

An aerial photograph of a dense urban area, likely New York City, showing a wide river (the Hudson River) and several bridges crossing it. The city buildings are tightly packed, and the overall scene is a high-angle view of a major metropolitan area.

The contemporary metropolis after relentless urbanization

ARCH 701 Design Studio

Fall 2014

NYIT School of Architecture and Design

Abstract

Our contemporary cities exist in perpetual urgency: metropolitan territories demonstrate tremendous diversity and complexity in growth and decline. By 2050, 70 percent or so of the world will live in cities. What does it mean for us to live together? And what will it mean for us to live together, several generations from now in the future? To elaborate this paradox is to understand the uestion of organization, or how we live together and mix. It is through this lens and the interdisciplinary filter of urban design that we must today more than ever question/probe/critique/rebuild/re-invent our built and natural systems.

Introduction

This studio engages New York City as a laboratory and introduces the ideas, representations, and techniques of contemporary urban design and discourse through the lens of a resilient built environment. By analyzing and questioning the morphology/or- ganizations/processes inherited from the past, we will propose a new vision for the city. We will innovate new patterns of human concentration as opposed to perpetuating the last 80 years of relentless expansion. Working in a post-industrial city requires the critical investigation and re-definition of the many layers of existing and past urban fabric and urban infrastructure to shape the city to the needs of its future inhabitants. Our focus will be on a new resilient vision for New York City in the form of re-thinking how we live (and work) together at the scale of an EcoDistrict, driven by new strategies that weave transit, housing, natural systems and the public realm. New York City, the most populous and the most urban of America’s cities will serve as a laboratory for these investiga- tions. A resilient New York City will develop the capacity to adapt and thrive in constant change. Success as urban designers will be measured from a civic building perspective, when innovative program and physical form provide the integrated resilience necessary for positive economic, social and ecological elements to flourish over time. Energy, Transportation, Waste, Water, Green Infrastruc- ture / Natural Systems and other urban infrastructure systems carry profound technical, social and cological consequences.

Methodology

This first semester introduces students to an urban design process. In urban design, site is not a given; students must identify and investigate the complex, layered contexts, operating at multiple scales, within which urban places are embedded. Similarly, the construction of program is within the urban designer’s purview; opportunities exist to extend and expand the field for human action and interaction. Working in multiple scales as well as multiple time frames will be an integral part of this investigation to design an intervention that follows a speculative hypothesis for the future of the City The techniques of investigating a site; its physical and non-physical context; its geographic, historical, or socioeconoic apects; its boundaries and networks; and its areas of influence and impact create knowledge about the site. In this studio, we treat drawings, diagrams and models not as final representations of a proposal, but as material evidence for a process of “thinking through making”. Students will be introduced to a variety of different techniques throughout the semester and we encourage students to test, refine, and sharpen skills of representation as a means of thinking and communicating complex ideas. In developing an urban design project, the process by which we imagine a project being implemented is an essential part of design itself. Who are the stakeholders that would advocate for or pay for the project? Who are the users that would benefit? What is the timeframe in which it is envisioned? Speculative answers to these questions inform the decision-making process for the physical manifestation of the urban design project. Students will be asked to translate investigation of site and program, and the making of knowledge about an urban site into a series of conceptual hypotheses for the site that operate on several scales and in several temporal dimensions. In the context of this studio, students will be asked to speculate with innovative models for how New Yorkers in the 21st century will live and work, and mechanisms to develop such models. Students will then be asked to apply a hypotheses to their specific site and develop design proposals that confront how we live together into physical space.

LONG ISLAND CITY

INITIAL NEIGHBORHOOD ANALYSIS

SITE EXPERIENCE

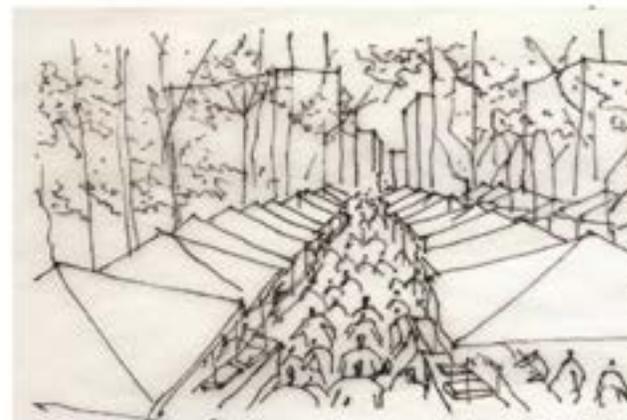


Community Housing near to the Court Square. Each of them has their own character. Hunters Point is the neighborhood most people mean when they say Long Island City. Dutch Kills is one of the first Dutch settlements on Long Island.

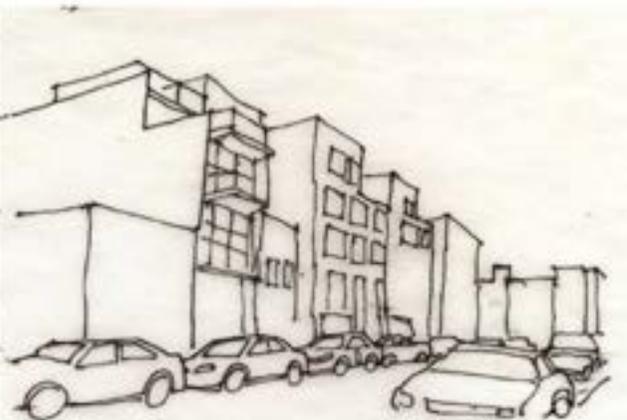


The neighborhood is a mix of residential and industrial. Low rents predominate, dilapidated blocks and lonely stretches make the place less charming. Despite the neighborhood's retail infrastructure being still bare.

01



The Hester Street Fair in Long Island City started out as a highly curated outdoor market for goods and specialty foods. They come up with hand made jewelry to rare vintage. Residents of LIC want to re-imagining a retail experience through the tradition and support the community artist collectors and first time entrepreneurs.

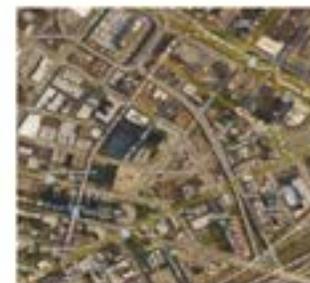


Long Island City has been popular with 20-somethings age groups and single professionals, many of whom choose the area for its close proximity to Manhattan. The neighborhood is always waiting for its long overdue moment, always on the verge of becoming.

