

Kalil Proposal Overview.

The project we propose is for the development and implementation of a network of Green Infrastructure for water retention and remediation on privately owned vacant lots and public sidewalks in North Corona, Queens. Our Pilot Project will function to reduce Combined Sewage Overflows in Flushing and Bowery Bays, and provide much needed gathering spaces, as well as to provide a tangible demonstration and scalable model. The development of our project is in collaboration with local residents and property owners, as well as the Louis Armstrong Community Center, Queens College, Queens Museum, The Department of Environmental Protection, and The Department Of Transportation. These collaborations allow us to implement a socially vibrant project with ecologically tenable outcomes.

Statement of Interest.

We are MS Design and Urban Ecologies students that have a shared interest in urban water infrastructure and water landscapes. Our initial research for this project began in our fall semester's Urban Embodiments studio. While we were already highly motivated and involved in this work, we were further encouraged by the reception of our presentations. Our project was received with widespread enthusiasm and encouragement towards further development and implementation, and we were extended multiple offers of support and mentorship.

Through our research in North Corona, Queens, we have identified a lack of gathering spaces for the local communities, as well as a lack of pervious and vegetated spaces. While the neighboring Jackson Heights has many private gardens, as a result of having a historic district of garden apartments, North Corona has almost no outdoor gathering spaces with instead an abundance of abandoned lots. Also, crowded playgrounds and playing fields characterize most of the present green spaces as well as a lack of vegetation and actual pervious surfaces making them more "grey" than "green".

A lack of pervious surface area in this densely developed neighborhood, as well as the combined sewer system contributes to overflows and flooding during heavy rain events and discharges sewage mixed with storm water, polluting Bowery bay and Flushing Meadow Bay & Creek. These are fragile ecosystems that are in need of Green Infrastructure systems in order to reduce the amount of bio-toxicity and increase coastal resiliency. In addition, climate change and an increase in extreme weather further stresses the importance of developing water infrastructure improvements and sufficient pervious surface to mitigate the impact of such events.

Further studies by the Department of Environmental Protection and the Department of Environmental Conservation have identified North Corona as a priority area of concern. The Green Infrastructure Plan and Plan NYC 2030 have prioritized projects in this area that will help decrease the amount of sewage overflows into Flushing and Bowery Bays. Environmental benefits of green infrastructure include carbon sequestration, urban heat island mitigation, reduced energy demand, improved air quality, and increased urban habitat for wildlife. Social benefits include opportunities for green jobs, improved quality of life, and economic benefits include reduced wastewater treatment needs.

Since North Corona is densely built, the introduction of large scale vegetated gathering space is not possible. Therefore, we propose a network of gathering spaces, Constellations, out of the many vacant lots in the neighborhood. This pilot project will demonstrate our effective low-cost solution to the lack of gathering and permeable spaces in North Corona.

Through the Kalil grant, and the donation of our time and skill-sets, we will be able to realize the Constellation Pilot Project and present a tangible, effective and economically viable demonstration as a scalable model.

Project Proposal.

We propose a pilot project that implements a network of gathering spaces of green water infrastructure through ecologically responsible site designs that enhance both social and natural cohesion and environmental resiliency in North Corona.

We have created a series of criteria to overview the potential spaces in this dense neighborhood based on stewardship, availability, density and ecological criteria. Through these criteria we have identified a large number of privately owned vacant lots in North Corona that can be redesigned and connected to one another to create constellations of gathering that function as water retention and remediation bodies. Whereas the adjacent neighbourhood of Jackson Heights has many interior gardens, North Corona has no such vegetated gathering spaces. Instead, the abundance of vacant lots in the neighbourhood can serve as a viable alternative. Our collaboration with local residents and organizations, as well as city departments, allow us to develop our project with a long-term maintenance plan that will ensure its social and environmental viability for the next 20 years. This provides North Corona with lasting spaces for socializing and outdoor activities.

We propose that these abandoned lots can be repurposed through New York City's current Green Infrastructure initiative, which funds projects that will create relief on NYC's combined sewer system. The authorities of this initiative have designated North Corona as an area of concern, making this area a likely candidate for successful Green Infrastructure interventions. Furthermore research of soil suitability has already been conducted by the DEP, and qualified as ideal for implementing green infrastructure.

Since 2011 the Department of Environmental Protection has a private owner grants for creating water infrastructure on vacant lots. However, the technical expertise that is required for this grant makes it inaccessible to the majority of the community. In 2011 and 2012 combined only 19 grants were given out in NYC to institutions and property owners that could afford external consultation.

