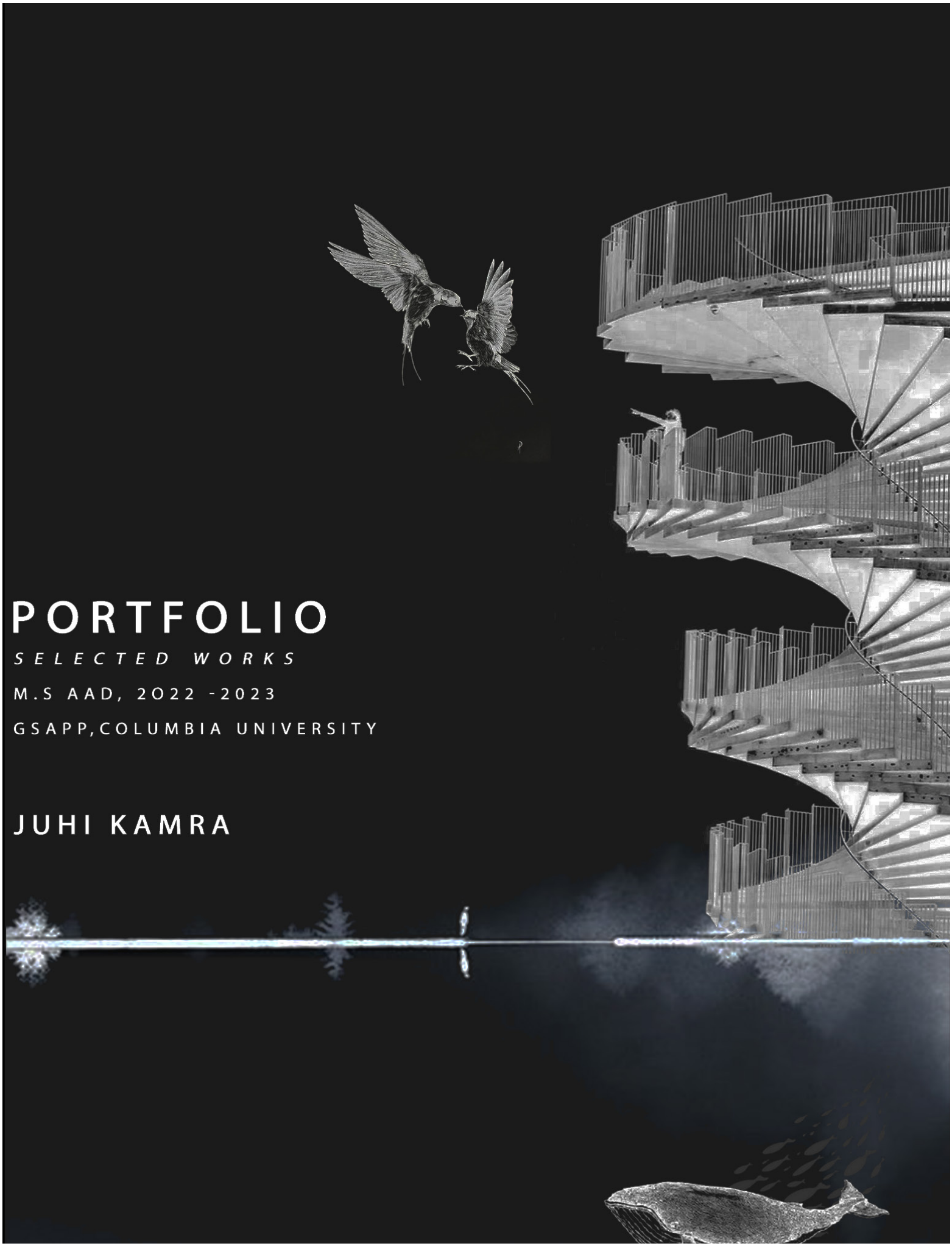


PORTFOLIO

SELECTED WORKS

M.S AAD, 2022 -2023

GSAPP,COLUMBIA UNIVERSITY

JUHI KAMRA

Table of Contents

01

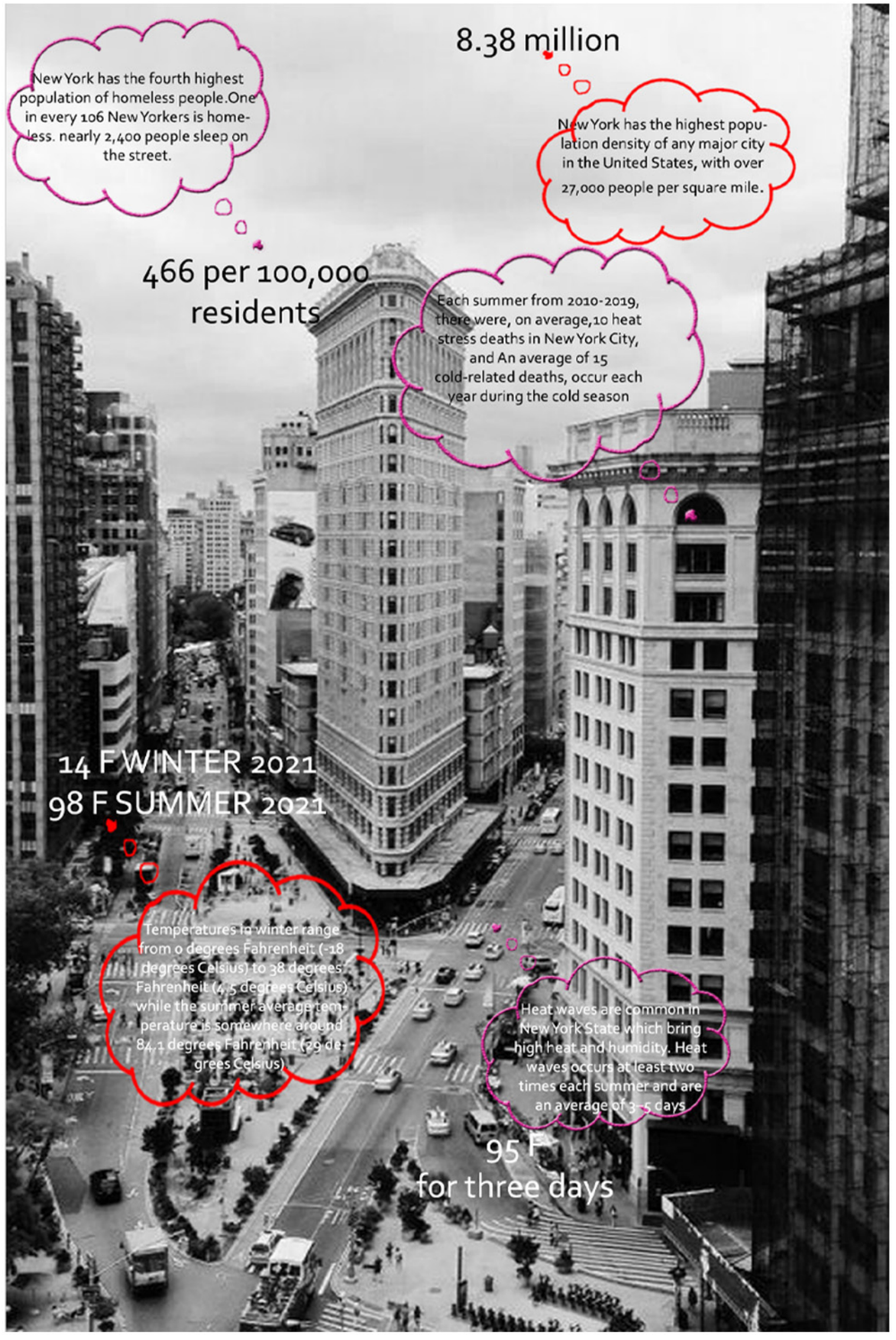
THERMAL COMFORT

Studio -Signature Urbanism
Instructor -Ersela Kripa and Stephen Mueller
Summer Semester

New York has the highest population density of any major city in the United States Though New York has about approximately 2300 public spaces available, only 17% of them are currently accessible. Extreme weather conditions can be deadly and some research suggests that difference of 1 F roughly 1.5 percent in the city's mortality rate The project seeks to apply architecture's disciplinary expertise in designing for thermal comfort to consider designing for increased thermal survivability .

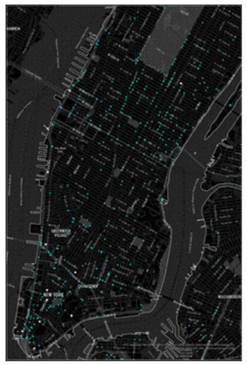
With these tools like satellite data, multispectral technology or emerging technologies , a new typology of public space can be designed according to the microclimate. Public spaces are just more than a confined space. It can act like a safe haven for people who are vulnerable to heat or cold.Instead of hostile public spaces , an inclusive public space should be designed which is thermally comfortable as well.

As climate change is becoming more evident day by day , it has become a need of today, to start designing architectural spaces according to the microclimates , so that surviving these extreme climates becomes possible for all.



