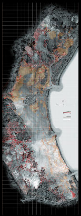
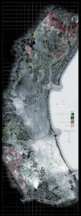
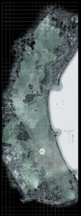
DATA MAPPING


LOW LYING AREAS

LAND FORMATIONS

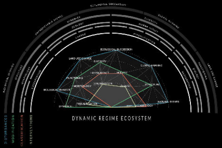

ECOTYPES


GRANULOMETRY

EROSION

SEDIMENT POLLUTION

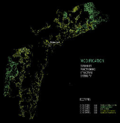
DYNAMIC RANGE CONCEPT


ECOLOGICAL SUCCESSION
UNPREDICTABLE EVENTS
GLOBAL WARMING
BIOLOGICAL INVASION
LAND USE CHANGE
DYNAMICS
DIVERSITY
ECOLOGY
HUMAN IMPACT
STRUCTURE
BIOLOGY
CHANGE
MODIFICATION
MORPHOLOGY
CONSERVATION
LAND USE CHANGE
DIVERSITY
GLOBAL WARMING
FUNCTIONING
HUMAN IMPACT
MODIFICATION
MORPHOLOGY
CHANGE
STRUCTURE
BIOLOGICAL INVASION
NATURAL EVENTS
DYNAMICS
REQUALIFICATION
HYDROLOGY
DISTURBANCES
MODIFICATION
CLASSIFICATION
INTERVENTIONS

DYNAMIC REGIME ECOSYSTEM

DYNAMIC AGENTS

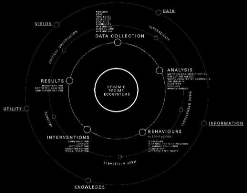
DISTURBANCES
BIOLOGICAL INVASIONS
ECOLOGICAL SUCCESSION
NATURAL EVENTS
LAND USE CHANGE
GLOBAL WARMING
TIDE LEVEL


MODIFICATION
DYNAMICS
FUNCTIONING
STRUCTURE
DIVERSITY
ECOTYPES

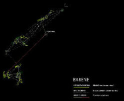
DISTURBANCES
BIOLOGICAL INVASIONS
ECOLOGICAL SUCCESSION
NATURAL EVENTS
LAND USE CHANGE
GLOBAL WARMING

CLASSIFICATION
MORPHOLOGY
ECOLOGY
BIOLOGY
HUMAN IMPACT
EROSION

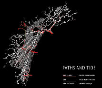
GENERATIVE PROCESS

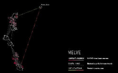

DATA
VISION
INTERROGATE
CRITICAL OBSERVATION
DATA COLLECTION
EROSION
TIDE LEVEL
POLLUTION
ECOTYPES
SEDIMENTS
MORPHOLOGY
ANALYSIS
MORPHOLOGY MODIFICATION
POLLUTION VALUES
GRANULOMETRY OF SEDIMENTS
ECOTYPES
ECOLOGY
HUMAN IMPACT
RESULTS
MODIFICATIONS
AND INTERVENTIONS
DYNAMIC REGIME ECOSYSTEMS
UTILITY
VALIDATE
MAKE OPERATIONAL
INFORMATION
INTERVENTIONS
CONSERVATION
CHANGE
MODIFICATION
COMPENSATION
REQUALIFICATION
BEHAVIOURS
ALGORITHMS FOR:
MOVEMENT
MORPHOLOGY MODIFICATION
CLEANING POLLUTION
PLANTATION
ADDRESS ECTOPICITY
MAKE APPLICABLE
KNOWLEDGE

DATA TO INFORMATION

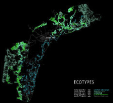

BARENE

EROSION

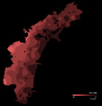

PATHS AND TIDE


MELVE

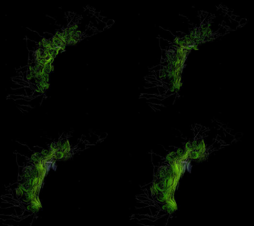
LOW LYING AREAS


ECOTYPES

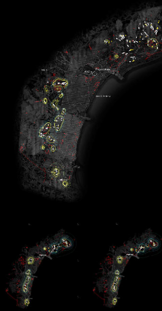
GRANULOMETRY (SEDIMENTS)



LAGOON DYNAMICS

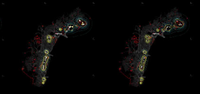


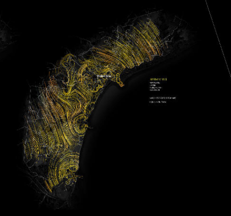
MOVEMENTS



INTERVENTIONS

ROBOTIC BEHAVIOURS
CONTEXTUAL DATA





INFRASTRUCTURE

ROBOT STATIONS
COVERAGE AREA OPTIMIZATION

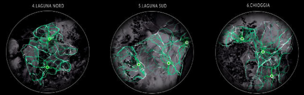
ROBOT STATIONS
SPECIFIC LOCATION
BASED ON CONTEXTUAL DATA
AREAS LESS SUBJECTED TO FLOOD
PROXIMITY TO BOUNDARY SEA/LAND

ROBOT STATIONS
OPTIMIZED DISTANCE FOR CHARGE/MANTEINANCE
AVERAGE ROBOT SPEED
DISTANCE IN BETWEEN THE STATIONS

LOCATION/ BEHAVIOURS

1. VENEZIA
2.BURANO
3.FUSINA

VENEZIA A.
VENEZIA B.
VENEZIA C.
VENEZIA D.
BURANO A.
BURANO B.
FUSINA A.
FUSINA B.
FUSINA C.

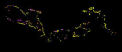

4.LAGUNA NORD
5.LAGUNA SUD
6.CHIOGGIA

LAGUNA NORD A.
LAGUNA NORD B.
LAGUNA SUD A.
LAGUNA SUD B.
LAGUNA SUD C.
LAGUNA SUD A.
LAGUNA SUD B.
LAGUNA SUD C.

INTERVENTIONS

DATA COLLECTION
NDVI MAPS

ECOLOGY
MAPPING PLANTS
AND ORGANISM

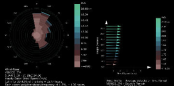


INTERVENTIONS
REPLANTATION
BARRIER CONSTRUCTION

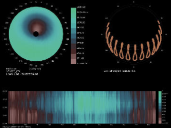
EROSION
AREAS SUBJECTED TO EROSION

MORPHOLOGICAL SITUATION
3D SCAN OF THE TOPOGRAPHY

WIND DATA

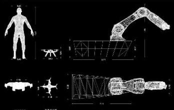


SUN/TEMPERATURE DATA



RAIN DATA

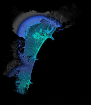
USERS


HUMAN
DRONE
ROBOT

CONTEXTUAL DATA

PROXIMITY TO DEEPEST AREAS

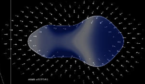
VISIBILITY



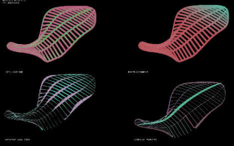
SURFACE

ENCLOSED PROXIMITY OF THE LAGOON

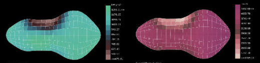
WIND FLOW ANALYSIS



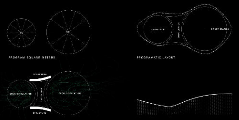
STRUCTURAL ANALYSIS



RADIATION/SUNLIGHT ANALYSIS



PROGRAM DEFINITION


DRONE PORT
ROBOT STATION
STRUCTURE
OPEN CIRCULATION
OPEN CIRCULATION
STRUCTURE

PROGRAM SQUARE METERS

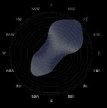
PROGRAMATIC LAYOUT

CIRCULATION

DESIRABLE HEIGHTS

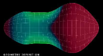
SITE PICKING

ORIENTATION


N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW

ENVELOPE ORIENTATION TO MAXIMIZE SOLAR RADIATION AND VENTILATION

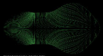
SHAPE OPTIMIZATION



GEOMETRY DEFINITION
CHARGING POINTS
DATA TRANSFER TO DATA CENTER

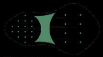
ENERGY PERFORMANCES

PERFORMATIVE ENVELOPE
FABRIC TEXTILE WITH SOLAR PANELS POSITION INFORMED BY SOLAR RADIATION



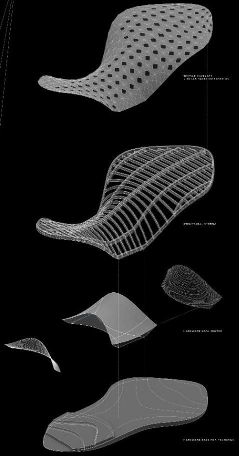
PERFORMATIVE ENVELOPE
RAIN WATER COLLECTOR

