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Decay and Opportunity of Architecture

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DECAY & OPPORTUNITY OF ARCHITECTURE

WASTE
INFRASTRUCTURE
DESTRUCTION
ABANDONED STATIONS
NETWORK

This thesis aims to develop a connection between the newly elevated downtown Brooklyn and the cultural/civic center of lower Manhattan. One of the growth projects is known as the Urban Farming Initiative. Private areas through out the five boroughs have been redeveloped into community gardens. The public then cultivates and reaps goods for their personal use. Through the expansion of the Urban Farming Initiative this new network connection can act as the “bridge” between the two major city centers as well as creating a central hub for the farming network.

Obsolete damaged infrastructure, such as abandoned subway stations, can still play a role on the urban environment. Through the acceptance of, and allowance for decay built within the design, these abandoned underground structures can operate as an adaptable network at both an urban and local scale. By accepting that certain events will happen to disrupt normal city activity, this network has the opportunity to relieve some of the system pressure while remaining operational. The utilization of these spaces will in turn increase the efficiency and resiliency of the ever-expanding urban infrastructural system.

Waste within an urban environment comes in many forms. Everything from the occupants’ physical trash to inefficiency itself can be considered waste. The major waste types are trash, infrastructure, inefficiency, abandonment, emissions, destruction, and opportunity. All of which can be further divided under the headings of Infrastructural Waste, Waste through Abandonment and Damage from Natural Occurrences.

Networks of abandoned underground structures exist in prime locations of urban cities everywhere. As urban centers grow and modernize, some areas are left untouched or forgotten because it is easier to build new, rather than reuse and re ic site. Sites like these have the ability to be readapted to influence their surrounding on both an Urban and a Local scale. Due to the elevation of such spaces, they are inevitably at a greater risk for damage. Redesigning the network to accommodate and adapt to the always-changing natural environment would insure their resiliency within the system.

A high-risk natural occurrence is flooding. Island and costal cities throughout the world are plagued with high rainfall, hurricanes and natural disasters, but many are not equipped to handle the ever-increasing high tides that come along with these natural occurrences. New York City’s largest natural disaster risk is flooding. New York, although protected somewhat by land and the bay, has pushed flood retention advancements aside even through it is subject to them at least four times a year. A rise in water levels by just 12’ alone would take out lower Manhattan. The damage can be greatly diminished by utilizing the network of abandoned stations and lines underneath the city for retention and redirection of the excess water. The construction of architecture that allows for various weather and seasonal occurrences will permit the continual use of these spaces, reducing the need to build new infrastructure and increase the overall efficiency when disaster strikes.

The City Hall Station in New York City, now abandoned, is in an extremely unique location. It resides underneath City Hall Park, one of the few park areas in lower Manhattan, in between the Civic Center and the World Trade Center. It is on the boarder line of a substantial geological change, as it acts as the termination of the Brooklyn Bridge, and is right within the major flood risk area of New York City. All of these factors increase the importance and opportunities that exist within the site and yet the station remains unused and abandoned right in the midst of it all.

There is a substantial amount of waste and inefficiency associated with the upkeep and security of a network of abandoned stations. These spaces are carefully boarded up and/or hidden with the hope that the city will not notice them from the street. This is an unfortunate development, as the locations of these stations have optimal opportunities to provide for and affect the surrounding areas.



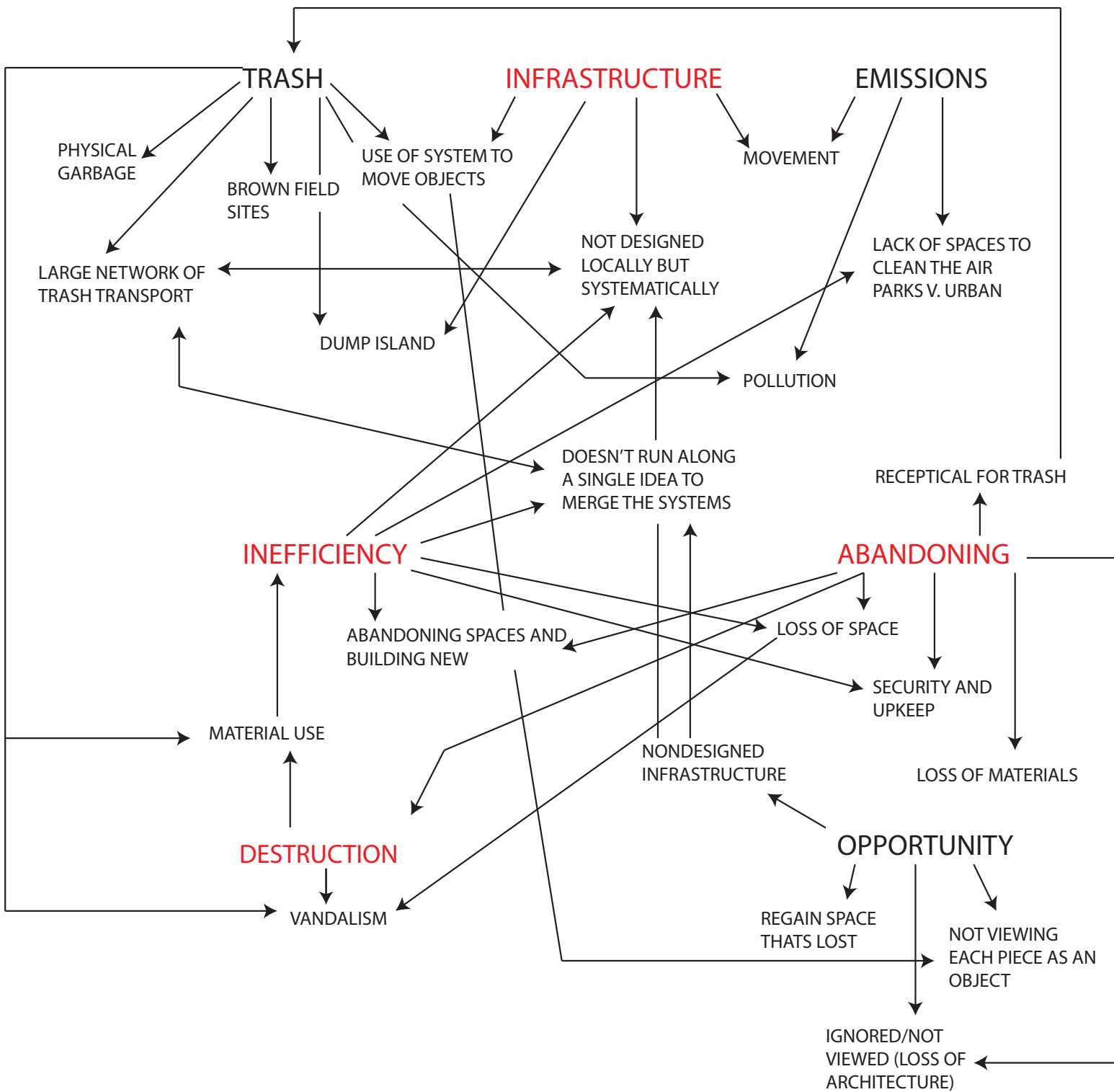
“Imagine a future where immense amounts of trash didn’t pile up on the peripheries of our cities: a future where we understand the ‘removal-chain’ as we do the ‘supply-chain’, and where we can use this knowledge to not only build more efficient and sustainable infrastructures but to promote behavioral change. In this future city, the invisible infrastructures of trash removal will become visible and the final journey of our trash will no longer be “out of sight, out of mind”.

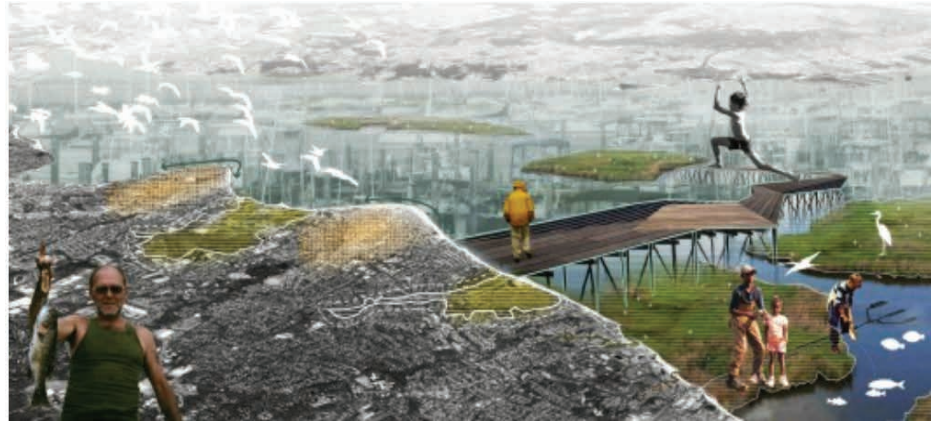
Elaborated by the SENSEable City Lab and inspired by the NYC Green Initiative, TrashTrack focuses on how pervasive technologies can expose the challenges of waste management and sustainability. Can these same pervasive technologies make 100% recycling a reality?

TrashTrack uses hundreds of small, smart, location aware tags: a first step towards the deployment of smart-dust - networks of tiny locatable and addressable microelectromechanical systems. These tags are attached to different types of trash so that these items can be followed through the city’s waste management system, revealing the final journey of our everyday objects in a series of real time visualizations.”

senseable.mit.edu/trashtalk/

KEY WORDS
INFRASTRUCTURE
INEFFICIENCY
DESTRUCTION
ABANDONMENT





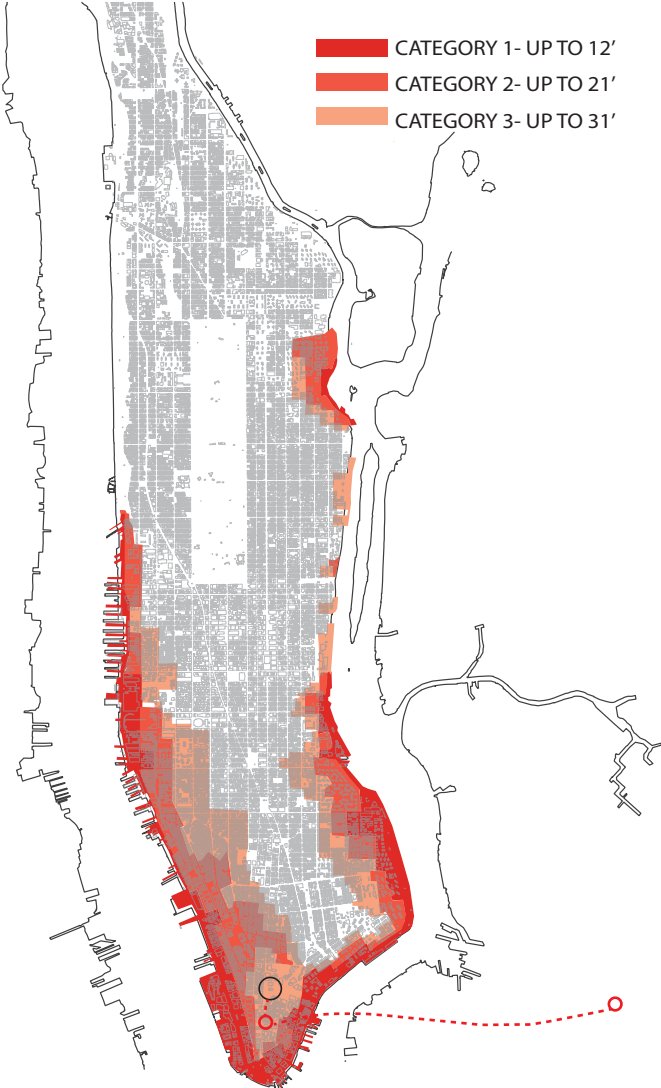
REBUILD BY DESIGN

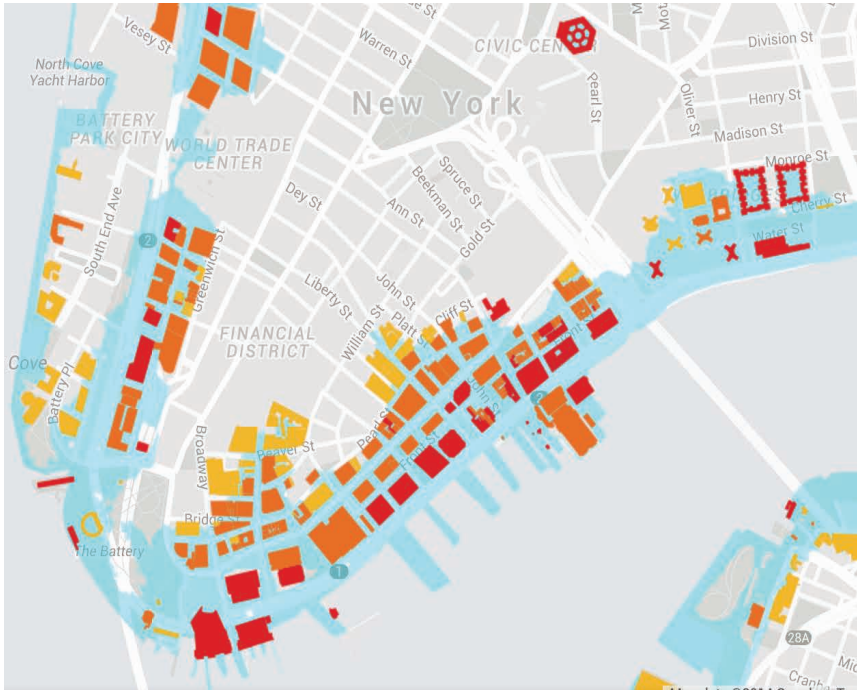


DESTRUCTION



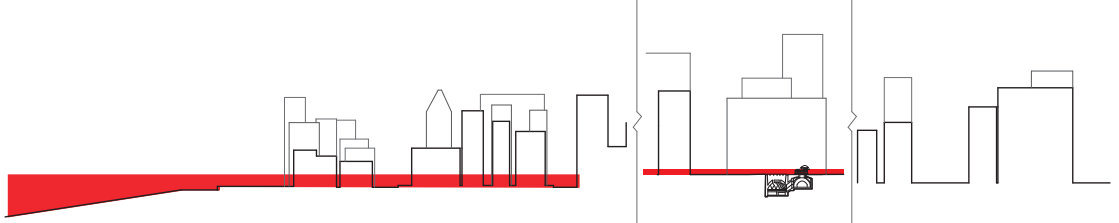
CATEGORY 6 HURRICANE DAMAGE



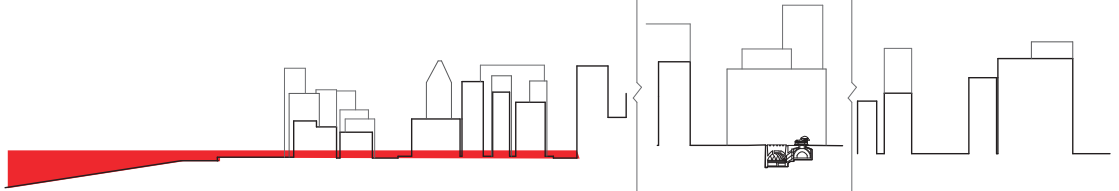


HURRICANE SANDY DESTRUCTION

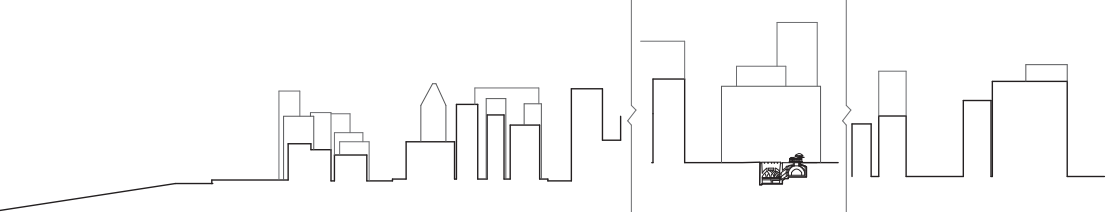
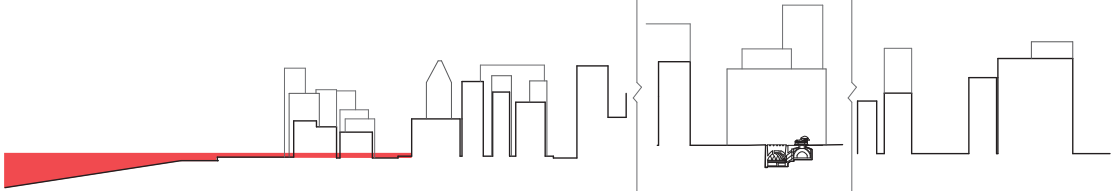
CATEGORY 1



