Systems

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Sphere No More
Typological Concepts

Written as part of the spring 2020 seminar
The Contemporary: Concepts and Ideas
from the 1960s to the Present

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TA Elliott Sturtevant
TA Valeria Palez Cala

Architecture is deeply rooted in the formation of a civilization and came into being with the formation of the city. Aldo Rossi thus takes cues from this historical city to formulate his theory of typology in architecture. After the rejection of history by the modernist movement, neo rationalists re-explored the idea of type to find a relationship of architecture with its people beyond the purely functionalist one. Rossi broadens the analysis of the building to its type and analyses it as an object of collective memory. Rossi defined type as a logical principle reducing buildings to their most basic elements/ aspects. Simply function is unable to explain the survival of these buildings in the city. The city is what survives the test of time. The relationship of shape to a kind of memory is a continuous thread that runs through urban history. While the activity of a building and its purpose may change through time, what he realises is, the formal image of the building remains the same. The city does not provide a one to one reading of form-function, instead, it exists as a timeless experience adapting to city life. He utilises these building shapes reduced to their most basic evocative formal quality. It heralds a return to classical iconography bereft of its superfluous weight.

His work such as the Modena Cemetery and the School at Falgona reduced the forms to an expression of pure euclidean geometry. Clean circles, triangles, cones, cylinders and cuboids formed his aesthetic. This geometric reduction has formed the basis of much of architecture even today. Space planning begins with loose circles of zoning which quickly transform into a juxtaposition of cuboids. Each architect then applies their maneuver, what I would call architectural “moves” to give a form to the building. These forms reflect a host of different ideas from Zaha’s sinuous forms to the disjointed style of eisenman and thom mayne, to the modular or discrete digital architecture that is being birthed for a future constructed using 3D printing robots. All these forms are held together by a certain type or birthed from it.

Aldo Rossi’s argument and his architectural work brings forth into question some aspects of architecture that we otherwise take for granted. If there is something such as a constant in architecture, then the crude irreducible and the most simplistic expression of it should suffice in fulfilling the programmatic and emotive capacity of architecture. The purest form is adaptable and timeless, becoming a container for social changes through time. They can adapt to the vision that the city and its people wish to see of it.

Rossi would have held a valid argument if the collective memory had ever been embodied in the building type. Instead of directing people's emotions to specific images, he creates these forms that could attach themselves to the changing image of the city. If today people envision the cone as a religious structure, they could tomorrow see it as a vestige of the industrial era. He thus created a detachment of the form and its meaning thus making it timeless.

//Operations on the Germ

It is through the identification and employment of type during the design process that possibilities of new typologies arise. The idea of the constants and thereby typology is almost a provocation to the contemporary architect whose constant is the struggle to move beyond what has been done before.

In The Atlas of Novel Tectonics, for Jesse Reiser, typology allows for a clear selection of architectural organization from the limitless possibilities that are available today. The crude typology connects to the functional or structural implication of it. Through the reevaluation of type, he looks at type not as a limited set of combinatorial moves but as selecting a range of parameters instead of a fixed model. By discounting what a type cannot or will not do, it opens up all the possibilities of what the type could do and be. It becomes a field of forces within which his artifact operates from which he selects the performative type- the programs and activities in the building. What is interesting is that he understands type as grouping figures by their response to events that occur to them. This process establishes a bias or tendency in his design rather than a category.

Greg Lynn, in his book FORM, writing about the use of computers in design, talks of the four persistent principles that have historically formed the basis of design- massing, facade, section typology and plan organization. Lynn claims that the design of individuals in a coherent species or family does not begin with the design of an origin as per Wittkower and Rowe, nor does it begin with the design of random constraints and mutations (Charles Darwin). It erupts from the creation of a generic primitive. He discusses the process of design in two types of moves- the generic and the genetic. The generic is the constant that gets multiplied, creates symmetry and harmony while the genetic is what breaks away from the norm, is unique and gives character. He compares it to an egg which initially, primitive in nature, mutates to unfold and specify its peculiarities. It is thus of essence that the primitive form is laden with possibilities for future differentiation and propels rather than inhibits such an emergence.

