AUDREY HAMPTON



Columbia University // Graduate School of Architecture, Planning & Preservation

AUTHOR'S NOTE an explanation & REFLECTION

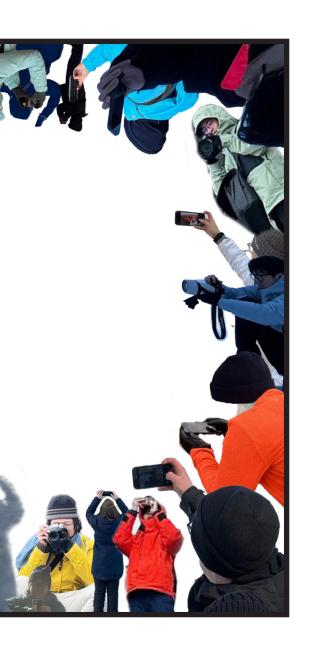
Reflecting back on the past year as graduation draws near, has me revisiting what i stated in my application was my goal, my interests, to see how they have manifested while at GSAPP. In my application, my main 'passion' is the belief that architecture, and architects, serve a unique role as the shaper's of our built environment, where humans spend the majority of their time. What drew to architecture was the ability to shape how someone feels in a space, a power that as I get older seems more daunting in it's implications.

This phenomenological stance manifests in my interests most acutely in the notion of Space architecture...to be clear, not 'space' as architects refer to it, but space as-in 'off earth', 'off-planet', 'extraterrestrial'.

The first ethical question for space architecture is should we be building in space? What implications does that have on resource extraction, waste management/infiltration of extraterrestrial systems, and so on. Despite what your personal stance on this is as an architect, if the industry continues towards a privatized space exploration and settlement, then I believe as architect's that it is our moral imperative to be involved in the process, in order to uphold our duty to protect the health, safety, and welfare of the public.



When selecting a graduate program and sharing my interest in space architecture with various people, the question inevitabley would lead to 'why not pursue a space architecture degree?' There are a few programs both in the U.S. and abraod focused on space architecture, but at this time the curriculum is more aligned with the



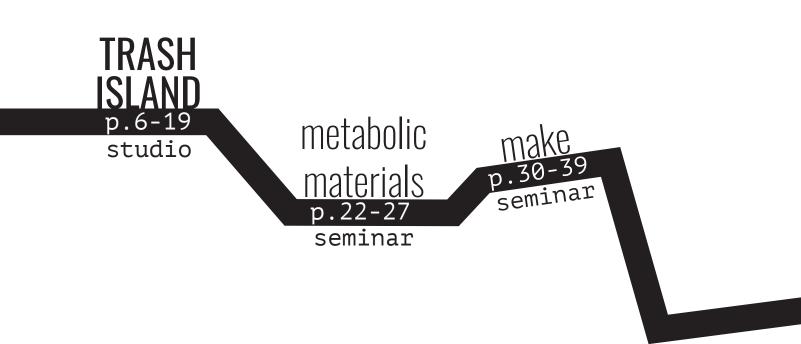
engineering disciplines as well as the form-finding and material exploration needed currently with short term missions. These pursuits are vital and necessary, but I am interested in what comes next as well as the broader implications of what architecture should be in such a foreign environment...and how architecture can promote the sustainability and resilience of the individual, not shareholder's profit margins.

To this end, I instead chose a more indirect path towards space architecture, one that does not involve course titles and studio briefs explicitly discussing off-world inhabitation. I brought my own 'angle' to courses, readings, and projects that sometimes appeared secondary to the primary pursuit, but internally was being filtered through the lens of 'how would this effect life/construction/etc in space?' As a result, many of the concepts and projects have a legitimate terrestrial application which would benefit life on earth, as well as acting as a testing ground and incubator for a hypothetical application off-earth.

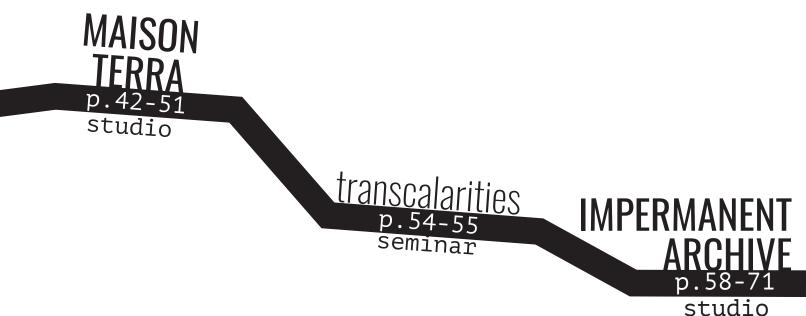
The image to the left lacks a subject, but much can be extrapolated from observing the means of capturing the subject. The photographer bent over, crouched down, arms lifted high....what were they recording and why was it important?

The projects, and highlighted sections of projects, showcased in this book strive to capture key concepts that are relevant to space architecture....without having a site plan in a different galaxy.

"a self-guided, indirect, and sometimes circuitous journey towards a SPACE architecture..."



Adv.IV | SU'23

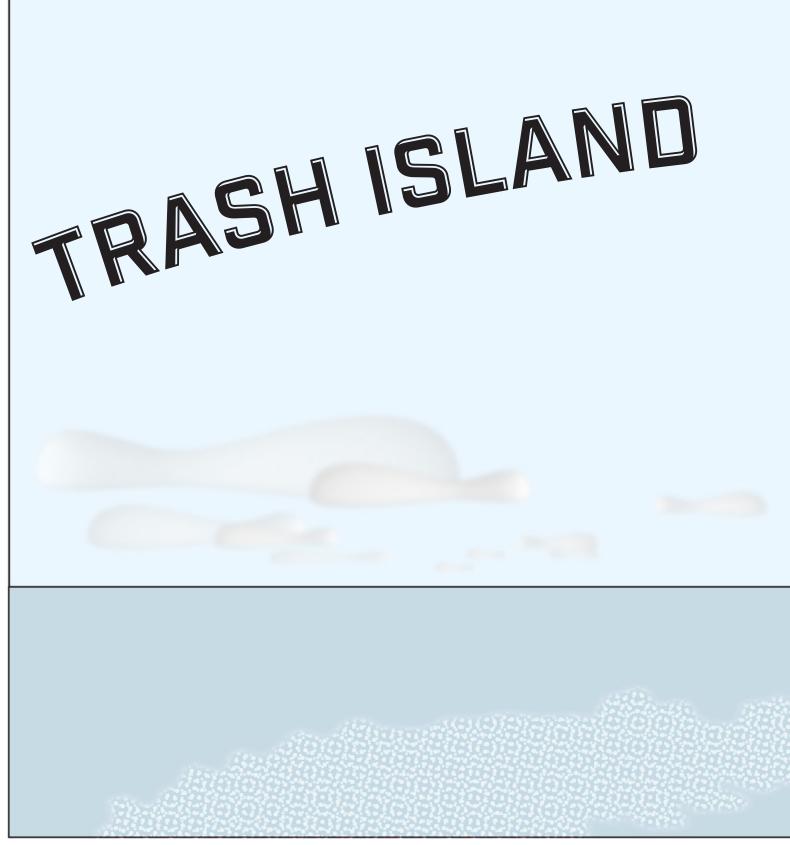


"...because sometimes the SPACE architecture finds you"