CATEGORY 2



CATEGORY 3

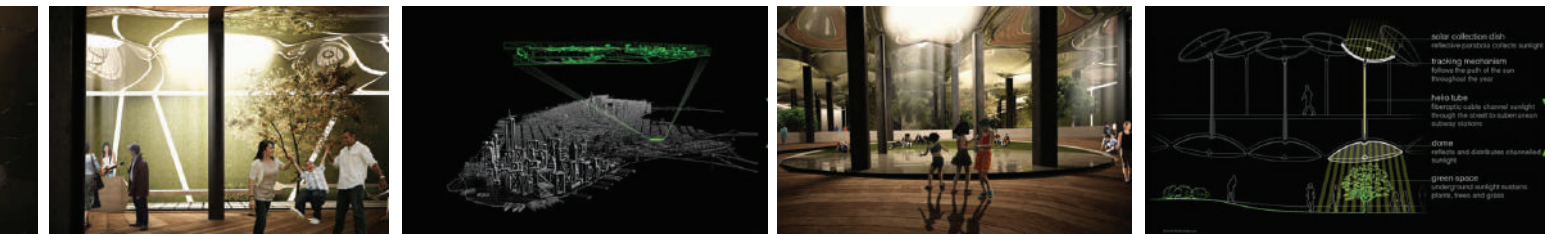


FLOOD LINE THROUGH LOWER MANHATTAN





HIGHLINE

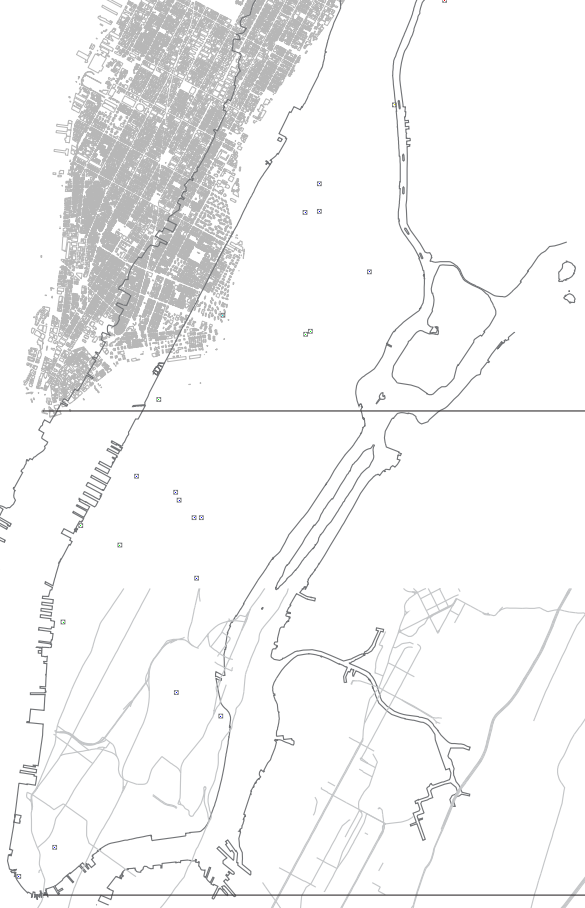


LOWLINE



INFRASTRUCTURE

GREATEST GRID COMPETITION



SUBWAYS

HIGHWAYS & BRIDGES

MAJOR ROADS

BUILDINGS

OUTLINE

MINOR ROADS



SUBWAYS V. ROADS



SUBWAYS V. BUILDINGS



ALL TRANSPORTATION SYSTEMS



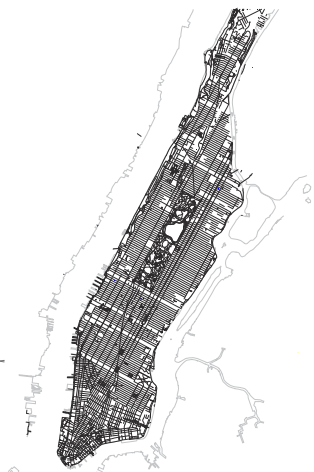
MAJOR RAIL SYSTEMS



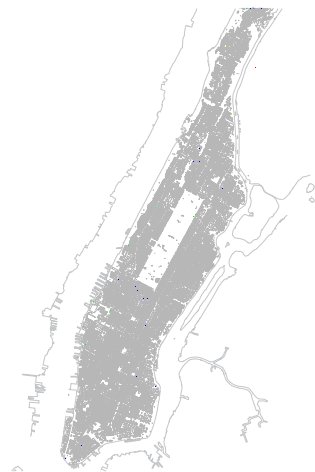
SUBWAY SYSTEM



MAJOR HIGHWAYS INTO NYC



ROAD DENSITY

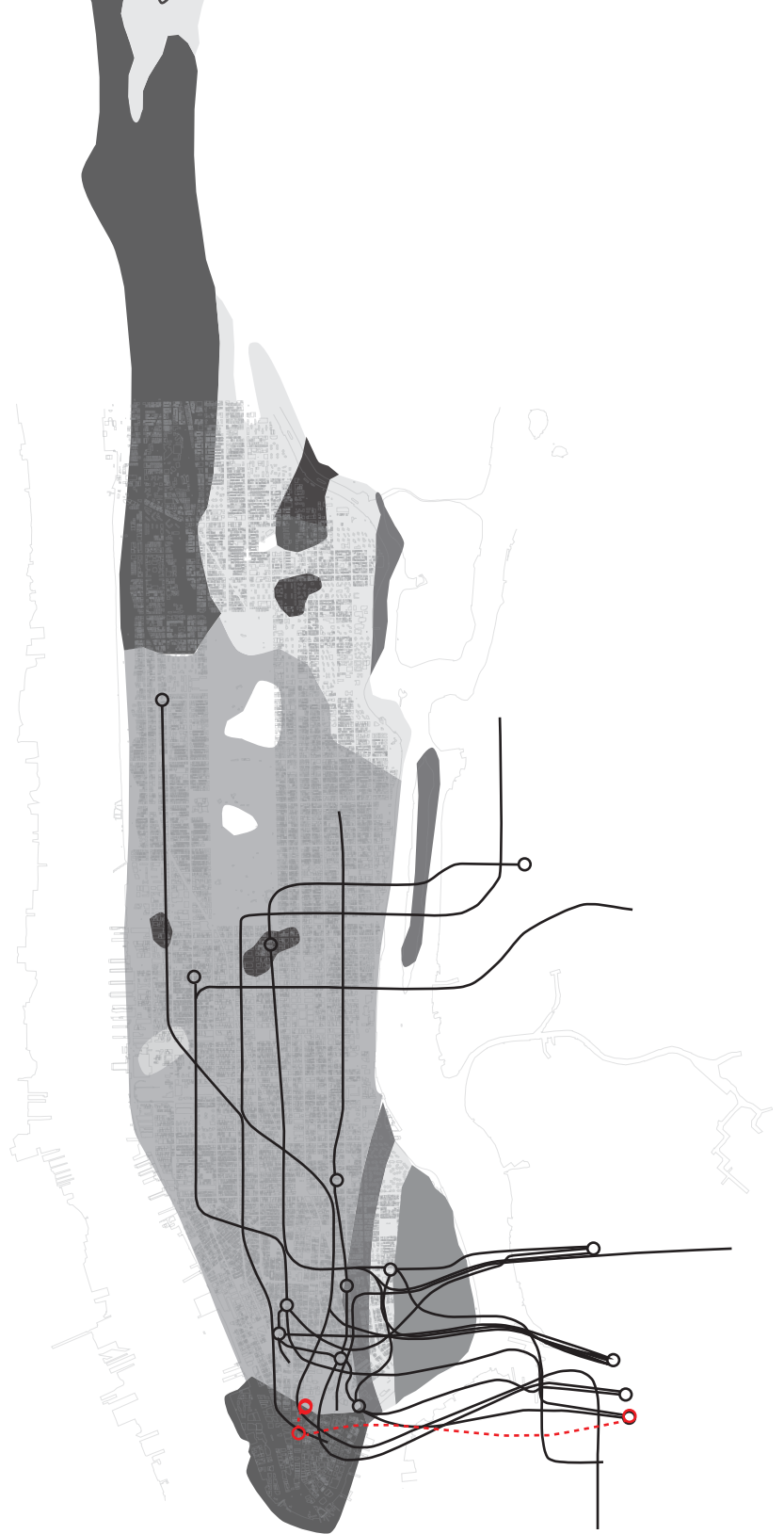


BUILDINGS



COMBINATION MAP

GEOLOGY OF NEW YORK CITY



- Trassic Sediments (redbeds)
- Quaternary Alluvium
- Tertiary Sediments
- Cambrian/Ordovician Metamorphic Rocks (Iapetus Terrane)
- Triassic/Jurassic Volcanic Rocks
- Cambrian/Lower Ordovician Meta-Sedimentary Rocks
- Precambrian Gneisses (Grenvillian)
- Precambrian Metamorphic Rock (Avalon Terrane)



GASOMETER CITY, VIENNA AUSTRIA



TATE MODERN, LONDON ENGLAND



GATTERSEA POWER STATION, LONDON ENGLAND



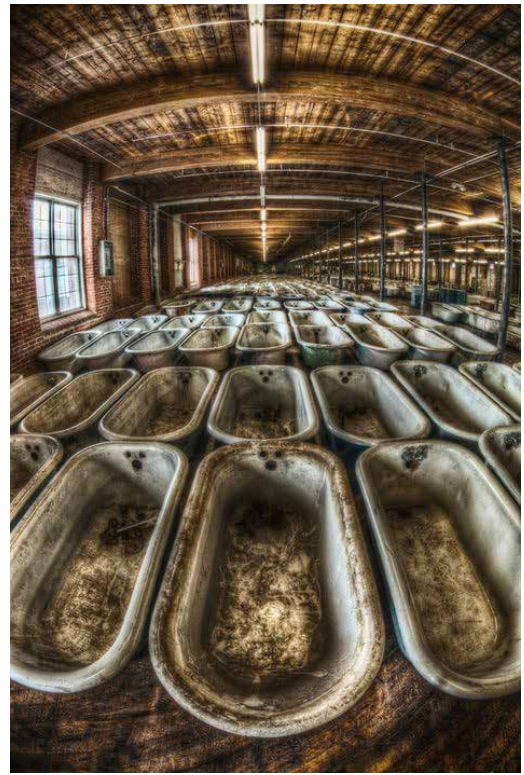
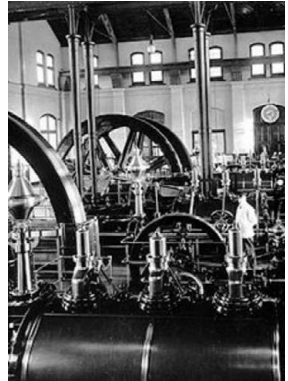
CAFE RESTAURANT, AMSTERDAM



SEWAGE SILO, NETHERLANDS

CASE COMVENT, MILAN

ABANDONED INFRASTRUCTURE



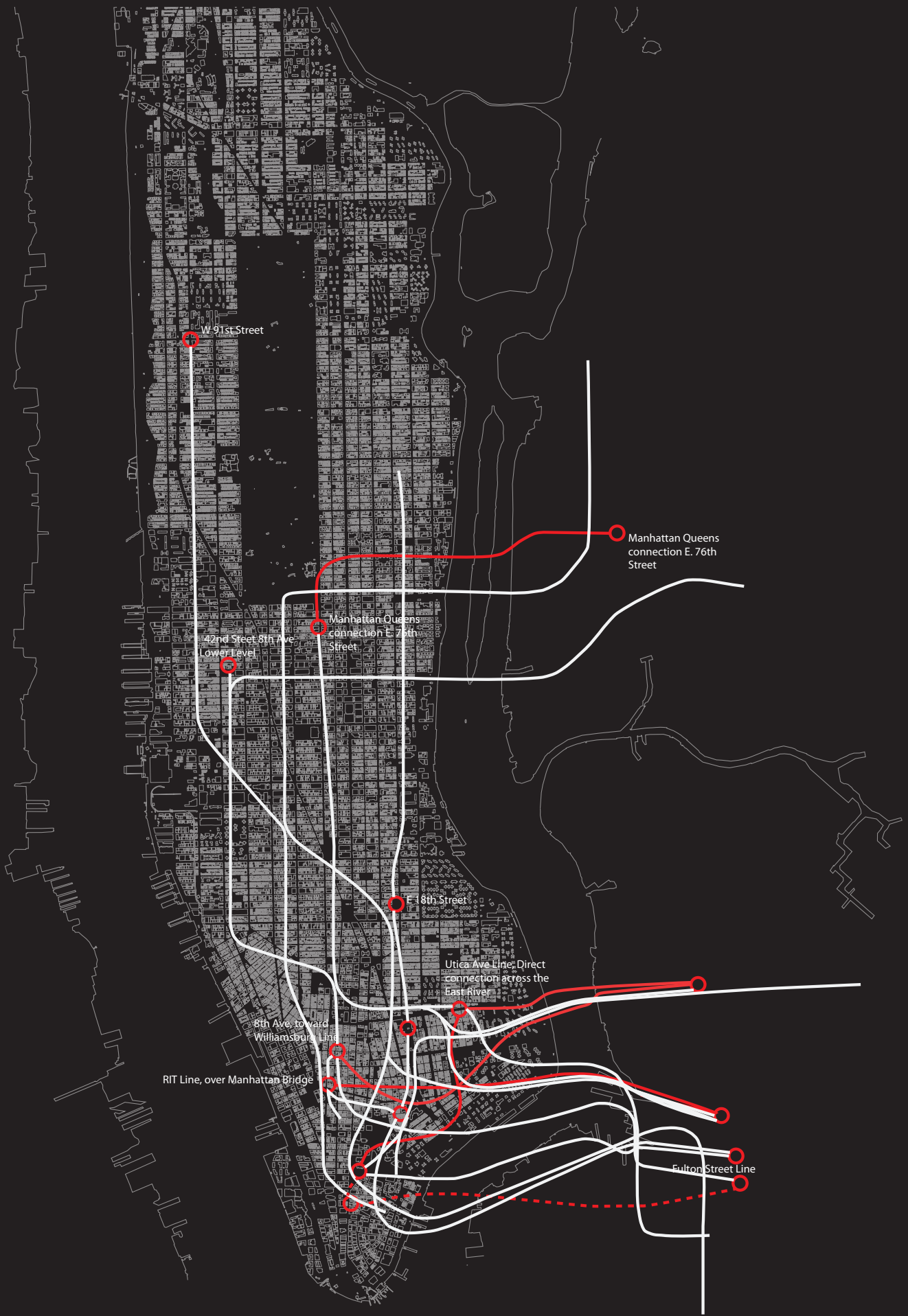
© Brandon Davis / Barcroft USA

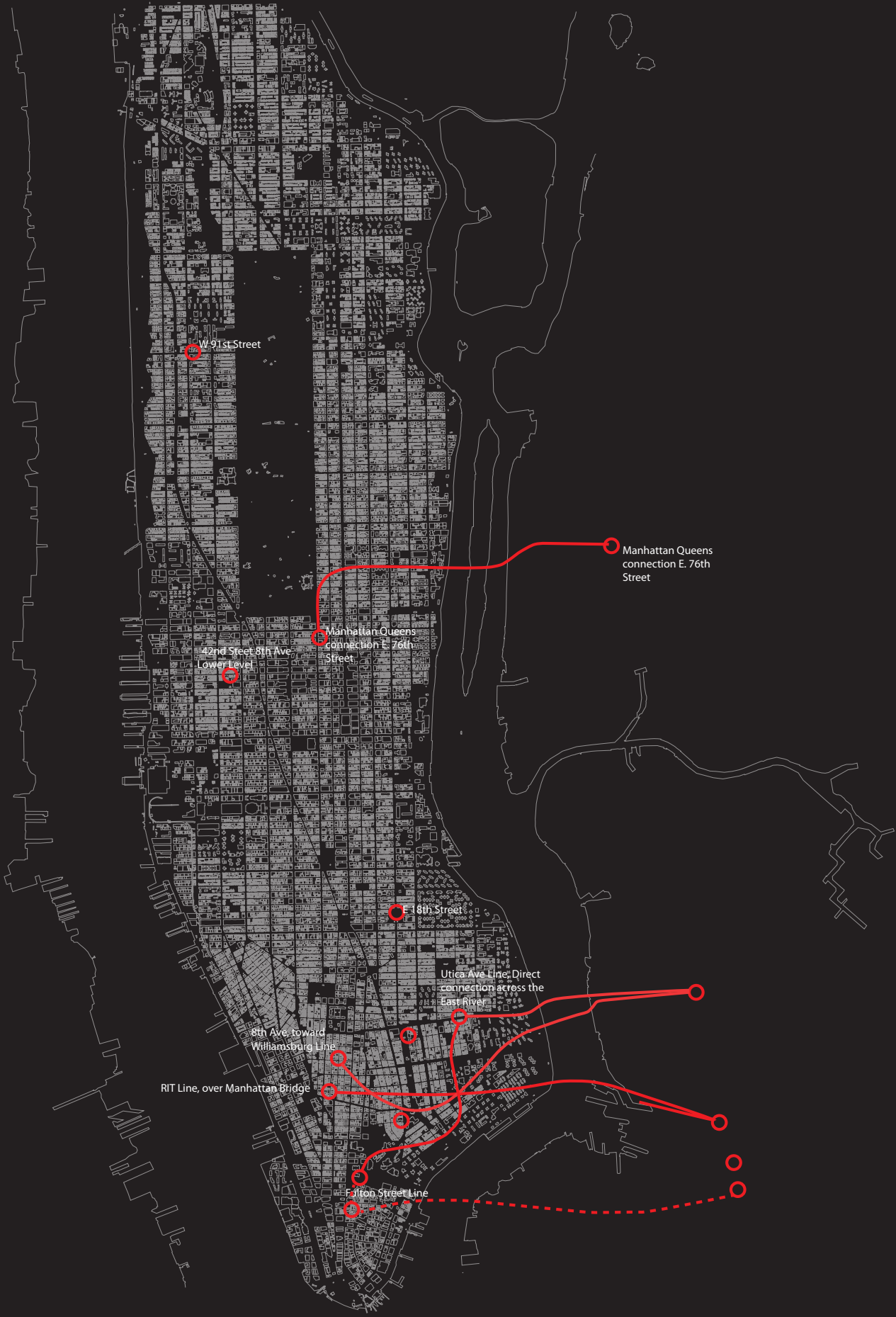
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W 91st Street

