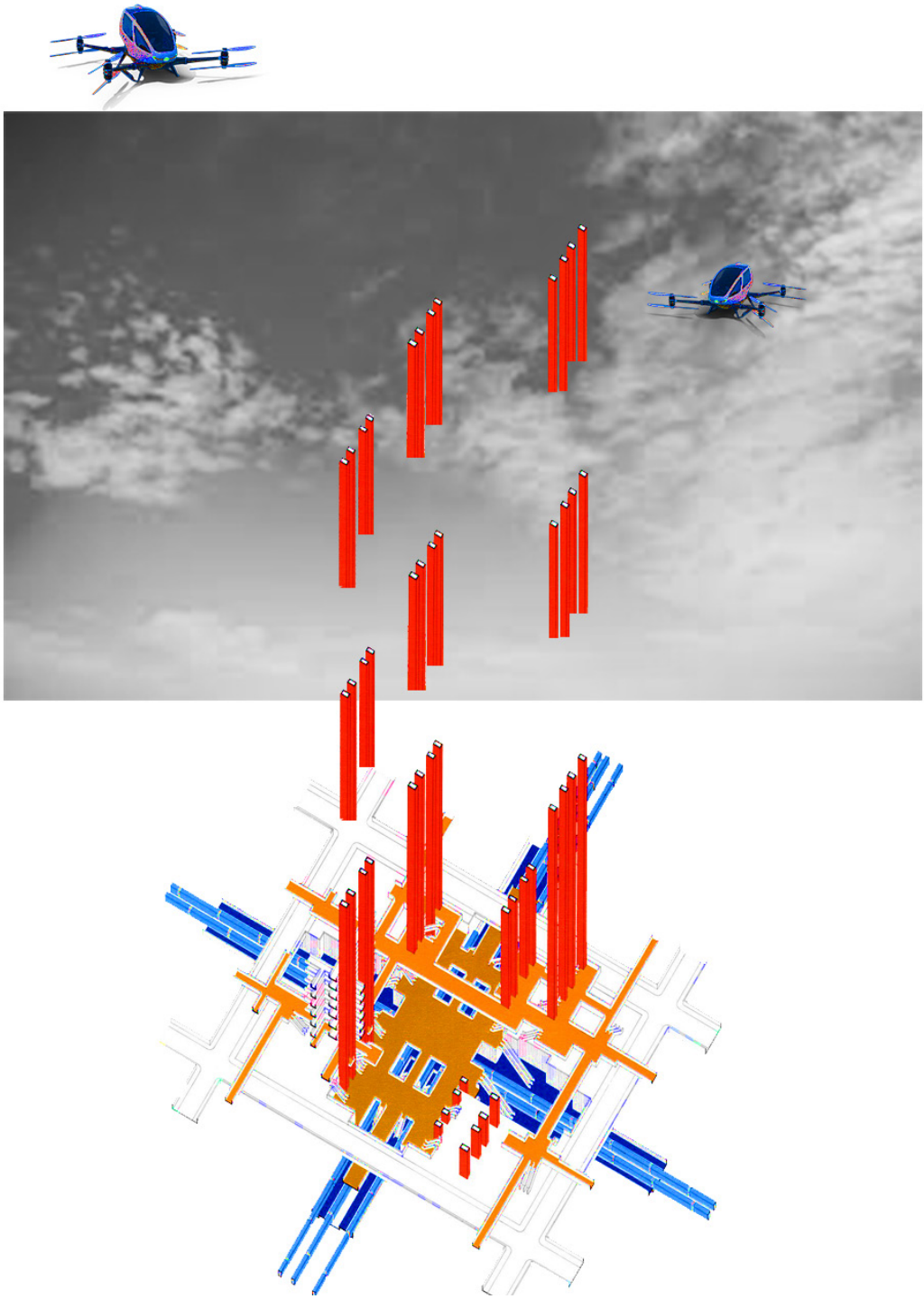


The Path to the Playground

Ludovica Beltrami



01 RESEARCH

- context-led research on Midtown West
- mobility and its effects
 - group strategy
- new mobility trends

02 PROGRAM

- Skiport precedents
- Program bar

03 MASSING

- Site analysis
- Massing studies

04 DESIGN

- Circulation through the building
 - Structure
- Drawing set
- Atmospheres

05 REFLECTION

- The relevance of the project
- Conclusion

01 RESEARCH

Context-led research on Midtown West



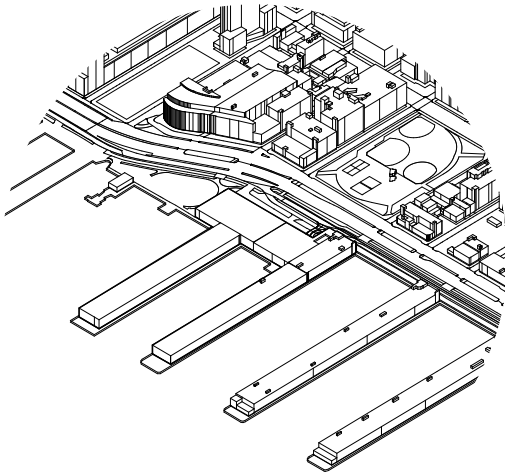
Location: New York City, Midtown



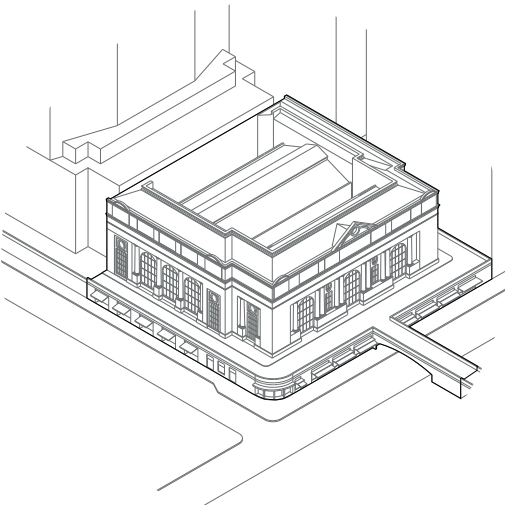
Manhattan

Midtown

Midtown-west
W57th Street to 42nd Street
Hudson River to 6th Avenue

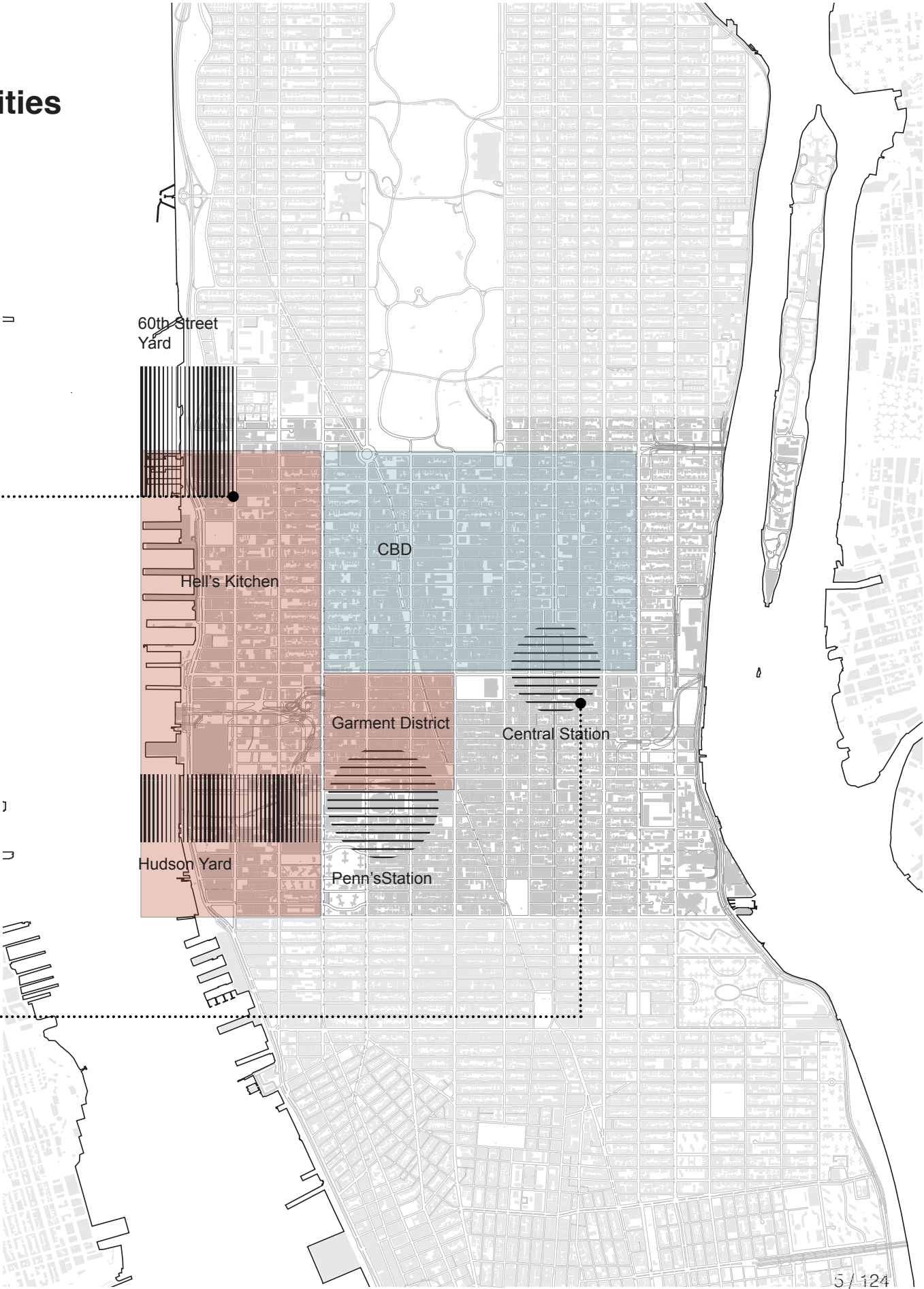


Manhattan Cruise Terminal



Grand Central Terminal

Midtown Polarities



Freights move out of Manhattan



60th street Rail yard



30th street Rail yard

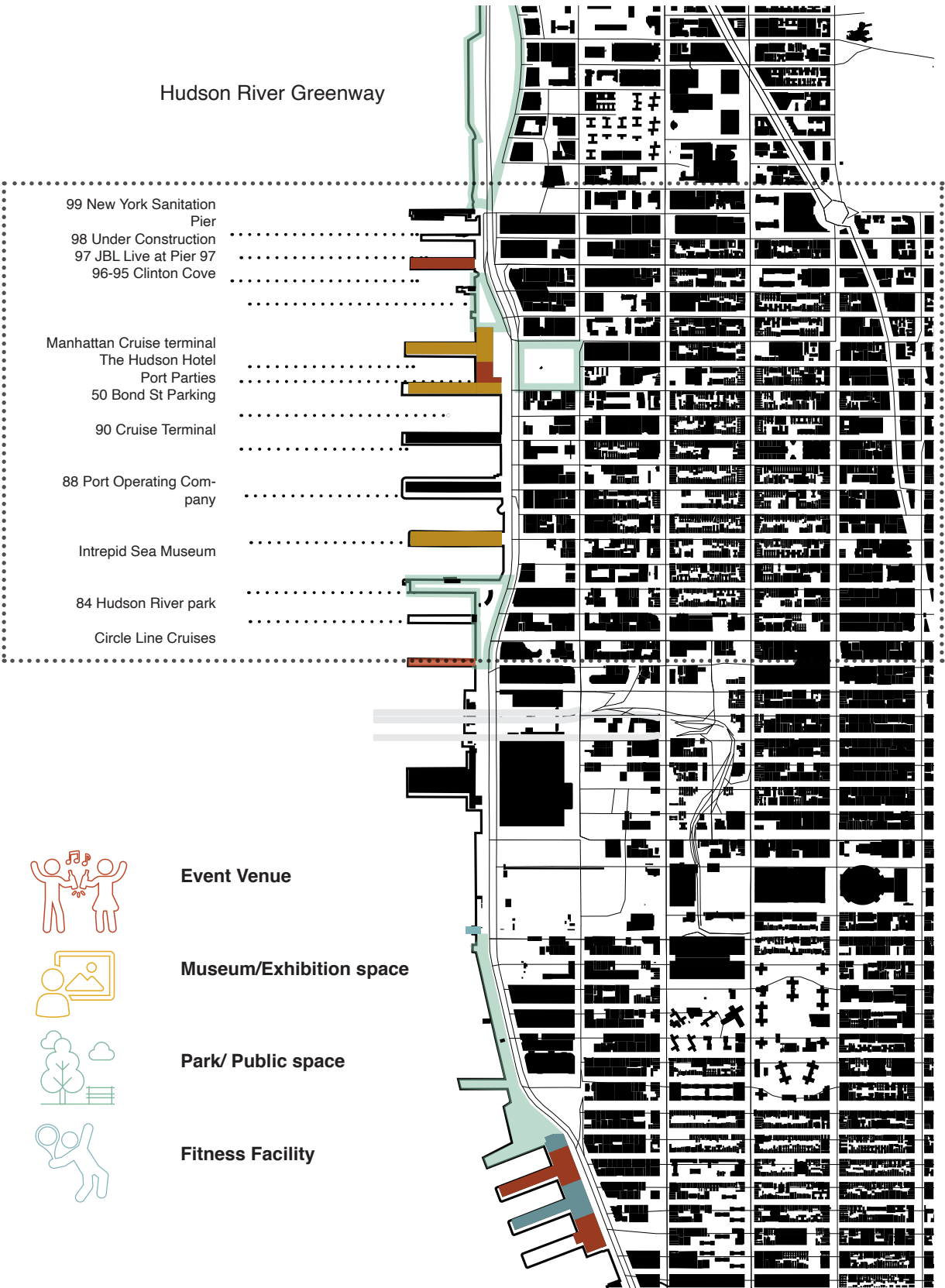


Riverside South

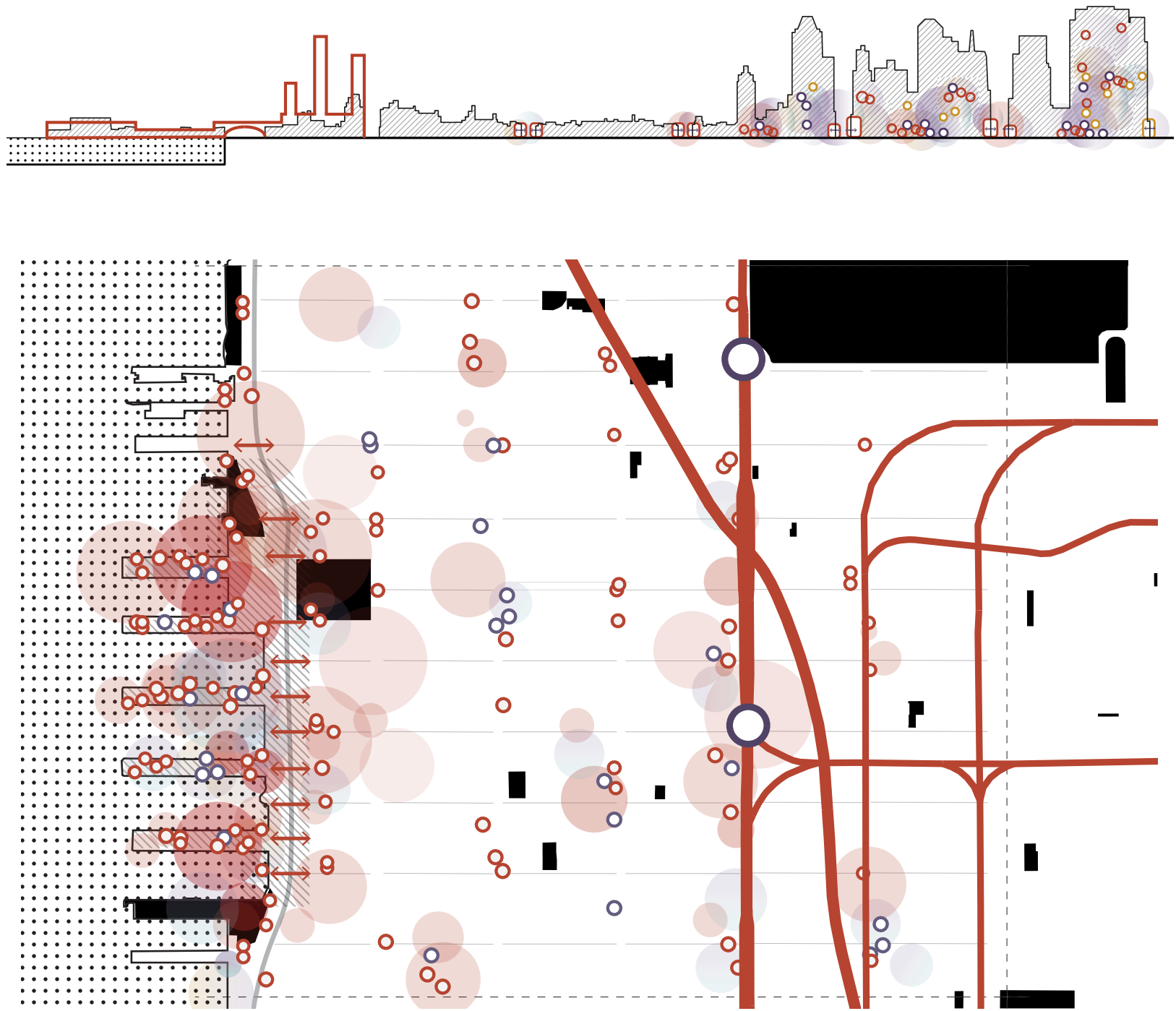


Hudson Yard

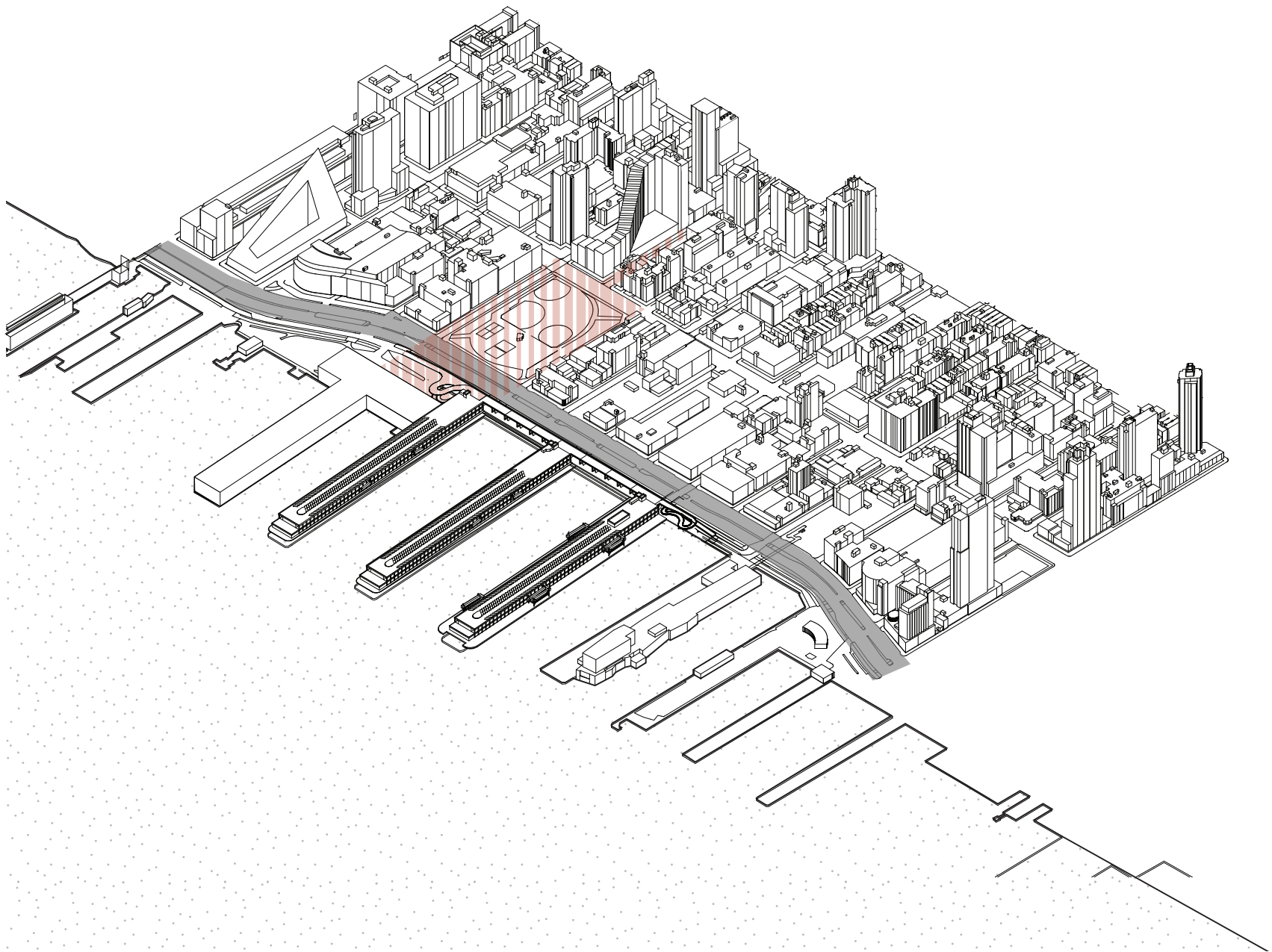
Piers Redevelopment- New playground of Manhattan



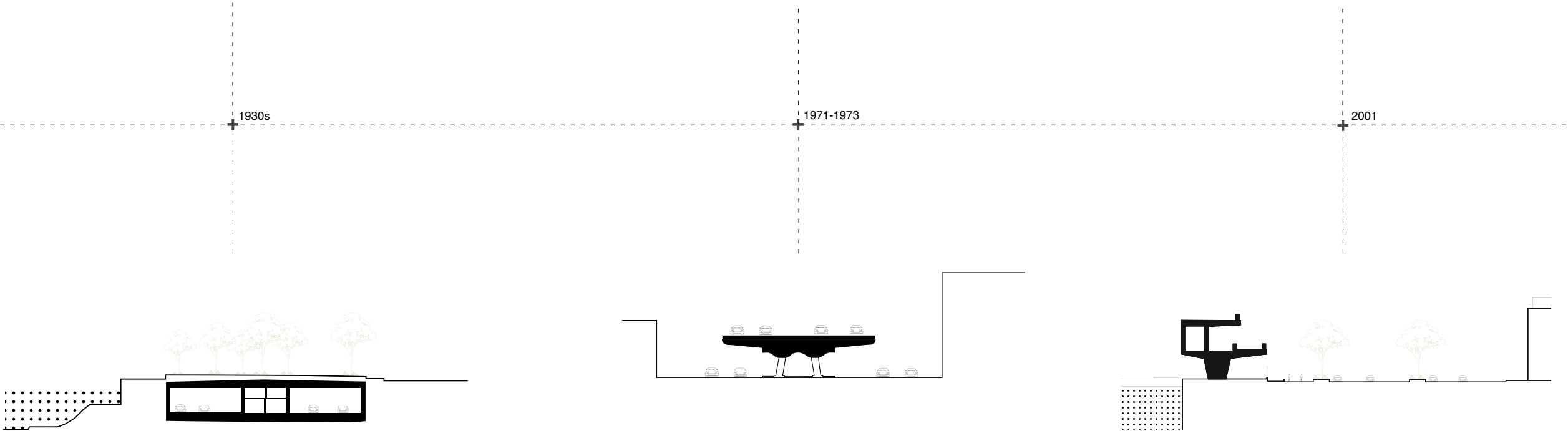
Mixed use and rediscovery of the waterfront



12th Avenue Highway



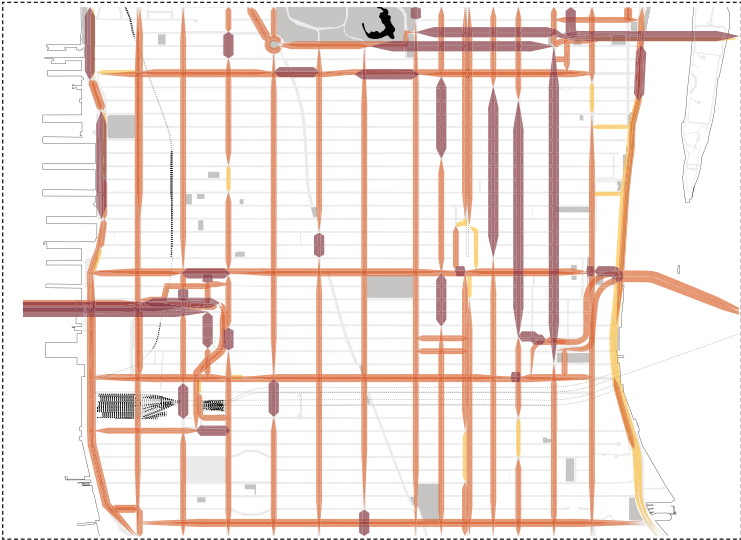
Highway history



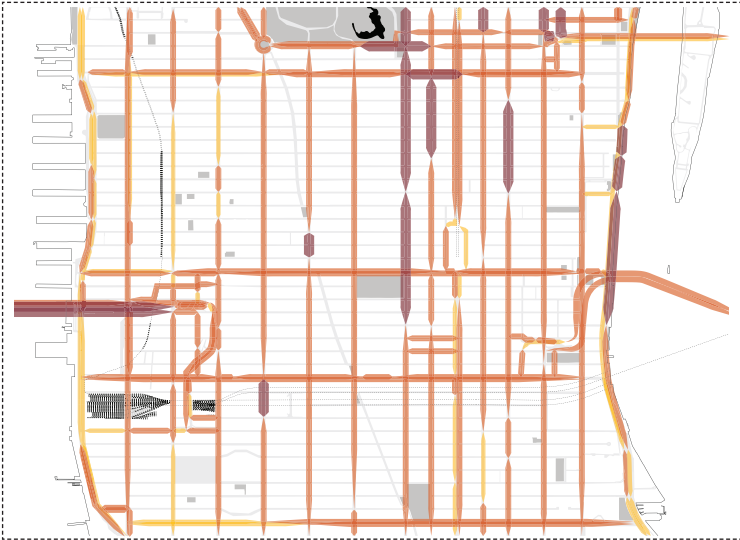
Cars in Midtown



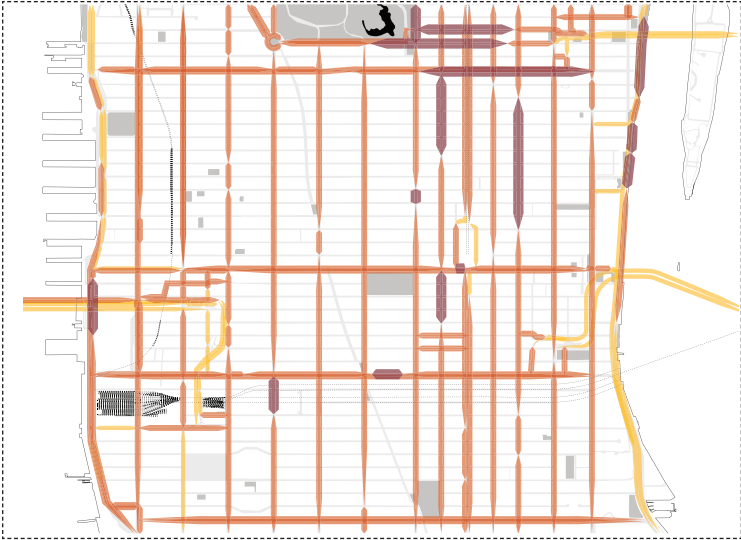
Congestion in the grid



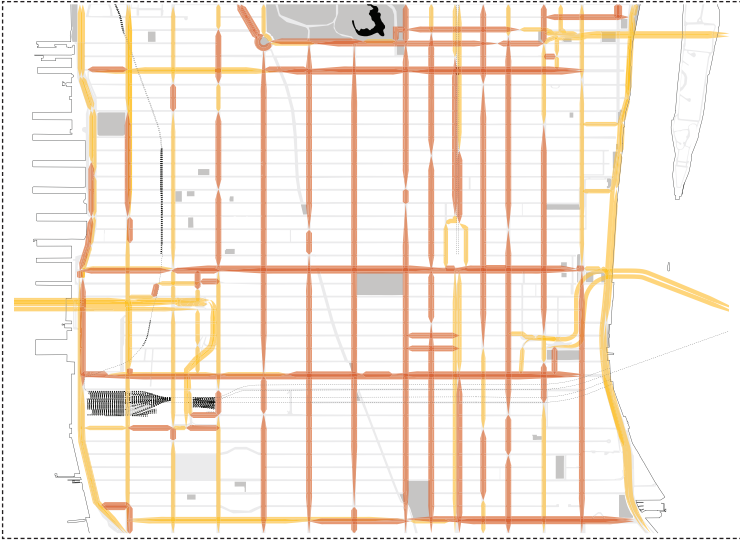
Traffic 9am



Traffic 5pm



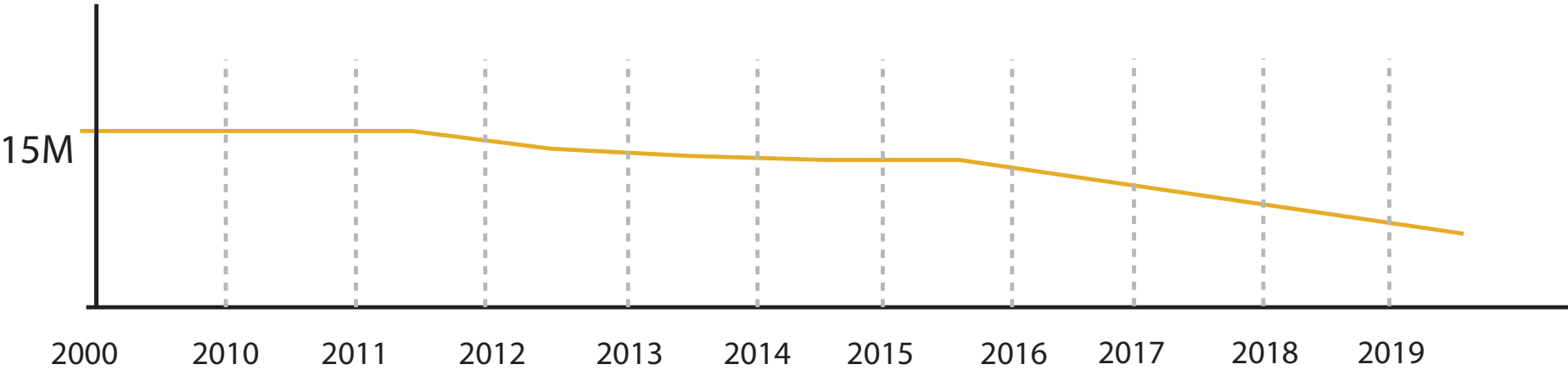
Traffic 1pm



Traffic 9pm

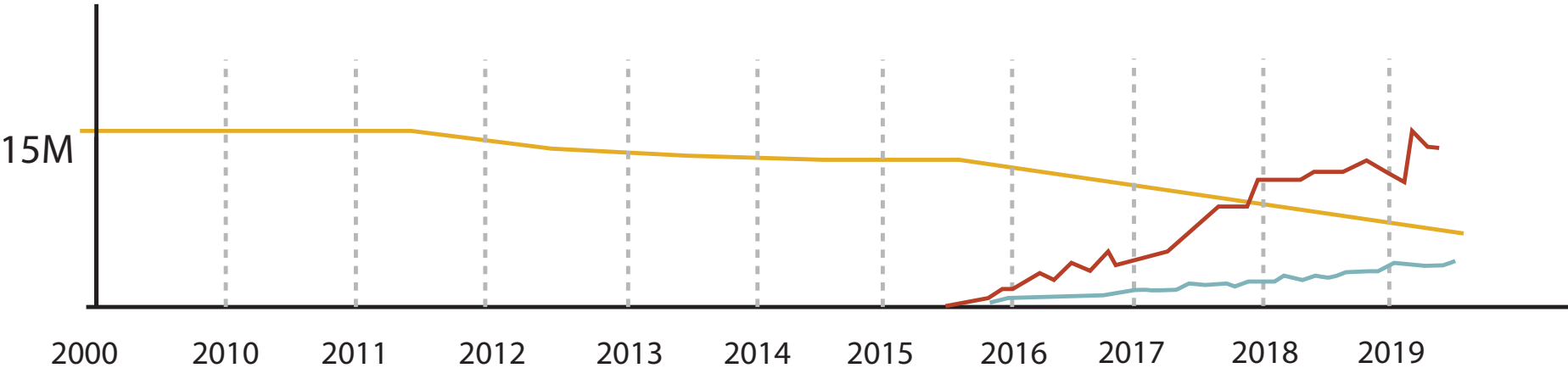
- Heavy traffic
- Medium traffic
- Low traffic

Future of transport?

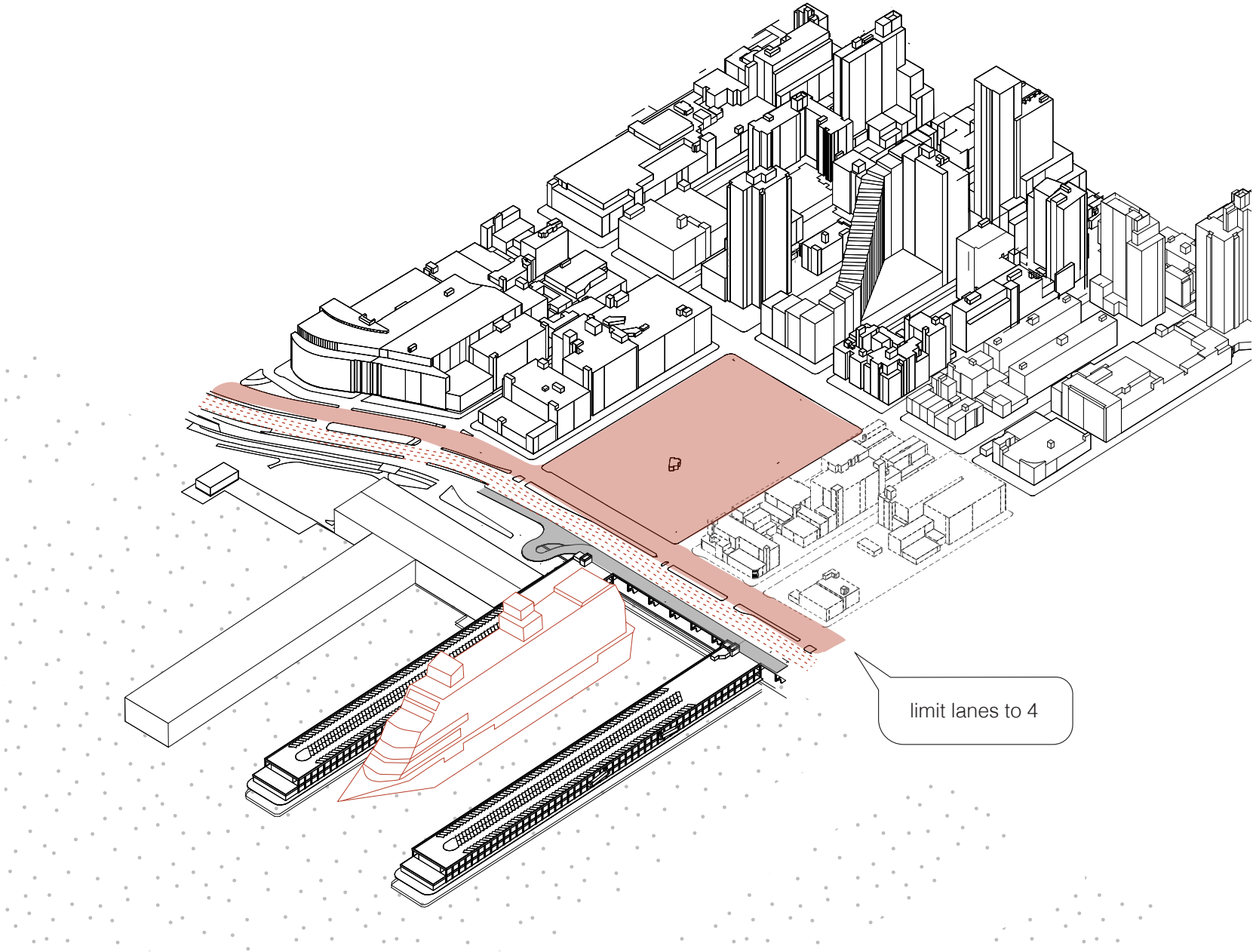


135 000 yellow cab

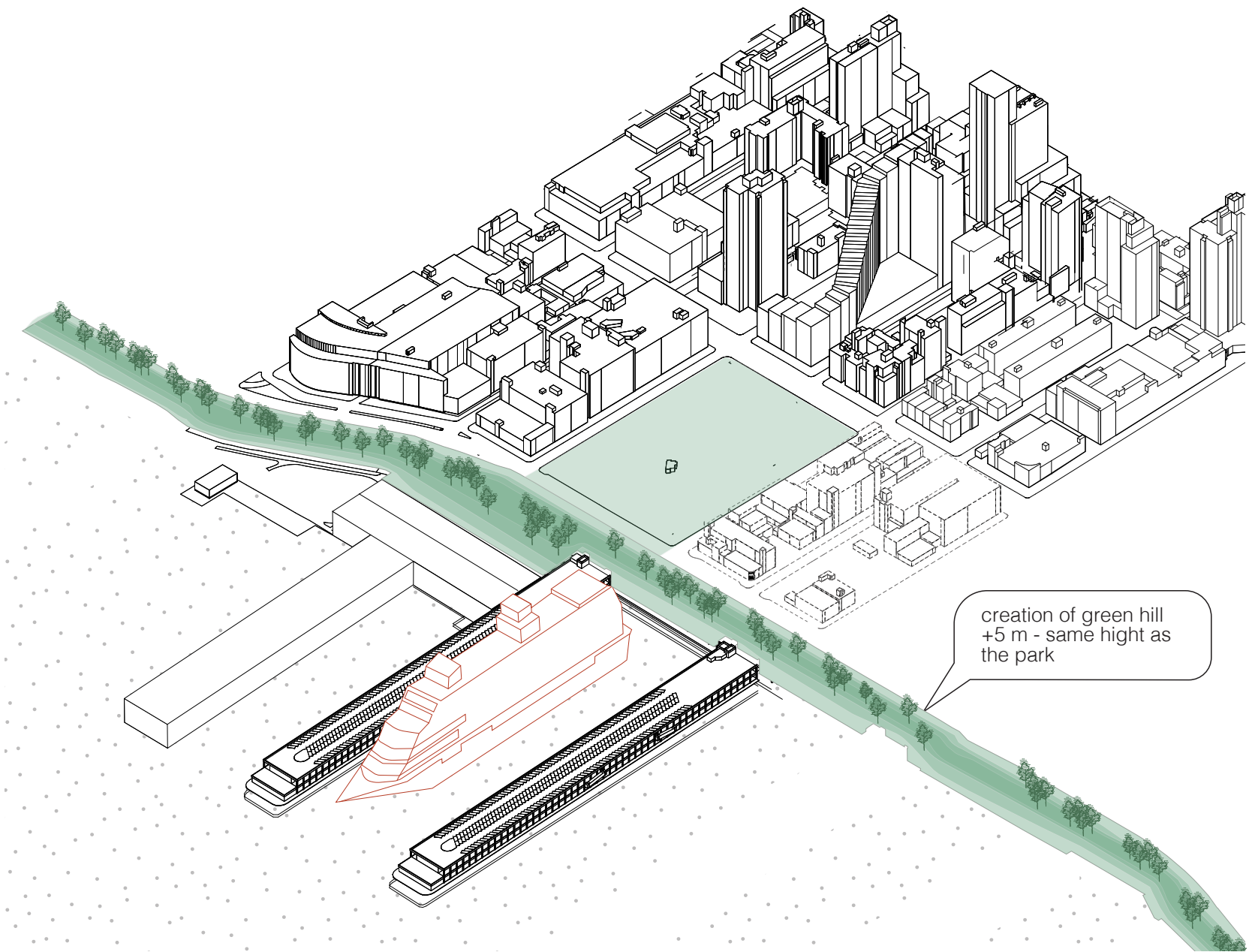
Shared Mobility in New York



Group vision



Group vision



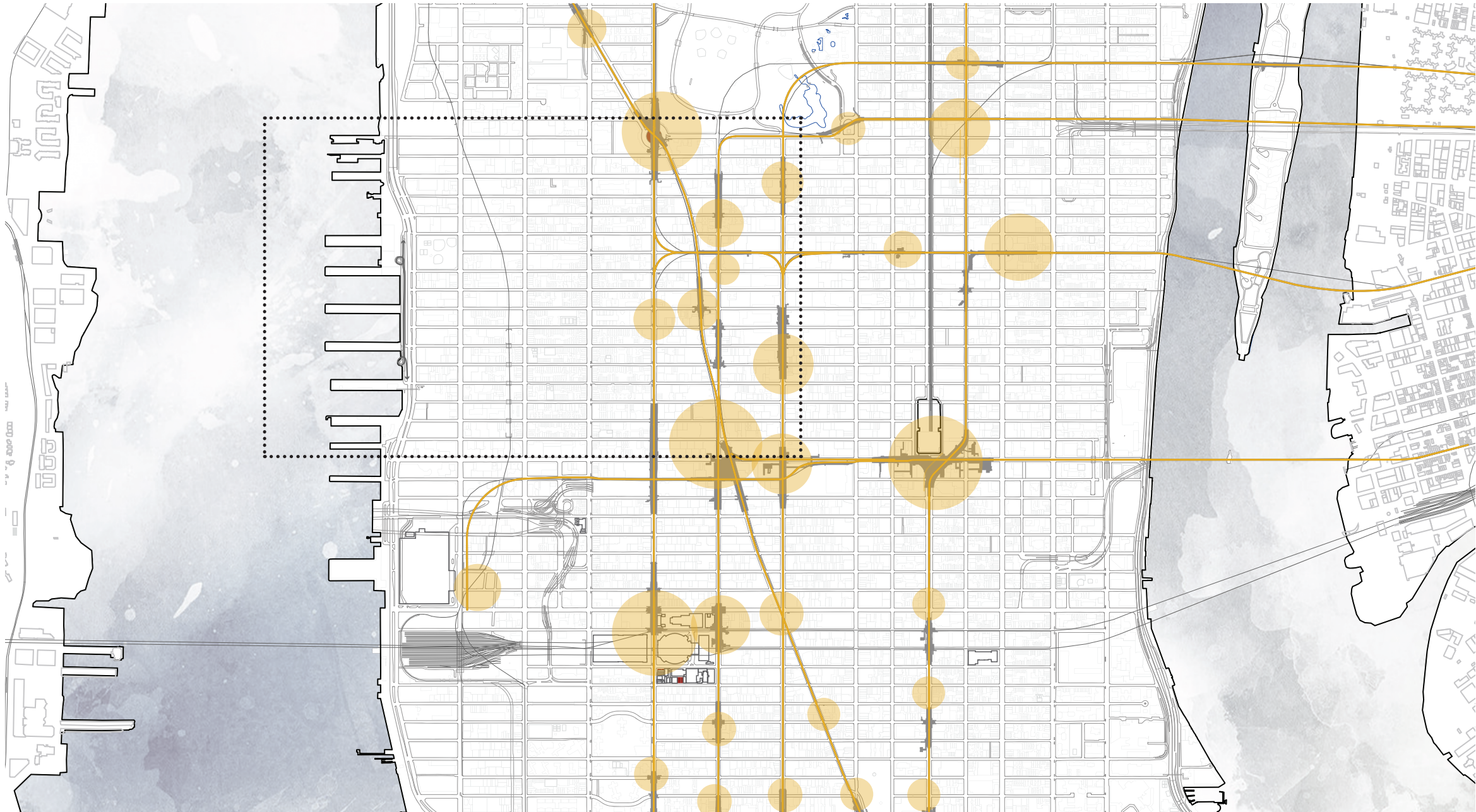
Group Vision



Reestablishing a connection with the waterfront

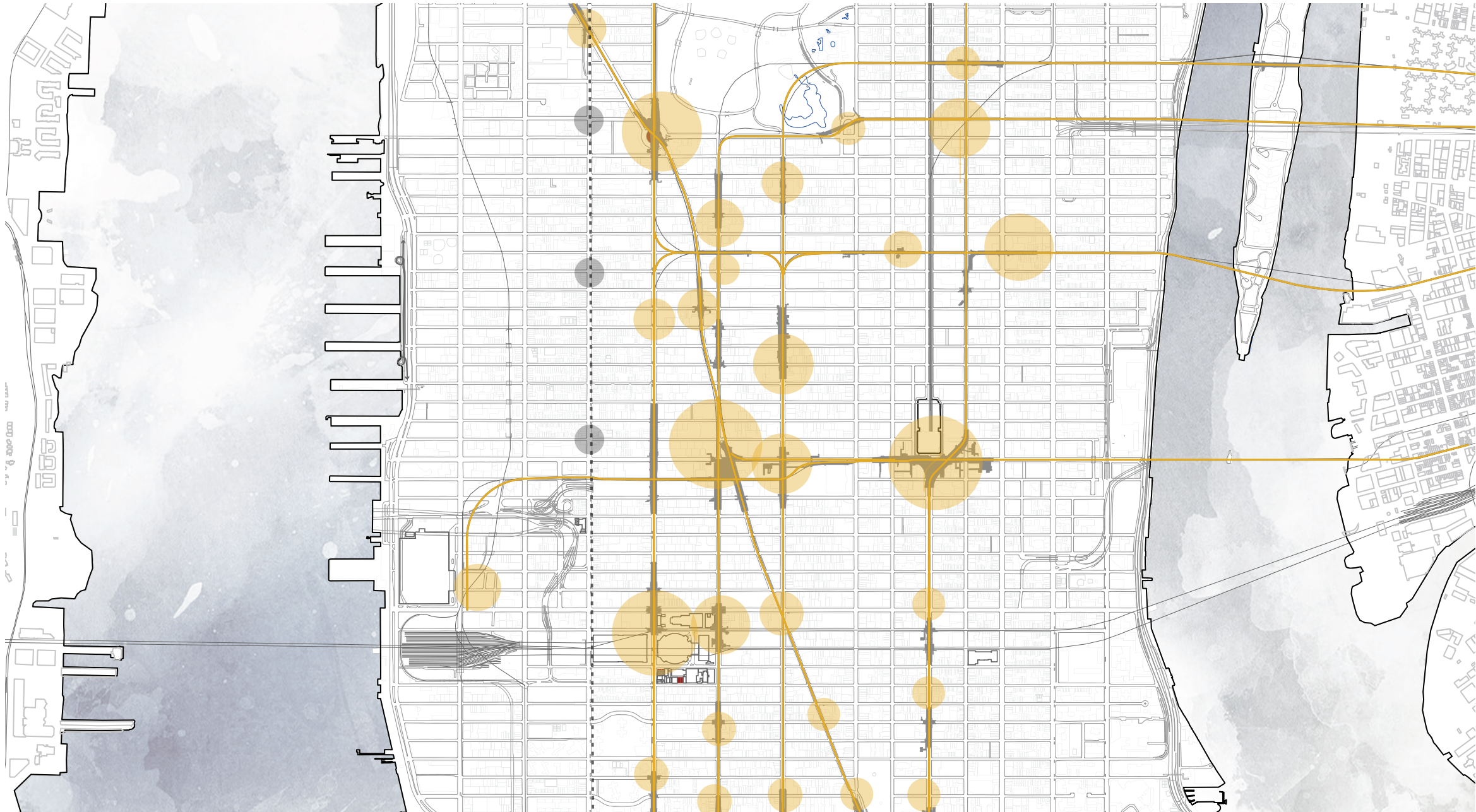
HOW WILL PUBLIC INFRASTRUCTURE RESPOND TO THE CHANGES OF THE AREA?