Summer | 2023 Adv. IV Critics: M. Loverich + A. Torres

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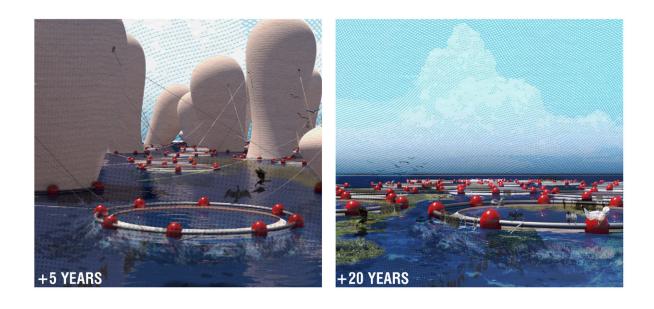
Why make an is•land from scratch...





when we have so much floa•ting trash?

Trash Island



The island is composed of individual metabolizing units, or 'pins', that are deployed in areas of accumulated floating trash. The pins capture the trash, then digest it through a series of nested membranes, each imbued with a different biogenic agent that is capable of consuming a different classification of plastic or paper-based waste. Over time, the digesting process compacts the volume and sequestrs it waway from marine life.

HOW TO SHOW LAYERS/DELE

Pin= latex _top: 3d printed with latex covering _bottom: hollow latex with weights

