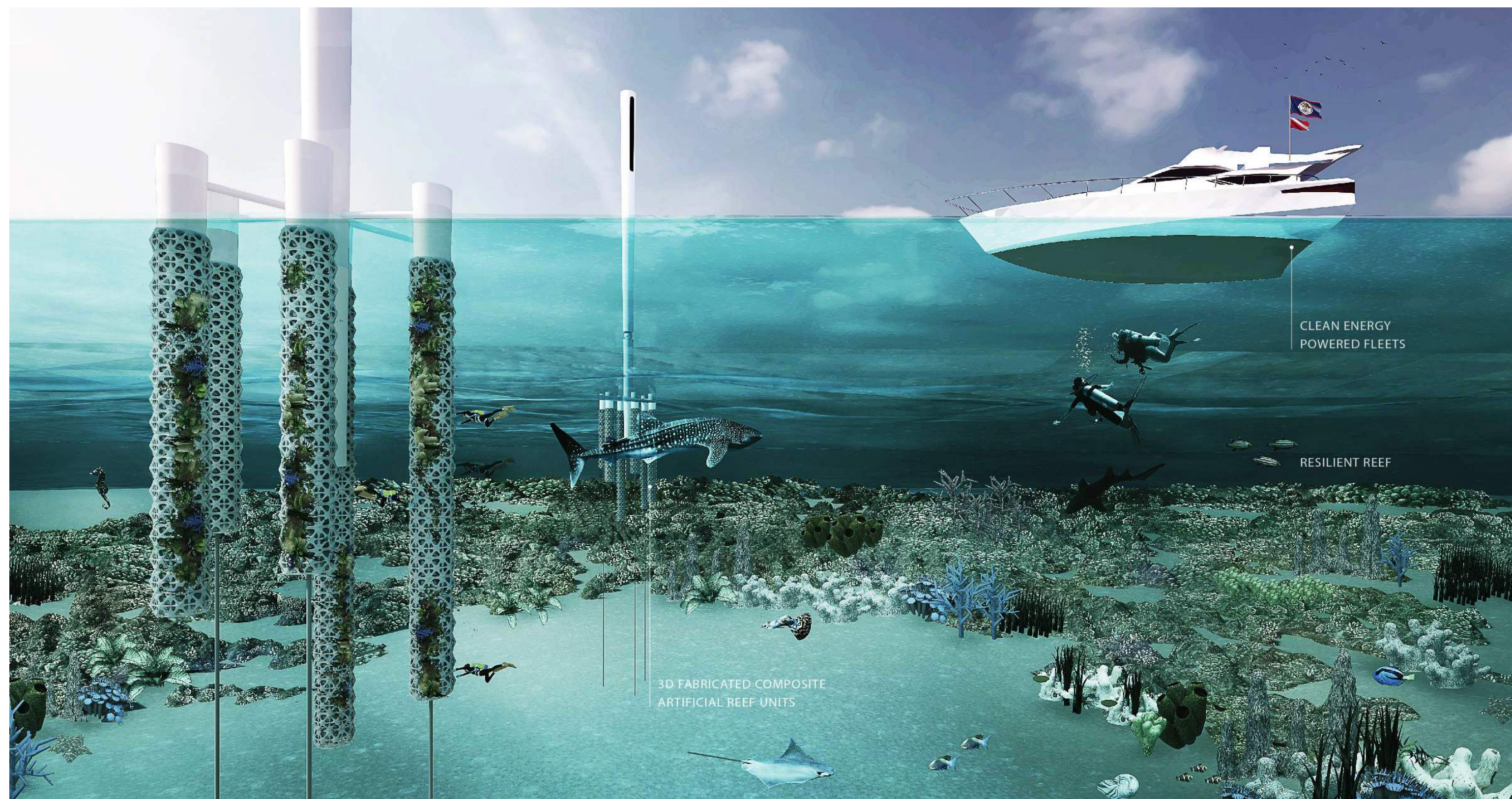

SAMUEL J. DYE

M.S. Architecture and Urban Design Graduation Portfolio
Columbia University GSAPP 2022
sjd2179@columbia.edu

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Em(power)ing Belize

Urban Design Studio III: Water Urbanism, Belize & Yucatan | Spring Semester 2022
 Professors Kate Orff, Geeta Mehta, Adriana Chavez, Thad Pawlowski, & Lorena Bello Gomez
 In collaboration with Lucas Coelho Netto, Giulia Chagas, & Yasmine Katkhuda
 San Pedro, Belize

As Belize's leading destination for tourism and development, the proposal is an urban fabric through energy and infrastructure strategies paired with ecological restoration. Energy independence can be achieved in tandem with nature-based strategies towards decarbonization and coastal resilience.

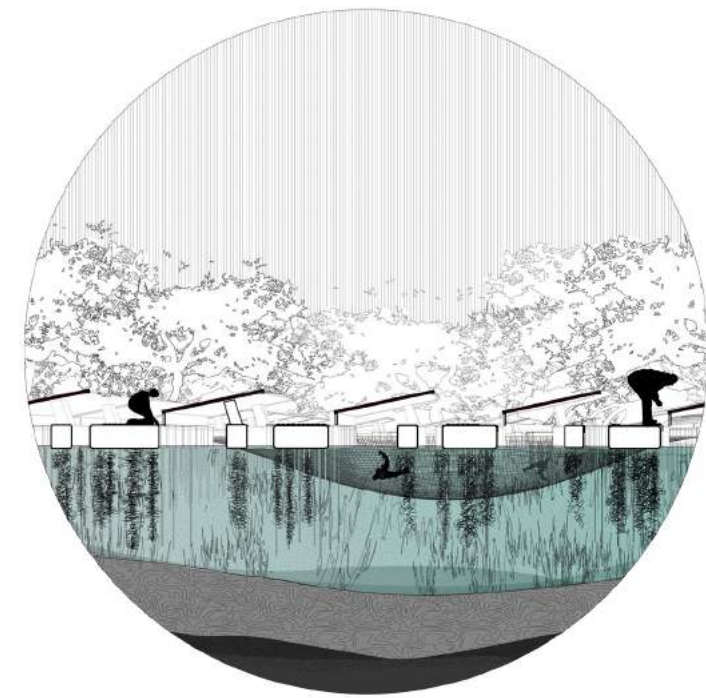
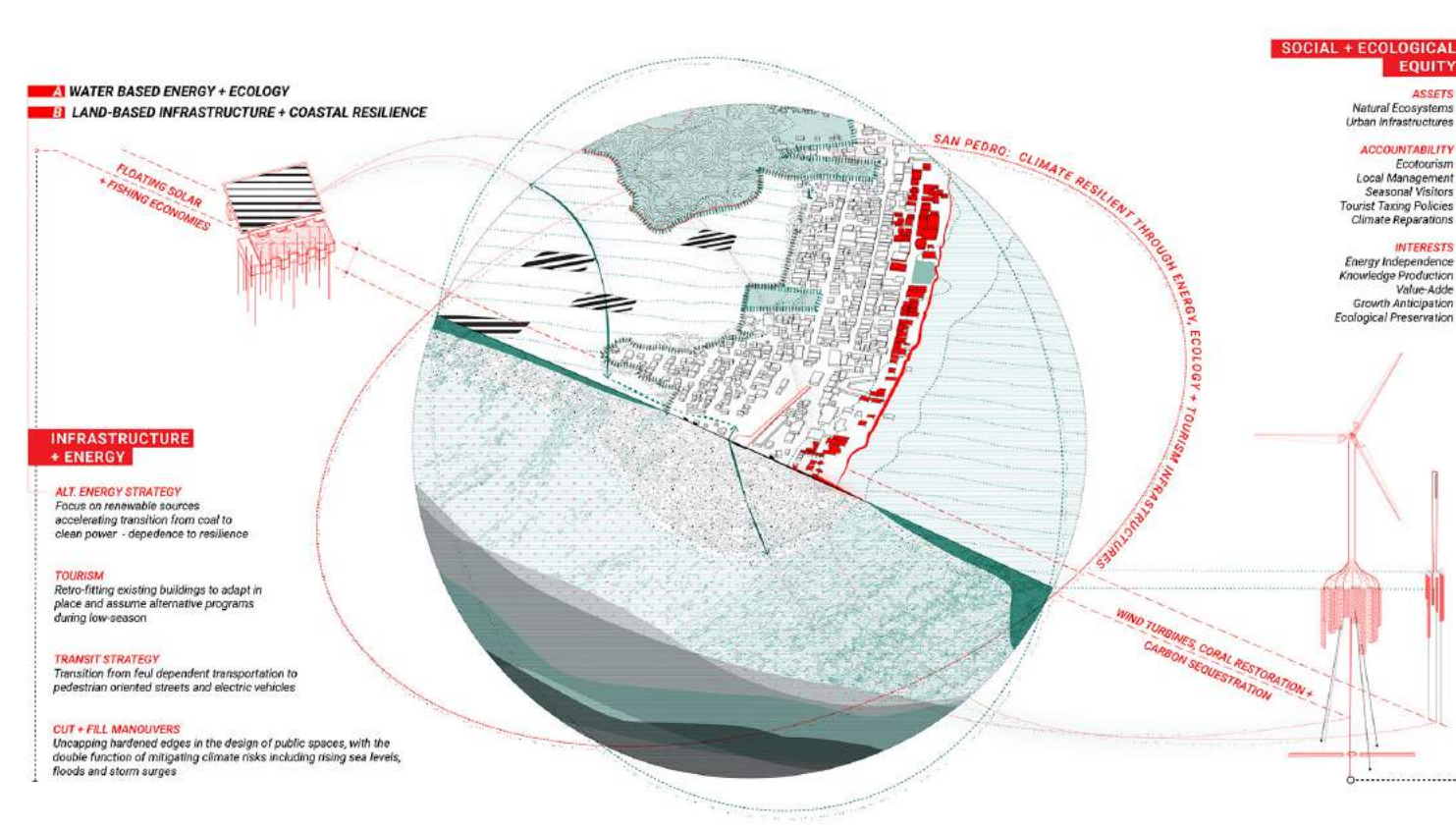
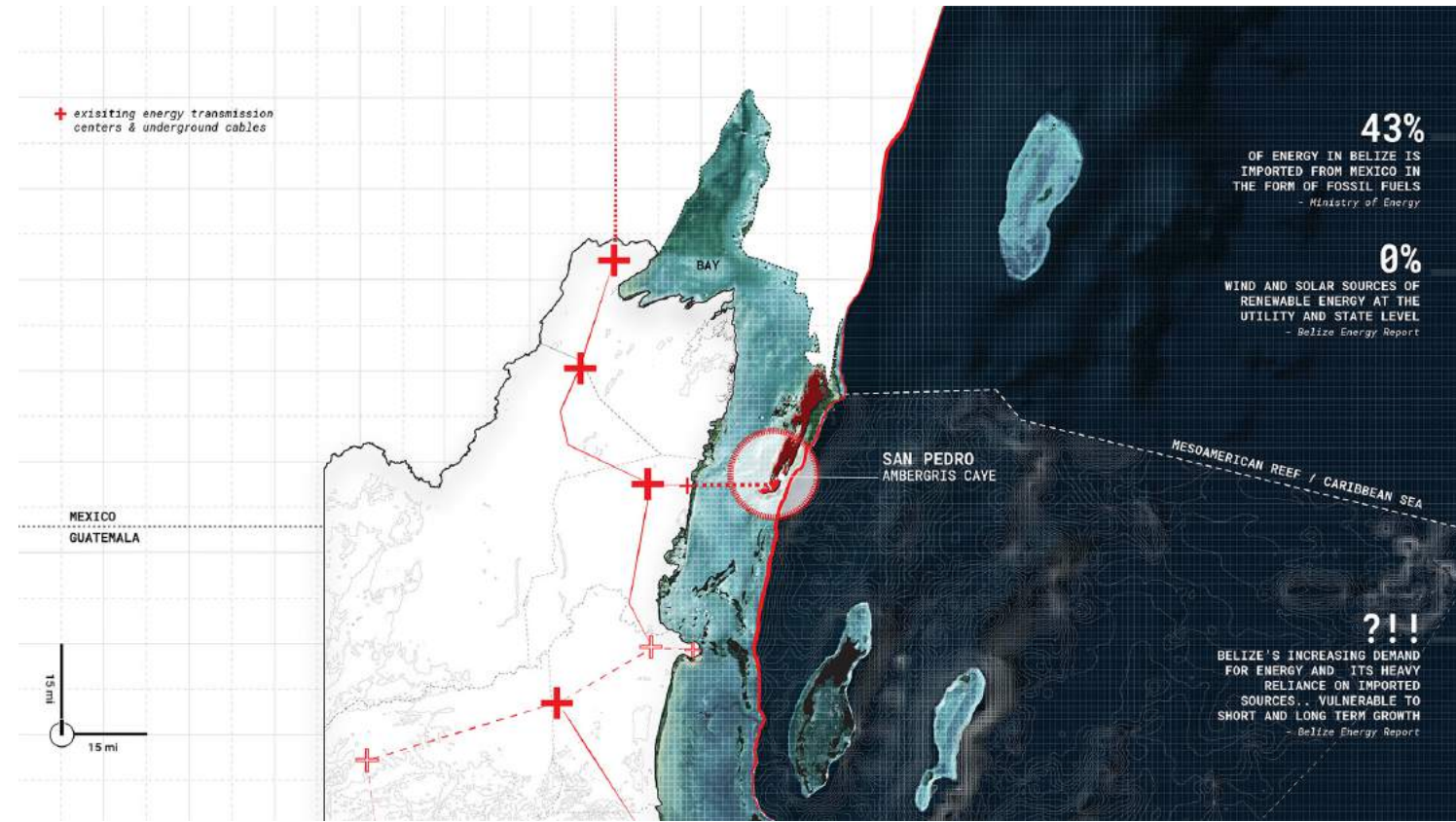
San Pedro can be the new model for climate resilience through clean energy and sustainable tourism infrastructure, and that making energy visible through design can support regional economic diversification and be a leading example and testing ground for future habitats in Belize. The urban landscape can be redesigned as permeable public spaces, retrofitted buildings, and waterfront strategies of protection from storm scenarios and expansion of the public beach.

A new postcard image for San Pedro is proposed by rethinking urban design with energy centrally integrated into our built environment and allow for such infrastructure to become an eco-tourist destination. With energy and infrastructure forefronted in this new image, the unit of change can be an example for Belize and the Caribbean.



San Pedro is the mid-point between Corozal Bay and Belize City, with untapped potential for harvesting energy.

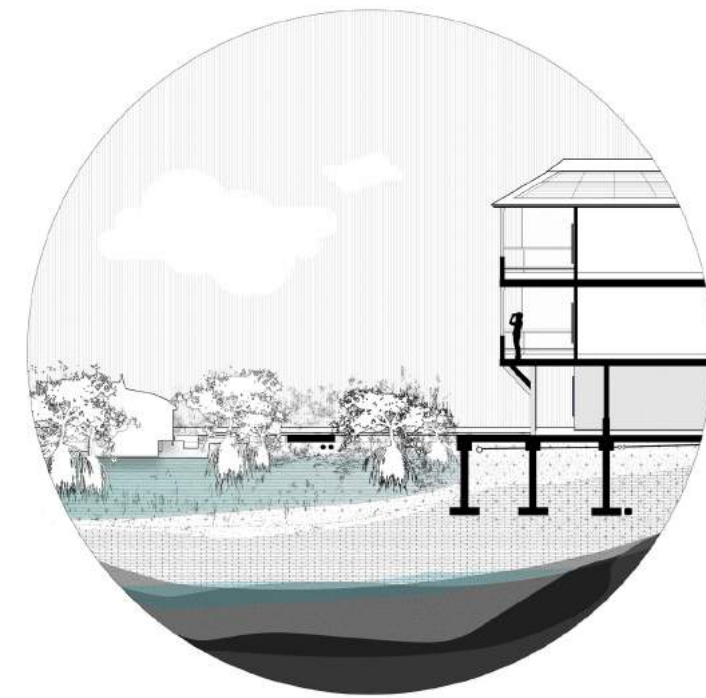




SOLAR ENERGY + AQUACULTURE

PHASE: FUTURE HABITATS

STR: MAINTENANCE + ALT. INDUSTRY
ACT: MINISTRY OF ENERGY & UTILITIES, VILLAGE COUNCIL
\$\$\$: GLOBAL FUND FOR CORAL REEFS



URBAN RETRO-FITS + STREET RE-DESIGN

PHASE: TRANSITIONAL LANDSCAPES

STR: GF RETREAT, ADDITIONAL FLOOR, PUBLIC SPACE, MANGROVE RESTORATION
ACT: PARCEL OWNERS / DEVELOPERS, CBA, AGA KHAN
\$\$\$: TOURISM TAXES FOR ECOLOGICAL JUSTICE, LOCAL ACTORS



SHORELINE ADAPTATION + PUBLIC SPACE

PHASE: ADAPT IN PLACE

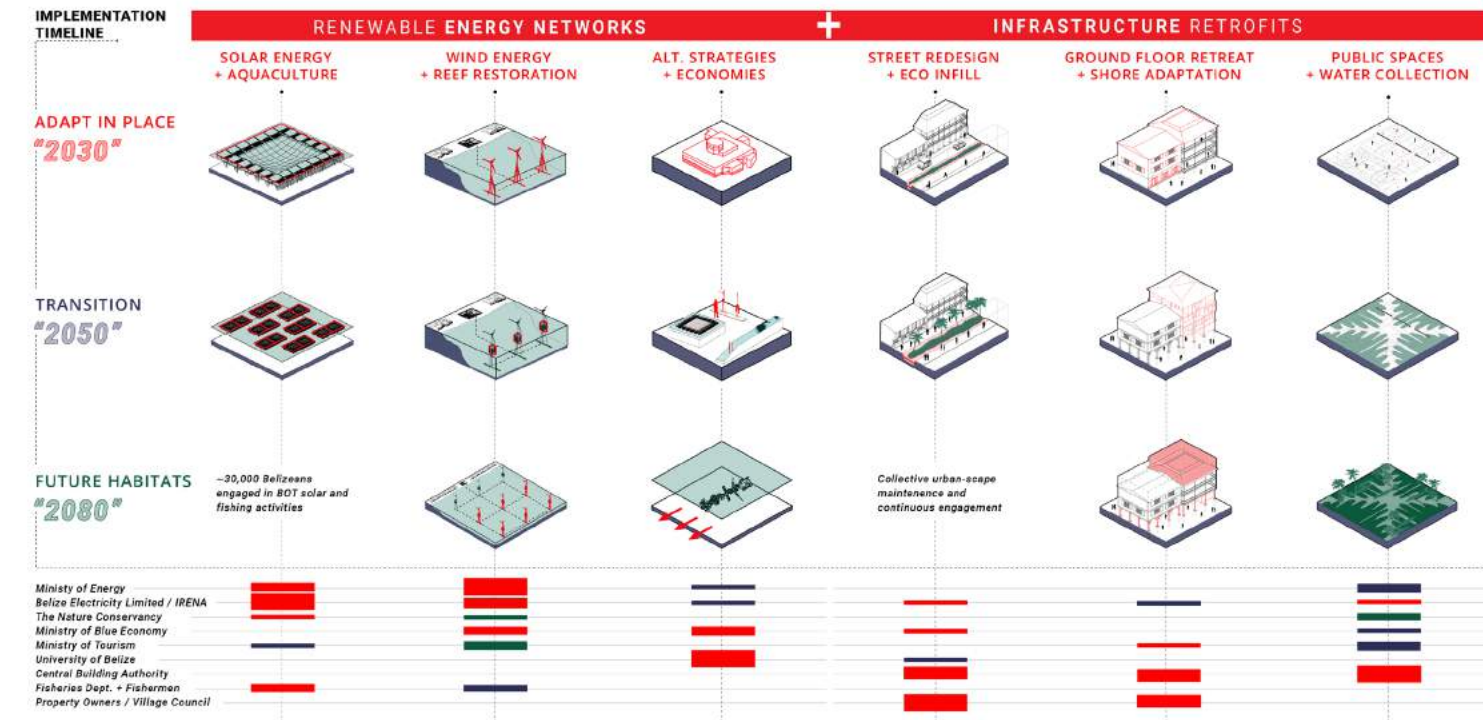
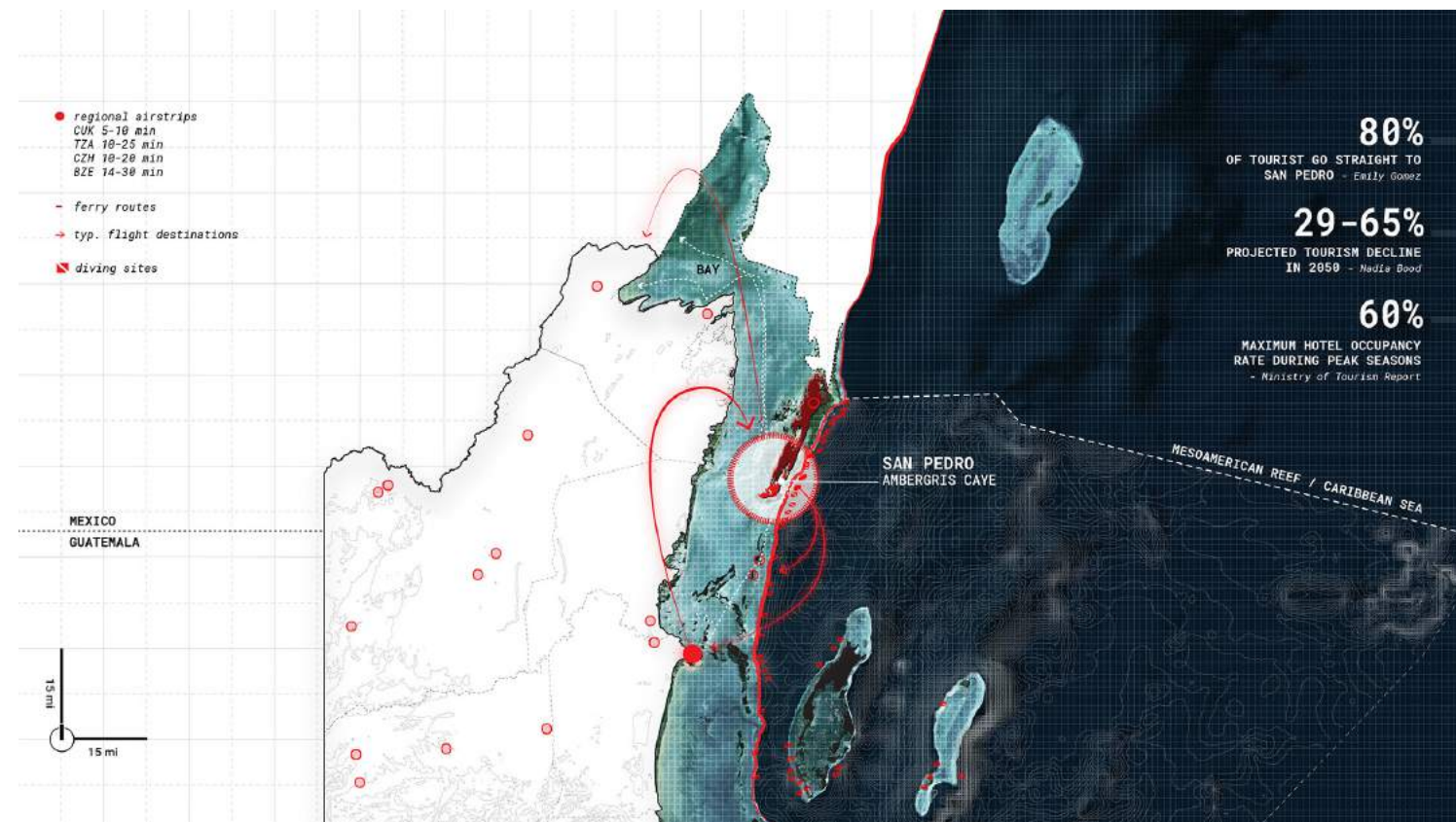
STR: CUT AND FILL, WATER INFILTRATION
ACT: CENTRAL BUILDING AUTHORITY
\$\$\$: MINISTRY OF TOURISM, BELIZE GOV.



