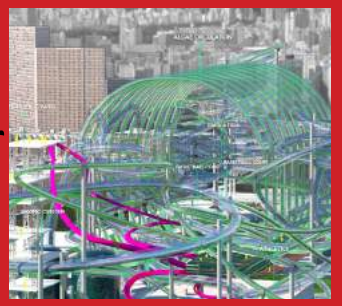
Christopher Spyrakos GSAPP AAD 2020



Futurama is a vision for the future. A comprehensive projection of tomorrow. The second part of the word comes from the greek “orama”, which is what architecture is very much based upon. Every new creation is made with the prospect of serving a purpose and creating conditions and environments that will make an impact on the future generations.

Futurama is my vision for the future. Through different briefs and curriculums every one of the designs deals with different constraints and parameters. The world we live in has entered the era of the Anthropocene. Hence, as architects, we have the responsibility to design following the vision of a sustainable future for the generations to come.

Futurama is a collection of work that brings contemporary problematics and concerns to the architectural discussion through different statements of the future.

Dead Zone Treatment Plant is a project operating through the passing of time. It is a regulatory machine that recreates alternative realities using algae. It is an equalizer that operates within a gradient of life and death through algal cultivation. The project is regulating the amount of algae in the Hudson River aiming to maximize or minimize life.

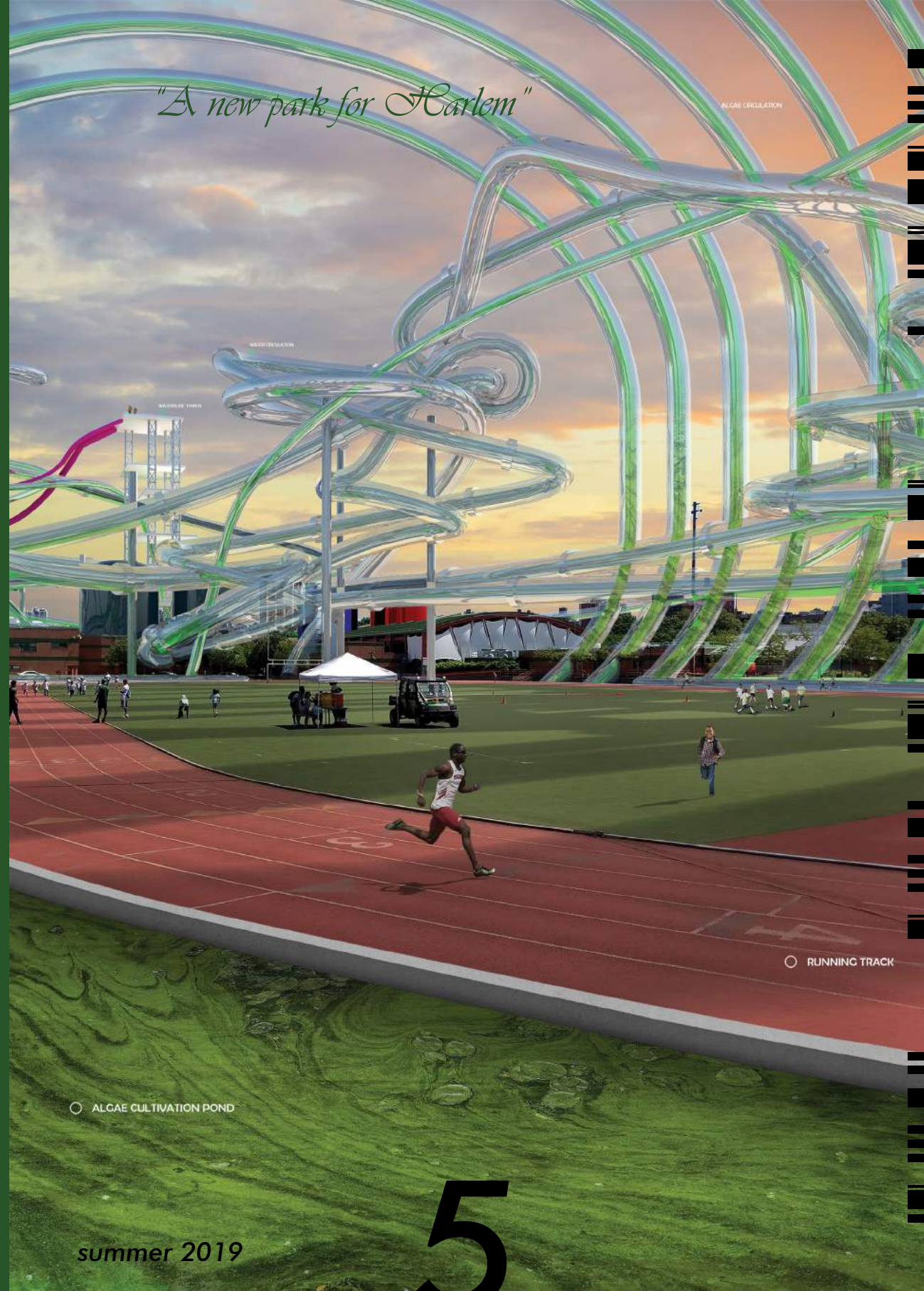
Algae is a fundamental element of a marine environment. It produces oxygen enabling aquatic life to thrive. With the abundance of nutrients such as phosphorus and nitrogen and also sunlight and temperature, algae starts to form. However, algae can also become deadly. When the water becomes extremely rich in phosphorus and nitrogen, algal blooms are generated. Over time, when algae decomposes it consumes the oxygen in the water and areas called “dead zones” start to form.

Dead Zone Treatment Plant uses the “North River Wastewater Treatment Plant” as to manage the disposal of nutrients to the river. The facility is located in Riverside Park and serves almost the whole western half of Manhattan’s sewage. The problem is that when it rains, the runoff water mixes with sewage and outflows to the river, polluting it. With the use of algae, equalization of the ecosystem becomes possible.

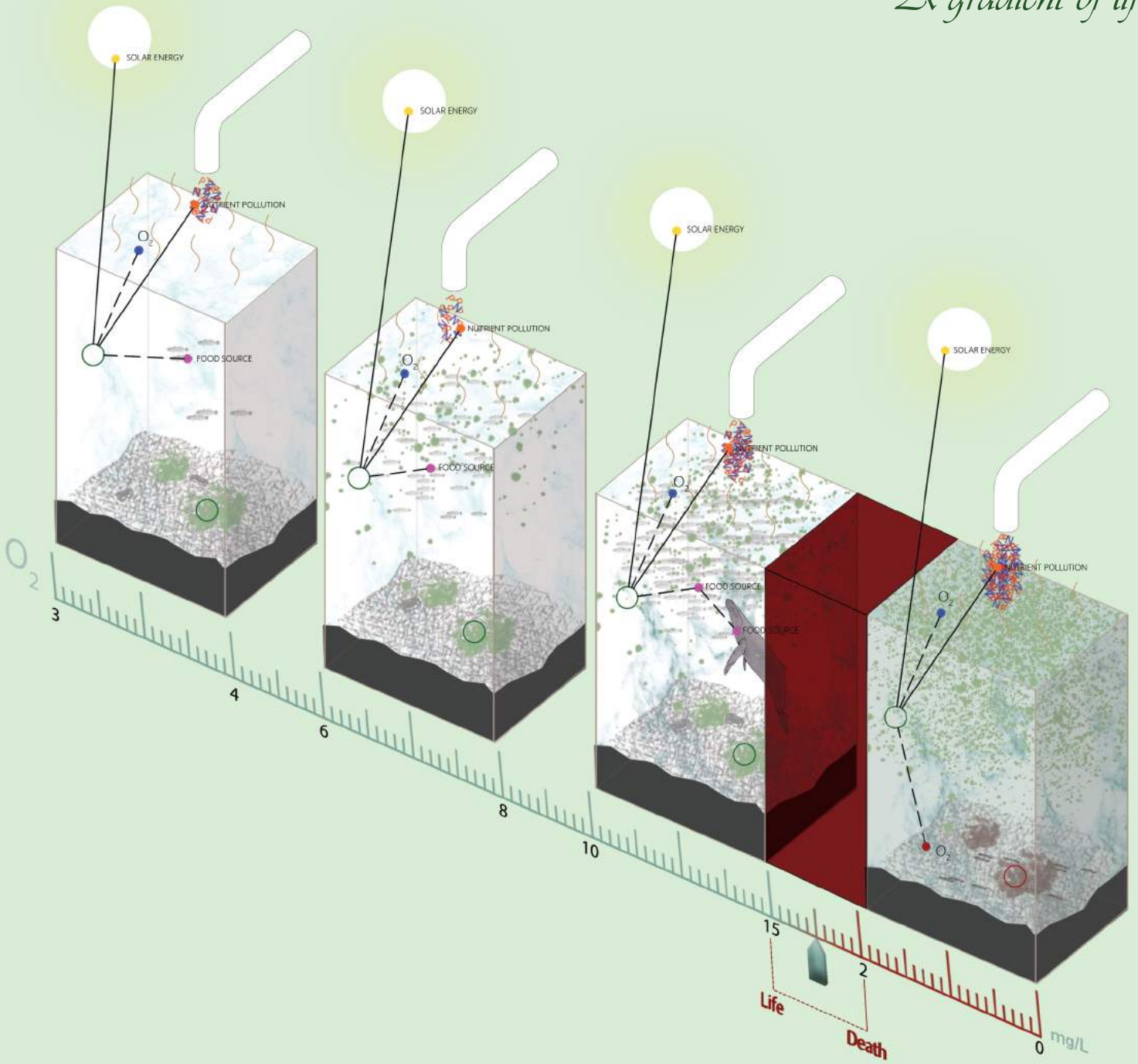
Algae cultivation is accomplished by pool systems. The rain water is collected and mixed with processed sewage to prevent polluting the river. It is then directed to the designated containers and circulates over the facility through pipes to the algae cultivation ponds. Then the algae circulates over the facility through another set of pipes when eventually is poured into the river. The amount that is released is regulated by oxygen sensors that are placed around the facility measuring the dissolved oxygen levels.

DEAD ZONE TREATMENT PLANT

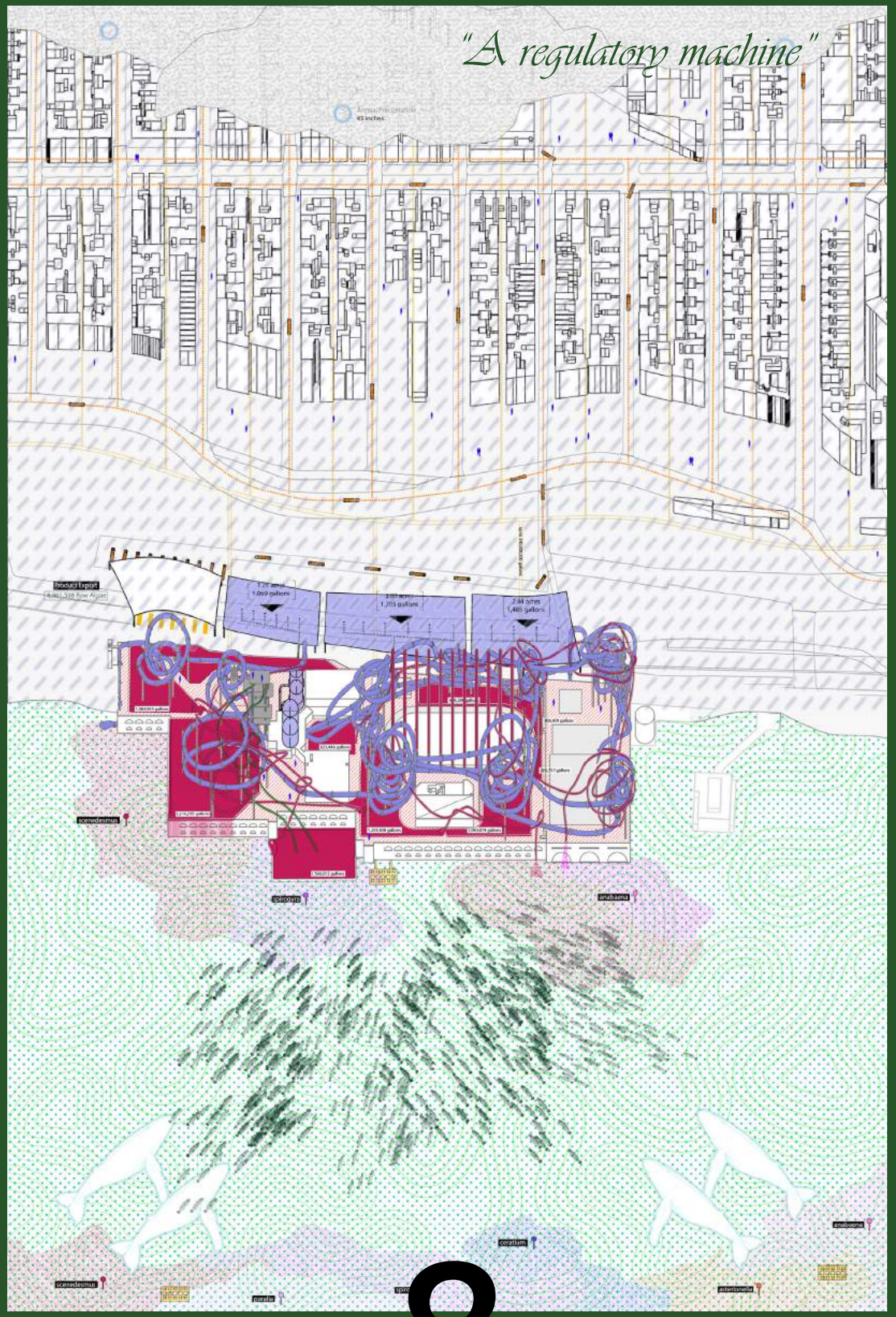
with Arvin Mirzakhanian
Advanced Design Studio IV
led by Nerea Calvillo



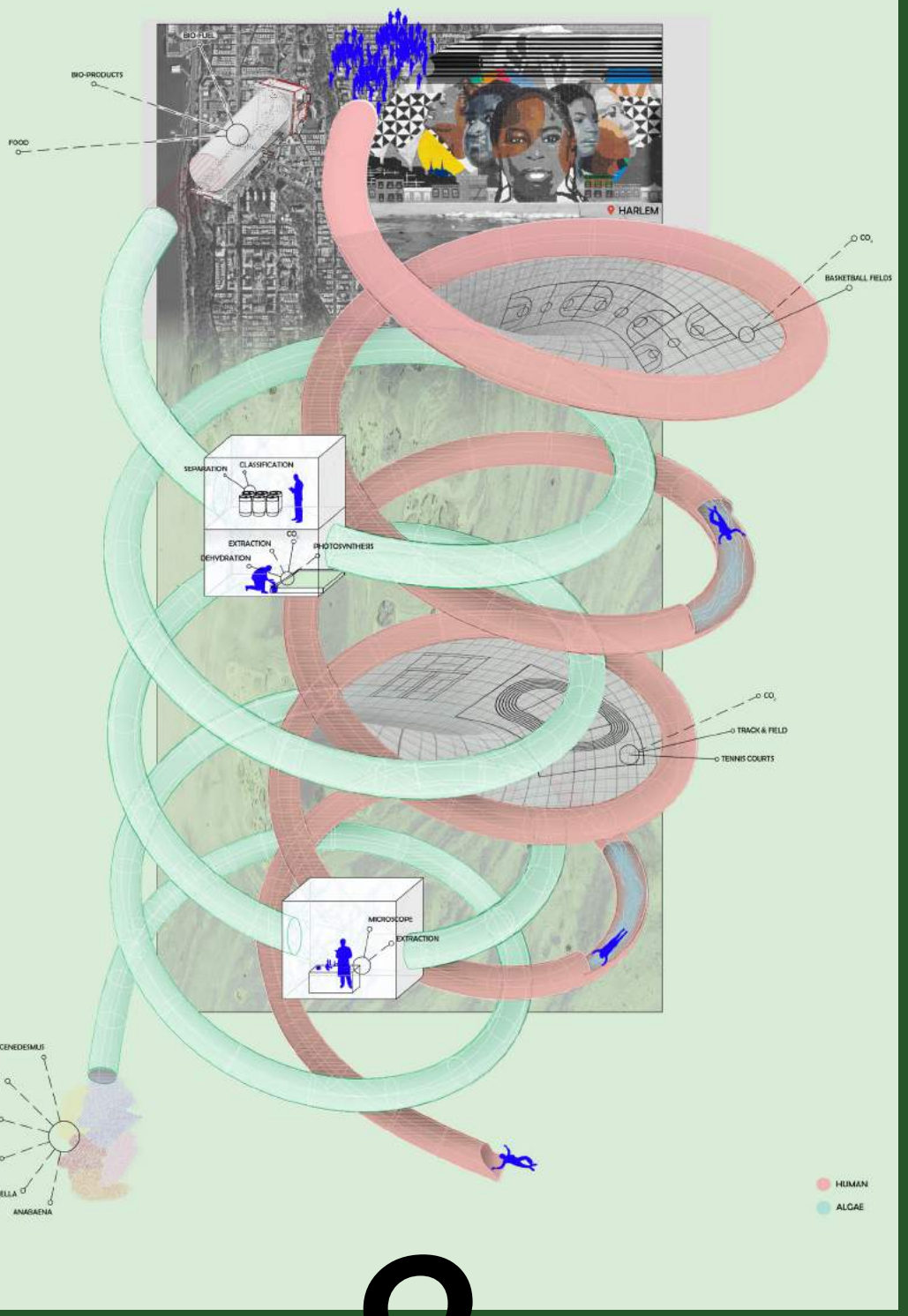
"A gradient of life & death"



"A regulatory machine"



"serving the neighborhood"



"North River Wastewater Treatment Plant"

