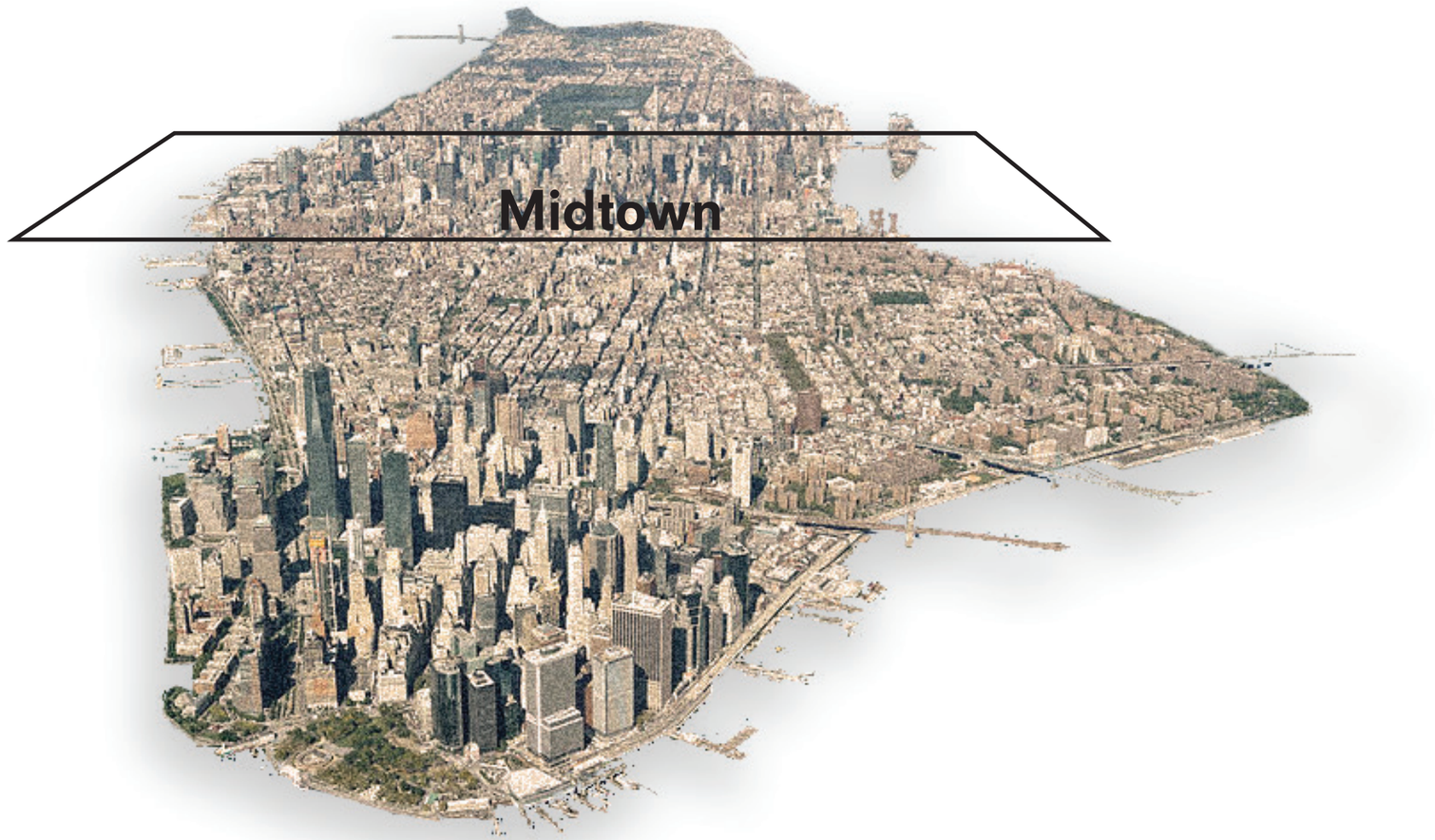
Transitory spaces

Tesla mobility hub | Jaap van den Hoogen | 31[illegible]20

CP

Area: 59.1 km²
Population: 1,653,877

Source: NYC planning (2018)



Area: 5.8 km²
Population: 226,121

Source: NYC planning (2010)

3.84 million people enter Manhattan through various entry points everyday

The M.T.A. is spending nearly a billion dollars on emergency repairs. But subway leaders say more than $40 billion is needed to rebuild the subway and make it reliable again.

Photo from Melissa Jardine, via Twitter

The New York Times

Your Subway Was Delayed by 1930s Signals. A Fix Is Finally Coming.

To upgrade signals, the M.T.A. plans to spend $7 billion. But the much-needed repairs could mean fewer trains on nights and weekends.

Opinion

New York City Is Thriving. Why Is Transport Such a Nightmare?

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Opinion

New York City Is Th... Wh... Is Transport Such...

The network is in a poor condition

The New York Times

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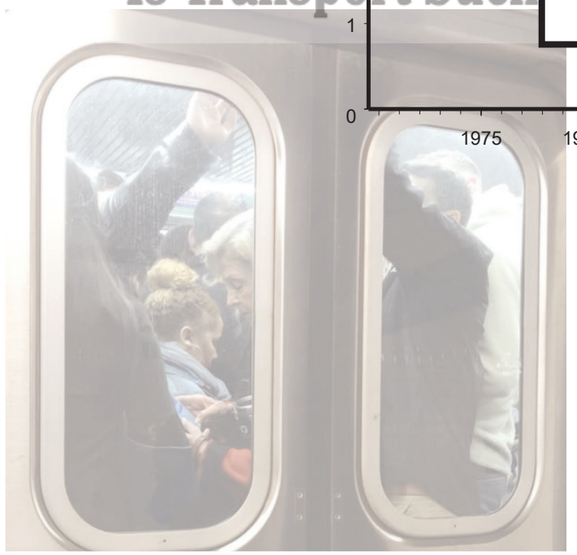
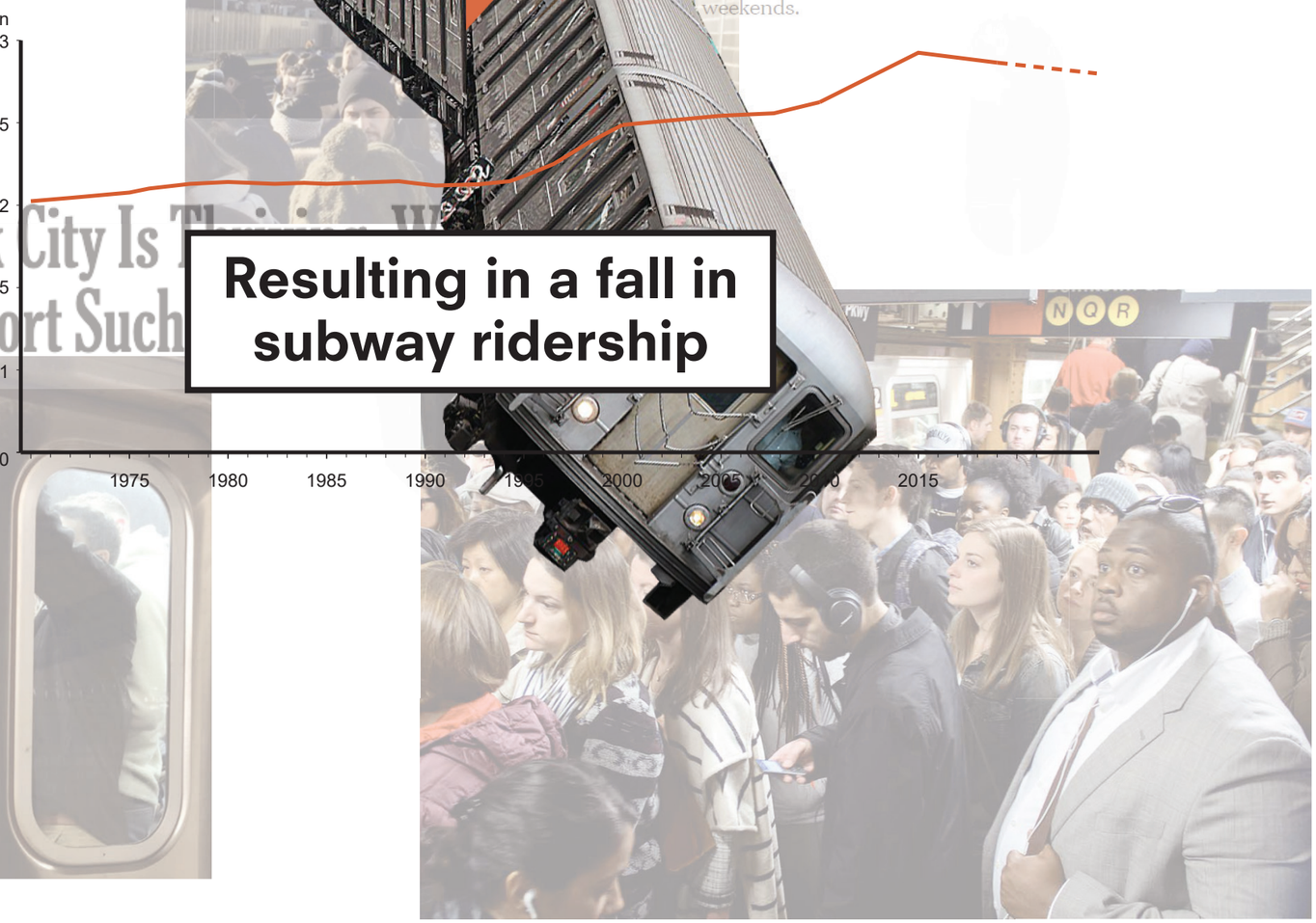
Opinion

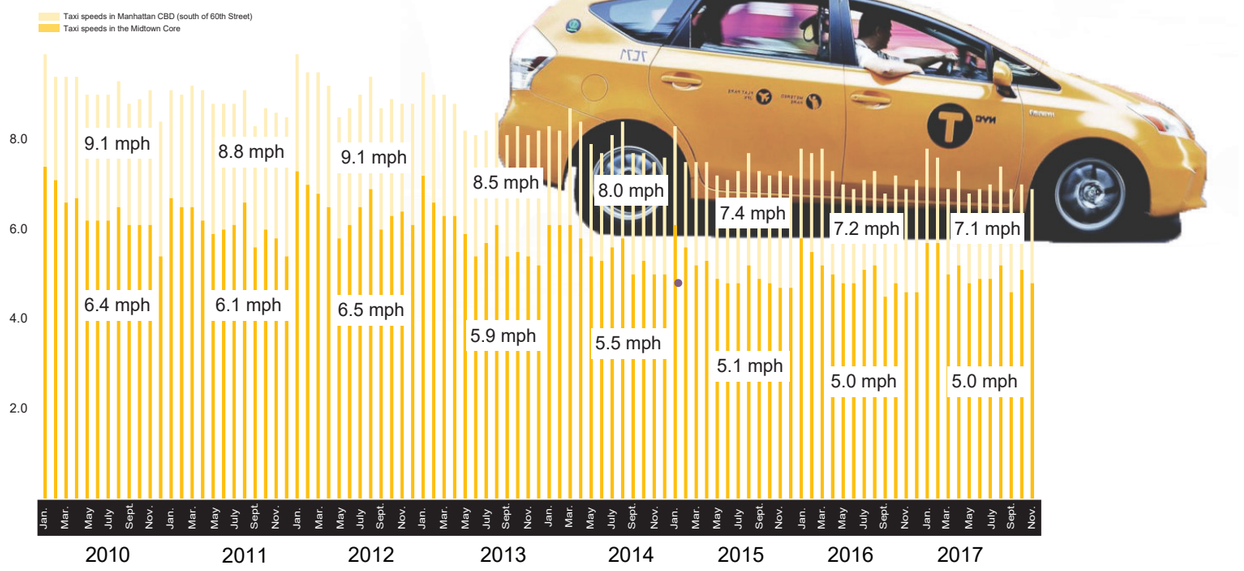
New York City Is T... W...
Is Transport Such...



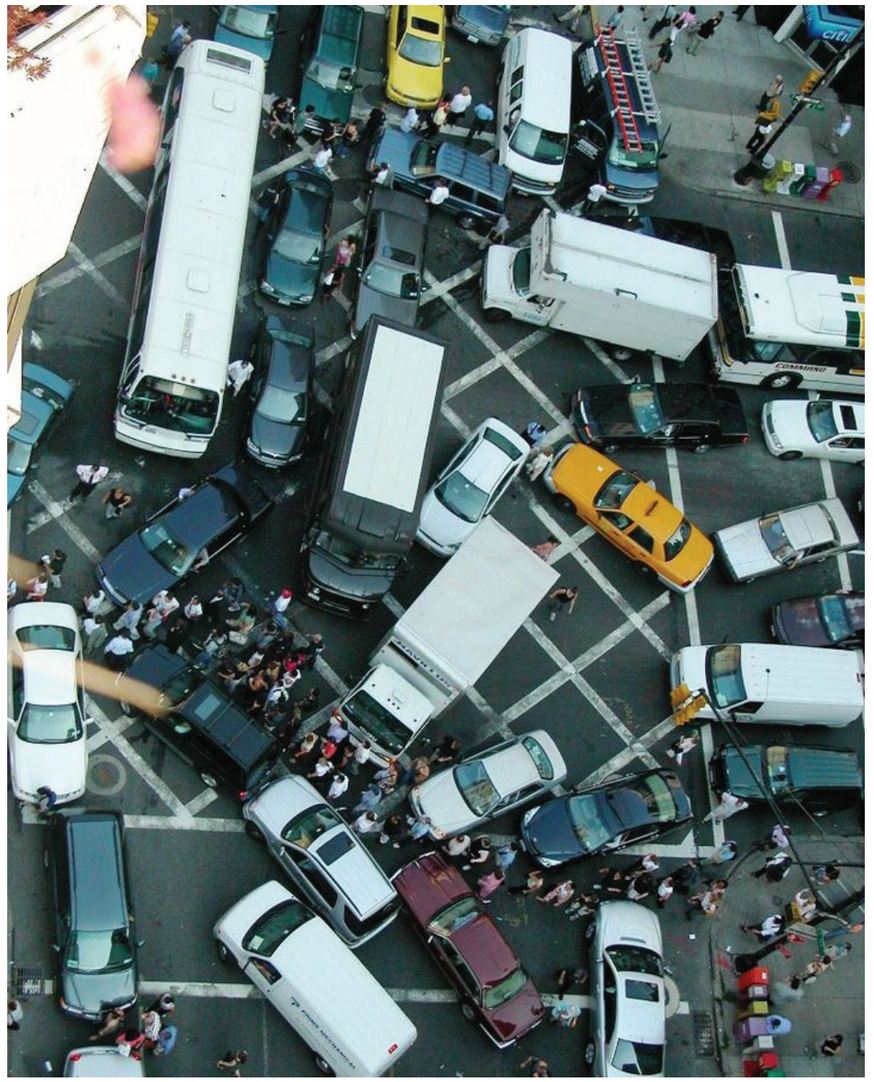


Resulting in a fall in subway ridership

Roads are also packed

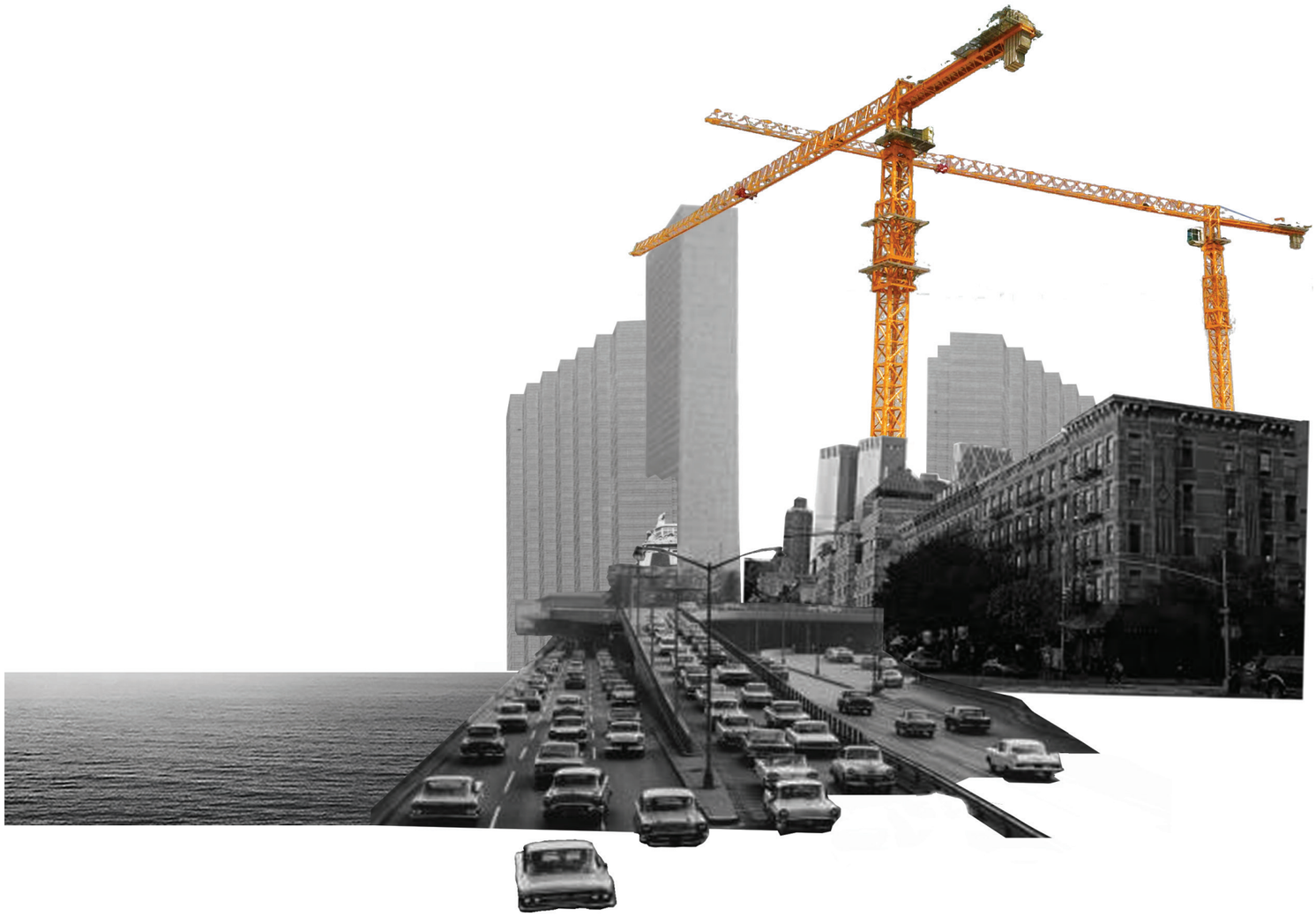


Traffic speeds have dropped in Midtown



Gridlock at 1st Avenue and 57th Street in 2007

Only getting worse because of the ride-hailing industry



And the city keeps on expanding meaning more people

including more cars

What if pressure can be relieved by a MOBILITY HUB?

the network

How did NYC get to this point?
STOP
ONLY
ONLY

1908
First T-Ford rolls
from production line

1867
Elevated Rapid
System Trains

1904
First subway
line opended

1927
Holland Tunnel
opended

1978
Peak sale of Amercian
made cars

2019
Congestion pricing
in New York

2013
Introduction of
Citibike

2011
Introduction of Uber
in New York

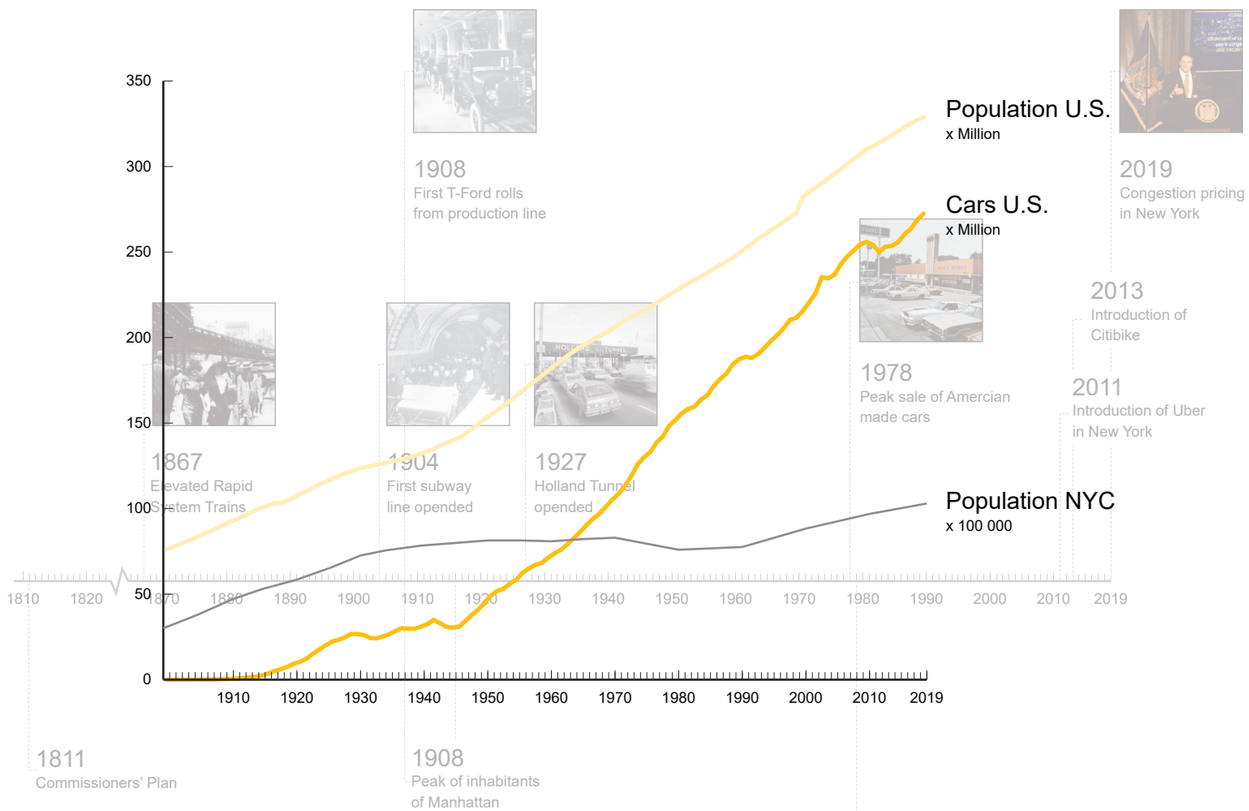
1810 1820 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2019

1811
Commissioners' Plan

1908
Peak of inhabitants
of Manhattan

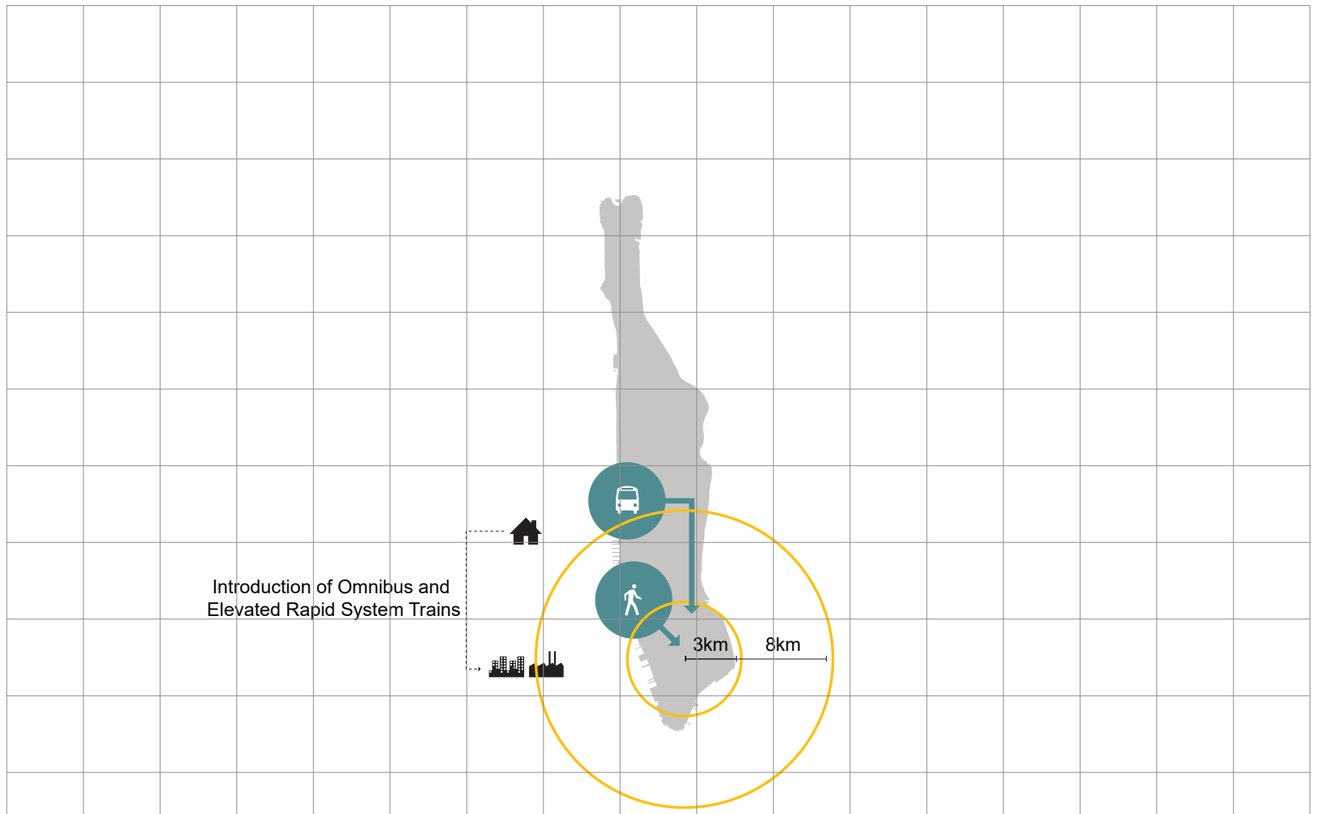
1916
Zoning Resolution

1979
Oil crisis

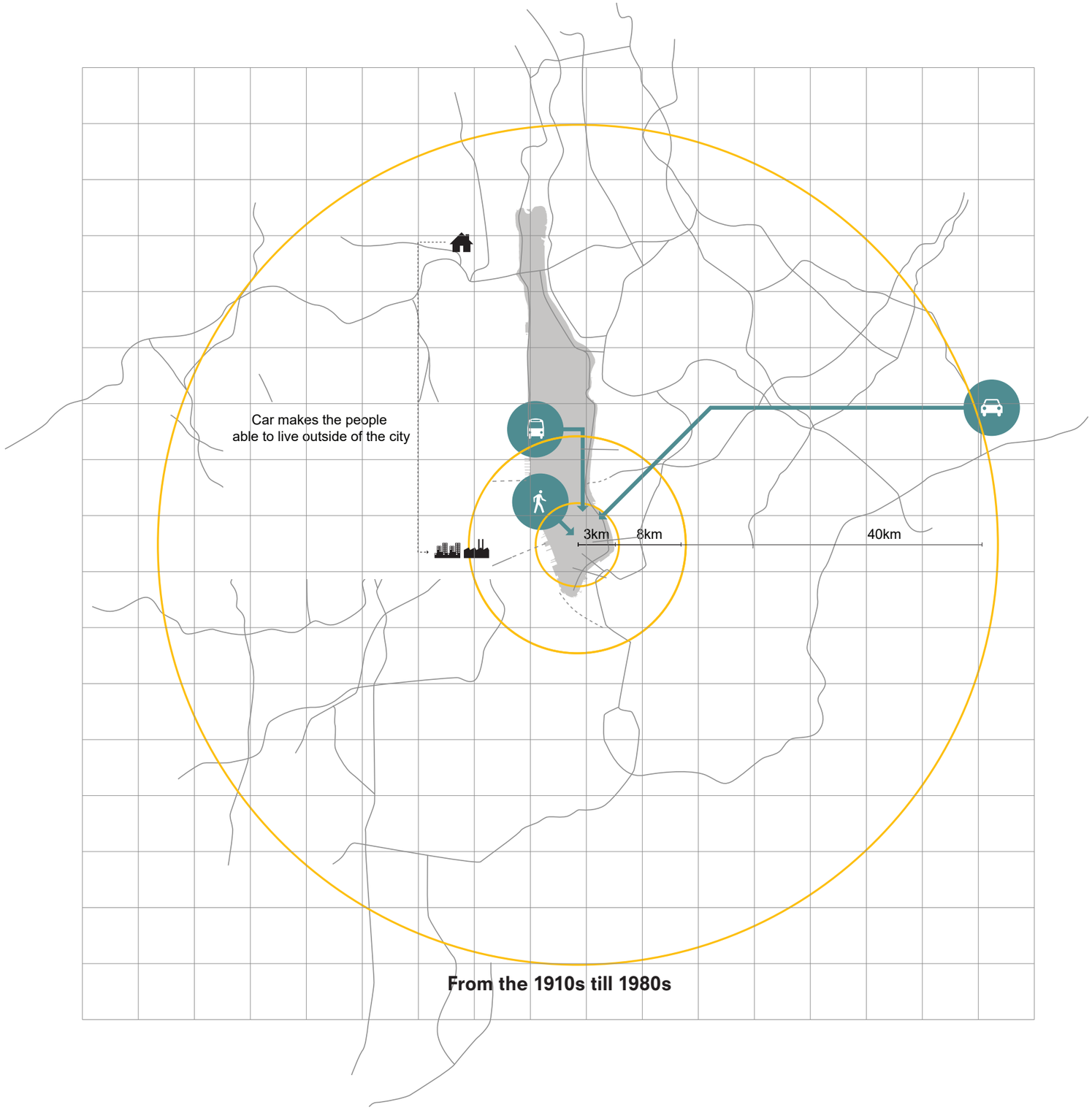


Car increase in the United States from 1900 to now

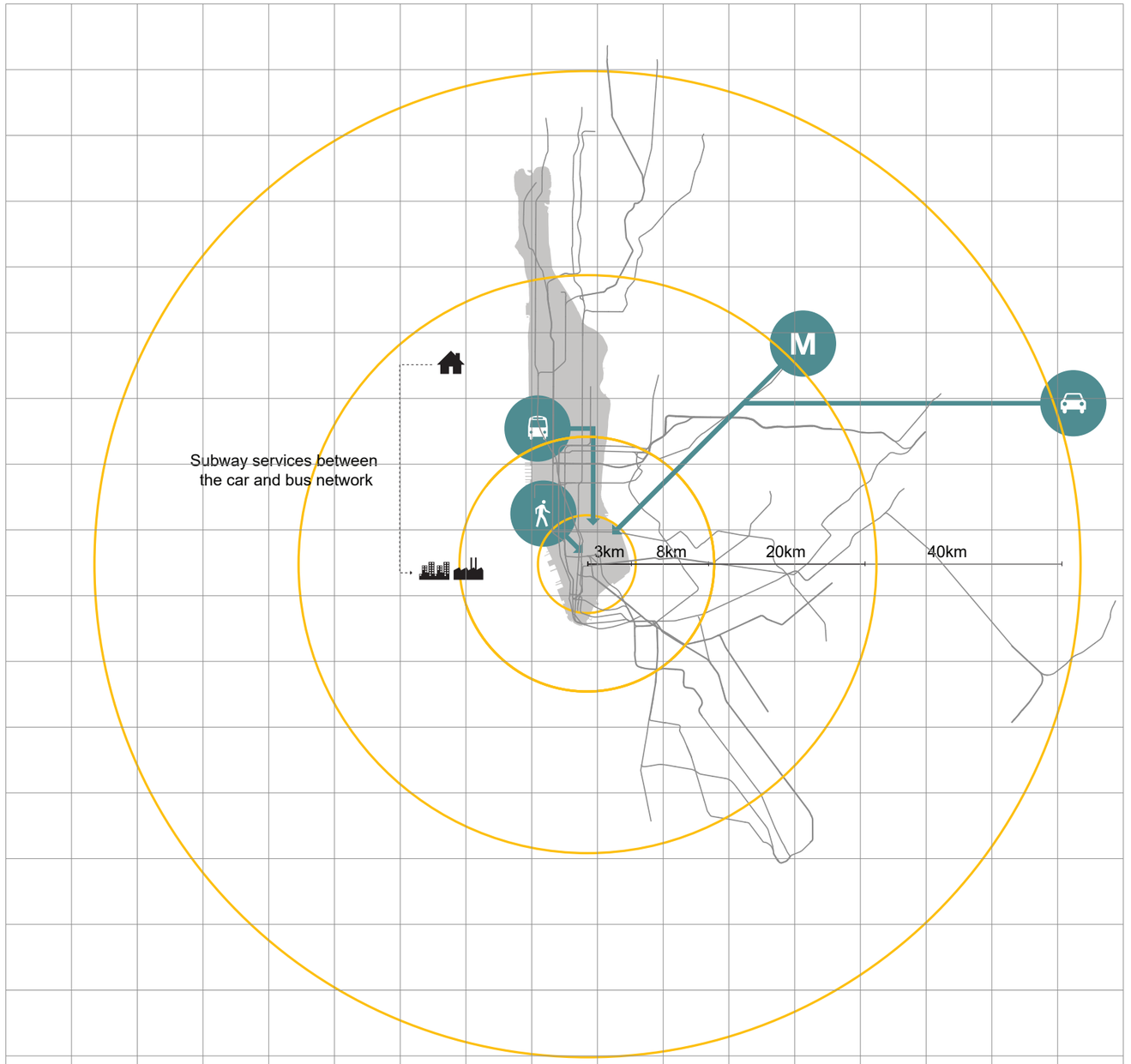
Pre 1860


Introduction of Omnibus and
Elevated Rapid System Trains
3km
8km

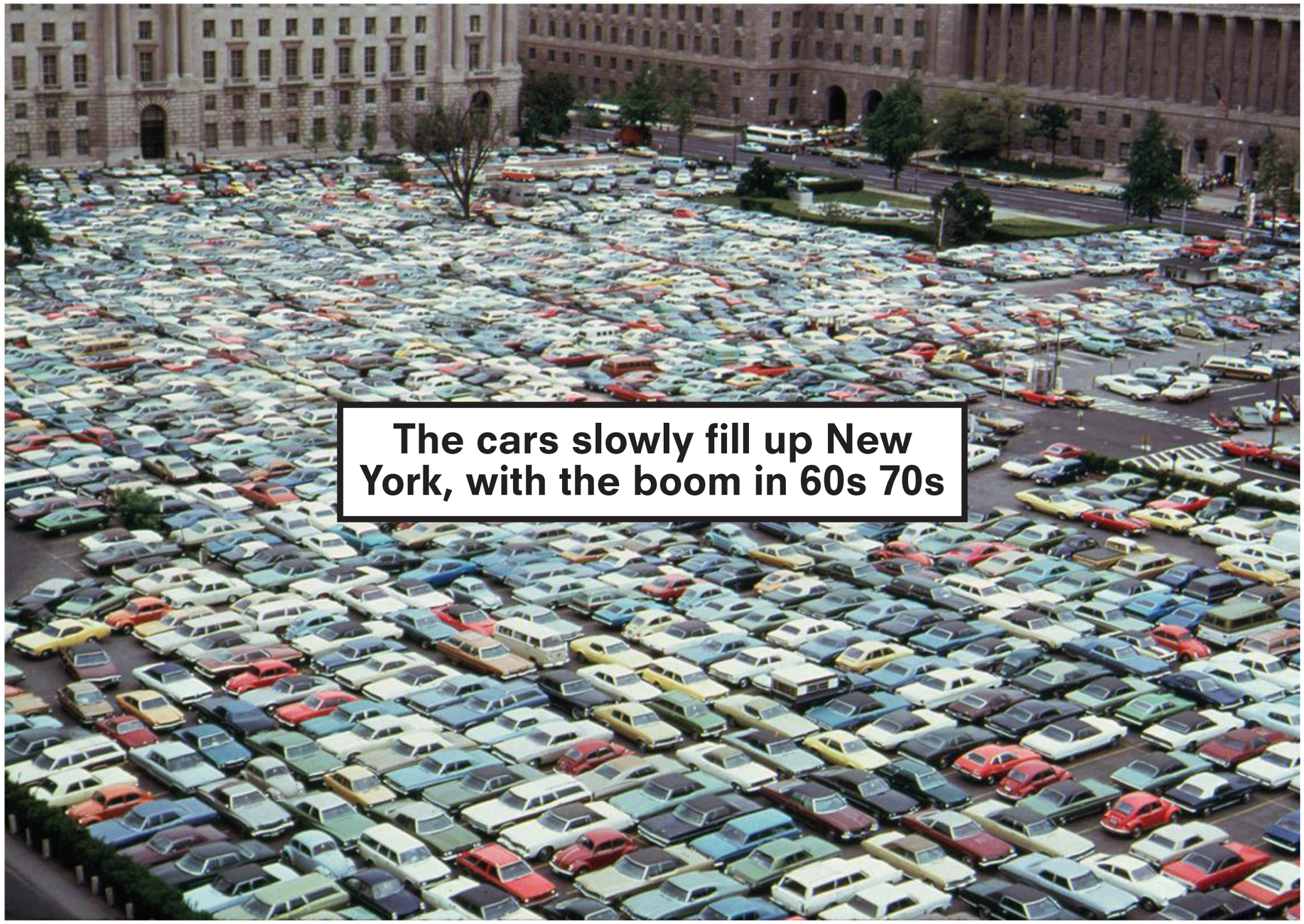
After 1867



From the 1910s till 1980s



From the 1900s till 1950s


The cars slowly fill up New York, with the boom in 60s 70s

Cars controlling the city and not the city controlling the cars

Ford (1921)

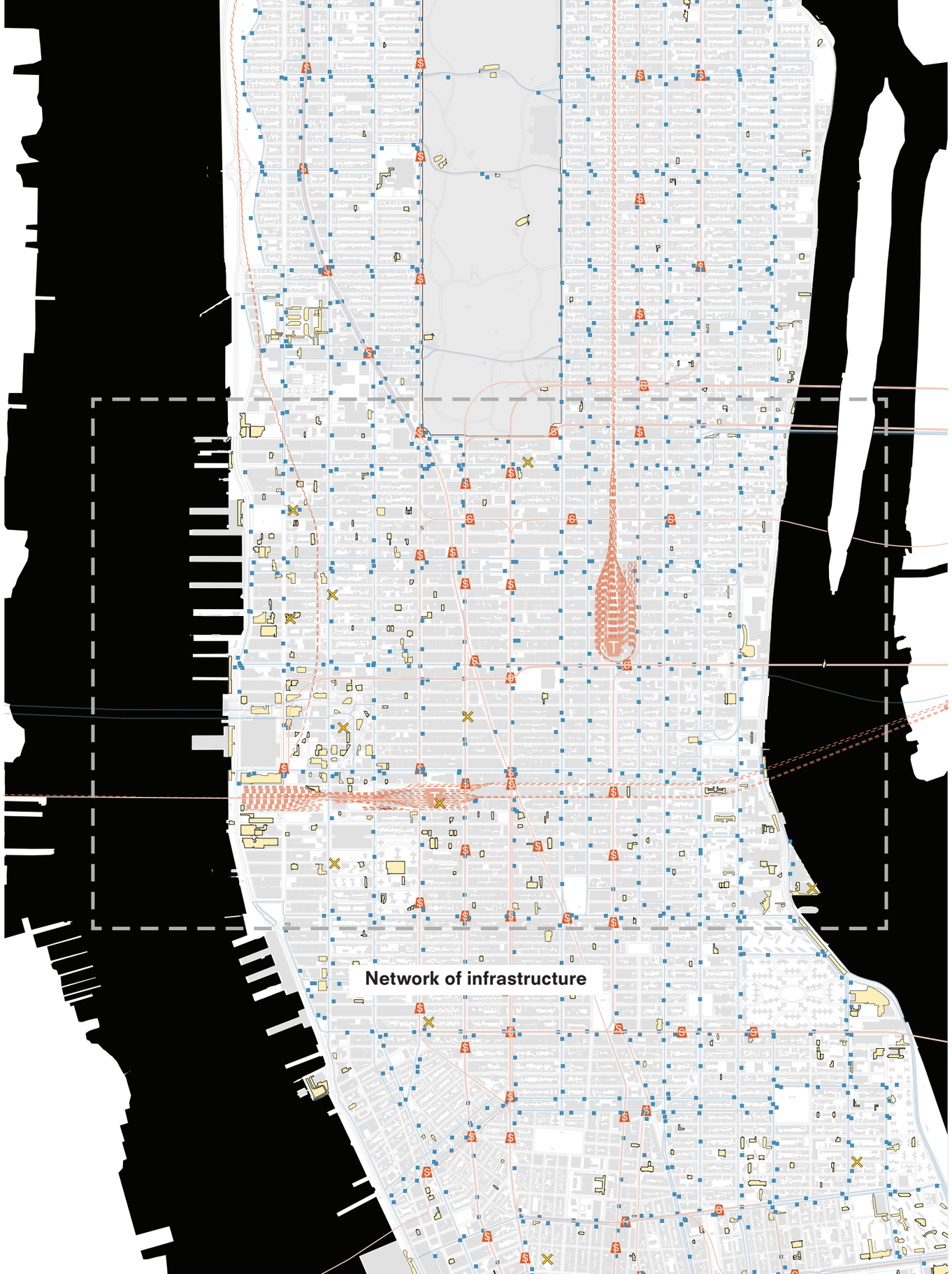
Chrysler (1930)