Yet, "Now this is long gone" was the title of an engraving Rossi did in 1975, in which as in his watercolour, "Architecture Assassinated" -dedicated, perhaps polemically, to this writer- he presented his dreams in a state of collapse...connecting inconceivable extremes- memory and history, sign and meaning, the individual and external reality.

Manfredo Tafuri
(The "Case" of Aldo Rossi)

It would be absurd to maintain that the formal value of a circular temple is increased as it approaches an ideal "type" of circular temple. Such an ideal "type" is only an abstraction, so it is inconceivable that an architectural type could be proposed as a standard by which the individual work of art could be valued.

Giulio Carlo Argan
(On Typology)

He thus finds the design and definition of the primitive vital as it communicates between the generic whole and the subdivision of its parts. This is an approach that differs from the bottom up approach of parametric design that multiplies a seed to form a whole. It hovers over the design process much like Classicism's use of harmony, proportion and an holistic image.

Anthony Vidler sees types as the necessary and inevitable substitution and distortion of known configurations that become essential to fill the gaps in an architectural vocabulary that can never completely come together by the simple functional allocation of space.

Mollie Claypool in her book Robotic Building captures the zeitgeist of architectural design in the age of automation. Recent movements in design automation consider the voxel space as the most basic unit of design that is multiplied through various operations to rationalise construction and lead to a more equitable and inclusive design. A voxel is a three dimensional unit of graphical information. This procedural approach to form making operates on a predetermined set of rules that propagates data through this voxel space. The voxel becomes the computational unit that embodies this data and enables an efficient construction system to arise. Since Lucien Croll's participatory design methodology, current design processes champion the user to choose their spatial configurations and base it on the data derived from the user. The designer's role is in the act of cohesion and designing of systems that enable such a process. The idea of the germ or typological unit is thus ever present and salient in the design process now, with the voxel representing the space of equity.

The typology could be the most basic element which forms one unit of the design leading to a more chaotic organic mass or that which guides the overall idea bringing together all aspects of the design.

//Undoing

What Rossi fails to account for are the architectural moves that have the overall impact on the dweller of the city. A building is a complex set of operations that performs in ways that perhaps are not fully known to even architects. It underlies social, economic and political agendas that create the ultimate image of the building. One might say that the blank slate that Rossi presents, fuels the imagination in a multiplicity of ways, however, by their very nature, types on their own are limiting and are not satisfactory expressions of all the complex nuances that architecture embodies.

The impact of the form does not arise from the type chosen by the architect to express it. The incision of a cross into the Church of Light by Tadao Ando inspires reverence due to the way the light penetrates the building and not solely because of its orthogonal form. The architectural moves of the cuts and the bends formulates its image and its perception rather than the undivided form.

While the core idea of The Architecture of the City is of substance, what the design in these crude geometries fails to achieve is the evocation of new types of feeling, and a new mix of programs. In the current architectural landscape, architects like Bjarke Ingels have looked to the diagram as a method of creating and analysing a building. These diagrams might be alluded to the "types" and typological reduction that we talk of today. In one instance, BIG takes the established typologies of the skyscraper and the courtyard style building to come up with a Courtscraper. These are singular manipulations of the existing types, but manipulations nonetheless.

The Marakthal presents an experience that is altogether different from what we might have seen before and is difficult to be categorized in a crude typology and is what can only be considered a mix. Buildings like the CCTV tower have changed the scale and notion of a skyscraper and fuels an imagination that would have been otherwise impossible with the historical archetypes. So how do we read these contemporary buildings as typologies? While they might have had a certain "type" as the germ of the design, what manifests and performs in the public sphere is very different from the germ of the idea. It leads to newer experiences and imaginations, things that would not have been possible without the ingenuity and intervention of the architect who went beyond the crude expression of the type.

Architectural serendipity is also an essential part of creating and experiencing a building. The typological approach to design is irrefutable but the expression of it wanes out of existence the possibilities of crossovers and mixes. The use of the term collective memory could be replaced by the experience of being in a certain kind of space. While both this and that are based on the overall courtyard typology, what this achieves is very different from that.

Thus typological form and symbolic form are not direct seamless overlaps, while there might be few but not complete. The form and its analogy do not have such a direct correlation for them to perform in the way Rossi intends them to. The choice of a typological form is used for reasons beyond the analogy and its memory.

