DESIGN PORTFOLIO

// NATHANAEL MYERS

// PROJECT INDEX

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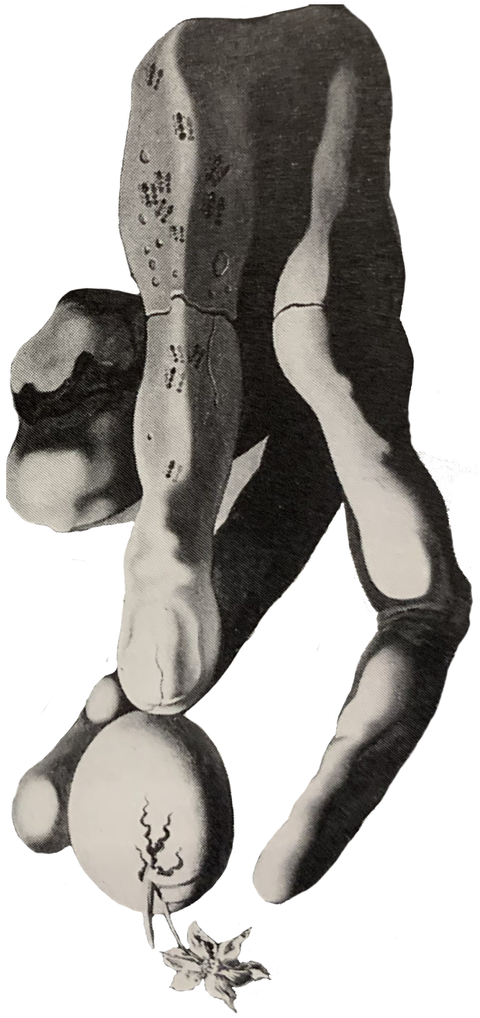
PROJECT 00



_*Metamorphosis of Narcissus*. Dali, Salvidor. 1937

// PROJECT MEMBERS

MYERS, NATHANAEL

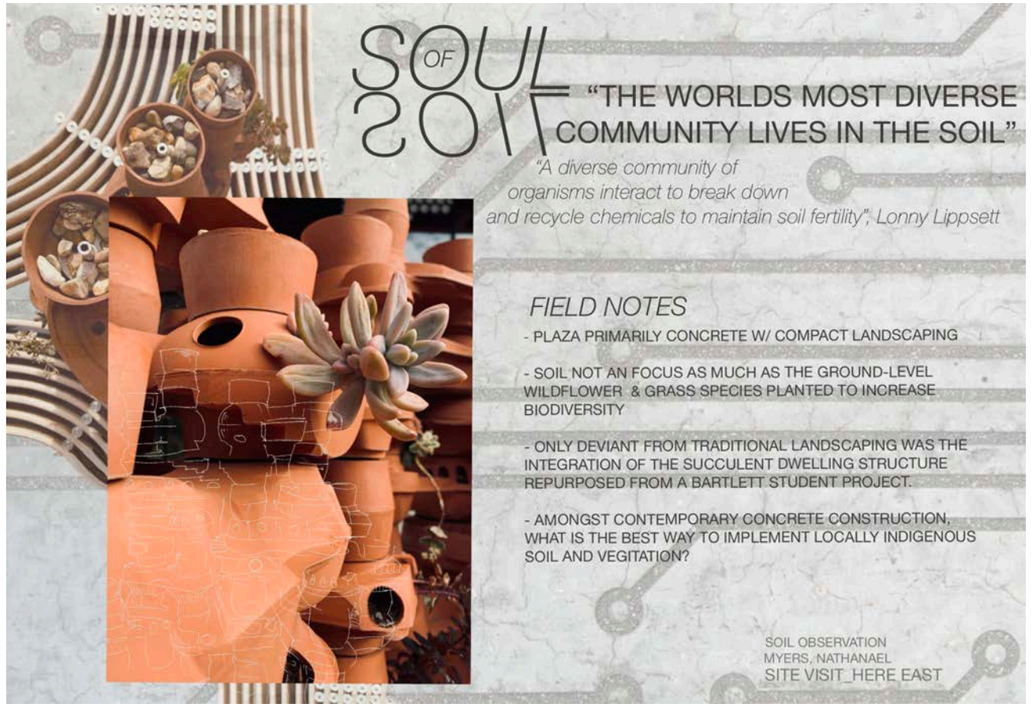
// PROJECT TUTORS

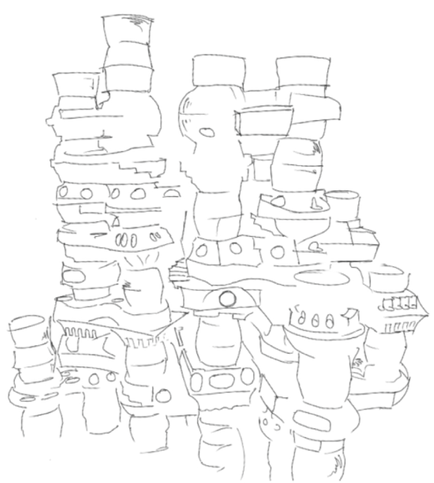
BOMBELLI, PAOLO; DEVADASS, PRADEEP; LE, TONY; ROBINSON, IAN; RUIZ RODRIGUEZ, JAVIER; TAMULI, PRANTAR

soil/soul

witness

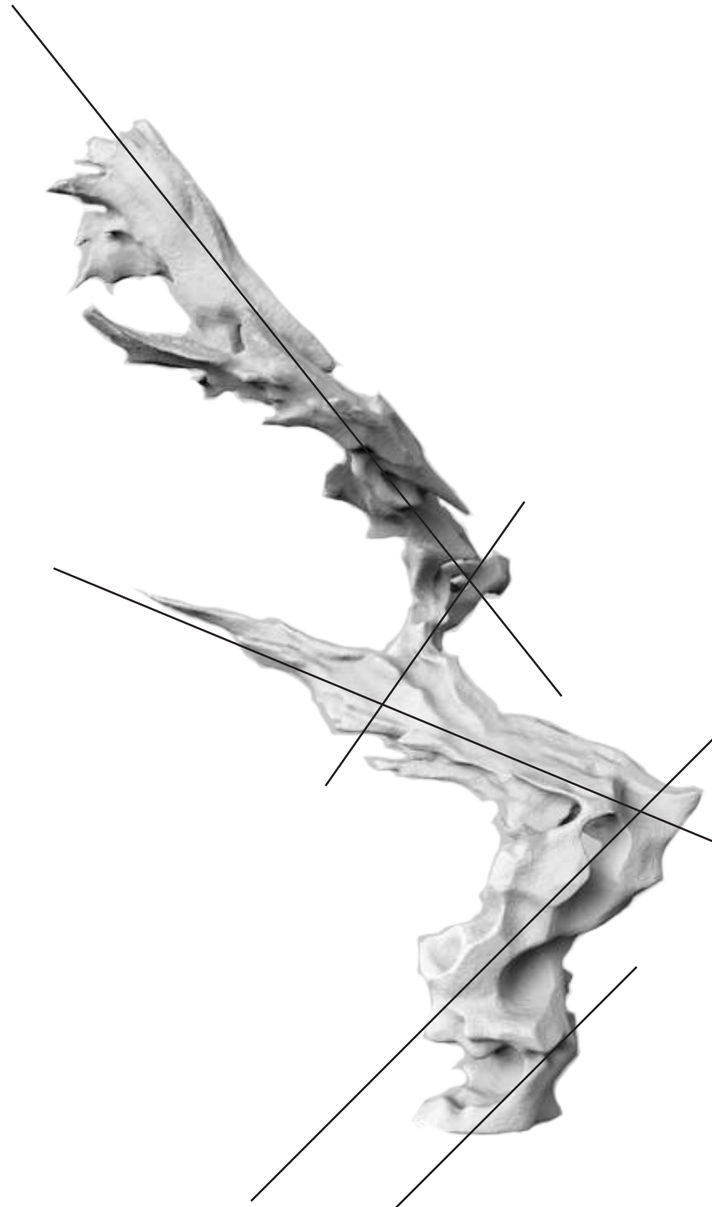
// REF


SOIL OF SOUL
"THE WORLDS MOST DIVERSE COMMUNITY LIVES IN THE SOIL"
"A diverse community of organisms interact to break down and recycle chemicals to maintain soil fertility", Lonny Lippsett
FIELD NOTES
- PLAZA PRIMARILY CONCRETE W/ COMPACT LANDSCAPING
- SOIL NOT AN FOCUS AS MUCH AS THE GROUND-LEVEL WILDFLOWER & GRASS SPECIES PLANTED TO INCREASE BIODIVERSITY
- ONLY DEVIANT FROM TRADITIONAL LANDSCAPING WAS THE INTEGRATION OF THE SUCCULENT DWELLING STRUCTURE REPURPOSED FROM A BARTLETT STUDENT PROJECT.
- AMONGST CONTEMPORARY CONCRETE CONSTRUCTION, WHAT IS THE BEST WAY TO IMPLEMENT LOCALLY INDIGENOUS SOIL AND VEGITATION?
SOIL OBSERVATION
MYERS, NATHANAEL
SITE VISIT_HERE EAST



PROJECT 01

FRACTALS + FULGURITES



// PROJECT MEMBERS

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// PROJECT TUTORS

BOMBELLI, PAOLO; DEVADASS, PRADEEP; LE, TONY; ROBINSON, IAN; RUIZ RODRIGUEZ, JAVIER; TAMULI, PRANTAR

_*Mitochondria: Powerhouses*. Mater, Ahmed. 2017

// PROJECT OVERVIEW

FOUND AMONGST NATURE'S WEATHER EXTREMES, SINTERING OF THE SILICA-RICH SANDS FORMALIZES, AS IF 3D PRINTED. DEFYING GRAVITY BY MELTING/RAPID COOLING PAIRED WITH A SURGE IN VELOCITY, SUBTERRANEAN FULGURITES AND THE RARE 'LIGHTING SCULPTURES' VISUALIZE NEW BIOMIMETIC BUILDING TYPES.

CONJOINING THE TECHNIQUES OF HAND-RENDERED TO SCULPTING IN SUBD THE UNIQUE FORM SOUGHT TO SPECULATIVELY TURN INSIDE-OUT THE INTERIOR LOGIC. FOUND AMONGST NATURE'S WEATHER EXTREMES, SINTERING OF THE SILICA-RICH SANDS FORMALIZES, AS IF 3D PRINTED. DEFYING GRAVITY BY MELTING/RAPID COOLING PAIRED WITH A SURGE IN VELOCITY, SUBTERRANEAN FULGURITES AND THE RARE 'LIGHTING SCULPTURES' VISUALIZE NEW BIOMIMETIC BUILDING TYPES.

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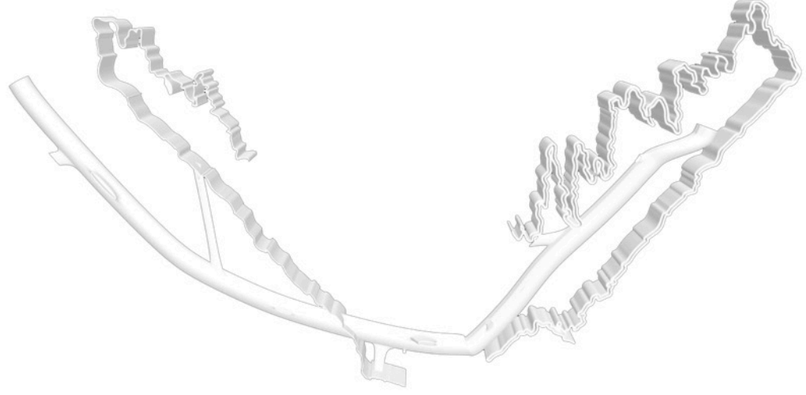
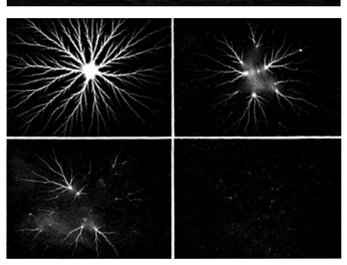
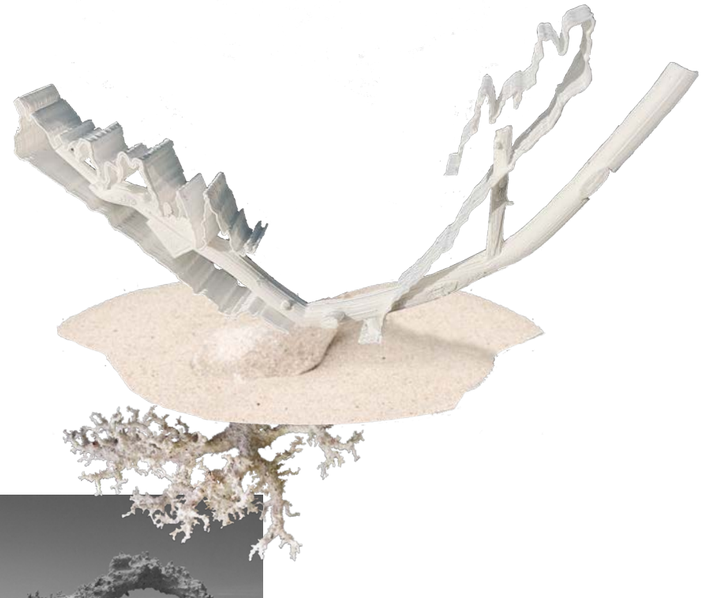
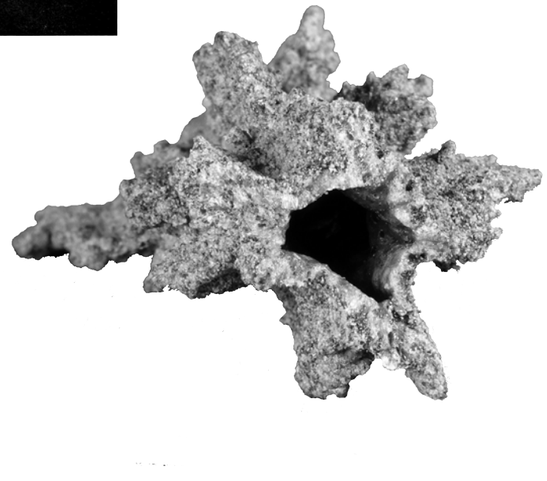
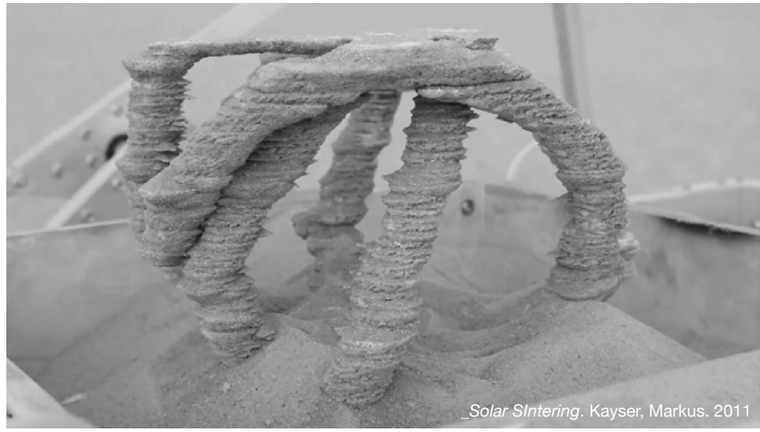