INFRASTRUCTURE



PHYSICAL INFRASTRUCTURE
CHARGING POINTS
DATA TRANSFER TO DATA CENTER

DESIGN


TEXTILE ENVELOPE
+ SOLAR PANEL INTEGRATION
STRUCTURAL SYSTEM
HARDWARE DATA CENTER
HARDWARE BASE FOR RECHARGE

CONTEXTUAL DATA

PROXIMITY TO DEEPEST AREAS

ACCESSIBILITY

MOBILITY
PUBLIC TRANSPORT LINES

SPECIFIC LOCATION

VISIBILITY

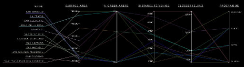
PLANTATION DATA

PUBLIC GREEN OF VENICE

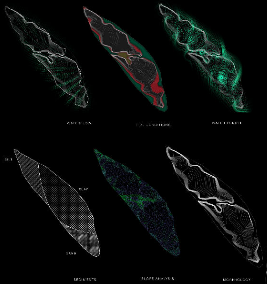
PLANTATION STATE OF THE ISLAND

ECOLOGIC STATE OF THE ISLAND

ISLANDS DATA



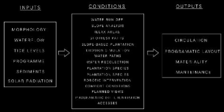
CONTEXTUAL DATA


SILT
CLAY
SAND

WATERFLOW
TIDE CONDITIONS
WATER RUNOFF
SEDIMENTS
SLOPE ANALYSIS
MORPHOLOGY

SITE PICKING

NEURAL NETWORK

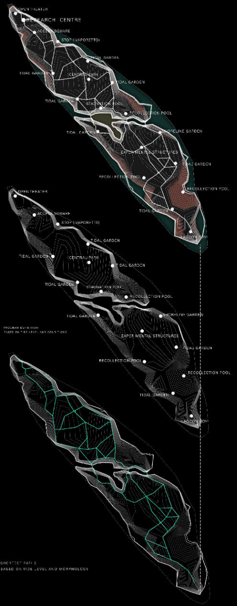


INPUTS
MORPHOLOGY
WATERFLOW
TIDE LEVELS
PROGRAMME
SEDIMENTS
SOLAR RADIATION

CONDITIONS
WATER RUN OFF
SLOPE ANALYSIS
RELAX AREAS
SHORTEST PATHS
SLOPE-BASED PLANTATION
EROSION SIMULATION
WATER PATHS
WATER RECOLECTION
PLANTATION SPECIES
PLANTATION SPECIES
ROBOTIC INTERVENTION
COMFORT CONDITIONS
PLANNED VIEWS
PROGRAMATIC DIFFERENTIATION
ACCESSES

OUTPUTS
CIRCULATION
PROGRAMATIC LAYOUT
MATERIALITY
MANTEINANCE

BOTANICAL GARDEN DESIGN

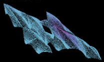

OPEN THEATER
RESEARCH CENTRE
ACCESS SQUARE
STOP (VAPORETTO)
TIDAL GARDEN
TIDAL GARDEN
CENTRAL PARK
TIDAL GARDEN
TIDAL GARDEN
STAGNATION POOL
RECOLLECTION POOL
TIDAL GARDEN
SHORELINE GARDEN
EXPERIMENTAL STRUCTURES
TIDAL GARDEN
RECOLLECTION POOL
RECOLLECTION POOL
TIDAL GARDEN
LAGOON VIEW
OPEN THEATER
ACCESS SQUARE
STOP (VAPORETTO)
TIDAL GARDEN
TIDAL GARDEN
CENTRAL PARK
TIDAL GARDEN
TIDAL GARDEN
STAGNATION POOL
RECOLLECTION POOL
TIDAL GARDEN
SHORELINE GARDEN
EXPERIMENTAL STRUCTURES
TIDAL GARDEN
RECOLLECTION POOL
RECOLLECTION POOL
TIDAL GARDEN
LAGOON VIEW

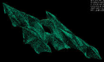
PROGRAM DEFINITION
BASED ON TIDE LEVEL AND CONDITIONS

SHORTEST PATHS
BASED ON TIDE LEVEL AND MORPHOLOGY

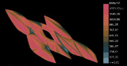
MORPHOLOGICAL DATA

STRUCTURAL ANALYSIS

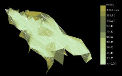

DISPLACEMENT

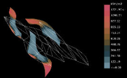

UTILIZATION

RADIATION SUNLIGHT ANALYSIS



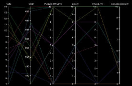
Radiation Analysis
1 JAN 1:00 - 31 DEC 24:00

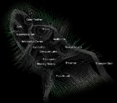




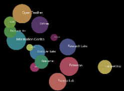
PROGRAMATIC DEFINITION

Offices: 0.75
Drone Port: 1
Auditorium: 1.5
Offices: 0.991





VECTOR FIELD



SHAPE OPTIMIZATION

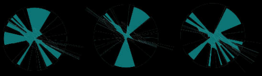
DIGITAL FORM FINDING

CURVATURE ANALYSIS

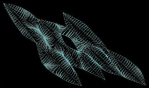
GENERATIVE SYSTEM

HEIGHT RELATIONSHIP TO THE GROUND

GENERATIVE LINES


VIEW ANALYSIS

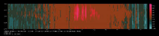
PERFORMANCES



PERFORMATIVE ENVELOPE

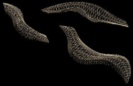
MATERIALITY,
LIGHT CONDITIONS
ENERGY PRODUCTION