References:

1. Rossi, Aldo. The Architecture of the City. Cambridge, Mass: MIT Press, 1982

2. Rossi, Aldo. An Analogical Architecture, trans David Stewart, Architecture and Urbanism 56 (May 1976): 74-6

3. Tafuri, Manfredo. "The 'Case' of Aldo Rossi," in History of Italian Architecture, trans. Jessica Levine. Cambride, MA: MIT Press, 1989

4. Argan, Giulio Carlo. On the Typology of Architecture. Trans. Joseph Rykwert. Architectural Design (December 1963), p.565

5. Reiser, Jesse. Atlas of novel tectonics / Reiser + Umemoto. 1st ed. New York : Princeton Architectural Press, 2006

6. Rappolt, M. (2008). Greg Lynn FORM. New York: Rizzoli.

7. Claypool, Mollie. Robotic building : architecture in the age of automation. Munich: Detail Business Information GmbH, [2019]

Seeking value in original typologies is not possible through an equivalency between type and a collective memory. Type and function, type and emotion have lost all correlation and thus the crude and formal expression of type does nothing more than being an aesthetic choice in the organization of architectural form. A type gains merit through the operations performed on it, through the ways it operates in that particular context and programmatic domain.

The crude refuses to adapt. The failure in subdivision and detail prohibits abnormal activities which could otherwise have been designed and instigated. The creation of what is not seen before, is not solely dependent on its crude form but the way it is expressed.

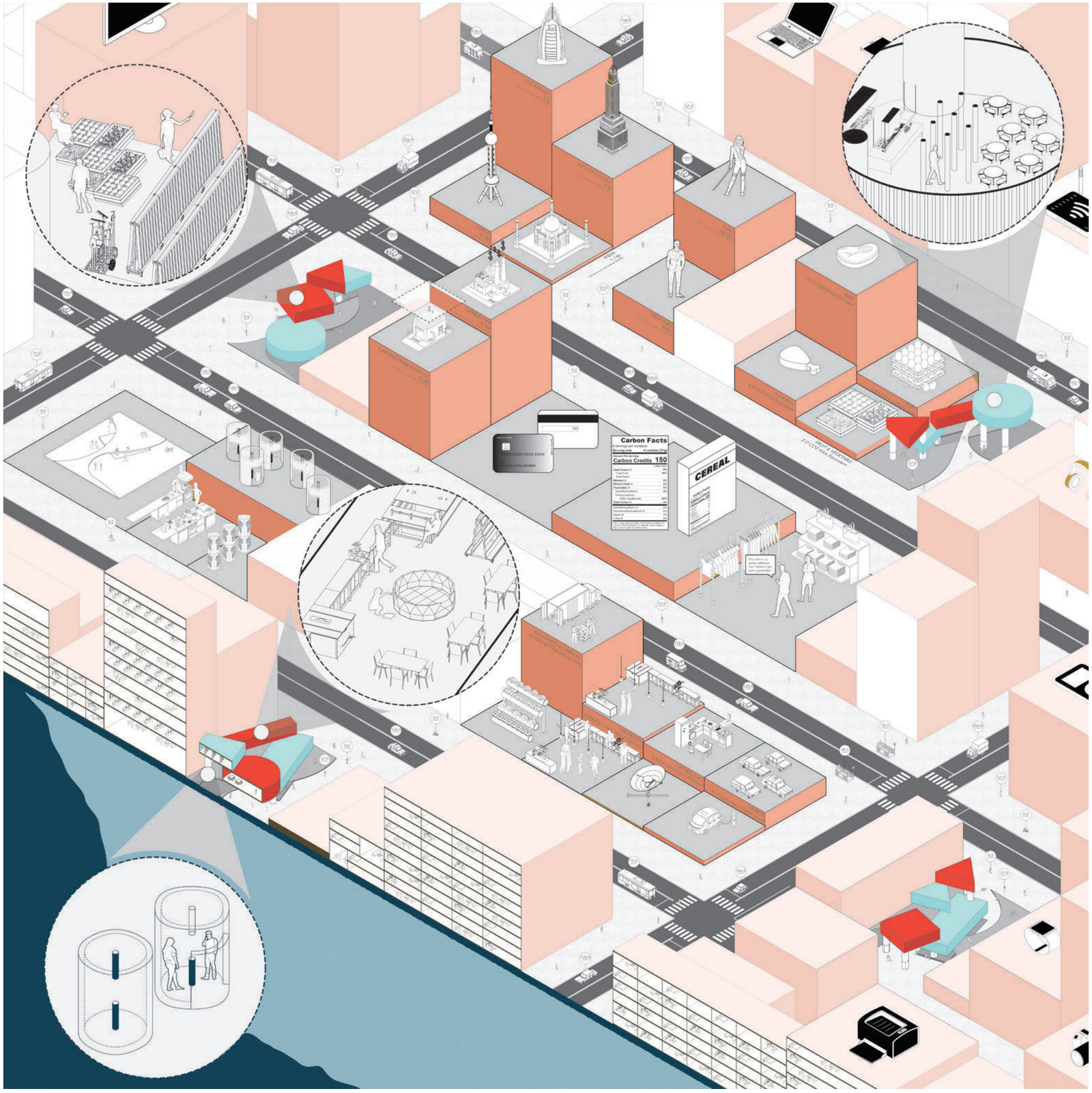
Somehow, the age old definition by Quatremare de Quincy seems befitting of the typological discourse today. Type not being an image of something to be copied, but one that forms a rule or a model upon which ideas are based. Thus while the type has changed, there is still distinctly a typological approach to design where the generic is the germ. In the recent past and in the future. It is to be seen if the germ itself changes while the idea of the germ persists. The germ becomes a rational method of design for the sake of efficiency or cohesion.