Through this project we will serve locals of North Corona by providing the necessary skills to design, fund, and implement this essential project that at once serves community and environmental needs. In addition, we are advocating for the implementation of tax credits for participating landowners, similar to the current Green Roof tax credit policy. This bill is presently under formation and discussion for presentation to the State Senate.

In order to create the connections between the vacant lots that will form the constellation networks, we are proposing the implementation of green infrastructure pathways along existing impermeable sidewalks and within vacant lots. The integration of multiple infrastructure design systems along the walkways will create a connected identity to these constellations, and lead to constellation points, present day vacant lots, that can include bioremediation through plant filtration, rain water reuse structures, rain gardens, tree pits, and cisterns amongst other interventions. Structures on the vacant lots will be constructed out of biodegradable materials that are at once low carbon footprint, low cost, biodegradable, and recycled such as corn board, cork, recycled trash and mycelia of mushrooms.

Currently there are approximately 30 million gallons of untreated storm water being released to NYC's water bodies every year through Combined Sewer Overflows (DEP 2010). Utilizing vacant lots in this very densely built up area will contribute to New Yorks City's Storm water Rule that was adopted in 2010 to decrease these CSO events. The rule aims at catching an inch of storm water on 4% of the impervious surface in NYC by 2020.

Based on our criteria we have selected a block on 105th street as our pilot site. Five underutilized lots exist on this block with varied ownership from community organizations, an educational institution, and private owners. Each of these requires specific processes in order to be legal, and to have a stable agreement.

While conducting this pilot project we are collaborating with the Department of Environmental Protection, the Department Of Transportation, the Queens Museum, and the following lot owners: Queens Community College, Louis Armstrong Community Center, and two individual land owners.

The Pilot Project implementation will introduce a method for repurposing dilapidated and underused spaces in North Corona that reduces storm water overflows, while the Pilot Project process will allow for necessary research and documentation. We intend that all of our data, processes, and designs will be shared as part of the creative commons, so that we can encourage the wider implementation of these initiatives. We also intend to expand upon our project through additional iterations on other

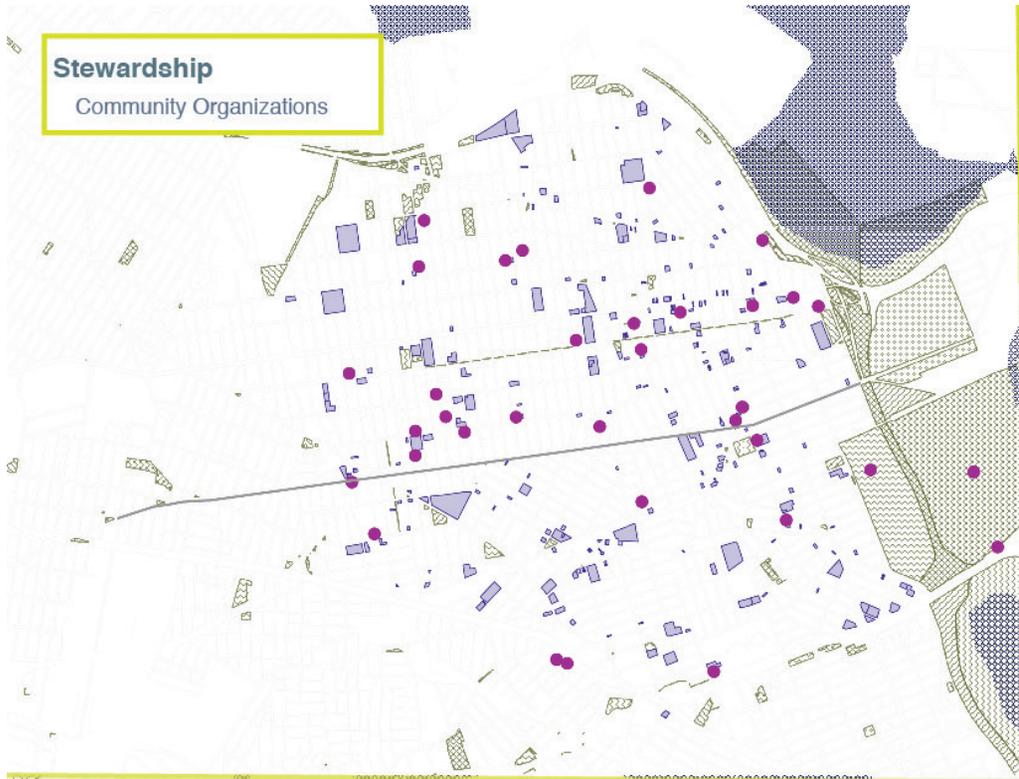
blocks we have identified in the area.

