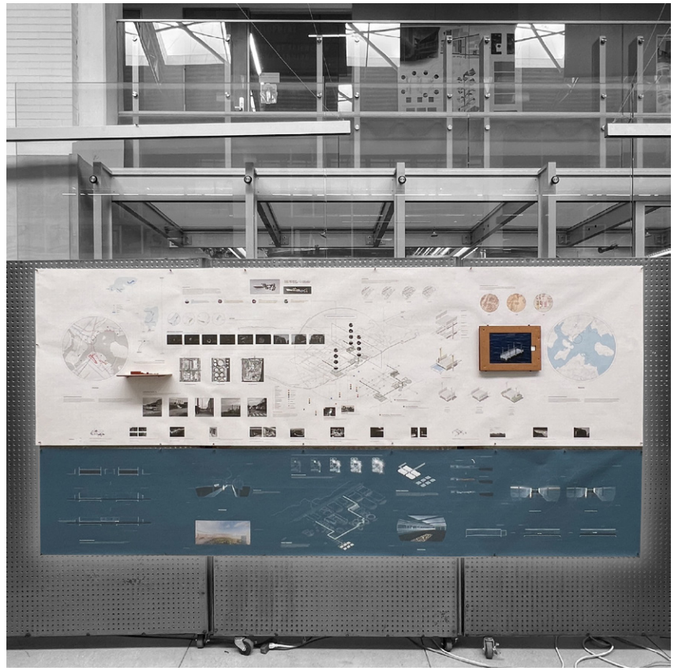
SEUNGHU KIM

Work Samples



Dreaming the Ruins

Capstone Thesis Project

Historically, humans tried to tame the nature, building an extractive relationship, believing that we could control it. The continuous development of land, growth of industry along the waterfront caused massive environmental harm against the nature. In the context of Port Morris, rather than resisting rising sea levels with engineering, this project surrenders to flooding in a purposeful manner, fostering meaningful dialogue between the humans and nature by dismantling.

May 2024
University of Arizona
Architecture

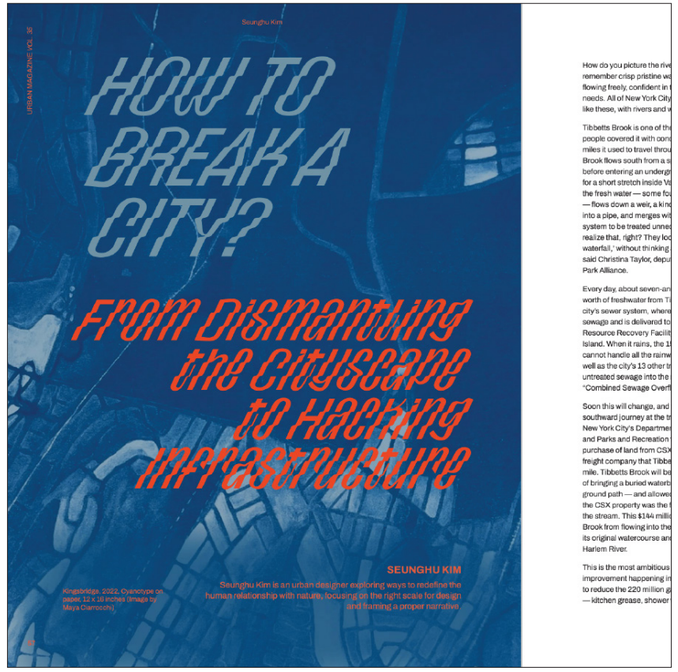
Blue Scar

Summer Studio Project

Water is one of the most important challenges facing all coastal cities around the world, which contains 40 percent of the global population. In the face of unprecedented climate crisis, New York City's deteriorating sewer system is a critical point of failure, especially with the mismatch between the water and sewershed. This project deconstructs parts of the Gravesend neighborhood in Brooklyn to construct stormwater retention basin which contains and releases the stormwater slowly.

August 2024
Columbia University
Architecture and Urban Design

"How to Break a City?", URBAN Magazine Vol.35, pp. 57-60



How to Break a City?

