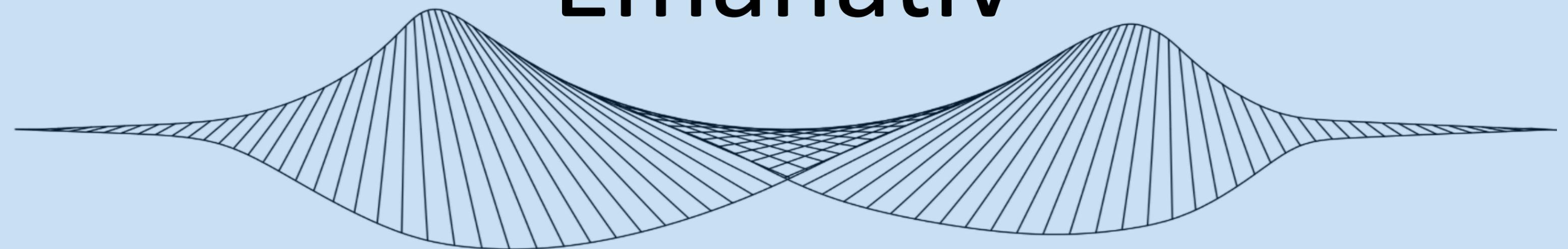
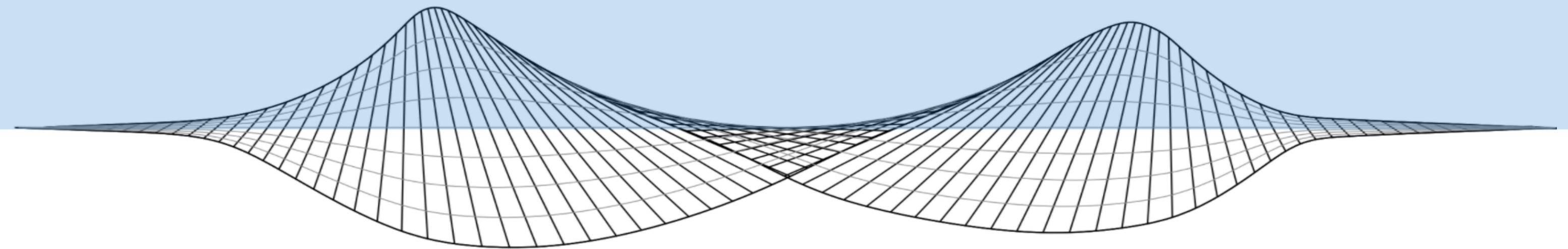


Emanativ

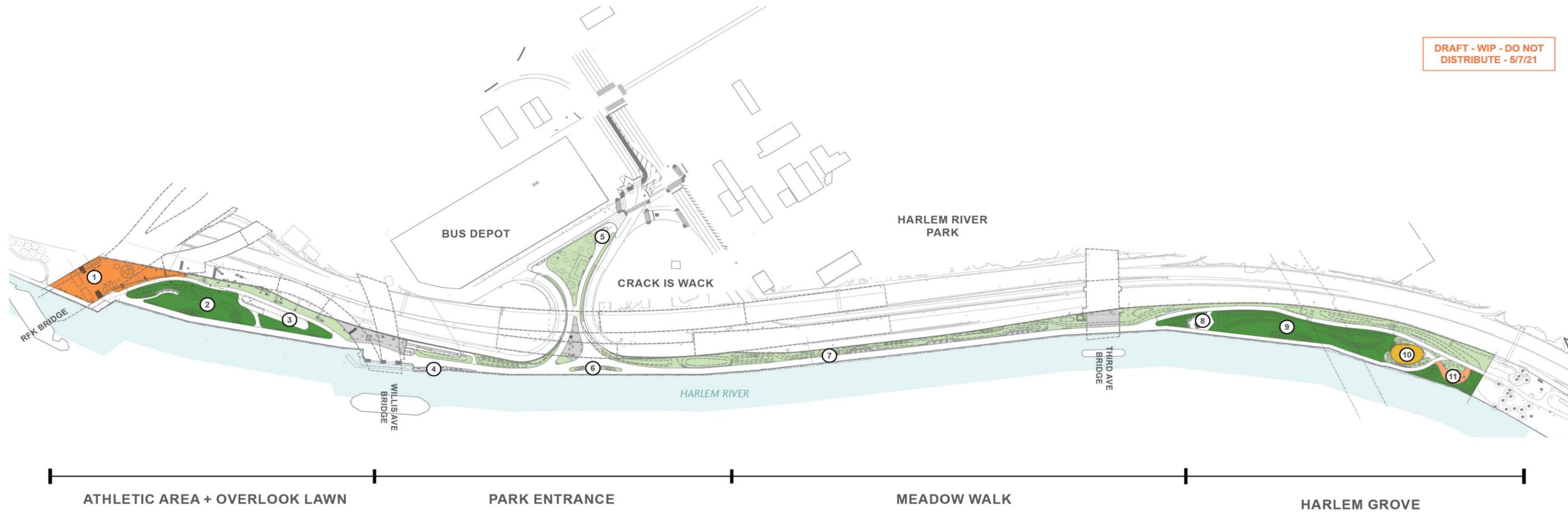


A Public Art Project for the Manhattan Greenway Harlem River
by Eto Otitigbe



Location Plan

DRAFT - WIP - DO NOT
DISTRIBUTE - 5/7/21



- | | |
|------------------------------|-------------------|
| 1. ADULT FITNESS AREA | 8. PUBLIC ARTWORK |
| 2. SOUTH LAWN | 9. NORTH LAWN |
| 3. TBTA BIKE RAMP LANDING | 10. PLAYGROUND |
| 4. OVERLOOK | 11. BBQ AREA |
| 5. ENTRANCE PLAZA | |
| 6. STONE BLOCK SEATING AREA | |
| 7. MEADOW WALK / SHARED PATH | |