42nd Street 8th Ave Lower Level

Manhattan Queens connection E. 76th Street

Manhattan Queens connection E. 76th Street

8th Street

Utica Ave Line, Direct connection across the East River

8th Ave toward Williamsburg Line

RIT Line, over Manhattan Bridge

Fulton Street Line



Worth Street



Crosstown line, Bergen Street



Nassau Street Station



Brooklyn Line,



Myrtle Avenue



18th Street Station



Court Street Station



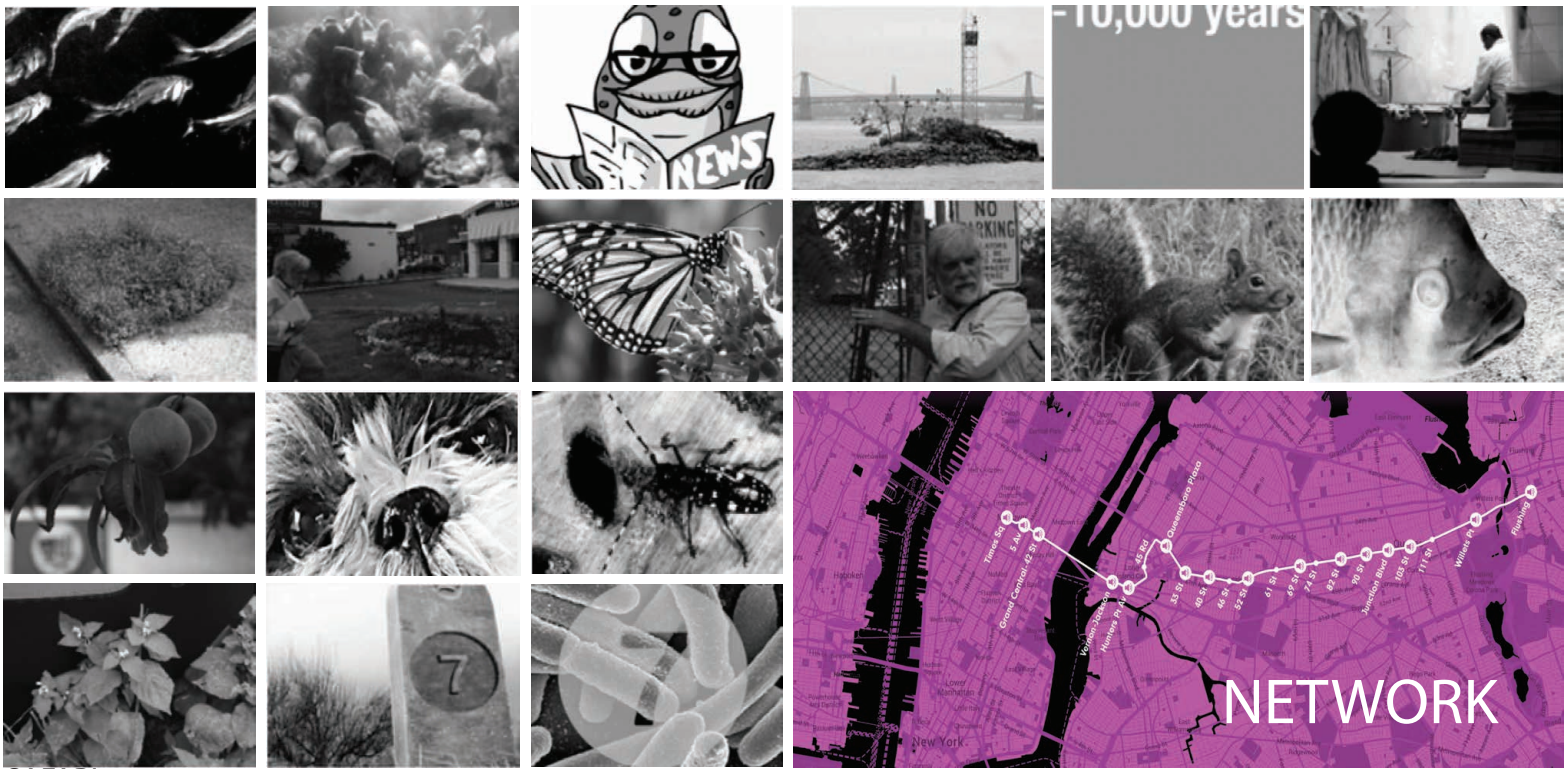
East Side Line, 18th St.



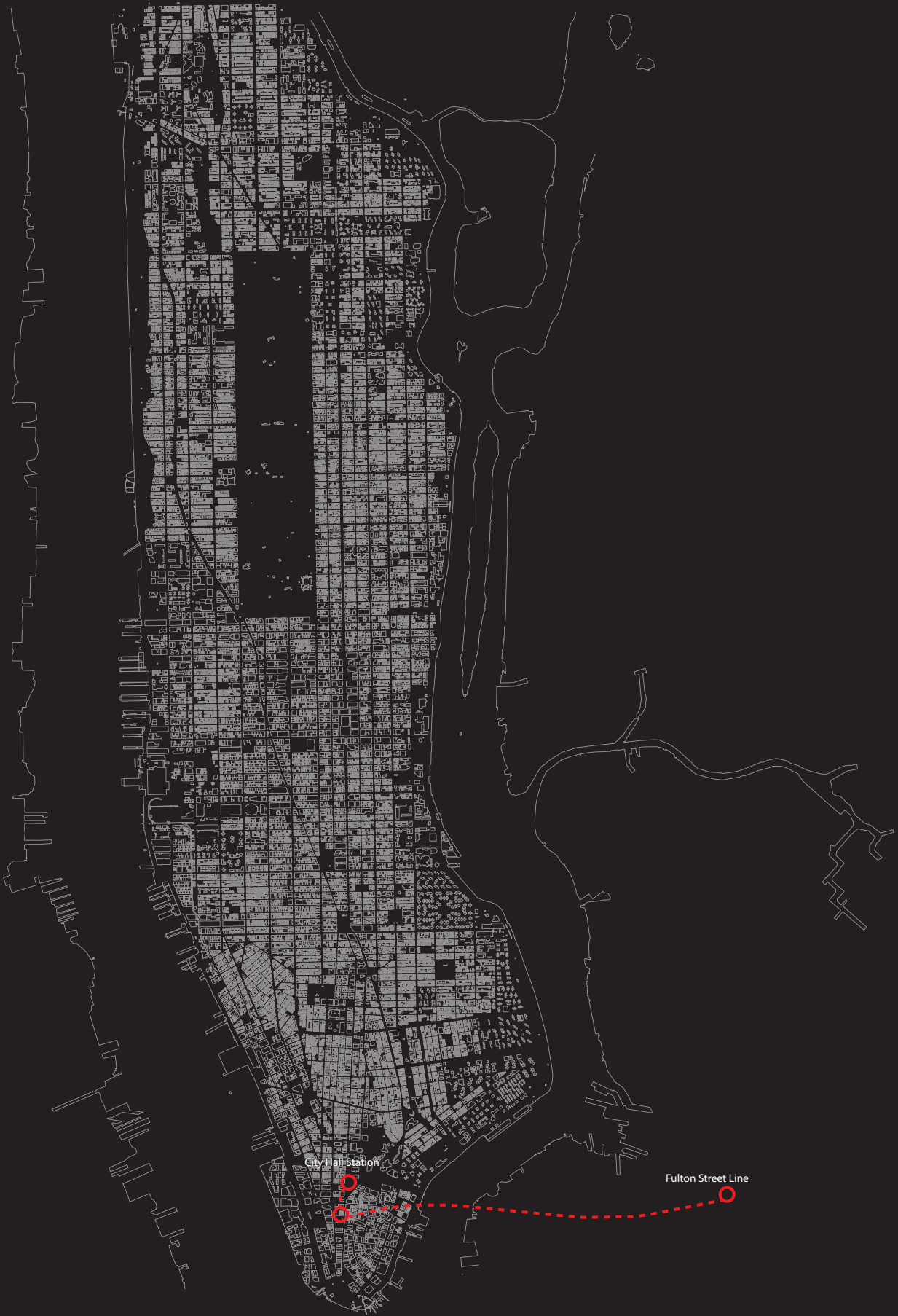
8th Street Avenue



City Hall Station



SAFARI 7

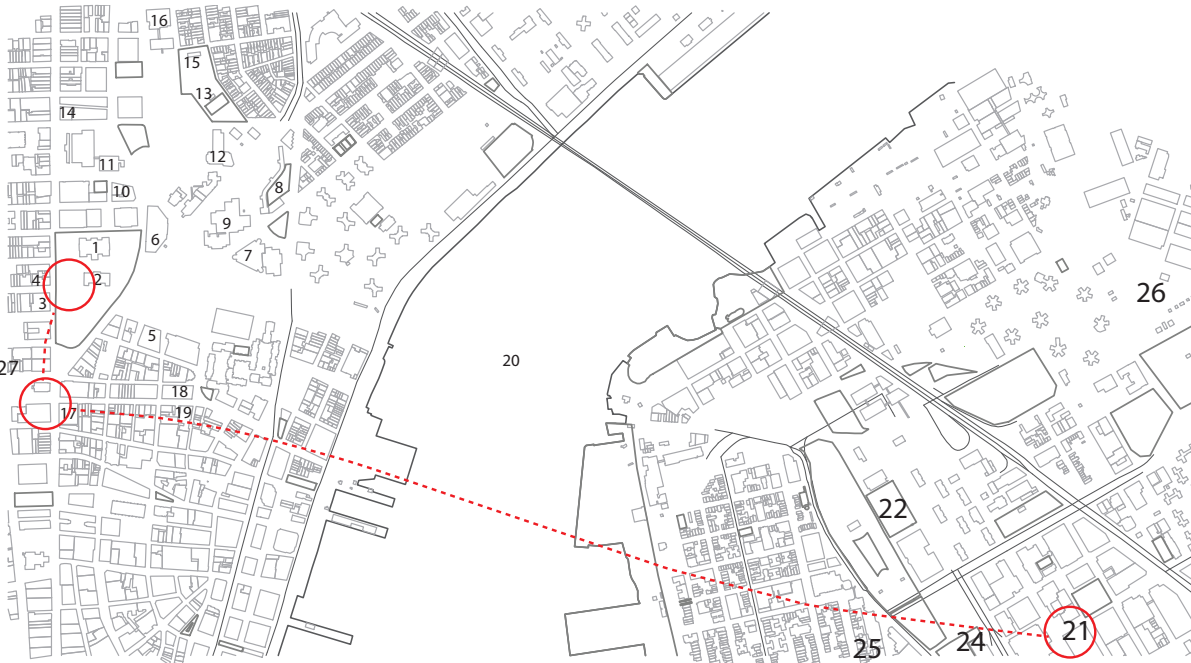


City Hall Station

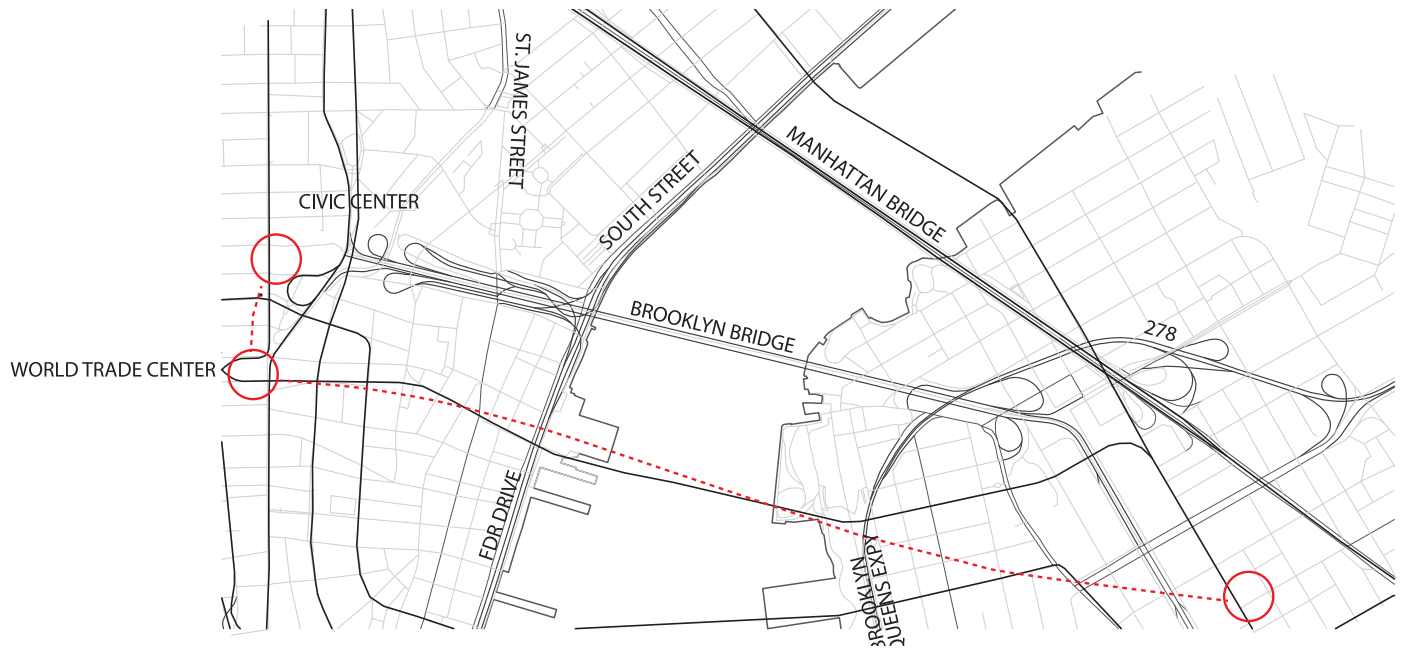
Fulton Street Line



WASTE / DESTRUCTION / INFRASTRUCTURE / ABANDONED / NETWORK



1. tweed court house
2. City Hall
3. wolworth building
4. City council building
5. New York Comtroller
6. New York City Landmarks Preservation Commission
7. Police Station
8. Metropolitan Corrections Center
9. andrews Roman Catholic Church
10. NYC Police Department
11. United States Court of International Trade
12. New York City Supreme Court
13. The Office of the City Clerk
14. New York City Sanitation
15. New York City Criminal Court
16. New York City Civil Court
17. Fulton Street Abandoned Station
18. Social Security Administration
19. New York City Administration
20. Brooklyn Bridge
21. Folton Street Line
22. United States District Court
23. NYC Transit Authority
24. Transit Adjunction Bureau
25. Transit Authority Museum
26. Brooklyn Community Housing
27. World Trade Center





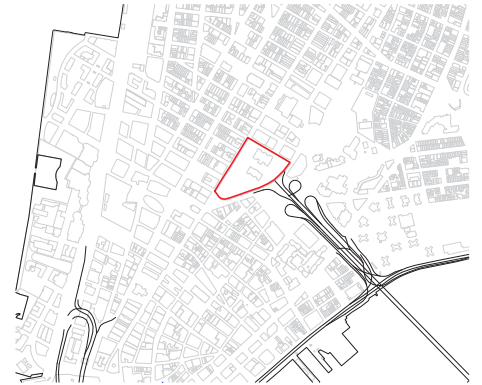
PARKING STRUCTURES / TRANSPORTATION



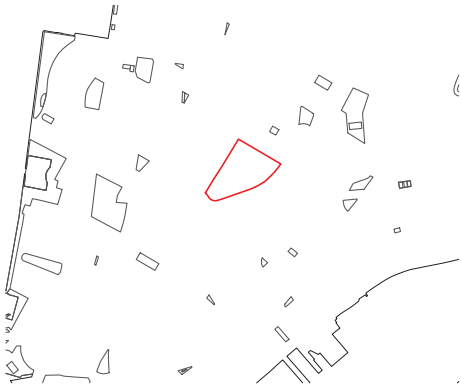
COMPILED



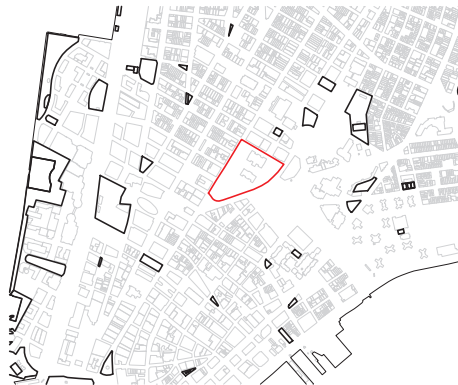
BUILDINGS



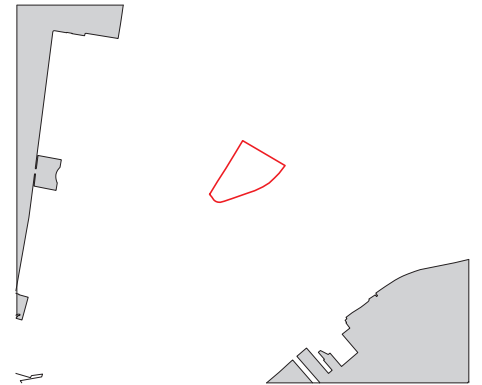
BRIDGE



PARKS



PARKS / BUILDINGS



WATER



MAJOR ROADS



SUBWAYS

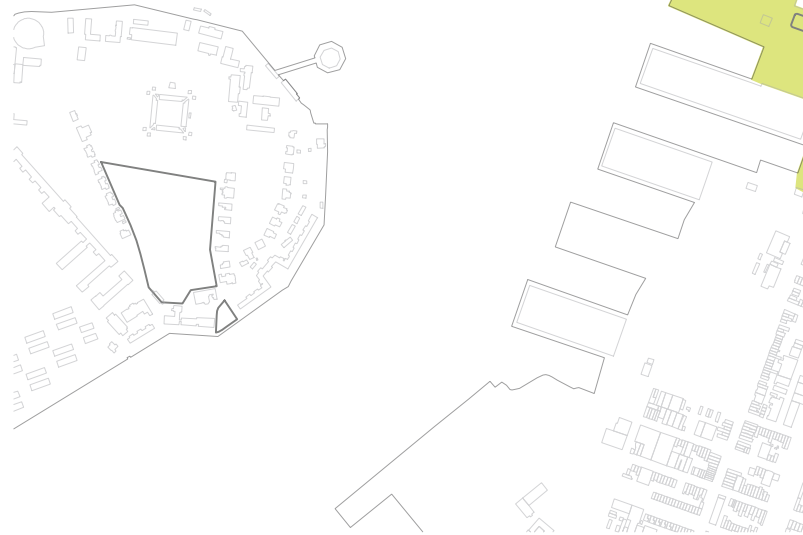


SUBWAYS / BUILDINGS

1. Brooklyn Heights Library, Redevelopment
2. Brooklyn Promenade
3. Urban Garden - Ingersol Garden of Eden, Urban Gardening Network
4. Willoughby Square Park
5. BAM Park
6. Flatbush Avenue Street Scape
7. Fox Square