The concept of typology is long but gone. It is on the resurgence from the chaotic limitless nature of architecture. Typologies now form a key element of parametrization of spatial logic and are the basis of computational design. However, these typological pursuits are far removed from the symbolism, historicism and cultural logic that Aldo Rossi pursued them with in the 1960s.

The way constants are understood now differs from the constants that Aldo Rossi describes in the The Architecture of the City, for they are not crude forms that are directly applicable in architecture. Their historical meaning leaves unexplored infinite architectural possibilities of creating and attaching new meanings.

The persistence of certain aspects of architecture has remained the same but the way we utilise and understand the reason for their persistence has changed.

Perhaps the idea of type could also be seen as a retrospective concept different from its ability to be a germ. Perhaps a different terminology which could be read as a tool for classification instead of creation. Perhaps type is that which simultaneously is the tool for classification and creation both.



Carbon Collective

A Carbon market where exchanges happen
through the medium ofCarbon Credits

Summer Studio 2019
New Economies for New York

Critic: Tei Carpenter
TA Marylynn Antaki

It's 2019 and we are not unaware of the consequences of the unchecked emission of greenhouse gases into the atmosphere. These gases include carbon dioxide, methane, nitrous oxide and fluorinated gases. No human activity is completely bereft of carbon dioxide emissions and having an embodied energy.

To put it in perspective, we generate 1 tonne of carbon dioxide with 3750 miles of driving or by 7000 miles of public transportation, or 1.89 minutes of flying on an airplane or producing 150 pounds of beef or 322 cheeseburgers.

If we were to visualize the co2 emissions, here is what they would look like. 1 metric tonne of carbon dioxide equals a cube of 26' 8" at STP.

A comparison across UAE, USA, India and China shows the disparity in C02 emission per person across different countries. An average person in USA utilizes 19.78 metric tonne of CO2 equivalent gases in comparison to 35 mt in UAE, 4.58 in China and 1.16 in India. Even within the US, there is a considerable difference between carbon emissions from a person in Texas and a person living in NY.