WIND ENERGY + REEF RESTORATION

PHASE: FUTURE HABITATS

STR: RESTORATION PILOT SITES, ALT. TOURISM + GRID MAINTENANCE
ACT: MINISTRY OF ENERGY & UTILITIES, MINISTRY OF TOURISM
\$\$\$: CLIMATE REPARATION FUNDS, BLUE BONDS, PRIVATE INVESTORS



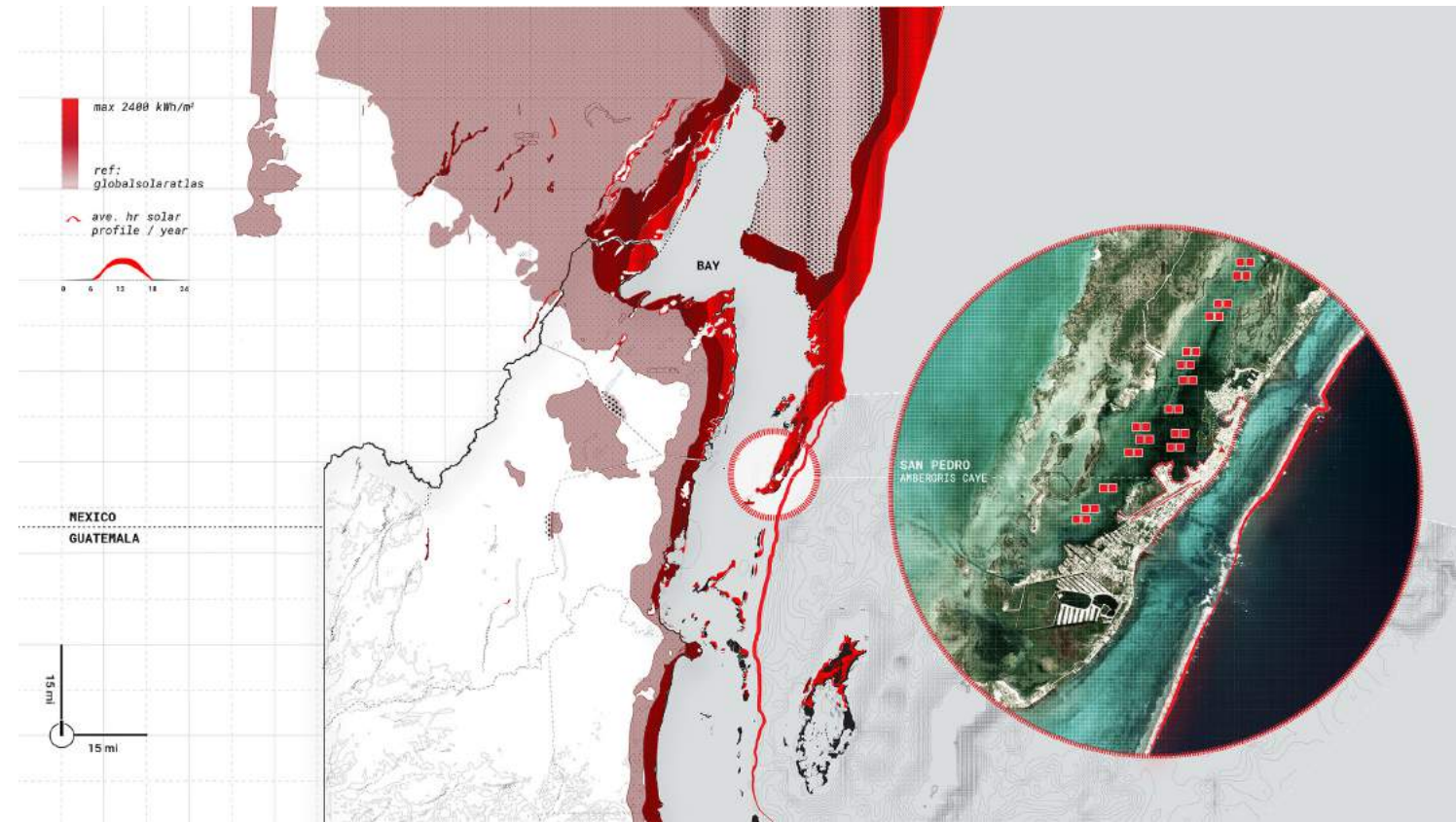
Design matrix solutions combining energy, infrastructure, and ecological restoration through different time periods.



Existing site plan and conditions for interventions.



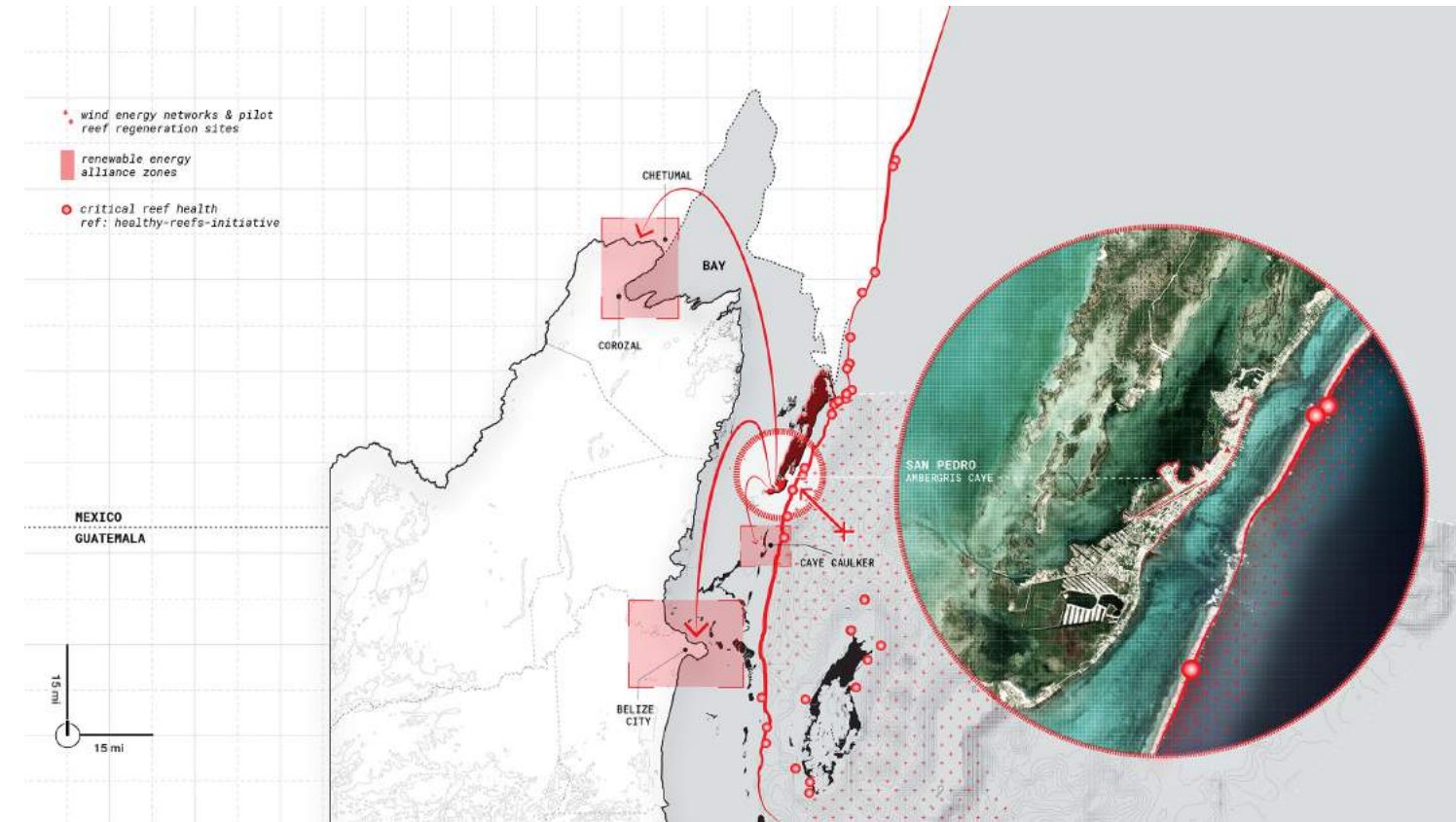
Site plan with key strategies for the lagoon, town core, and beach front.



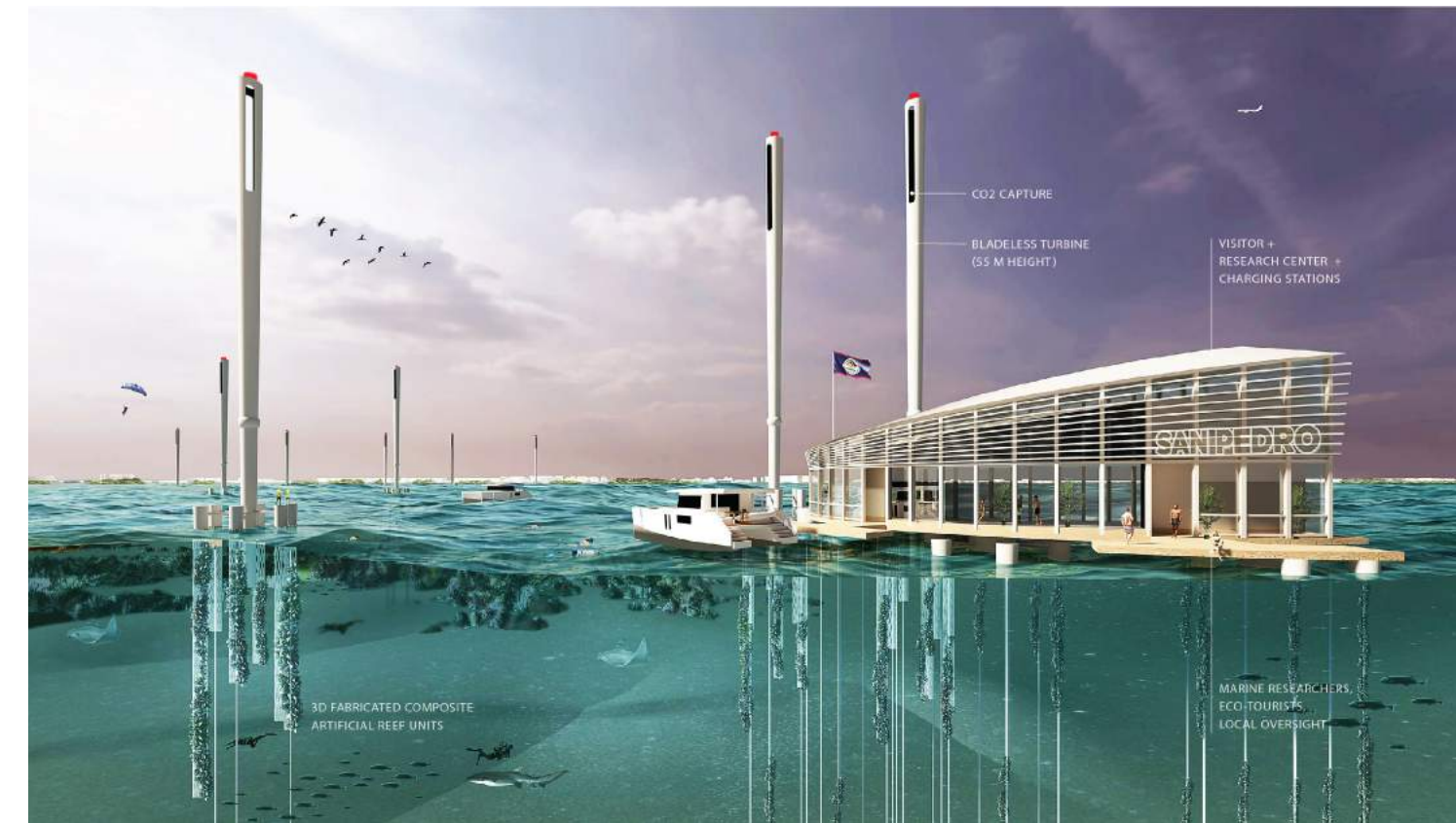
Solar modules siting map in the lagoon.



Solar infrastructure, mangrove restoration, and ecotourism.



Wind turbine modules siting map for coral restoration.



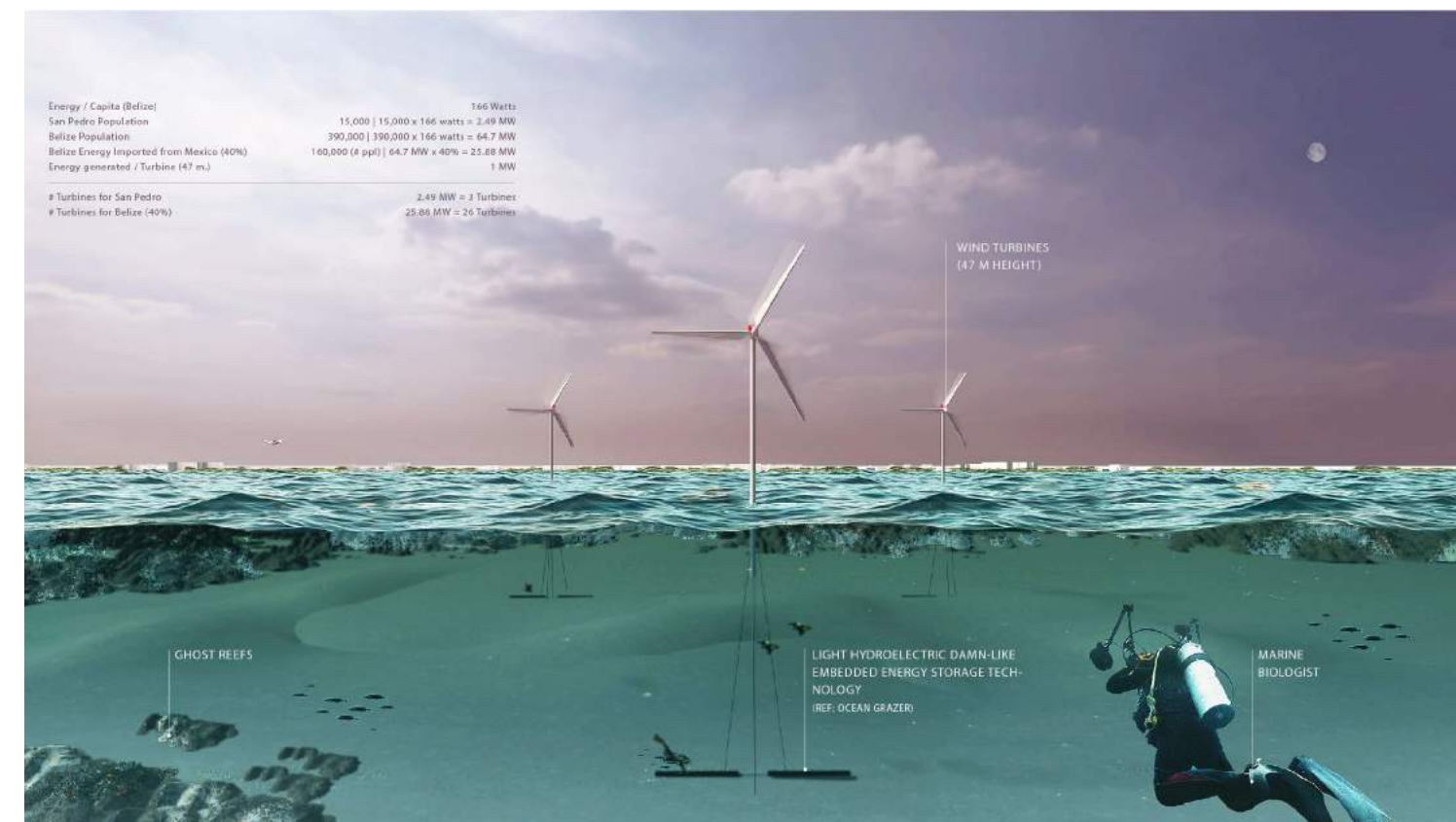
Future bladeless wind turbines, carbon captures, and scuba visitors center.



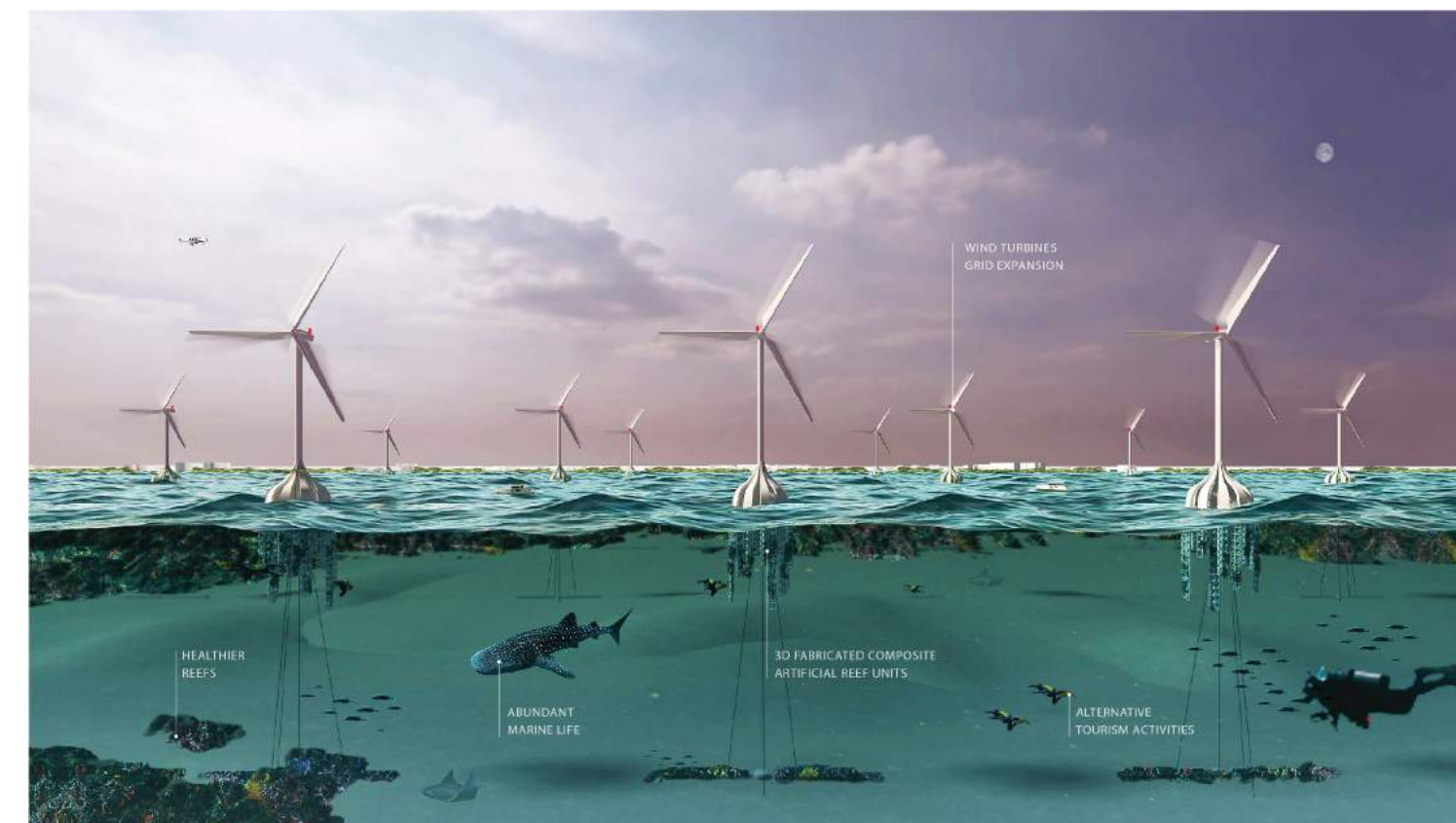
Phase 1 solar module rollout.



Phase 2 expansion of modules and commercial fishing industry.



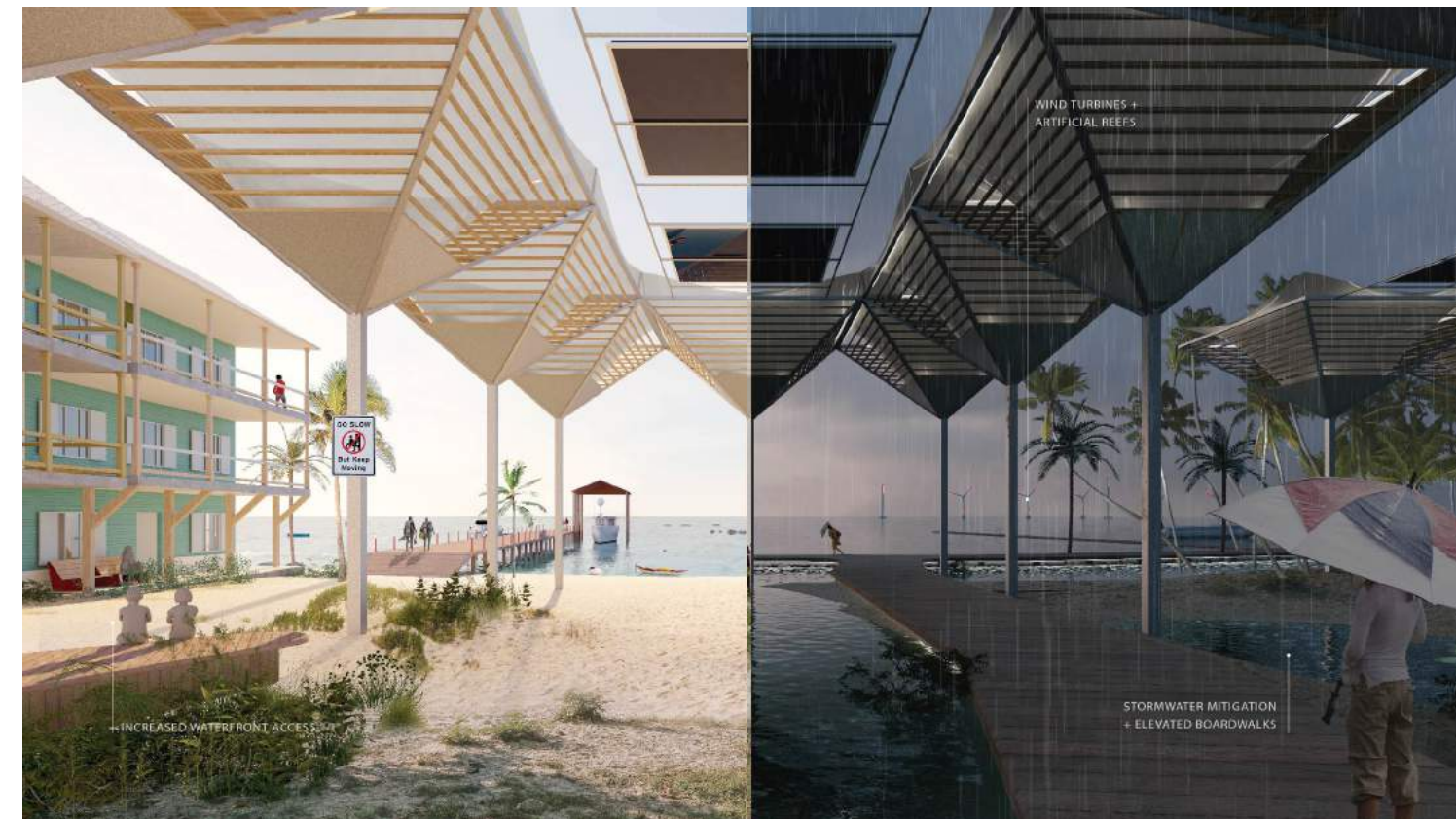
Phase 1 wind turbine module rollout.



