ANTHROPOCENE MEMORIAL WITH CARBON CASTING

BY Kumsal Akdogan

Kumsal Akdogan
Instructor: Jing Liu, Kevin Lamyuktseung

www.iaacblog.com

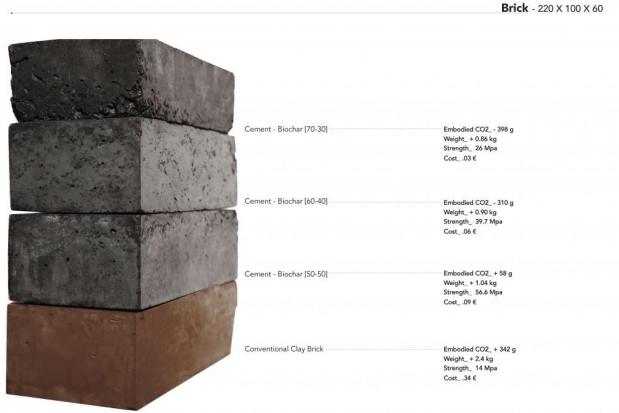
CAST IN CARBON - IAAC Blog

There are huge carbon emissions from human activities every year over the last few decades which has led to a high concentration of carbon in the atmosphere, and is gradually increasing the temperature of the Earth. The industries with the biggest carbo...

globalgradshow.com

Cast in Carbon - GGS

Cast in Carbon aims to reverse the carbon cycle by removing excess carbon dioxide from the atmosphere and reducing carbon emissions generated through the construction process. Biochar is a new construction material through which carbon can be stored wit...



e360.yale.edu

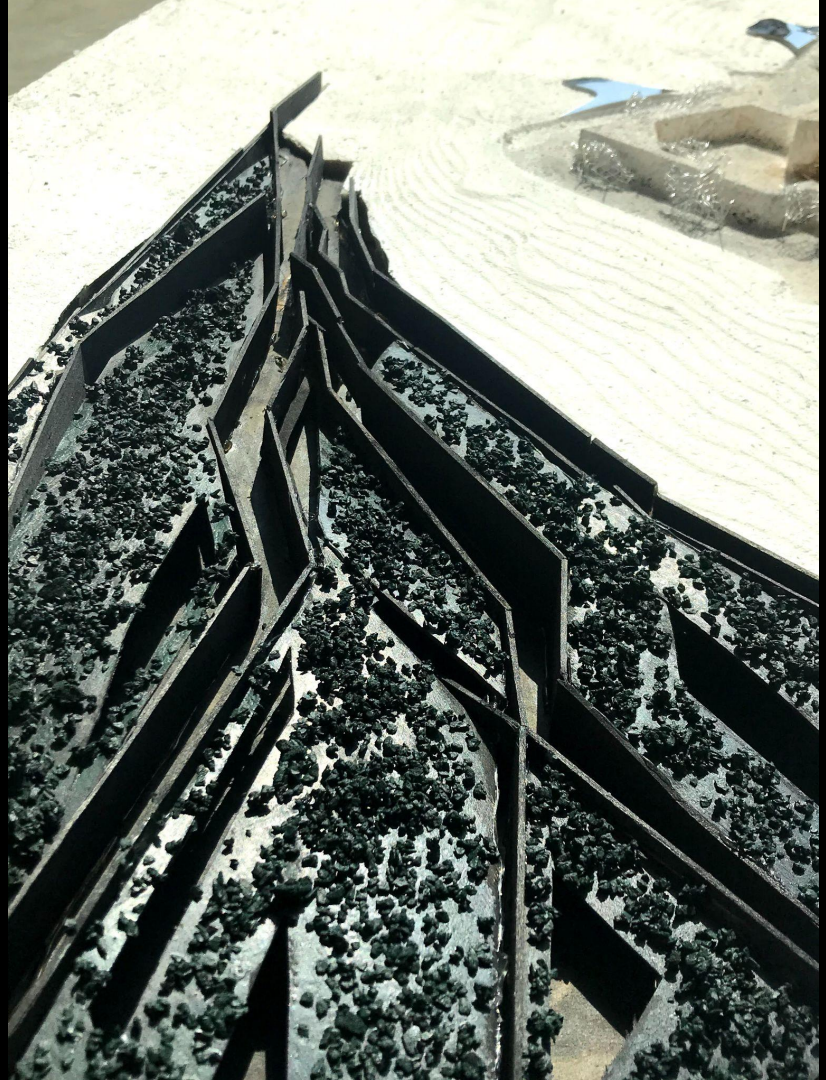
As Uses of Biochar Expand, Climate Benefits Still Uncertain

Research shows that biochar made from plant fodder and even chicken manure can be used to scrub mercury from power plant emissions and clean up polluted soil. The big question is whether biochar can be produced on a sufficiently large scale to slow or r...

Can Biochar, a carbon negative material, be integrated into architectural application for reducing building carbon footprint while enhancing the passive performance and micro climate of built spaces ?