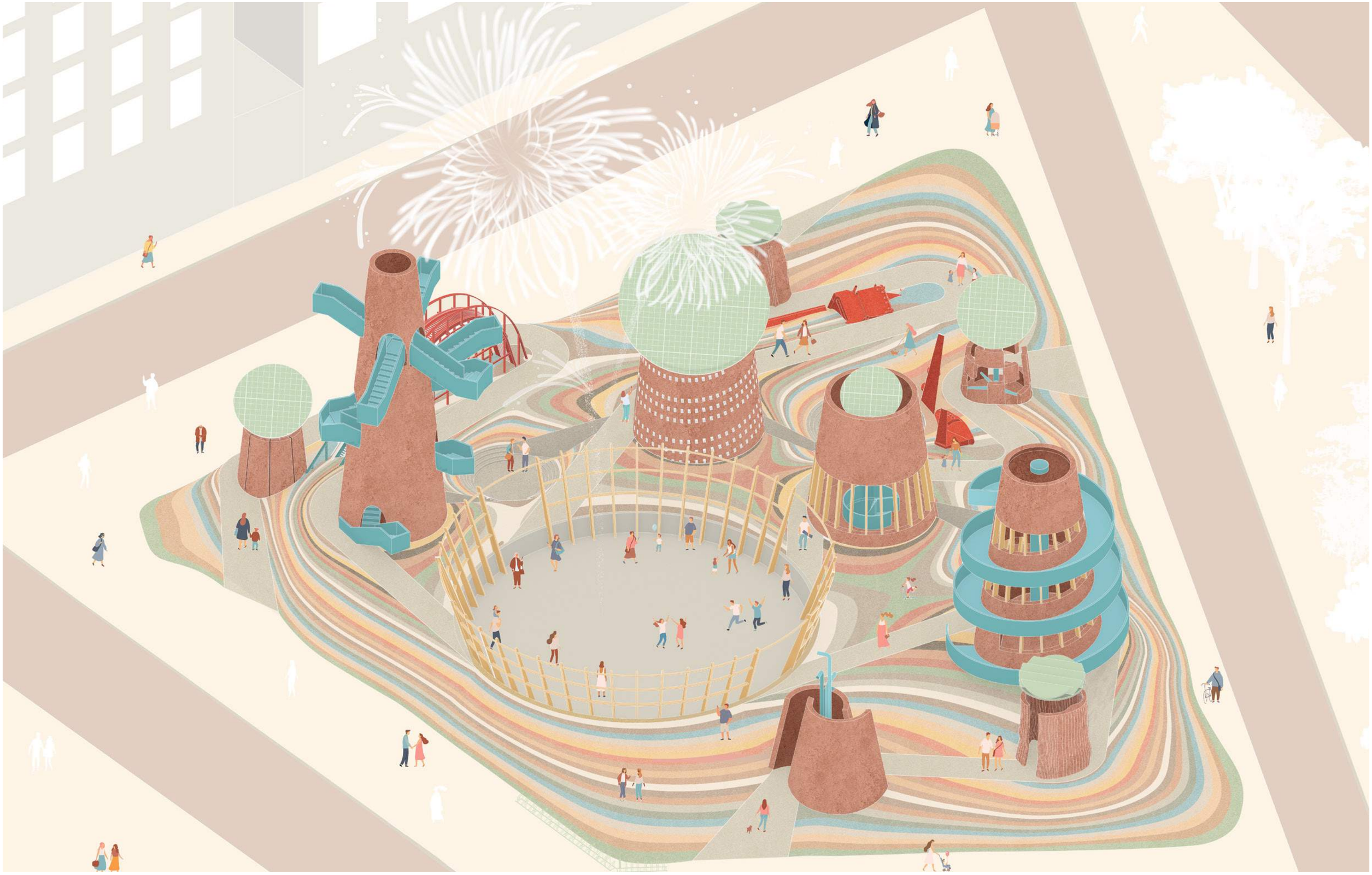
With proposals like the Green New Deal becoming serious topics of discussion, a future is not far where heavy carbon tax for higher embodied energy becomes the norm.

We imagine the tax trickling down to consumers where all everyday goods and services get valued in terms of the embodied energy that they have.

Valuing items and activities based on carbon would change the way we look at objects and force the market to innovate and adapt. With a carbon tax increasing the price of items with higher embodied energy, goods and services with lower embodied energy come into demand.

Conversations change from: This project doesn't seem financially viable To: Hey, this project is carbon effective! From: this H&M t-shirt is so cheap! To: these jeans are highly carbon effective! It's such an amazing offer!

Our market proposal will bring this global issue and system down to the individual scale with the use of carbon credits as a medium for exchange. Each person is given a totem that stores the carbon credit and exchange information.



Our study of the Living Energy Farm introduced to us a community living off the grid in rejection of over-consumption in America today. It is a community driven by the energy of the sun, living by the daylight. Each member of the community is responsible for one task in the community- either cooking or cleaning or child care or farming etc. All tasks are valued equally and a common income for the community is generated. Living off the grid relies on each member of the community contributing and sharing resources.