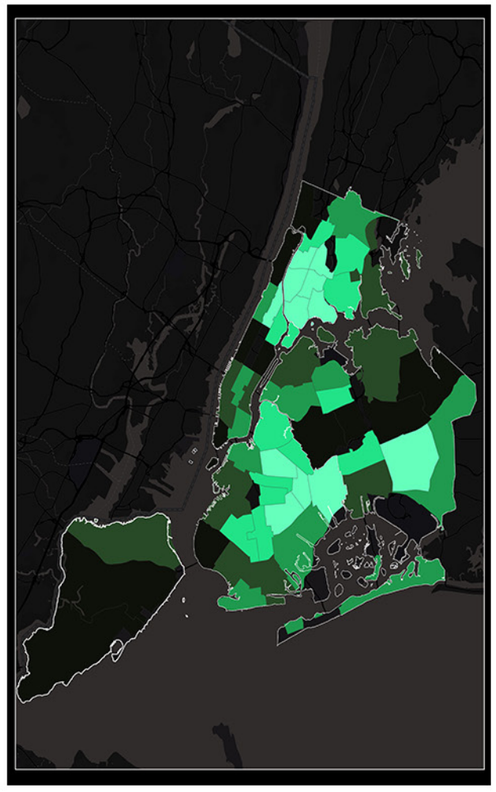
UN-HOUSED POPULATION PER CENSUS TRACT

UN-HOUSED POPULATION PER CENSUS TRACT



PUBLIC CAMERAS

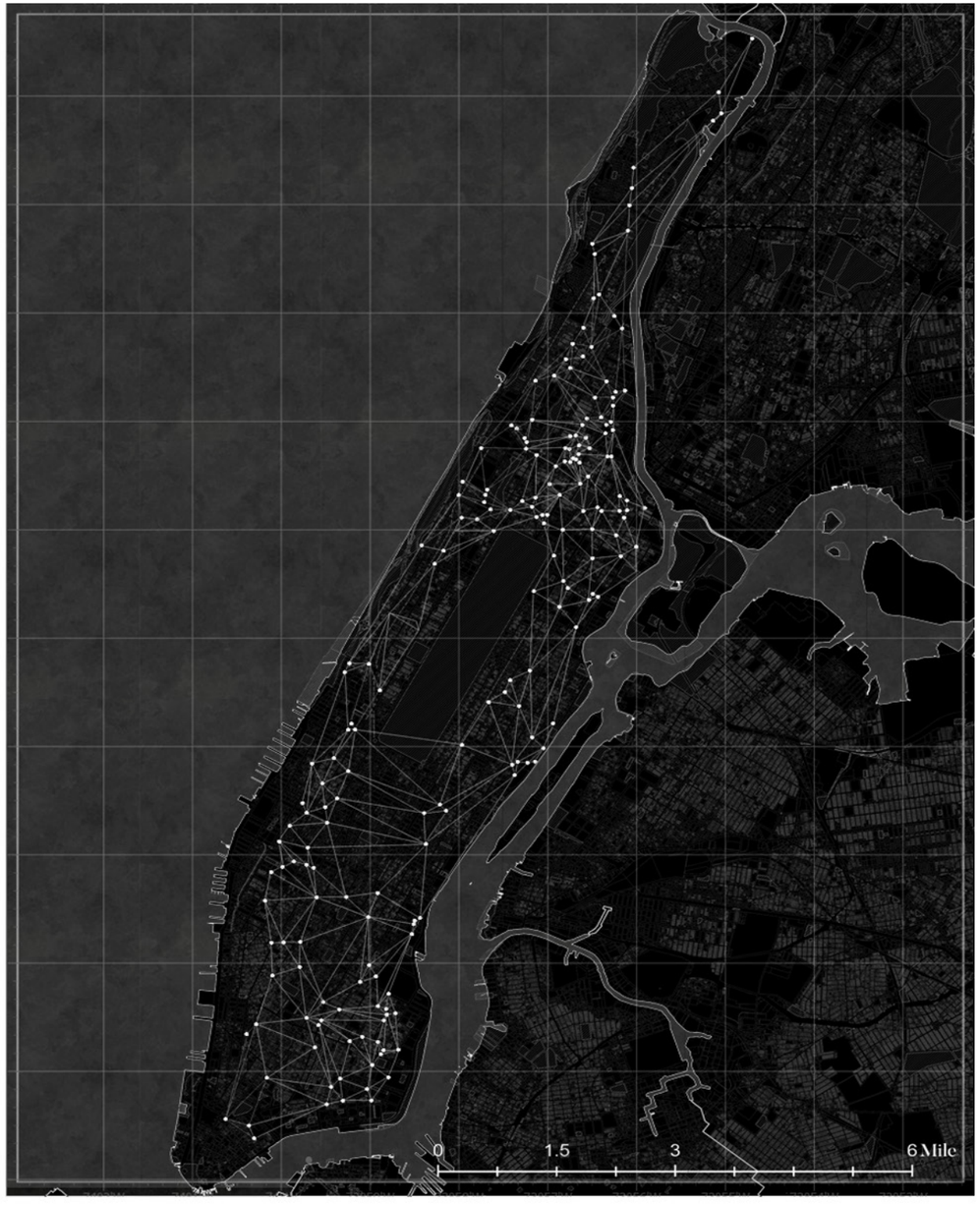
PRIVATE CAMERAS



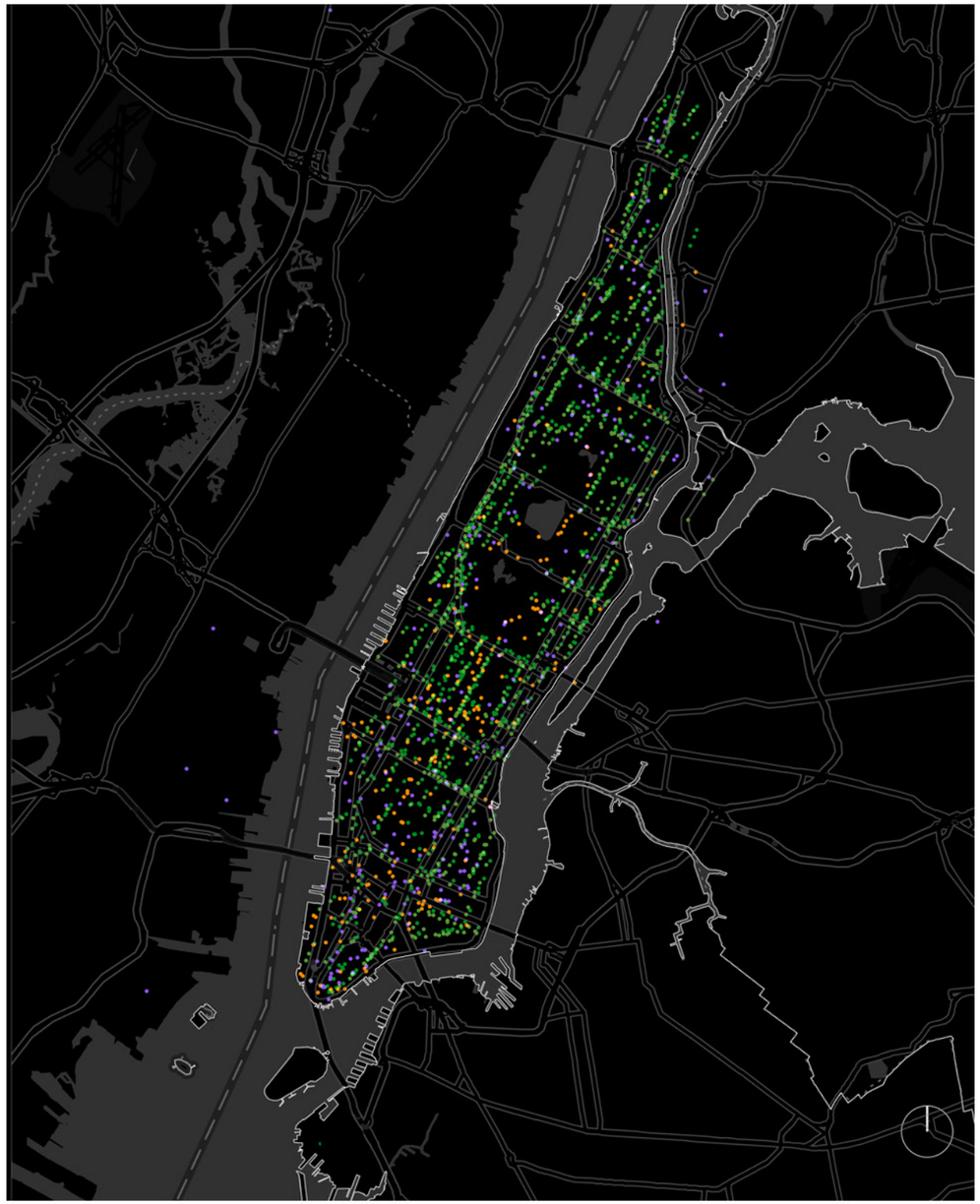
HEAT VULNERABILITY INDEX

POPULATION MOVEMENT AROUND SHELTERS

POPULATION MOVEMENT AROUND PANTRIES

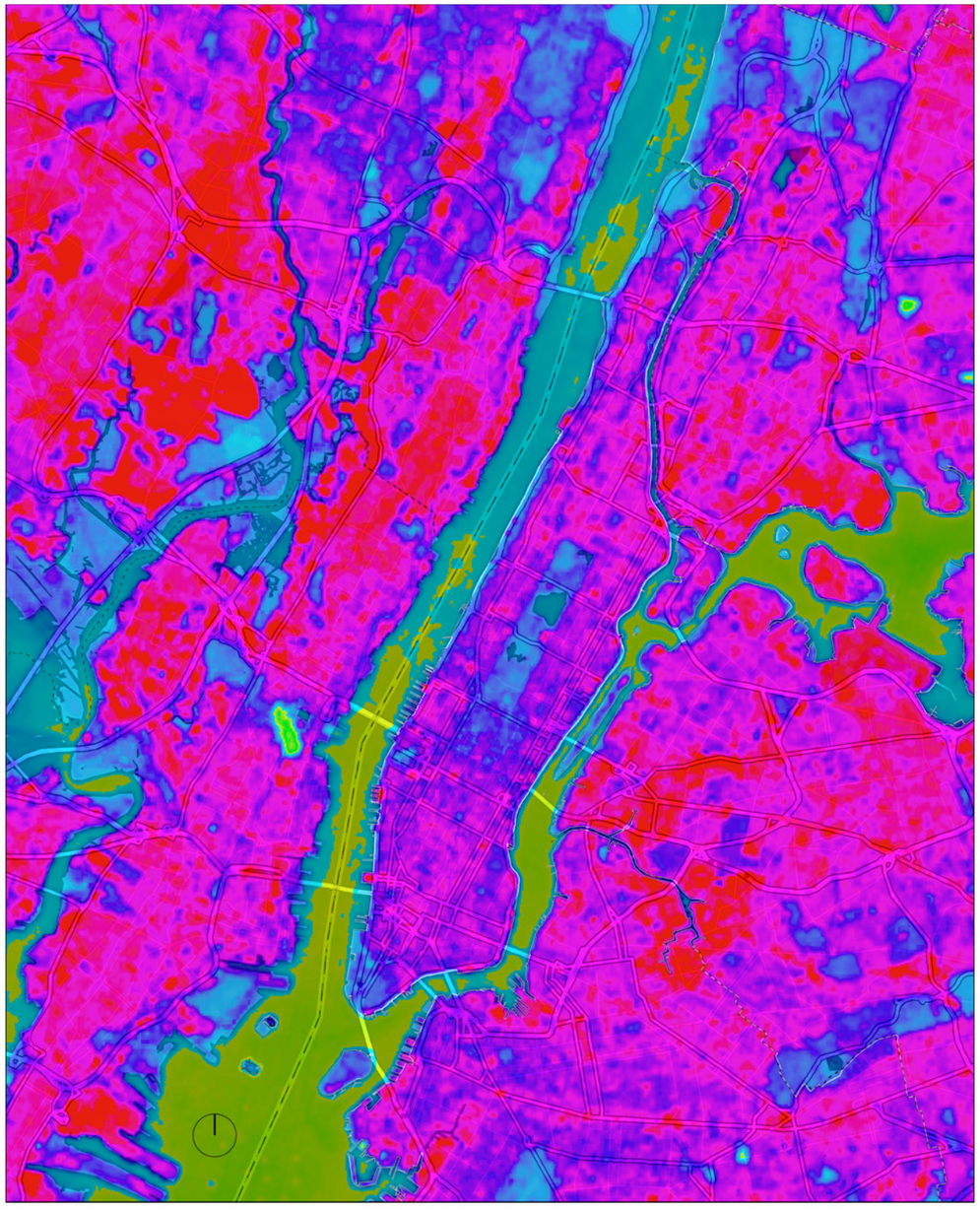


SHELTERS AROUND THE CITY

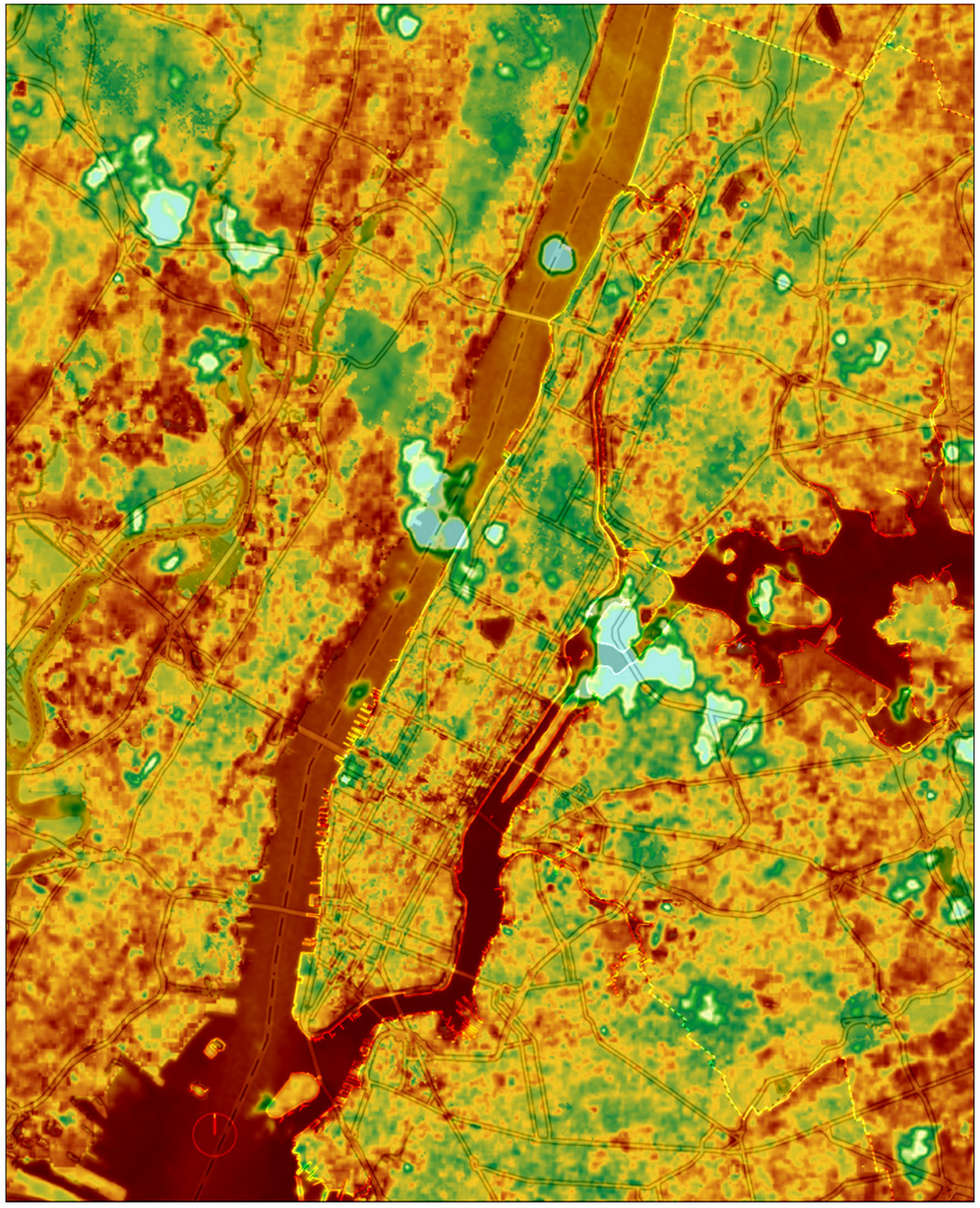


HOSTILE ARCHITECTURE

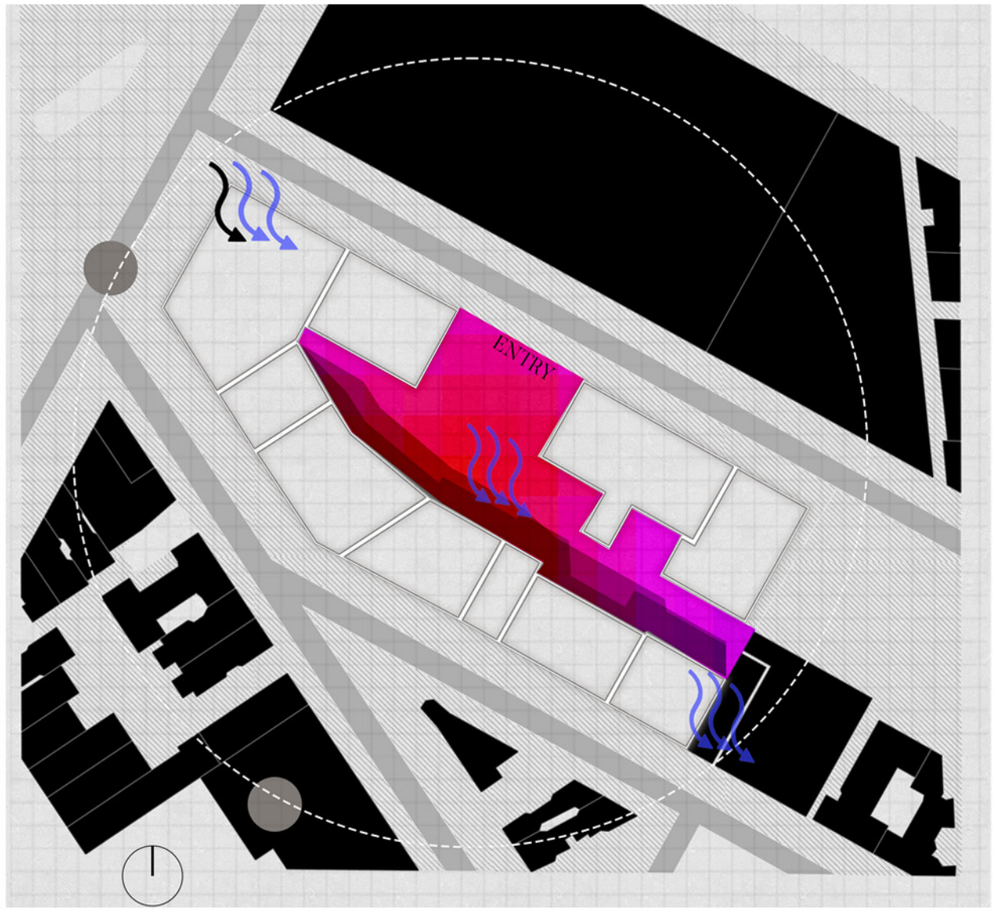
HOSTILE ARCHITECTURE

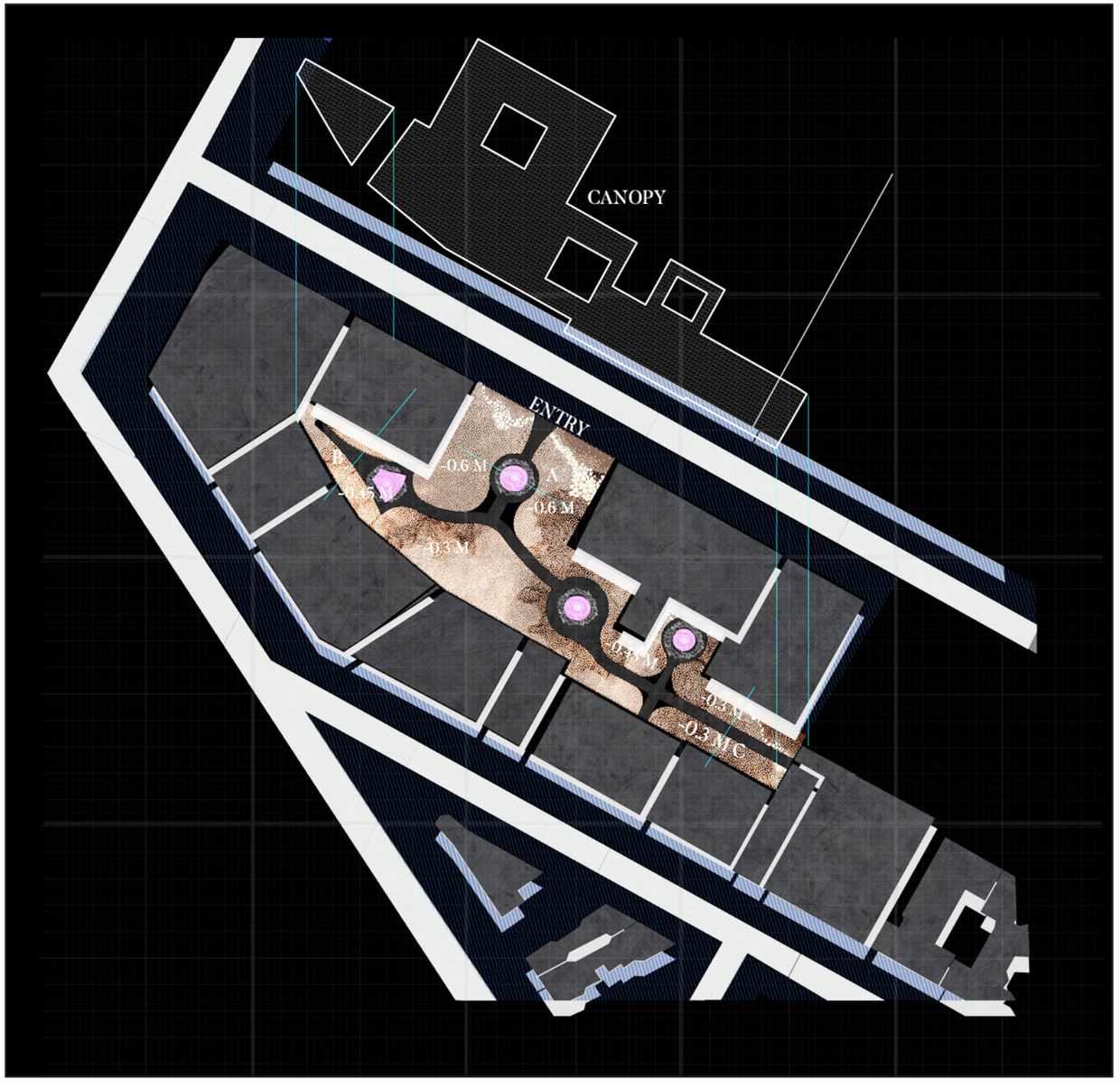


SUMMER MICROCLIMATE MAP



WINTER MICROCLIMATE MAP





SITE LOCATION
128TH STREET , EAST HARLEM

EXISTING SITE

MICROCLIMATE
TEMPERATURE NOTED -90 F

02

RAISING TO 2100

Studio -What if..Floating New York
Instructor -Laurie Hawkinson
Group-Juhi Kamra and Namrata Dhore
Spring Semester

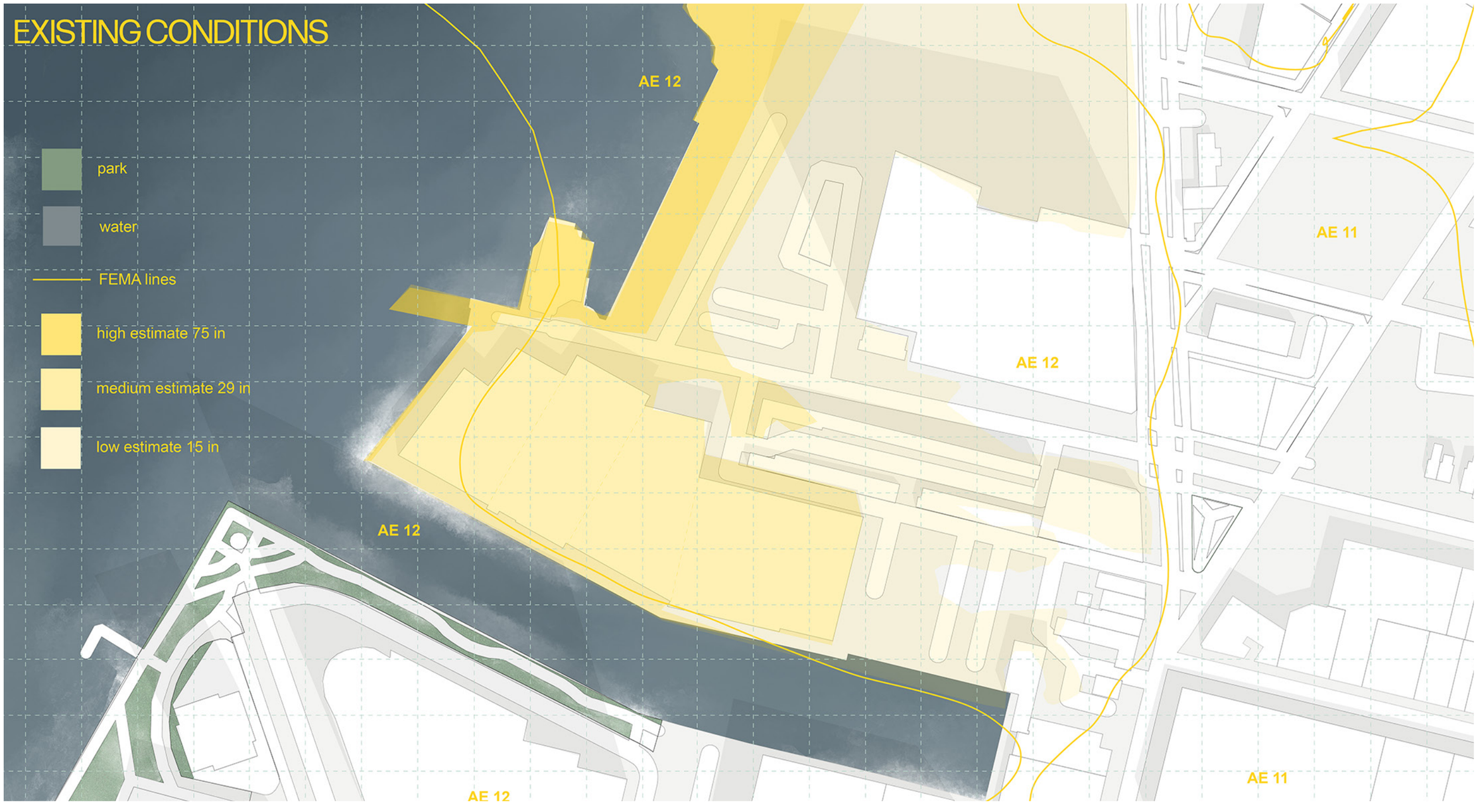
FEMA estimates that 13 million Americans currently live within a 100-year flood zone but a new study published in the journal Environmental Research Letters argues the real number of people exposed to flood risk is about 41 million — more than three times FEMA's estimate. The flood risk is estimated to increase by 45 % by the year 2045. Queens is also singled out as a borough with the highest risk of flooding putting over 2700 homes at risk.

The existing site is located at Anabel Basin, in Hunters Point, Queens, and currently consists of warehouses owned by Plaxal and a bar right by the coast edge. The site is in AE 12 zone and will experience a sea level rise of 75 inches in most areas by 2100. This also means that it will experience a flood of about 14ft by the year 2100.

This project is a model for what the implementation of the changes to the coastal construction code might look like. After taking a look at the DOB code in Appendix G the following edits are done:

Proposed Addition:
G311.2.1 Modification to the Area of Special Flood Hazard or Shaded X-Zone:
1. Raise buildings in at risk coastal zone to at least a height of 15ft with by 2030.
2. Add appropriate storm water management systems to sites with occupancy group c d and j in at risk zones by 2030.

EXISTING CONDITIONS




27
EXISTING STRUCTURE
EXISTING SITE
RAISED TILL 2100 SEA LEVEL RISE
27
EXISTING STRUCTURE
NEW SLAB LEVEL
18
EXISTING SITE

