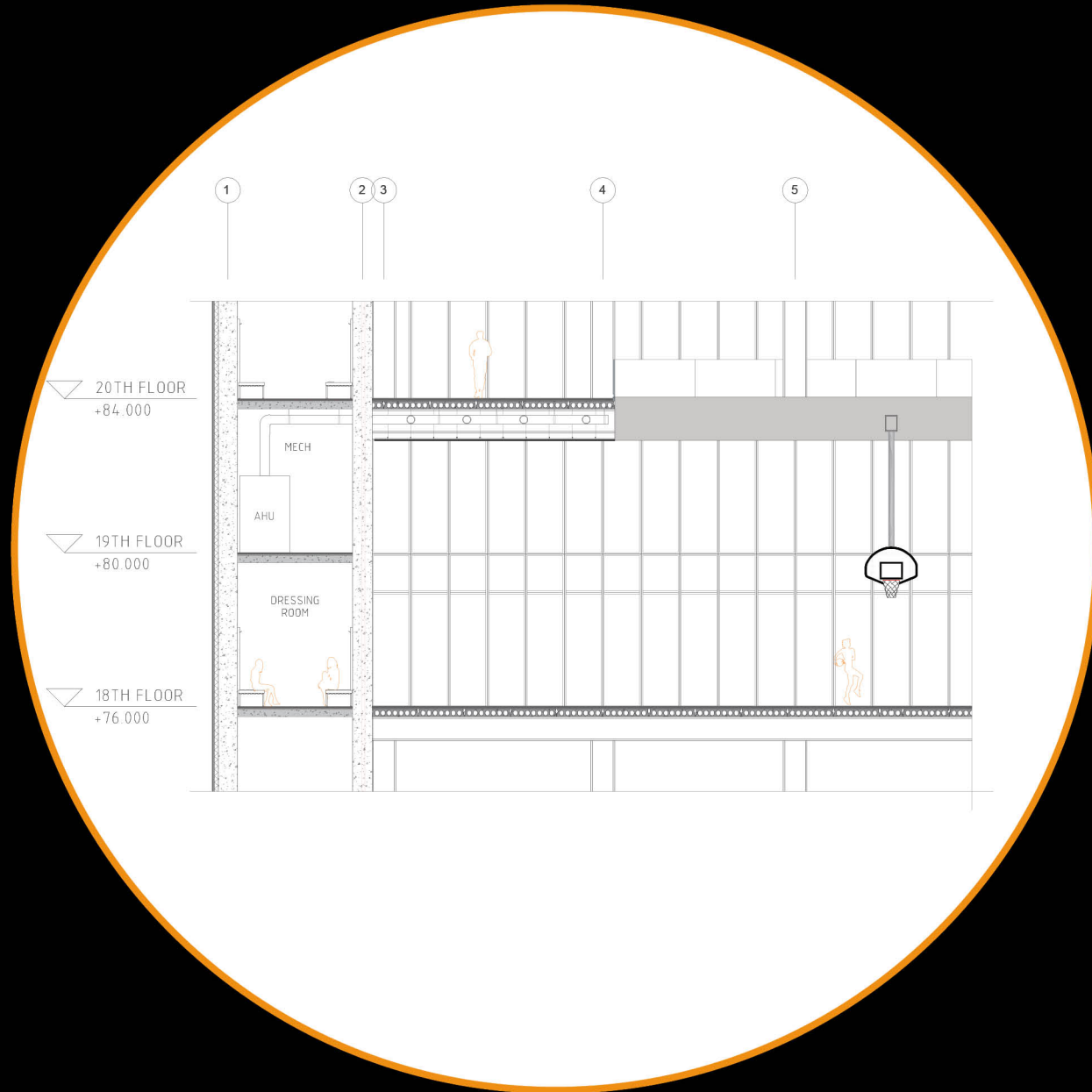
Water recovery



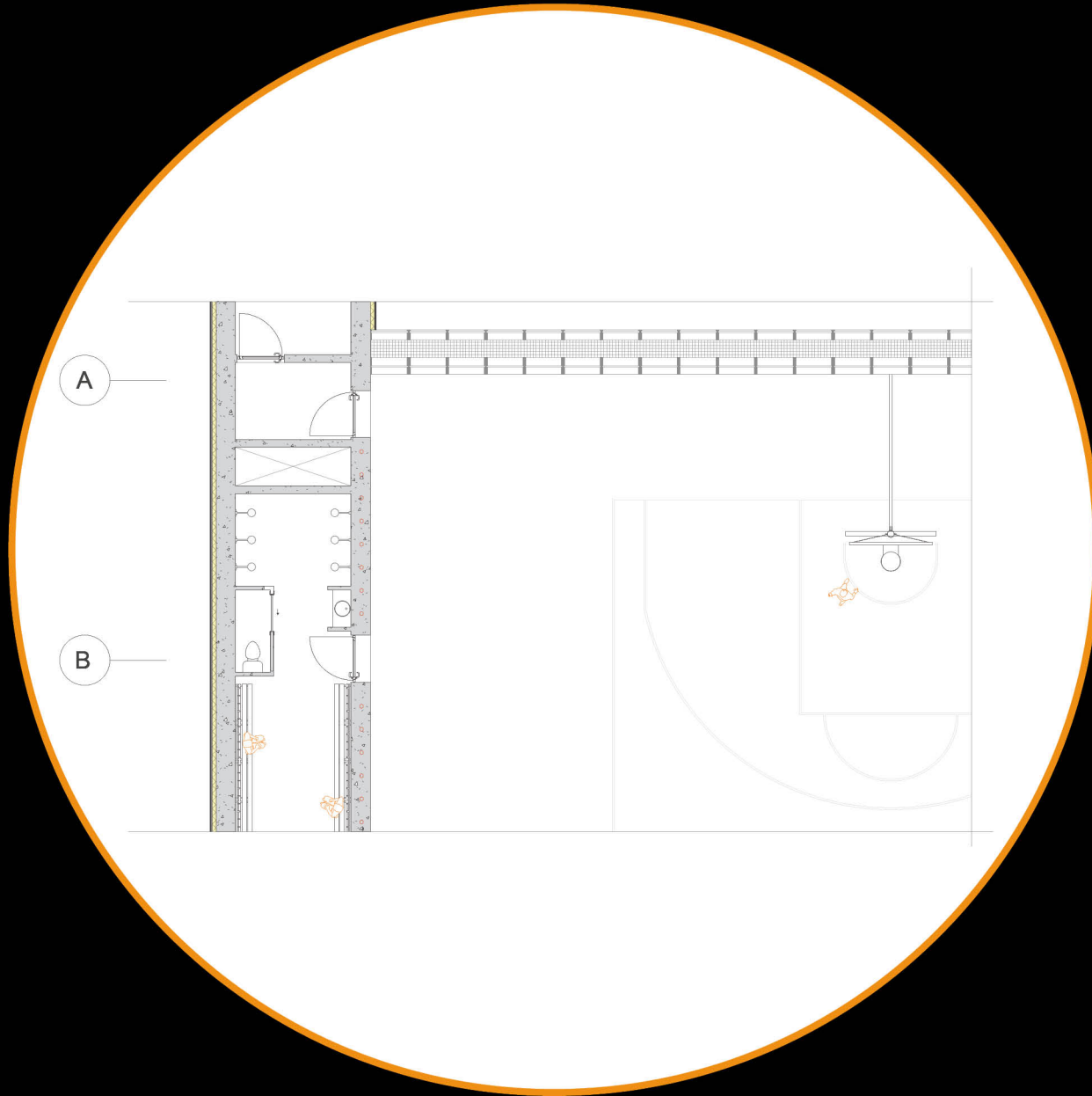
1:50 INTERIOR FRAGMENT



1:50 INTERIOR FRAGMENT

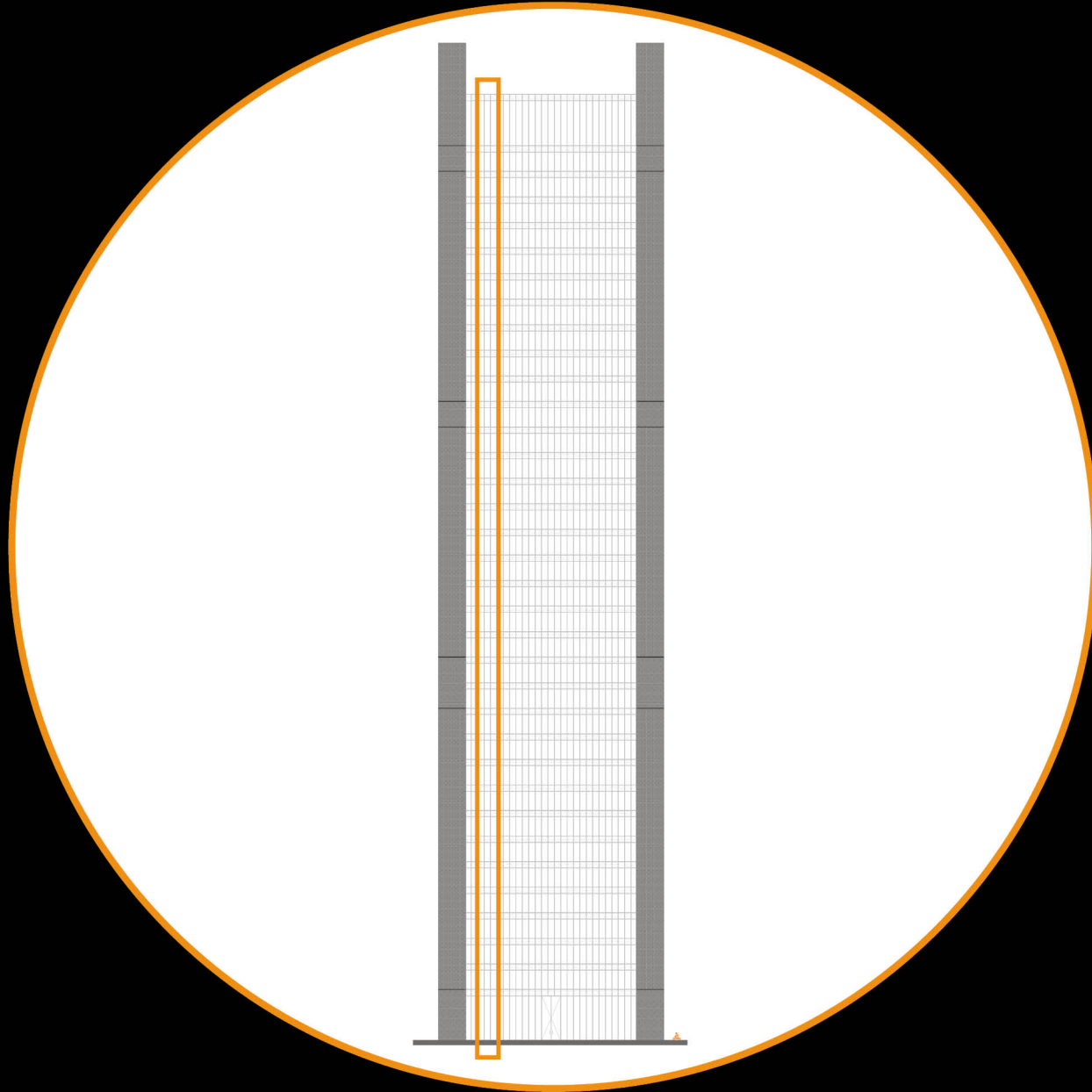


1:50 INTERIOR FRAGMENT