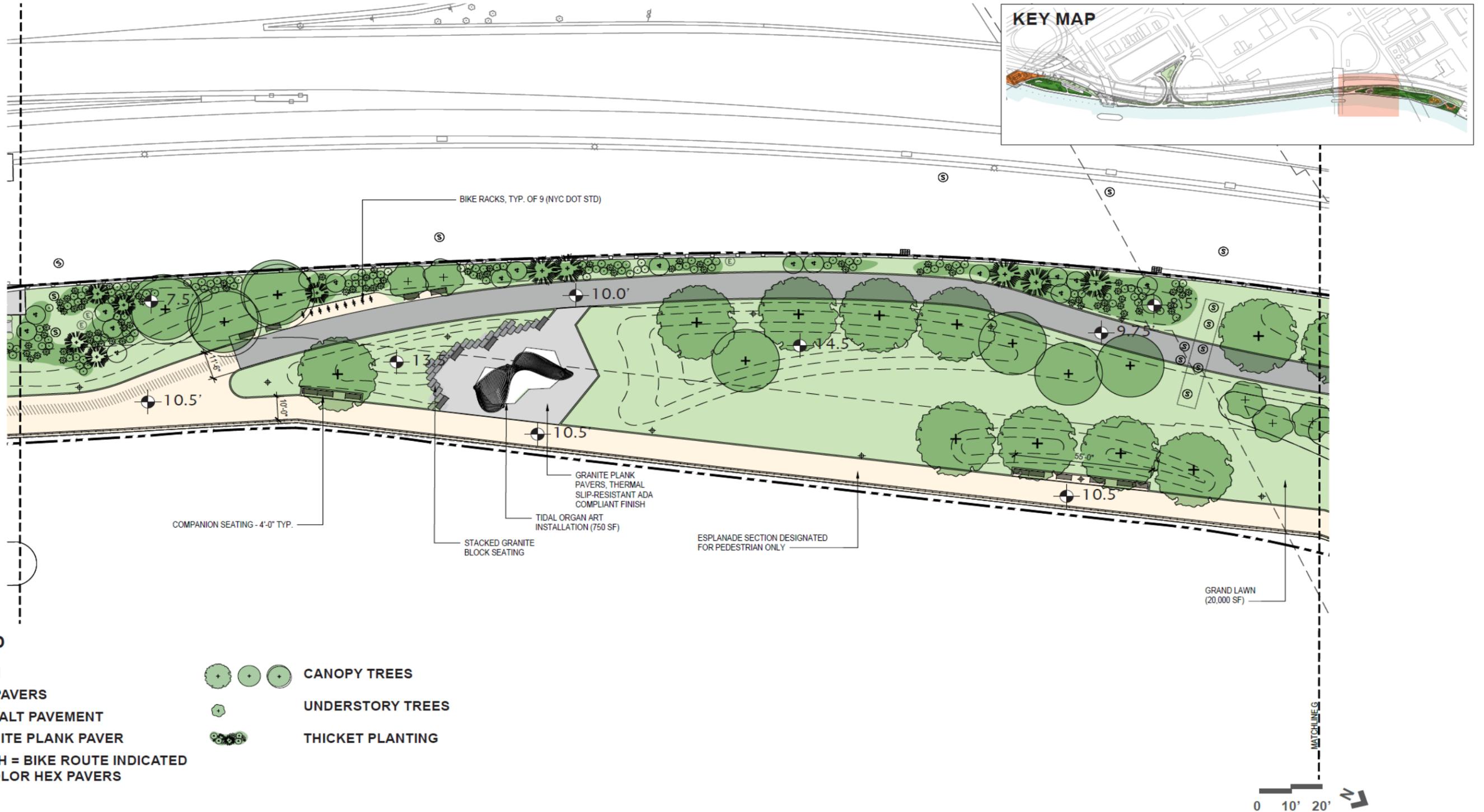
MANHATTAN GREENWAY HARLEM RIVER | Conceptual Diagram



SHEET 22 / 58

Site Plan – Previous Iteration 07/06/2021

7/6/21



MANHATTAN GREENWAY HARLEM RIVER – PUBLIC ART UPDATE

2 September 13, 2021

Emanativ – A Public Art Project for the Manhattan Greenway Harlem River
Do Not Distribute - PDC Concept Submission 09-13-2021



Renderings – Previous Iteration with Raised Stone Platform 07-06-2021



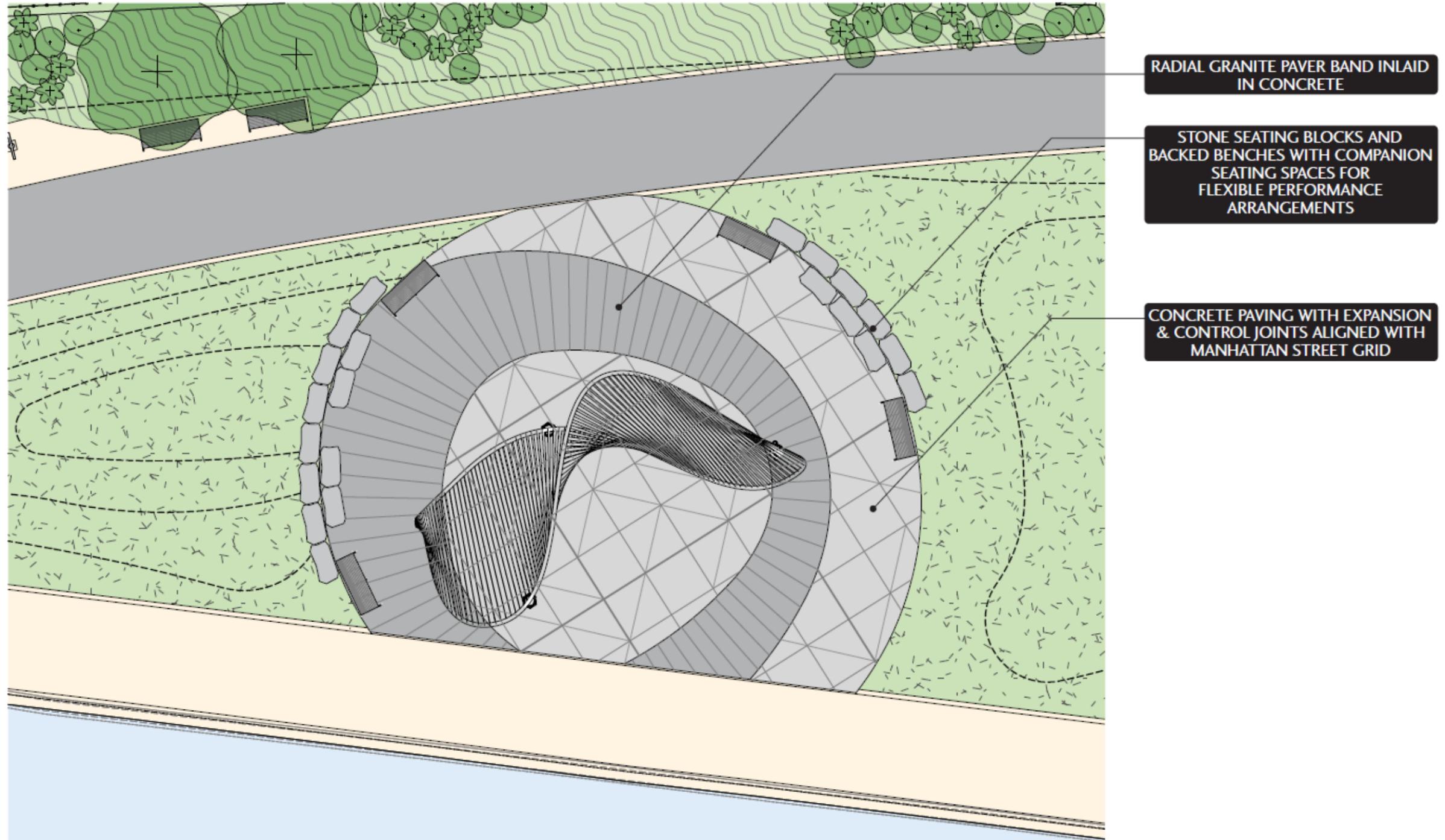
MANHATTAN GREENWAY HARLEM RIVER – PUBLIC ART UPDATE

3 September 13, 2021



Renderings – Revised Site Design

- Replace raised stone “platform” with granite pavers that echo the design of the wave canopy.
- Integrates geometry of artwork with overall site, creating stronger relationship between artwork and landscape.
- More inviting and interactive experience.
- Enhances the effect of cast shadows on ground from wave canopy.
- Seating and inlaid design create an amphitheater instead of a stage.