General Motors (1964)

The three big American car companies built headquarters in NY

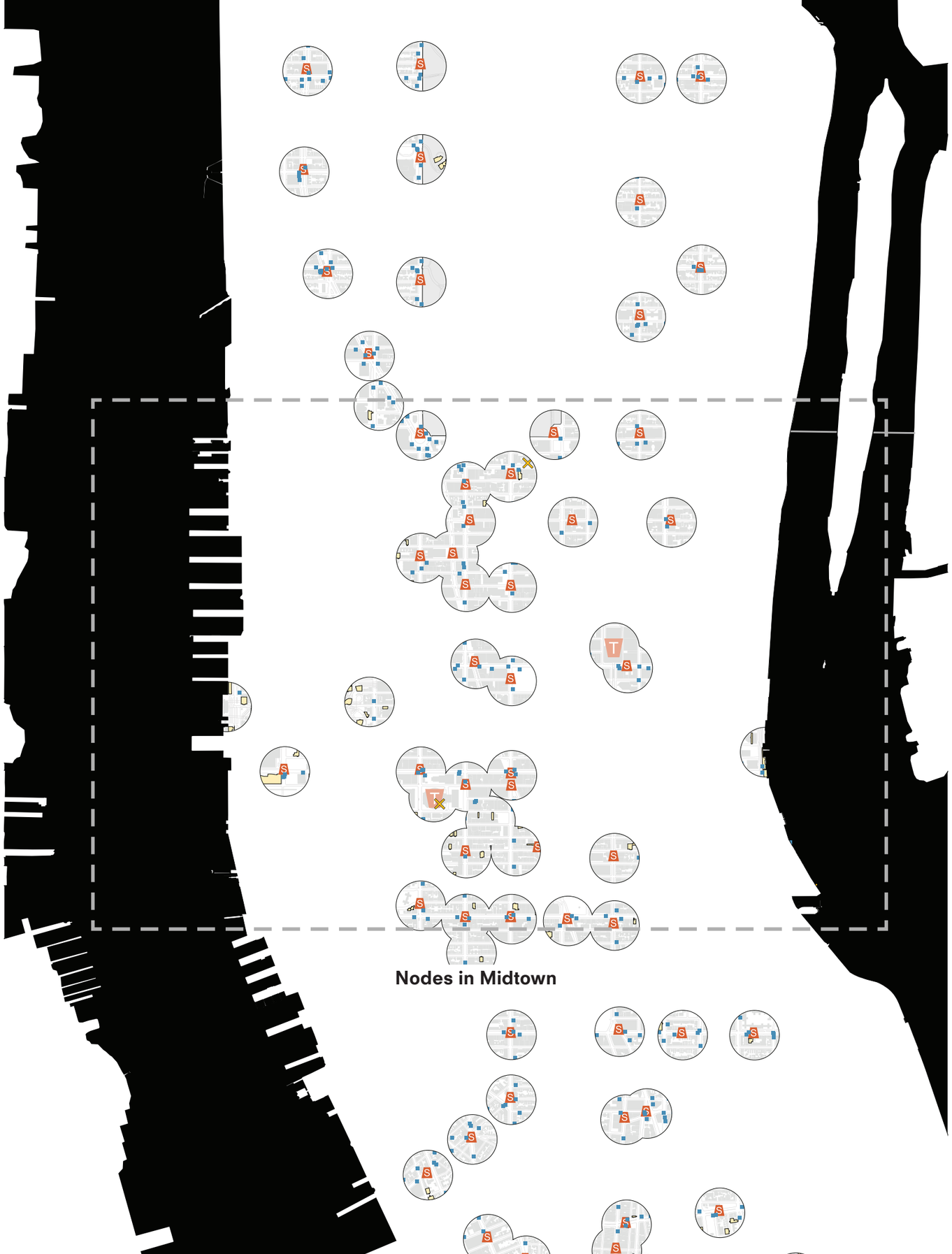
All this resulted in major complex infrastructural structures in NYC

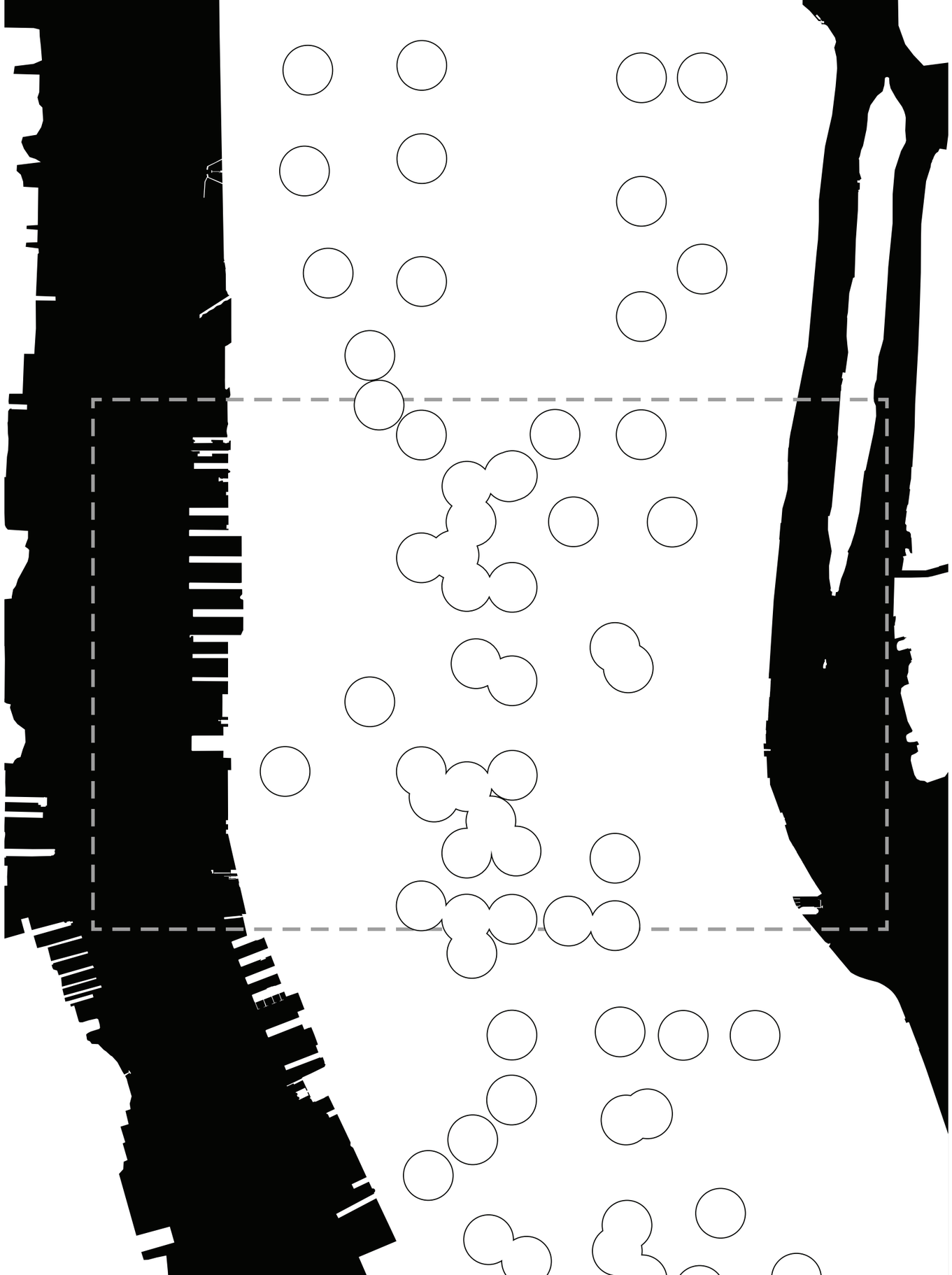
Entering the island creates multiple dense access points where its infrastructure meets the Manhattan grid.


Network of infrastructure

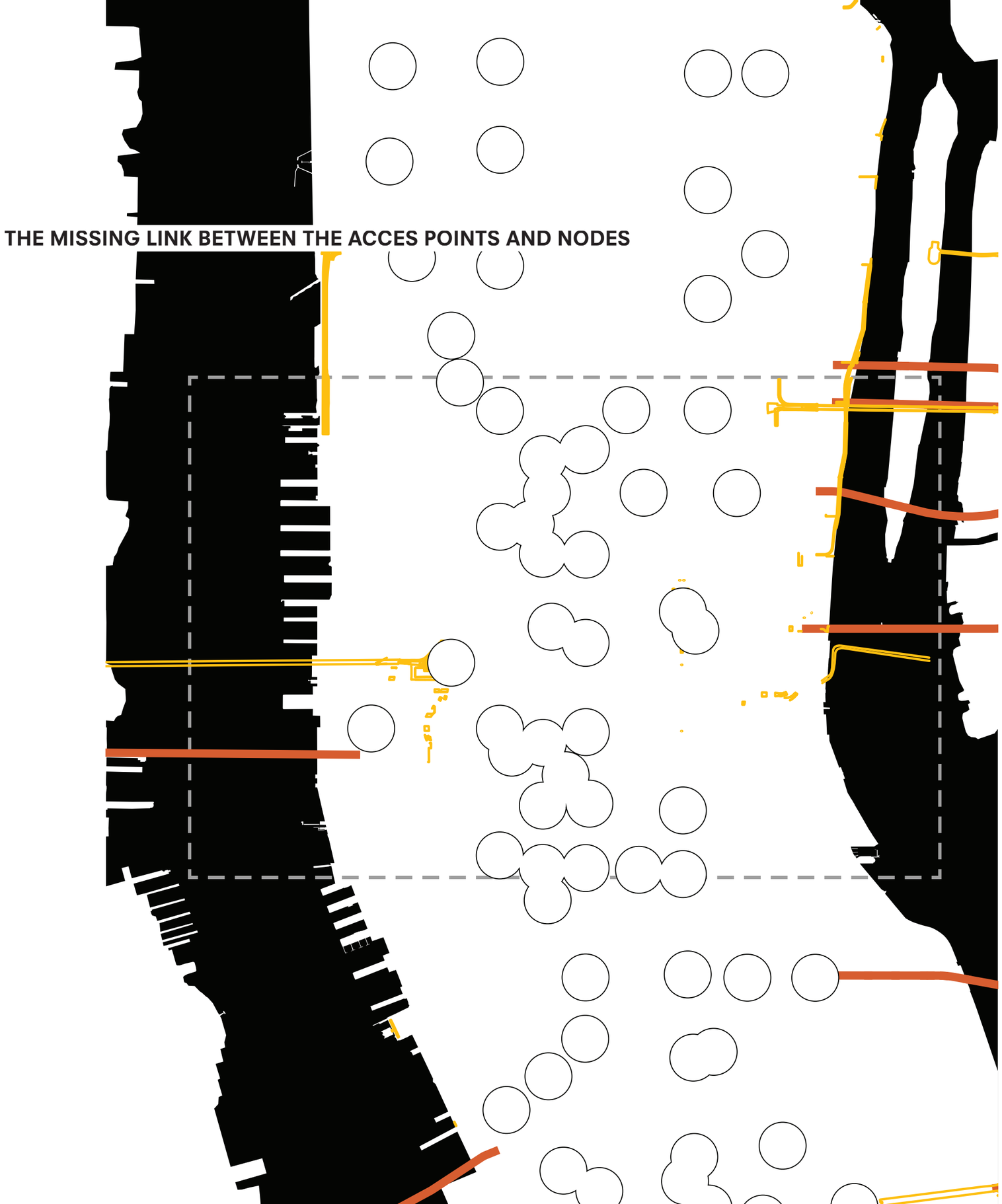
"Are points, the **strategic spots** in a city into which an observer can enter, and which are the **intensive foci** to and from which he is traveling. They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one **structure** to another.[1]"

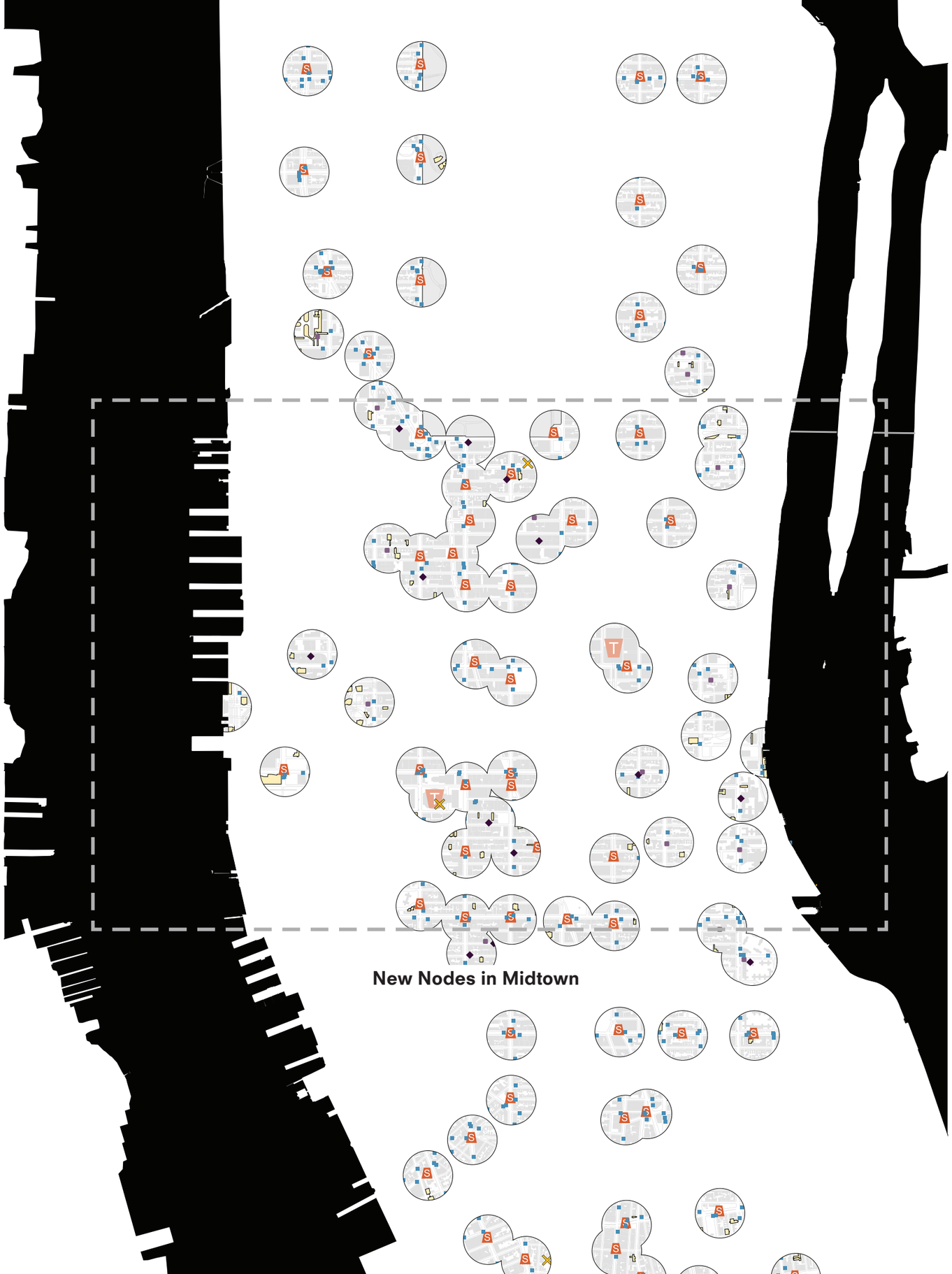
Nodes (1Kevin lynch p.41 The image of the city)

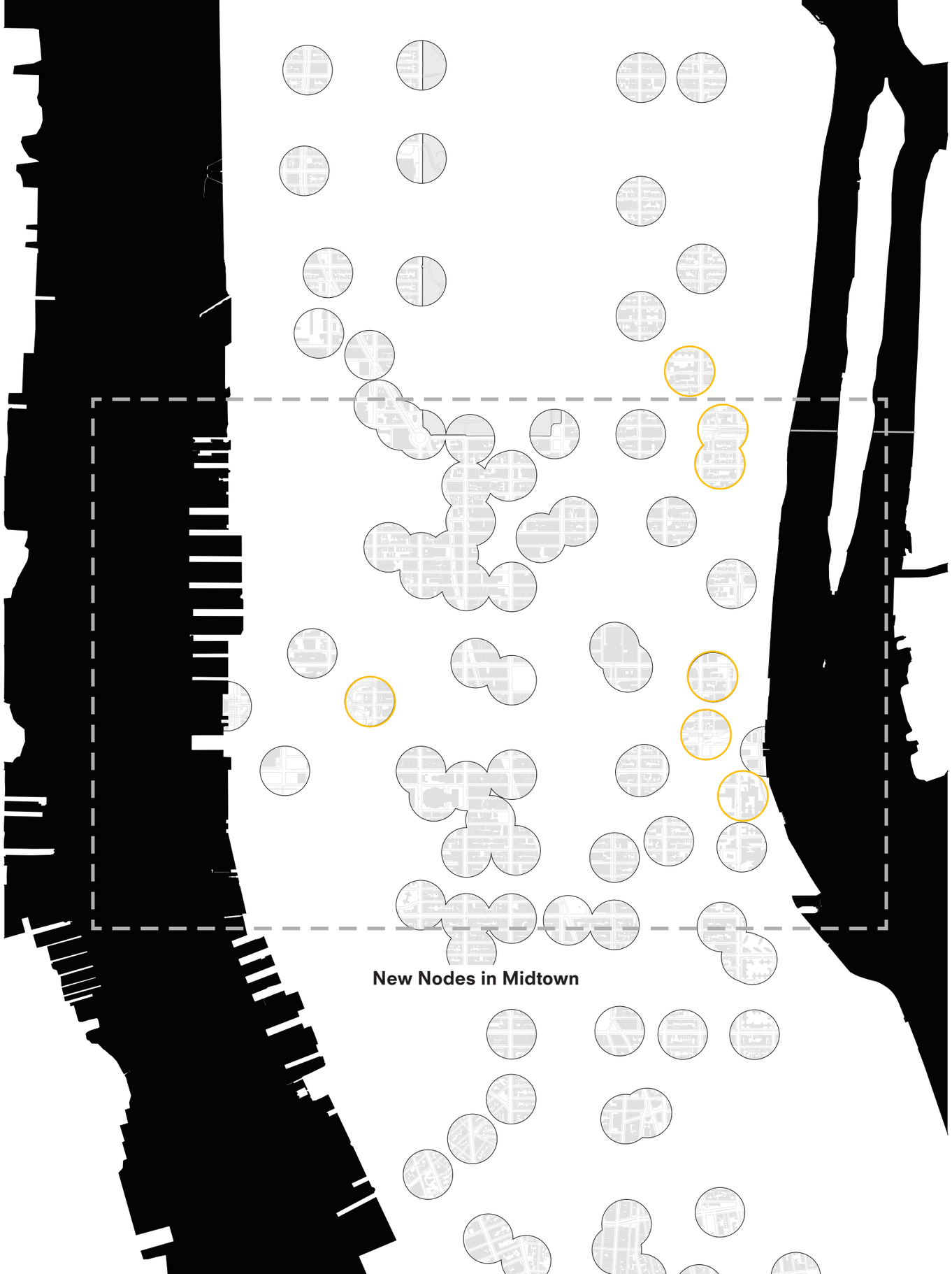

Nodes in Midtown



THE MISSING LINK BETWEEN THE ACCES POINTS AND NODES

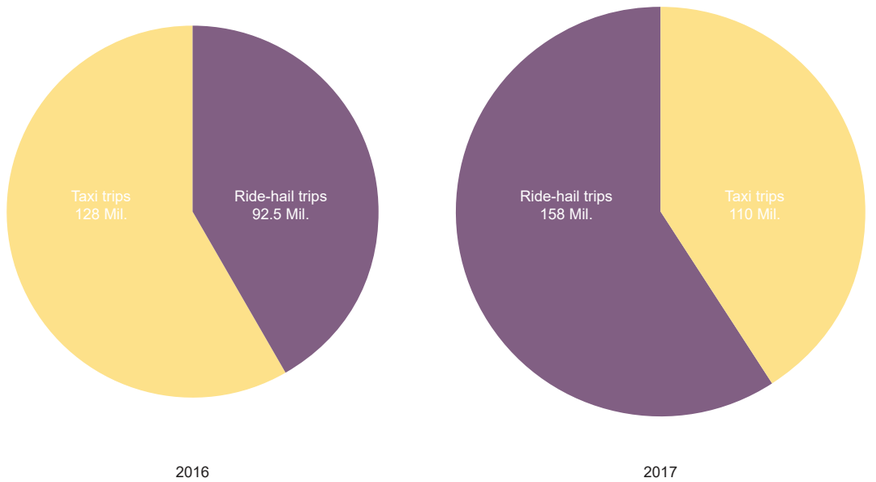



New Nodes in Midtown


New Nodes in Midtown

“How can the entry points of Midtown contribute to a greater mobillity of the city?”

The sharing network



Uber and other ride-hail companies are an additional layer to the transport network

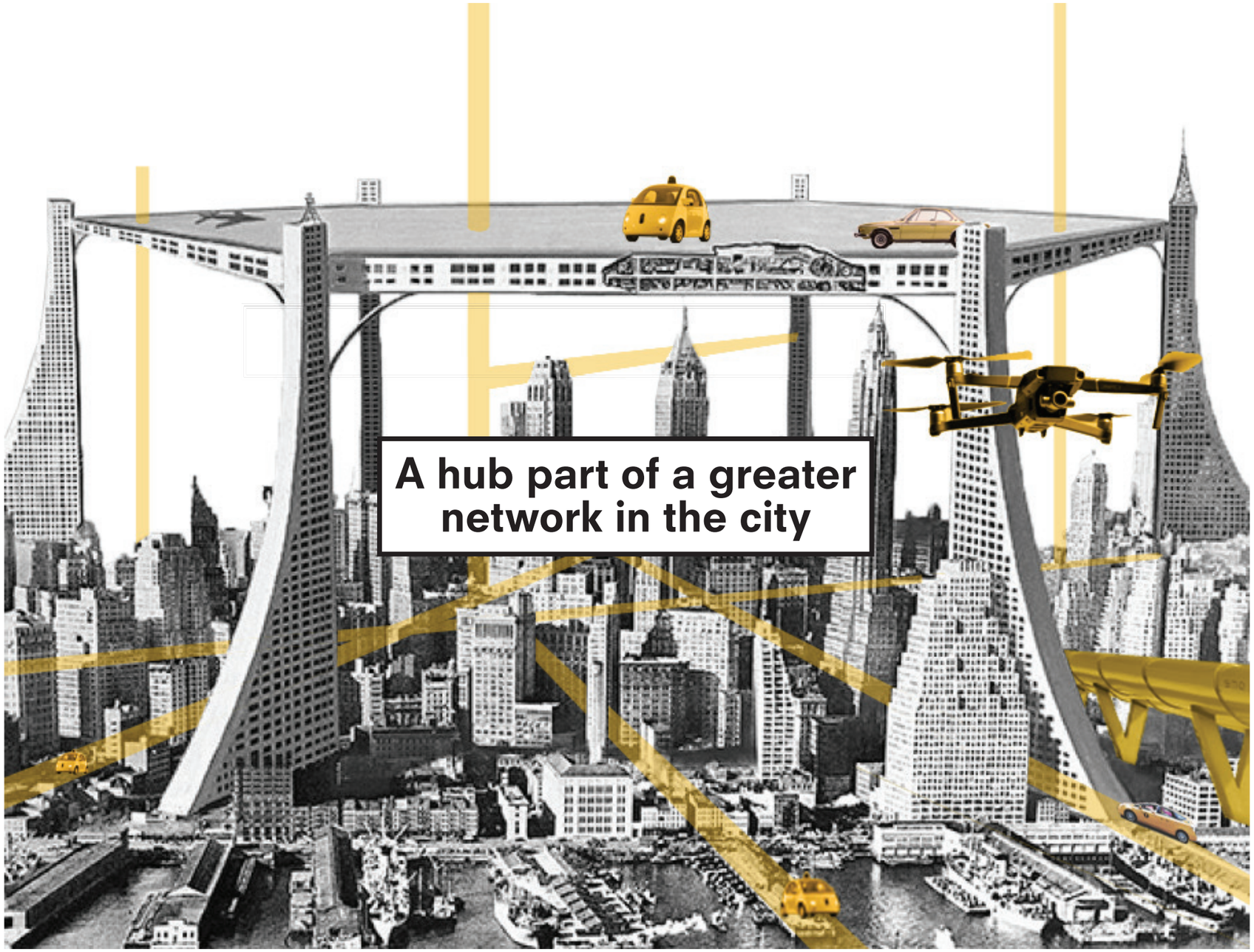
“ The company will roll out autonomous taxis next year in some parts of the US. The service will allow Tesla owners to add their cars to a Tesla network, which he said would be akin to Uber or Airbnb”

For every shared car 11 privately owned cars are taken of the streets (City Lab 2016)

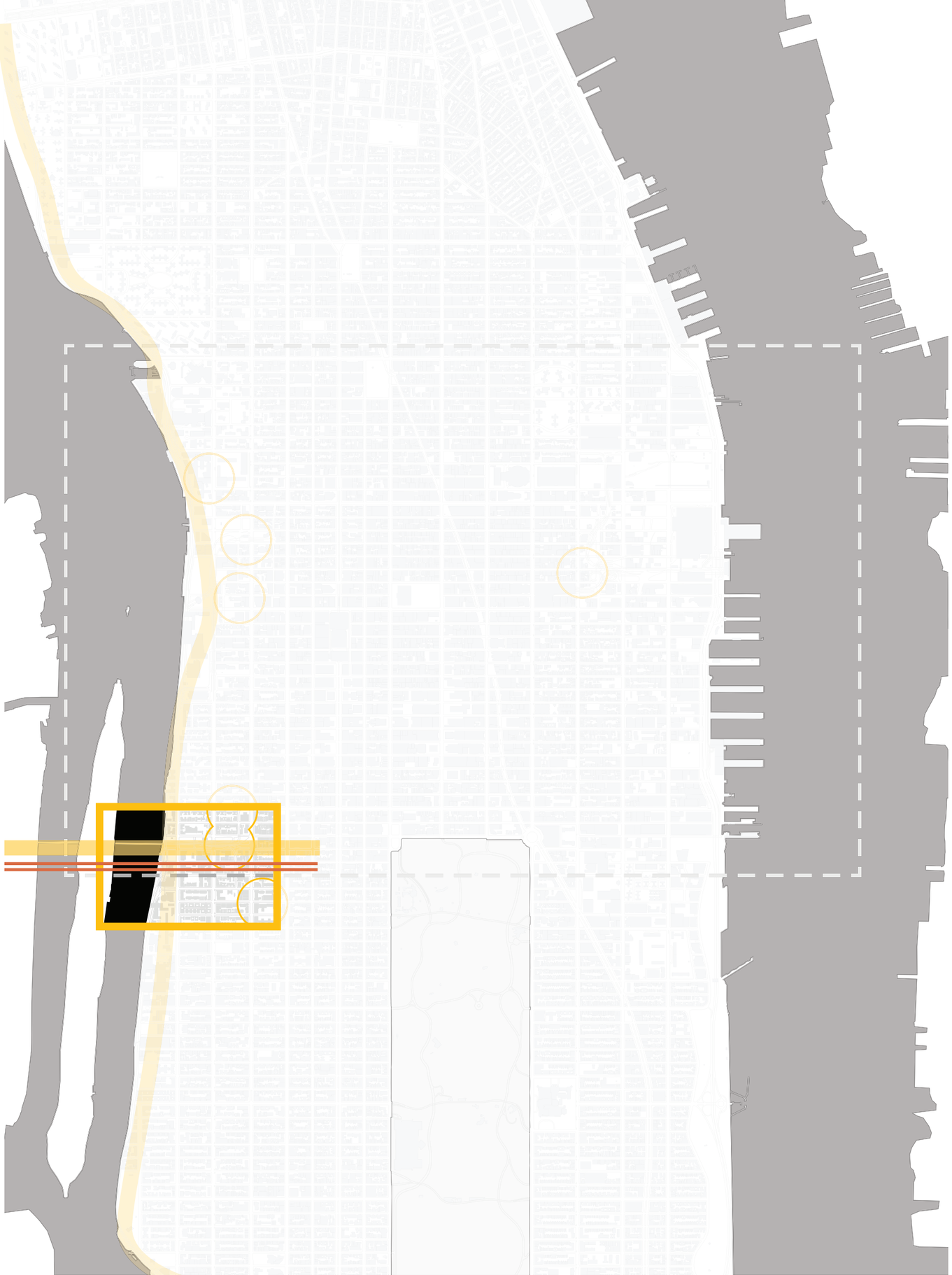
Where do we leave al those shared cars?

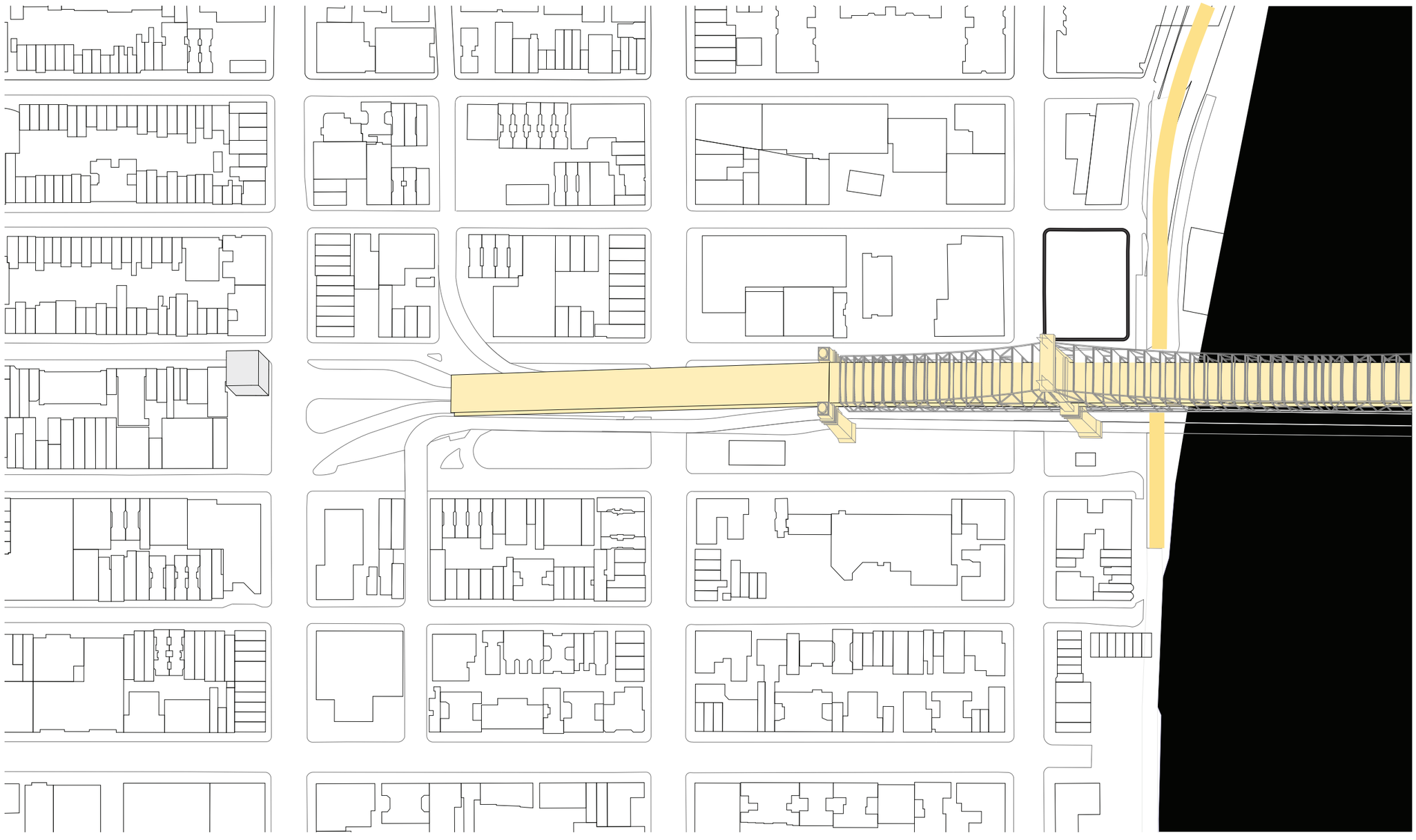
Following the tradition of the big car companies in the 1900s