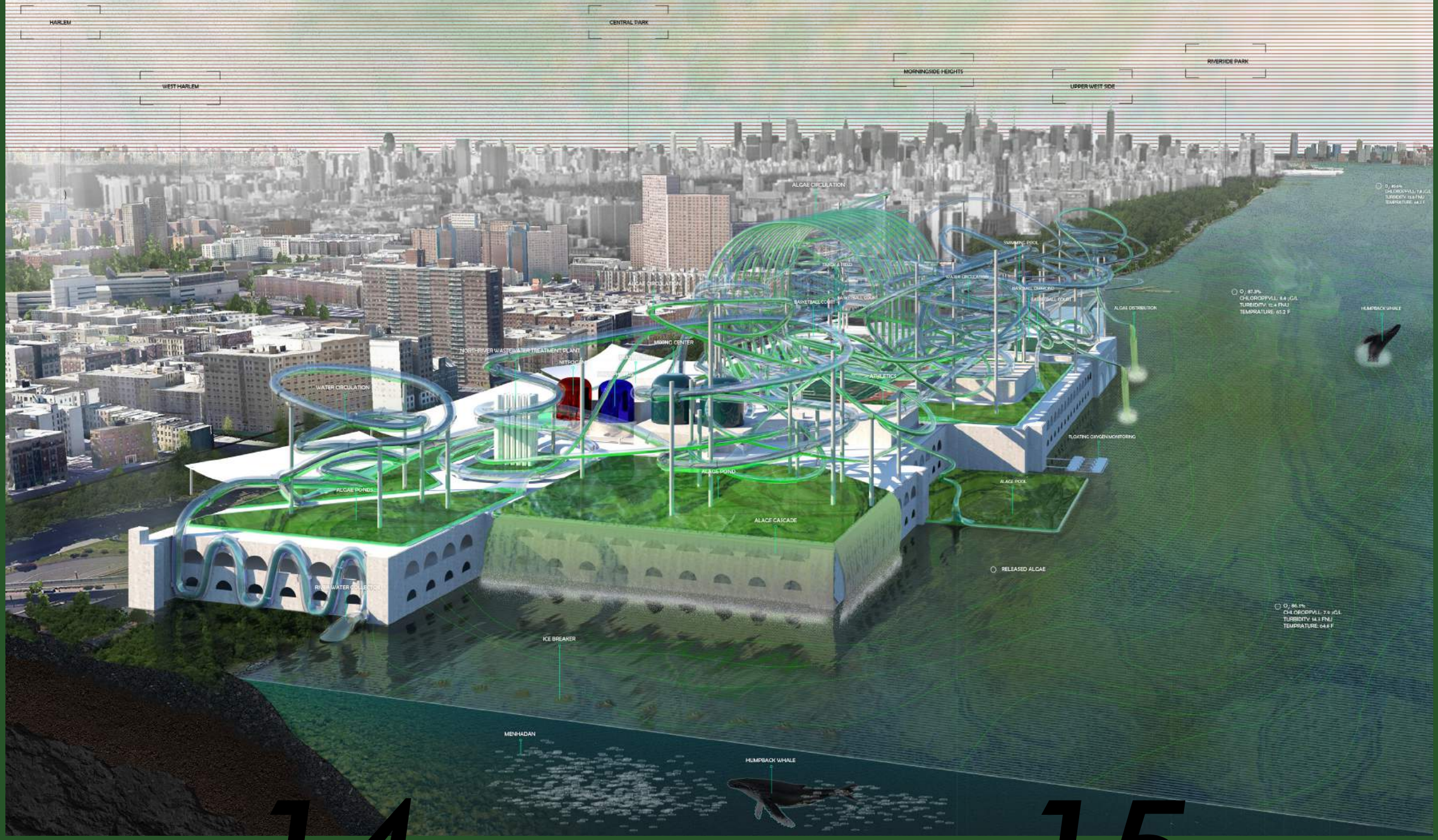
2019

"Accumulation"

2020

"Cultivation"

2025



"Recreation"

2030

"Hijack"

2060


HARLEM
WEST HARLEM
CENTRAL PARK
MORNINGSIDE HEIGHTS
UPPER WEST SIDE
RIVERSIDE PARK
ALGAE CIRCULATION
SLICE TOWER
ALGAE CIRCULATION
WATER CIRCULATION
ALGAE DISTRIBUTION
NORTH RIVER WASTEWATER TREATMENT PLANT
NITROGEN
PHOSPHORUS
MIXING CENTER
OVERGROWN ALGAE
WATER CIRCULATION
OVERGROWN ALGAE
ALGAE PONDS
OVERGROWN ALGAE
ALGAE POND
WATER SLIDE
FLOATING OXYGEN MONITORING
ALGAE POOL
ALGAE COVERING THE SURFACE
ICE BREAKER
DEAD ZONE

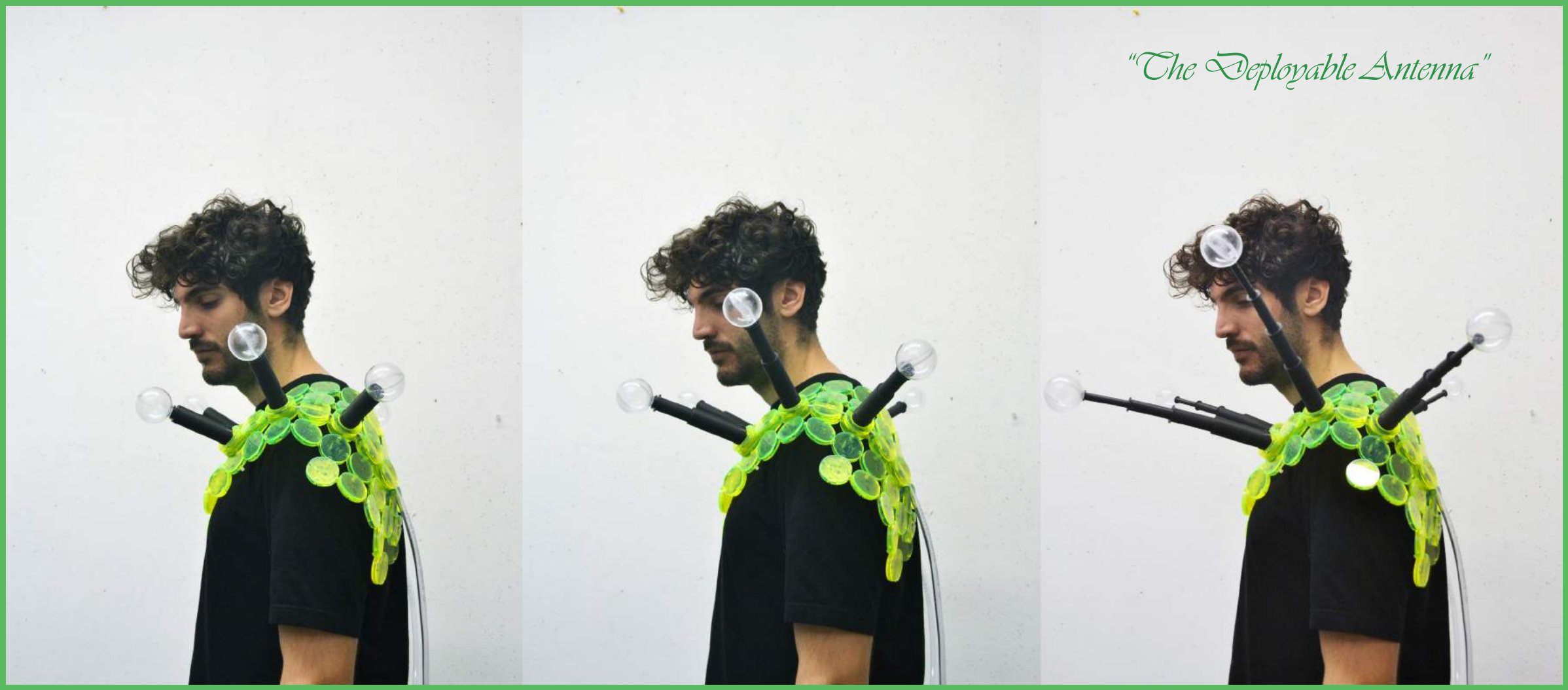
THE EUPNEA PROJECT

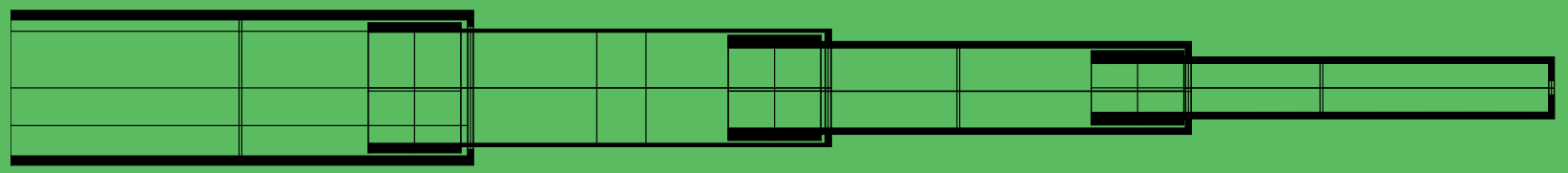
with Oscar Caballero
Transformable Design Methods
led by Matthew Davis

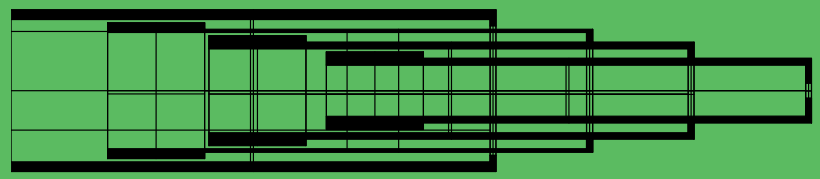
In a dystopian near future where air pollution has been magnified around the world humans would have to rely on technology to keep themselves protected. Fashion has been the main industry that is attached to the human body. The Eupnea Project, is where fashion meets technology in order to face a dystopian, yet pragmatic phenomenon.
The Eupnea Project is a wearable that stands around the users head. It consists of 109 acrylic plates attached to each other that enable a hollow pipe to run across the apparatus. The pipe connects six telescopic antennas that are placed in proximity to the head. Through a set of multiple sensors the apparatus reacts to bad air quality. Purified air, that is kept in a small package, begins to flow through the pipes and deploy the antennas, creating a mist around the users head, keeping the air quality in favorable levels.

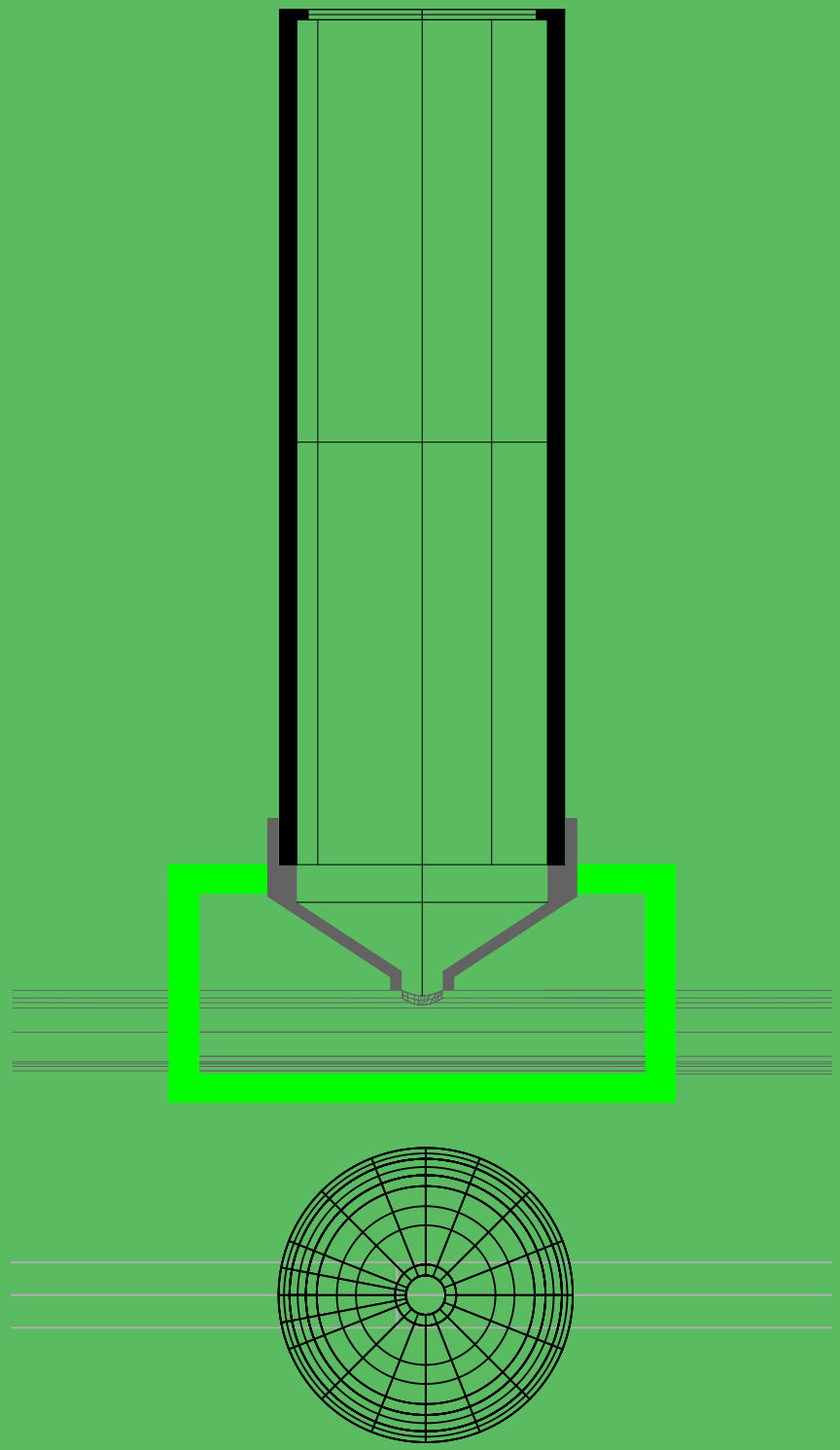
"Where fashion meets technology"

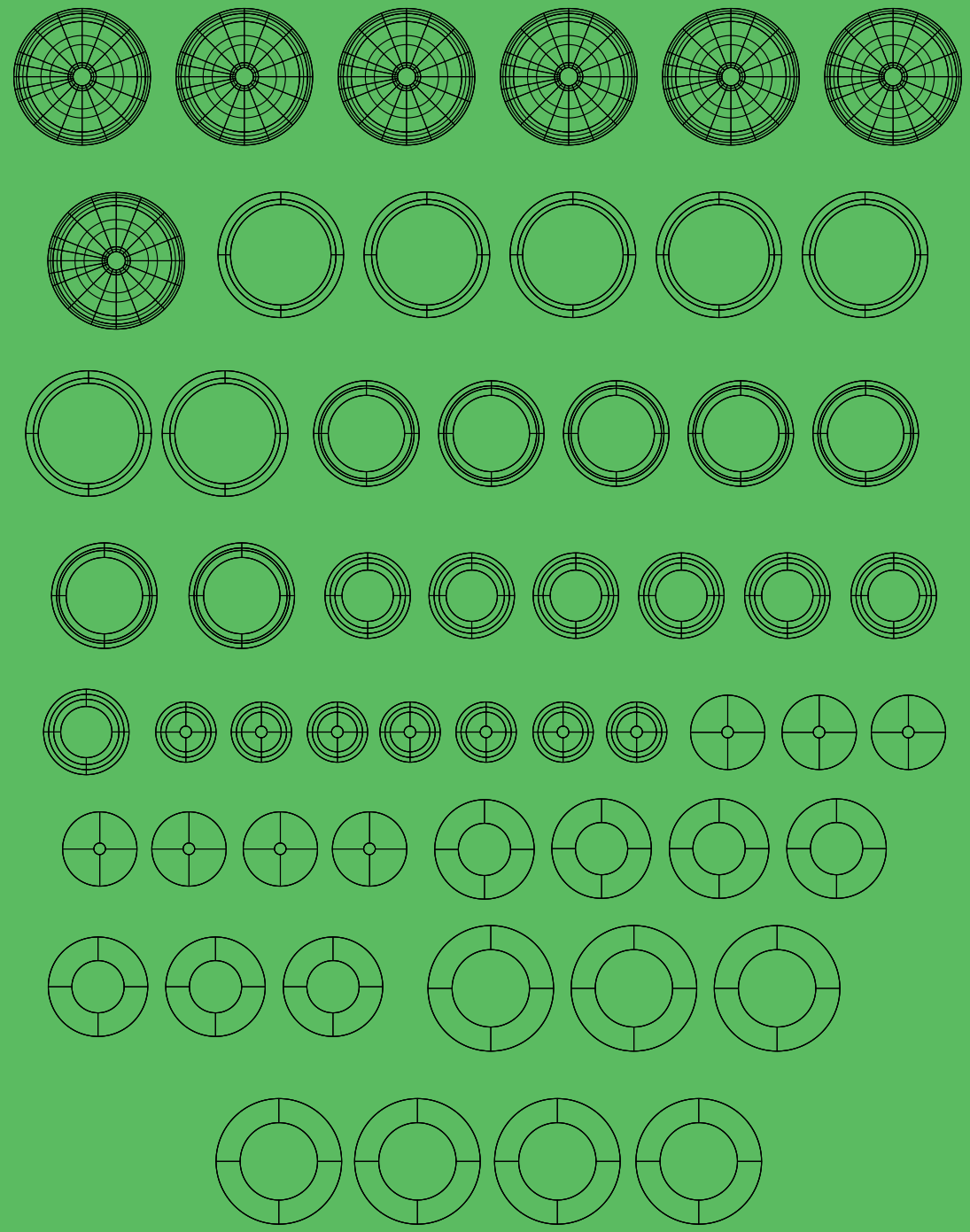
"The Deployable Antenna"