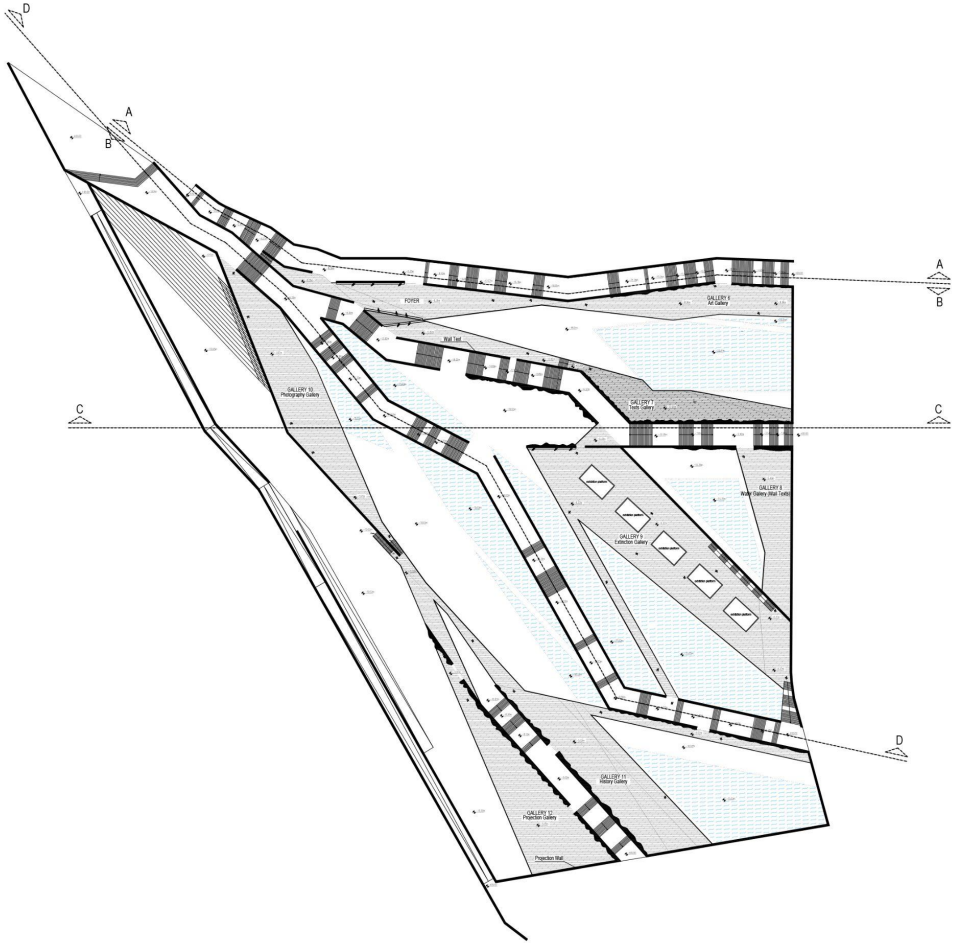
SITE, GOVERNORS ISLAND

SITE PLAN

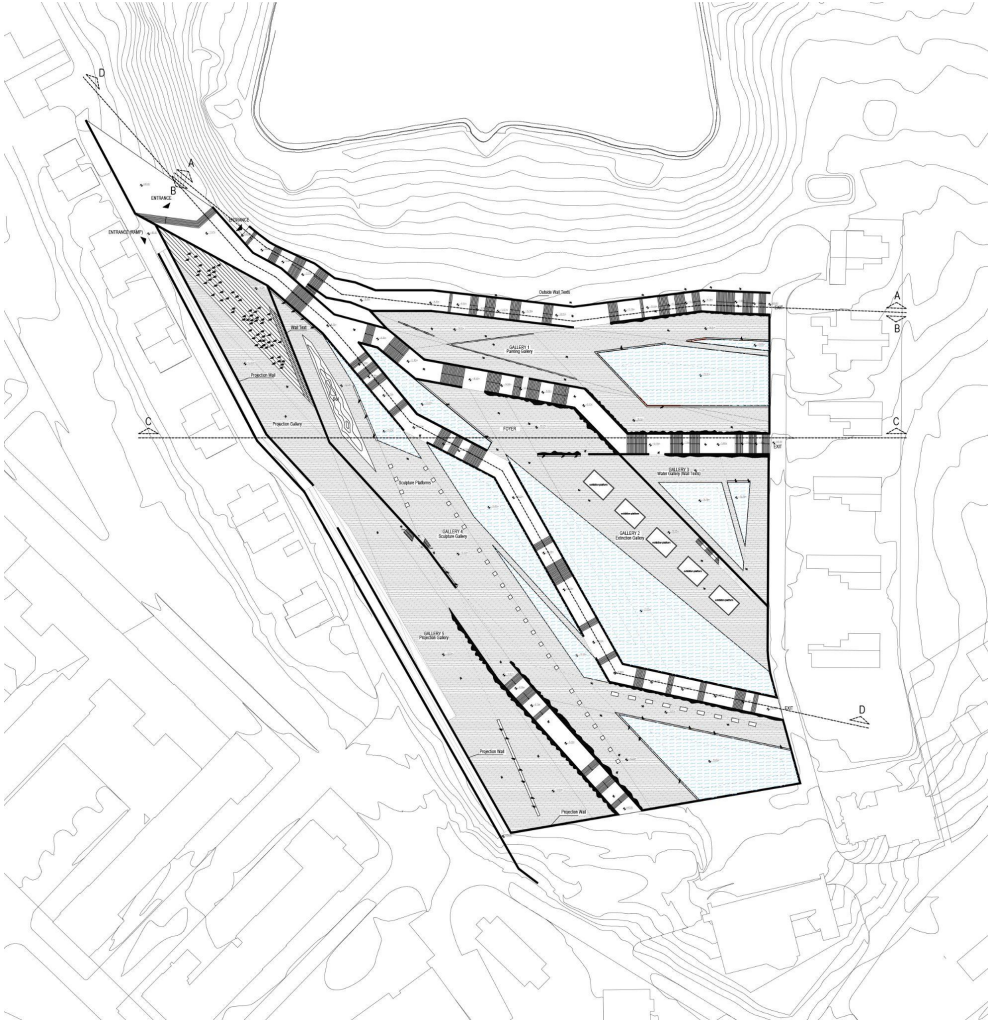


1/50 PHYSICAL MODEL

PLAN

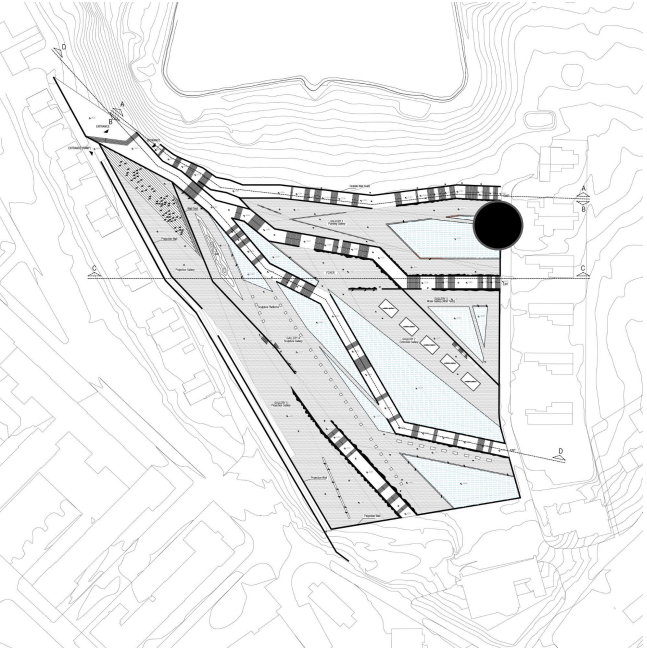

D
A
B
C
FOYER
GALLERY 6
Art Gallery
Wall Text
GALLERY 10
Photography Gallery
GALLERY 7
Texts Gallery
GALLERY 8
Water Gallery (Wall Texts)
GALLERY 9
Extraction Gallery