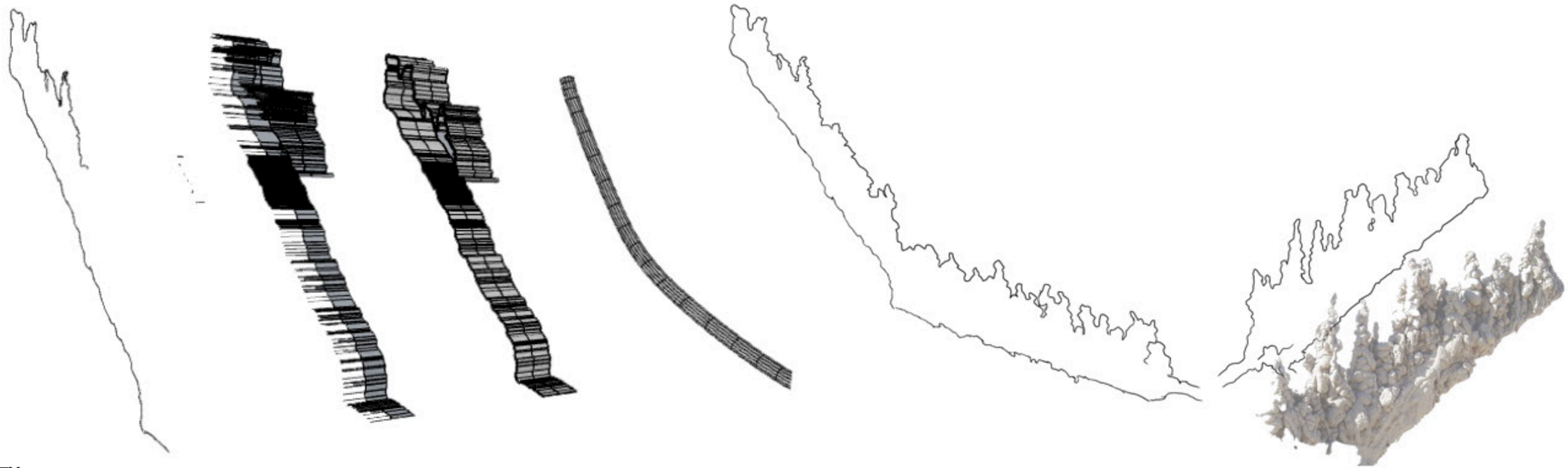


Solar SIntering. Kayser, Markus. 2011



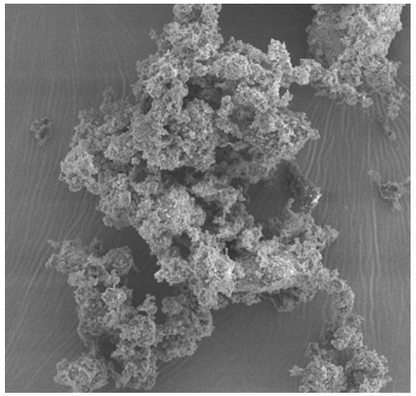
_frozen sand. Lake Michigan, USA

EMBRACING THE BRANCHING PATTERNING FROM THE PHENOMENA OF LIGHTNING, WHERE THE PATH OF LEAST RESISTANCE DICTATES DIRECTION AND FLOW. D1 PROJECT, FULGURITES & PHENOMENA SUGGESTS CASTING FULGURITES AND MAPPING SILICA SAND SCULPTURES AS NEW INFORMANTS OF DATA, CONSTRUCTION ENGINEERING, AND BUILDING MATERIAL. LEADING TO NEW WAYS OF SINTERING AND L-BRANCHING SYSTEMS, LICHTENBERG TESTS, MATERIAL PROPERTIES OF GLASS VS. CRYSTALLIZATION, AND GROWTH AGGREGATION COMPRISED THE FRAMEWORK FOR COMPUTATIONAL SCULPTING.



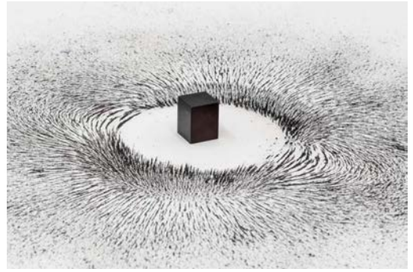
_ **DESIGN OPPORTUNITY**

THROUGH EMBRASSING THESE PATHWAYS OF LEAST RESISTANCE A SPECULATIVE REIMAGINATION OF CURRENT OVERLOADED FERTALIZERS WAS SUBSITUTED FOR ELECTRO-STATIC CONDUCTOR WHICH WOULD APPLY REGULATED NITRATE, AS LIGHTING IS KNOWN TO DO -- ASSISTING THE NITRATE FIXATION CYCLE WHILE, ACTING AS MOTHER NATURE'S FERTALIZER.



_bioactive glass by electron microscope, Oregon State University

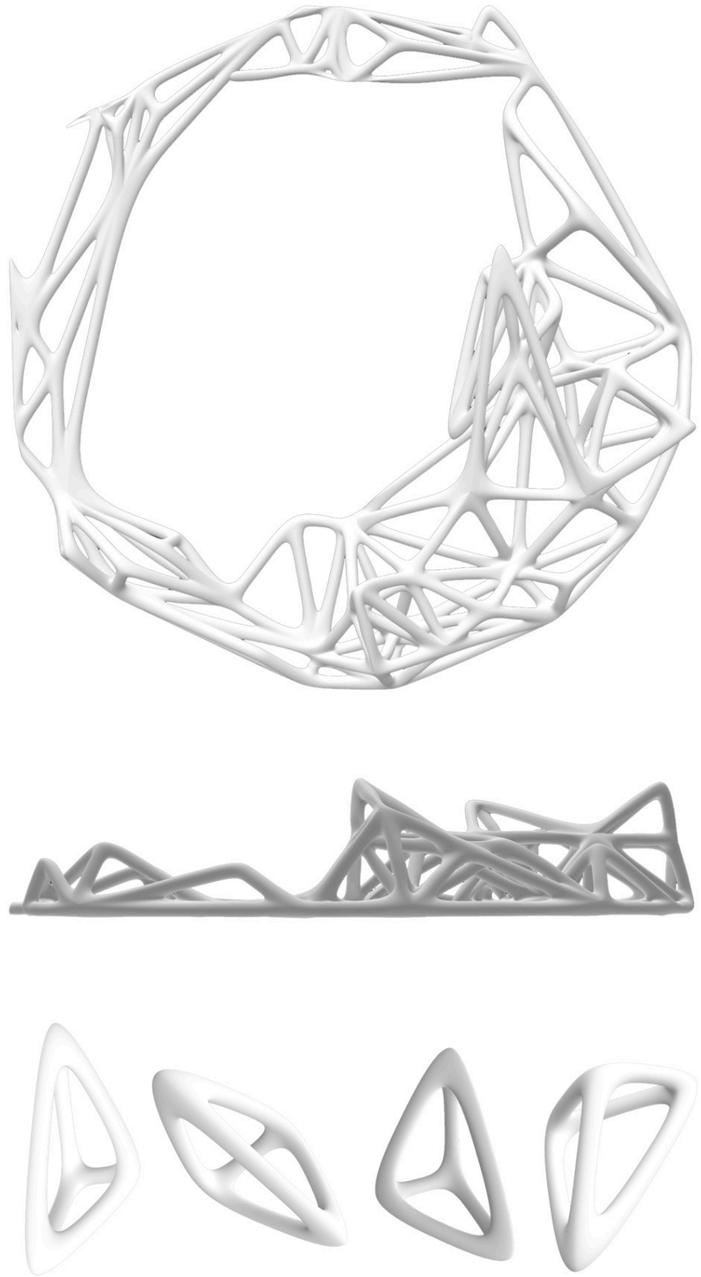
_*20 Bridges for Central Park*. Aranda\Lasch. 2011

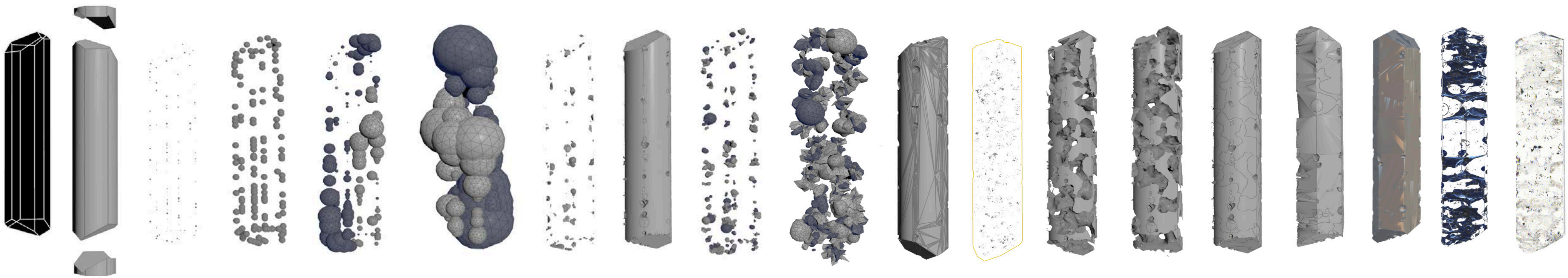


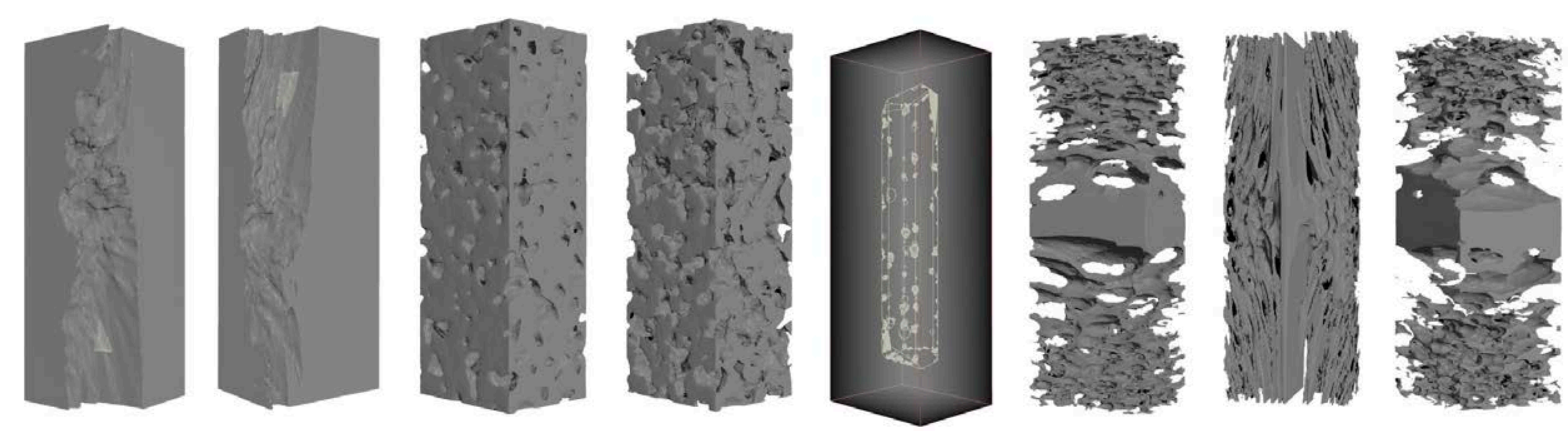
_*Magnetism*. Mater, Ahmed. 2009

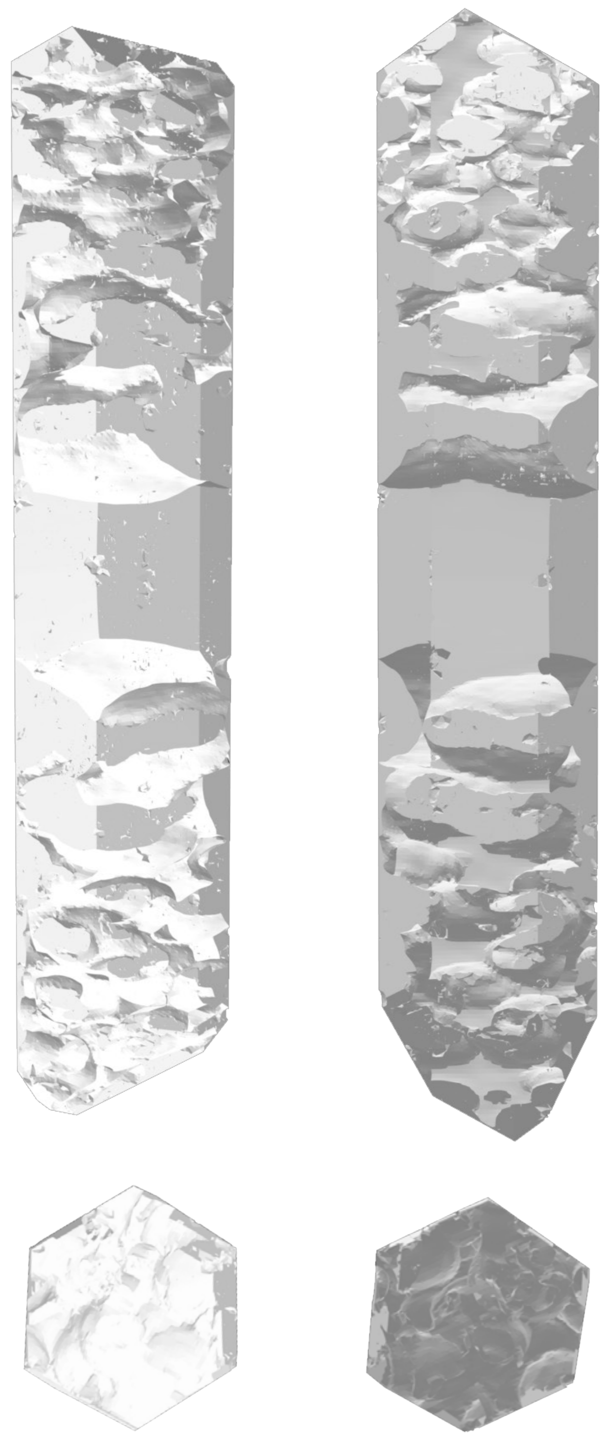
WITH COLLECTED CONSIDERATION OF RECENT STUDIES, BIO ACTIVE GLASS NANOSTRUCTURE, MINERALIZATION, DENDRITE CONSTRUCTION, AND THE ASYMETRIC BUILDING BLOCKS OF GLASS, THE REDUCED FORM OF THE TETRAHEDRON WAS SUPERIMPOSED AS A STRUCTURAL MODE OF GROWTH.