Collar= metal 'jump-ring' wire alternate: foam/plastic

Buoy* = white or yellow seed bead *if time allows

Deflated 'bag'= 'stamp' coral-like pattern to underside

big caveat: if time allows

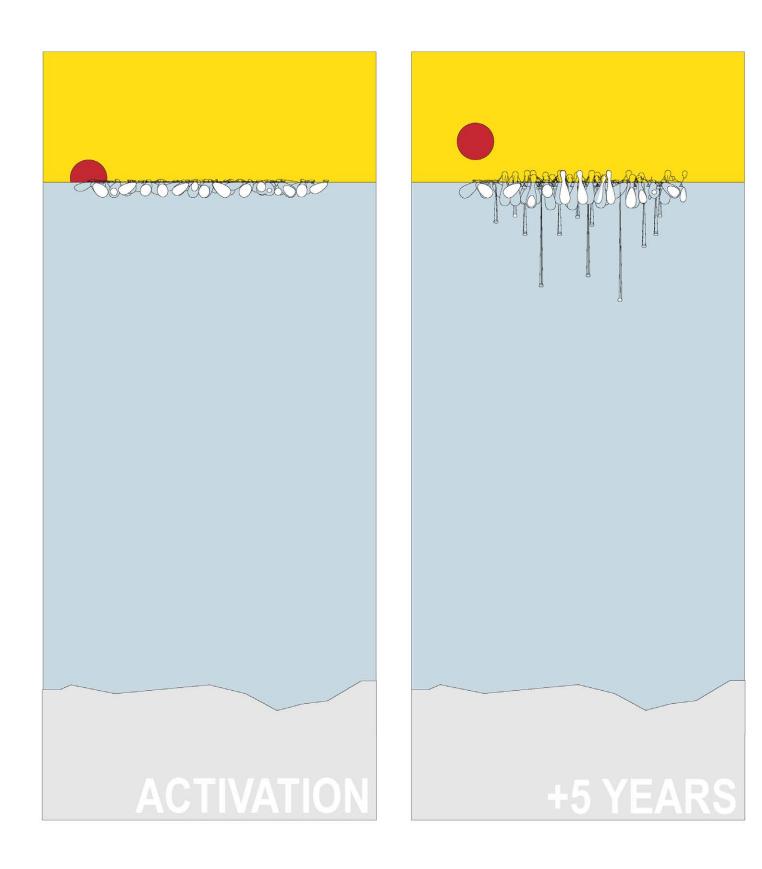
CHANGE ANGLE

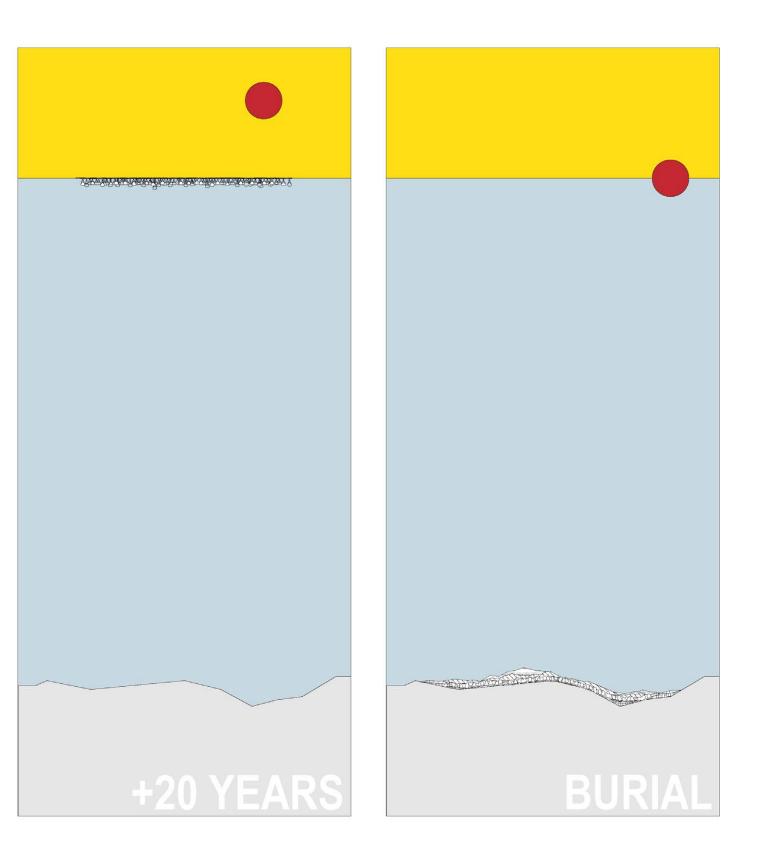
TO SHOW

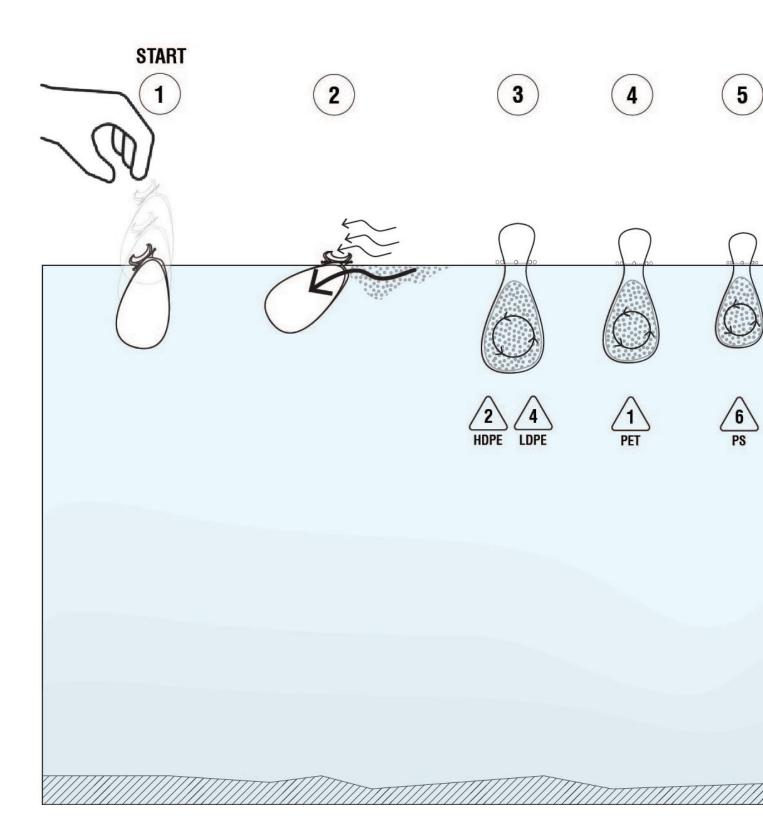
INSIDE

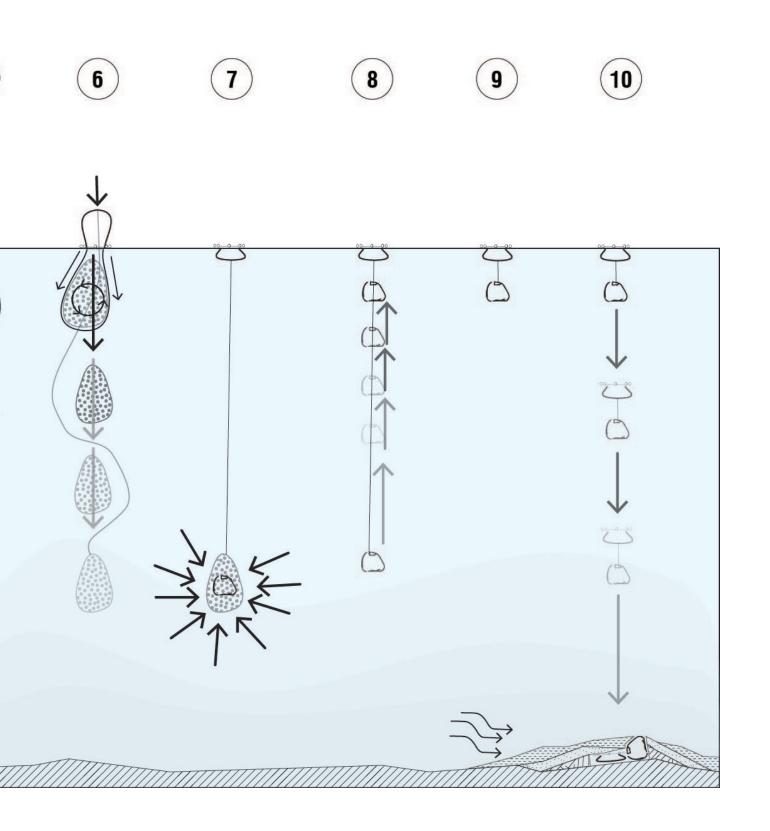
EB

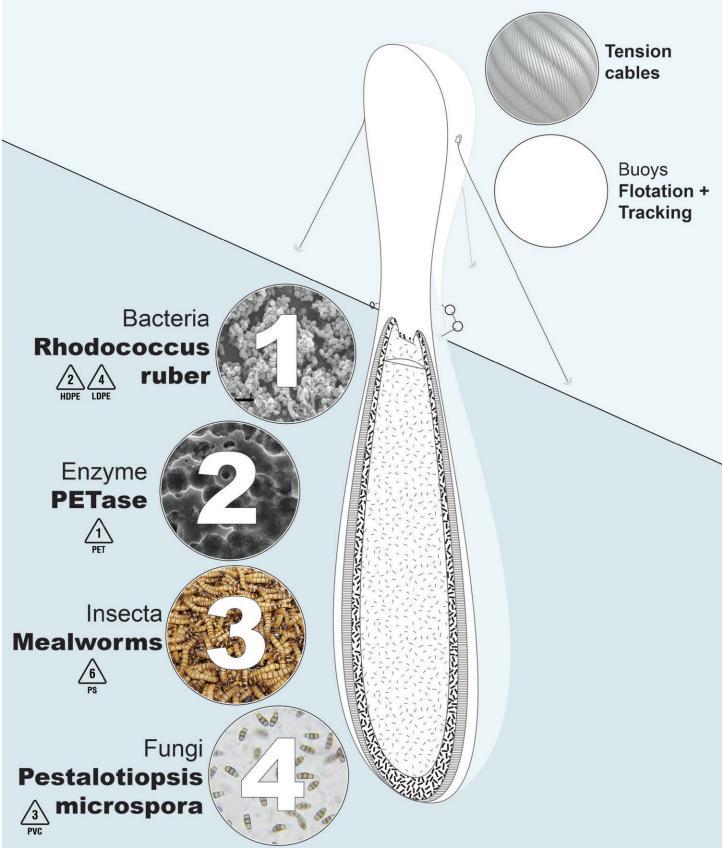
for (long)







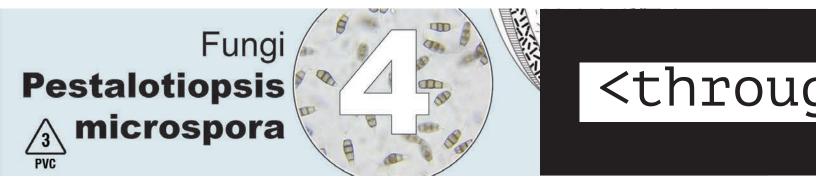




The 'pins' layers are time-released, based on the rate of digestion of the previous biogenic agent. Later layers coexist with earlier agents, creating a simultaneous metabolic environment, that idealy increase the rate of consumption.

The island is composed of individual metabolizing units, or 'pins', that are deployed in areas of accumulated floating trash. The pins capture the trash, then digest it through a series of nested membranes, each imbued with a different biogenic agent that is capable of consuming a different classification of plastic or paper-based waste. Over time, the digesting process compacts the volume and sequestrs it waway from marine life.