Existing metro network



--- Existing metro

Demolished 9th avenue elevated

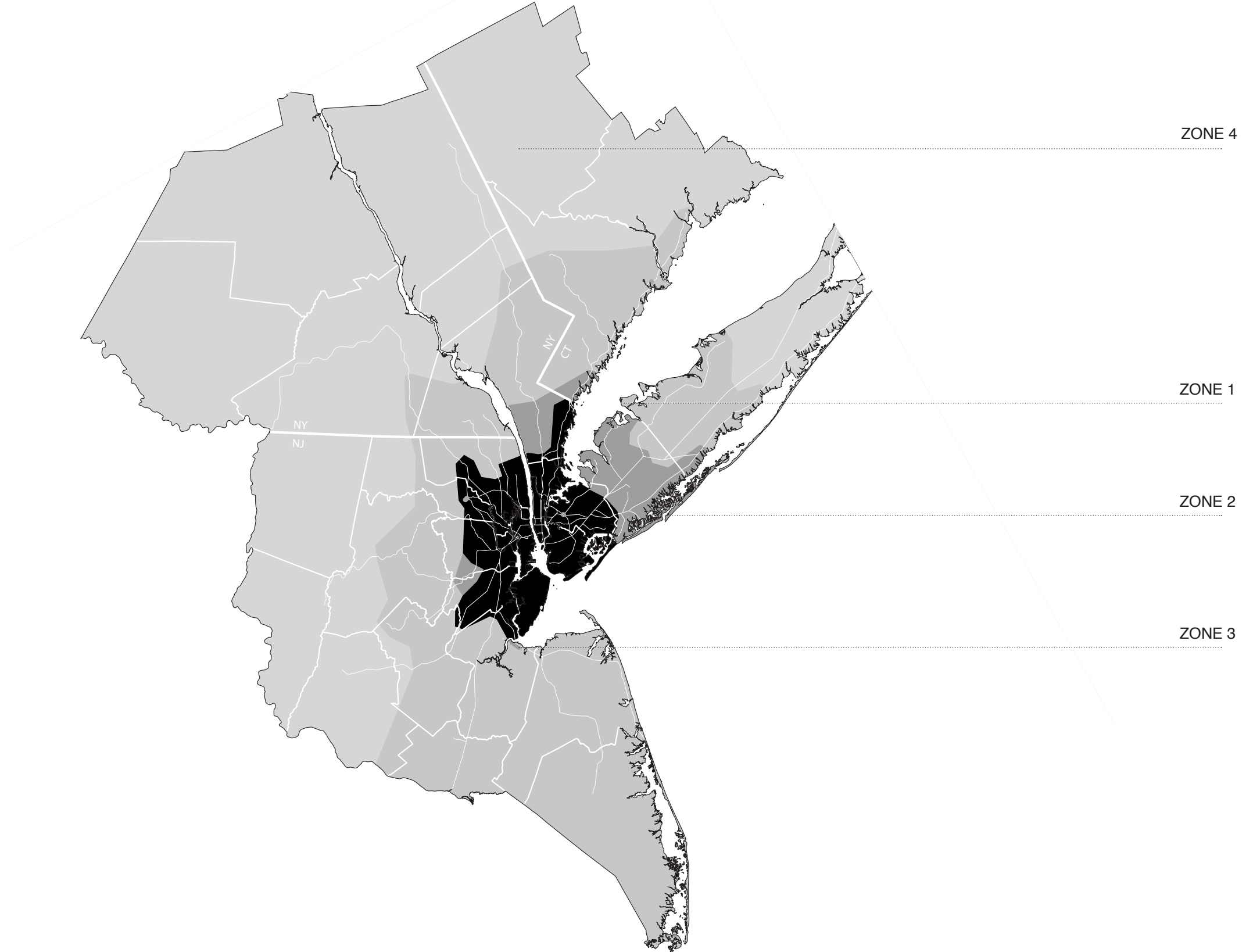


- Existing metro
- 9th elevated demolished metro

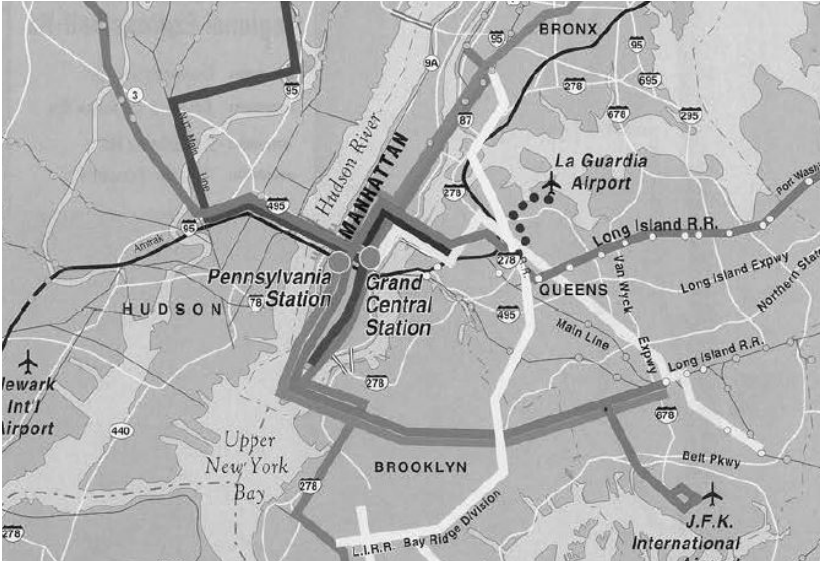
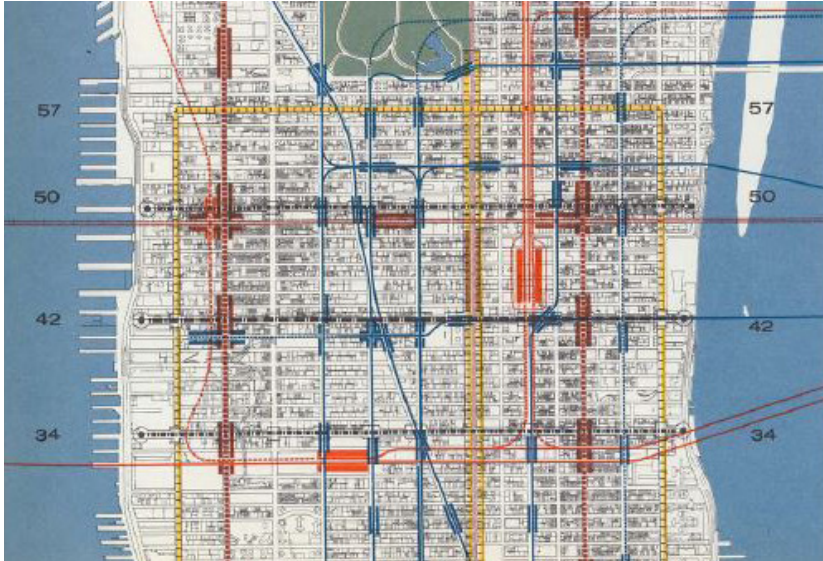
Reusing the empire connection



Expanding the service zone to ensure more service



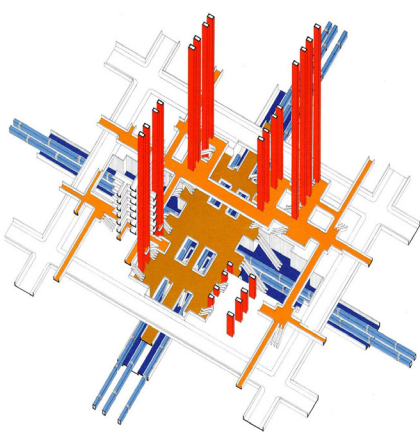
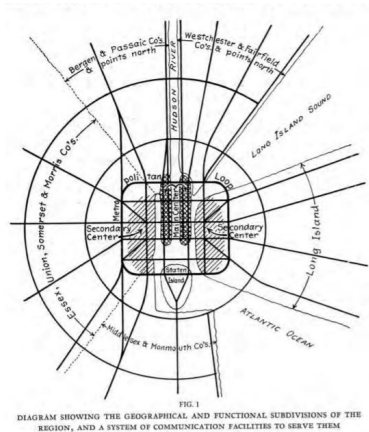
Past regional plans focus on mobility



1930

1960

1996

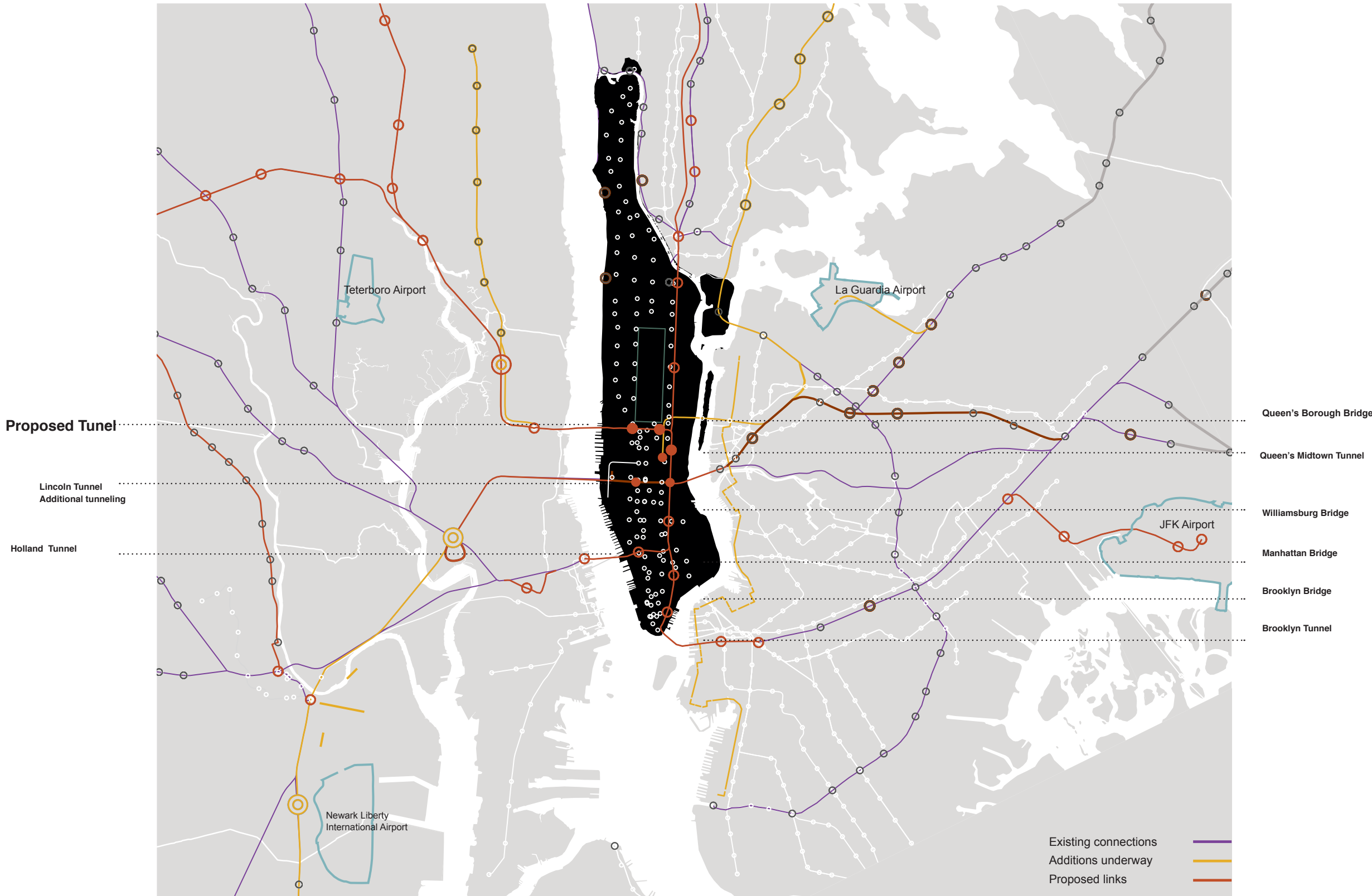


Transforming the New York Region's Commuter Rail System Into an Integrated Regional Rail Network

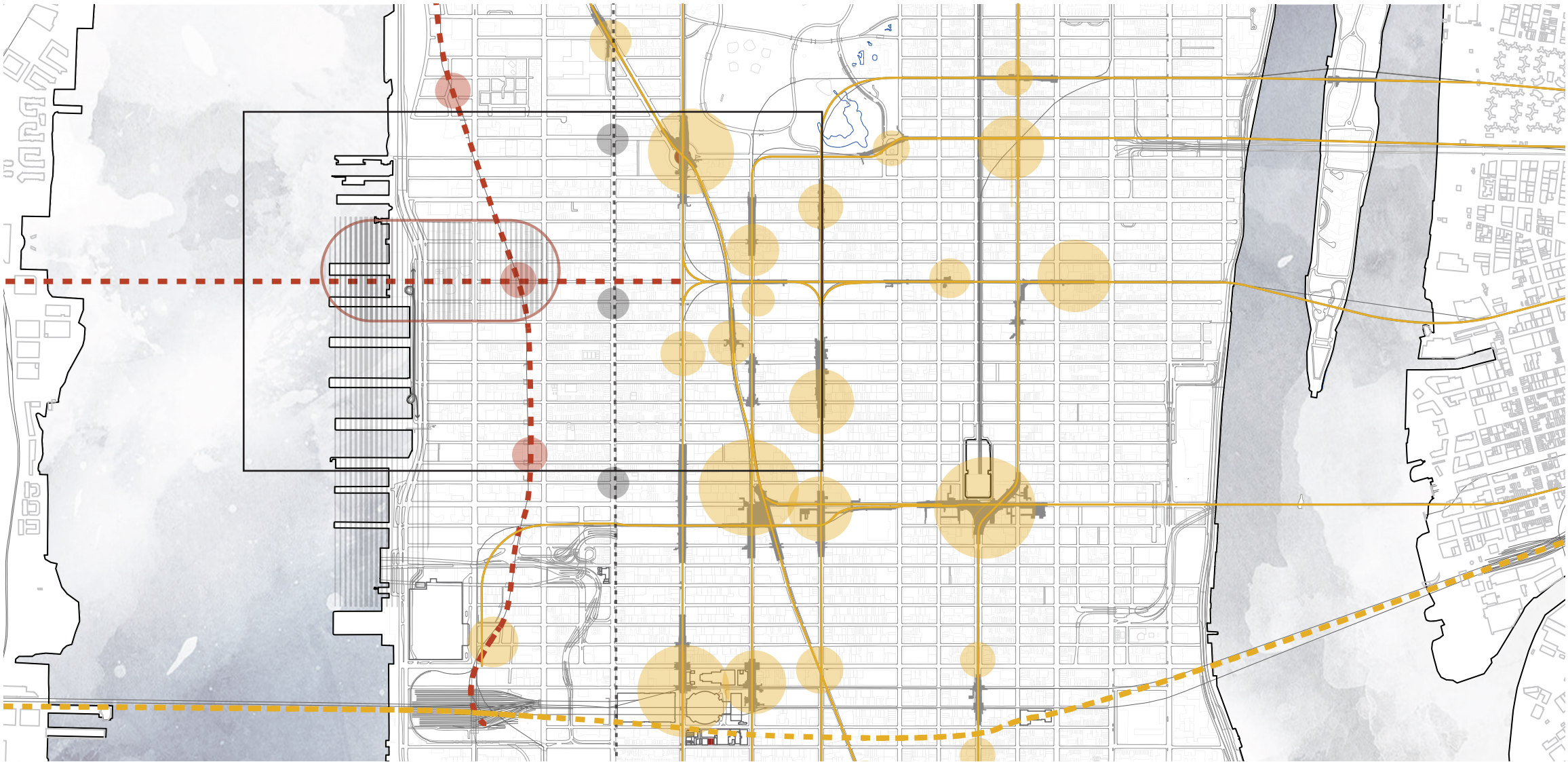
Complex Project - NEW YORK

01 Research

The Path to the Playground P5

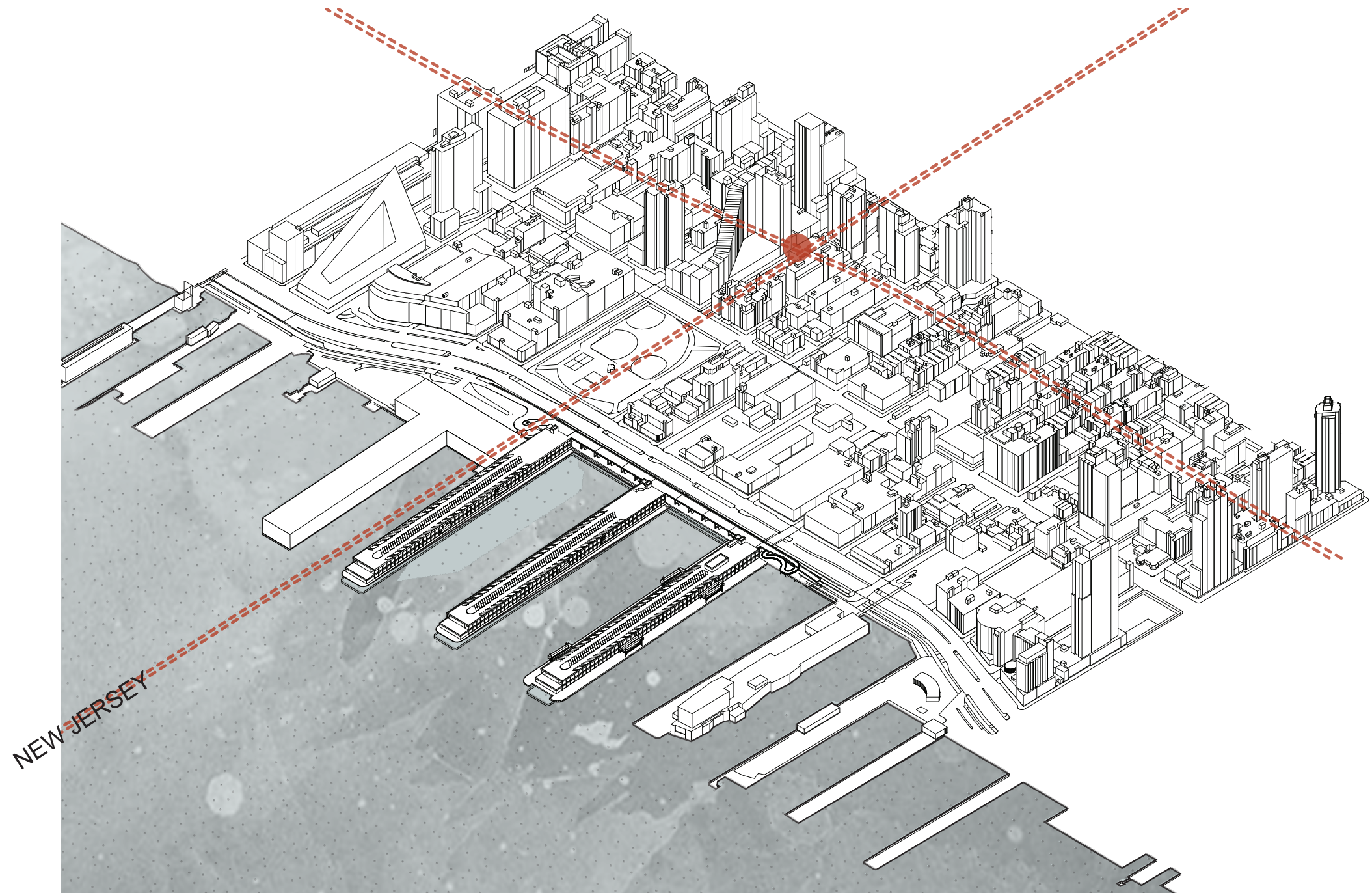


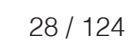
The Project in the Network



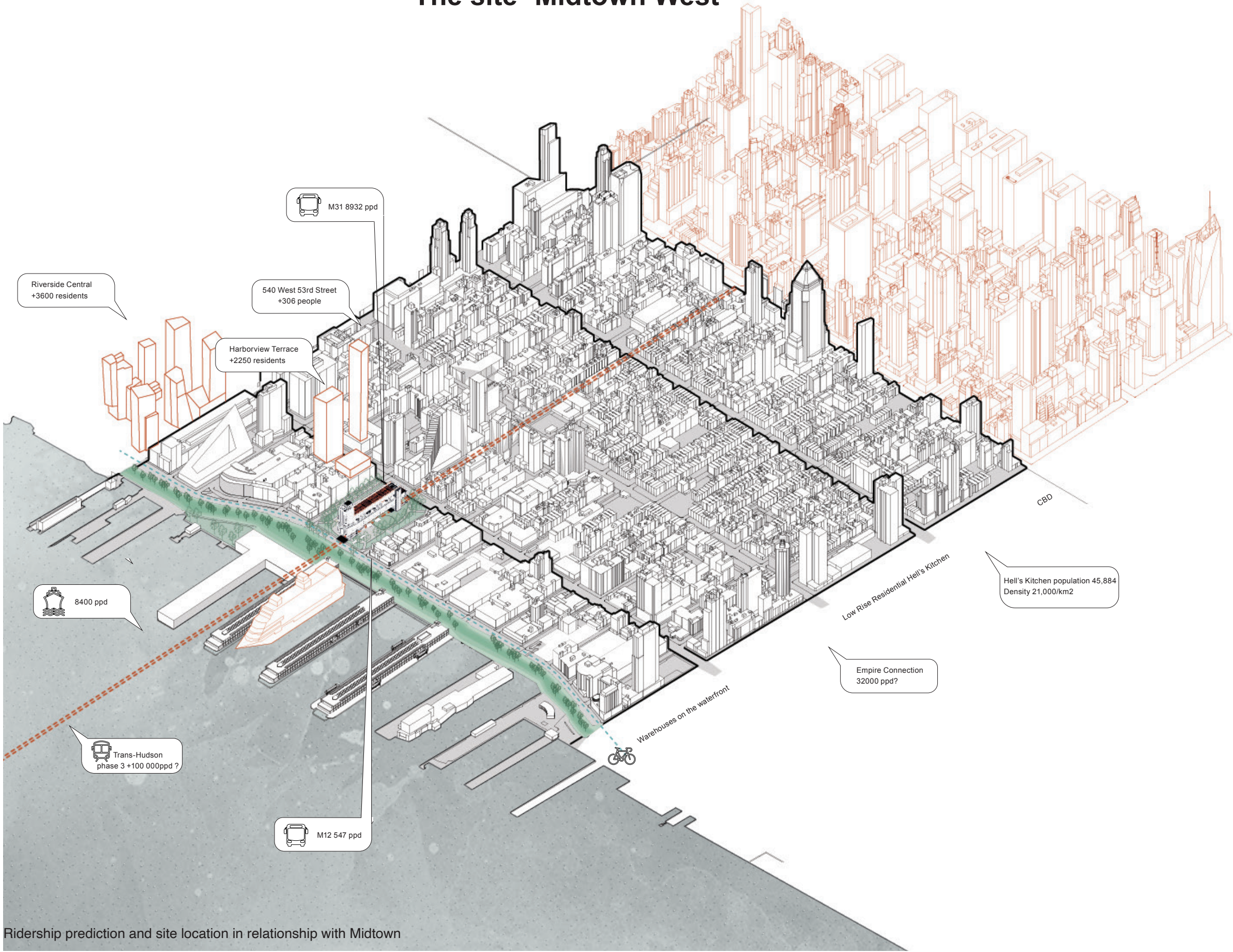
- - - Existing metro
- - - Porposed Metro
- - - 9th elevated demolished metro
- Proposed metro stations
- ||||| Site

With the electrification of the underused freight line ad the a tunnel to NJ the project links the west of midtown with the entire region



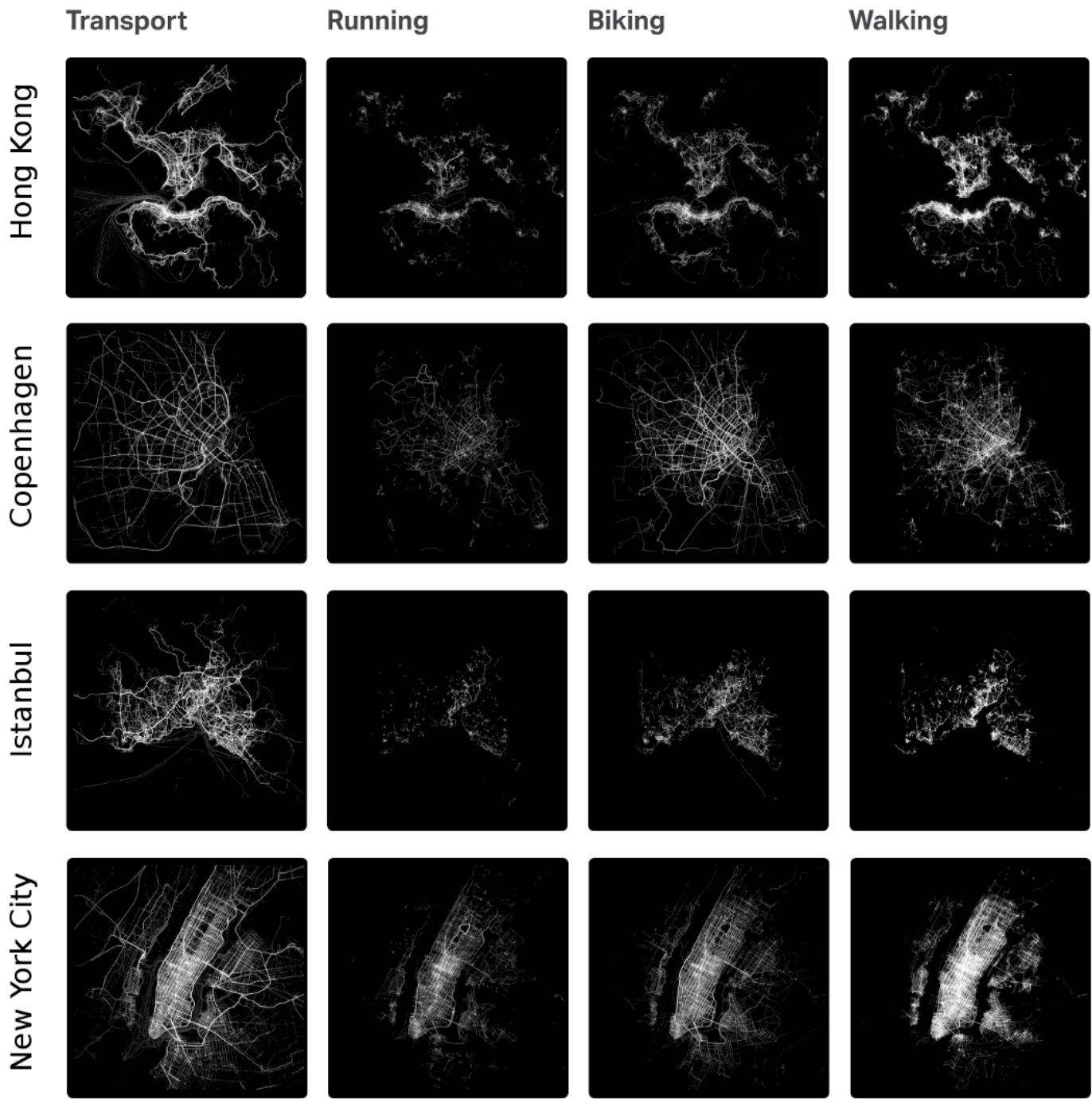


The site- Midtown West

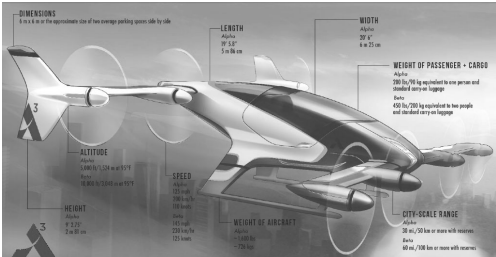
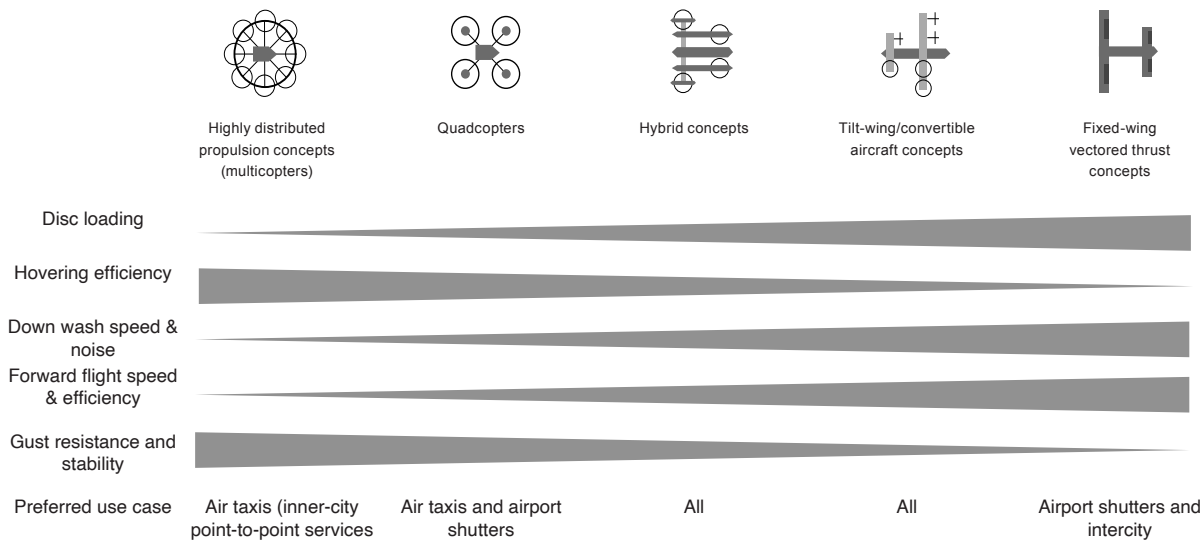


WHAT IS THE FUTURE OF MOBILITY?

Urban analysis of the city networks



Aircraft Prototypes



E- Hang 184 - FATO REQUIREMENT 8400 mm

Passenger capacity: 2 people

Maximum total power: 152kW

Number of Motors: 8

Total battery energy: 14.4 kWh

Propeller diameter: 1.6m

Net weight: 260 kg

Average flight speed: 100km/h

Width: 5600 mm

Length: 5600 mm

Car dimension: 1018x 2074 mm

Height: 1700 mm

Parking requirements: 5m2

The aircraft can be charged by 220V or 380V power supply in 1 hour at the fastest.

A³ Vahana beta- FATO REQUIREMENT 9300mm

Passenger capacity: 2 person

Maximum total power: 152kW

Total battery energy: 14.4 kWh

Propeller diameter: 1.6m

Net weight: 475 kg

Average flight speed: 230 km/h

Width: 6250 mm

Length: 5860 mm

Car dimension: 1018x 2074 mm

Height: 2800 mm

Parking requirements: 5m2

Motor output 8 x 45 kW

8 propellers

A³ Vahana beta- FATO REQUIREMENT 9300mm

Passenger capacity: 2 person

Maximum total power: 152kW

Total battery energy: 14.4 kWh

Propeller diameter: 1.6m

Net weight: 475 kg

Average flight speed: 230 km/h

Width: 6250 mm

Length: 8500 mm

Car dimension: 2000x 3000 mm

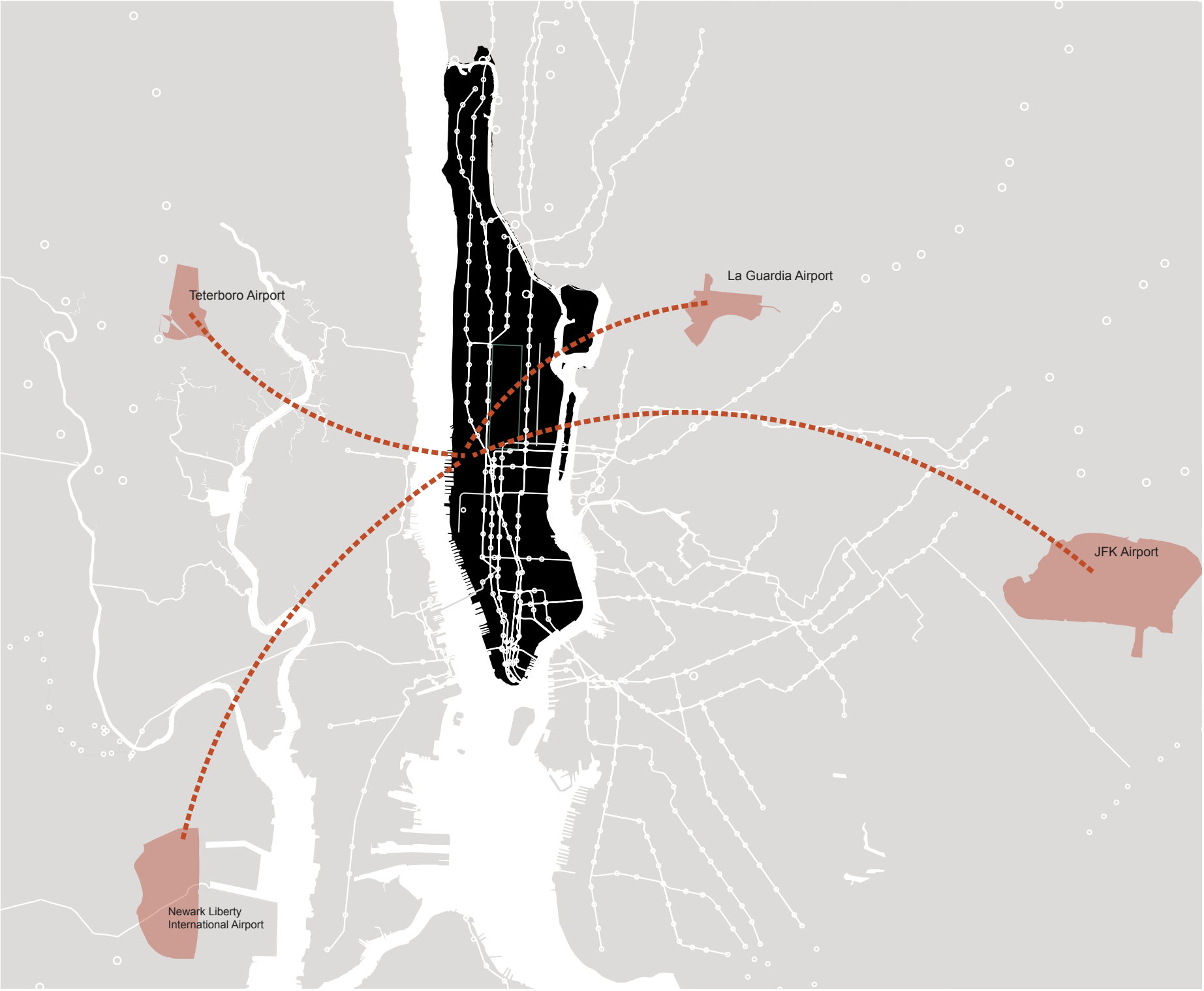
Height: 3200 mm

Parking requirements: 5m2

Motor output 8 x 45 kW

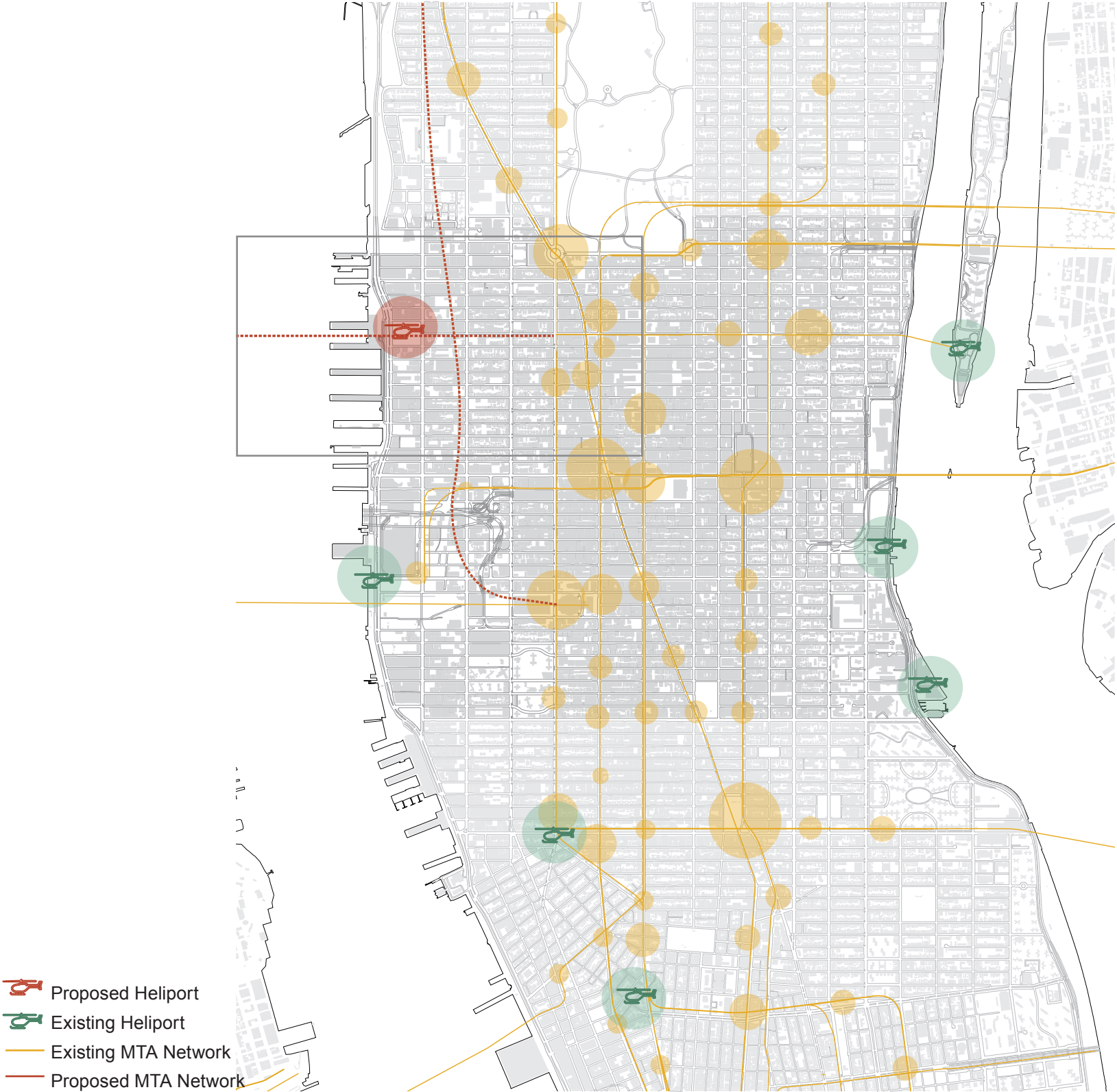
10 propellers

Drones Regional Network

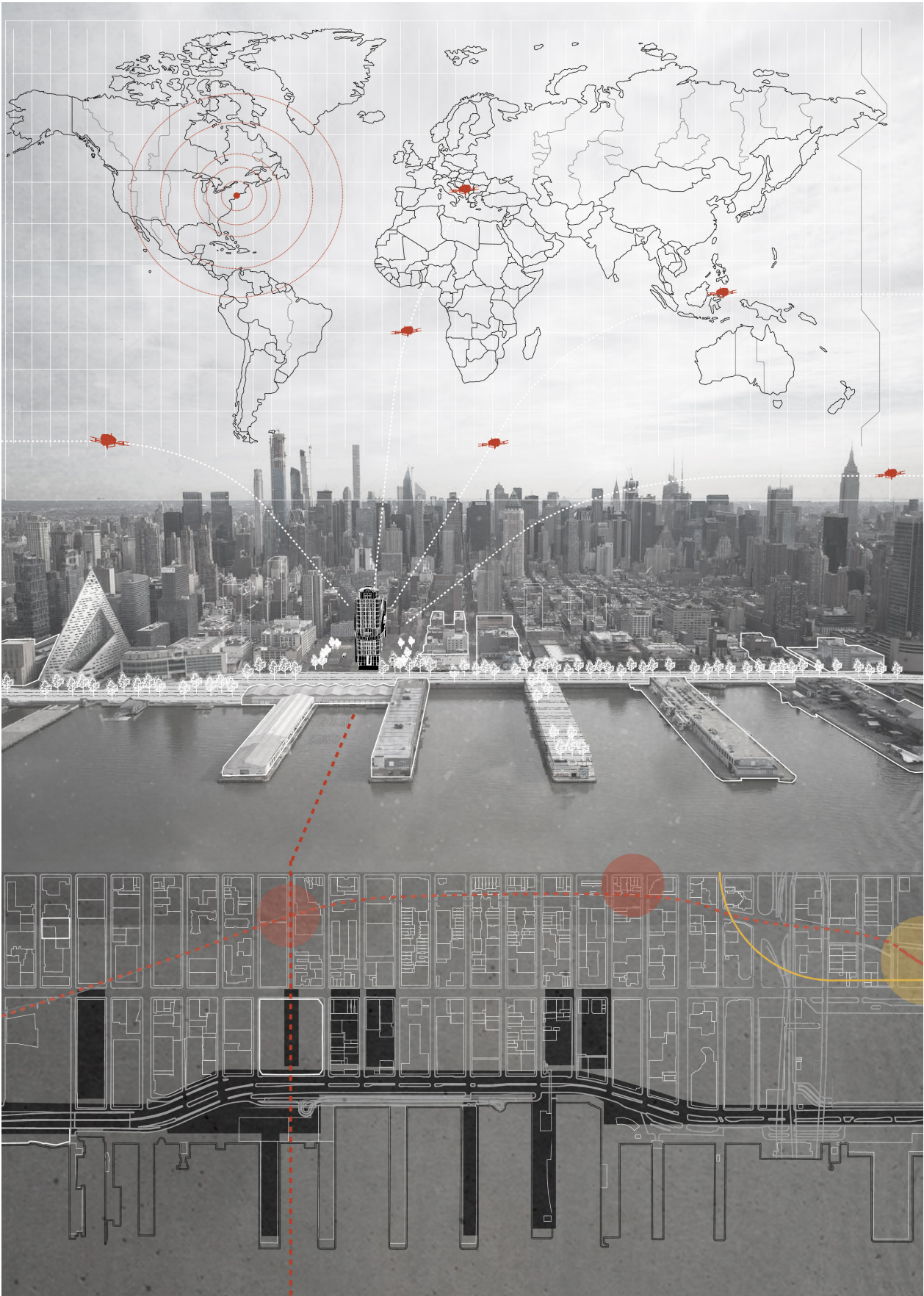


Linking all airports directly with Midtown by air to overcome the highly congested grid

Aircraft City Network



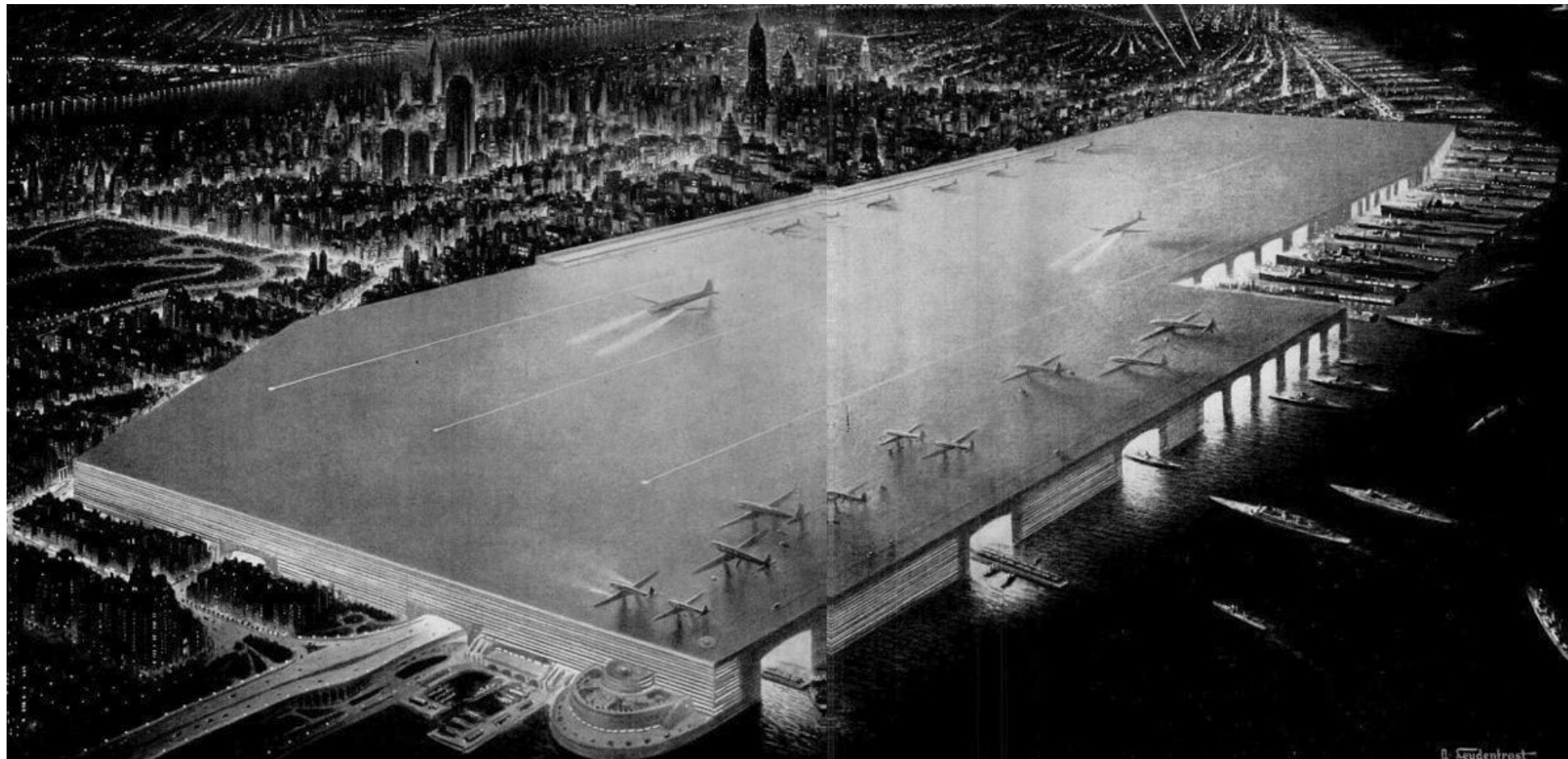
Ambition



02 PROGRAM



Air mobility as Utopia?