Publication

In June 2024, New York City finalized the purchase of the CSX rail corridor in the Bronx, the last piece of the puzzle to unlock the long-awaited daylighting of Tibbetts Brook. After decades stalled negotiations and community advocacy, the project is finally scheduled to begin construction in 2026. For the Bronx—a borough that has endured systemic disinvestment and environmental inequities—this moment represents more than an ecological restoration. It represents an act of civic repair.

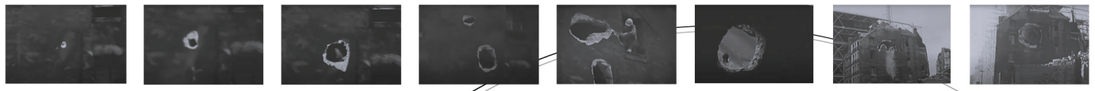
December 2024
Columbia University
Journalism School

Seunghu Kim

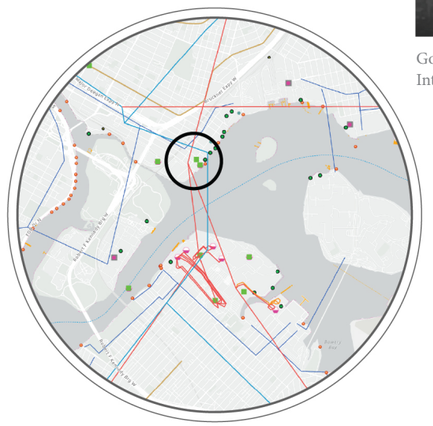
DREAMING THE RUINS

Gordon Matta Clark, Conical Intersect

Dismantling existing architecture form to create new spatial experience.