Popping up in the grid

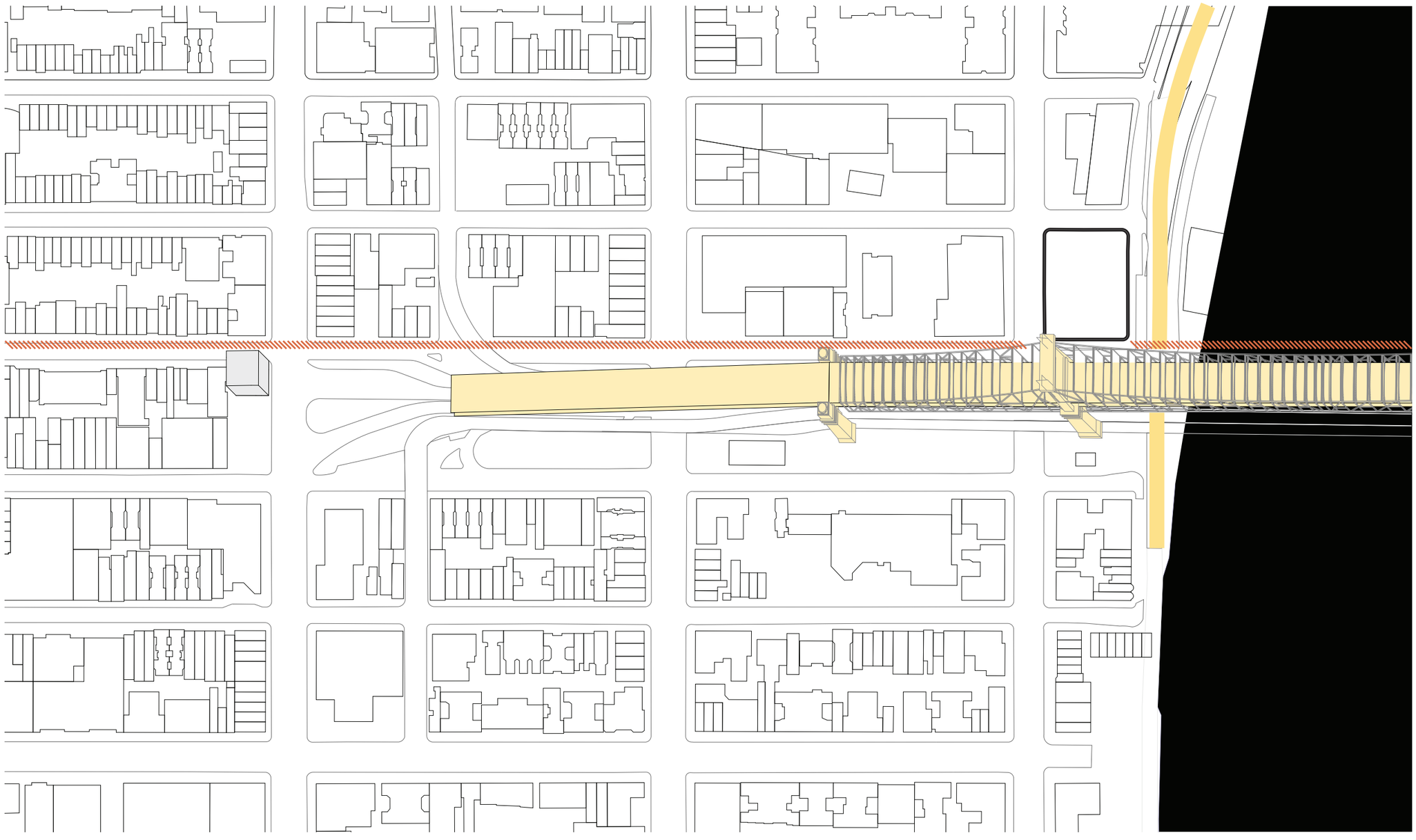

A hub part of a greater
network in the city

Frank D. Roosevelt
Highway
Hudson parkway
Highway links

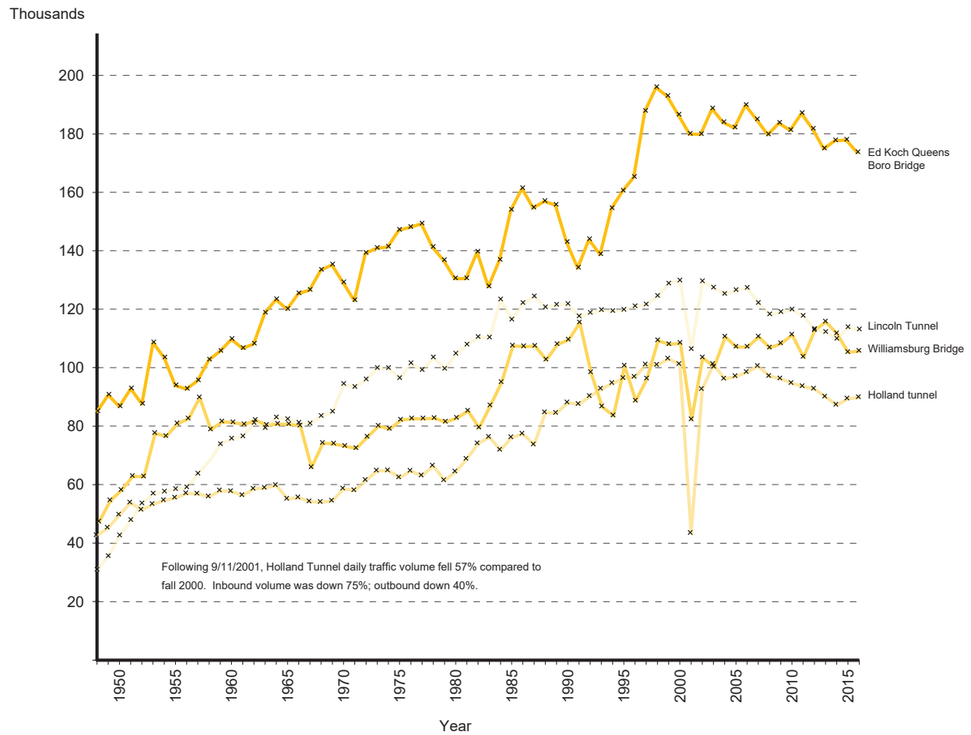




Bridge and highway cutting through the area



The highway and subway meet but don’t intersect or stop



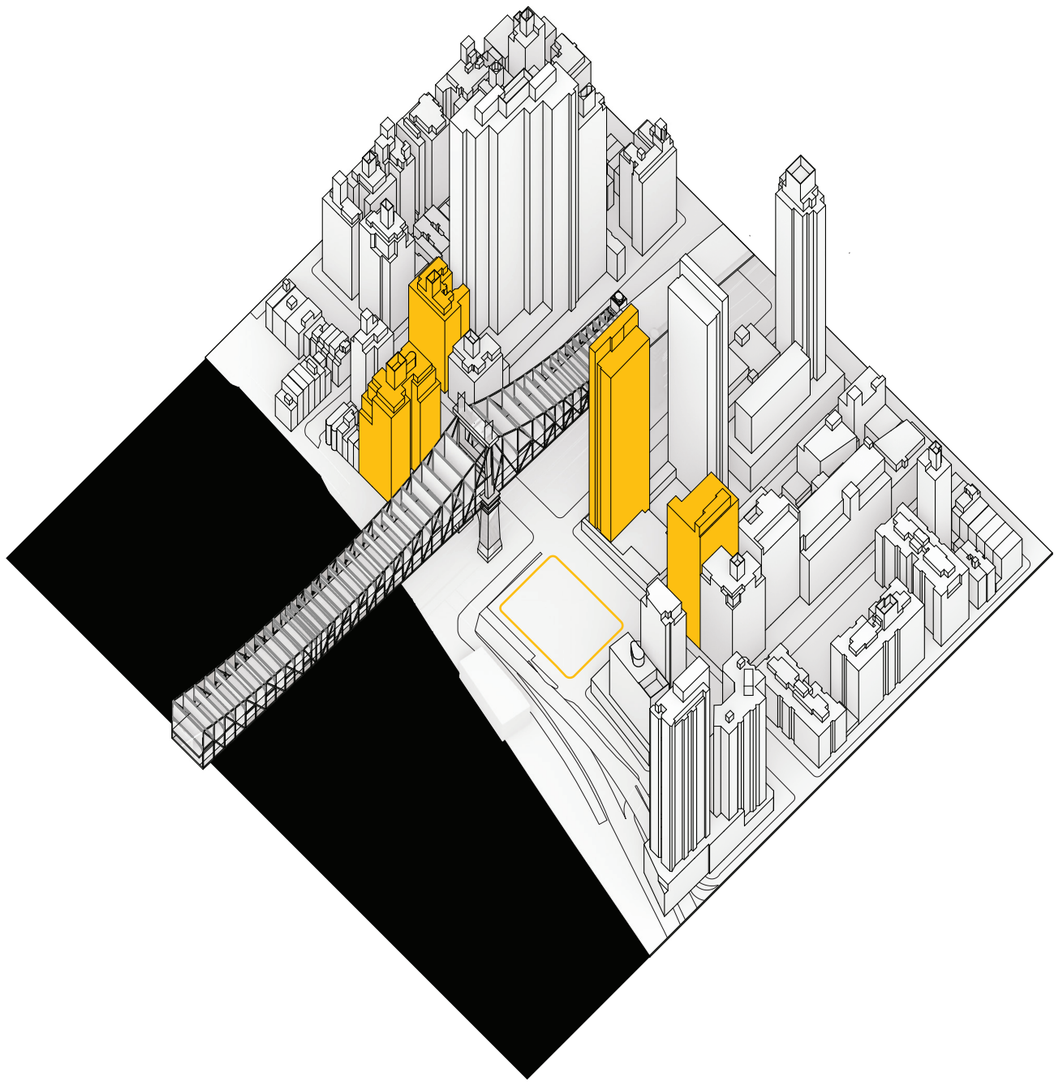
Bussiest Bridge over the East river

The cars only passes through this area

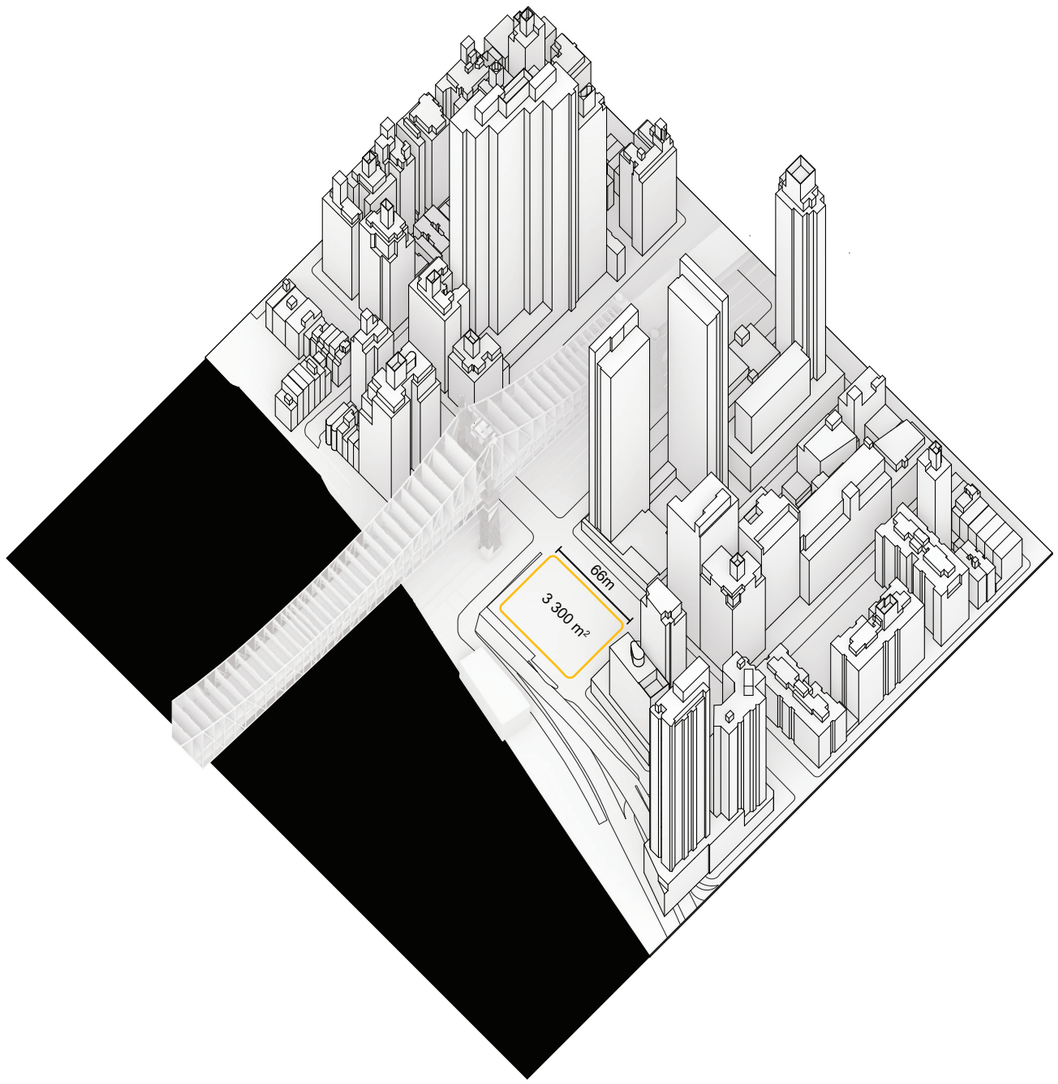
A park and a highway area

Site

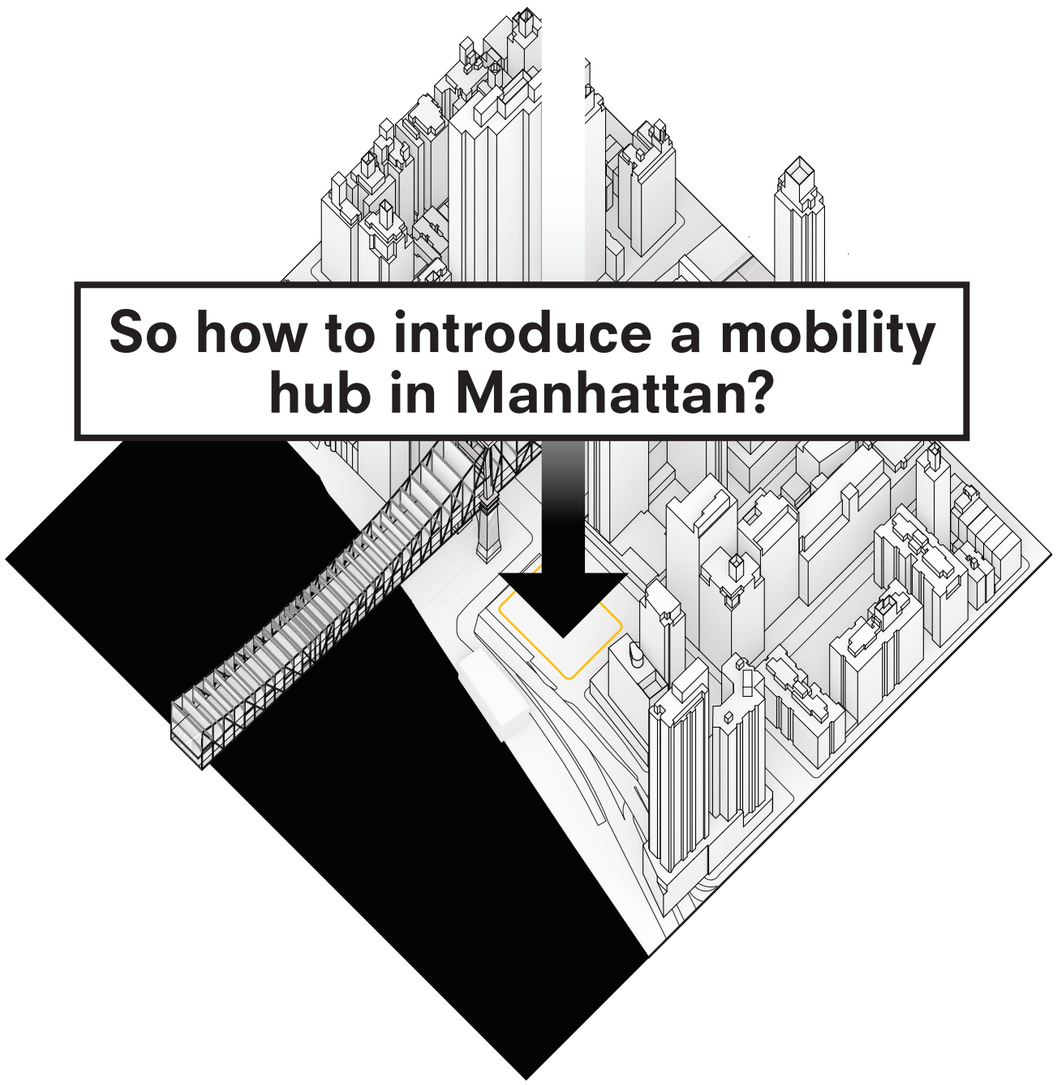
Unused waterfront



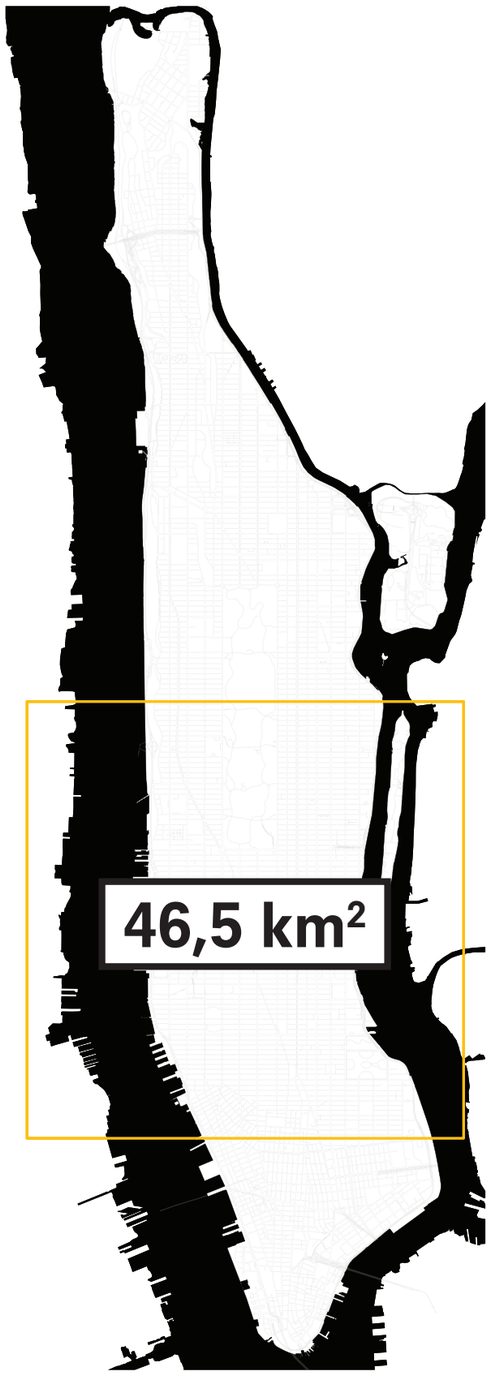
Surrounded by towers



Plot info


So how to introduce a mobility hub in Manhattan?

The car street parking problem of NY



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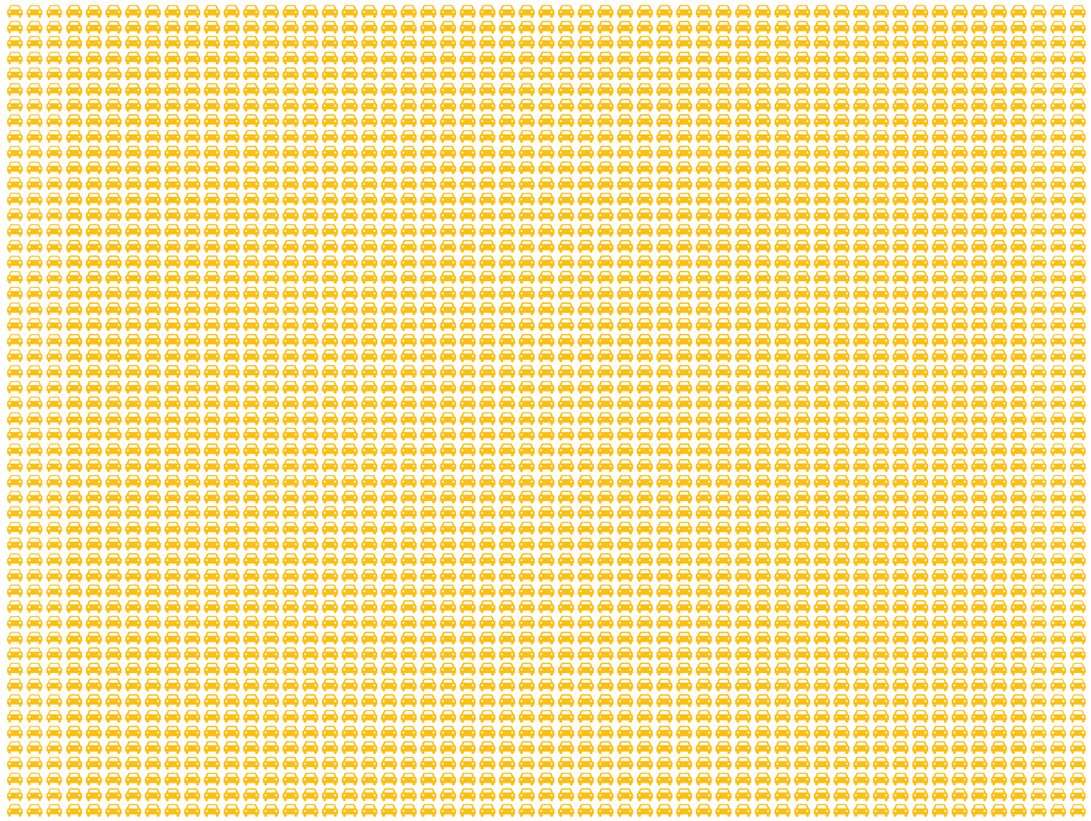
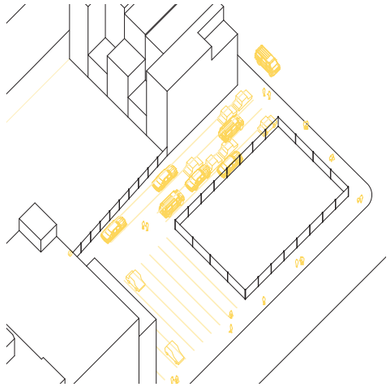
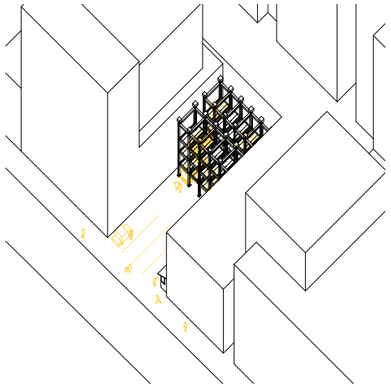


x 1000 street parking spots

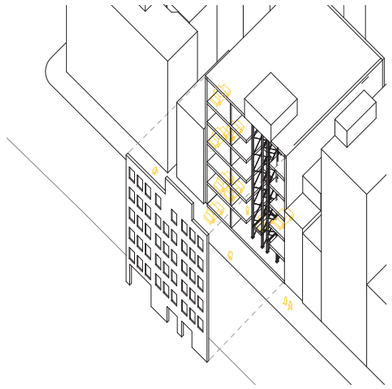
2 776 000 car spots



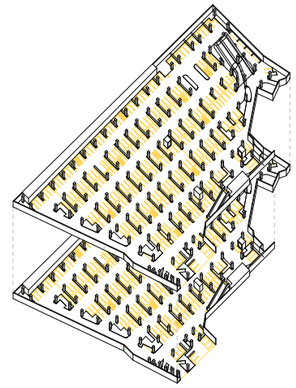
01 Parking lot Manhattan



02 Infill stacked parking



03 Transformed parkinghouse

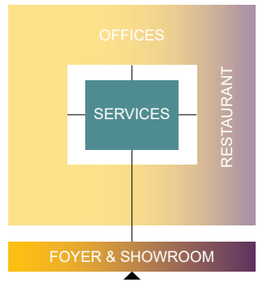


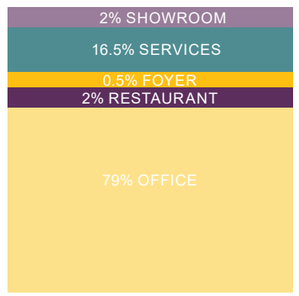
04 Underground parking

Other parking typologies in NYC

CAR SHARE
Connecting parking, carsharing,
ridehailing, the subway
and the Tesla headquarter
CAR SHARE
02

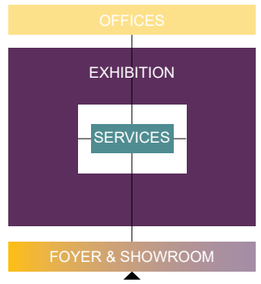
CHRYSLER BUILDING
1930

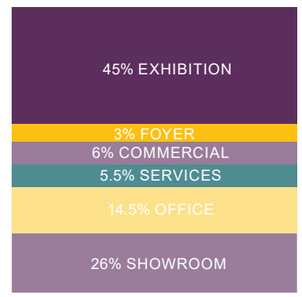




96 180 M2

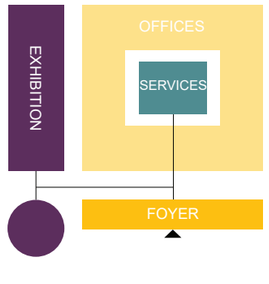
MERCEDES
2006

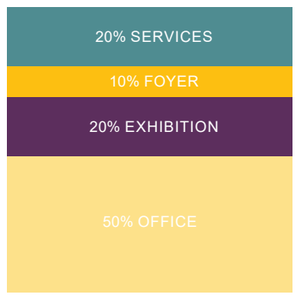




35 000 M2

BMW
2007

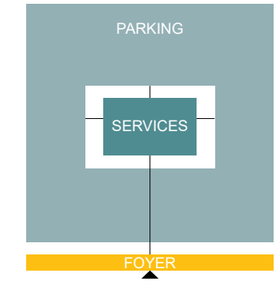


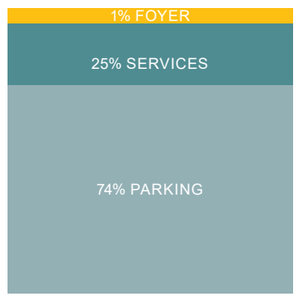


53 000 M2

Car headquarter trends

KENT GARAGES
1928

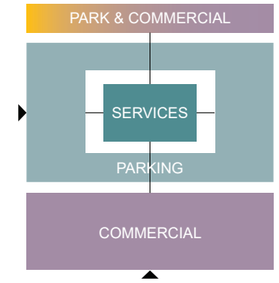


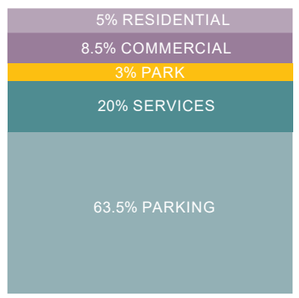


18 000 M2

906

LINCOLN ROAD
2010

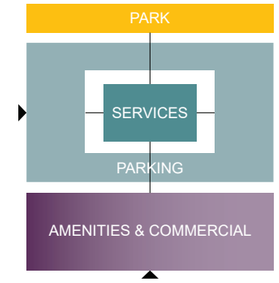


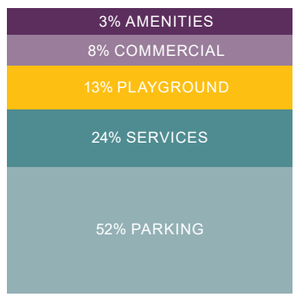


22,575 M2

300

PARK ‘N PLAY
2016





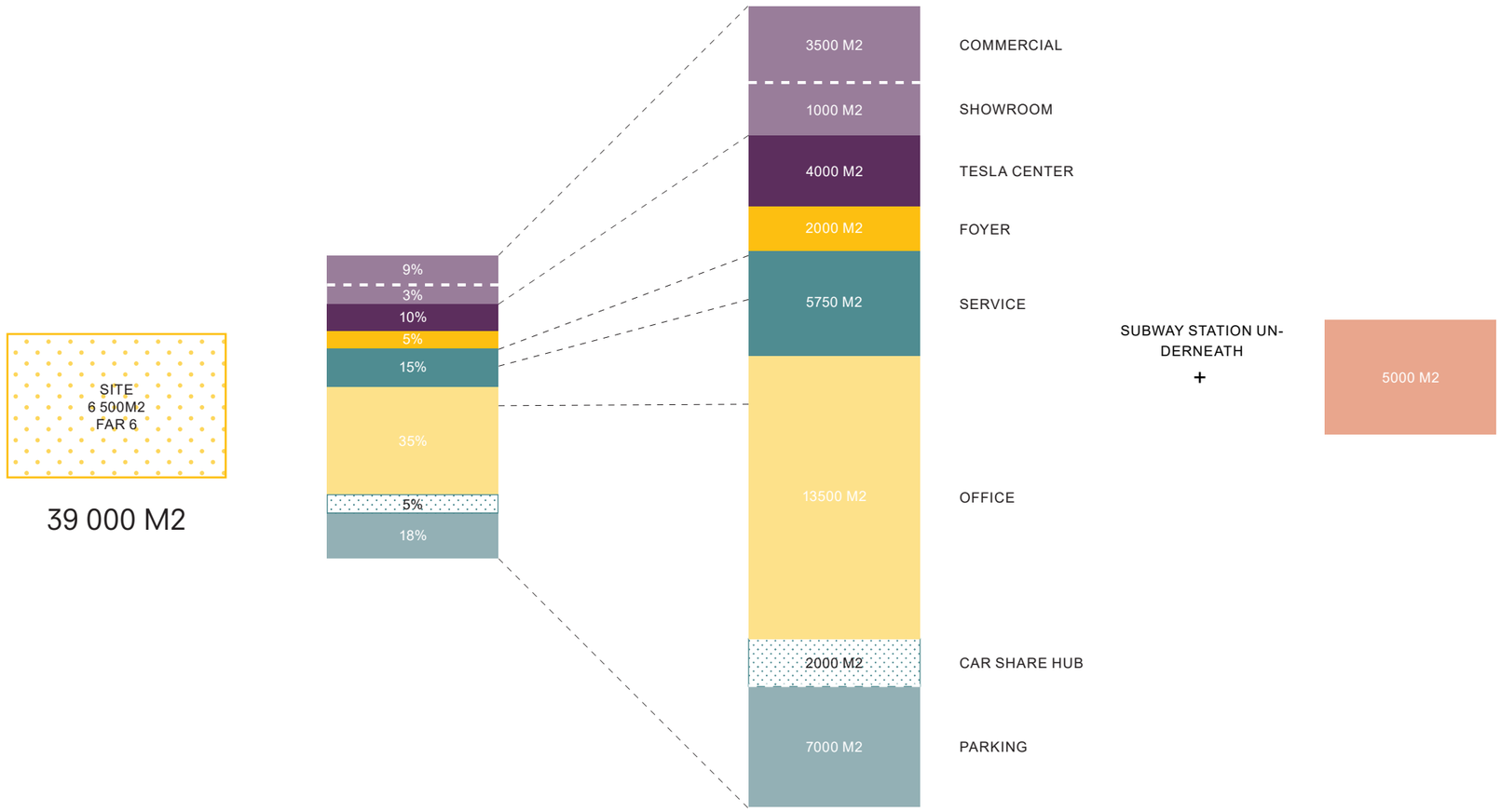
19 200 M2

490

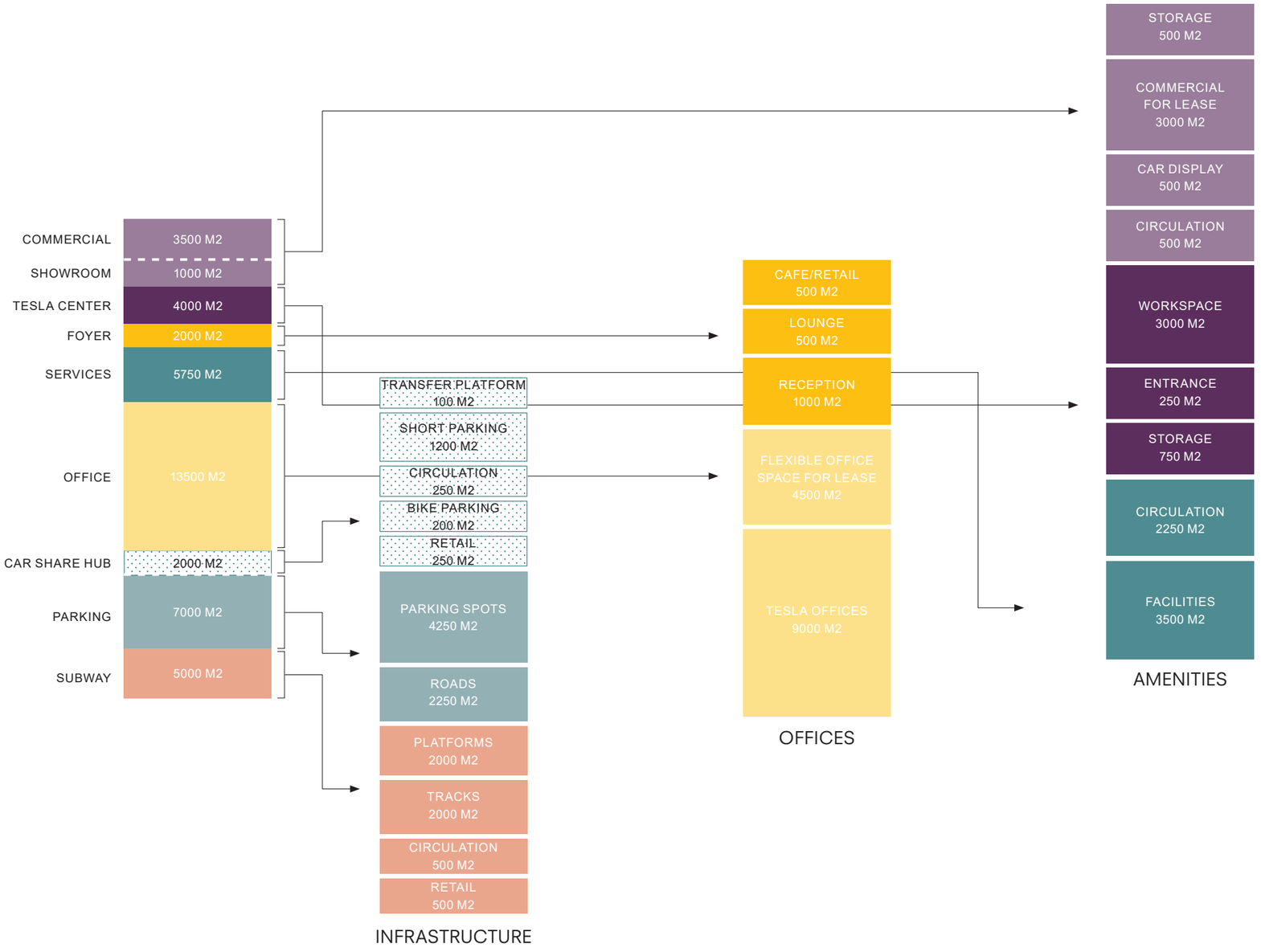
Parkinggarage trends

Trend fot HQ is to be more multifunctional and more open to the public

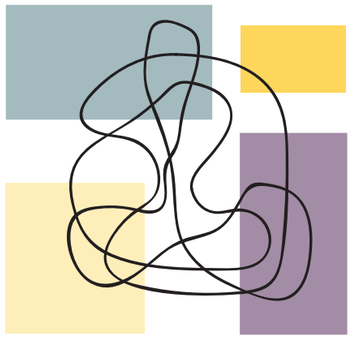
From experience for the car to focus on its relation with the city


SITE
6 500M2
FAR 6
39 000 M2
9%
3%
10%
5%
15%
35%
5%
18%
3500 M2
1000 M2
4000 M2
2000 M2
5750 M2
13500 M2
2000 M2
7000 M2
COMMERCIAL
SHOWROOM
TESLA CENTER
FOYER
SERVICE
OFFICE
CAR SHARE HUB
PARKING
SUBWAY STATION UN-
DERNEATH
+
5000 M2

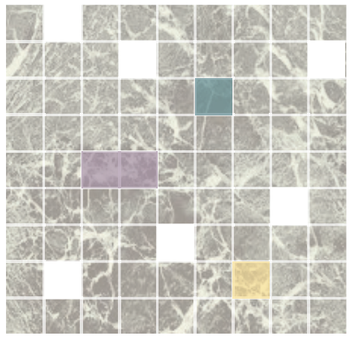
Program bar


COMMERCIAL
3500 M2
SHOWROOM
1000 M2
TESLA CENTER
4000 M2
FOYER
2000 M2
SERVICES
5750 M2
OFFICE
13500 M2
CAR SHARE HUB
2000 M2
PARKING
7000 M2
SUBWAY
5000 M2
TRANSFER PLATFORM
100 M2
SHORT PARKING
1200 M2
CIRCULATION
250 M2
BIKE PARKING
200 M2
RETAIL
250 M2
PARKING SPOTS
4250 M2
ROADS
2250 M2
PLATFORMS
2000 M2
TRACKS
2000 M2
CIRCULATION
500 M2
RETAIL
500 M2
INFRASTRUCTURE
CAFE/RETAIL
500 M2
LOUNGE
500 M2
RECEPTION
1000 M2
FLEXIBLE OFFICE
SPACE FOR LEASE
4500 M2
TESLA OFFICES
9000 M2
OFFICES
STORAGE
500 M2
COMMERCIAL
FOR LEASE
3000 M2
CAR DISPLAY
500 M2
CIRCULATION
500 M2
WORKSPACE
3000 M2
ENTRANCE
250 M2
STORAGE
750 M2
CIRCULATION
2250 M2
FACILITIES
3500 M2
AMENITIES

BRING THE CAR AND PROGRAM
INTO CONNECTION WITH THE CITY

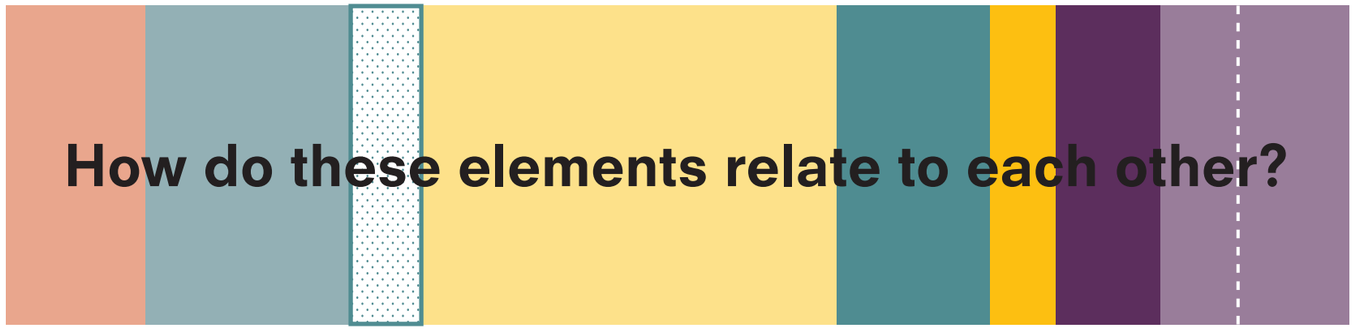


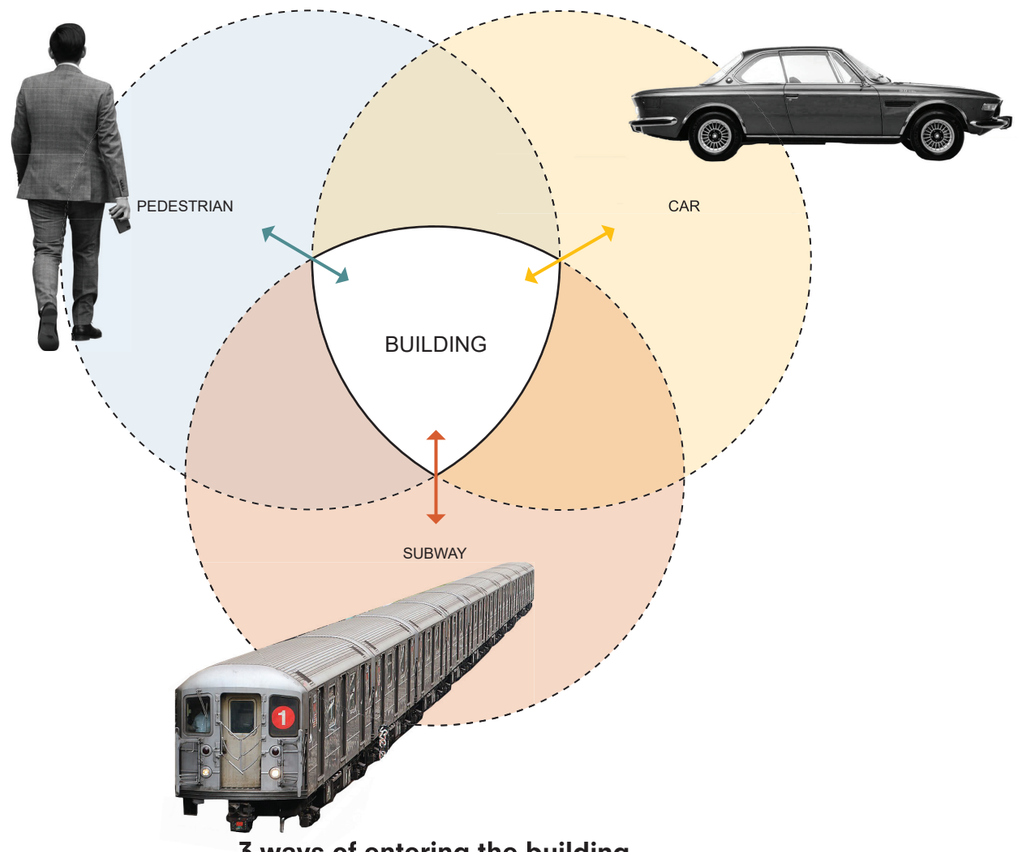
INTERNAL RELATIONS BETWEEN
DIVERSE PROGRAM



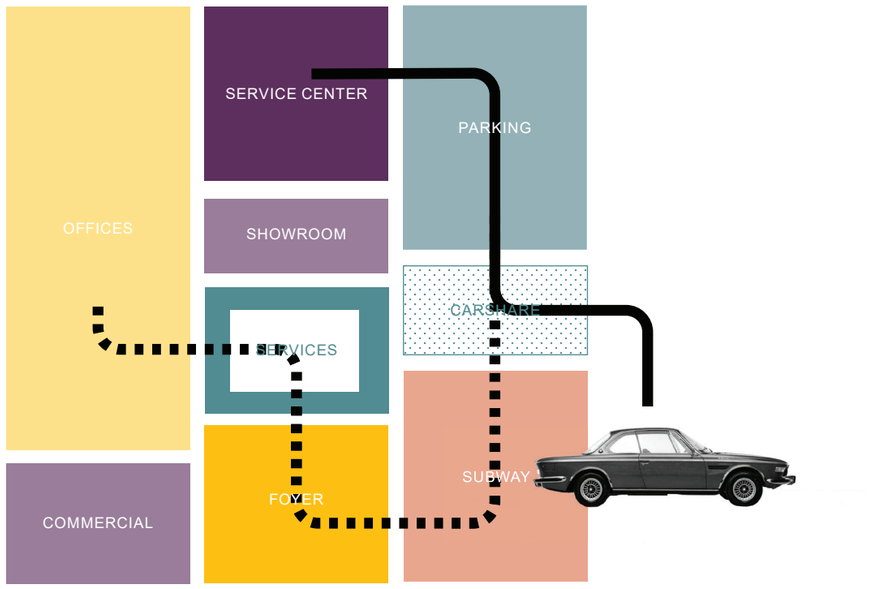
ROBUST LANDMARK AS A PILLAR OF
INFRASTRUCTURE

Character ambition

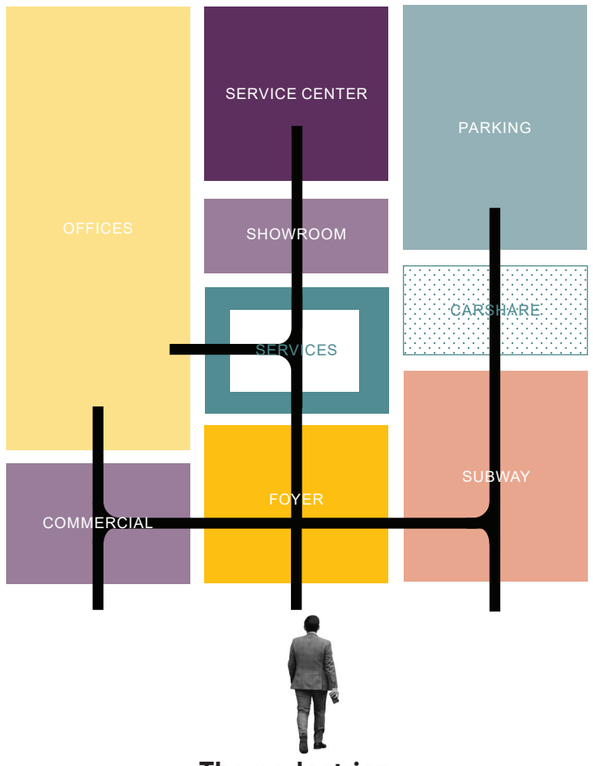

How do these elements relate to each other?