MARKET HALL

RESEARCH CENTER

PROJECT PROPOSED

PHASE 1

PHASE 2

PHASE 3

2023

2030

2050

2100

building elevated

paths added

water square added

terracing coast edge

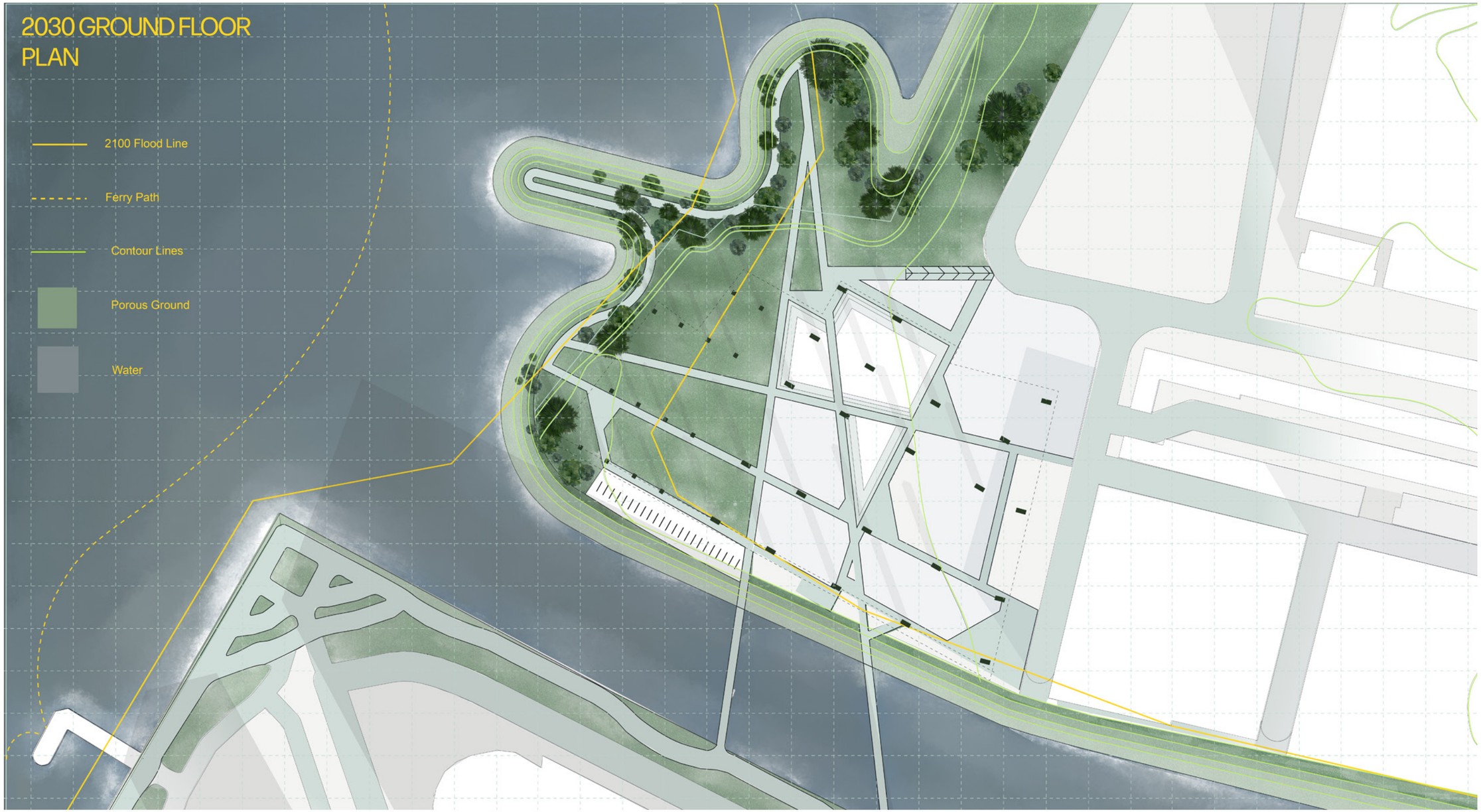
park added to connect to ferry

flood increase by 45%

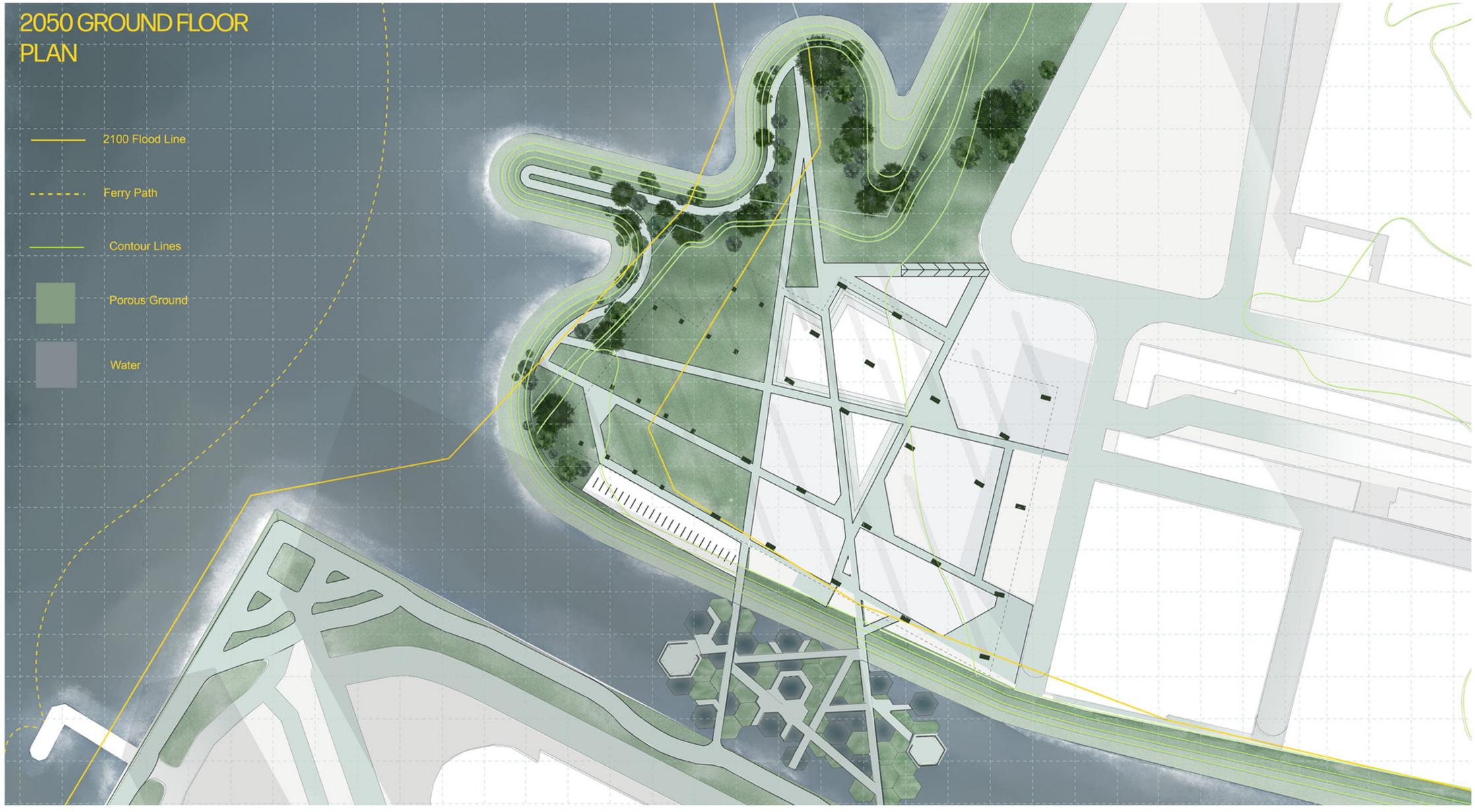
building paths remain un flooded

program changes

2030 GROUND FLOOR PLAN



2050 GROUND FLOOR PLAN



PROJECT TOOLS AND INTERVENTIONS

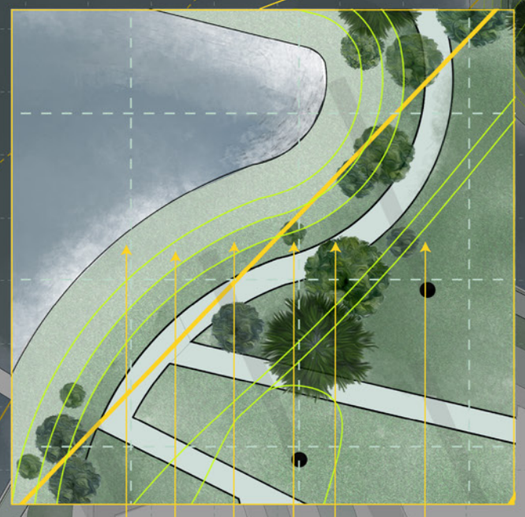
2100 Flood Line

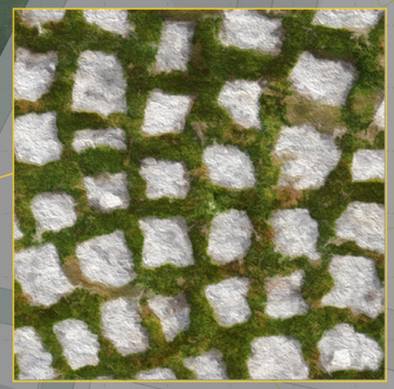
Ferry Path

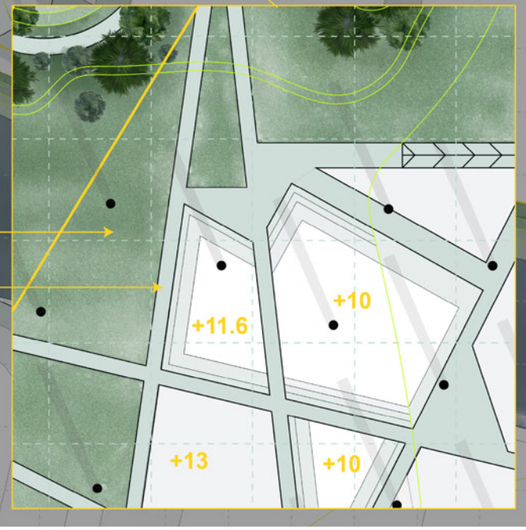
Contour Lines

Porous Ground

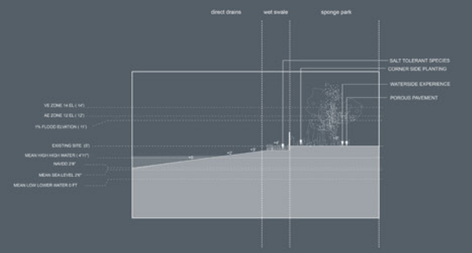
Water

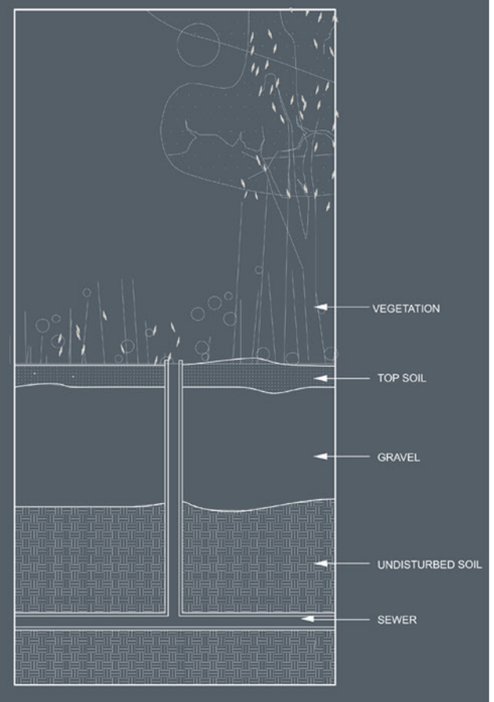




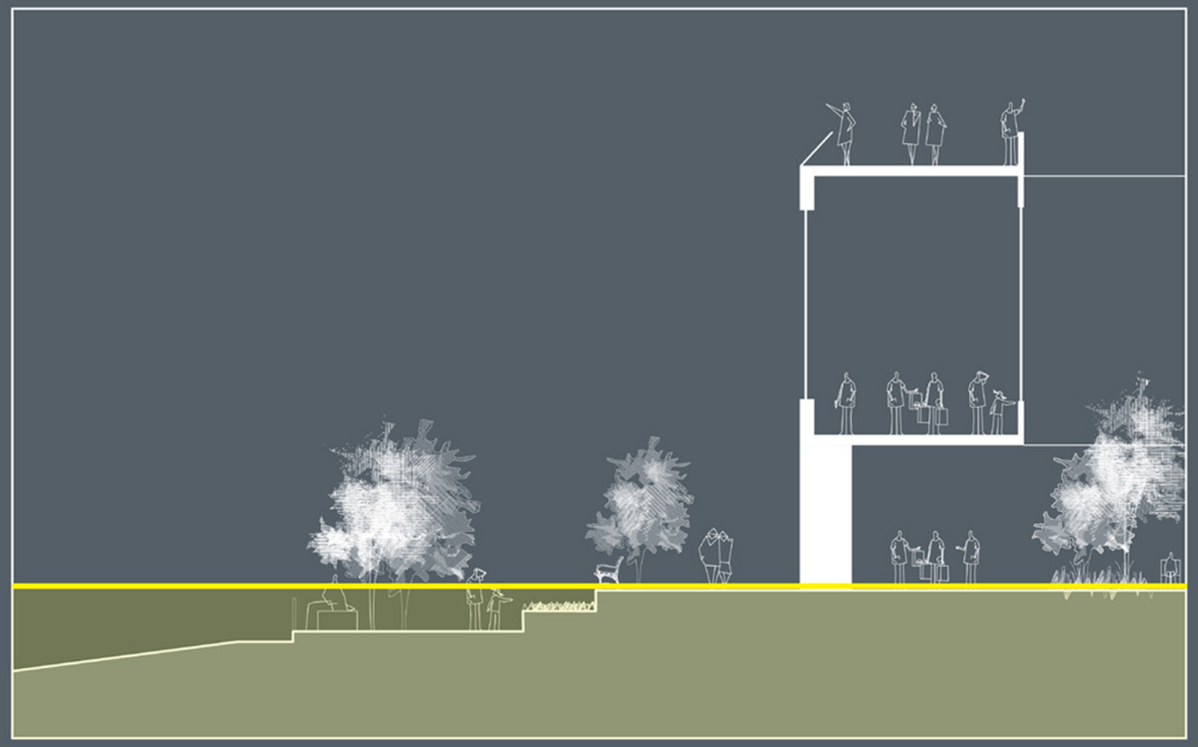