Kalil funding would allow us to create the pilot project and produce a tangible model for rainwater catchment, filtration and storage, reducing sewage overflows, while promoting community vibrancy through the activities run by the local neighbors, Queens College, and Louis Armstrong Community Center.

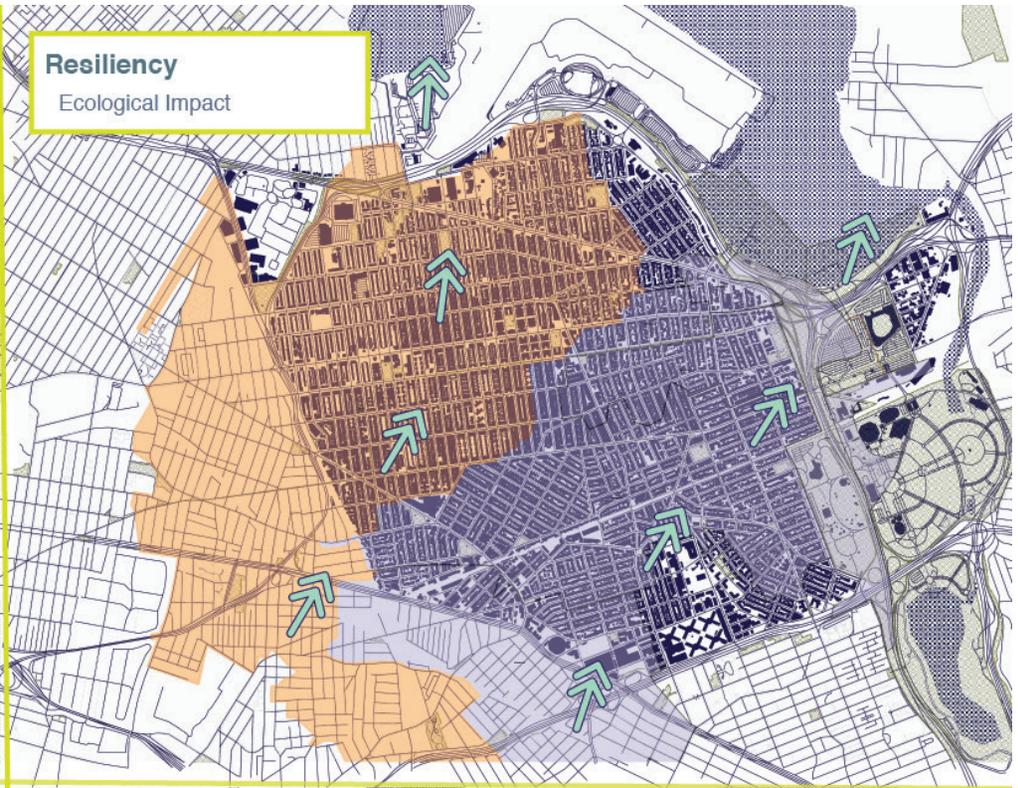
Outline Budget.

Pratt Institute Urban Green Infrastructure: Green Systems Clean Water Certificate (2* \$100.00)	\$ 200.00
Model	\$ 400.00
Hydrologist: Water calculations and report (10 hours * \$20)	\$ 200.00
Engineer: Construction plans infiltration planters and Bioswales (15* \$20)	\$ 300.00
Corn board (30 pc)	\$ 500,000
Cork Rolls (8 rolls)	\$ 1,600.00
Mushrooms	\$ 200.00
Mycelia containers and food supplies	\$ 300.00
Laboratory Space for mushroom growth	\$ 500.00
Other building materials (nails, screws, natural sealant, etc.)	\$ 150.00
General printing costs (maps, plans etc.)	\$ 500.00
Open source platform designer (5 hours*\$20)	\$ 100.00
Unanticipated costs	\$ 50.00
Total	\$ 5000.00