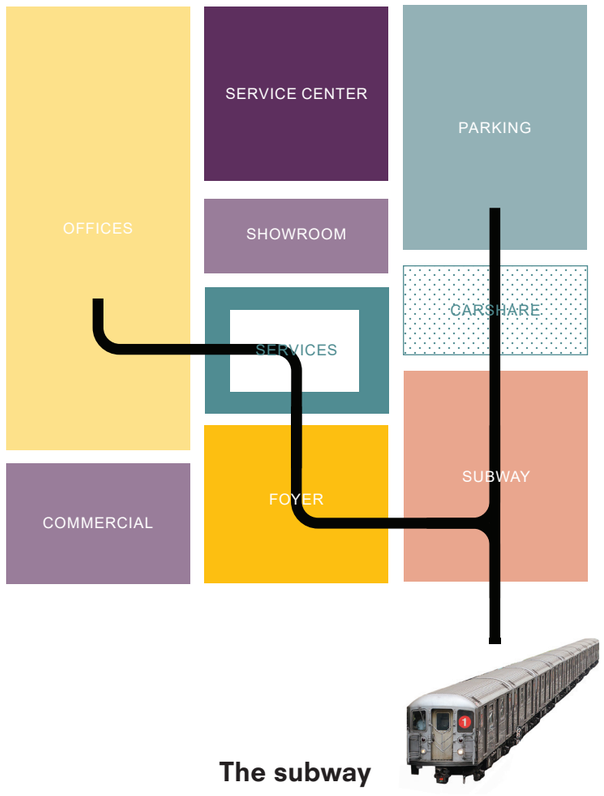
3 ways of entering the building


OFFICES
SERVICE CENTER
PARKING
SHOWROOM
CARSHARE
SERVICES
SUBWAY
FOYER
COMMERCIAL

The car

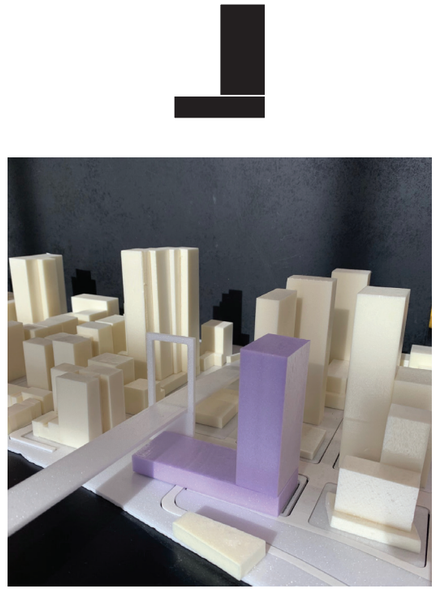
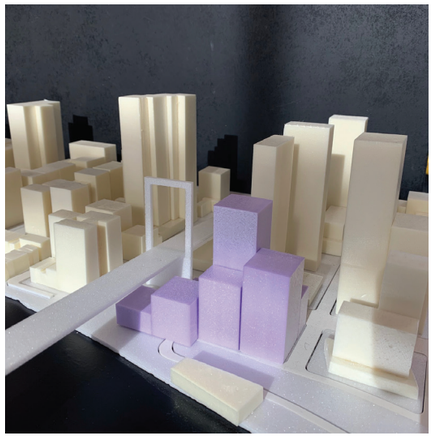
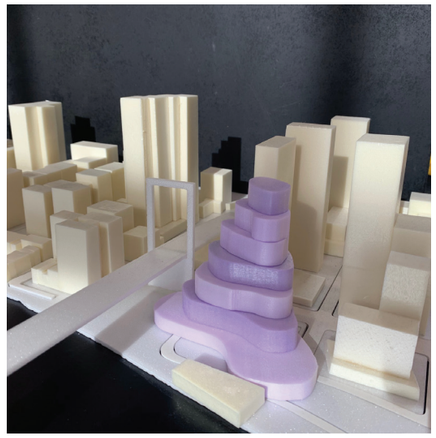
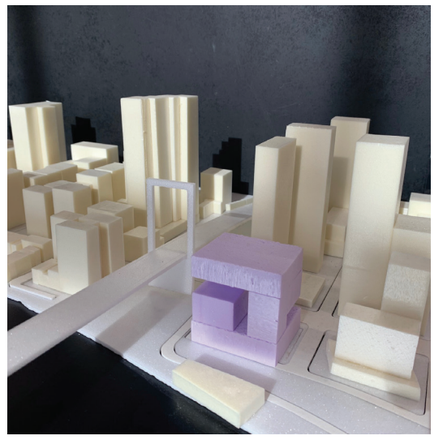
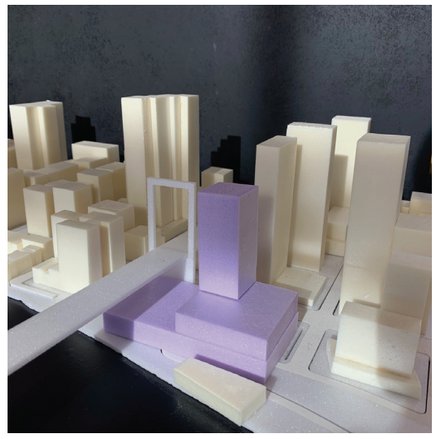
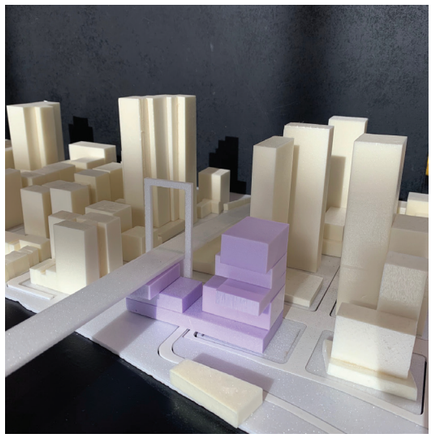
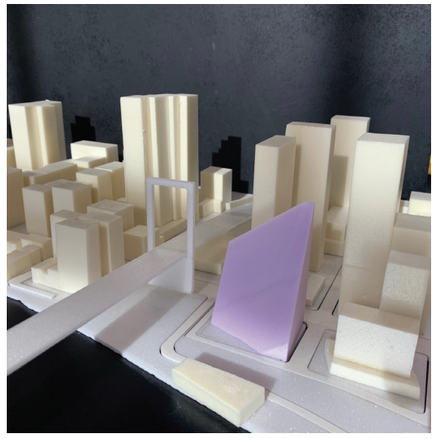
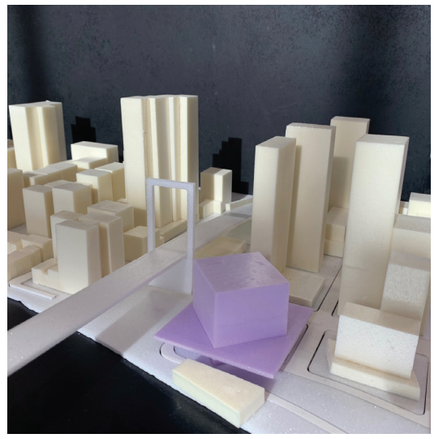
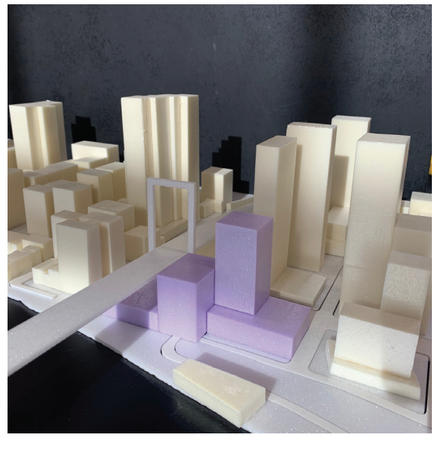
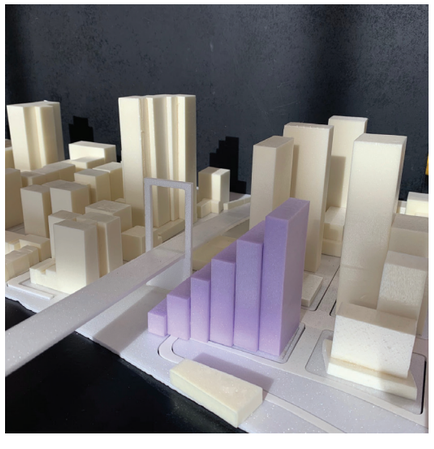
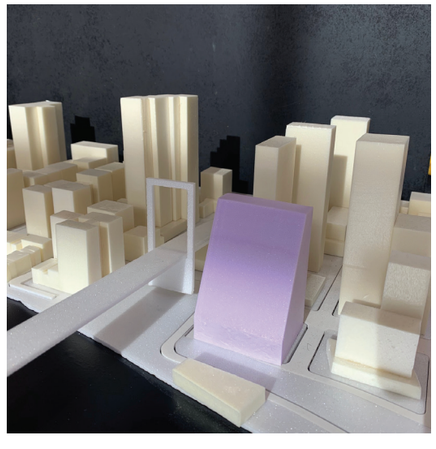


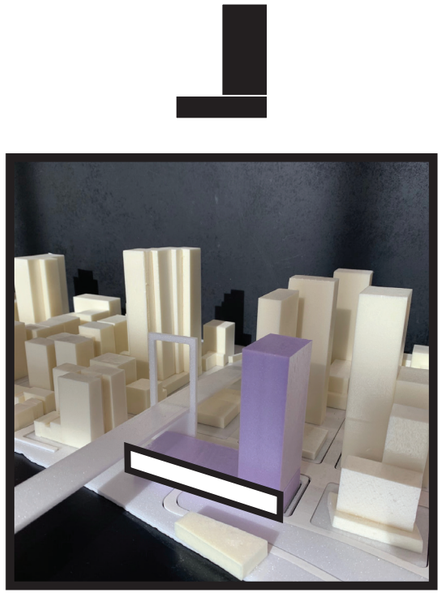
The pedestrian

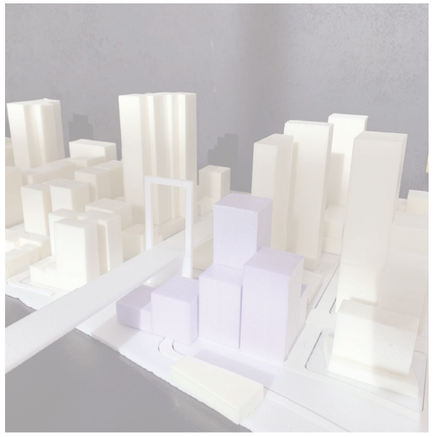

OFFICES
SERVICE CENTER
PARKING
SHOWROOM
CARSHARE
SERVICES
SUBWAY
FOYER
COMMERCIAL

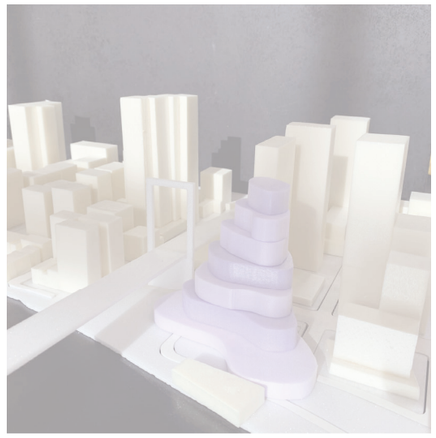
The subway

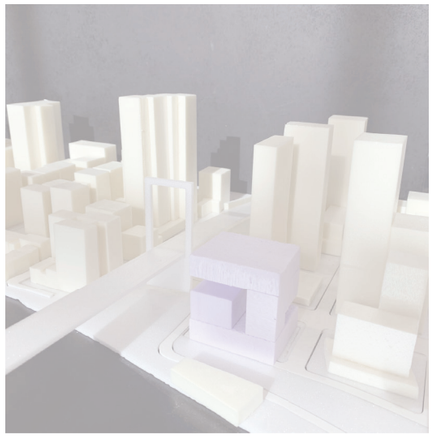
Horizontal landmark

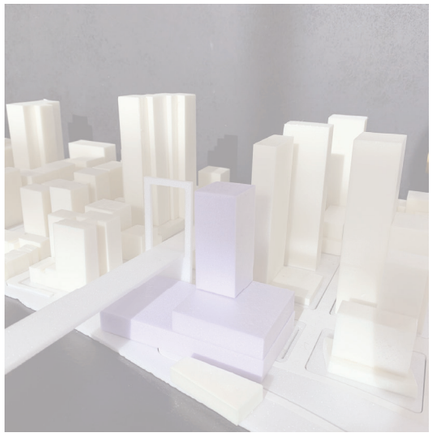












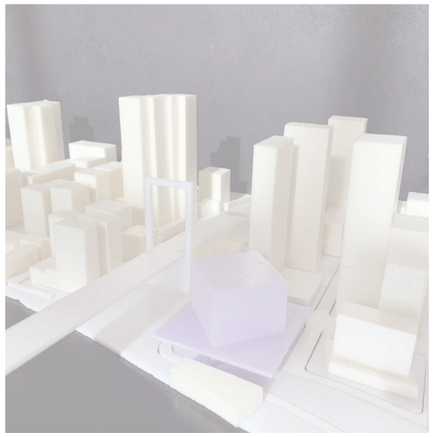




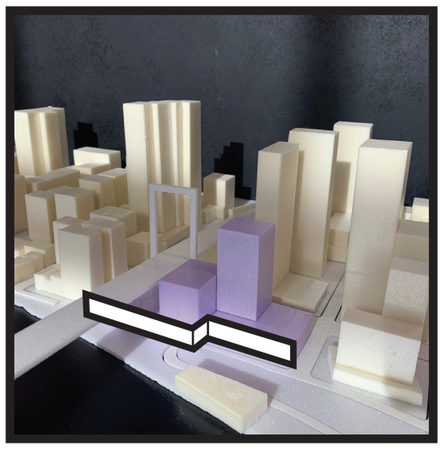


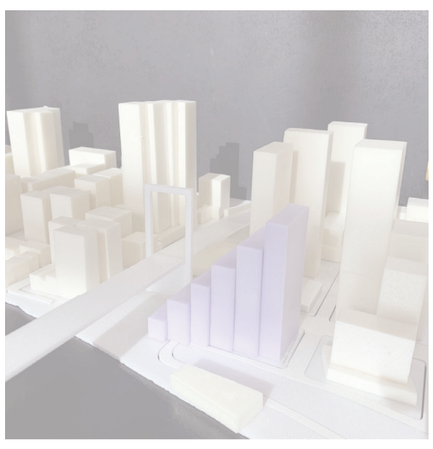


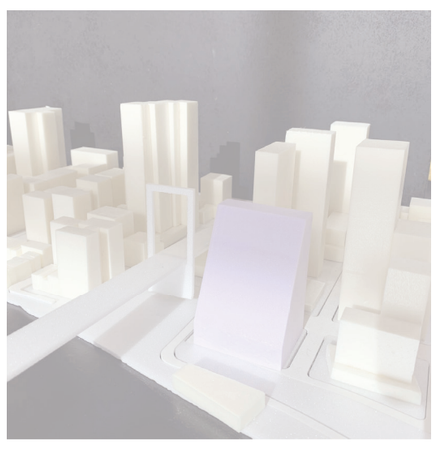


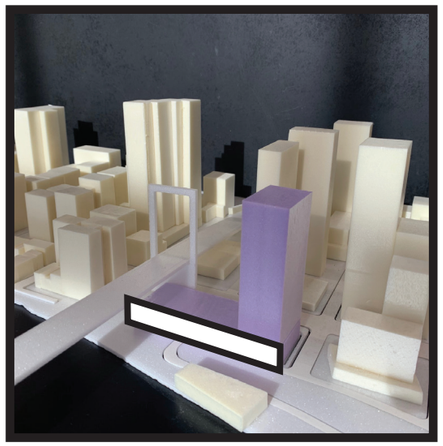


For the building to stand out in its context the building shape should be more horizontal

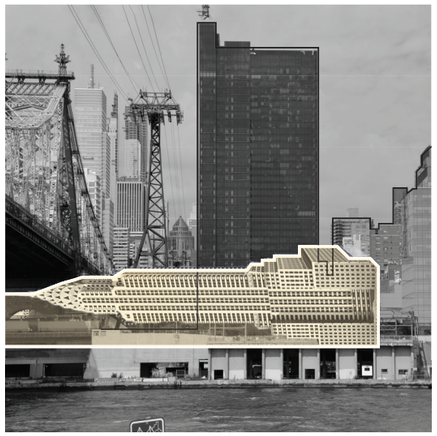






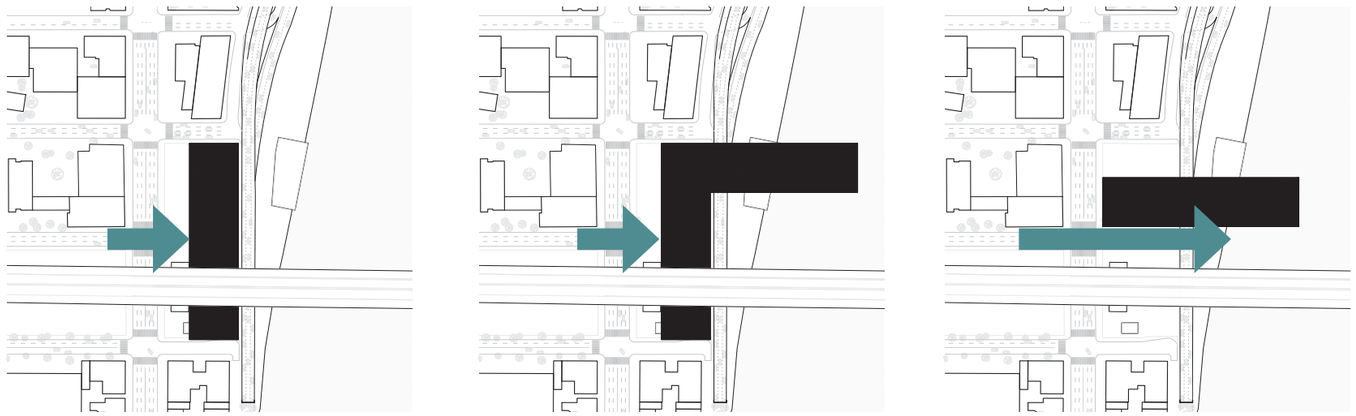


Blending in context



Contrasting with context

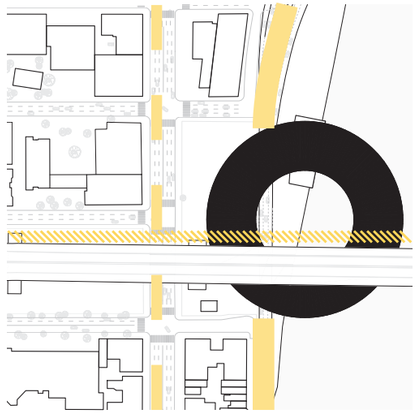
LINEAIR



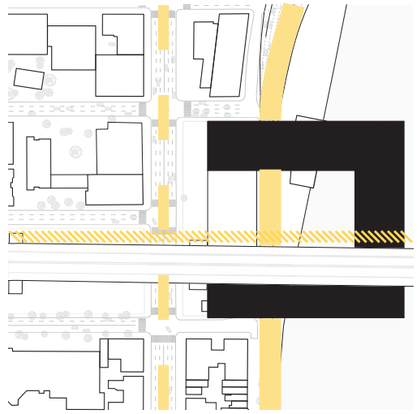
Enhance link with waterfront

LINEAIR

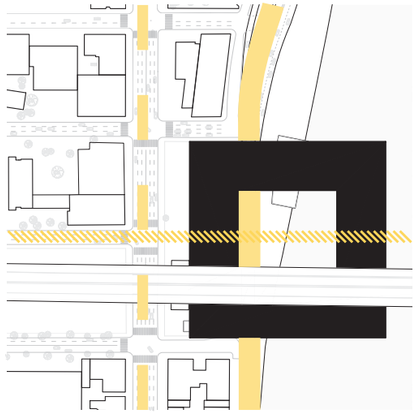
LOOPS



CIRCLE



U SHAPE



SQUARE

Nodal point in it’s surrounding

LINEAIR

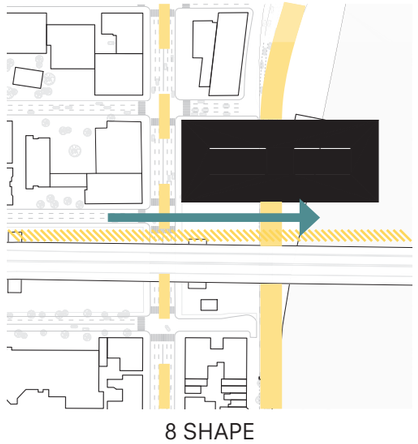
LOOPS

CIRCLE

U SHAPE

SQUARE

Nodal point in it’s surrounding



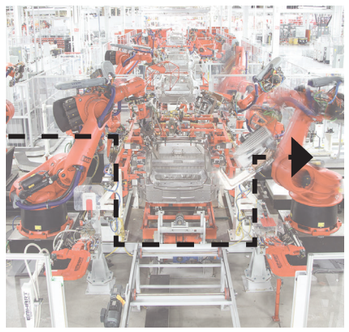
8 SHAPE

Linear Loop

Who is Tesla?

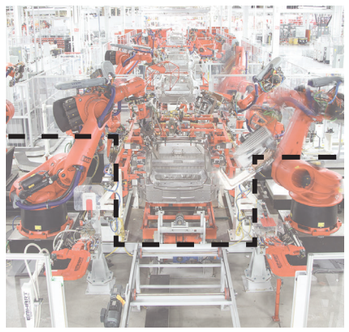
A long horizontal factory and office box