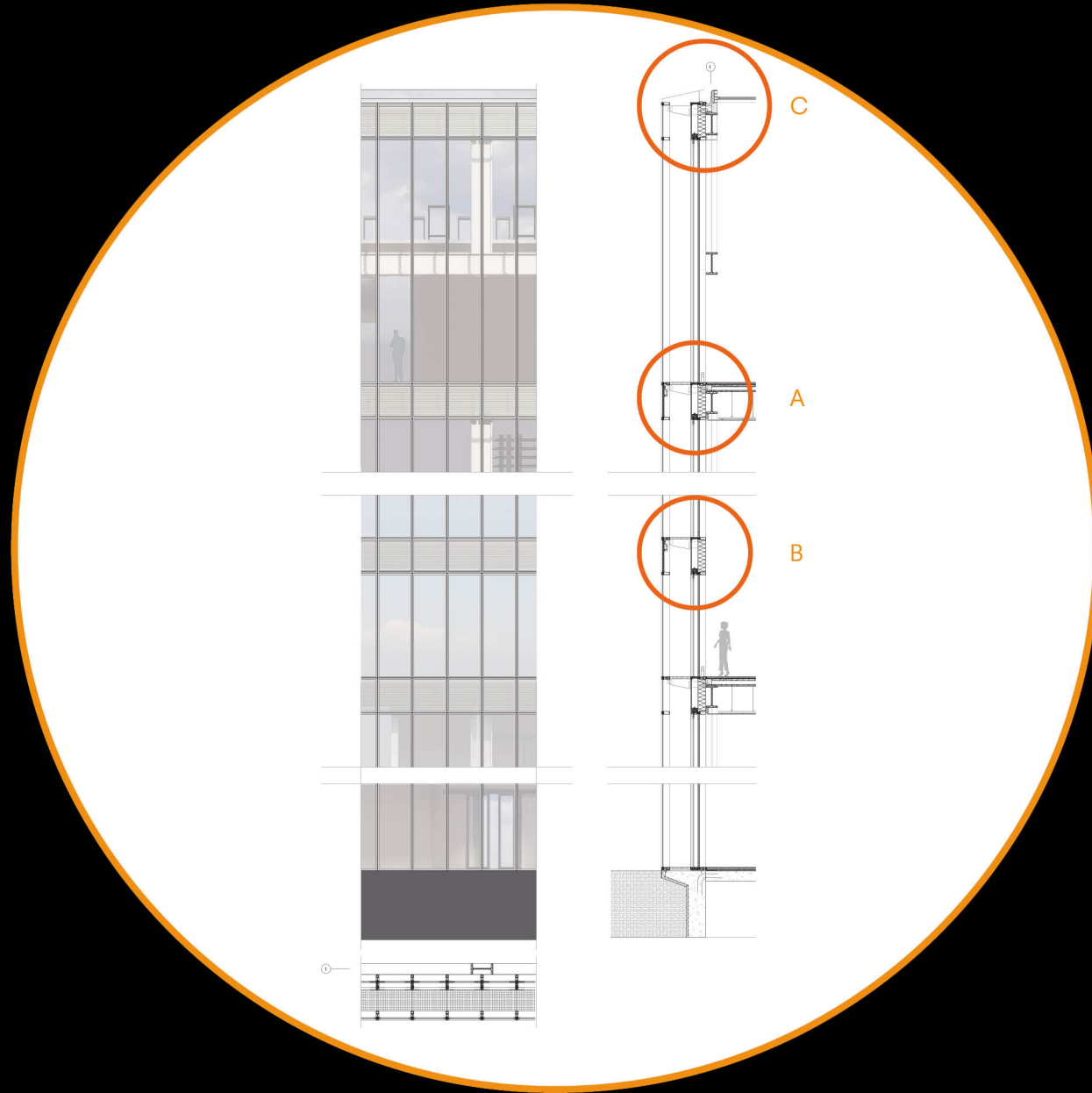


Implementation

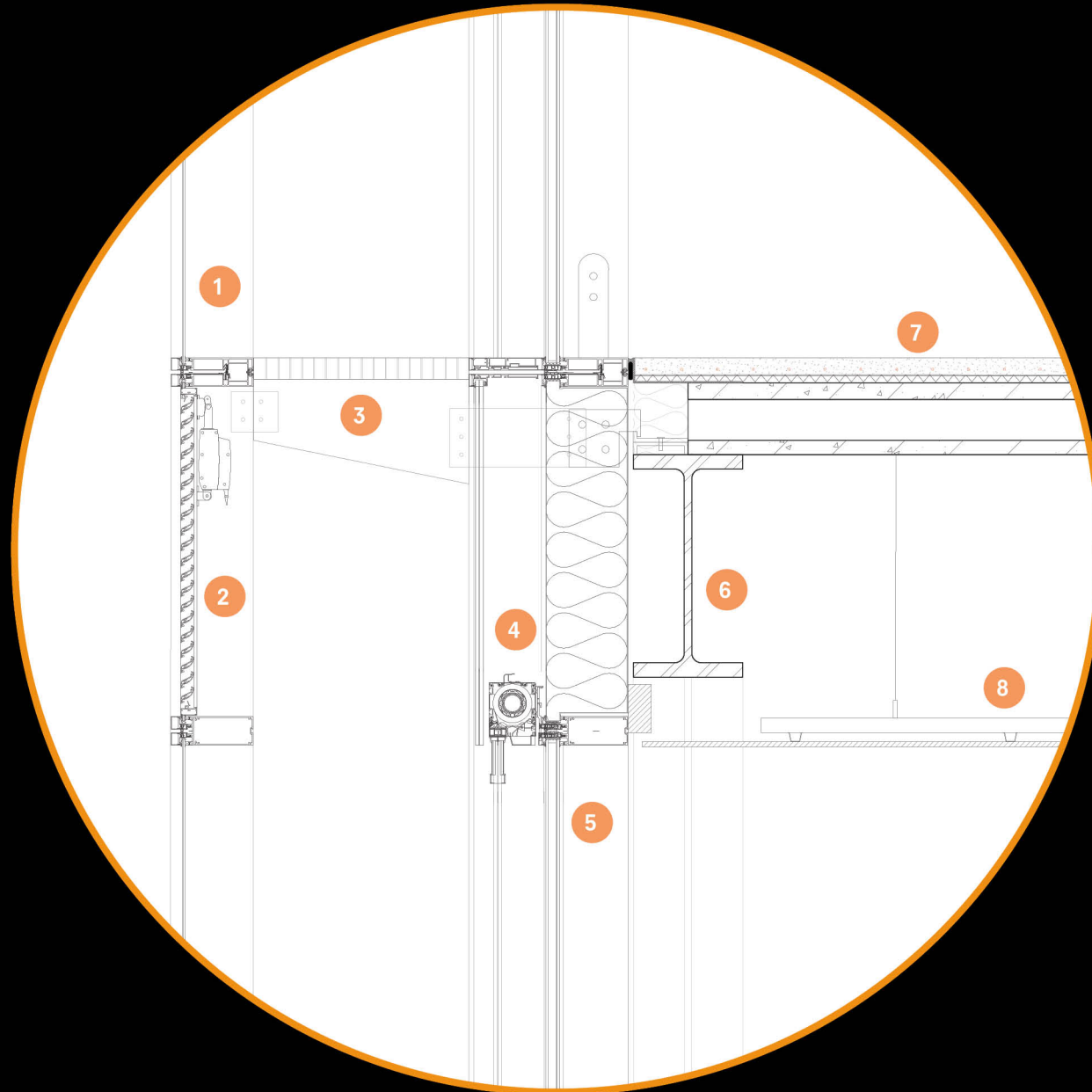
1:20 LOCATION



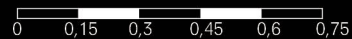
1:20 ENVELOPE FRAGMENT



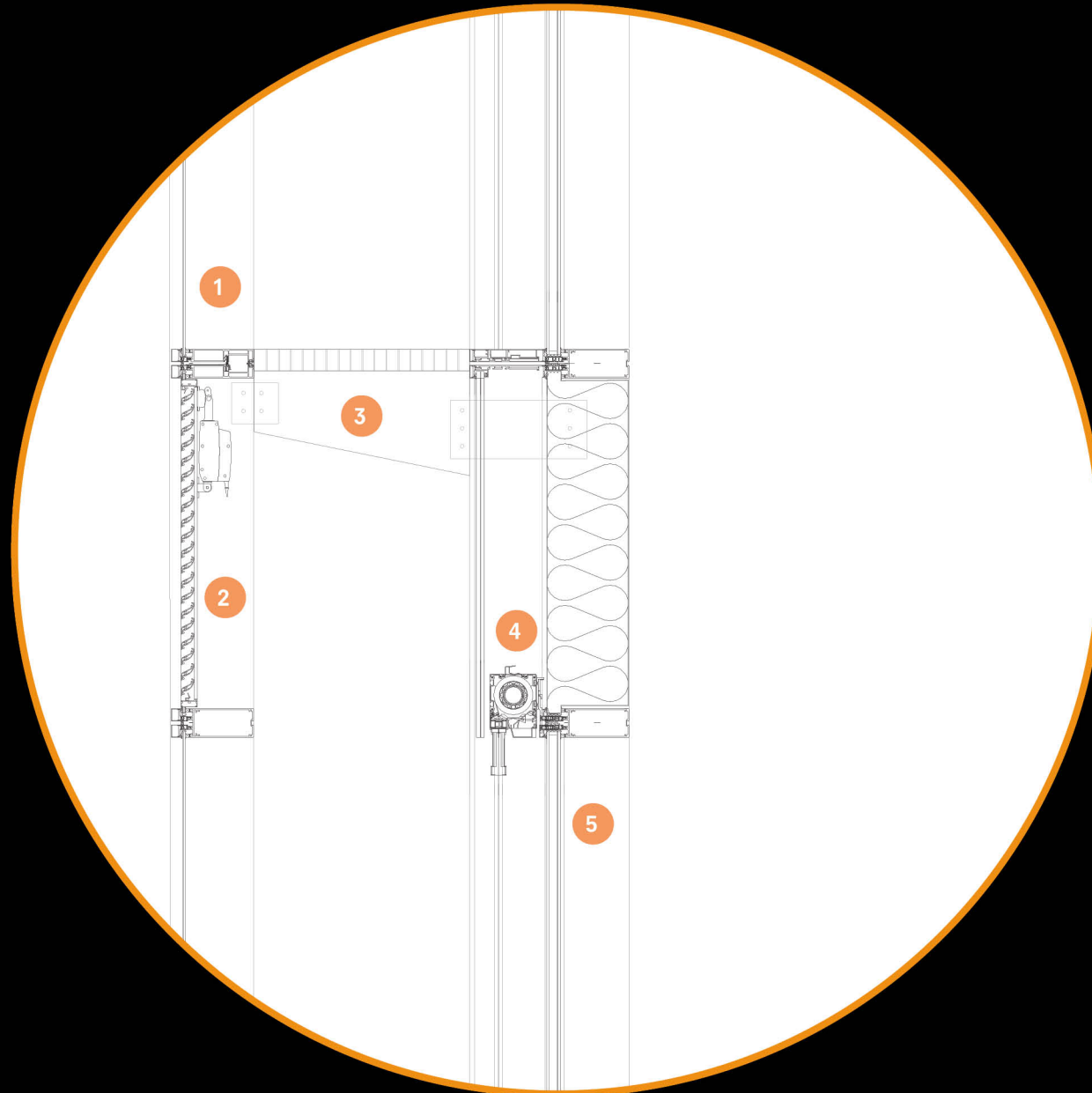
1:5 DETAIL A



- 1 SCHUCO AF UDC 80 outer element facade panel with laminated glass (4-6)
- 2 DUCOGRILLE CLOSE F 35Z ventilation grille with motor
- 3 Steel connection between inner and outer skin + steel grate for maintenance
- 4 SCHUCO AB ZDS automated shading in black, perforated to make it see-through
- 5 SCHUCO AF UDC 80 inner element facade panel with double glazing + laminated glass (4-22-4-6). connected to vierendeel truss through a facade bracket
- 6 HEM 600 steel beam as part of the vierendeel truss, coated with intumescent paint (fire proofing)
- 7 VBI hollow core slab 200mm with a 20 mm floor rigid insulation and a 50 mm screed with integrated floor heating
- 8 DERAKO closed linear ceiling system; wooden slats of 125 mm wide with a gap of 15 mm, hanging on a carrier system of galvanized steel rails with clips