Manhattan airport – 1945 – William Zeckendorf
Airport deck, Factories, shops, apartments, railways and steamship

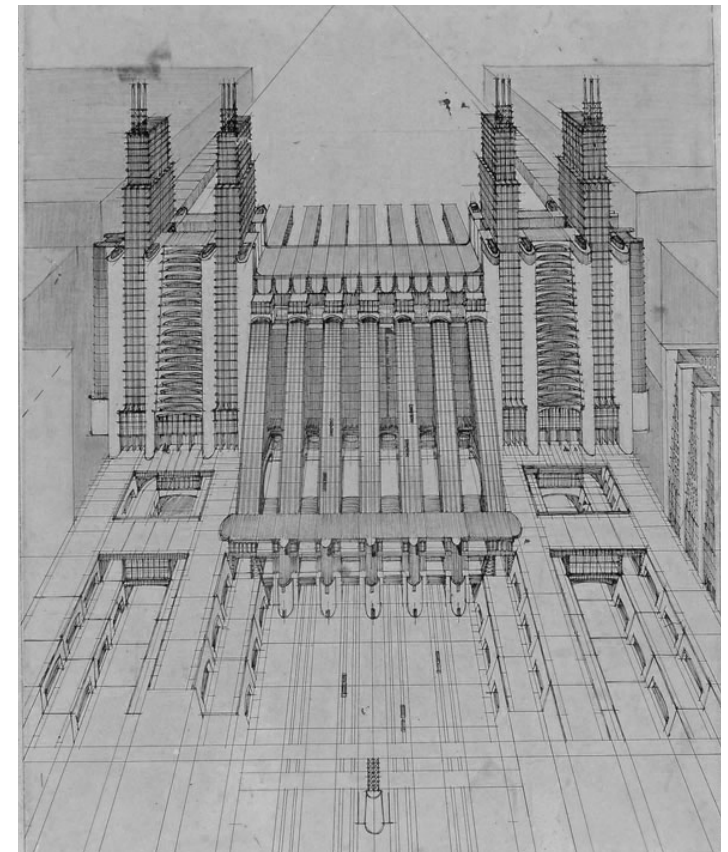
Airmobility as Utopia?



Rooftop Inner-city circular airport .Illustrated London News, Rooftop Inner-City Circular Airports, 1919

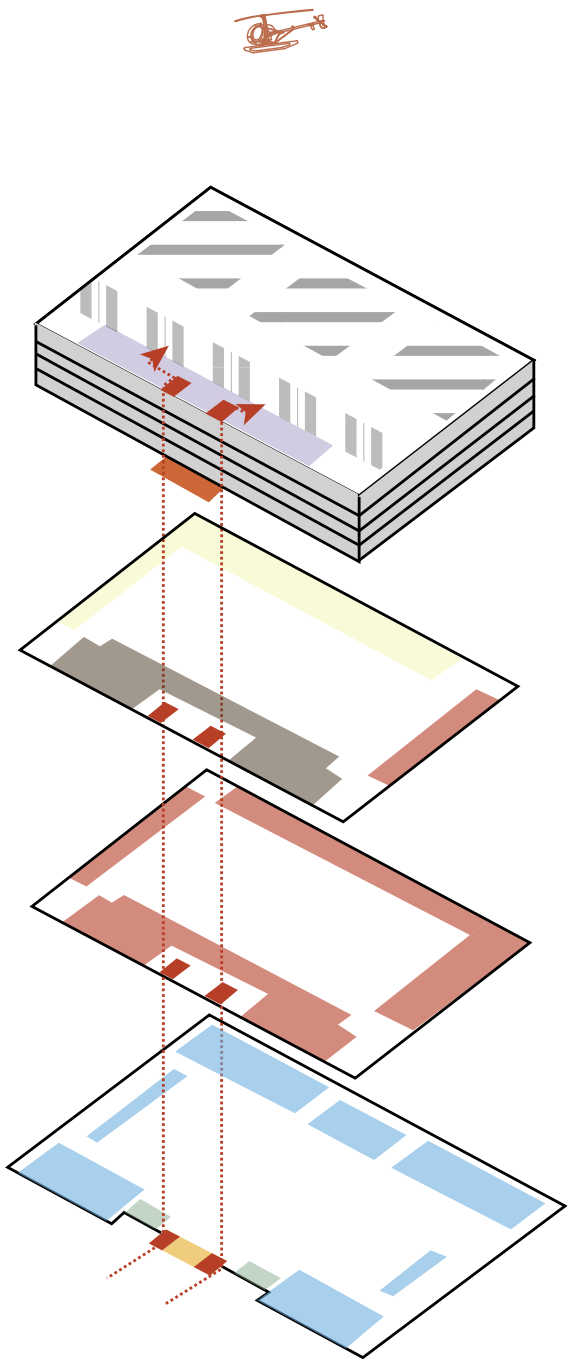
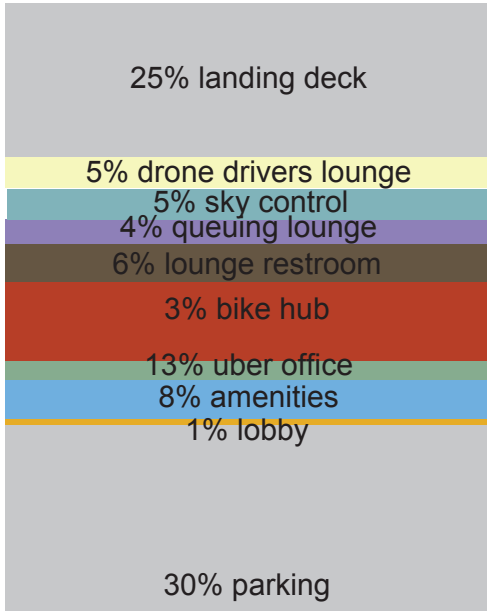


The City of Skyscrapers. Postcard '900. New York seen in the future

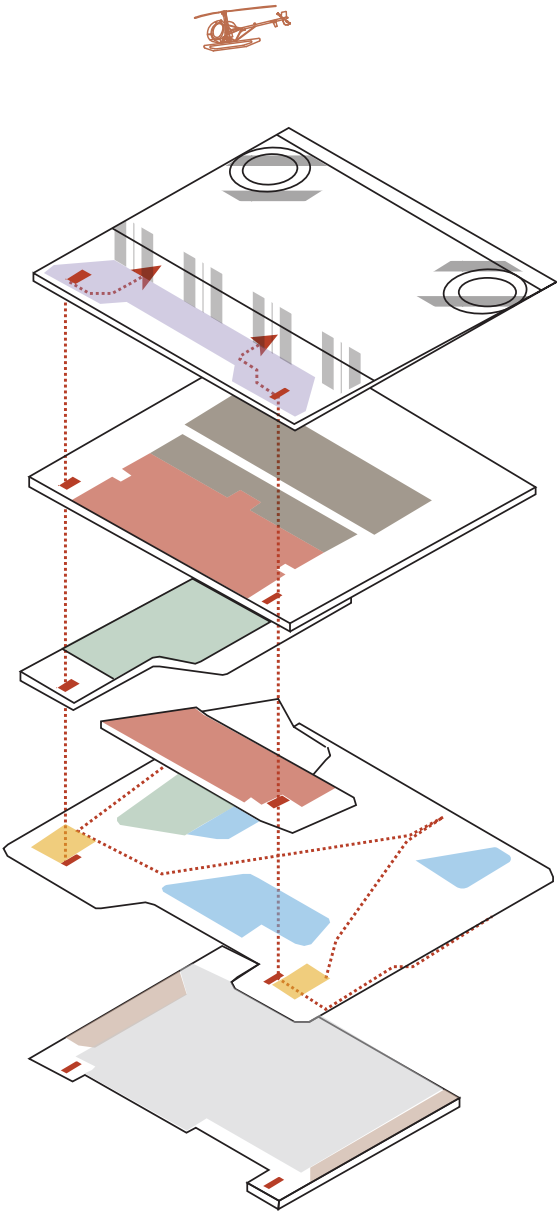
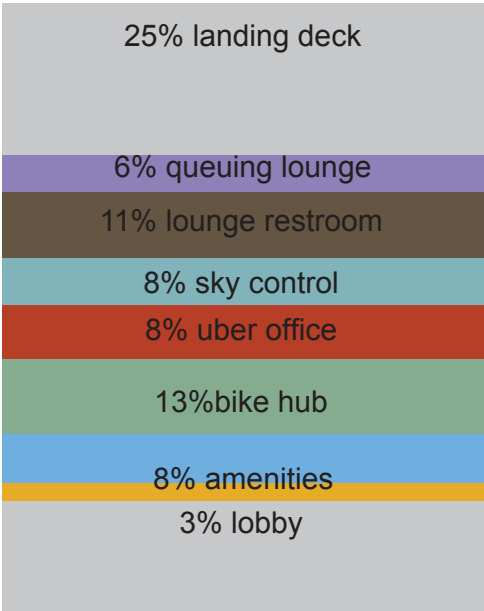


Antonio Sant'Elia Station. Station for trains and airplanes with cable railways and lifts above three roadways, 1914.

Boka Powell



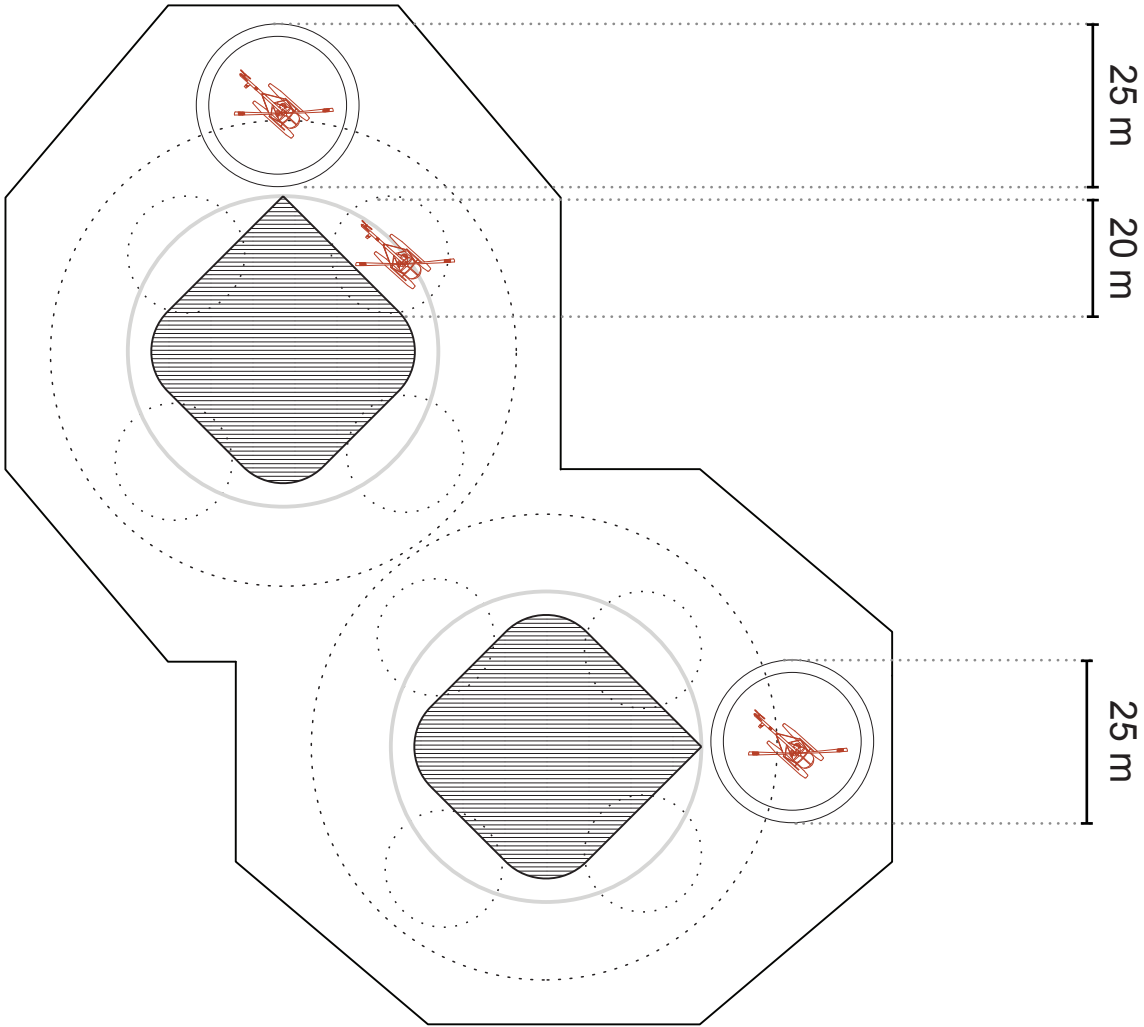
Corgan Design



Corgan Design
Landing deck



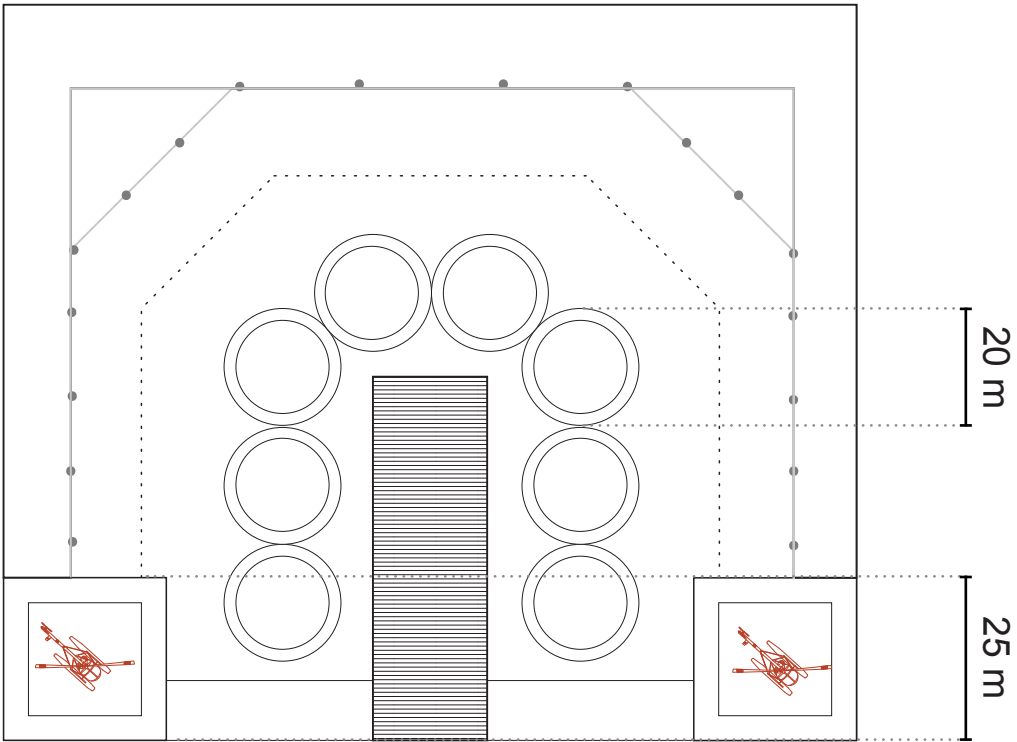
Corgan Design
Los Angeles



Gensler Design
Landing deck



Gensler Design
Los Angeles



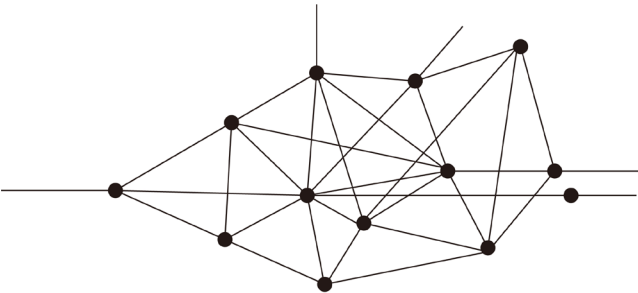
From Non-Places



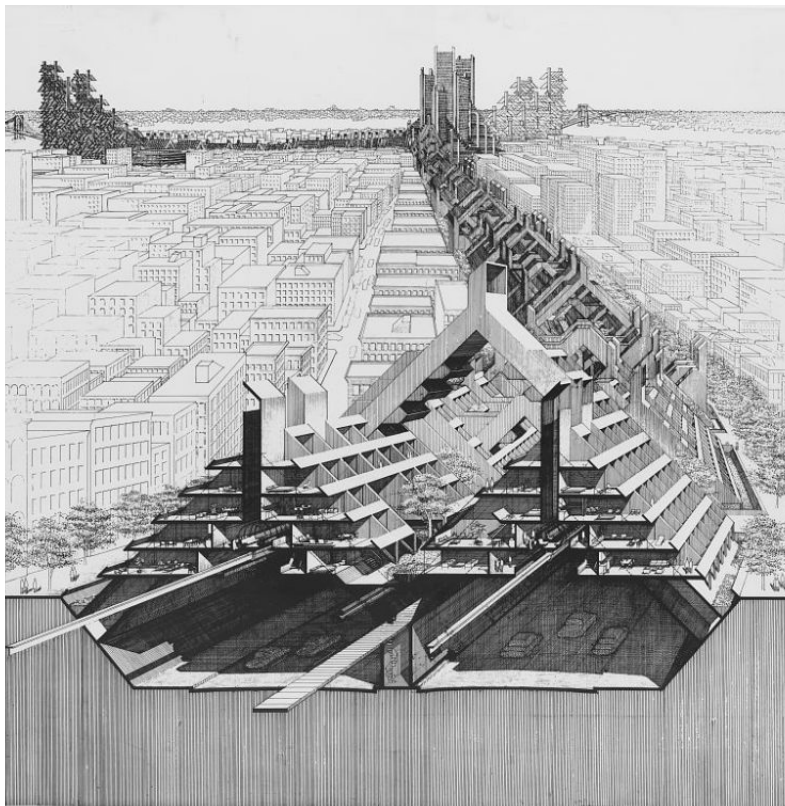
"Places for transports, destined to solitary individuality, to a provisional and ephemeral passage, inhabited by people that are alone or people in the moment of transition not relating with each other. Non-places are the non-places are the nodes and the nets in a world without boundaries, anonymous or stereotypical."



From Non-Places to places

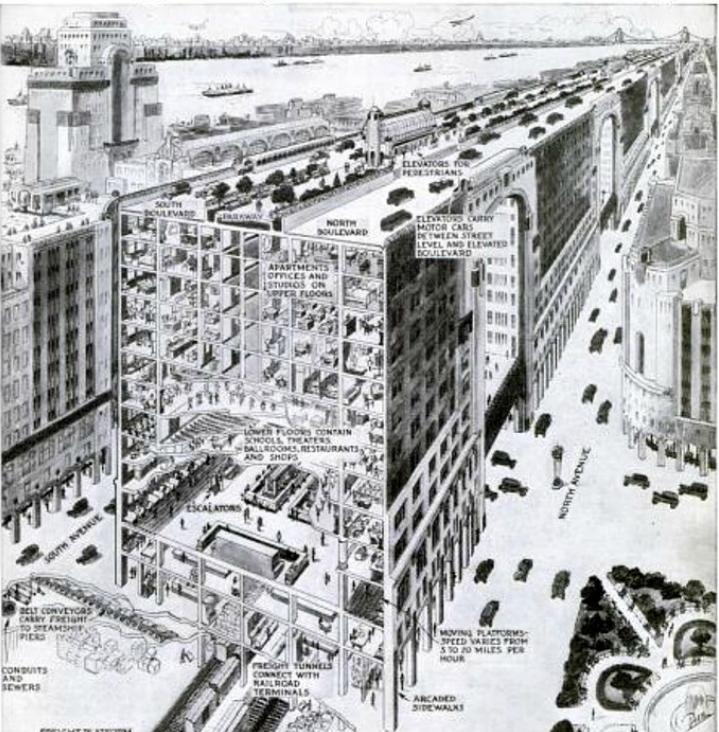


Ecosystem of Transportation



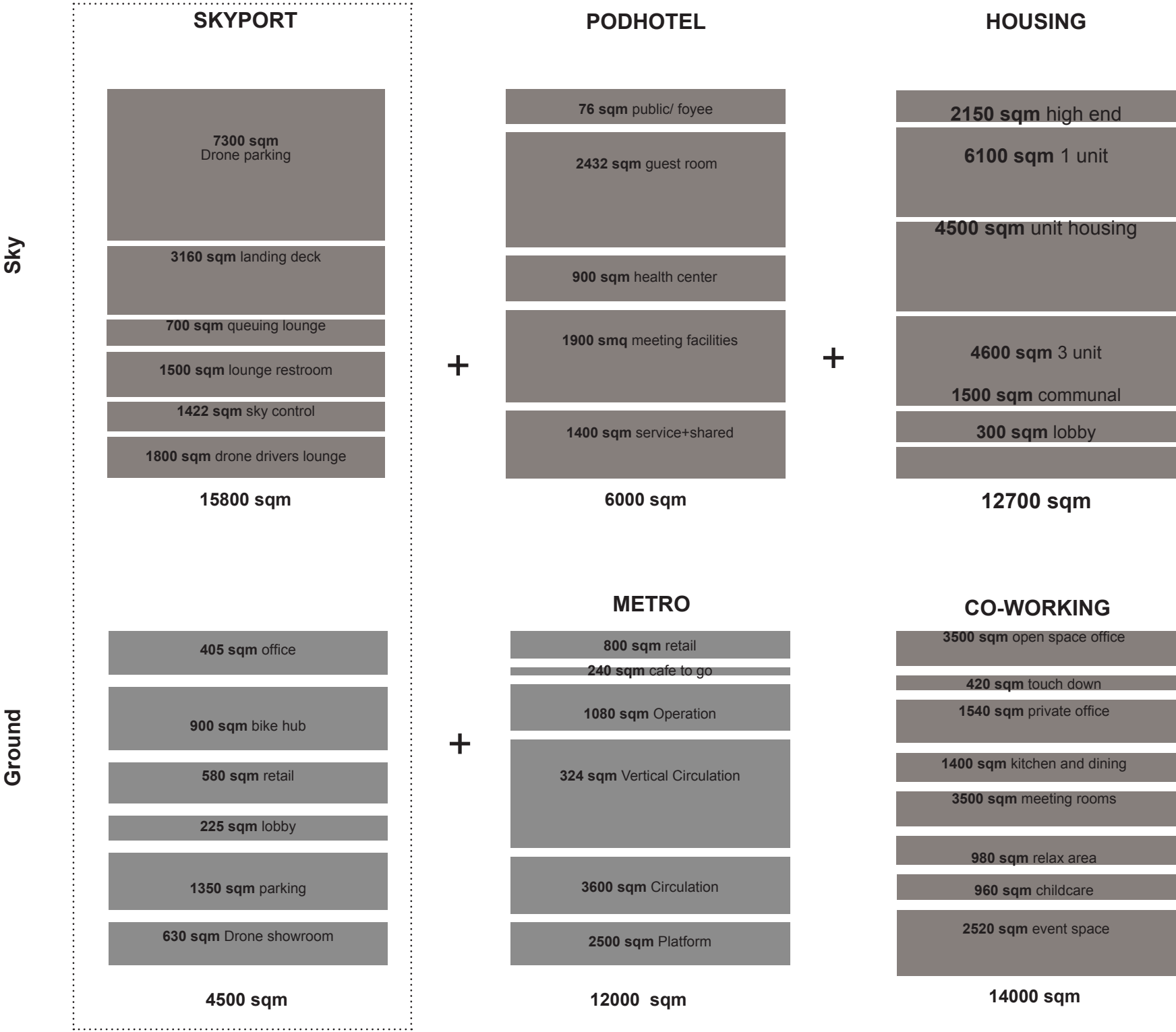
Paul Rudolph alternative for Lower Manhattan Expressway 1974

A Highway *on the Roof Tops*

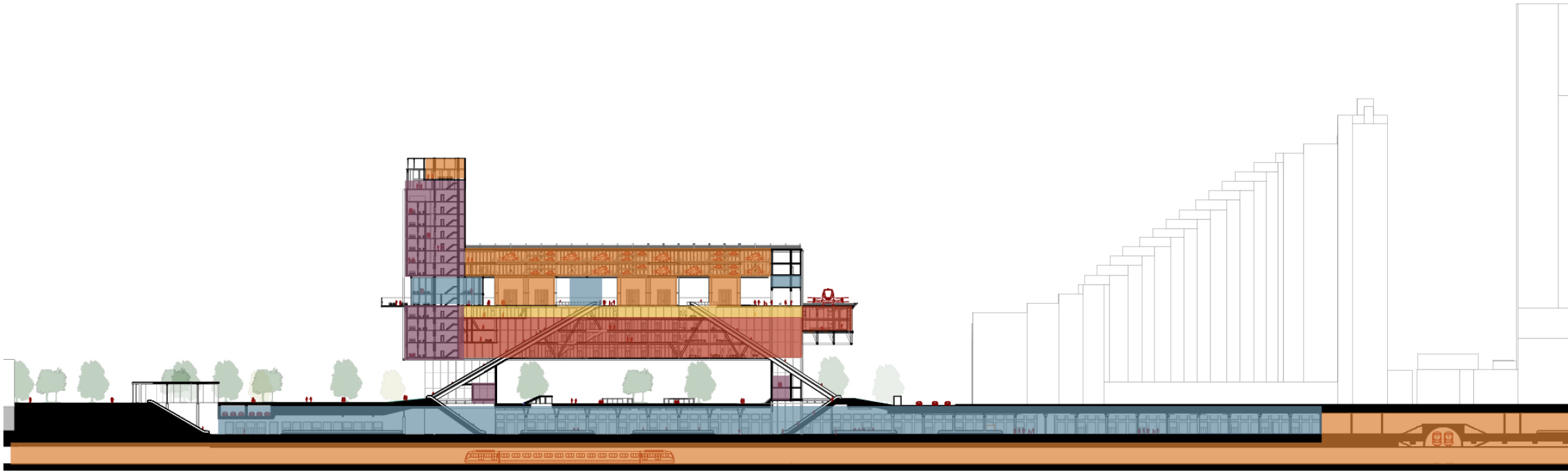


John Hencken highway alternative proposal by 16 Miles elevated speedway as traffic aid

Building Program



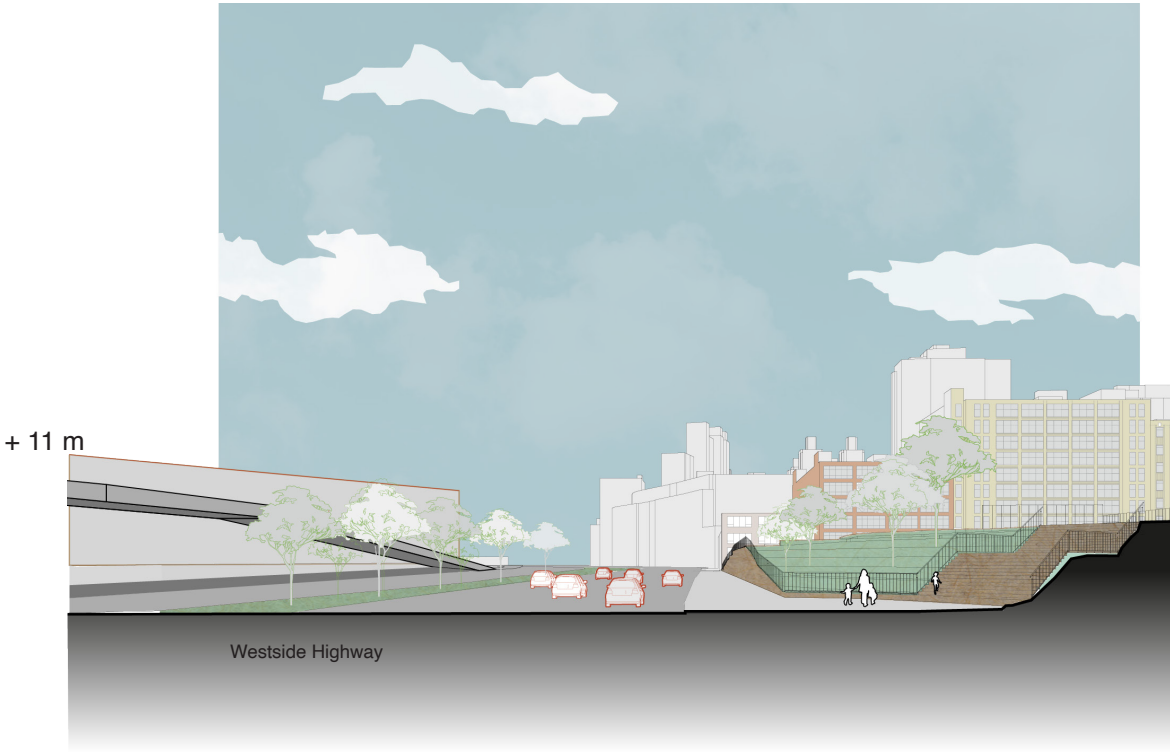
Program Organization



- Housing
- Hotel
- Coworking
- Retail/Commercial
- Skyport + Parking

03 MASSING

The site: De Witt Clinton Park

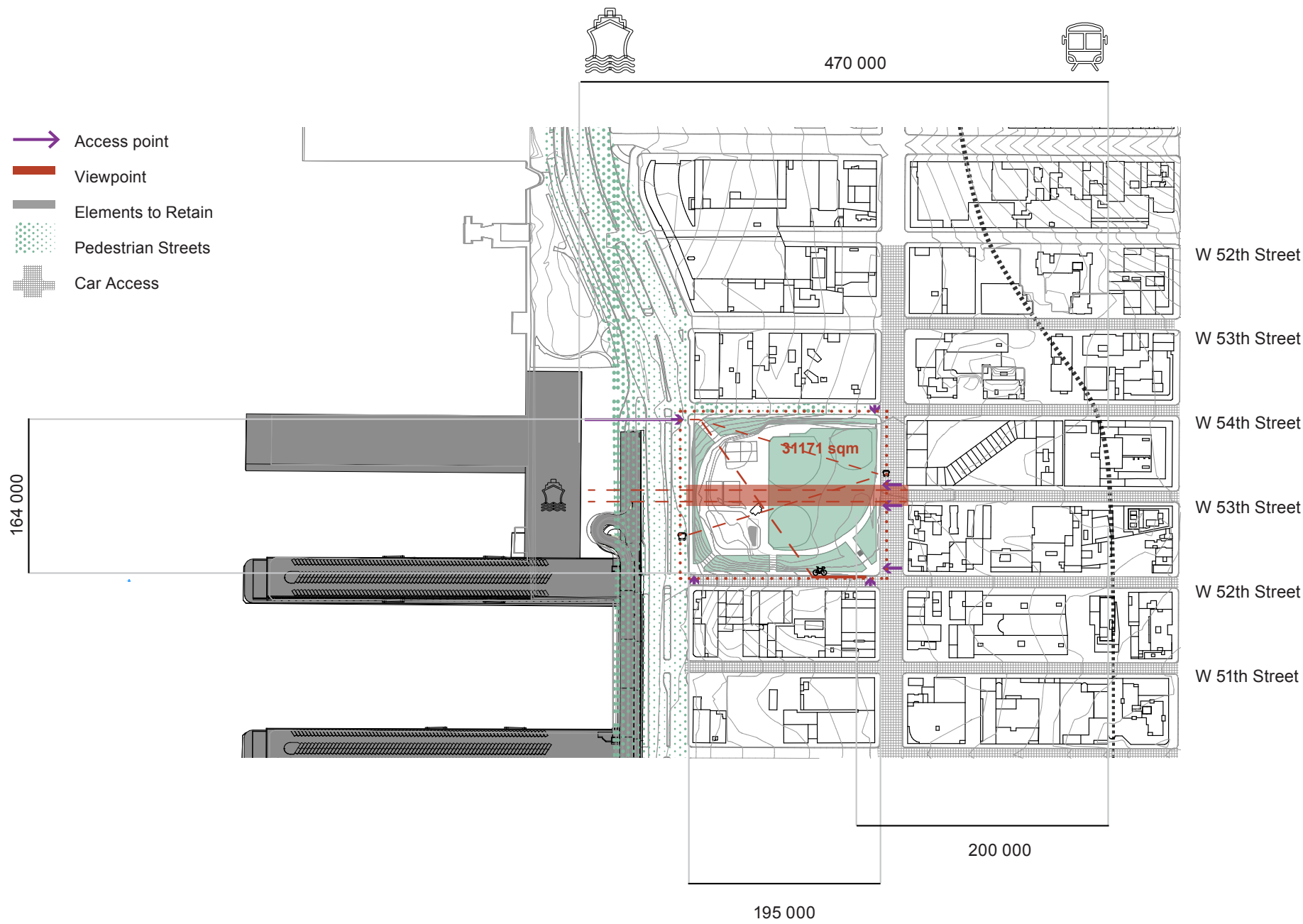


Existing conditions De Witt Clinton Elevated from the Highway

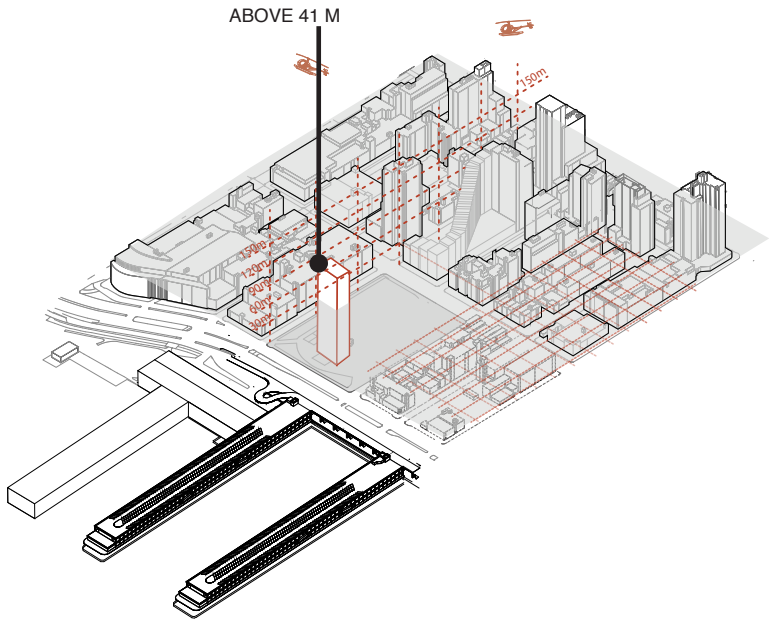


Existing conditions Erie Canal Playground Rock Exotic Terrace

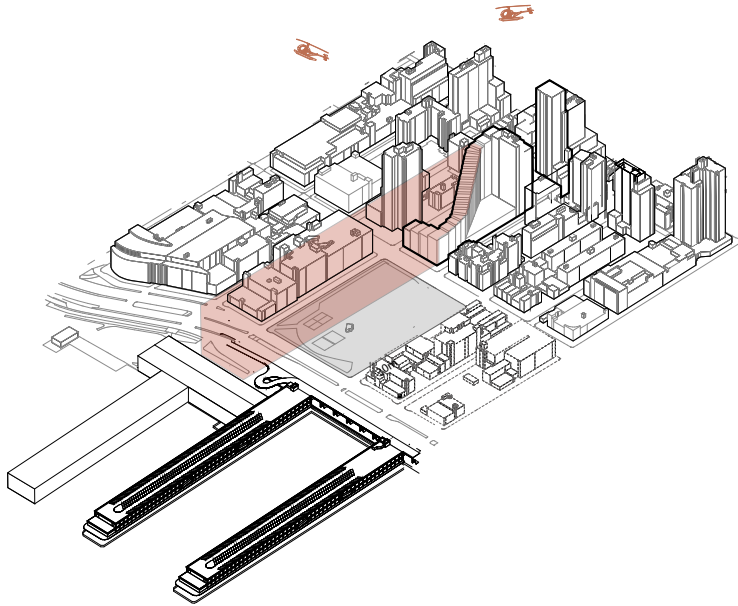
Site Challenges



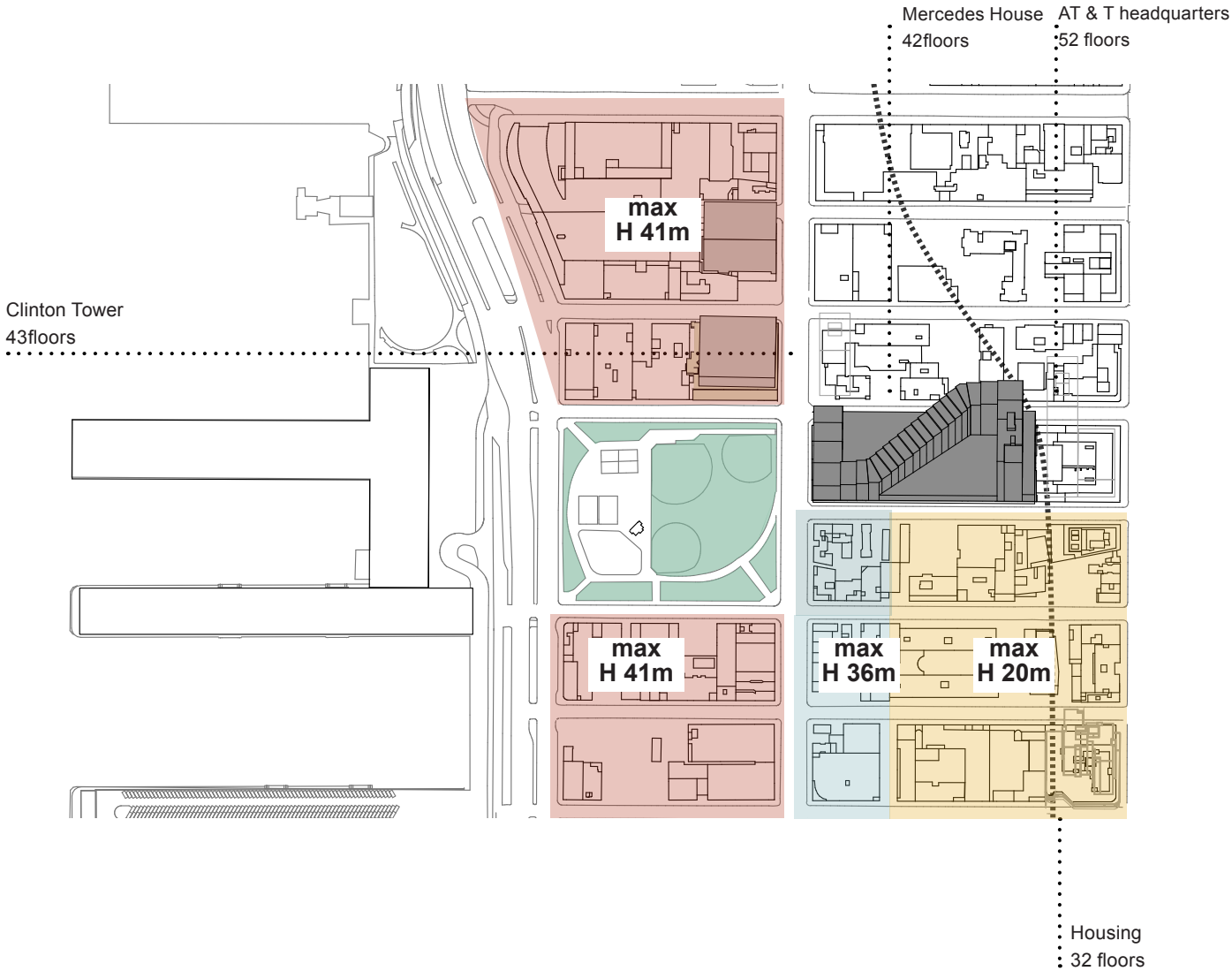
Building Height



Height from the Buildings

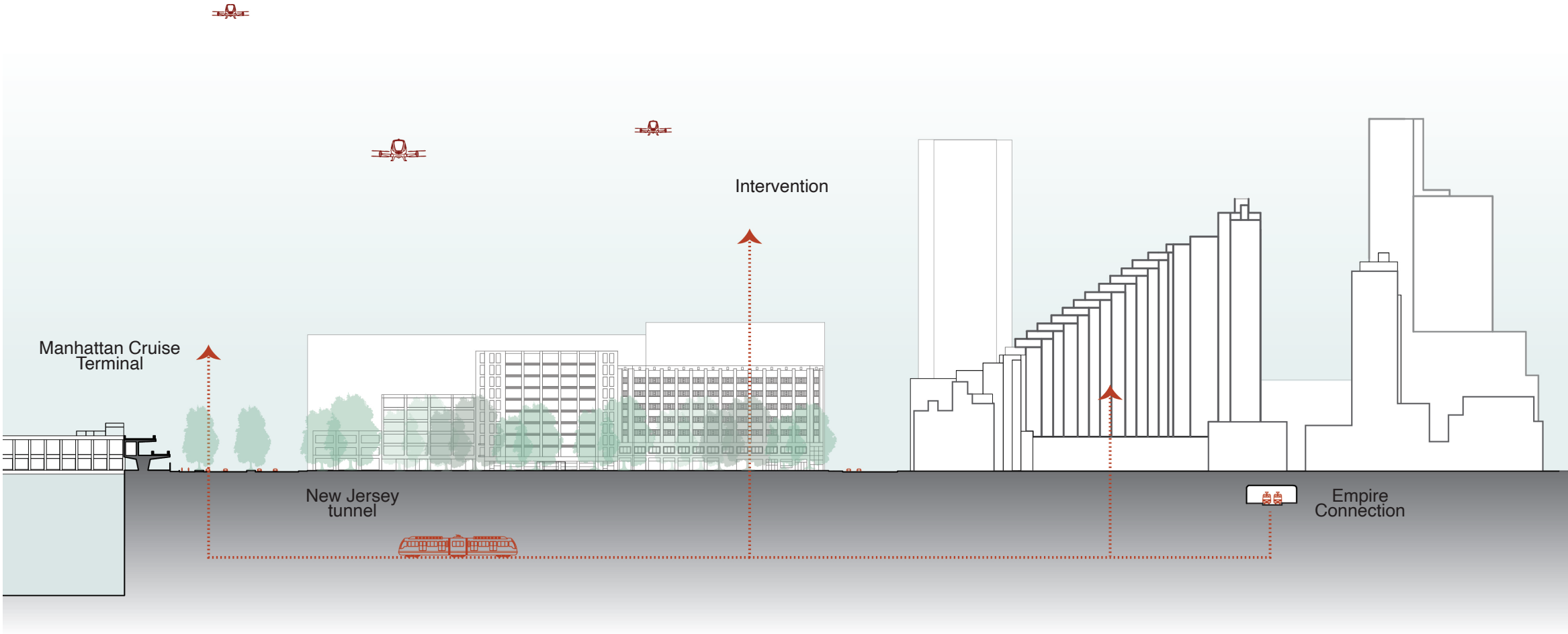


Leaving View Clear



Height Regulations

Linking metro and water

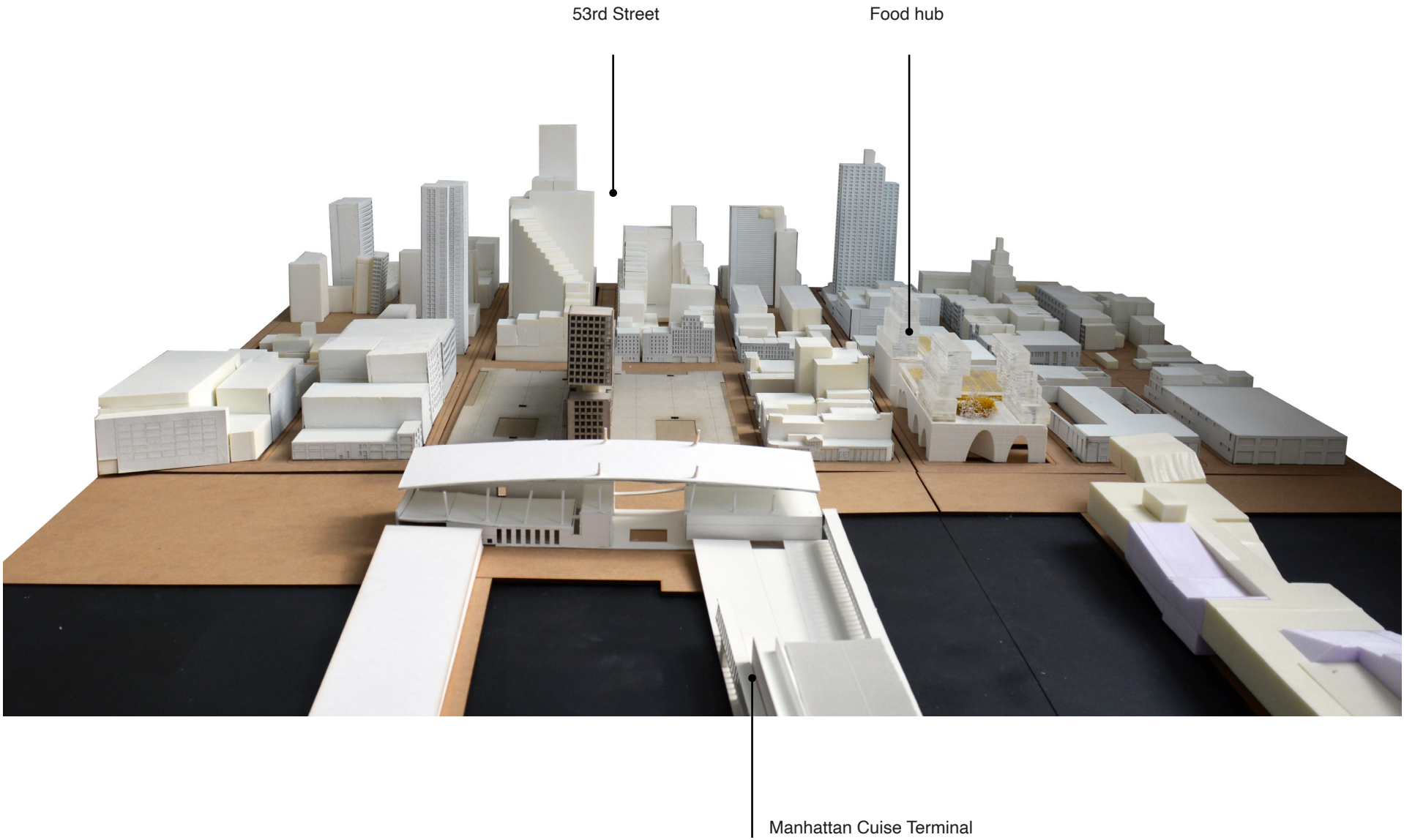


Massing Study

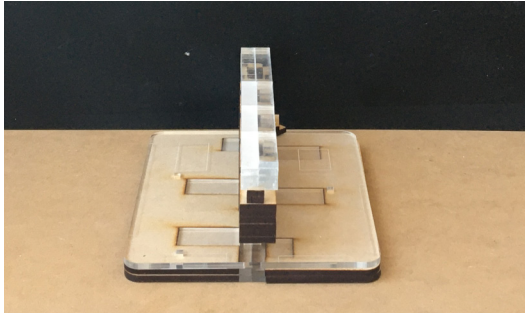
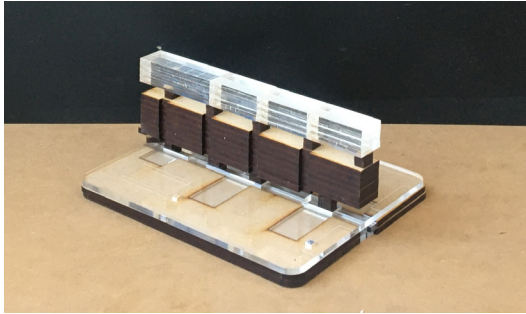
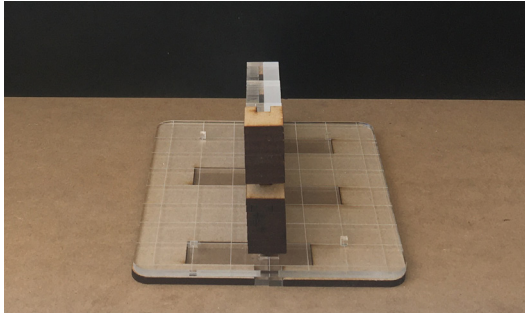
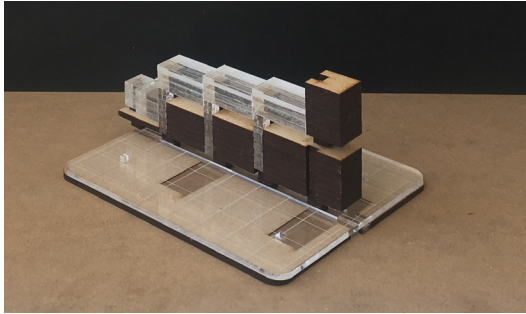
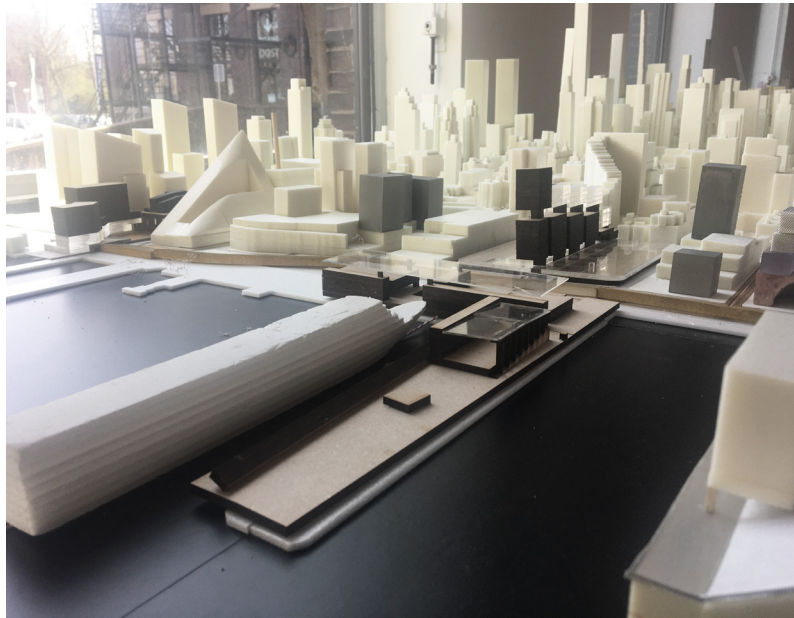
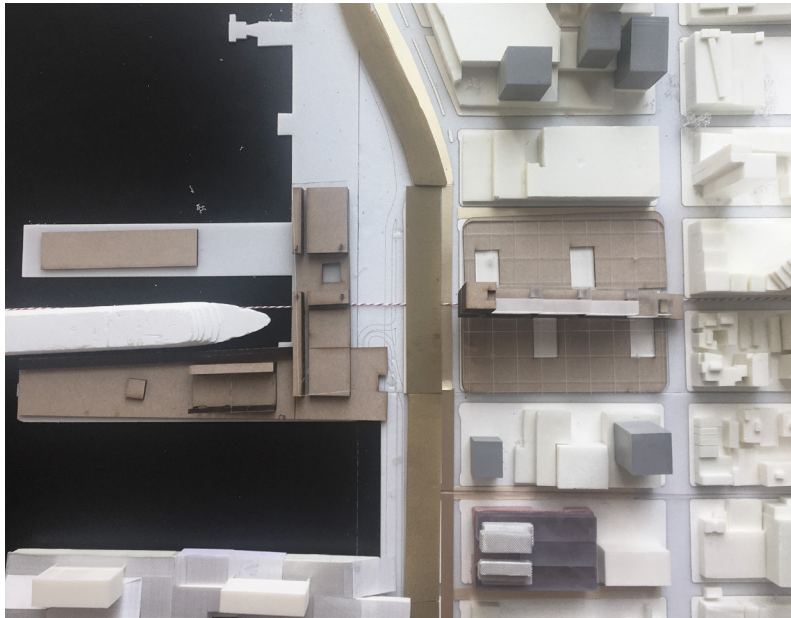
1:500 model