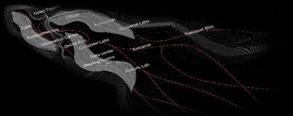
RAINWATER COLLECTION



INTERIOR AND COMPOSITION

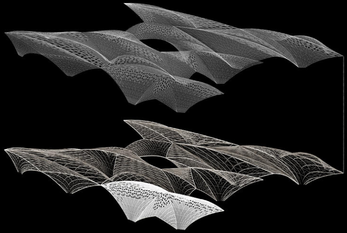
VOLUMES


STRUCTURAL SYSTEM

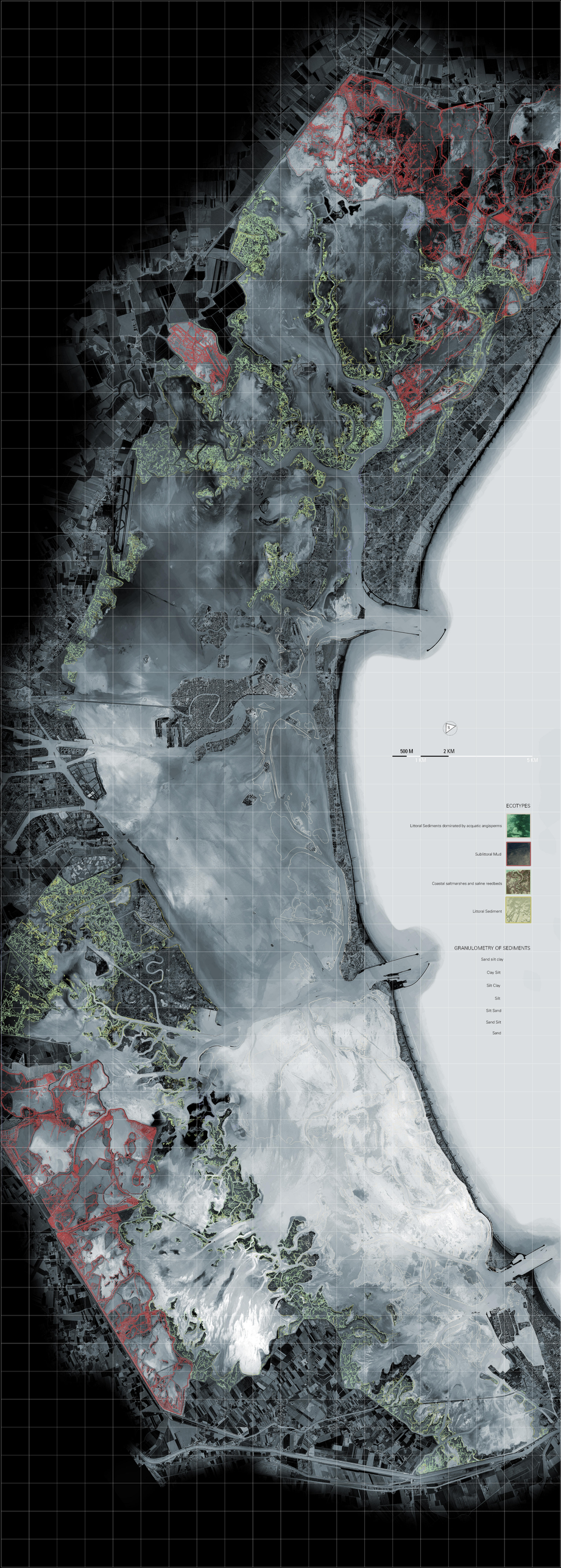

Open Teather
Offices
Cafe
Auditorium
Research Labs
Experimental lab
Information Centre
Drone Port
Computer Labs
Transport Stop
Entrance
Data center
Meeting Rooms
Robotic Lab