//BIOGENIC PLA

Summer | 2023 Adv. IV Critics: M. Loverich + A. Torres

Spring | 2024 Metabolic Materials Instructor: Michael Wang



STIC DIGESTION





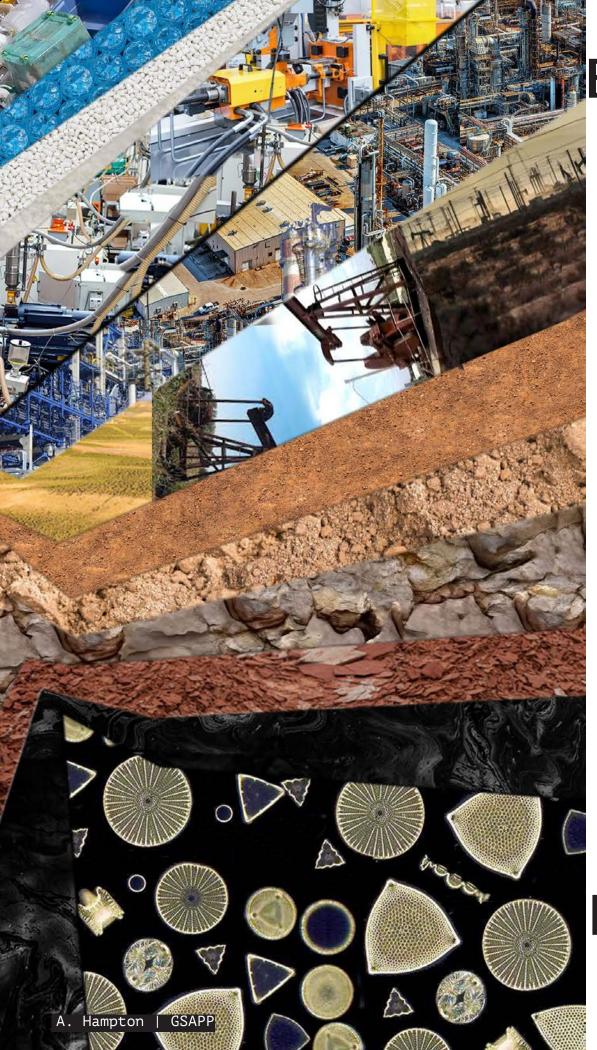


BREAKDOWN CENTURIES



PROCESSING





EXTRACTION DECADES

DRILLING MONTHS





Petroleum-based plastics break down slowly through physical degradation and exposure to UV light-frequencies, but does not transmutate the material--the result is simply infinitely smaller pieces. Biogenic degredation goes beyond physical deterioration by transmutating the material to allow for integration of the chemical building
blocks back into various ecosystems.
Different biogenic agents metabolise
different types of plastic; some agents
include bacteria, algae, insects, and
fungi <including oyster mushrooms>

Plastic-eating mushrooms, such as oyster mushrooms, yield an entirely EDIBLE crop, despite consuming a non-edible substrate.

traditional oyster mushroom farm>>

industrial mushroom farming + plastic waste management

'smallhold-mushroom-farm-vernon', LA Times

Current industrial mushroom farming takes place indoors under controlled environmental conditions. Typically, a plastic bag full of woodchips or sawdust is innoculated with spores and allowed to grow to maturity. Each bag can yield 4-6 'crops' before being discarded. This project asks if we can reimagine the vessel and substrate as inseperable, and edible to the fungi, to result in zero byproduct to discard.



//REJECTING [

Spring | 2024 Metabolic Materials Instructor: Michael Wang

Fall | 2023 MAKE Instructors: G. Lignano + A. Tolla



DISPOSABILITY



The beginning of a semester-long exploration into 'stitching' as both joinery, structure, and incidental ornamentation. Opacity and fortification added with surplus shower curtain in order to result in zero waste.



Discarded Shower Curtain + Rain Poncho, thread



Bottle caps collected in tree wells and sidewalks in Inwood, NYC. Accumulation tells the story of daily activities of congregation and community; sidewalks as a heavily used public space for gathering where individuals leave their individual building address to join the collective block.



5 lbs of collected bottle caps arranged in rows of 5 are cinched together with leftover mesh fabric to create a semi-taut surface. The ribbon-like surface has a natural curve, and when twisted to extremity, is self-supporting.



The 'bent arrow' forms created from the body of the cans are stitched together with the braided cord and reinforced with the copper wire; specific positions are held in tension with the aluminum 'tabs'.



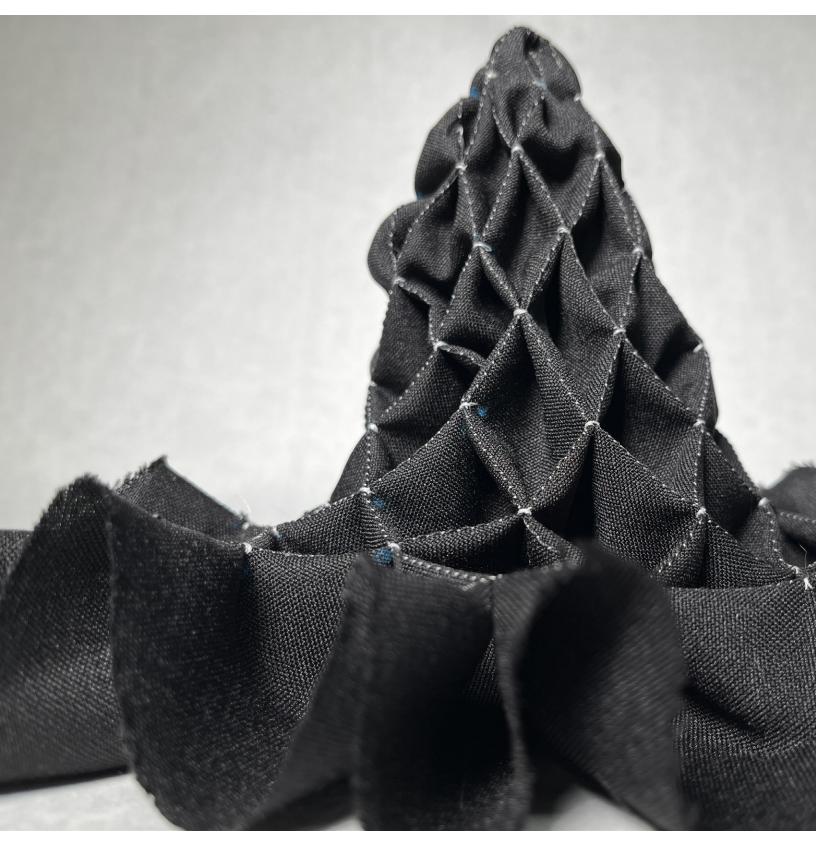
Collected aluminum soda cans, from my personal recylcing bin; <shown left> braided aluminum cord and copper wire, stripped from an ethernet cord mistakenly not returned to previous internet provider...



Various branches collected from Inwood Hill Park. Note: only previously fallen branches were collected, and inspected for early signs of rot and infestation,



Branches become both joined and joinery. The heartwood is exposed by stripping bare the bark; while the bark is still pliable, it is wrapped and cinched around two branches to affix; after drying the friction of the bark holds it in place.



An exploration in co-opting traditional fabric manipulation for three-dimensional experiments in void/surface. The technique used is modifed honeycomb smocking, but applied in a radial, rather than a linear, pattern to create a cone.