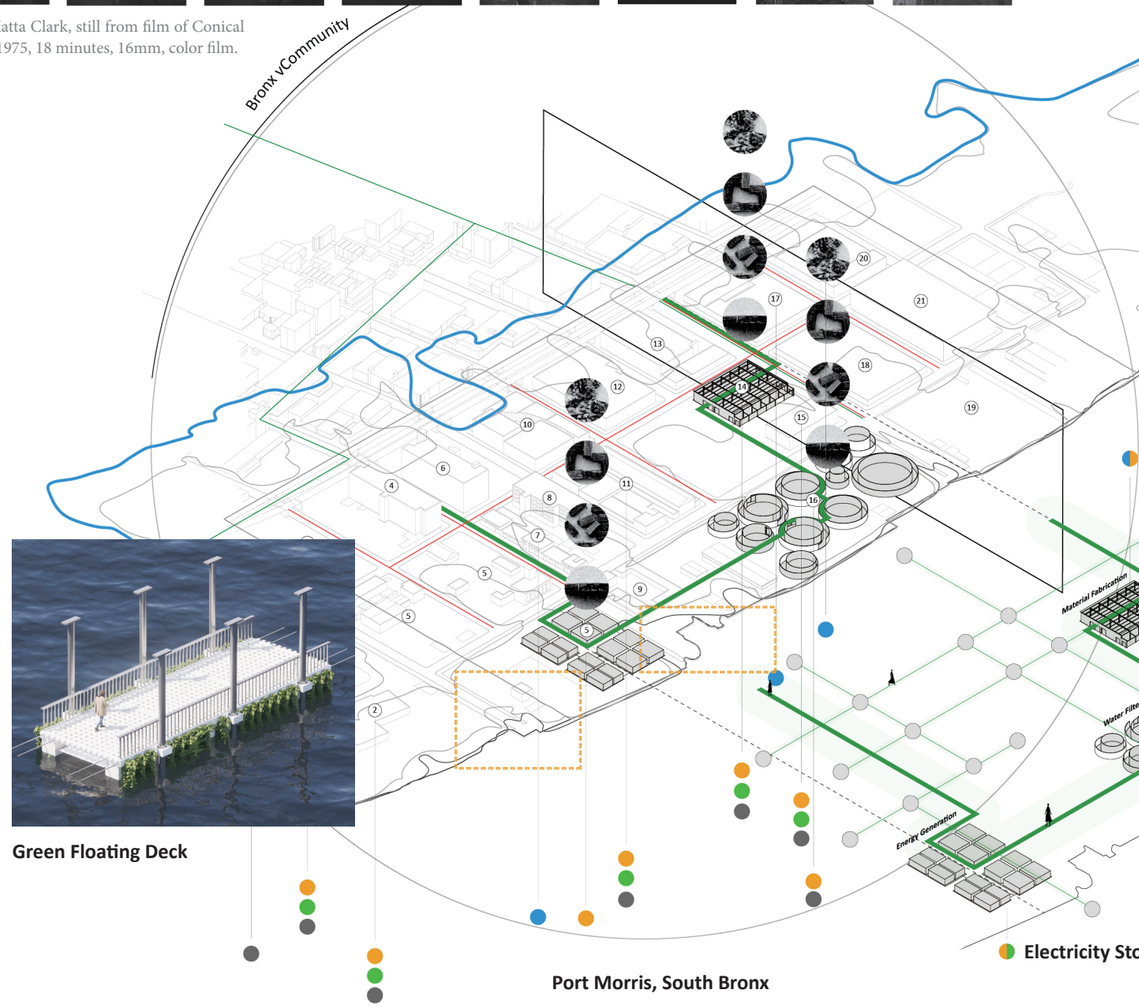


Gordon Matta Clark, still from film of Conical Intersect, 1975, 18 minutes, 16mm, color film.



Human

- Critical Infrastructure
- Waste Management
- Diesel Truck Reliant
- Manufacturer
- Potential Growth
- Bike Route
- Major Truck Route
- Green Floating Deck
- Historic Landmark



Green Floating Deck

Nature

Bio-material Manufacturer

Recyclable materials like oyster shells will be processed to create ecological materials

Oyster Water Filtration Plant

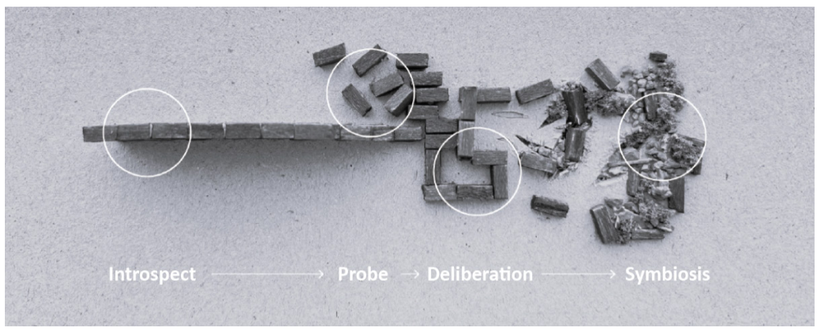
Oyster farm to filter plankton and contaminants and provide clean water

Nature Maintaining Itself

Parametric simulation illustrating sediment movement and natural vegetation growth

Electricity Storage + Wave Power Generation

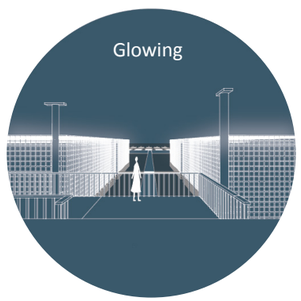
Port Morris, South Bronx

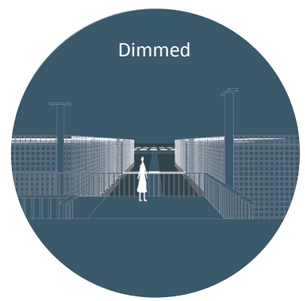


Concept Model Development

Historically, our actions towards nature have been self-serving and one-sided, involving activities such as de-forestation, detrimental development, and pollution.

This methodology involves dismantling to offer distinct phases of conversation; Introspect, Probe, Deliberation, and Symbiosis, allowing humans and nature to perceive, inquire, investigate, and develop a mutual understanding.