Renderings – Revised Design



MANHATTAN GREENWAY HARLEM RIVER – PUBLIC ART UPDATE

5 September 13, 2021



Renderings – Revised Design



MANHATTAN GREENWAY HARLEM RIVER – PUBLIC ART UPDATE

6 September 13, 2021



Materials – Paving

COLORS AND PRECEDENTS



- Granite paving shown as representative range of available colors
- Pavers to be custom cut by stone fabricator and set flush with surrounding jointed concrete



Agate



Mesabi Black®



Lake Placid Blue®



Lake Superior Green®

Lighting Concepts Overview

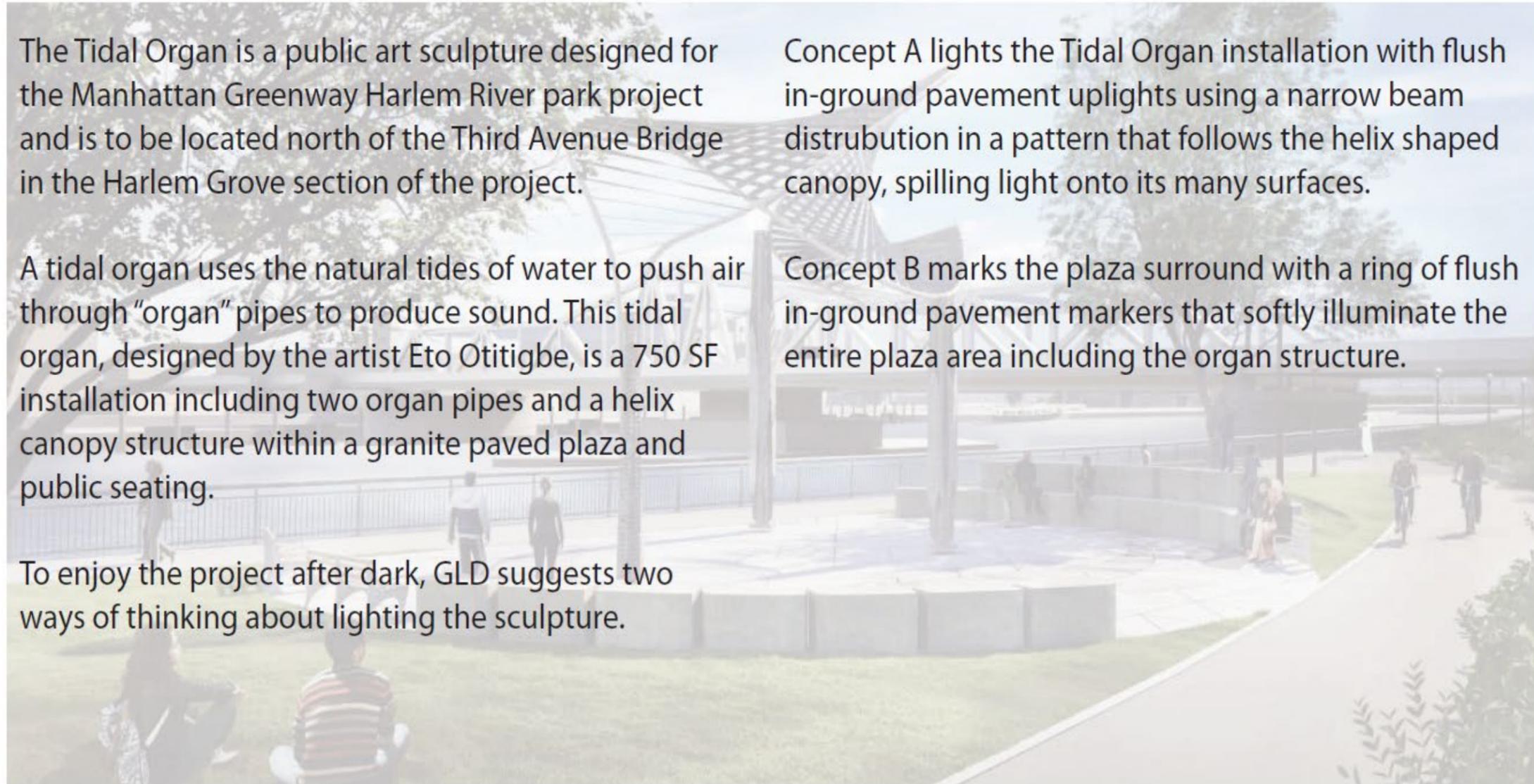
The Tidal Organ is a public art sculpture designed for the Manhattan Greenway Harlem River park project and is to be located north of the Third Avenue Bridge in the Harlem Grove section of the project.

A tidal organ uses the natural tides of water to push air through "organ" pipes to produce sound. This tidal organ, designed by the artist Eto Otitigbe, is a 750 SF installation including two organ pipes and a helix canopy structure within a granite paved plaza and public seating.

To enjoy the project after dark, GLD suggests two ways of thinking about lighting the sculpture.

Concept A lights the Tidal Organ installation with flush in-ground pavement uplights using a narrow beam distribution in a pattern that follows the helix shaped canopy, spilling light onto its many surfaces.

Concept B marks the plaza surround with a ring of flush in-ground pavement markers that softly illuminate the entire plaza area including the organ structure.