Discarded fabric shopping bag <black> and ripped bed sheet <not shown on left>



//CIRCULA

Spring | 2024 Metabolic Materials Instructor: Michael Wang

Fall | 2023 Adv. V Critic: G. Kipping



R ECONOMY

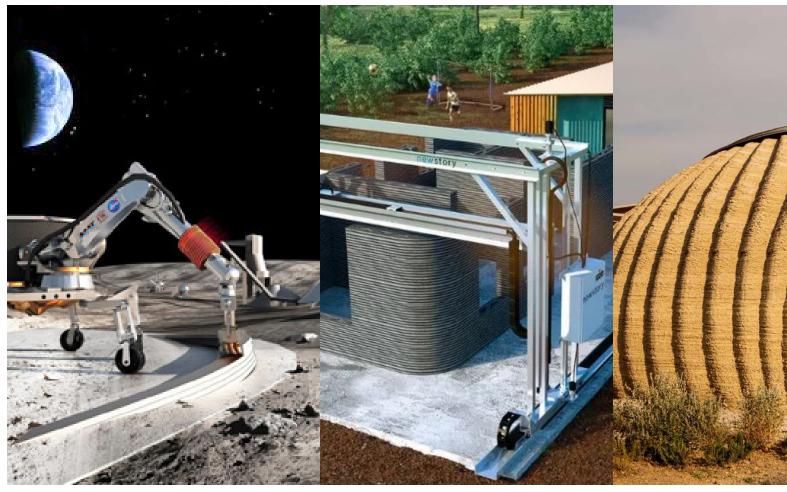
Maison Terra..._

MAIO

Fall | 2023 Adv. V Critic: G. Kipping



What can extra•terrestrial construction

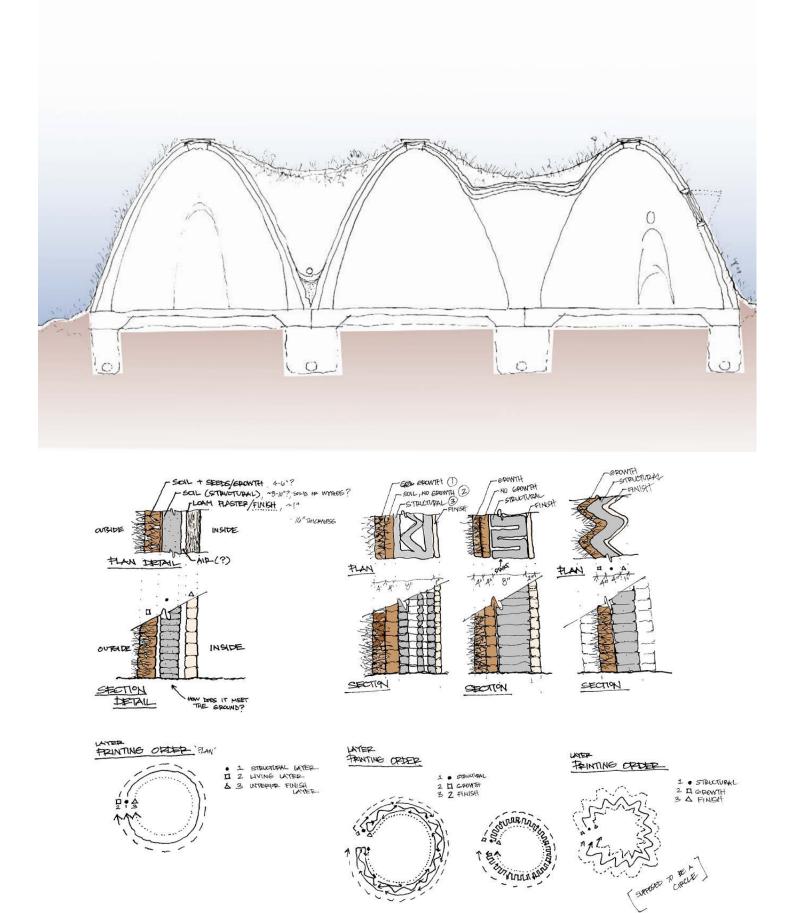


Adv.V | FA'23

)n



learn from terrestrial practices?

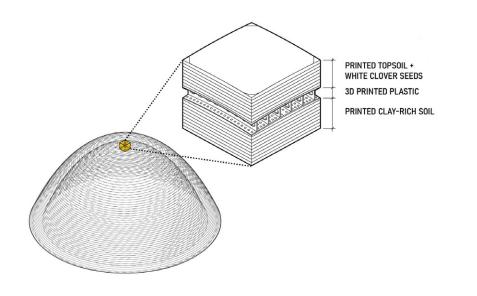


Adv.V | FA'23

additive, in-situ manufacturing + turf/sod



Until recently, the majority of 3D-printed constructed relied on cement-based mixtures for structural capabilities, as well as ease of priting/extrudability. Research has recently expanded into earth-based printing mixtures; this project explores the feasability of using earth, including topsoil, present on site in the printing mixture. Native groundcover acting as a natural rainscreen, protecting the inner, clay-dense structural layers. Maison Terra



The one-to-one prototype is taken from the top of a non-altered dome module, in order to be self supporting. The top printed living layer contains a combination of ground cover seeds, with an emphasis on fast germinating and drought tolerant varietals. The air gap/drainage layer has an intended second-life as the base for a pet bed, to avoid the typical discarding of model materials. Note: the pet bed has been completed at time of publication, but unfortunately has not been utilized by pet, ergo, no photograph.



Maison Terra

suburbia as pro



Adv.V | FA'23

totype, as testing ground for innovations in materials, practices, and sentimentalities



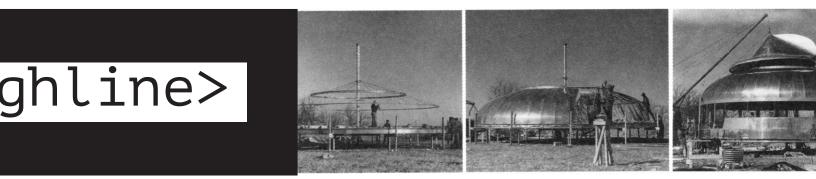




//MODULAF

Fall | 2023 Adv. V Critic: G. Kipping

Summer | 2023 Transcalarities Instructor: I. Cisneros



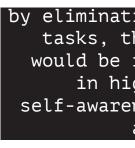
R HOUSING

Case Study // 01

DYM/ HOUS R.BUCK Fl

The Dymaxion House was for an affordable, masstransportable house in to made possible by advant and the industrial assent disregarded convention construction methods to the human scale, not on also the workers involve transportation, and inst

A house was envisioned from the elements, inste penned, a "machine for minimize the toil of phy parts of the machine wo menial labor, and by elim the inhabitants would b levels of self-awareness



The prototype harnesse advancements to reduce

AXION SE MINSTER JLLER

as a prototypical design produced, and easily the early 20th century ces in material science nbly line. The design al housing typologies and b better accommodate ly for the end user but ed in the manufacturing, allation process.