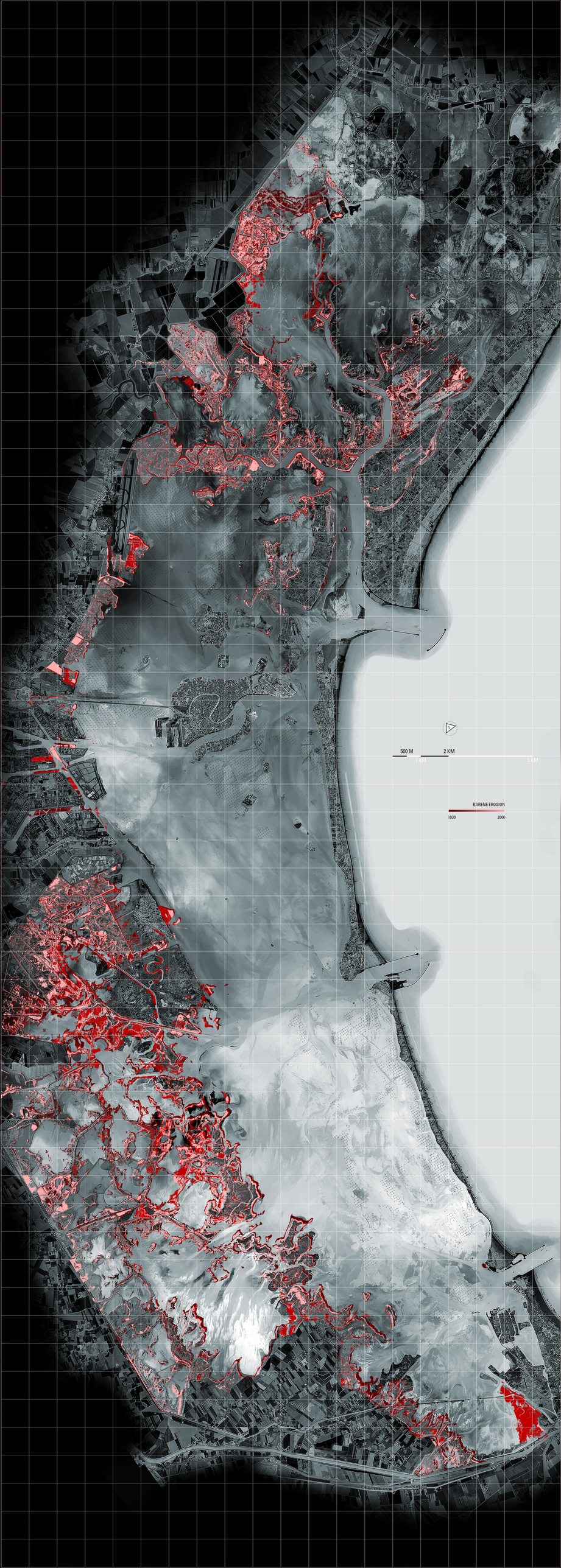
PUBLIC SPACE DEFINITION

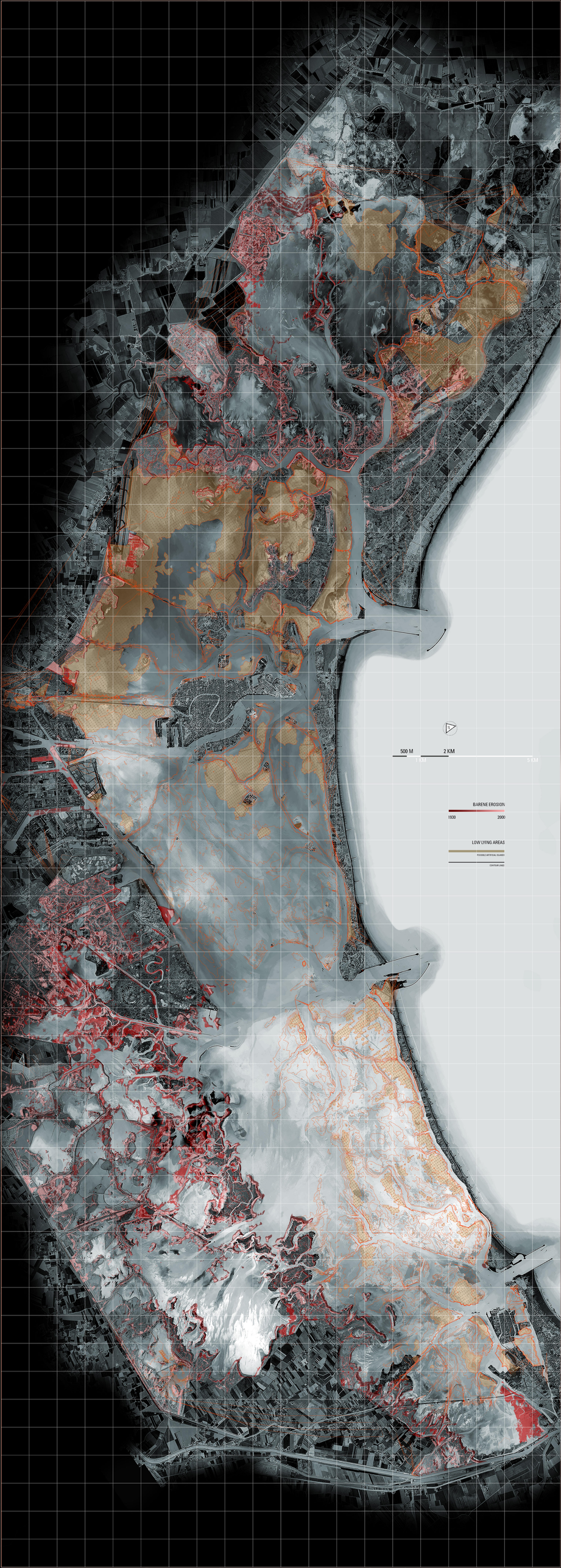
DESIGN

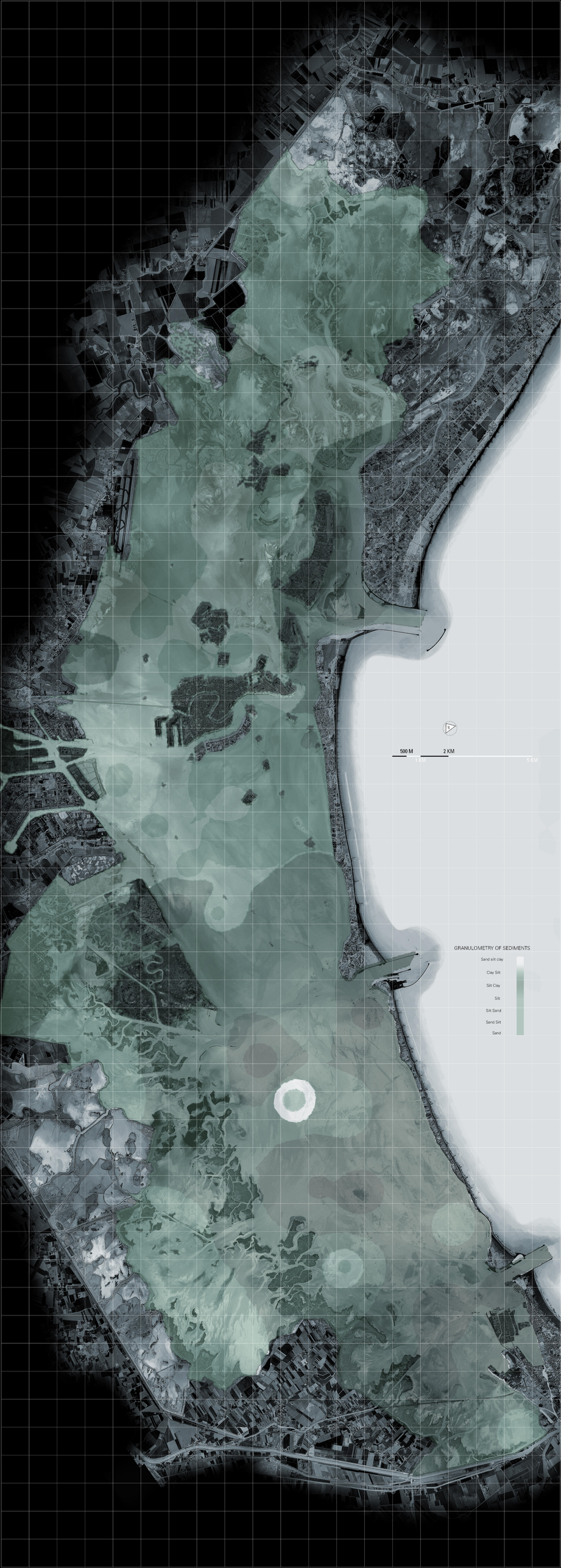


500 M
1 KM
2 KM
5 KM
CHANNELS
CASSE DI COLMATA
VALLI DA PESCA
BARENE
VELME

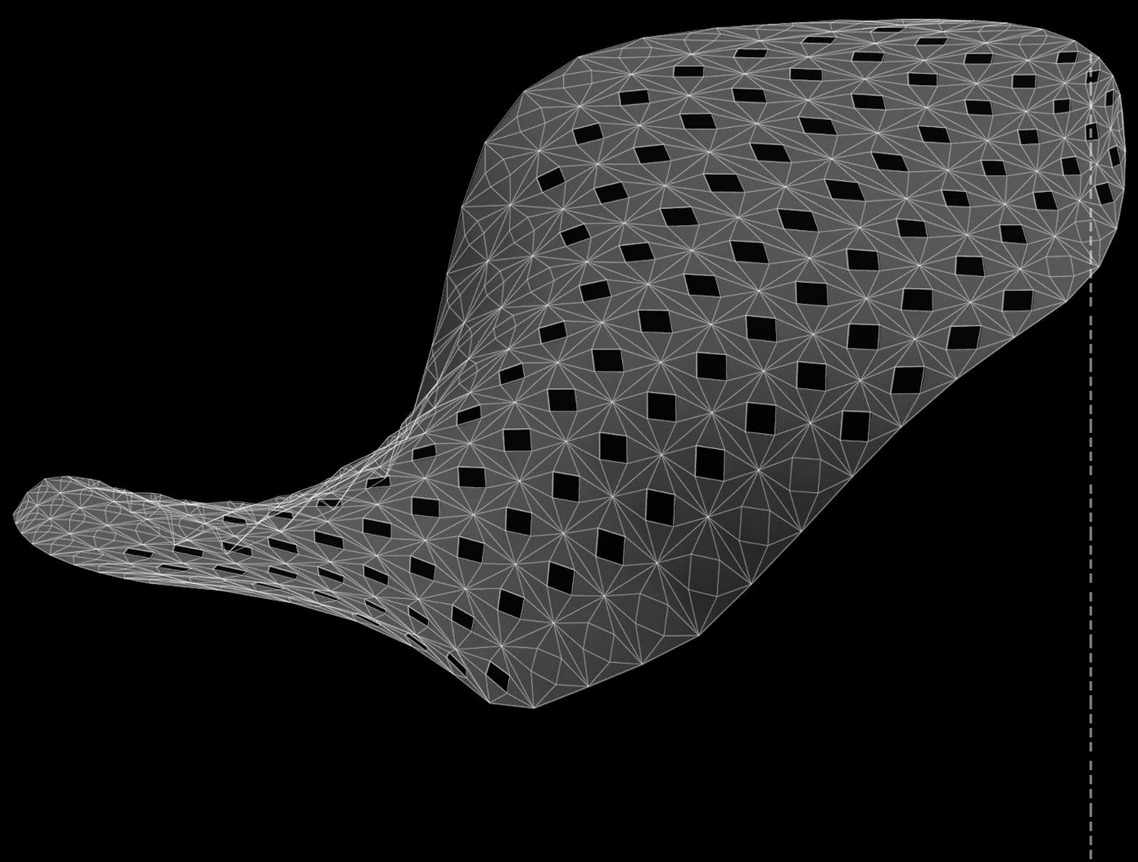

500 M
1 KM
2 KM
5 KM
ECOTYPES
Littoral Sediments dominated by acquatic angiosperms
Sublittoral Mud
Coastal saltmarshes and saline reedbeds
Littoral Sediment
GRANULOMETRY OF SEDIMENTS
Sand silt clay
Clay Silt
Silt Clay
Silt
Silt Sand
Sand Silt
Sand