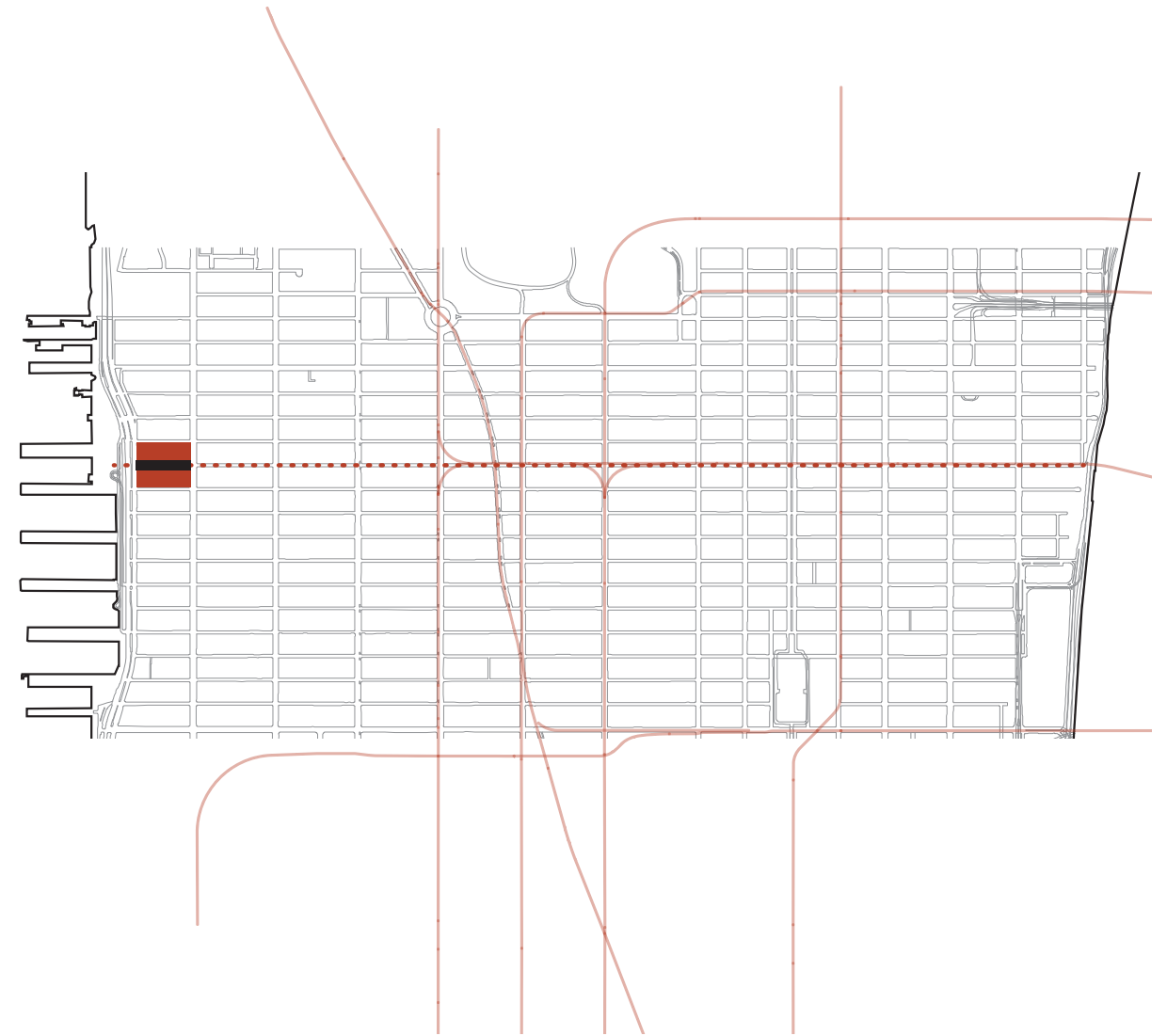
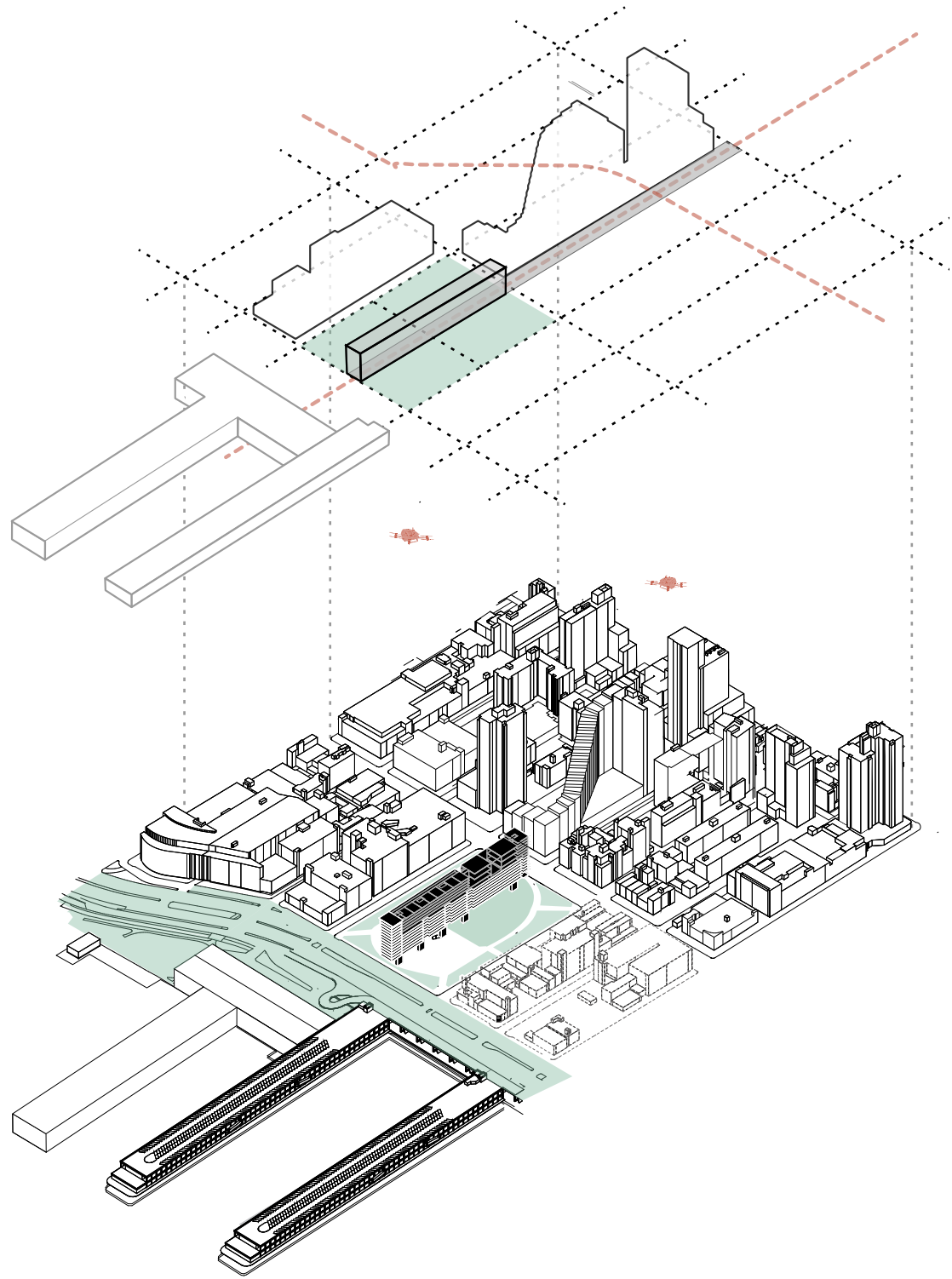
1:500 model



Massing Study

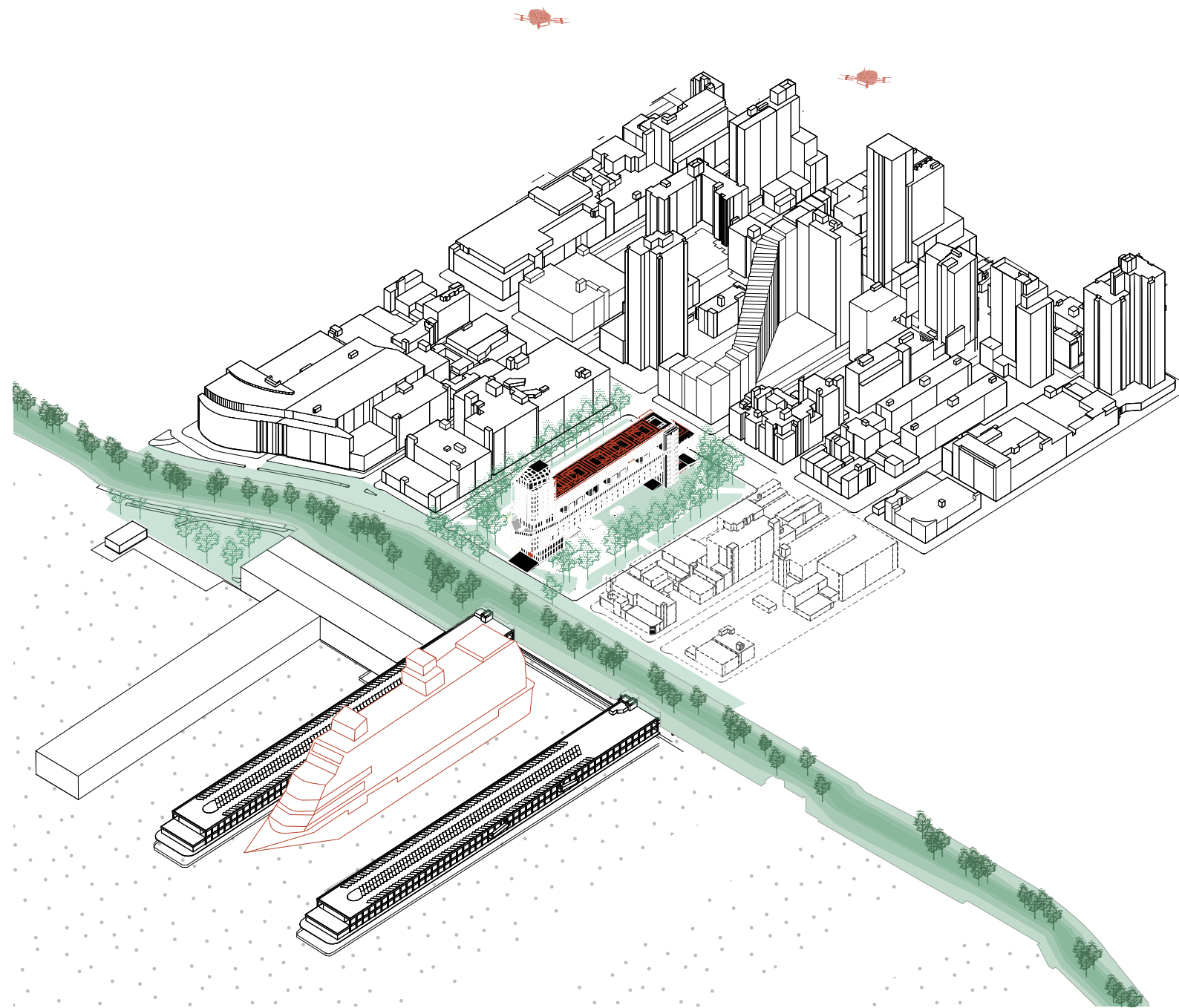


Responding to the Grid

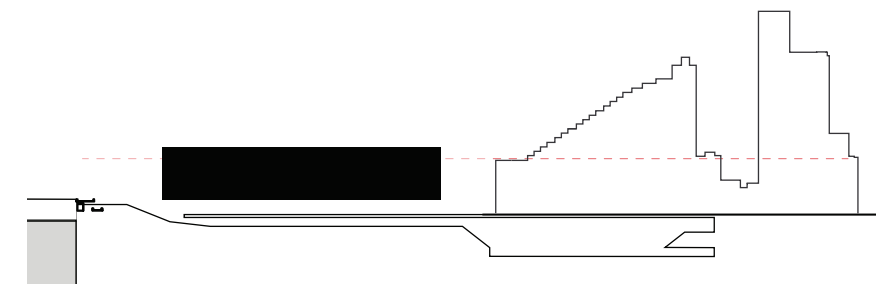


De Witt Clinton Park is a moment of interruption of the grid of New York, occupying two entire blocks on the West waterfront. The building is located in line with West 53rd street as it function as an infrastructural node. Through it's position it assumes great visibility from Midtown East.

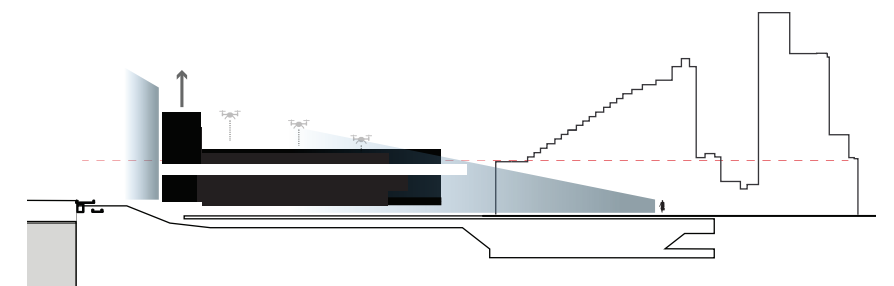
Massing Study



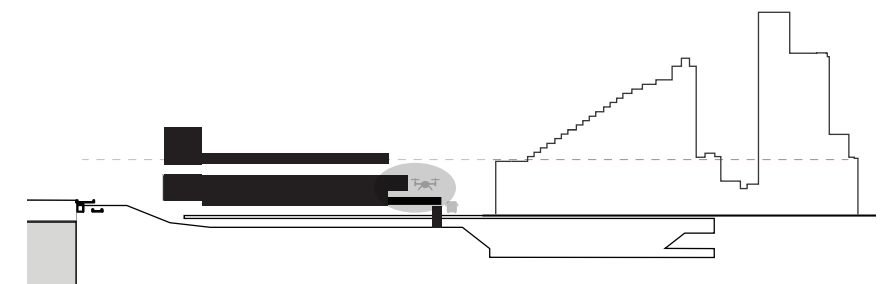
Axonometry of the proposal on site



Phase 01: the tower turns on the side to maximize deck dimensions.
The landing deck is located above 41m (max height of for the neighboring building by zoning)

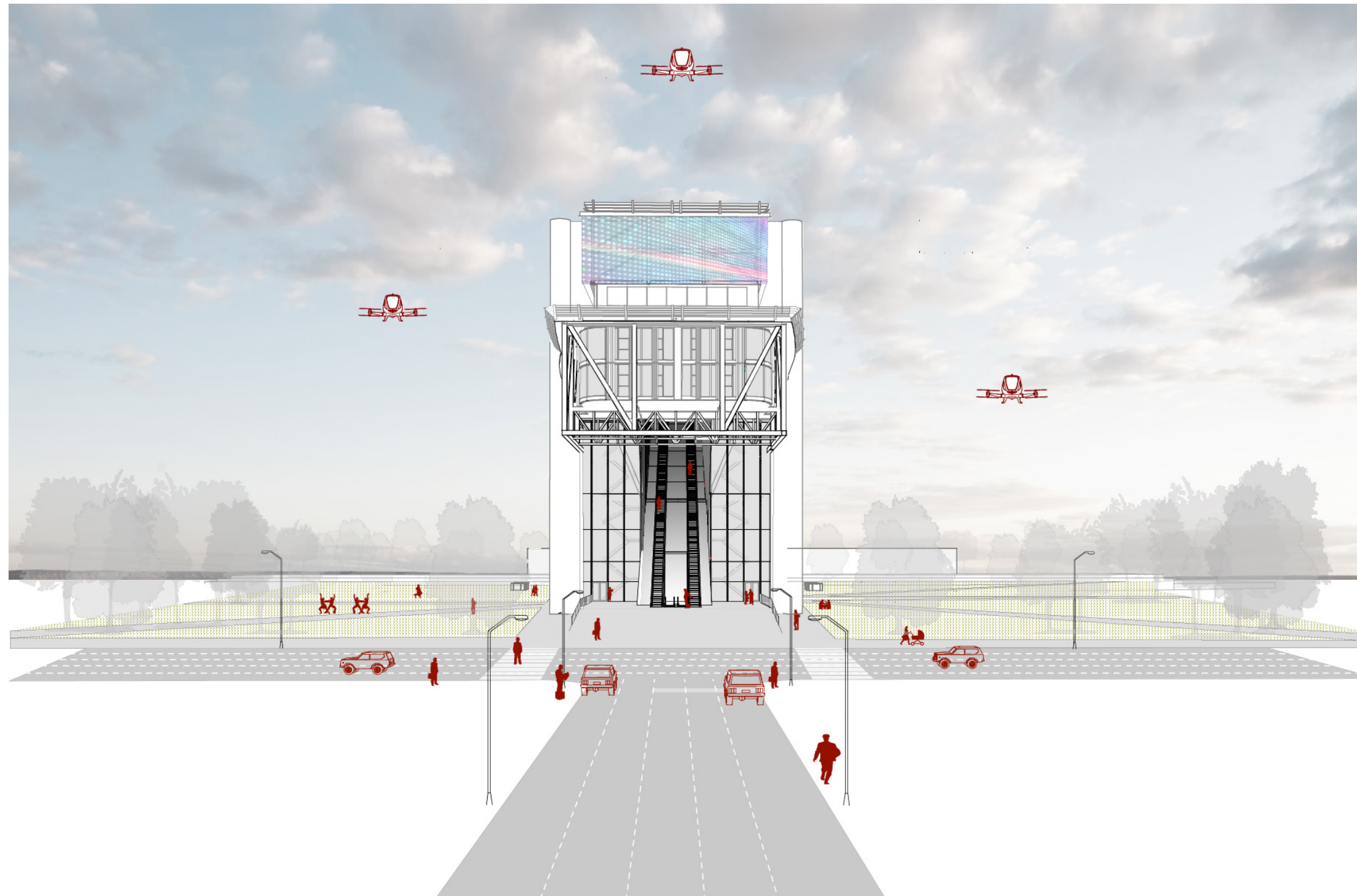


Phase 02: Increase view on the water for the apartments
Creation of raised promenade to allow also the public to have view on the water

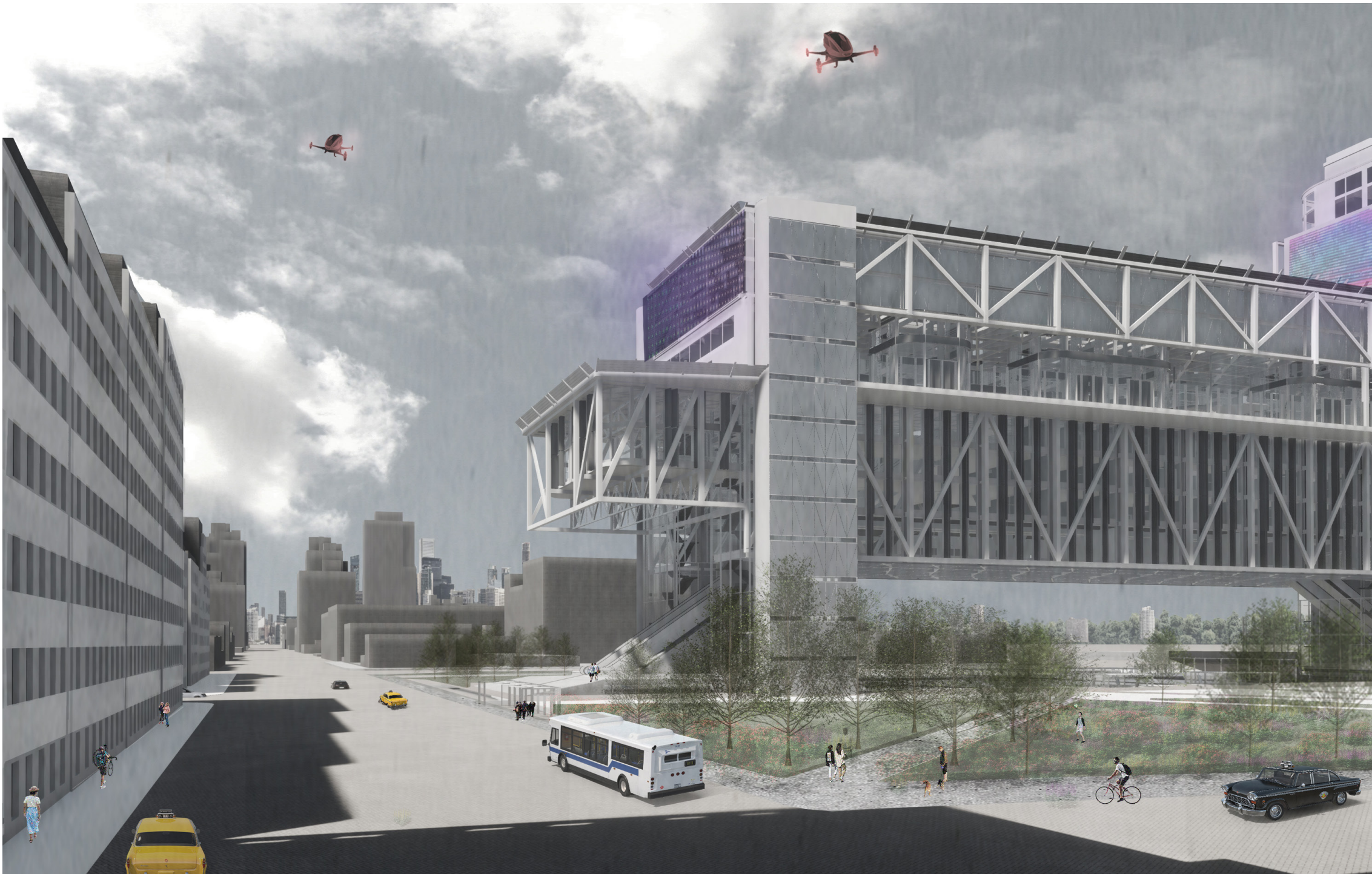


Phase 03: The end of the building gets further lowered to allow quicker public transports connection

Perspective elevation from EAST 1:200



View from North-East

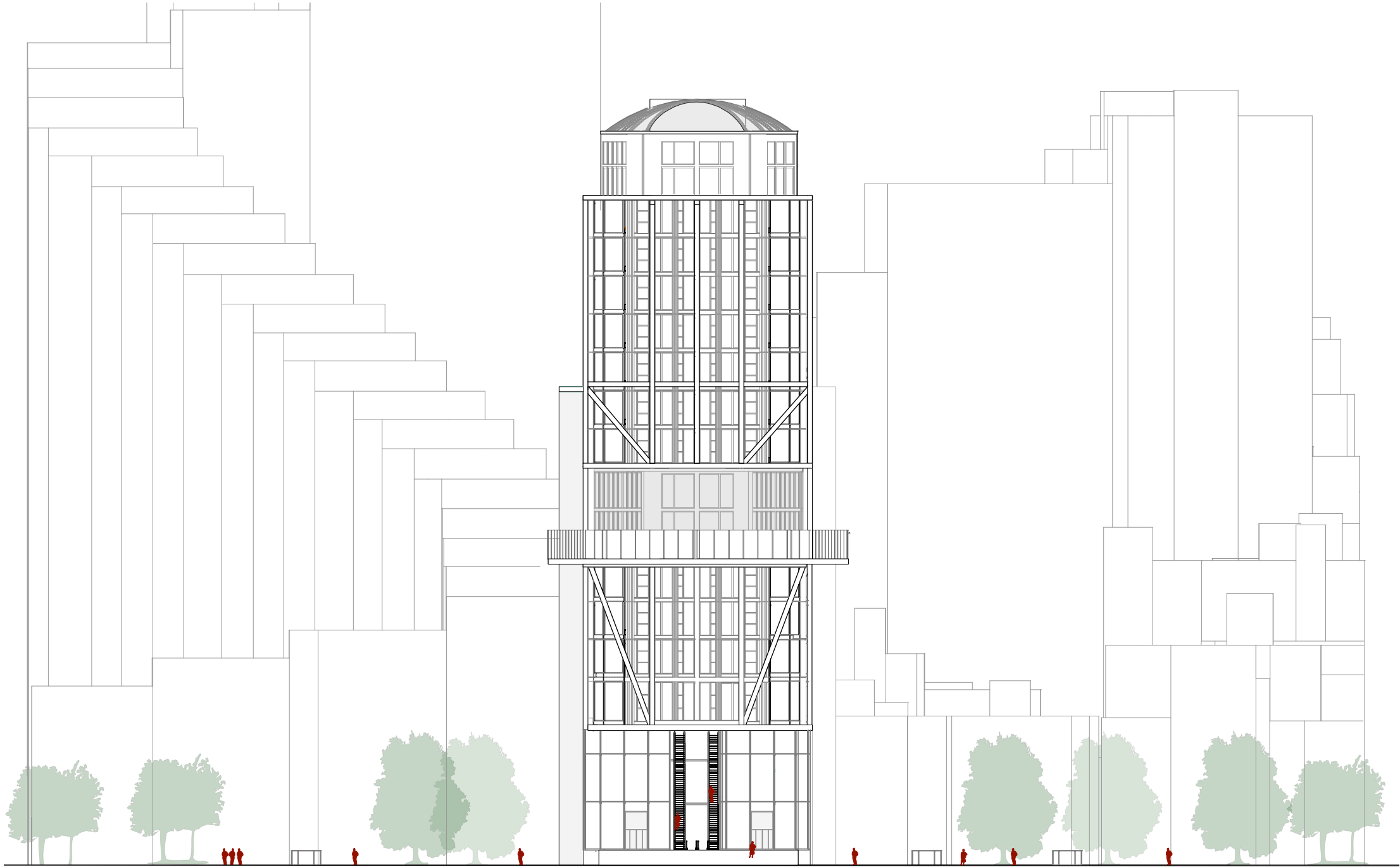


West Elevation 1:200

Complex Project - NEW YORK

04 Design

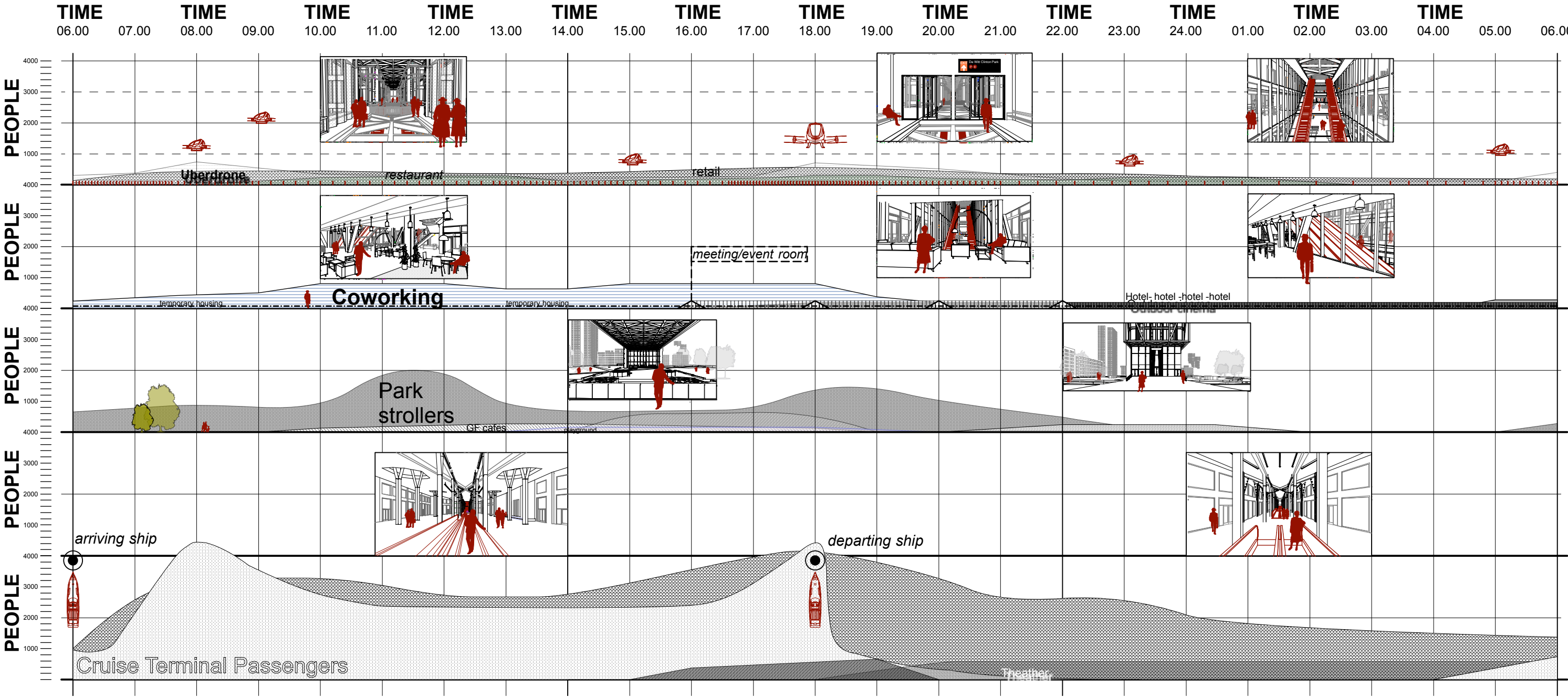
The Path to the Playground P5



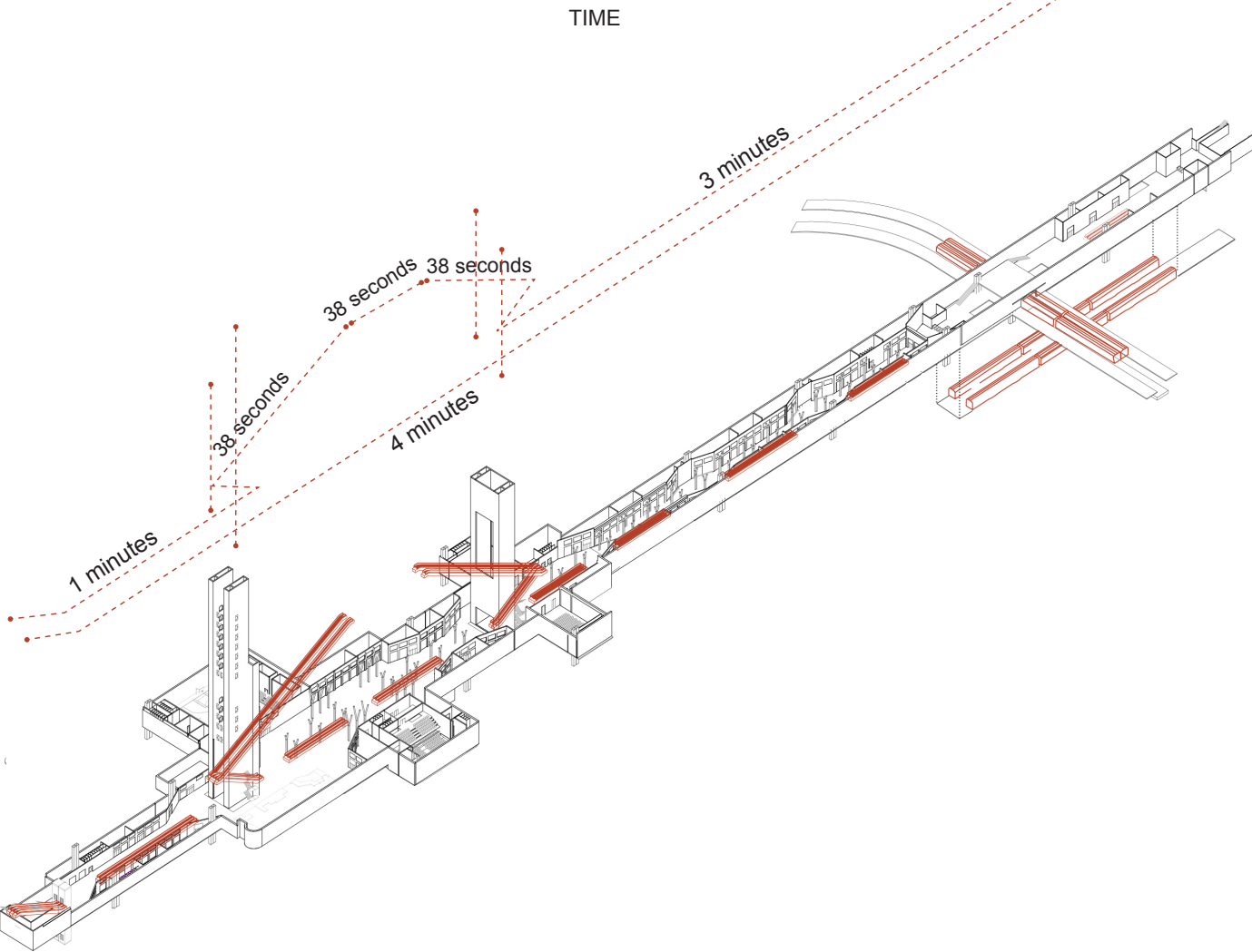
View from West entrance



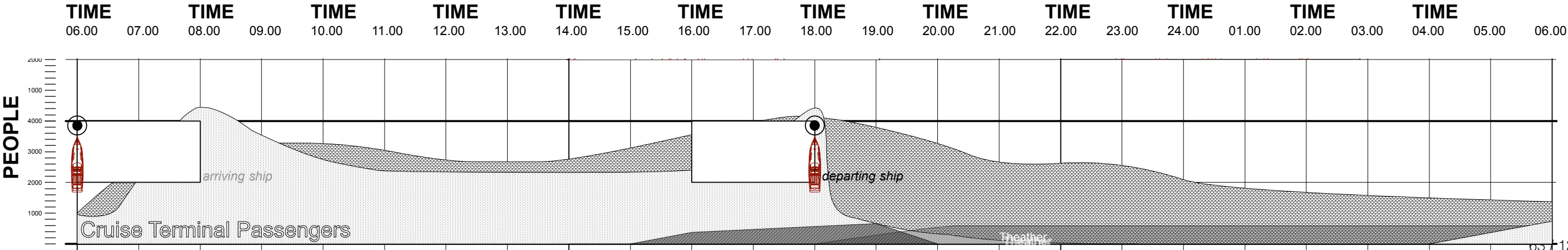
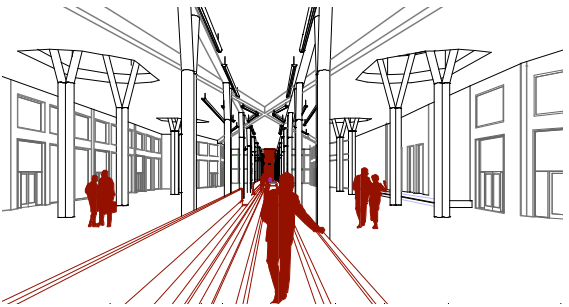
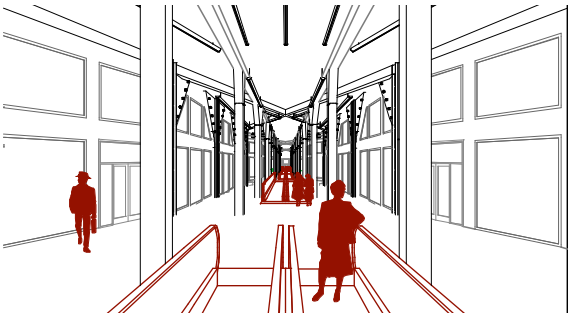
Ridership



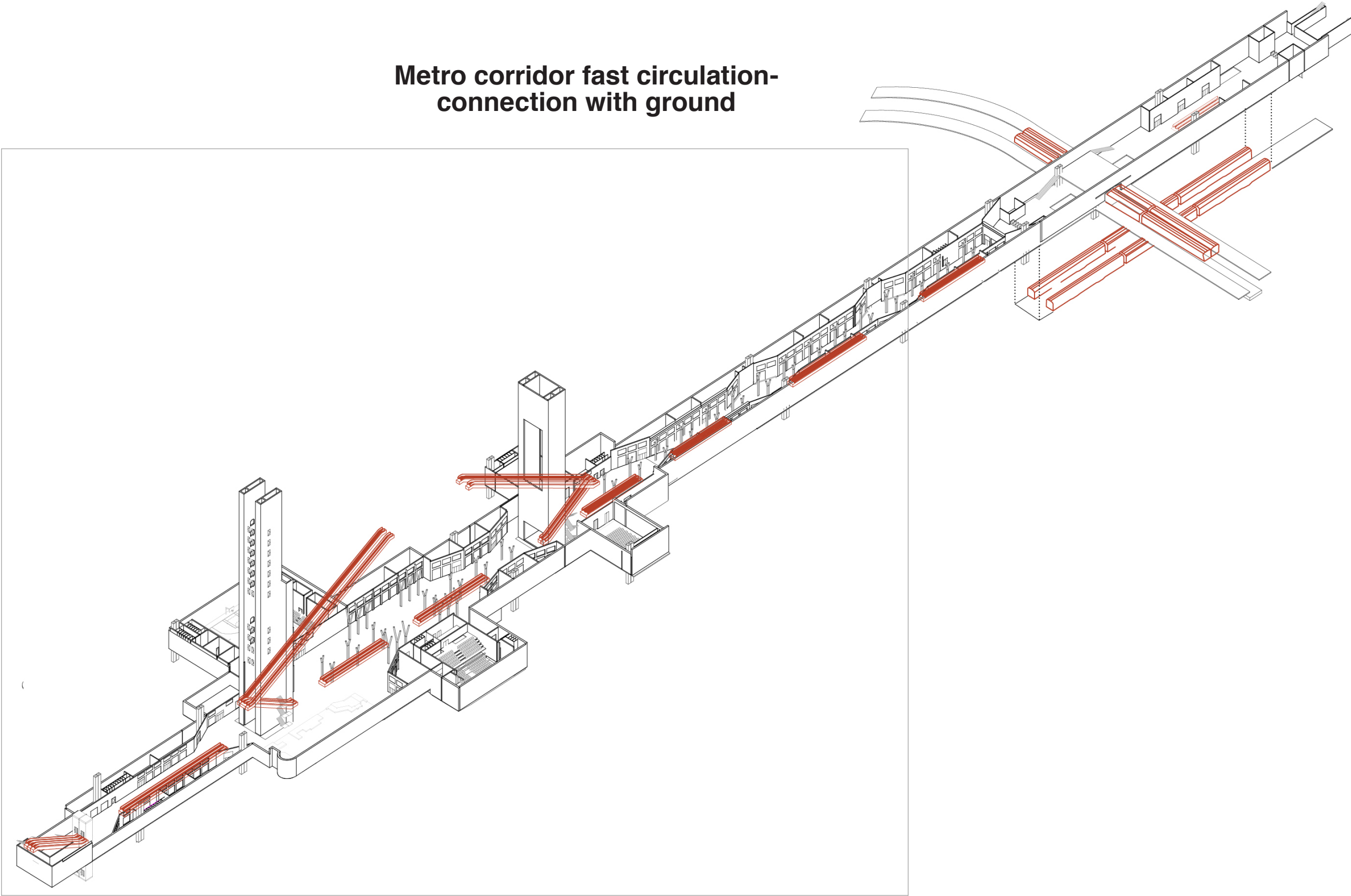
Velocity and Transition



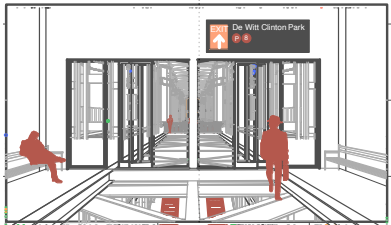
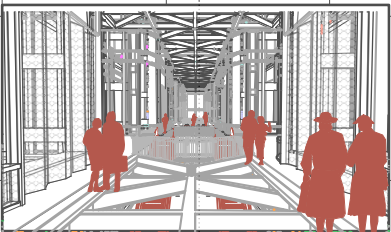
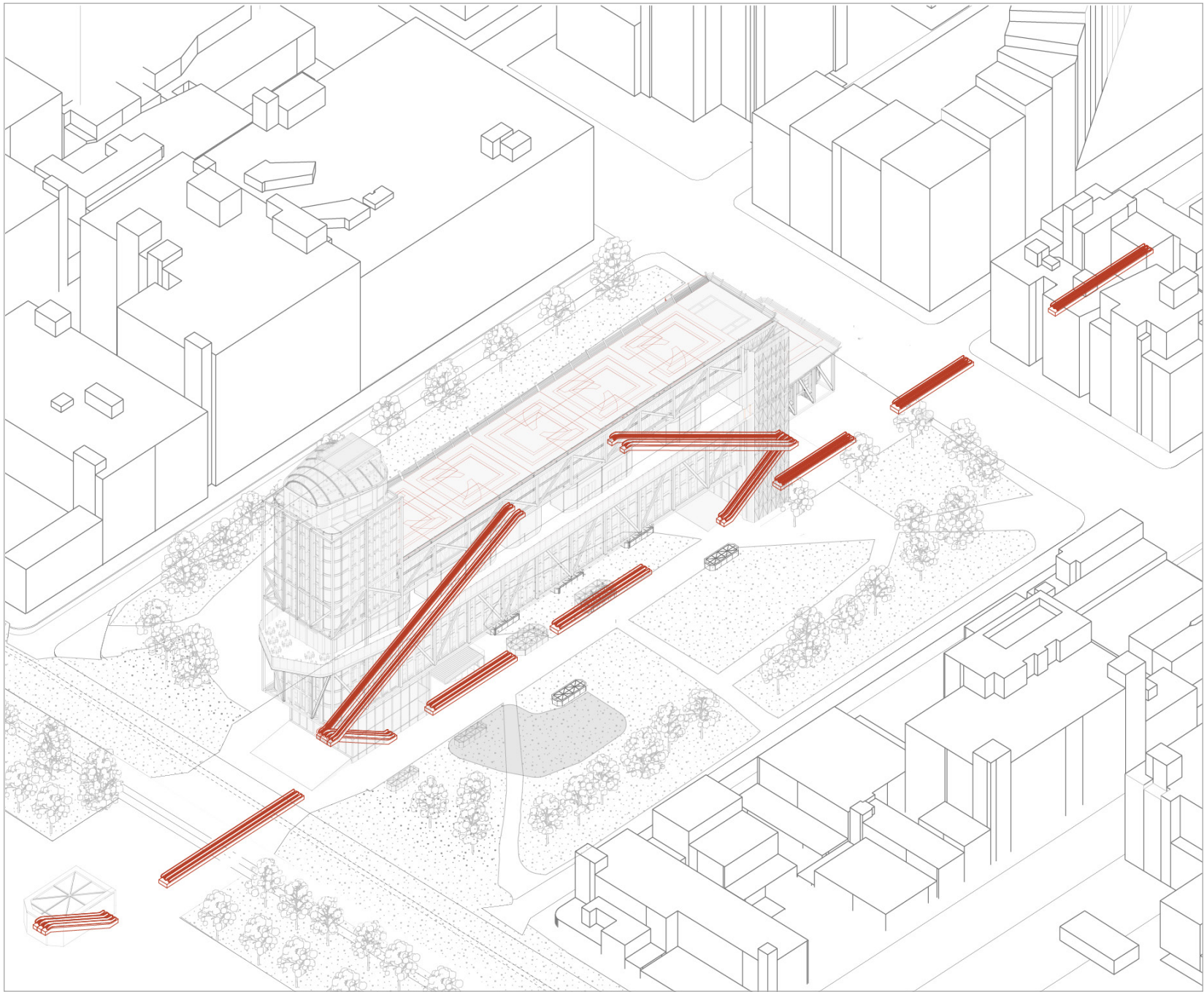
TRANSITION