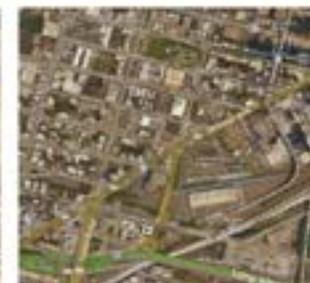
LONG ISLAND CITY

DEFINING & ANALYSIS SHAPING ACTION: CONSTRUCTING NYC ECO-DISTRICTS

Long Island City, located directly across the East River from Midtown Manhattan, is a vibrant mixed-use community. Home to Fortune 500 companies, world-renowned arts and cultural institutions, prominent film and television studios, a large industrial base, and over 70,000 residents, Long Island City is a diverse and authentic NYC neighborhood in the borough of Queens - America's most diverse county.



QUEENSBORO NEIGHBORHOOD FABRIC



COURT SQUARE NEIGHBORHOOD FABRIC



HUNTERS POINT NEIGHBORHOOD FABRIC

FABRIC ANALYSIS

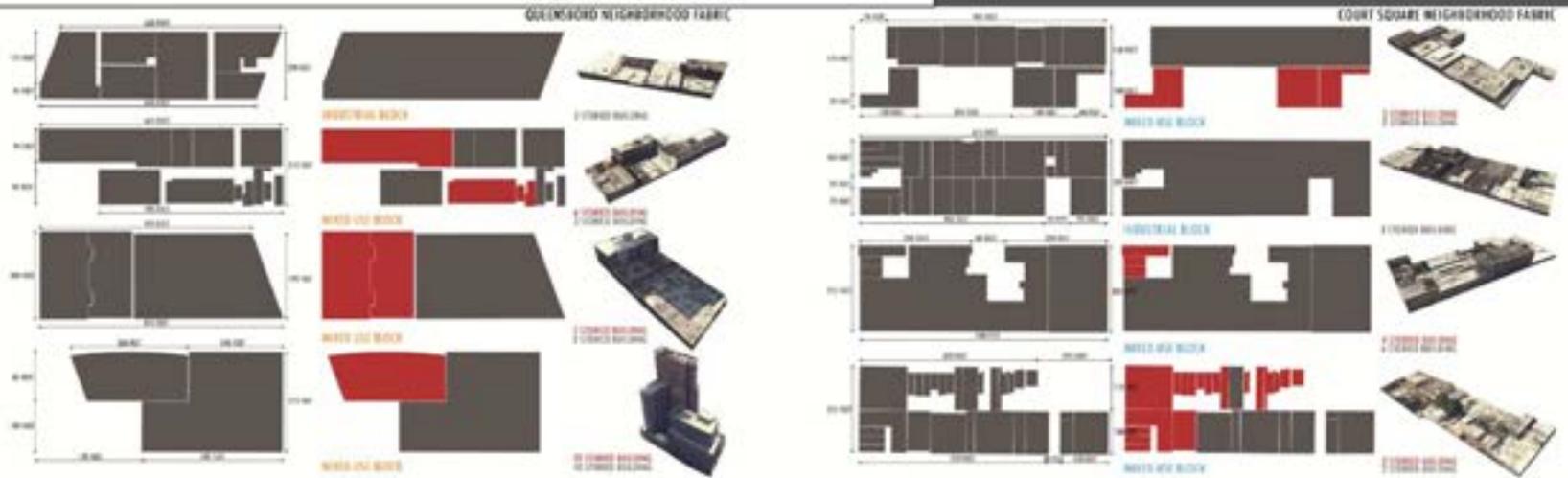


URBAN FABRIC IN A NEIGHBORHOOD SCALE



LONG ISLAND CITY

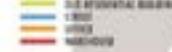
INITIAL URBAN FABRIC ANALYSIS



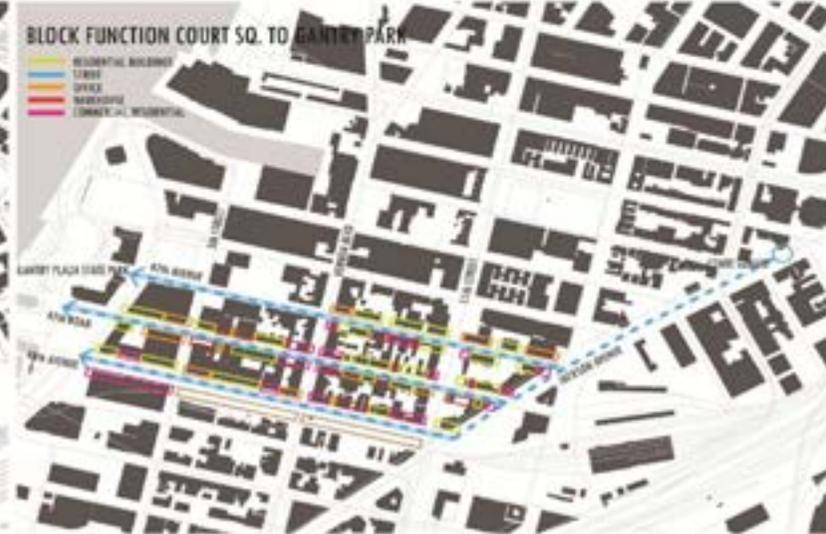
LONG ISLAND CITY

DEPLOYING NYC ECO-DISTRICTS

BLOCK FUNCTION COURT SQ. TO EDL. EQUINOX LIBRARY



BLOCK FUNCTION COURT SQ. TO GANTT PARK



BLOCK CONFIGURATION & DISTANCE



BLOCK CONFIGURATION & DISTANCE



LONG ISLAND CITY

DEPLOYING NYC ECO-DISTRICTS



- CONTINUED HIGH-SKILLS MANUFACTURING DISTRICT** >> Is a zoning district in which manufacturing uses, most commercial uses and some community facility uses are permitted. Industrial uses are subject to a range of performance standards.
- HYBRID MANUFACTURING RESIDENTIAL DISTRICT** >> Is a zoning district in which commercial uses, partly for residential use and partly for community facility or commercial use.
- BUSINESS IMPROVEMENT DISTRICT** >> Is a zoning district in which commercial uses, most commercial uses.