Phase 2 module expansion and coral restoration.



Beach pavilion for cultural activities and visible energy infrastructure.



Enhanced beach front and elevated areas for storm scenarios.



Beach section perspective with key strategies.



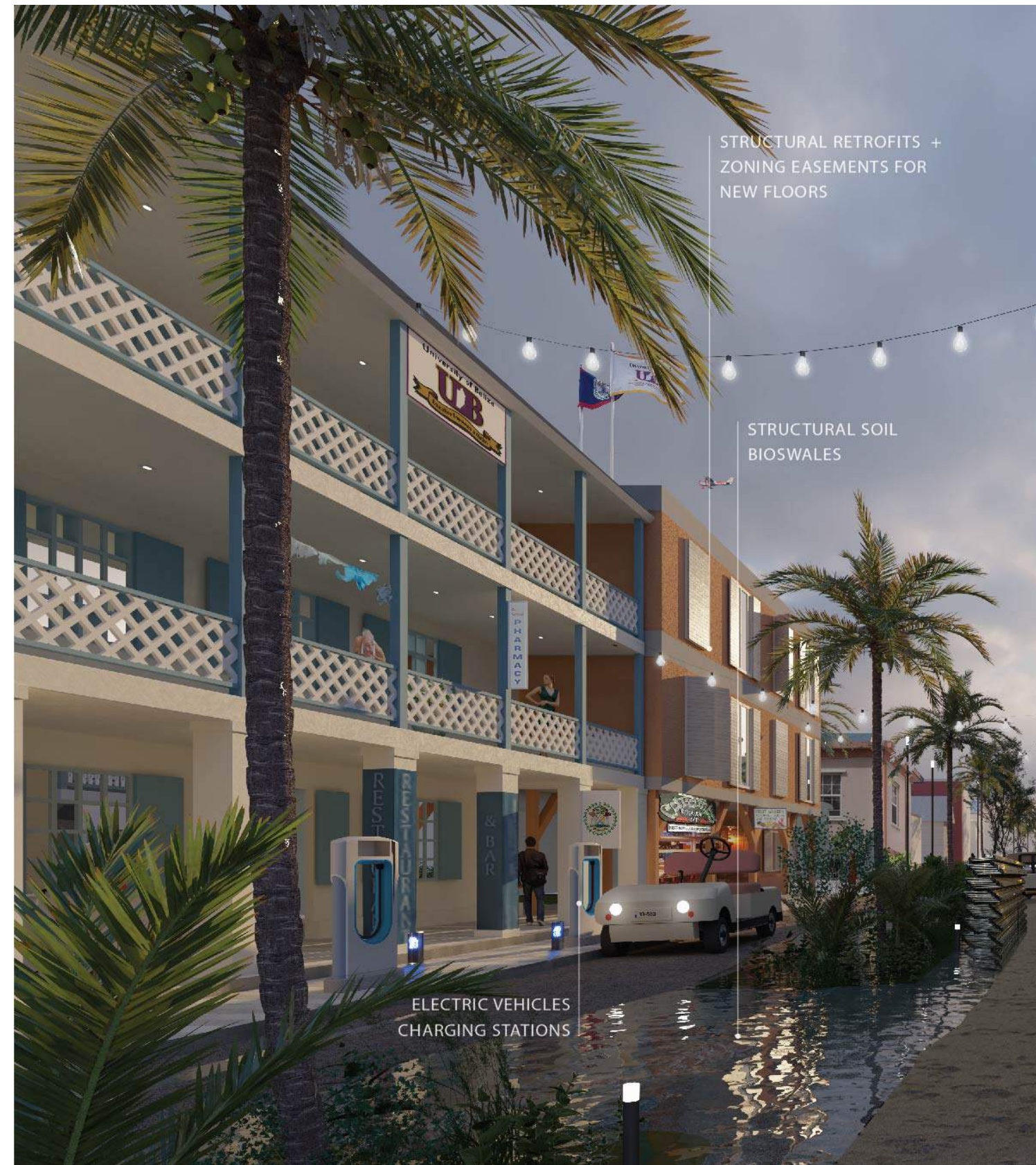
Mangrove restoration and floodable public spaces.



Lagoon section perspective with key strategies.



Increased public space locations.



Central bioswales and structural soil for rainstorm filtration.



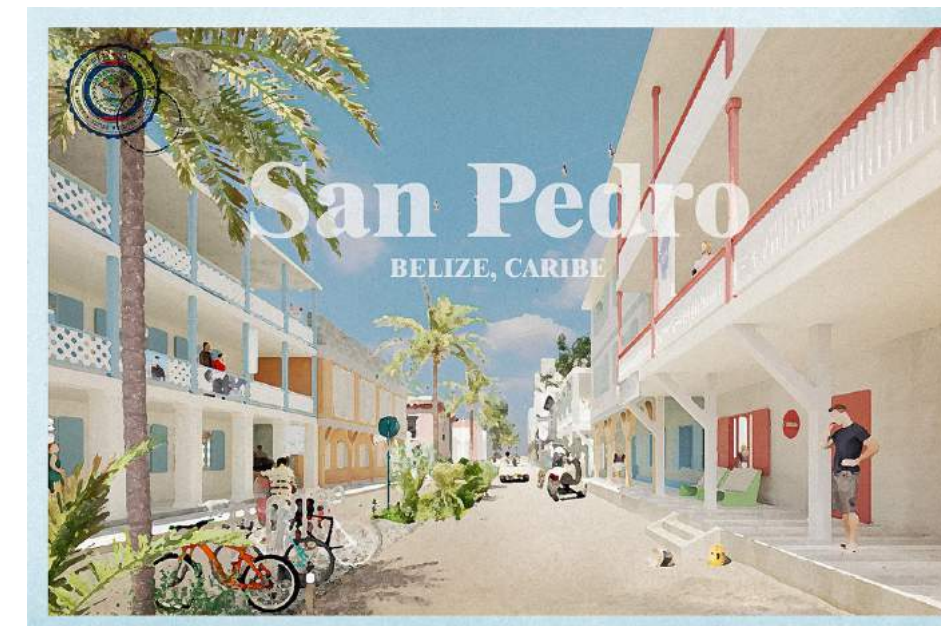
Ground floor retreat, new research centers, and areas for small businesses and community engagement.



Stormwater mitigation to floodable spaces and controlled locations.



360 VR bay render for solar energy and aquaculture.



360 VR town core render for urban retrofits and street redesign.



360 VR reef render for wind energy and coral restoration.





Vacancy Redefined

Urban Design Studio II: American Cities & Regional Context | Fall Semester 2021
 Professors Emanuel Admassu, Nina Cooke John, Lexi Tsien, & Chat Travieso
 In collaboration with Daniela Deu, Minsung Kim, & Haotian Jiang
 Atlanta, GA

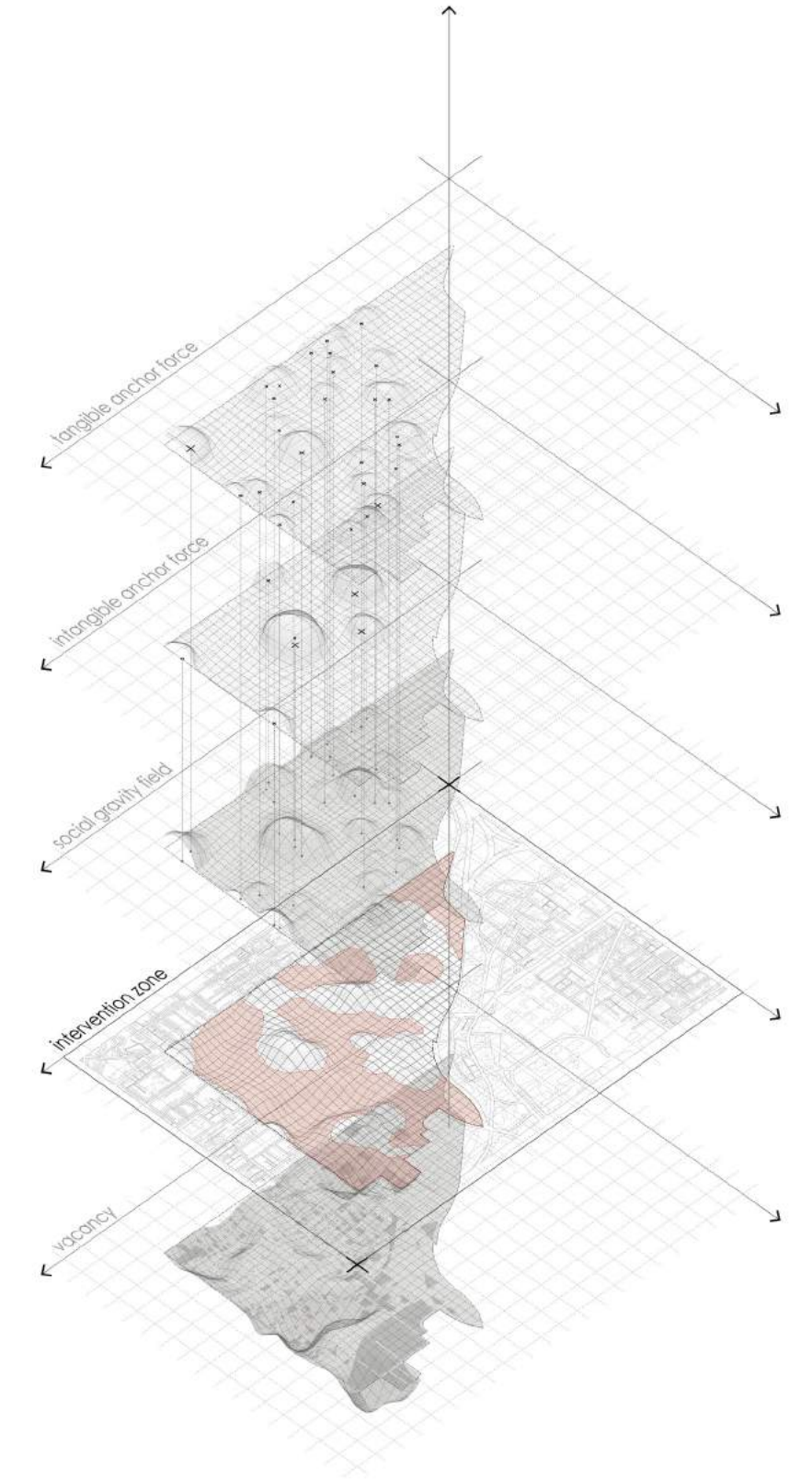
The proposal seeks to challenge the understanding of value; to prioritize human intangible forms of wealth building over financial gain. By targeting vacant lots in the English Avenue neighborhood of Atlanta, we redefine vacancy as spaces that require care because they have historically been neglected and devalued, and transform them into spaces that generate a new type of wealth centered on collective and communal growth.

The framework utilizes renewable energy production as an effective means to generate wealth that can be redistributed back to the neighborhood.

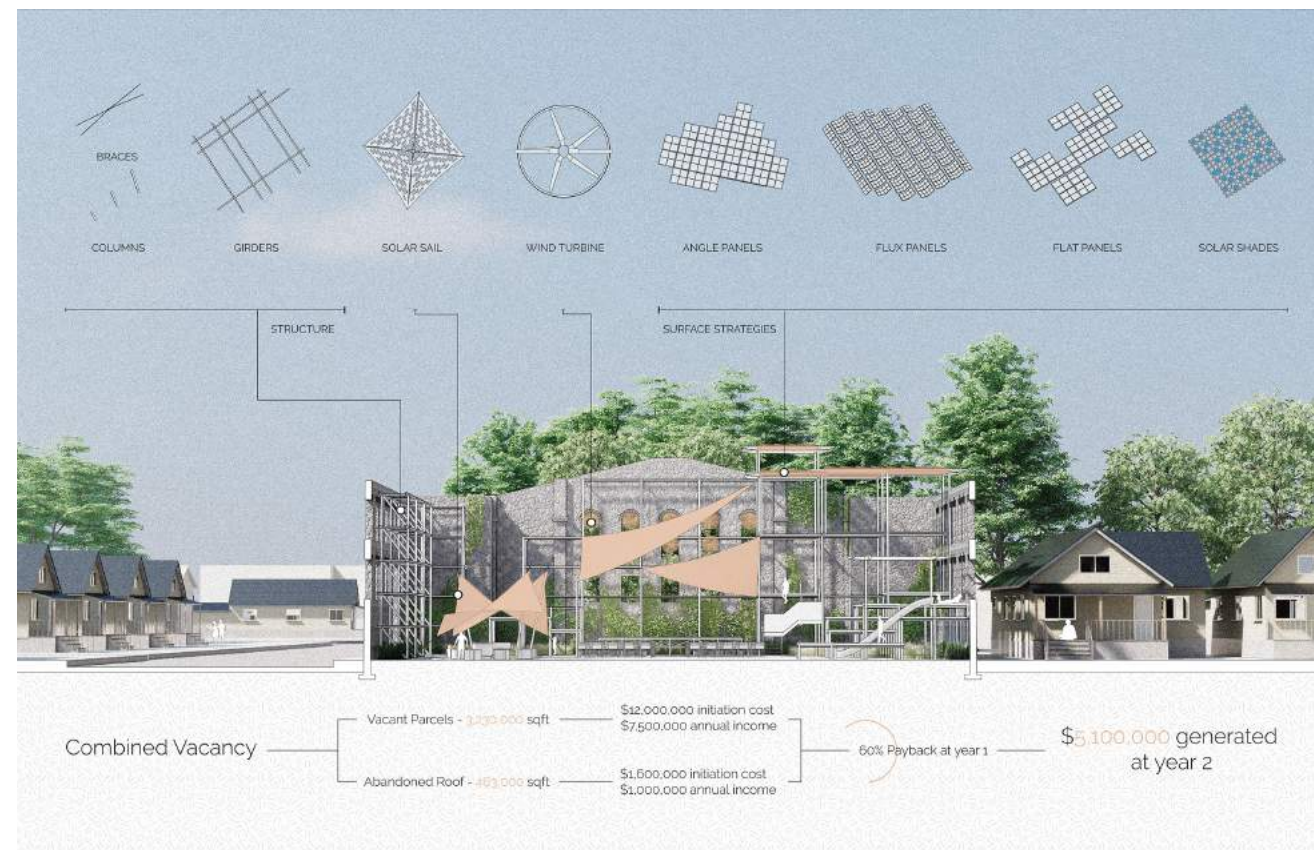
At the neighborhood scale, the modifications of the community anchors strengthen the intangible social networks, creating a continual system of development as the community needs change over time. As vacancy is not an issue exclusive to English Avenue, the model can become the inflection point in an expanding constellation of vacancy redefinitions in other neighborhoods in the Atlanta region at large.



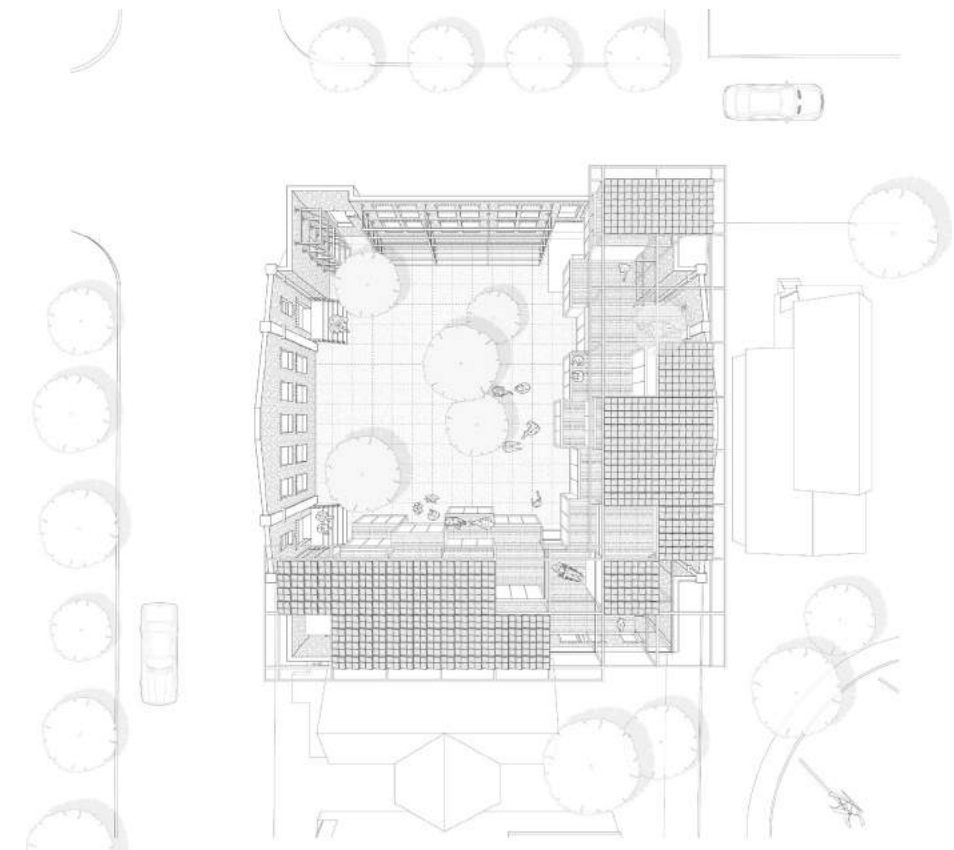
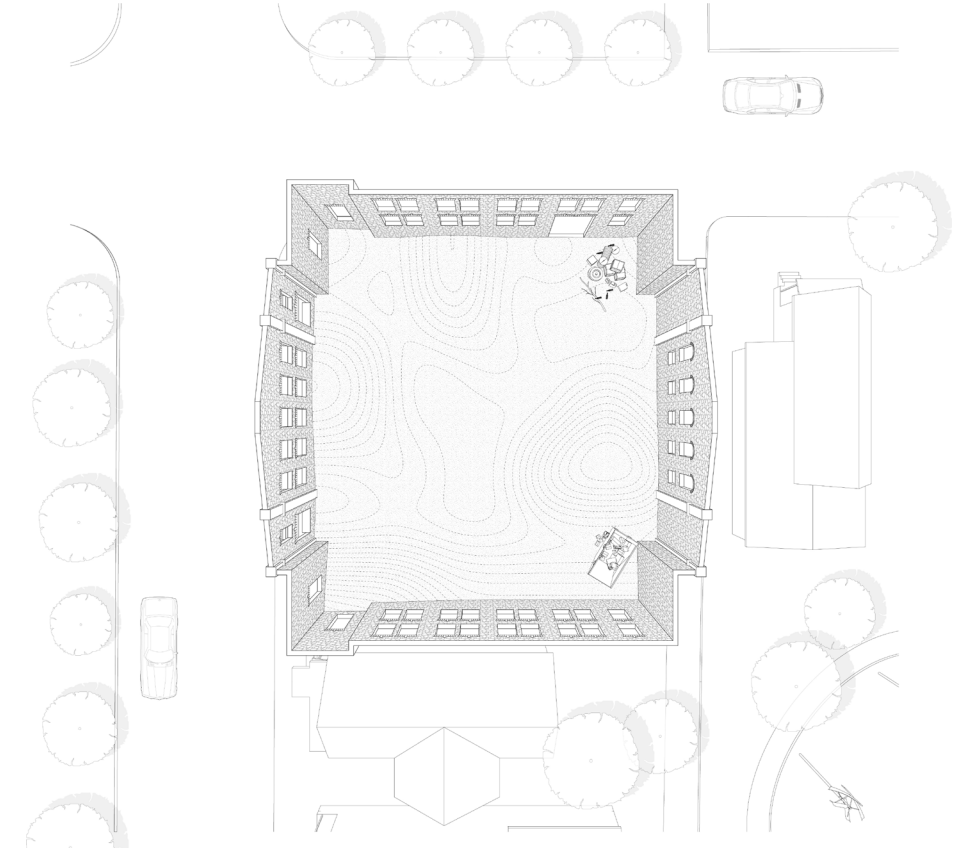
Modular structure to build upon existing programs and activities on vacant lots.



Community asset map showing overlays of vacancy, tangible and intangible networks. Axon by Minsung Kim.



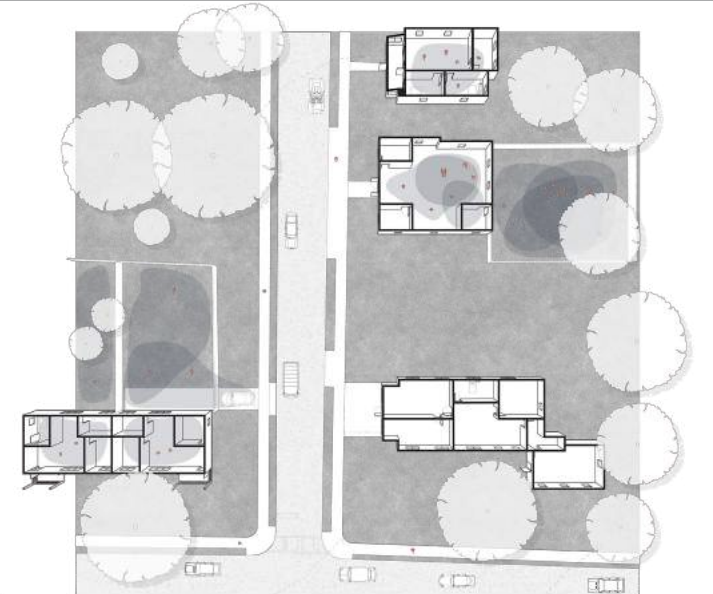
Existing and final phases of the community anchor renovations, including the energy production model. In collaboration with Minsung Kim.