Goldstick Lighting Design

www.goldsticklighting.com

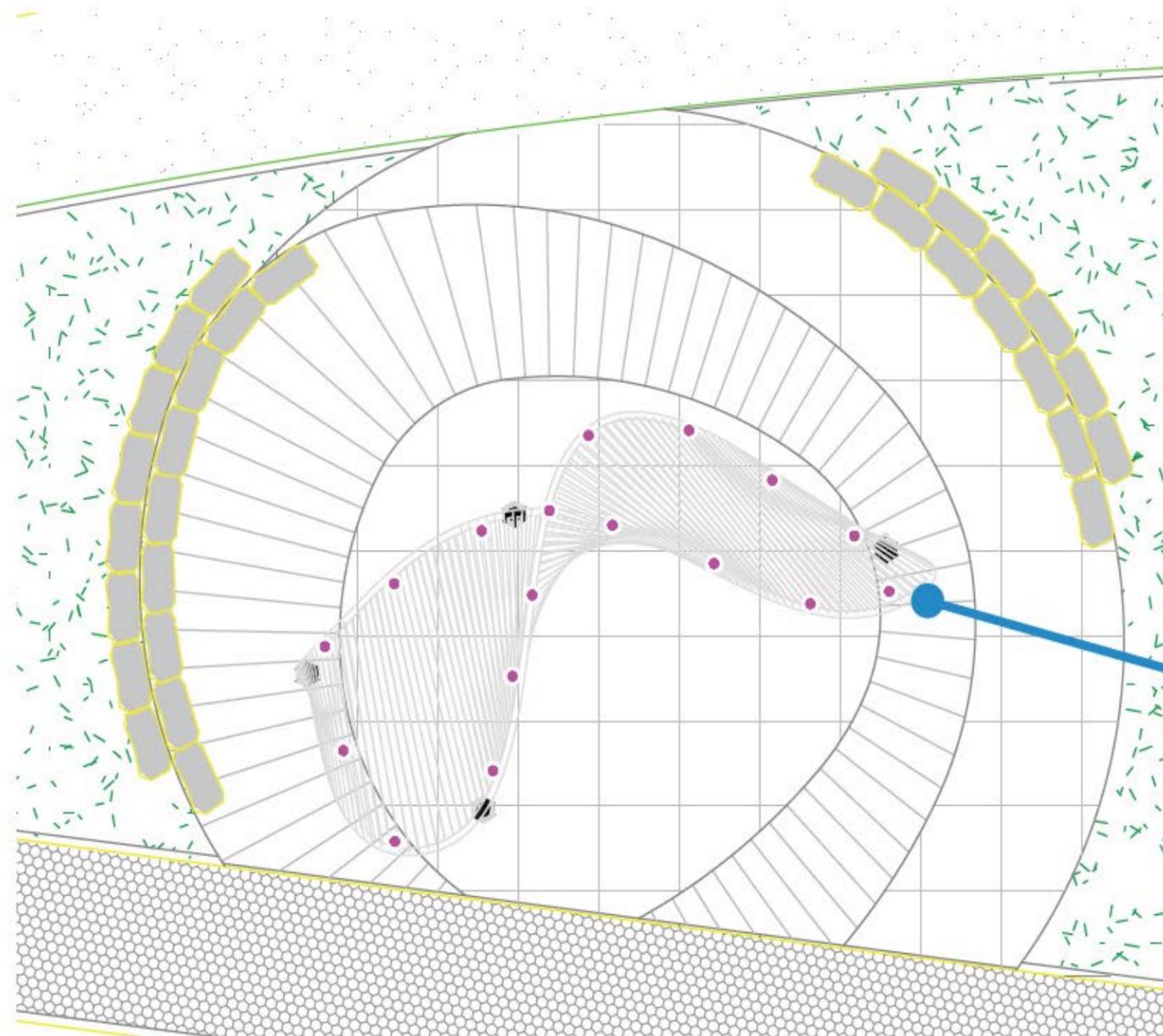
Lighting Concept

Lighting Concept A

Flush In-ground LED Uplights Below Canopy

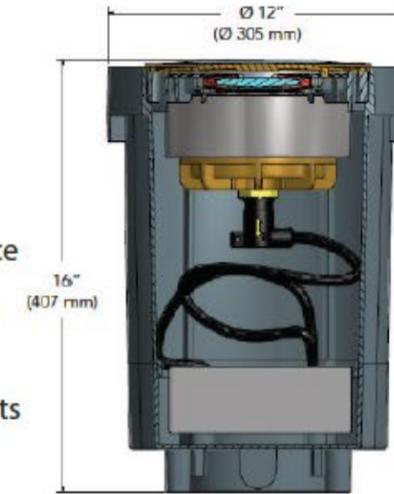
Tidal Organ - Civic Art Project

September 9, 2021



Fixture Specs:

- Quantity - 17 pieces
- Flush to Pavement
- Approximately 12" OD
- Approximately 16" Deep
- Clear Lens - Slip Resistant
- Adjustable / Aimable LED Source
- 10 degree Beam Spread
- Honeycomb Louver
- Approximately 30 Watts
- IP68 Factory Sealed Components
- Over 29 year life



Goldstick Lighting Design

www.goldsticklighting.com

Lighting Concept A

Flush In-ground LED Uplights Below Canopy

Tidal Organ - Civic Art Project

September 9, 2021



ORALOG NUMBER _____
 NOTES _____
 TYPE _____



M9700C In-Grade Luminaire

HIGHLIGHTS

- Factory-sealed LED lamp module and encapsulated power module
- Optical and mechanical aiming with an optional double lens
- Optimal efficiency through photometric improvements
- Color temperature: 27K - 50K
- In-line & 0-10V Dimming
- Flow-through technology



IP68



Specifications	SINGLE LENS	DOUBLE LENS
Length:	12"	12"
Width:	305 mm	305 mm
Height:	16"	16"
	407 mm	407 mm