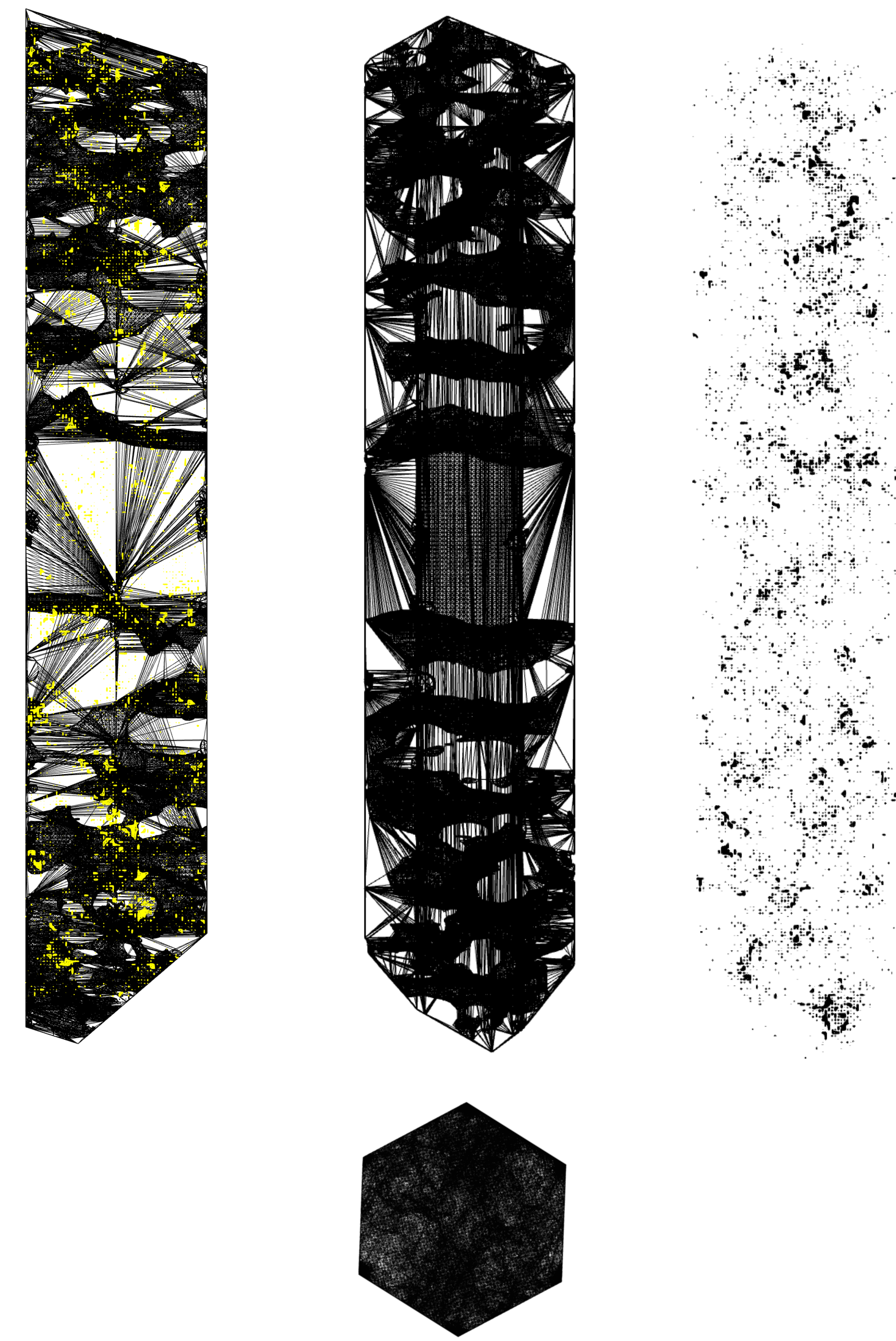
UTILIZING THE AMORPHOUS STRUCTURE OF GLASS,A SINGULAR TETRAHEDRON WAS THE TEMPLATE BUILDING BLOCK FOR THE SPECULATIVE INTERIOR OF THE FULGURITE GLASS TUBE, DEDUCTED FROM THE CHEMICAL STRUCTURE OF SILICATES. [GLASSES AND CERAMICS | BASICMEDICAL KEY, N.D.] TESTING THE ANGLED LIMITED OF THE PLA 3D PRINTING AND IDEATING ON MODULAR BUILDING OF TETRAHEDRON FORM DERIVATION.





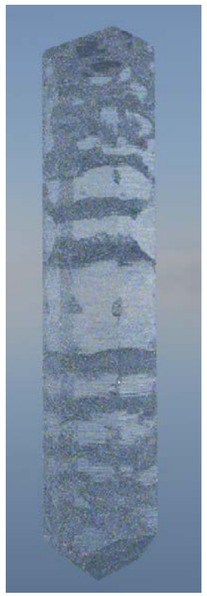


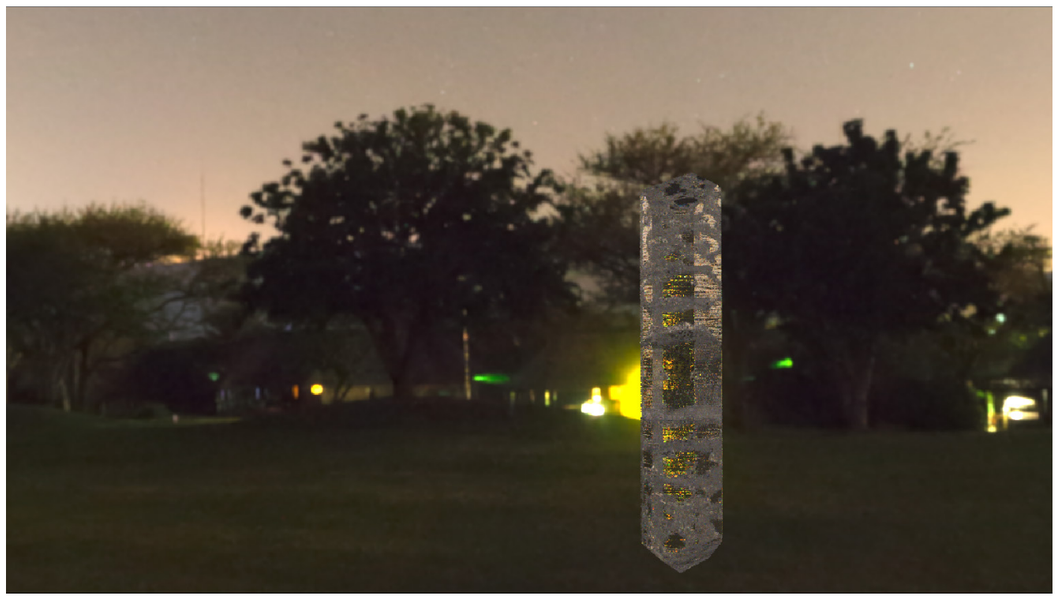


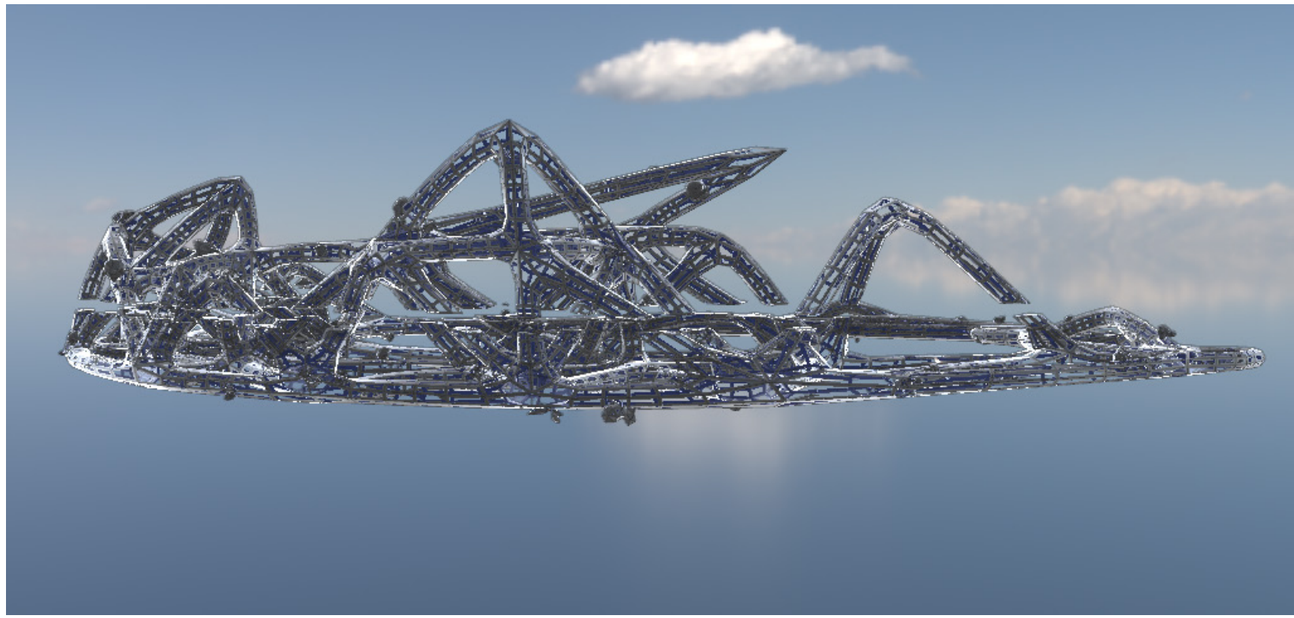


IN STUDY OF MINERALIZATION IN COMPARISON TO AMORPHOUS GLASS, A STUDY OF A LIGHT REFRACTING AND TRANSPARENT FORM WAS SCRIPTED UTILIZING HDRI LIGHTING AND MANTRA RENDERING. PLAYING WITH IORS, TIERS OF PARTICLE FRAGMENTATION, AND FOG VBDS, THE STUDY ALLOWED FOR THE VISUALIZATION OF, FULGURITES + PHENOMENA, AND LITERATURE RIEVEW SUBJECT OF BIOACTIVE GLASSES WITH THE MEDIUM'S UNIQUE ABILITY FOR ENGINEERED GENESIS AND ENTROPY.

THROUGH THE LAYERED CONSTRUCTION , THE UNLOCKED POTENTIALS OF FORM GENERATION WERE FOUND ALONGSIDE THE ABILITY TO GENERATE LIGHT BENDING.



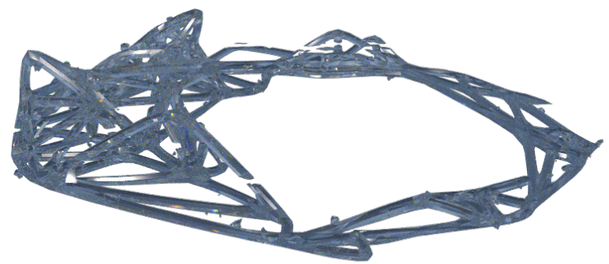


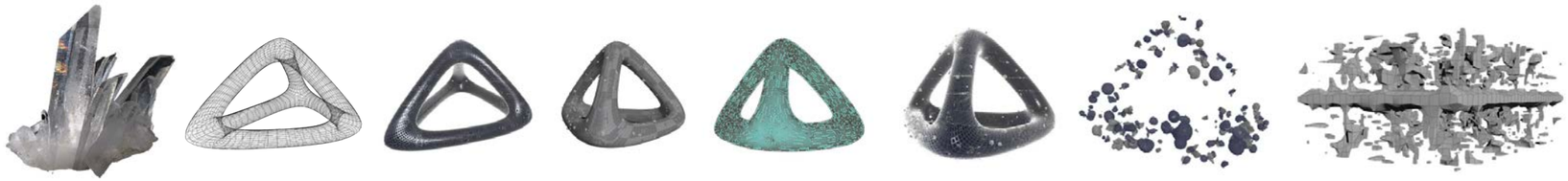


THE MATERIAL SCRIPT WAS THEN APPLIED TO THE TETRAHEDRON MODULAR COMPLEMENT WITH AN INVERSE LOOK AT THE BASE FORM BEING OVER TAKEN BY INTERIOR FRACTALS/ CRYSTALLIZATION OVERGROWTH.

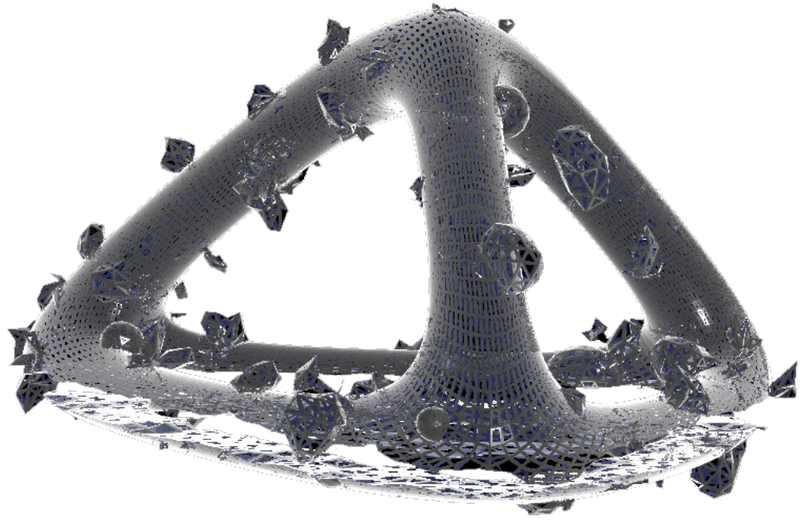
IN CONJUNCTION WITH THE FUNCTIONING OF BIOACTIVE GLASS AND THE ABILITY OF NUTRIENT AID, INITIATED MINERALIZATION, AND CELL GROWTH ACTUATION, THIS POTENTIAL MAY BE BEYOND JUST COMPUTATIONAL ILLUSTRATION.

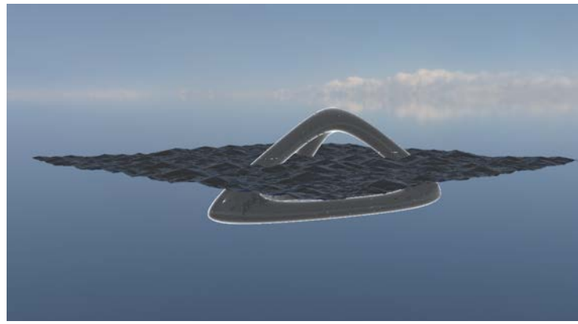
THROUGHOUT THE RENDERING PROCESS, ACKNOWLEDGMENT OF THE KIN FORMATION OF OBJECT PARTICLES WERE RECOGNIZED BETWEEN PIXELATION AND MINERALIZATION.

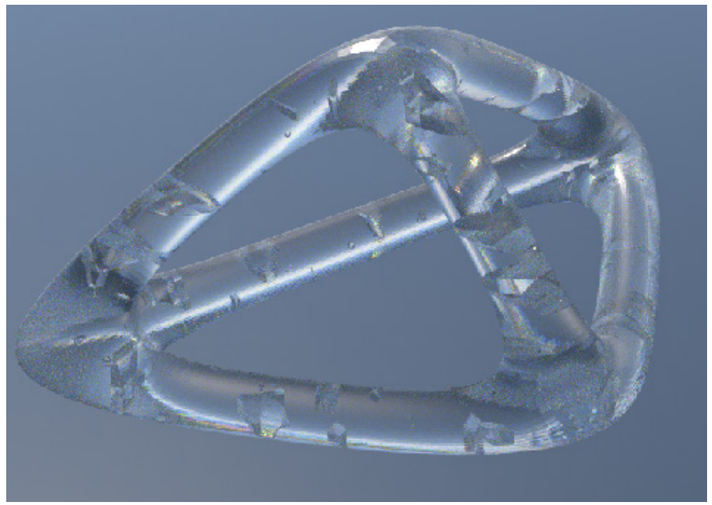




BY SUPERIMPOSING THE TETRAHEDRON FORM THROUGH THE INVESTIGATION OF OBJECT LUMINESCENCE, BRIDGING STRUCTURES SIMILAR TO THOSE OF FULGURITES AND FORMS ACHIEVED THROUGH SINTERING WERE FOUND BY SURFACE INTERVENTION WHILE SHADOW MAPPING.