as more than a shelter ead as Le Corbusier living", an instrument to sical existence. All the orked together to reduce minating repetitive tasks, e free to engage in higher s and self-actualization.

```
ing repetitive
ne inhabitants
free to engage
gher levels of
ness and self-
actualization.
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d technological e the burden of the user by automating daily household chores. Manufacturing was also automated and intended to be massproduced with no aesthetic customization by the user. Fuller believed that the stylization of traditional houses was a cosmetic mimicking of contemporary trends, and this ornamentation added time, and therefore costs, without increasing the functionality or liveability of the inhabitants.

A neighborhood of Dymaxion Houses would consist of identical pods, creating a conformed community without the identifiable 'quirks' incorporated into traditional houses. The image of a house that became more machine than home, each indistinguishable from one another, was in conflict with the human desire for self-expression.

The image of a house				
that became more				
machine than home,				
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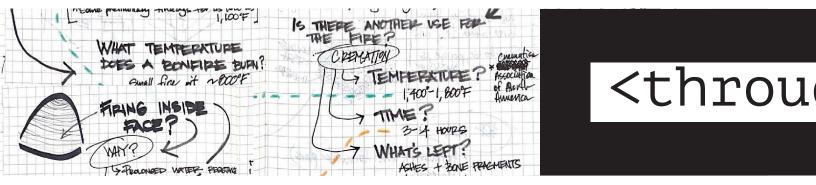
Fuller intended to allow for internal selfactualization by taking away the surface-level aesthetic decisions associated with living, thereby removing the agency for external expression which is fundamental to the self-realization of many people.

Lower acquisition cost justified the sacrifice of customizability, since the houses could be almost entirely machined and assembled in factories, with minimal on-site construction required. Ultimately the astronomical cost associated with establishing a mass assembly production, comparable to the factories of Henry Ford, would be one of the factors in the Dymaxion House not making it past the prototype stage.



While Buckminster Fuller's Dymaxion house was designed to accommodate all the utilitarian needs of a human body, it did not address the desires of the humans inhabiting the space. The significance of the prototype is the enduring impact and inspiration to future evolutions of design thinking by reimagining and speculating on what a house can be, and what it's role is in the lives of the inhabitants.

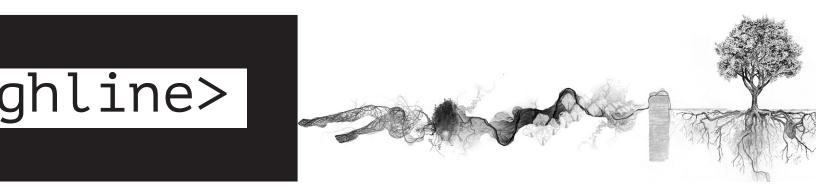
The significance of the prototype is the **reimagining** what a house can be, and what it's role is in the lives of the inhabitants.



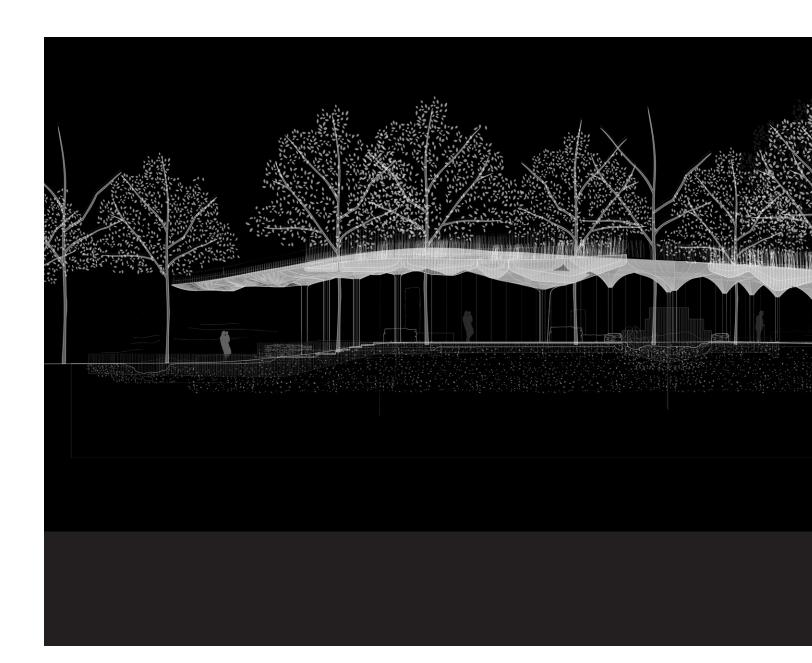
//DEATH BRIN

Fall | 2023 Adv. V Critic: G. Kipping

Spring | 2024 Adv. VI Critic: K. Rothstein Group Partner: Chris Deegan

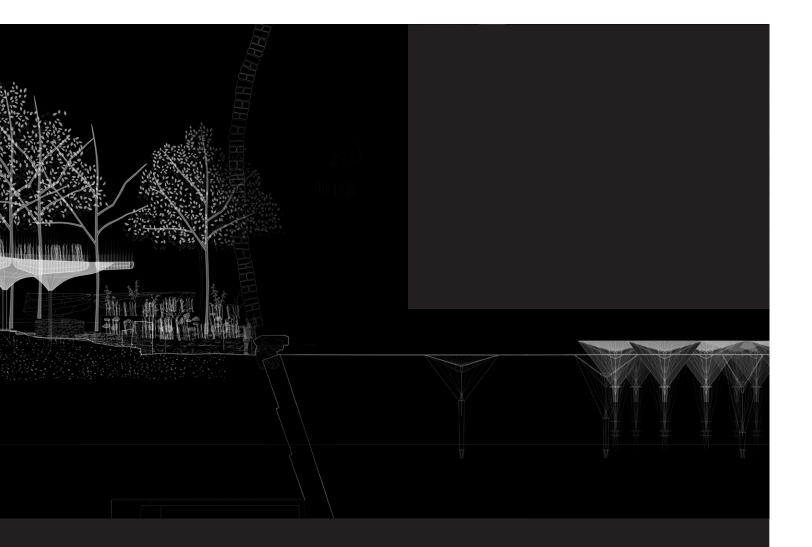


NGS NEW LIFE



Adv.VI | SP'24

Spring | 2024 Adv. VI Critic: K. Rothstein Group Partner: Chris Deegan



What if spaces of mort-ality mirrored



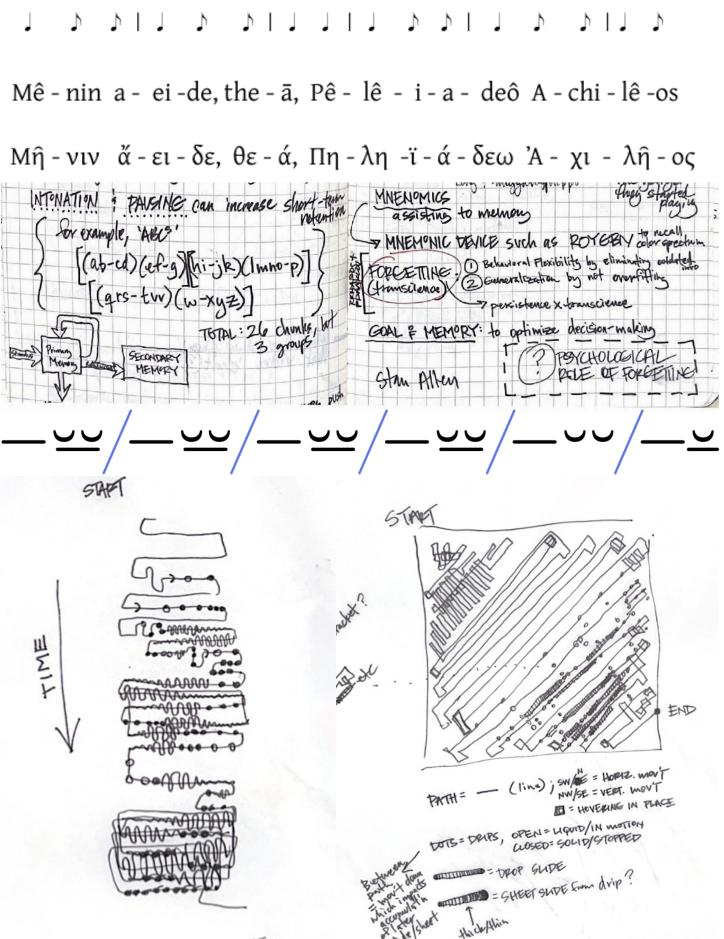
Adv.VI | SP'24



the en-tropic beauty of life & death?



Our processing of existential loss and grief is often associated with the desire to remember, or forget. The pragmatic role of memory, and forgetting, is to optimize decision making by allowing efficient pattern recognition and extrapolation during the process of converting stimuli from short term to long term memory. This conversion process involves a repetitive state of recall; mnemonics allows for the remembrance of information through a repetitive pattern of tones, rhythm, or sequences.



Adv.VI | SP'24

Trash Island

TIME HEAT TIME EFFECT HEAT <start> middle horiz/vertical rods in place, slight up+left down, 1, botton third right 5 up 5, to top third of rod down up, diagonal right to top of 10 down 10 up 9 up, diagune down 10 up, 8, 9 down, to 5 up 5 down 2, 3 up, 2, 3 right, along top of rods to 8 left right, to 9 down 9 0: 38 0: 43 0: 46 0: 50 0: 53 0: 56 0: 59 1: 02 1:05 down 9 left, down 5 up 5 down, 3, 4 up, 1 down, 2, 3 up, 5 down, 7, 8 up down, 7, 8 up down, 10 up, 5, 6 1: 11 1: 14 1: 17 1: 21 1: 24 1: 28 1: 31 1: 34 1: 37 down, 5, up, 3, 4 down, 1 1: 41 1: 45 1: 48 1: 51 1: 57 2: 00 up right top of rods to 5 down_5 halfway 2.02 up. 5 2003 right 2005 up right to bottom right corner block; hover 2013 left along bottom of block 2016 up to middle of block 2017 right along middle of block 2020 left along middle of block 2022 aligonal (down/left) to bottom left corner of 2023 right along bottom of block 2026 left along bottom of block 2028 up to middle of block eage of block along bottom of block ! up to middle of block ! up to middle of block hover top right corner of block left along middle of block (up/down micromotion) down to bottom left corner of block up/down along left edge of block right along bottom edge of block right along bottom edge of block right left along bottom edge of block right 2: 38 2: 38 2: 41 2: 44 2: 46 2: 49 2: 52 hover bottom left corner of block TIME EFFECT loosening, 1-3 2 00 3 05 3 08 3 11 3 15 3 18 3 21 3 28 3 28 3 3 28 3 31 3: 02 3: 05 3: 08 3: 11 3: 15 3: 18 3: 21 up/down, hover left loosening, 7-9 laosening, 779 drop, 1 drop, 10, weep, 1 weep, 10 weep, 5 loosening, 476 left right left right, two third bottom edge left left diagonal (right/up) left, bottom third of block right left, bottom third of block Losening, 4-6 drop, 6 weep, 2, 3, 4, 5, weep, 5, 6 weep, 3 cascade, 1-5 weep, 3 cascade, 1-8 weep, 4) tean weep, 6, 7, 3, 4 3: 25 3: 31 right, top third of block left, botton third of block right, top third of block left, botton edge of block right, halfway along botton edge left up/right, top third of block left top third of block 3: 35 3: 37 3: 40 3: 44 3: 44 3: 47 3: 50 3: 35 3: 37 3: 40 3: 44 3: 47 3: 50 3:52 weep. 6, 7, 3, 4 3:54 weep. multiple 3:58 drop. 1 4:01 weep. 3, 7, 2, 5 4:03 weep. 7, 4, 5 down, right halfway along bottom edge 3: 58 4:01 left up, right top third down, left, middle of block <exit right> middle horizontal/vertical of block 4: 0.5 4:08

TIME 0:20 0:21 0:23 0:23 0:24 0:26 0:28 0:30 0:32 0:34 0:35	HEAT (start) top 5 and 6 left to top of 1 and 2 down, one up 3 holfway right, 4-55-67-8-9 left, 9-8-7-6-5-4-3-2-1 left, 9-8-7-6-5-4-3-2-1 left, 9-8-7-6-5-4-3-2-1 up 10 to holfway left, 9-8-7-6-5-4-3-2-1		
0:39 0:41 0:43 0:45	up 1 to one-third right 2-34-5-6-7-8-9-10 diagonal up-left to bottom of block, 1 hover right left right to 4		
$\begin{array}{c} 0 & 50 \\ 0 & 53 \\ 0 & 55 \\ 0 & 55 \\ 0 & 55 \\ 1 & 00 \\ 1 & 01 \\ 1 & 02 \\ 1 & 04 \\ 1 & 104 \\ 1 & 16 \\ 1 & 11 \\ 1 & 14 \\ 1 & 16 \\ 1 & 121 \\ 1 & 23 \\ 1 & 28 \\ 1 & 31 \\ 1 & 28 \\ 1 & 31 \\ 1 & 42 \\ 1 & 44 \end{array}$	left to 1 slight hover, up 1 to top of block slight down and up 1 right down B to botton of block, left right hover	TIME 0:50 0:52 0:53 0:55 0:58 1:00	EFFECT tear, 1,:
	right to 8 left up down 1 right, slight up down as right, stop 7 left right to 8 left right to 8	1:11 1:14 1:16	weep, 4, loosenin weep, 2, loosenin
	left right to 9 left right to 8 hover, slight left to 7 left and up to 7 down 7 to 6 bottom of block	1: 28 1: 31 1: 35 1: 42	cascade weep (LD weep (LD weep (LD weep (LD weep (LD weep 2,9
	left right to B left right to 9 left	1: 43 1: 46 1: 49 1: 52 1: 54 1: 57 1: 59 2: 01	cascade loosenin loosenin cascade loosenin
5:03	(remove heat)	2: 03 2: 05 2: 09 2: 12 2: 12 2: 27 2: 31 2: 38	weep 3/3 cascade 7 cascade 4 weep 5/5/ cascade 4 weep 5, 3; weep 5, 3; weep 5, 3;

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A. Hampton | GSAPP
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```
TIME HEAT

3:21 (start) 7/8 b/o block

3:25 left to top of 1 and 2

3:27 hover

3:32 right to 9

3:37 left

3:41 hover

3:43 right to 9

3:48 left

3:51 up (block along 1)

3:53 right to 9

3:56 left

4:00 right to 9

4:04 left

4:00 right to 8

4:10 (remove heat)

4:13

4:16

4:30

5:04 end accunulation
```