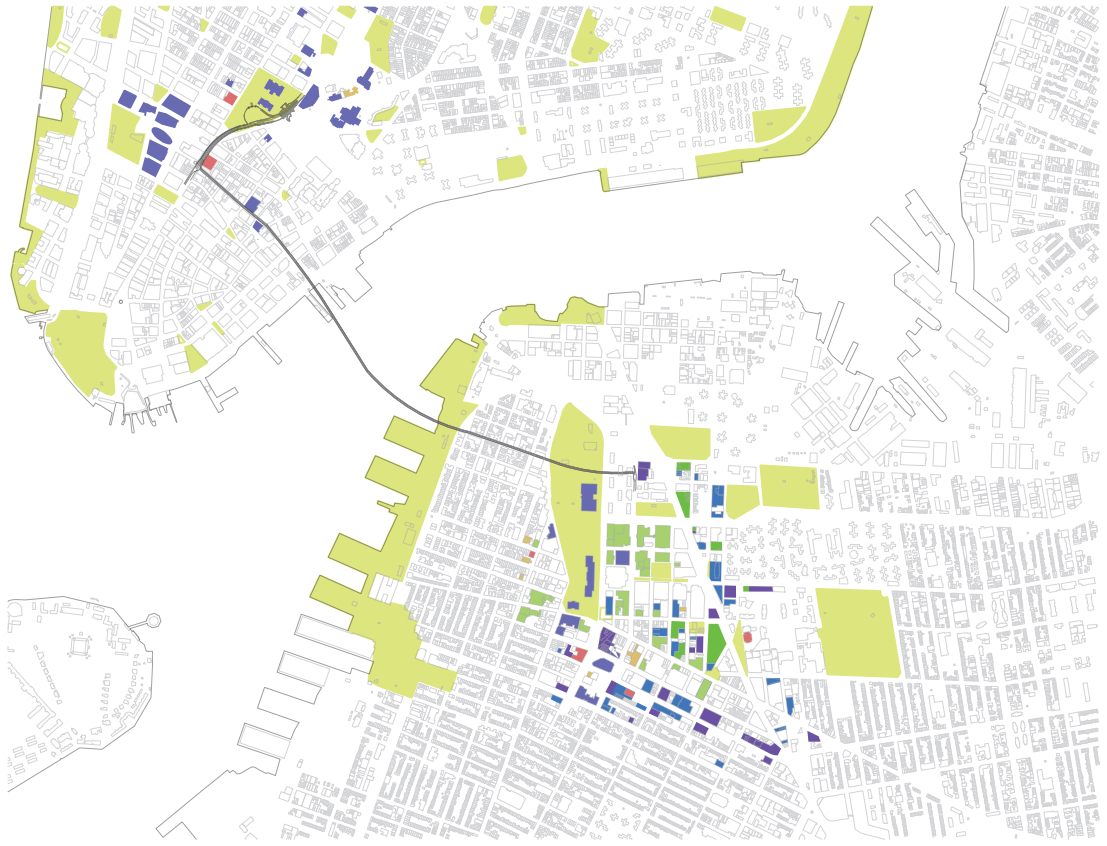


-  PARKS
-  IN CONSTRUCTION
-  COMPLETED NEW CONSTRUCTION
-  GOVERNMENT / CIVIC BUILDINGS
-  EDUCATION / INSTITUTIONAL
-  RELIGIOUS BUILDINGS
-  ARTS AND ENTERTAINMENT
-  NEW DEVELOPMENT





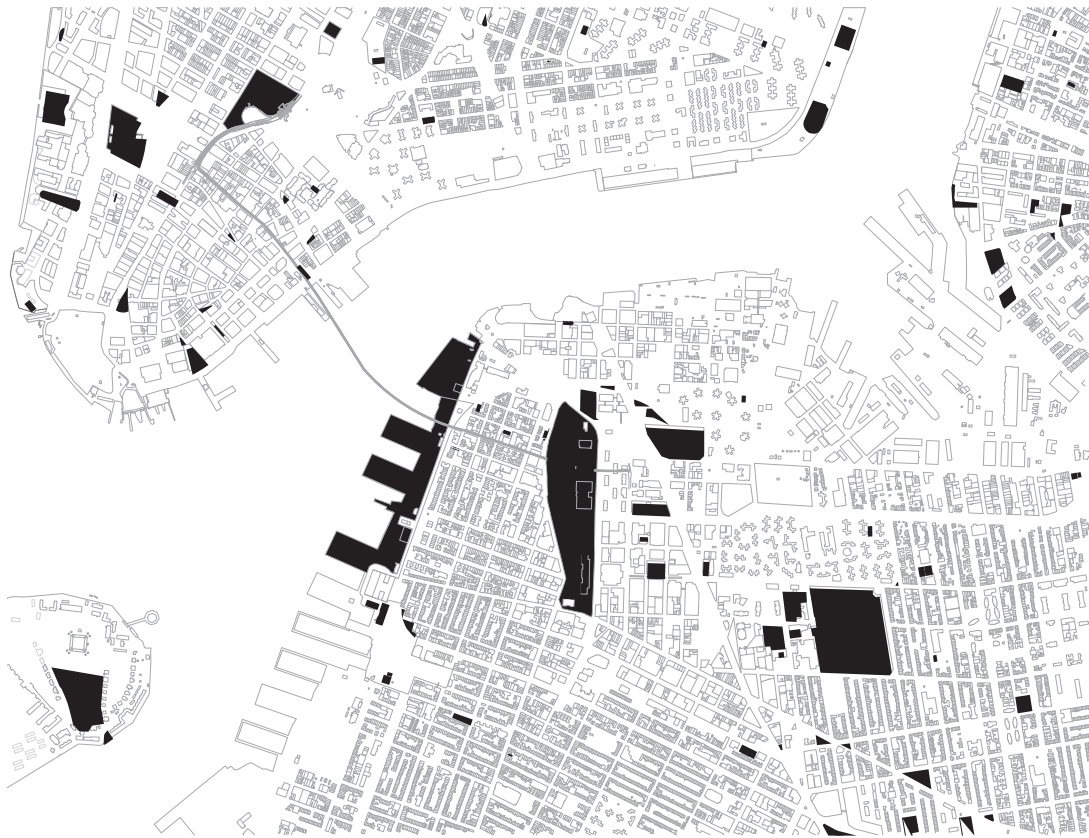
WASTE / DESTRUCTION / INFRASTRUCTURE / ABANDONED / NETWORK



NEW DEVELOPMENT



CIVIC / GOVERNMENTAL



PARKS / PUBLIC AREAS

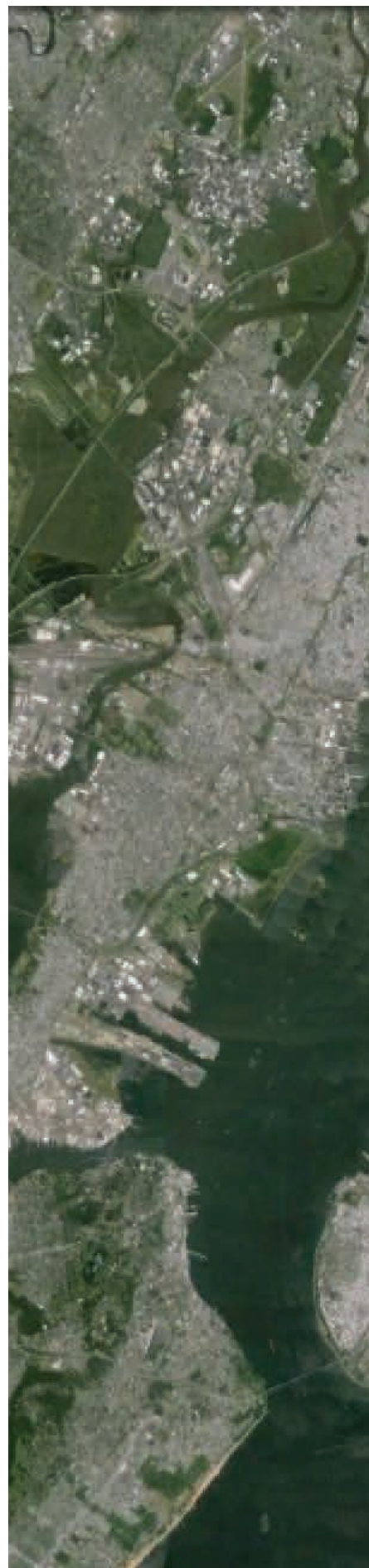
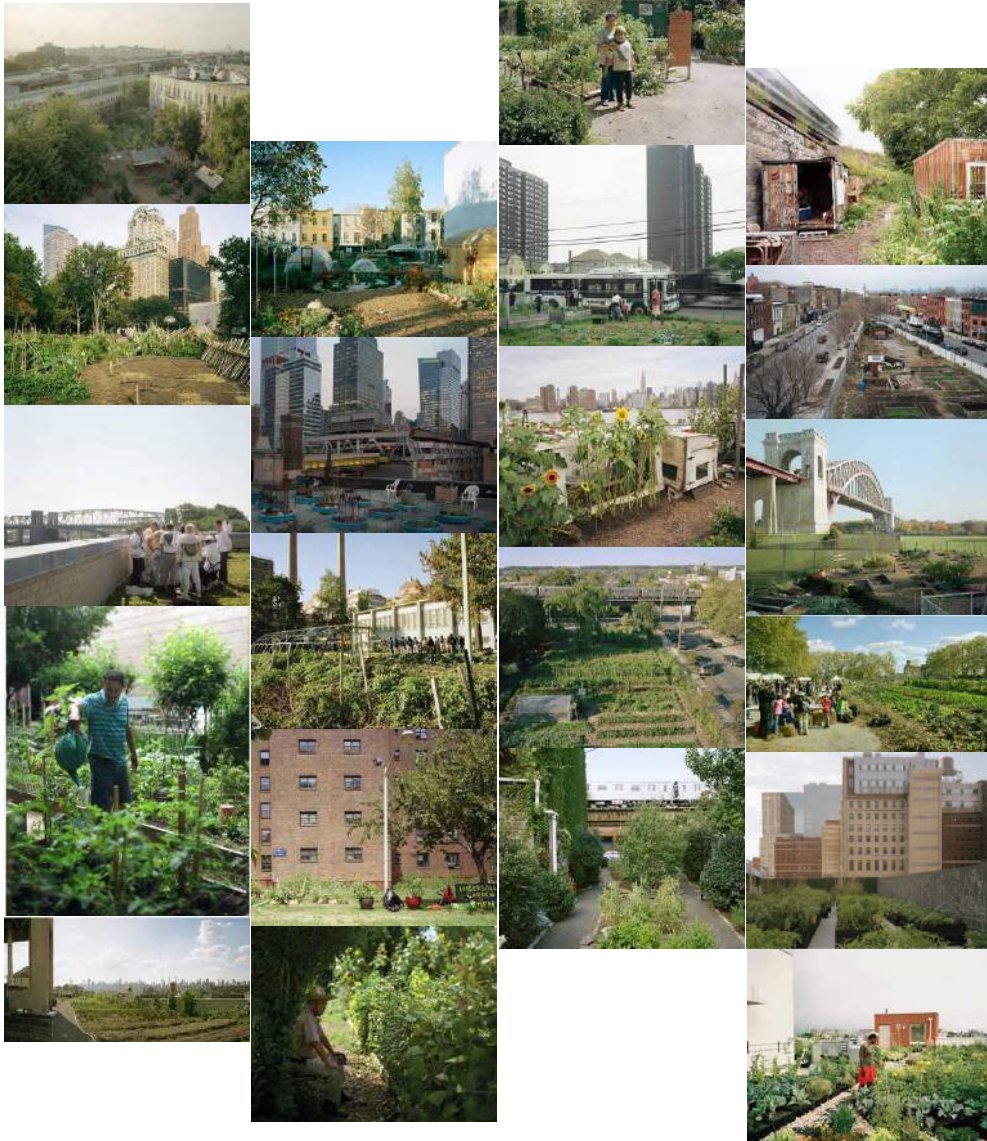


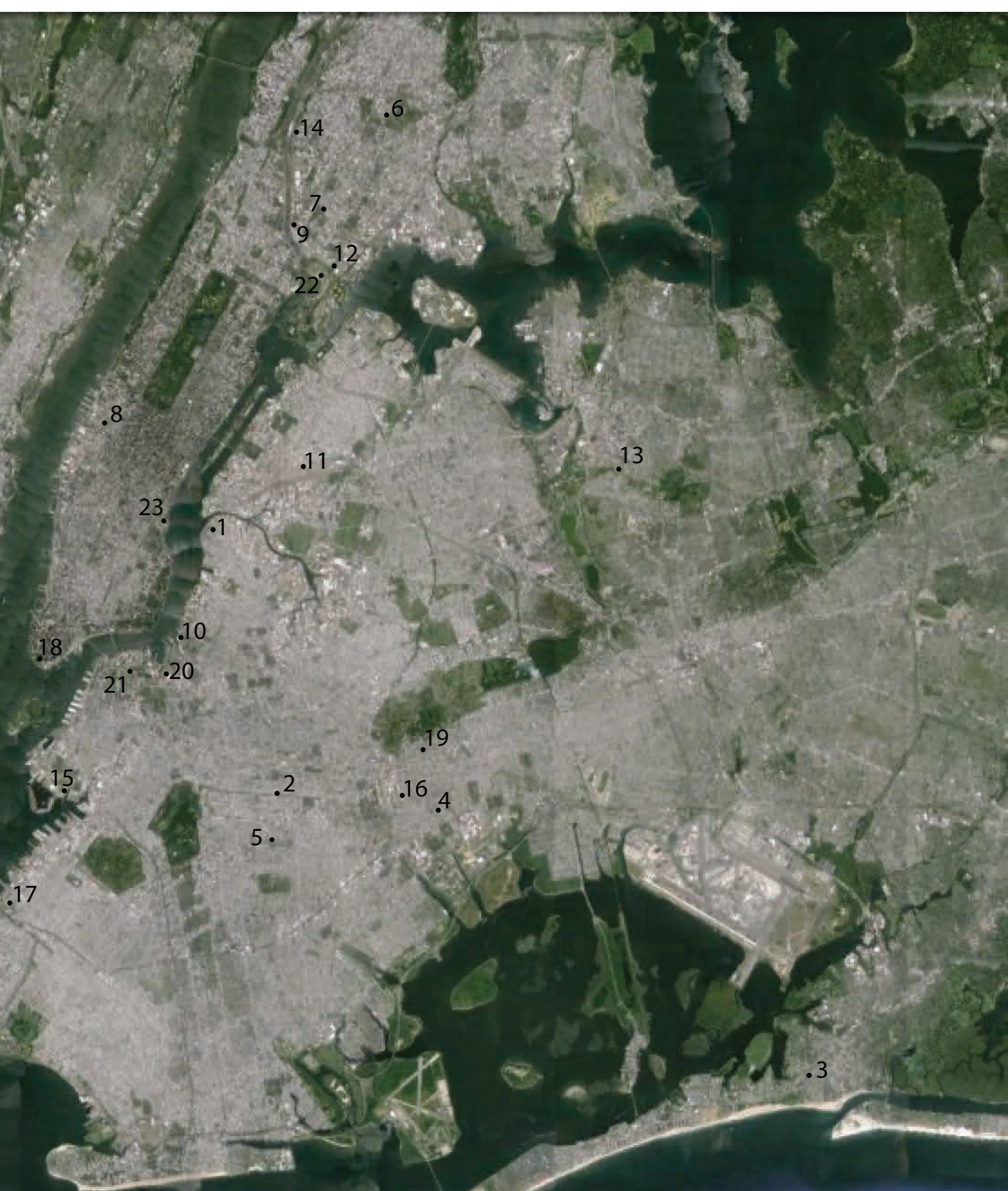
ARTS / ENTERTAINMENT PROJECTS



EDUCATIONAL INSTITUTIONS

1. Eagle Street Rooftop Commercial Farm
2. Phoenix Community Garden Community Farm
3. Culinary Kids Garden Community Garden
4. East New York Farms Community Farm
5. High School for Public Service Youth Farm
6. Garden of Happiness Community Garden
7. Randalls Island Learning Garden Institutional Farm/Garden
8. Hell's Kitchen Farm Project Institutional Farm or Garden
9. La Finca del Sur Community Farm
10. Berry Street Garden Community Garden
11. Brooklyn Grange Commercial Farm
12. Bruckner Mott Haven Garden Community Garden
13. Kissena Corridor Community Garden
14. Taqwa Community Garden
15. Red Hook Community Farm
16. Temple of David Community Garden
17. 64th Street Community Garden
18. Battery Urban Farm Institutional
19. Essex Street Community Garden
20. Hattie Carthan Community Garden
21. Ingersoll Garden of Eden Institutional Farm
22. Five Borough Green Roof
23. Riverpark Farm Commercial