GALLERY 11
History Gallery
GALLERY 12
Projection Gallery
Projection Wall

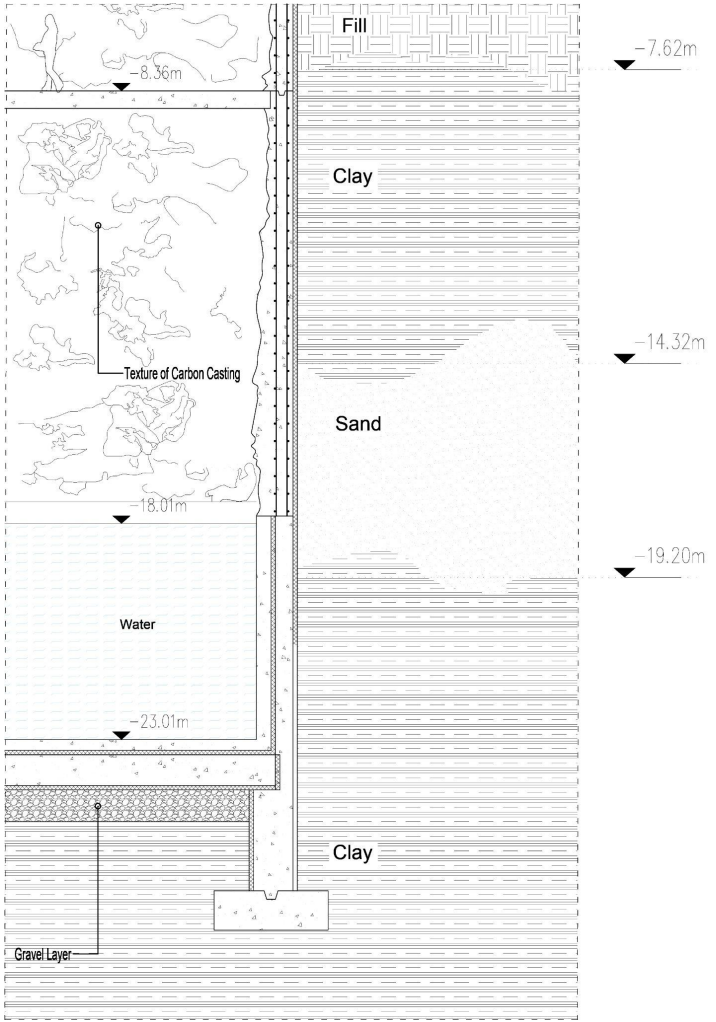
PLAN


A
B
C
D
ENTRANCE
ENTRANCE (STAIR)
Projection Wall
Projection Gallery
Sculpture Platforms
GALLERY 1
Painting Gallery
GALLERY 2
Exhibition Gallery
GALLERY 3
Projection Gallery
GALLERY
Sculpture Gallery
Projection Wall
Projection Wall