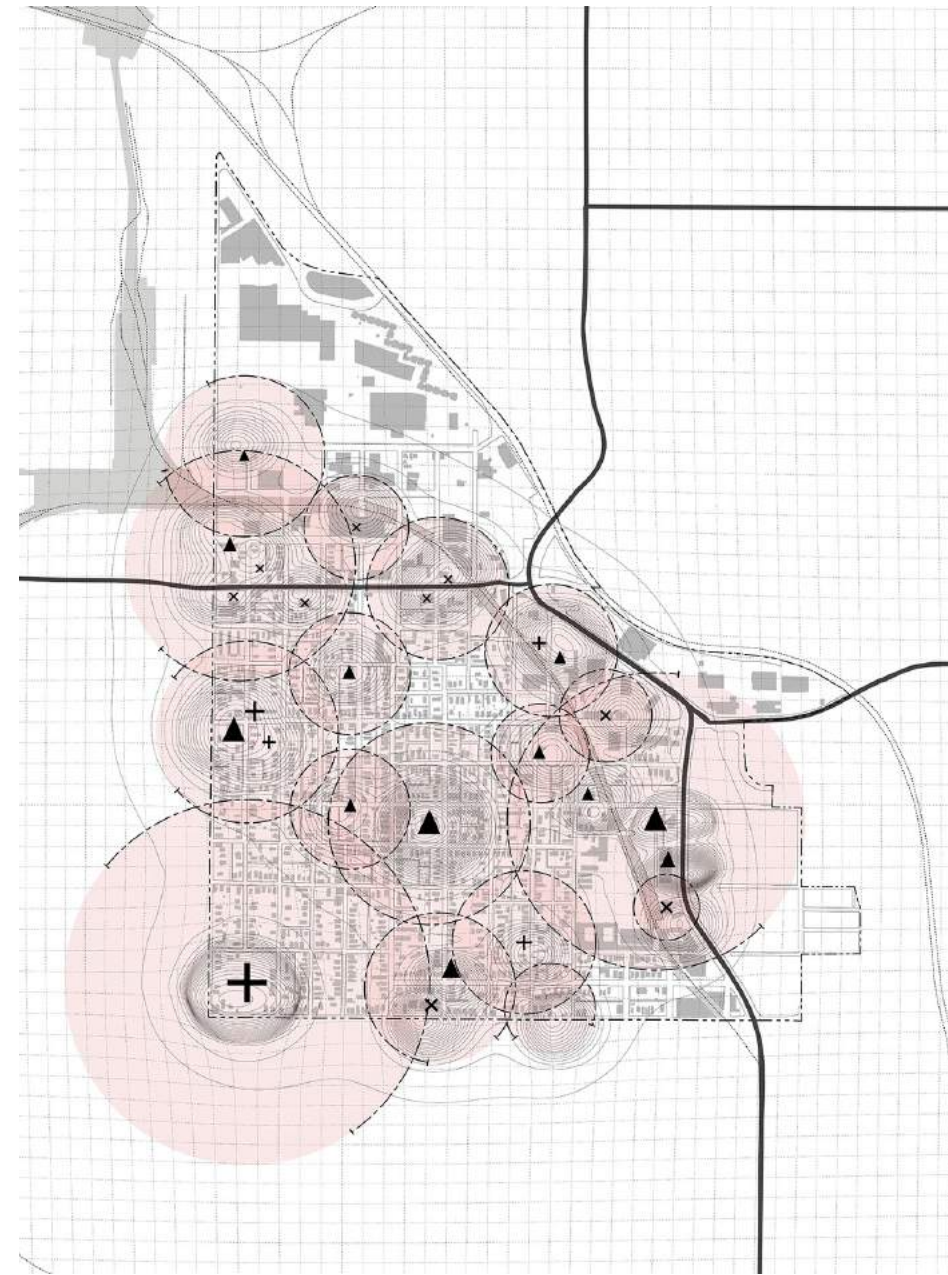
Existing and final phases of the community anchor renovations. Plans by Minsung Kim.



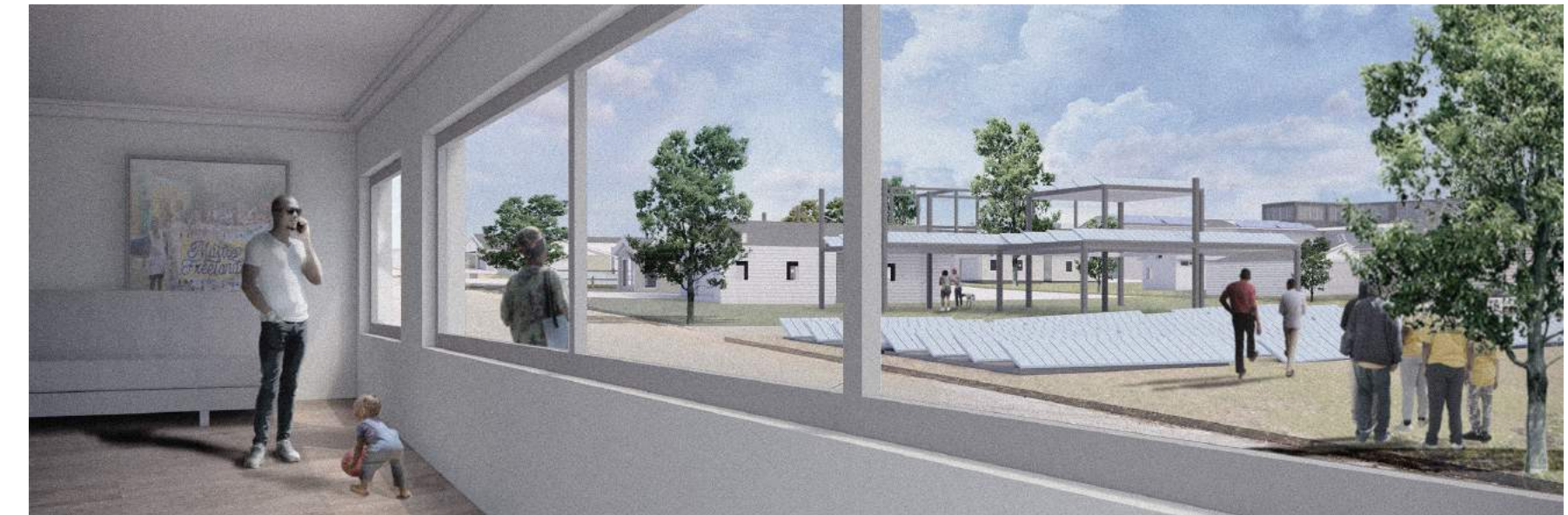
Countering vacancy with refurbished spaces of care and communal growth. Sections by Haotian Jiang



Communal growth at the street block scale.



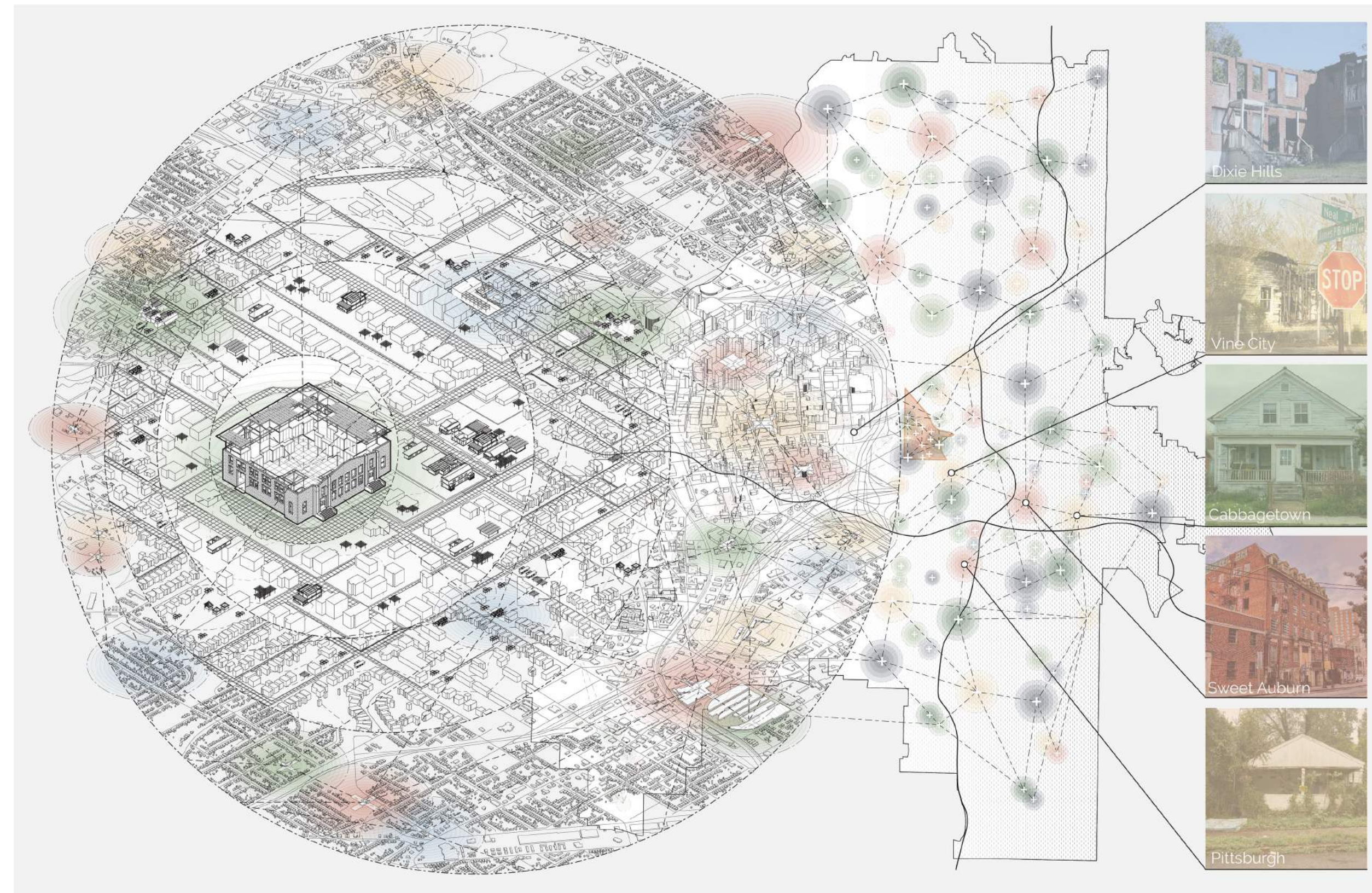
Maps of community networks with formal community spaces, informal community spaces, and site selection intervention zone. Maps by Minsung Kim.



Before property, counter property, and after property. Renderings by Haotian Jiang.



At the neighborhood scale, community anchor renovations creates a rhizomatic network of connections. In collaboration with Minsung Kim.



English Avenue becomes the model for the rest of Atlanta to counter vacancy and establish networks.



Reclaim the Air

Urban Design Studio I: The New York Studio | Summer Semester 2021
 Professors Nans Voron, Sagi Golan, Jae Shin, Galen Pardee, Austin Sakong, Sean Gallagher, & Tami Banh
 In collaboration with Carmen Yu, Minsung Kim, & Javier Ortiz
 Newark, NJ

Focusing on research and data visualization into air quality and levels of pollution in Newark, the proposal seeks to combat pollution, restore air quality, and explore ways to accelerate improvements in community health through design. Air pollution caused by toxic factories, transportation, and foul odors leads to increased health concerns and affects vulnerable communities. The design proposal commits to designing a healthier environment and to promote a healthy Newark region.

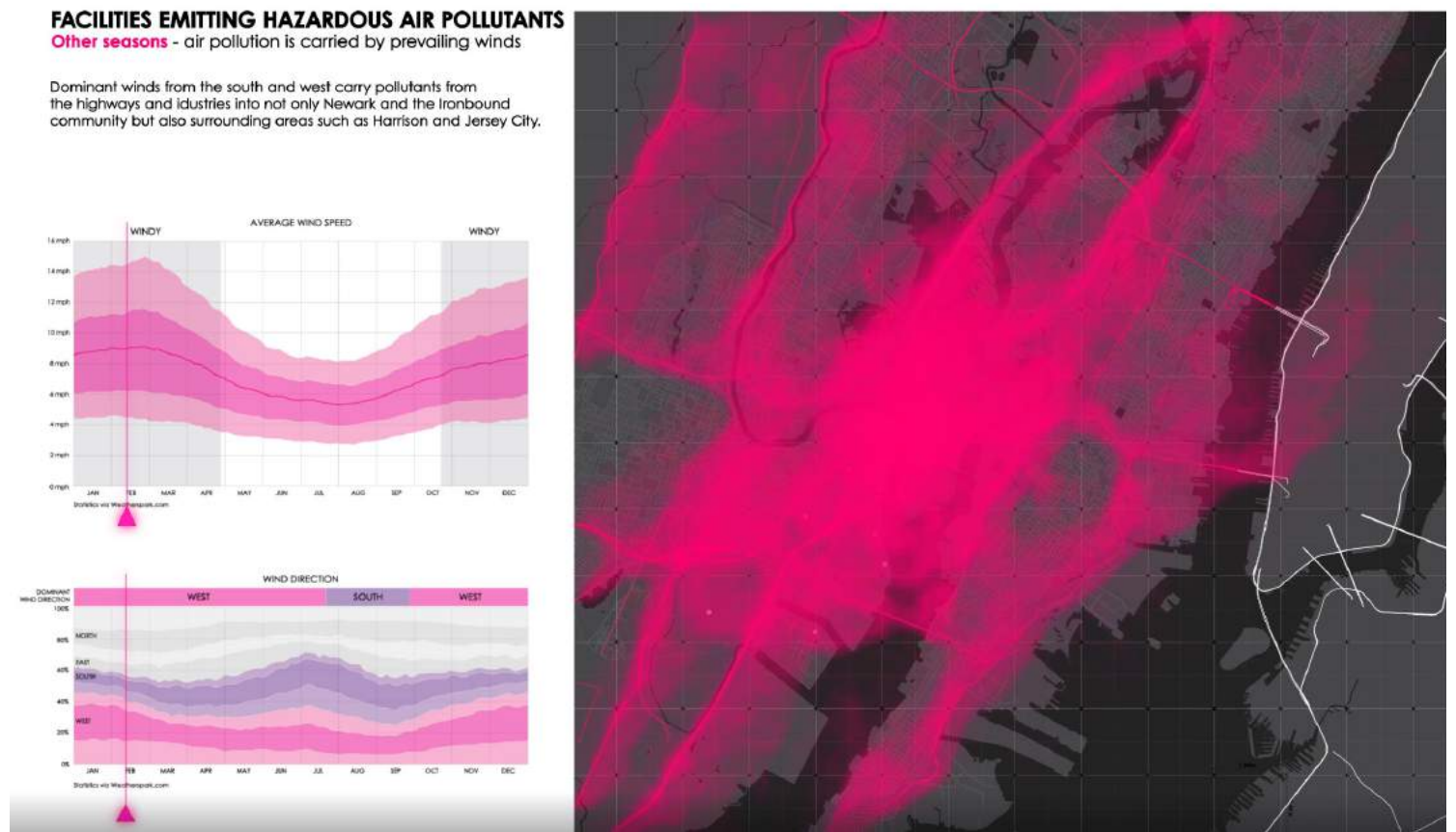
Since air pollution does not follow boundaries, each type of pollutant requires a different intervention at the point one interacts with the environment. Design solutions based on capturing technology can also protect and educate the community.

The project framework consists of a test site of the design intervention matrix followed by an expansion into separate site around Newark for the different conditions of the city and surrounding river areas. Finally the program has the ability to be adopted at a state level and to view New Jersey as the model for improving air quality and combating pollution.

Full presentation and animations link:
<https://www.youtube.com/watch?v=zAfrvC1v7Gw>

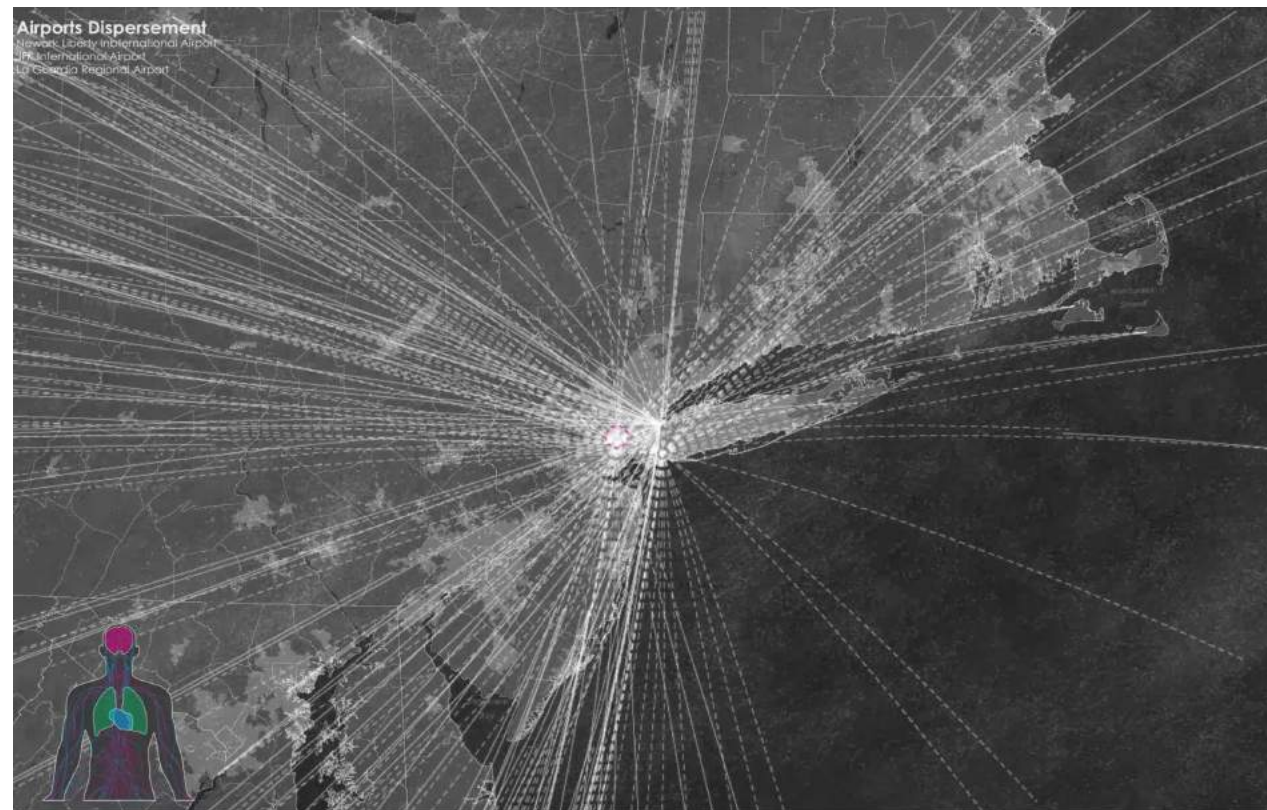
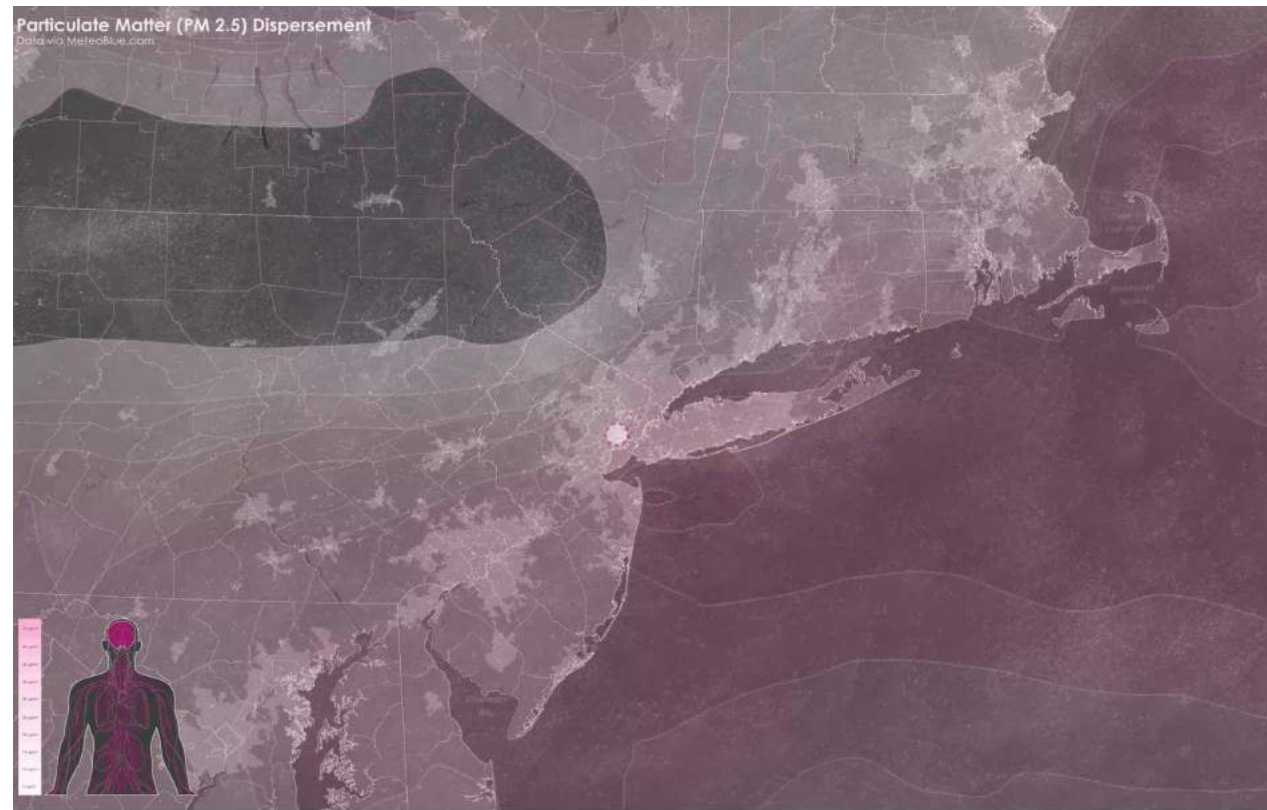
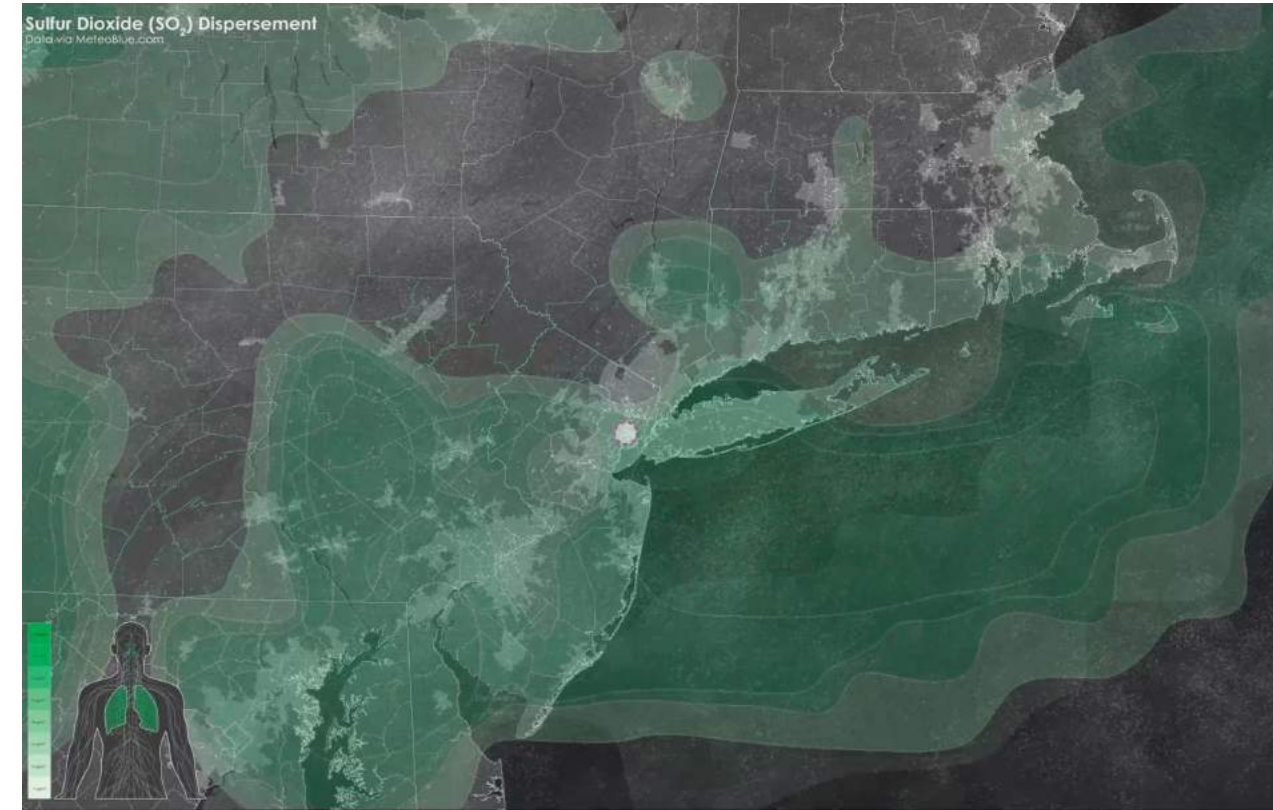