TIME EFFEC1
3:41 weep 2
3:43 [loosening 4-8
3:44 [loosening 9-5, weep 1
3:49 [loosening 1-8, weep 2, cascade 2-7, weep 3, weep 5, weep6
3:51 [loosening 1-8, weep 2, 3,5,6
3:53 cascade 2-7, weep 2, 3,5,6
3:56 weep 7, 3/3/3/2/2, loosening 9-3, cascade 8-3
4:00 [loosening 2-8, cascade 3-4, 4-5, 5-8, weep 7, 3,4/4,6/6
4:04 [loosening 2-9, cascade 4-9, 3-4, 1-3, weep 7,3,7/4,6/6
4:04 [loosening 2-9, cascade 4-9, 3-4, 1-3, weep 7,3,7/4,6/6
4:04 [loosening 2-9, cascade 4-9, 3-4, 1-3, weep 7,3,7/4,6/6
4:10 weep 7, 4/4/4,3,2, 8,5, cascade 1-8
4:110 weep 7, 4/4/4,3,2, 8,5, cascade 1-8
4:13 cascade 1-2, 2-3, 4-7, 7-8, 8-9, weep 2,3,4/4/4,5/5,6/6,7/7,8/8,
4:16 weep 2,3,4/4/4,4,5,6/6,6/7,7,8/8/8,9
4:30 weep 4,4/4, 8/8, 3, 6
4:50 weep 4,8
5:04 end accumulation