500 M
1 KM
2 KM
5 KM
BARENE EROSION
1930
2000

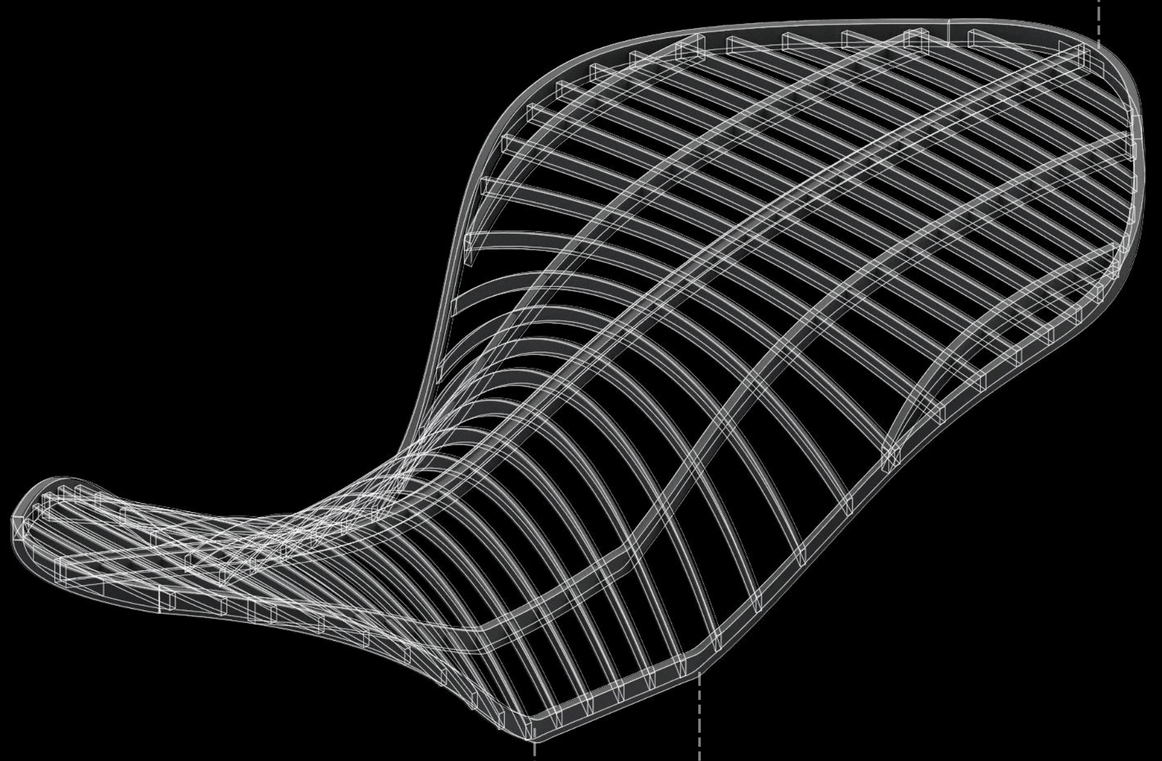

500 M
2 KM
1 KM
5 KM
BARENE EROSION
1930
2000
LOW LYING AREAS
POSSIBLE ARTIFICIAL ISLANDS
CONTOUR LINES


500 M
1 KM
2 KM
5 KM
GRANULOMETRY OF SEDIMENTS
Sand silt clay
Clay Silt
Silt Clay
Silt
Silt Sand
Sand Silt
Sand

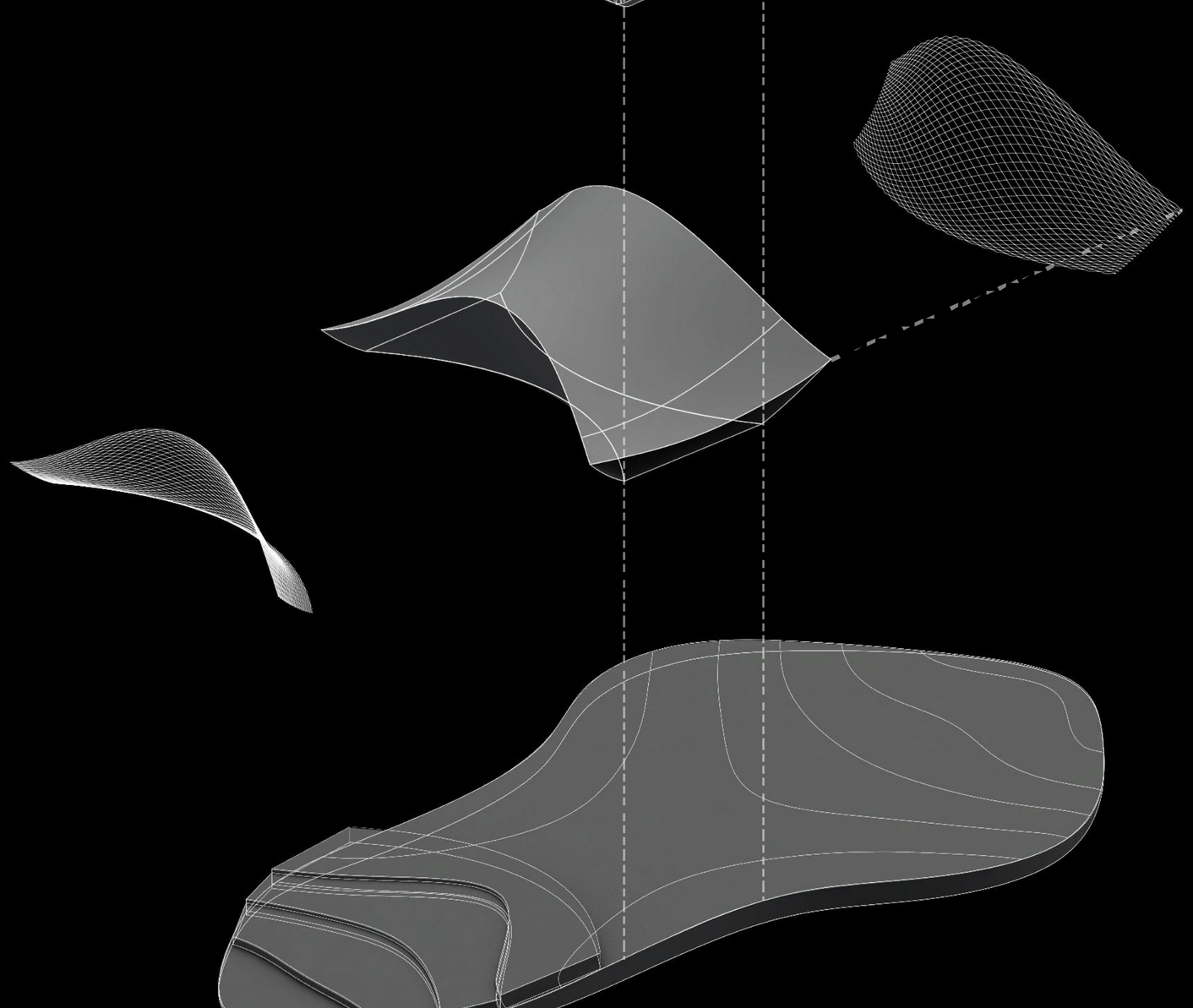
500 M
2 KM
1 KM
5 KM
POLLUTION
4.0
0.1
As mg/kg
CLASSIFICATION
CHANNELS
CASSE DI COLMATA
VALLI DA PESCA
BARENE
VELME



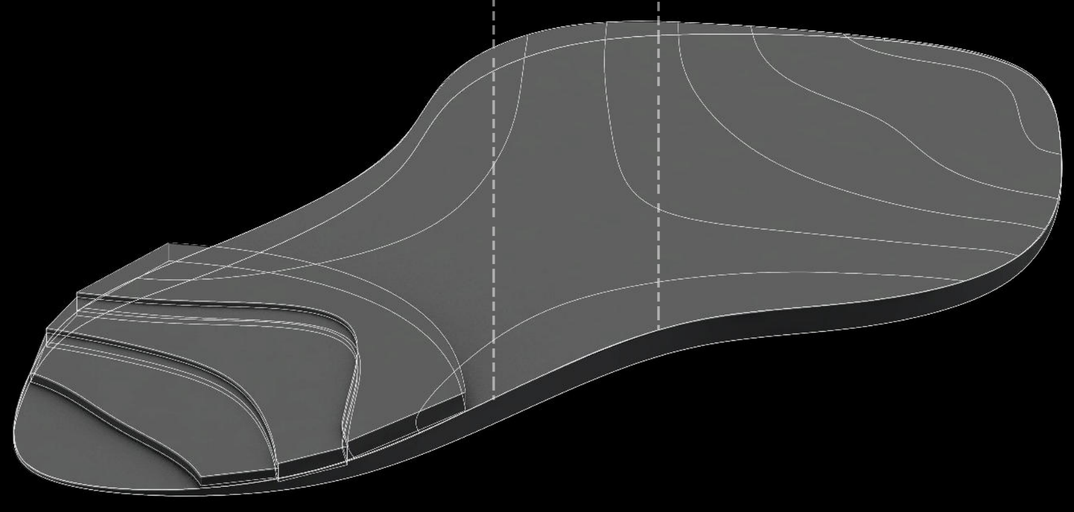
TEXTILE ENVELOPE
+ SOLAR PANEL INTEGRATION