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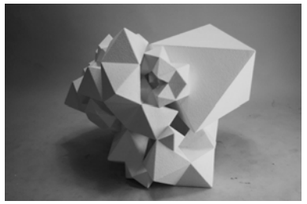
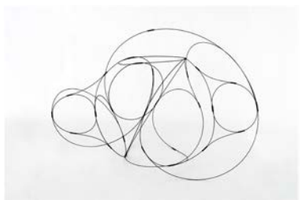
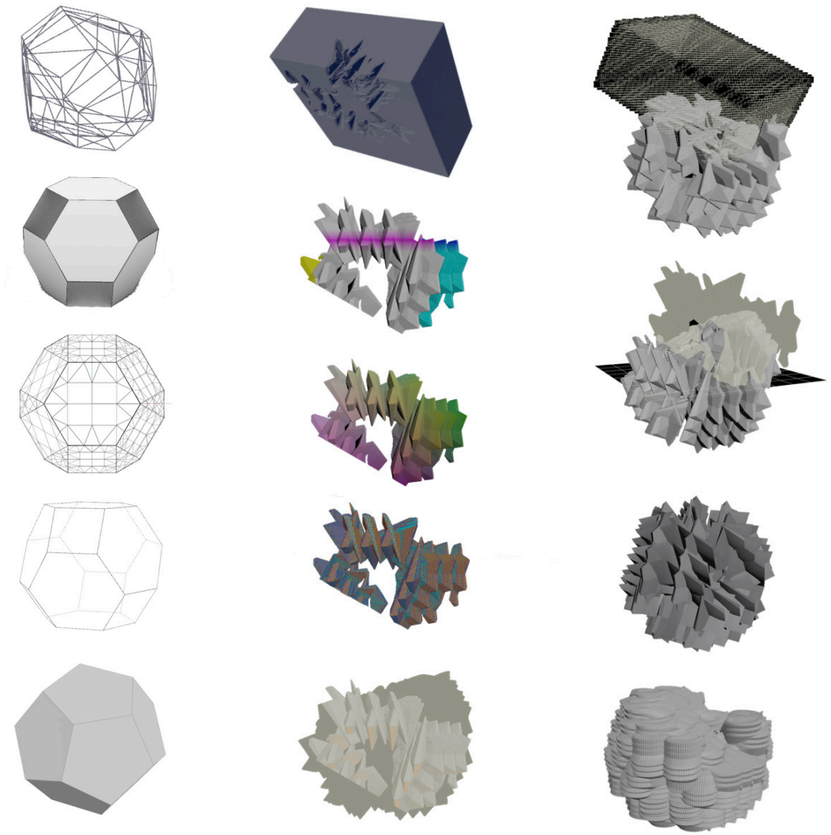






// zeolite_

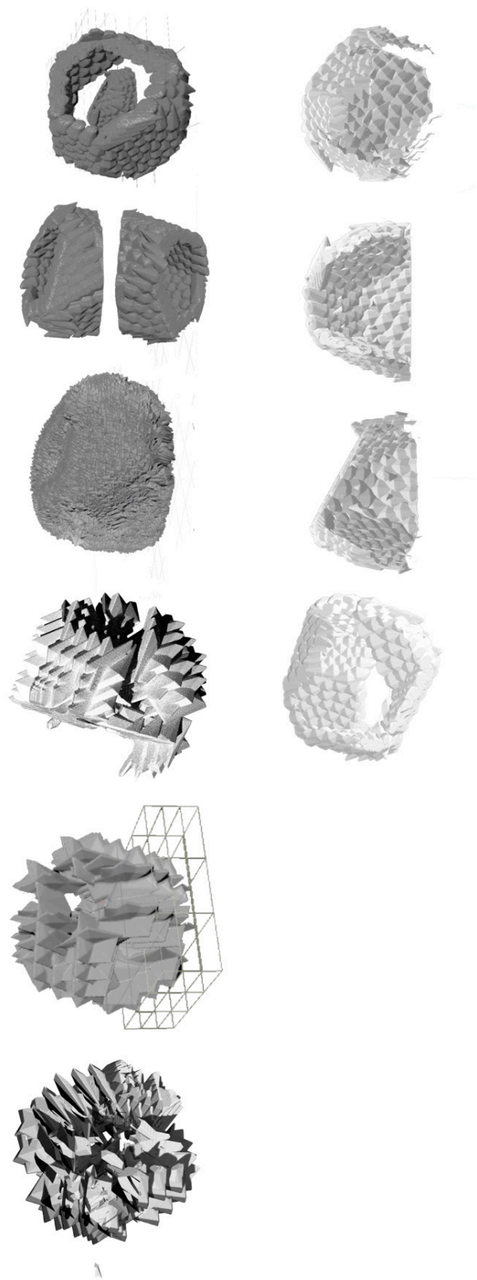
a minteral with a porous three-dimensional honeycomb framwork and negative net charge. Operating as both sponge and magnet they soak up microscopic particles, nutrelizing the compounds.

THE ZEOLITE BECAME THE BACKDROP STUDY FOR THE FIRST IDEATION OF THE D2 PROJECT FILTRATION POSSIBILITY AS A NATURALLY-OCCURRING, ORGANIC FILTRATION SYSTEM, AND THE INSPIRATION FOR THE 3D CLAY PRINTING.

_Primatives; Meeting the Clouds Halfway, Aranda\Lasch

DISSECTING THE ZEOLITE FORM, A HEXTETRAHEDRAL IS THE SINGULAR UNIT OF THE ANATOMICAL STRUCTURE CALLED A SODALITE. ISOLATING THIS SHAPE AND ITS FUNCTION AS THE BUILDING BLOCK FOR ZEOLITES, THE GEOMETRY IS THEN EXTRAPOLATED TO INFORM A METHOD FOR MODULAR BUILDING, NEGATIVE SPACE AND GEOMETRICAL REFERENCE POINT.

INVESTIGATING SECTIONED AND BLASTED FORMS, HELIX OBLITERATION, CASTING, REDUCTION OF ANGULARITY, THROUGH THE BASE SHAPE OF THE ZEOLITE-DERIVED HEXTETRAHEDRAL, THIS FORM FRAGMENTATION SERVED AS THE TEMPLATE FOR ROBOTIC CLAY PRINTING. EXPLORING THE LIMITATIONS OF DOUBLE-WALLED SHELLS WITHOUT INTERIOR SUPPORT STRUCTURE, THE PRINT STARTED TO CAVE IN RESULTING IN A DRAPING AND LATTICED FORM. ADDITIONALLY, THIS SHELLING CONCEPT WAS THE FIRST ITERATION OF THE FILTER DESIGN FOR *OLEOPHILIC ASSEMBLAGE*.



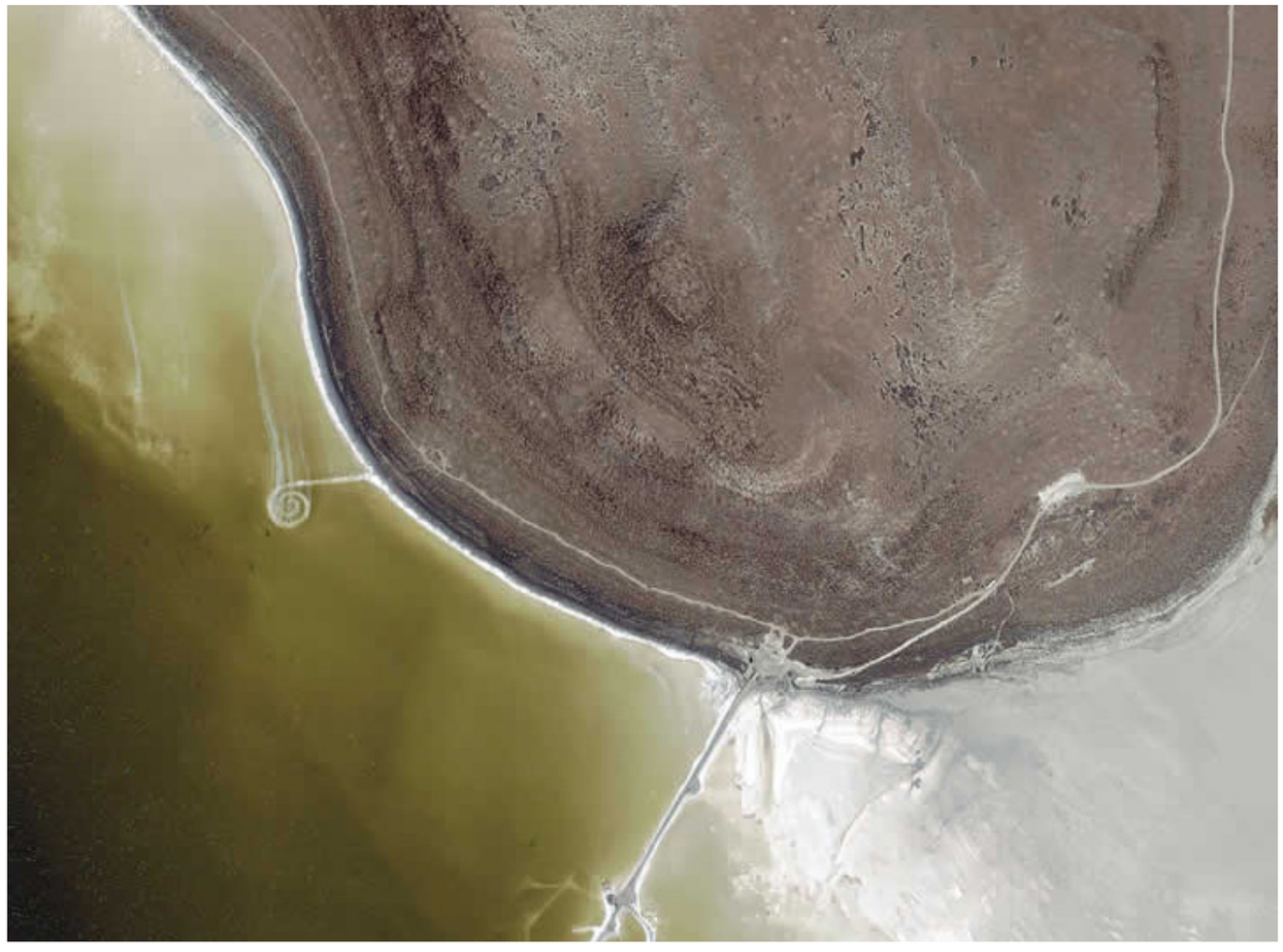
“Both the ruin and the nanostructure share a ragged edge of possibility. The most dynamic work lies at the fine or order and disequilibria. The place where watter unfords unpredictabily, caught between its own internal rules and the new ones it’s introducedd to.

“Perceiving ordered pattern is an evolutionary habit. But to push order just beyond the faculty of recognition, to introduce ruin, is a vital exersice. It is only on this ragged edge that, if you look in the right way, you may recognize the seemingly disordered structures for new formulations of order.”

// Trace Elements. **2017**

PROJECT 02

OLEOPHILIC ASSEMBLAGE



_*Spiral Jetty.* Smithson, Robert. 1970

// PROJECT MEMBERS

MUGHAL, RIDA
MYERS, NATHANAEL
ORBANDI, ANDRITA

// PROJECT TUTORS

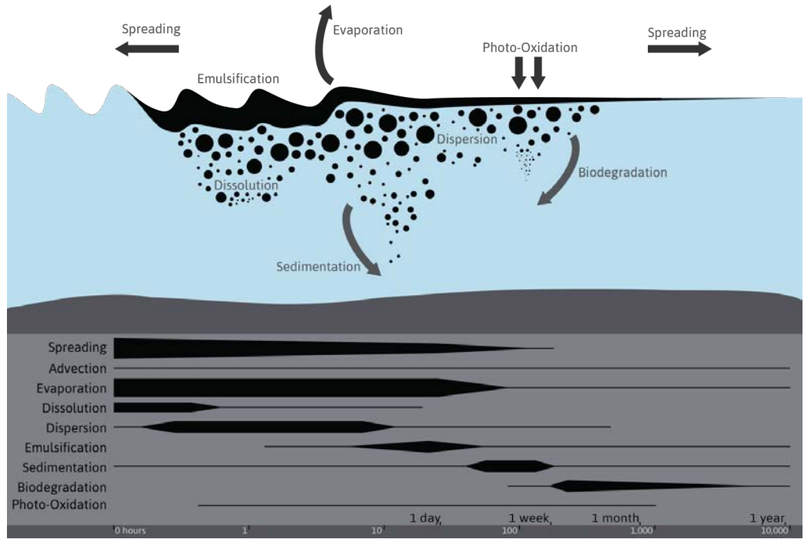
BOMBELLI, PAOLO; DEVADASS, PRADEEP; LE, TONY; ROBINSON, IAN; RUIZ RODRIGUEZ, JAVIER; TAMULI, PRANTAR

// PROJECT OVERVIEW

OLEOPHILIC ASSEMBLAGE, LOOKS TO INTRODUCE A BIOMETIC RESPONSE FOR THE CURRENT MAL PRACTICES OF OIL SPILL CLEAN UP THROUGH LOCAL BIOLOGICALLY-DERIVED FILTRATION.

OFF THE PUBLIC FOOTPATH NO. 5, IN FRONT OF THE EXXON MOBILE PETROLEUM STATION IN PURFLEET, LONDON IS WHAT IS TO BE ASSUMED AS LEACHED CRUDE OIL. THIS HAS MADE THE BANK OF THE THAMES RIVER COMPLETELY INACSESSIBLE WITH SLUDGE REPLACING SAND OF THE SHORELINE.

AS A WAY TO GIVE BACK THE WATER ACCESS TO THE SURROUNDING COMMUNITY AND REINSTATE A HEALTHY ECOSYSTEM, A FOOTPATH ASSEMBLAGE WAS CONSIDERED ALSO CATERING TO THE RIVER TRANSPORTATION.