We echo the sentiments of the living energy farm. In a world taken over by over-consumerism, of goods, of energy and exploitation, we imagine an economy where we are not making decisions based on financial gain, rather by the ecological footprint that the goods and services have.

In the utopian theoretical society of New Babylon, Constant imagined a new society where individuals would move beyond work and would only be engaged in play. This society would be built upon our current society, and will continue to expand its territory for like-minded people. The market we are proposing would develop the same logic which would offer a new purpose or an alternative way of life. It offers ways in which people could be more informed about living sustainably, and being carbon efficient in spending or earning carbon credits by performing communal activities through play.

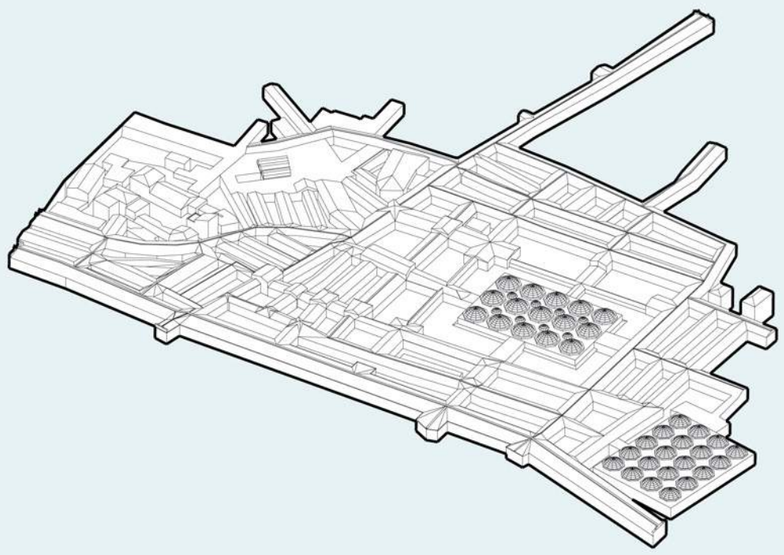
Taking cues from the study of New babylon and reflecting upon the world today, we realise that we are moving away from the tradition of labour and into the act of play. Employing that narrative we take a hedonistic view on a carbon conscious world. We create a marketplace for the exchange of carbon expensive activities with carbon credit. By the complete rejection of these carbon expensive activities from our lives, these acts become special.

3,266 K
surface area (sf)

historic covered street market

GRAND BAZAAR

1454
opening year



site plan

exchange

Istanbul, Turkey

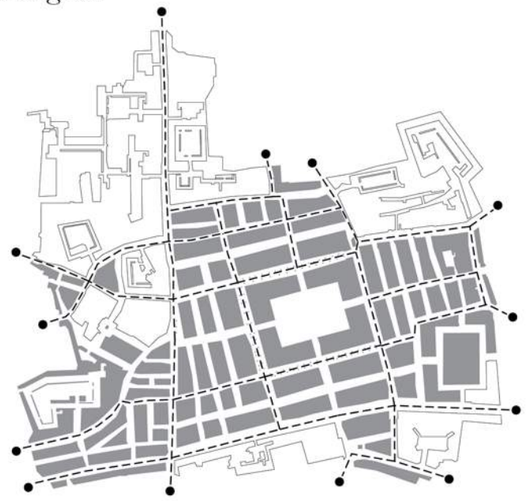
typology

historic covered street market

GRAND BAZAAR

display

organizational diagram



The buildings are based on a loose grid system while parts of the market start to spread into the urban fabric informally.

material wood, stone, brick & rubble	*temporality* changing boundaries
social structure kadi-chief-merchants-customers	*access* 21 gates (4 main)
urban implication spread into urban fabric	*product* gold, copper, leather, carpet, textile, antiques
user group 250,000-400,000 per day	*structure* domes, arches & vaults