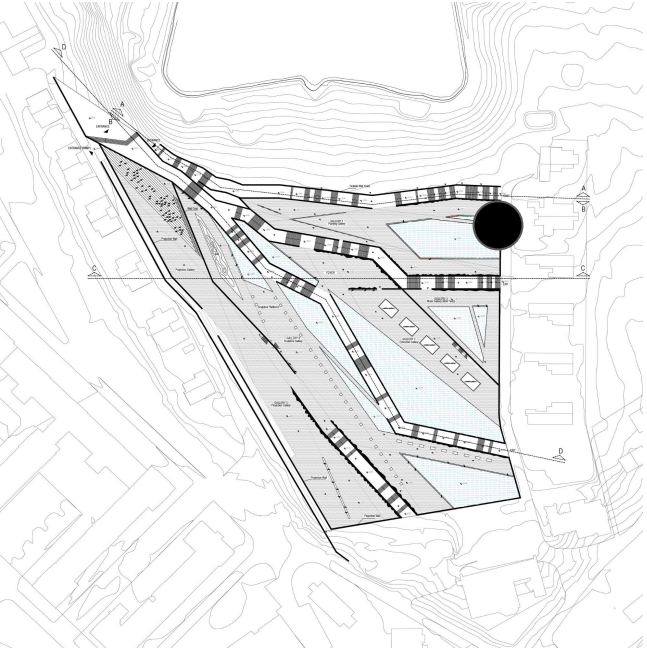
CARBON TEXTURE ON WALL, ILLUSTRATION FROM 1/50 PHYSICAL MODEL

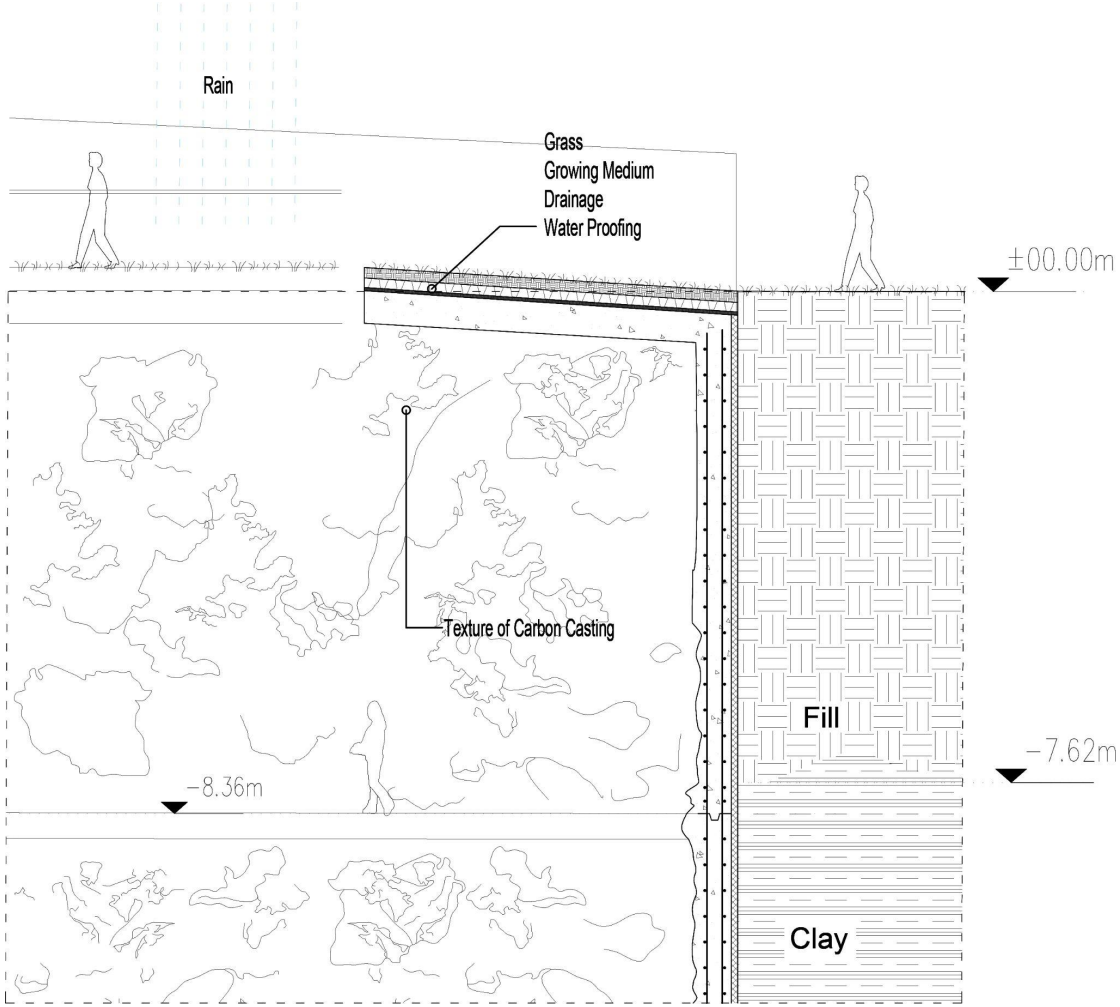
⅛ DETAIL



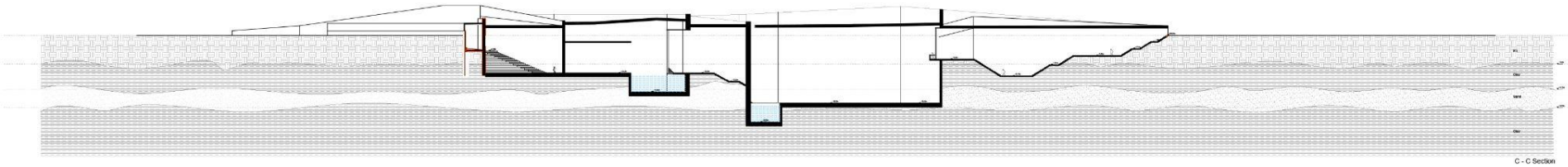

Fill
−7.62m
−8.36m
Clay
Texture of Carbon Casting
−14.32m
Sand
−18.01m
−19.20m
Water
−23.01m
Clay
Gravel Layer