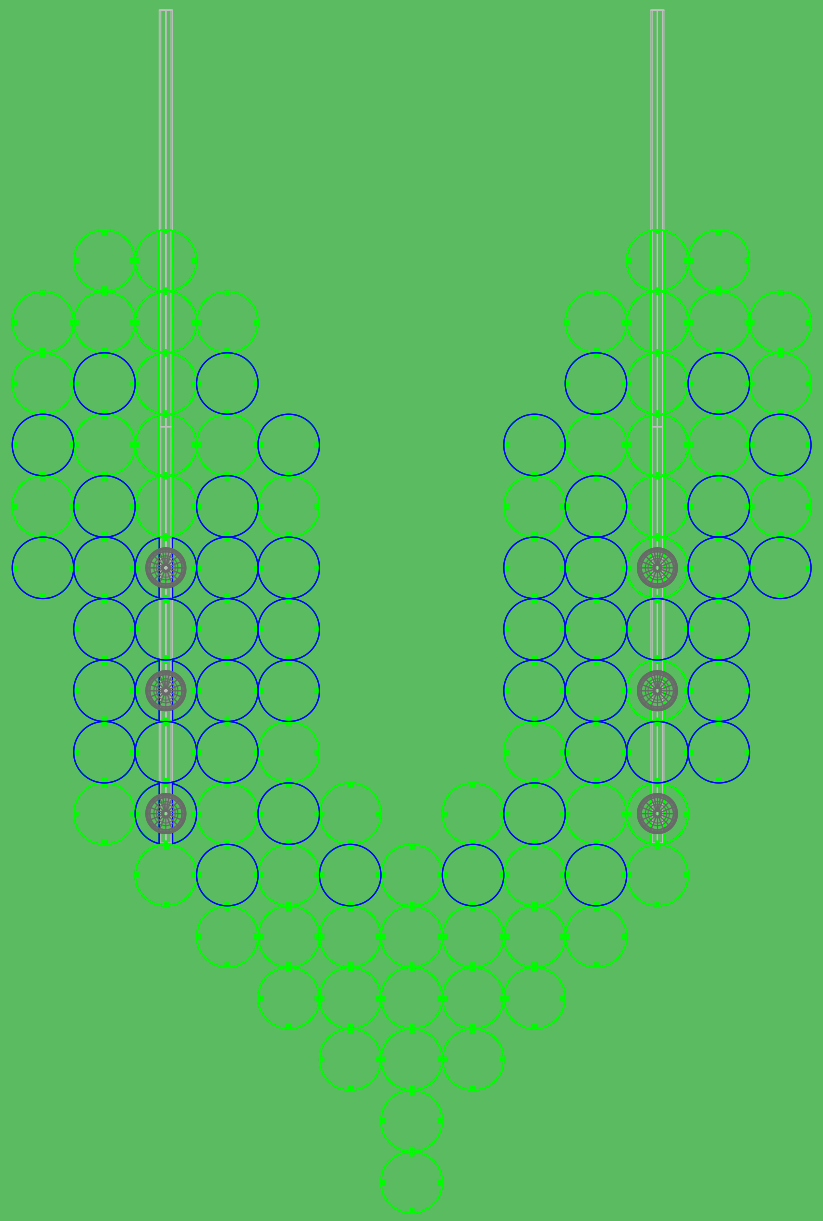


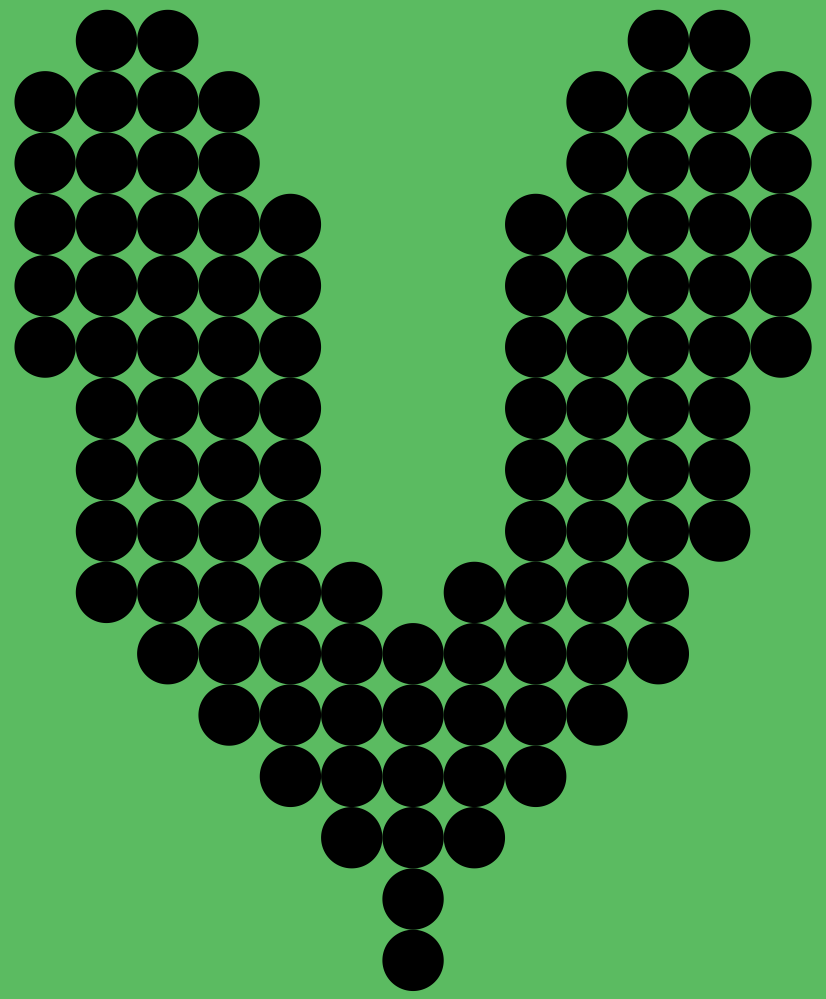












Toxic Entanglements is a Prototype at 50 Hudson Yards which utilizes architecture as a vehicle for the assemblage of processes and actors at various scales, that promotes ecosystemic cohabitation through the circulation of matter, within existing institutional frameworks.

Through the implementation of a single prototype, we can reduce emissions of metric tons of CO_2 equivalent by 92%, relative to its populations, and provide housing equivalent to10% of its immediate surrounding population, while maximizing architecture's potential to impact climate crisis productively, as a new public infrastructure.

TOXIC ENTANGLEMENTS

with Frederico Gualberto Castello Branco & Frank Mandell

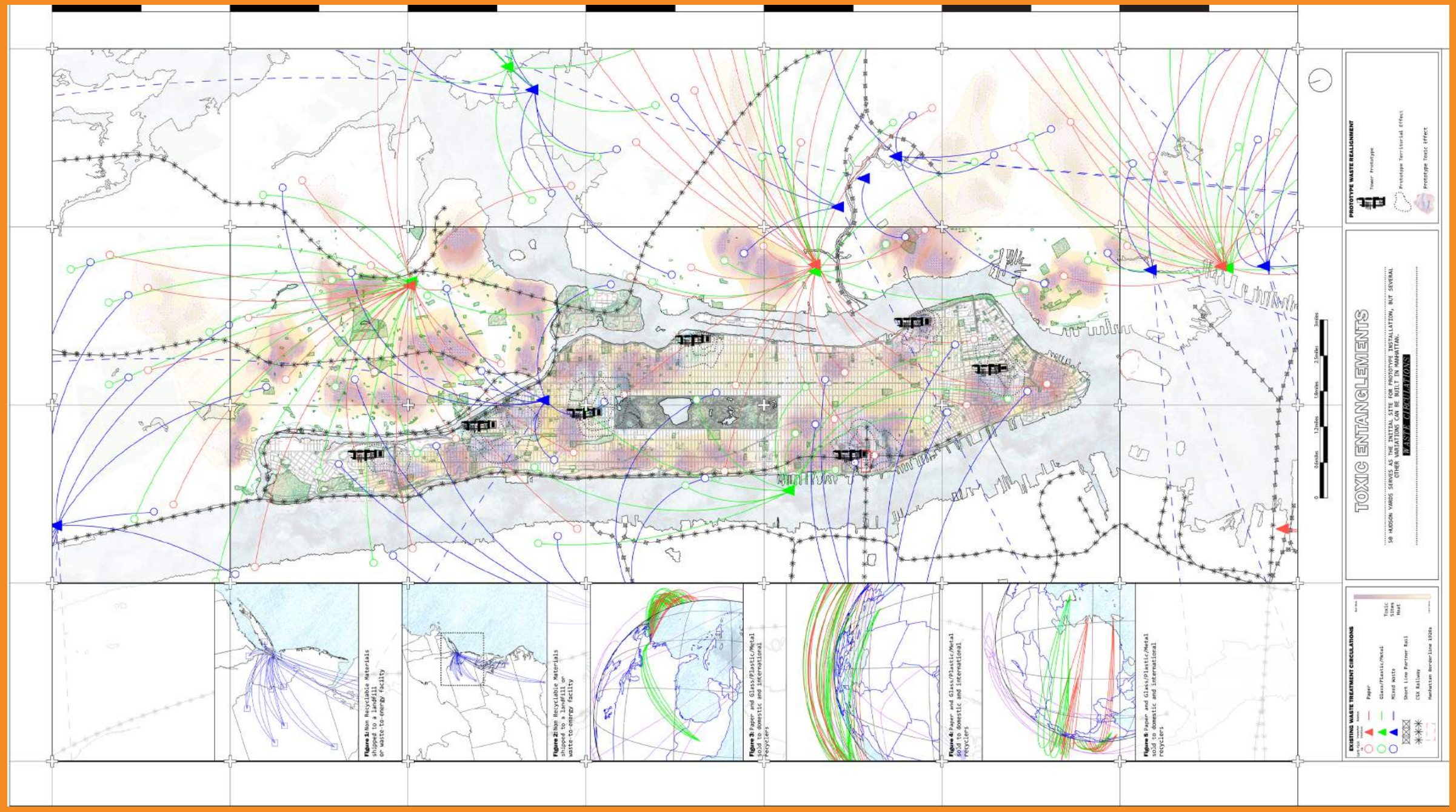
Advanced Design Studio V

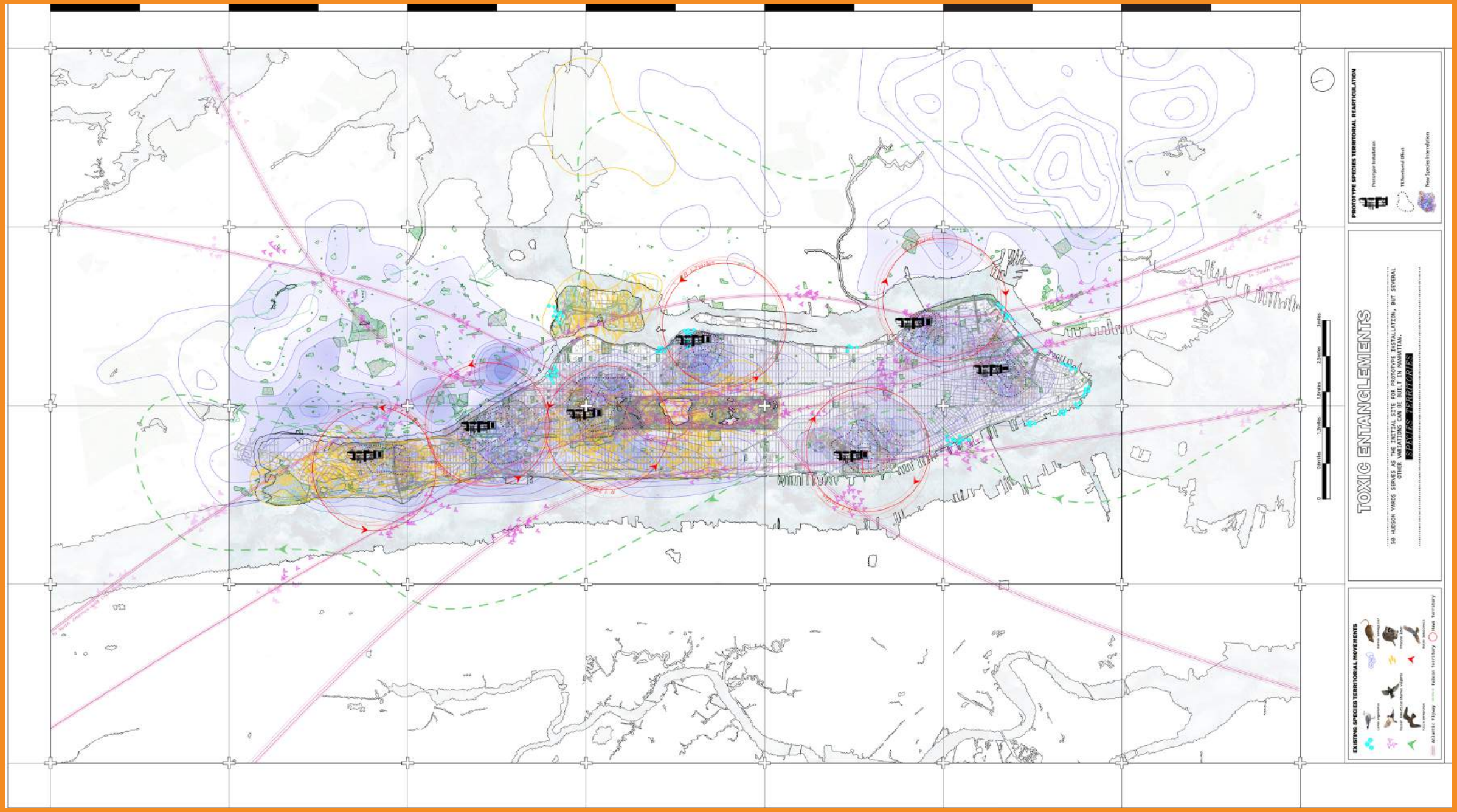
led by Andrés Jaque

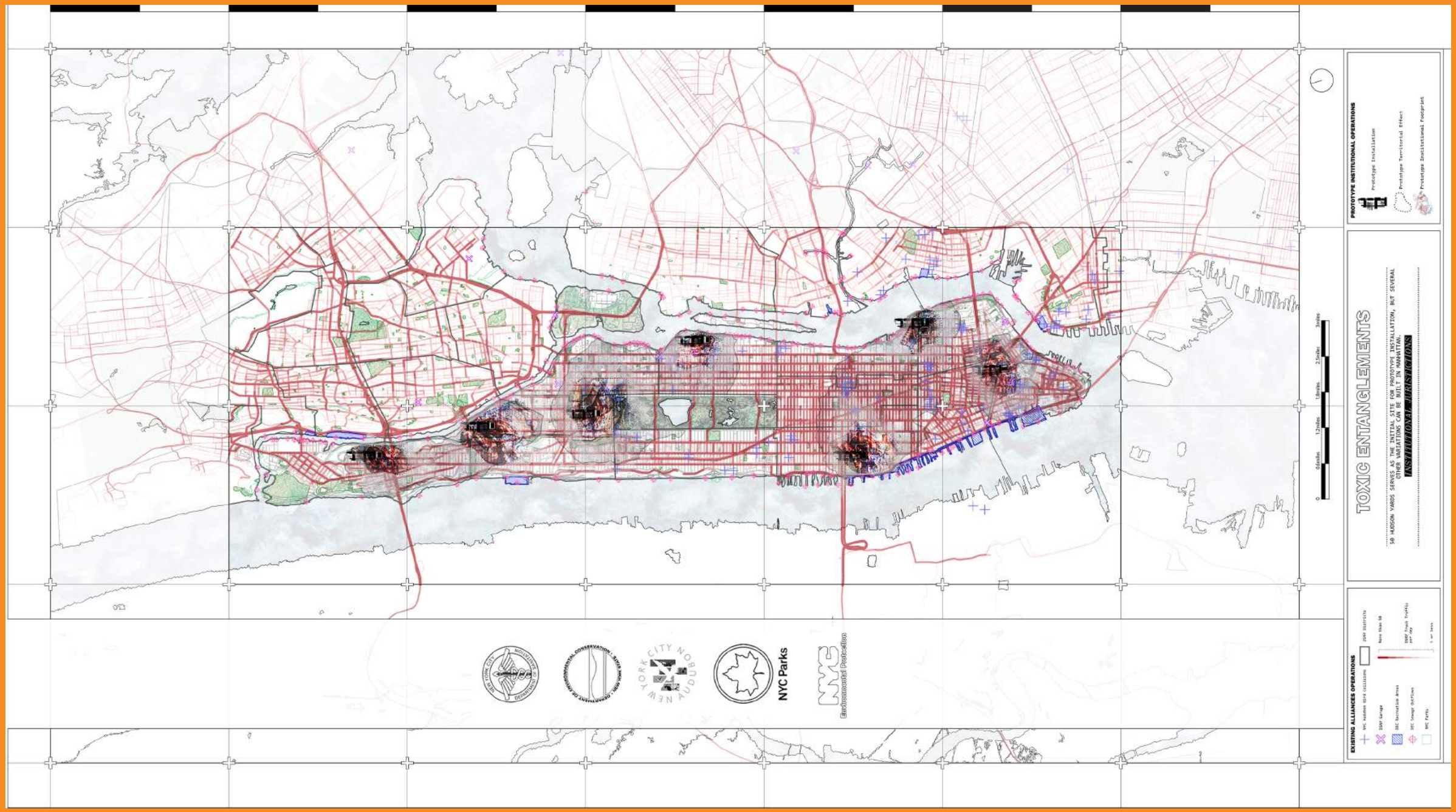
In spite of the effort of creating and perpetuating the image of a segregated city, where humans are separated from non human actors, and waste management tactics works to make diverse ecosystems invisible, we need to rearticulate our relationships to other species. We analyze existing environments that are tied to waste management today to forecast and envision a possible New York City. In this, reevaluating our charismatic relationship to species of various scales.

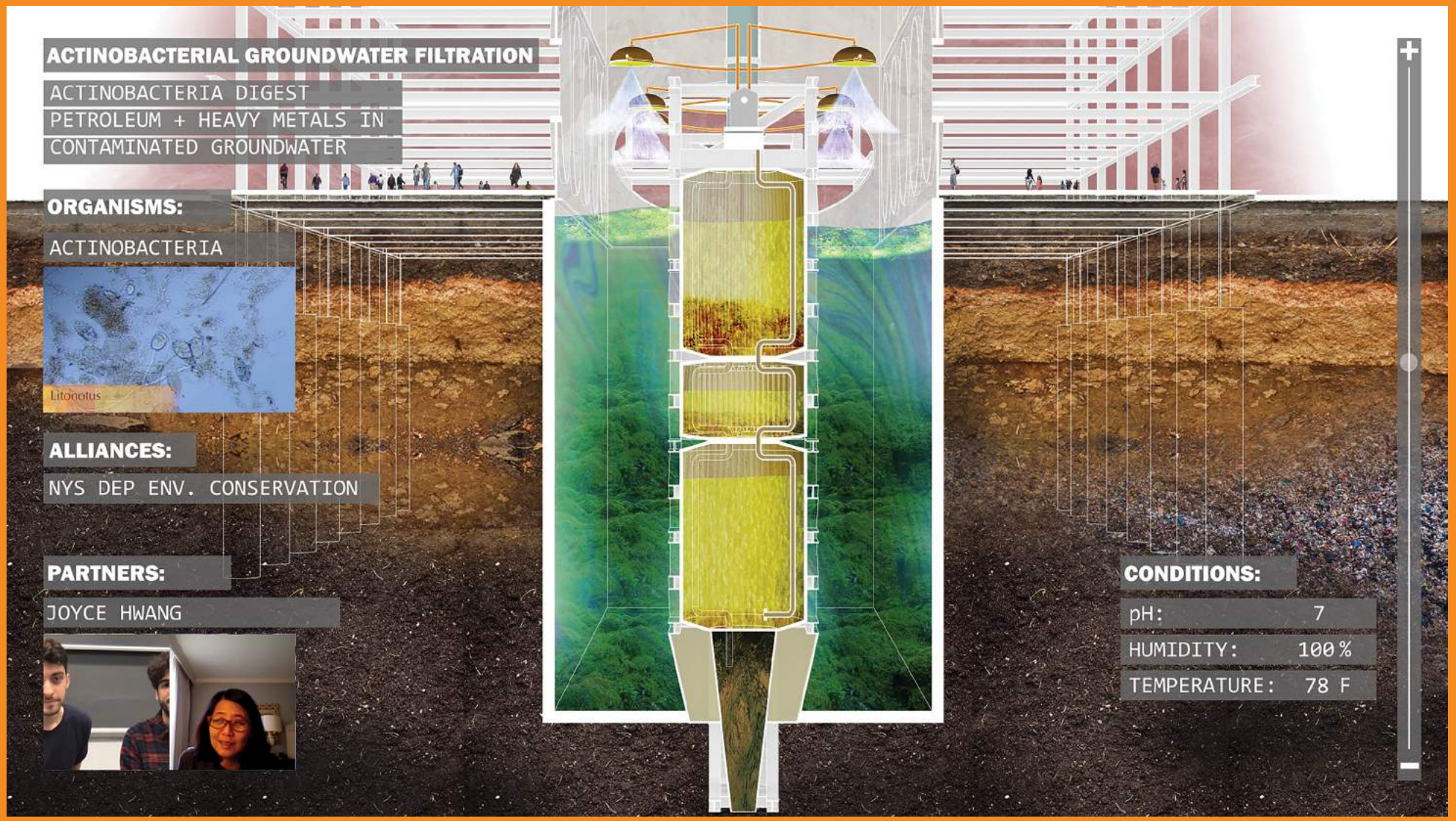
In this prototype, human and non human populations are organized to feed and provide for each other. Matter and resource are exchanged, produced, consumed and expelled. What is toxic for certain species nurtures the next, through a continuous circular system. An assemblage of 10 processes, interconnecting diverse actors, humans, non humans and mechanical systems, conditioned by a heat and humidity emitting envelope.