A long horizontal factory and office box



With the technique hidden

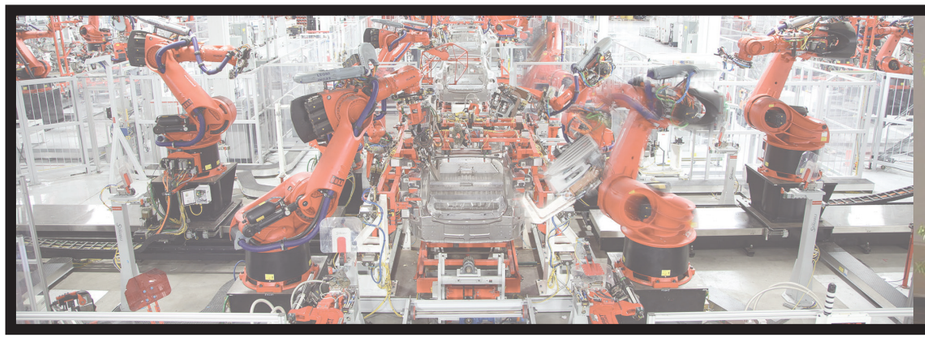
A long horizontal box



With the technique hidden

Being the office for the future of mobility

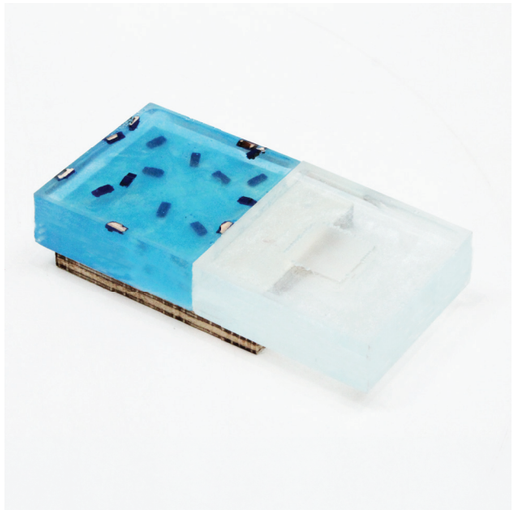
The box



Parking & Service

Office

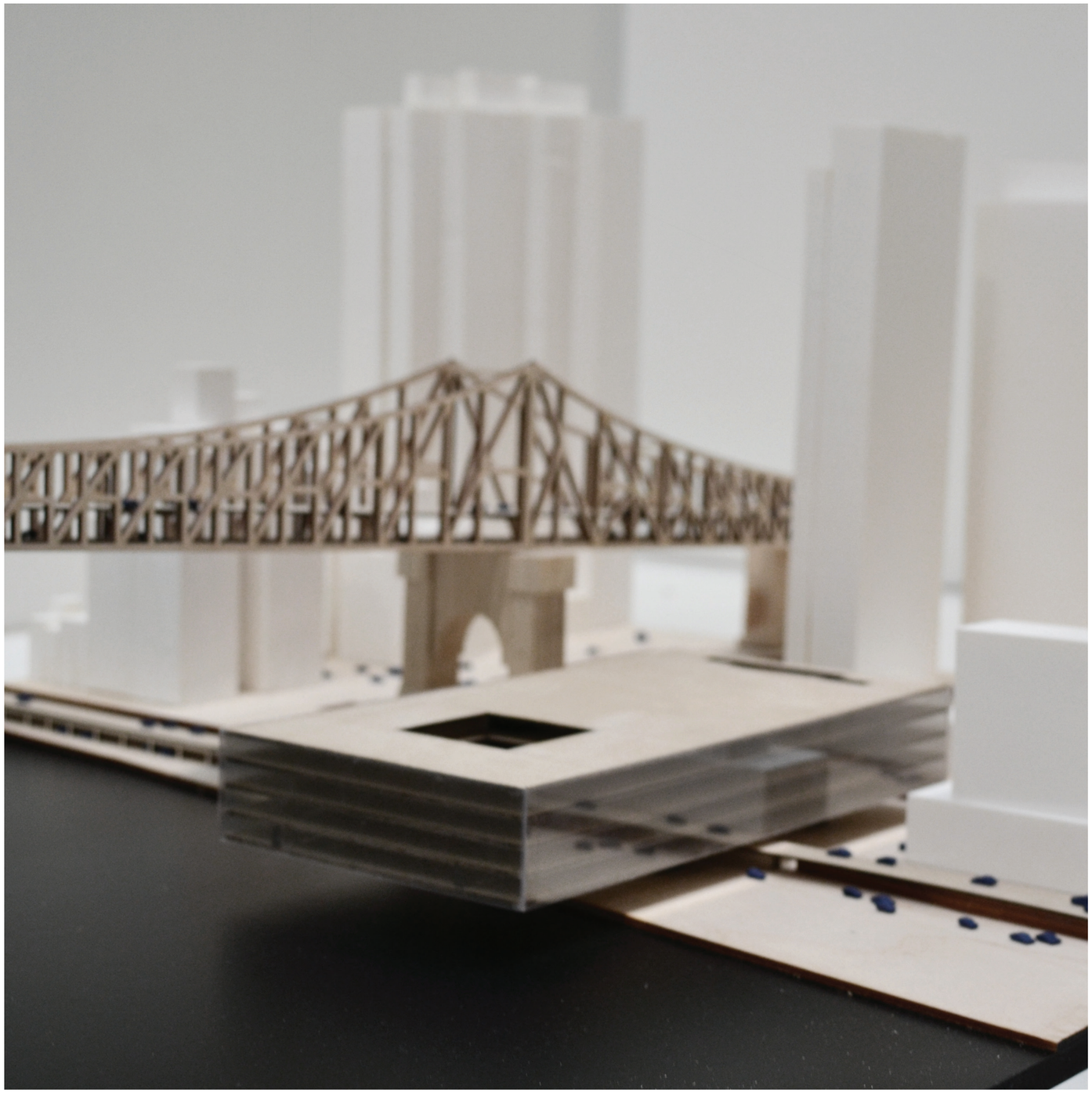
LINEAIR LOOP

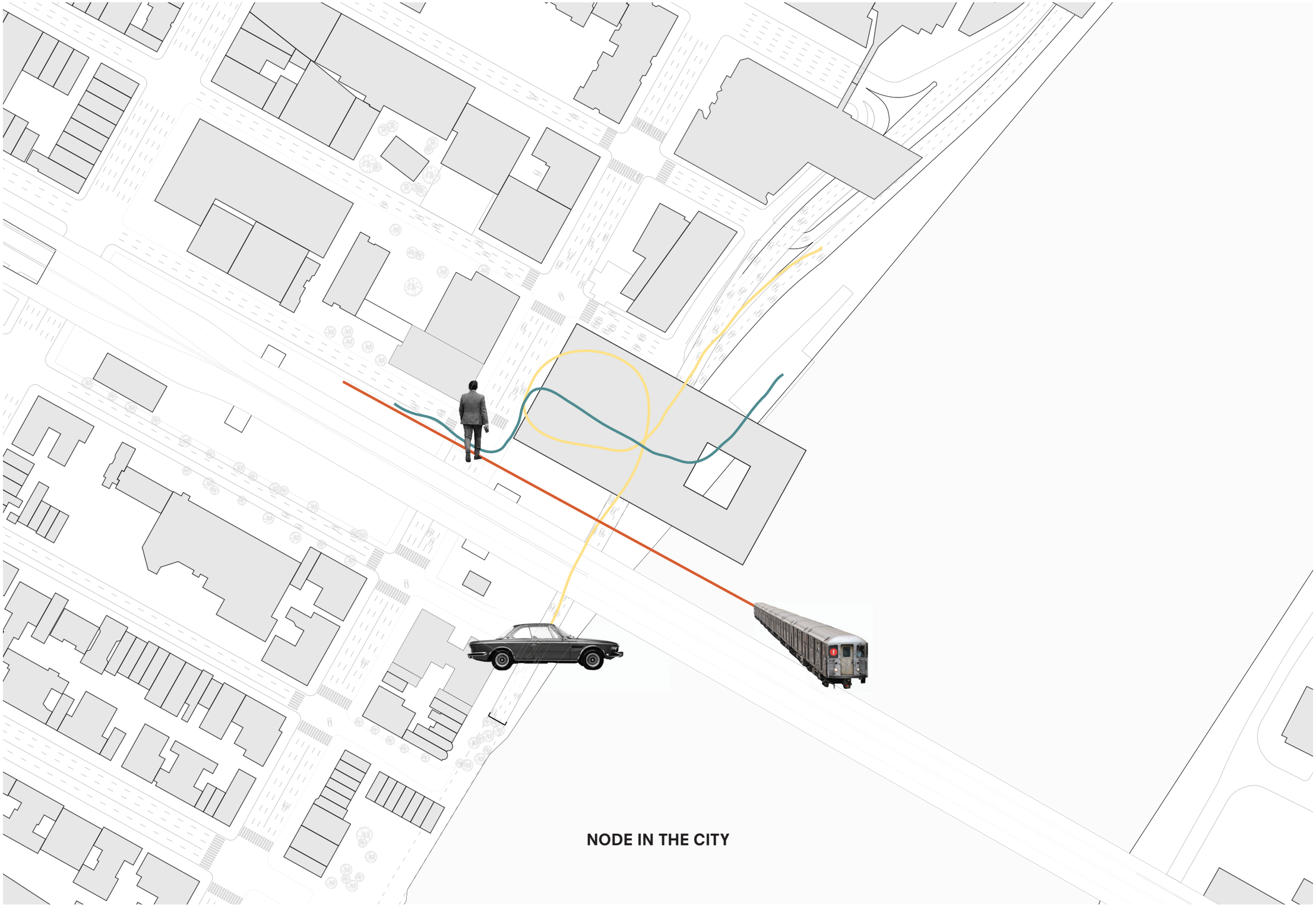


3 DIVISION

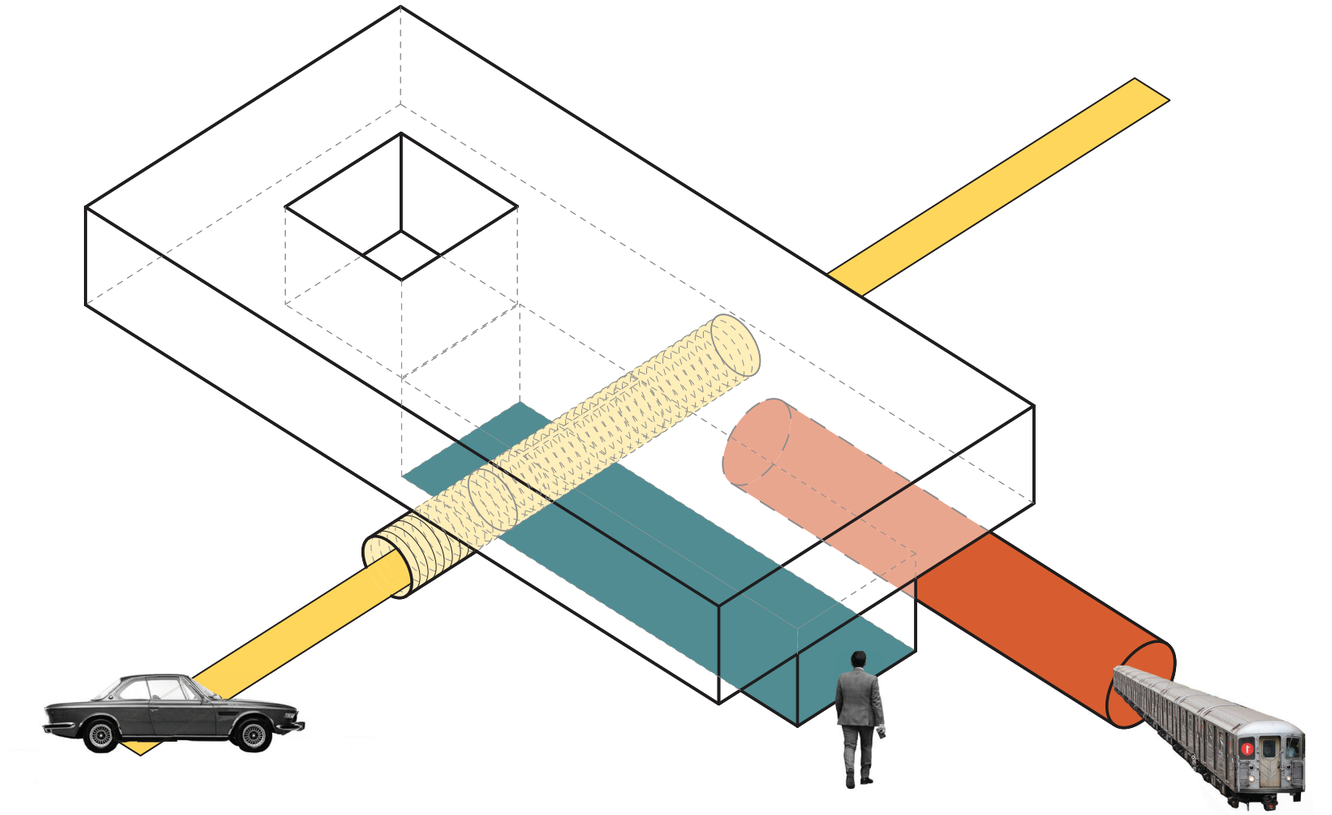
FLOATING BOX CONNECTING TO
THE WATER

Transitory spaces





NODE IN THE CITY

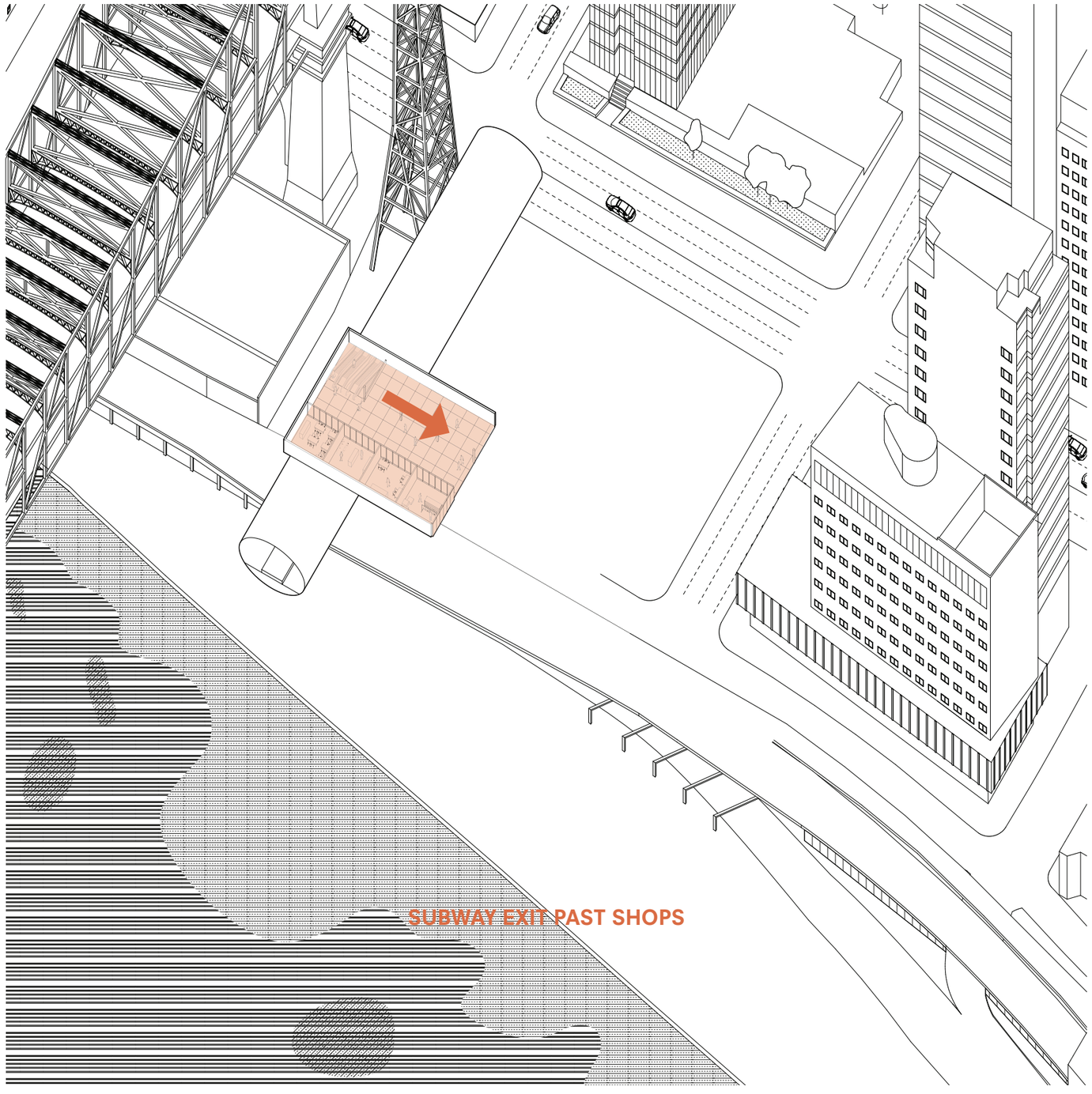


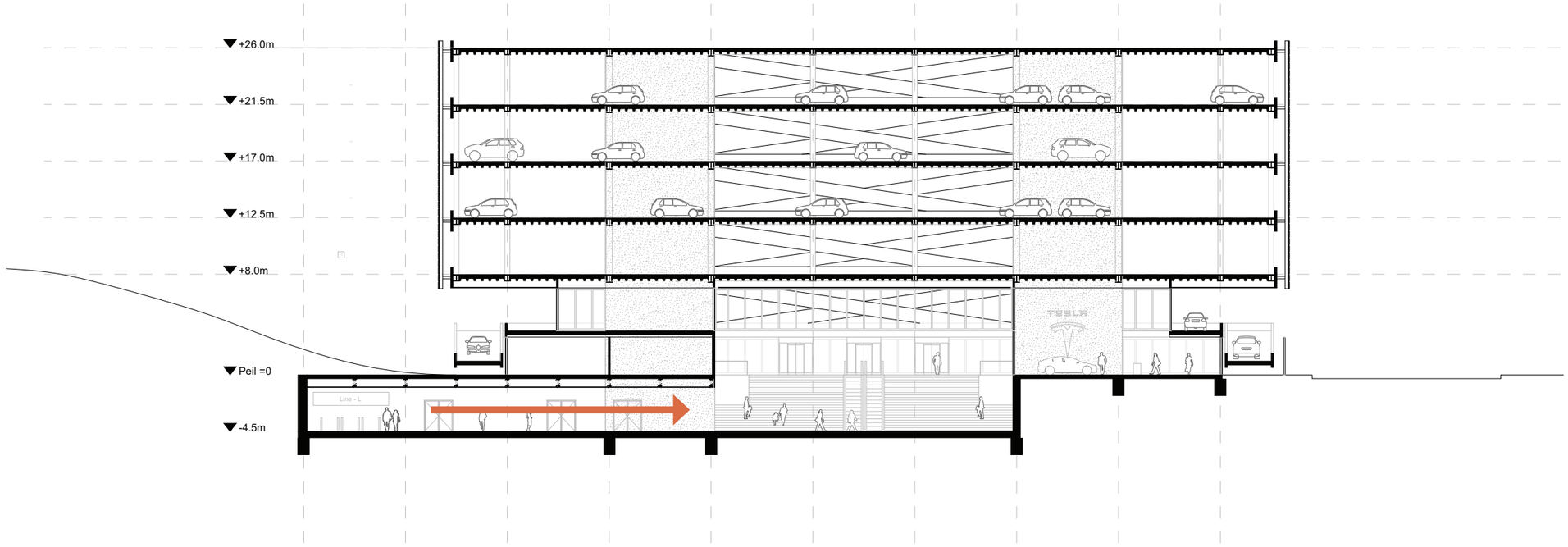
THE CAR

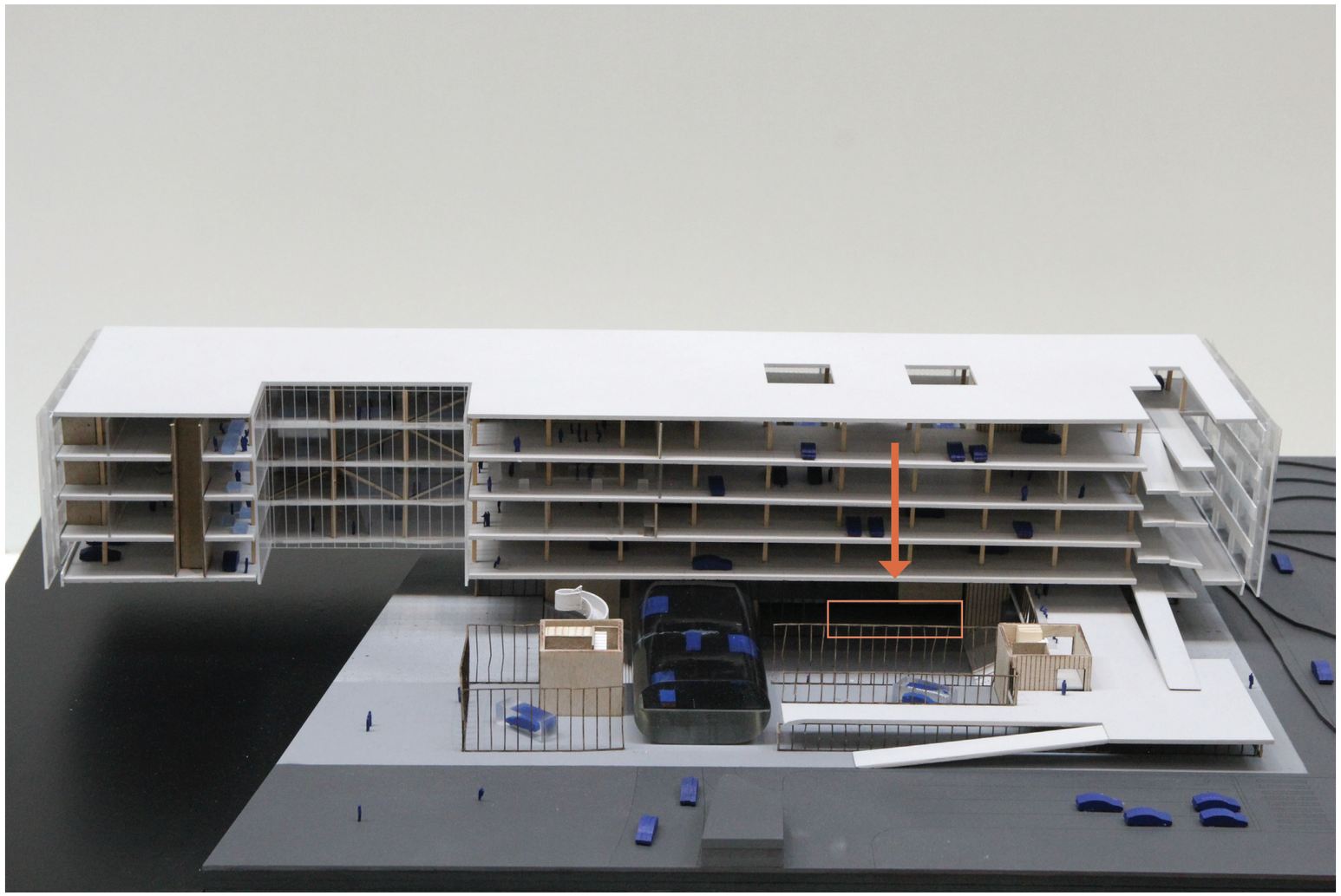
THE PEDESTRIAN

THE SUBWAY

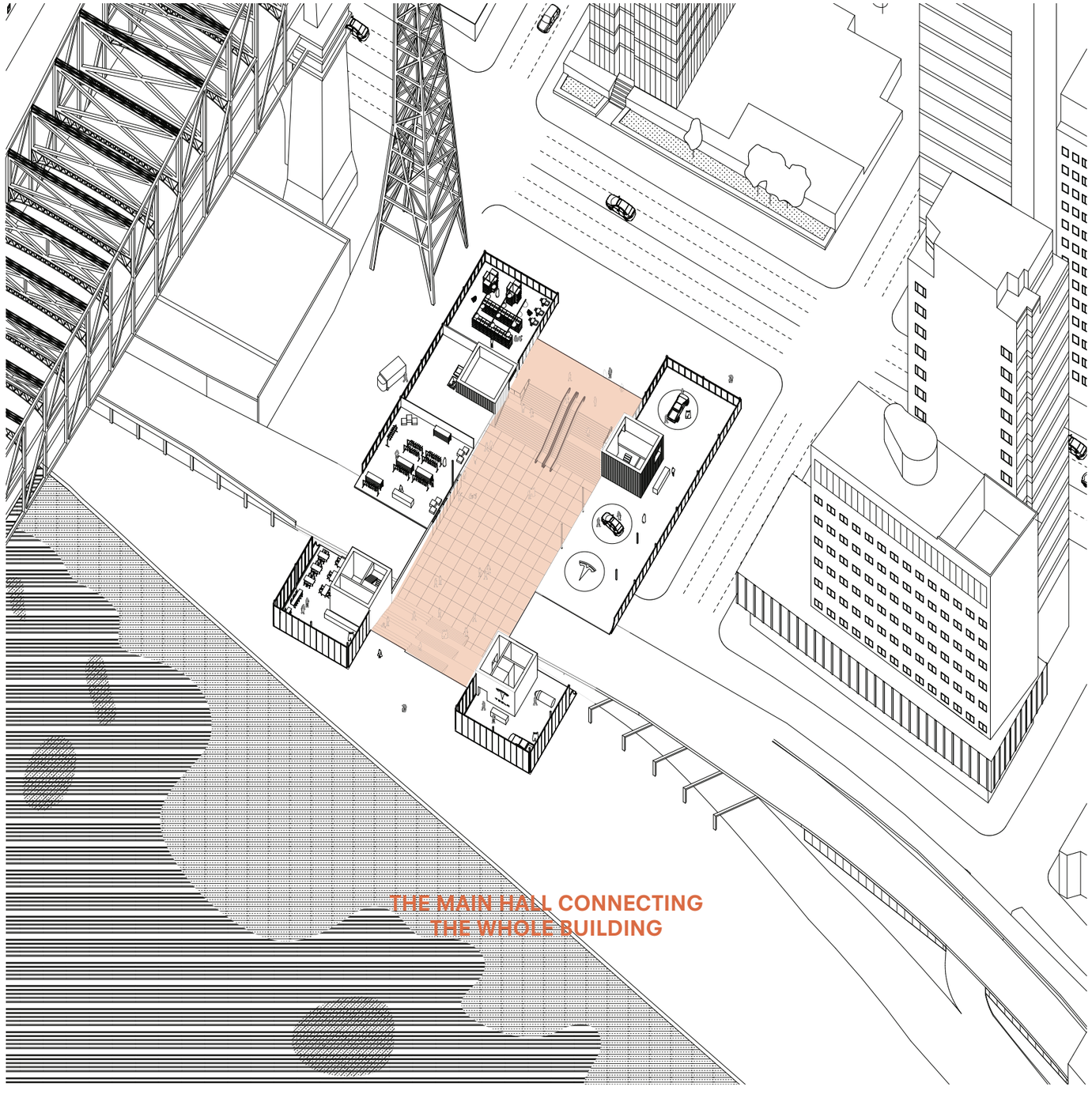
THE SUBWAY

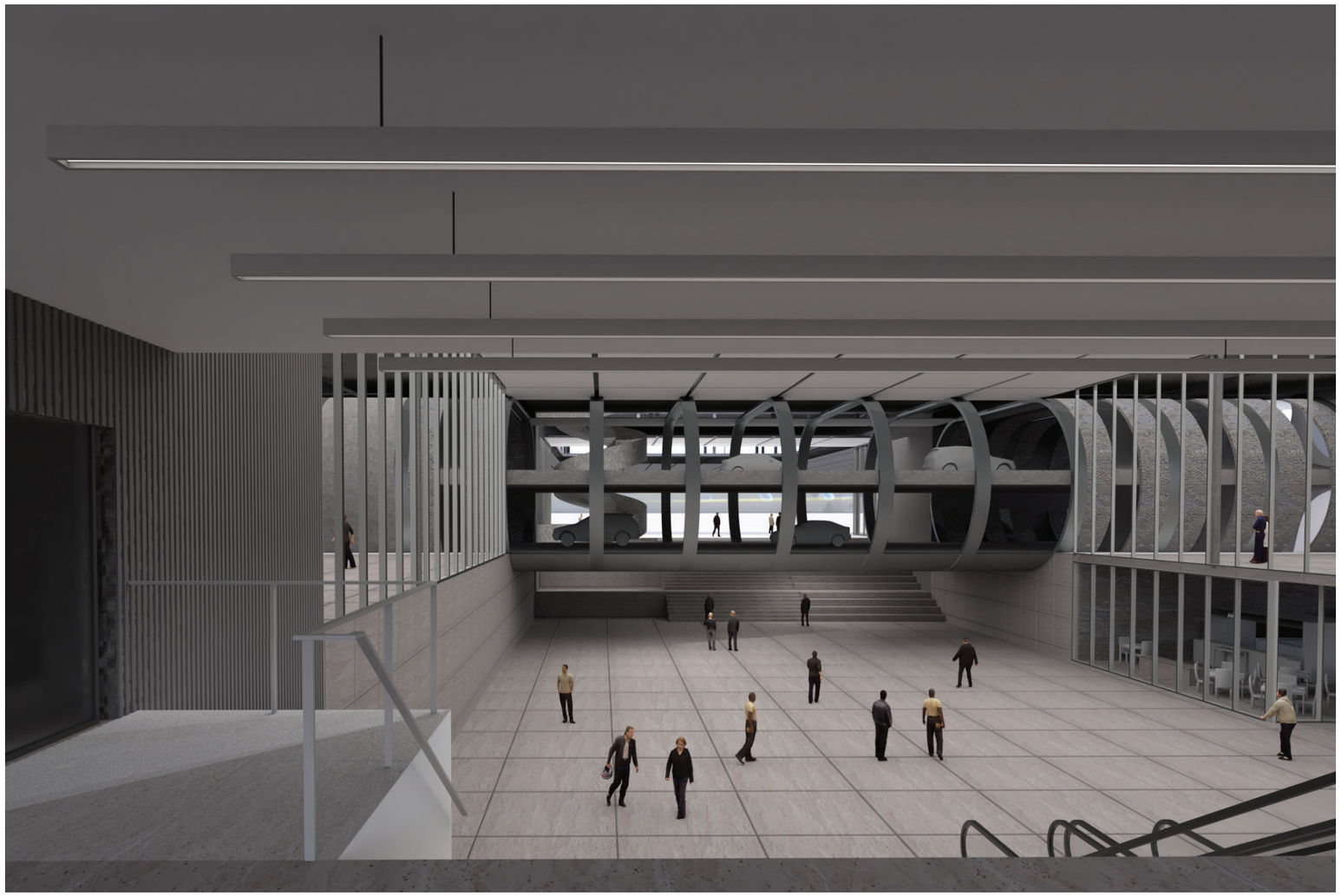

SUBWAY EXIT PAST SHOPS


+26.0m
+21.5m
+17.0m
+12.5m
+8.0m
Peil =0
-4.5m
Line - L
TESLA

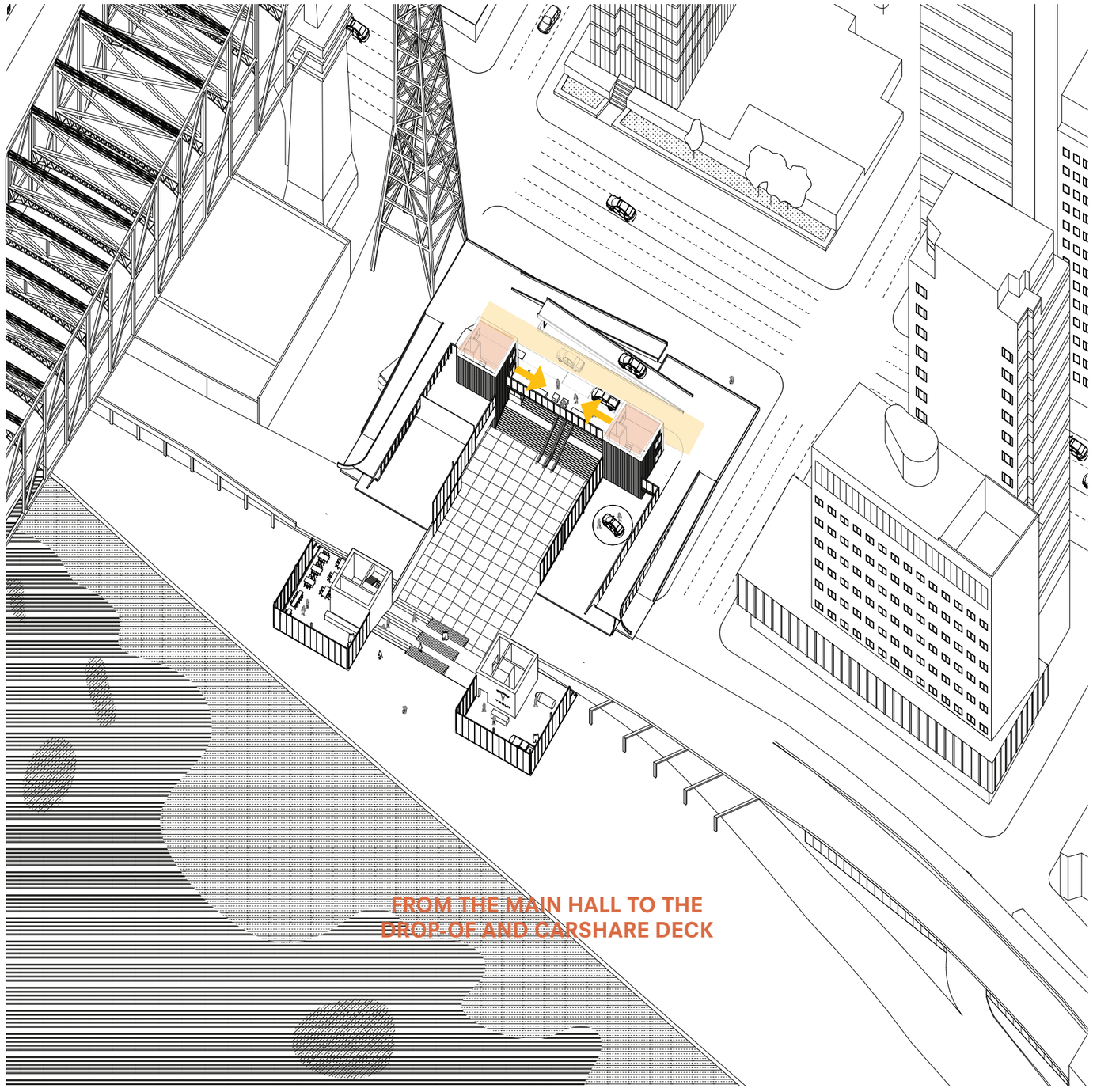


EXITING INTO THE MAIN HALL


THE MAIN HALL CONNECTING
THE WHOLE BUILDING