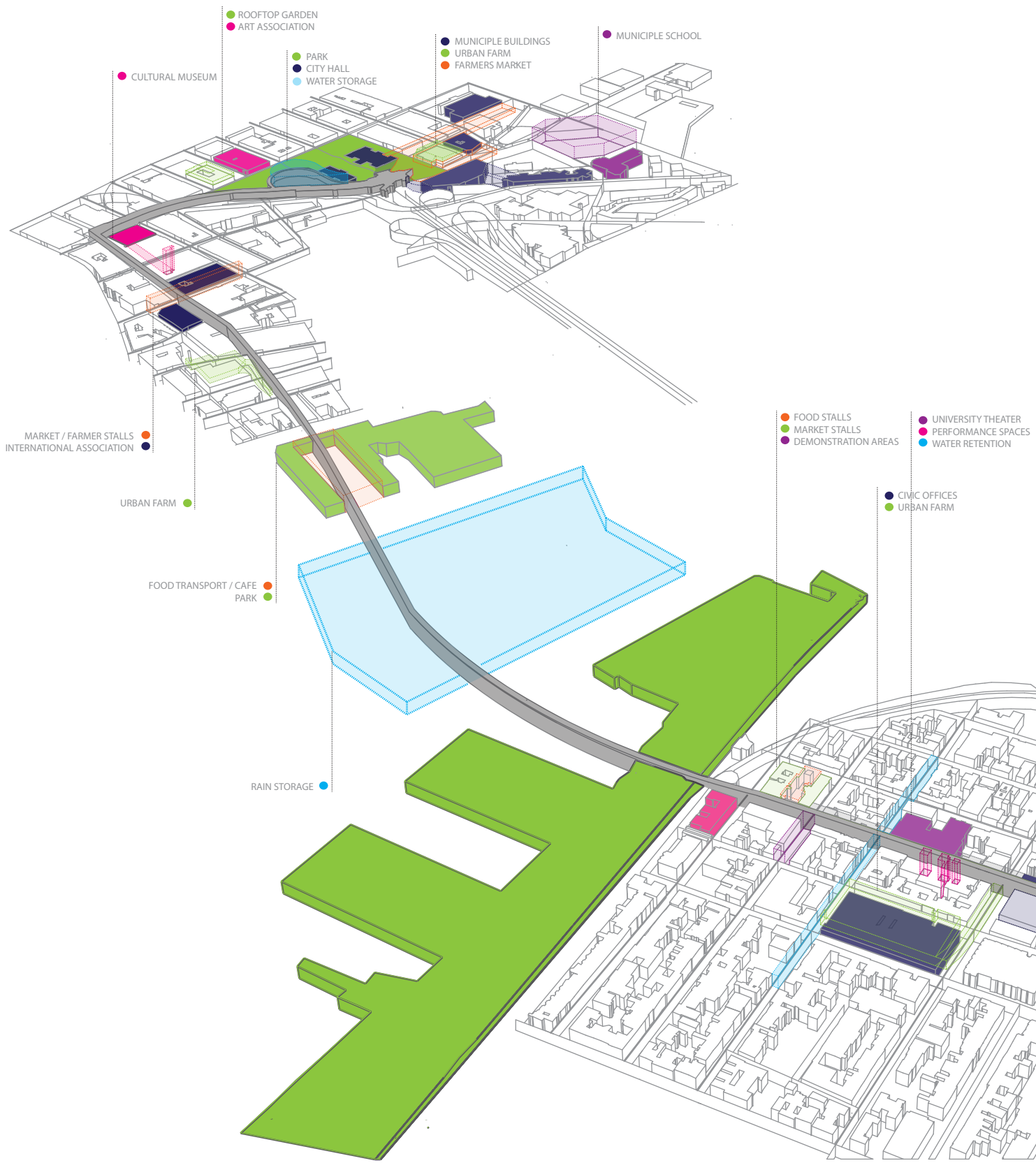
WASTE / DESTRUCTION / INFRASTRUCTURE / ABANDONED / NETWORK

PROGRAM LIST



	FOOD TRUCKS
	MARKET STALLS
	FOOD STALLS
	CAFE
 	CIRCULATION FOOD
	PARKS
	RESTROOMS
	PARKING STRUCTURES
	CIRCULATION TRUCKS
	CONNECTION TO PROGRAM ABOVE
	STORAGE
	CIRCULATION PEDESTRIAN
	PICNIC TABLES
	URBAN GARDENS
	GREEN HOUSES / PLANTED AREAS
	DISPLAY AREAS
	DEMINSTRATION AREAS
	FESTIVALS
	WINE TASTING AREAS
	OFFICES
	CLASSROOMS
	LIBRARY ?
	COMPUTER LABS ?
	WATER STORAGE

 INSTITUTIONAL	 CIVIC/GOVERNMENTAL	 ARTS/ENTERTAINMENT	 URBAN FARMING
 FOOD	 SERVICES	 WATER	



- ROOFTOP GARDEN
- ART ASSOCIATION

- PARK
- CITY HALL
- WATER STORAGE

- MUNICIPAL BUILDINGS
- URBAN FARM
- FARMERS MARKET

- MUNICIPAL SCHOOL

- CULTURAL MUSEUM

- MARKET / FARMER STALLS
- INTERNATIONAL ASSOCIATION

- URBAN FARM

- FOOD TRANSPORT / CAFE
- PARK












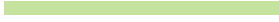

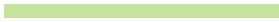










- RAIN STORAGE

- FOOD STALLS
- MARKET STALLS
- DEMONSTRATION AREAS

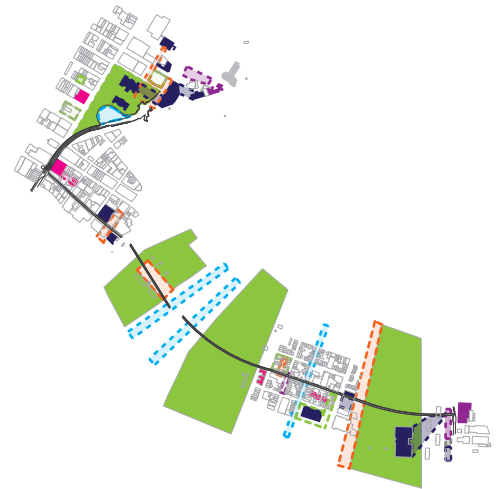
- UNIVERSITY THEATER
- PERFORMANCE SPACES
- WATER RETENTION

- CIVIC OFFICES
- URBAN FARM

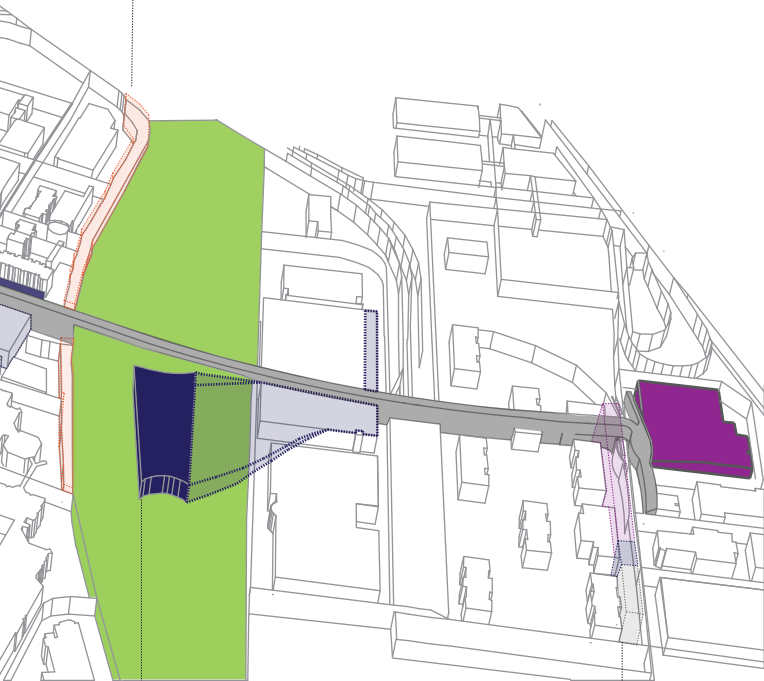
PROGRAM LIST

-  FOOD TRUCKS
-  MARKET STALLS
-  FOOD STALLS
-  CAFE
-  CIRCULATION FOOD
-  PARKS
-  RESTROOMS
-  PARKING STRUCTURES
-  CIRCULATION TRUCKS
-  CONNECTION TO PROGRAM ABOVE
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-  CIRCULATION PEDESTRIAN
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-  WINE TASTING AREAS
-  OFFICES
-  CLASSROOMS
-  LIBRARY ?
-  COMPUTER LABS ?
-  WATER STORAGE

-  INSTITUTIONAL
-  CIVIC/GOVERNMENTAL
-  ARTS/ENTERTAINMENT
-  URBAN FARMING
-  FOOD
-  SERVICES
-  WATER

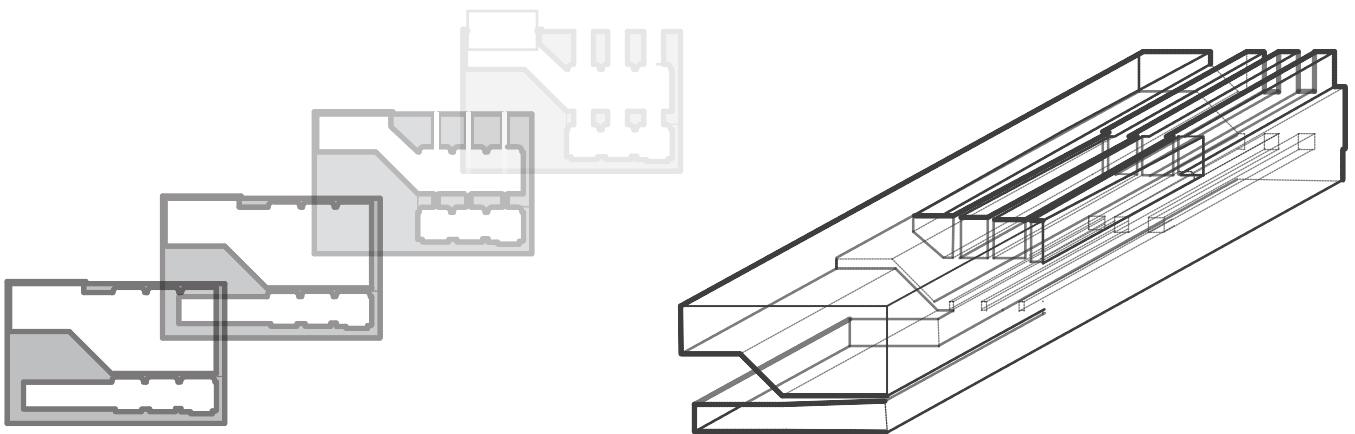
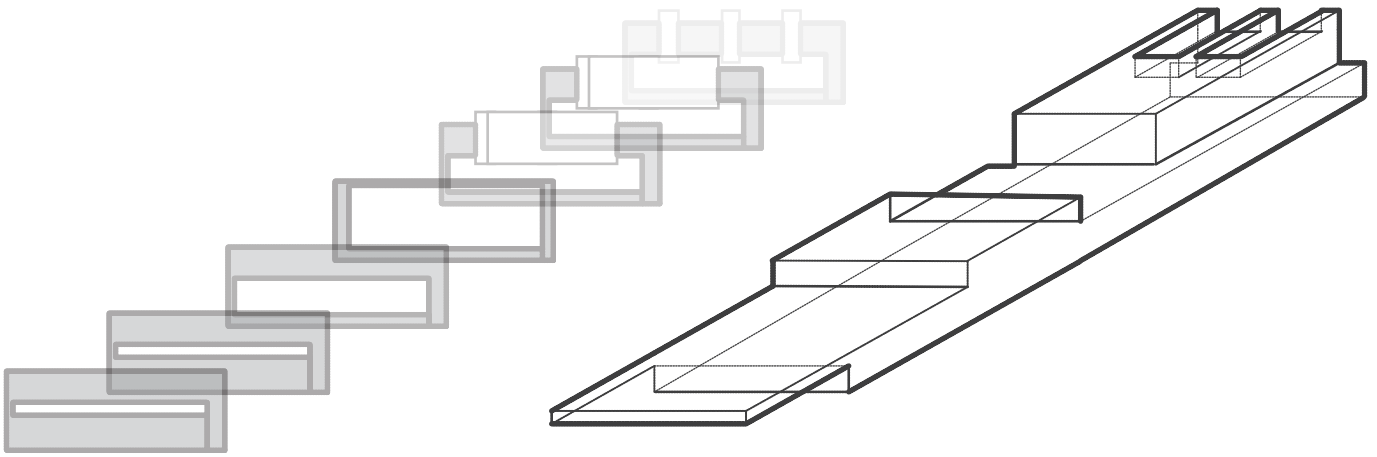
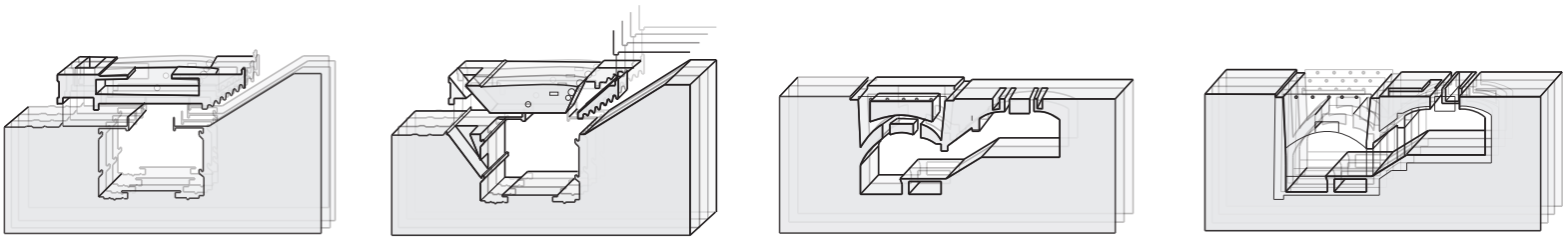


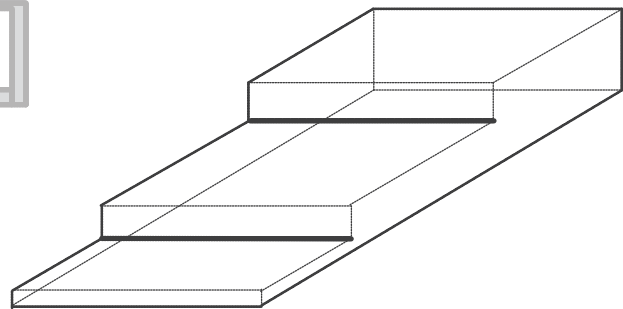
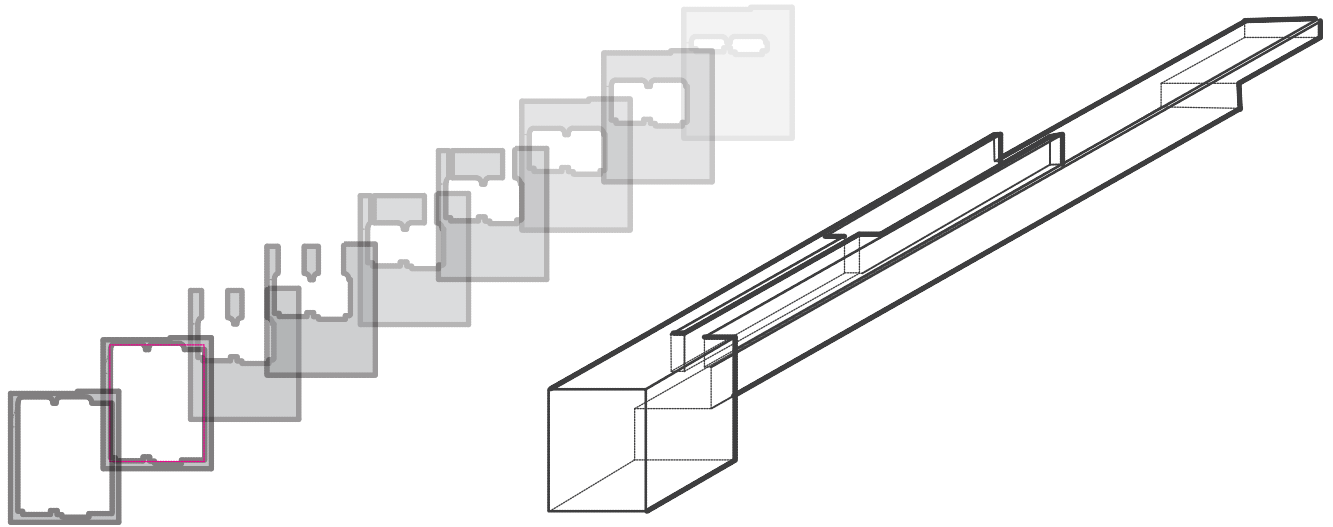
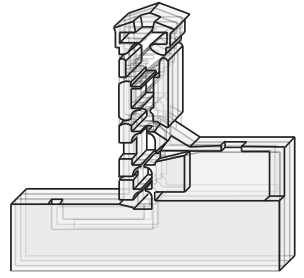
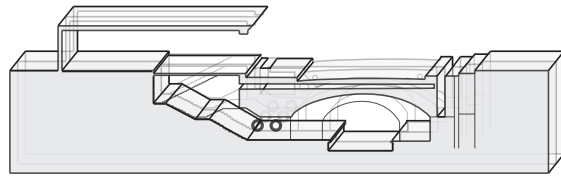
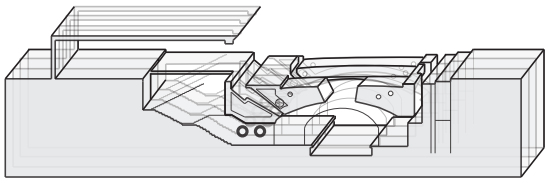
-  FOOD TRUCKS
-  PARK