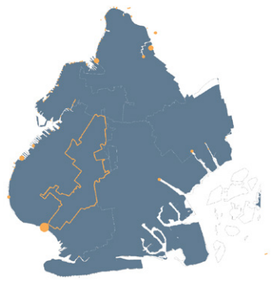


Building as Interactive Device

Visualizing energy generation

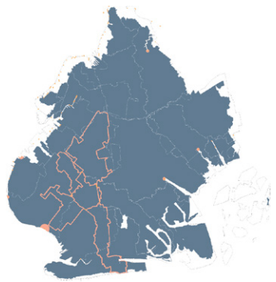
Seunghu Kim

BLUE SCAR

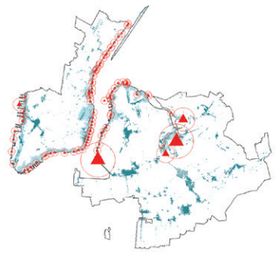


Brooklyn Sewershed

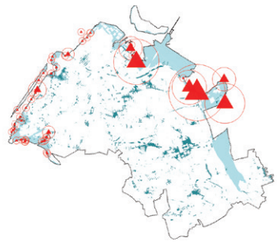
Brooklyn Watershed



Mismatch

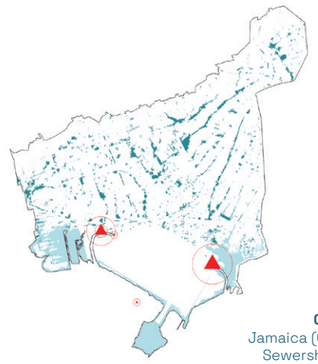


003
Newtown Creek (MN-BK)
Sewershed



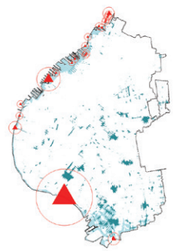
004
Bowery Bay (QN)
Sewershed

005
Hunts Point (BX)
Sewershed

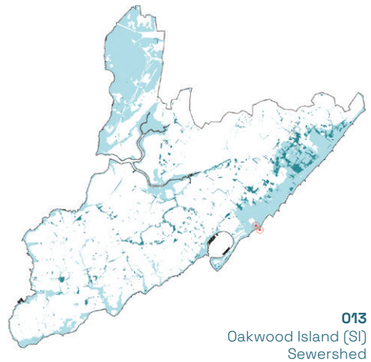


008
Jamaica (QN)
Sewershed

009
26th Ward (BK) Ward
Sewershed



010
Owls Head (BK)
Sewershed



013
Oakwood Island (SI)
Sewershed

014
Port Richmond (SI)
Sewershed

CSOs