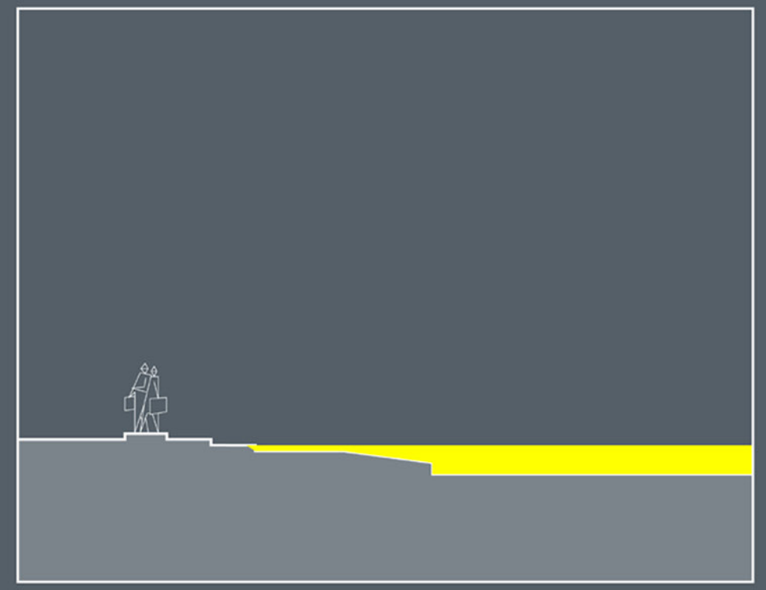
VEGETATION DETAILS

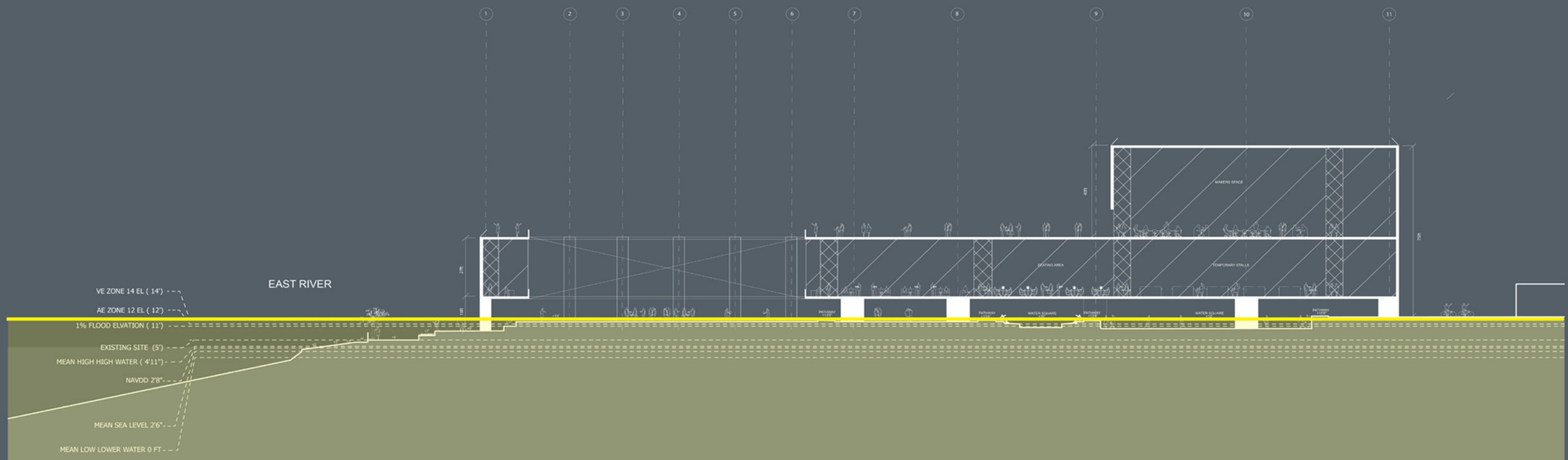




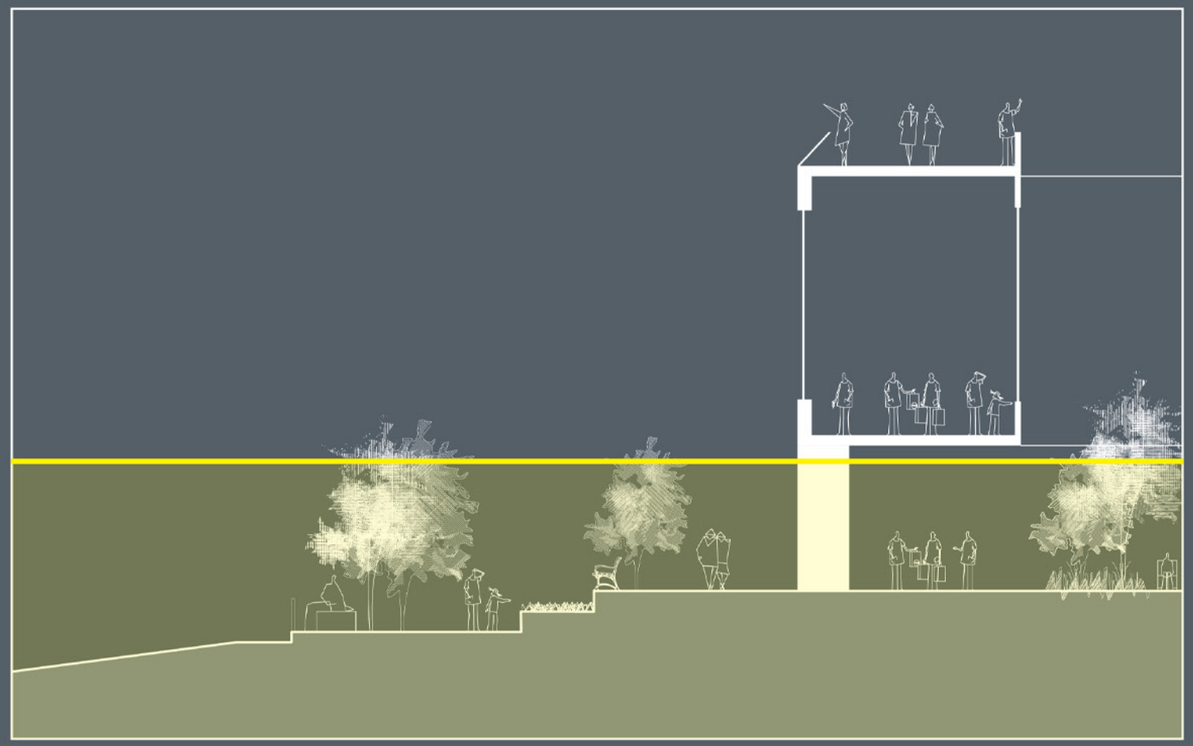
SECTION 2050 FLOOD LINE
WITH WATER SQUARE

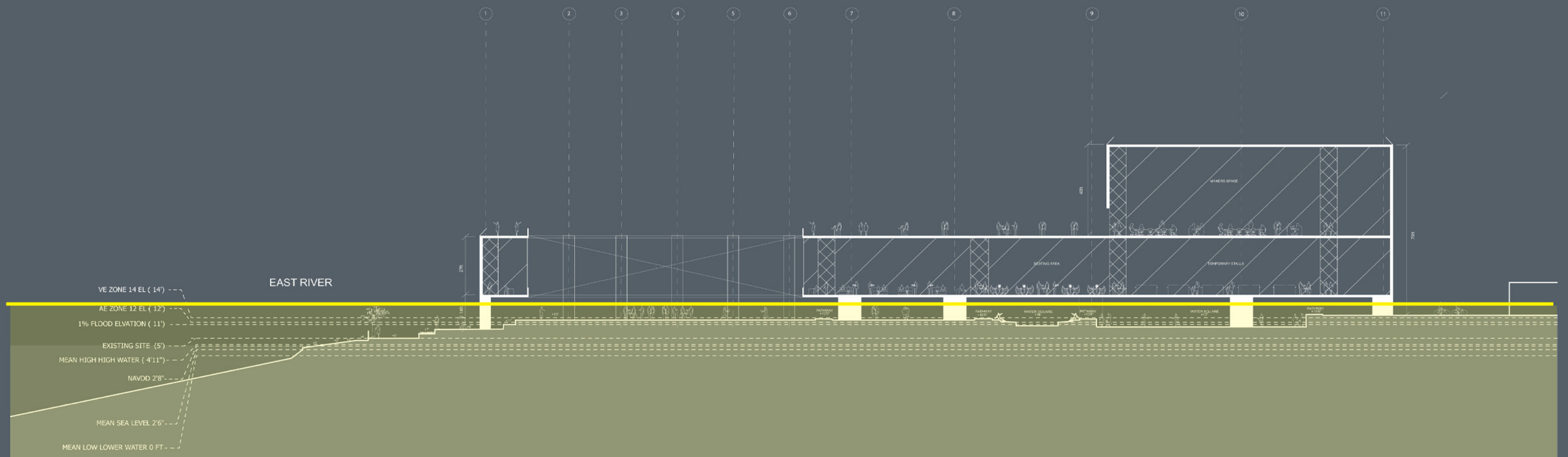




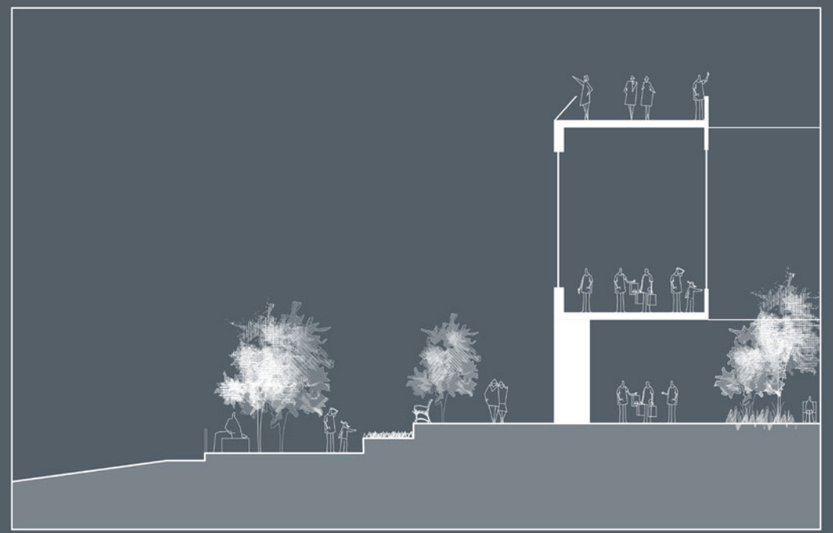


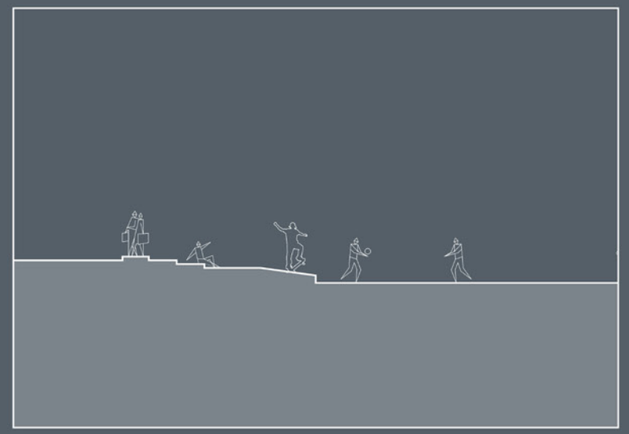
SECTION 2100 FLOOD LINE

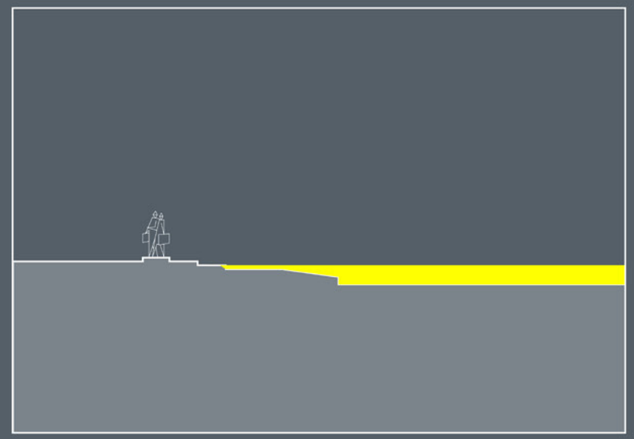


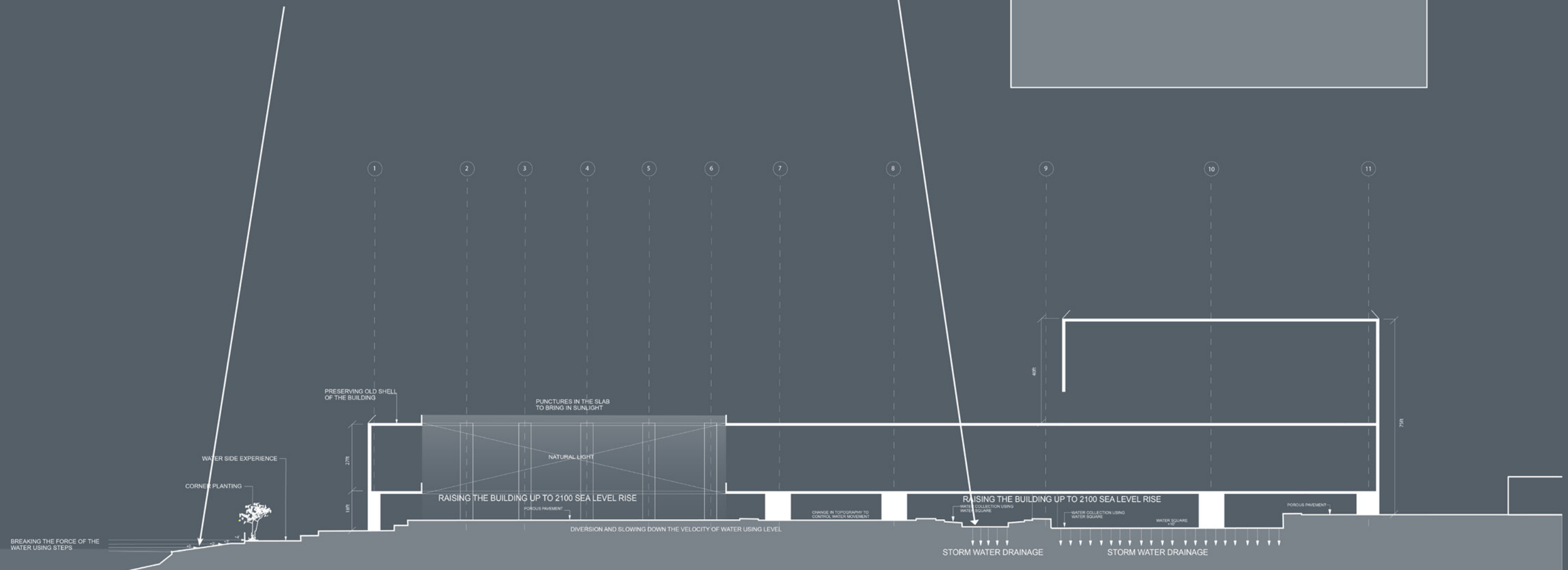


SECTION DETAILS

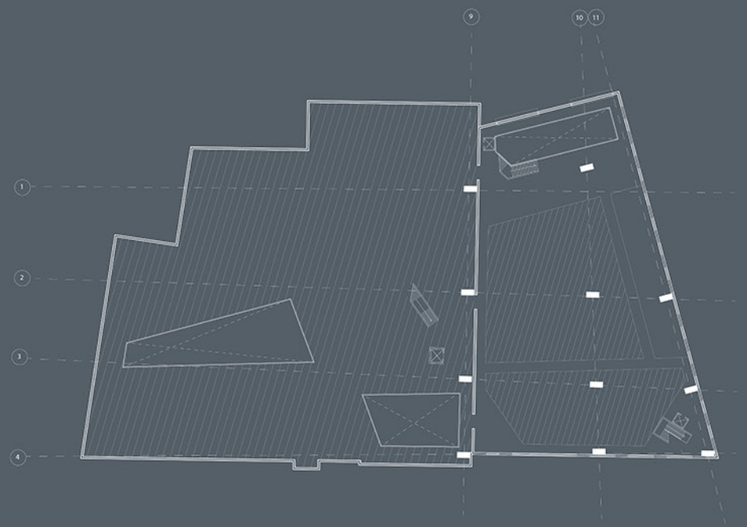


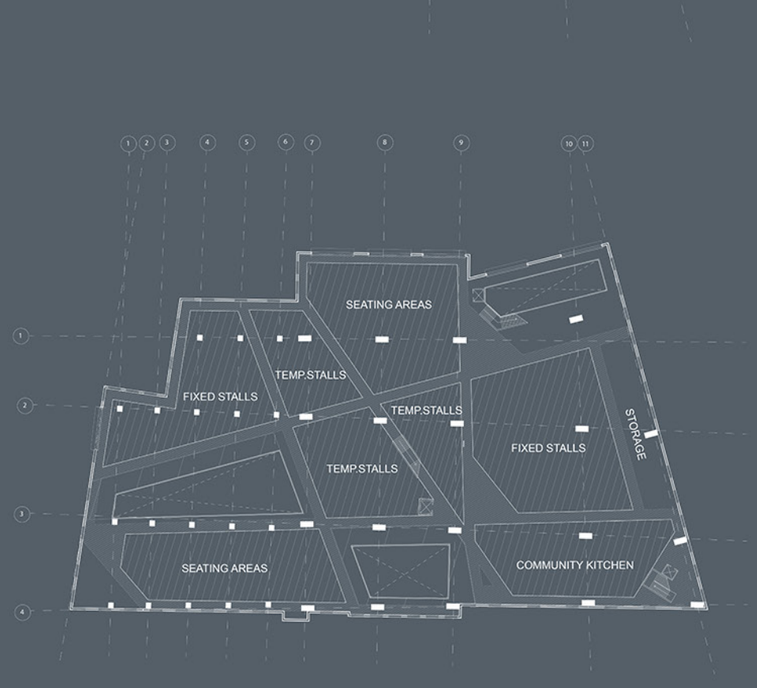


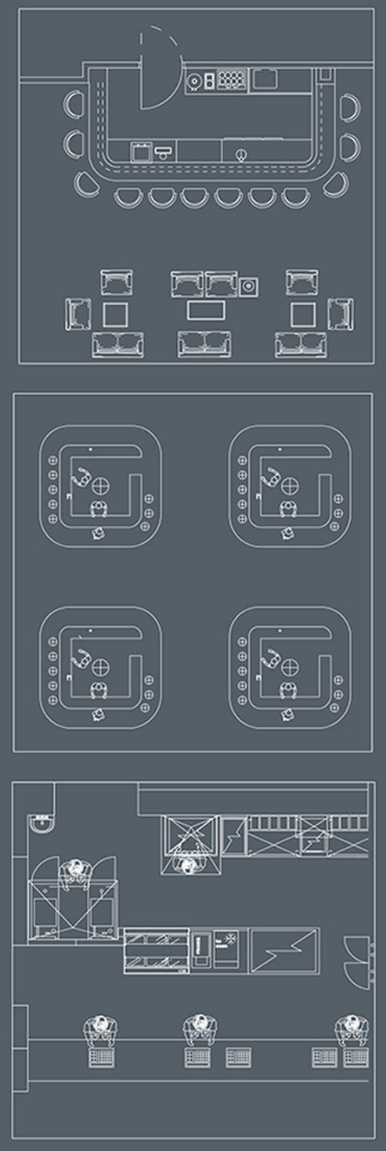




1ST & 2ND FLOOR PLAN







03

URBAN RENEWAL 2050

Studio -Capping the Cross Bronx Expressway
Instructor -Michael Bell
Group-Juhi Kamra and Namrata Dhore
Fall Semester