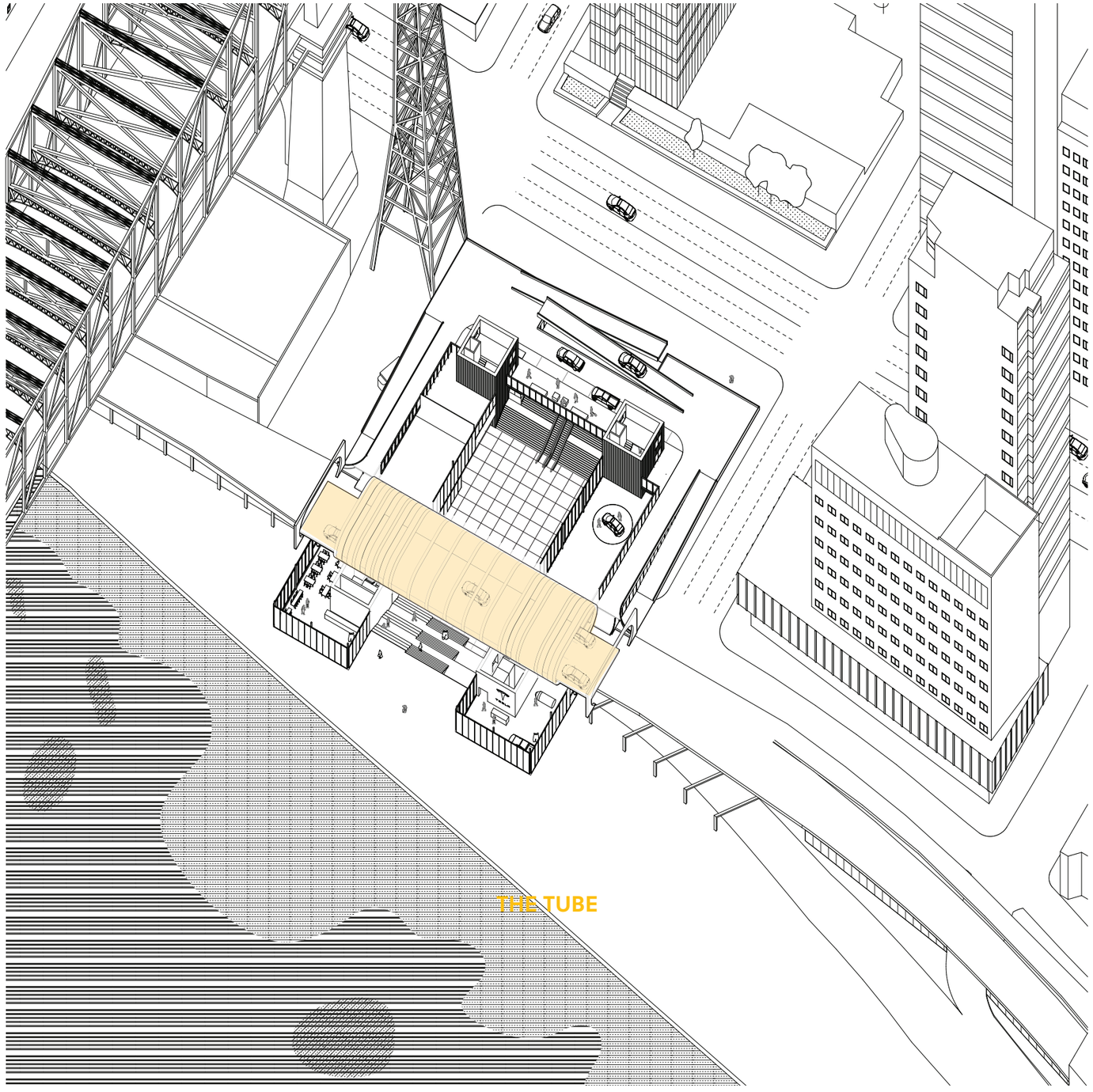


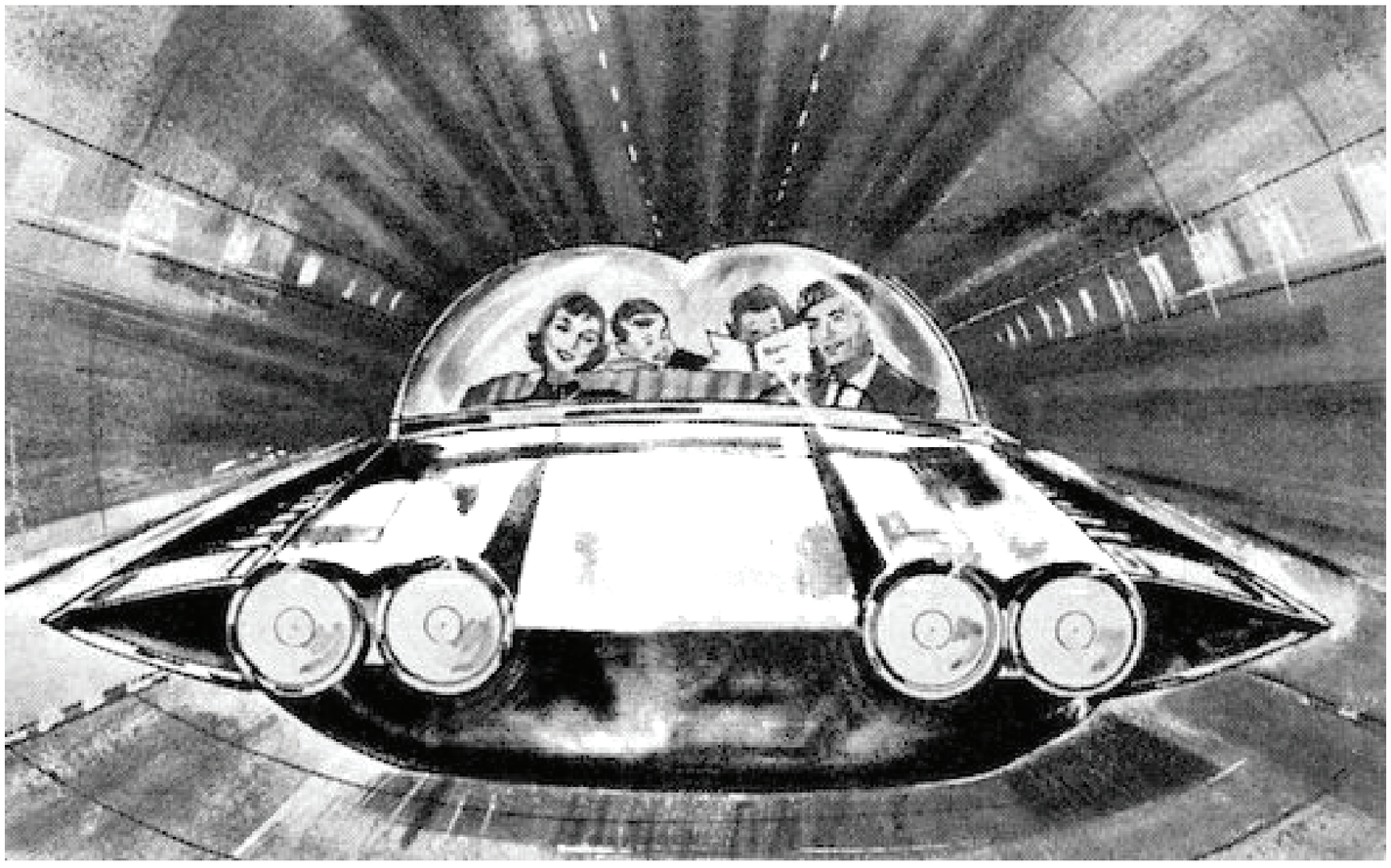
THE MAIN HALL



FROM THE MAIN HALL TO THE
DROP-OF AND CARSHARE DECK

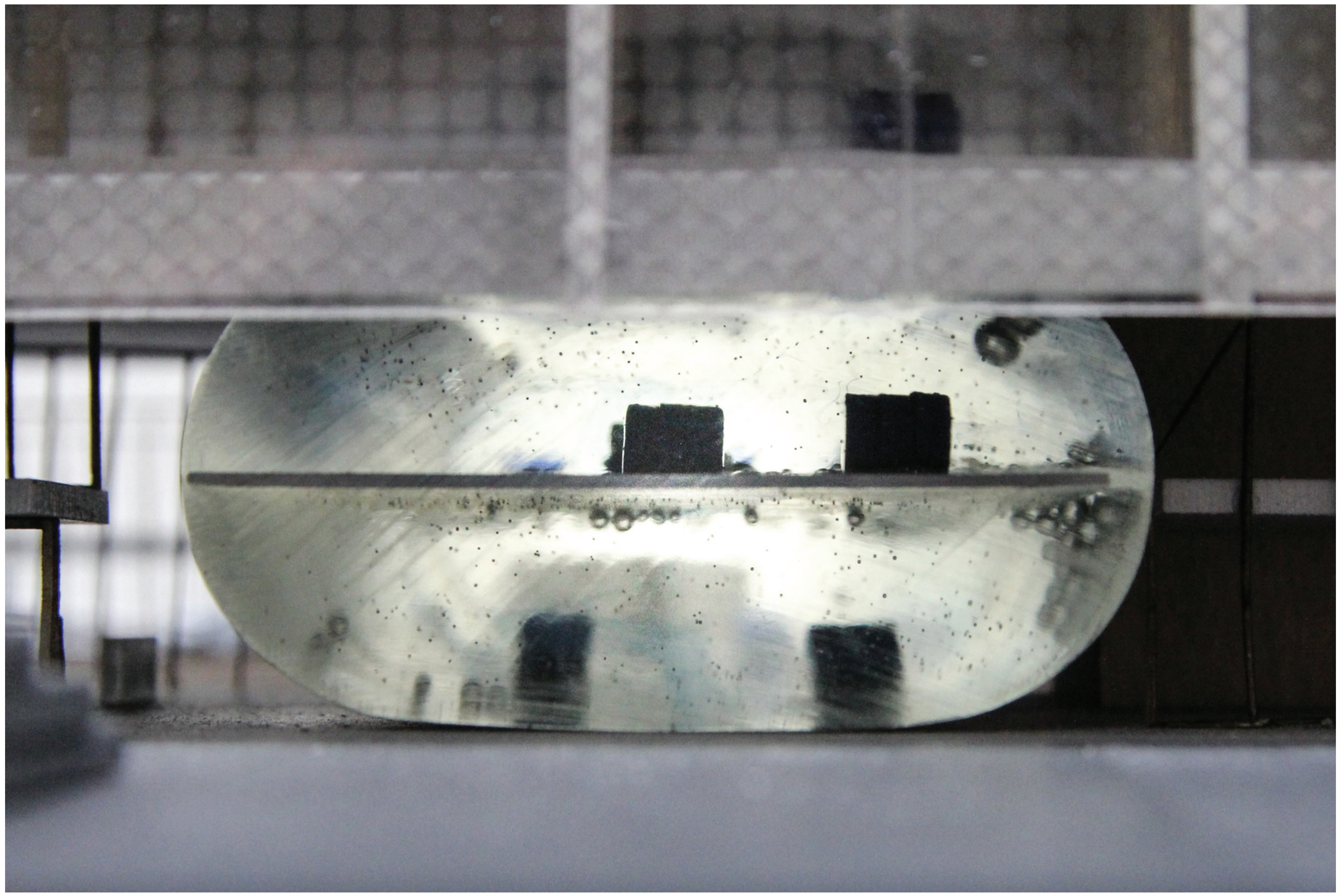
THE CAR


THE TUBE

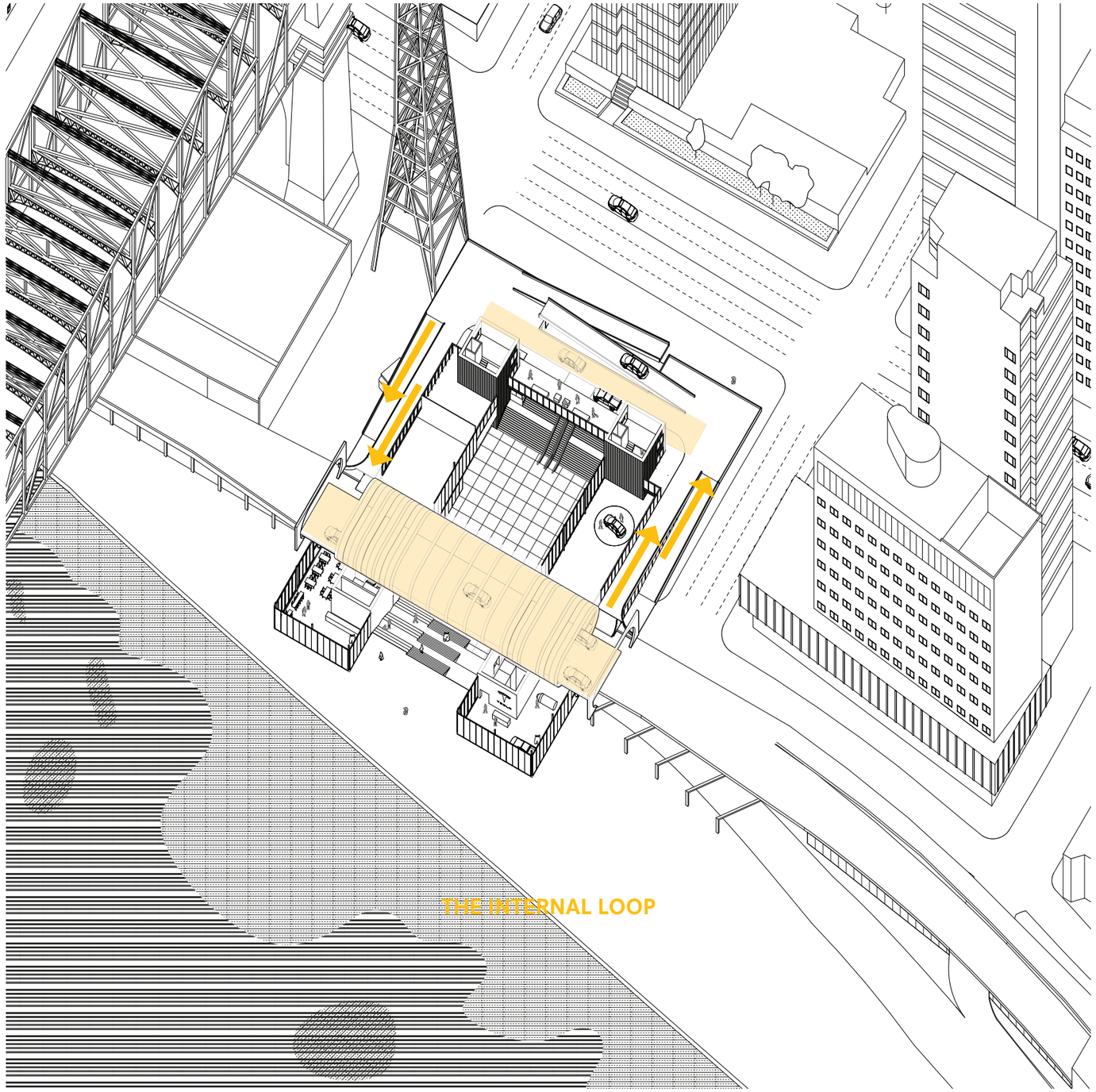


60’S FLOATING CARS IN A TUBE

THE APPROACH



ENTERING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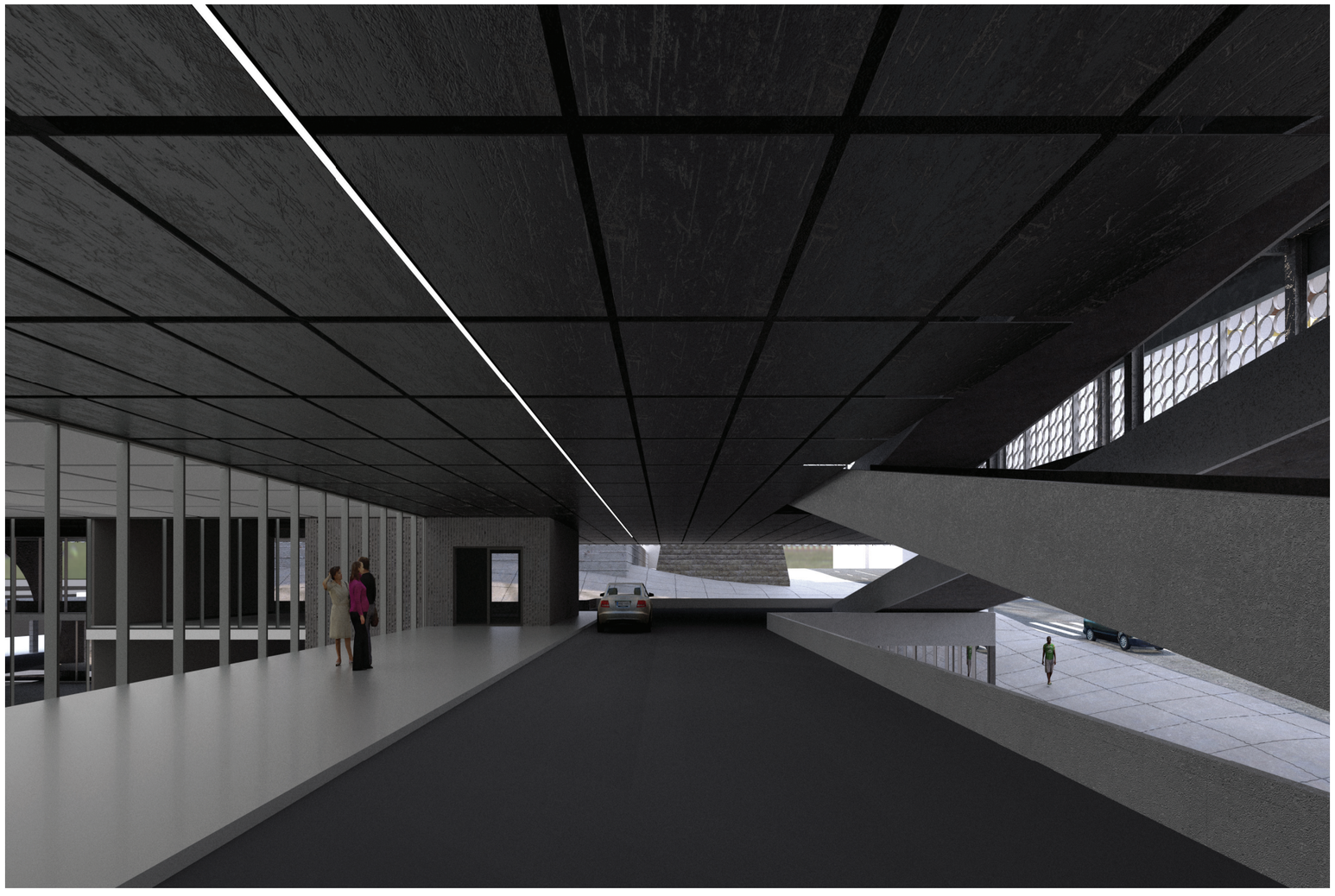
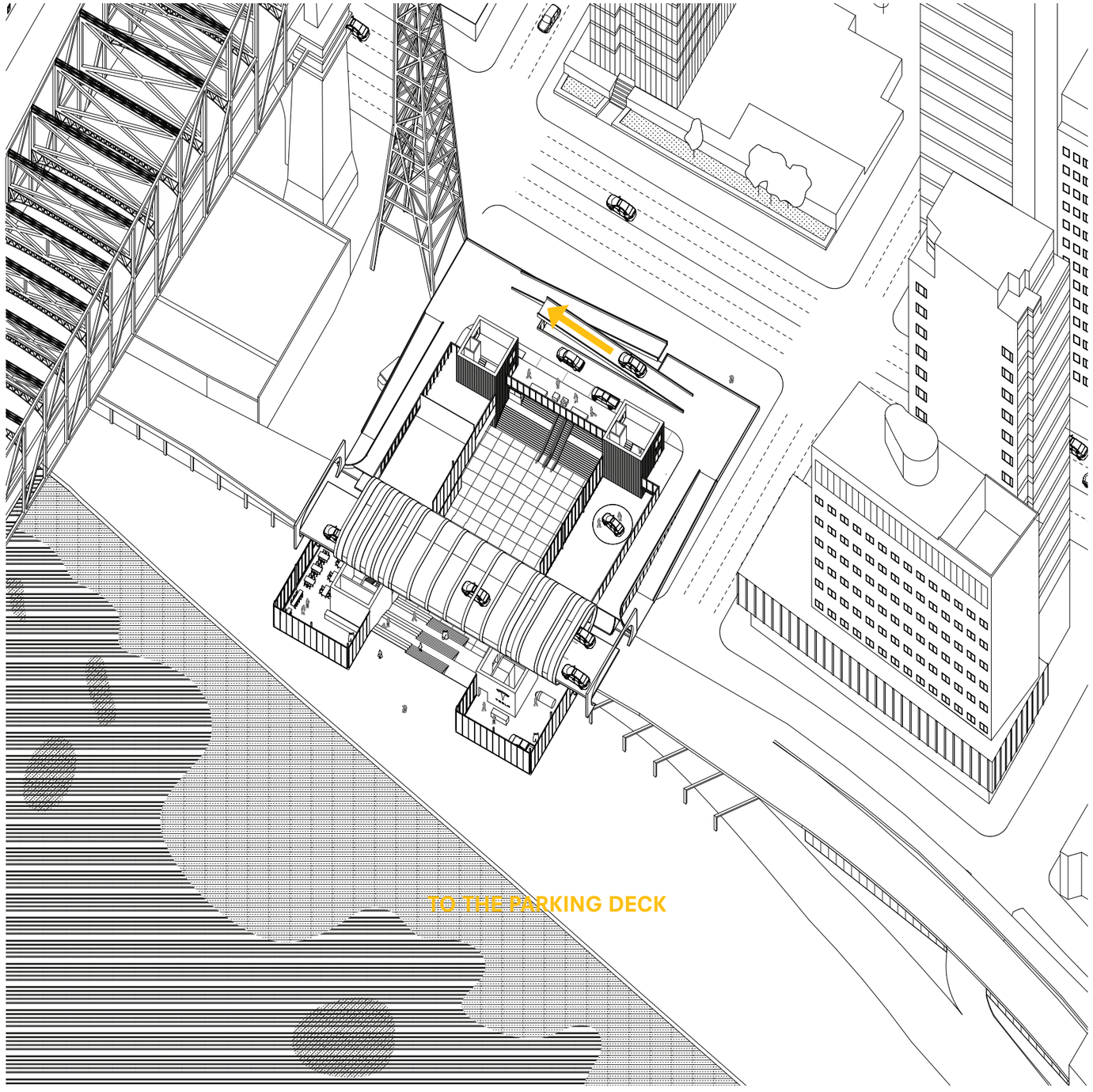
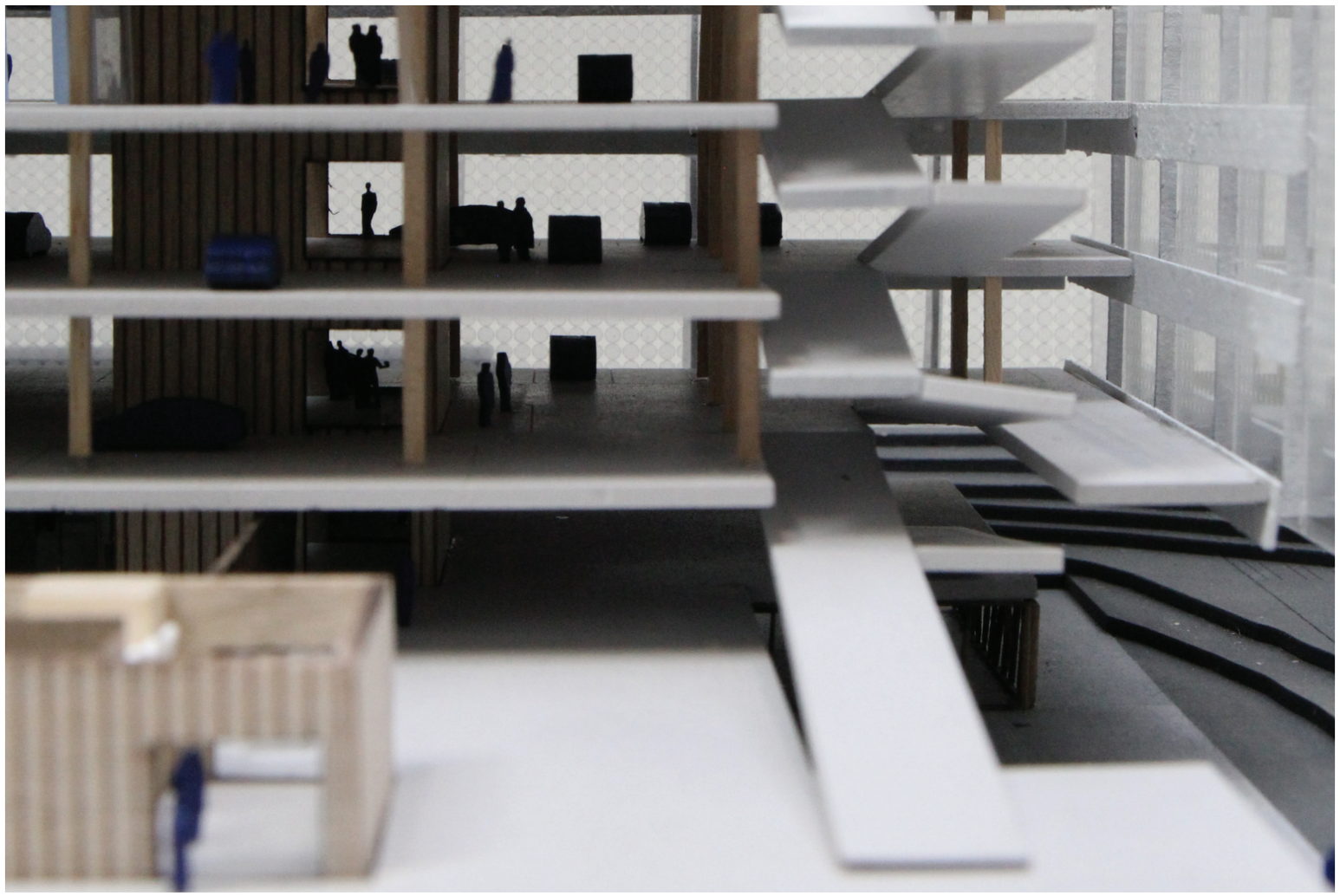
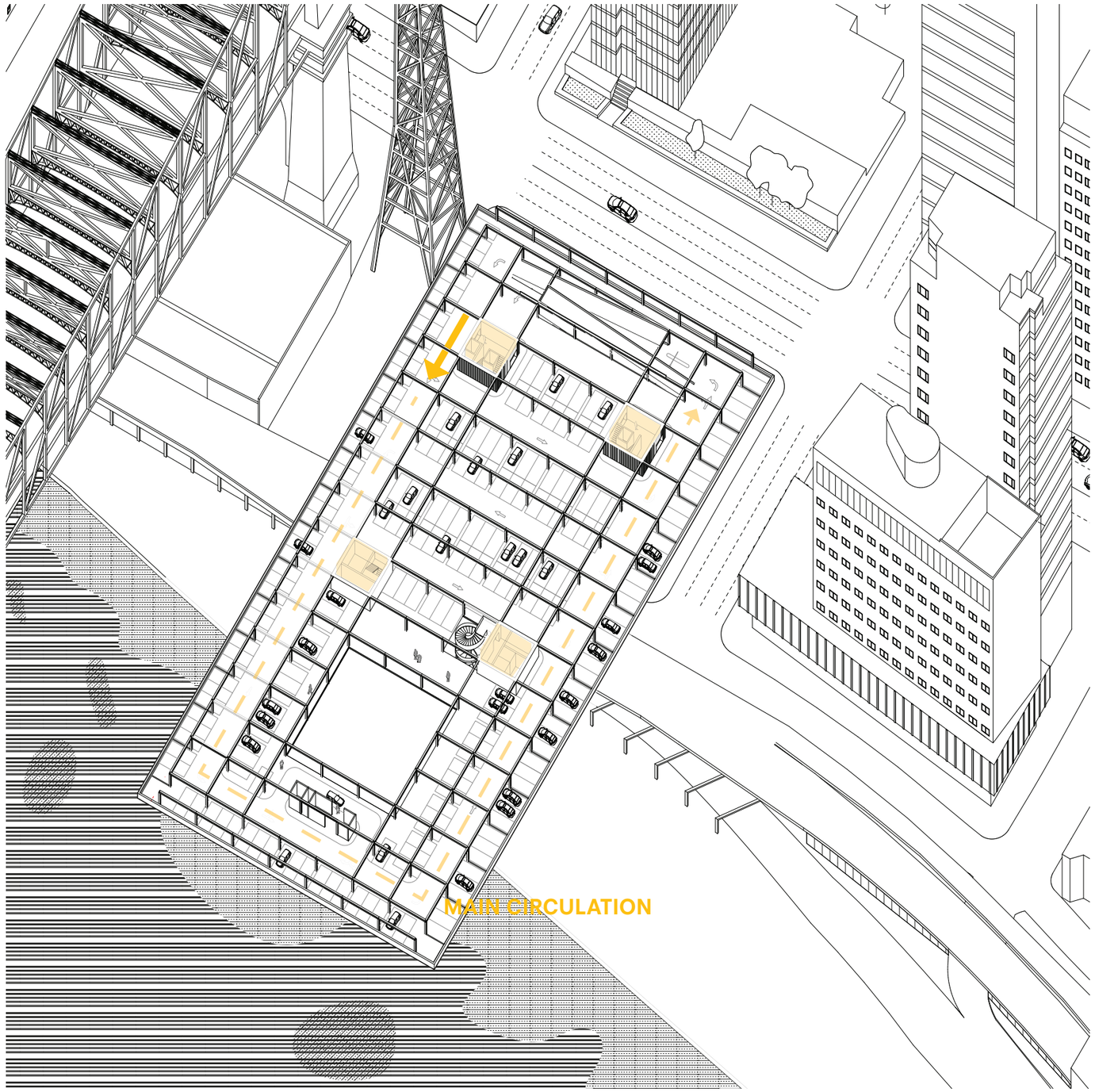
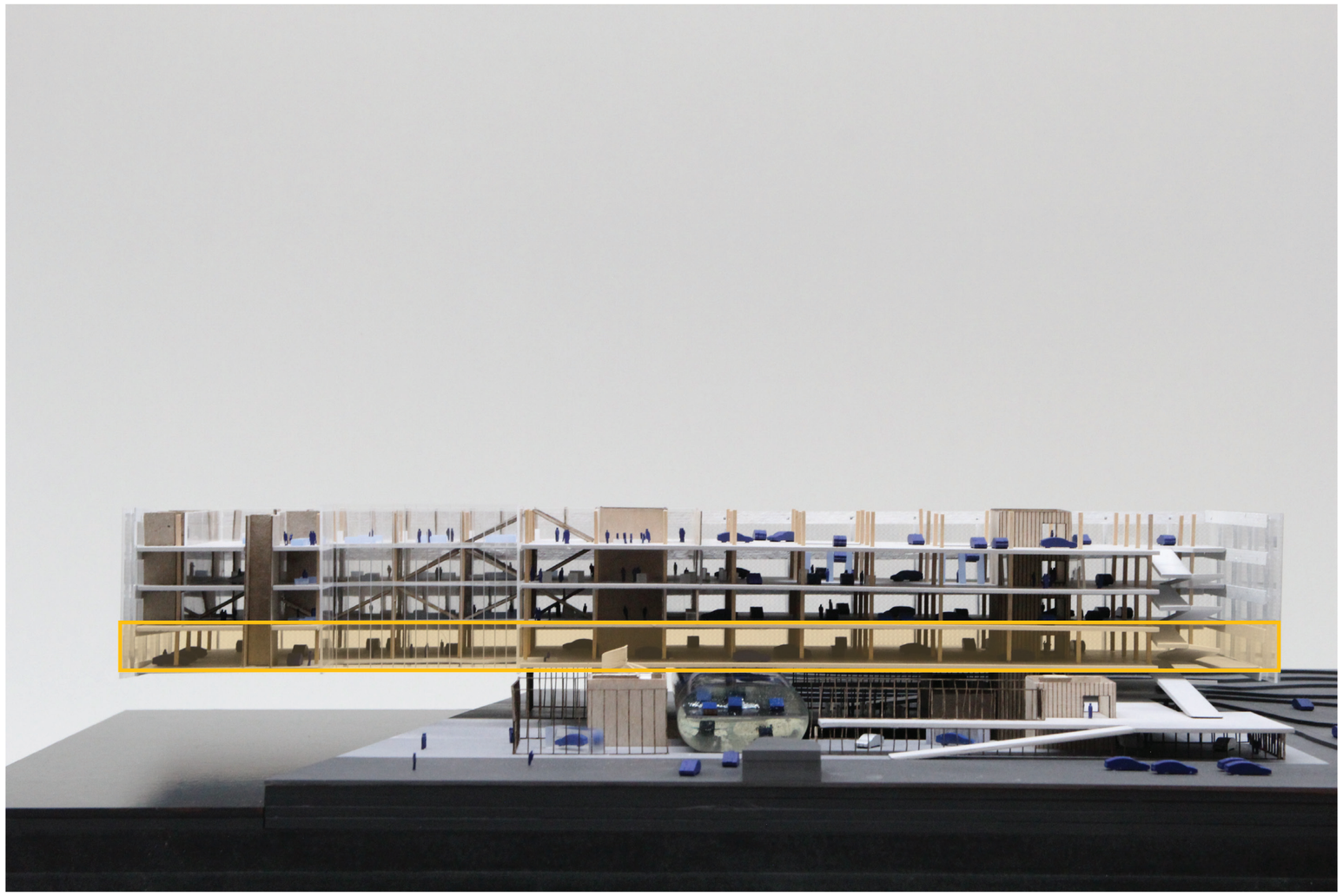


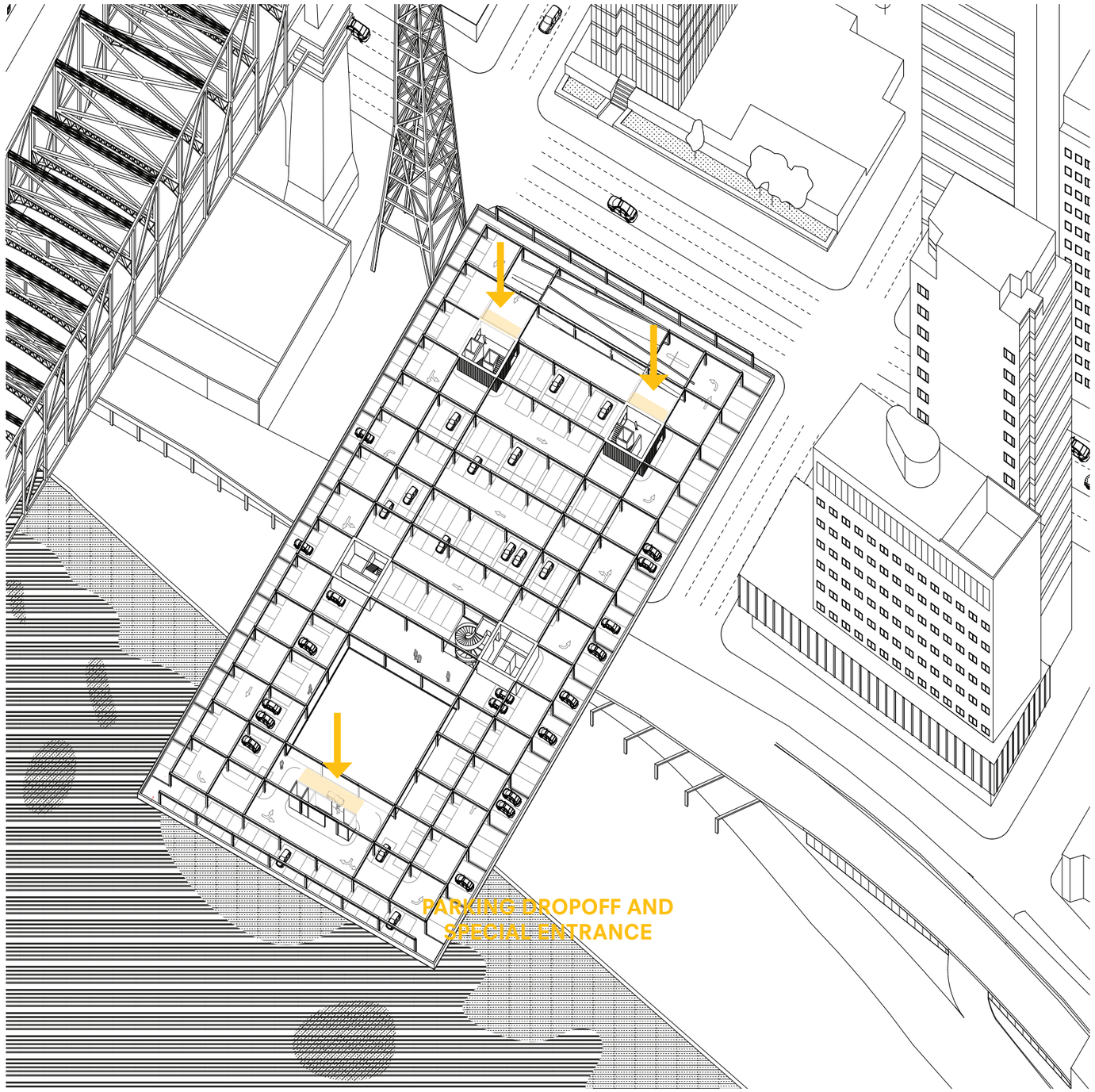
THE DROP OFF AND
CARSHARE DECK

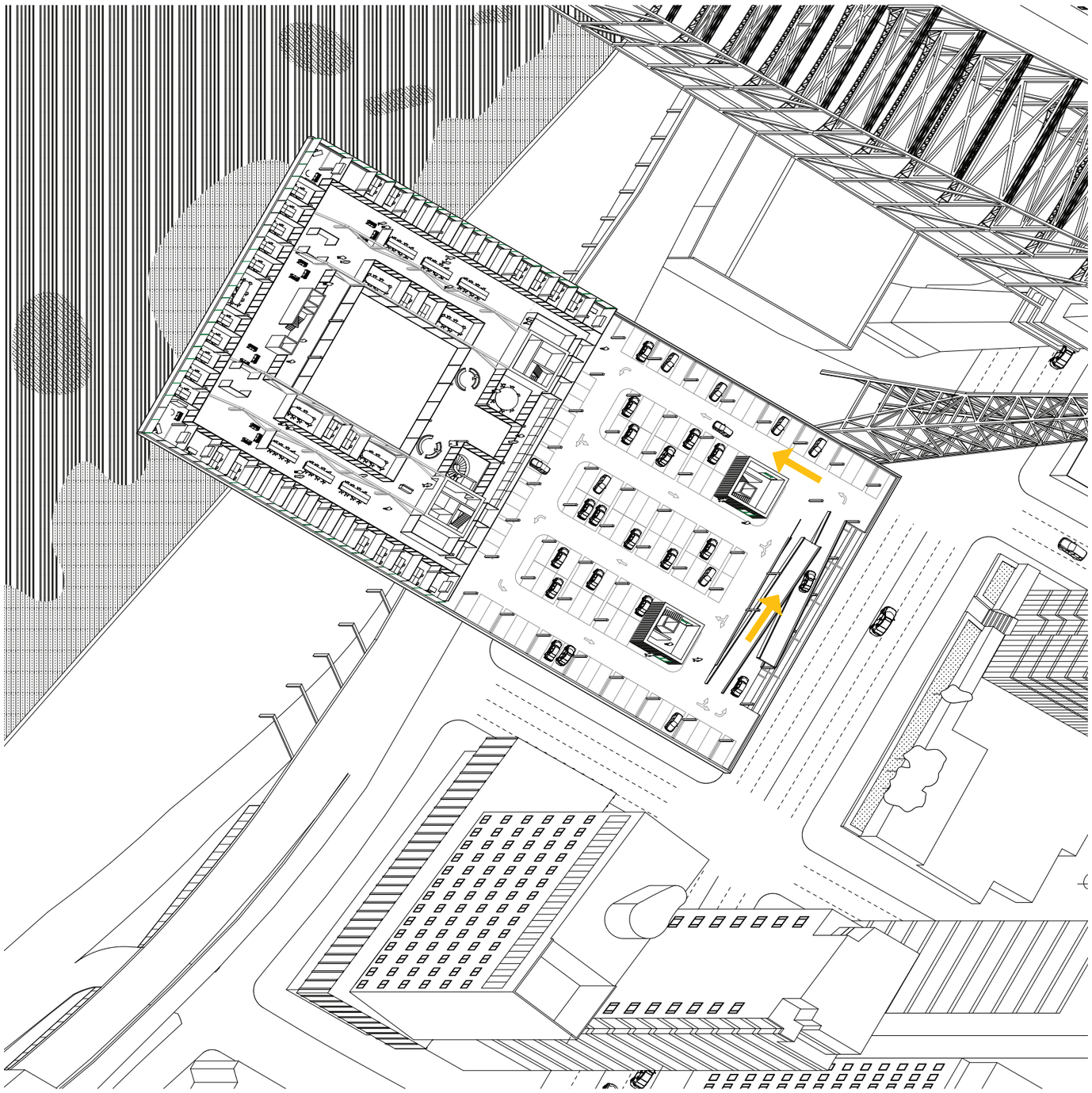

TO THE PARKING DECK

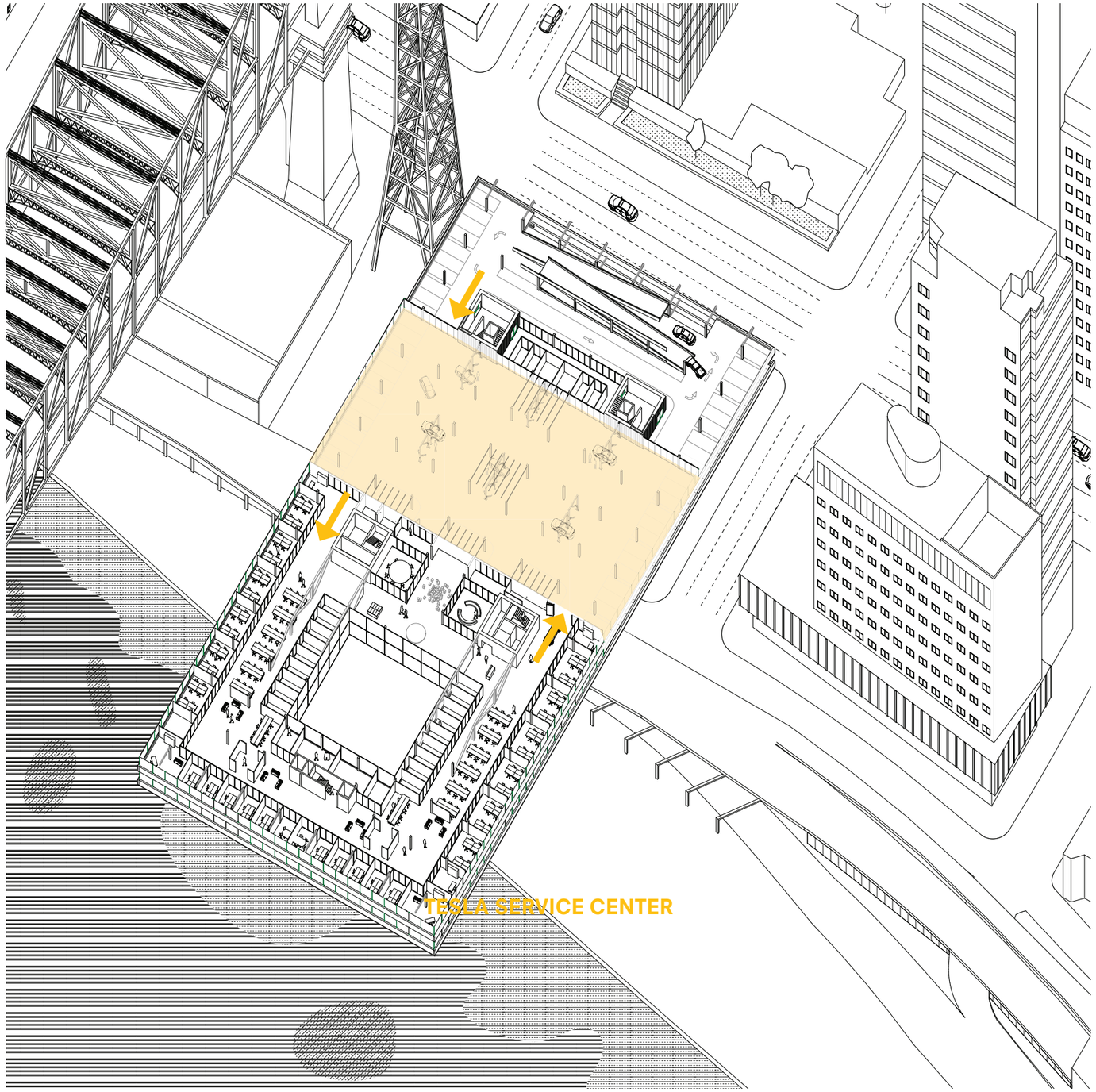



MAIN CIRCULATION

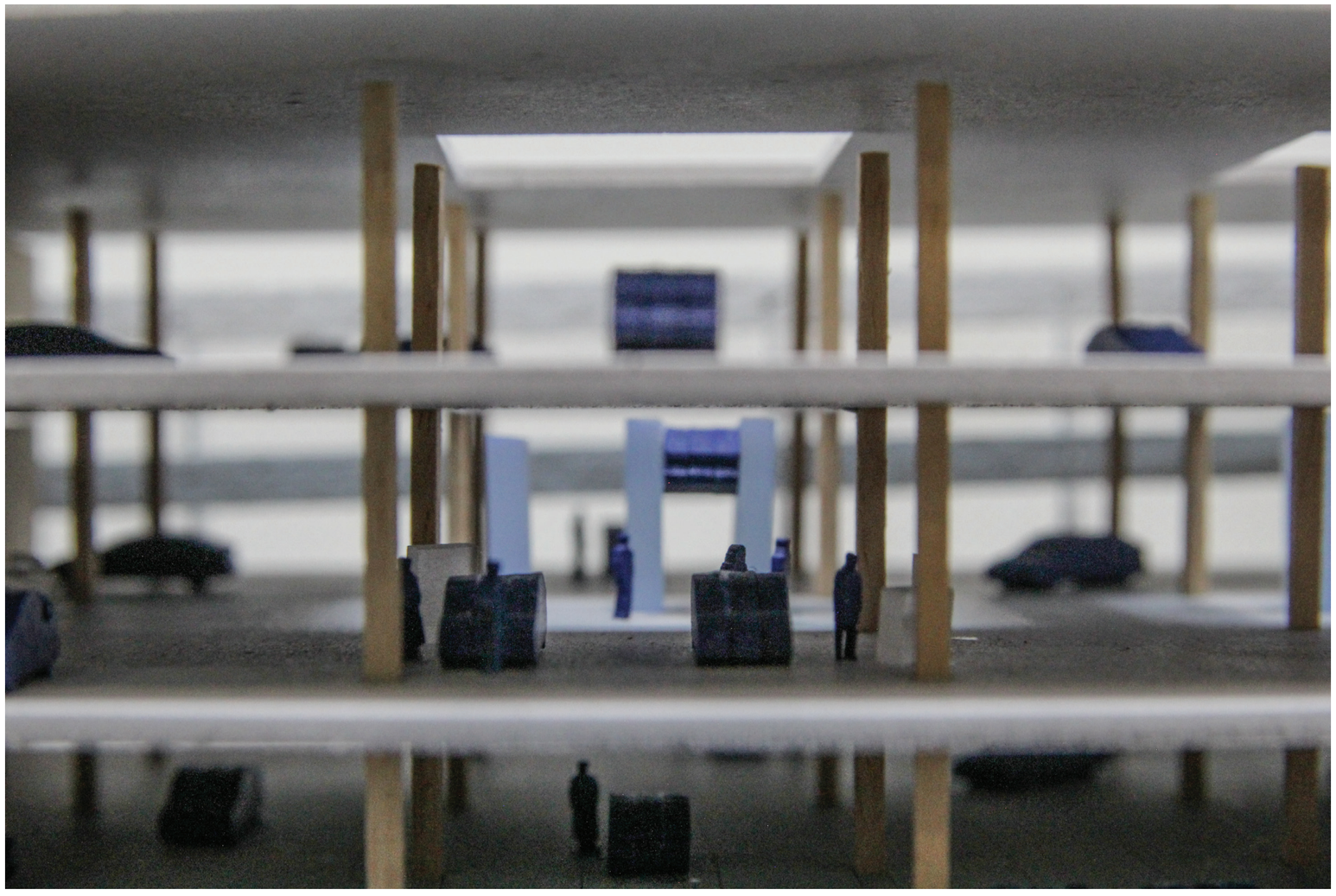



PARKING DROPOFF AND
SPECIAL ENTRANCE

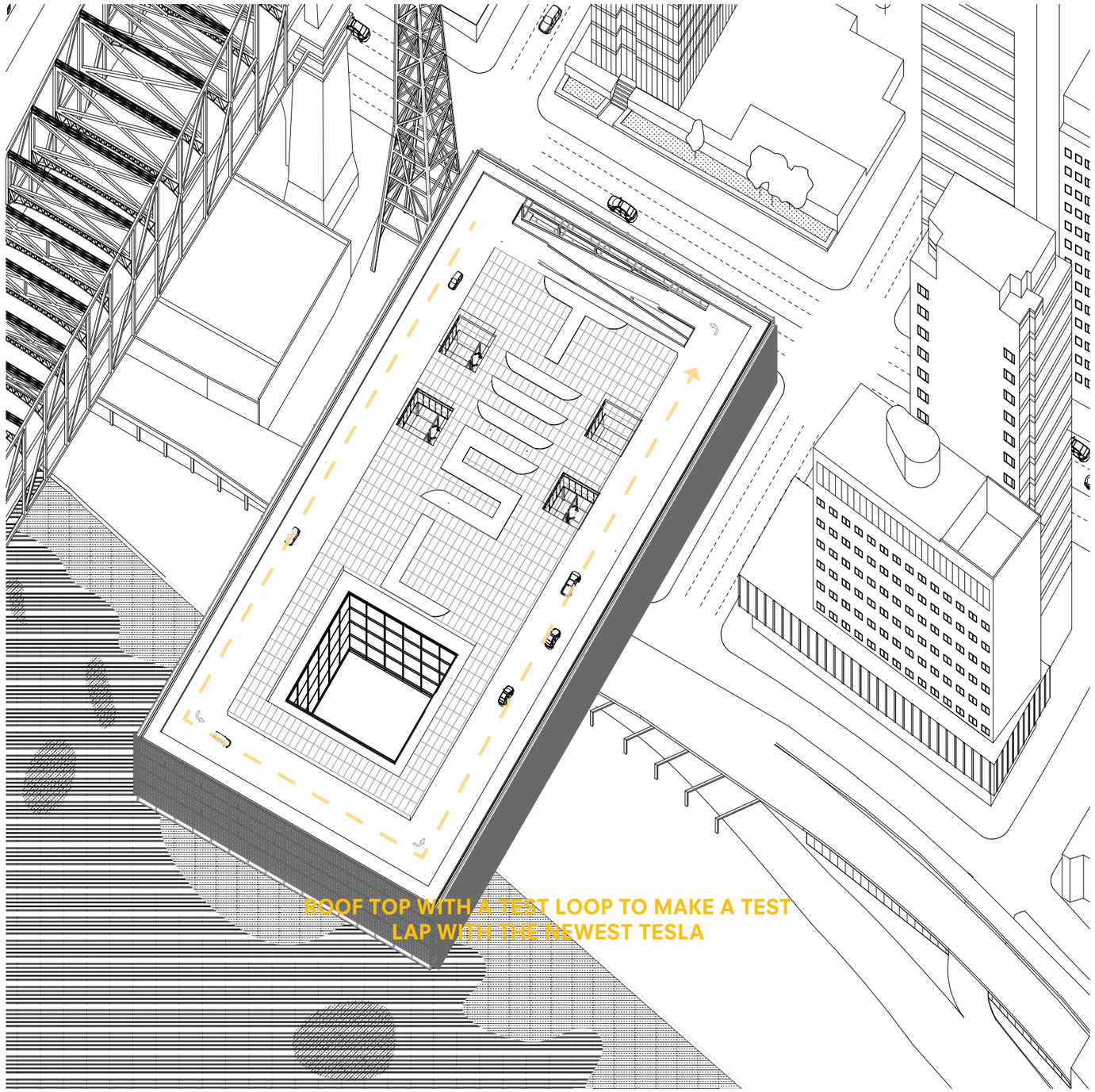



TESLA SERVICE CENTER

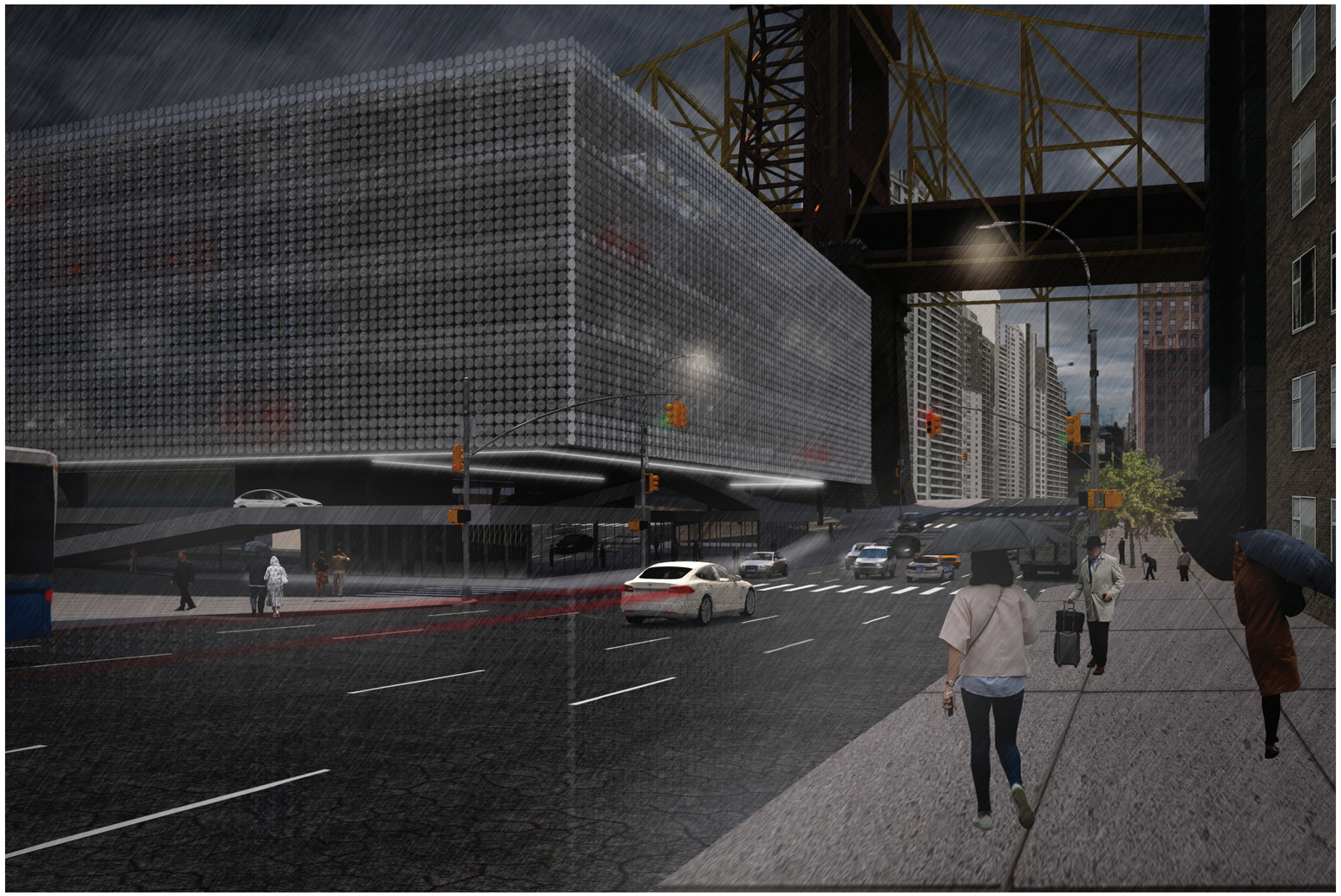
TESLA SERVICE CENTER CONNECTED WITH THE OFFICE