CSOs Volume

Low volume

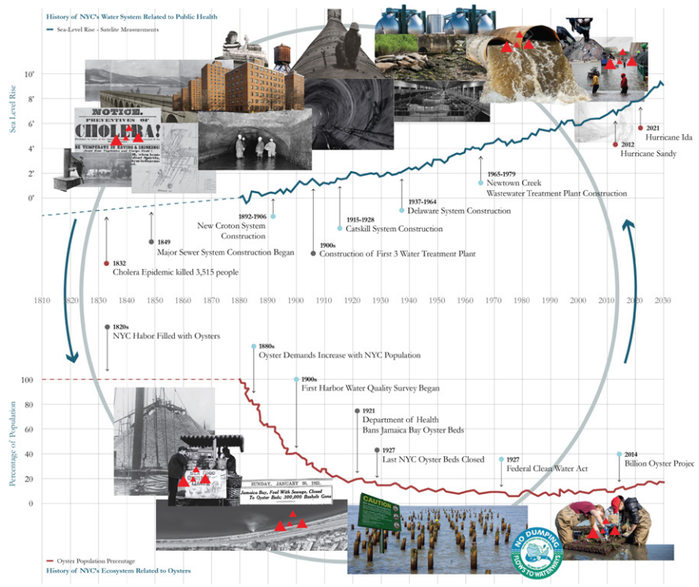
High volume

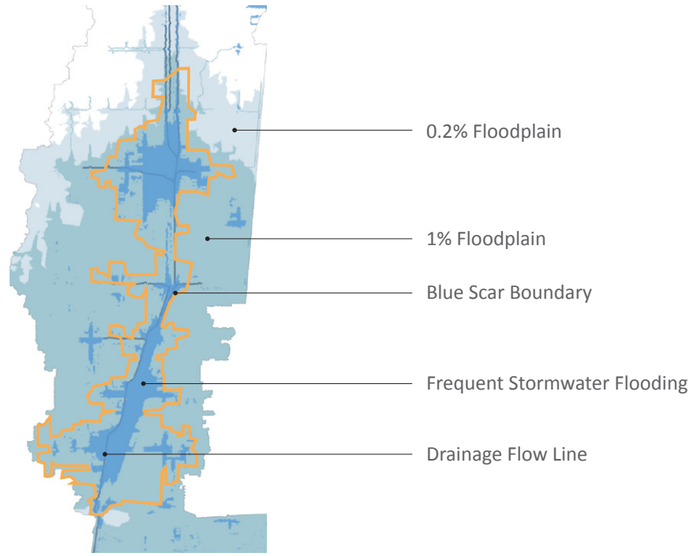
Sea Level Rise 100 years flooding (50 in.)

NYC Stormwater Flood Map - Extreme Flood

Deep and Contiguous Flooding (1 ft. and greater)

A
Legend





Systematic Mismatch

Conflict between two systems, causing massive infrastructure failure.

NYC Sewershed Catalog

A new way of mapping NYC. Ever more increasing pluvial flooding threatens to revert the glorious New York City back to the 1850s when waterborne diseases were out of control. This sewershed catalog reveals where infrastructure is failing.

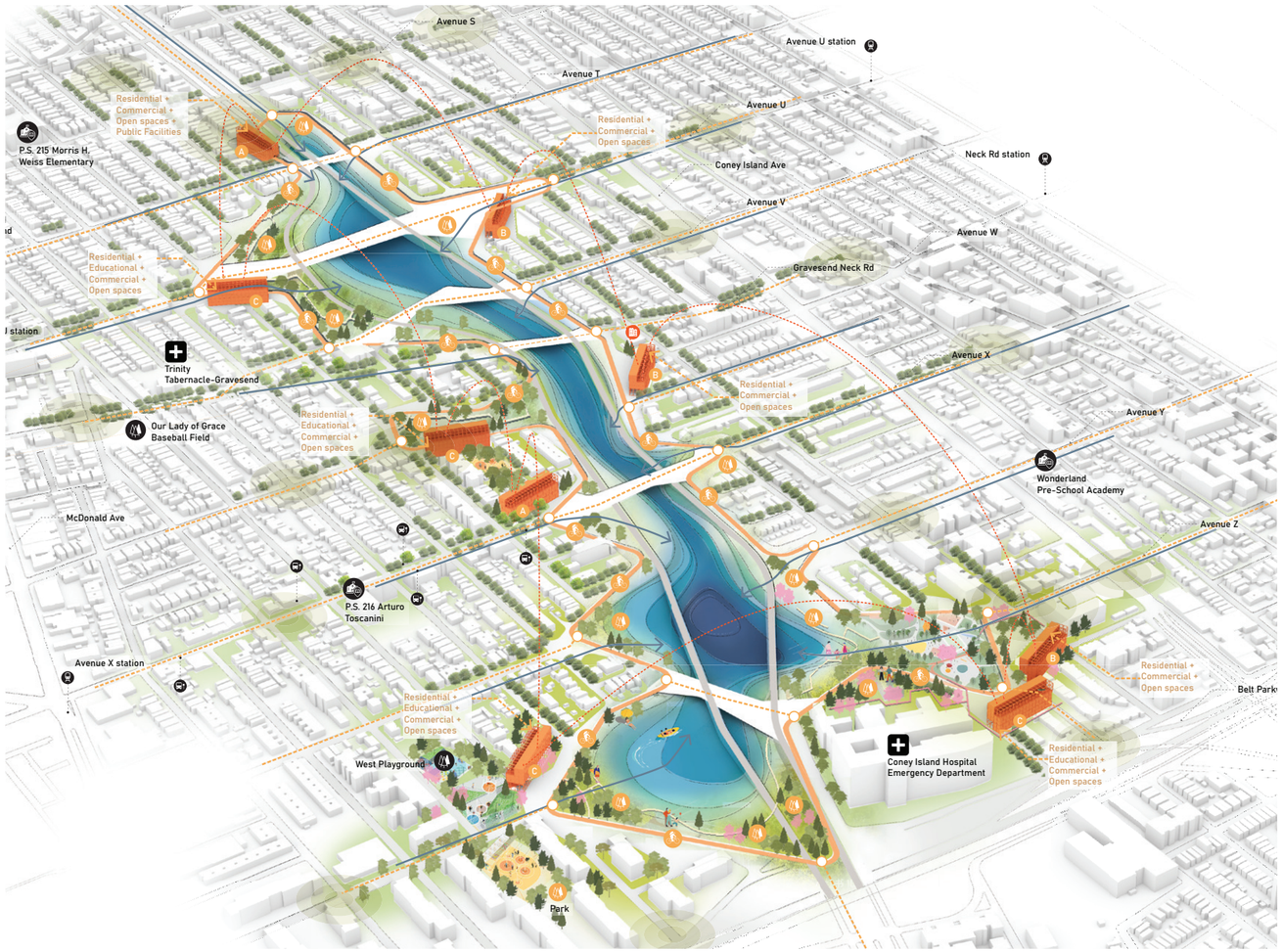
CSOs Storymap / Boundary of the Blue Scar