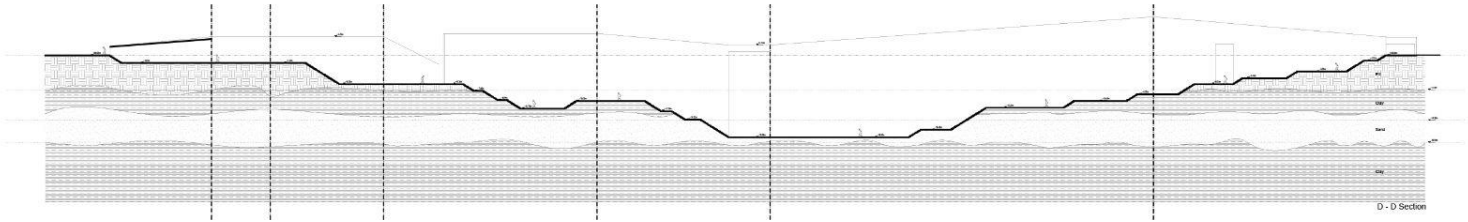
⅛ DETAIL



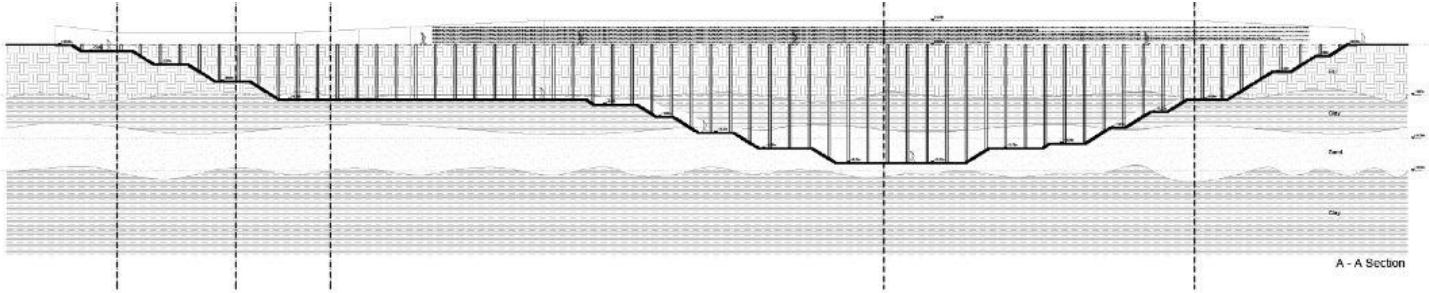

Rain
Grass
Growing Medium
Drainage
Water Proofing
±00.00m
Texture of Carbon Casting
Fill
-7.62m
-8.36m
Clay