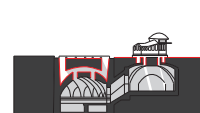
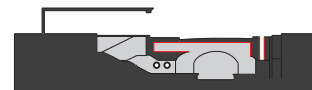
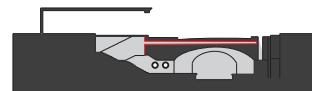
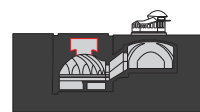
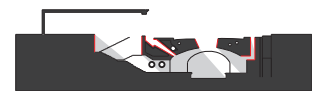
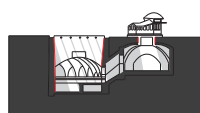
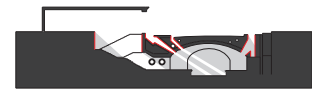
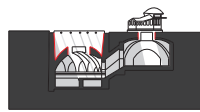
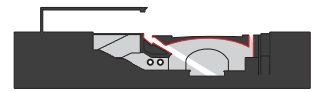
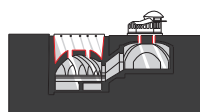
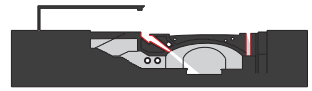
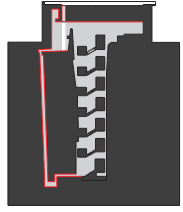
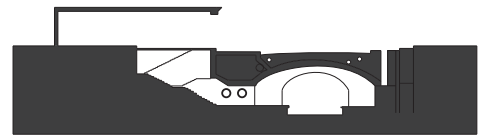
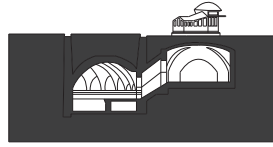
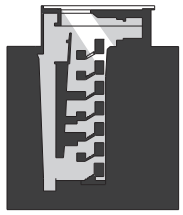


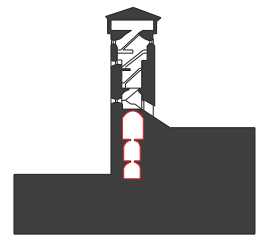
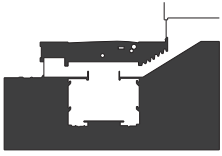
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-  CIVIC CENTER

-  GOVERNMENTAL
-  UNIVERSITY
-  GENERAL SERVICES

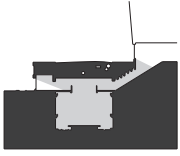








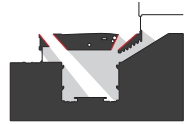
GENERAL CONDITION



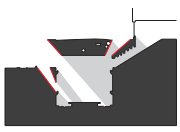
THICK



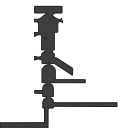
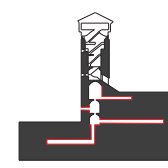
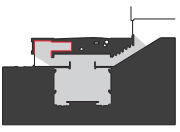
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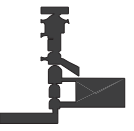
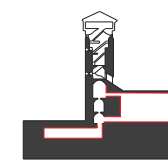
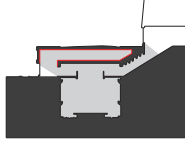
MINIMAL INTERVENTION



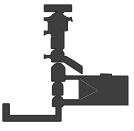
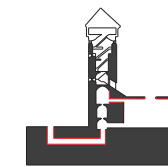
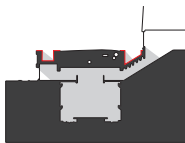
MAXIMUM INTERVENTION



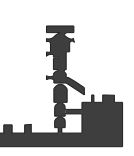
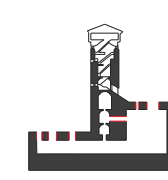
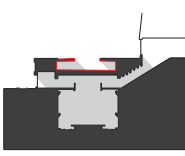
MINIMUM OCCUPATION



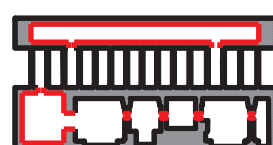
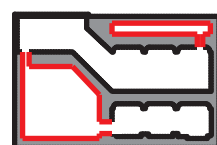
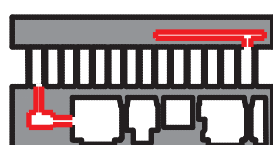
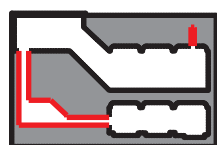
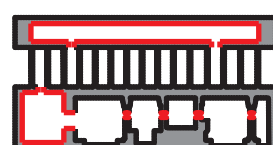
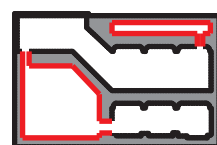
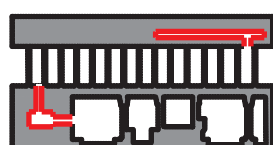
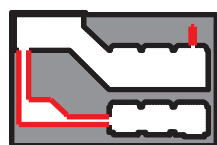
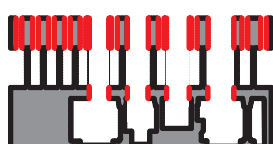
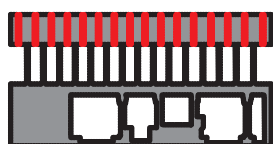
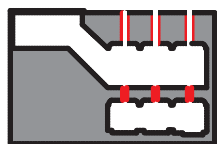
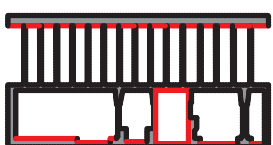
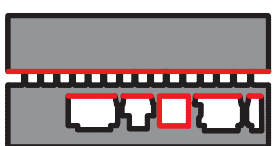
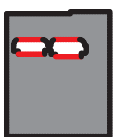
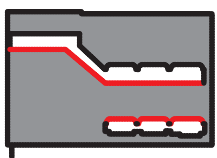
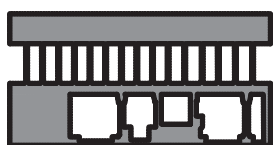
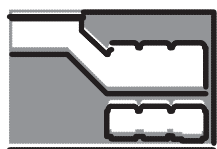
MAXIMUM OCCUPATION



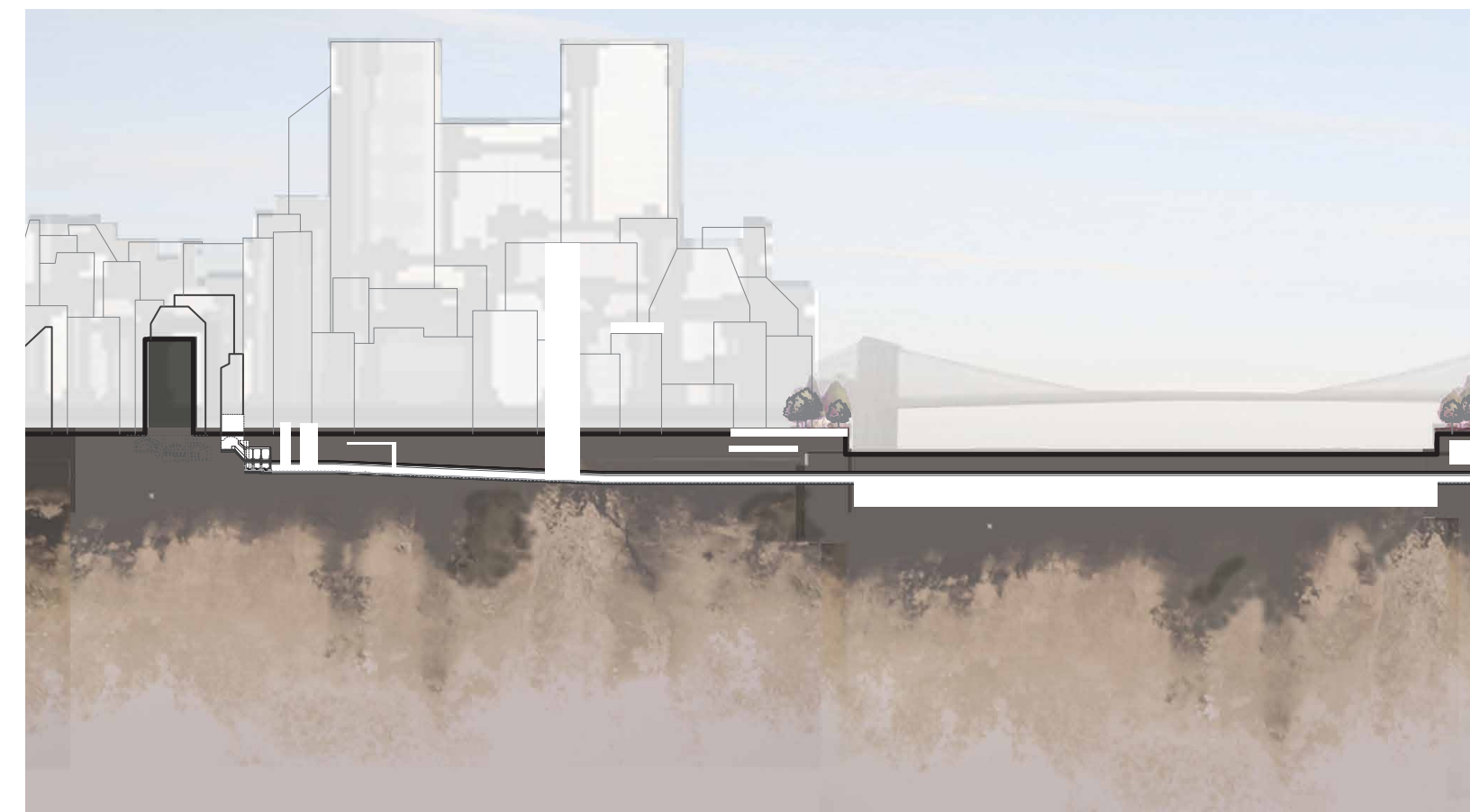
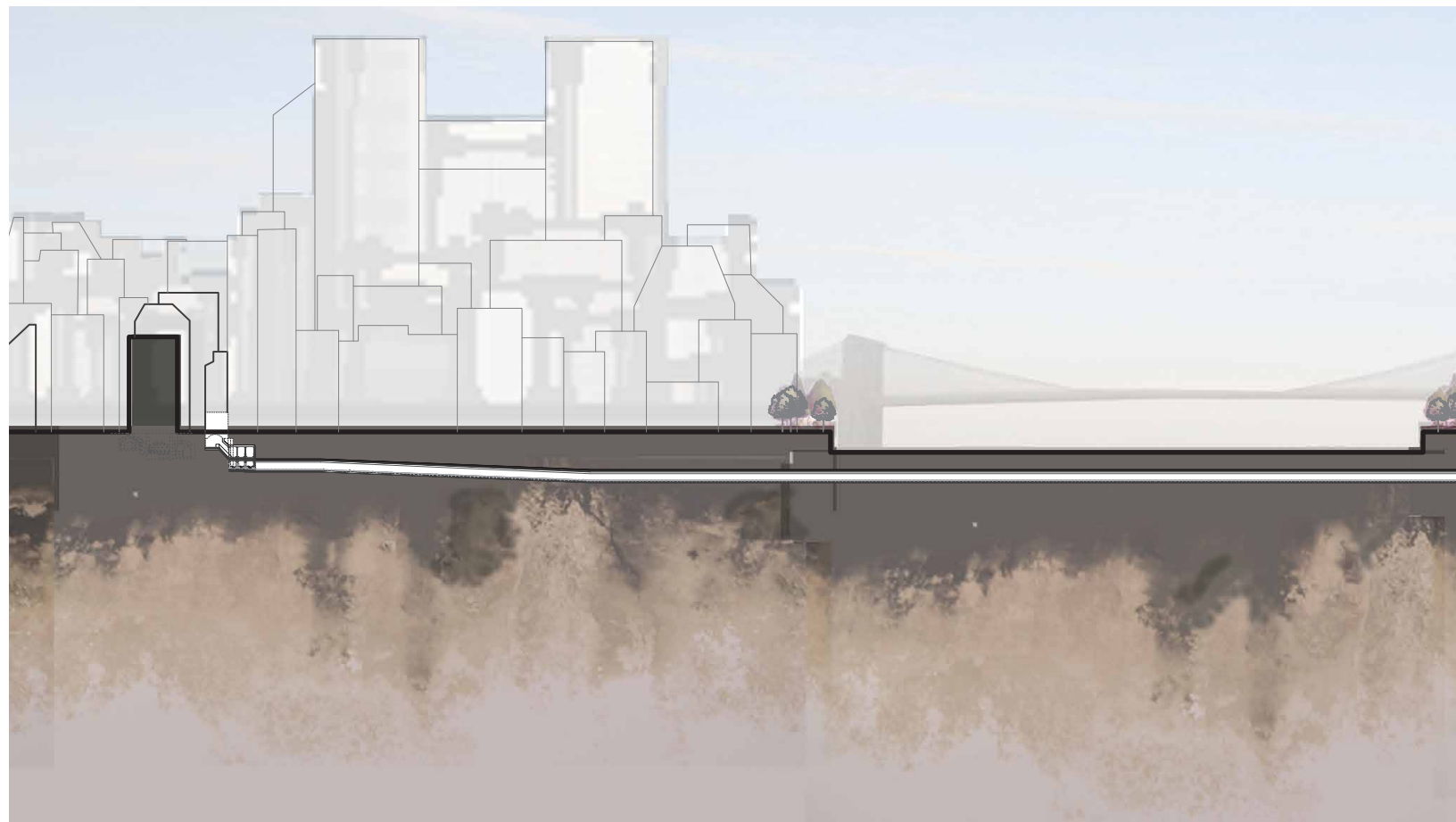
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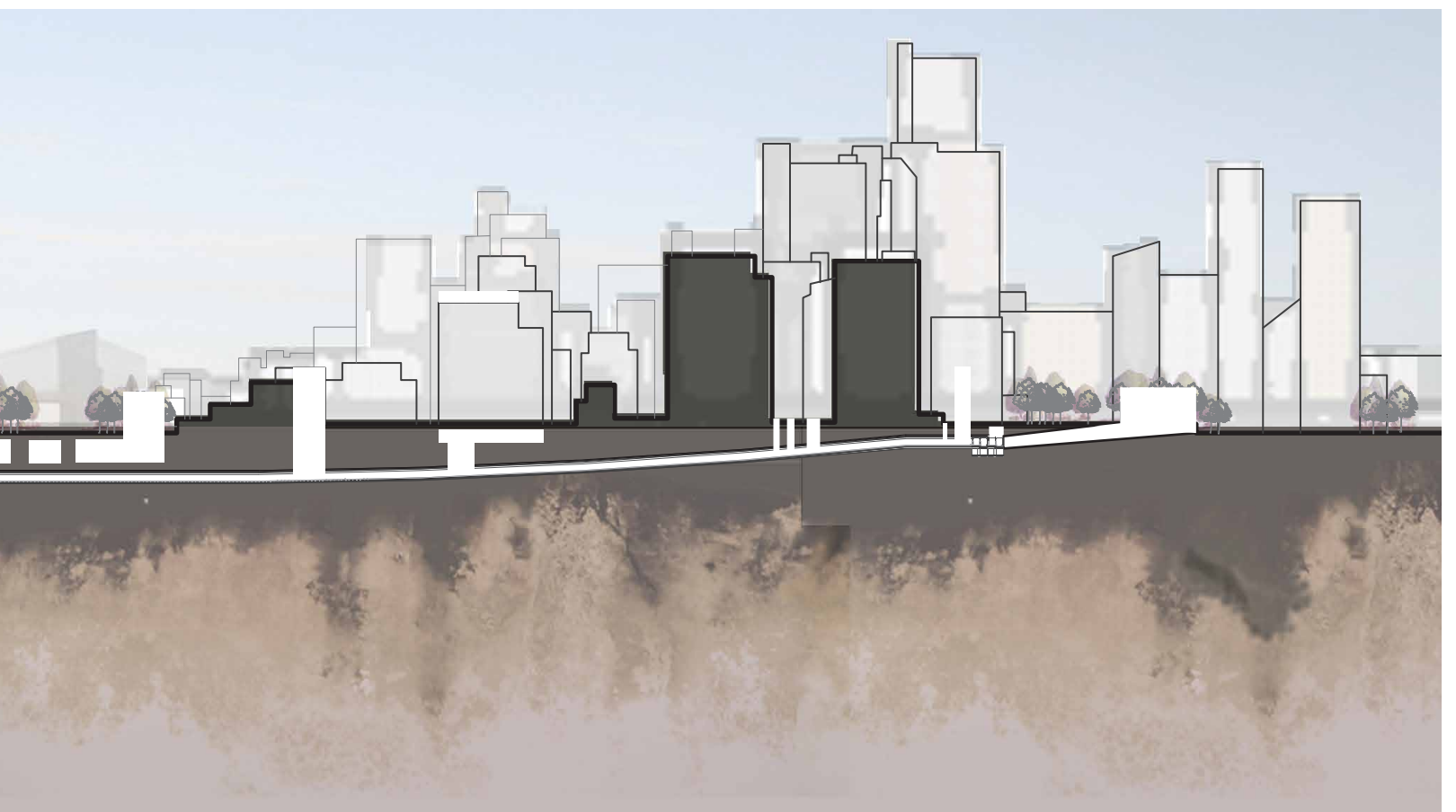
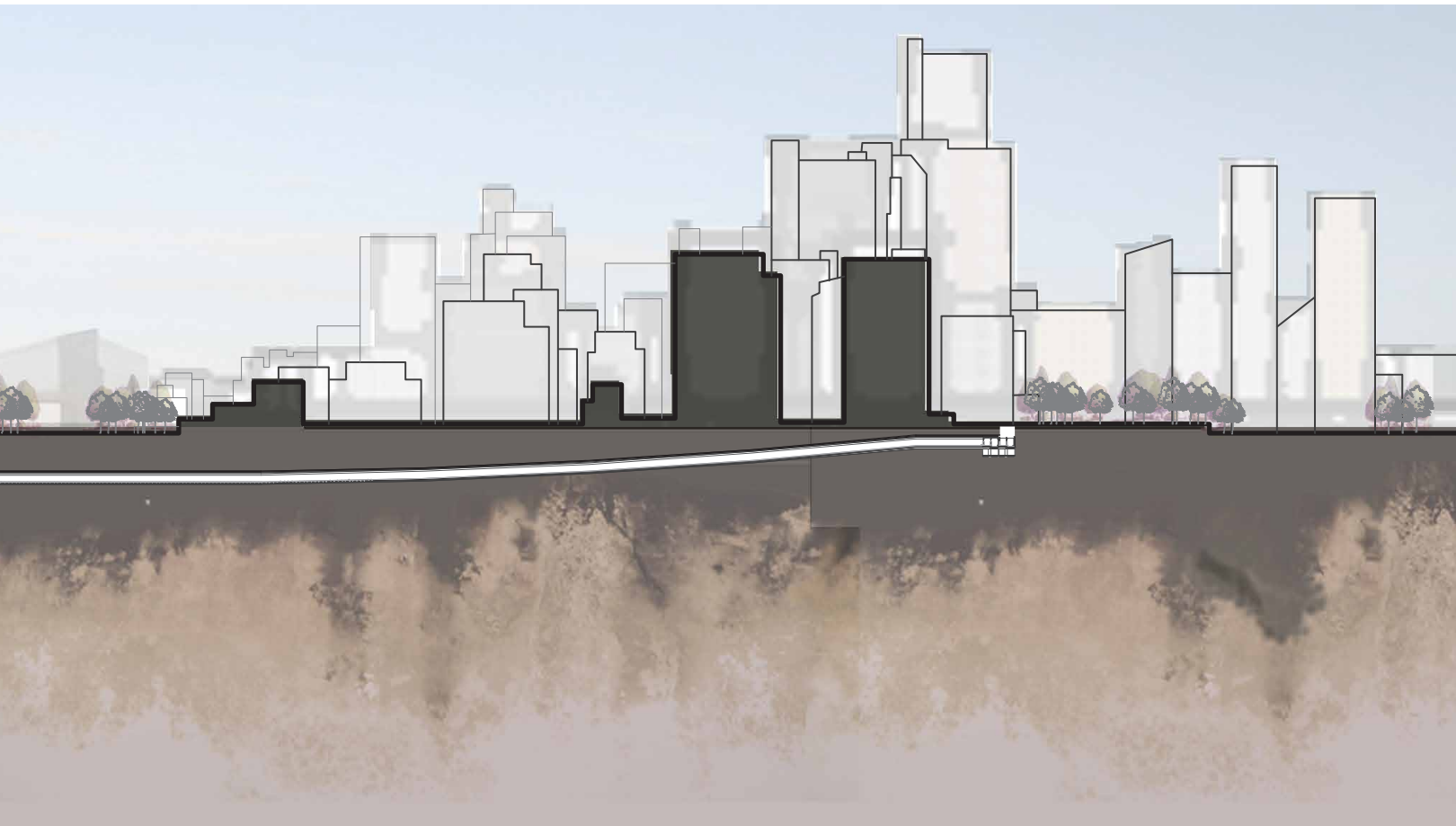