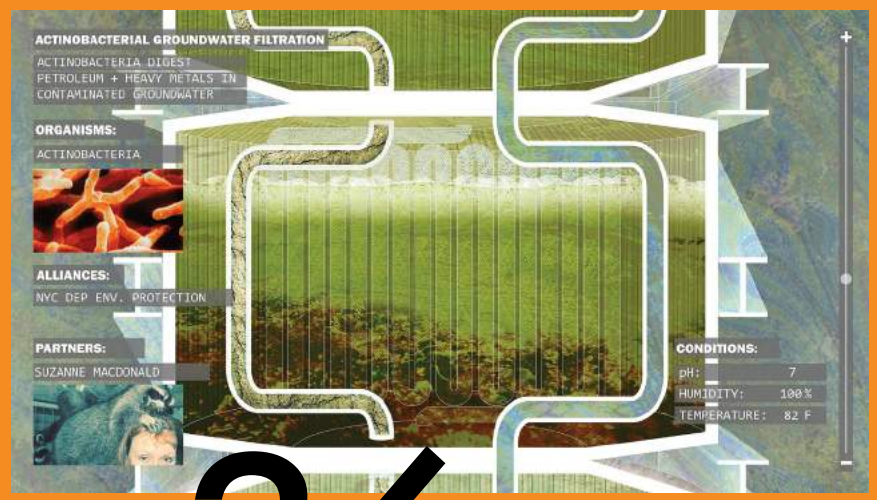
fall 2019


PROTOTYPE WASTE REALIGNMENT
Tower Prototype
Prototype Territorial Effect
Prototype Toxic Effect
TOXIC ENTANGLEMENTS
50 HUDSON YARDS SERVES AS THE INITIAL SITE FOR PROTOTYPE INSTALLATION, BUT SEVERAL OTHER VARIATIONS CAN BE BUILT IN MANHATTAN.
0
6blocks
12blocks
18blocks
2.5miles
3miles
EXISTING WASTE TREATMENT CIRCULATIONS
Paper
Glass/Plastic/Metal
Mixed Waste
Short Line Partner Rail
CSX Railway
Manhattan Border-Line 1924
Toxic Waste Mixed Waste
Figure 1: Non Recyclable Materials shipped to a landfill or waste-to-energy facility
Figure 2: Non Recyclable Materials shipped to a landfill or waste-to-energy facility
Figure 3: Paper and Glass/Plastic/Metal sold to domestic and international recyclers
Figure 4: Paper and Glass/Plastic/Metal sold to domestic and international recyclers
Figure 5: Paper and Glass/Plastic/Metal sold to domestic and international recyclers

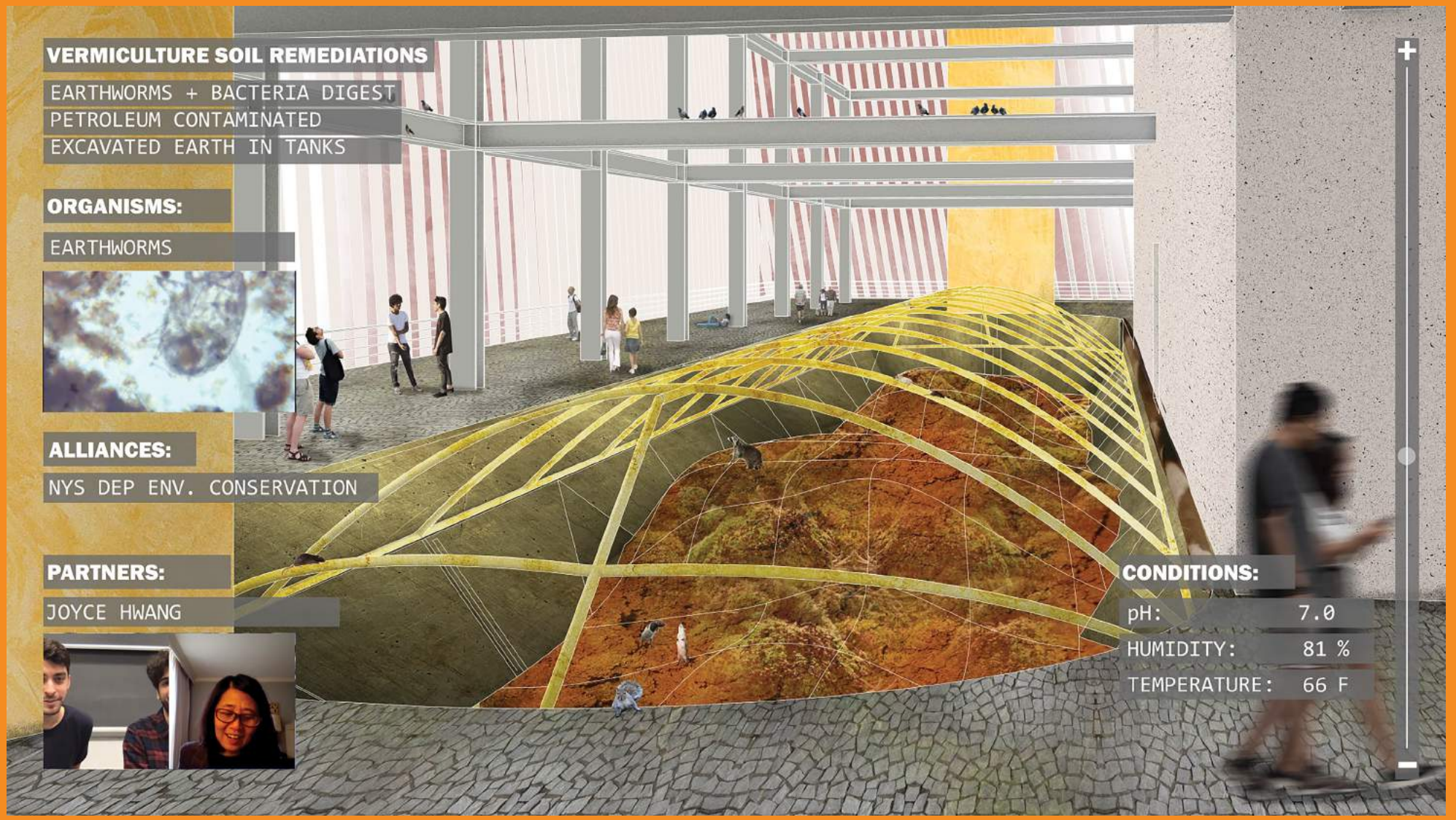

PROTOTYPE SPECIES TERRITORIAL REARTICULATION
Prototype Installation
TE Territorial Effect
New Species Interrelation
TOXIC ENTANGLEMENTS
50 HUDSON YARDS SERVES AS THE INITIAL SITE FOR PROTOTYPE INSTALLATION; BUT SEVERAL OTHER VARIATIONS CAN BE BUILT IN MANHATTAN.
SPECIES TERRITORIES
EXISTING SPECIES TERRITORIAL MOVEMENTS
Atlantic Flyway
Falcon territory
Hawk territory


PROTOTYPE INSTITUTIONAL OPERATIONS
Prototype Installation
Prototype Territorial Effect
Prototype Institutional Footprint
TOXIC ENTANGLEMENTS
50 HUDSON YARDS SERVES AS THE INITIAL SITE FOR PROTOTYPE INSTALLATION, BUT SEVERAL OTHER VARIATIONS CAN BE BUILT IN MANHATTAN.
INSTITUTIONAL JURISDICTIONS
0
6Miles
1.2Miles
1.8Miles
2.5Miles
3Miles
EXISTING ALLIANCES OPERATIONS
DSNY Districts
DSNY Trucks Traffic per day
1 car lane
NYC Parks
NYC Environmental Protection


ACTINOBACTERIAL GROUNDWATER FILTRATION
ACTINOBACTERIA DIGEST
PETROLEUM + HEAVY METALS IN
CONTAMINATED GROUNDWATER
ORGANISMS:
ACTINOBACTERIA
Litonotus
ALLIANCES:
NYS DEP ENV. CONSERVATION
PARTNERS:
JOYCE HWANG
CONDITIONS:
pH: 7
HUMIDITY: 100%
TEMPERATURE: 78 F


ACTINOBACTERIAL GROUNDWATER FILTRATION
ACTINOBACTERIA DIGEST
PETROLEUM + HEAVY METALS IN
CONTAMINATED GROUNDWATER
ORGANISMS:
ACTINOBACTERIA
ALLIANCES:
NYC DEP ENV. PROTECTION
PARTNERS:
SUZANNE MACDONALD
CONDITIONS:
pH: 7
HUMIDITY: 100%
TEMPERATURE: 82 F


ACTINOBACTERIAL GROUNDWATER FILTRATION
ACTINOBACTERIA DIGEST
PETROLEUM + HEAVY METALS IN
CONTAMINATED GROUNDWATER
ORGANISMS:
ACTINOBACTERIA
ALLIANCES:
NYC DEP ENV. PROTECTION
PARTNERS:
ROBIN NAGLE
CONDITIONS:
pH: 7
HUMIDITY: 100%
TEMPERATURE: 82 F


VERMICULTURE SOIL REMEDIATIONS
EARTHWORMS + BACTERIA DIGEST
PETROLEUM CONTAMINATED
EXCAVATED EARTH IN TANKS
ORGANISMS:
EARTHWORMS
ALLIANCES:
NYS DEP ENV. CONSERVATION
PARTNERS:
JOYCE HWANG
CONDITIONS:
pH: 7.0
HUMIDITY: 81 %
TEMPERATURE: 66 F


VERMICULTURE SOIL REMEDIATIONS
EARTHWORMS + BACTERIA DIGEST
PETROLEUM CONTAMINATED
EXCAVATED EARTH IN TANKS
ORGANISMS:
EARTHWORMS
ALLIANCES:
NYS DEP ENV. CONSERVATION
PARTNERS:
RIYANA RAZALEE
CONDITIONS:
pH: 6.9
HUMIDITY: 79 %
TEMPERATURE: 70 F


VERMICULTURE SOIL REMEDIATIONS
EARTHWORMS + BACTERIA DIGEST
PETROLEUM CONTAMINATED
EXCAVATED EARTH IN TANKS
ORGANISMS:
HCB BACTERIA
ALLIANCES:
NYS DEP ENV. CONSERVATION
PARTNERS:
ROBIN NAGLE
CONDITIONS:
pH: 7.1
HUMIDITY: 70 %
TEMPERATURE: 75 F

MYCELIAL PLASTICS PROCESSING

OYSTER MUSHROOMS GROW WITH METHANOGENIC DIGESTATE AND PLASTICS DIGESTION.

ORGANISMS:

ACTINOBACTERIA

ALLIANCES:

NYC DEP ENV. PROTECTION

PARTNERS:

RIYANA RAZALEE

CONDITIONS:

pH:	10
HUMIDITY:	93 %
TEMPERATURE:	93 F

ECOSYSTEMIC GROUND 1

DIGESTATE IS DISPERSED AND FORMS A LATENT ECOTONIC CONDITION FOR SPECIES

ORGANISMS:

RACCOON

ALLIANCES:

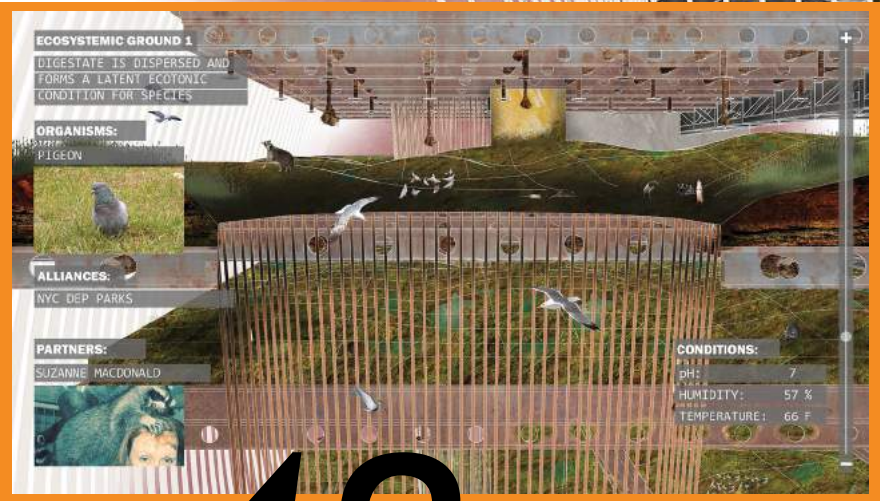
NYC DEP ENV. PROTECTION

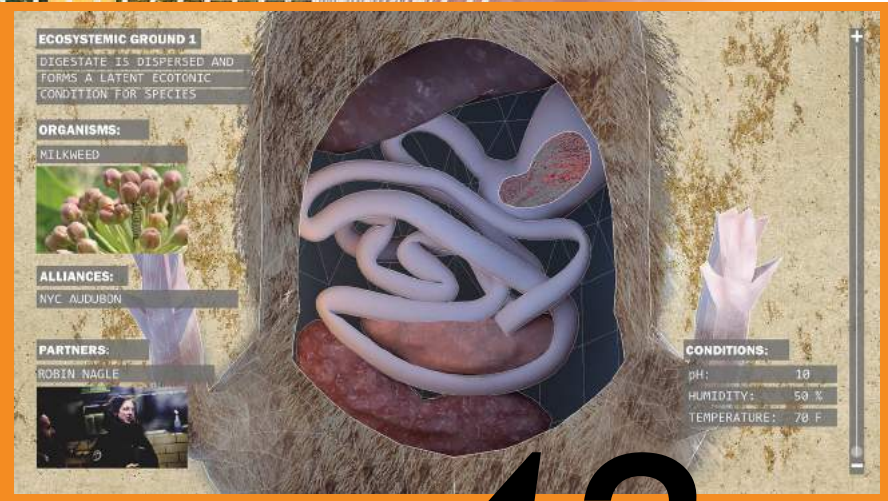
PARTNERS:

JOYCE HWANG

CONDITIONS:

pH:	10
HUMIDITY:	43 %
TEMPERATURE:	73 F



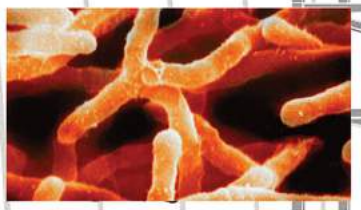


AQUATIC CIRCULATION POOLS

INTERCONNECTED OPEN AIR TANKS DISTRIBUTE WATER IN CONDITIONS TO OTHER SYSTEMS

ORGANISMS:

ACTINOBACTERIA



ALLIANCES:

NYS DEP ENV. CONSERVATION

PARTNERS:

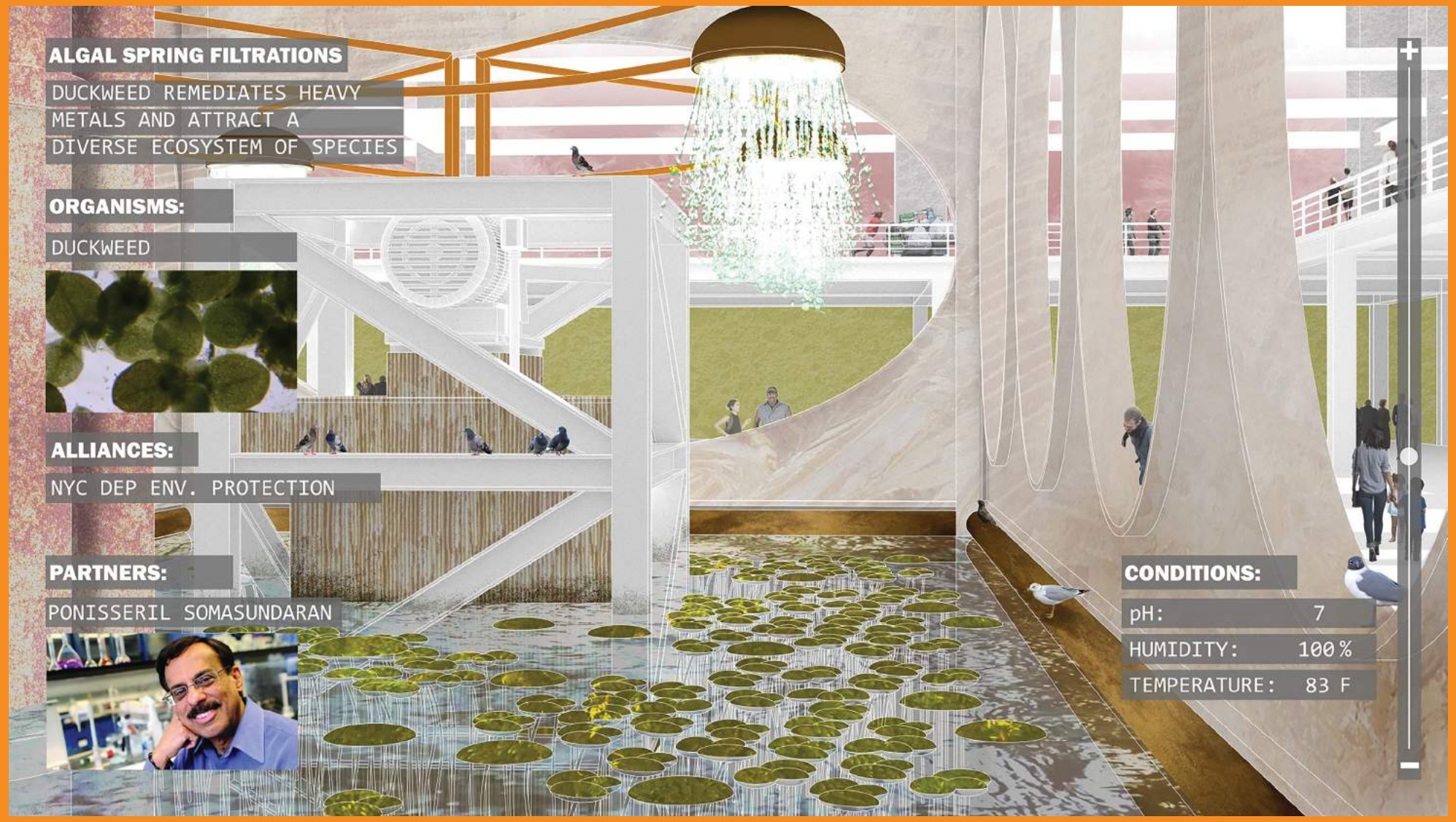
JOYCE HWANG

CONDITIONS:

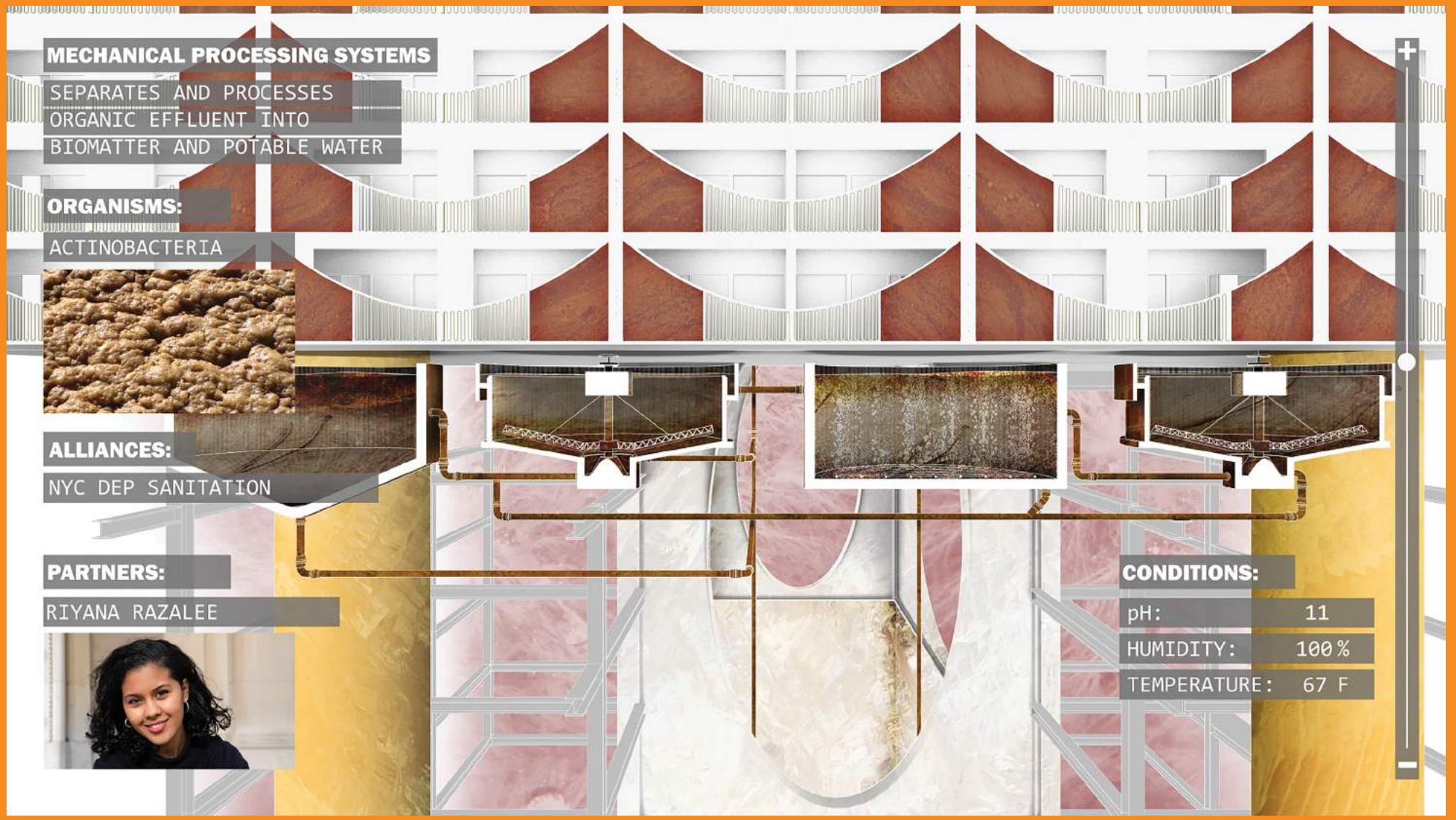
pH: 7

HUMIDITY: 100%

TEMPERATURE: 71 F


ALGAL SPRING FILTRATIONS
DUCKWEED REMEDIATES HEAVY METALS AND ATTRACT A DIVERSE ECOSYSTEM OF SPECIES
ORGANISMS:
DUCKWEED
ALLIANCES:
NYC DEP ENV. PROTECTION
PARTNERS:
PONISSERIL SOMASUNDARAN
CONDITIONS:
pH: 7
HUMIDITY: 100%
TEMPERATURE: 83 F


AQUATIC CIRCULATION POOLS
INTERCONNECTED OPEN AIR TANKS DISTRIBUTE WATER IN CONDITIONS TO OTHER SYSTEMS
ORGANISMS:
ACTINOBACTERIA
ALLIANCES:
NYS DEP ENV. CONSERVATION
PARTNERS:
SUZANNE MACDONALD
CONDITIONS:
pH: 7
HUMIDITY: 100%
TEMPERATURE: 69 F


MECHANICAL PROCESSING SYSTEMS
SEPARATES AND PROCESSES ORGANIC EFFLUENT INTO BIOMATTER AND POTABLE WATER
ORGANISMS:
ACTINOBACTERIA
ALLIANCES:
NYC DEP SANITATION
PARTNERS:
RIYANA RAZALEE
CONDITIONS:
pH: 11
HUMIDITY: 100%
TEMPERATURE: 67 F


MECHANICAL PROCESSING SYSTEMS
SEPARATES AND PROCESSES ORGANIC EFFLUENT INTO BIOMATTER AND POTABLE WATER
ORGANISMS:
ACTINOBACTERIA
ALLIANCES:
NYC DEP ENV. PROTECTION
PARTNERS:
ROBIN NAGLE
CONDITIONS:
pH: 14
HUMIDITY: 100%
TEMPERATURE: 77 F


INTEGRATED ANAEROBIC DIGESTION
ARCHAEA TRANSFORM BIOMATTER
TO METHANOGENIC + ACIDOGENIC
DIGESTATE + BIOGAS
ORGANISMS:
METHANOGENIC BACTERIA
ALLIANCES:
NYC DEP ENV. PROTECTION
PARTNERS:
RIYANA RAZALEE
CONDITIONS:
pH: 12
HUMIDITY: 53 %
TEMPERATURE: 103 F

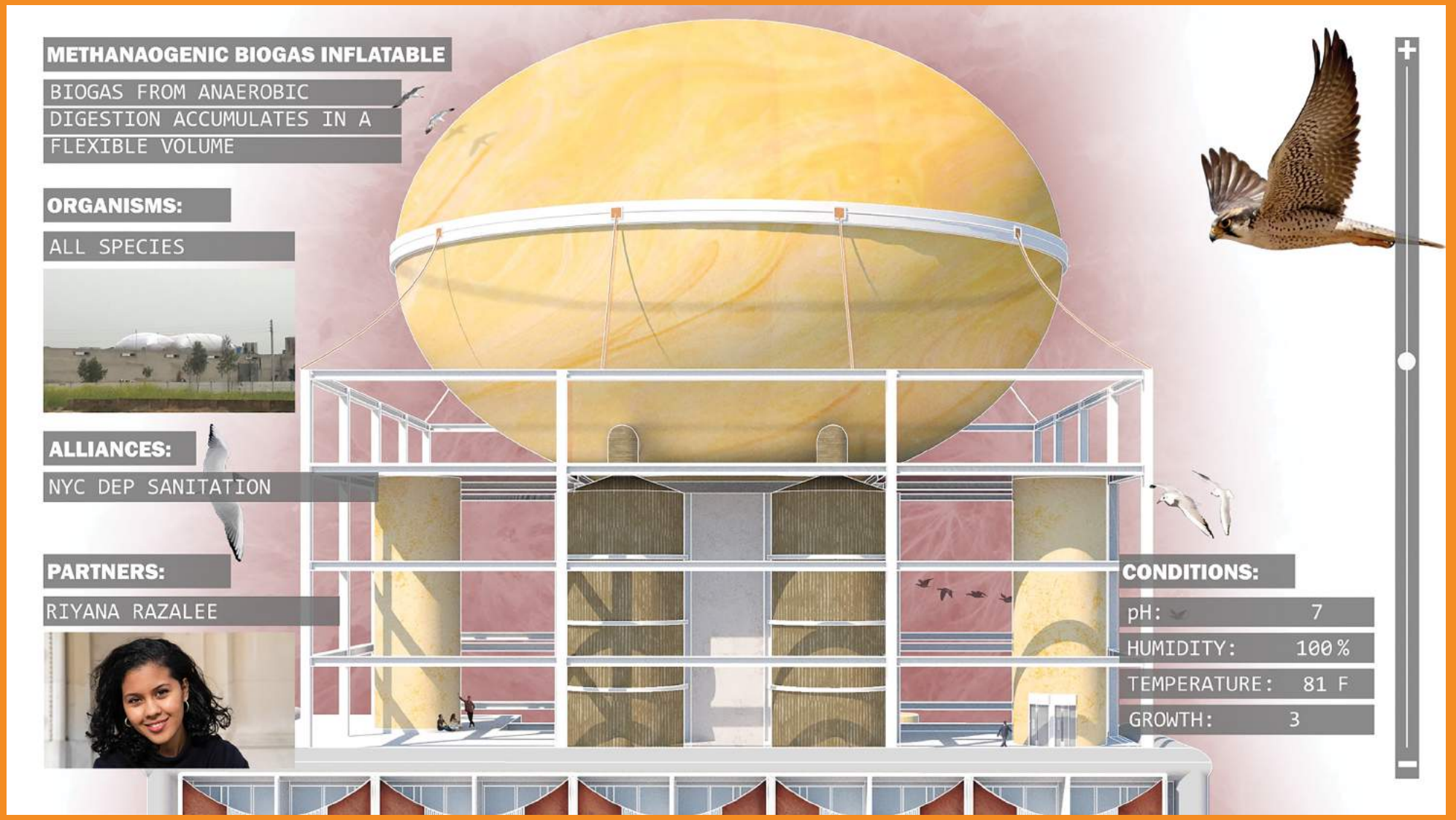

INTEGRATED ANAEROBIC DIGESTION
ARCHAEA TRANSFORM BIOMATTER
TO METHANOGENIC + ACIDOGENIC
DIGESTATE + BIOGAS
ORGANISMS:
ACIDOGENIC BACTERIA
ALLIANCES:
NYC DEP SANITATION
PARTNERS:
SUZANNE MACDONALD
CONDITIONS:
pH: 6
HUMIDITY: 55 %
TEMPERATURE: 104 F

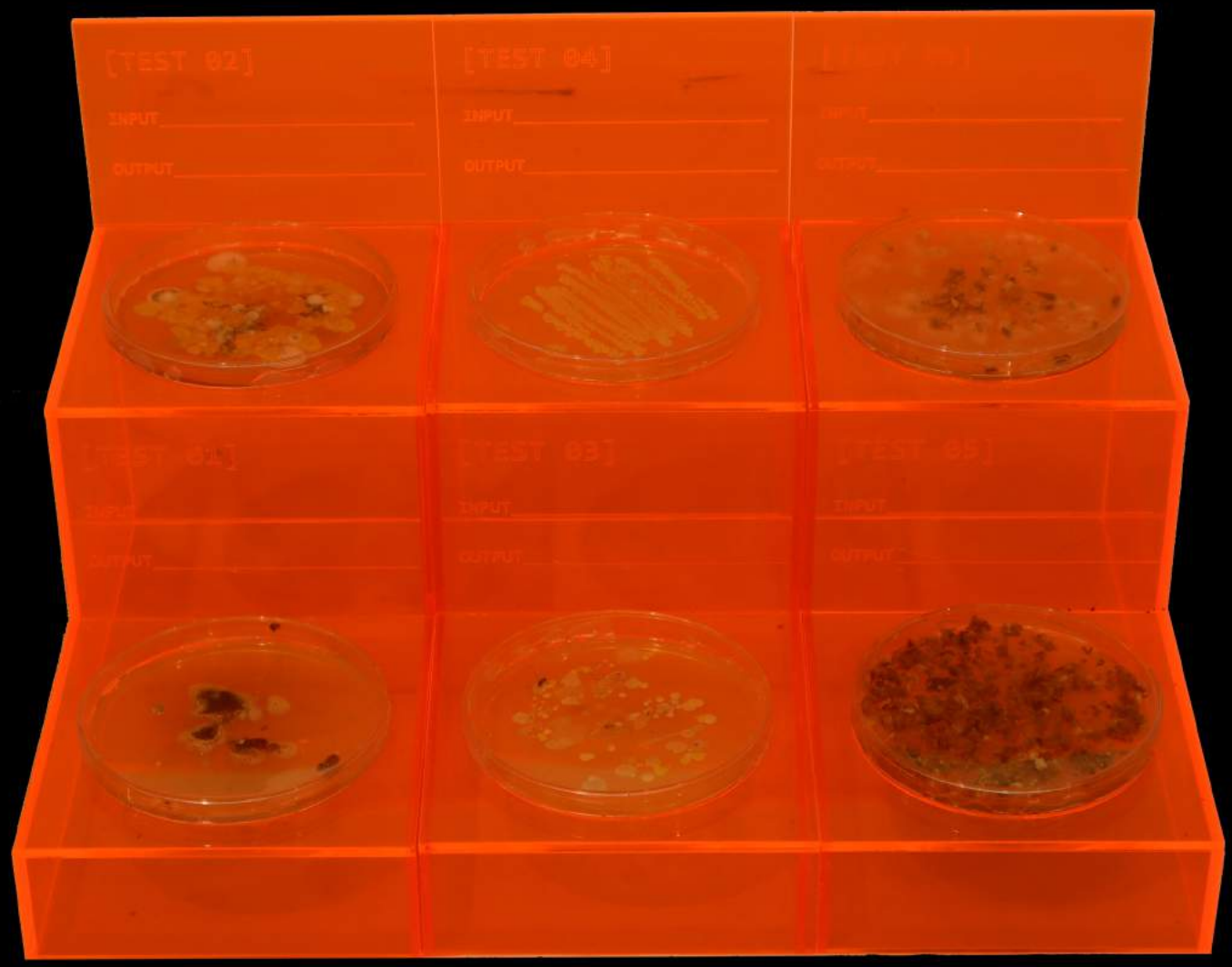

AVIAN HABITAT 1
INTEGRATED CAVITY HABITAT FOR SMALL BIRDS NATIVE AND MIGRATORY
ORGANISMS:
STARLING
ALLIANCES:
NYC DEP ENV. PROTECTION
PARTNERS:
JOYCE HWANG
CONDITIONS:
pH: 12
HUMIDITY: 51 %
TEMPERATURE: 69 F

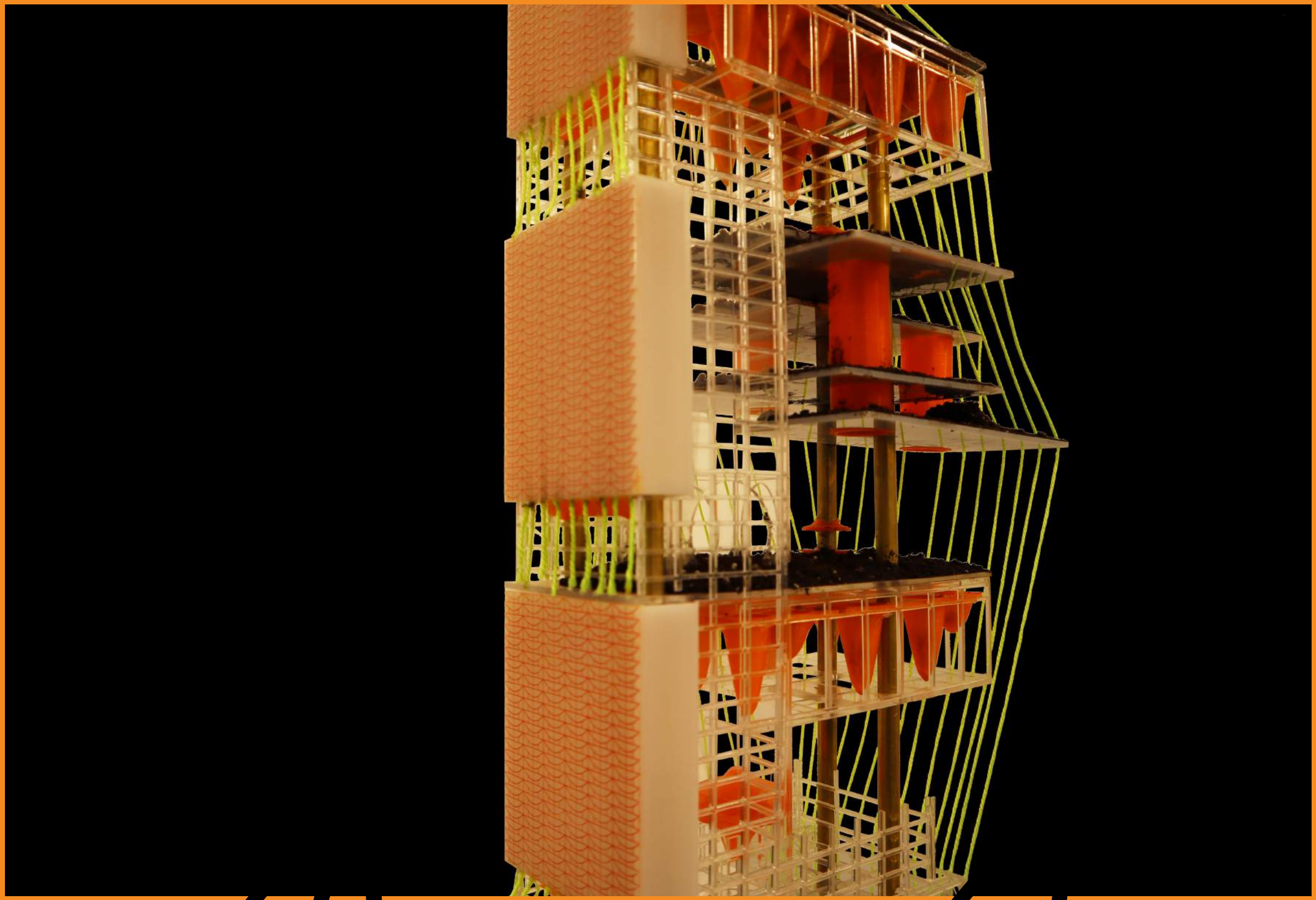

AVIAN HABITAT 1
INTEGRATED CAVITY HABITAT FOR SMALL BIRDS NATIVE AND MIGRATORY
ORGANISMS:
SPARROW
ALLIANCES:
NYC DEP SANITATION
PARTNERS:
SUZANNE MACDONALD
CONDITIONS:
pH: 0
HUMIDITY: 48 %
TEMPERATURE: 71 F


AVIAN HABITAT 2
HABITAT FOR SMALL POPULATIONS OF PREDATORY BIRDS
ORGANISMS:
FALCON
ALLIANCES:
NYC DEP ENV. PROTECTION
PARTNERS:
PONISSERIL SOMASUNDARAN
CONDITIONS:
pH: 3
HUMIDITY: 56 %
TEMPERATURE: 67 F


AVIAN HABITAT 2
HABITAT FOR SMALL POPULATIONS OF PREDATORY BIRDS
ORGANISMS:
HAWK
ALLIANCES:
NYC DEP SANITATION
PARTNERS:
PONISSERIL SOMASUNDARAN
CONDITIONS:
pH: 11
HUMIDITY: 50 %
TEMPERATURE: 70 F


METHANAOGENIC BIOGAS INFLATABLE
BIOGAS FROM ANAEROBIC DIGESTION ACCUMULATES IN A FLEXIBLE VOLUME
ORGANISMS:
ALL SPECIES
ALLIANCES:
NYC DEP SANITATION
PARTNERS:
RIYANA RAZALEE
CONDITIONS:
pH: 7
HUMIDITY: 100%
TEMPERATURE: 81 F
GROWTH: 3


[TEST 02]
INPUT
OUTPUT
[TEST 04]
INPUT
OUTPUT



The following project is a visual and narrational interlude.
It is a visual collection of photographic material that depict the conjunction of the ancient city of Babylon and contemporary New York City and focusing even more to the Tower of Babel and 432 Park Avenue Tower.
The narcissistic nature of man is portrayed through an architecture of power that in mod-

ARCHI TECTURE OF POWER

Babel

led by Kyle Dugdale

ern times redefines finance, culture and environments relate to each other, yet it is hardly noticeable.
This is directly connected to the materials that are being used in these kinds of buildings and especially in the case of 432 Park Avenue Tower, the glass that is used in the building's facade.