↑ Understanding the history of NYC getting its freshwater from 120 miles up north, using it and dumping it as CSOs, resulting sea level rise and near extinction of oysters.

↓ The boundary of the Blue Scar was given by the area stormwater flooding area, acknowledging that this is where the water wants to be.

Seunghu Kim

BLUE SCAR



Overall Diagram of the Blue Scar

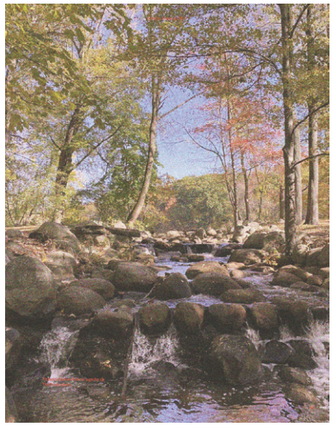
Blue Scar integrated in the neighborhood, providing rainwater basin and unique experience for community. Filled with stormwater after flash flood event, rather than going towards sewer system, causing CSOs.

Through permanent dry/wet areas, the Blue Scar becomes an recreation assets during dry seasons. Previously neglected area of the neighbor-hood became a place of building new relationship with nature.

NYC Stormwater Flooding Map

Once mapped as a threat, this is now an opportunity to dismantle parts of our city to cohabitate with nature, creating a meaningful dialogue and relationship with nature.

HOW TO BREAK A CITY?



From Dismantling the Cityscape to Hacking Infrastructure

How do you picture the river you grew up with? You might remember crisp pristine water between mossy freshness, flowing freely, confident in taking up as much space as it needs. All of New York City was once filled with streams like these, with rivers and wetlands.

Tibbetts Brook is one of these streams, buried when people covered it with concrete to build this city. For 7 miles it used to travel through the Bronx. Now, Tibbetts Brook flows south from a spring in Yonkers for 1.2 miles before entering an underground pipe. It then resurfaces for a short stretch inside Van Cortlandt Park. From there, the fresh water—some four to five million gallons a day—flows down a weir, a kind of a dam. Then it disappears into a pipe, and merges with New York City's sewer system to be treated unnecessarily. "Most people don't realize that, right? They look at it and they go, 'Oh, it's a waterfall,' without thinking about where that water goes," said Christina Taylor, deputy director of the Van Cortlandt Park Alliance.