SURFACE OCCUPATION

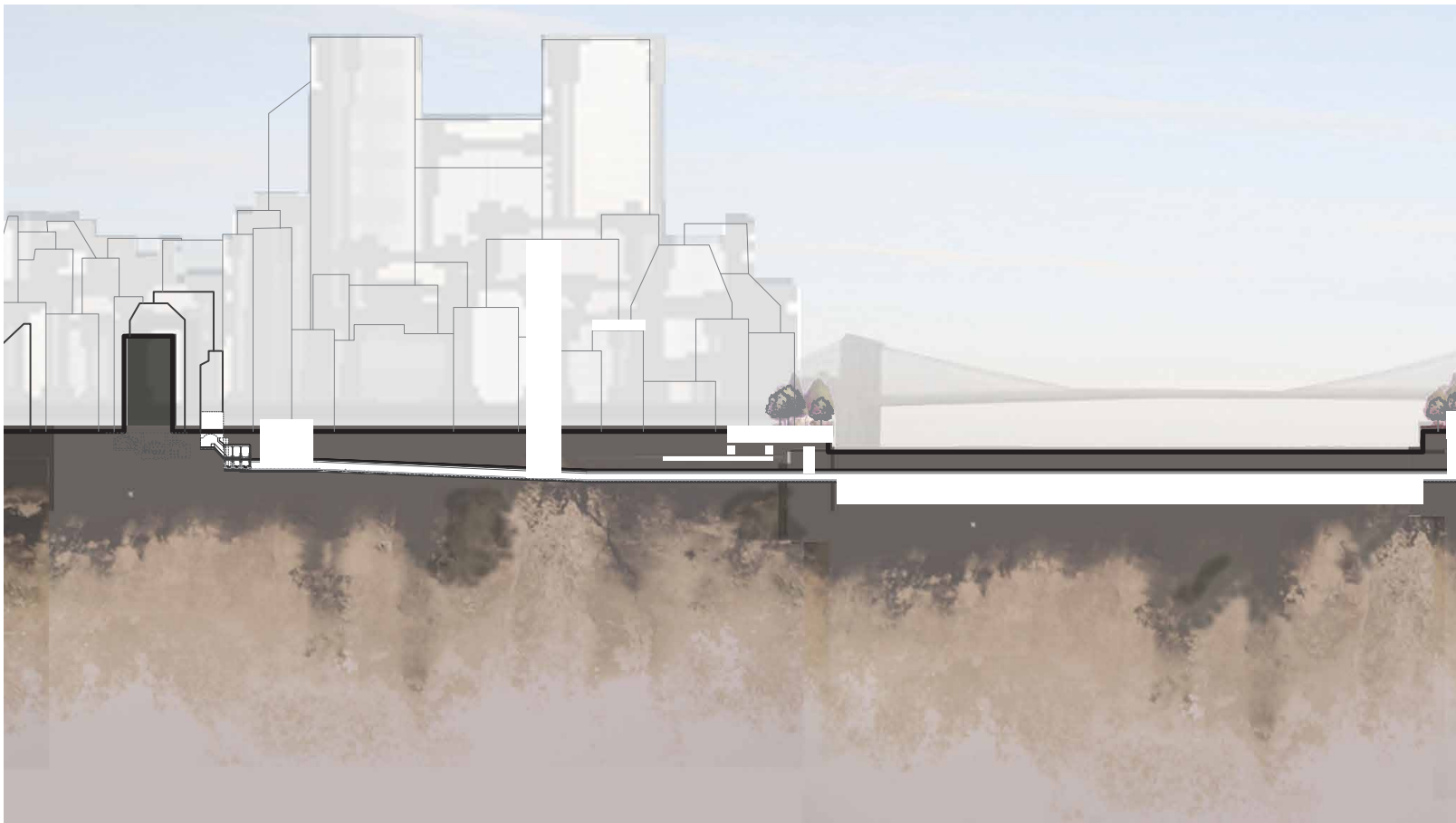
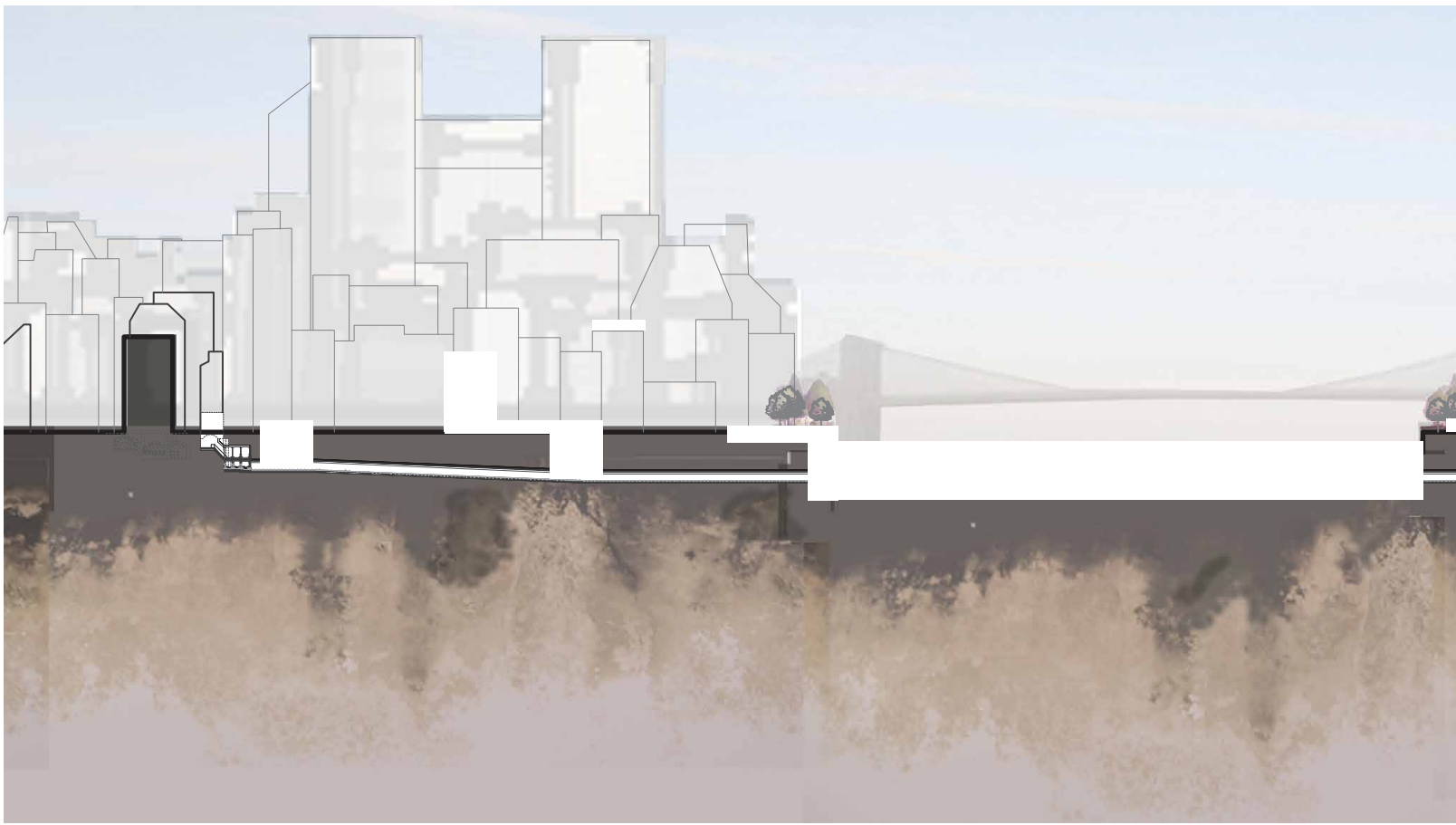


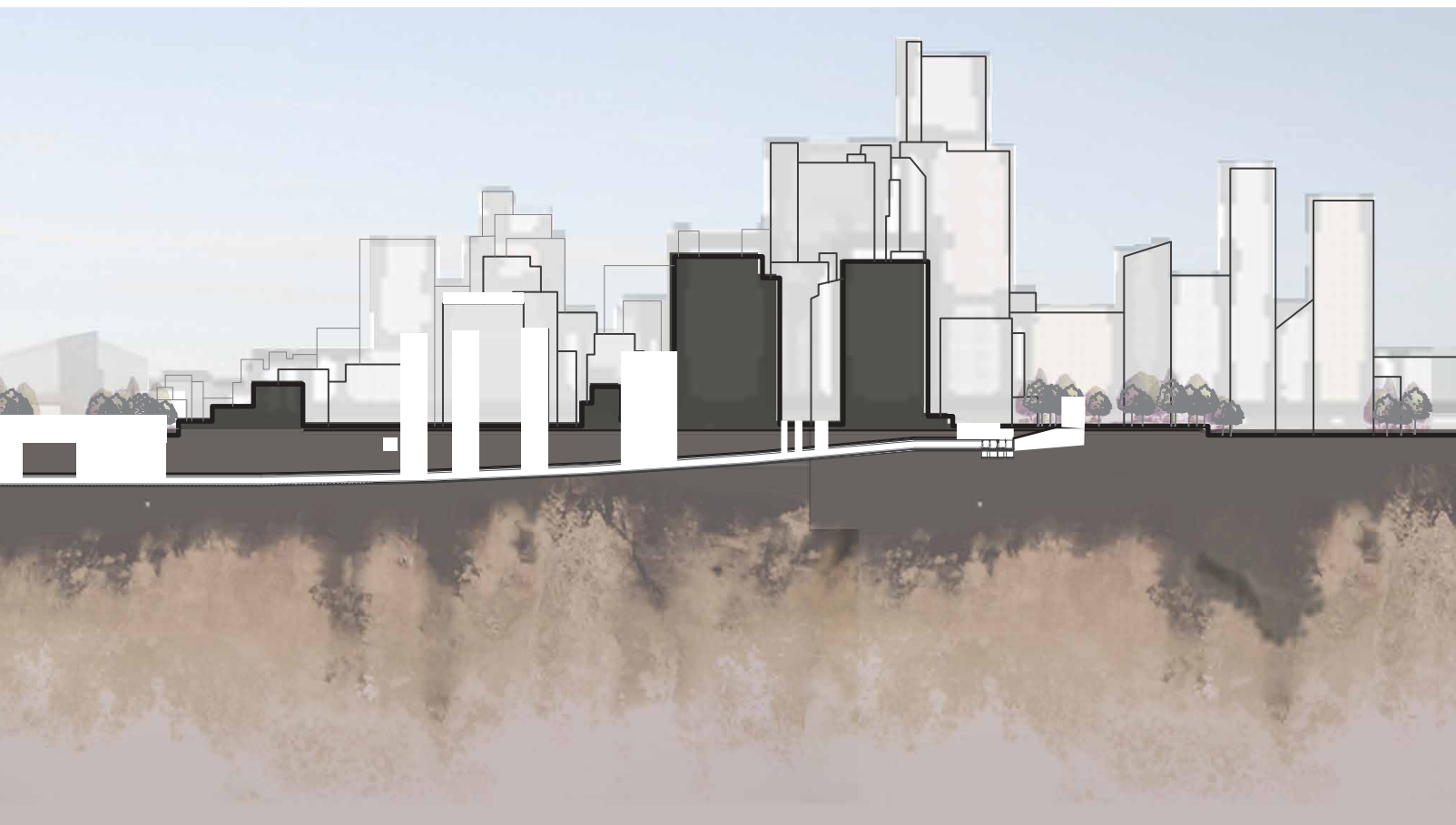
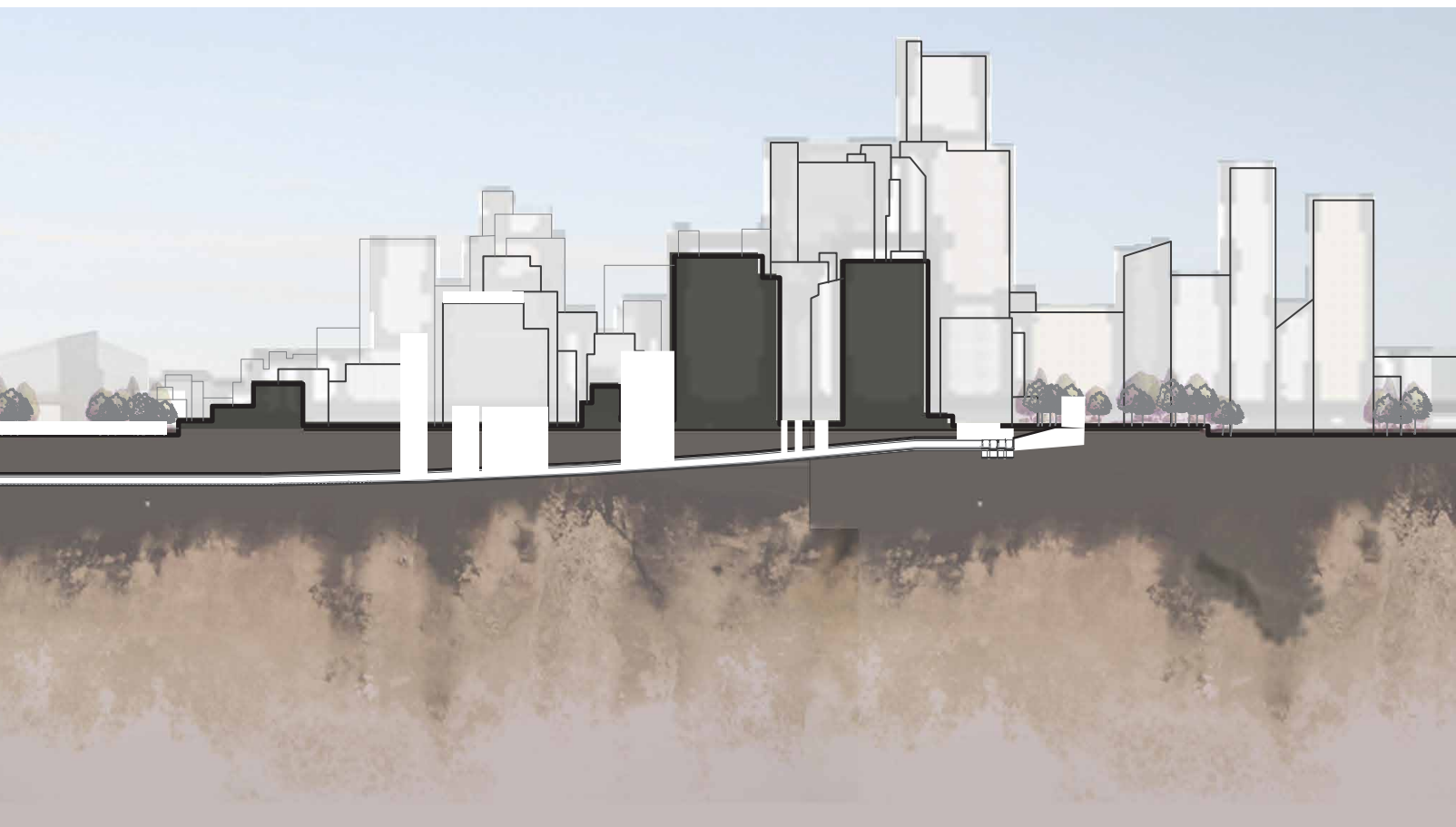