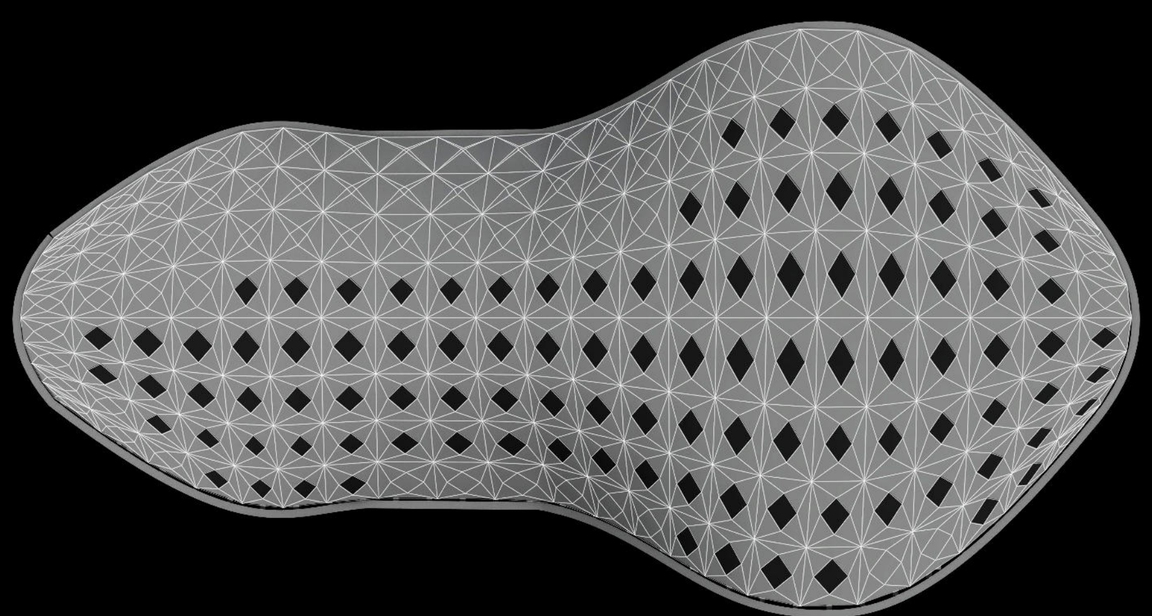
STRUCTURAL SYSTEM



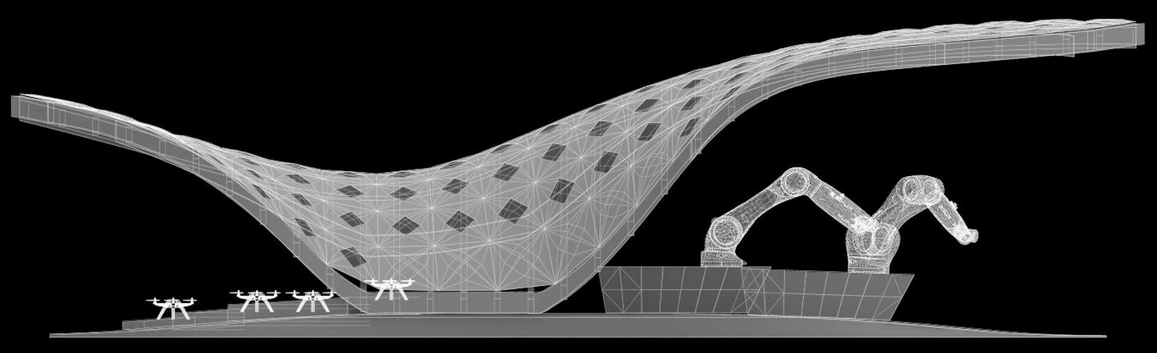
HARDWARE DATA CENTER



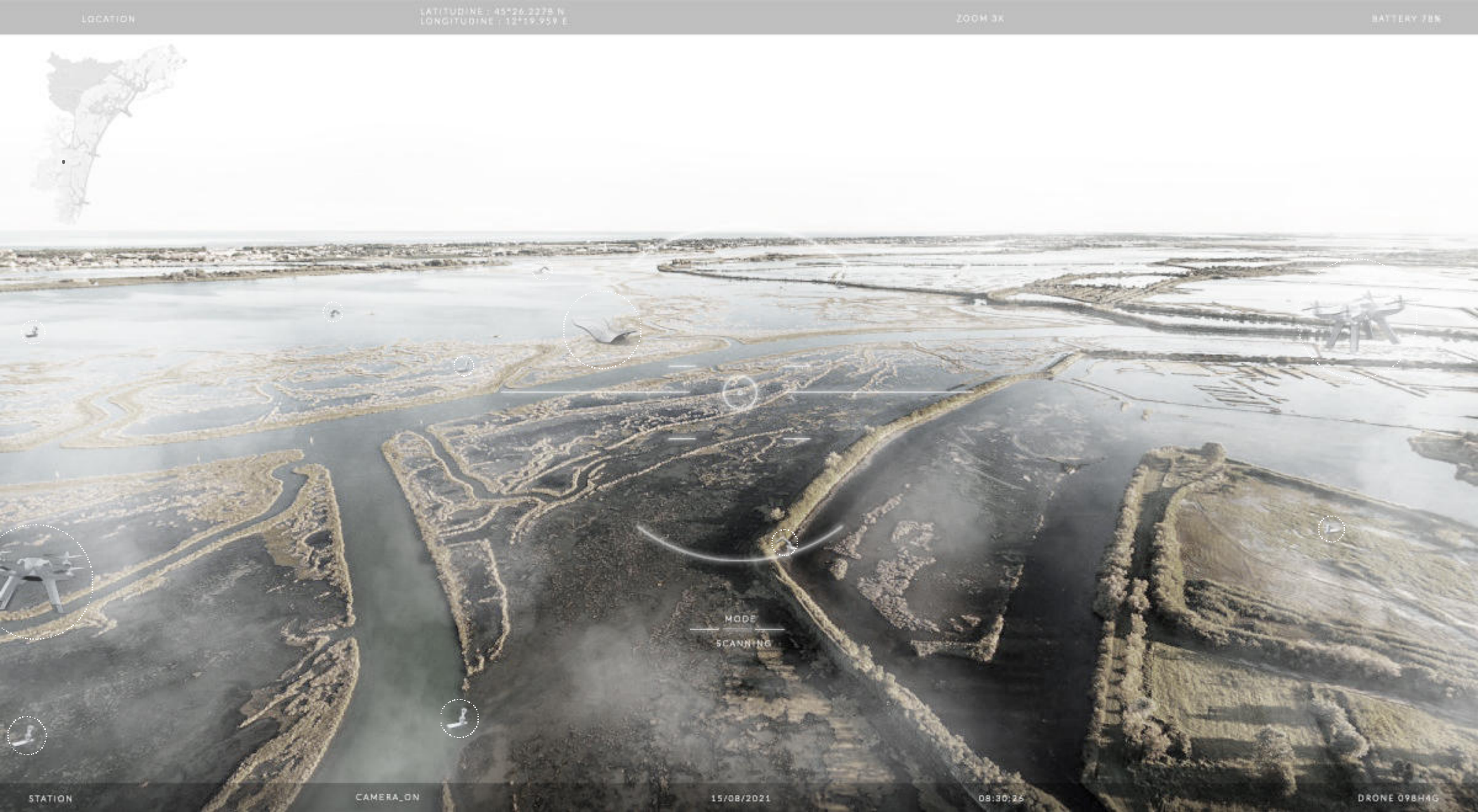
HARDWARE BASE FOR RECHARGE



TOP VIEW

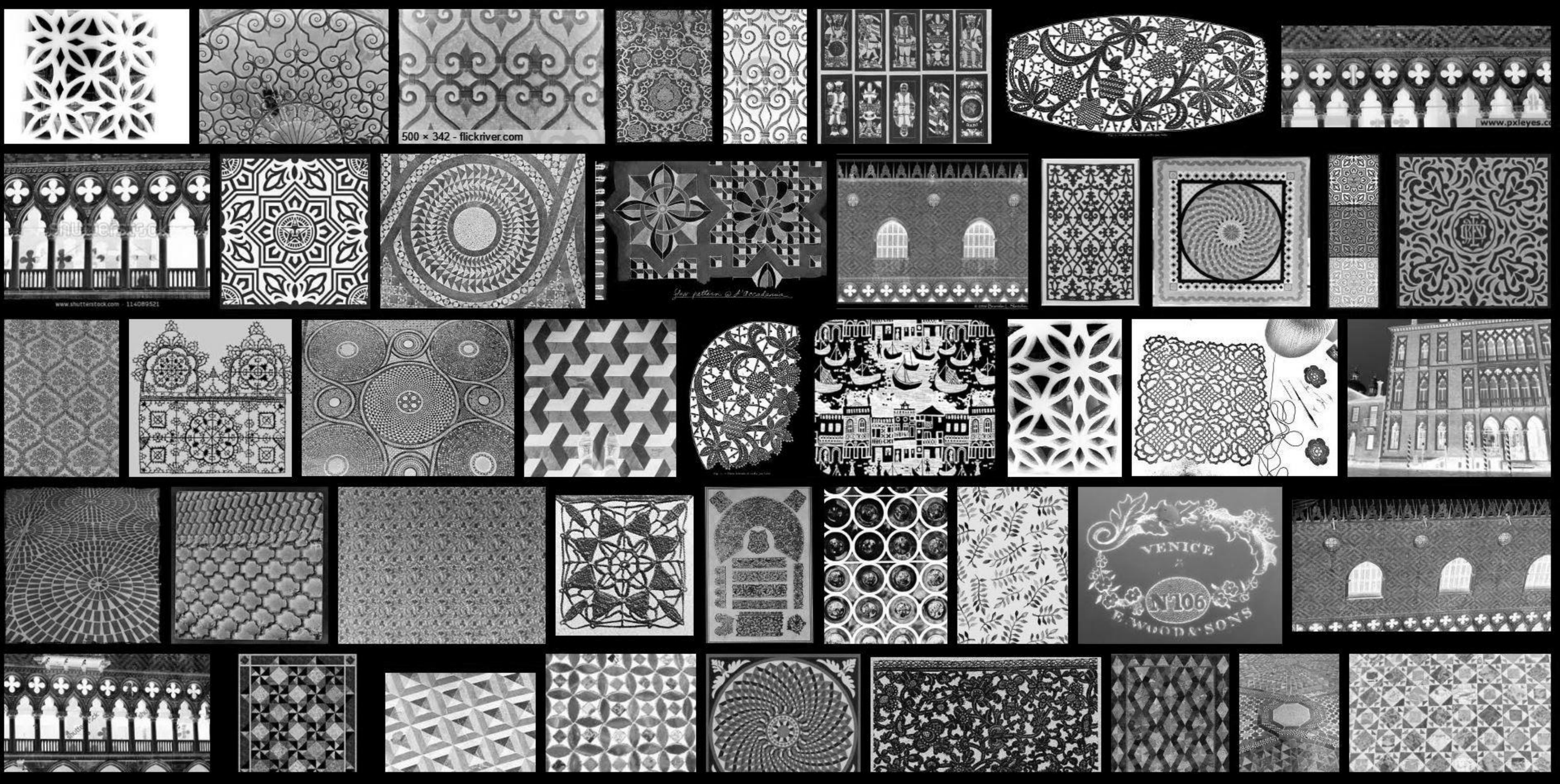