Stamford Media Village with Concept A narrow beam uplights

Goldstick Lighting Design

www.goldsticklighting.com

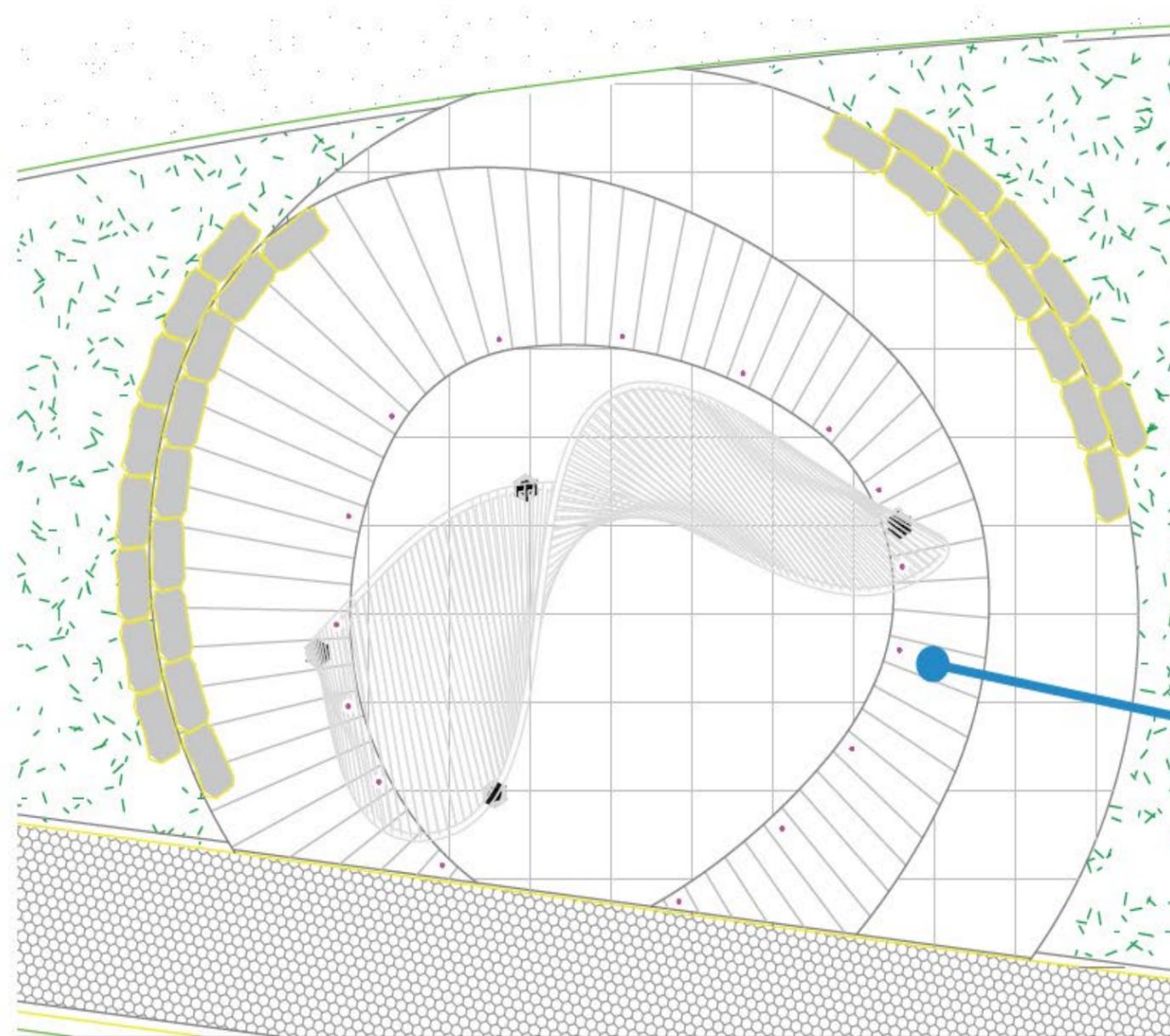
Lighting Concept

Lighting Concept B

Flush In-ground LED Pavement Markers in Plaza Surround

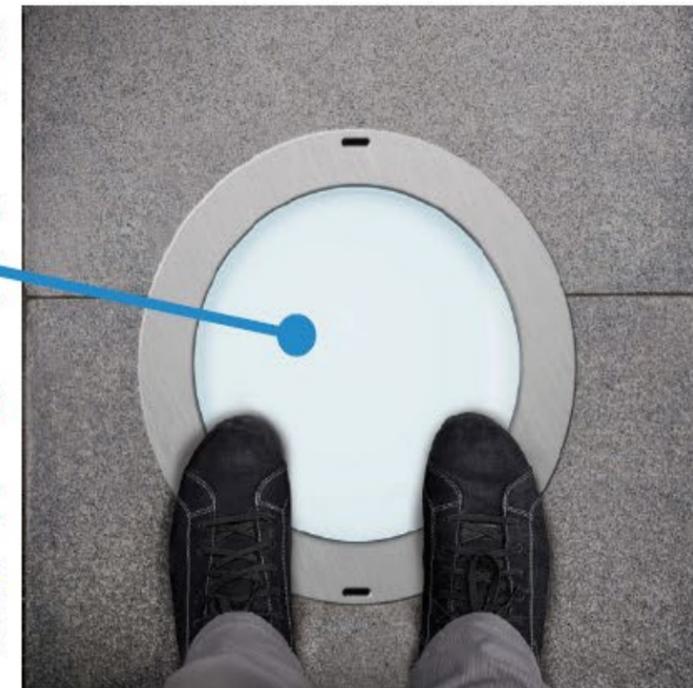
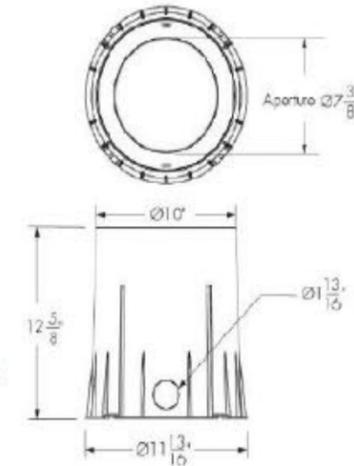
Tidal Organ - Civic Art Project

September 9, 2021



Fixture Specs:

- Quantity - 16 pieces
- Flush to Pavement
- Approximately 8" OD
- Approximately 12" Deep
- Frosted Lens - Slip Resistant
- LED Source
- Flood Beam Spread
- Approximately 30 Watts
- IP68 Factory Sealed Components
- Over 29 year life



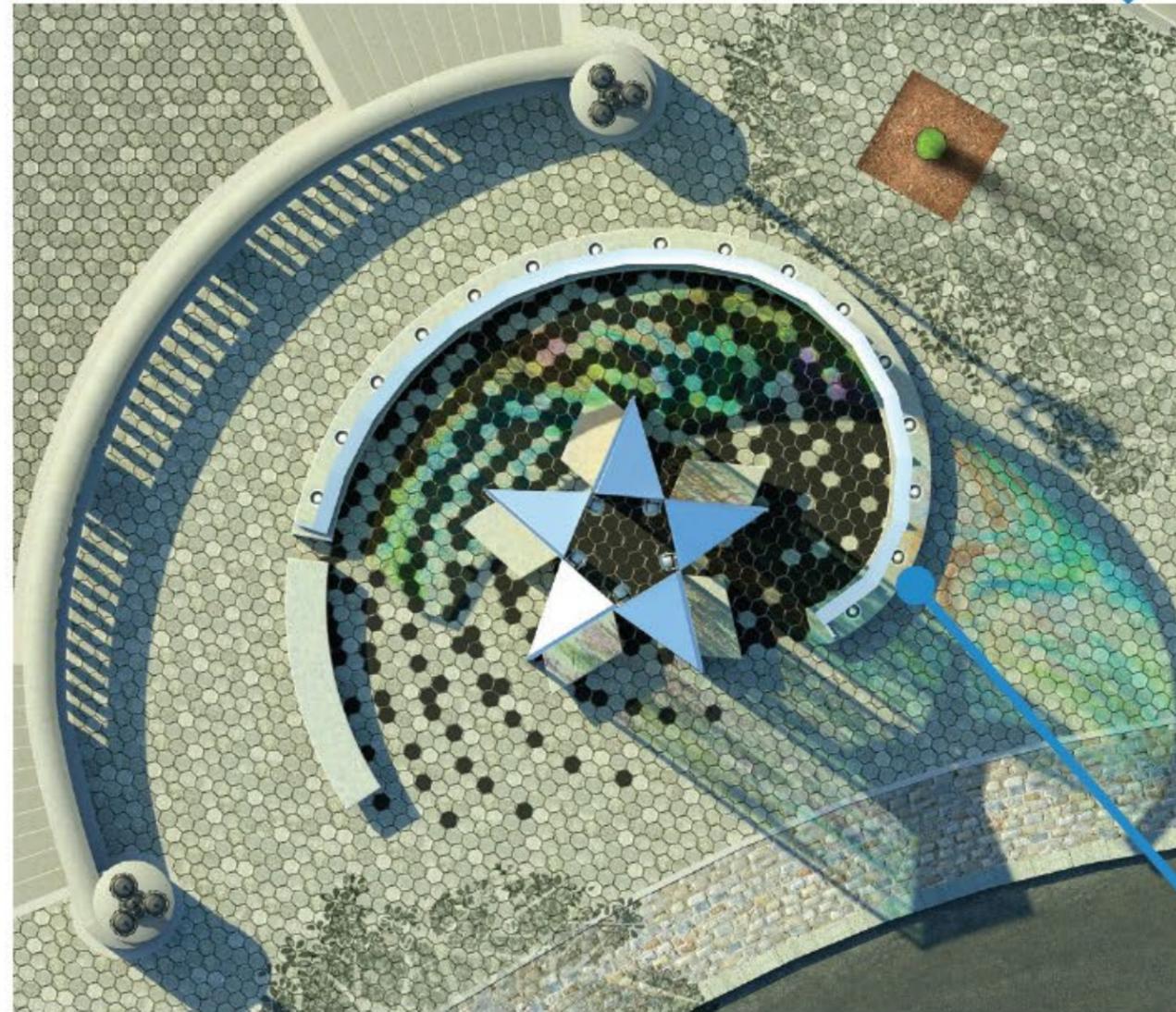
Goldstick Lighting Design

www.goldsticklighting.com

Lighting Concept

Lighting Concept B

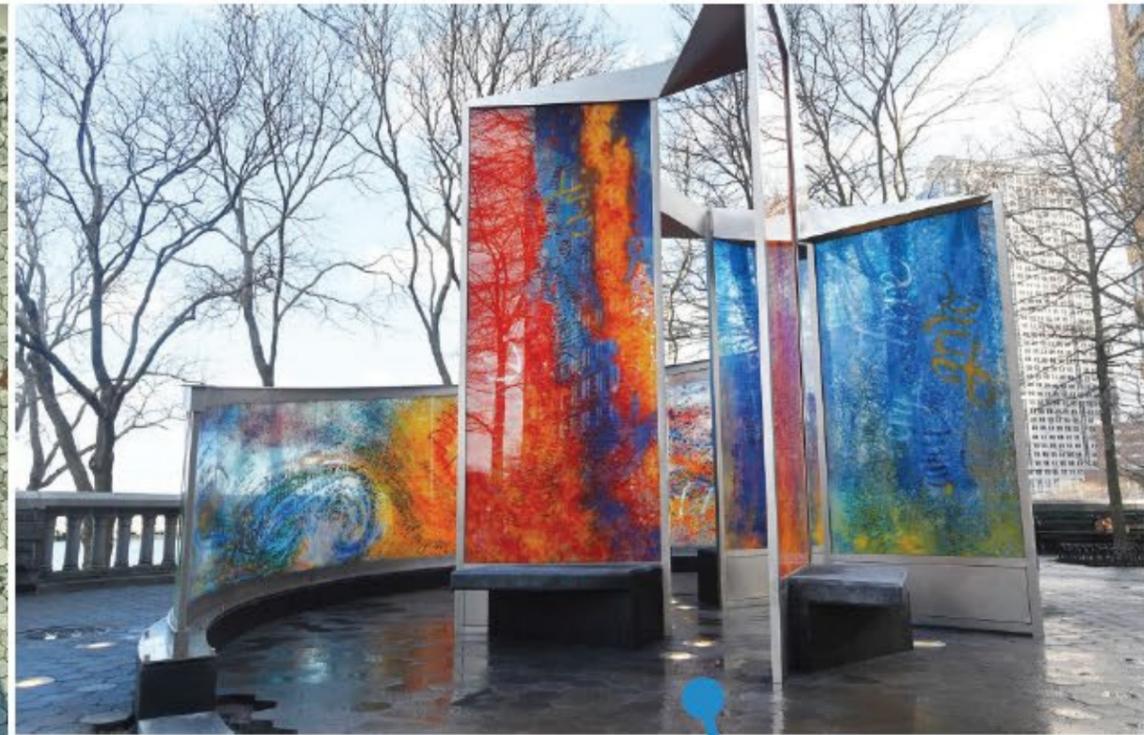
Flush In-ground LED Pavement Markers in Plaza Surround