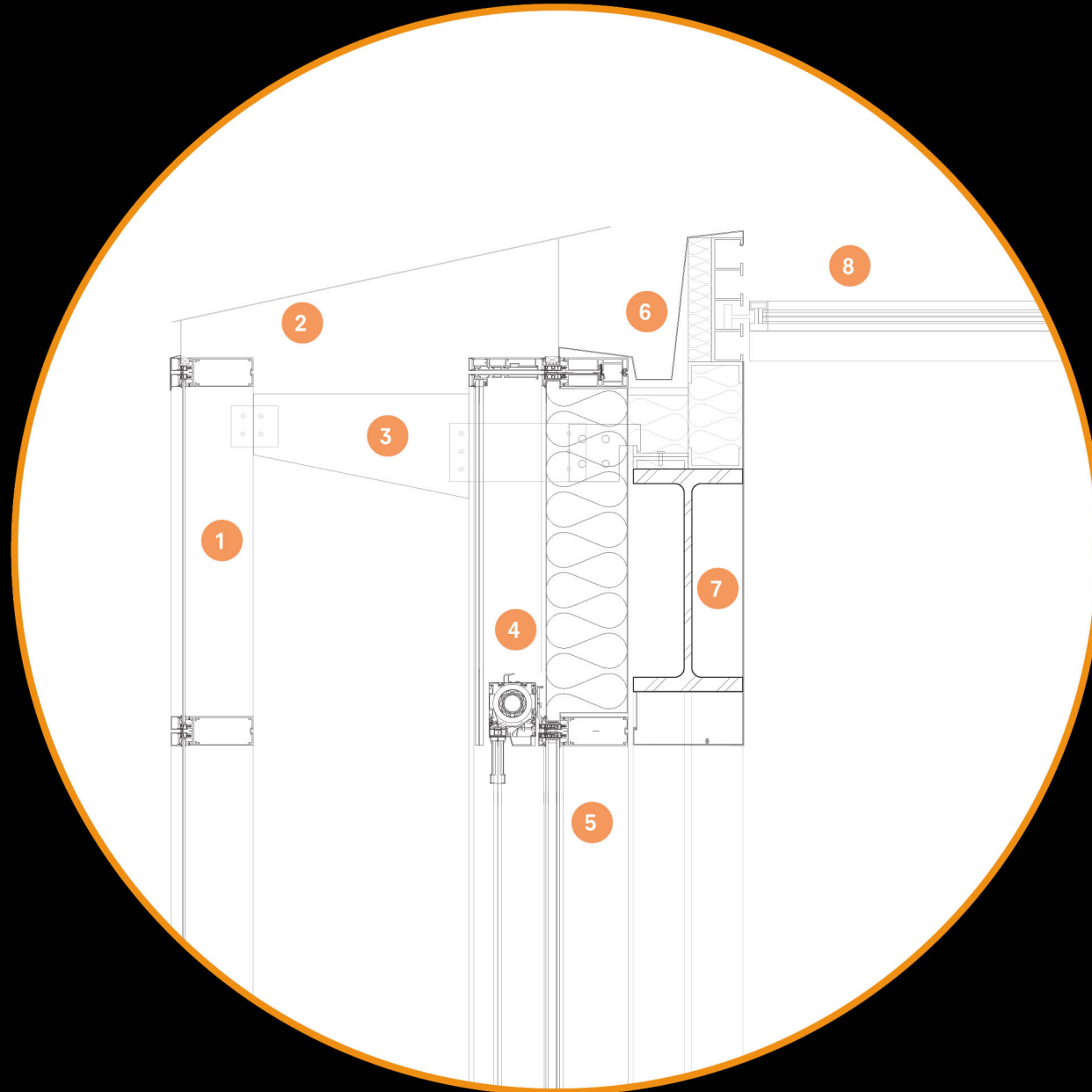
1:5 DETAIL B



- 1 SCHUCO AF UDC 80
outer element facade panel
with laminated glass (4-6)
- 2 DUCOGRILLE CLOSE F 35Z
ventilation grille with motor
- 3 Steel connection between
inner and outer skin + steel
grate for maintenance
- 4 SCHUCO AB ZDS
automated shading in black,
perforated to make it see-
through
- 5 SCHUCO AF UDC 80
inner element facade panel
with double glazing +
laminated glass (4-22-4-6).
connected to vierendeel
truss through a facade
bracket