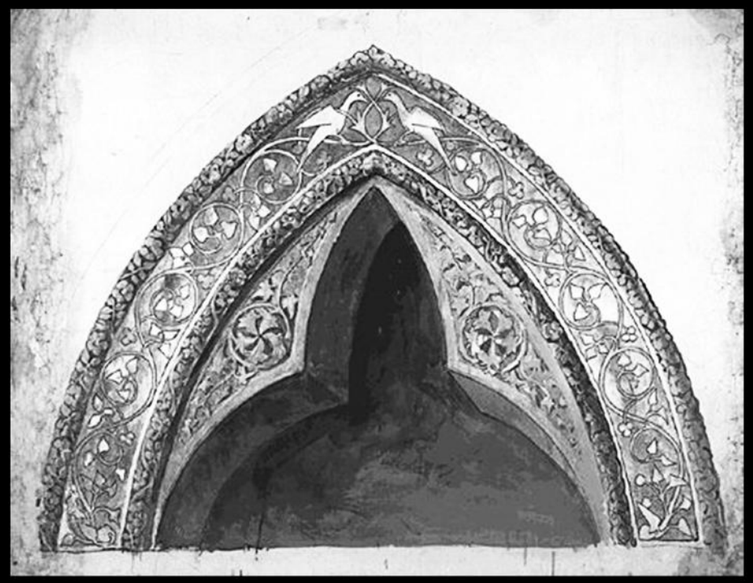
ELEVATION VIEW

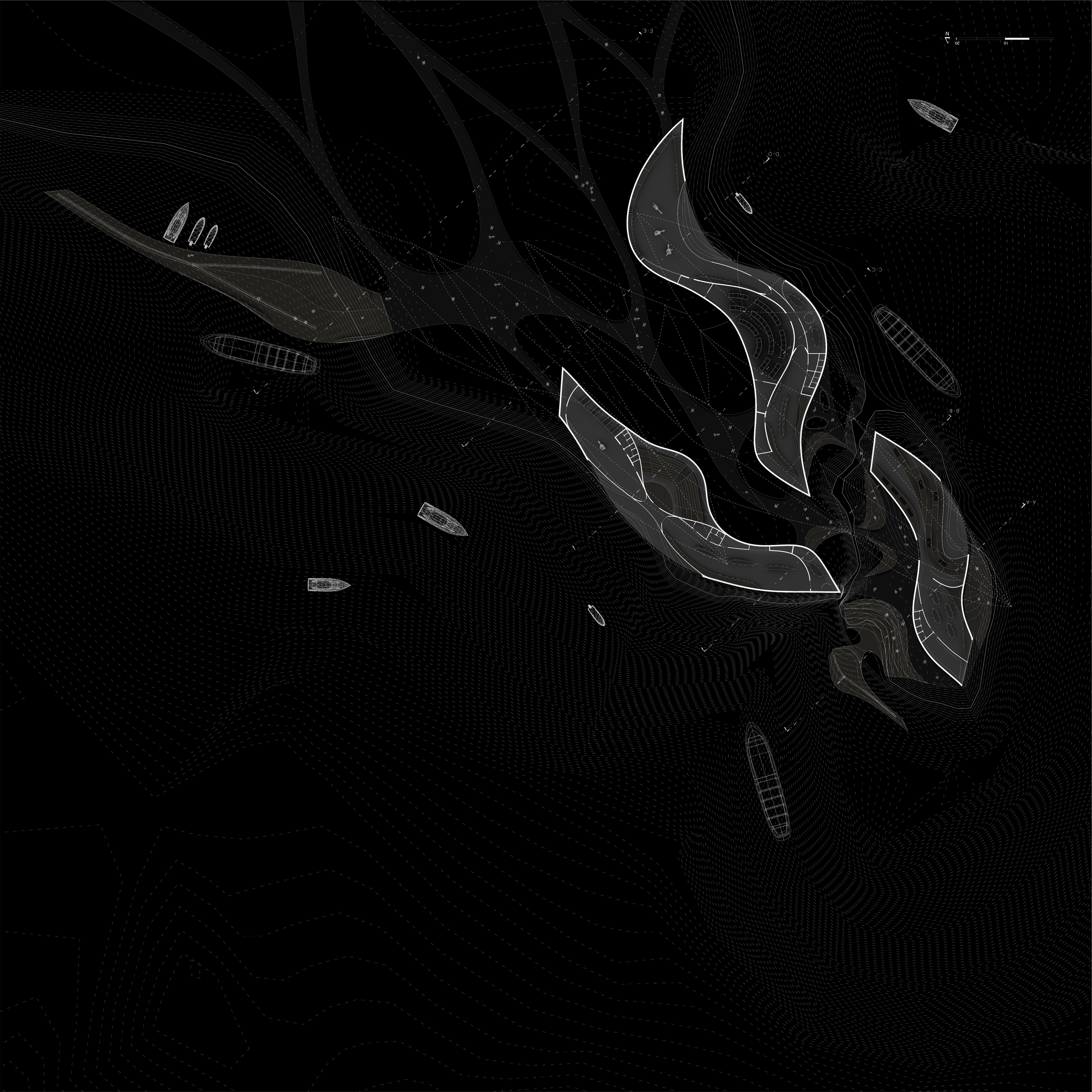

LOCATION
LATITUDINE : 45°26.2279 N
LONGITUDINE : 12°19.959 E
ZOOM 3X
BATTERY 78%
MODE
SCANNING
STATION
CAMERA_ON
15/08/2021
08:30:25
DRONE 098H4G