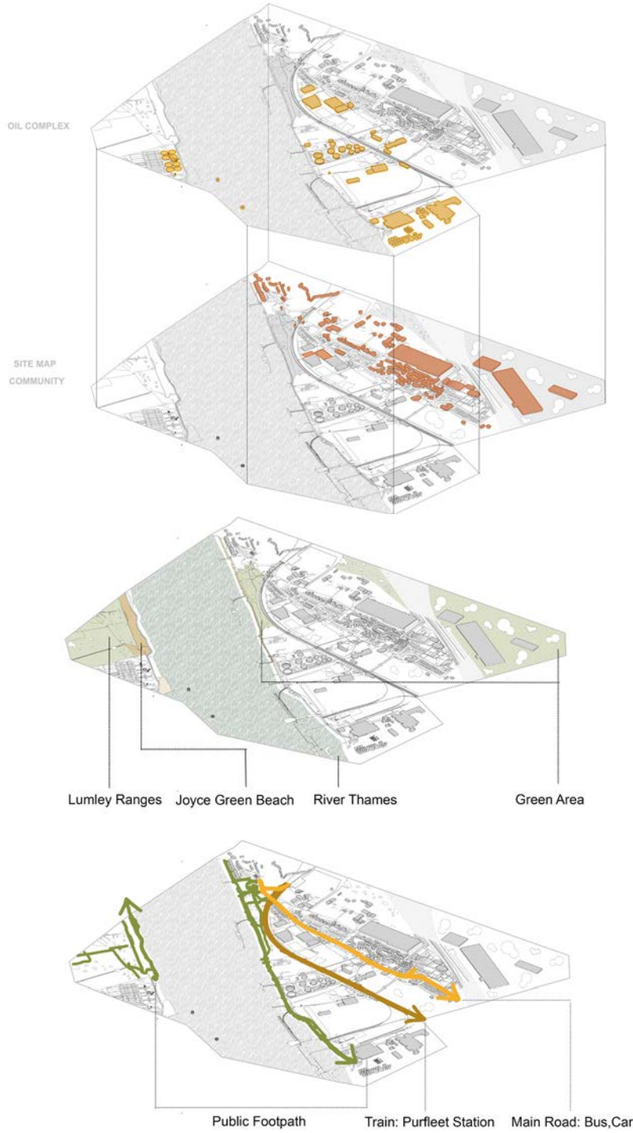
THIS GROUP PROJECT HAS AN INTEREST IN EXTREME ENVIRONMENTAL CONDITIONS. ONE OF MANY INTERESTS THAT INTRIGUE US IS THE TREATMENT OF OIL SPILL CASES. IT IS DIFFICULT TO IMAGINE THE DAMAGE OF AN OIL SPILL TO AN ENVIRONMENT. THEREFORE, WE DECIDED TO MAKE A FIELD TRIP. WE GOT A TIP FROM A FRIEND THAT UNDER THE DARTFORD CROSSING BRIDGE AT THE LAKESIDE AREA NEAR THE OIL STORAGE DEPOT BY EXXON MOBIL SMELLS LIKE OIL, ESPECIALLY DURING THE SUMMER. IN APRIL 2022, THERE WAS A DEMONSTRATION BY JUST STOP OIL THAT BLOCK 10 OIL TERMINALS AND FORCE EXXON MOBIL UK TO SUSPEND OPERATIONS, AS CITED FROM THE INDEPENDENT. AFTER DOING FIELD OBSERVATIONS AND OBTAINING SAMPLES FROM THE FIELD, THERE ARE SOME BENEFITS OF GOING FOR A SITE INSPECTION:

_ IT IS IMPORTANT TO FIND AN ACCURATE SITE THAT REPRESENTS THE BIG TOPIC

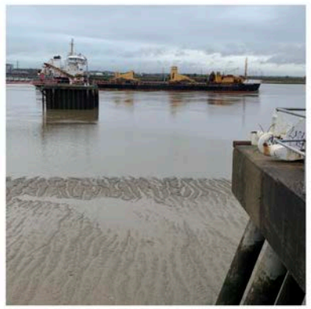
_ABLE TO LEARN ABOUT THE TOPOLOGY OF THE AREA AND ABOUT HUMAN INTERACTIONS, WHICH IS HELPFUL FOR DESIGN APPROACHES

_ABLE TO LEARN ABOUT ENVIRONMENTAL CONDITIONS SUCH AS WATER AND SAND POLLUTION, WHICH IS USEFUL FOR LEARNING THE INTERACTION BETWEEN ORGANISMS

_COLLECTING SAMPLES FROM AN ACTUAL LOCATION WILL BE BENEFICIAL FOR THE BIO-INTEGRATION PROCESS BECAUSE OF CONSIDERATION OF THE LOCAL ORGANISM
_FOR FUTURE DEVELOPMENT, THERE IS A POTENTIAL TO TEST THE PROTOTYPE IN SITU AND OBSERVE THE FEEDBACK

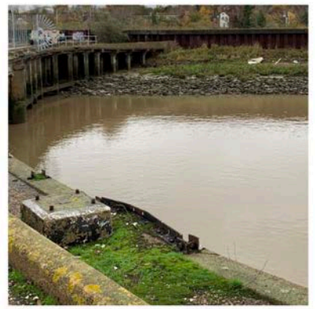


// SAMPLE COLLECTION



// SITE A

_water samples



// SITE B

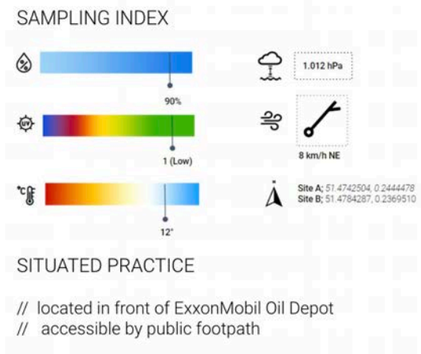
_ sea pulsane

_ oragne goo

_ moss

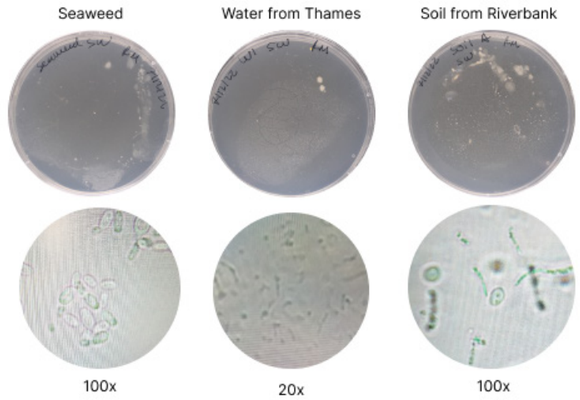
_seaweed

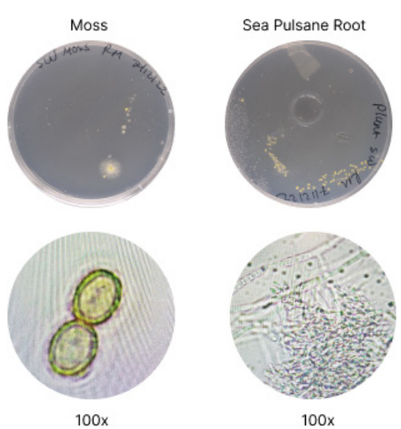
_footprint sludge

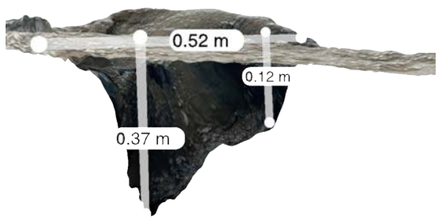


SITUATED PRACTICE

// located in front of ExxonMobil Oil Depot
// accessible by public footpath



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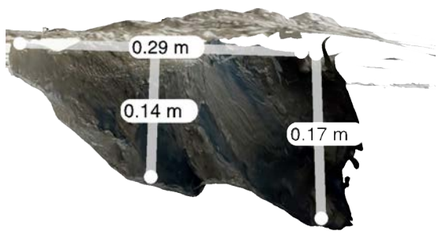
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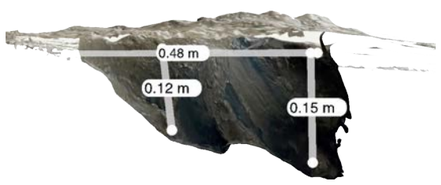
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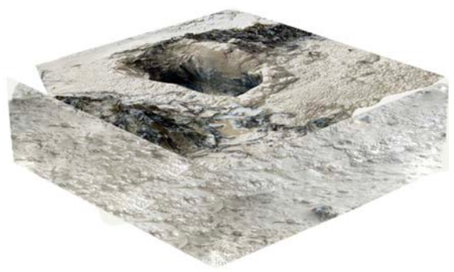
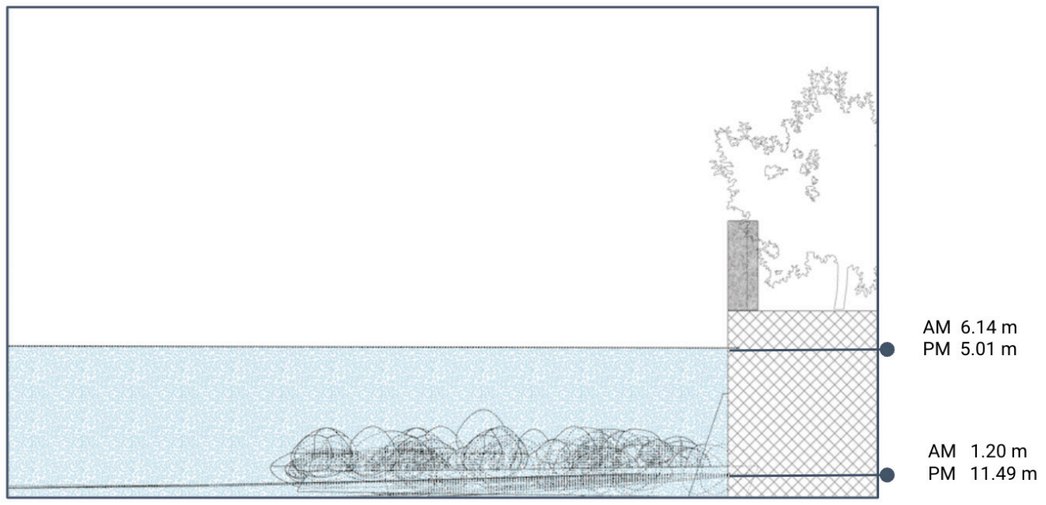
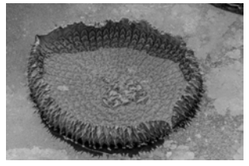



AM 6.14 m
PM 5.01 m
AM 1.20 m
PM 11.49 m

// REF



bio//morphic--remediation

_The Floating Peris. Christo + Jeanne-Claude. 2016

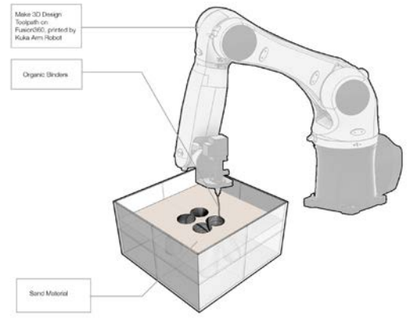
// **BIOREMEDIATING FIILTER**

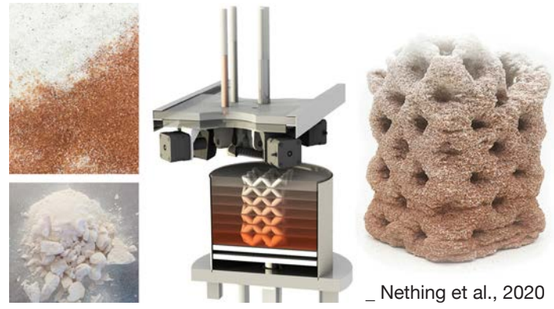
// FABRICATION

DURING THIS PROJECT, THE METHODS FOR FABRICATION WERE HAND-PRESSURED EXTRUSION AND 3D CASTING. BOTH METHODS ARE DONE MANUALLY WITH A DIY OR READY-MADE TOOLS FOR SCULPTING. WE USED RHINOCEROS 7 TO CREATE THE DESIGN, AND 3D PRINTED THE MODEL THROUGH A PRUSA I3 MK3 MACHINE WITH 1.75MM PLA FILAMENT. THE MOULD/SURFACE MATERIALS ARE SILICONE, ACRYLIC PLASTIC, AND GLASS.

_ F U T U R E

- INTEGRATED COMPLEX DESIGN
- MULTI-MATERIAL ASSEMBLY
- SCALE-DOWN PROTOTYPE OF A SINGLE STRUCTURE COLUMN
- CRAFTING A UNIQUE FILAMENT FROM BIOPOLYMER AND USE THE REGULAR 3DP MACHINE
- EXPLORE EXTRUSION VS. CASTING



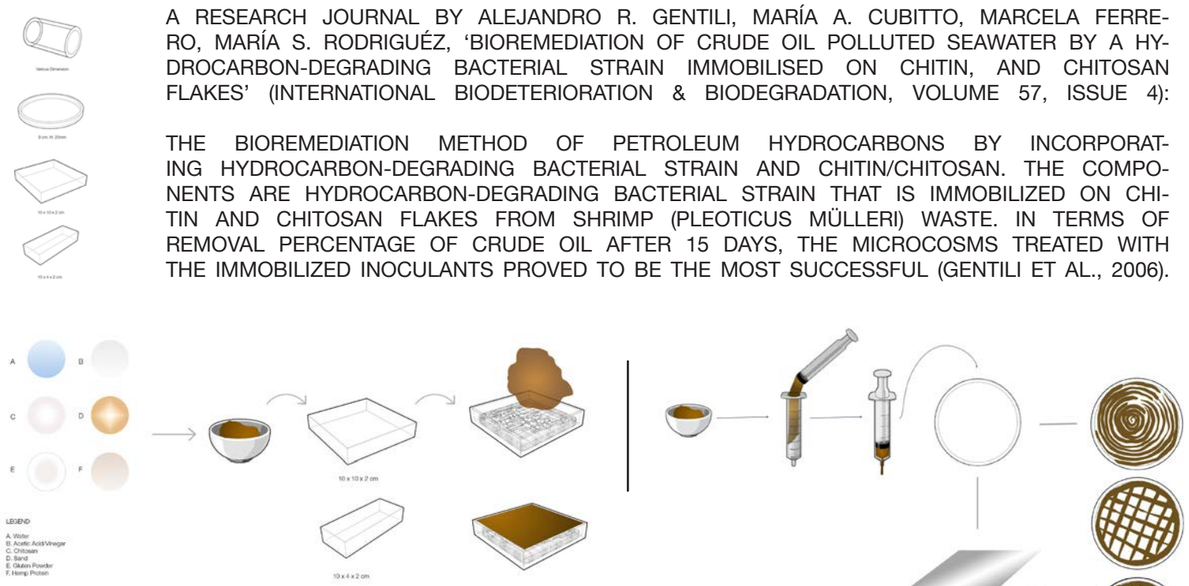


_ Nething et al., 2020

THE DESIGN HAS A MULTI-MATERIAL APPLIED TO CERTAIN PARTS OF THE DESIGN. THE APPLICATION OF MULTI-MATERIAL WAS MADE TO ACCOMMODATE DIFFERENT PROPERTIES IN ONE DESIGN BODY. THE DESIGN BODY IS DIVIDED INTO STRUCTURE AND SKIN/SPONGE. THE STRUCTURE MATERIAL WAS INTENTIONALLY RESEARCHED TO BIOREMEDIATE THE OIL SPILL AND A HOST FOR THE SPONGE MATERIAL. THE PURPOSE OF A SPONGE IS TO ABSORB OIL THAT RESIDES ON TOP OF THE WATER BY ABSORBING WATER AND LETTING THE OIL LATCH ON ITS SURFACE, WHICH WILL BE INTRODUCED WITH HYDROCARBON-DEGRADING BACTERIA. IN THIS PROJECT, WE USED A CHITOSAN-SAND COMPOSITE WITH ACID TO DISSOLVE CHITOSAN AND MIXED IT WITH SODIUM ALGINATE.