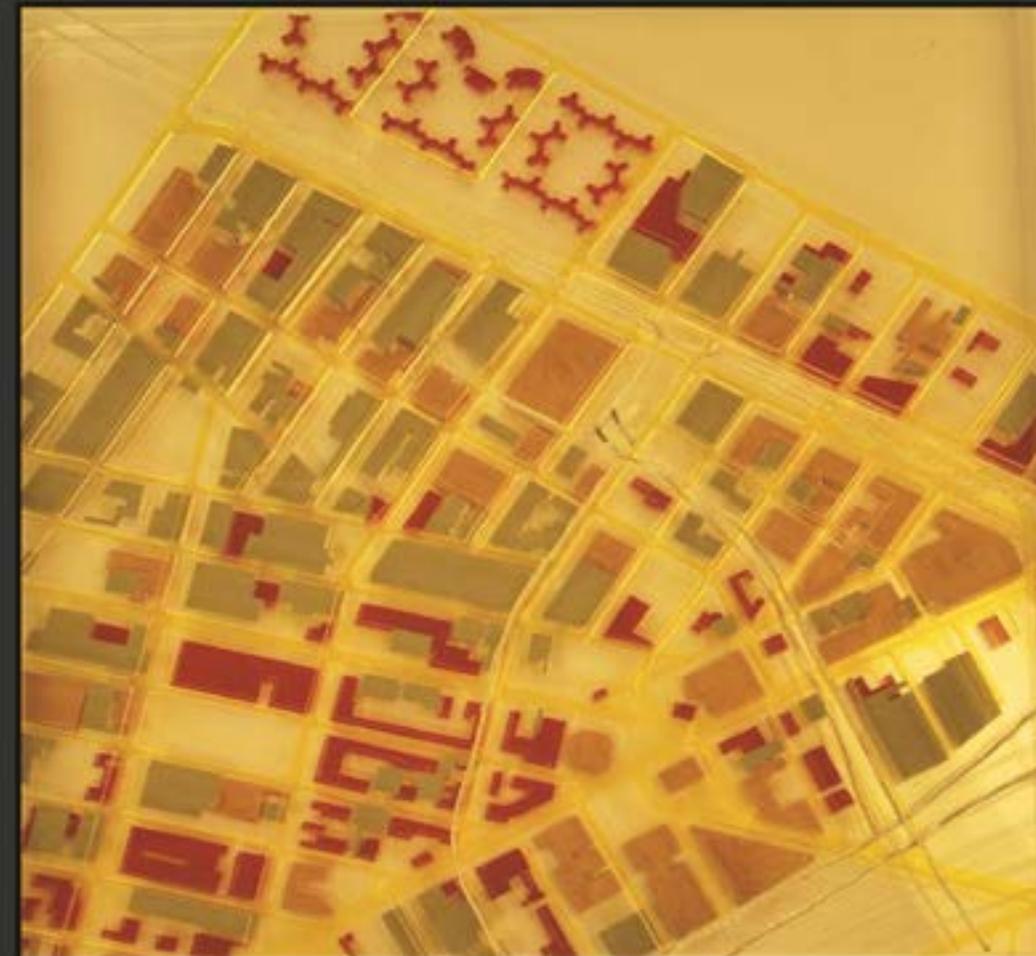
TOP VIEW OF THE MULTI-LAYERED MODEL

TO SHOW THE VARIATION IN LAND USE PATTERN WITH TRANSPORTATION AND STREET CONNECTIONS.

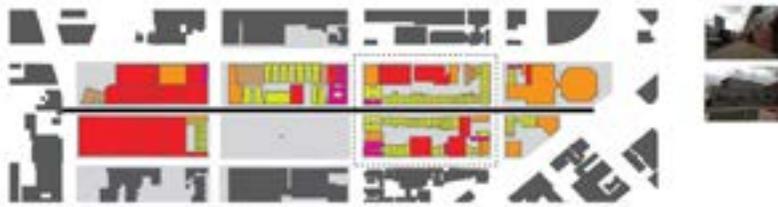
AS EXPRESSWAY, MTA NETWORK, LIRR AND PEDESTRIAN.

MATERIAL:
COLOR AND TRANSPARENT ACRYLIC
STEEL WIRE

- RED: RESIDENTIAL
- GREY: INDUSTRIAL
- BROWN: MIXED USE AND COMMERCIAL
- YELLOW: STREET
- STEEL: EXPRESSWAY AND MTA CONNECTION