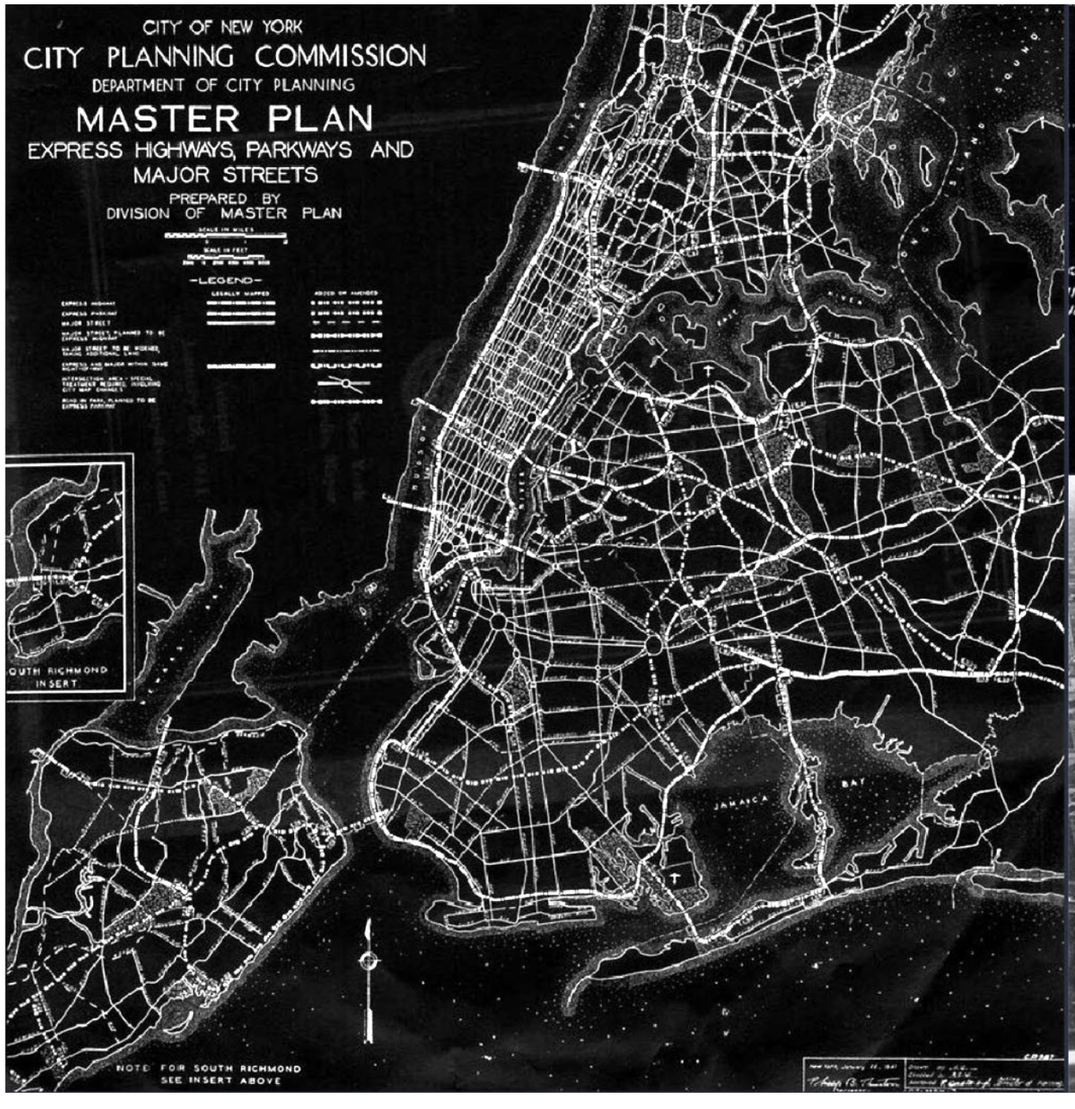
The Cross-Bronx Expressway or CBE originated in 1929 and was a part of the Regional Plan of New York City at the time. This system was needed because of New York's chronic traffic problems, which grew four-fold between 1920 and 1939.

The Cross Bronx Expressway is blamed for the decay of neighborhoods in the South Bronx. Community members argue that the CBE was intentionally directed through the neighborhood, even though there was a more viable option only one block south. Many of the neighborhoods it runs through have been continually poor since its construction, partly due to the lowered property value caused by the Expressway.

This project is proposed as a catalyst to speed up the already lagging 2050 plan.
It impacts most of their parameters for development and positively influences their performance metric. Through interpolation of data, a finer-grain map of looking at the city by utilizing data sets from the past and analyzing them in correlation with one another are created.

A new way of re-routing trucks is proposed so that they remain on the periphery of the manufacturing so as to create habitable environments between the south of Bronx and Manhattan and also around previously burdened CBE adjacent neighborhoods.
Restricting the time in which these trucks can go to these warehouses, as during the day the peak traffic is observed. By restricting them to operate only during off hours like 11 pm -5 am, air pollution and sound pollution can be controlled.

Strategies like this one have also called for a rezoning of the Bronx. Manufacturing from their initial east placement has been moved and shifted to the southwest to allow for habitable conditions between Bronx and Manhattan. This also allows for potential higher-density developments that were previously plagued by poor air quality.

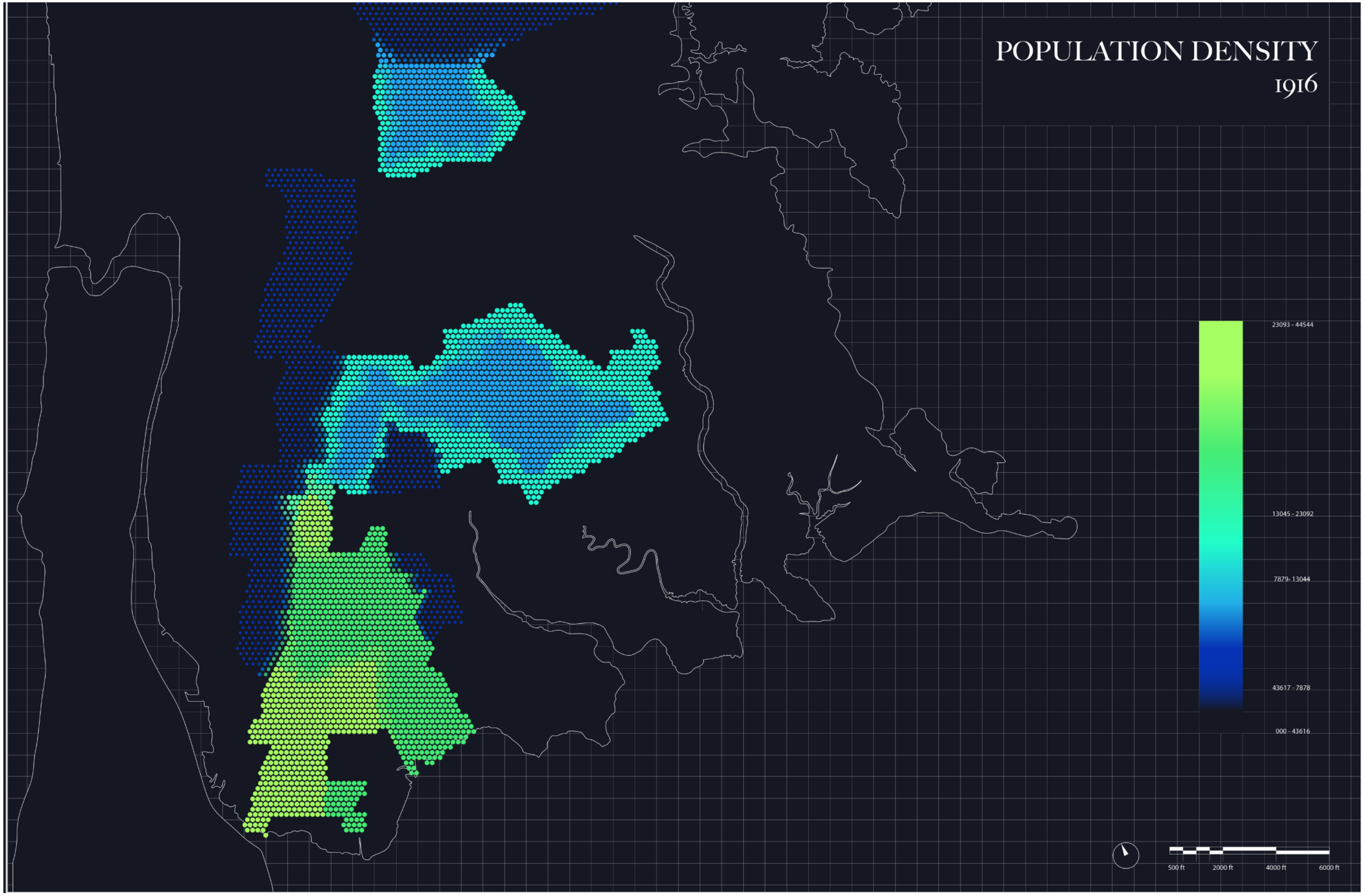

CITY OF NEW YORK
CITY PLANNING COMMISSION
DEPARTMENT OF CITY PLANNING
MASTER PLAN
EXPRESS HIGHWAYS, PARKWAYS AND MAJOR STREETS
PREPARED BY
DIVISION OF MASTER PLAN
-LEGEND-
LEGALLY MAPPED
ADDED BY AMENDED
SOUTH RICHMOND INSERT
JAMAICA BAY
NOTE FOR SOUTH RICHMOND SEE INSERT ABOVE


BROADWAY
WASHINGTON BRIDGE
UNIVERSITY AVE.
JEROME AVE.
CONCOURSE
WEBSTER AVE.
CROTONA PARK
THIRD AVE.
ROSTER ROAD
PROJECTED LOWER BRONX RIVER THRUWAY
EASTERN
BOSTON ROAD
TREMONT AVE.
WESTCHESTER RIVER
PARKCHESTER
Section 1
Section 2
Section 3