The wonderment of looking at the limitless sky's or the awe of watching the infinite horizon brings up a feeling of ambition and desire. But when reaching the highest point, then the feeling turns into greediness of power and control.

"Come, let us build ourselves a city, and a tower with its top in the heavens, and let us make a name for ourselves".

Tower of Babel by Abel Grimmer

Narcissus by Caravaggio

Building Brands. Creating Desire. Adding Value. | Courtesy of Dbox

432 Park Ave Tower | Courtesy of Dbox

Introspective Futurism is built over and with the essence of time. It consists of a series of different creations that reflect on time. These creations are based on preoccupations and occupations that were generated through time and left a mark on me. Like fossils, I extract them and use them as inspirations to create. Sometimes, in order to look into the future, we need to dig into the past.

INTRO SPECTIVE FUTURISM

Advanced Design Studio VI

led by Ada Tolla & Giuseppe Lignano

My interest in architecture is unravelled and explained from another perspective. Documenting my physical creations was an opportunity to explore geometric potentials. The lens of the camera created stories and perceptions.

Introspective Futurism is divided into two parts which contain two chapters. Each part is defined by its relation to Earth and nature, while each chapter by its relation with time:

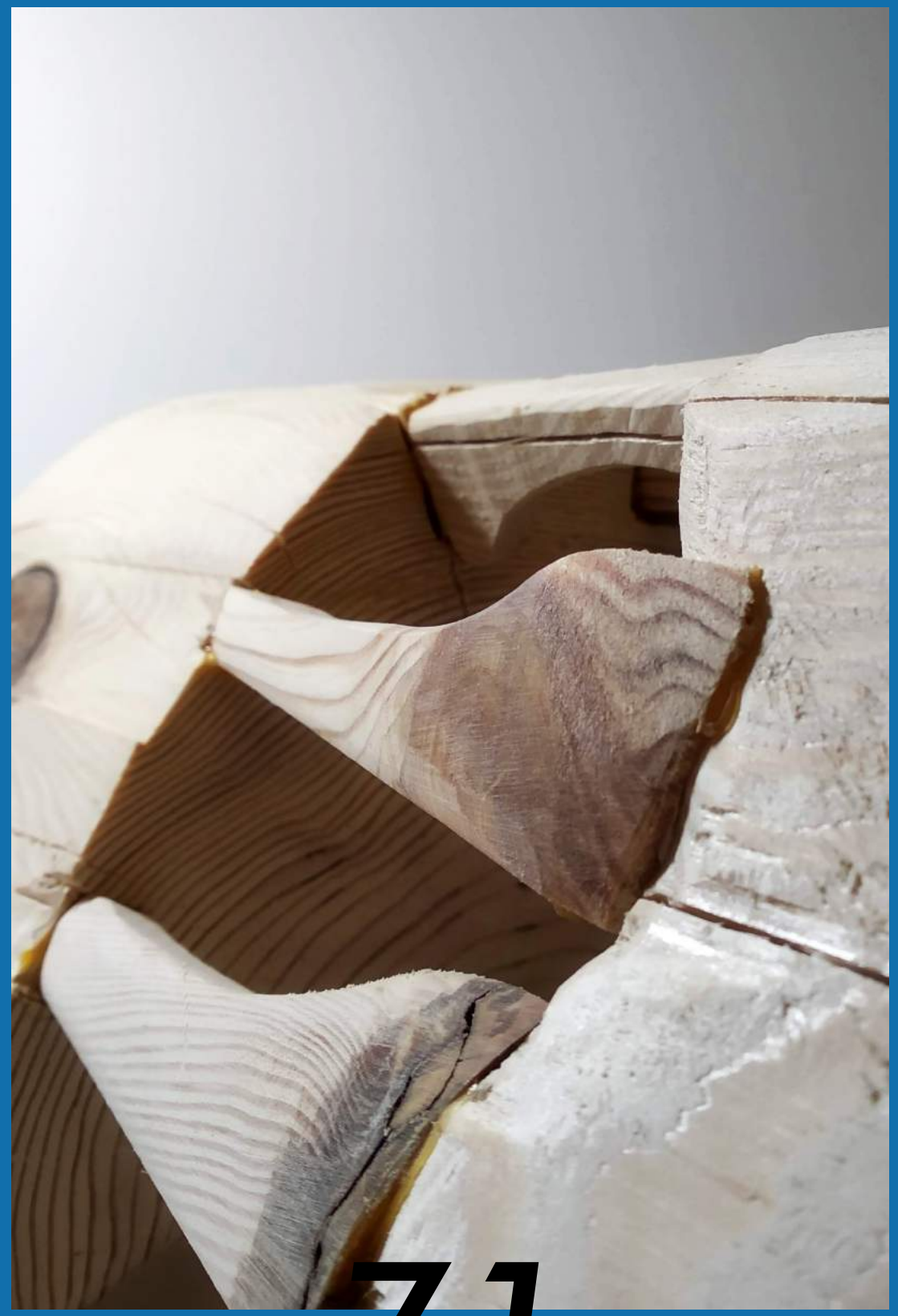
Terrestrial is manifested out of four different objects built from four different materials. Two naturally made and two artificially made. Their creation was inspired from occupations of the past (Yesterday) and the present (Today).

Extra-Terrestrial is the product of the new reality that shifted the way we live. Production relied on machines and physical tools turned to computer algorithms. Tonight is a collection of the new occupations that came as an aftermath of the new circumstances. Playful, yet dark, they forecast the ultimate creation: the house of the future (Tomorrow).

Introspective Futurism envisions the future through an exploration of current realities while glancing at the past.

spring 2020

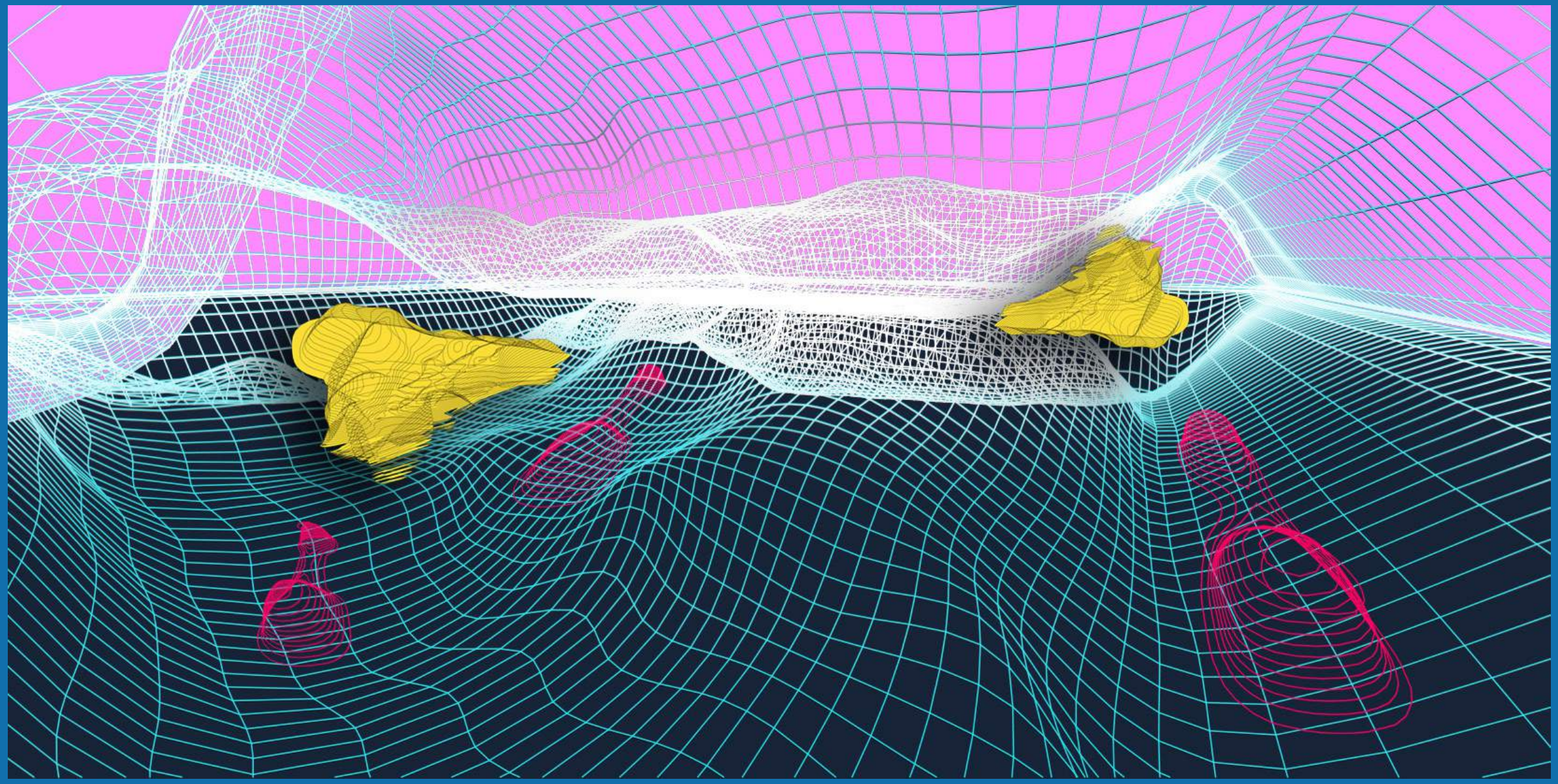
"the backbone of the early years."

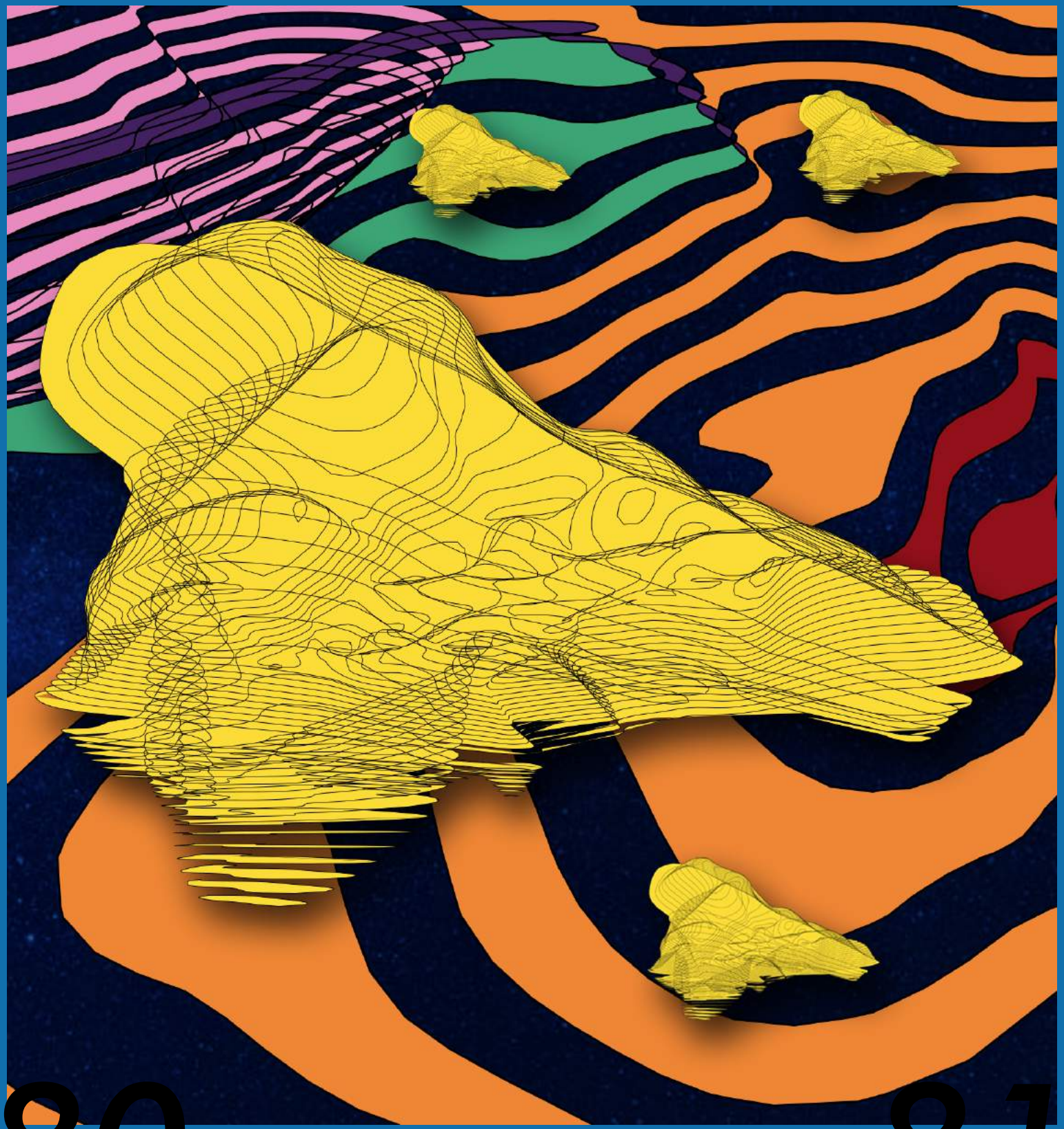


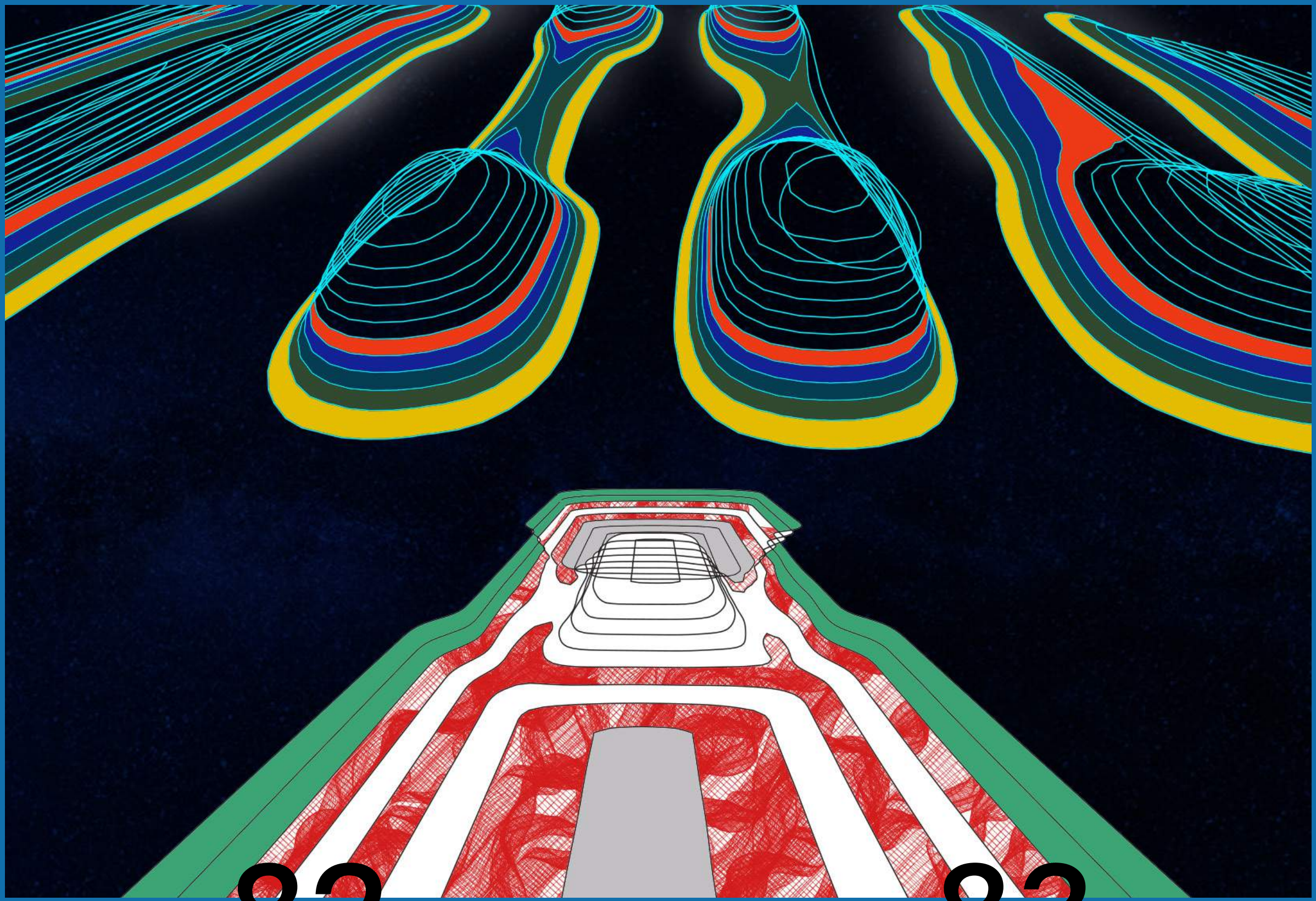
"a record of observations."