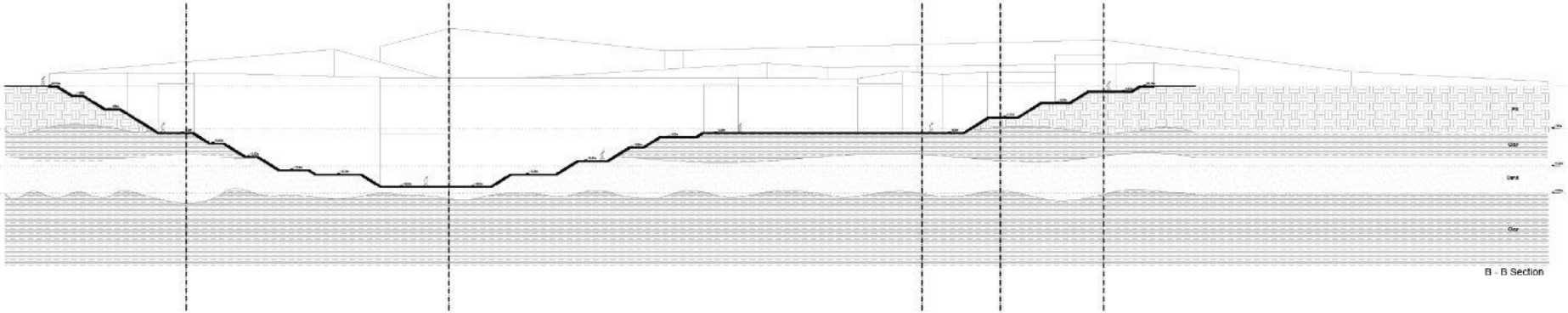
C-C SECTION, D-D SECTION



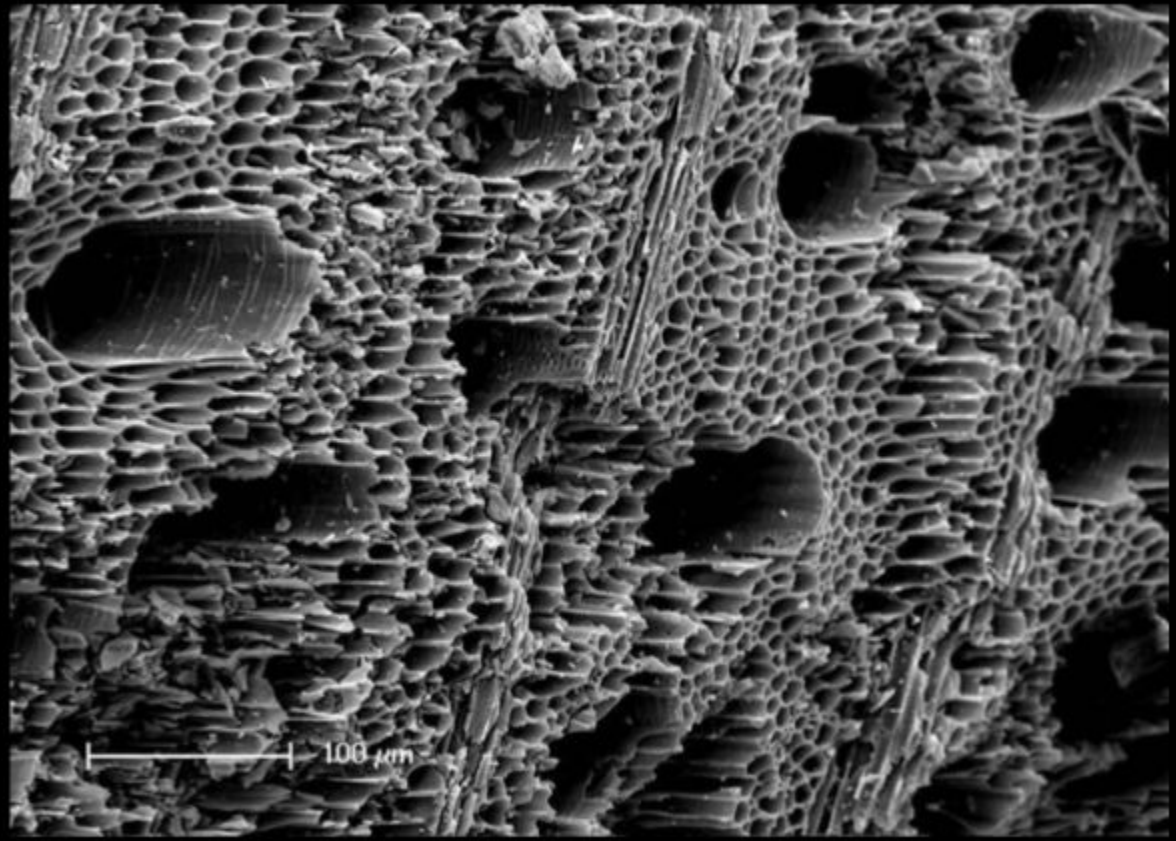


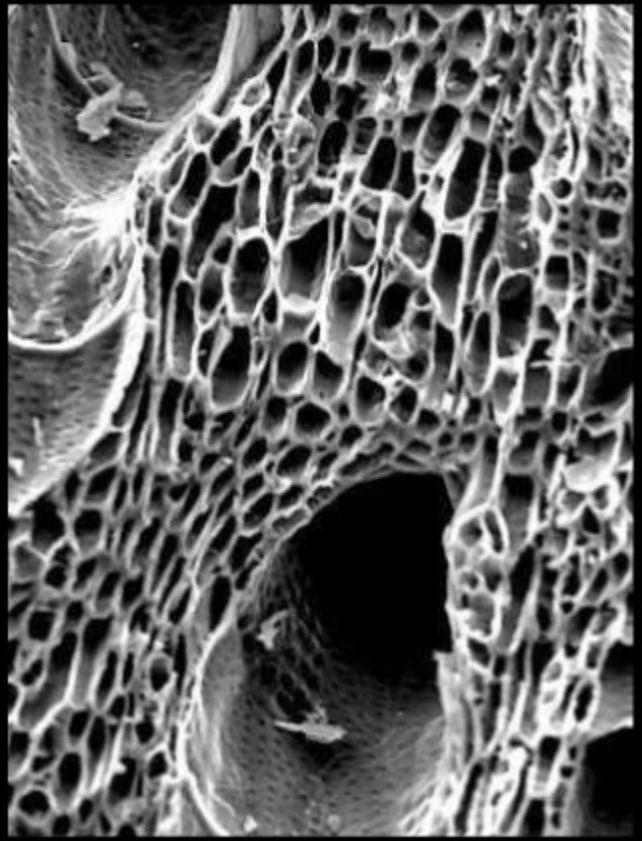
A-A SECTION, B-B SECTION





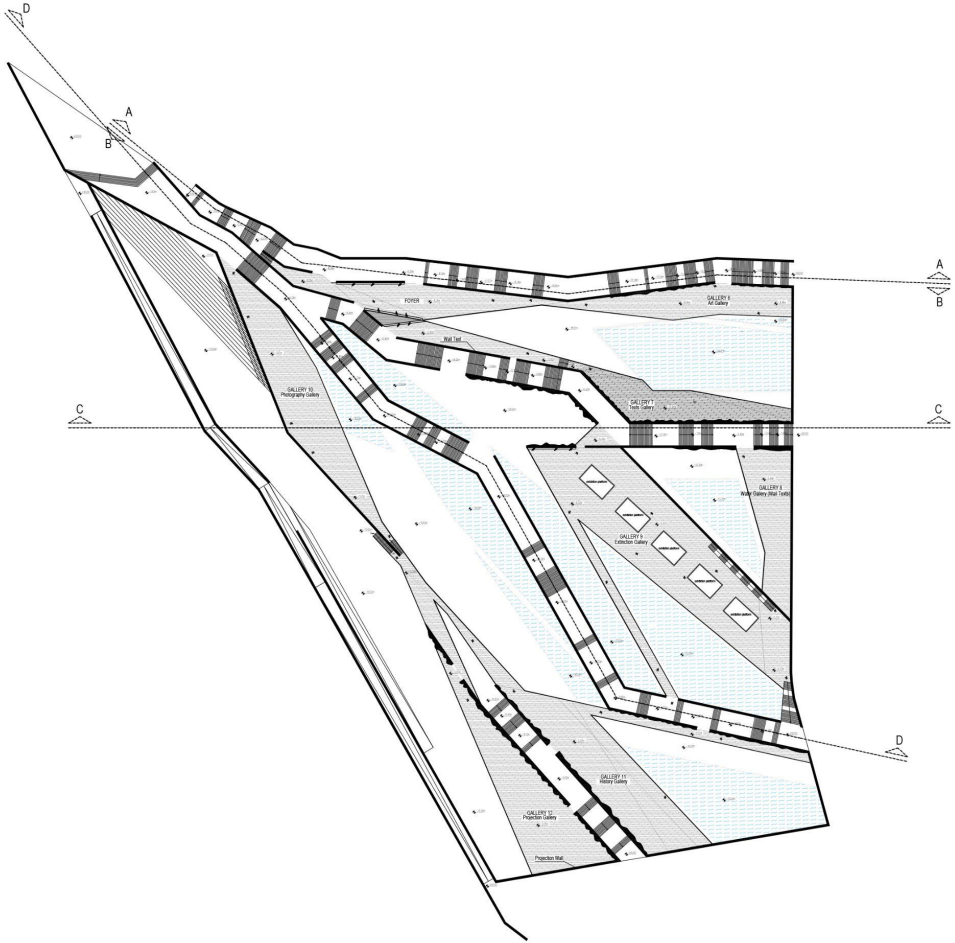
MAGNIFIED CARBON, BIOCHAR





CASTING, TEXTURE, PRESEDENT-ANNE HOLTROP

PLAN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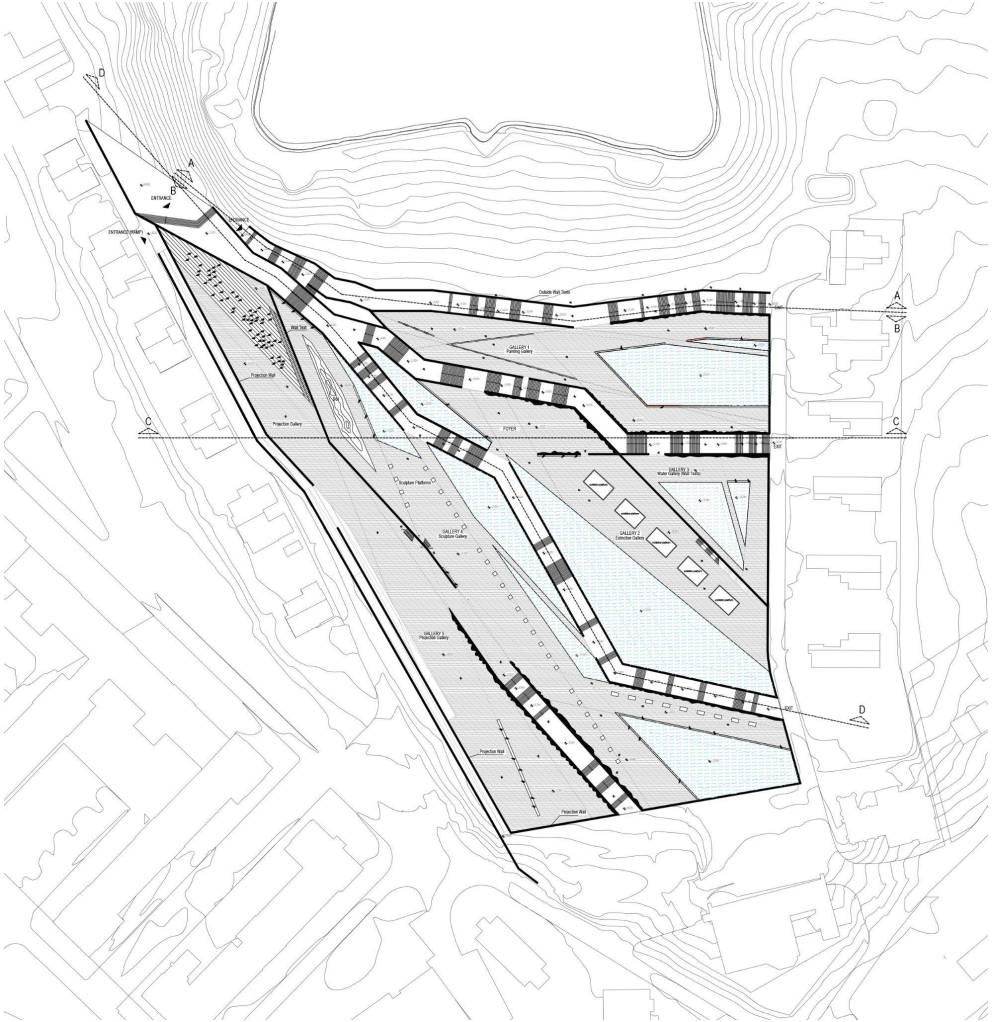
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SOIL BORING OF GOVERNORS ISLAND, SPRING SEMESTER

PHYSICAL PROPERTIES

LUB - HOUSE 14

***PRESENT**/FUTURE*

Kumsal Akdogan

LUB - Laguardia-Urban Land Complex, 3 to 8 percent slopes

60% Laguardian (High amount of carbon)
25% Urban Land
Minor Components:
7% Ebbets
7% Greenbelt
1% Secaucus

Laguardia

- Drainage class: Well drained
- Runoff class: Medium
- Depth to water table: more than 80 inches
- Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)
- Available water capacity Low (about 3.1 inches)

Urban Land

- Runoff class: Very high
- Capacity of the most limiting layer to transmit water: Very Low
- Available water capacity: Very Low

REFERENCES

Use Chicago Manual Style
Surname, First name. Year. Title. Publisher. Website.

SCALE: AS NOTED

LEGEND

SAND
SILT
CLAY
WATER

SOIL PROPERTIES