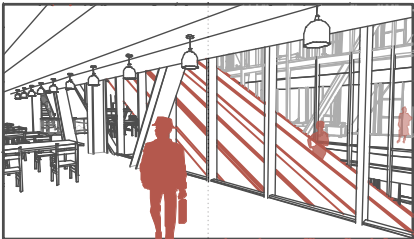
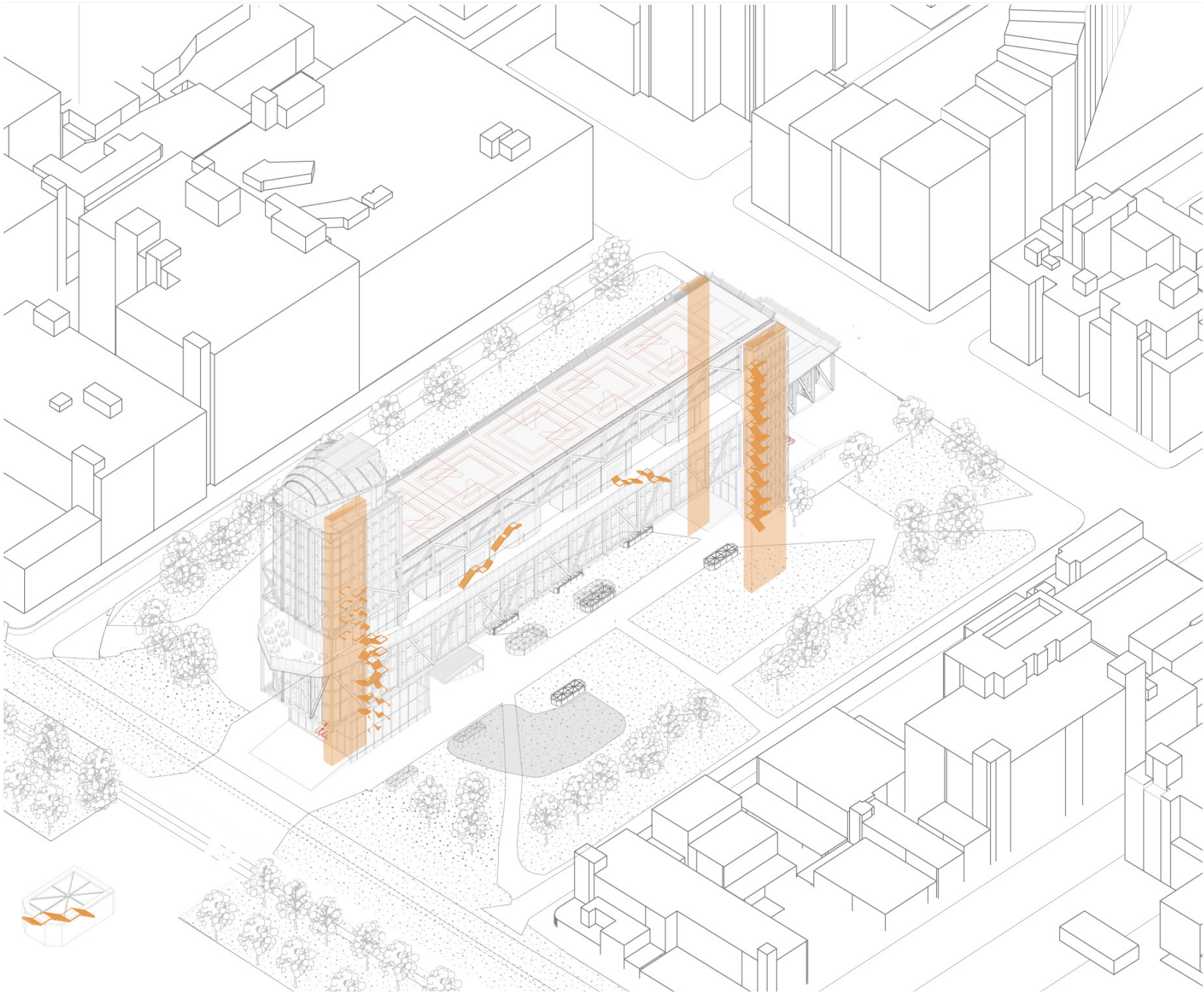
**Metro corridor fast circulation-
connection with ground**



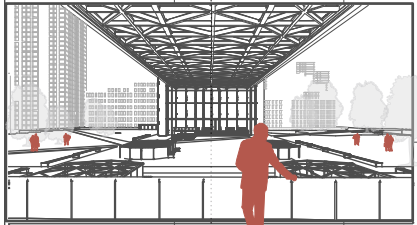
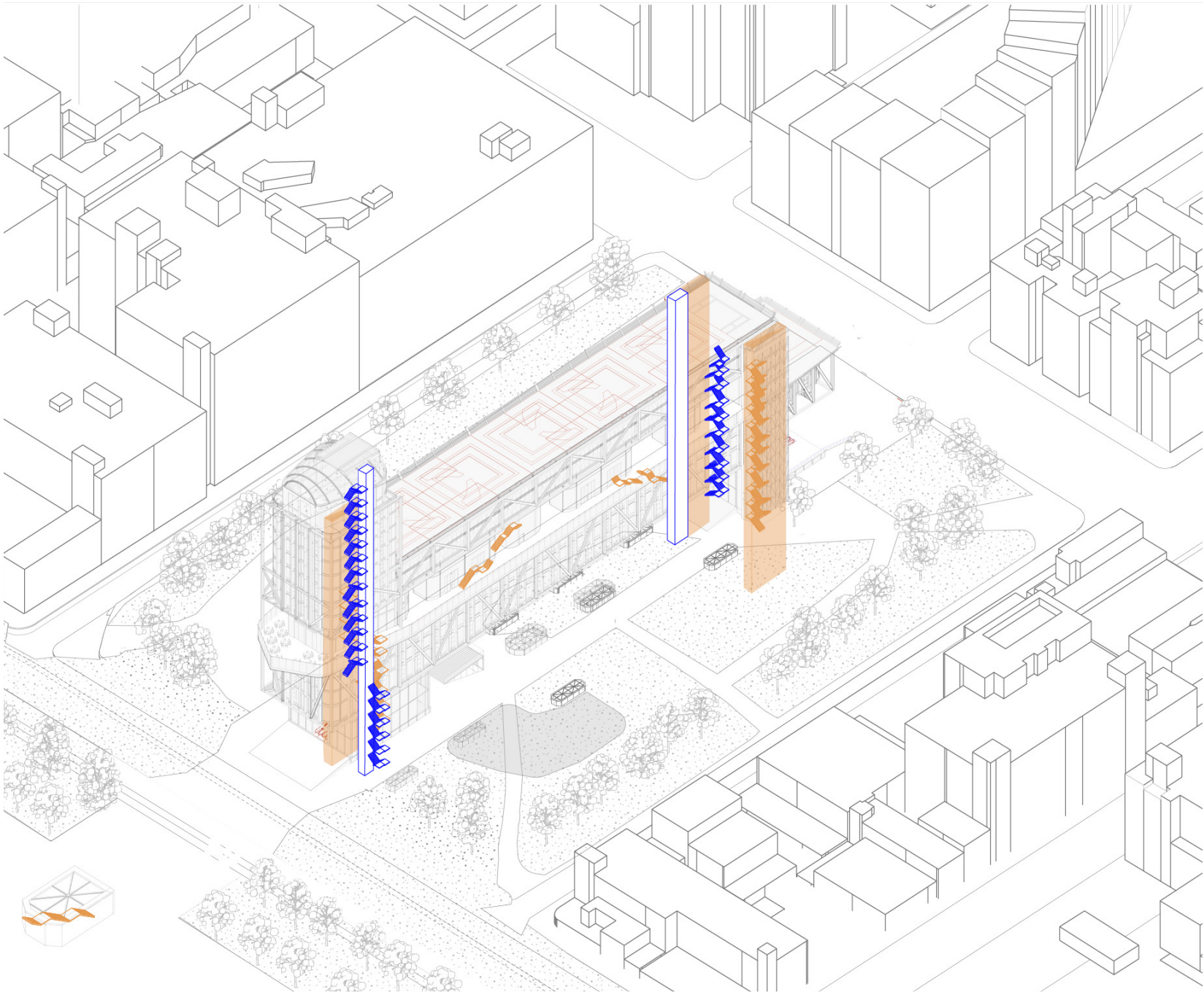
Building Fast circulation connection with ground



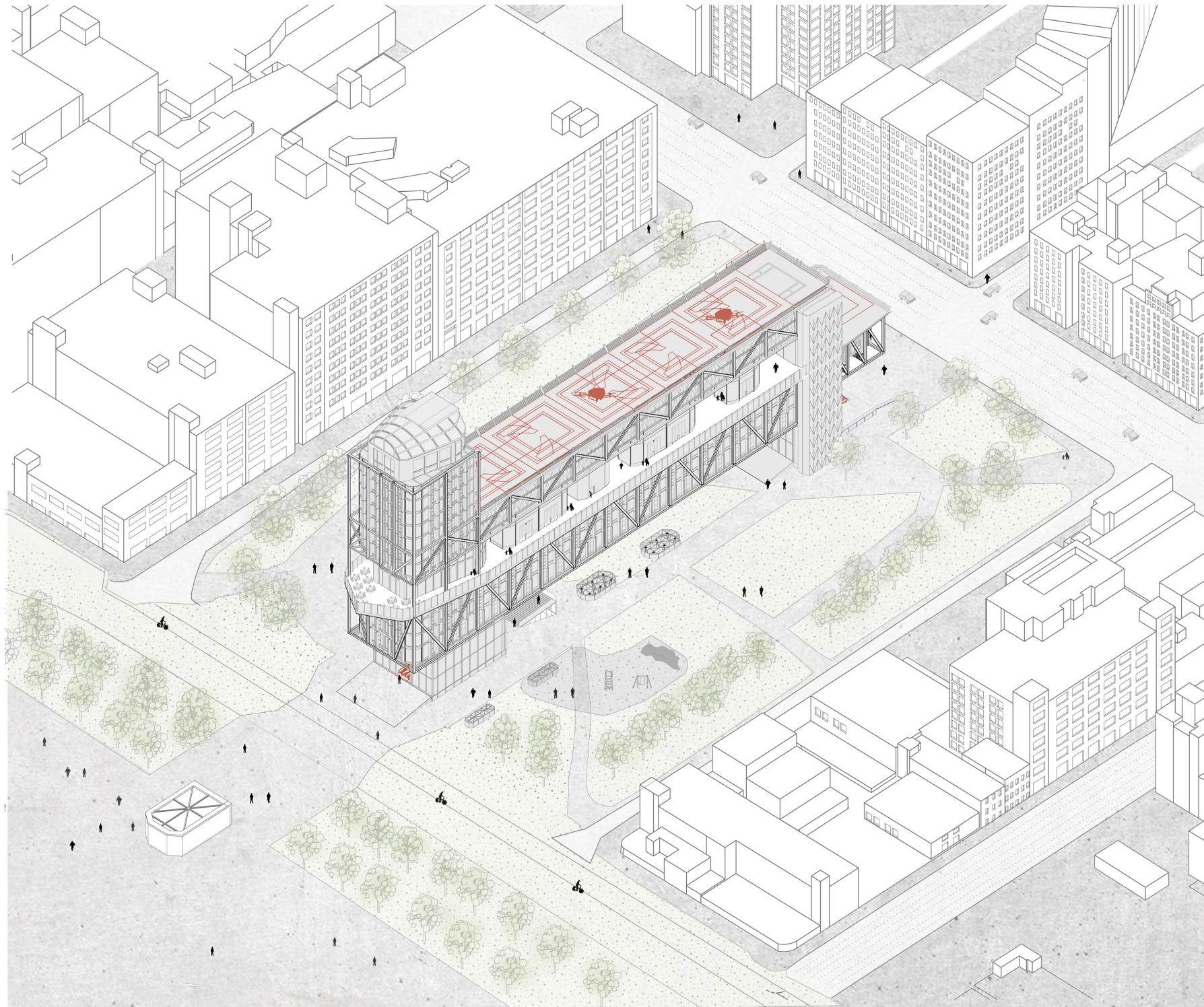
Coworking access



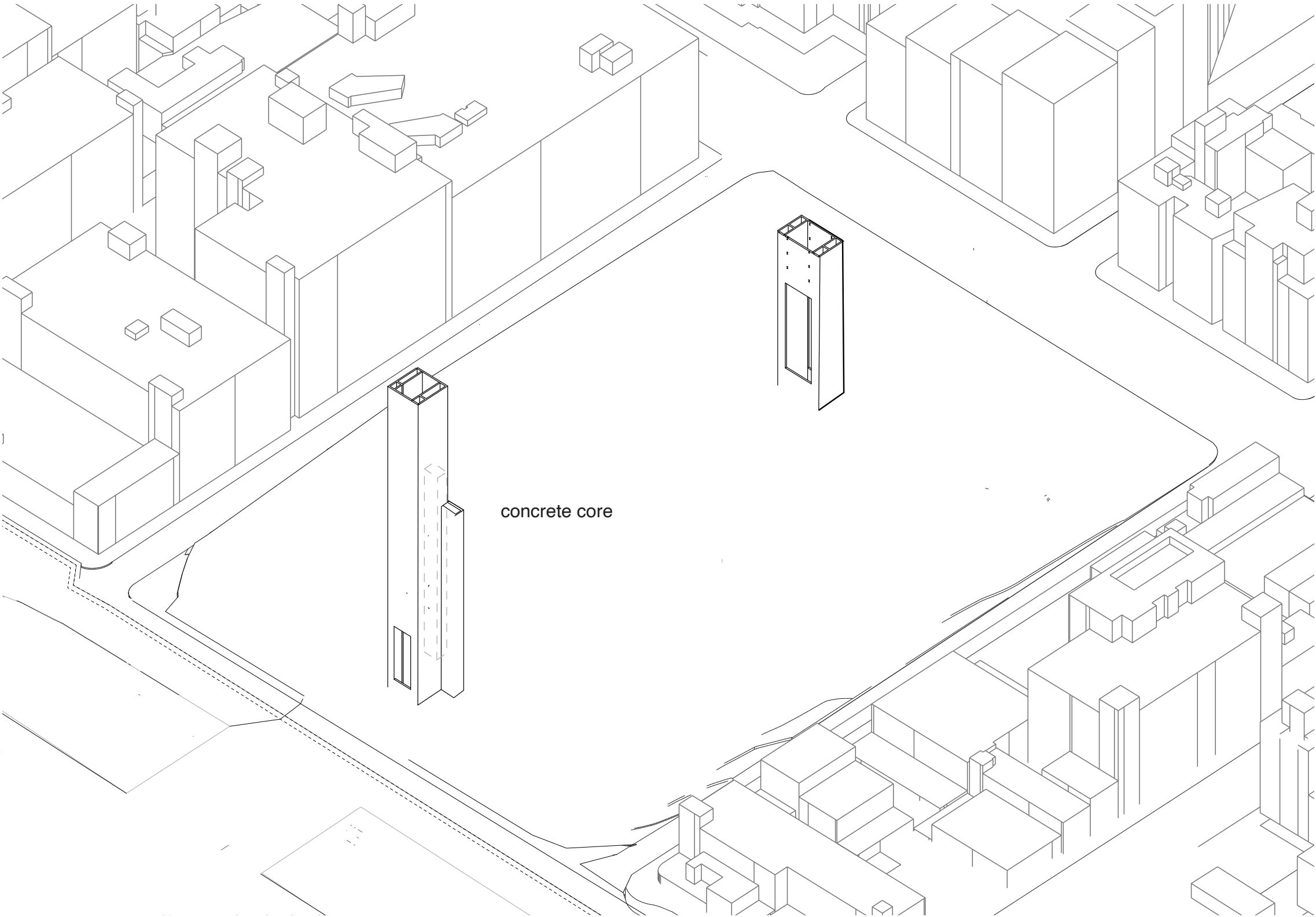
Temporary housing/ hotel access



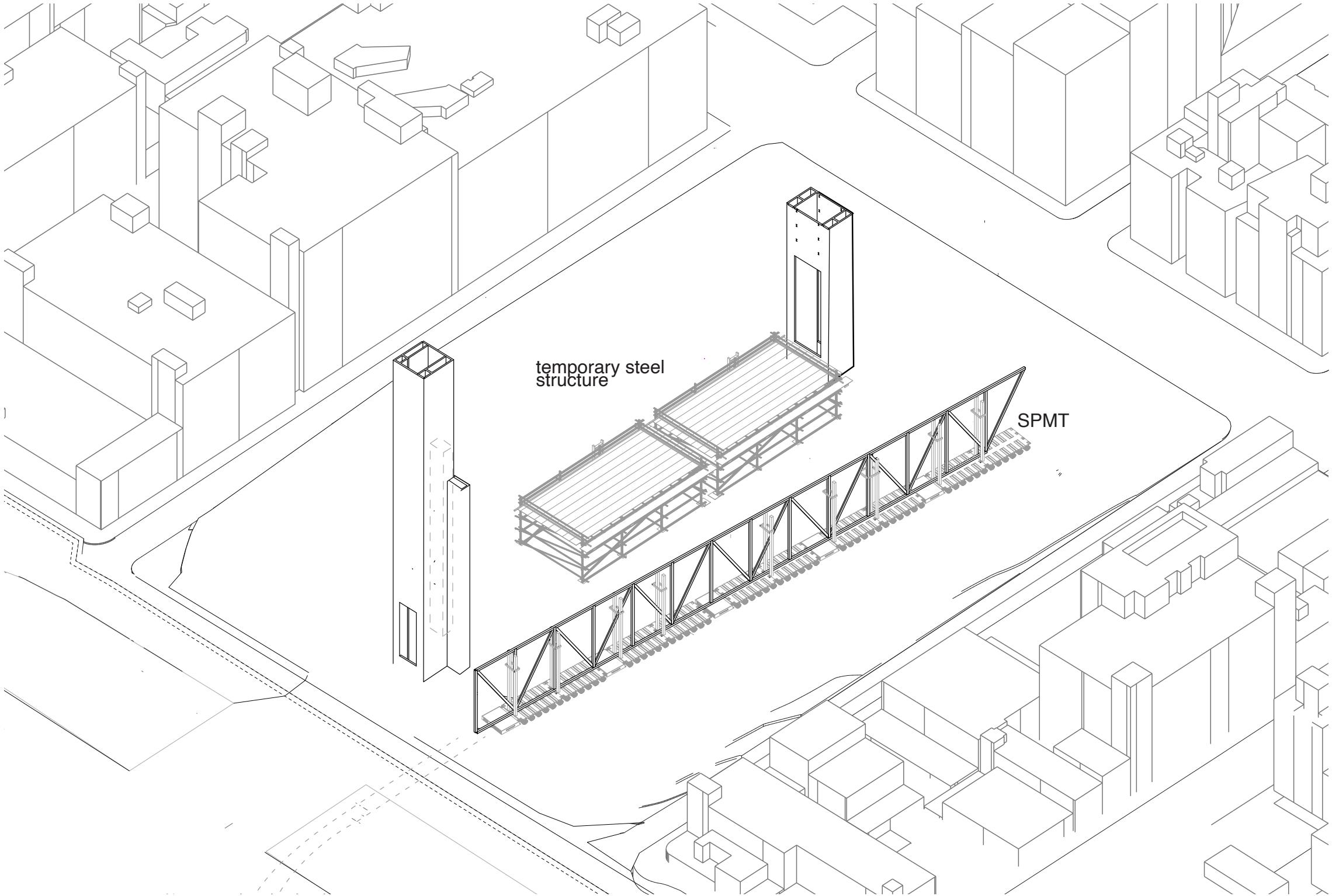
Proposal Axonometric 1:900



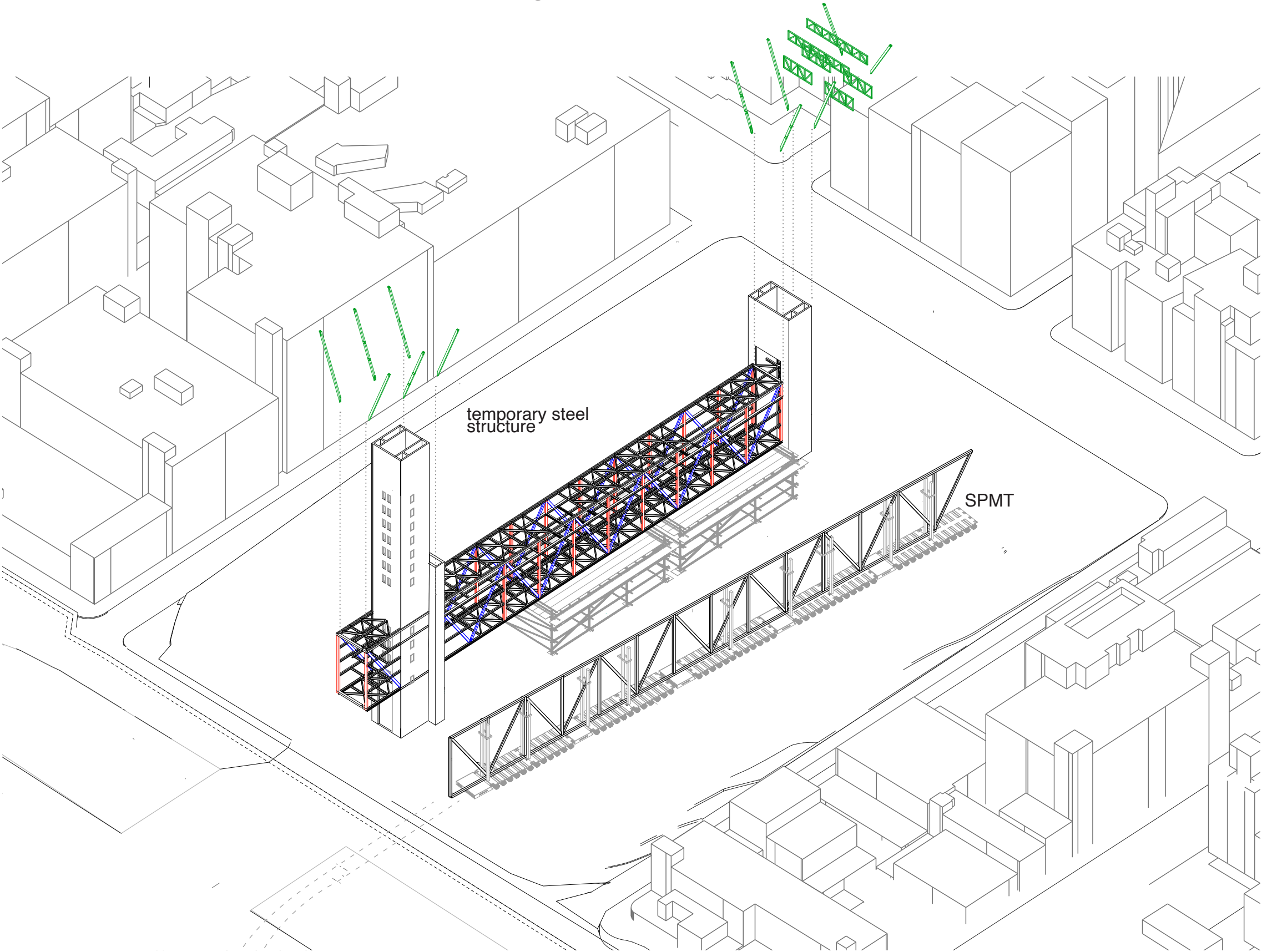
Building construction phase 1



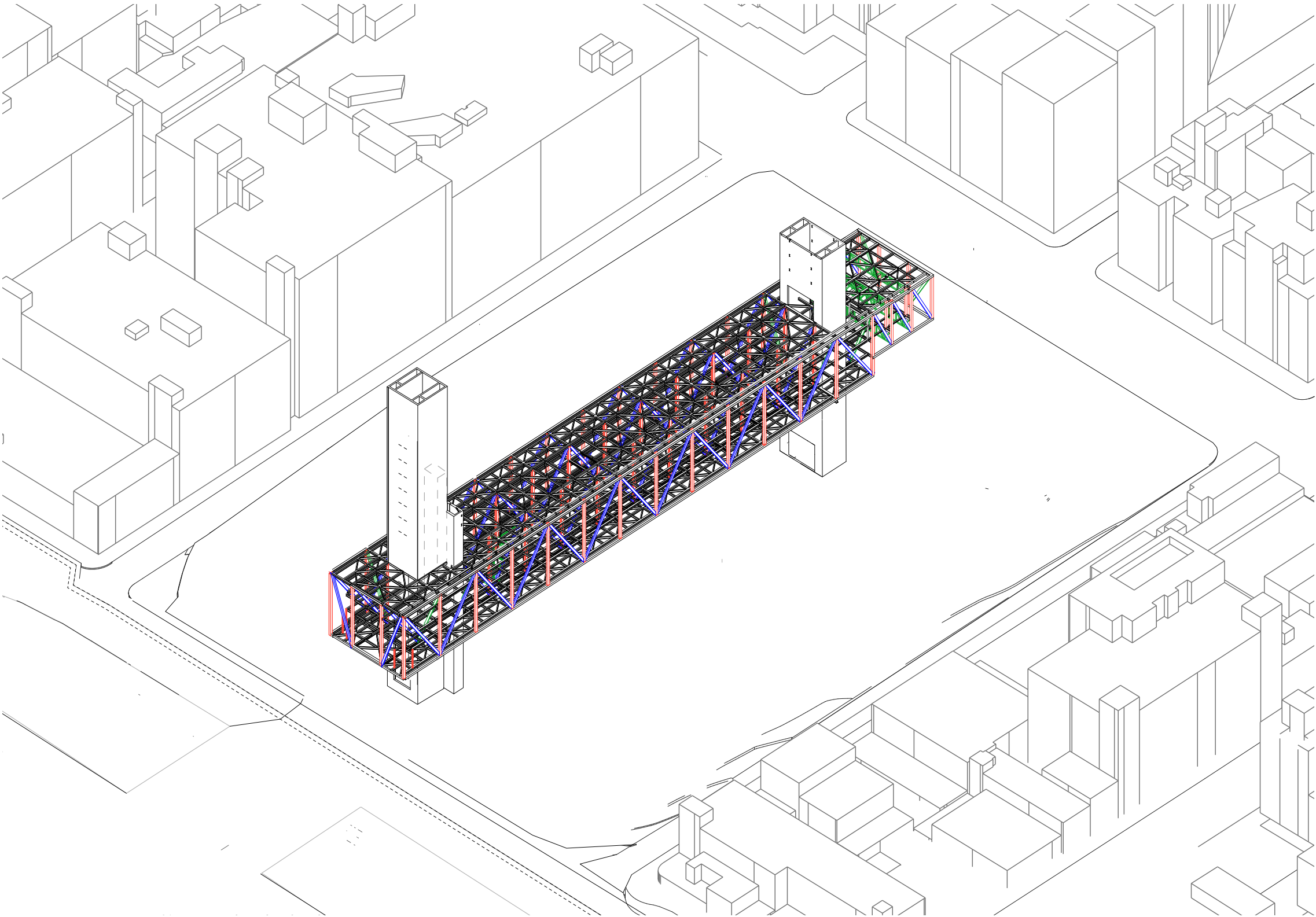
Building construction phase 2

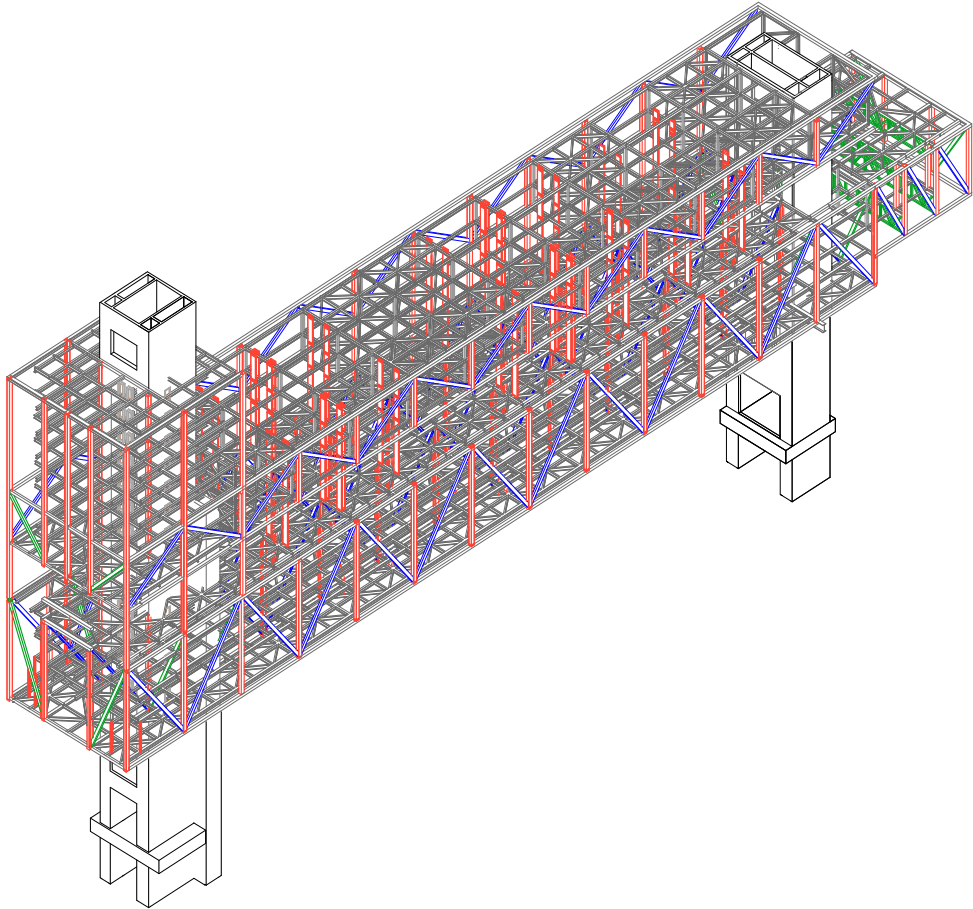


Building construction phase 3

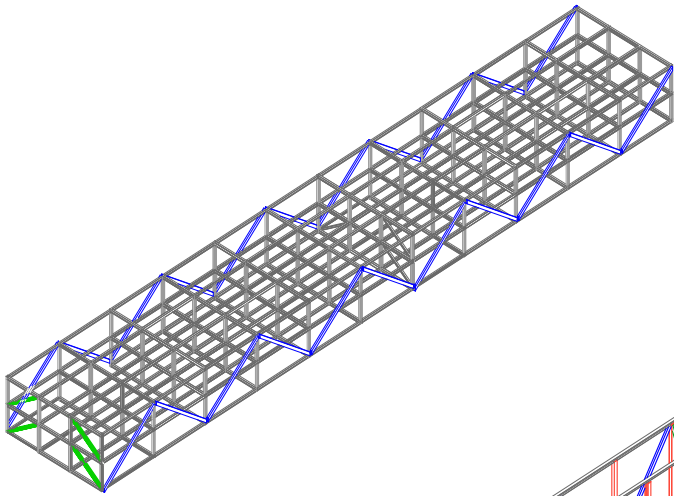


Building construction phase 4

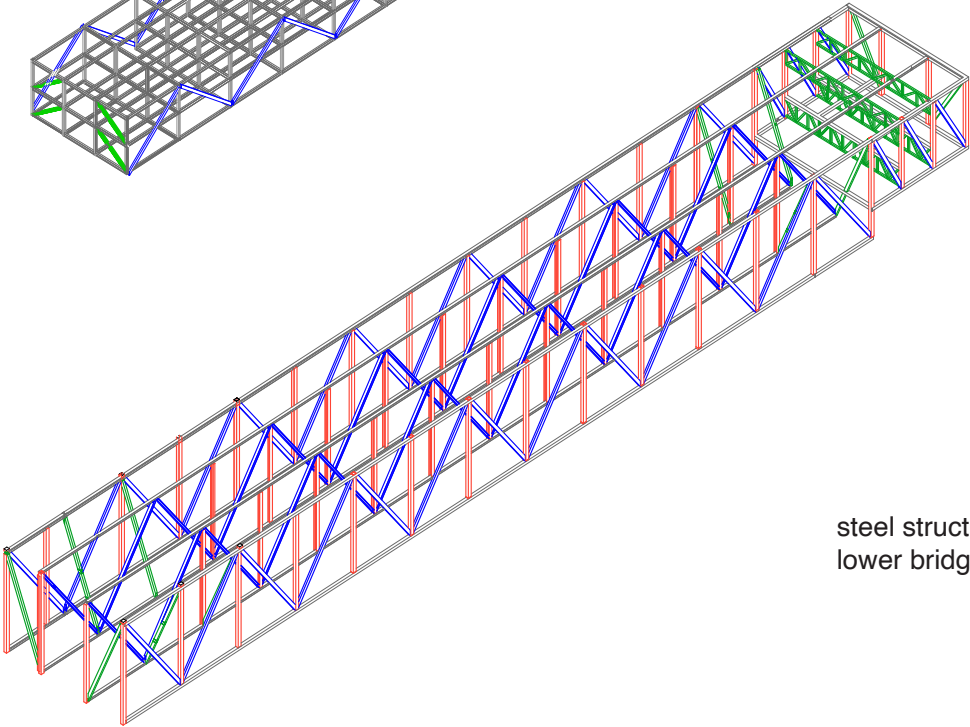




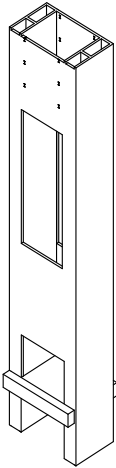
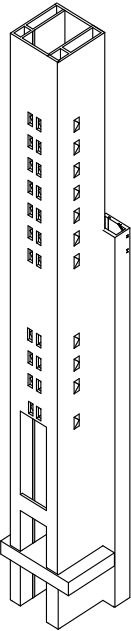
structural axonometric 1:1000



Lightweight
steel struc-
ture droneport
1:1000

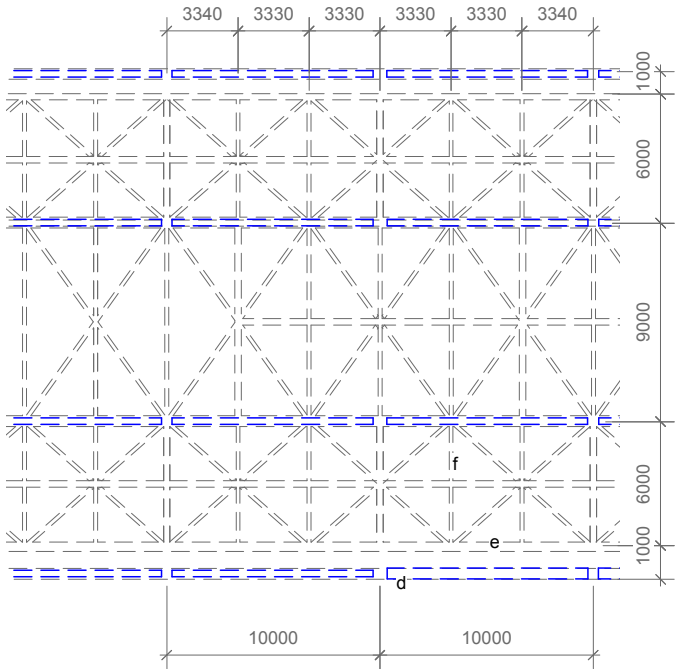


steel structure
lower bridge



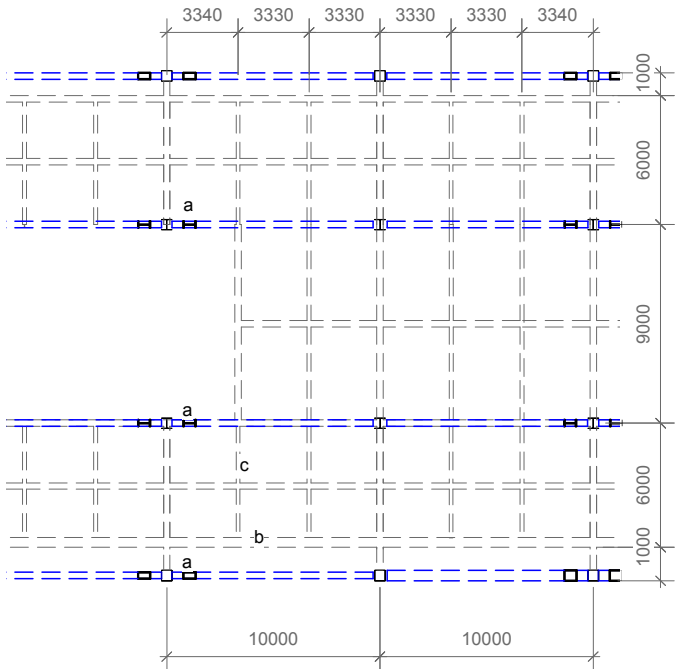
concrete
cores holding
the bridge

Structural floorplan



1:200 fragment of structural floor level 1

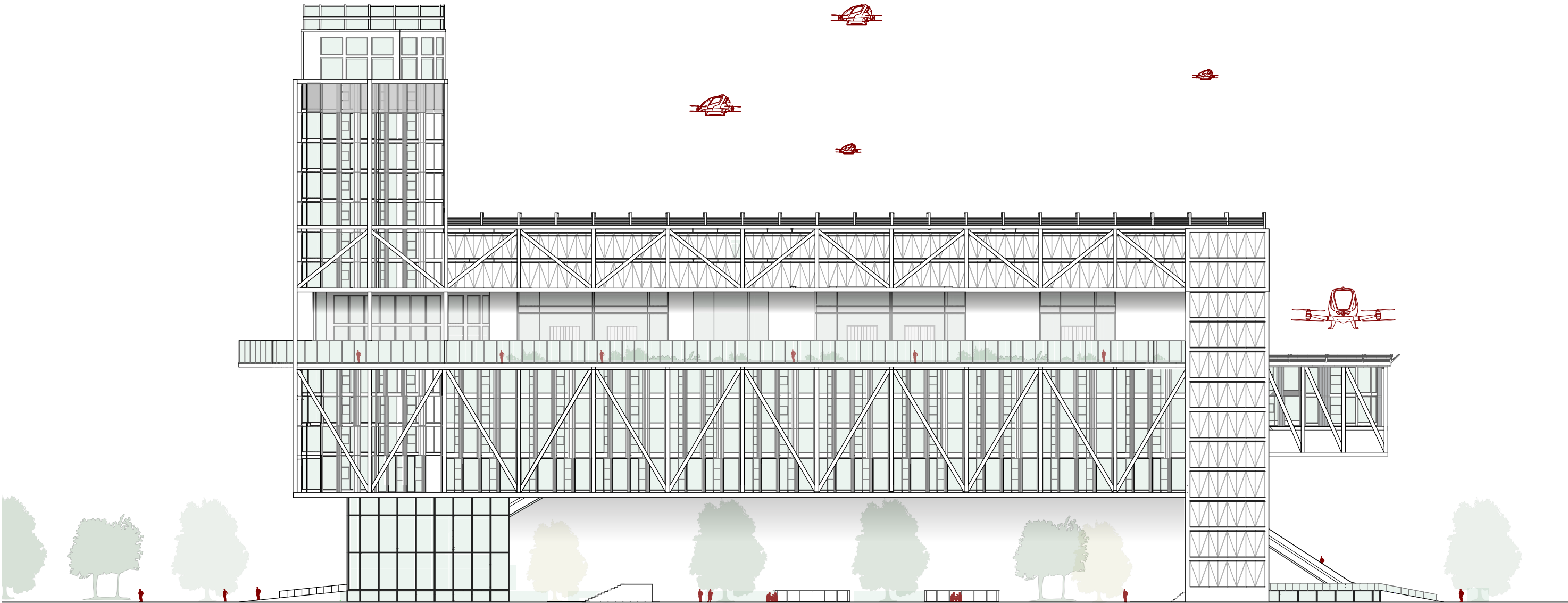
BEAM DIMENSIONS
d: KW 500X300X12.6
e: HEA 500
f: IPE 500
g: KW 180X8



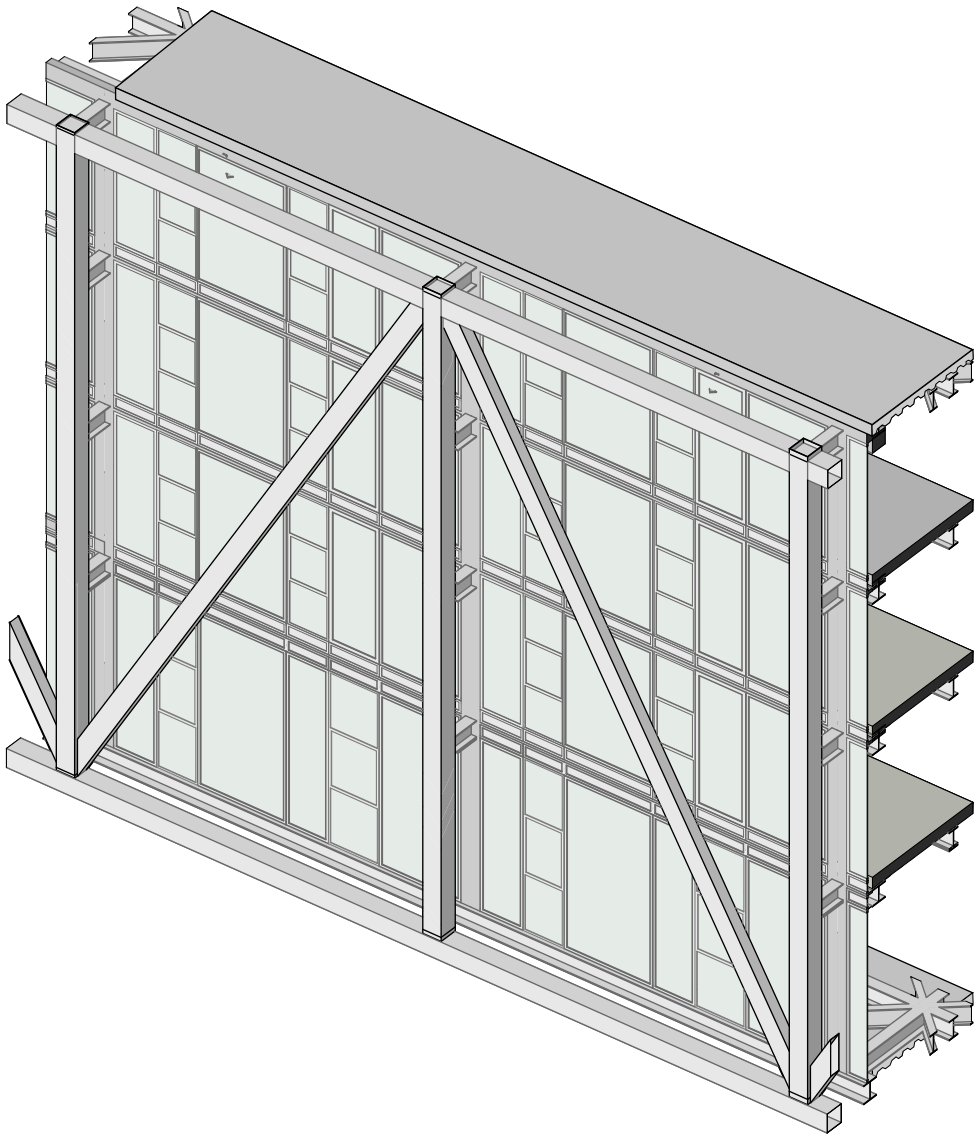
1:200 fragment of structural floor level 2