Hackensack River and Passaic River existing conditions



Animation of vehicle air pollutants across seasons. In collaboration with Minsung Kim

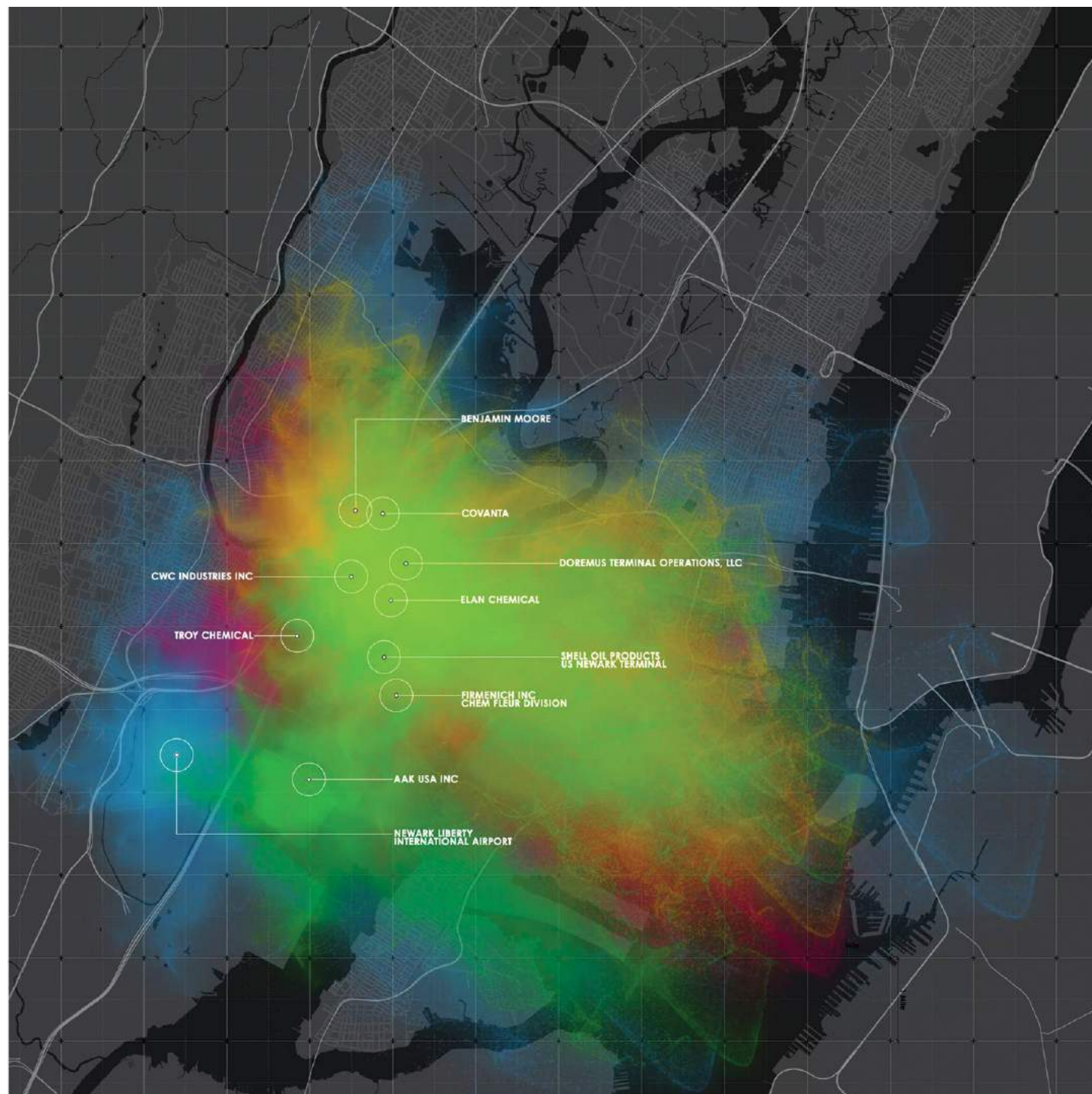
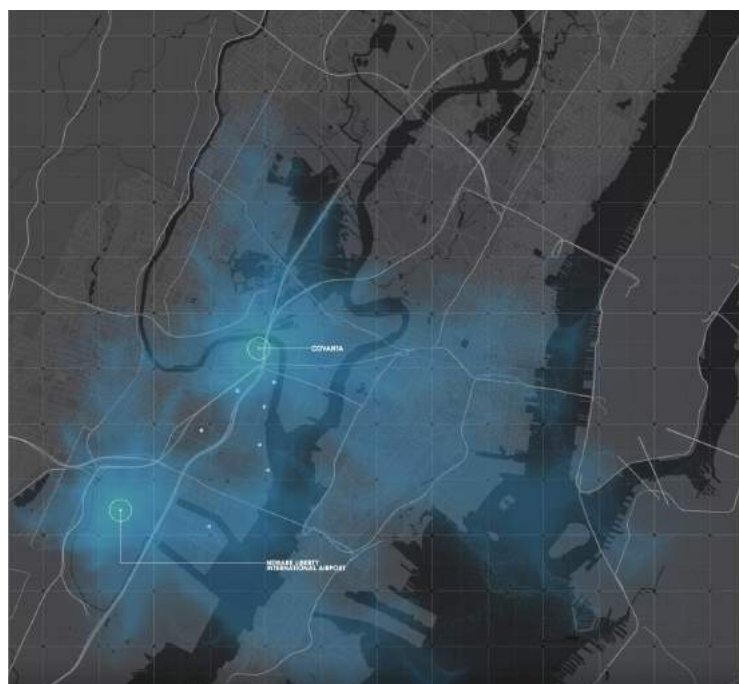
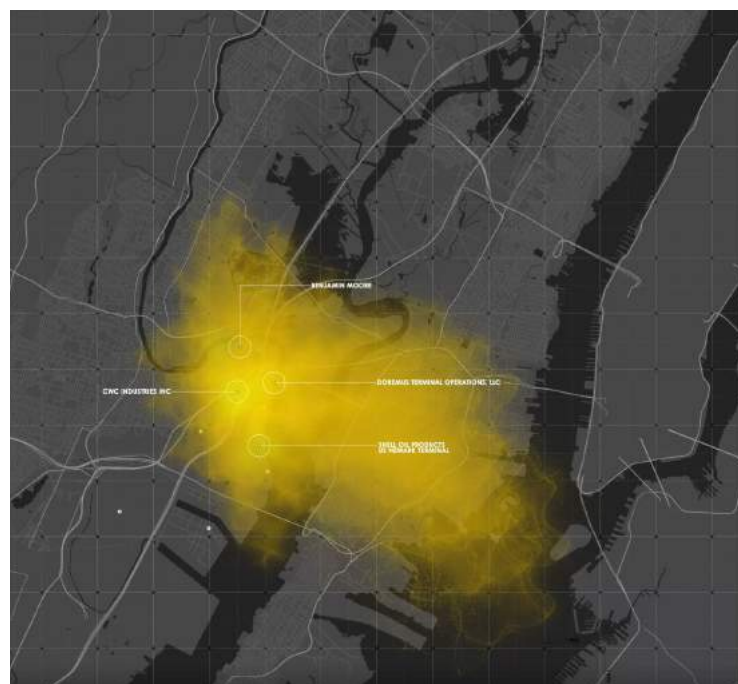




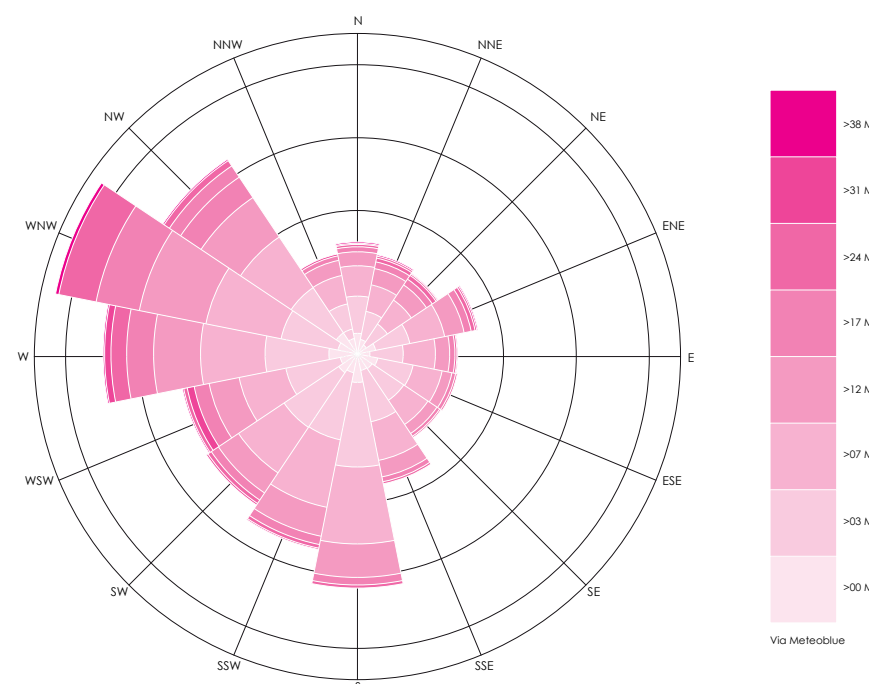
Major pollution dispersment across the northeast affecting Newark, and flights through Newark and New York City which contribute to pollution levels in the region.



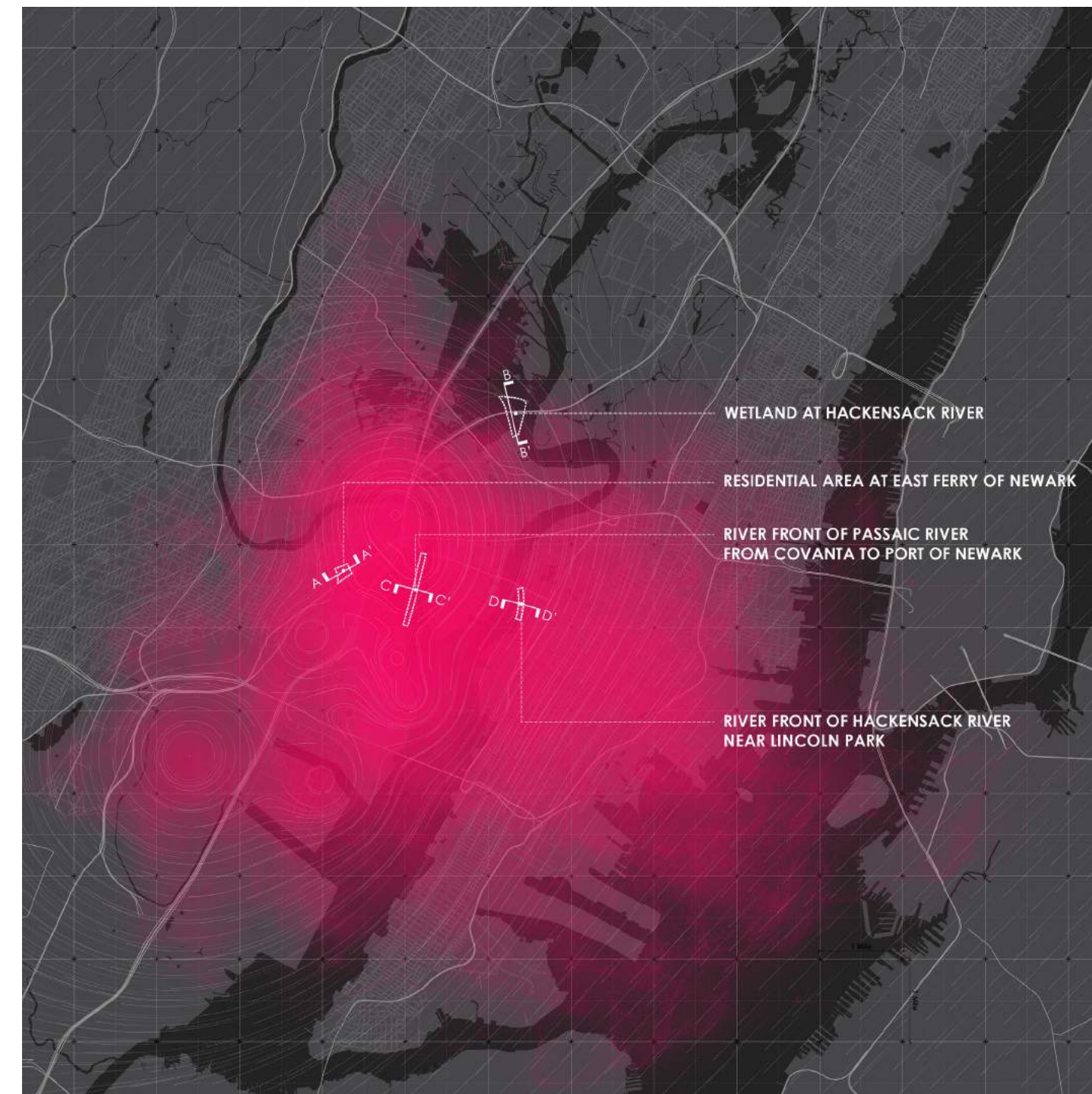
Map overlay of pollution dispersment across the northeast and additional regional sites to apply design the matrix.



Maps of facilities and chemicals emissions across Newark which informed site selection. In collaboration with Minsung Kim.

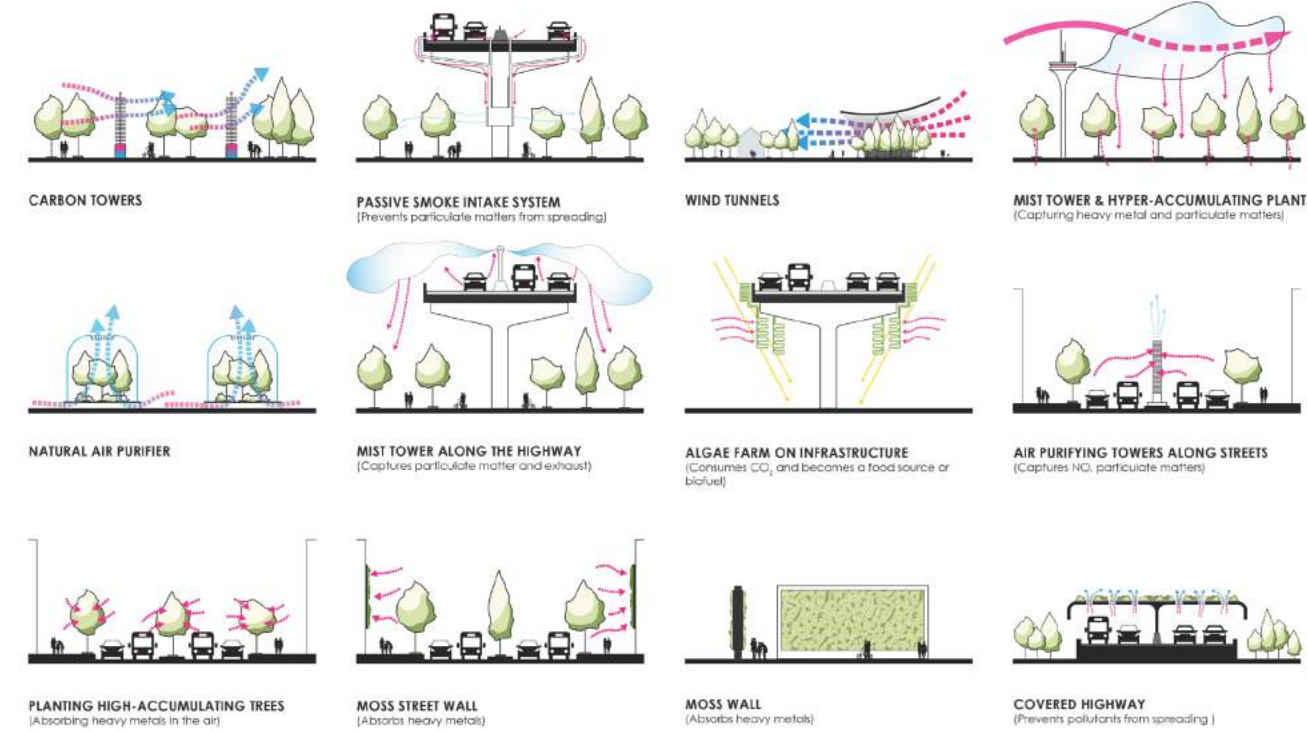


Asthma rates of people of 18 in the New York/Newark region. In collaboration with Minsung Kim and Carmen Yu.

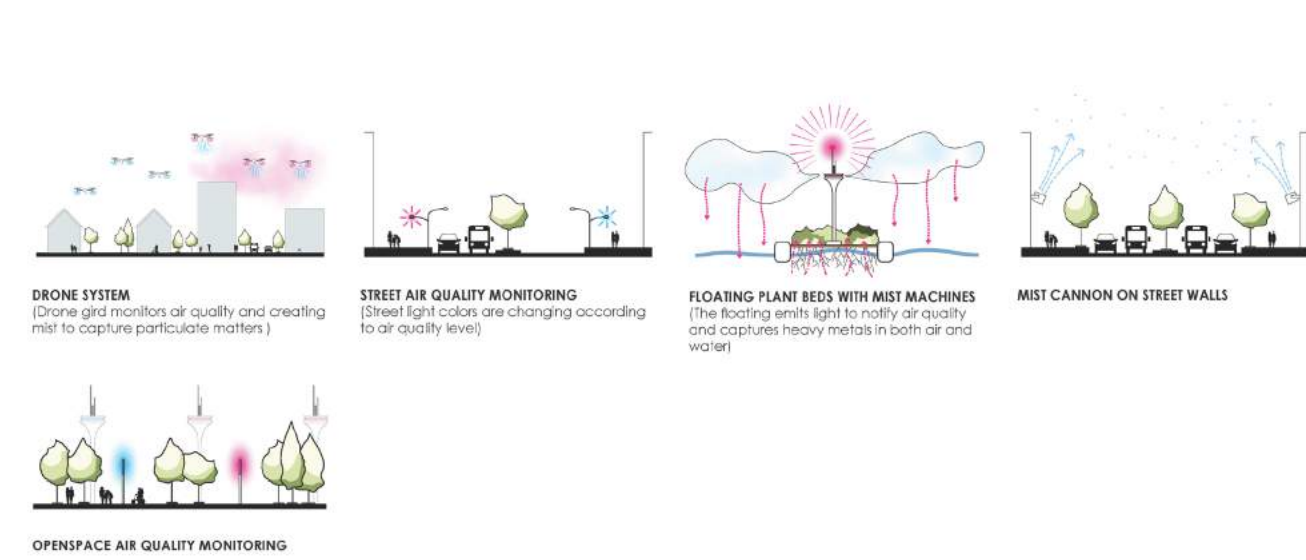


Site selection based on pollution dispersion to different urban conditions.