45TH AVENUE CORRIDOR



PROBLEMS CORRIDOR
 - BLANK WALLS
 - LACK OF STREET FURNITURE
 - LACK OF PLANTING
 - BLANK FACADES
 - LACK OF



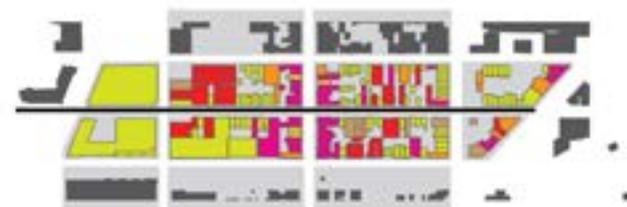
45TH ROAD CORRIDOR



PROBLEMS CORRIDOR
 - LACK OF STREET FURNITURE
 - LACK OF PLANTING
 - BLANK FACADES
 - LACK OF

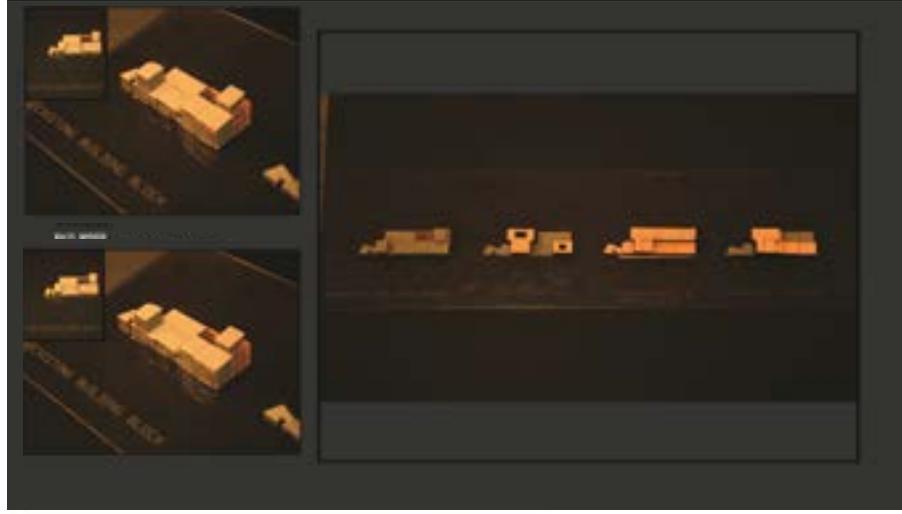


47TH ROAD CORRIDOR



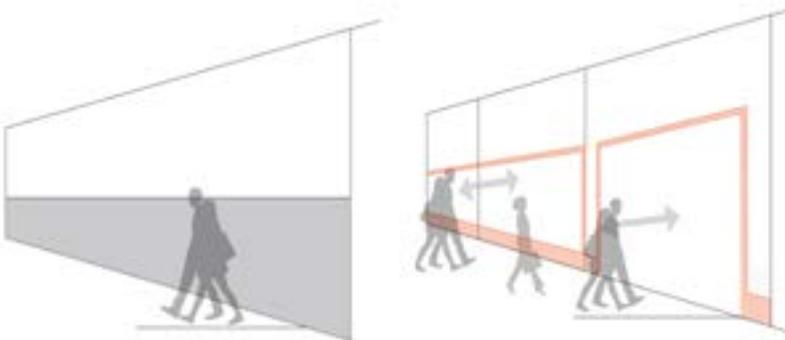
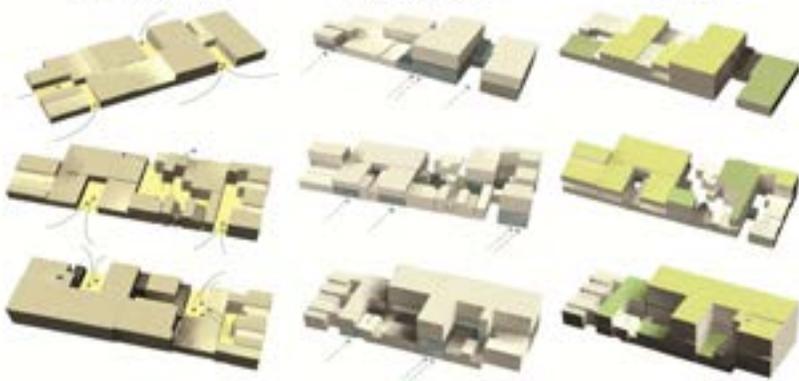
CORRIDOR ANALYSIS

- To identify the problems and propose possible solutions.
- Blank walls
- Built dwellings with entrances to the ground floor
- No staircase
- Narrow lanes
- Wide sidewalks with no proper street furniture



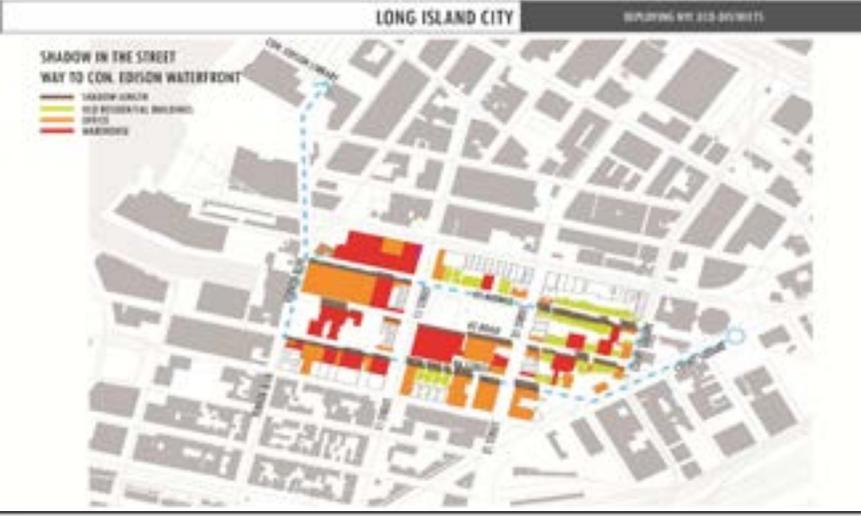
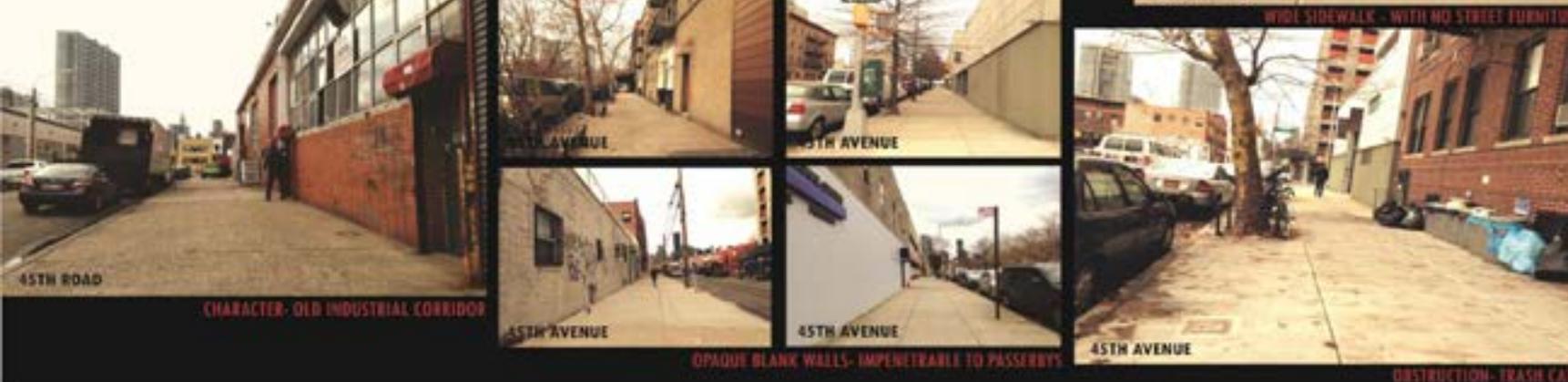
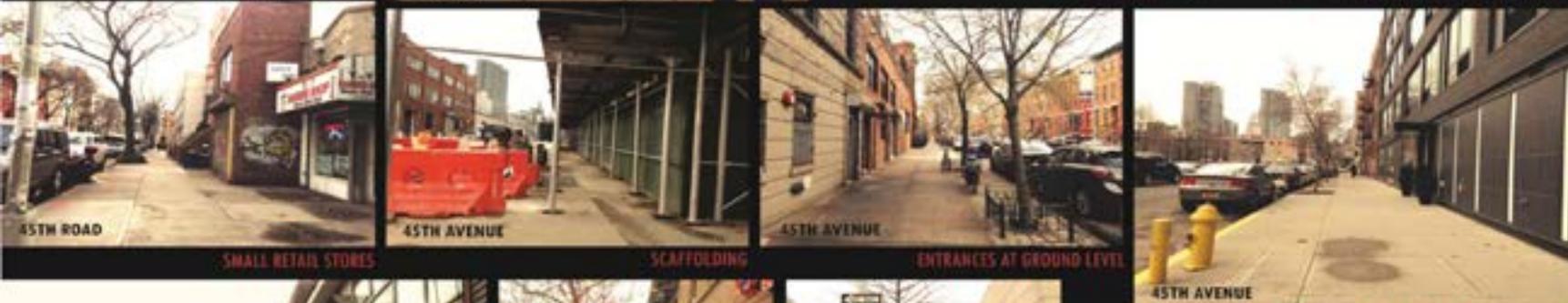
LONG ISLAND CITY
 URBAN FABRIC REGENERATION_HYBRID MANUFACTURING DISTRICT
 NYC DCU DISTRICTS PROTOTYPE