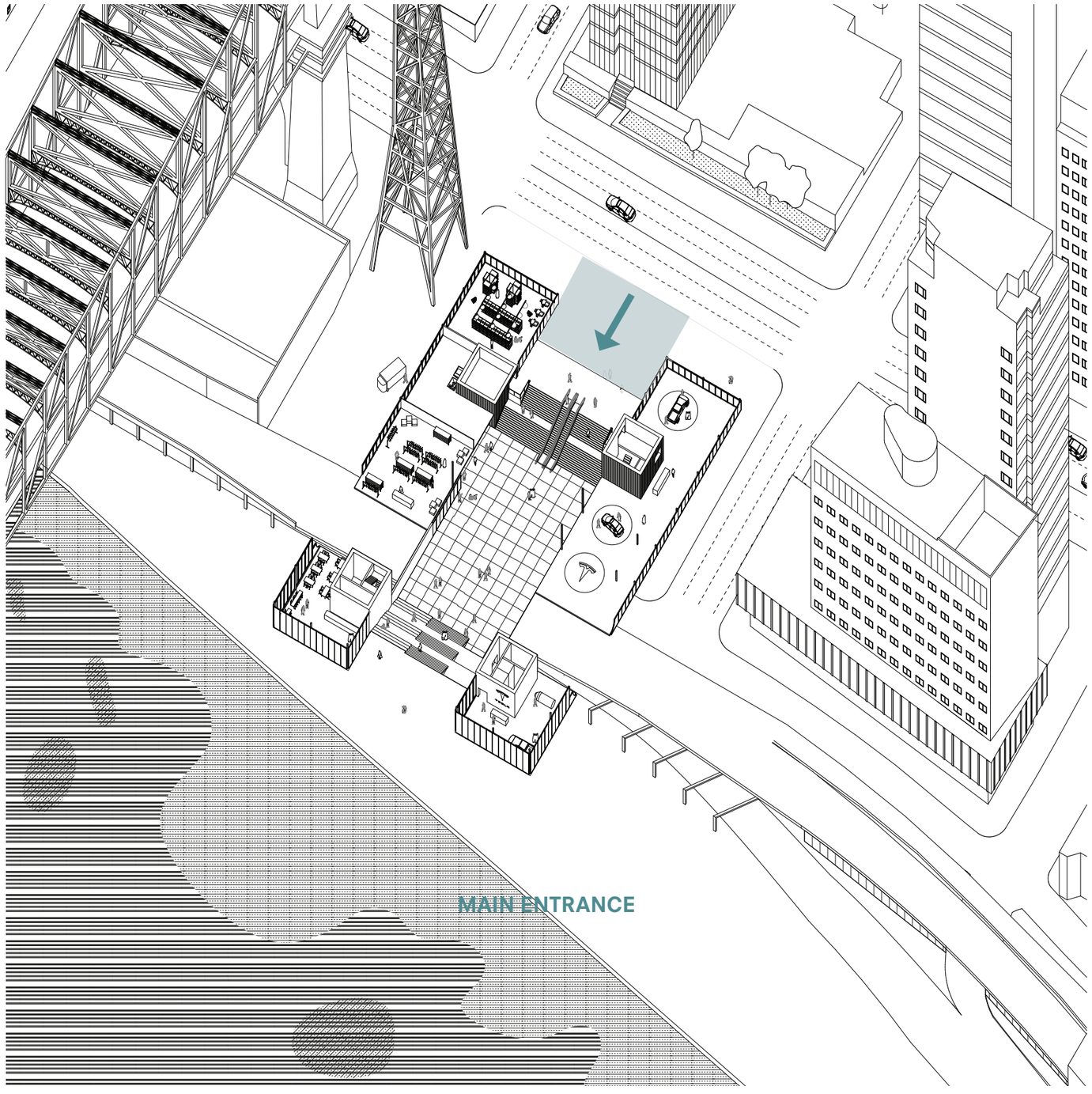
CAR LIFTS WITH DAY LIGHT AND PROVIDE
A GLYMPS INTO THE SERVICE CENTER

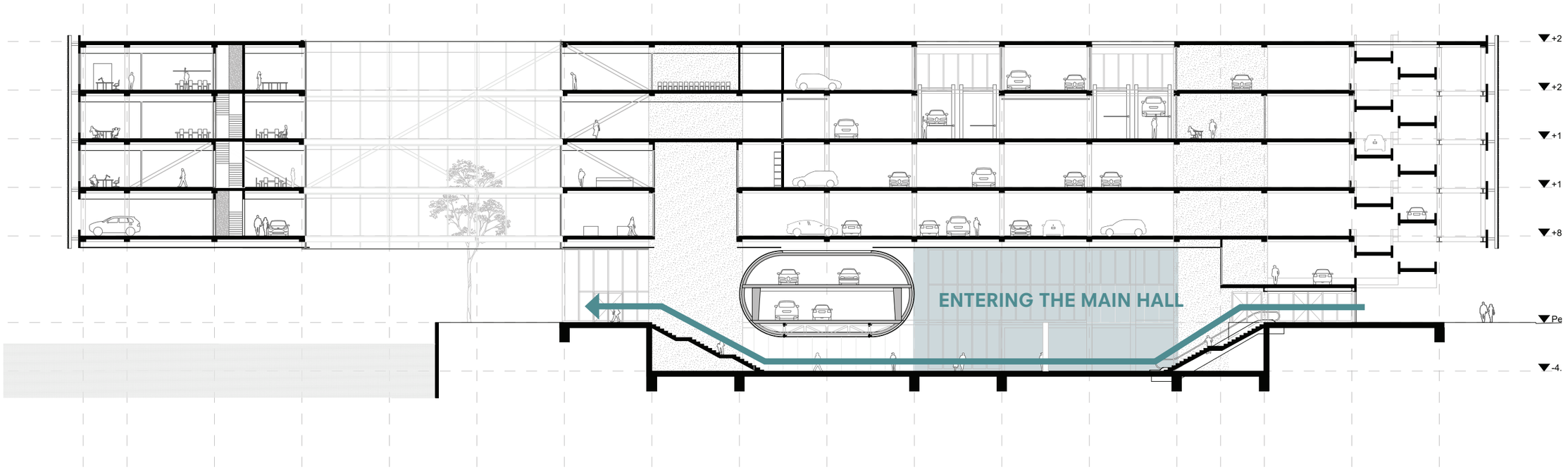

ROOF TOP WITH A TEST LOOP TO MAKE A TEST
LAP WITH THE NEWEST TESLA

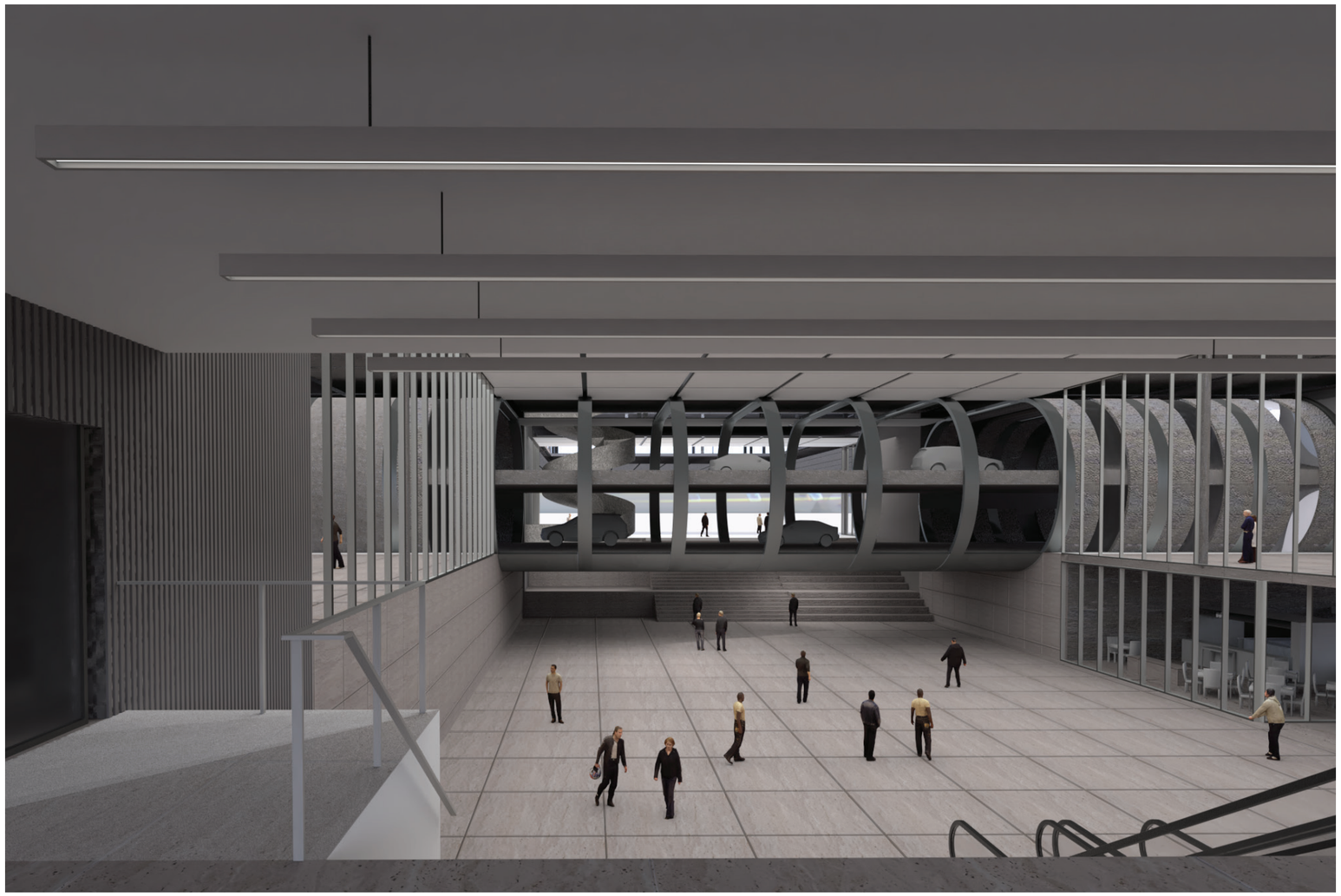
The pedestrian



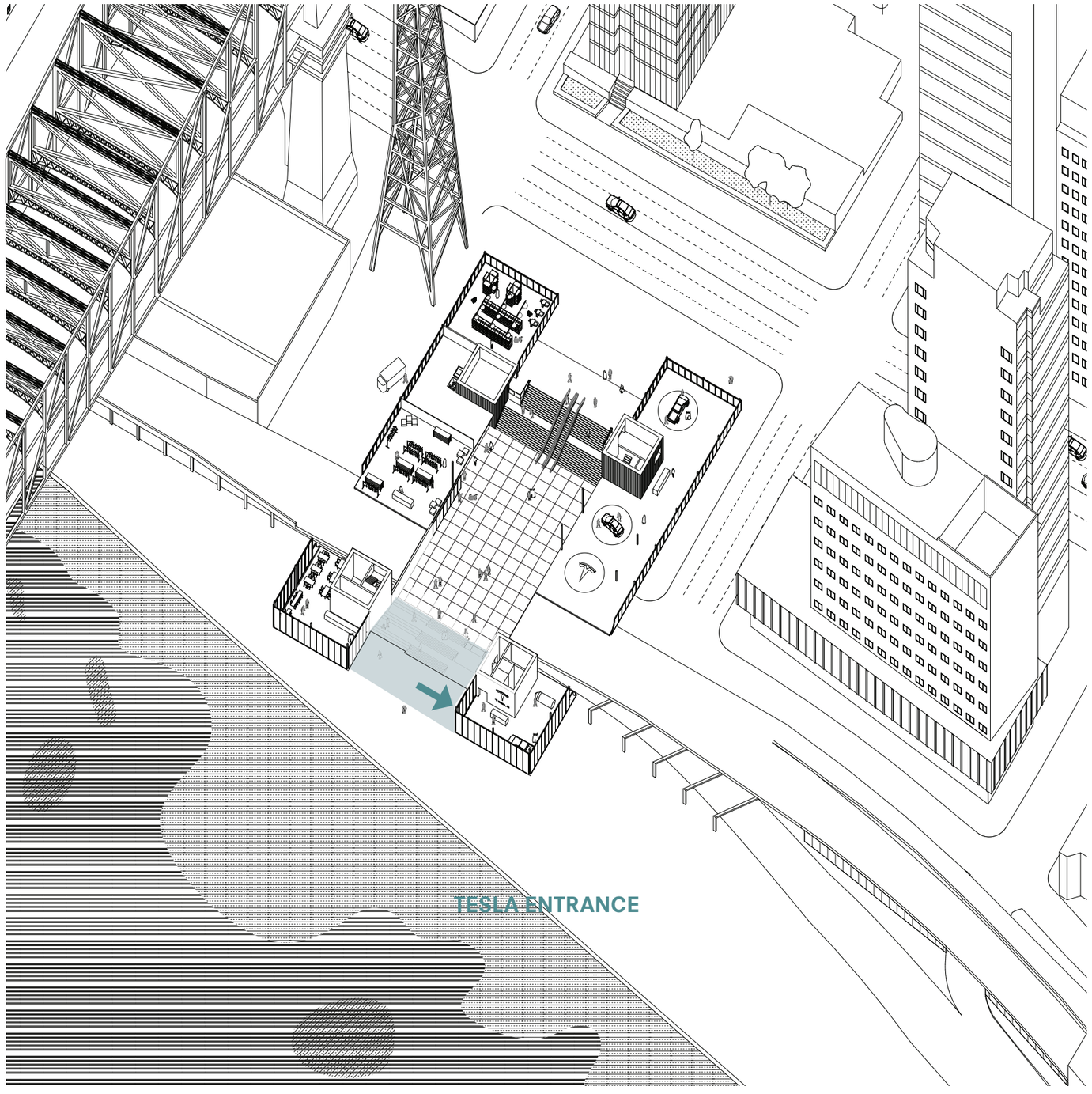
STREET ENTRY


MAIN ENTRANCE

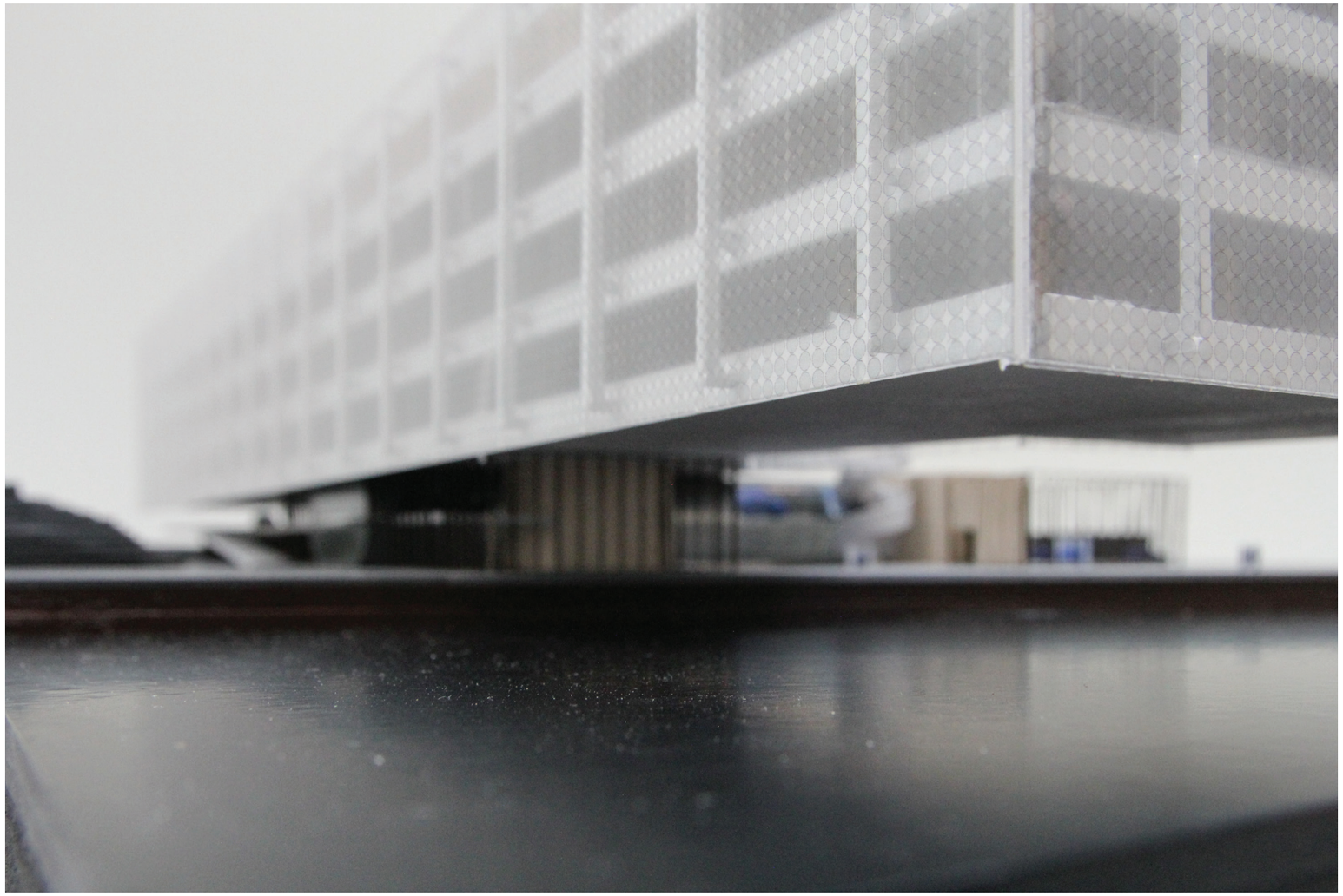

+2
+2
+1
+1
+8
Pe
-4.
ENTERING THE MAIN HALL



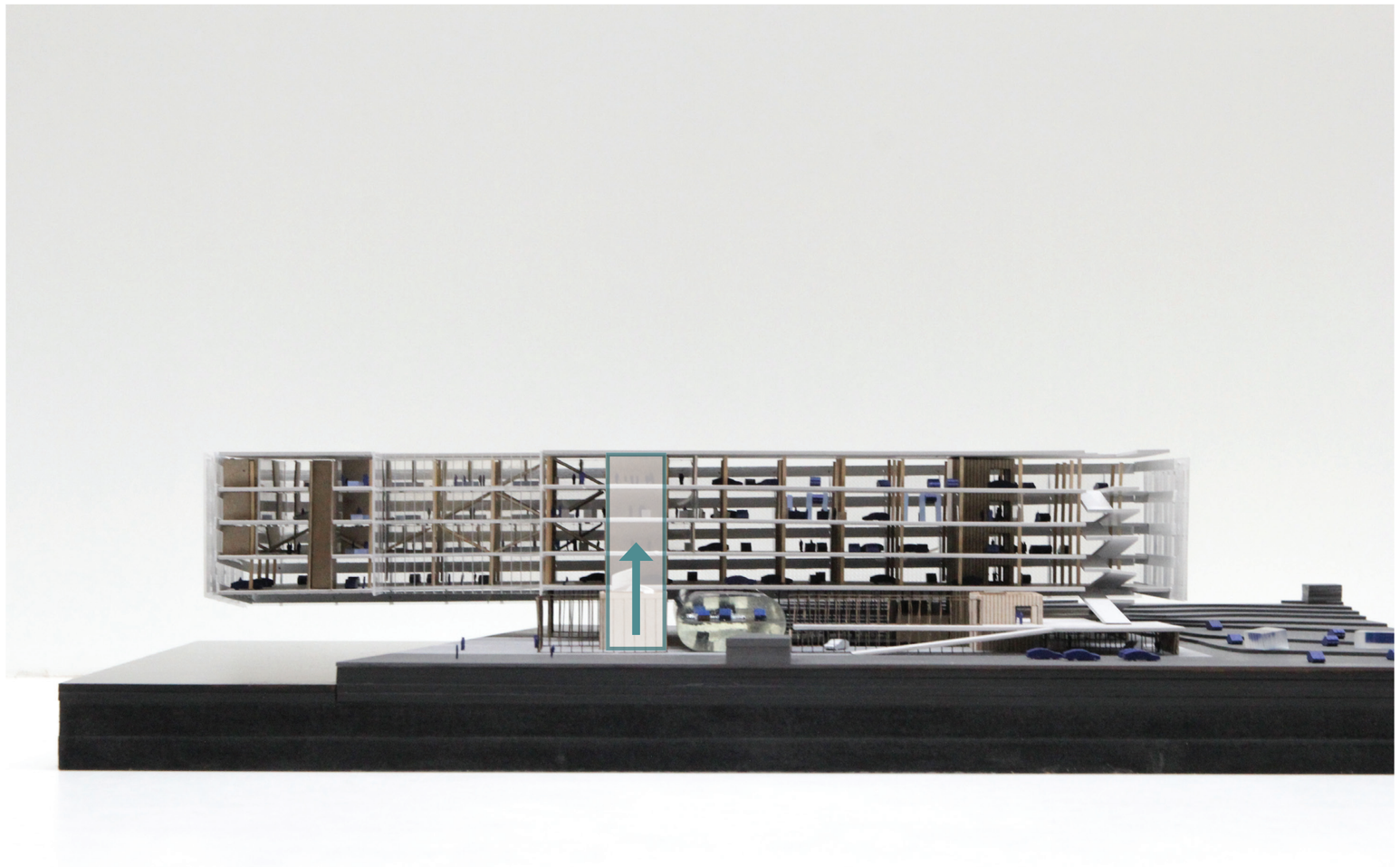
MAIN HALL


TESLA ENTRANCE

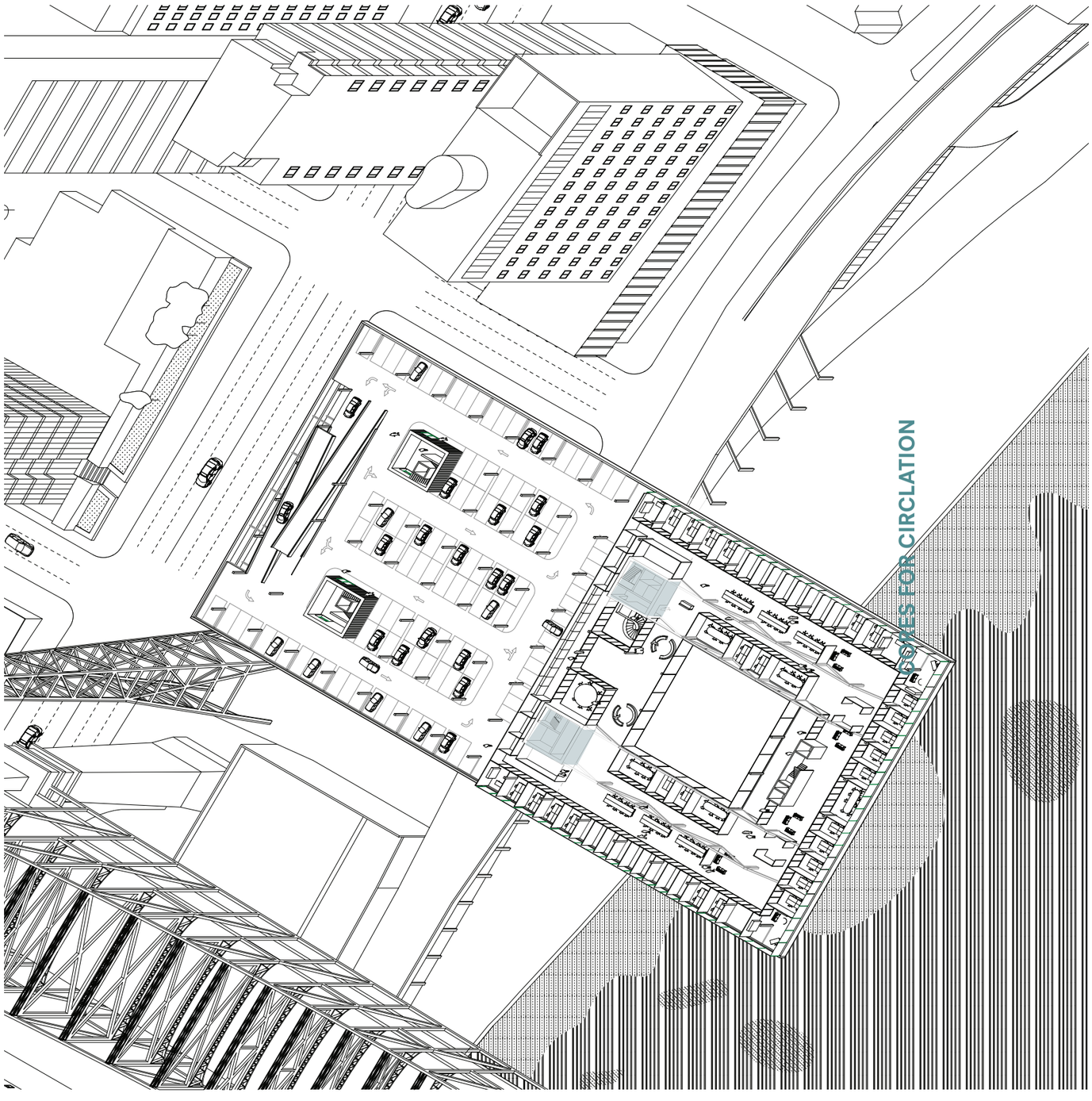
ATRIUM HOOVERING ABOVE THE WATER

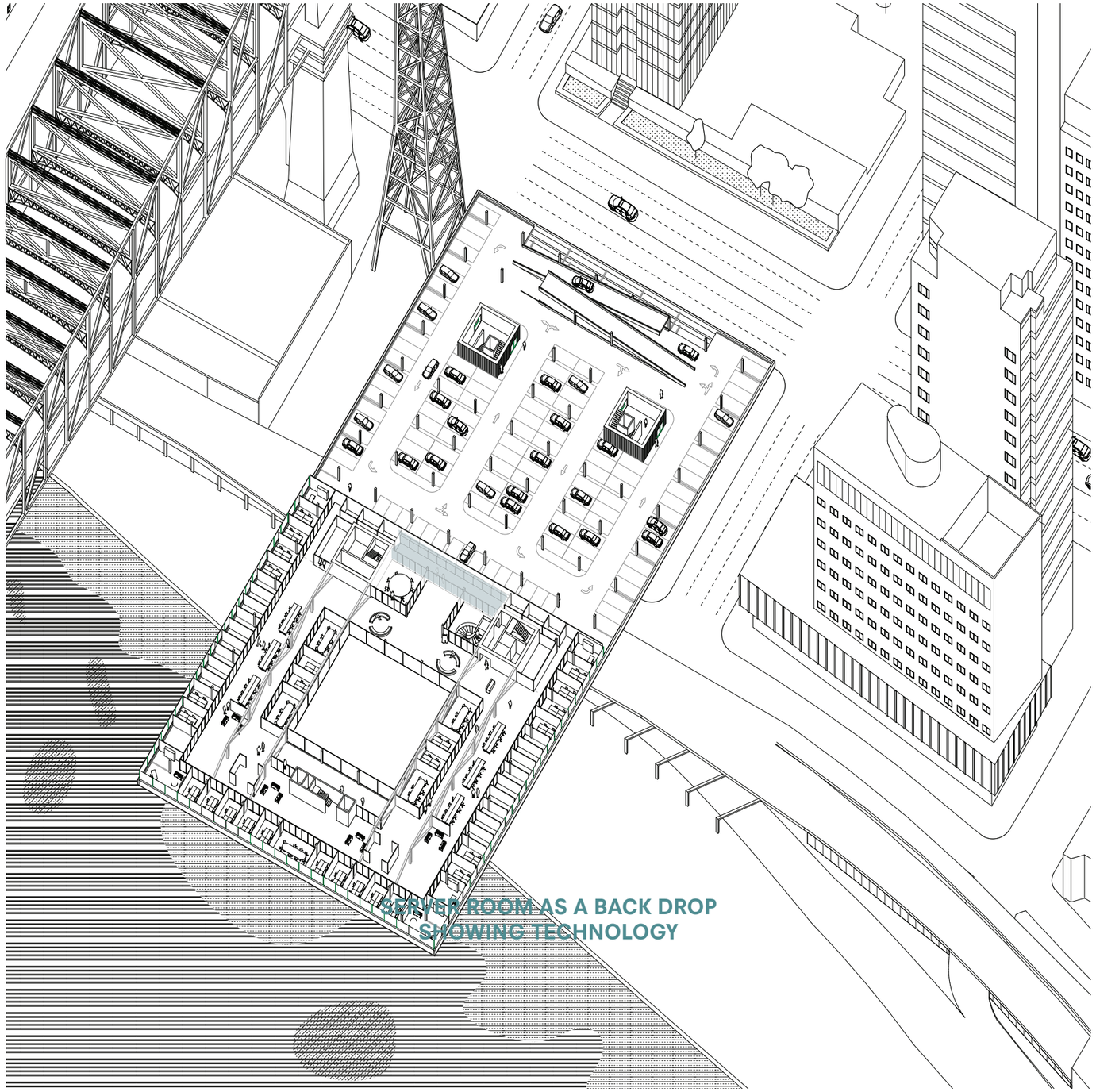


FLOATING BOX

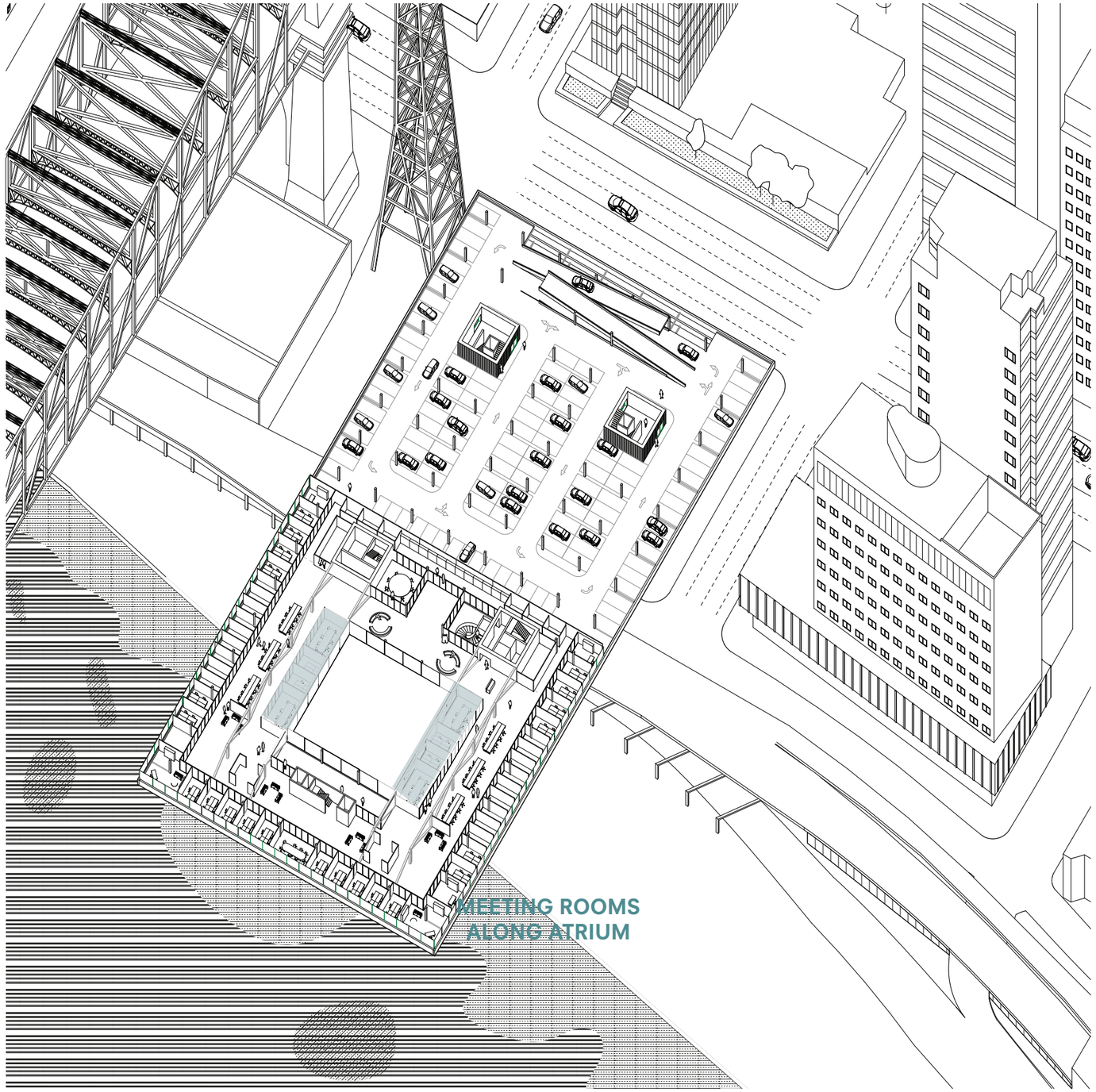


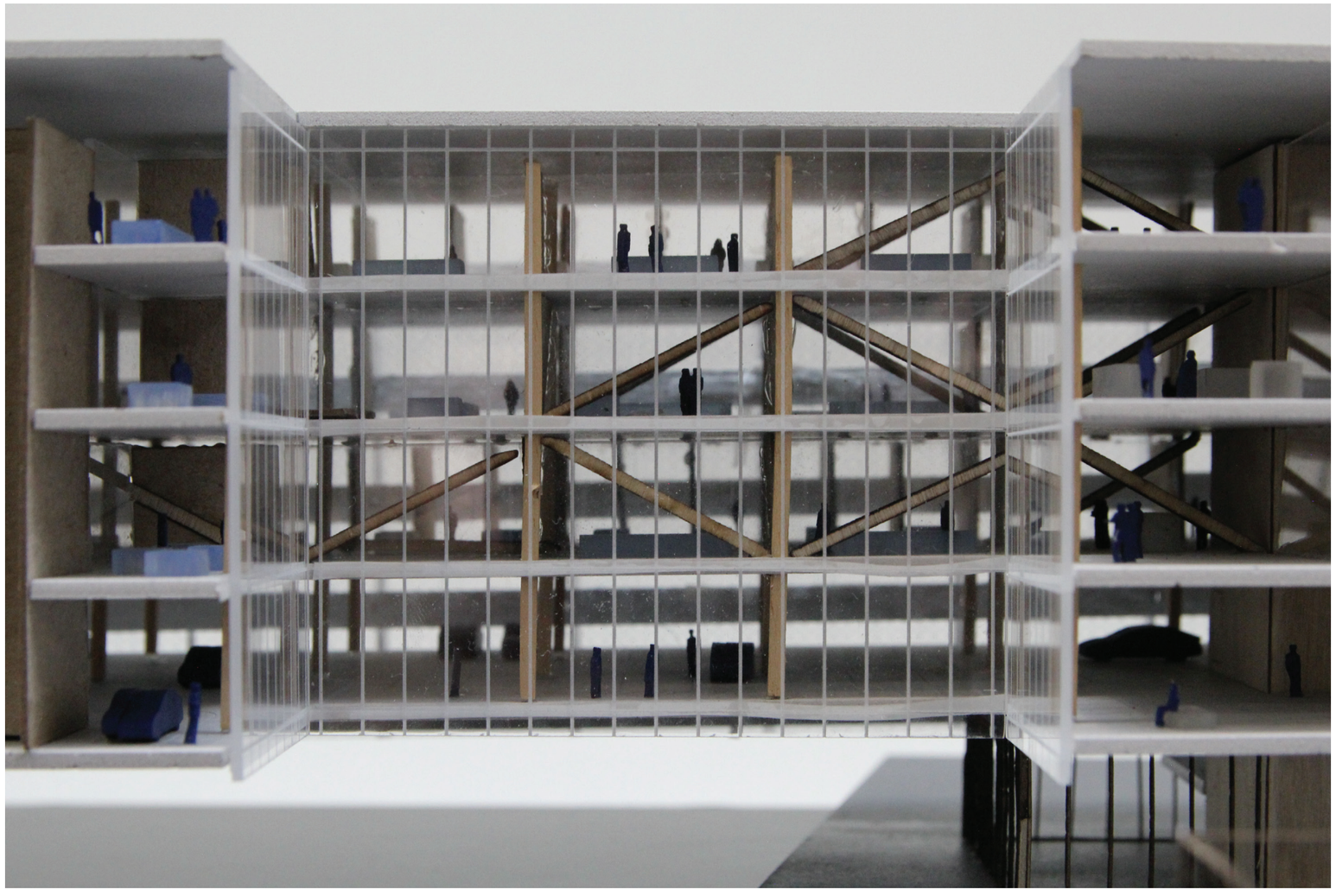
ENTERING THE BUILDING THROUGH THE
MAIN CORE


ROUTES FOR CIRCULATION

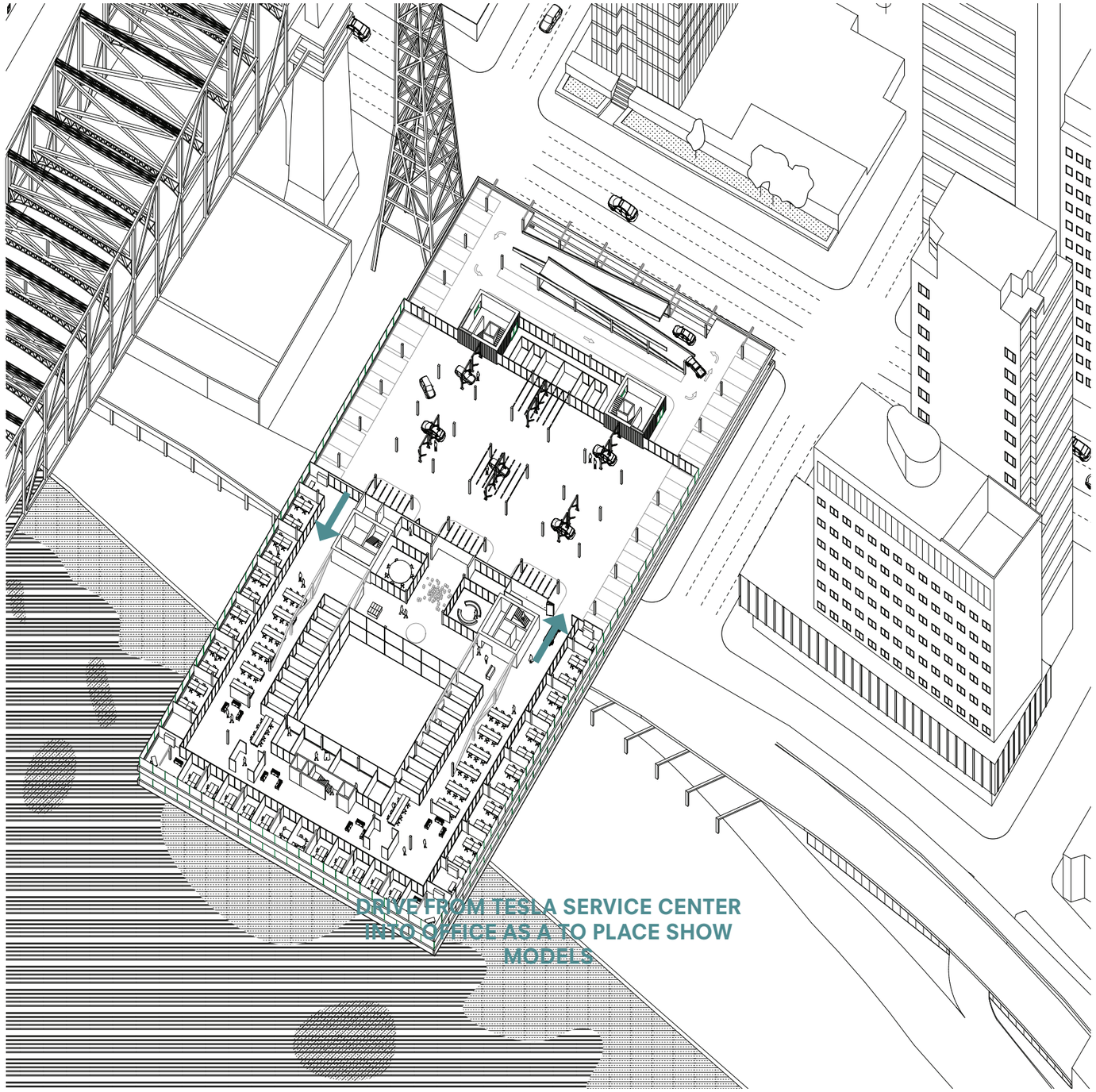


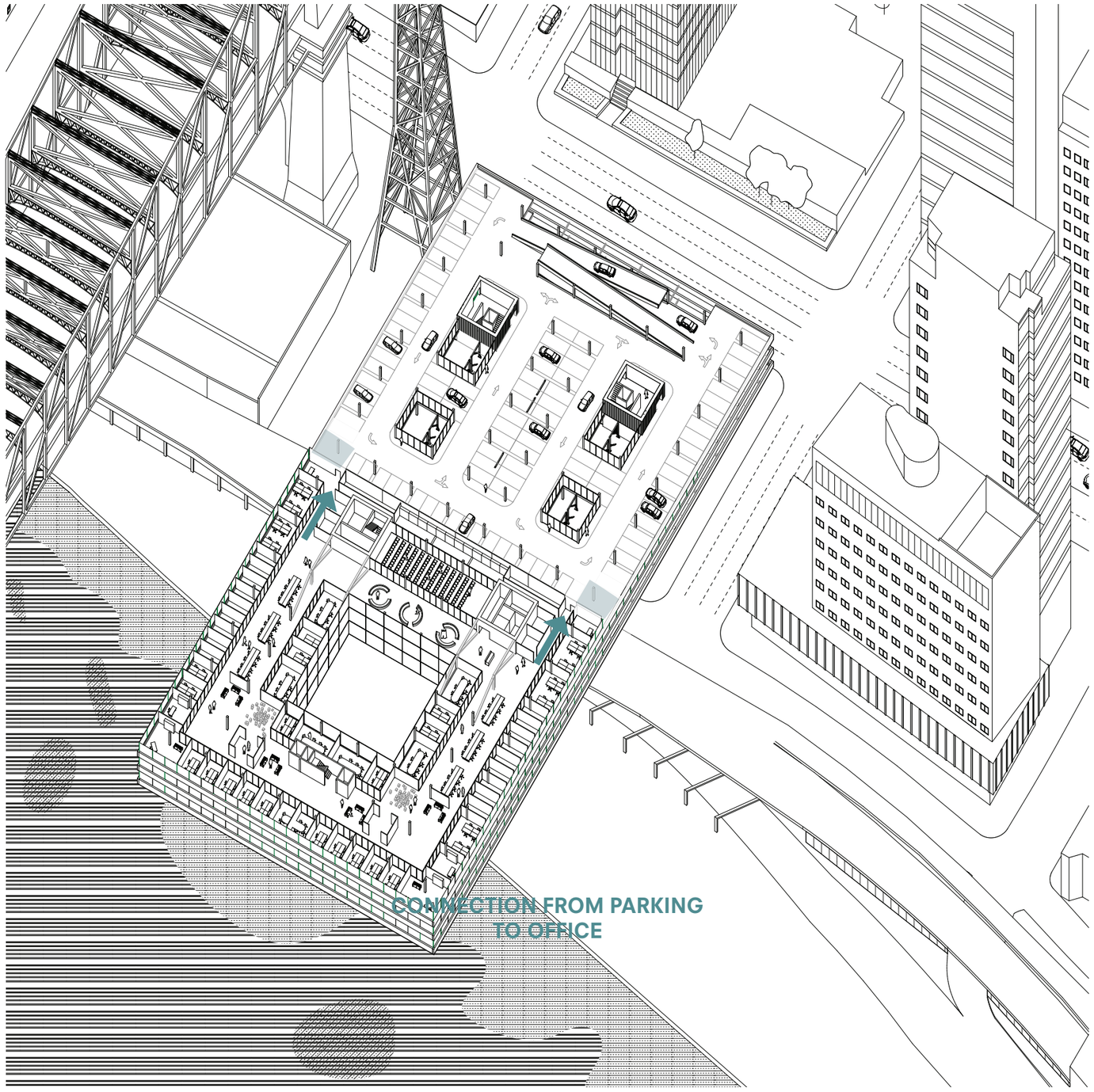
SERVER ROOM AS A BACK DROP
SHOWING TECHNOLOGY