BEAM DIMENSIONS
a: RHS 500X300X12.5
b: HEA 450
c: 300 ASB196

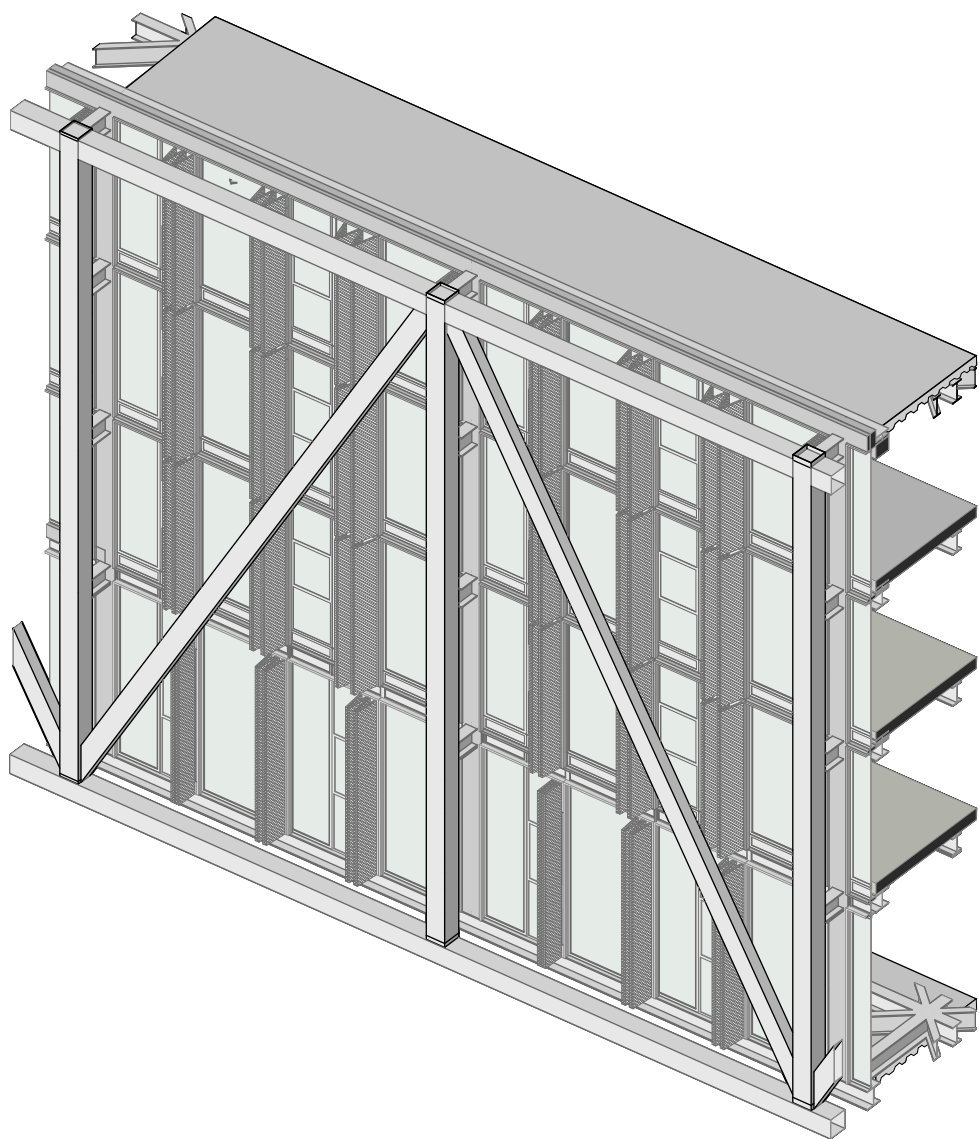
South facade 1:200

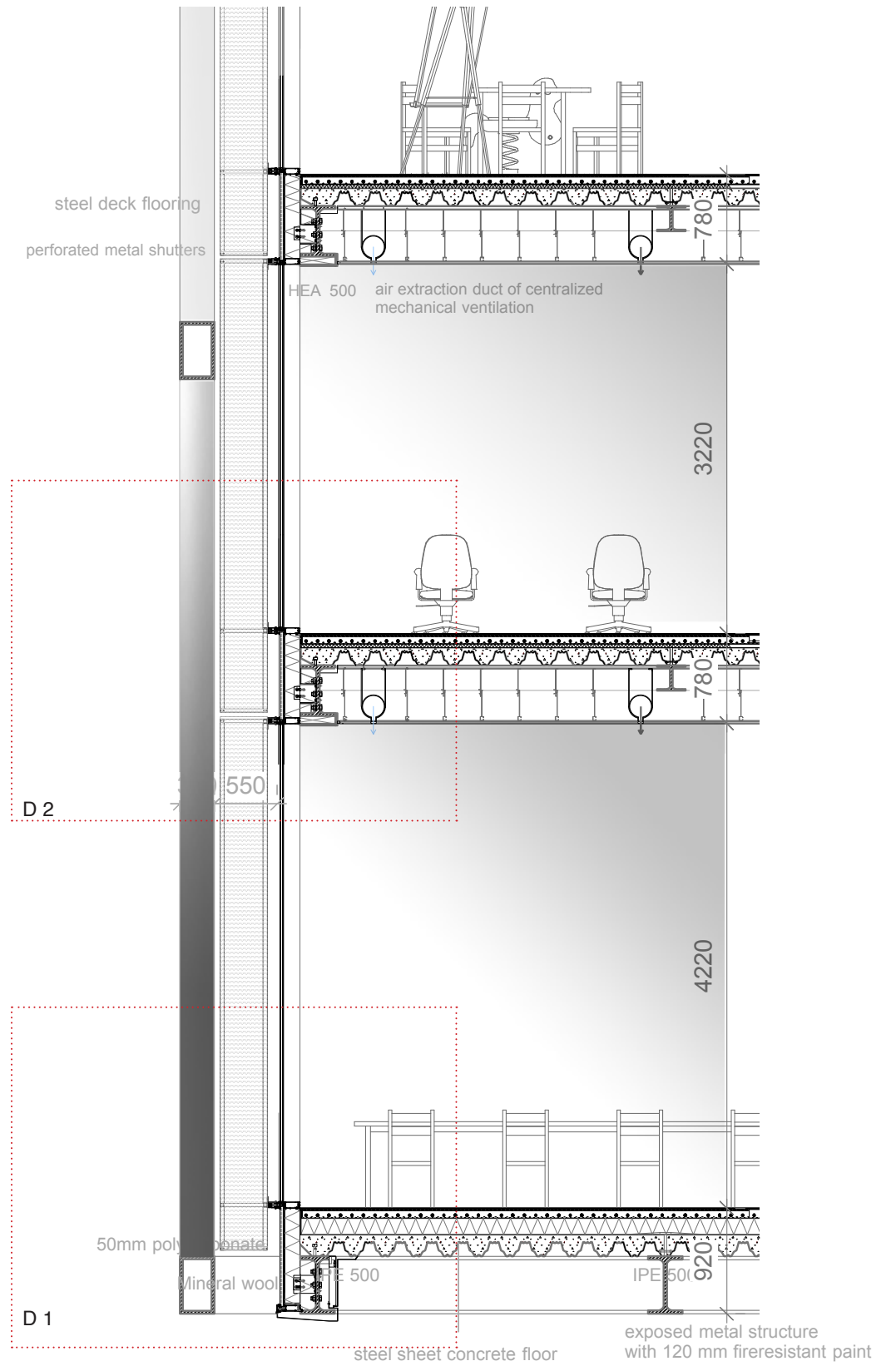
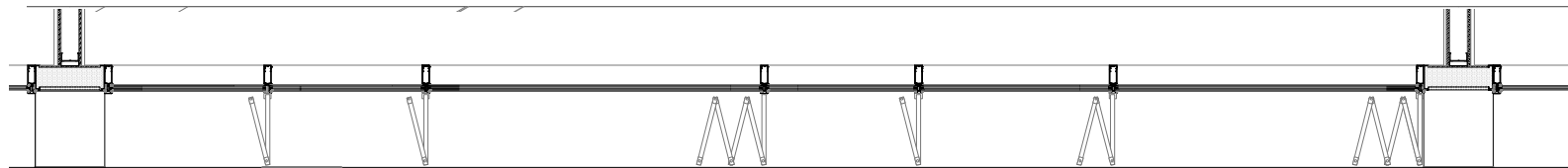


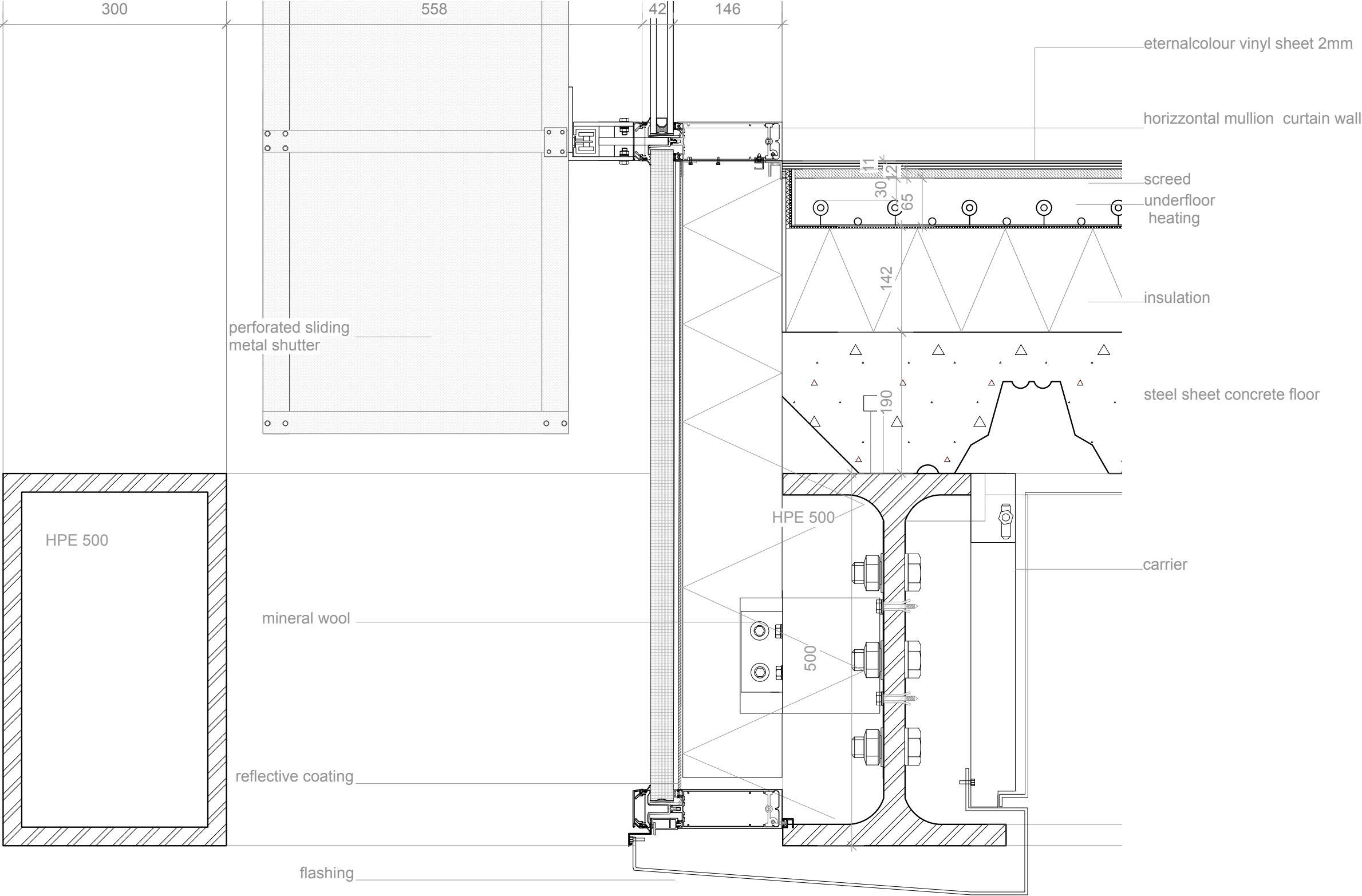
Curtain wall lowered on facade

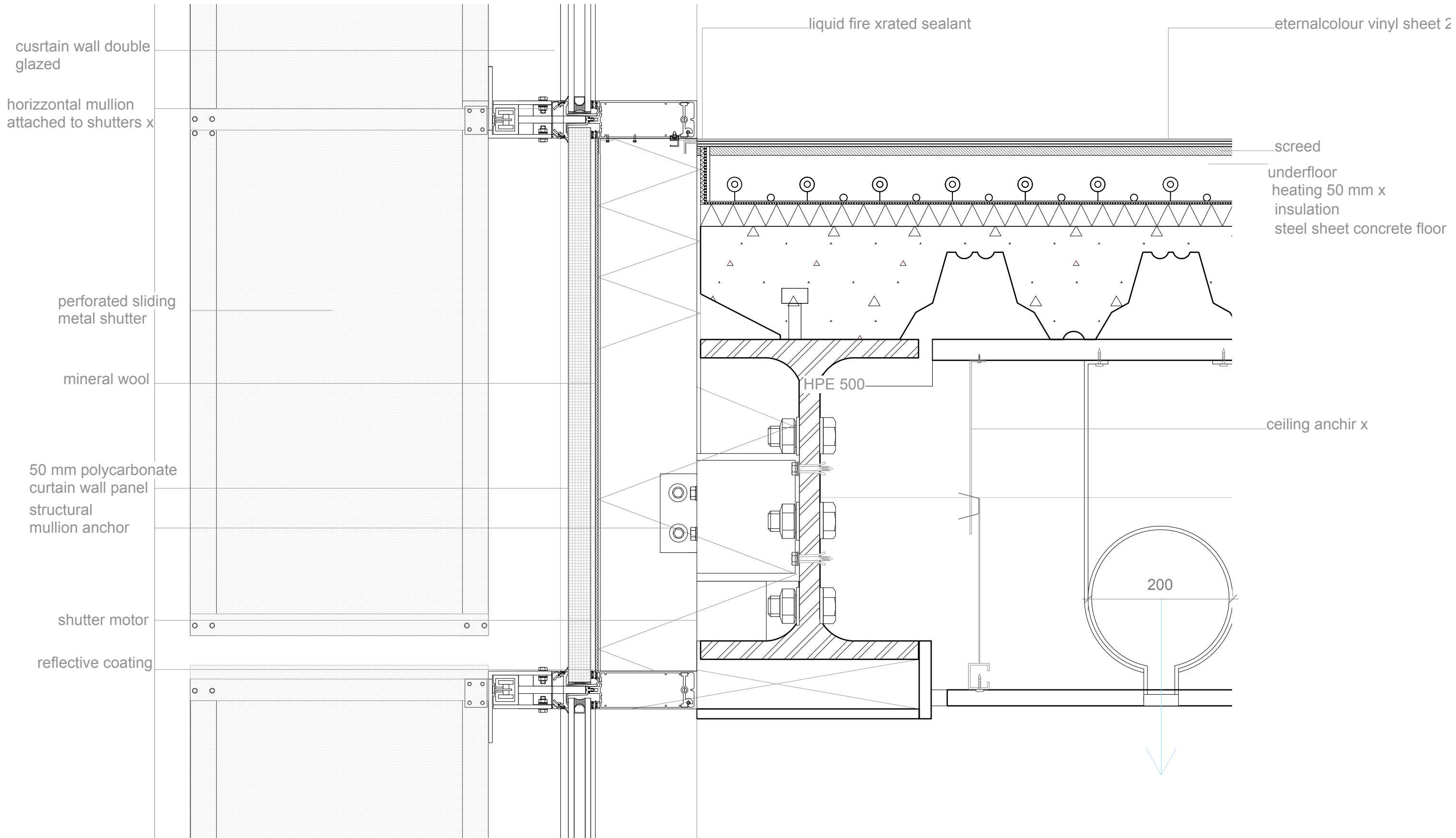


Sliding shutters attached to facade







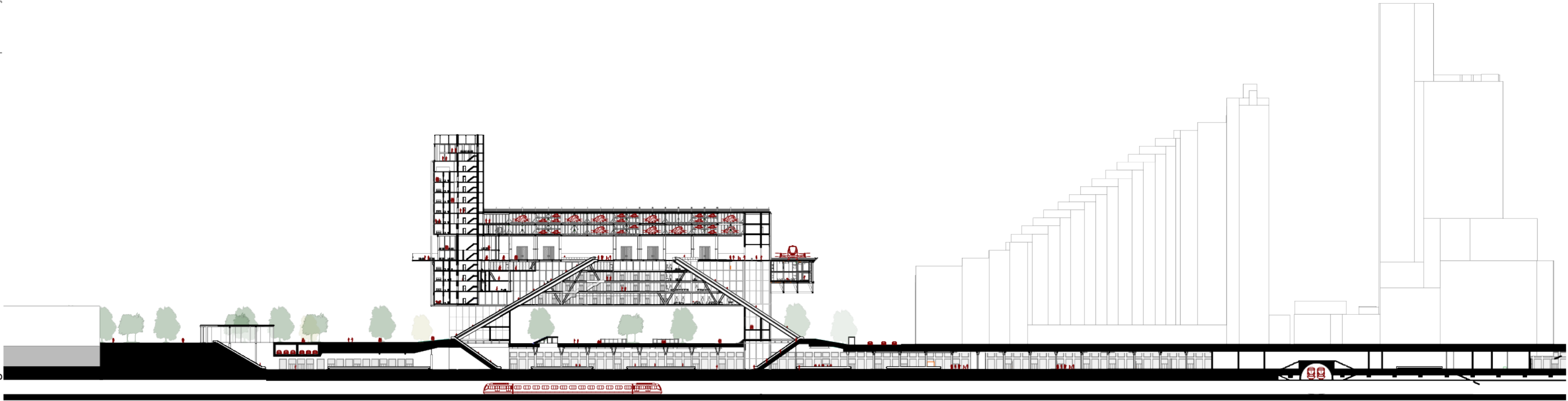


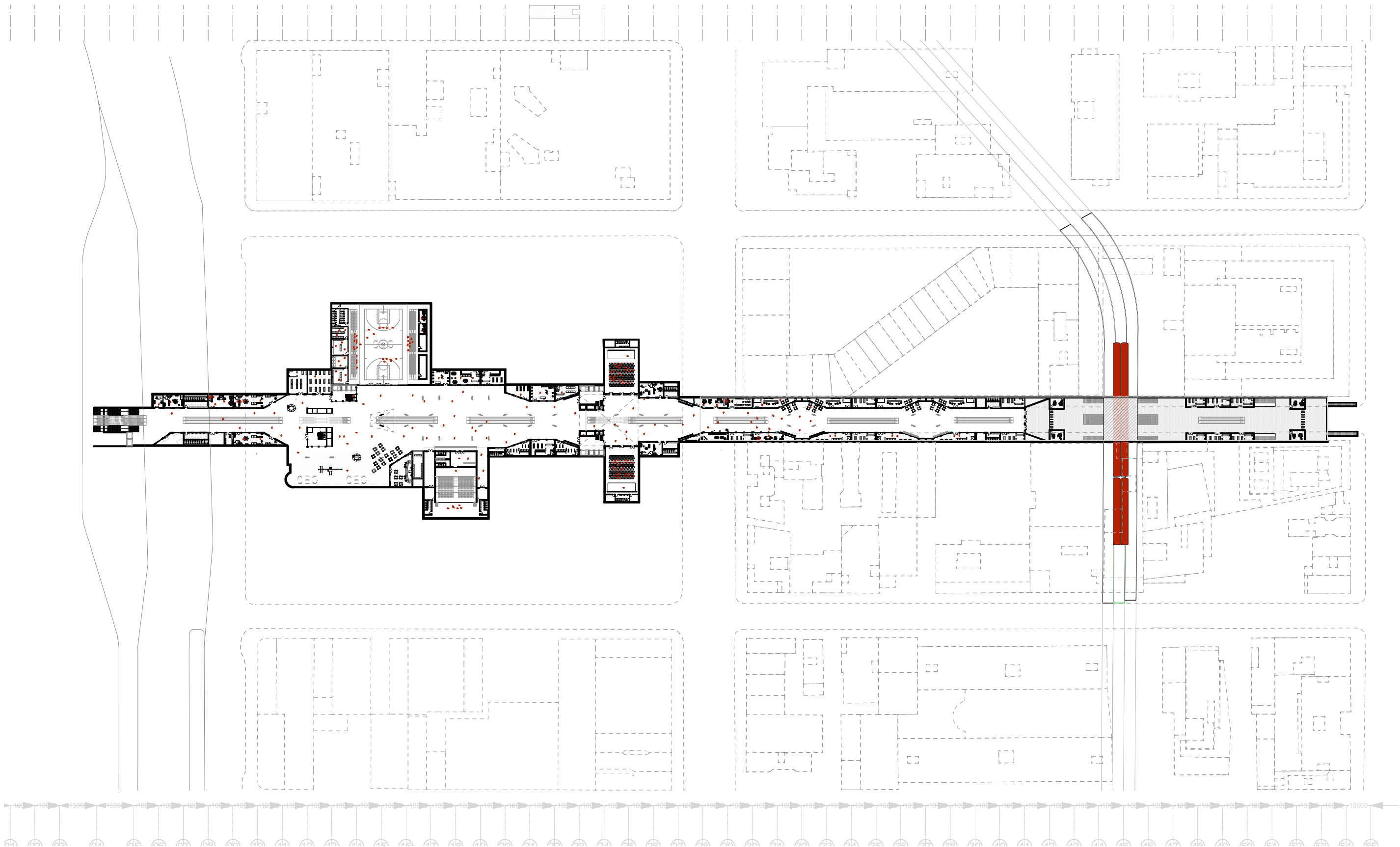
1:1500 west-east section through circulation

Complex Project - NEW YORK

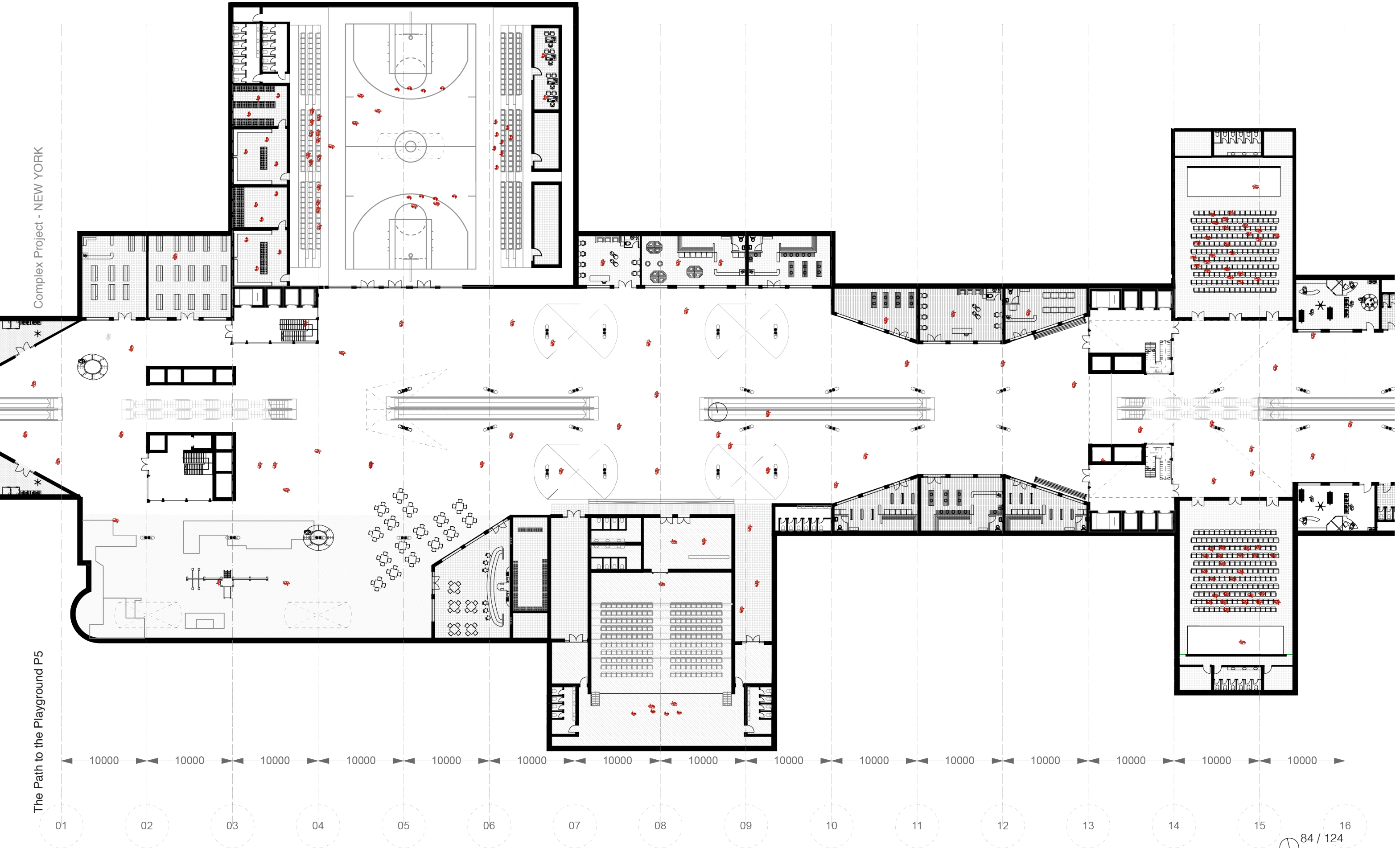
04 Design

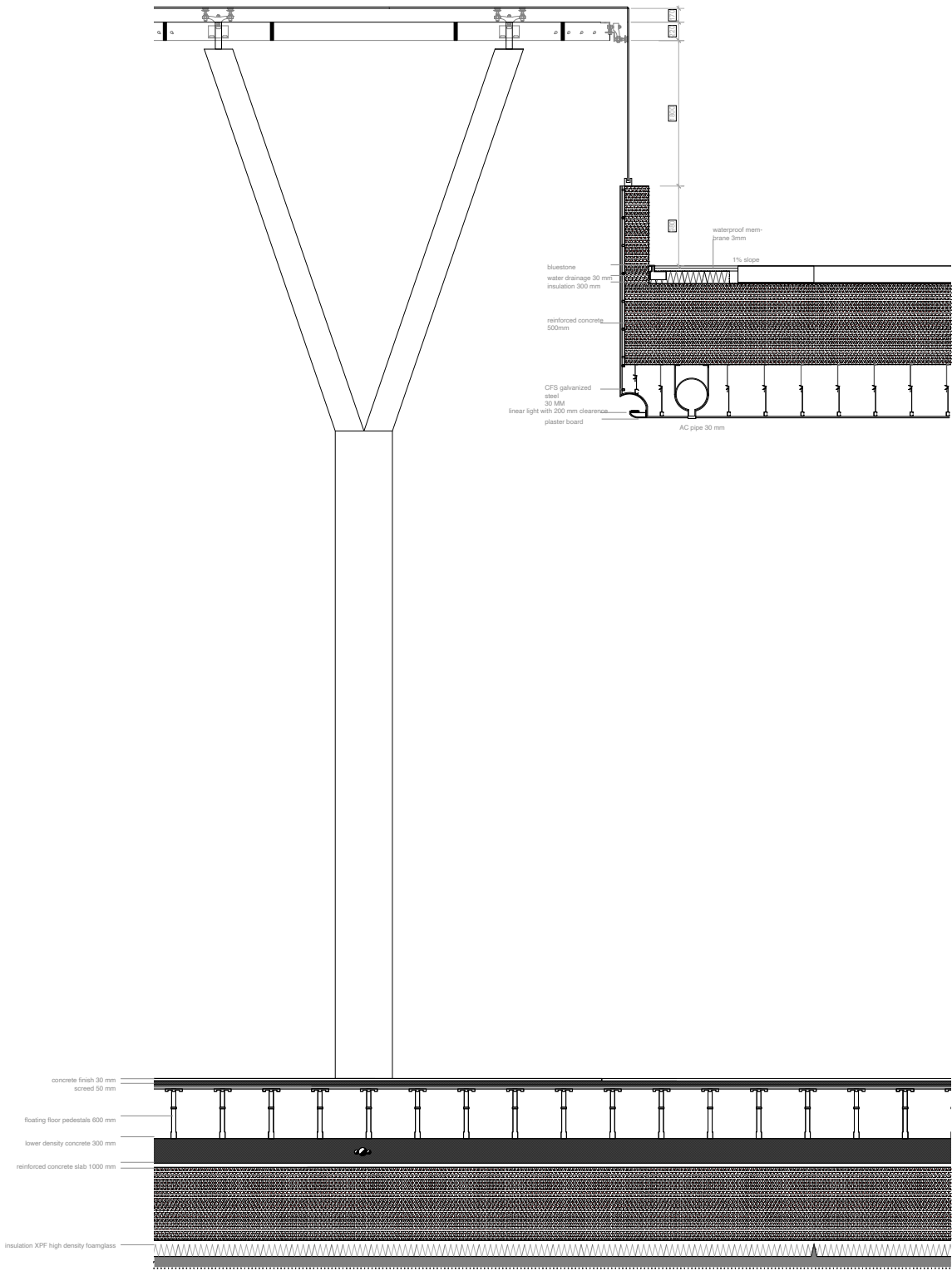
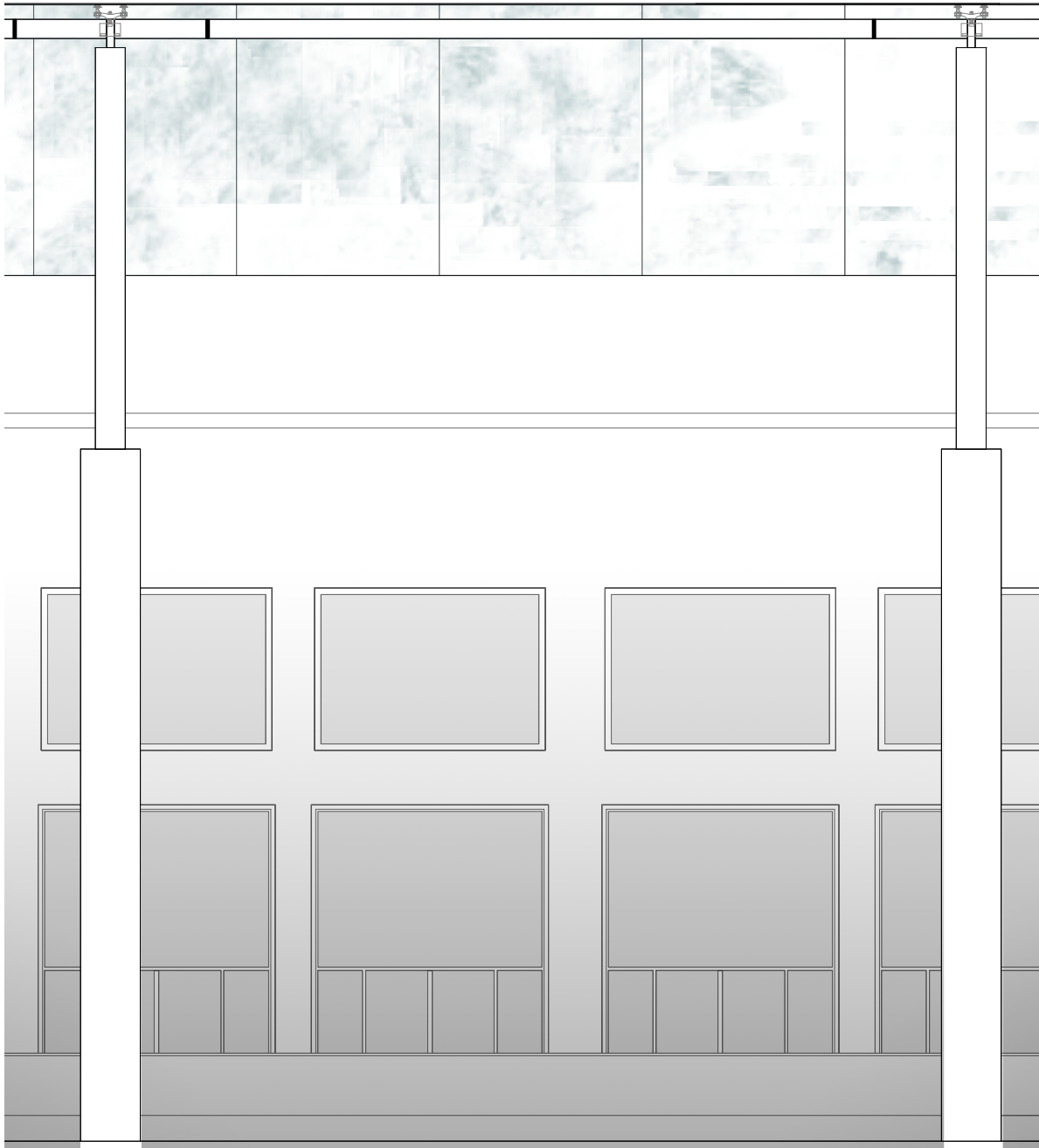
The Path to the Playground P5





1:1500 -1 plan

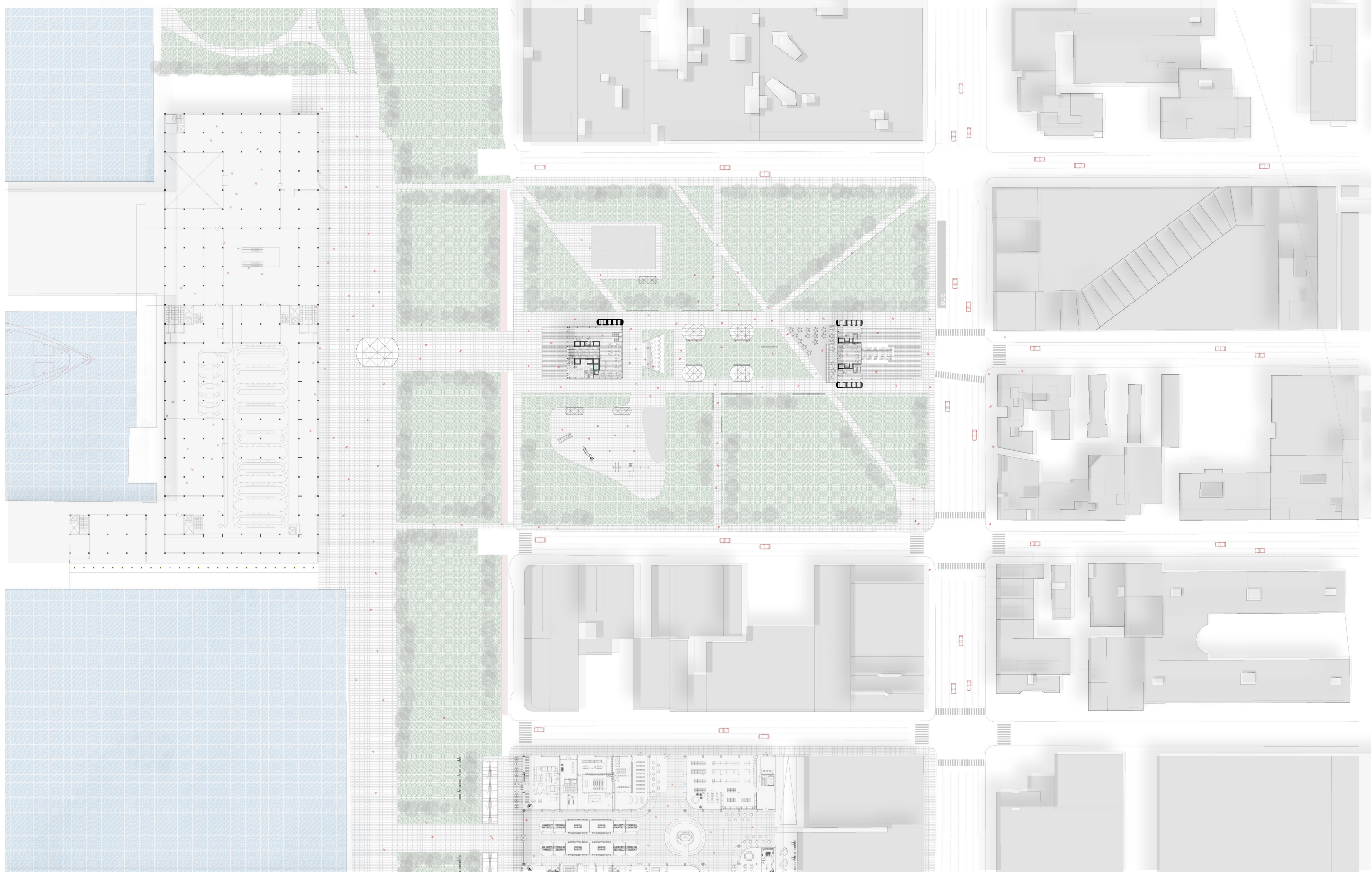


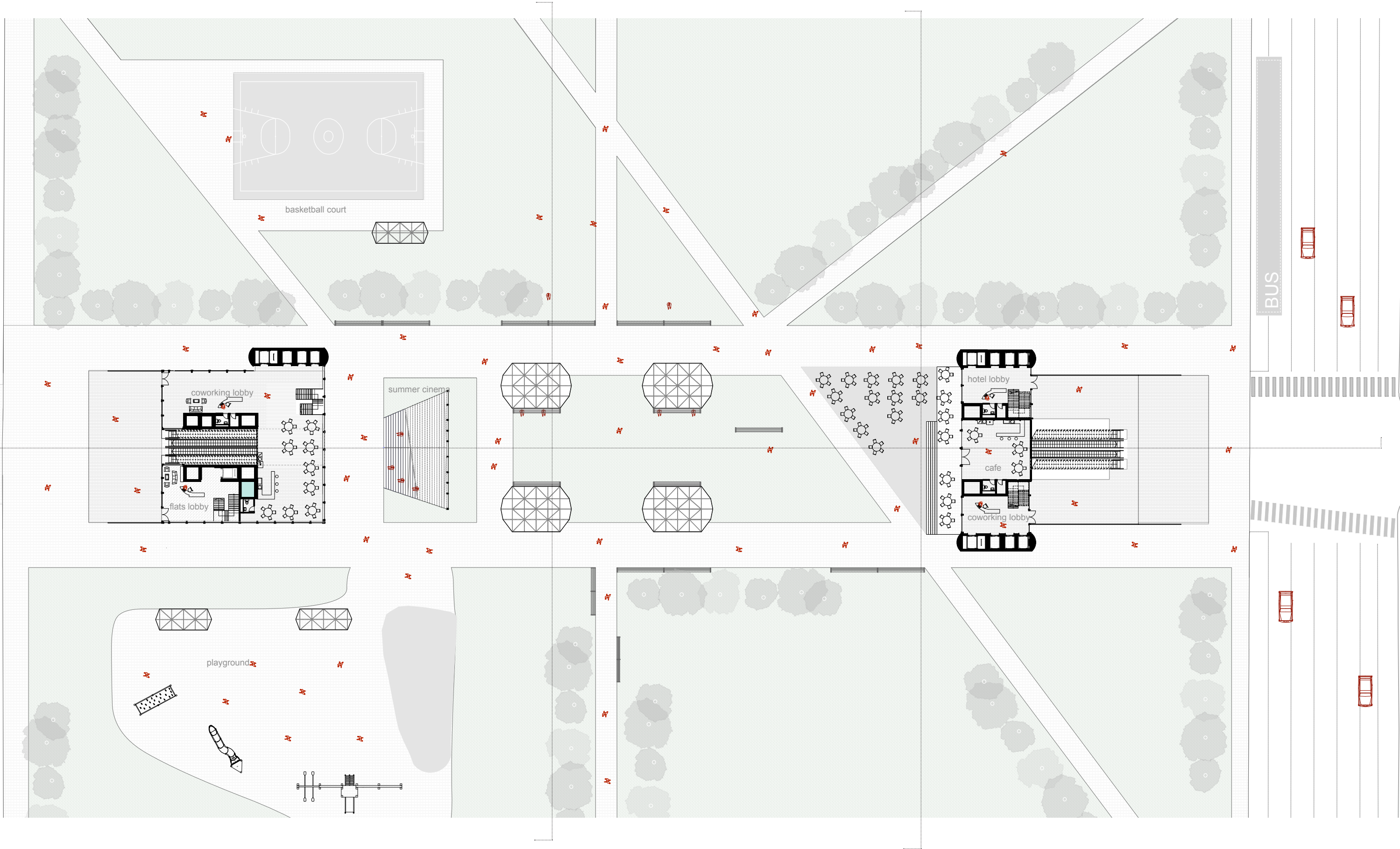


1:20 lightwell to underground

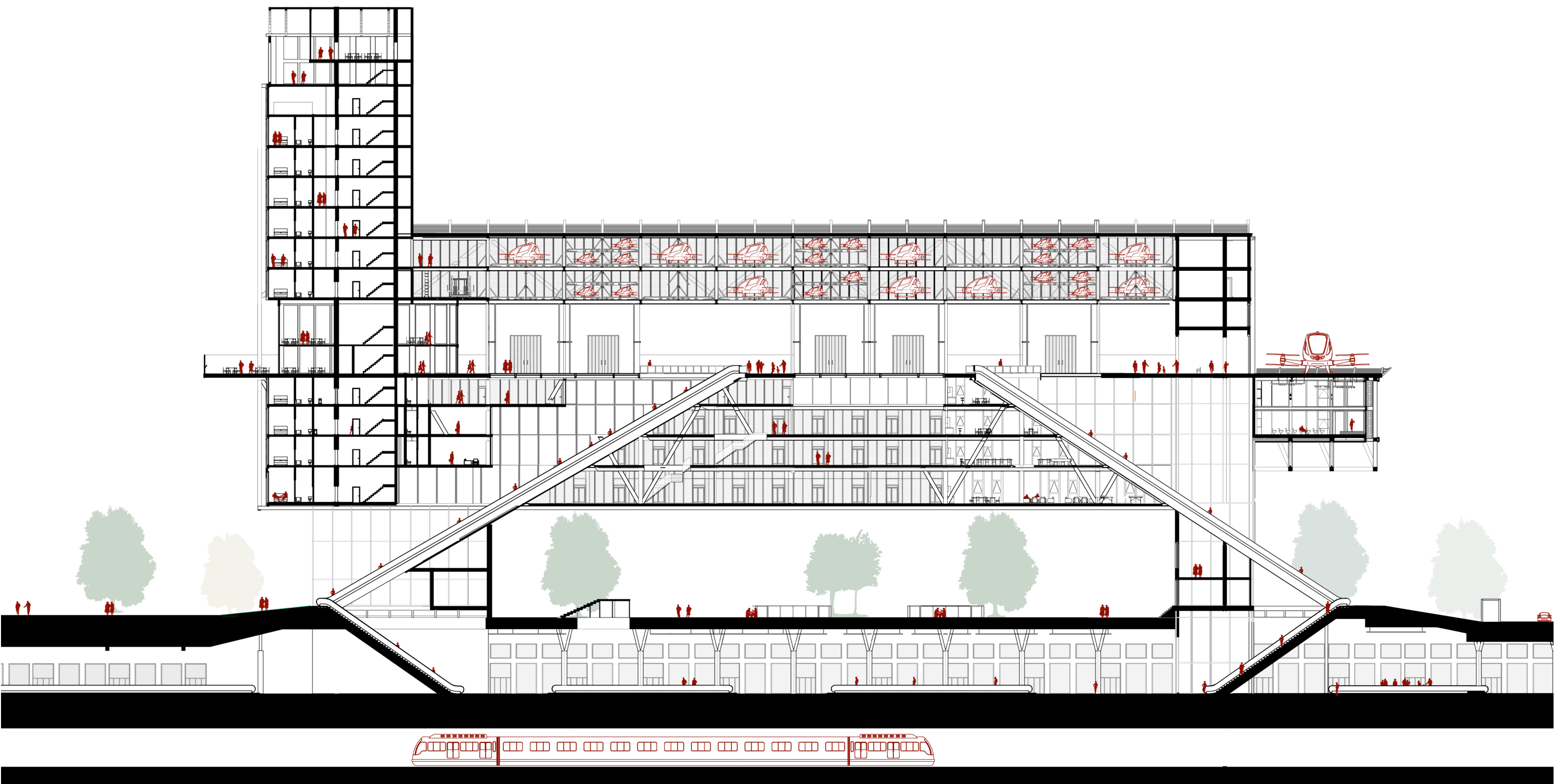
Under the Bridge







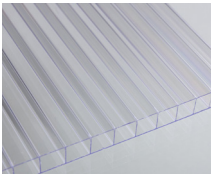




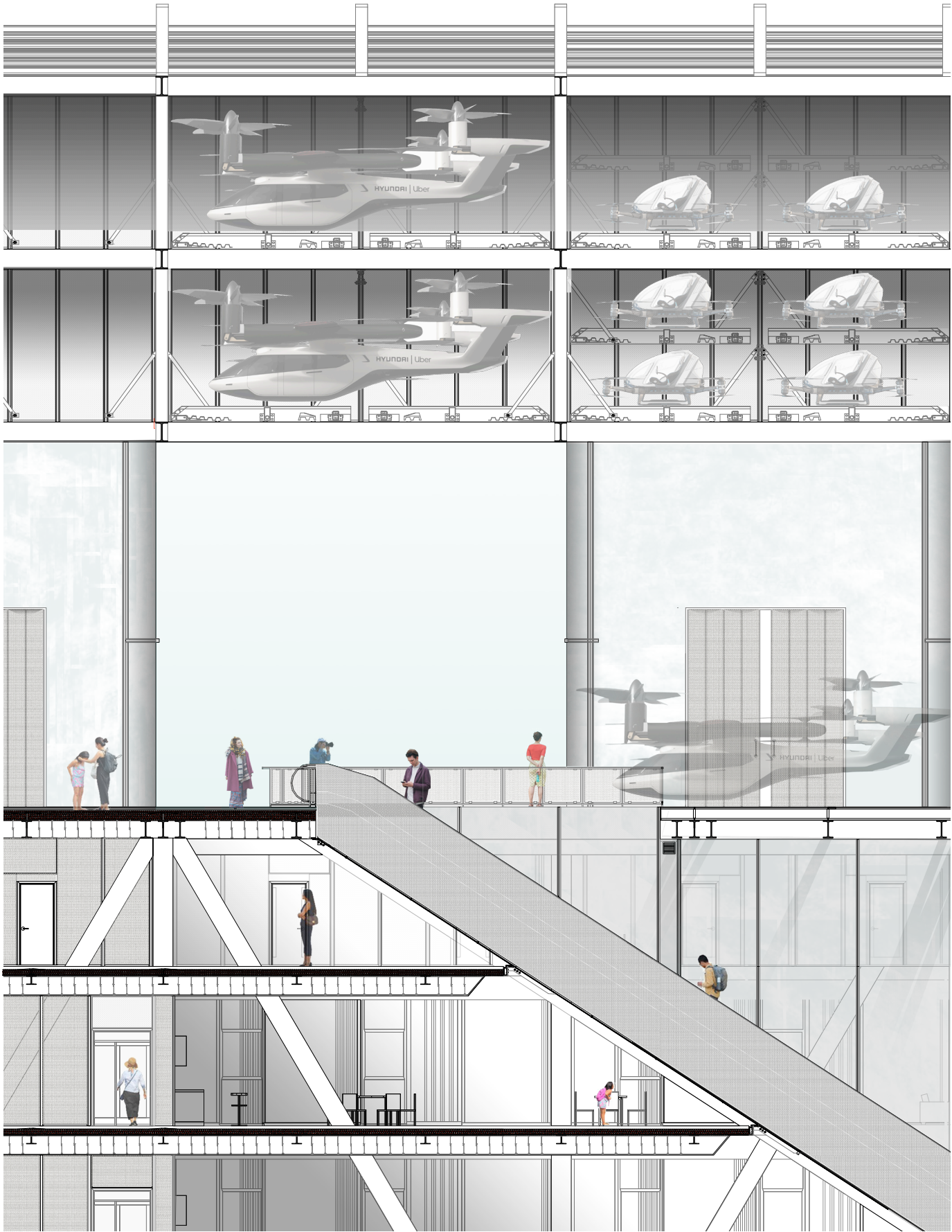
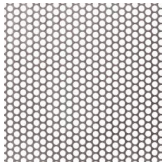
1:200 west-east section through circulation