Soon this will change, and the fresh water will not end its south ward journey towards treatment plant. In June of 2024, New York City's departments of Environmental Protection and of Parks and Recreation finalized the $11.2 million purchase of land from CSX Transportation, a railroad freight company that Tibbetts Brook flows under for one mile. Tibbetts Brook will be daylighted, the process of bringing a buried waterbody to its natural, above ground path and allowing it to flow freely. Acquisition of the CSX property was the final piece needed to daylight the stream. This $144 million project will divert Tibbetts Brook from flowing into city's sewer system to restore its original watercourse and discharge to Harlem River directly.

Every day, about seven-and-a-half Olympic size pools' worth of freshwater from Tibbetts Brook enters the city's sewer system, where it combines with household sewage and is delivered to the Wards Island Wastewater Resource Recovery Facility located in Randall's Island. When it rains, the 150-year-old sewer system cannot handle all the rainwater, and Ward's Island, as well as the city's 13 other treatment plants, spit excess untreated sewerage into the rivers—a phenomenon called combined sewage overflow, or CSO.

This is the most ambitious green infrastructure improvement happening on the Bronx, which is expected to reduce 220 million gallons of untreated sewage—kitchen grease, shower water, poop, garbage, toxic oil—poured into the Harlem River. Karen Argenti of the Bronx Council for Environmental Quality, one of the groups behind the daylighting, described the news as particularly exciting for many Bronx communities, "Manhattan has greenways. We don't," she said. "We have a drawing on a map. They have an actual greenway."

Tibbetts Brook was dammed in the 18th century to create and power the mill pond in Van Cortlandt Park. The weir was constructed to control the flow of water. In 1912, Tibbetts Brook was completely buried as the marshlands that surrounded it were filled for development. "It was fine because we have a lot of green space that was absorbing all the rainwater, and we didn't have as many toilets to put into it. But you know, now we are at the point where it's not sustainable," said Taylor.

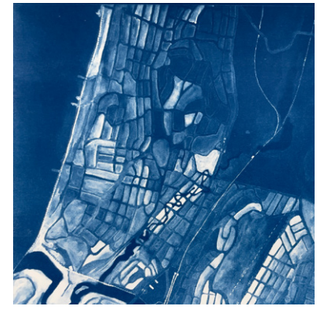
During superstorms, the impacts are particularly extreme. "When Sandy came, the storm surge came up the Harlem River and straight up to CSX property to 238th Street and that was not during high tide" said Argenti. The Kingsbridge neighborhood was the most inundated, which is explained by the history of landscape: it used to be marshland through which Tibbetts Brook flowed. This is true in many of New York City's most flood-prone area: the patterns of severe inundation areas align with former infill sites, historic watercourses, and wetlands. It seems like the forgotten watercourses are revealed during flash flood events, a nature's way of reminding us what it used to be.

The idea to daylight Tibbetts Brook was first raised by the Bronx Council for Environmental Quality. The organization wanted to re-direct the water to the Harlem River. According to Argenti, this took three decades of work. "It's a slow process. I mean... we had the drawings for the Daylighting of Tibbetts Brook in 1997." Once the Department of Environmental Protection understood the effects daylighting Tibbetts Brook could have on reducing combined sewage overflows, the project gained momentum. "It became very obvious that the only way they were actually going to reduce the CSO was by, by daylighting Tibbetts Brook and that's what kind of sold it," said Taylor.

The plan is to modify the weir, and daylight one mile of the brook, located in the Kingsbridge neighborhood. At 232th Street, it will enter a pipe again and from there it will be discharged into the Harlem River —not entering the sewer system. Multiple public access points will be constructed as well. The project is currently in its final design phase which includes street access design and on-going restoration of Hester and Piero's Mill Pond. Construction is scheduled to begin in early 2026.

Daylighting is perhaps how we start to put cracks into our concrete cities. Tibbetts Brook could dismantle the cityscape through thoughtful deconstruction by unearthing previously covered stream. It is a one way of adaptation between humans and nature, built infrastructure and natural systems—the wall we have imposed in our attempt to control nature, the line we draw against nature.

The water remembers its historic path and seeks freedom once again.



Maya Ciarrocchi. Kingsbridge, 2022, Cyanotype on paper.