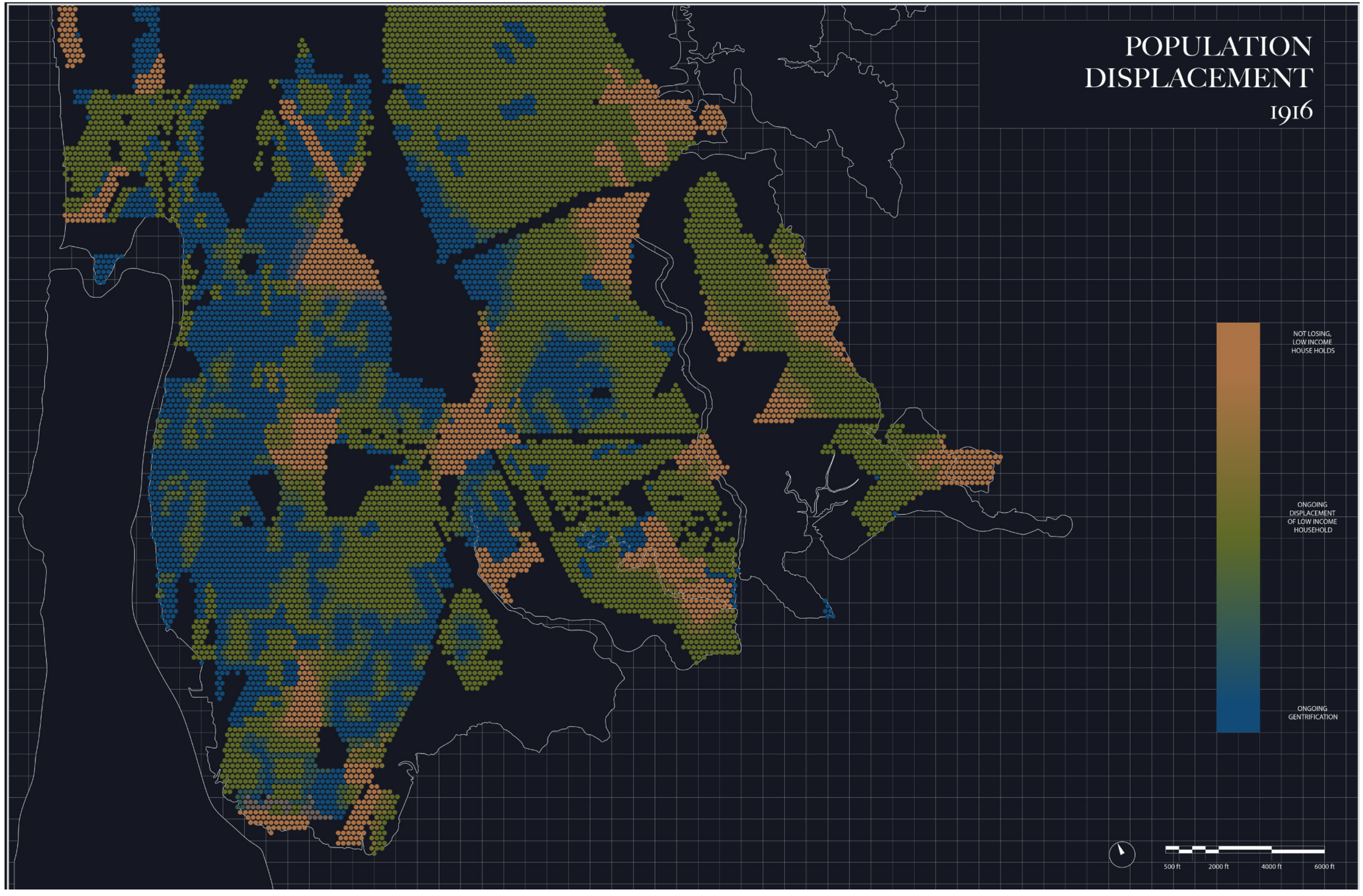

NEW JERSEY
THE BRONX
MANHATTAN
QUEENS


KEY PLAN
REGIONAL HIGHWAY ROUT

POPULATION DENSITY
1916

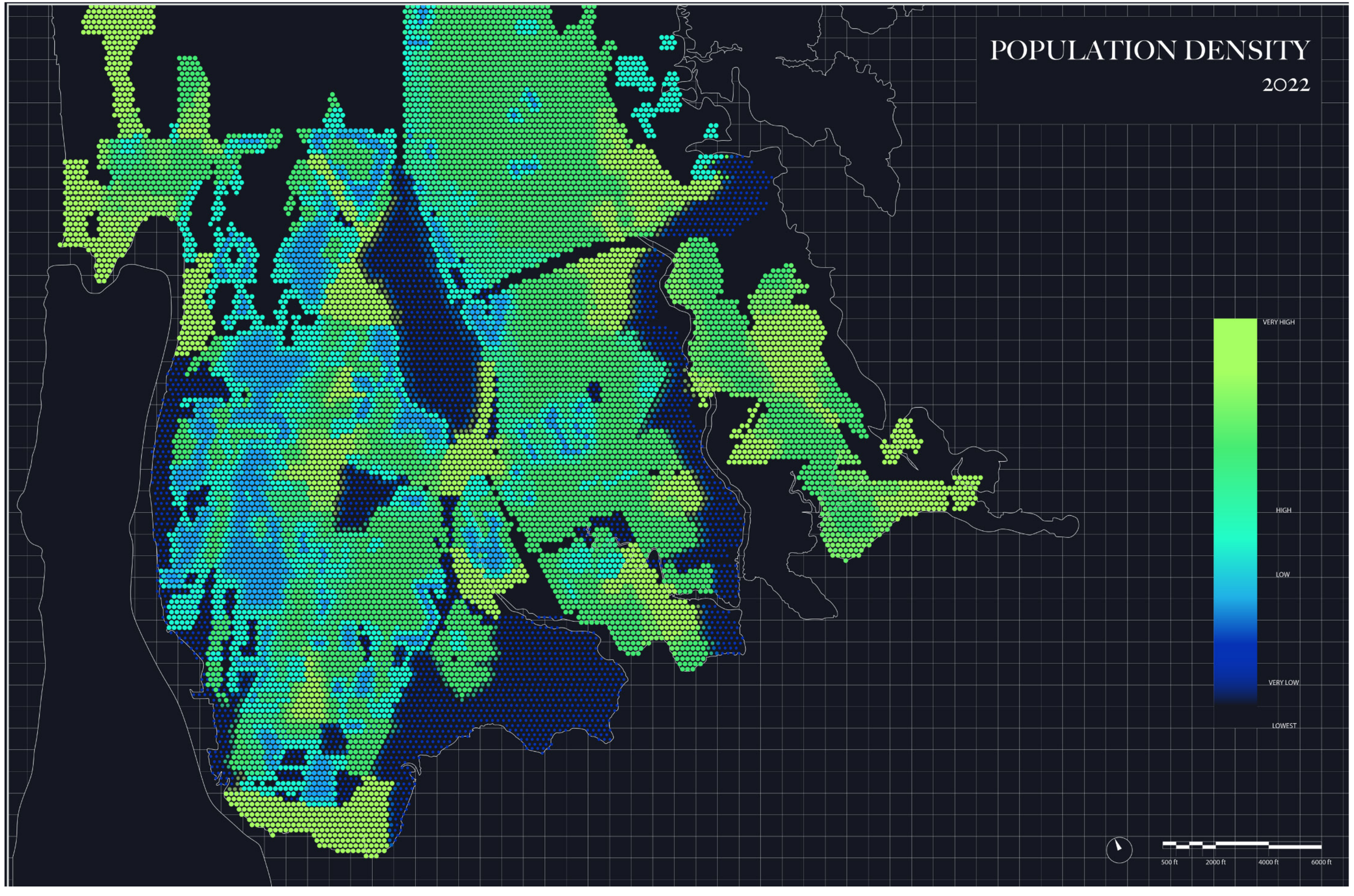


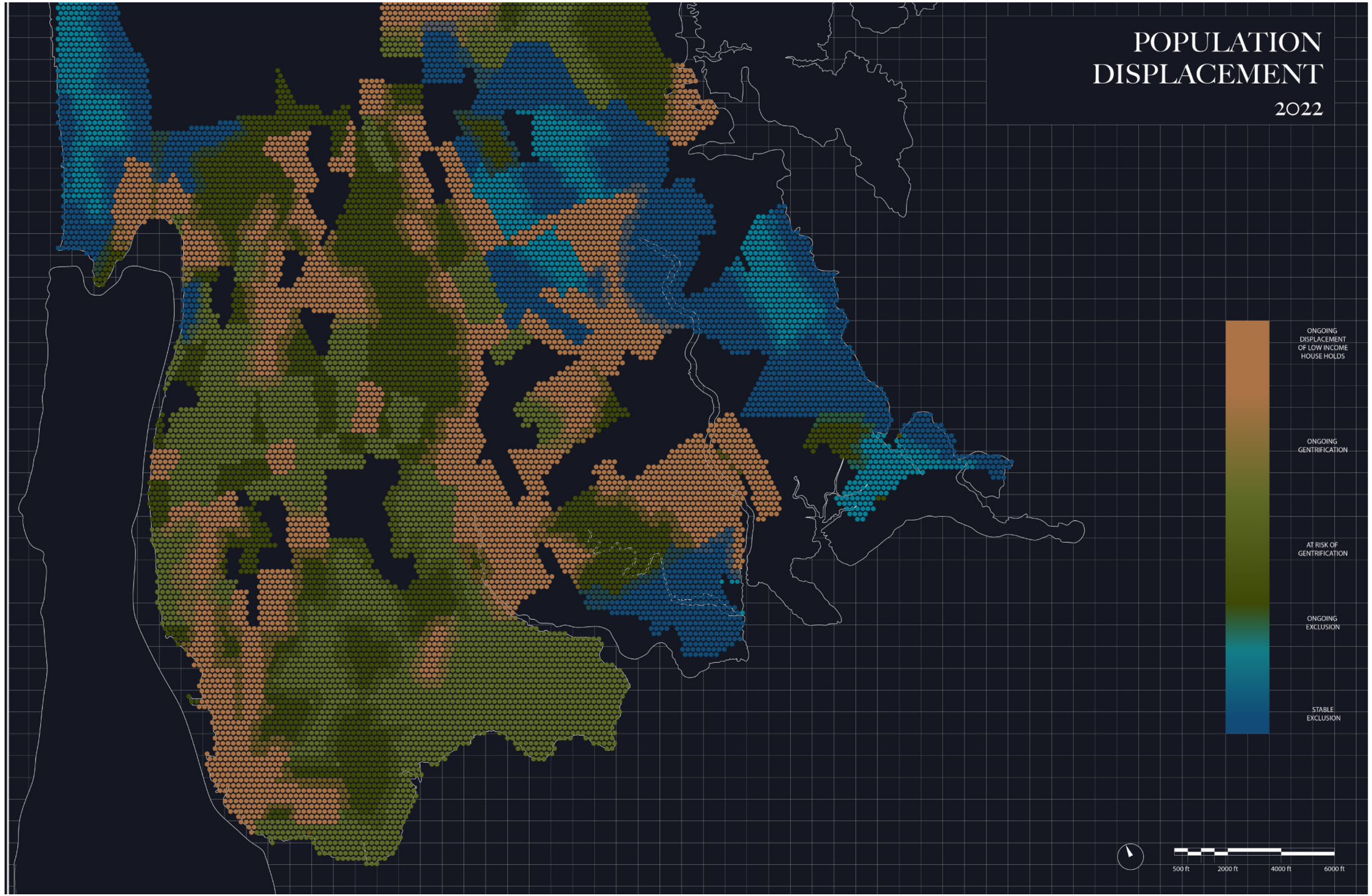
POPULATION DISPLACEMENT
1916



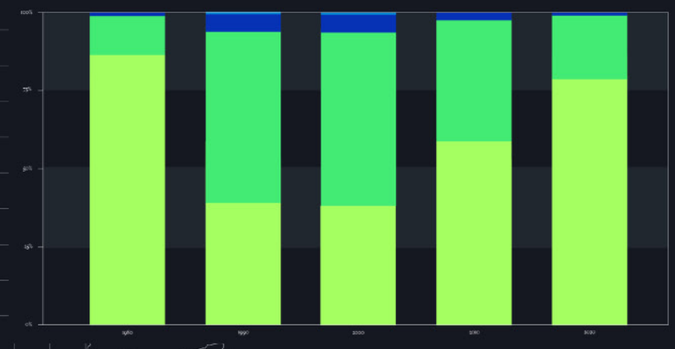
POPULATION DENSITY

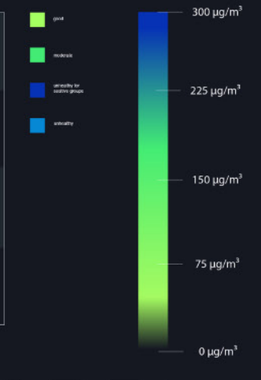
2022




POPULATION
DISPLACEMENT
2022
ONGOING
DISPLACEMENT
OF LOW INCOME
HOUSE HOLDS
ONGOING
GENTRIFICATION
AT RISK OF
GENTRIFICATION
ONGOING
EXCLUSION
STABLE
EXCLUSION
500 ft
2000 ft
4000 ft
6000 ft

AIR QUALITY AND AREA AFFECTED 1916





AIR QUALITY AND AREA AFFECTED 2022


CONQUER
THE EMPIRE
THE REALTY LOBBY DIES
HOLD ON TO YOUR
MES
NO MORE MONUMENTS
MOSES
MOSES THE DICTATOR
JOB
TENANTS REF
RELOCATI
MONEY

EXISTING TRUCK ROUTES

AVERAGE TRAFFIC DATA (ONE DAY)