Stewardship
Community Organizations



Resiliency
Ecological Impact



Space
Density & Gathering

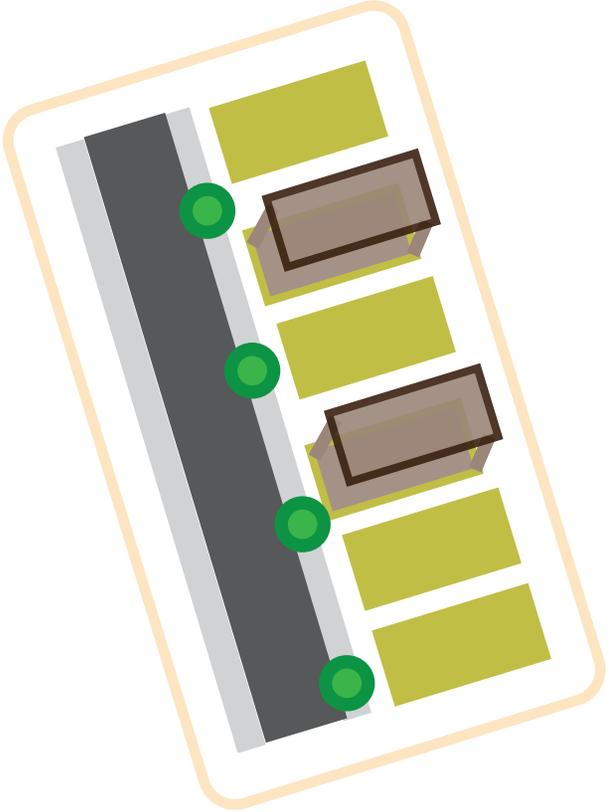
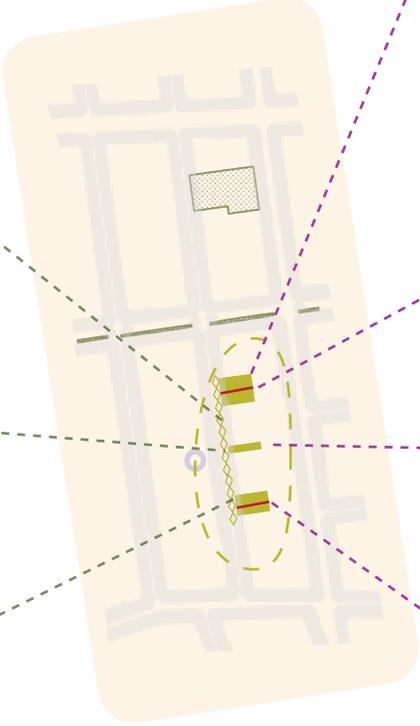
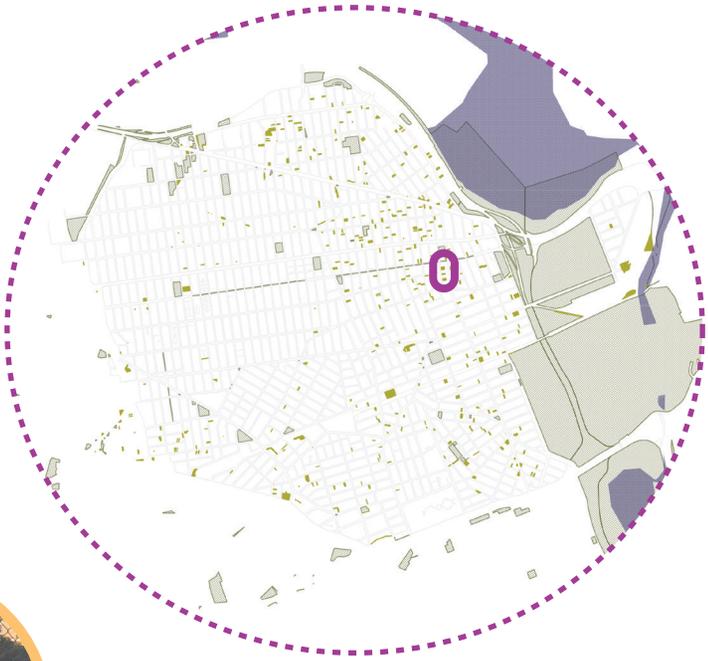


Access
Open Space



CRITERIA

CONSTELLATION PROPOSAL





SITE

POTENTIAL STRATEGY

TECHNOLOGY



Green Roof
Blue Roof

Rooftop



Rain Garden
Rain Water Reuse System

Rain Harvesting



Tree Pit
Constructed Wetland
Bluebelt

Subsurface-Bioinfiltration



Bioswale
Pervious Pavement
Gravel Bed

Subsurface-Non-Bioinfiltration



Rain Barrel
Cistern

Detention

SPATIAL PROCESSES

WHO

- Land Owners
- Community Organizations
- DOT
- DEP
- ▣ Funding Sources & Permits

HOW

- Policies
- Permits
- Funding
- Relationships
- Commitments

WHAT

- Green Infrastructure
- Material Options
- Bio-technology
- Materials
- Design
- Programs

WHERE