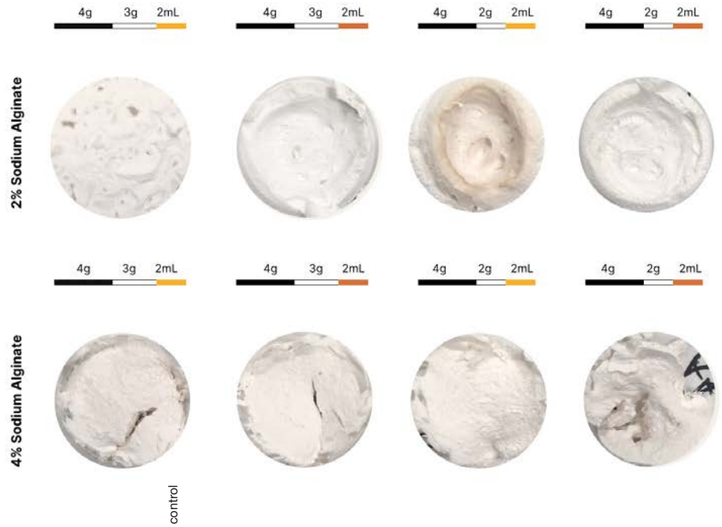
A RESEARCH JOURNAL BY ALEJANDRO R. GENTILI, MARÍA A. CUBITTO, MARCELA FERRERO, MARÍA S. RODRIGUÉZ, ‘BIOREMEDIATION OF CRUDE OIL POLLUTED SEAWATER BY A HYDROCARBON-DEGRADING BACTERIAL STRAIN IMMOBILISED ON CHITIN, AND CHITOSAN FLAKES’ (INTERNATIONAL BIODETERIORATION & BIODEGRADATION, VOLUME 57, ISSUE 4):

THE BIOREMEDIATION METHOD OF PETROLEUM HYDROCARBONS BY INCORPORATING HYDROCARBON-DEGRADING BACTERIAL STRAIN AND CHITIN/CHITOSAN. THE COMPONENTS ARE HYDROCARBON-DEGRADING BACTERIAL STRAIN THAT IS IMMOBILIZED ON CHITIN AND CHITOSAN FLAKES FROM SHRIMP (PLEOTICUS MÜLLERI) WASTE. IN TERMS OF REMOVAL PERCENTAGE OF CRUDE OIL AFTER 15 DAYS, THE MICROCOSMS TREATED WITH THE IMMOBILIZED INOCULANTS PROVED TO BE THE MOST SUCCESSFUL (GENTILI ET AL., 2006).



// chitosan sand brick_FUTURE

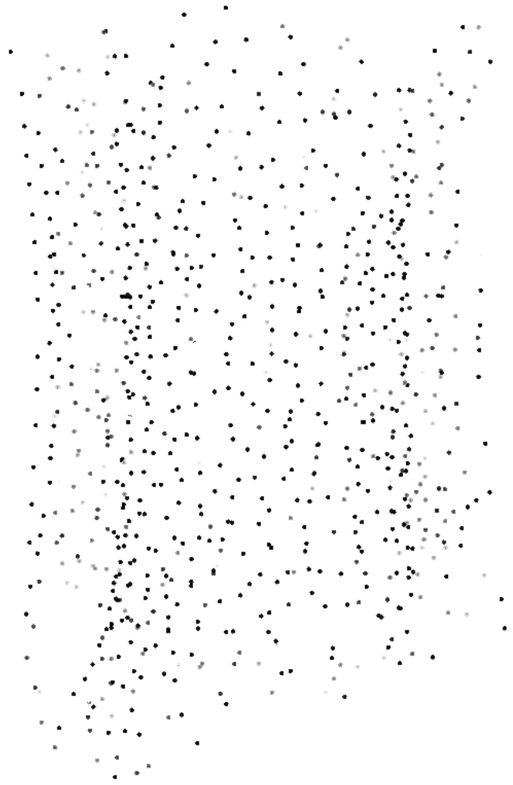
- MATERIAL SHRINK RATE VARIES, THE MOST STABLE IS THE CONTROL COMPOSITION
- THERE ARE MOLD IN MOIST PART OF THE MATERIAL DURING THE DRYING PROCESS
- ONLY THE MATERIALS THAT USED ACETIC ACID AS THE DISSOLVENT HAD MOLDS. MIGHT BE CONTAMINATED
- WE DIDN’T GET TO TEST MATERIAL PROPERTIES SUCH AS STRENGTH, BIODEGRADABILITY OVER TIME AND ITS ABILITY TO BREAK DOWN HYDROCARBONS
- WE DIDN’T GET TO COMBINE THE CHITOSAN-SAND COMPOSITE WITH THE SPONGE, THEREFORE WE COULDN’T OBSERVE THE REACTION WHEN BOTH ARE MERGED

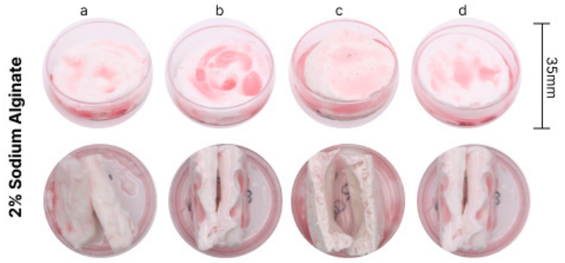


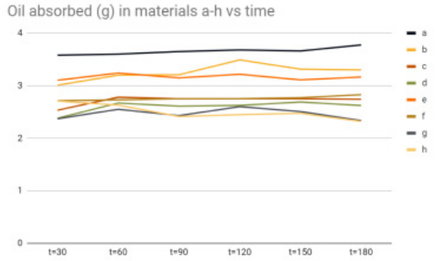
// calcium alginate_FUTURE

calcium carbonate and sodium alginate mixture, crosslinked with acetic acid or vinegar

FUTURE INVESTIGATIONS OF THIS MATERIAL WOULD INCLUDE INTRODUCING MULTISYMBIOTIC ORGANISMS, NAMELY MYCORRHIZAE, HYDROCARBON-DEGRAGING BACTERIA, RHIZOBIUM, AND PHOSPHATE-DISSOLVING BACTERIA. FURTHER ITERATIONS HOLD SYNONYMOUS TO [ATLAS & HAZEN, 2011; EL-SHESHTAWY ET AL., 2021; SRI RAHAYU, N.D.] WHICH LOOK AT A TRIPARTITE SYMBIOSIS BETWEEN PLANTS, MICORRHIZAE, AND RHIZOBIUM WHILE ALSO ADDING PLANT GROWTH BACTERIA SUCH AS PSB TO DUALY ASSIST PLAT SURVIVAL IN OIL-CONTAMINATED SOIL.







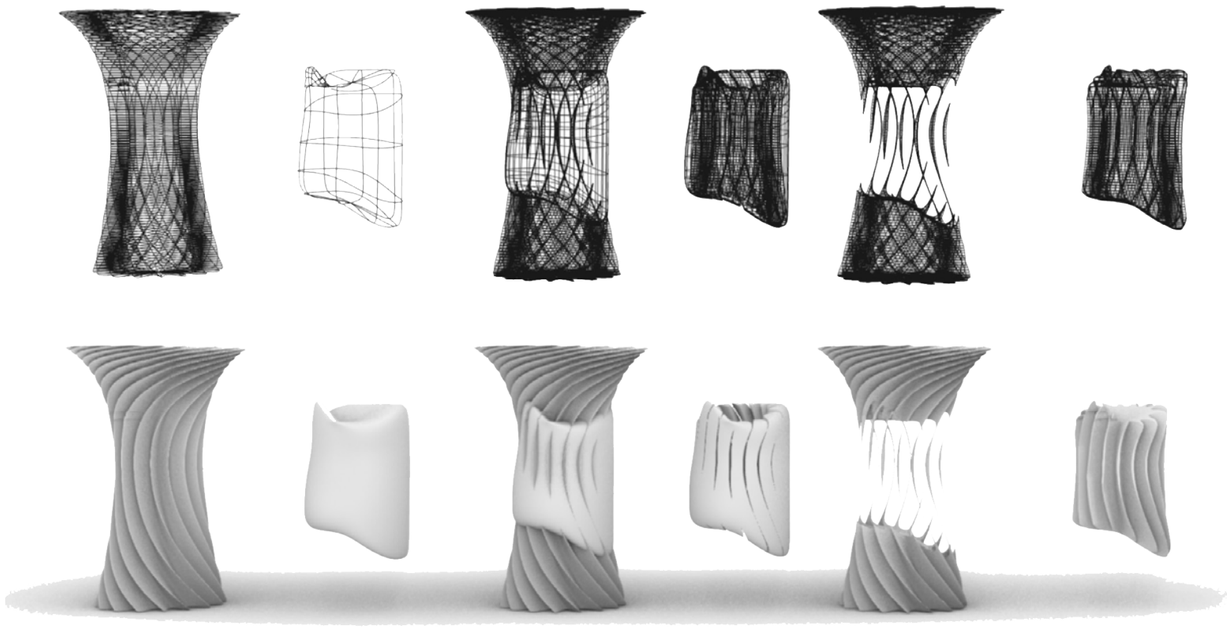
// calcium alginate_FUTURE

ANOTHER AVENUES FOR CONTINUED MATERIAL TESTING INCLUDES:

- CONDUCTING ABSORPTION WITH WATER SAMPLE FROM THE SITE AND PETROLEUM
- TRACKING THE DEGREDATION OF THE MATERIAL OVERTIME.
- COMBINED MATERIAL TESTING WITH THE SAND STRUCTURE
- REGULATING THE POROSITY AND CONTROLING THE MATERIAL TEXTURE FOR BOTH SPONGE-LIKE AND A MORE STRUCTURAL CHALK-LIKE ITERATION WITH THE INTRODUCTION OF HEAVY ACID.

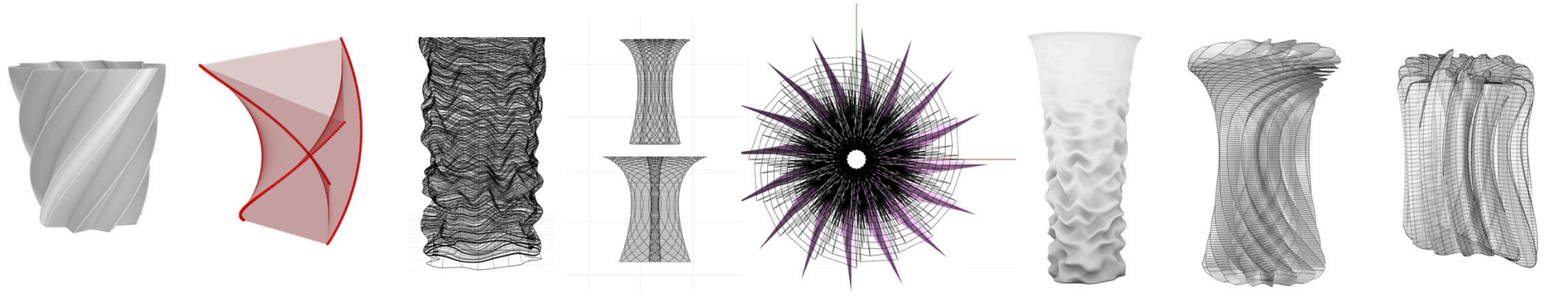
AS A FORM DERIVED FOR OIL SPILL SITE INTERVENTION AND BIOREMEMDIAITON, THE STRUCTURE PROPOSED FOR, OLEOPHILIC ASSEMBLAGE, COMBINES A SPONGE LIKE ABSORBENT MATERIAL OF CALCIUM ALGINATE WITH A VINEGAR HARDENED SAND-BRICK FRAMING UTILIZING THE LOCATION SITE MATERIAL OF THE PURFLEET THAMES BANK.

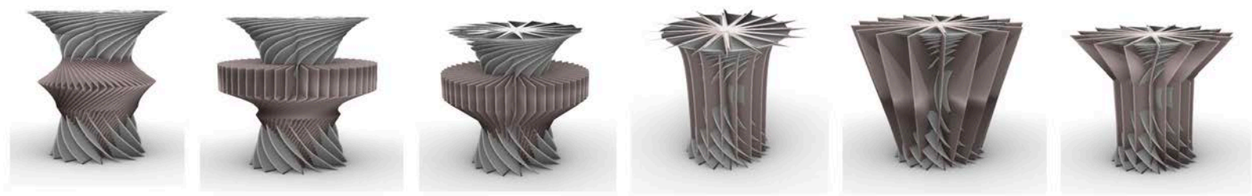
COMBINING GRASSHOPPER AND SUBD DERIVED FORMS, THE FILTER CONSIDERS THE ADDITIVE AND SUBTRACTIVE METHODS FOR FABRICATION AND VISUALIZATION.

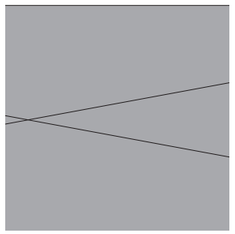


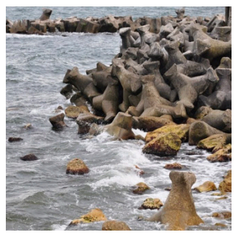
CONSIDERING NATURE'S ORGANIC METHODS FOR FILTRATION. SPIRAL AND DOUBLE HELIX STRUCTURES OF MULTIPLE MATERIAL COMBINATIONS WERE AN EXTENSION OF THE DESIGN 2 PROJECT, OLEOPHILIC ASSEMBLAGE. UTILIZING A GRASSHOPPER SCRIPT THE FORMS WERE CONSIDERED ON A MULTITUDE OF OF PARAMETERS OF WHICH WERE EXPONENTIAL WITH THE ADDITION OF THE SECOND HELIX.

AS A VESSEL FOR HOSTING HYDOR-CARBON BREAKDOWN THROUGH A COLLECTIVE COMMUNITY ACTION OF BACTERIA, INTERLOCKING CREVICED CAMBERS PROVIDED THE NEEDED POCKETS FOR BACTERIAL GROWTH, OIL SEQUESTERING, WHILE EMBRACING WATER CHANNELING.