SCALE=10:1

8 - 26 inches(%): sand 17, 76, 78
silt 13, 17, 62
clay 3, 8, 27

SOIL BORING
SCALE=1:100

NOTES

SOIL

45% Minerals (clay, silt, sand, gravel, stones).

25% Water (the amount varies depending upon precipitation and the water-holding capacity of the soil).

25% Air (an essential ingredient for living organisms).
5% Organic matter or humus (both living and dead organisms).

Laguardia

^Au - 0 to 8 inches: cobbly-artifactual coarse sandy loam
^BCu - 8 to 26 inches: very cobbly-artifactual coarse sandy loam
^Cu - 26 to 79 inches: very cobbly-artifactual coarse sandy loam

Available water capacity

0 - 8 inches: 0.05 - 0.08 - 0.13
8 - 26 inches: 0.02 - 0.06 - 0.17
26 - 79 inches: 0.02 - 0.04 - 0.14

Soil susceptibility to surface sealing

Low

Soil susceptibility to compaction

Rock Fragments, 0 - 12 inches
Value: 1.00
Soil structure grade, 0 - 12 inches
Value: 1.00
Subaerial
Value: 1.00
Soil Texture, 0 - 12 inches
Value: 0.50

Urban Land

M - 0 to 15 inches: cemented material
2^C - 15 to 79 inches: gravelly sandy loam

Ebbets

^A - 0 to 7 inches: sandy loam
^Bwx - 7 to 27 inches: gravelly-artifactual sandy loam, silt loam, stony sandy loam
2^Cu - 27 to 72 inches: very gravelly- artifactual loamy coarse sand, artifactual silt loam