POSSIBLE SOLUTIONS FOR 2020



BLANK WALL
 LIMITED ACTIVITY DUE TO UNSTIMULATING FRONTAGES

OPEN GROUND FLOOR PLANE
 MORE ACTIVITY DUE TO VISUAL LINKAGES



QUEENS

LIC **LIRR INFRASTRUCTURE**

Once the busiest Long Island Rail Road station in Queens when it was a terminal, today the LIC station no longer even has a station house, and hasn't had one since 1938.

HUNTERS POINT STATION

Over the years, number of stations in Brooklyn and Queens have been closed.

Hunters Point station is open only weekdays.

LIC

CLASSIFYING BRIDGE

Infrastructure at Lake Roosevelt and LIC.

ISLANDS - UPPER AND LOWER

In addition to the two elevated subway tracks, the bridge also has four street car tracks.

Only one lane for bicycles and pedestrians.

NEED FOR MORE...

Why so concrete even more cars while discourage people from walking and cycling?

DAILY TOTAL CROSSING

How many people cross the bridge daily?

RESIDENTIAL DEVELOPMENT

Map showing residential development areas.

PRESENT UNUSED SPACES IN COURT SQUARE AND VERNON BLVD

POSSIBLE SOLUTIONS THAT CAN BE IMPLEMENTED TO ENCOURAGE MORE PUBLIC ACTIVITY.

QUEENS

MAIN TRANSPORTATION IN LONG ISLAND CITY

Ten minutes walking distance from the subway stations.

Analysis about the art district.

BUILDING HIERARCHY ALONG THE WATER FRONT

EXISTING BIKE LANES - LONG ISLAND CITY

SHARED BIKE LANE
BIKE LANE
PROTECTED BIKE LANE

LIC **PROPOSED CITY BIKE NETWORK IN LONG ISLAND CITY**

BARRIERS TO ACCESS

The most common hurdle to bike share equity is a lack of stations in low-income neighborhoods.

PROPOSAL

The city's immediate expansion plans for Citi Bike will result in 10,000 bikes at 800 stations which includes Long Island City.

PROPOSING FOR A BIKEABLE CITY

NO PROPOSED BIKE LANES

LIC

TWO VISIONS FOR LONG ISLAND CITY

One vision is of a major commercial office center in Queens, a vibrant alternative to the high rents of midtown Manhattan and a new bright spot in a city economy.

Other vision is of a vibrant neighborhood miraculously unincorporated, where a person can live in a high-rise 1370 foot-tall and a business can lease a factory for rent.

RESIDENTIAL DEVELOPMENT

URBAN BLOCK FORMATION

PROPOSED URBAN BLOCK PROTOTYPE

POSSIBLE CIRCULATION

VARIETY OF SEMI PRIVATE TO PRIVATE SPACE

VARIATION AND HIERARCHY IN HEIGHT

EXISTING BIKE LANES - LONG ISLAND CITY

SHARED BIKE LANE
BIKE LANE
PROTECTED BIKE LANE

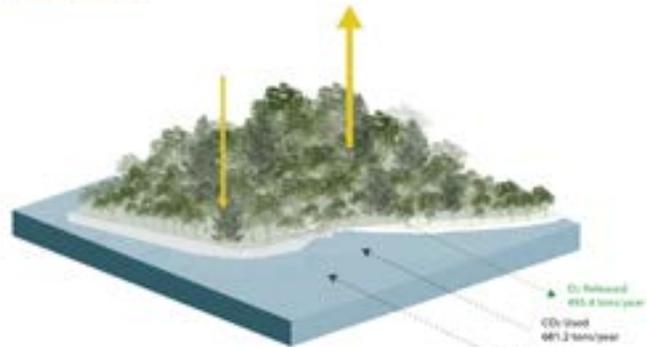
STATEN ISLAND



Pre-development Energy Use Conditions

100% Solar Energy Input
161,006,000 Kw/h year

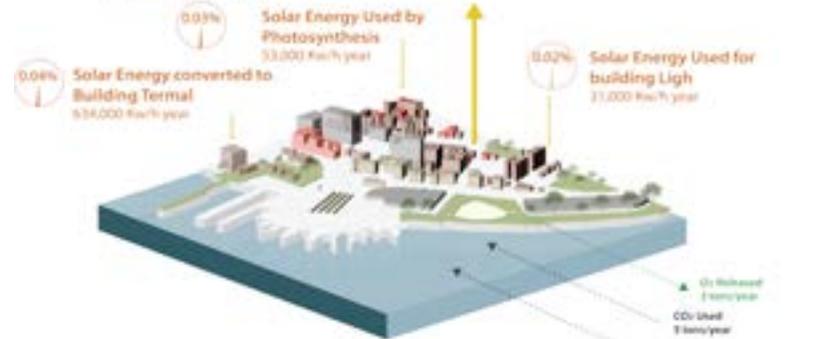
99% Solar Energy Reflected Absorbed and Released
152,916,000 Kw/h year