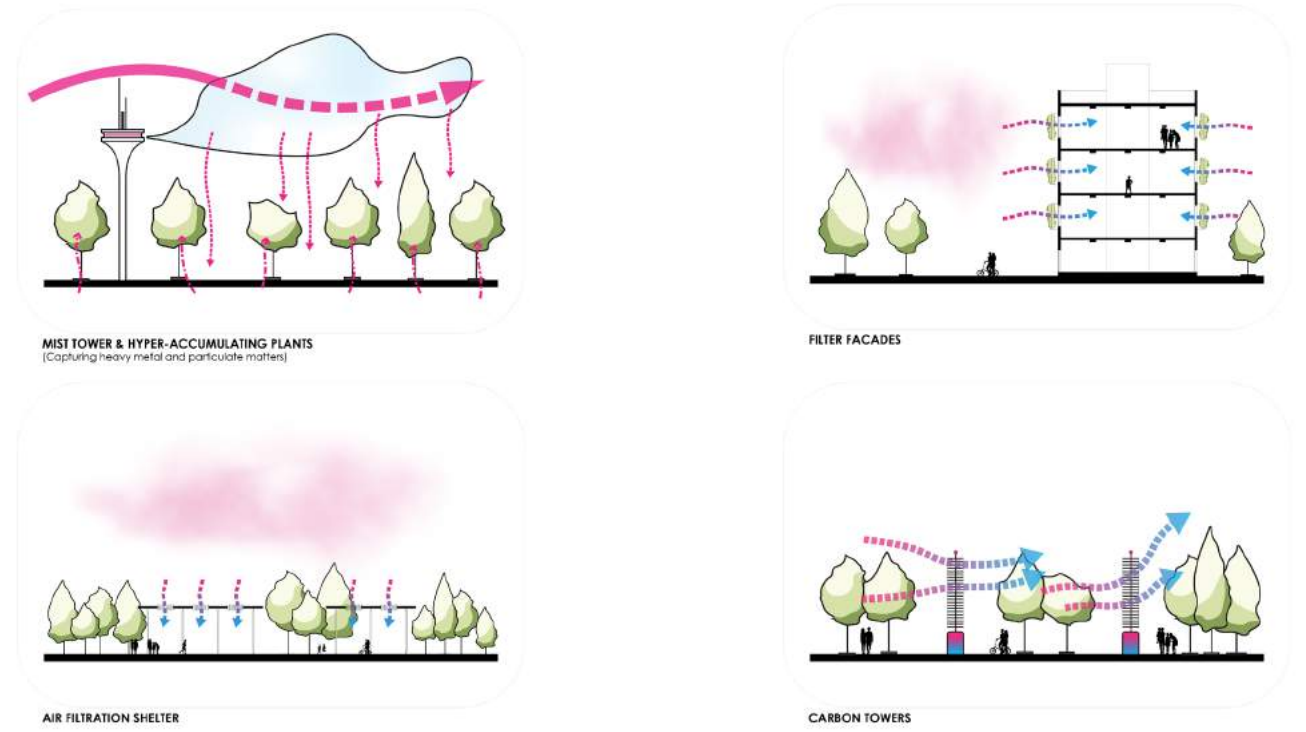
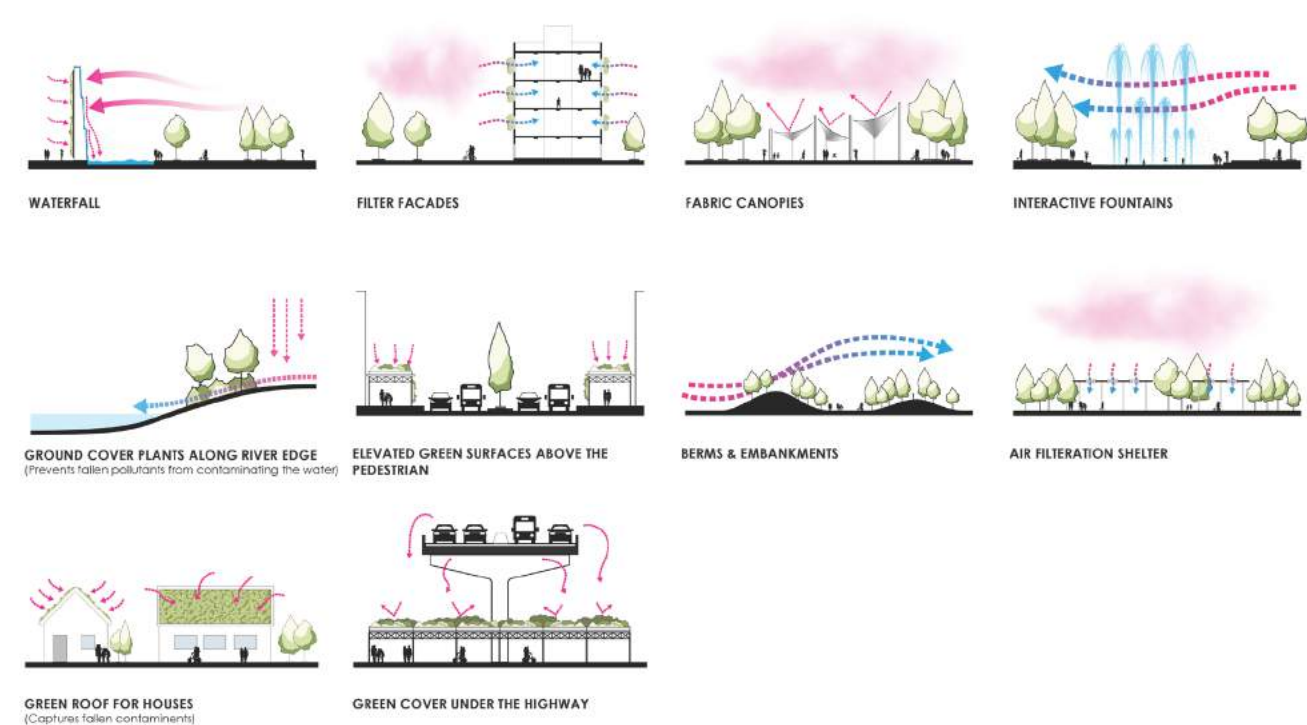
ABSORB & CAPTURE
Capturing pollutants & carbon with air and water vapor technology



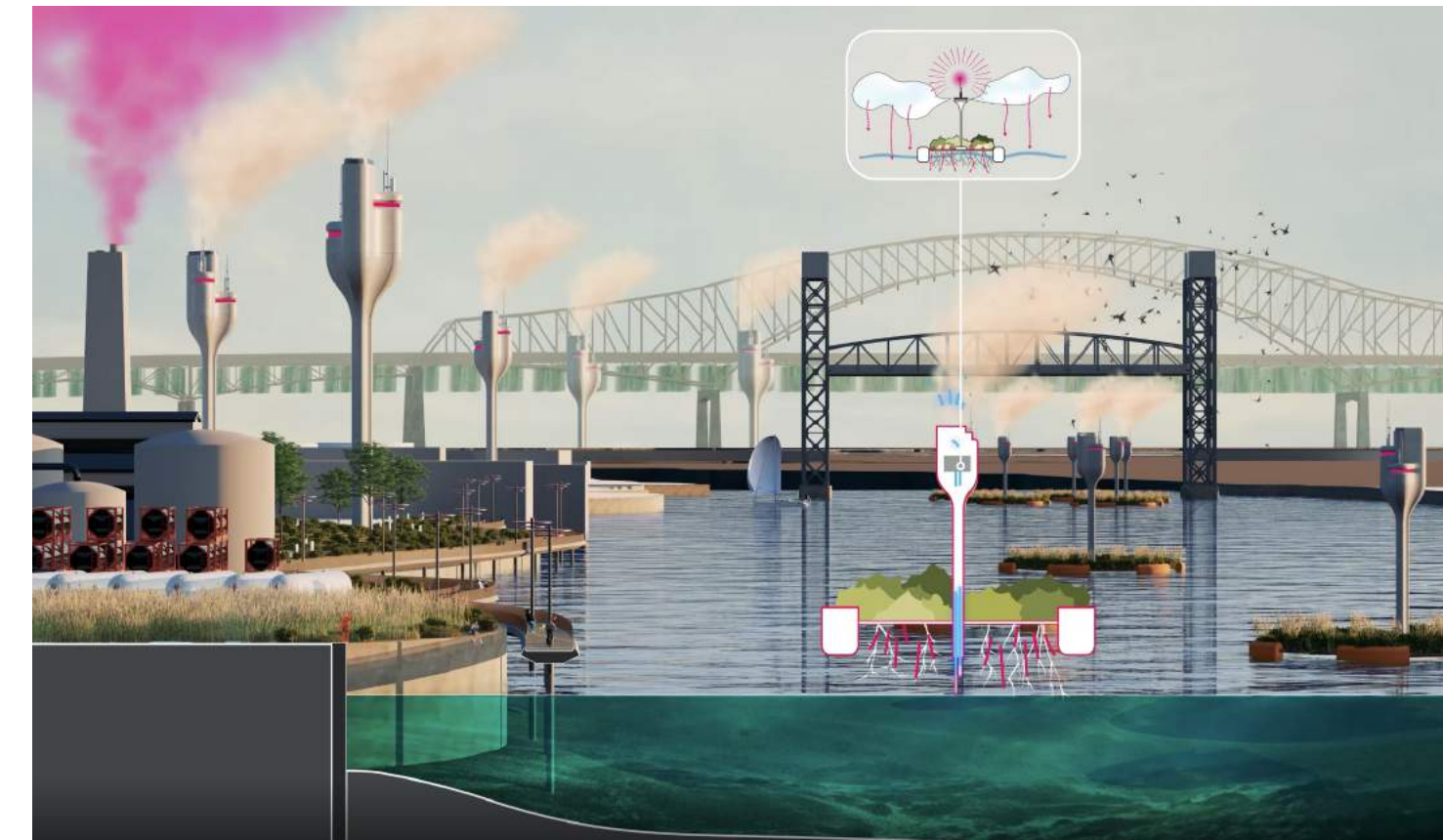
ALERT & EDUCATE
Systems to warn the community of high levels of pollution and to make aware effort to combat it



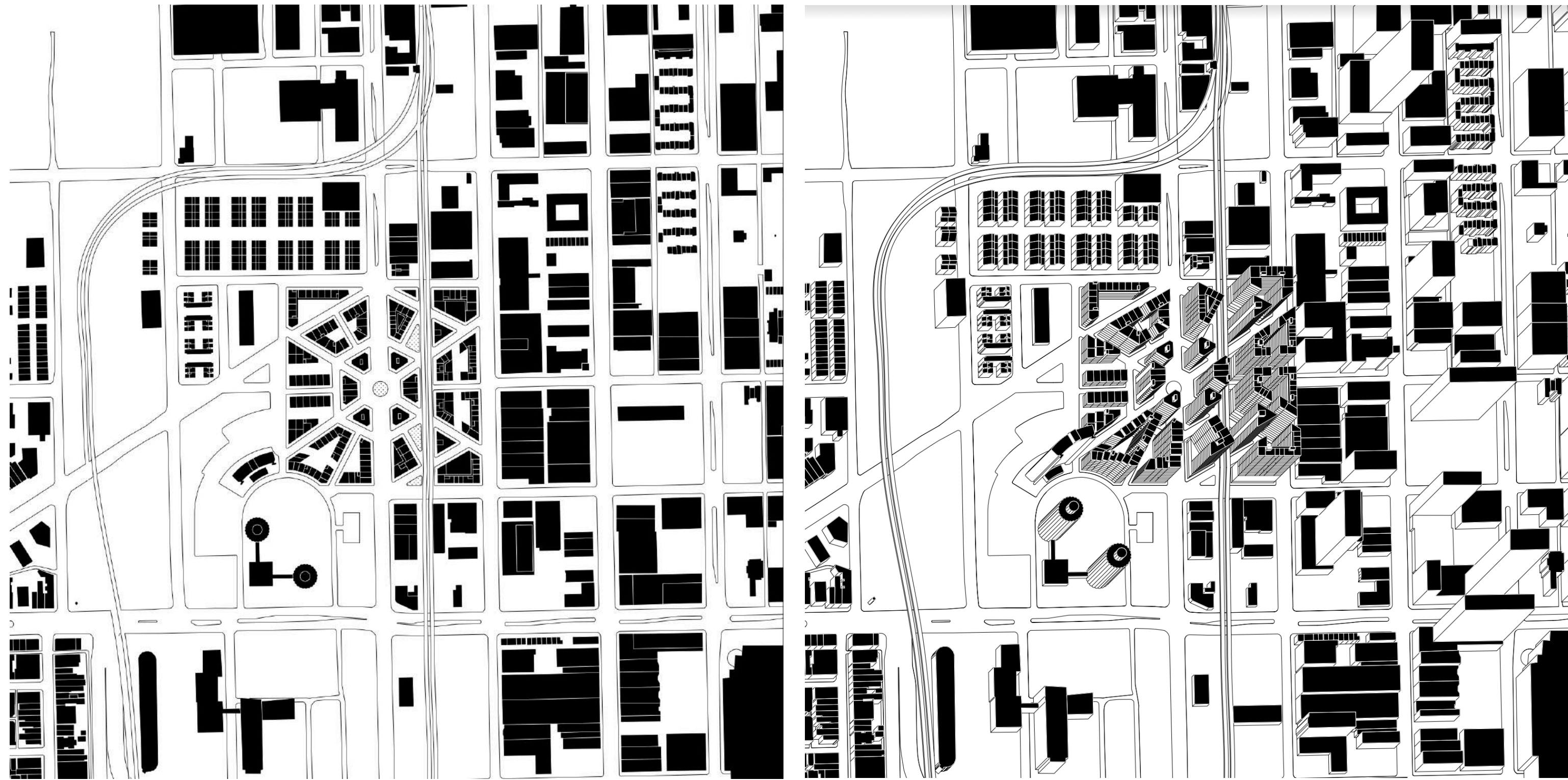
PROTECT & SHELTER
Systems to shield the community and the environment from contaminants



Design matrix elements applied at the three sites. Sections in collaboration with Minsung Kim.



Sections and callouts at the wetlands, residential areas, and river front conditions. Sections in collaboration with Carmen Yu, Javier Ortiz, and Minsung Kim.



Fabrics & Typologies

UD Seminar | Fall Semester 2021
 Professor Richard Plunz
 In collaboration with Minsung Kim
 Chicago, IL

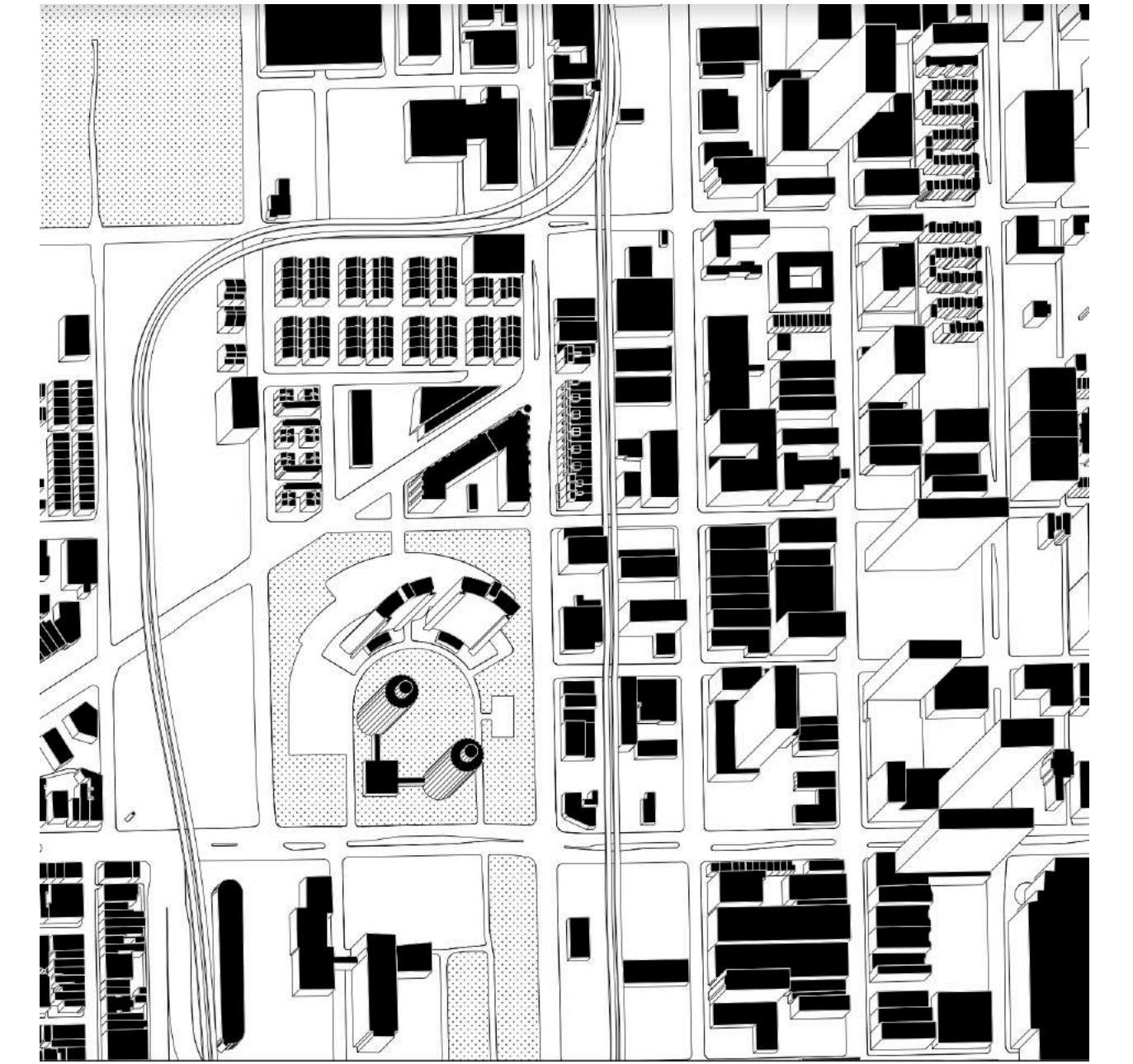
The existing Chicago grid has resulted in an uneven distribution of density across the city. Our proposal aims to increase density and place from nodal development, with a clear pattern of commercial spaces, residential areas, and open spaces adaptable to existing site conditions.

The current city grid consists of an orthogonal layout with intermittent avenues diagonally intersecting the rigid grid and fabric. The new grid aims to increase the amount of intersecting diagonals and rearrange them in a radial order around a series of nodes. At the center of the nodes are the commercial spaces and office buildings, then as the plan radiates out the density changes to residential apartment buildings.

As a series of quadrants, the new fabric responds to existing site density and context. As the forms move from east to west, the building height decreases to provide a smoother density between the lakeside and the residential neighborhoods to the east. Similarly, from north to south the building heights decrease away from downtown. As the train line intersects the site, parking garages are built around the rail line.



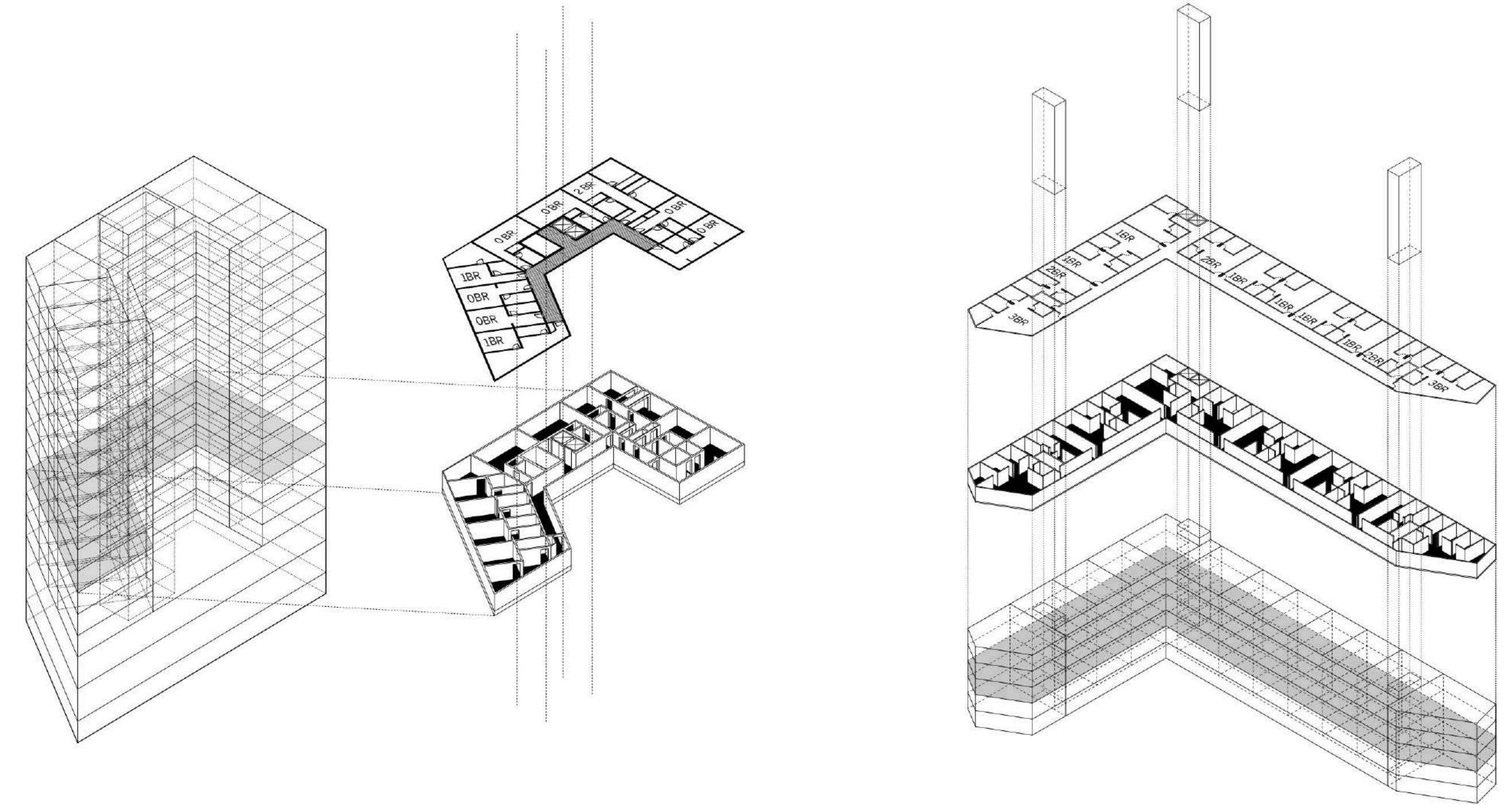
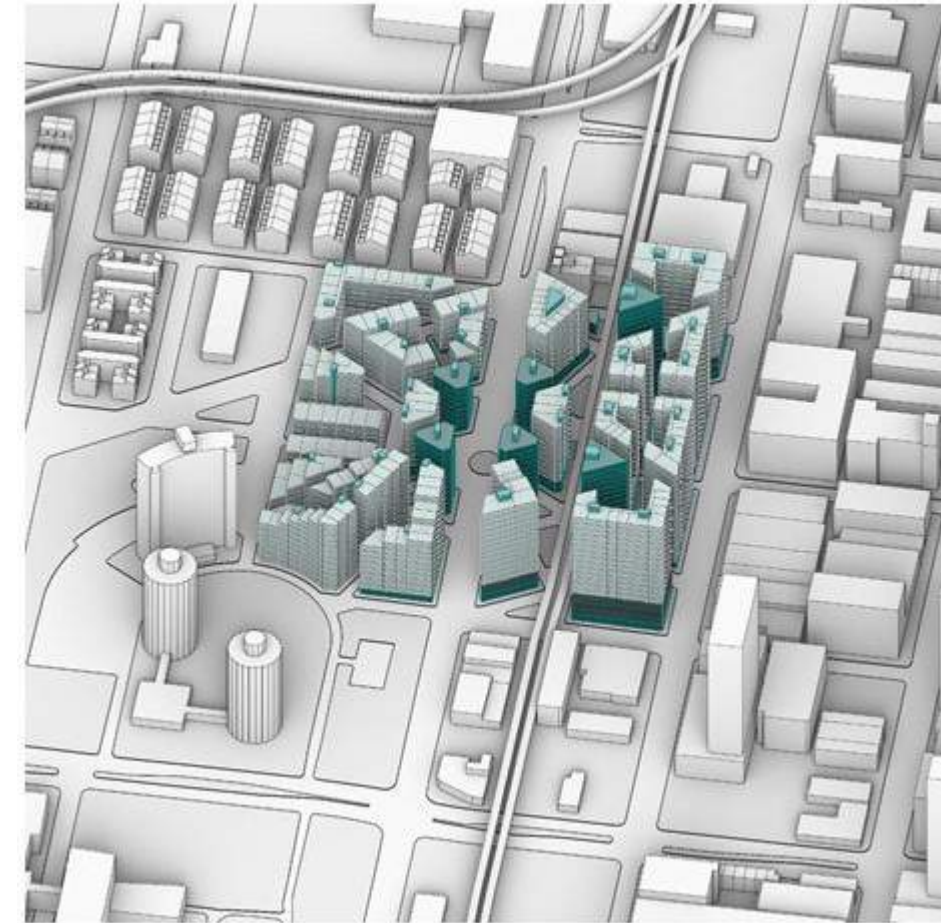
Existing conditions of the site and similar Chicago neighborhoods to South Loop.



Existing fabric conditions plan oblique.



Perspectives and axonometric of proposed fabric scheme.

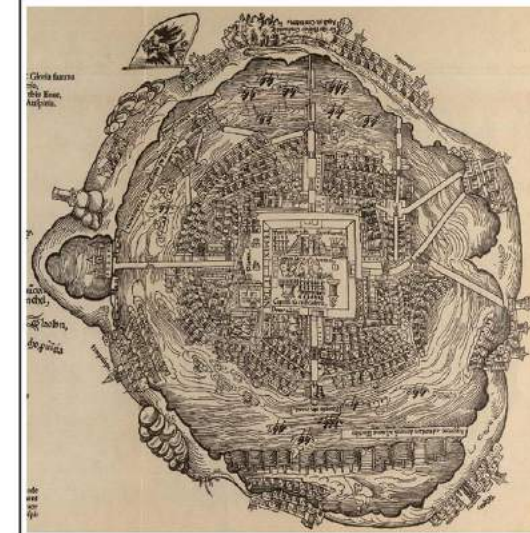


Axonometric of typical apartment building floor plans.