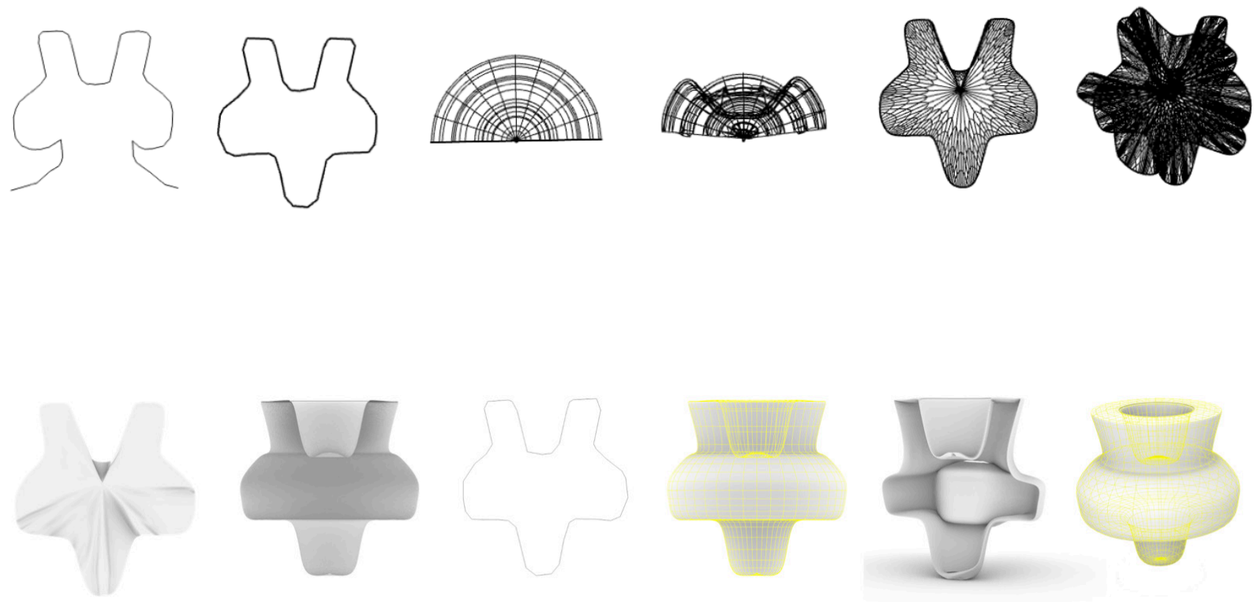


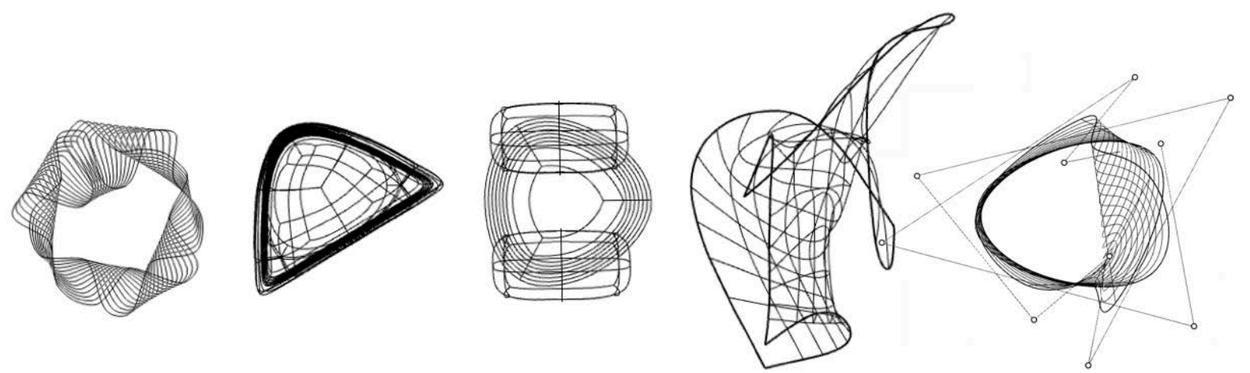


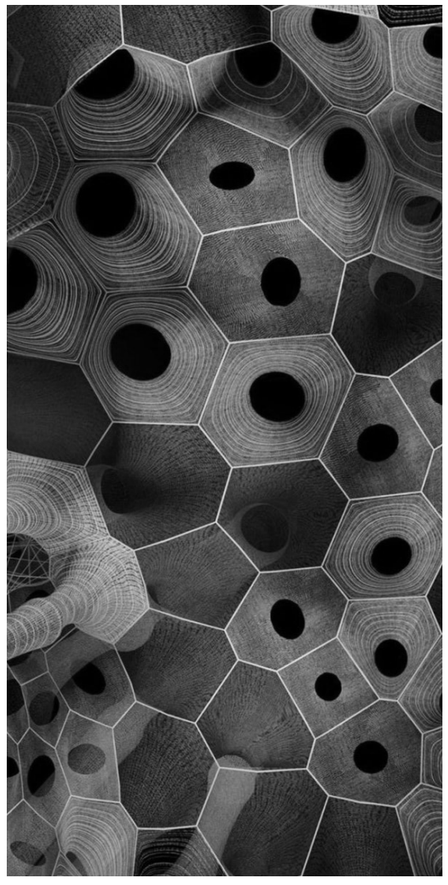


VARIANTS AND EVOLUTION OF THE PILLAR AND COLONNADE STRUCTURES ARE DIRECTLY INFORMED BY THE SIMULTANEOUS CONVERSATIONS OF THE FUNCTIONALITY OF MODULARITY AND NECESSITY OF POROSITY. WITH THE GOAL OF MULTI-FUNCTIONALITY — CAN THE STRUCTURAL PILLAR SERVE AS THE FILTER ITSELF?

CONSIDERING THE FUNCTIONALITY OF A DOCKING CLEAT. THE FORM WAS EXTRAPOLATED FOR, Oleophilic Assemblage, FROM THE PURFLEET SITE VISIT. ANALOGOUS IN FORM TO LADDERS, RIGGINGS, SPINE NODULES, AND LILY PADS, THE FORM WAS SOUGHT TO PROVIDE BOTH A PILLAR LIKE APPLICATION TO THE FOOTPATH, STORM BREAKERS, AND AS A MODULAR COMPONENT FOR THE FOOTPATH ASSEMBLAGE.

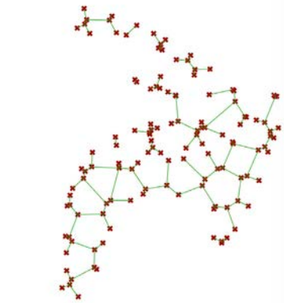


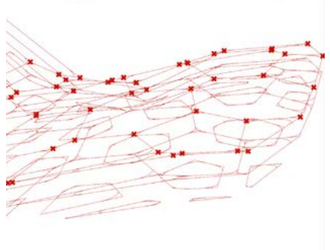


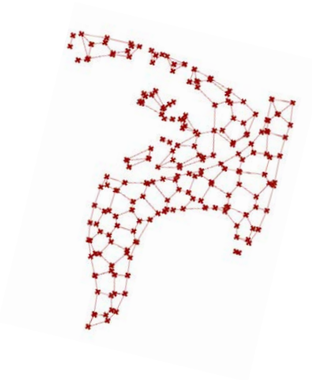


REGULATING SEEDS AND NEIGHBORS OF THE VORONOI METHODOLOGY. CELLULAR DIVISION FOR THE FOOTPATH AND POD ASSEMBLAGE STRUCTURE WAS CONSIDERED AS A POTENTIAL FORM OF THE FILTER, MODULAR FLOTATION VISUALIZATION, AND AS A POTENTIAL PILLAR FOR A DOCK AND SHORELINE ANCHORING.

SURFACE MORPHOLOGY DICTATED BY LOCATION SHORE LINE MAPPING,

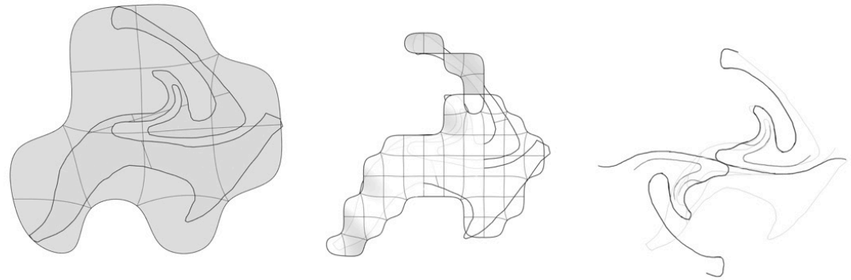


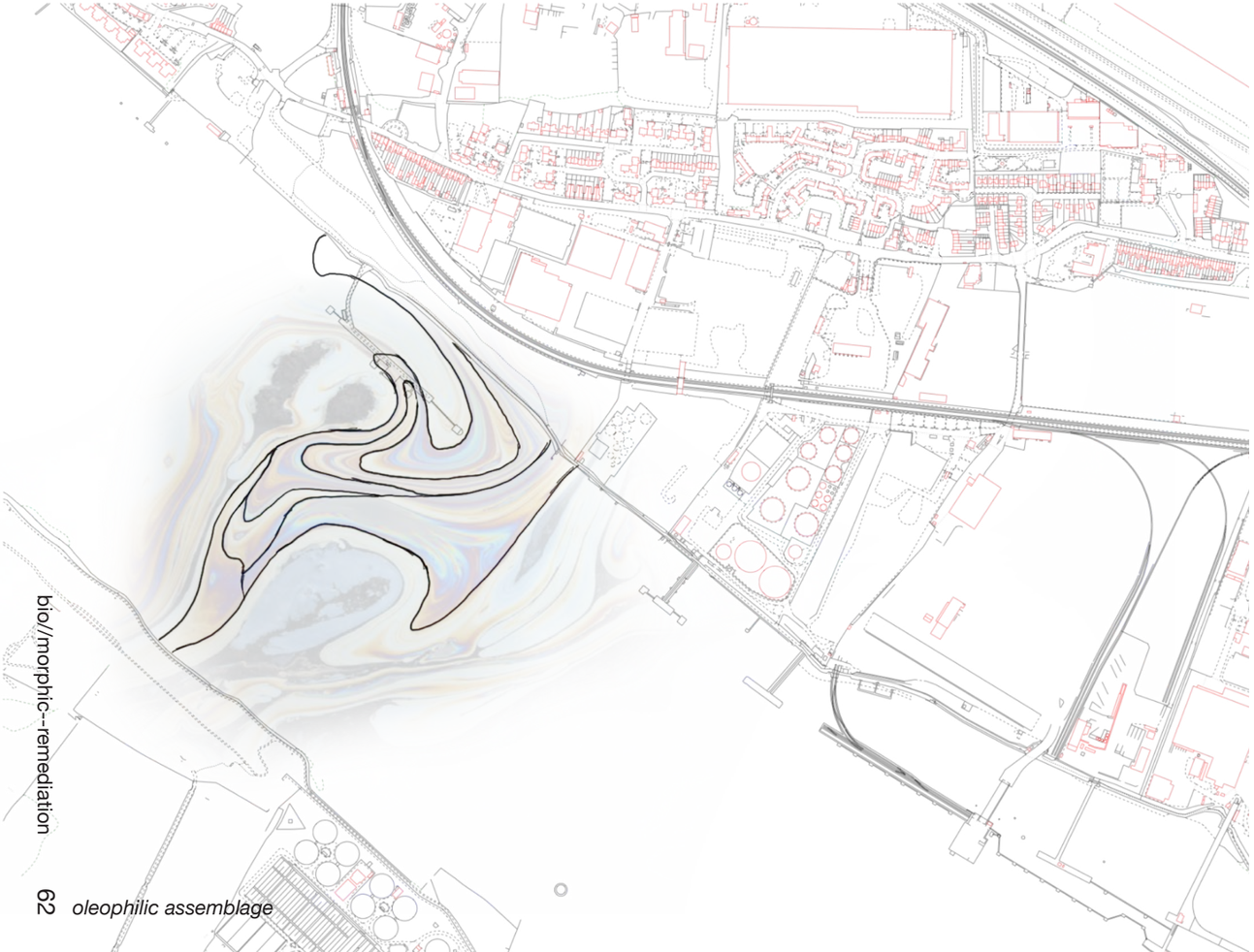


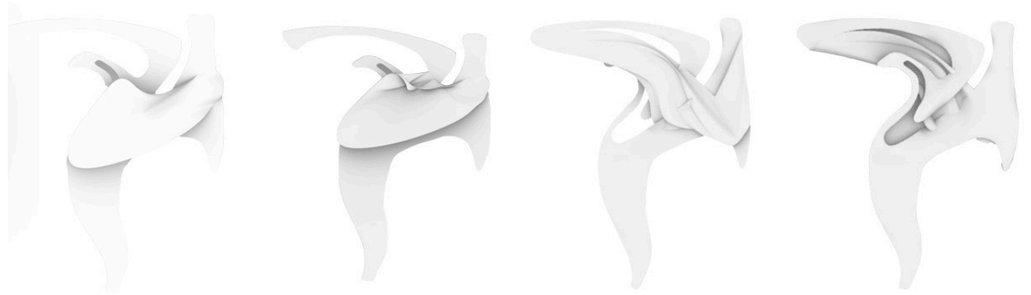


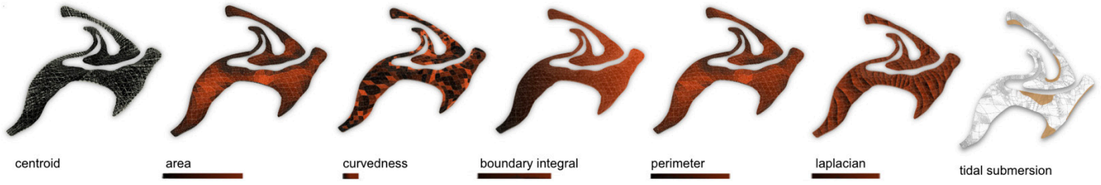
THE FORM OF THE FOOTPATH WAS MAPPED FROM OIL'S INTERACTION WITH WATER FROM DENSITY DIFFERENTIATION. ANALOGOUS FORMS WERE FOUND FROM A SATELLITE IMAGE OF THE 2021 CYPRUS OIL SPILL.

BY ITERATIVE DESIGN, THE STRUCTURE WAS FINALIZED TO BE AN ASSEMBLAGE FOR ACCESSIBILITY OF WATER TRANSPORT, WITH SUBMERGED SLOPES FOR WATER INTERACTION, WITH AN MULTI-FUNCTIONAL UNDER-STRUCTURE. THE STRUCTURE WAS CONSIDERED TO HAVE MULTI-LEVELS, FLOATATION REFERENCES SUCH AS THE WATER LILY, POD SHAPES, AND INTERLOCKING DESIGN.



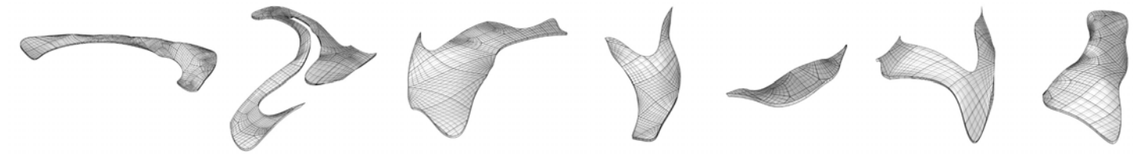


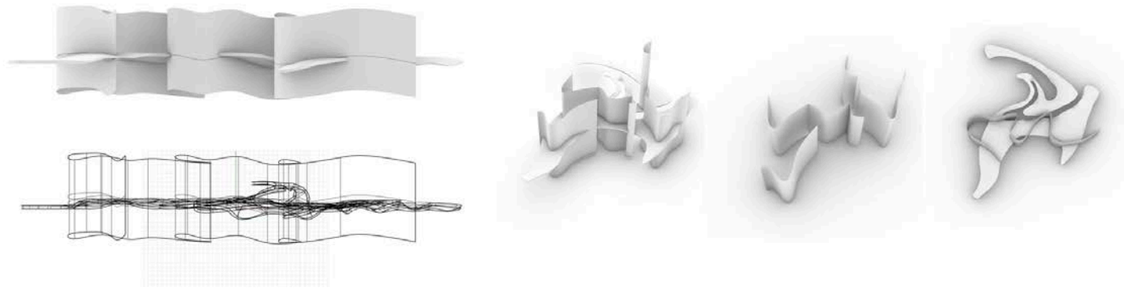


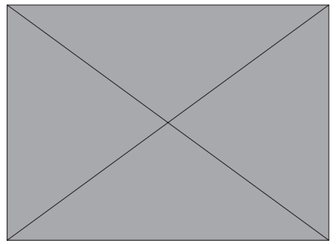


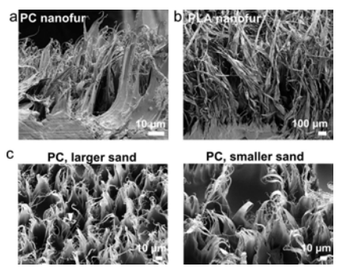
ONCE THE BIOMIMETIC FORM AND DESIGN CONTEXT OF A FOOTPATH EXTENSION WAS ESTABLISHED, THE ASSEMBLAGE SECTIONING OF THE FOOTPATH REQUIRED SPECULATIVE SIMULATING OF THE CONJOINING AND UNTETHERING PODS. REGULATED BY A SERIES OF 5 CUTS TO THE FORM, THE DIVIDED FOOTPATH THEN BECAME A MINI ISLANDS OF REMEDIATION FOR POTENTIAL RELOCATION WHERE NECESSARY.