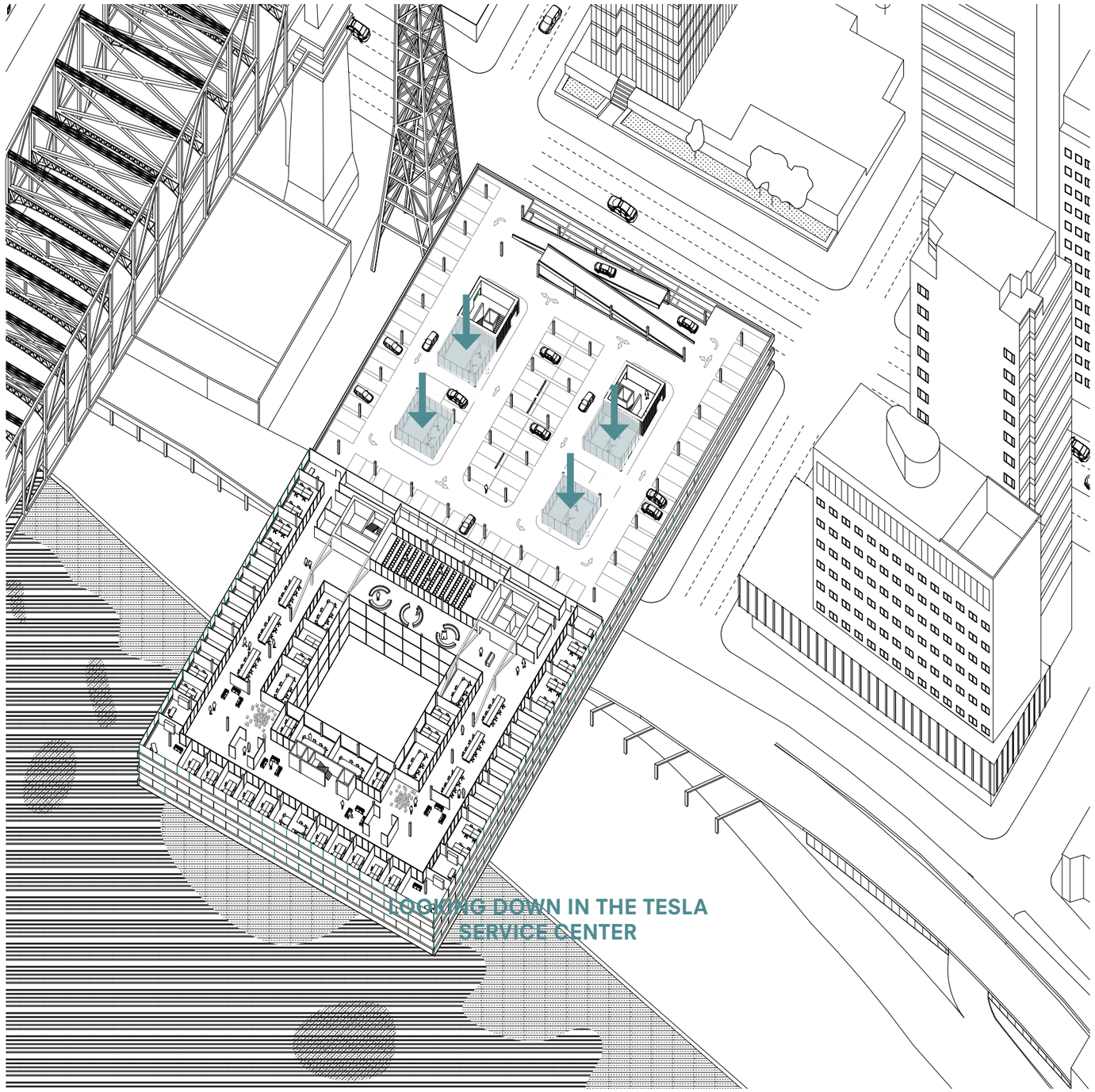

MEETING ROOMS
ALONG ATRIUM



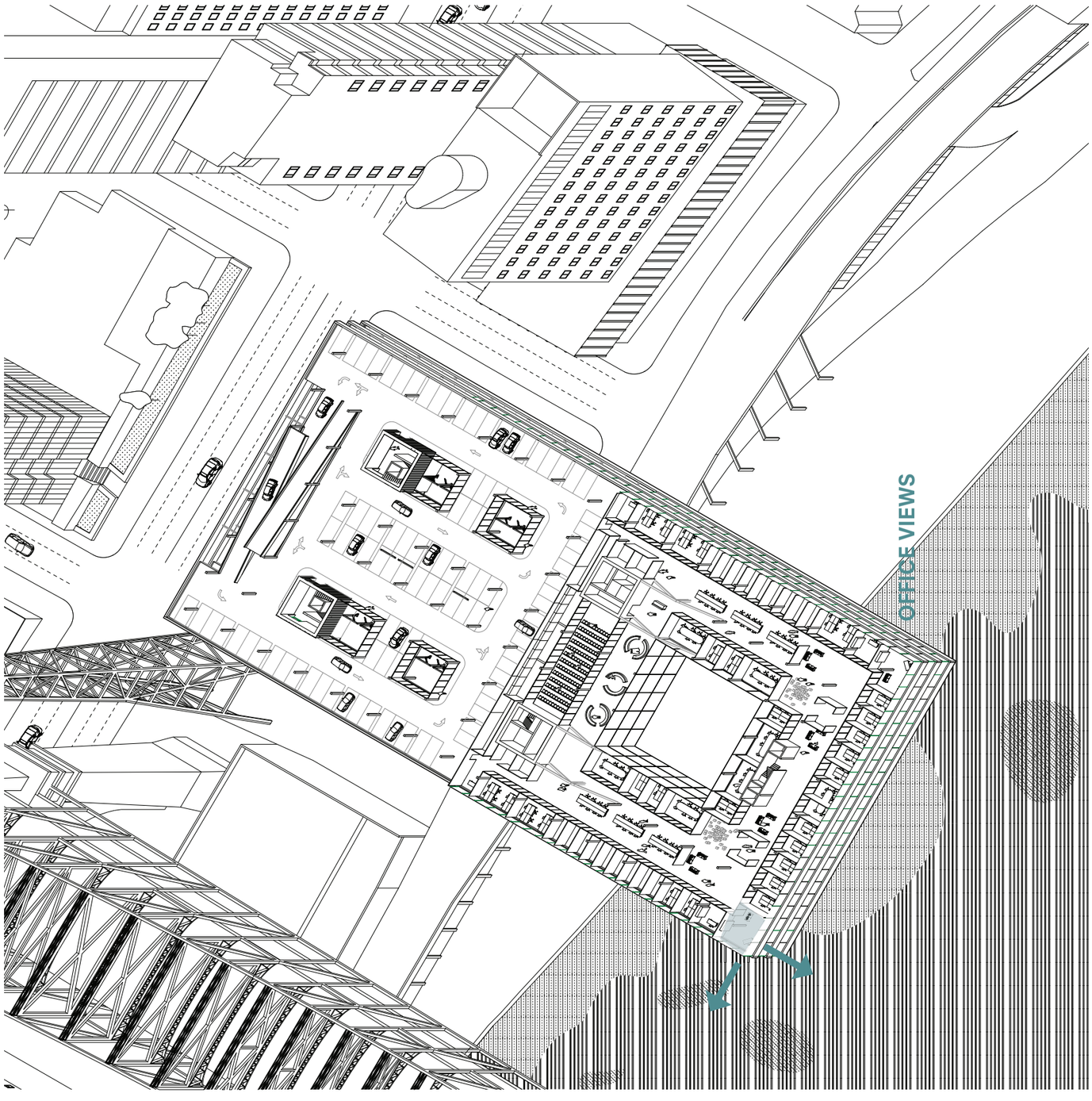
MEETING ROOMS


DRIVE FROM TESLA SERVICE CENTER
INTO OFFICE AS A TO PLACE SHOW
MODELS

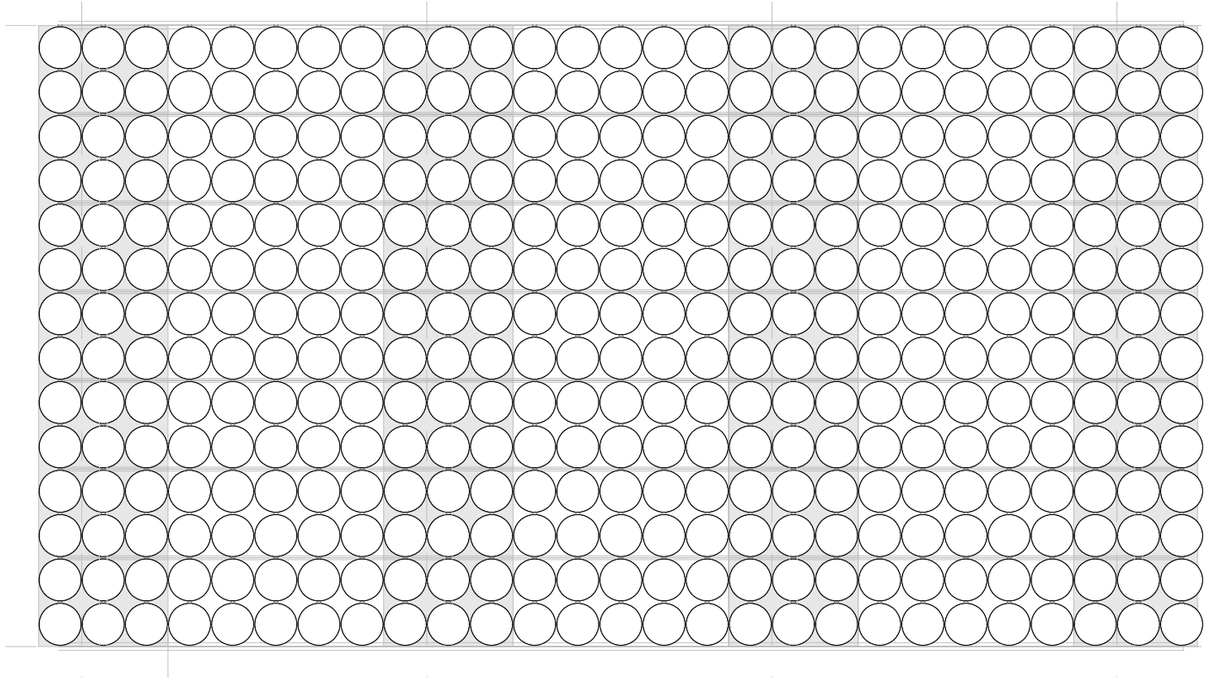

CONNECTION FROM PARKING
TO OFFICE

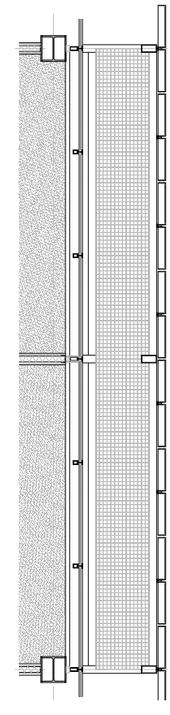


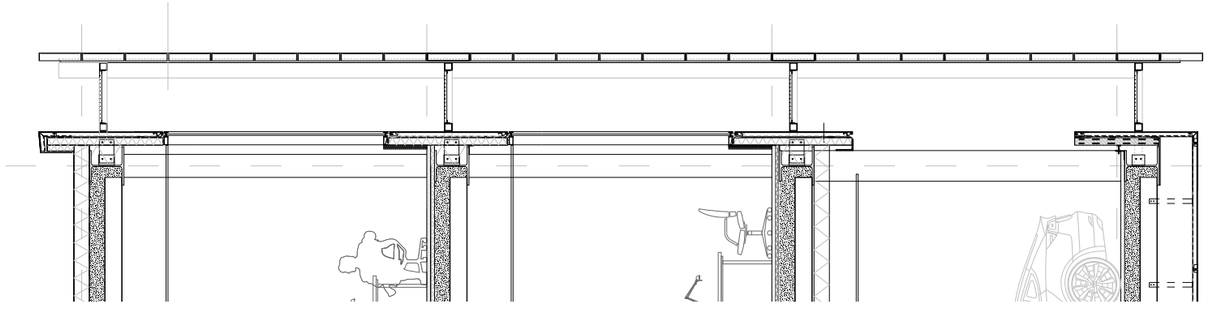
LOOKING DOWN IN THE TESLA
SERVICE CENTER

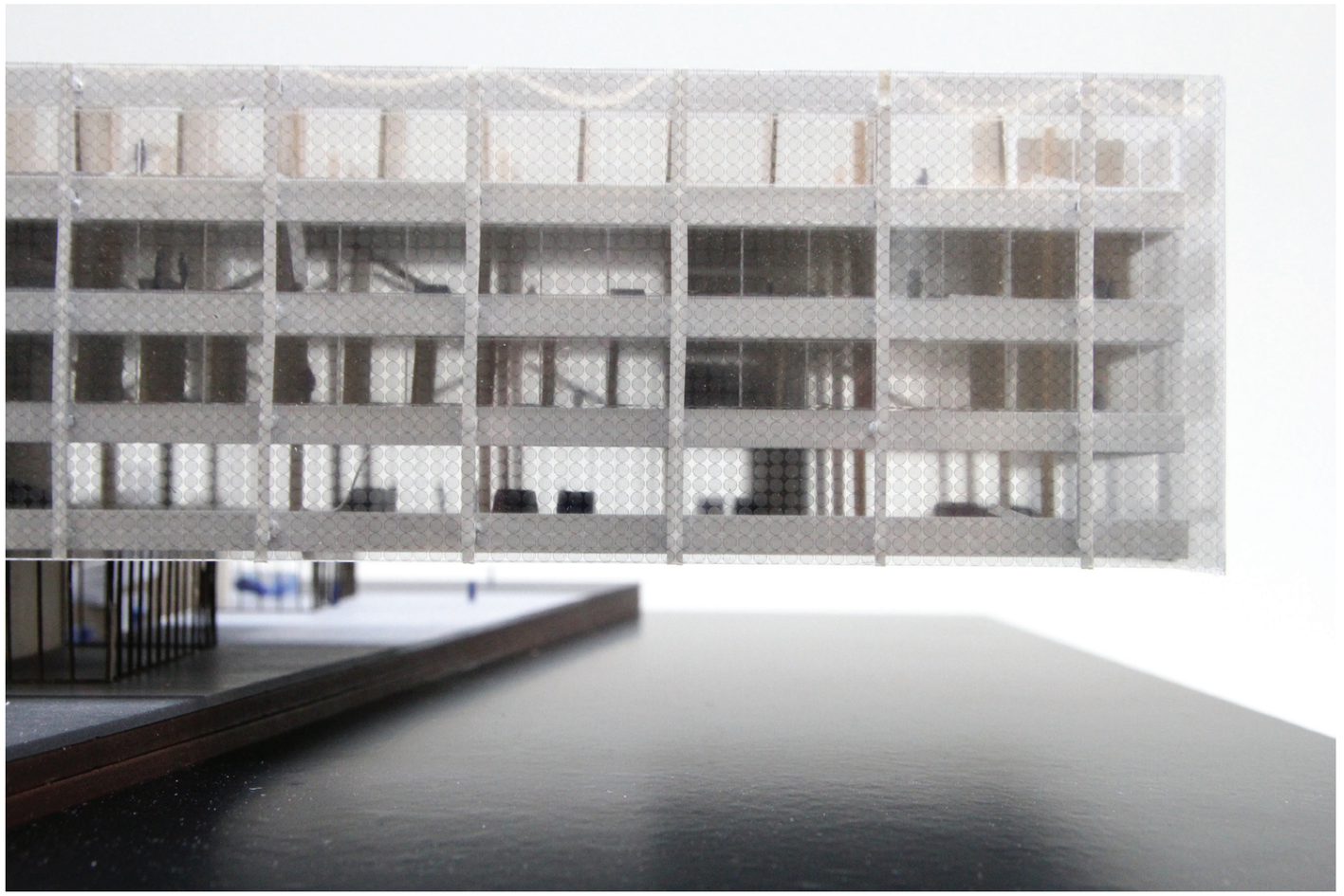

OFFICE VIEWS

OFFICE INTERIOR



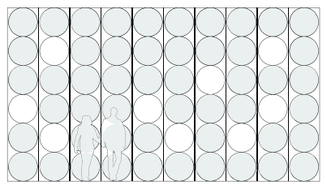




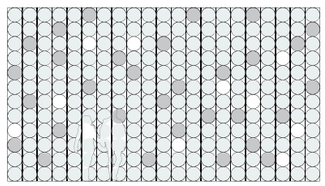


CORNER OFFICE VIEWS

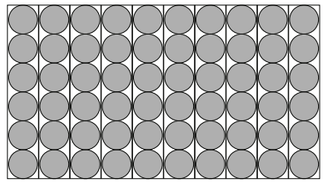
SOUTH FACADE



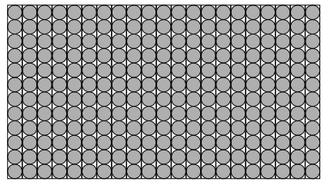
OPEN EN SEMI TRANSPARANT



PV PANELS IN CIRCLES

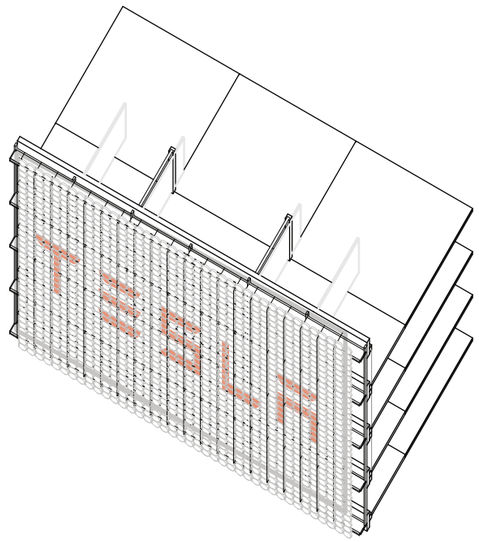


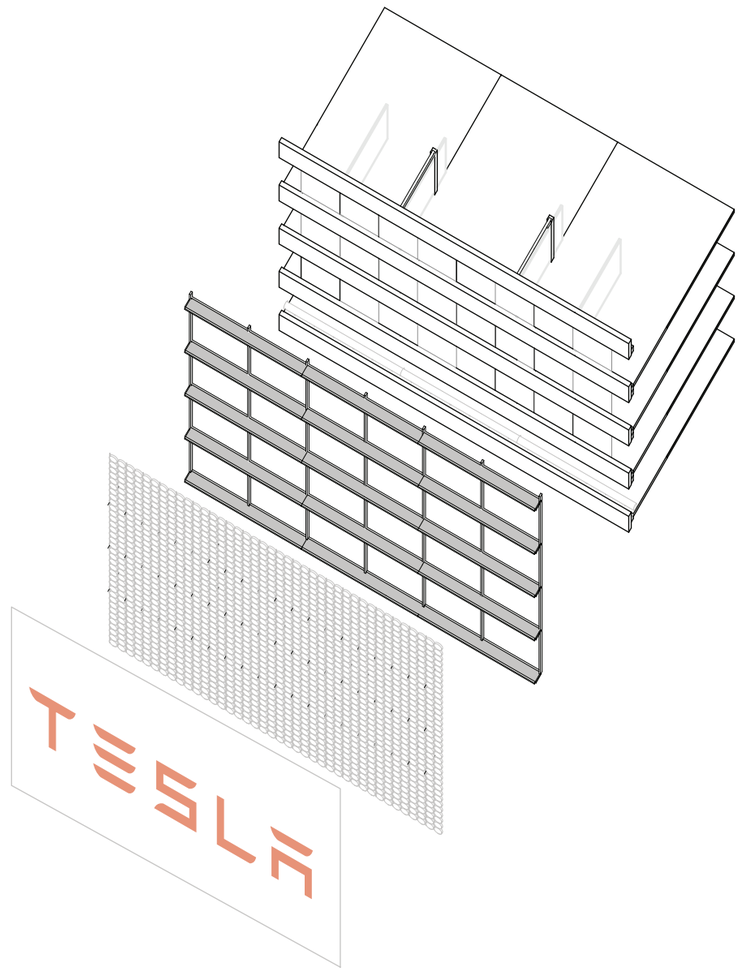
OPEN CLOSED RATIO 3:1

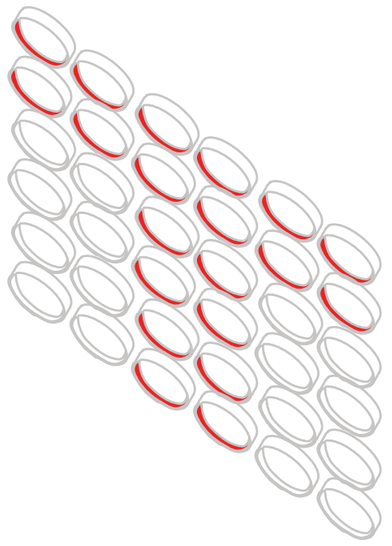


OPEN CLOSED RATIO 3:1

FACADE_PRINCIPLE

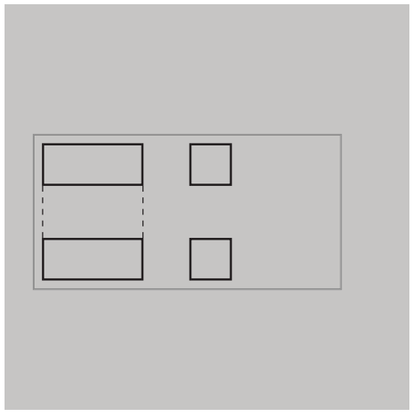




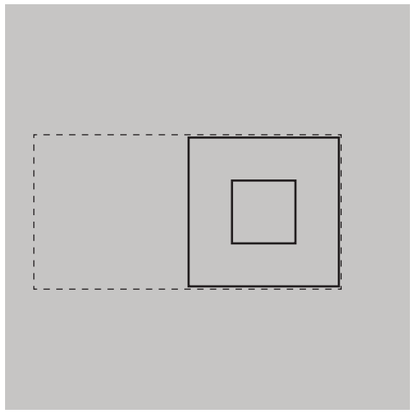


FACADE BUILT UP

INSULATION LAYER

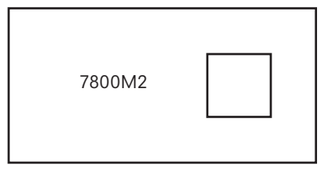


GROUNDFLOOR



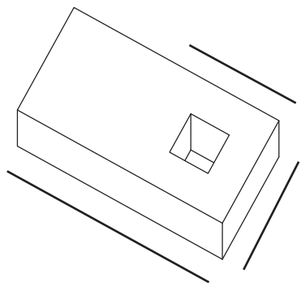
OFFICE FLOORS

ENERGY PRODUCTION



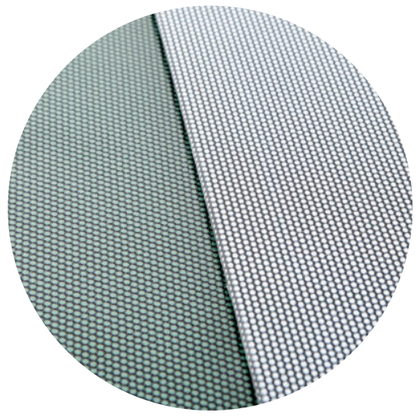
7800M2 X40% = 3120M2

ROOF



4800M2 X20% = 960M2

FACADE



FACADE PV PANELS

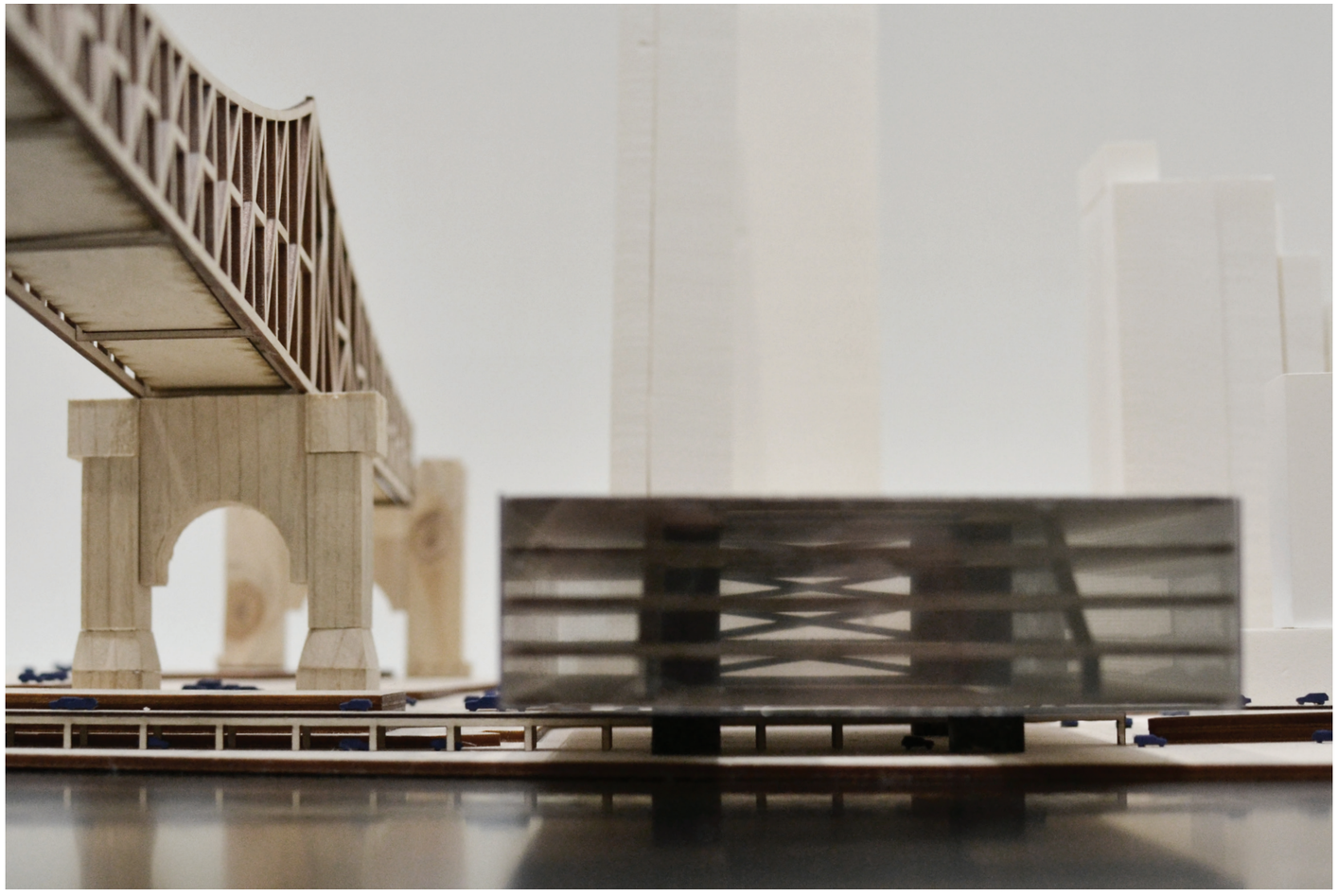
7800M2 X40% = 3120M2
4800M2 X20% = 960M2

960M2 X 50 Wp = 48 000W
3120M2 X250Wp = 780 000W
3.79 AVERAGE SUN HOURS IN NY

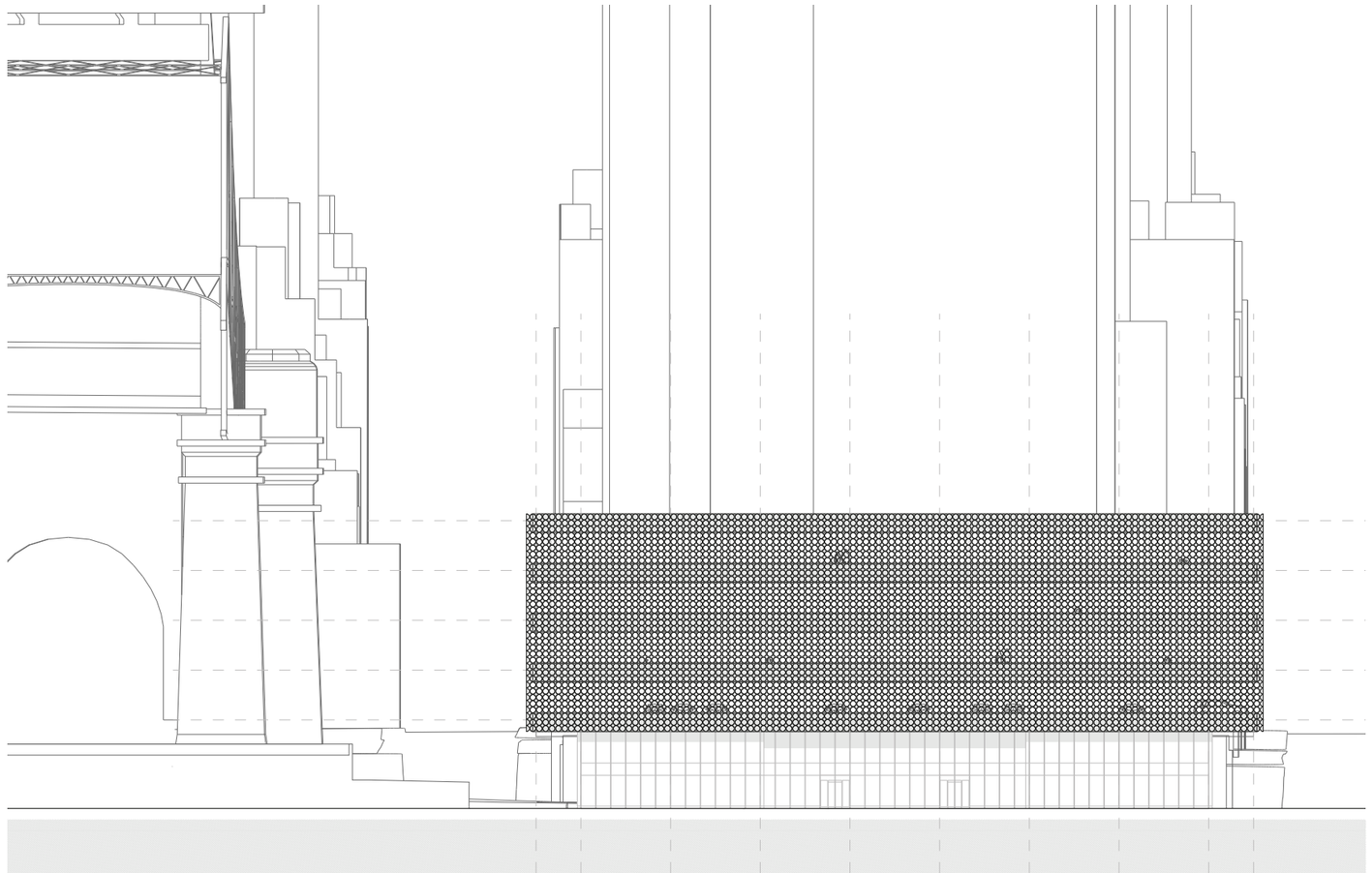
828 000 W X 3.79 X75%= 2 217 000 W per day

OFFICE FLOORS

CLIMATE

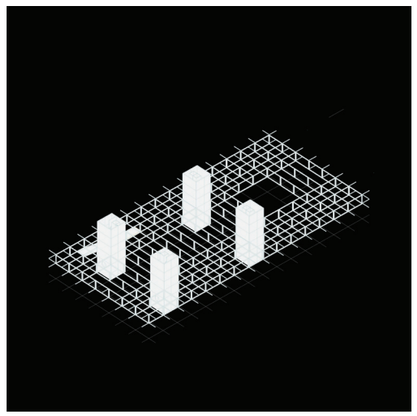


WATERFRONT FACADE

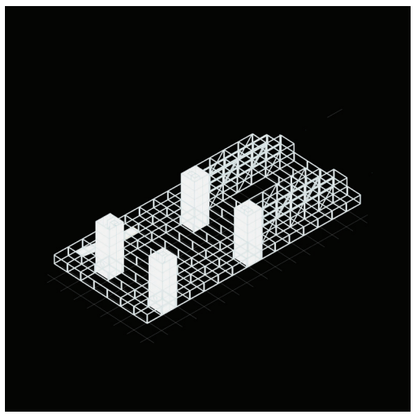


CLIMATE

4 CONCRETE CORES 8,1X8,1

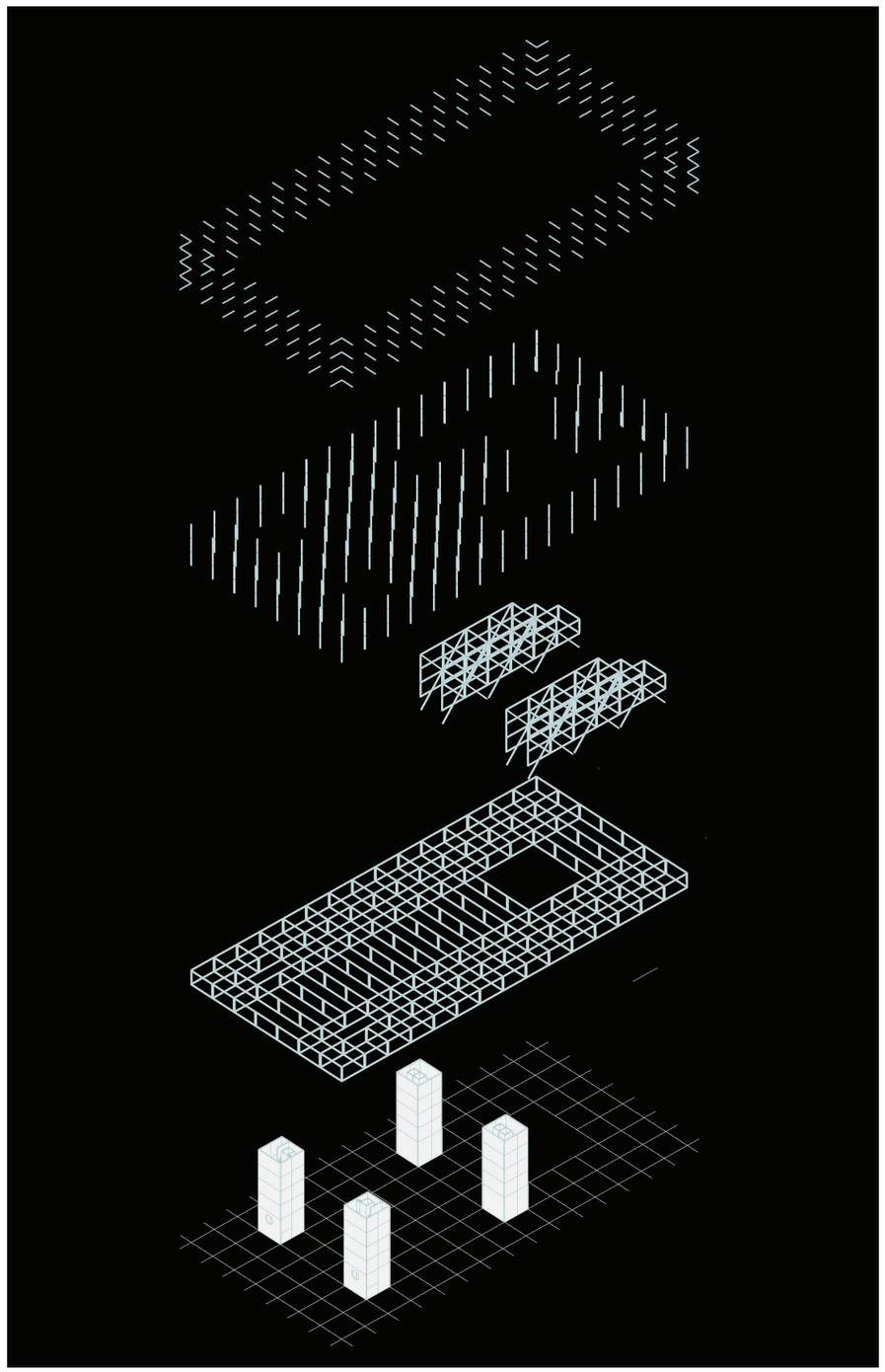


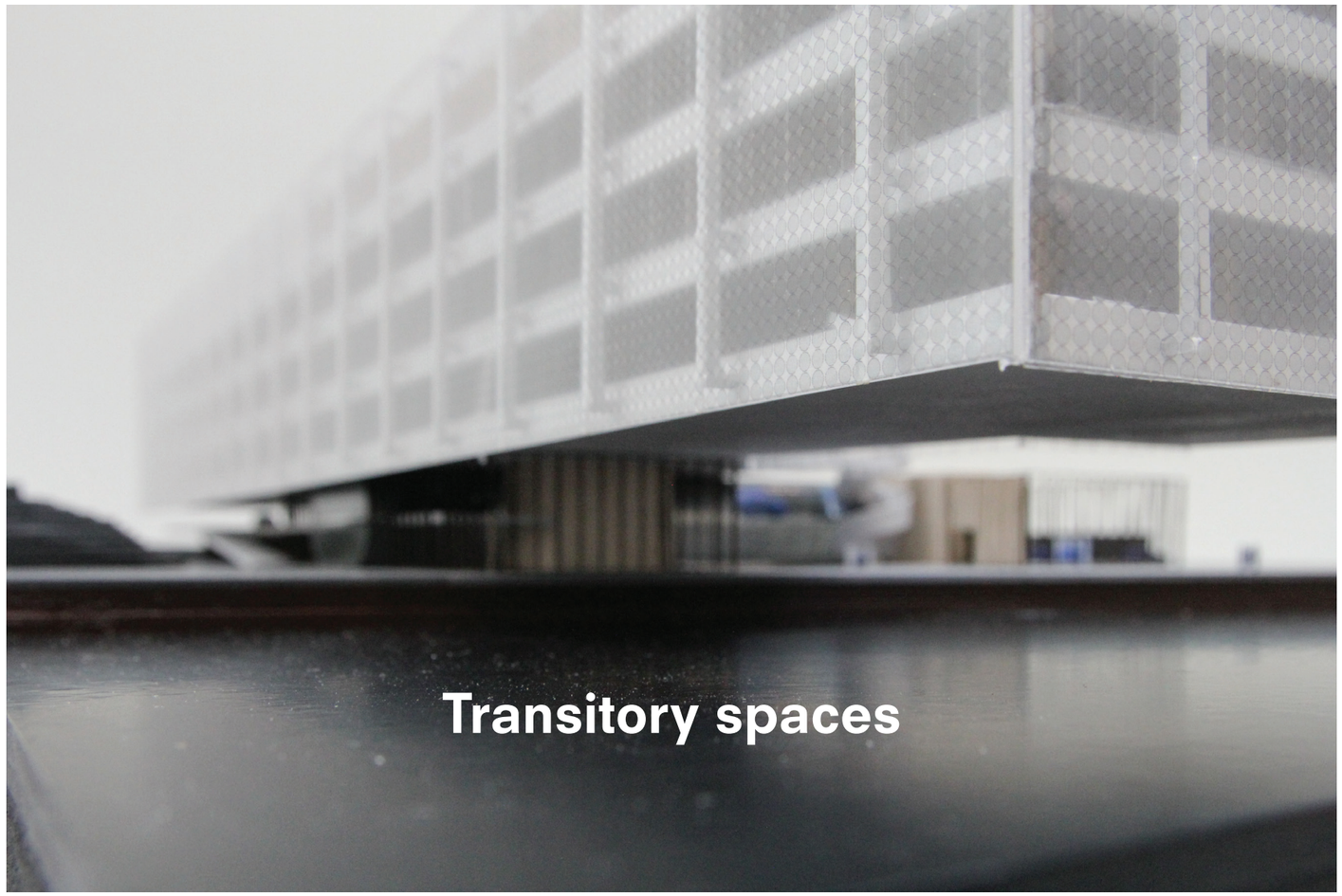
VIERENDEEL TRUSS HANGING
FROM CORES



DIAGONALS AS CABLES HANGING
THE CANTILEVER

STRUCTURE




Transitory spaces