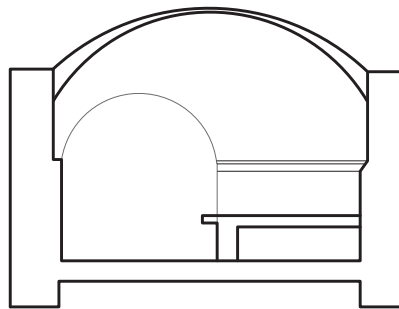
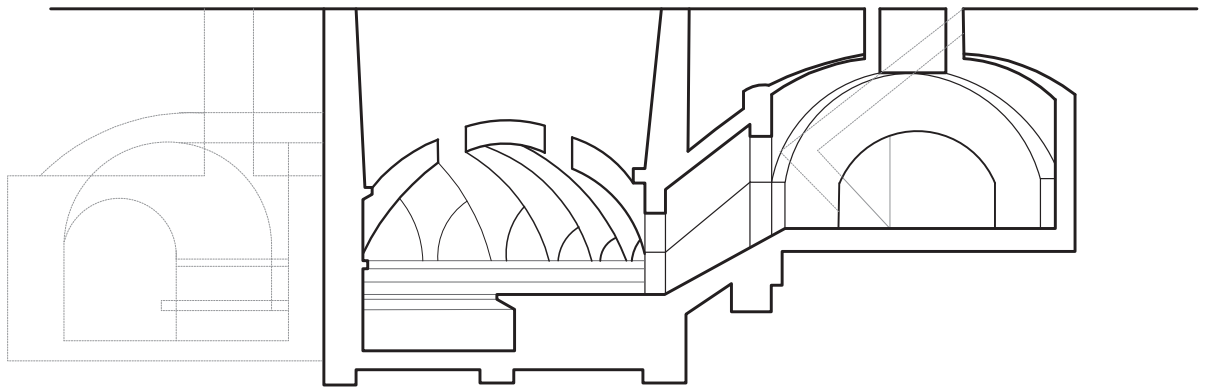
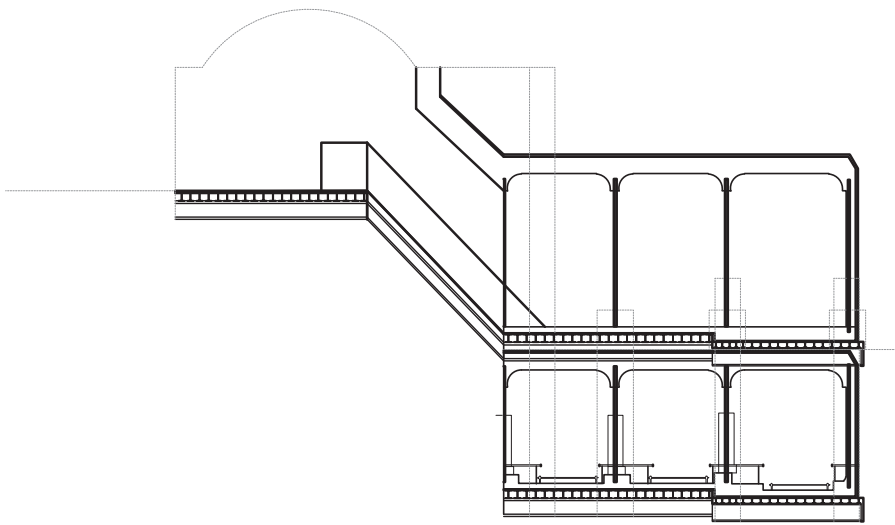


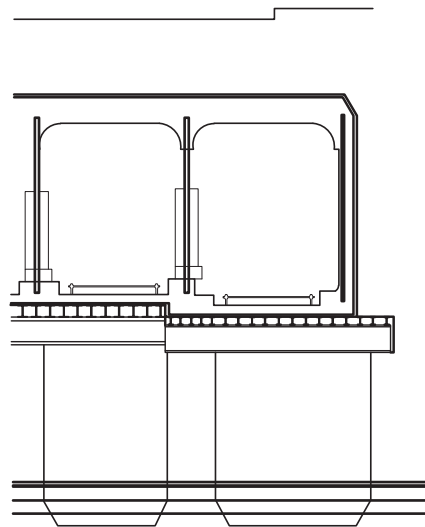
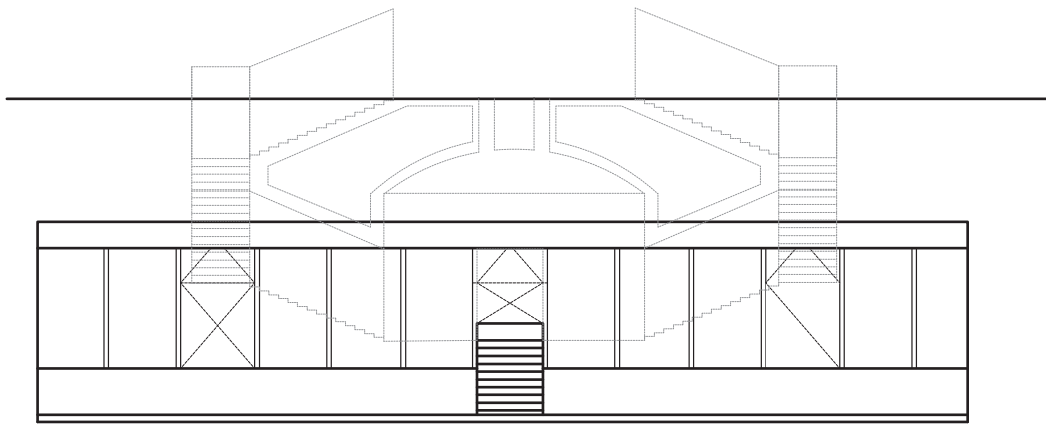
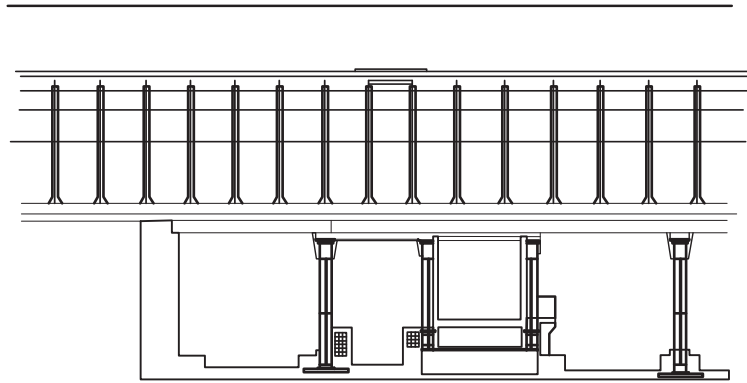
WASTE / DESTRUCTION / INFRASTRUCTURE / ABANDONED / NETWORK

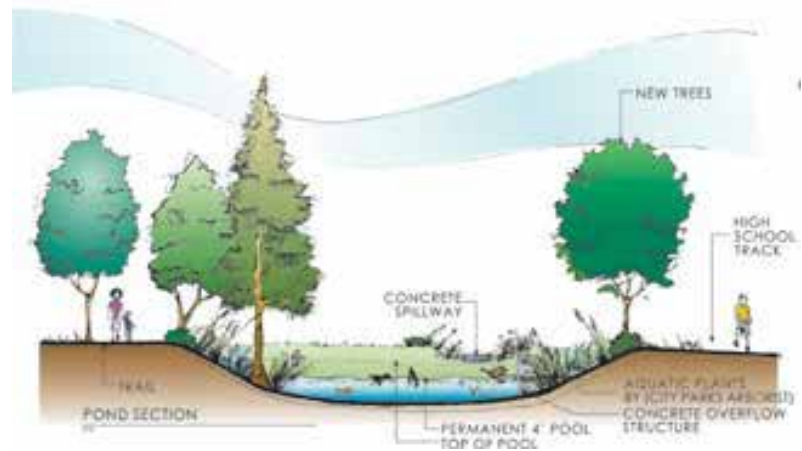




WASTE / DESTRUCTION / INFRASTRUCTURE / ABANDONED / NETWORK

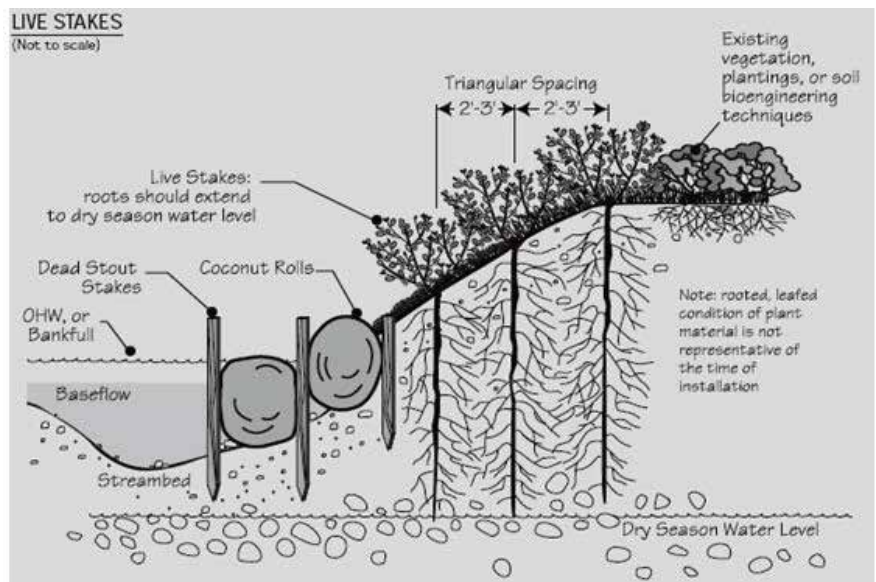






RETENTION

The retention materials consist of a combination of stone, plantings, heavy soil and a form of concrete or wood. These materials already exist within the area. The natural materials would be continued from the surface and combined with what is below. This technique allows for the creation of storage areas for the excess of rain water. These areas can be combined with other programs and benefit not only the city but also whats adjacent.

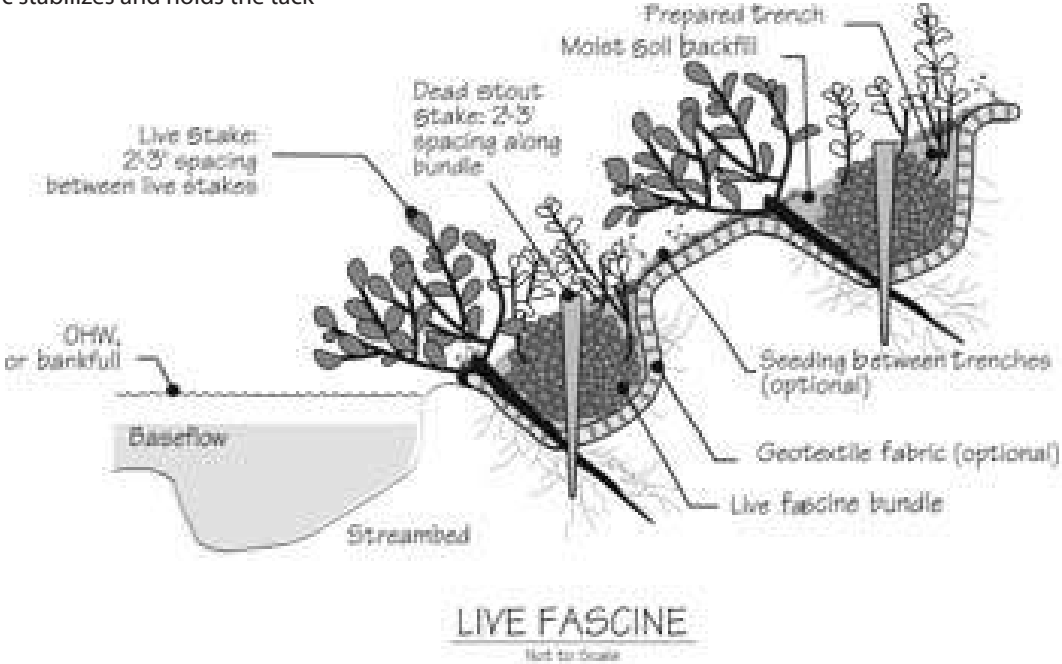
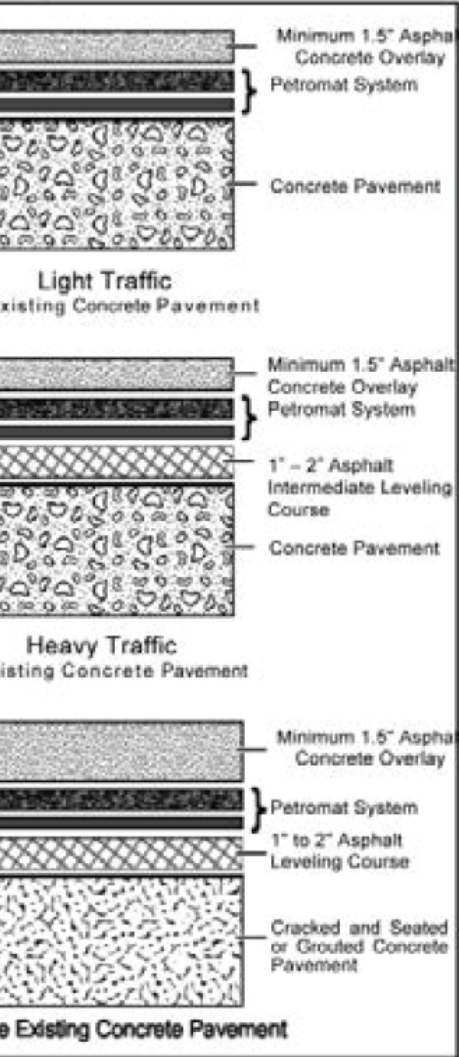


Green Concrete

Green concrete, is a material which has an effective ph level. Moss or algae is able to grow on the concrete as it is exposed to moisture and the elements. This is a biological concrete material that will allow building construction to temperate climate, regulate the air moisture, and increase the air quality of the structure.

Geo-Textile Paving Fabric

Enhances the performance of asphalt. First, it acts as a stress absorbing interlayer to retard the progression of cracks up through an overlay. Second, the Geo-Textile forms a moisture barrier to limit infiltration of water through the pavement and into the base and subgrade materials. With less exposure to moisture, the base and subgrade become stronger, increasing the support provided to the pavement and improving pavement performance. The asphalt cement tack coat used in installation of the paving fabric provides the waterproofing and the paving fabric stabilizes and holds the tack coat in place.



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