AS A FURTHER INVESTIGATION, ANALYSIS OF THAMES RIVER WATER LEVELS WOULD INFORM A RENDERED VISUALIZATION OF WILDLIFE INHABITATION OF THE STRUCTURES.

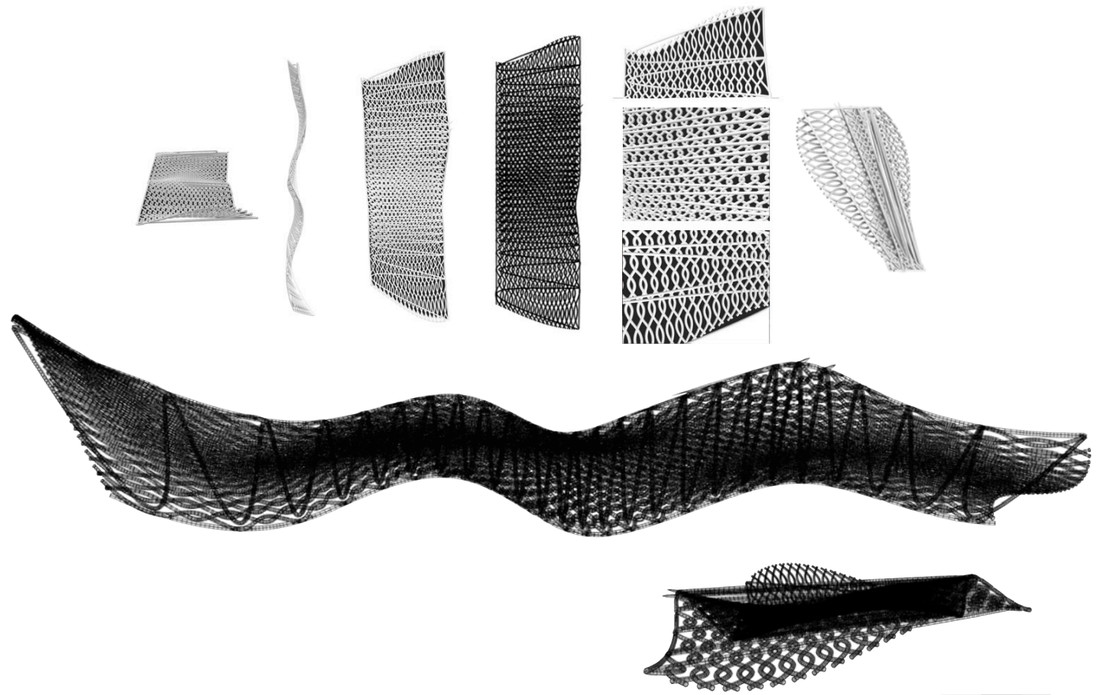




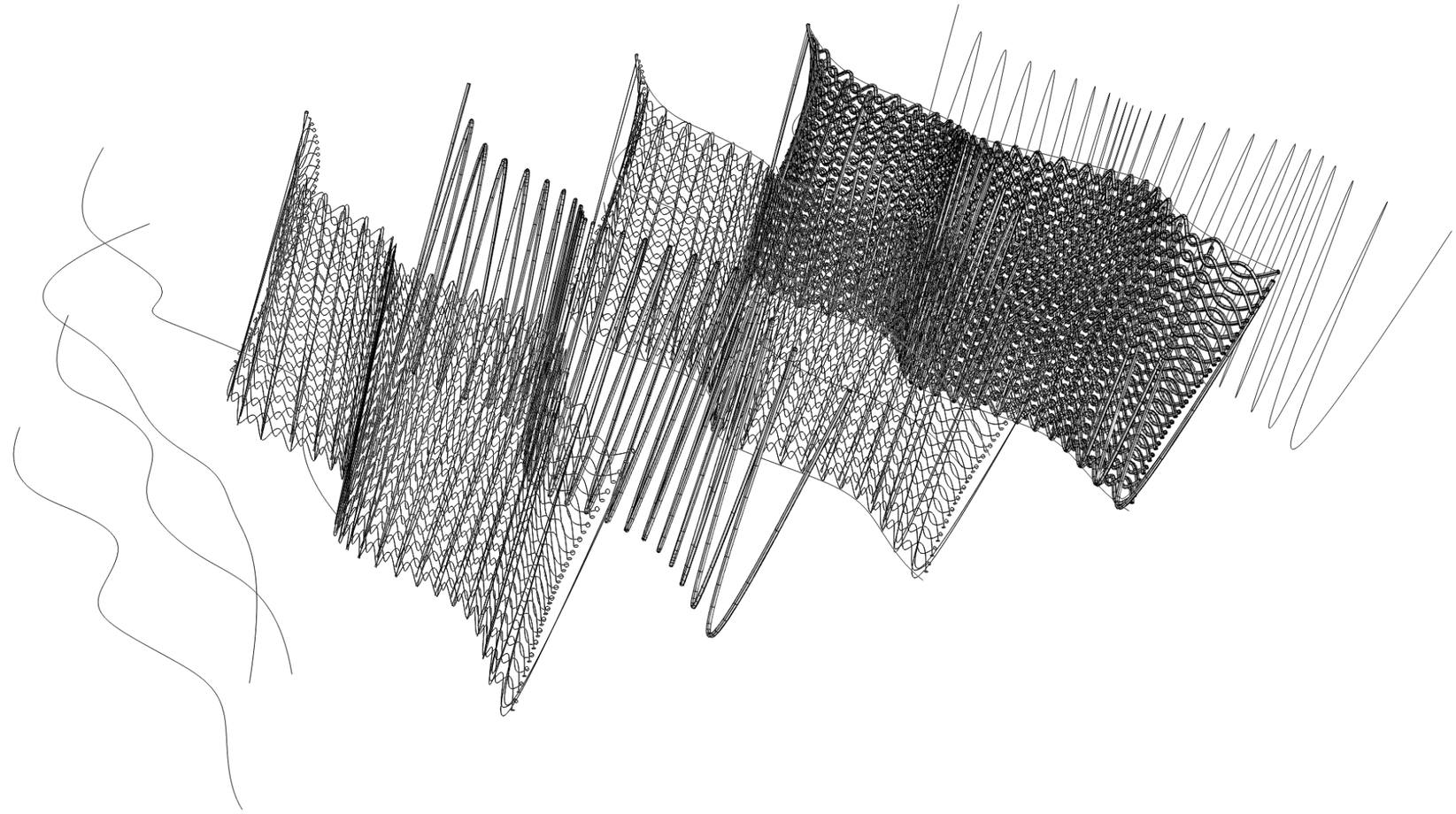


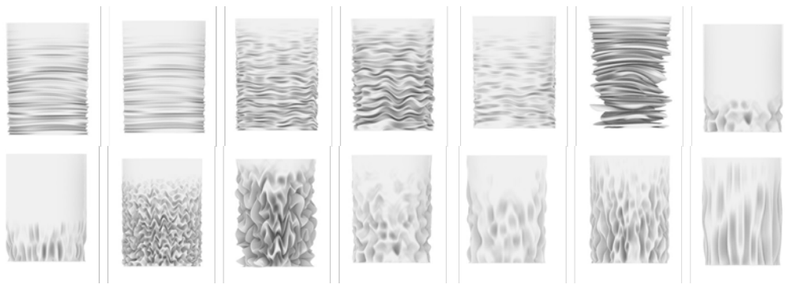


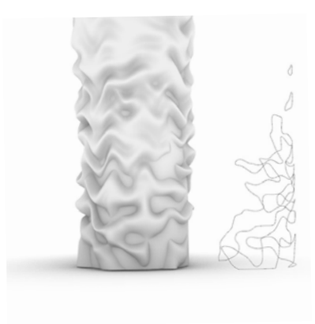
APPLICATIONS OF POROUS TEXTURE FOUND AS THE MOST SUCCESSFUL SECONDARY SURFACE MORPHOLOGY FOR OIL FILTRATION. ZAAROUR ET AL., 2020)

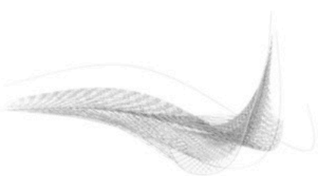


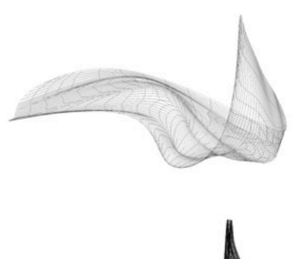
INITIALLY THE STUDY OF COMPUTATIONAL WEAVING WAS REGARDED FOR THE ACHIEVABLE POROSITY FOR THE FILTER CONSTRUCTION. REDUCING THE FORM TO A SIMPLIFIED GEOMETRY OF BOUNDING CURVES THE KNITTED STRUCTURED INSPIRED POROSITY NOT JUST FOR THE NECESSITY OF THE FILTER BUT THE ADVANTAGES OF THIS STRUCTURE UNDERWATER BIODIVERSITY. POROSITY WAS ALSO STUDY BY EXTRAPOLATED BOOLEANS AS A NEGATIVE CASTING.

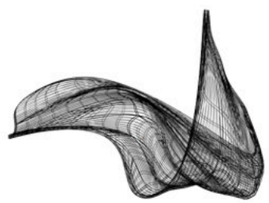


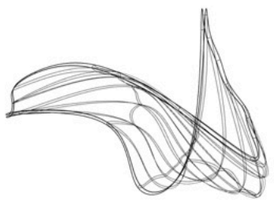






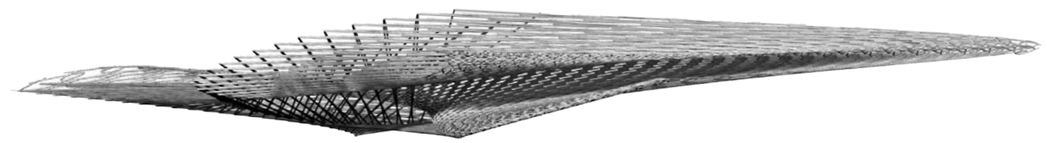


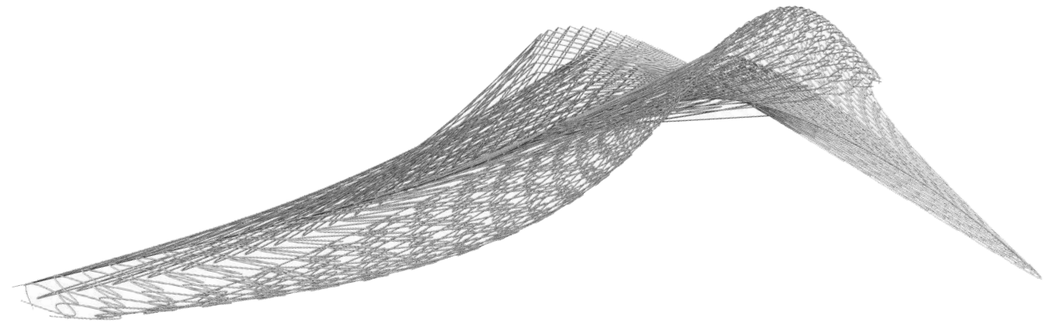




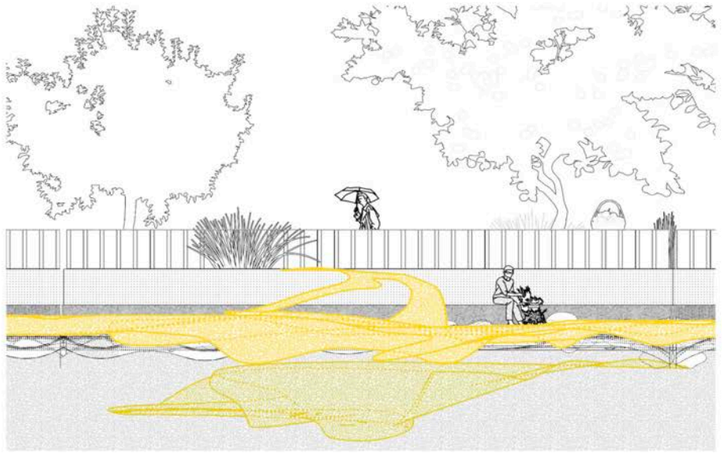
CONSIDERING THE UNDER-STRUCTURE FOR THE PROJECT OLEOPHILIC ASSEMBLAGE FUNCTIONING AS A BIOREMEDIATING FILTER SYSTEM, COULD THE STRUCTURE BE THE FILTER ITSELF THROUGH A POROUS STRUCTURE. BY INVERTING THE EXPOSED EDGES OF THE FOOTPATH STRUCTURE, A NEW FORM WAS FOUND, THEN LAYER WITH A GH WEAVING SCRIPT.

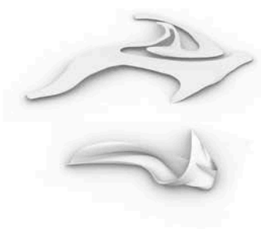
THE PROPOSED LATTICED STRUCTURE WAS THEN REIMAGINED IN THE AFTERLIFE OF THE OIL HYDROCARBON BREAKDOWN TO HOST A SEAWEED GARDEN.





// FOOTPATH UNDERSTRUCTURE REIMAGINED





MUGHAL, RIDA. MSc // researcher + visual artist

BACKGROUND // RIDA MUGHAL HAS A BACKGROUND IN CELL AND TISSUE ENGINEERING AND T CELL RESEARCH. SHE GRADUATED FROM UNIVERSITY OF ILLINOIS AT CHICAGO WITH A BSC IN BIOMEDICAL ENGINEERING. HER OTHER INTEREST INCLUDE OIL PAINTING, NEW MEDIA ART, AND CROCHET.

LEAD // LAB + MATERIAL STUDIES

MYERS, NATHANAEL. MArch // visual artist + dancer

BACKGROUND // MYERS IS A INTERDISCIPLINARY CREATOR AND MOVER FROM THE SONORAN DESERT, WITH A BFA IN STUDIO ART FROM THE UNIVERSITY OF ARIZONA. HIS ARTISTIC PURSUITS FORMALIZED THROUGH STAINED-GLASS, IMMERSIVE STORY-TELLING, AND CRAFTING SPACE FOR COMMUNITY.

LEAD // DESIGN + COMPUTATIONAL RENDERING

ORBANDI, ANDRITA. MArch // visual artist

BACKGROUND // VISUAL ARTIST FROM INDONESIA. HER NEW MEDIA SCULPTURES AND SITE-SPECIFIC INSTALLATIONS STEM FROM ENVIRONMENTAL CONTEXT IN RELATION TO HUMAN BEHAVIOR. GRADUATED WITH BA IN VISUAL ARTS FROM BANDUNG INSTITUTE OF TECHNOLOGY, ID (2012) AND MEISTERSCHÜLER IN SCULPTURE (BILDHAUEREI BEI RAIMUND KUMMER), HOCHSCHULE FÜR BILDENDE KÜNSTE BRAUNSCHWEIG, DE (2016)

LEAD // ENVIRONMENTAL ANALYSIS + STRUCTURE MATERIAL + FABRICATION

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