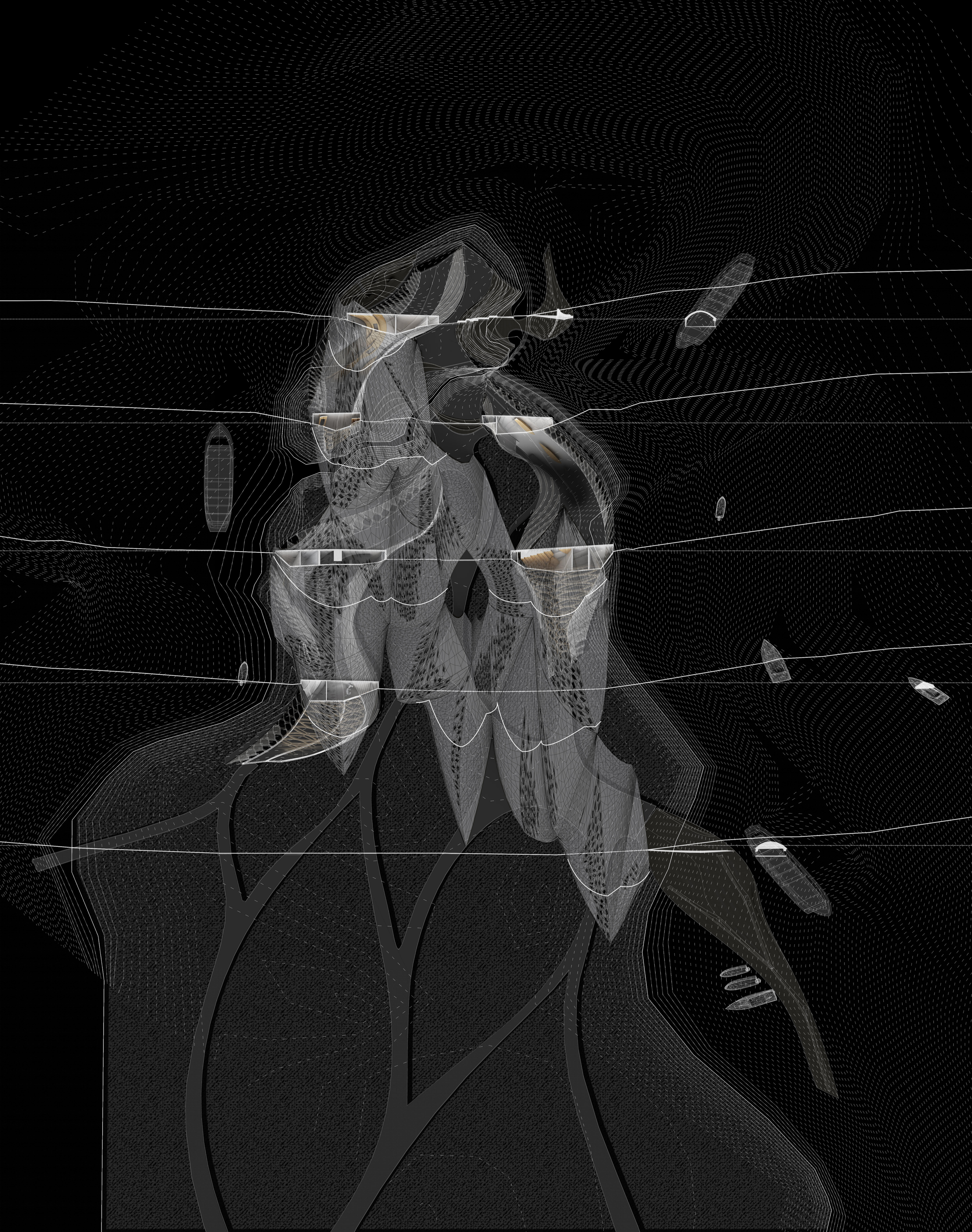
KUKA

N
200
100


500 × 342 - flickriver.com
www.pxleyes.com
www.shutterstock.com · 114089521
VENICE
N°106
E. WOOD & SONS



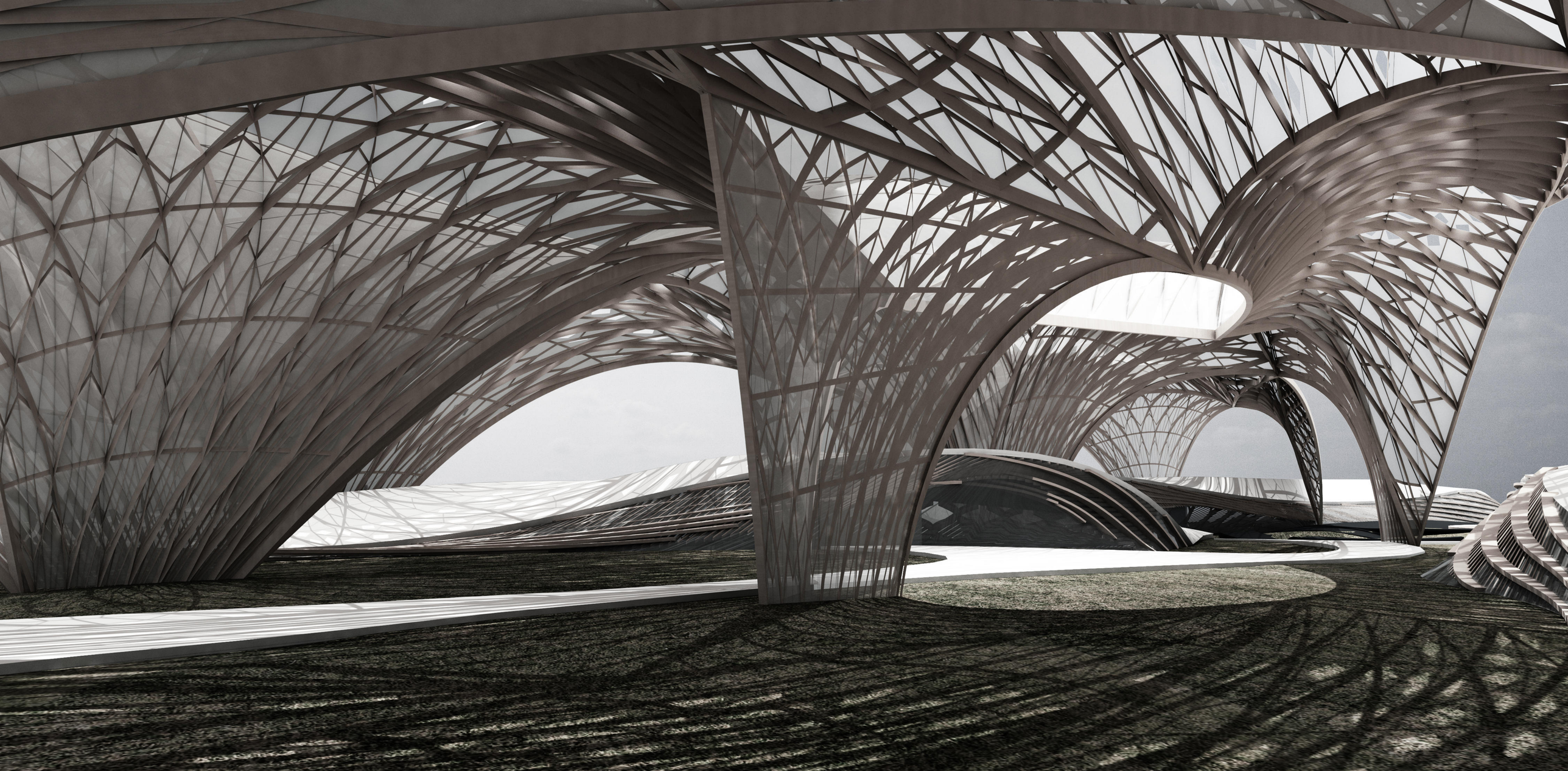

N
20
10
E-E'
D-D'
C-C'
B-B'
A-A'



ENVELOPE

ENVELOPE STRUCTURE

STRUCTURE

FACADES

INTERIOR