COLLAGE

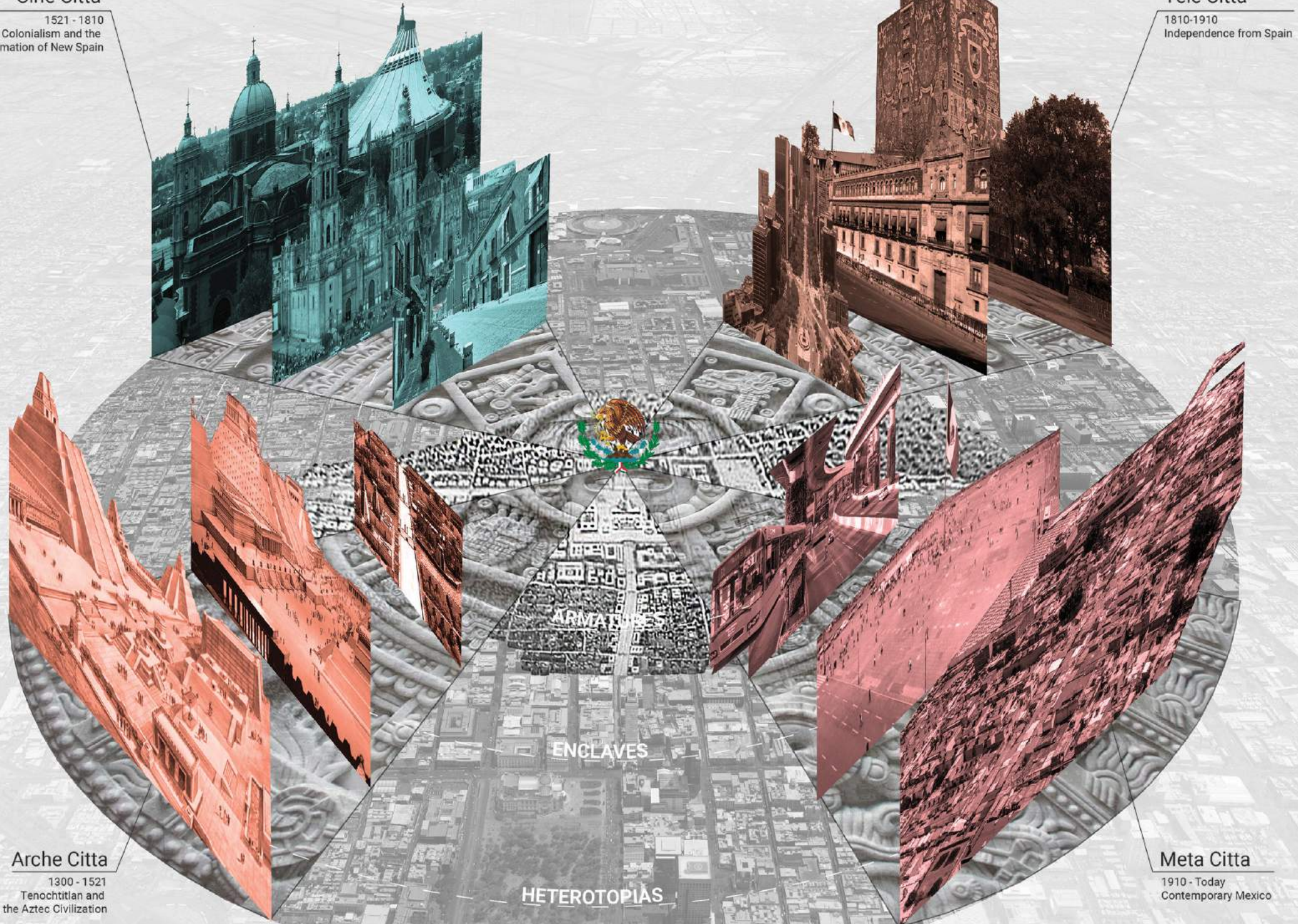
Arche Citta (1300 - 1521)
Cine Citta (1521 - 1810)
Tele Citta (1810 - 1910)
Meta Citta (1910 - Today)

As the historic city progresses, the city models progress radially, similar to the Aztec calendar and early representations of Tenochtitlan. The elements of each model branch off from the center and leave memory traces along the way across the city.



Cine Citta

1521 - 1810
Colonialism and the formation of New Spain



Tele Citta

1810-1910
Independence from Spain

Arche Citta

1300 - 1521
Tenochtitlan and the Aztec Civilization

Meta Citta

1910 - Today
Contemporary Mexico

Public Space/Recombinant Urbanism

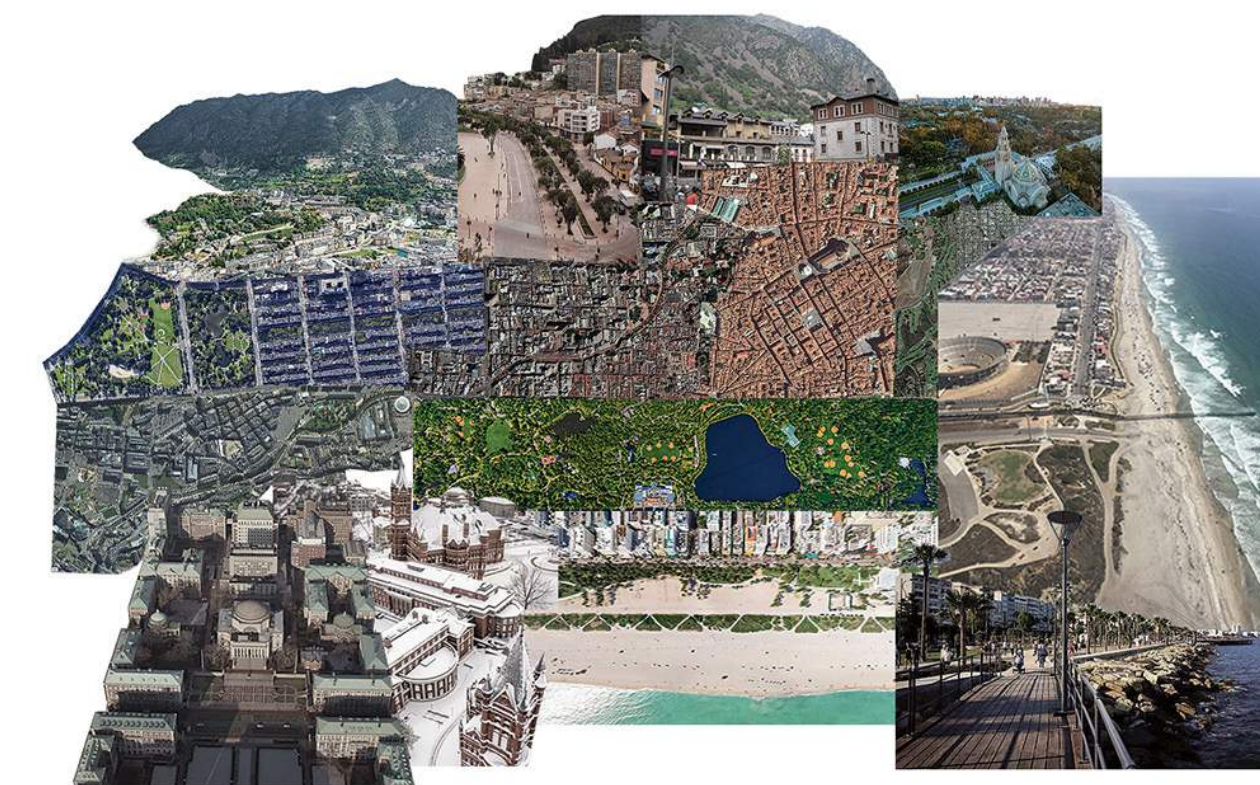
UD Seminar | Spring Semester 2022
Professor David Grahame Shane | Spring Semester 2022
In collaboration with Cesar Delgado and Daniela Deu
Mexico City, MX

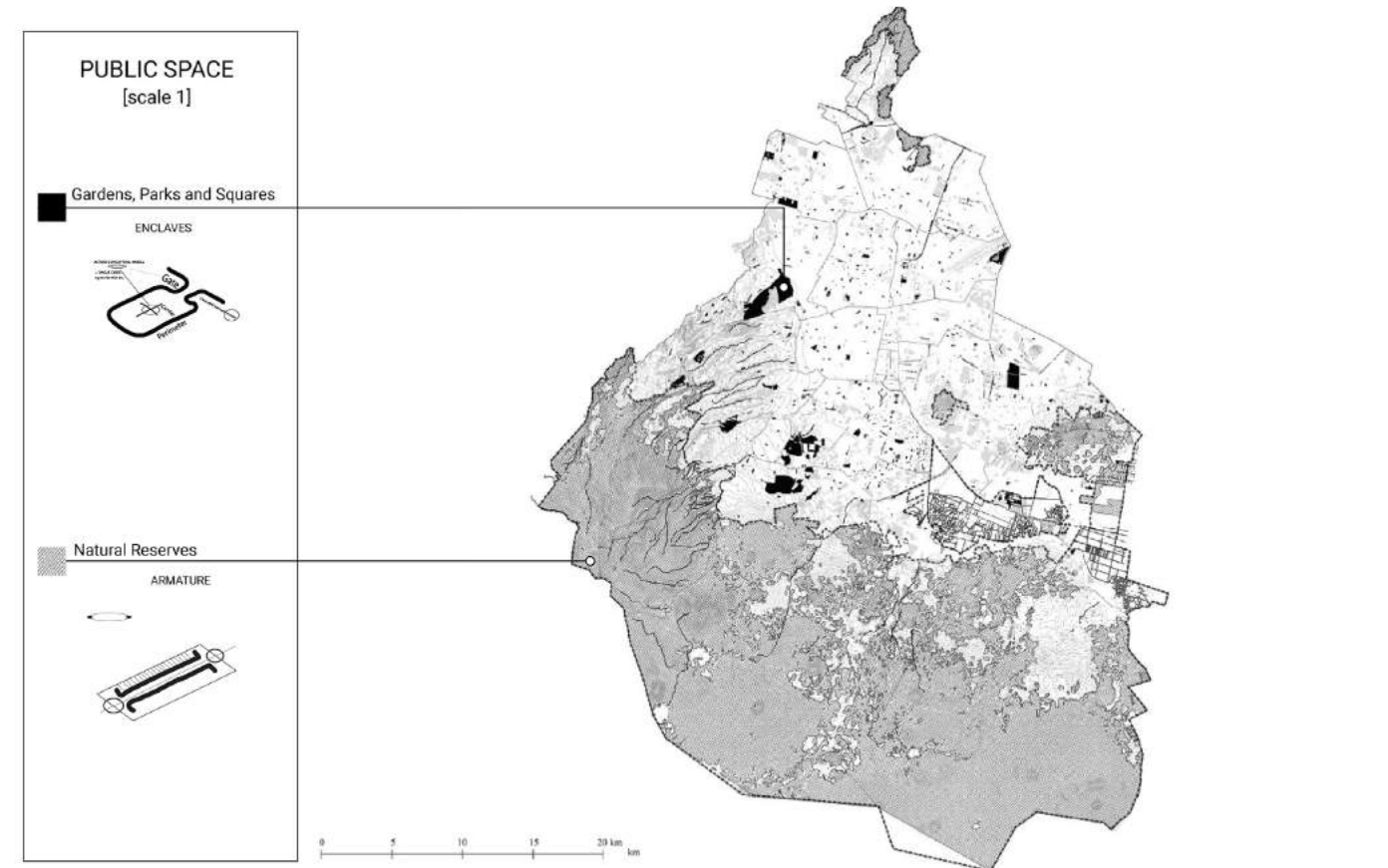
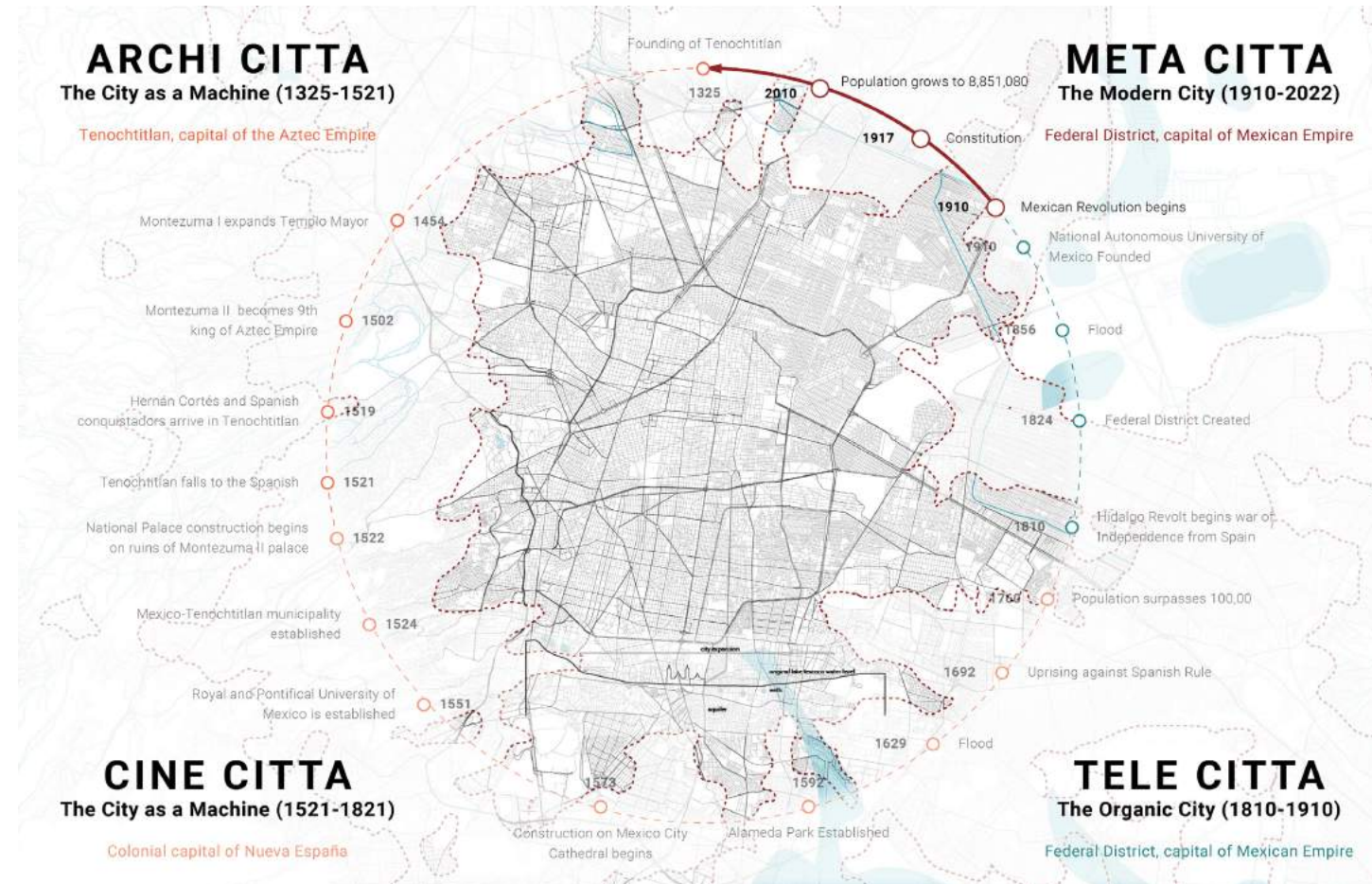
City analysis of Mexico City over time through the four city models of arche citta, cine citta, tele citta, and meta citta. From its Aztec origins to the contemporary city, enclaves, armatures, and heterotopias emerge through layered spaces with elements in each model. As the historic city progresses, the elements of each model branch off and leave memory traces along the way across the city.

Analysis of the city is explored through formal drawings, research of existing systems, and collages of urban elements.

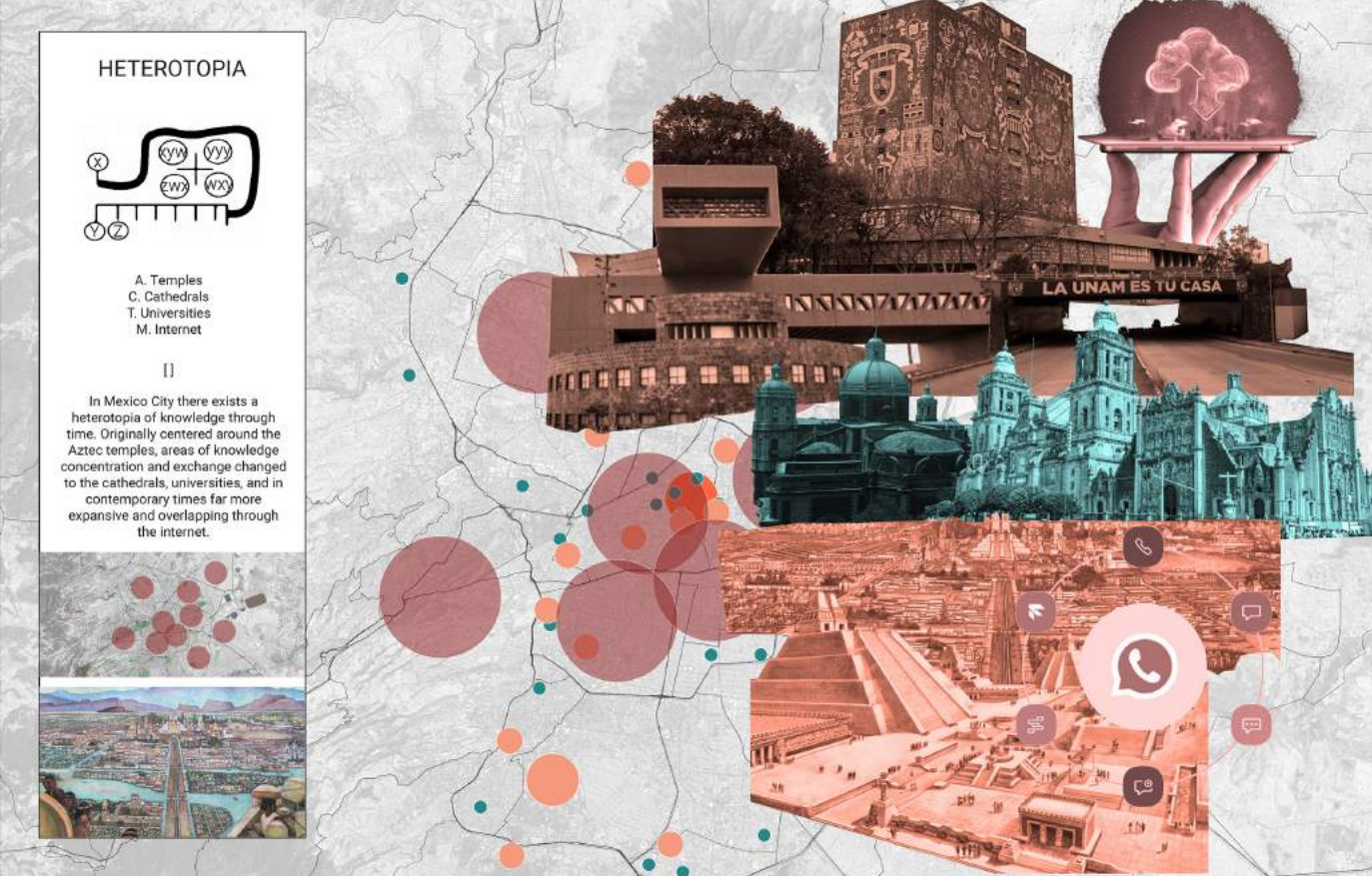


Individual and team collages of urban biographies.