Hurricane Maria Memorial with Concept B frosted lens marker lights

Tidal Organ - Civic Art Project

September 9, 2021

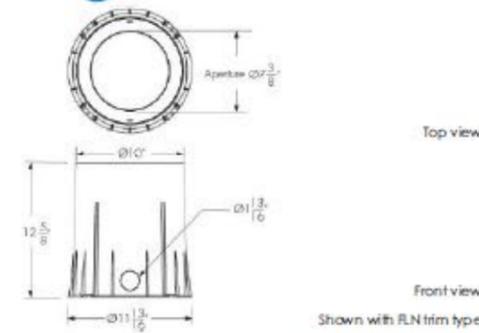


Specification Sheet

lumenbeam
Inground Large Direct View
LBI LD
WHITE AND STATIC COLORS

Project Name _____ Qty _____

Type _____ Catalog / Part Number _____



Goldstick Lighting Design

www.goldsticklighting.com

Lighting Concept

Power Options

Electricity from Utility Company or Solar Panel

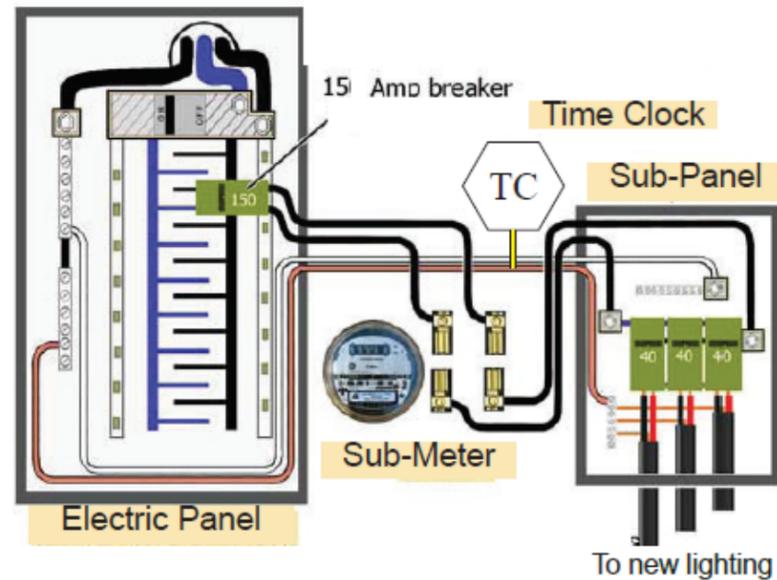
Power Consumption:

17 inground LED light fixtures X 30W/fixture = 510W = 0.51KW

Hours : dusk to 2 am average 7.5 hours/day X 365 days/year = 2,737.5 hours/year

KWH: 2,737.5 hours X 0.51KW = 1,396 KWH year (3.83 KWH day)

Consumption: 1,396 KWH X \$0.21/KWH = \$294 per year



Utility Power:

- * Sub-meter from existing electrical panel.
- * One circuit
- * Time clock control

Tidal Organ - Civic Art Project

September 9, 2021

Solar Panel Sizing:

3.5 hours average peak sunlight/day

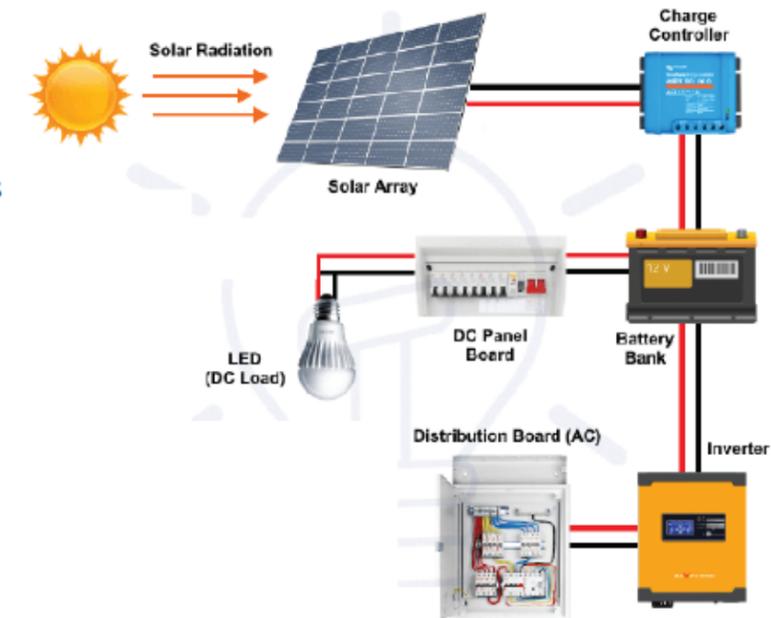
(Daily KWH / average peak sunlight hours) x 1.15 efficiency factor

(3.83 KWH / 3.5 sun hours) X 1.15 = 1.3KW DC solar system size required (1300W)

(4) 325W solar panels - dimensions: 66" X 40" (Can be multiple smaller panels with same area)

Solar Power:

- * Locating (4) 66"X40" solar panel arrays
- * Additional components
- * Self sustaining



Goldstick Lighting Design

www.goldsticklighting.com

FIXTURE SPECIFICATIONS & COSTS

Fixture Specifications:

- Walk over compliant up to 1000kg (2200 lbs)
- Drive over compliant up to 5000kg (11,000 lbs) when mounted in concrete footing
- 70% light output reached at 29 years after which LED engine source should be evaluated for replacement
- IP68 watertight rated for wet locations. Can be submerged up to 3.3 ft for up to 24 hours
- Impact rating IK10, the equivalent of dropping a 10 lb object from 15” above glass lens
- No light bulb - so there is no need to open the fixture for up to 29 years
- Operates from -40F to 122F
- Fiberglass reinforced polymer housing, tempered glass anti-slip lens, brass LED chamber and stainless steel hardware

Fixture Costs:

- Annual electricity cost: \$294
- No special cleaning or maintenance necessary
- Installation to be done by licensed electrician
- One-time installation cost for sub-meter power or solar power in addition to annual electricity use cost
- Solar power components estimated to cost \$5000 - \$7000 initially, with \$500 - \$1000 annual maintenance costs

Maintenance

Sculpture Annual Maintenance

- Organ pipes are fully enclosed in the four towers. The towers contain perforations for the transmission of sound while also preventing debris from entering the pipes.
- The sculpture will have a design book and maintenance guide.
- Each pipe organ tower will have a small lockable access panel. Once opened the panel allows one to access the shut-off-valve and connection-port.