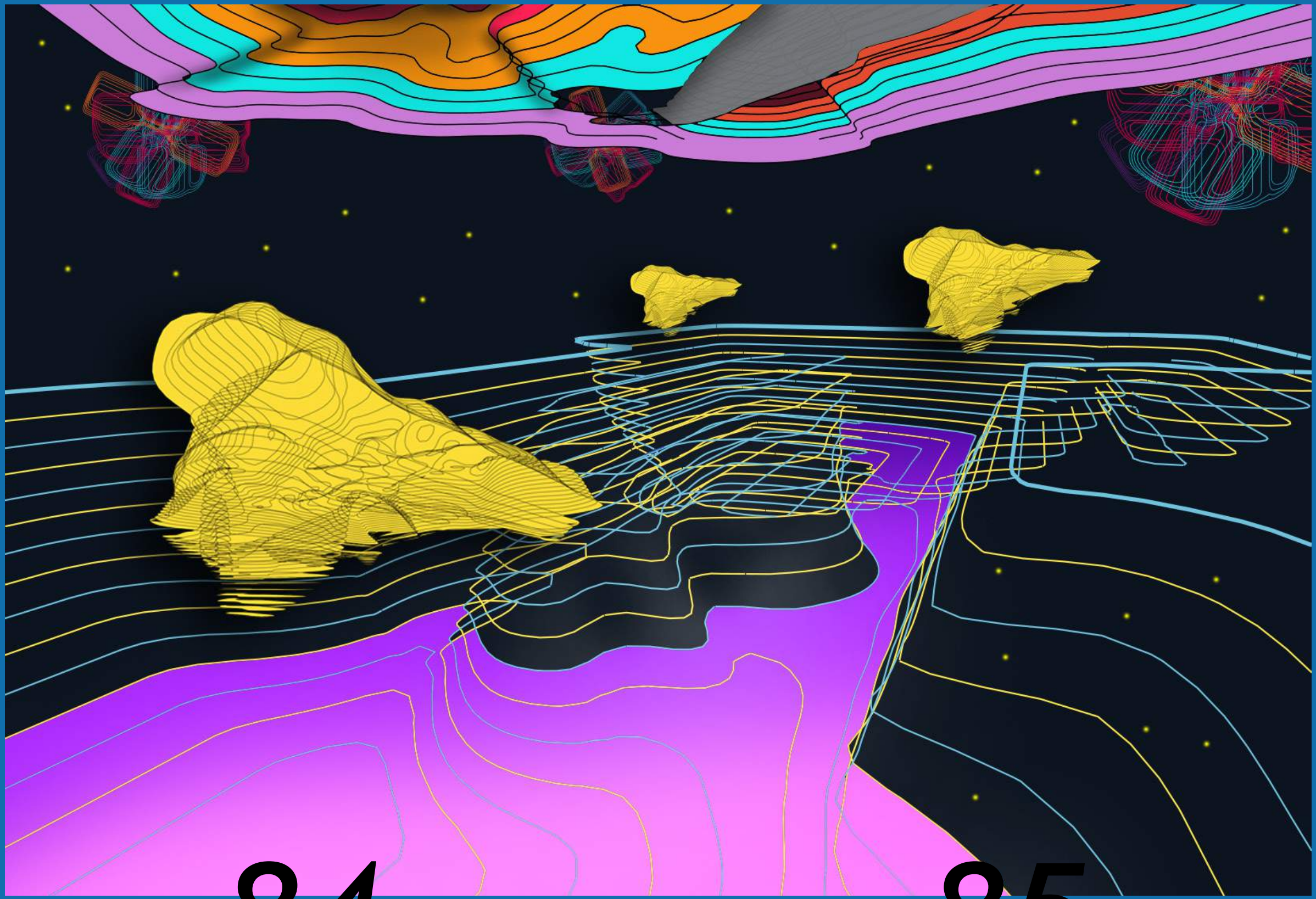
"plastic reality."

"an occupation of today."



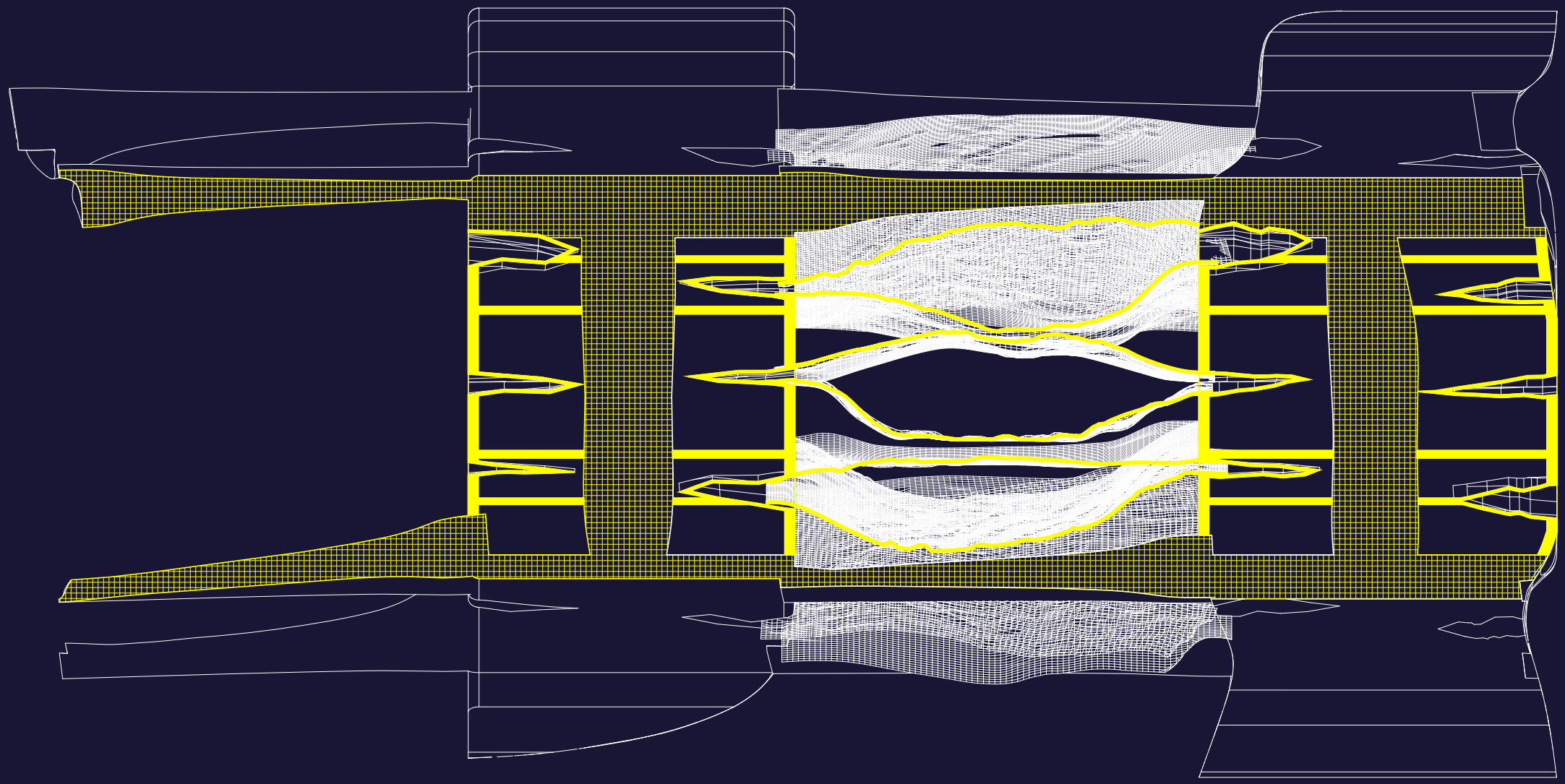






AEON

LIVING PODS - PLAN



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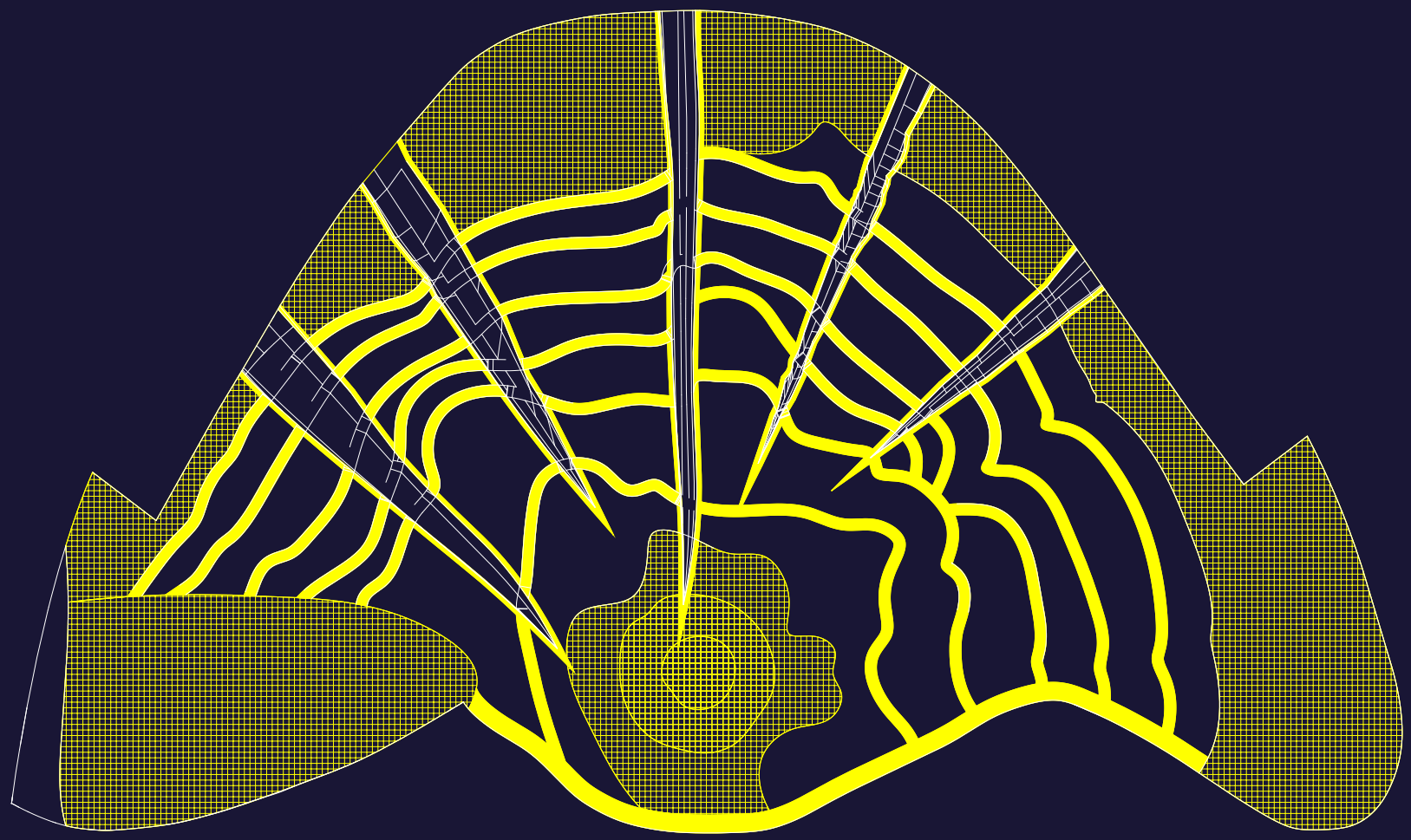
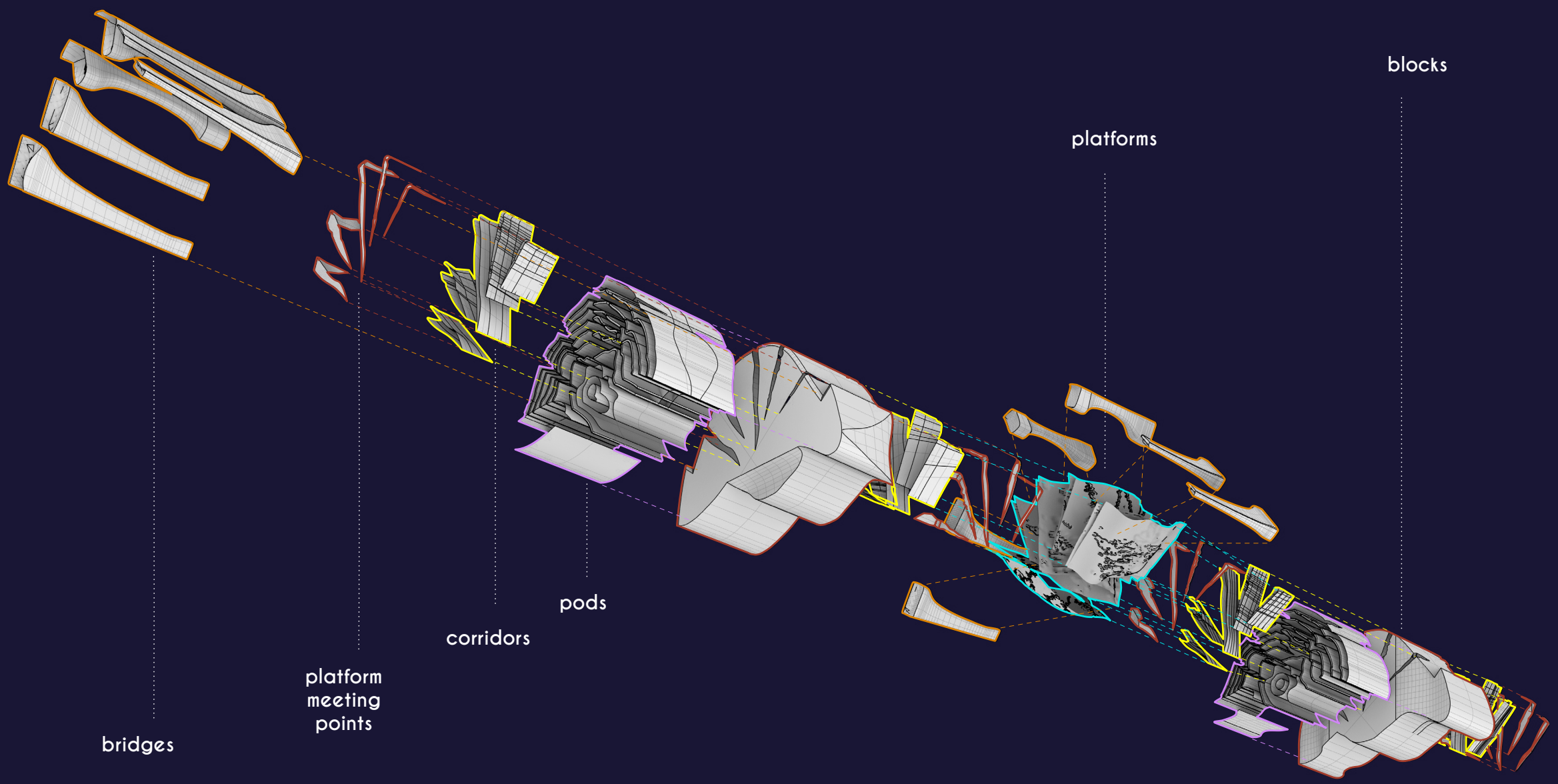
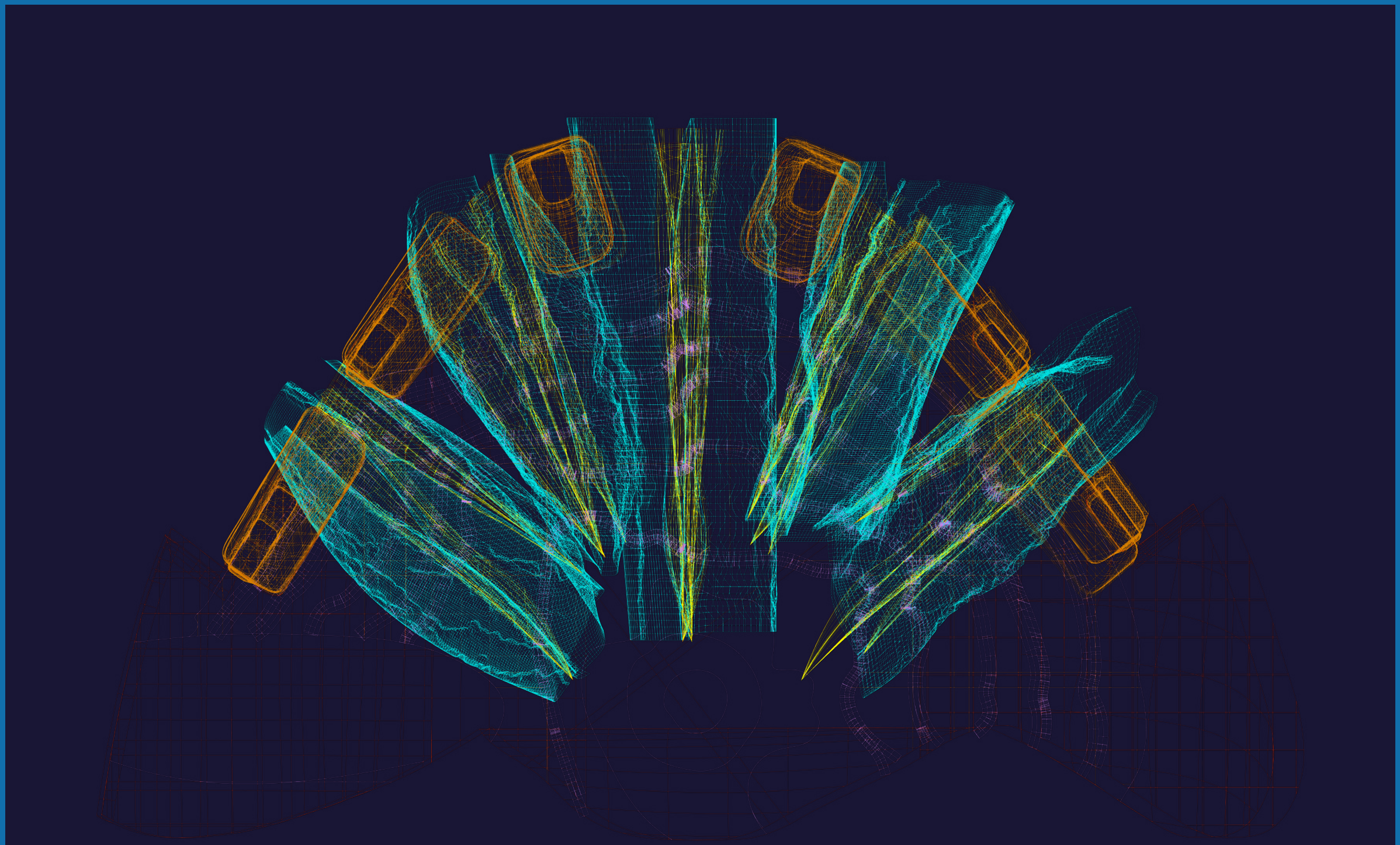
LIVING PODS - SECTION