2014 existing Energy Use Conditions

100% Solar Energy Input
161,006,000 Kw/h year

99.8% Solar Energy Reflected Absorbed and Released
160,267,296 Kw/h year

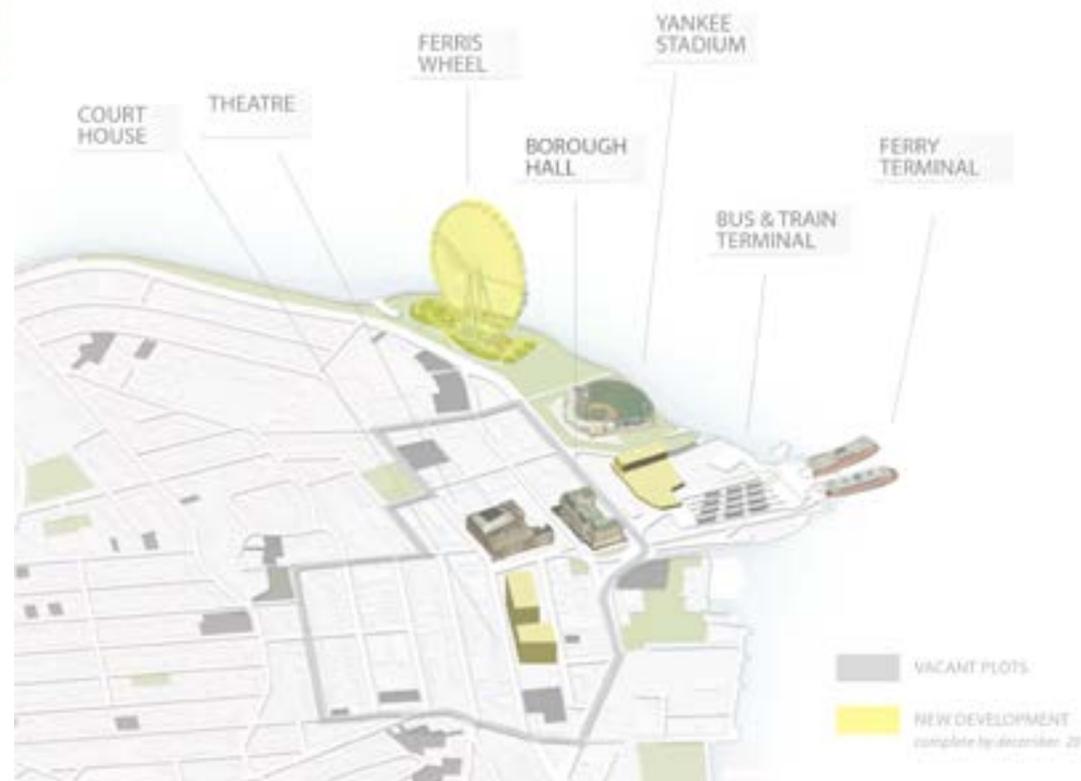


ECOLOGICAL
Preservation and restoration of park capacity, establishment of park for regional connectivity, biodiversity and protection from development and climate change.

URBAN
Green infrastructure, green infrastructure.

COSTAL
Stormwater management, flood protection, flood protection, flood protection, flood protection, flood protection, flood protection, flood protection.

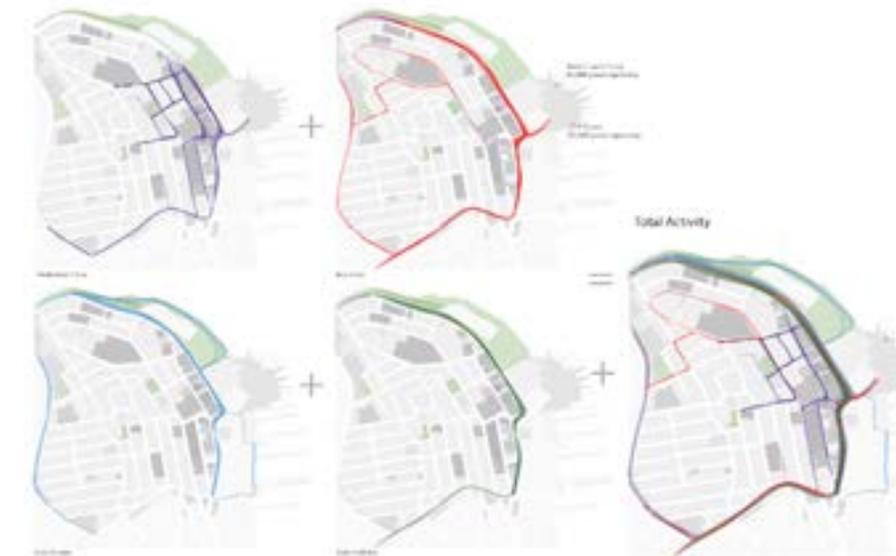
STATEN ISLAND



STATEN ISLAND PROXIMITY



PUBLIC SPACE _ USE ANALYSIS



PROPOSED _ LAND USE



STATEN ISLAND



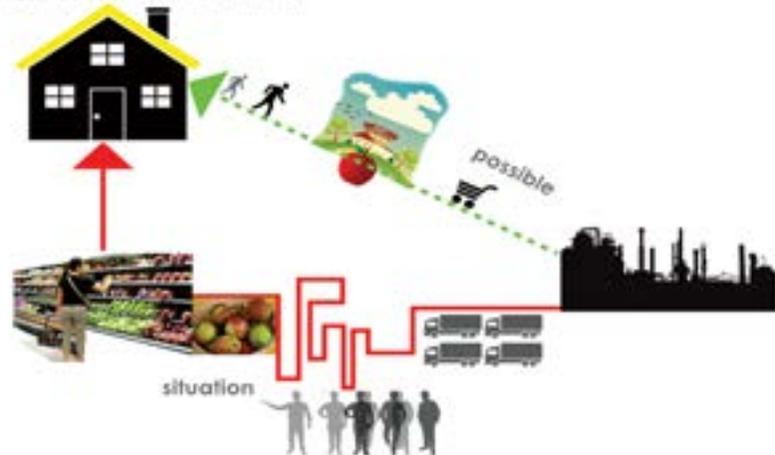
THE BRONX

C - Waste Transfer Stations
There are 14 waste transfer stations in Hunt's Point which generate 65000 ton/year



Hypothesis:

B - Scaling down the industrial scale to be a human scale using waste as biofuel to run the new soul