Project Specific Maintenance Fund

- Maintenance Fund to be launched in 2022 prior to installation of project in tandem with education and outreach efforts
- Initial funding goal is \$15,000, which is estimated to fund the maintenance of the sculpture for at least five years
- Maintenance Fund would cover both annual maintenance and repairs along with cost of electricity if using a metered connection
- A public art conservation / restoration service provider would be contracted to administer maintenance services

Coordination with NYC Parks Citywide Monuments Conservation Program (CMCP)

- CMCP launched in 1997 to augment the City's care of its public art collection through private investment and to train the next generation of conservators
- Funds would be administered through the CMCP
- CMCP would work with artist on maintenance and management plan
- Determine annual costs for maintenance based on contractor costs, inflation and prevailing interest rates
- City Parks Foundation acts as fiscal sponsor
- Basic repetitive maintenance tasks could be performed by Parks M&O staff as part of regular duties

Community/ Neighborhood Context

Recent Update:

- **Zane Rodulfo and Eto Otitigbe commissioned by Guggenheim Museum to develop and interactive sculpture using organ pipes and found instruments during Guggenheim's new outdoor art event on October 23, 2021.**
- **Eto Otitigbe awarded Social Practice Grant by CUNY/ Mellon Foundation to explore sound sculpture and civic engagement.**

Community Engagement

Community engagement activities will shift as the project evolves. During the initial stages, activities will focus on introducing the project to community members and making connections with organizations and individuals. After the project is formally approved, the focus will shift to education and outreach in the form of artist talks and panel discussions. Finally, the overall project budget includes an honorarium for three Free Jazz Musicians and a Videographer. The honorarium and filming fees will cover an onsite rehearsal followed by a live recording. The intention is to document the musicians improvising with the sculpture. Free Jazz has a tradition of complex organic improvisation that was sometimes inspired by nature. Musicians: David Durrah - piano, Larry Roland - bass, Harrell Robinson – saxophone

Potential Cultural Partners/ Audience:

- Community Board 11
- National Jazz Museum in Harlem
- Caribbean Cultural Center African Diaspora Institute
- Schomburg Center for Research in Black Culture in Harlem
- Calabar Imports
- Africa Center
- Harlem School of the Arts
- Studio Museum in Harlem
- Harlem Arts Alliance
- CUNY and neighboring public schools

Background Slides

Concept and Physical Description

Emanative - em'a-na'tive (adj.) Proceeding by emanation; issuing or flowing out, as an effect due to the mere existence of a cause, without any activity of the latter.

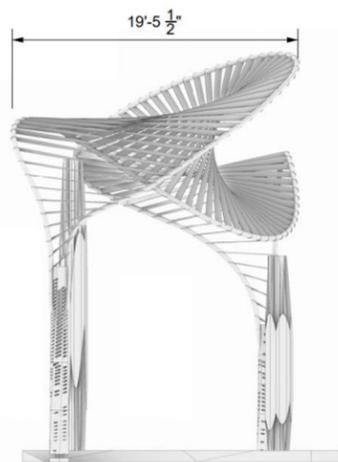
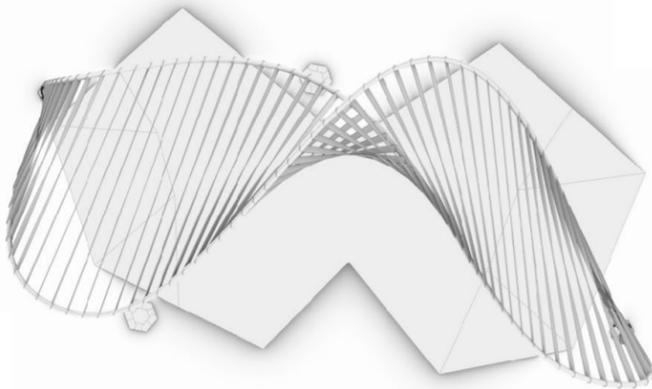
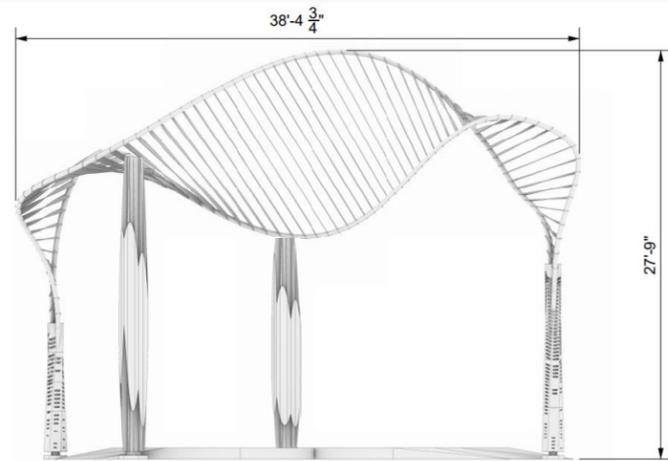
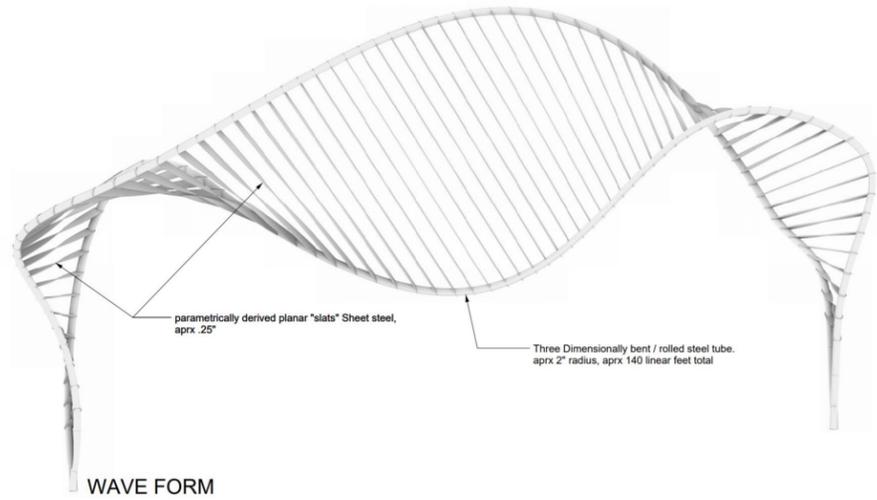
The *Emanativ* is a sound sculpture that is powered by changing water levels in the Harlem River. *Emanativ* uses interactive sculpture and biophilic design principles to offer a unique urban soundscape that transforms the park into a cultural destination.

The original idea dates to the 3rd century BC when a so-called hydraulis was invented by Ctesibius of Alexandria (Britannica, 2017). This mechanical pipe organ consisted of several acoustical pipes placed on top of a windchest that was connected to a wind chamber. The sound was produced by compressed air flowing through the pipes. The wind chamber was half-filled with water so that when the air pressure decreased, pumps were manually activated to increase the water level, which compressed the air and restored the required pressure in the windchest. Currently, there exist three tide or wave powered sea organs around the world. They are in San Francisco, U.S.A (Wave Organ); Zadar, Croatia (Sea Organ); and Blackpool, U.K (Tide Organ). Each one is slightly different in design and configuration, but they function based on the same physical principles. These organs have all proven to be alluring works of public art that transform the sites they are installed into notable destinations for cultural tourists.

The sculpture is an acoustical, architectural, and hydraulic structure. It is essentially is an instrument that generates music driven by the motion of the water in the Harlem River. Changing water levels force water through an *INLET PIPE* which is installed below sea level. This, in turn, pushes air through an upward sloping *TRANSITION PIPE*. The transition pipe is connected to an *ORGAN PIPE above ground*. The forced air pressure through the organ pipe results in sound. Organ pipes are designed and tuned to play specific notes. Valves between the transition and organ pipe can be used to tune the sound and “voicing” or loudness of the pipe.