- Runoff class: Medium

Greenbelt

^A - 0 to 5 inches: loam
^Bw1 - 5 to 16 inches: cobbly sandy loam, silt loam, loam
^Bw2 - 16 to 30 inches: cobbly sandy loam, silt lom, loam
^C - 30 to 79 inches: cobbly sandy loam, silt loam, sandy loam

- Runoff class: Medium

Secaucus

^Au - 0 to 6 inches: gravelly-artifactual fine sandy loam
^Cu1 - 6 to 17 inches: very artifactual silt loam, extremely artifactual loamy coarse sand, very artifactual fine sandy loam
^Cu2 - 17 to 35 inches: extremely stony-artifactual loamy coarse sand, very gravelly-artifactual silt loam, extremely cobbly-artifactual fine sandy loam
^Cu3 - 35 to 65 inches: extremely stony-artifactual loamy coarse sand, very gravelly-artifactual silt loam, extremely cobbly-artifactual fine sandy loam

- Runoff class: High

PHYSICAL PROPERTIES

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***PAST**/PRESENT/FUTURE*

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- Runoff class: Medium

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PHYSICAL PROPERTIES

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PRESENT/FUTURE

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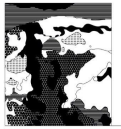

26 - 79 inches(%): sand 17, 76, 78
silt 13, 17, 62
clay 3, 8, 27

SOIL BORING
SCALE=1:100

NOTES

Frequency of flooding: none

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Value: 1.00
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- Runoff class: Medium

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Secaucus

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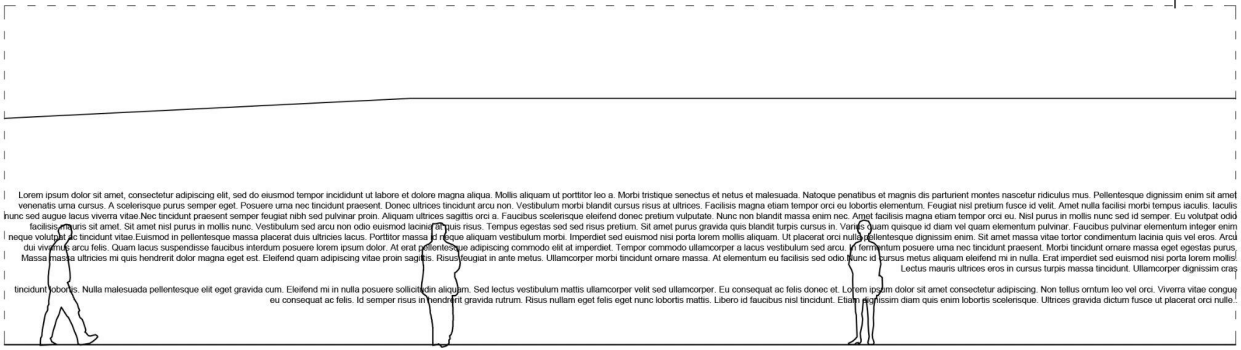
- Runoff class: High

⅛ DETAIL



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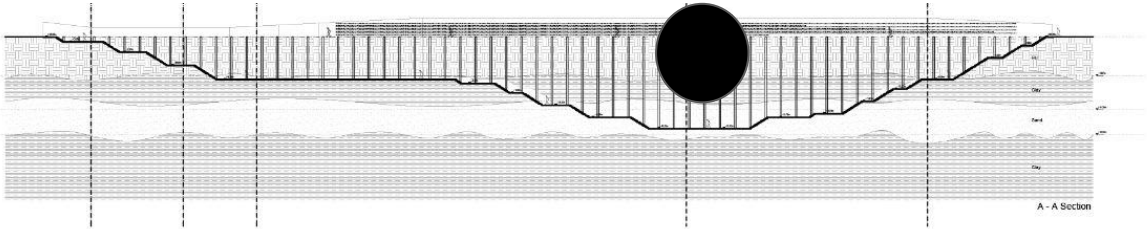

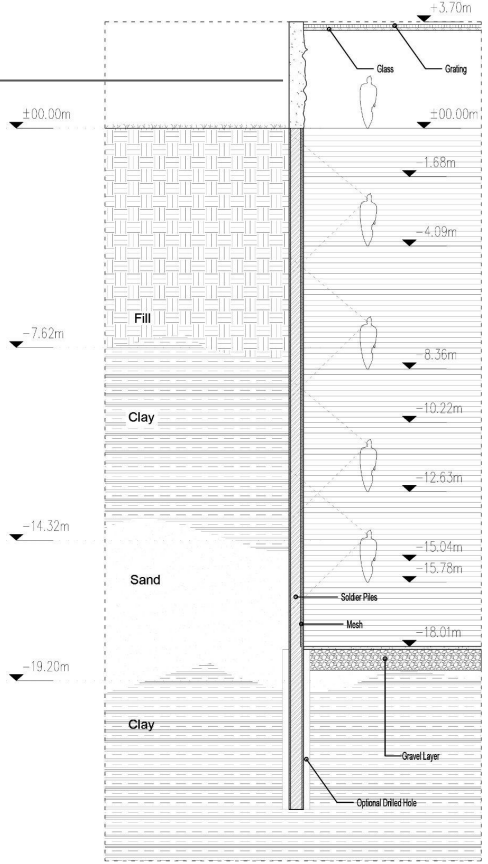

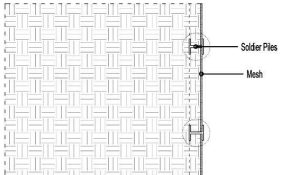

C-C SECTION, D-D SECTION

1/500 PHYSICAL MODEL

Thank you.