1:50 fragment through circulation

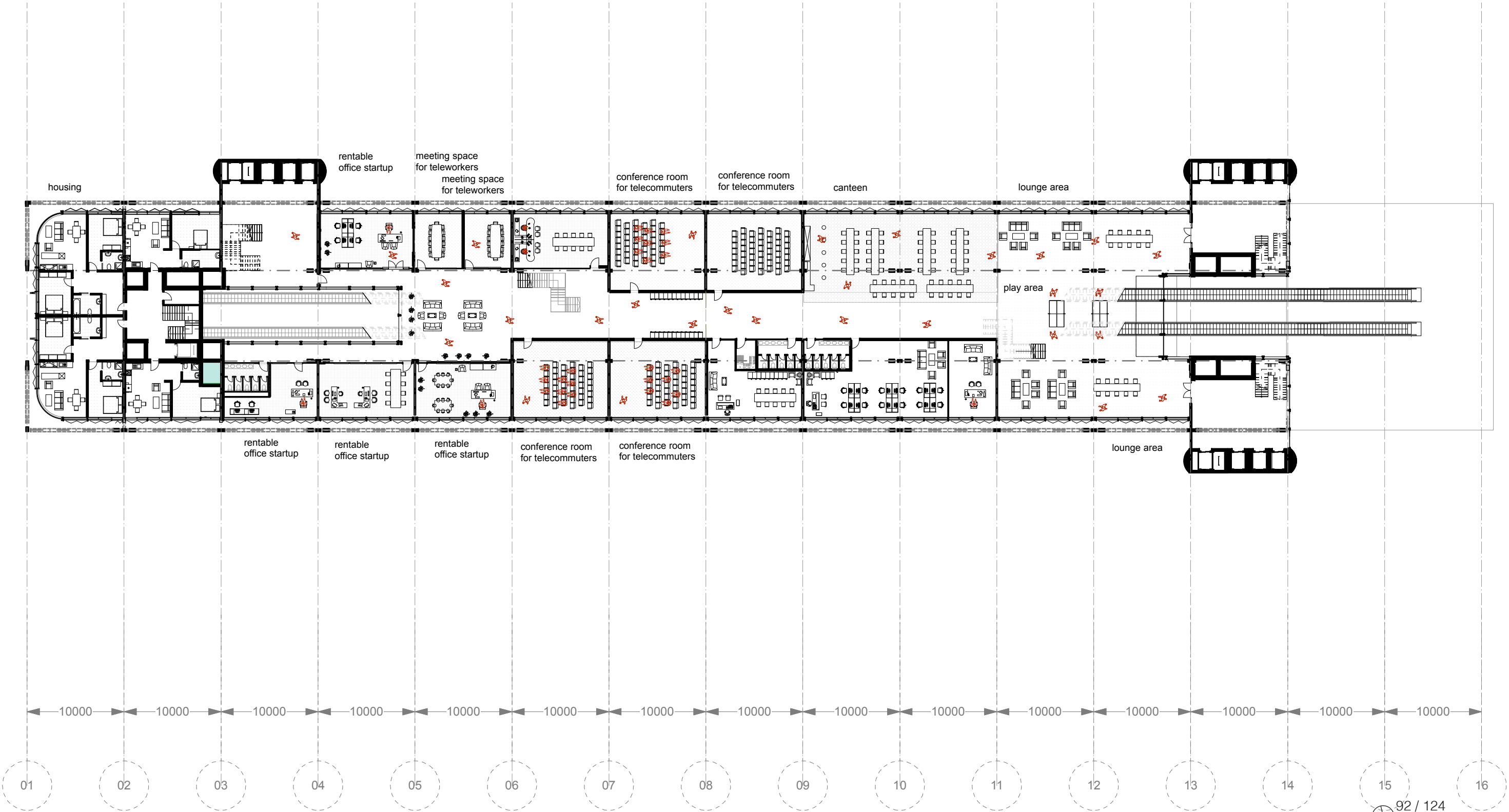
SUNLITE® PLUS MULTI-WALL POLYCARBONATE palram



perforated metal



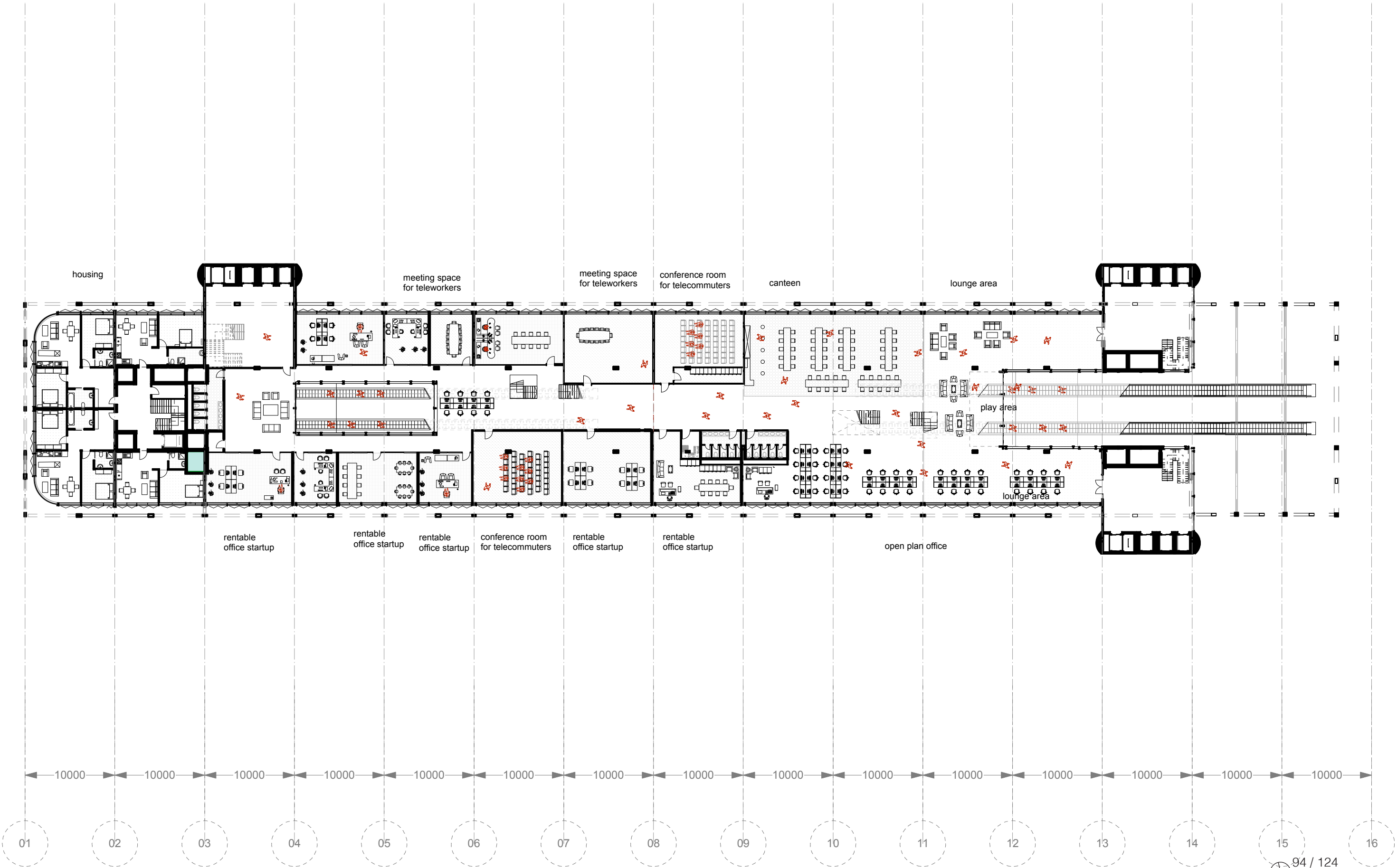
1:200 2nd floor plan



View coworking common spaces



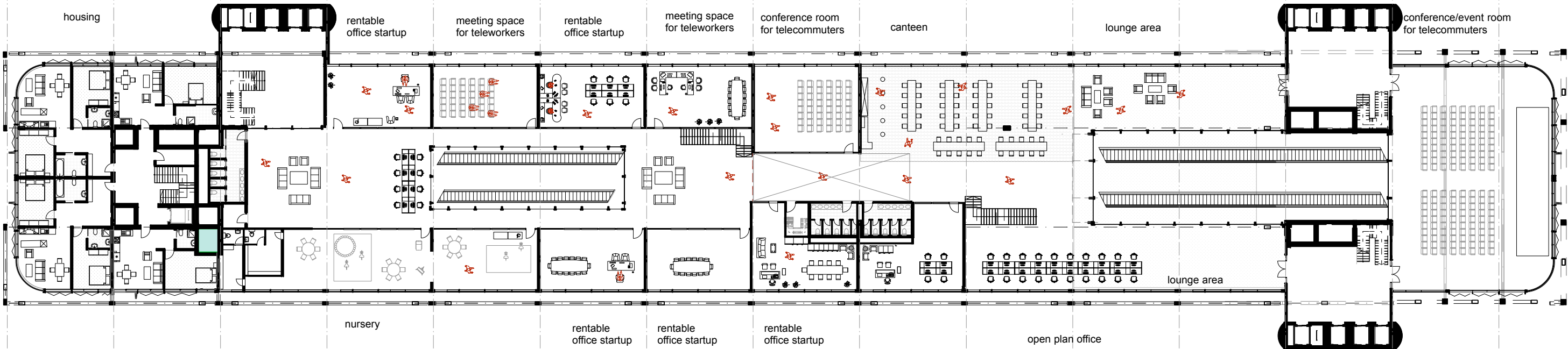
1:200 3rd floor plan



View coworking common spaces



1:200 3rd floor plan

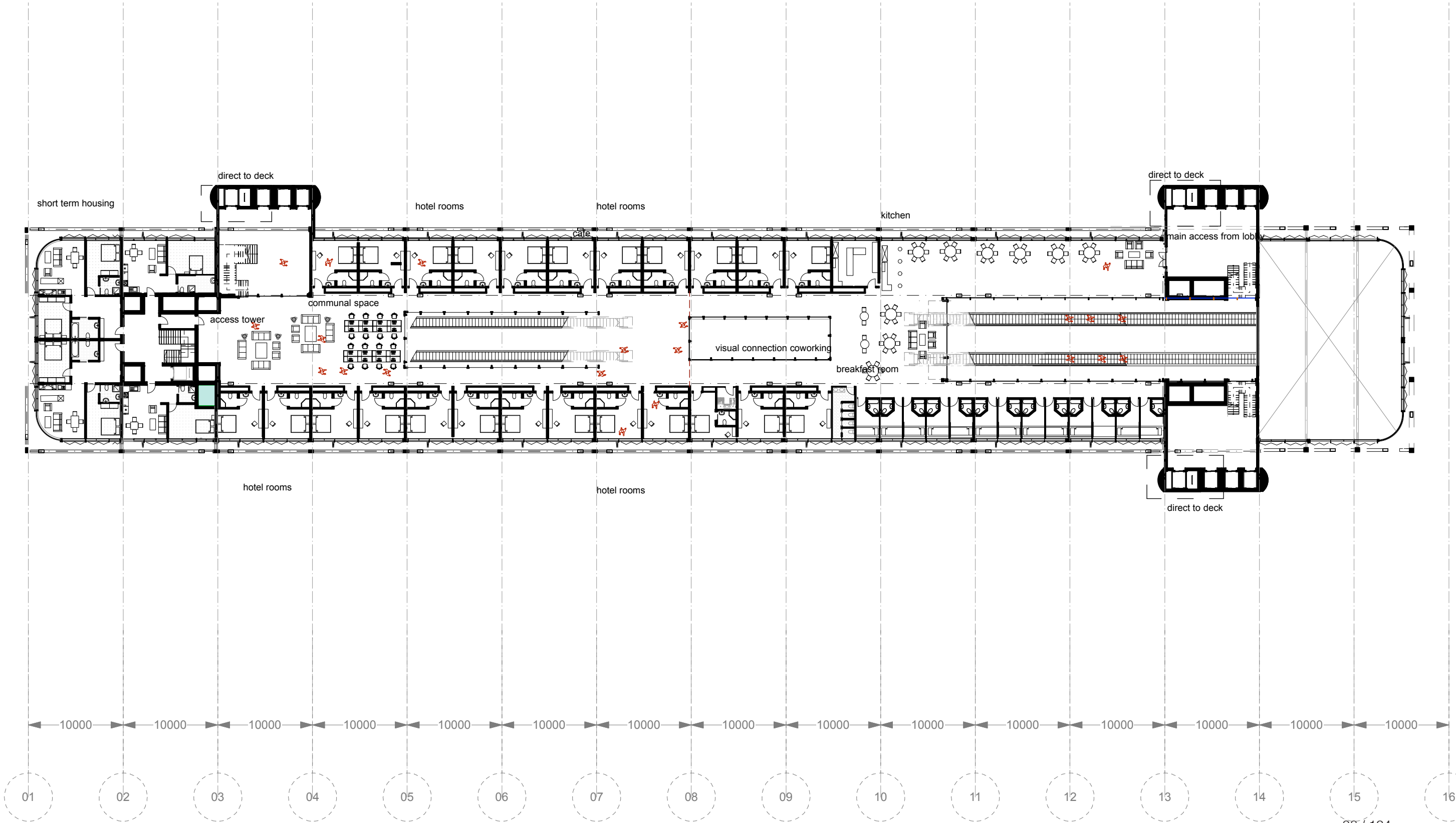


10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000

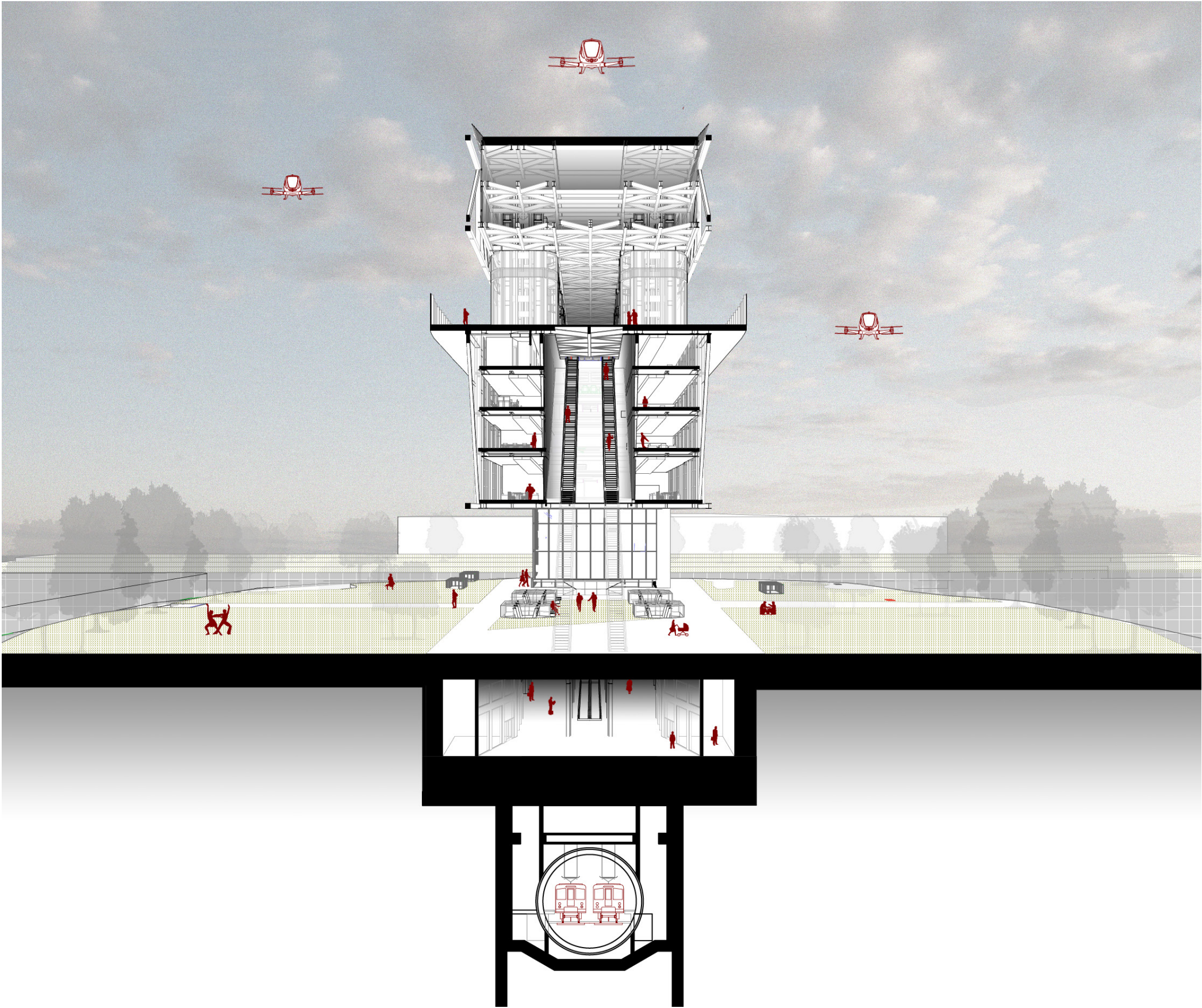
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16



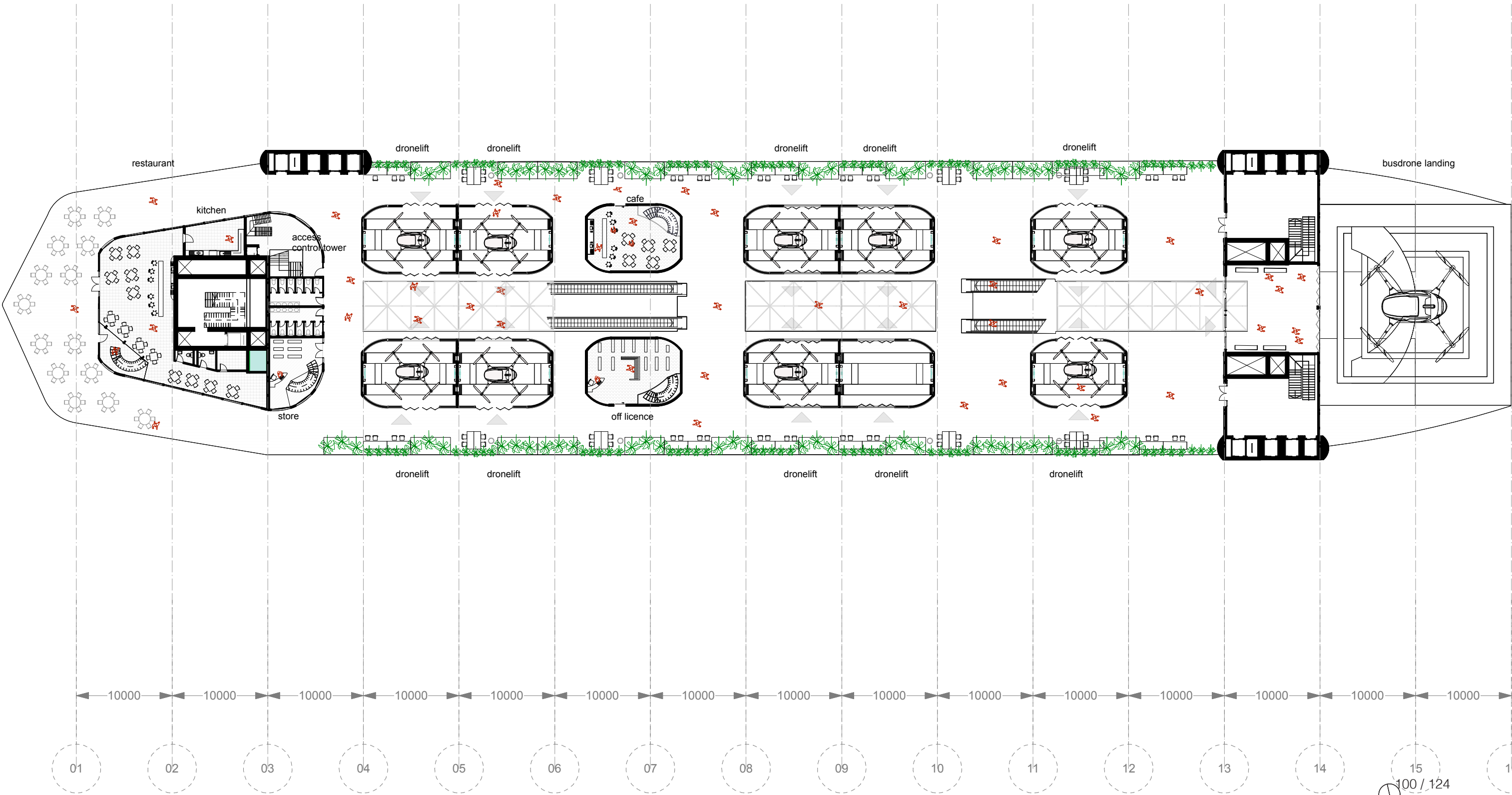
1:200 5th floor plan



Perspective short section N-S 1:200



Plan 1:200 level 6

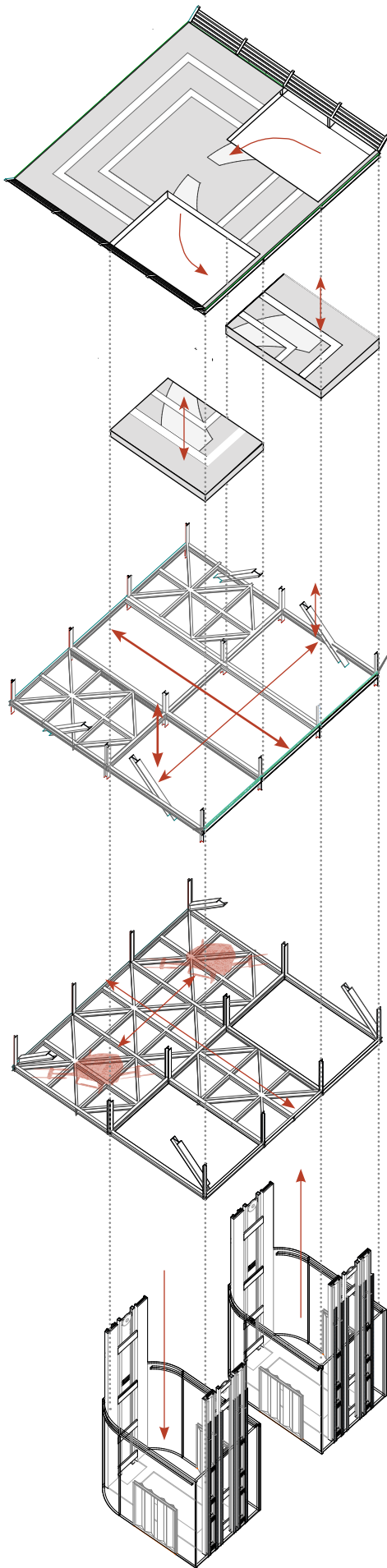


View drone platform



8am waiting for the busdrone





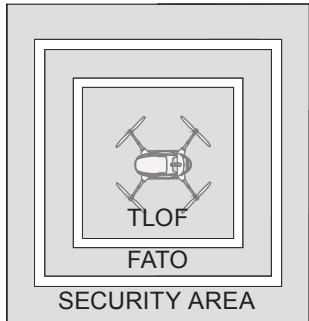
Modular Landing platform

platform- each platform is serviced by two elevator in a rotary system- each time a drone lands it goes into the elevator to deembark people- while this goes down a new drone goes up with passengers

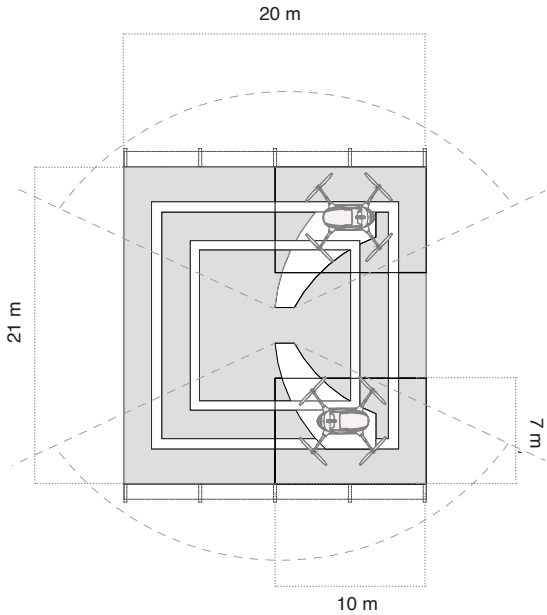
parking - 2 or 4 parking according to arrangement of modules

parking - 2 or 4 parking according to arrangement of modules

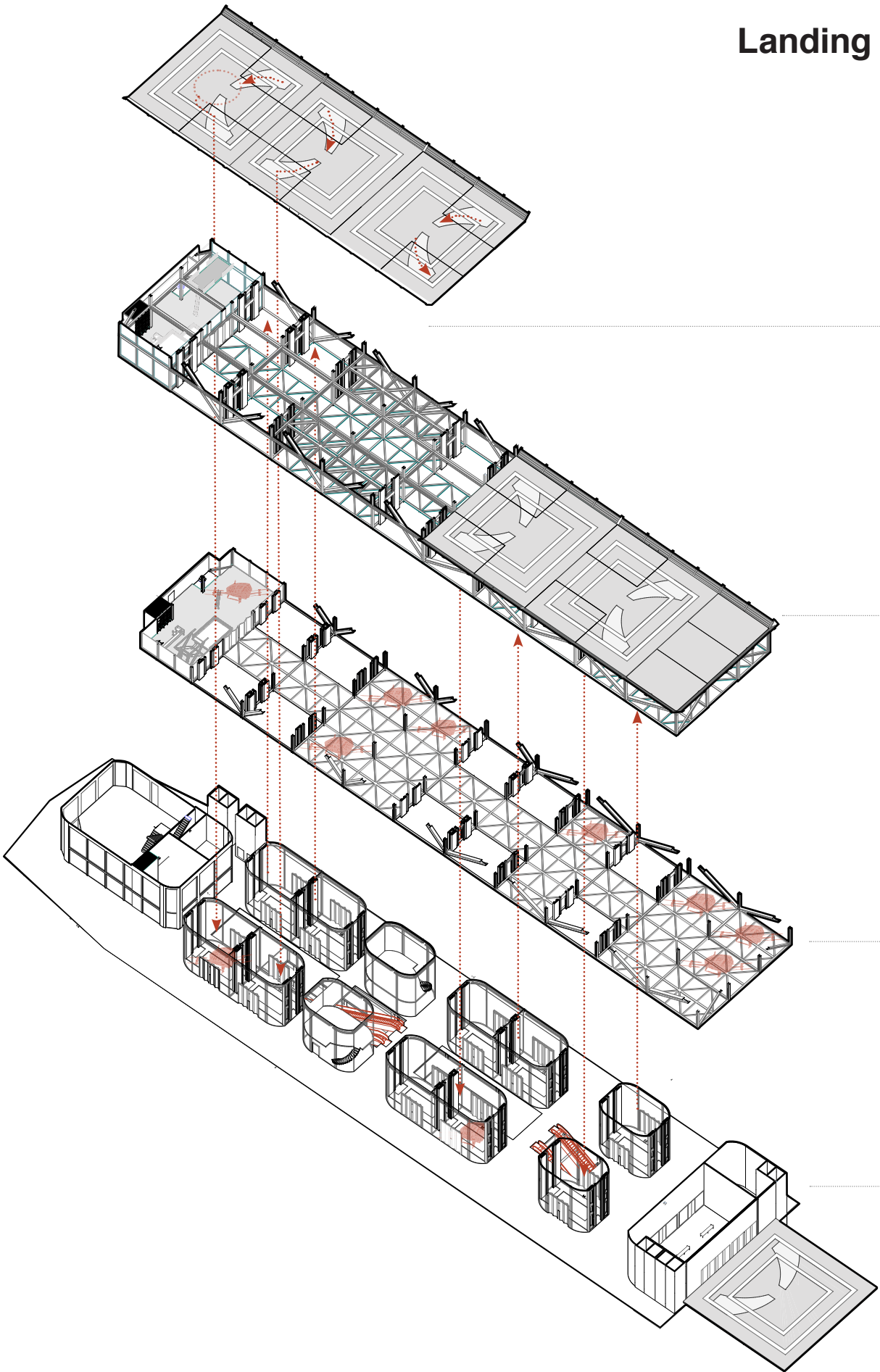
drone elevator



TLOF: Rotor Diameter of designed helicopter
FATO: width overall lenght of helicopter x1.5
SECURITY AREA: FATO X1.5



Landing Deck Axonometry



3 helipads- pad structure
transparent concrete layer
electrical layer with solar panels
baselayer to distribute power and
waterproof
sound barrier

2 min per landing-
90 departures per h

2 helipads- pad structure
transparent concrete layer
electrical layer with solar panels
baselayer to distribute power and
waterproof
sound barrier

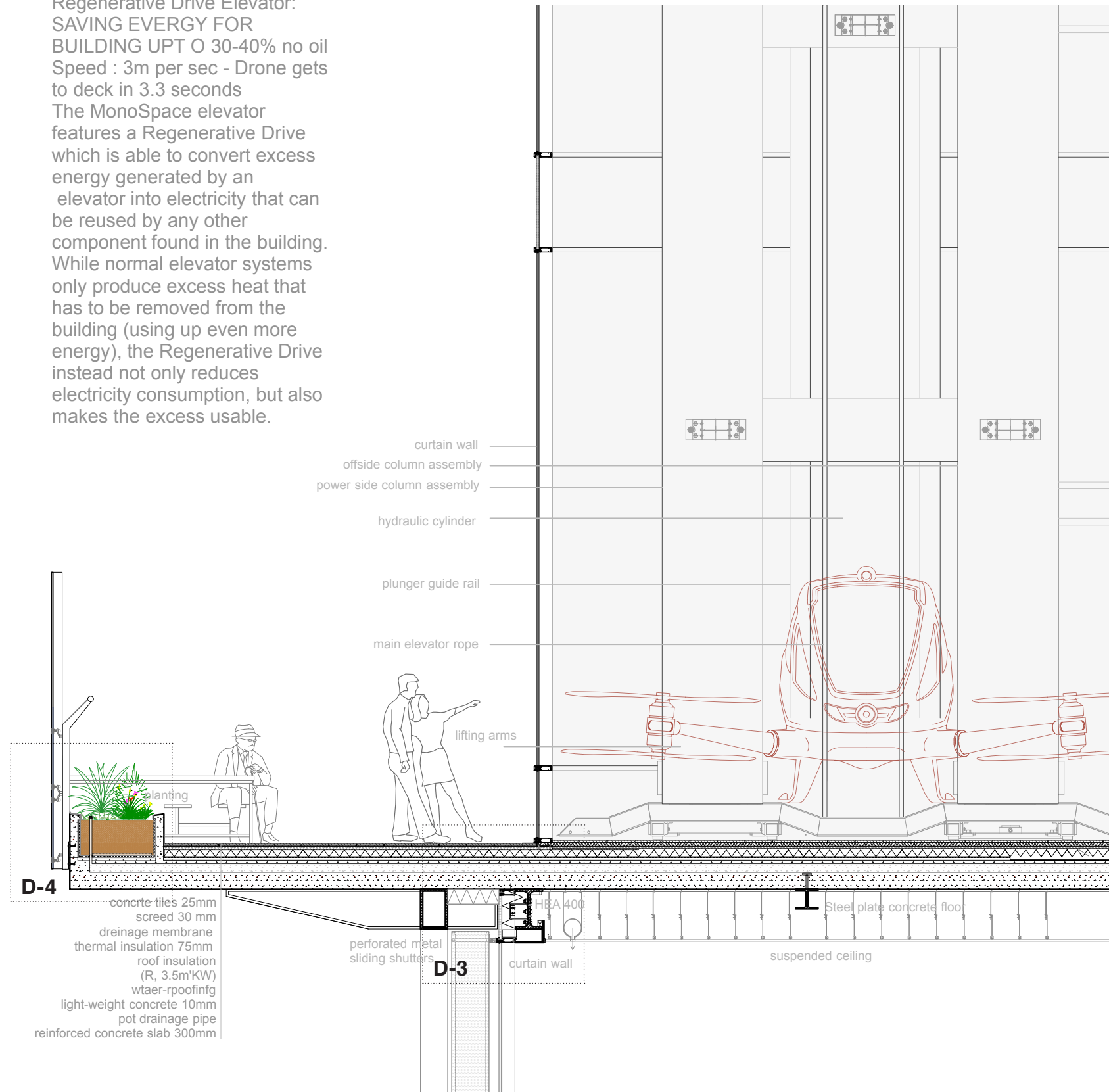
2 min per landing-
30 departures per h

parking and mechanical layer-
drone access to repair and servicing
battery exchange

Deck- 10 elevators servicing 5 plat-
form
2 Restaurant
4 shops
Bus drone platform and waiting area

1:20 detail of the deck with regenerative drive elevator

Kone S MonoSpace with
Regenerative Drive Elevator:
SAVING ENERGY FOR
BUILDING UPT O 30-40% no oil
Speed : 3m per sec - Drone gets
to deck in 3.3 seconds
The MonoSpace elevator
features a Regenerative Drive
which is able to convert excess
energy generated by an
elevator into electricity that can
be reused by any other
component found in the building.
While normal elevator systems
only produce excess heat that
has to be removed from the
building (using up even more
energy), the Regenerative Drive
instead not only reduces
electricity consumption, but also
makes the excess usable.