TIME EFFECT

3 3.2. / Loosening 2-4 9 1-6 3

2,3

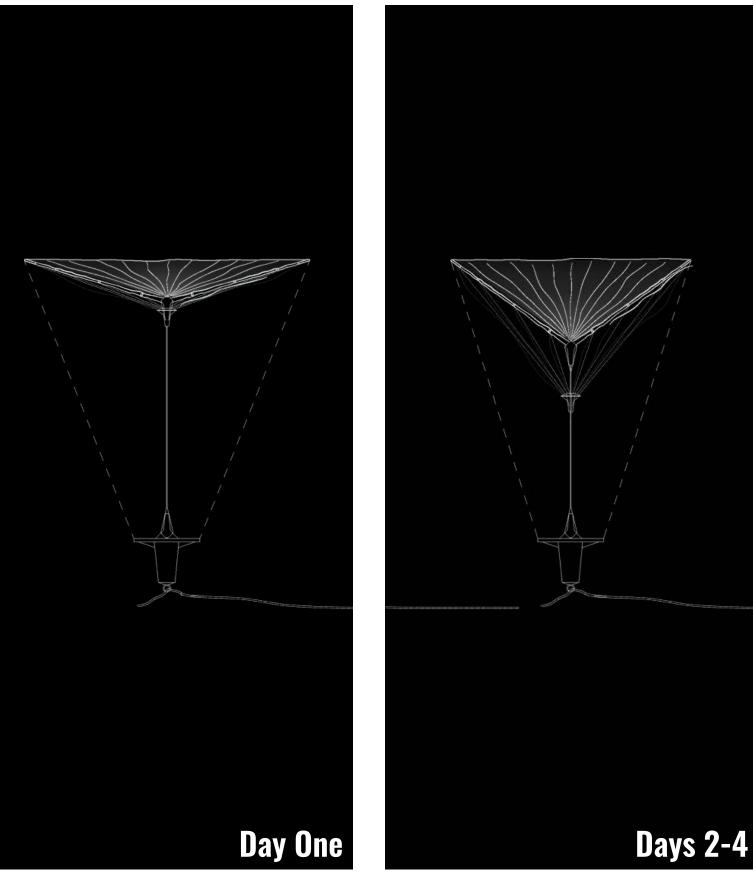
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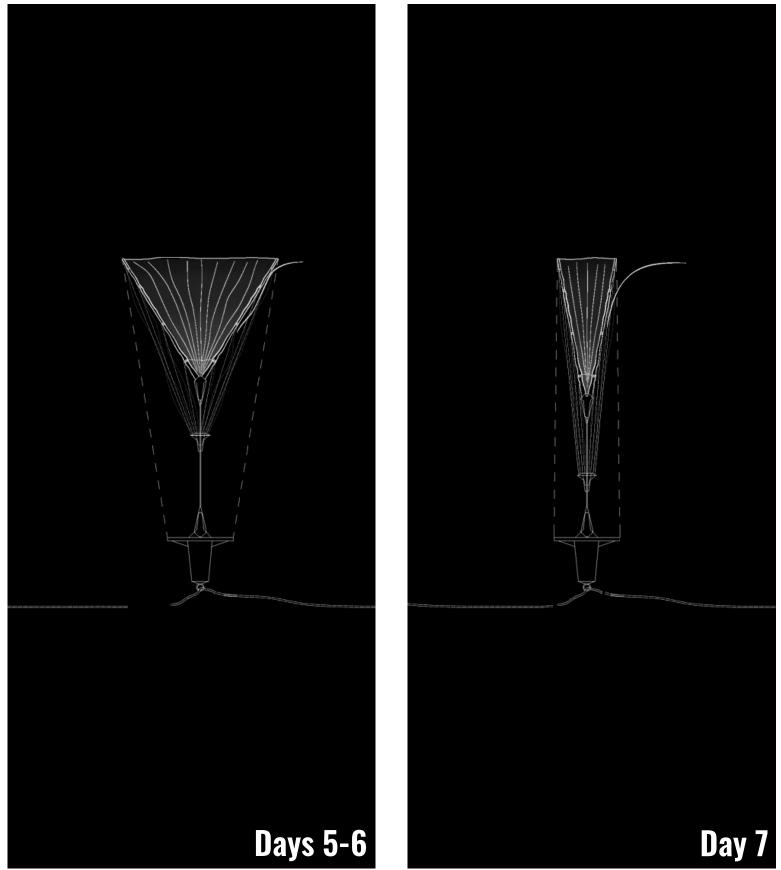
Trash Island

STAT STREET



Individual effluent vessel,





or 'lily', acts as a visual bridge between the individual and the collective (reservoir)