Proposed Truck Route



Before

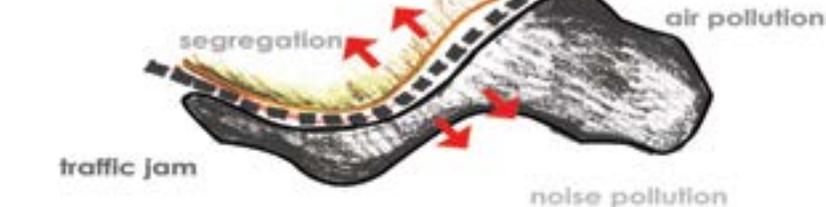
After

Organic Waste
WASTE to ENERGY



20

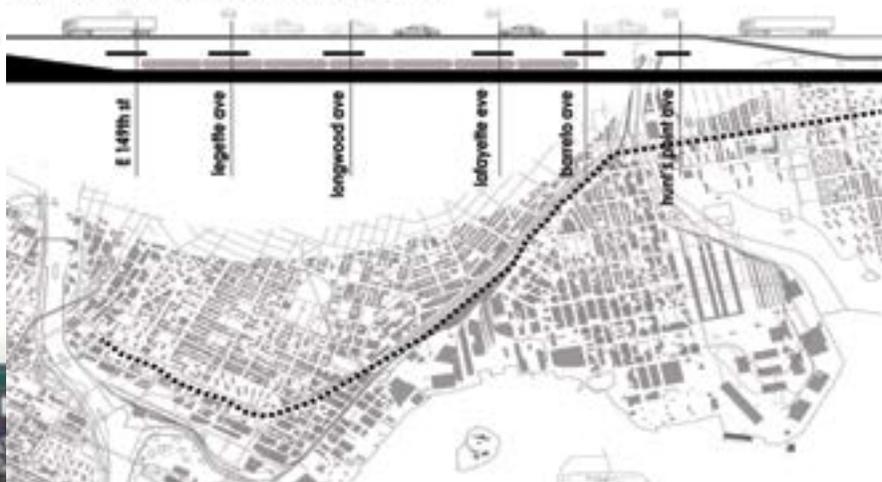
The Bruckner Barrier



One major issue that gives rise to several problems, the expressways.