1:5 D 3

concrte tiles 25mm
screed 30 mm
drainage membrane

thermal insulation 75mm
wtaer-rpooфин
light-weight concrete 10mm

reinforced concrete slab 300mm

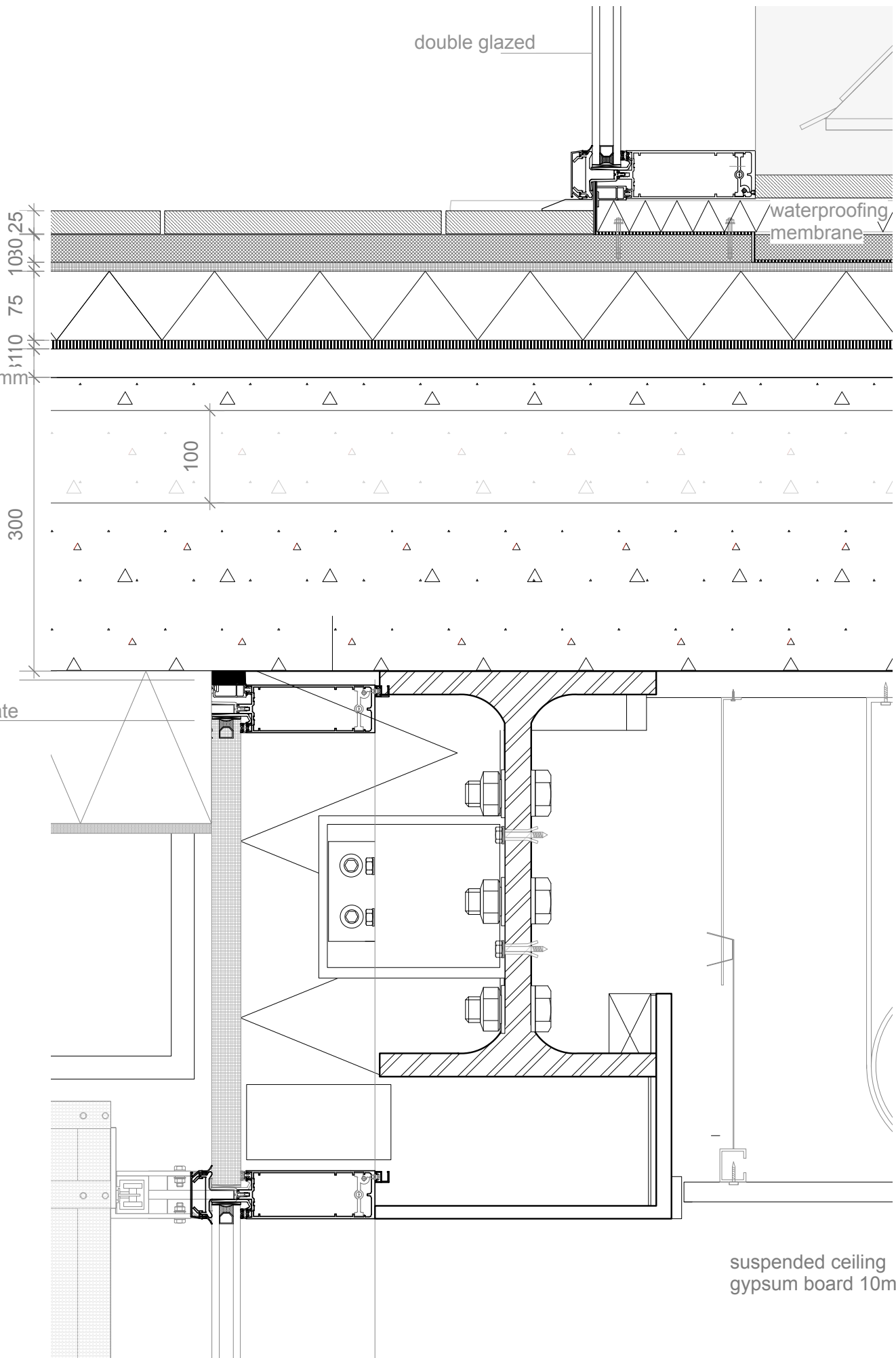
pot drainage pipe

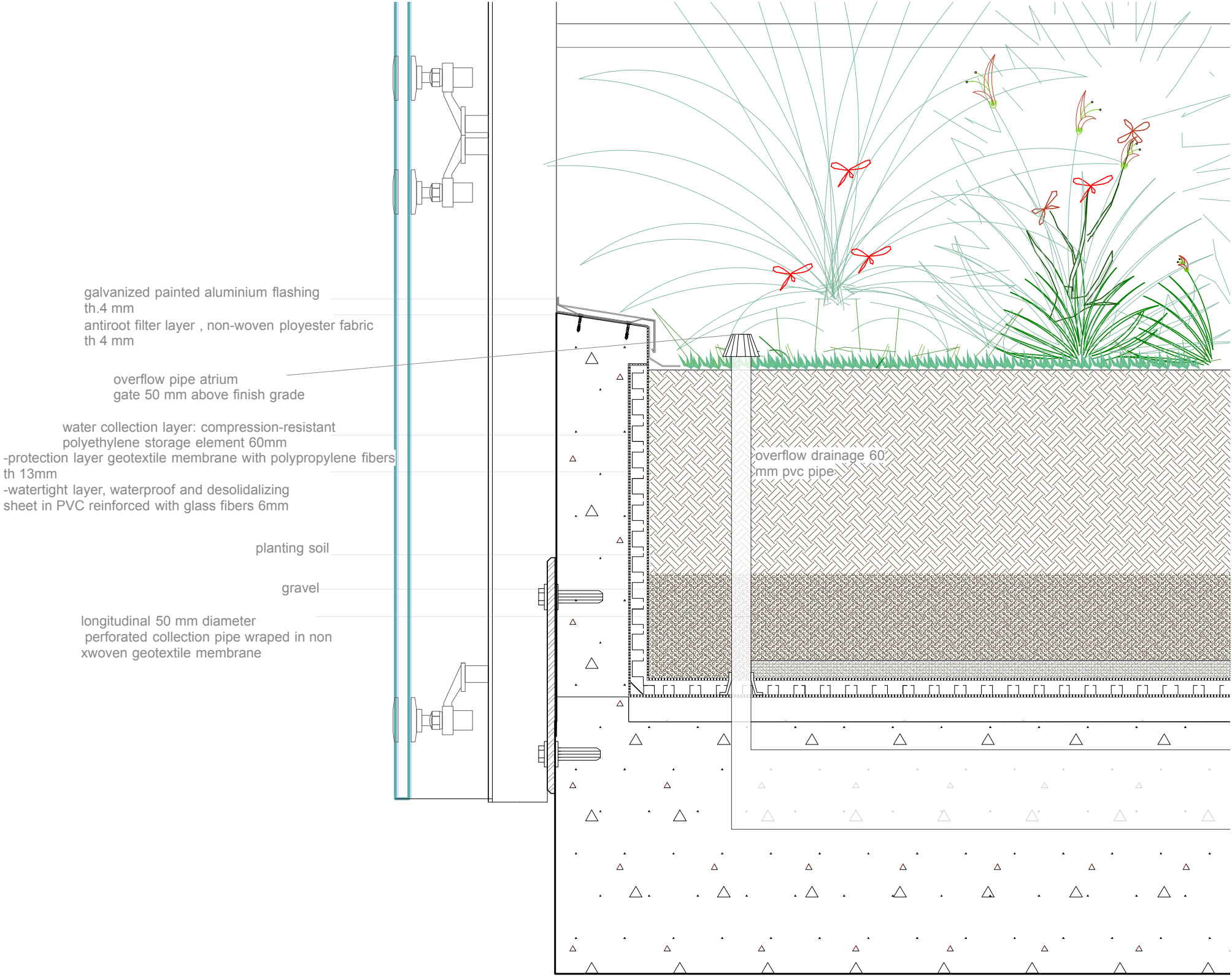
polycarbonate

double glazed

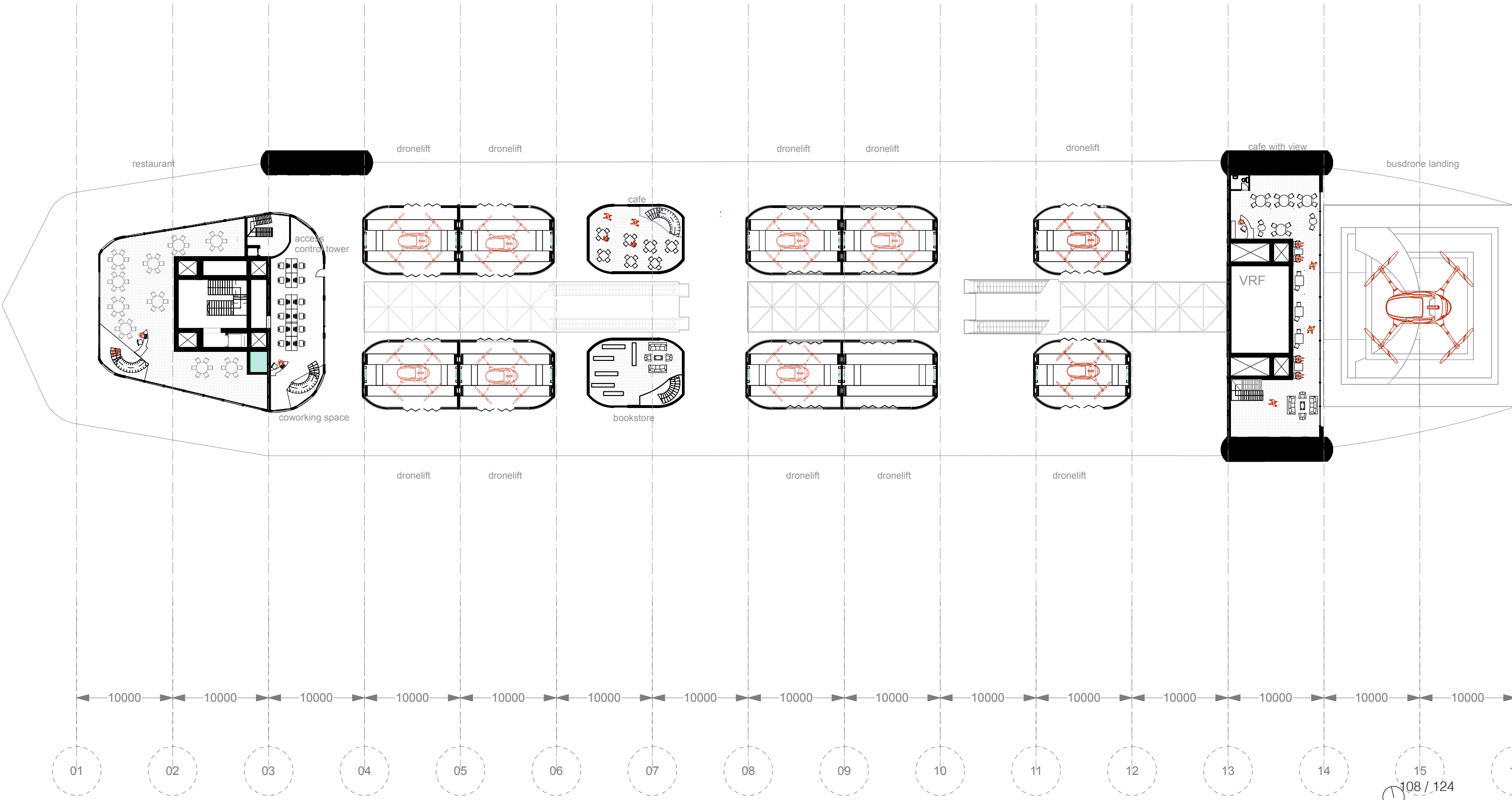
waterproofing
membrane

suspended ceiling
gypsum board 10mm





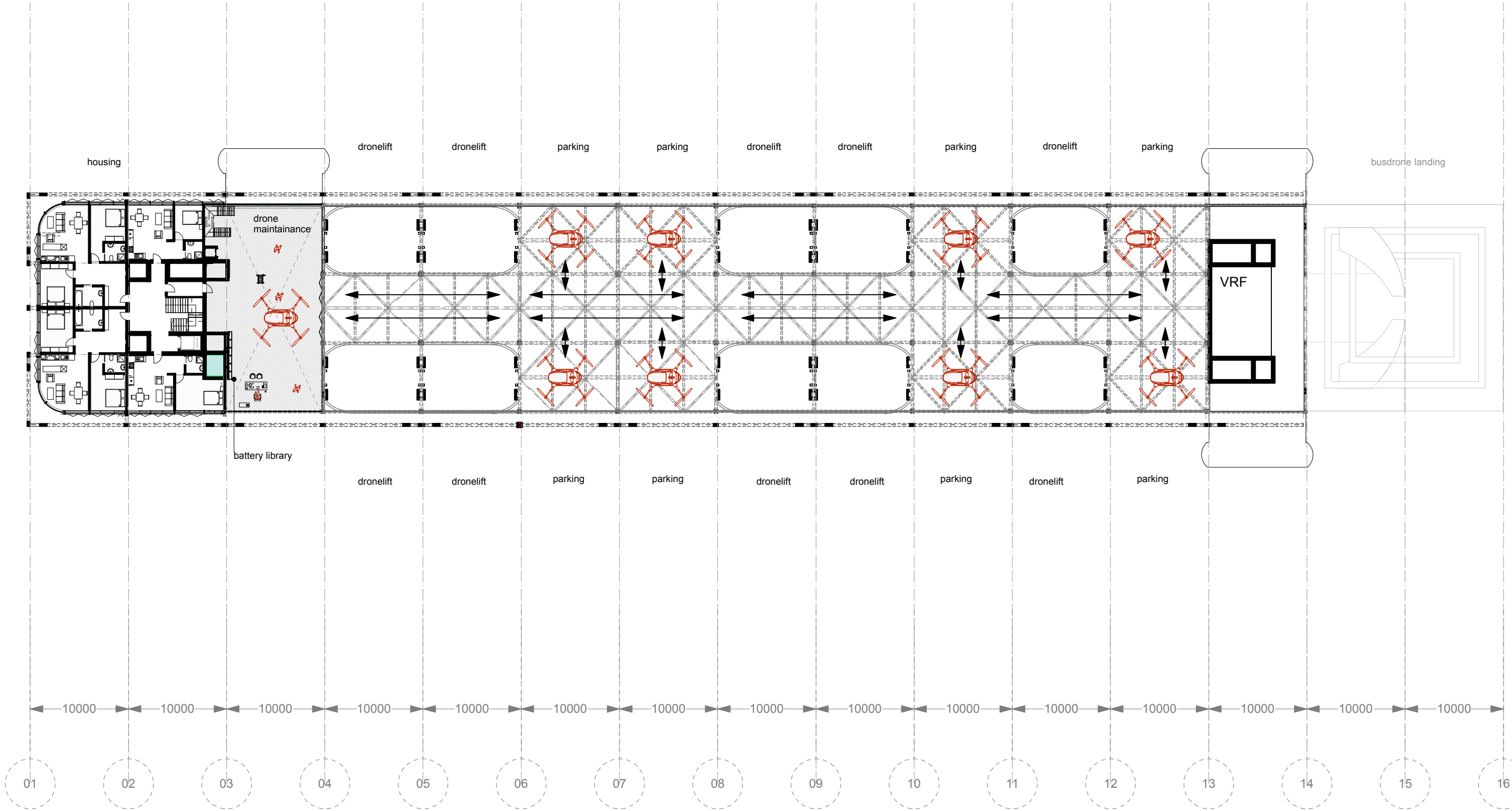
Plan 1:200 level 7



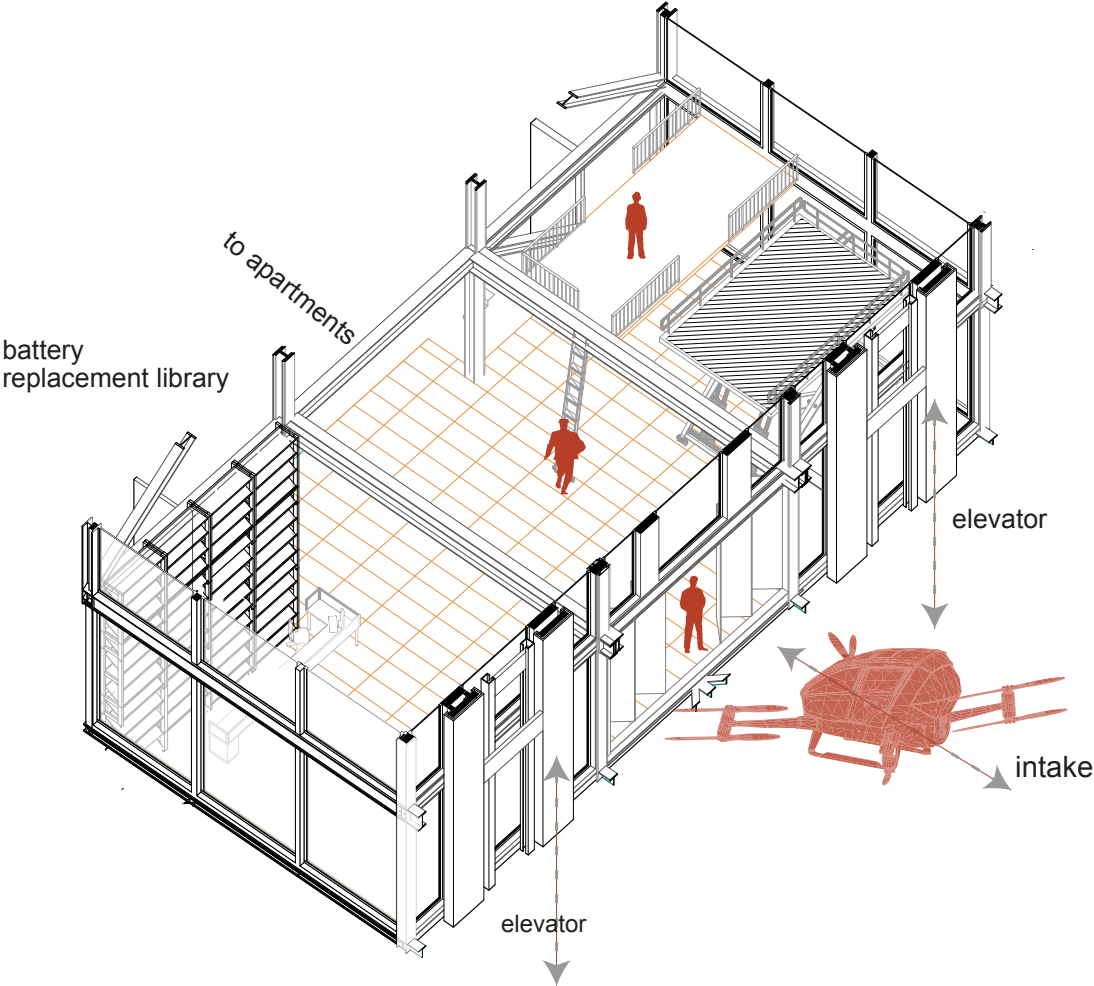
View from the restaurant



Plan 1:200 level 8



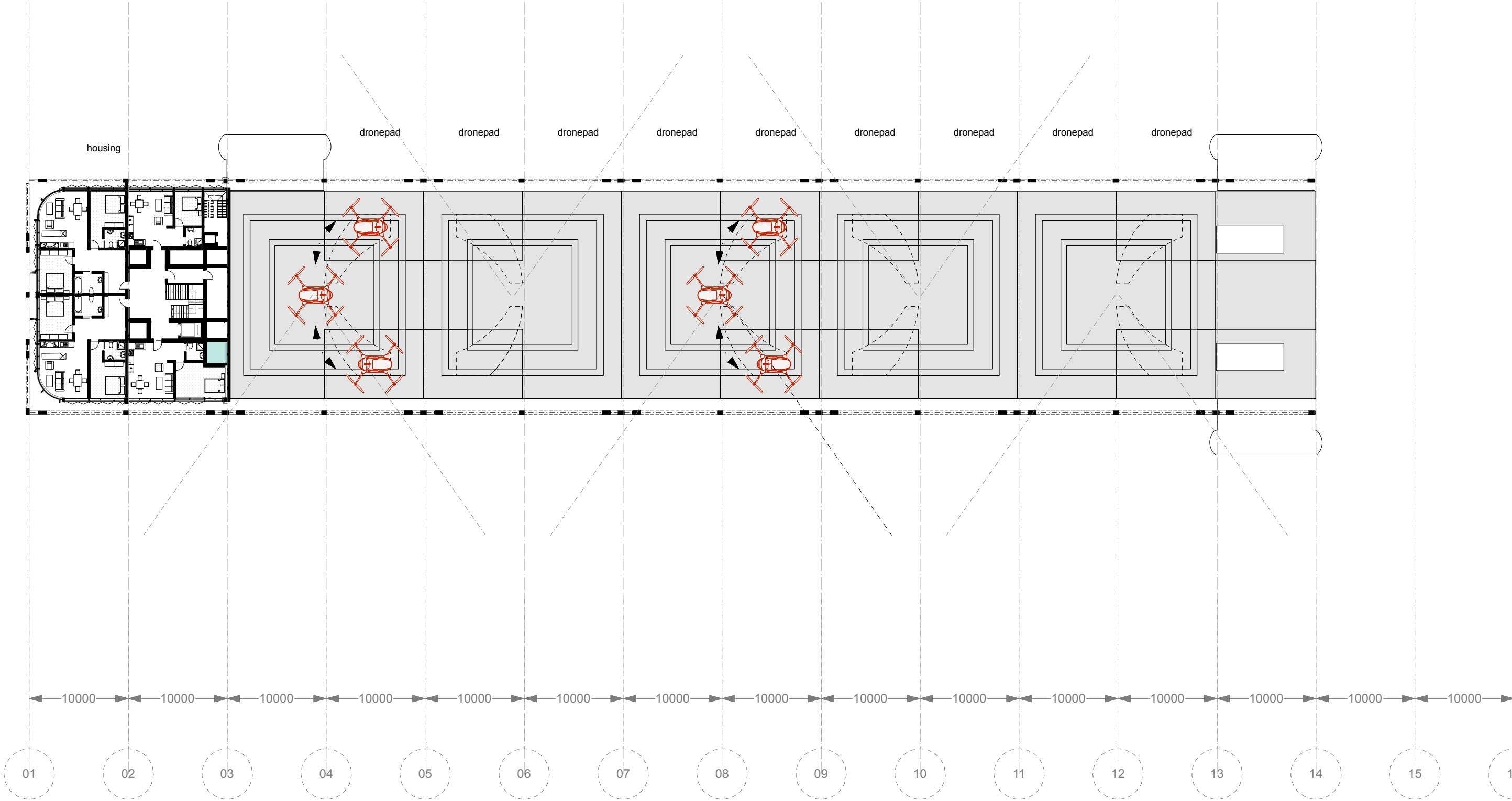
Drone repair and maintenance



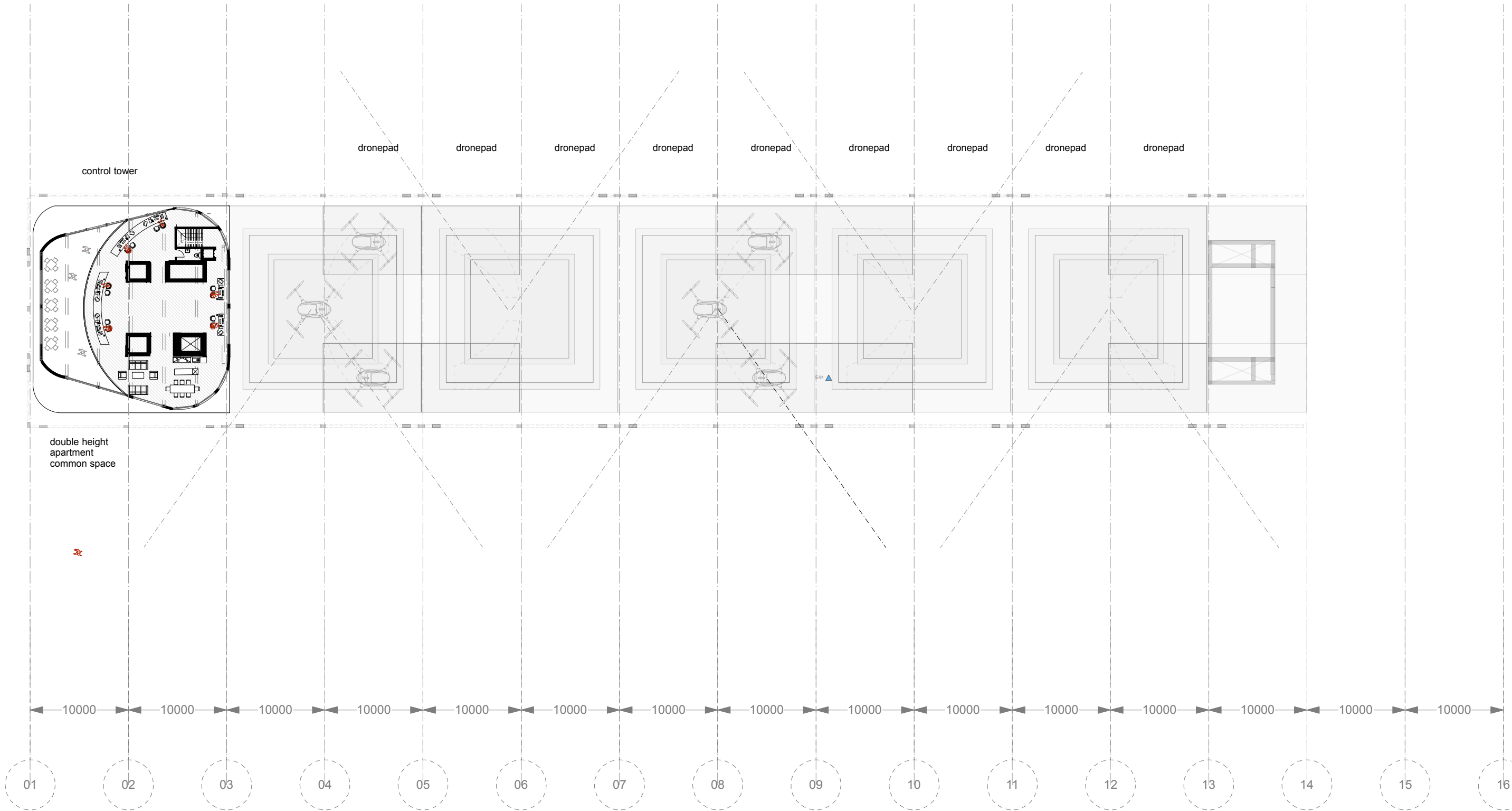
Drone repair and maintenance

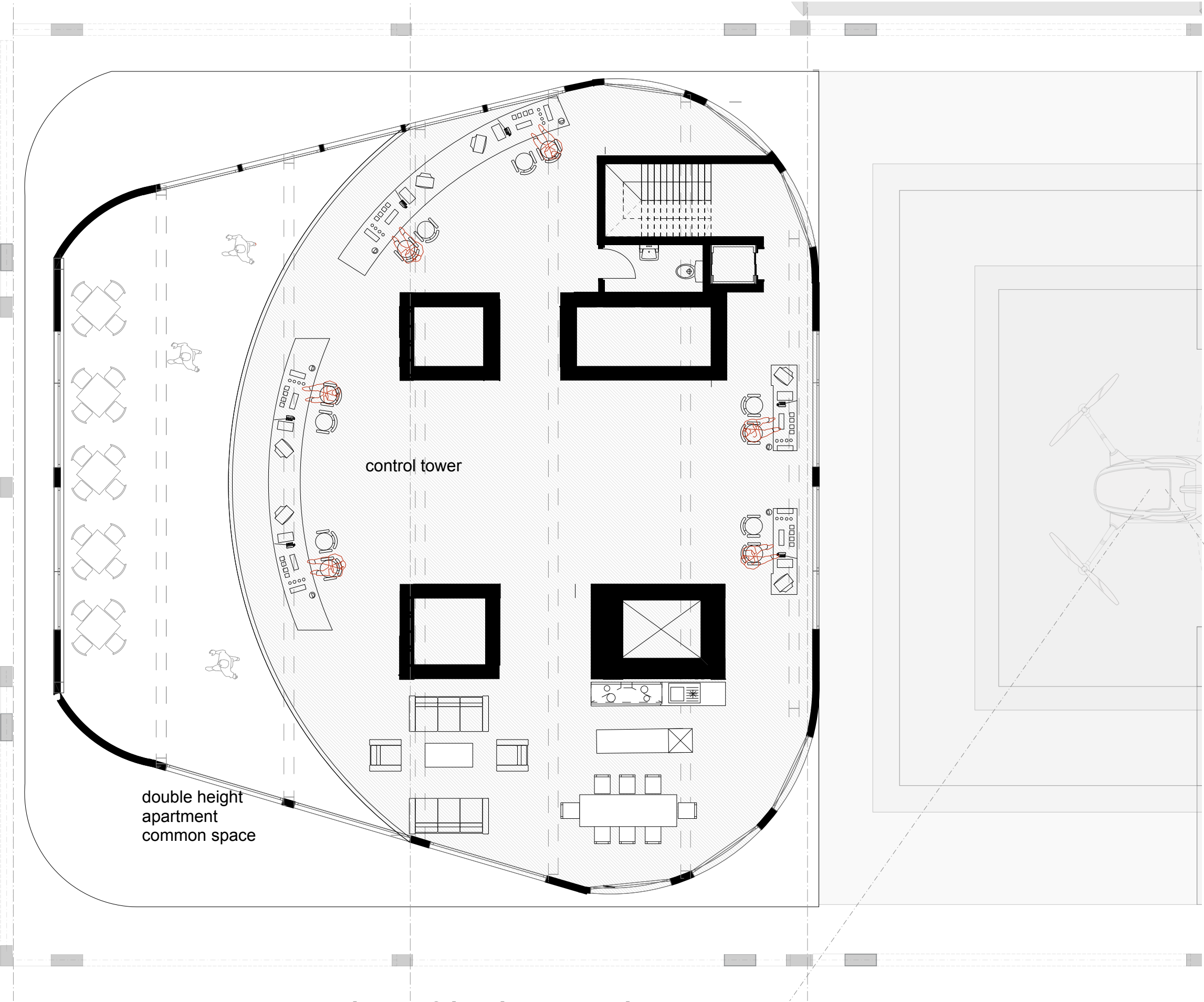


Plan 1:200 level 9



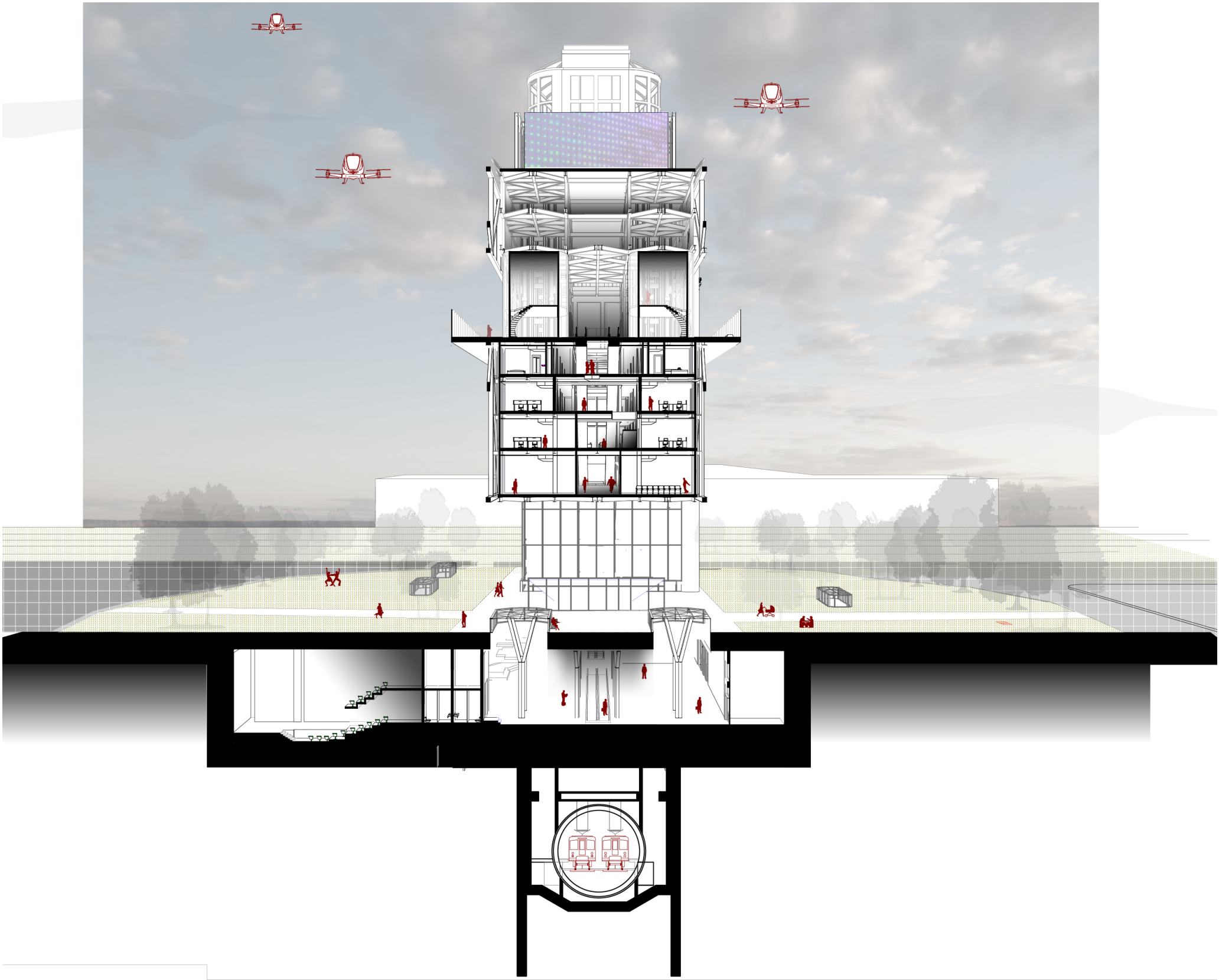
Plan 1:200 level 14 control tower



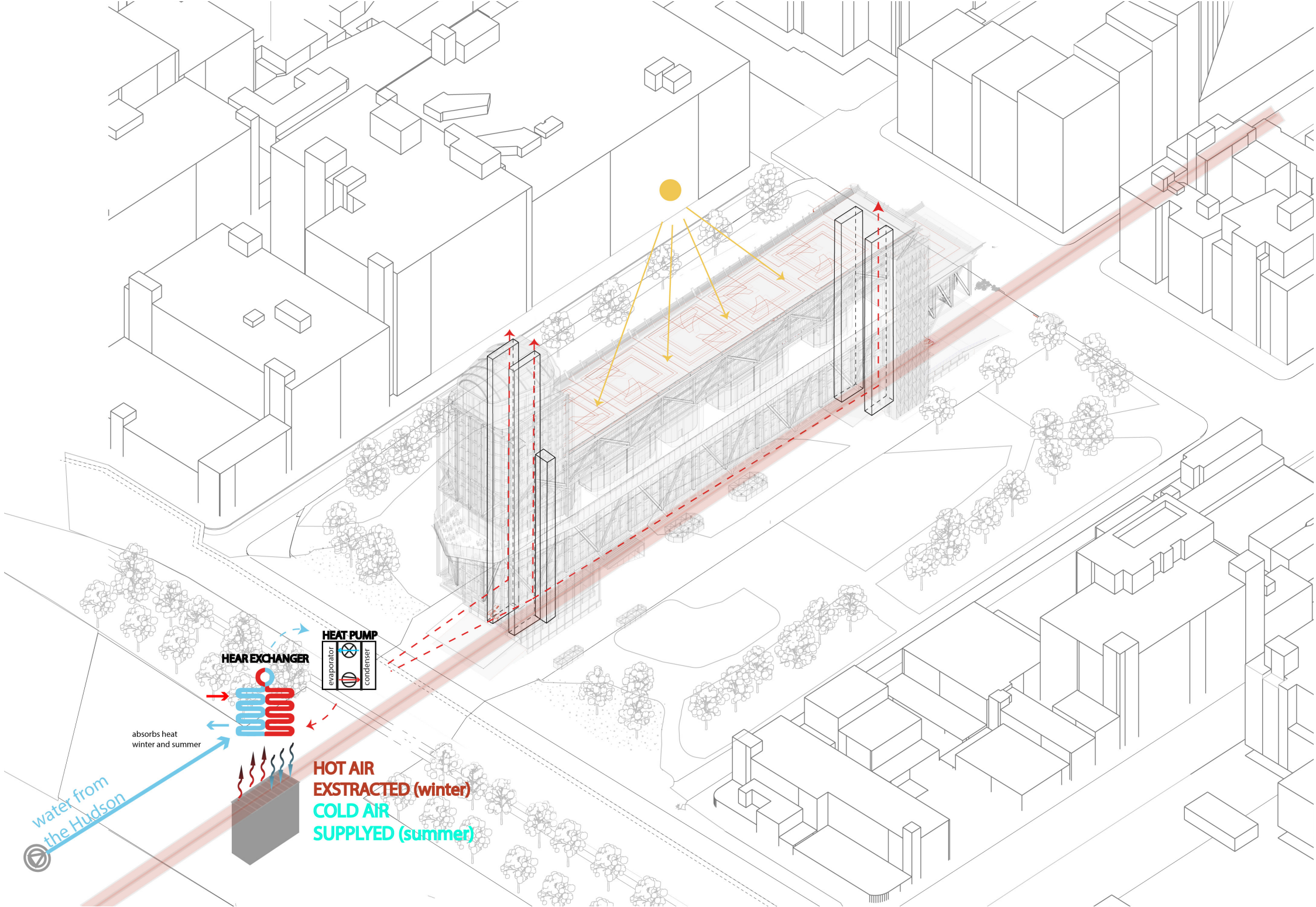


plan 1:50 level 14 control tower

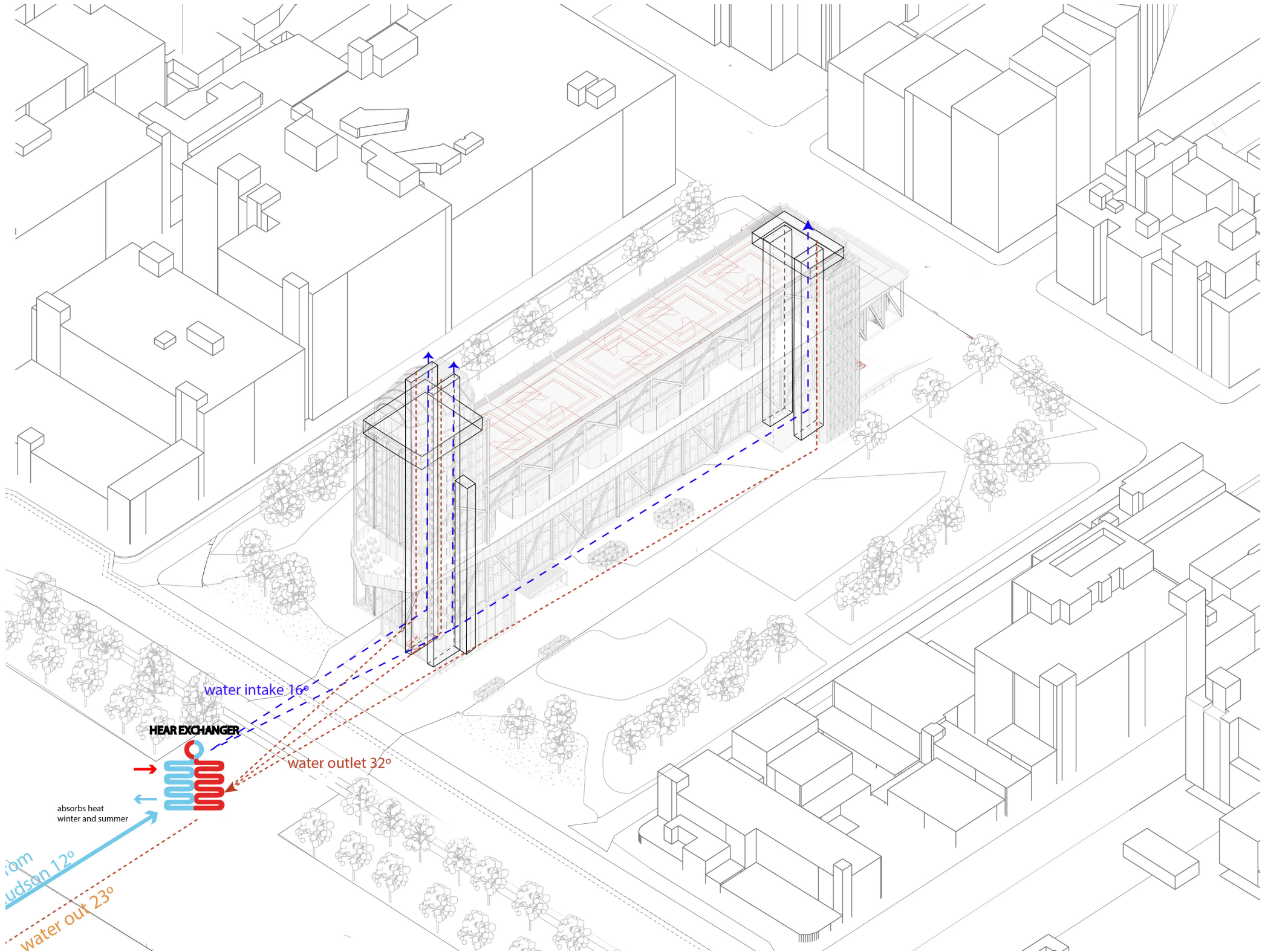
Perspective short section N-S 1:200



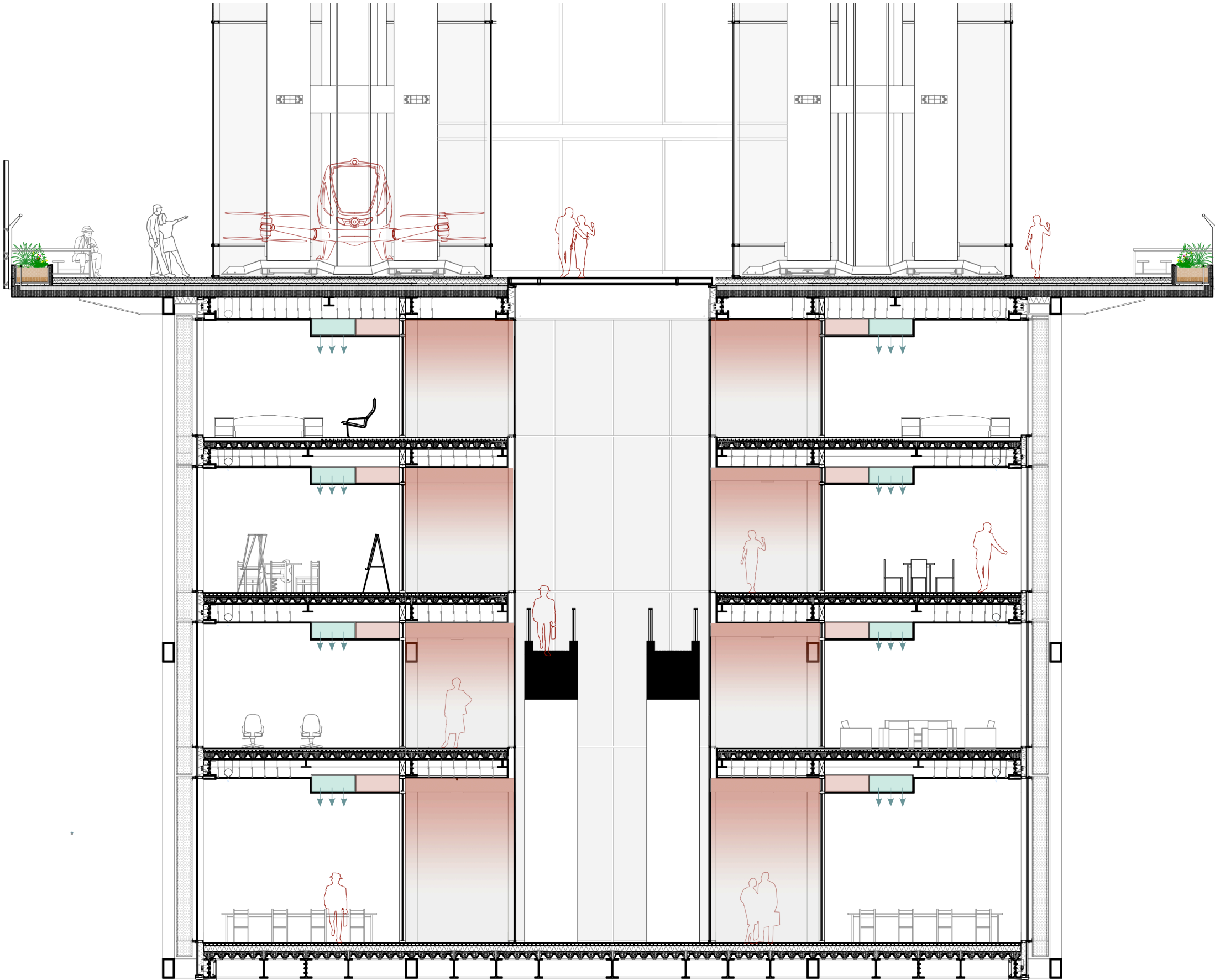
Winter: heating from the metro



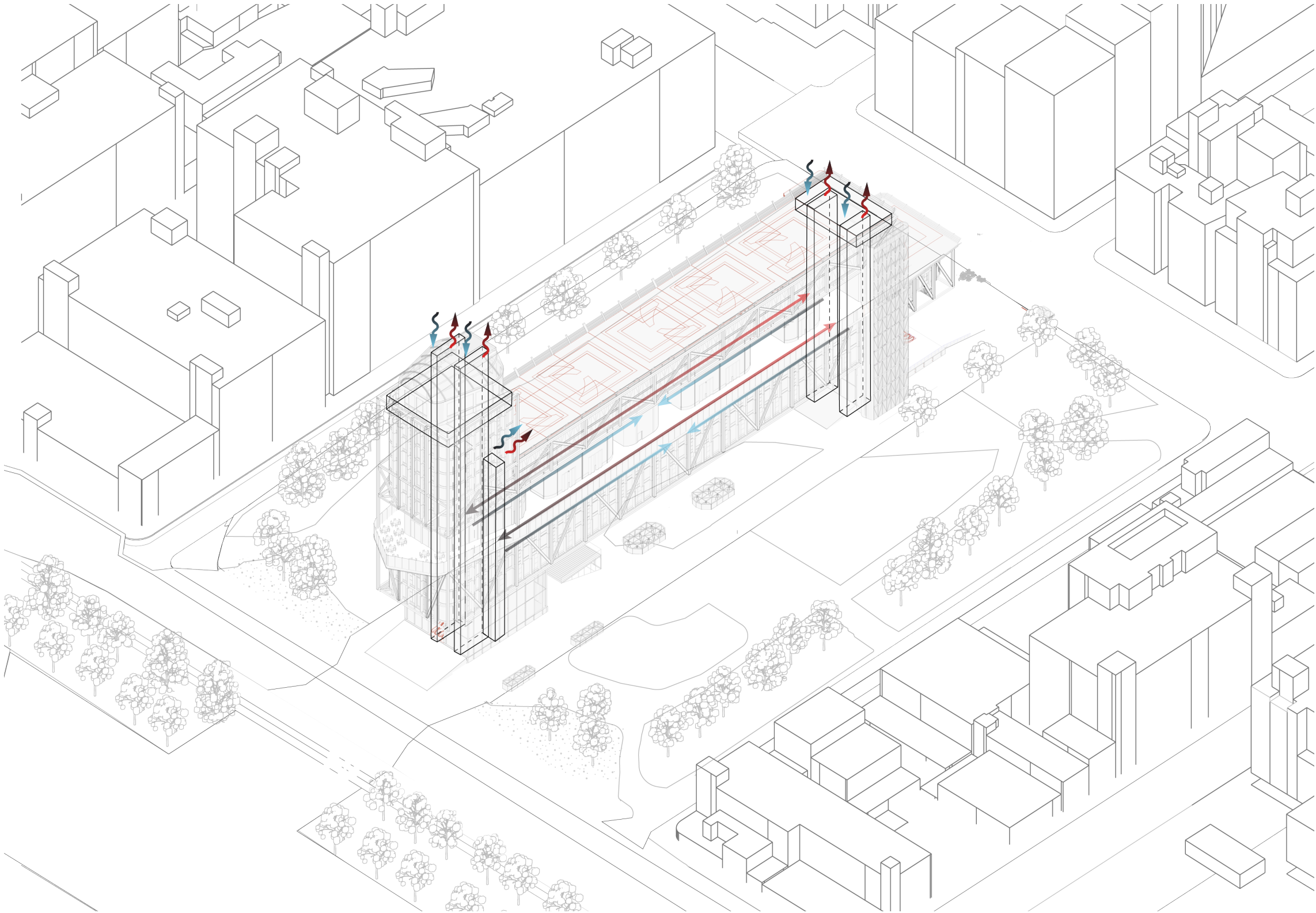
Summer: water from the Hudson



1:50 section: ventilation strategy

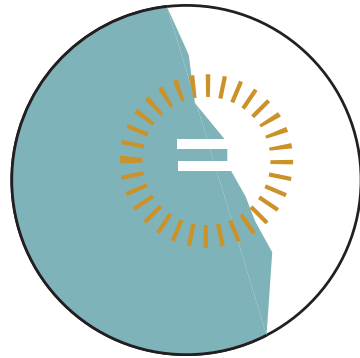


Mechanical and natural ventilation

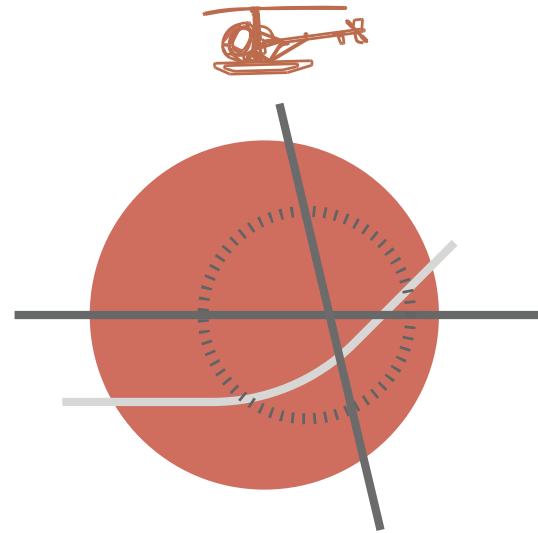


CONCLUSION

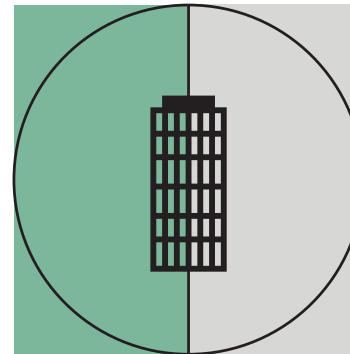
Answer the ambition



Activate
Riverbank



Create efficient node

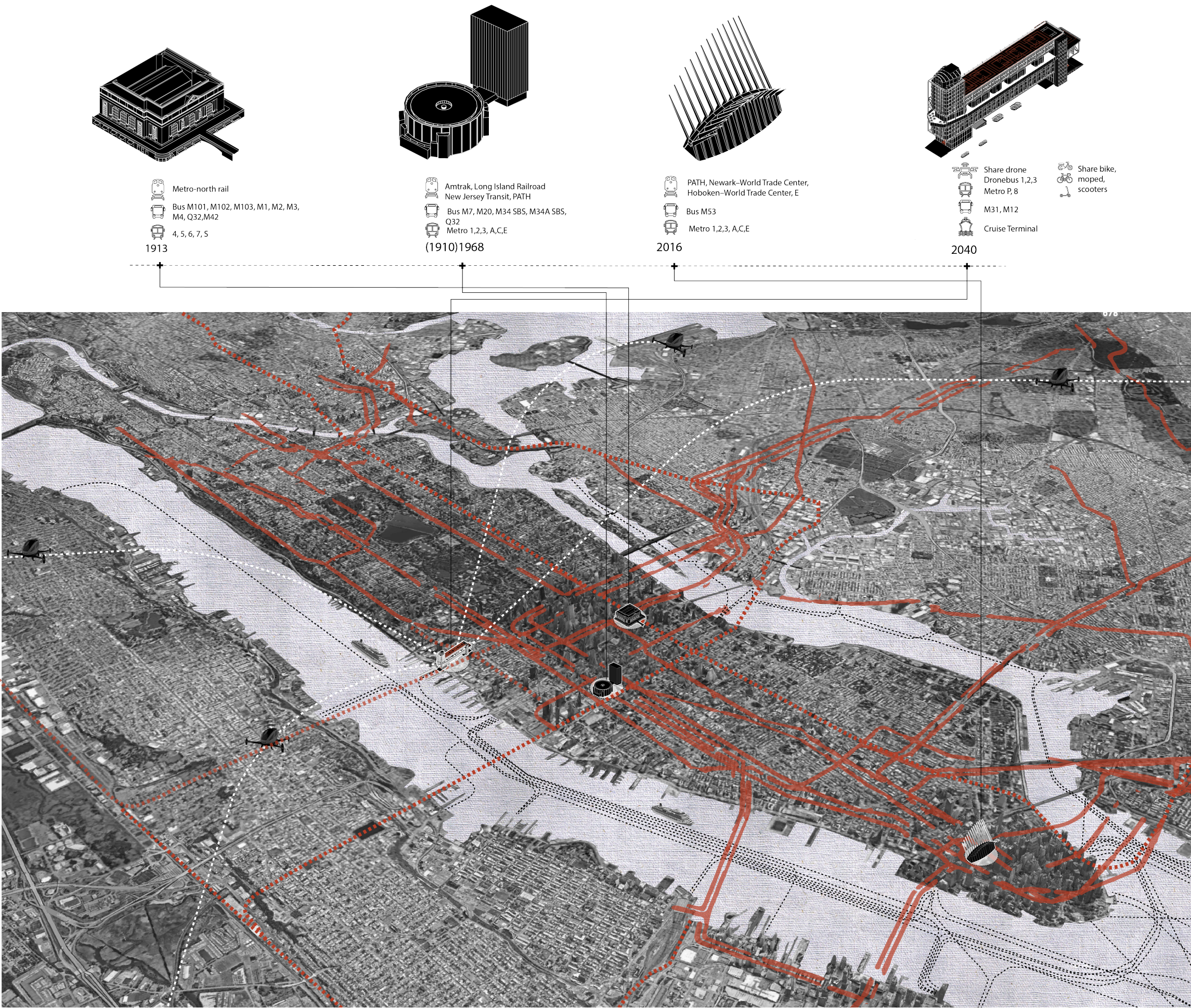


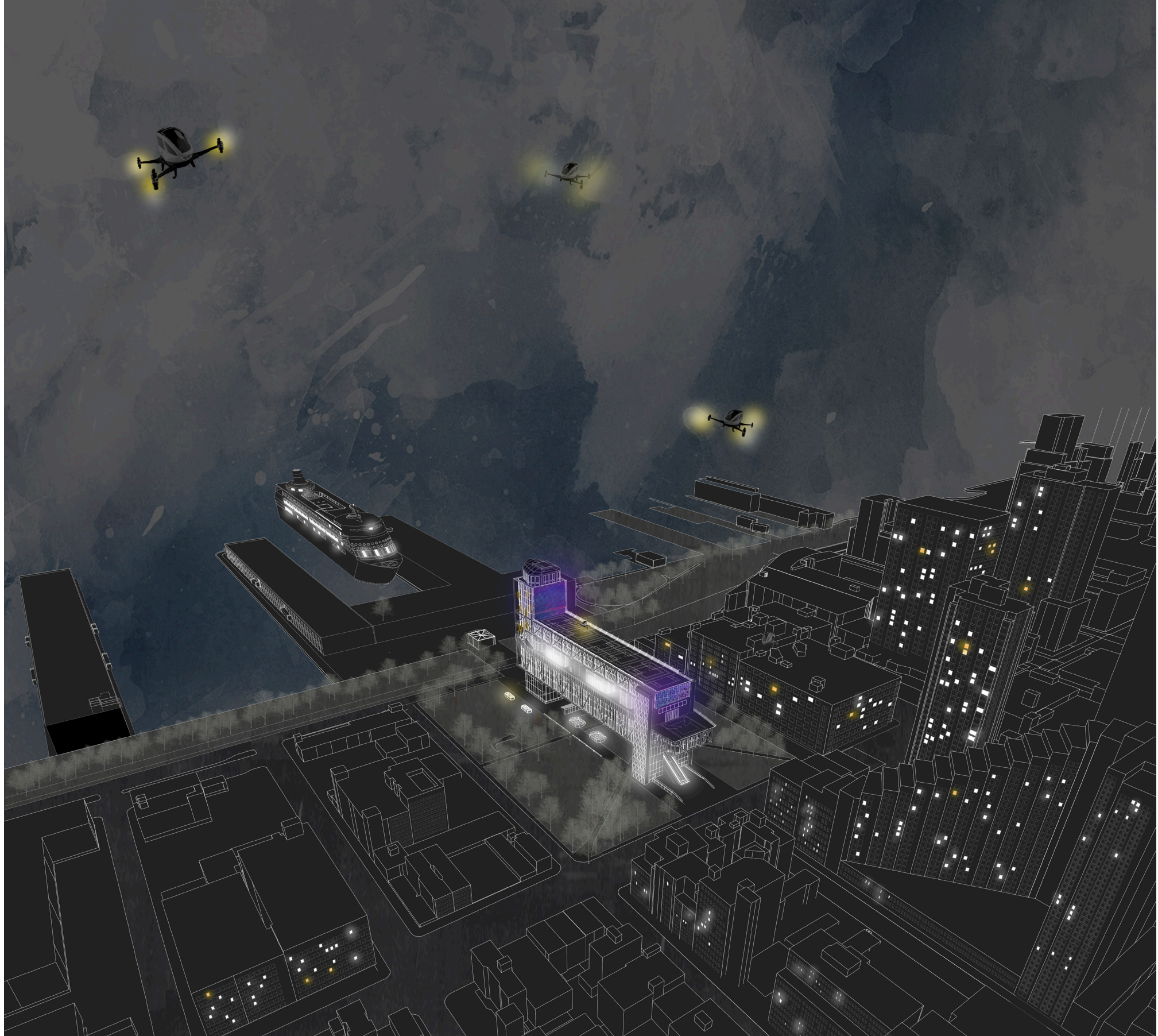
Bridge park and city



Flexible meeting
space

New node in the Manhattan Network





THANK YOU!