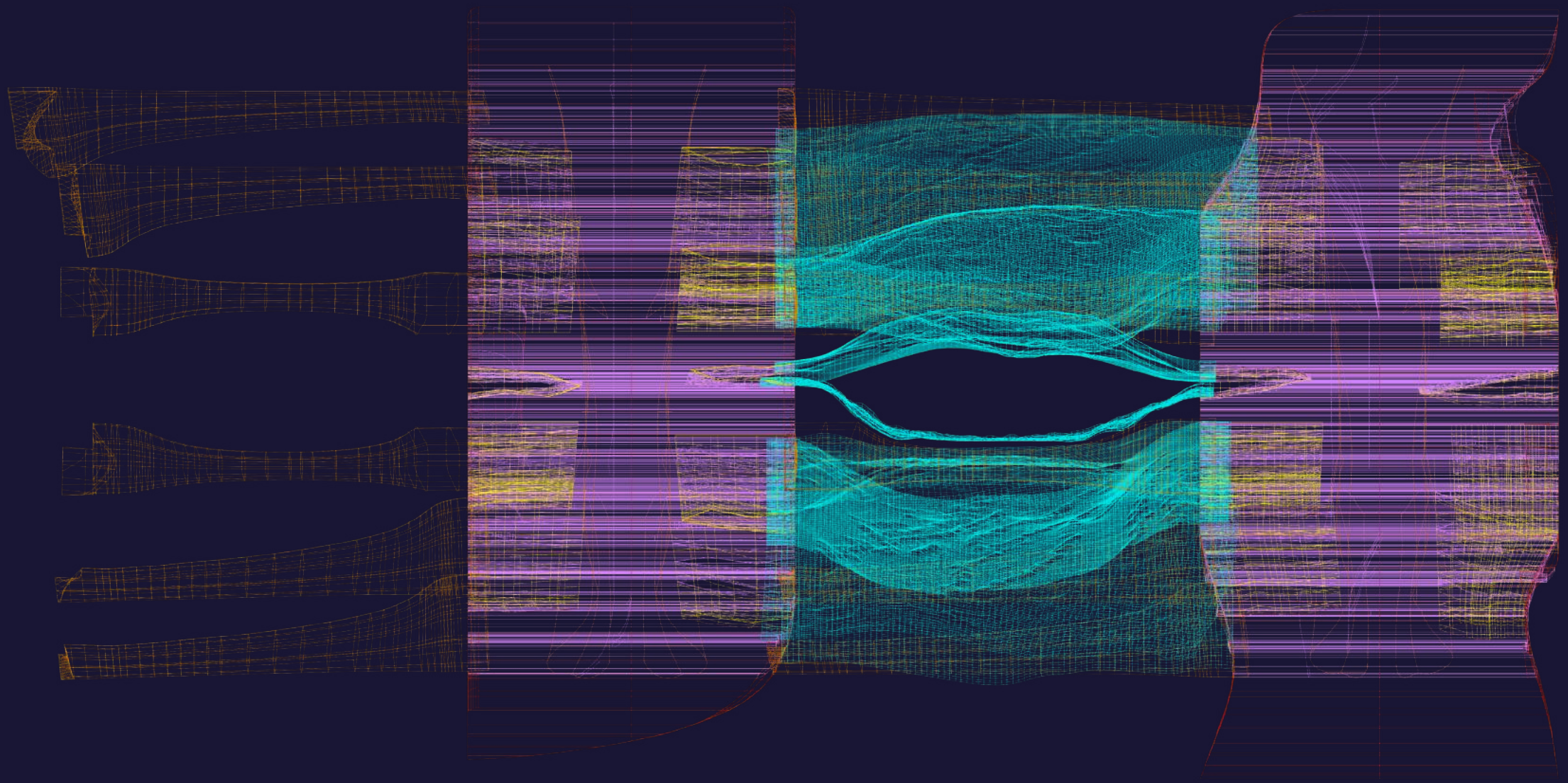


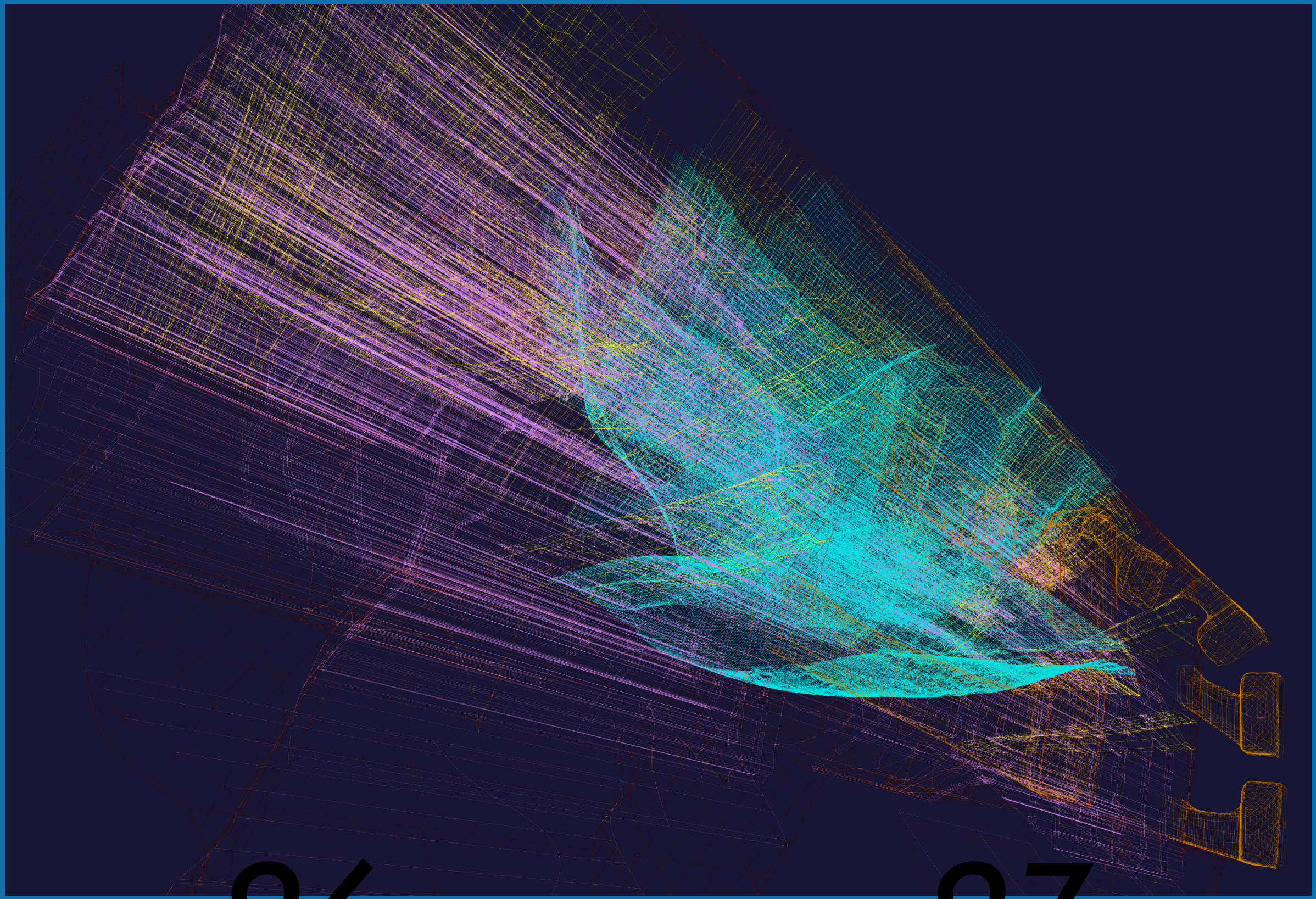
AEON

PART ASSEMBLAGE

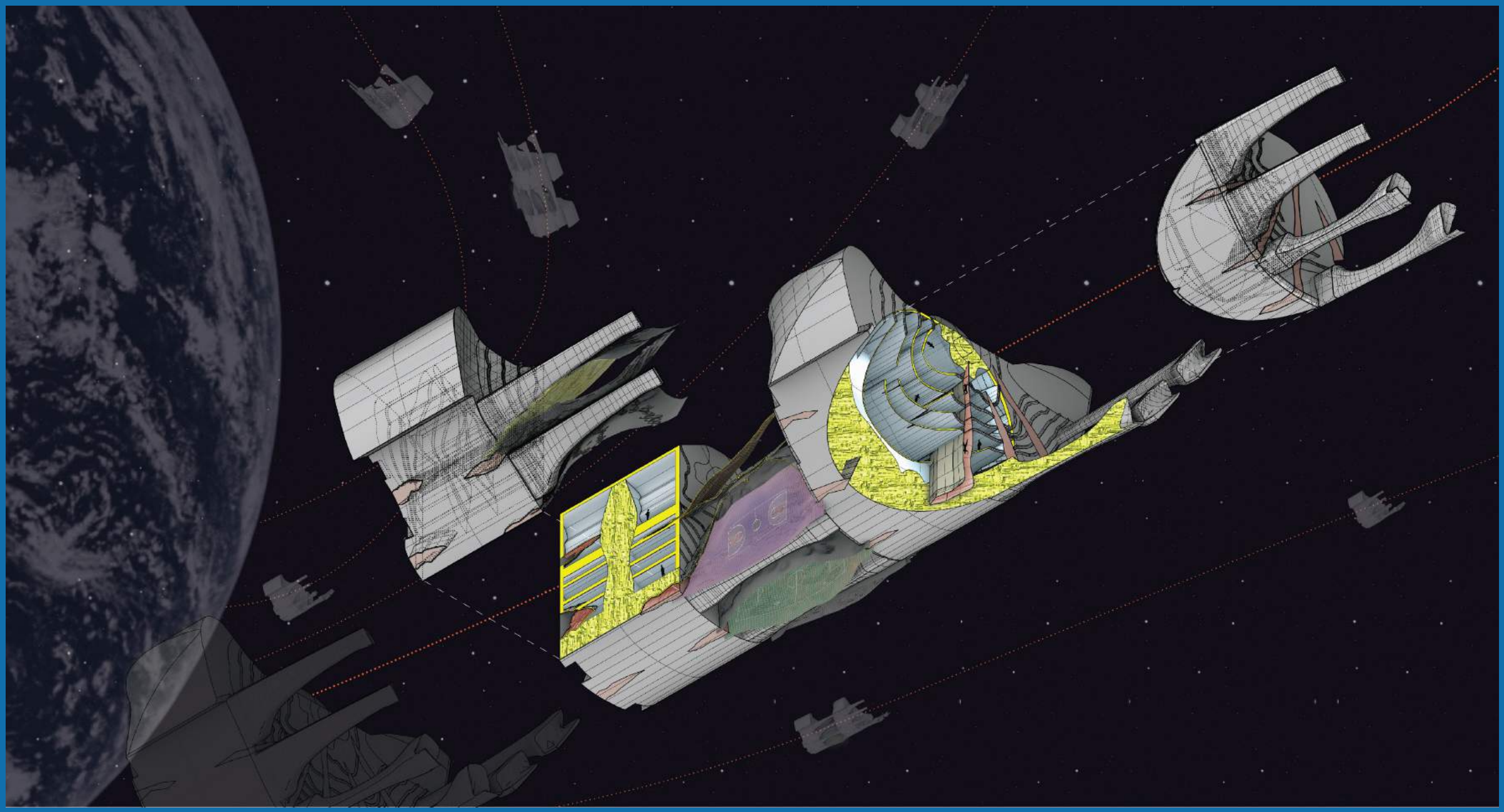








"Observations of today. Glances to the past. Creations for the future."



spring 2020

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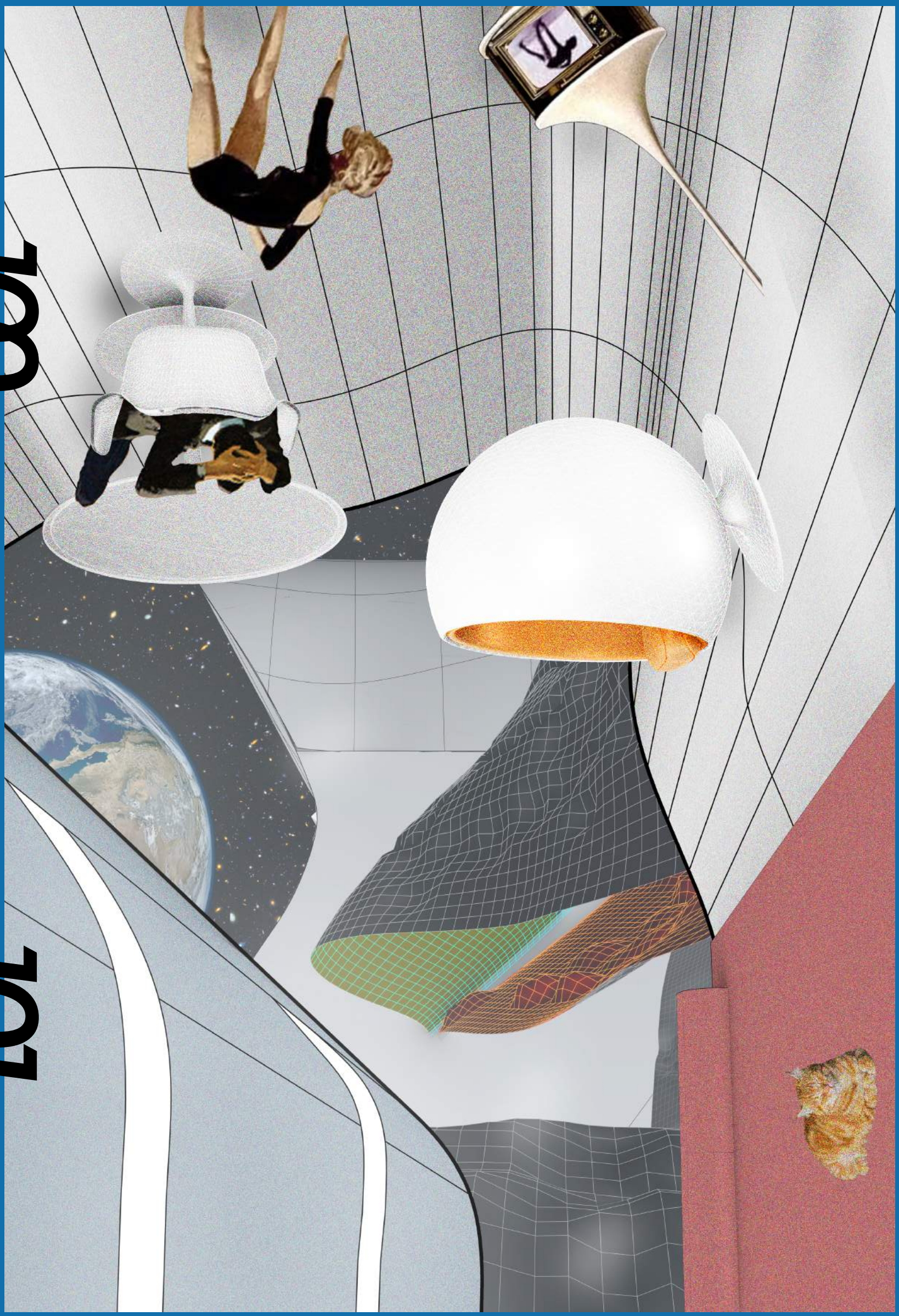
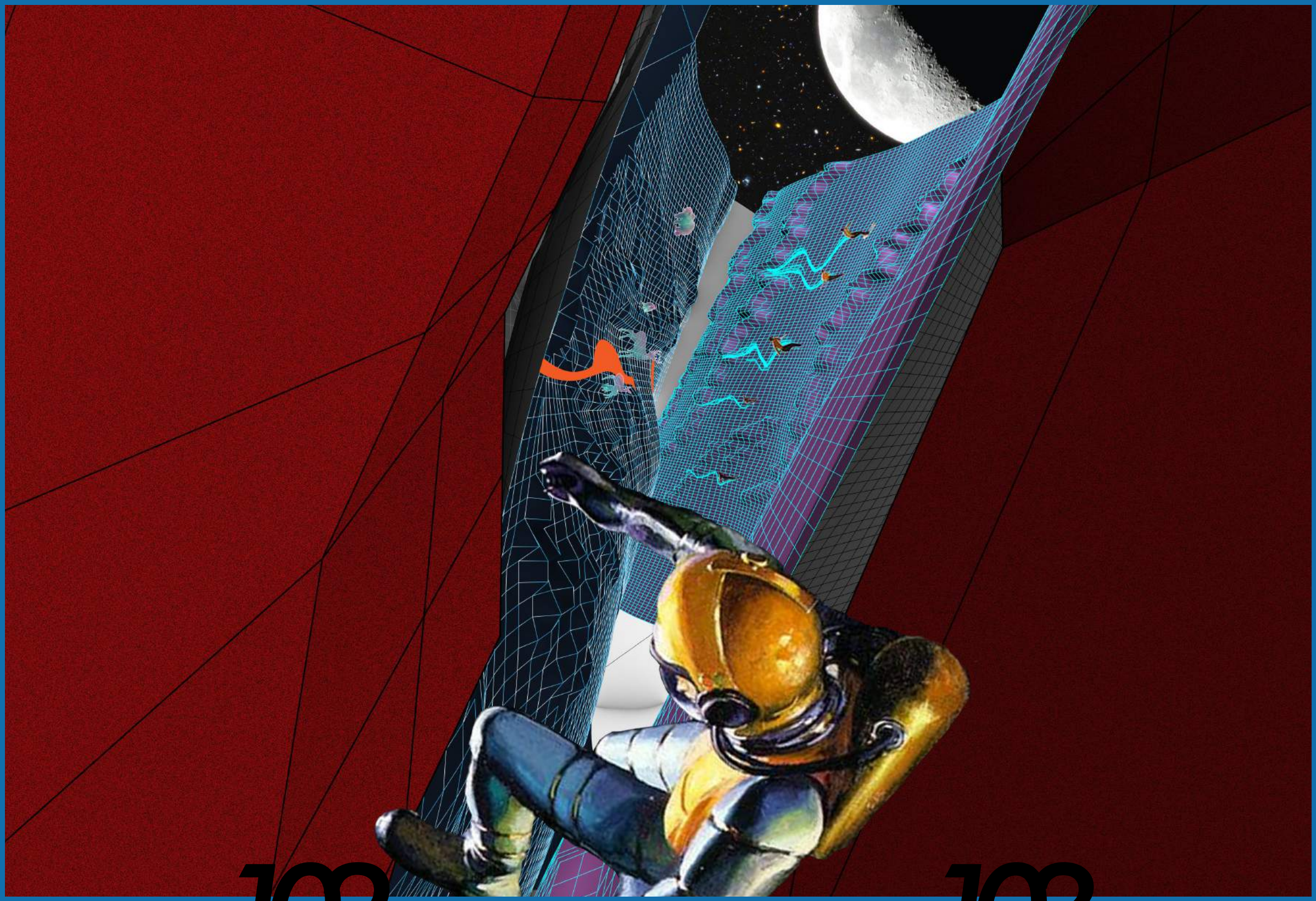


spring 2020

101



Dead Zone Treatment Plant

SUMMER 2019

Apparatus Project

FALL 2019

Toxic Entanglements

FALL 2019

Architecture of Power

FALL 2019

Introspective Futurism

SPRING 2020

Futurama-GSAPP-AAD-20'
Christopher Spyrakos