BRUCKNER EXPRESSWAY SECTION

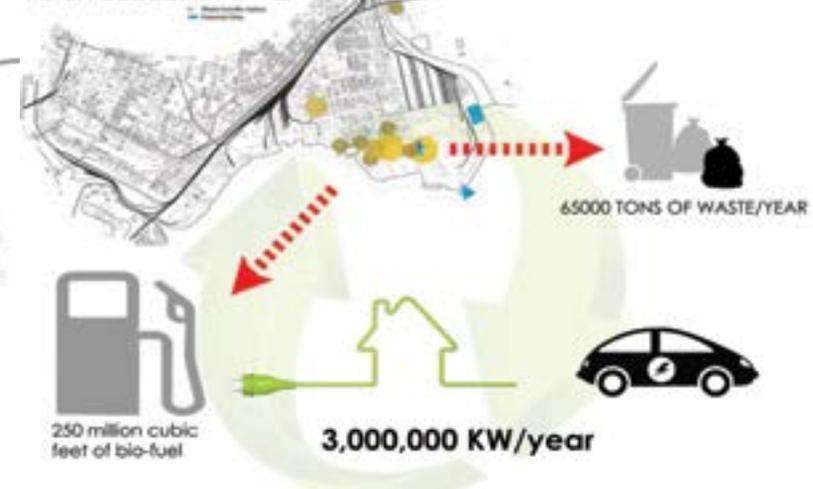


THE BRONX

WASTE TRANSFER STATIONS AND TRAFFIC ROUTES



Organic Waste

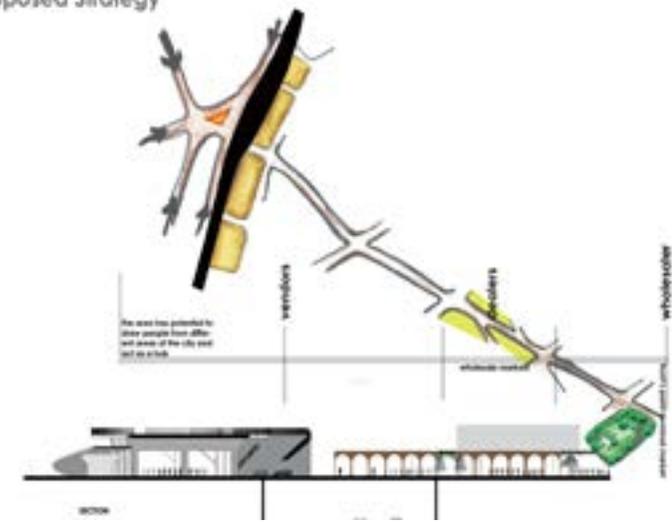




Activating dead zones



Proposed Strategy



Transporting goods by freight trains



Existing Situation



HEALTH & WELL BEING



Asthma



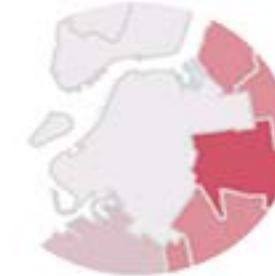
15%-20%

NO₂



34.9ppb

Obesity



7.3%-17.9%

Walked/biked for transportation



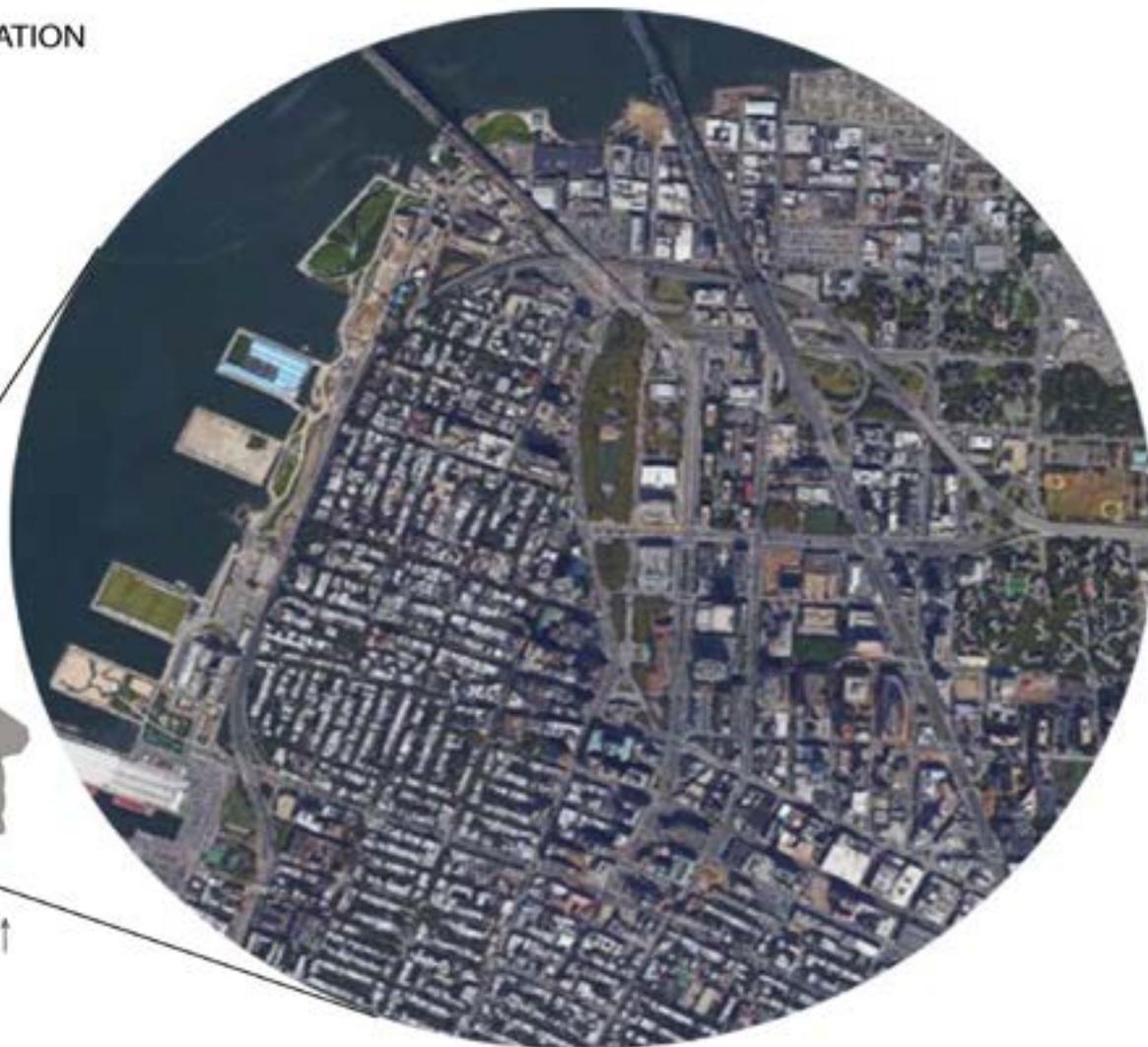
72%-86.5%

BROOKLYN

BROOKLYN

DOWNTOWN BROOKLYN - LOCATION

It is the 3rd largest business district, which is located in the Northwestern part of Brooklyn and facing Lower Manhattan. It has many districts, such as the cultural district, educational district and shopping district.



2050 CONDTION

Solar Energy Input 100% 

16,006,000kWh/yr

Solar Energy Reflected, Absorbed & Released 98%

15,633,880 kWh/yr

Solar Energy Used for Building Lighting 0.13%

20,800 kWh/yr

Solar Energy Converted to Building Thermal 1.8%

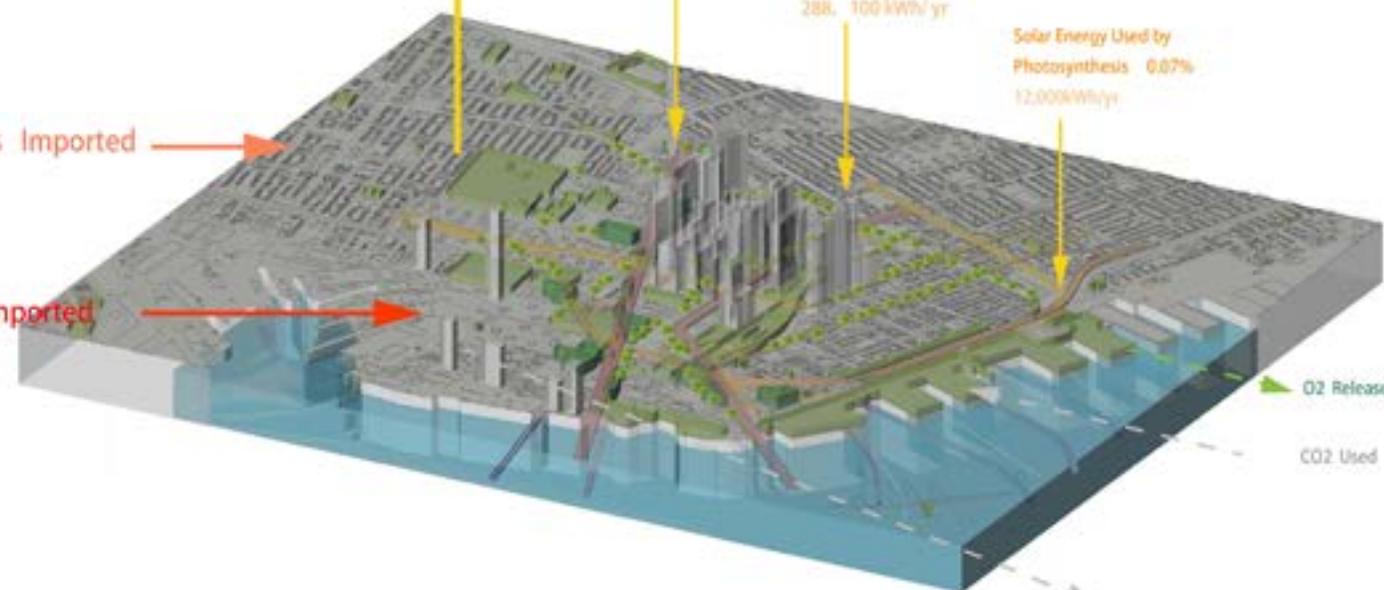
288, 100 kWh/ yr

Solar Energy Used by Photosynthesis 0.07%

12,000 kWh/yr

Natural Gas Imported 

Electricity Imported 



CO2 Release



Courses Faculty:

Jeffrey Raven, Director MSAURD, Associate Professor

Andrew Heid, NOA, Adjunct Professor, NYIT

Students :

1. Downtown Brooklyn; Rongxin Na, Jhansi Lingam
2. Long Island City; Sarita Rahman, Neha Manda
3. Staten Island; Evelyn Thomas, Loris Autovino
4. The Bronx, Fahad Daak, Nazia Hasan



This **design jury** drew from diverse faculty and active professionals leading global practices based in the New York City Metroplotian areas.

-David Allin, Senior Associate, Diller Scofidio Renfro

-Ernest Hutton, Hutton Associates

-Bill Browning, Founding Partner, Terrapin

-Robert Balder, Cornell University

-Janette Kim, GSAPP Columbia University

-Albert Wei, Senior Associate Principal, KPF

-Jack Robbins, Principal, FXFOWLE

-Daniel Windsor, Associate, Perkins Will

-Brian Nesin, Associate, Dattner

-Darryl Zuk, Senior Project Manager, NYC EDC

-Rob Cleary, CookFox

-David Grider, David Grider Architect

-Nick Hornig- Cambridge/Harvard GSD

-Judith DiMaio, Dean, NYIT

-Beyhan Karahan, NYIT

-Matthias Altwicker, NYIT

-Lior Galili, NYIT

-Shan Jayakumar, NYIT