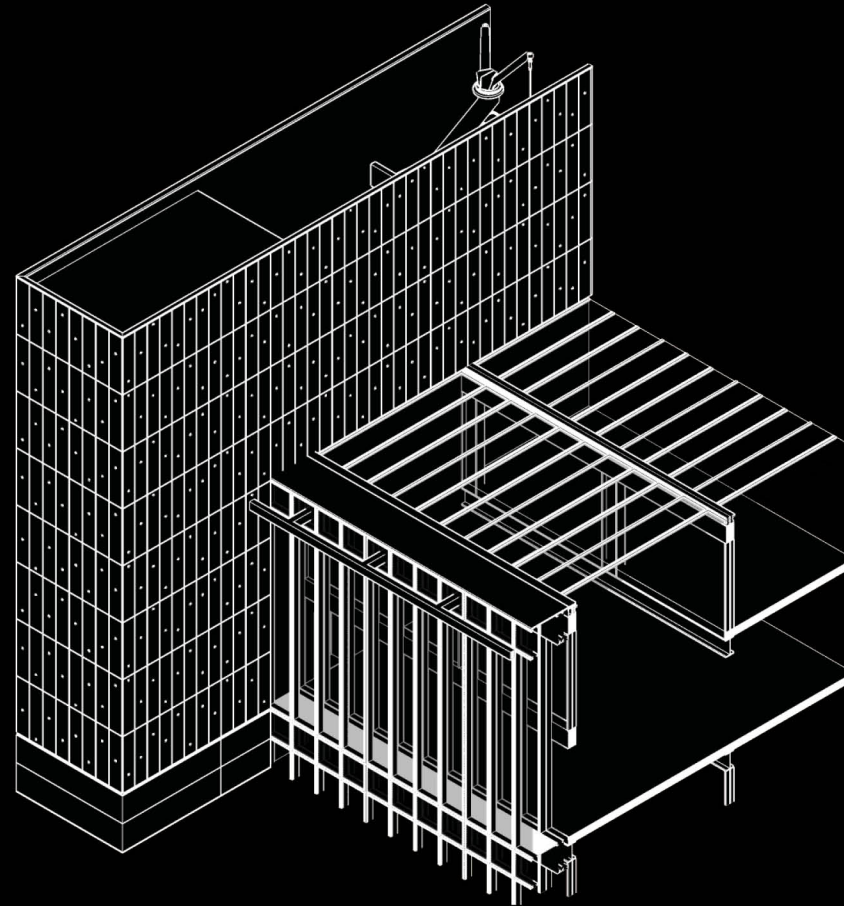
1:5 DETAIL C



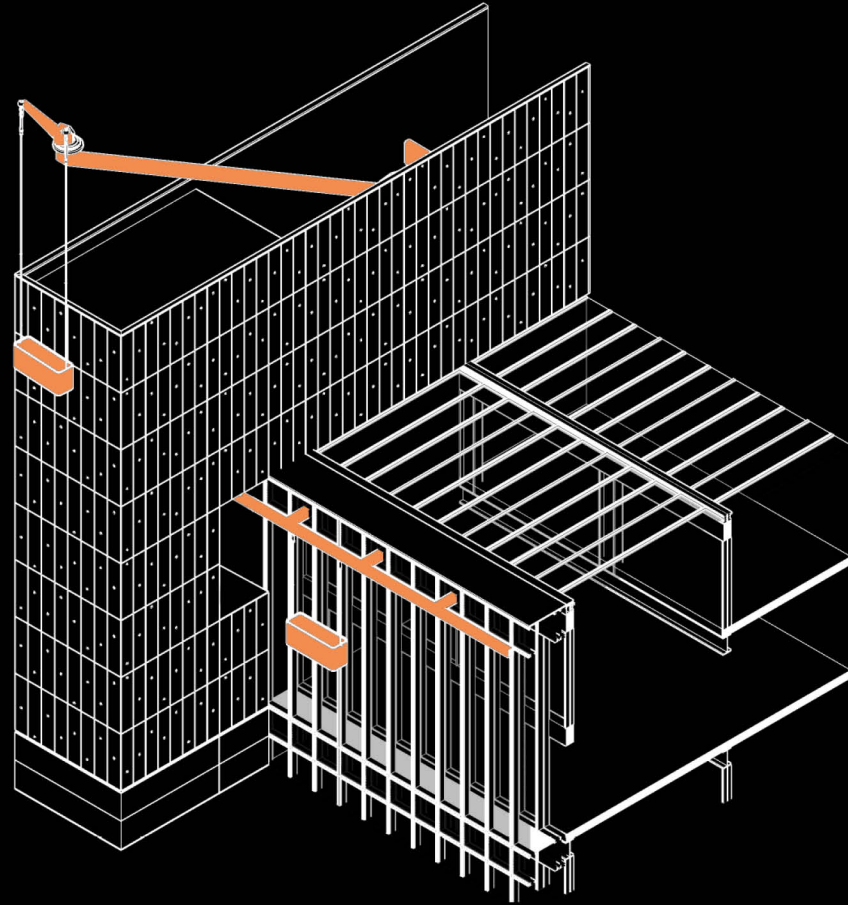
- 1 SCHUCO AF UDC 80 outer element facade panel with laminated glass (4-6)
- 2 Double skin facade top cover with opening as an air outlet
- 3 Steel connection between inner and outer skin
- 4 SCHUCO AB ZDS automated shading in black, perforated to make it see-through
- 5 SCHUCO AF UDC 80 inner element facade panel with double glazing + laminated glass (4-22-4-6). connected to vierendeel truss through a facade bracket
- 6 Custom rainwater drainage
- 7 HEM 600 steel beam as part of the vierendeel truss, coated with intumescent paint (fire proofing) and covered by a steel trim
- 8 SolarGlide V2 openable glass roofing system, sliding into the concrete slabs



MAINTENANCE



MAINTENANCE



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RESEARCH QUESTION

**HOW CAN SPACE CONSUMING LEISURE SPORTS
BE IMPLEMENTED IN A DENSIFIED CITY CENTER,
IN ORDER TO BE A SOCIAL CONDENSER?**

RESULT

VERTICAL SPORTS FACILITY
DENSE LOCATION
MIXTURE OF FUNCTIONS; SPORT AND SOCIAL







THANK YOU.



complex projects