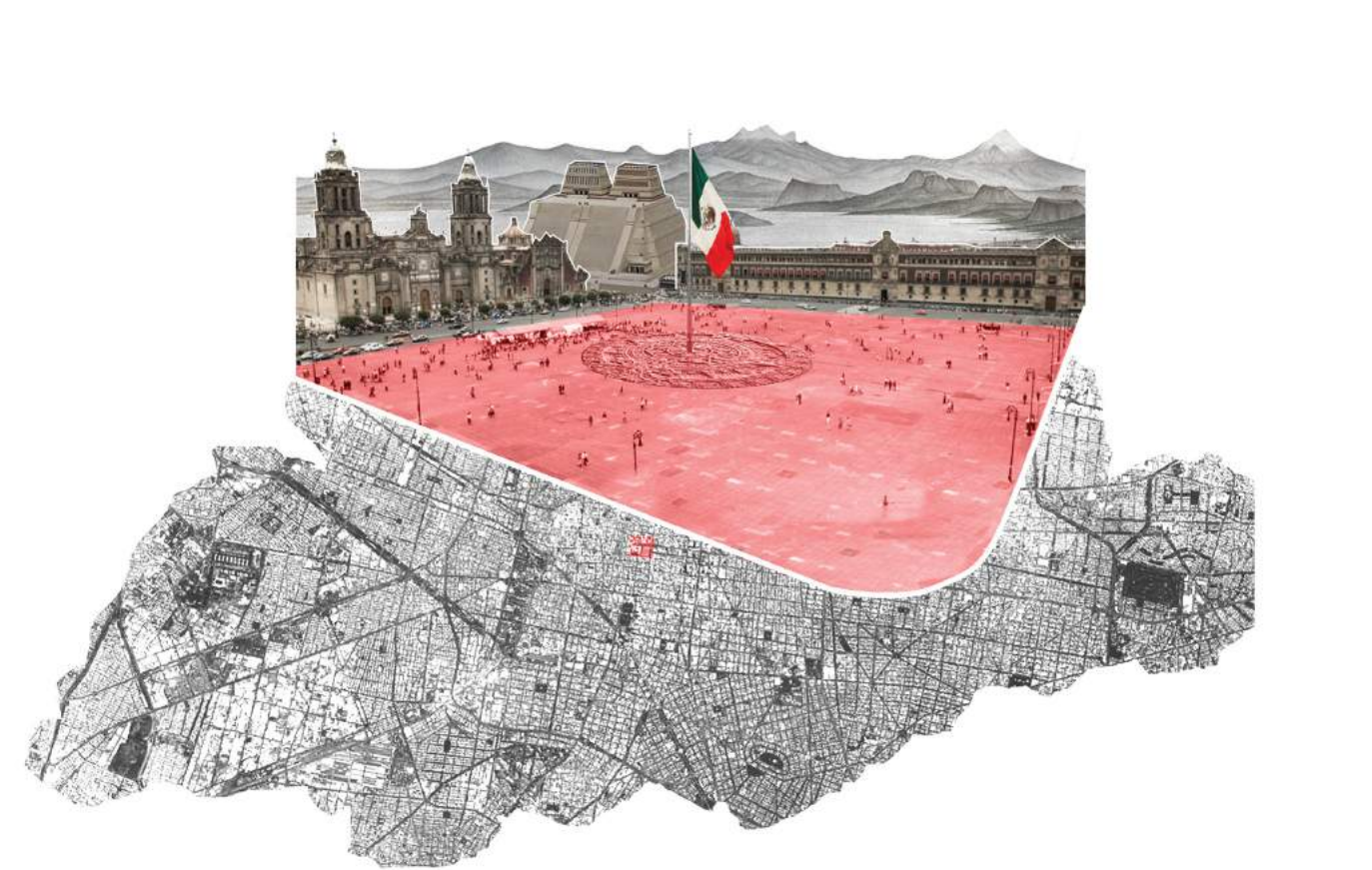


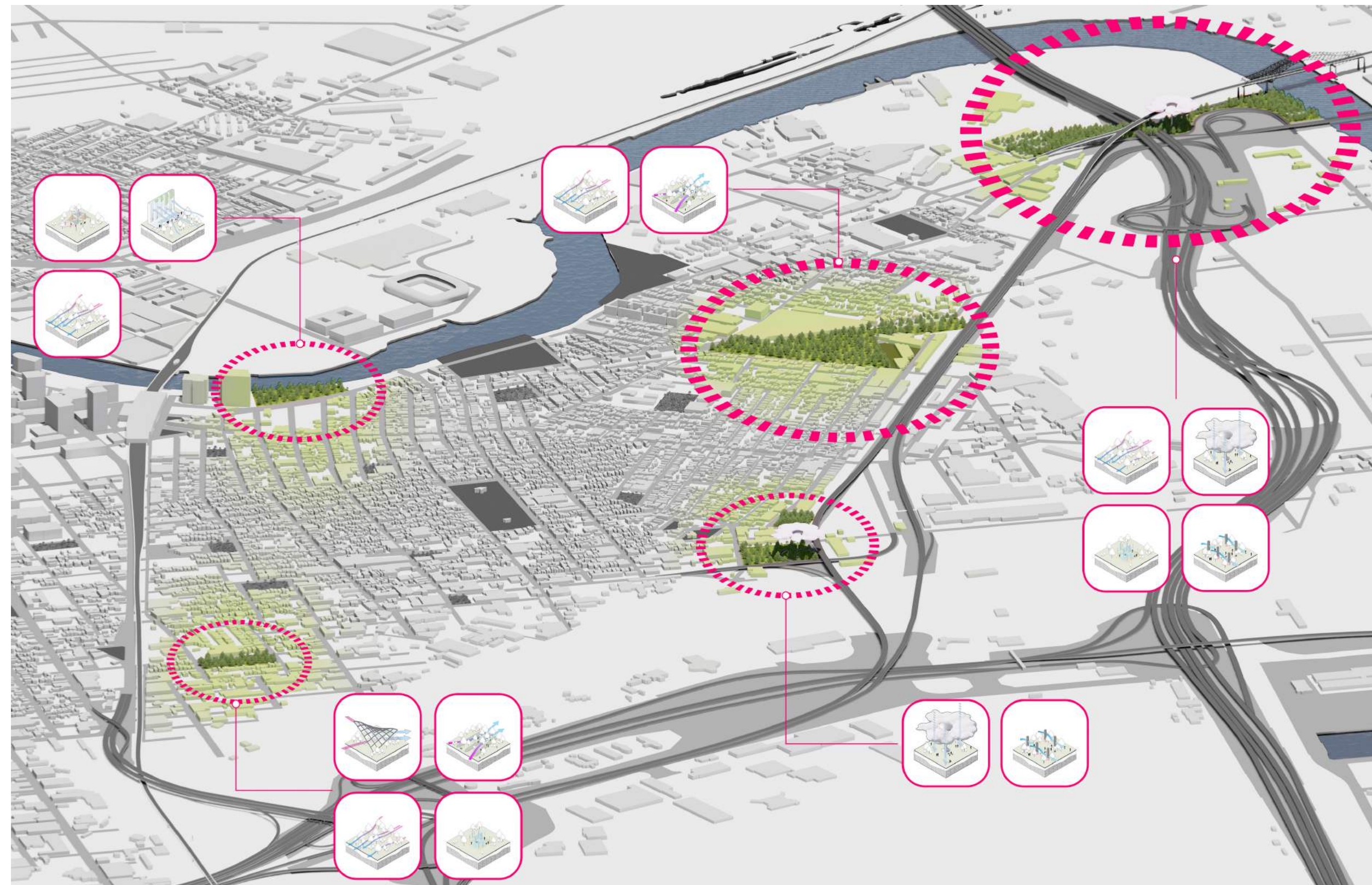


Timeline of the four city models and layout of public spaces.



Enclaves, armatures, and heterotopias through the four city models.



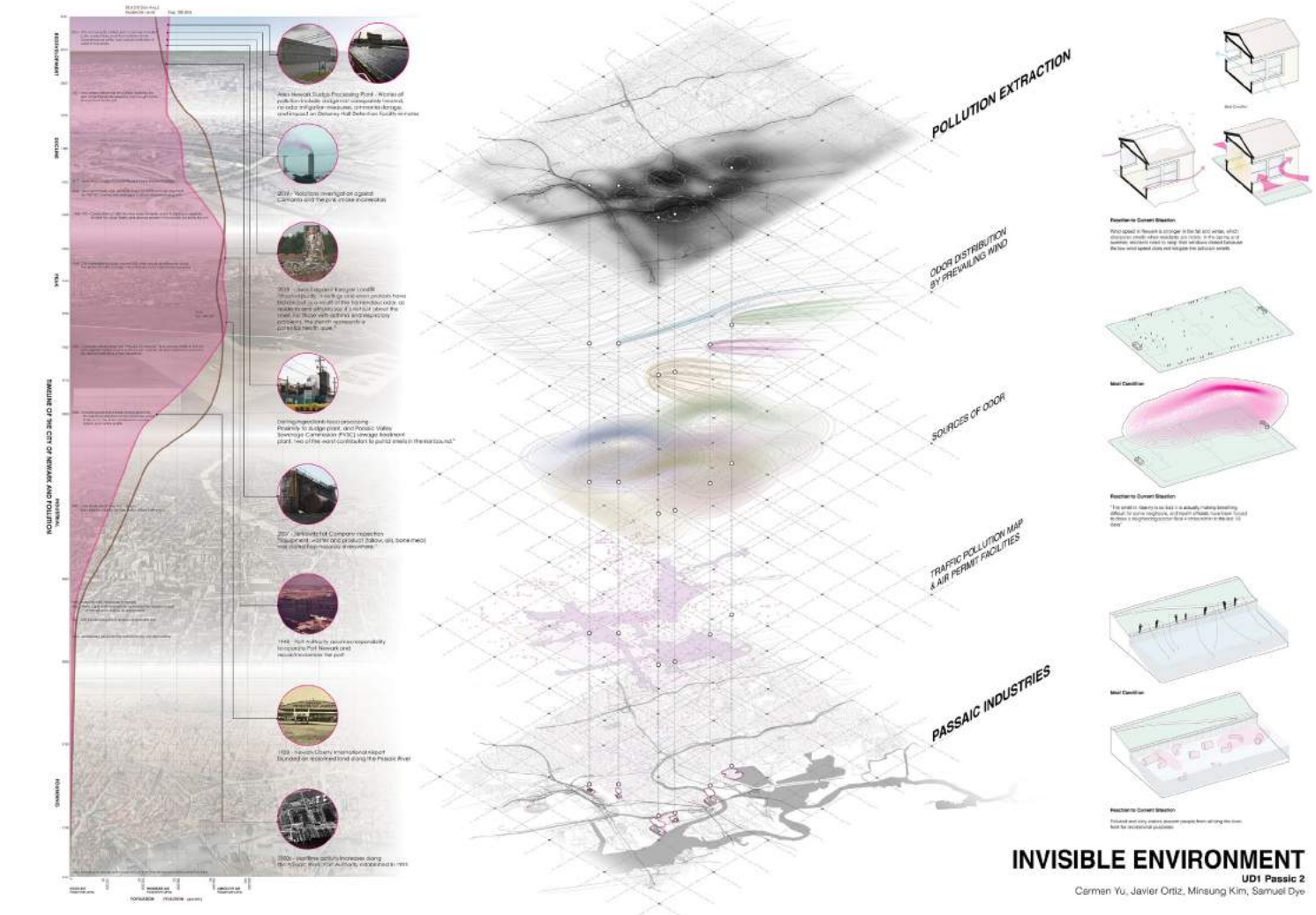


DTEQ/Digital Techniques

Seminar | Summer Semester 2021
 Professors Richard Chou, Eric Huntley, & Paul Kamuf | Summer Semester 2021
 In collaboration with Carmen Yu, Minsung Kim, & Javier Ortiz

Digital techniques were explored as part of the course in tandem with summer semester studio projects. Digital lessons and exploration of representational skills included GIS, 3D modeling, rendering, and animation and video editing. Final assignment included constructing a video manifesto of the studio design proposal.

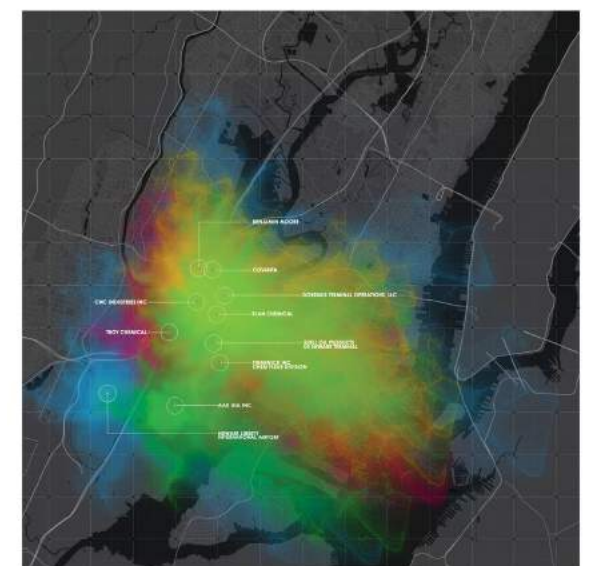
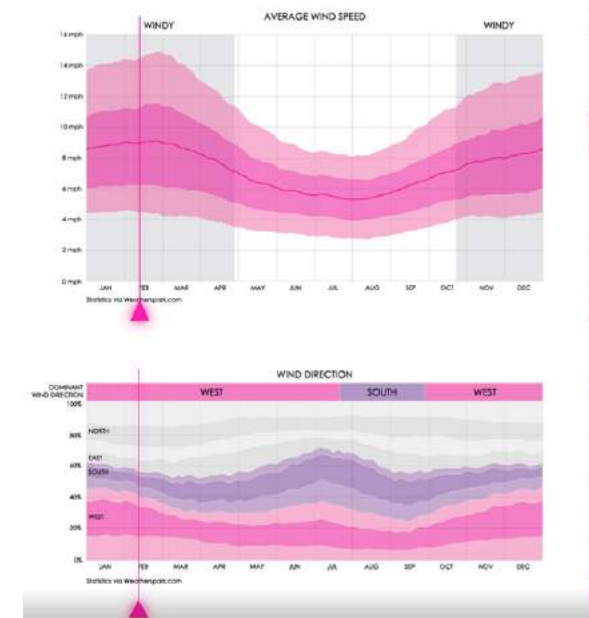
Sample animation videos of sectional perspectives for final review:
 Passaic Riverfront 1: <https://www.youtube.com/watch?v=iubGur8LOa0>
 Passaic Riverfront 2: <https://www.youtube.com/watch?v=zhOv0DnZue8>



Constructing site and layering of pollution over different scales.

FACILITIES EMITTING HAZARDOUS AIR POLLUTANTS
Other seasons - air pollution is carried by prevailing winds

Dominant winds from the south and west carry pollutants from the highways and industries into not only Newark and the Ironbound community but also surrounding areas such as Harrison and Jersey City.

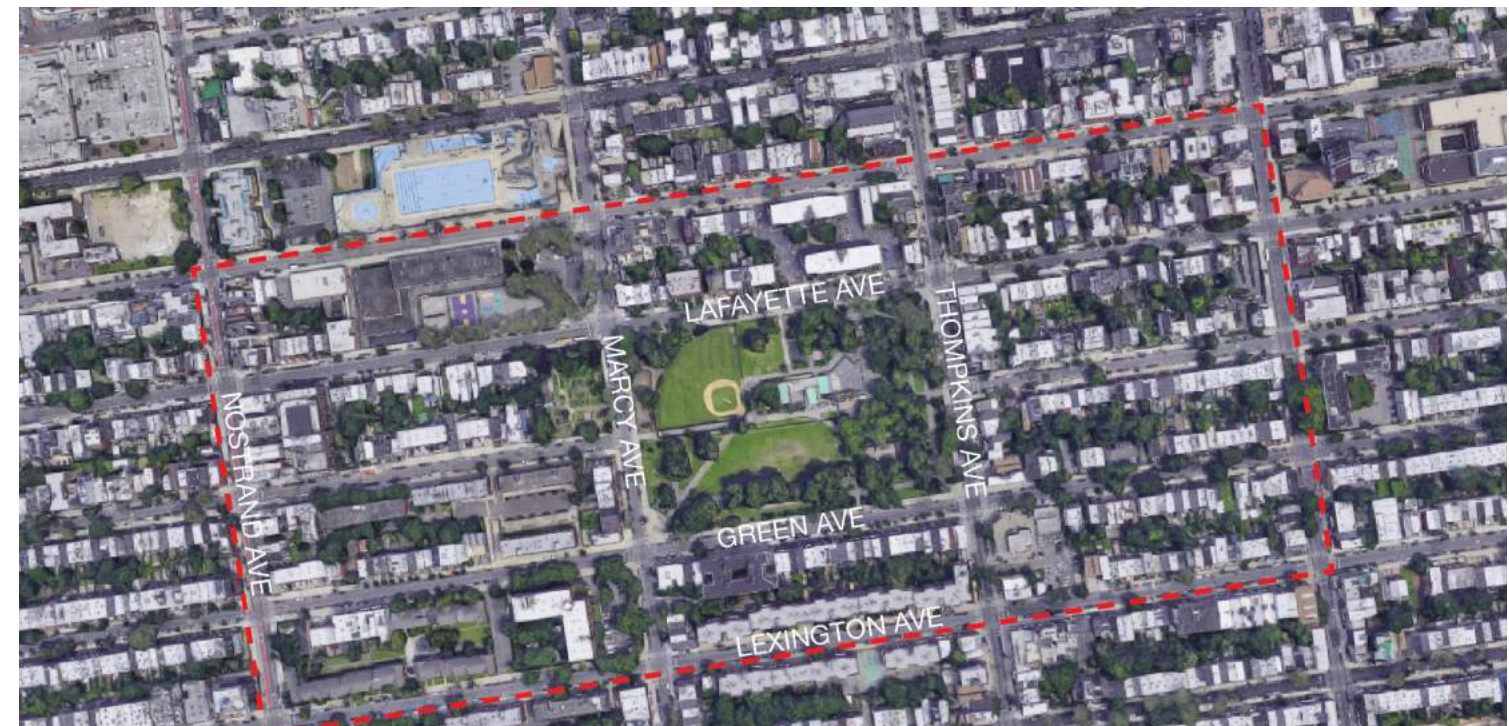


Still images of design proposal manifesto.

The neighborhood of Bedford-Stuyvesant, Brooklyn has undergone a series of changes over the course of its history and is currently experiencing a new series of shifts. The selected site is particularly interesting for the mixed-use neighborhood set up, with a wide range of residential, commercial, institutional, religious, and community spaces all within the span of a few blocks. There is an ample amount of public space within the neighborhood, including parks, playgrounds, basketball courts, and markets. Observations from visits to the neighborhood are that residents use both the available public space and open areas within lot boundaries, including apartment steps, backyards, and parking lots for gatherings and recreational activities.

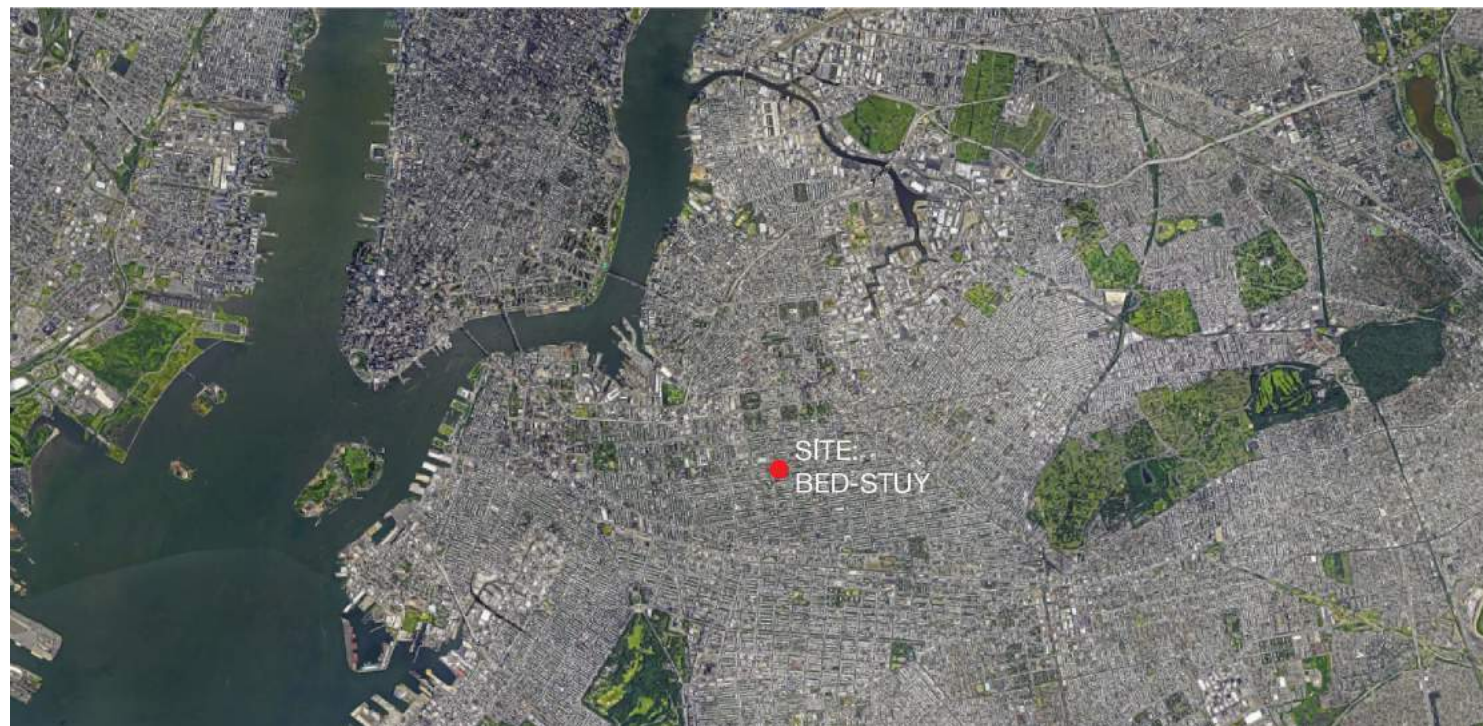
The accompanying storymap information below focuses on the blocks surrounding Herbert Von King Park as a study of the greater neighborhood. Exploration includes a historical timeline, video montage, and an examination of what comes next in the neighborhood:

<https://storymaps.arcgis.com/stories/7020c798cca84853b1783c1d077b421b>



Reading New York Urbanisms (RNYU)

Seminar | Summer Semester 2021
Professor Cassim Shepard



Electives Appendix Urban Theory & Design in the Post-Industrial Age

UD Seminar 1 | Summer Semester 2021
Professor Noah Chasin & Instructor Charlette Caldwell

Final assignment analyzed the Lower Manhattan Expressway proposal (1967-1972) by Paul Rudolph and its forward-thinking yet ultimately flawed study into the future of New York City infrastructure. The project failed in that it was designed for the automobile and not the human. Formal gestures to provide for more livable neighborhoods still disconnected housing from the existing street condition and context. While a new approach to an old problem of configuring highway systems into cities without disrupting communities, the proposal is fit more centered to bridges and highways than the existing fabric.

Theoretical Turn in Architecture

Elective | Fall Semester 2021
Professor Mary McLeod

Critique of contradictions in Bernard Tschumi's Parc de la Villette between the MoMA exhibition *Deconstructivist Architecture* (1988) catalogue and Tschumi's writing in *Cinegramme Folie* (1989). Contradictions in the texts can be seen through the notions of form and exploration of formal strategies, subversion of context and claims of anti-contextualism, and inclusion of programmed and non-programmed spaces within the park. The project operates in a both/and condition, in that the differences and contradictions show a plurality of interpretations and is therefore an embodiment of deconstructivism for these very contradictions.

The History of Architectural Theory

Elective | Fall Semester 2021
Dean Emeritus Mark Wigley & Instructor Ultan Byrne

Analysis of a piece of theory with *The Liberal Monument: Urban Design and the Late Modern Project* (2010) by Alexander D'Hooghe. The retroactive manifesto is a call for countering sprawl by proposing urban design interventions and groupings of democratic monuments to strengthen public space within networks. The analysis examines the structure of the theory itself and its effectiveness in the position taken, the intended audience, and context.

Structural Daring & The Sublime

Elective | Spring Semester 2022
Professor Rory O'Neill

Phenomenological investigation of the Cathedrale Saint-Gatien in Tours, France and the sublime effects of the Gothic cathedral. Through monumentality, long spans, contrasts of light, and unique structural features the cathedral hints at the mathematical sublime and a working relationship between the grand interior spaces and exterior structural components. Angled buttresses and dematerialized walls with stained glass further contribute to the perplexity of the space.

SAMUEL J. DYE

AIA, NCARB

Registered Architect, Massachusetts
NCARB Certified

EDUCATION

Columbia University Graduate School of Architecture Planning & Preservation
Masters of Science in Architecture and Urban Design

Syracuse University School of Architecture
Bachelor of Architecture, Class Marshal, Cum Laude, Dean's List

Minor in Management Studies, Whitman School of Management
Renee H. Crown University Honors Program
International Study: Florence, Italy

Jamesville-Dewitt High School | Dewitt, NY
National Honor Society, AP Scholar with Distinction
Scholastic Art & Writing Awards Silver Key Portfolio

EXPERIENCE

Isgenuity, LLC | Boston, MA
Associate

Architectural Designer
Produced construction drawings for DPH approval on healthcare projects and oversaw CA work
Coordinated project's inclusion in and produced documents for hospital's Integrated Masterplan
Headed architectural BIM coordination in IPD structured project

Syracuse University Office of Campus Planning, Design, & Construction | Syracuse, NY
Completed University's feasibility studies drawings and estimations, and produced construction drawings
Assisted project managers, visited university construction sites and completed field reports
Built Revit models of university buildings for school's feasibility study and assisted office transition to BIM

George Penniman Architects | Essex, CT
Completed schematic design phase drawings and assisted with construction drawings
Visited sites and recorded measurements and information

Peripheral Objects | Syracuse, NY
Produced drawings and models for workshop and exhibition by Prof. Benjamin Farnsworth

OTHER EXPERIENCE & VOLUNTEER

Syracuse Architecture Student Mentor Squad
Mentored freshmen during orientation and organized informational events for students of all classes

Town of Dewitt Parks & Recreation | Dewitt, NY
Day camp counselor; supervised campers and organized activities

Butternut Community Police Center at Schiller Park | Syracuse, NY
Participated in activities for at-risk youth and assisted in reading programs for children

GiGi's Playhouse | Cicero, NY
Designed and produced images for parade float, participated in activities for children with Down Syndrome

Digital

Revit, AutoCAD, Photoshop, Illustrator, InDesign, Premiere, AfterEffects, Rhino, Enscape, Grasshopper, SketchUp, Microsoft Excel, Optimum VR, ArcGIS

Fabrication Construction

Hand-Craft, Laser Cutting, Woodshop Modeling, 3D Printing
BIM 360, Newforma, Procore

PERSONAL WORK

Oil and acrylic paintings, digital artwork

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February 2021
April 2021

May 2022

May 2018

Spring 2016
June 2013

October 2021 - Present
June 2018 - October 2021

Summer 2017-May 2018

Summer 2016

Summer 2015

Fall 2014 - 2018

Summer 2011 - 2015

Winter 2016

Spring 2013

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