200,000 Vehicles

27,592 Trucks

AFTER CBD TOLLING

INCREASE BY 704 Trucks

LEGEND

MAIN ROUTE

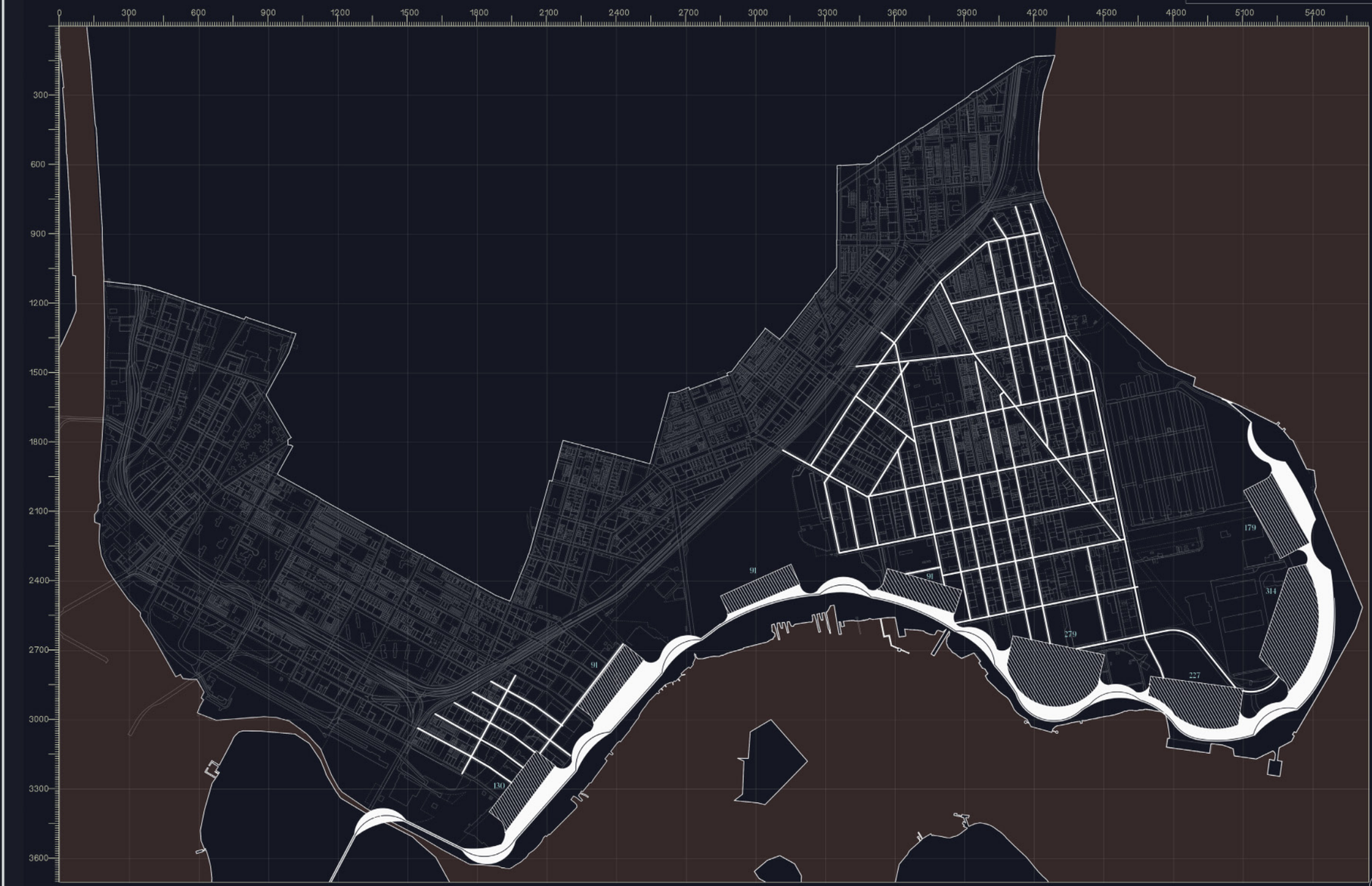
LOCAL TRUCK ROUTE

POINTS OF CONGESTION

200 ft 800 ft 1600 ft 3200 ft

PROPOSED TRUCK ROUTES

PROPOSED MANUFACTURING ZONE



TRUCKS FREQUENCY

1450 TRUCKS PARKING

X 20 TRIPS

29000 TRUCKS

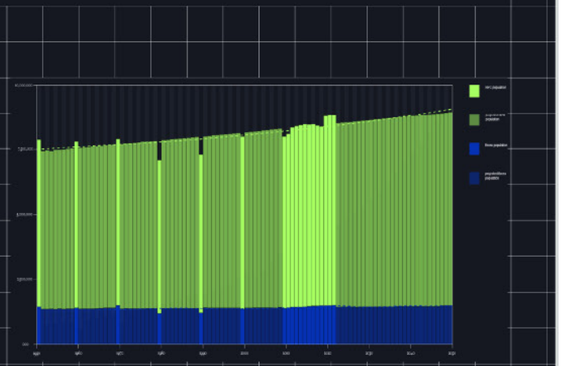
LEGEND

FORKLIFT ROUTE

PROPOSED WAREHOUSE

200 ft 800 ft 1600 ft

POPULATION DENSITY
2050



VERY HIGH

HIGH

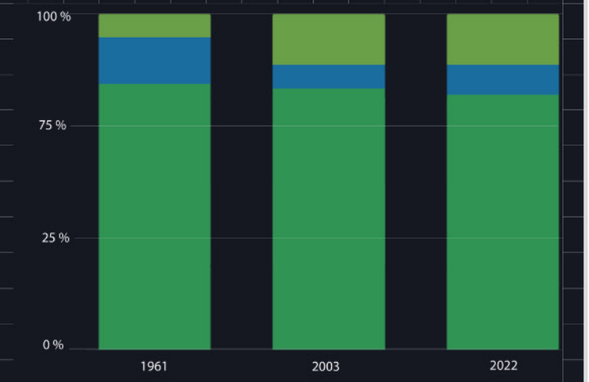
LOW

VERY LOW

LOWEST

500 ft 2000 ft 4000 ft 6000 ft

PROPOSED RE ZONING



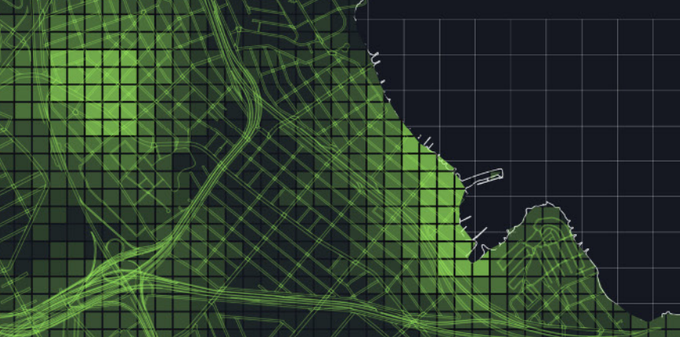
RESIDENTIAL

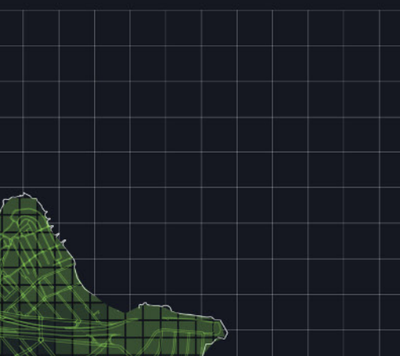
COMMERCIAL

MANUFACTURING

500 ft 2000 ft 4000 ft 6000 ft

AIR QUALITY AND AREA AFFECTED 2050





PROPOSED GREEN HIGHWAY

Eastern red cedar (Juniperus virginiana)
Red maple (Acer rubrum)
American elm (Ulmus americana)
White poplar (Populus alba)

75 ft 300 ft 600 ft 1200 ft

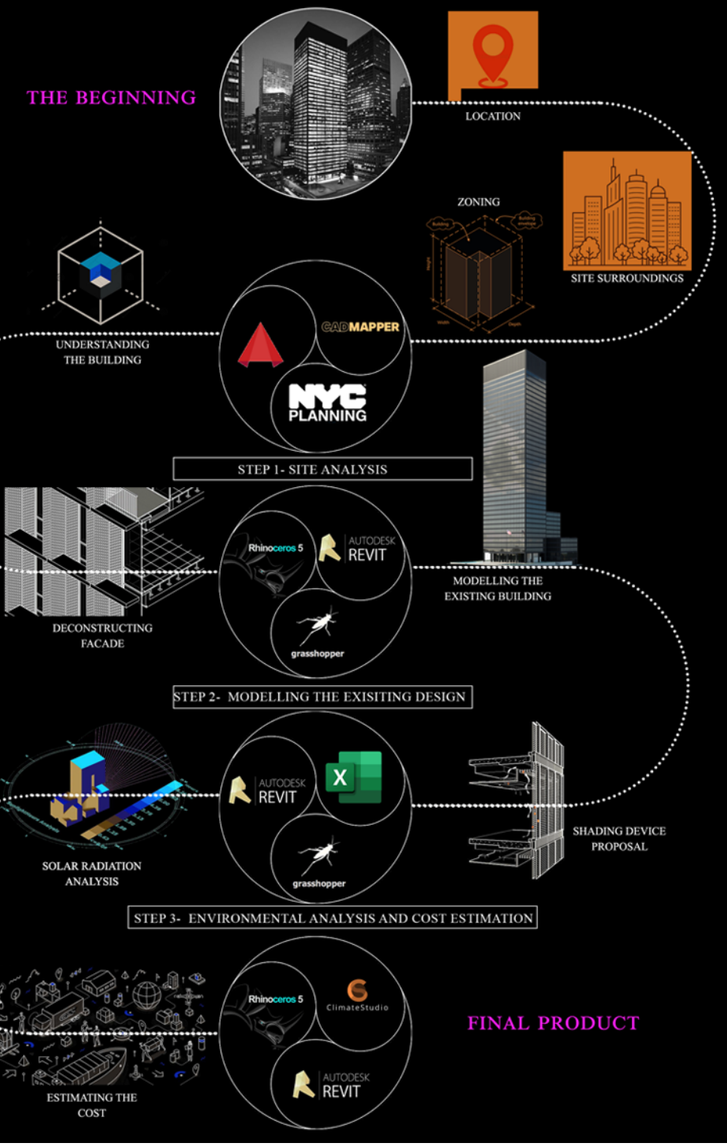
04

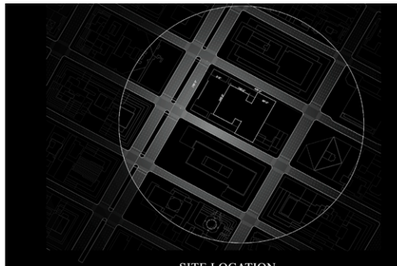
RETHINKING BIM

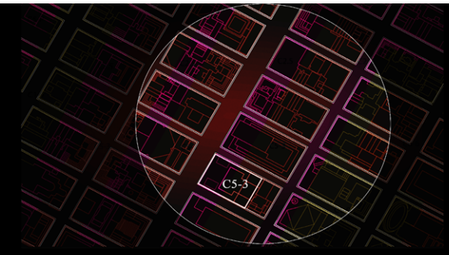
Instructor -Joseph Brennan

Group-Juhi Kamra and Namrata Dhore

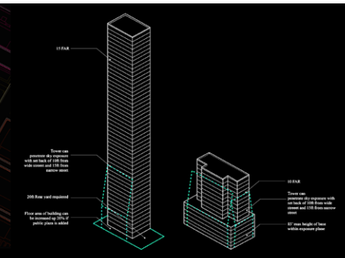
Fall Semester

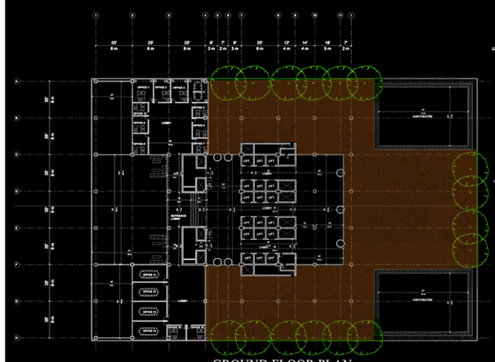



SITE LOCATION

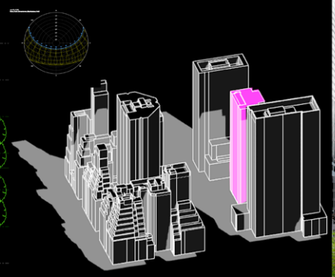


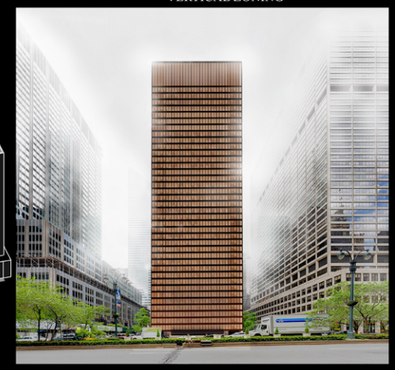
SITE ZONING


VERTICAL ZONING

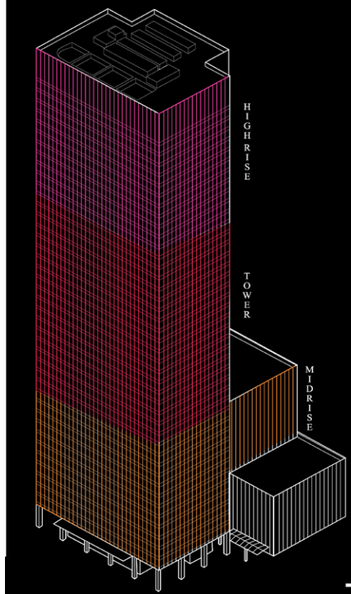

GROUND FLOOR PLAN

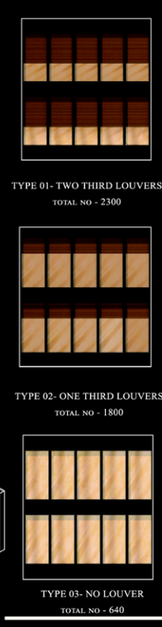
ZONING STUDY


SHADOW ANALYSIS OF SITE



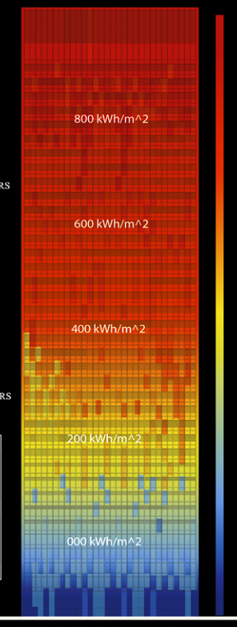
PROJECT STUDY



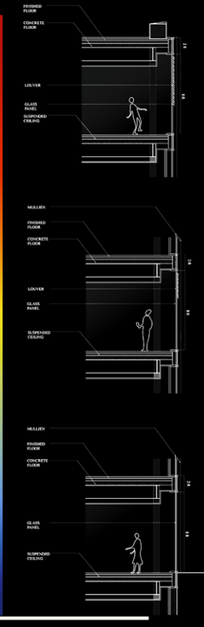

TYPE 01- TWO THIRD LOUVERS
TOTAL NO - 2300

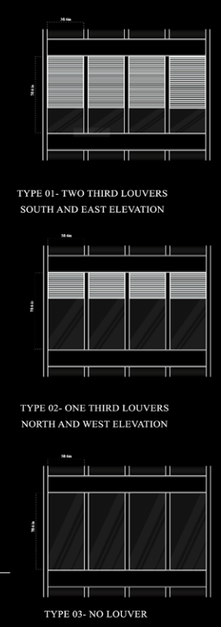
TYPE 02- ONE THIRD LOUVERS
TOTAL NO - 1800

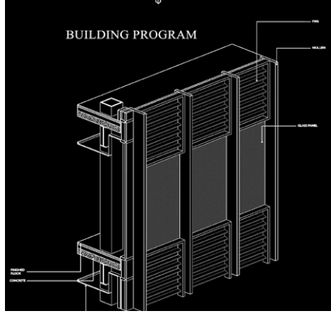
TYPE 03- NO LOUVER
TOTAL NO - 640



WEST ELEVATION (Main Entrance)
SOLAR RADIATION ANALYSIS


LOUVER DESIGN




BUILDING PROGRAM

PROPOSAL DESIGN