The inlet and transition pipes are made of PVC or 316 stainless steel; whereas the organ pipes are made of zinc. The sound is released through special openings in the sculpture’s four towers into the surrounding area where it can be heard and enjoyed by anyone in the immediate vicinity. In the musical sense, *Emanativ* will be tuned to a Dominant 7th Chord. Comprised of 4 notes, this chord was born out of the harmonic vocabulary that jazz musicians used to develop Bebop. Since then it has been used widely throughout Jazz music gives to give sound movement and tension. The *Emanativ* exploits these tonal qualities to reflect the location in which it is situated. Harlem having a rich history in Jazz, Latin Jazz, Funk, Gospel, Hip-Hop, and House Music; and the Harlem River – a turbulent estuary. The notes of the tide organ play at random but since they are tuned to the Dominant 7th Chord they will have a pleasing sonic experience.

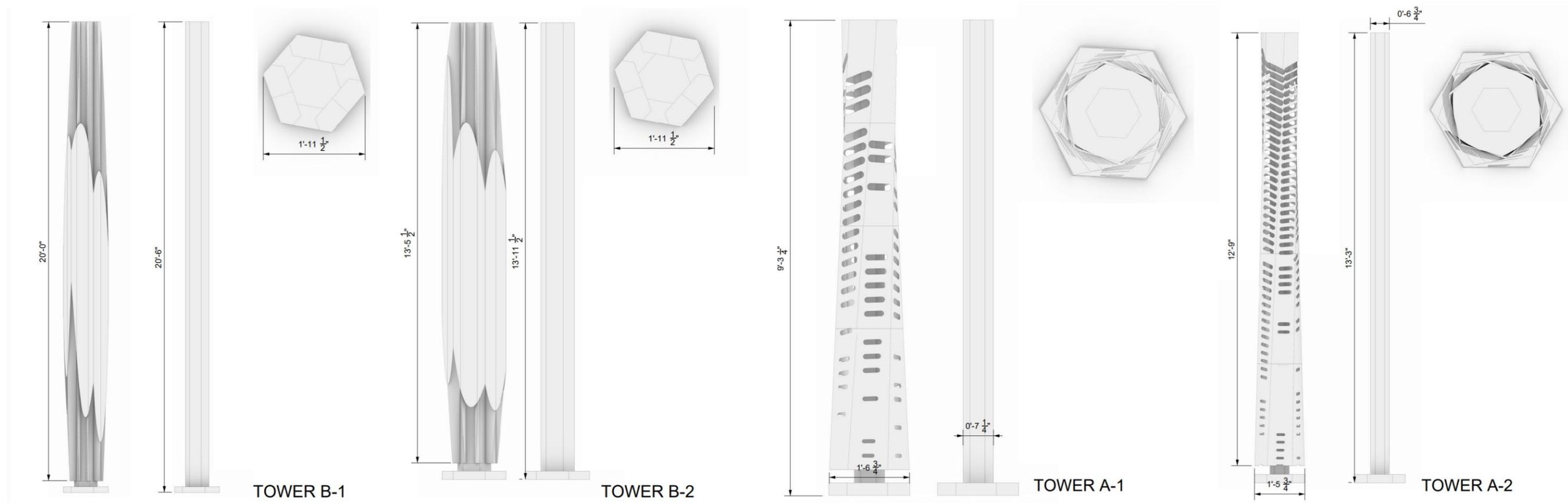
Project Details - Wave Forms & Materials



Tower Frame, Base, Anchors	Tower Surfaces	Wave Pattern	Base/ Platform
316 Stainless Steel Square Tubing and Plate	Cut and Etched 316 Stainless Steel Sheet (6mm)	Cut 316 Stainless Steel Sheet (3mm)	Stone
			

Organ Pipes	Transition Pipes	Water Pipes	Pipe Fasteners
Zinc (10" to 24" length)	PVC 1" to 2.5" Diameter	PVC 3" to 6" Diameter	316 - Stainless Steel Straps and Fasteners
			

Project Details – Tower Design



Funding Sources

Budget allocated for artwork is \$140,000.

Scheduling Constraints

There are no scheduling constraints.

High-level project timeline:

Milestones

2021	Q2	Seek EDC Design Approval
2022	Q3 - Q4	Design Development and Optimization/ Bidding
2022		Outreach, Education, Develop Maintenance Fund
2023	Q1 – Q4	Fabrication
2024	Q1	Install subsurface components
2024	Q2	Install above ground components

Previous Work



Corner (2014)

Temporarily installed in Socrates Sculpture Park, Queens, NY
Materials: Viroc, Plywood,
Dimensions: 3' x 4' x 5'
Budget: \$5000



Previous Work



Looping Back (2013)

Temporarily installed in Randall's Island, NY

Materials: Poplar Tree Bark, Steel, Plywood

Dimensions: 20' x 20' x 9'

Budget: \$10000



Previous Work



Memorial for the Enslaved Laborers (2020)

Member of the memorial design team with a focus on the imagery carved into the exterior surface.

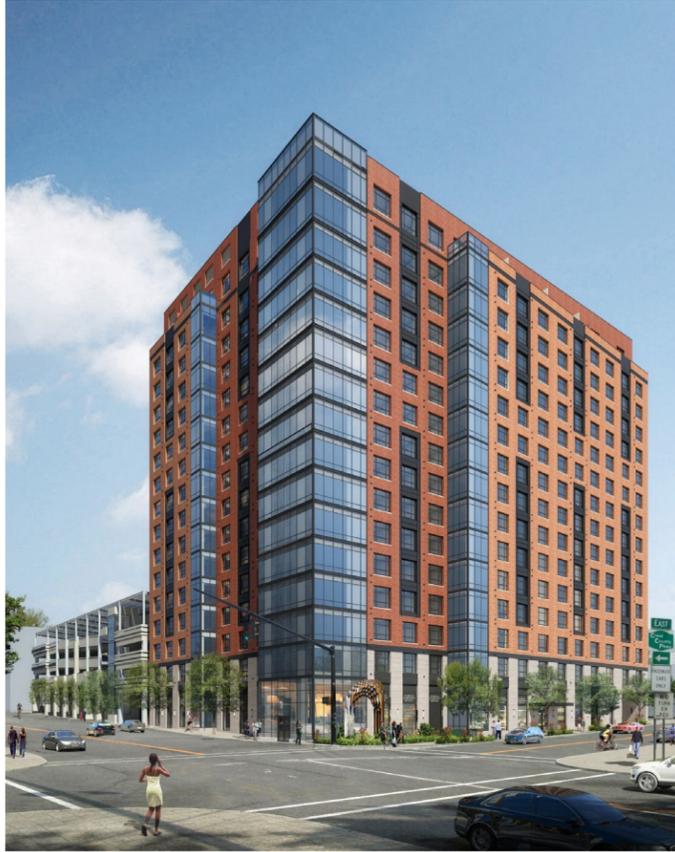
Permanently installed at the University of Virginia in Charlottesville, VA

Materials: Granite

Dimensions: 20' x 20' x 9'

Budget: \$6,000,000

Previous Work



Peaceful Journey (2021)

Permanent Public Sculpture at
42 Broad Street Mount Vernon, NY
For Alexander Development Group and Arts Westchester

Peaceful Journey represents the process of Seeking harmony and balance in times of change. It complements the metalwork and brick masonry that will clad the exterior of 42 Broad Street and it is a signifier of transformation.

Materials: Marble, CORTEN Steel, Stainless Steel
Dimensions: 20' x 10' x 10'
Budget: \$100,000