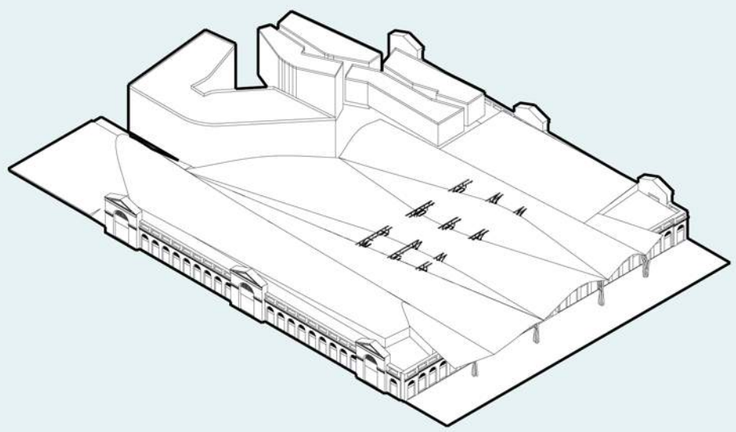
Sritoma Bhattacharjee and Neuy Buranasiri

188,723
surface area (sf)

lively market hall

SANTA CATERINA

2005
opening year



site plan

exchange

Barcelona, Spain

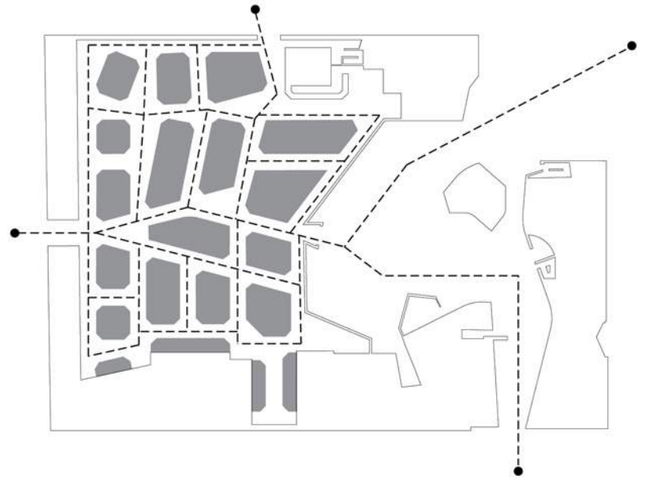
typology

lively market hall

SANTA CATERINA

display

organizational diagram



The shops are designed to blend into the existing structures with the use of the new roof as its perimeter.

material concrete, steel, wood & ceramics	*temporality* open everyday
social structure merchants-customers	*architect* Enric Miralles & Benedetta Tagliabue
urban implication rejuvenated the vella	*product* fruit, vegetable, flower, meat
user group locals, city residents, tourists	*roof* 325,000 colorful ceramic tiles

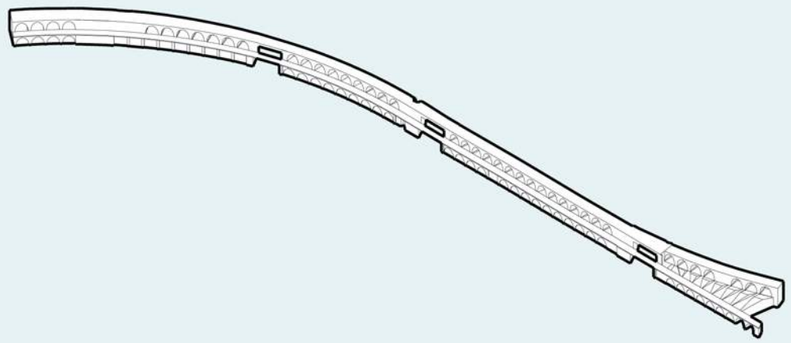
Sritoma Bhattacharjee and Neuy Buranasiri

96,961
surface area (sf)

infill unused viaduct

IM VIADUKT

2010
opening year



site plan

exchange

Zurich, Switzerland

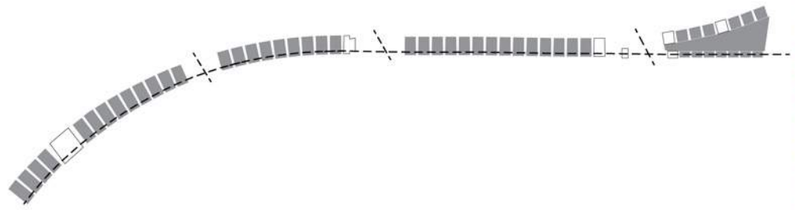
typology

infill unused viaduct

IM VIADUKT

display

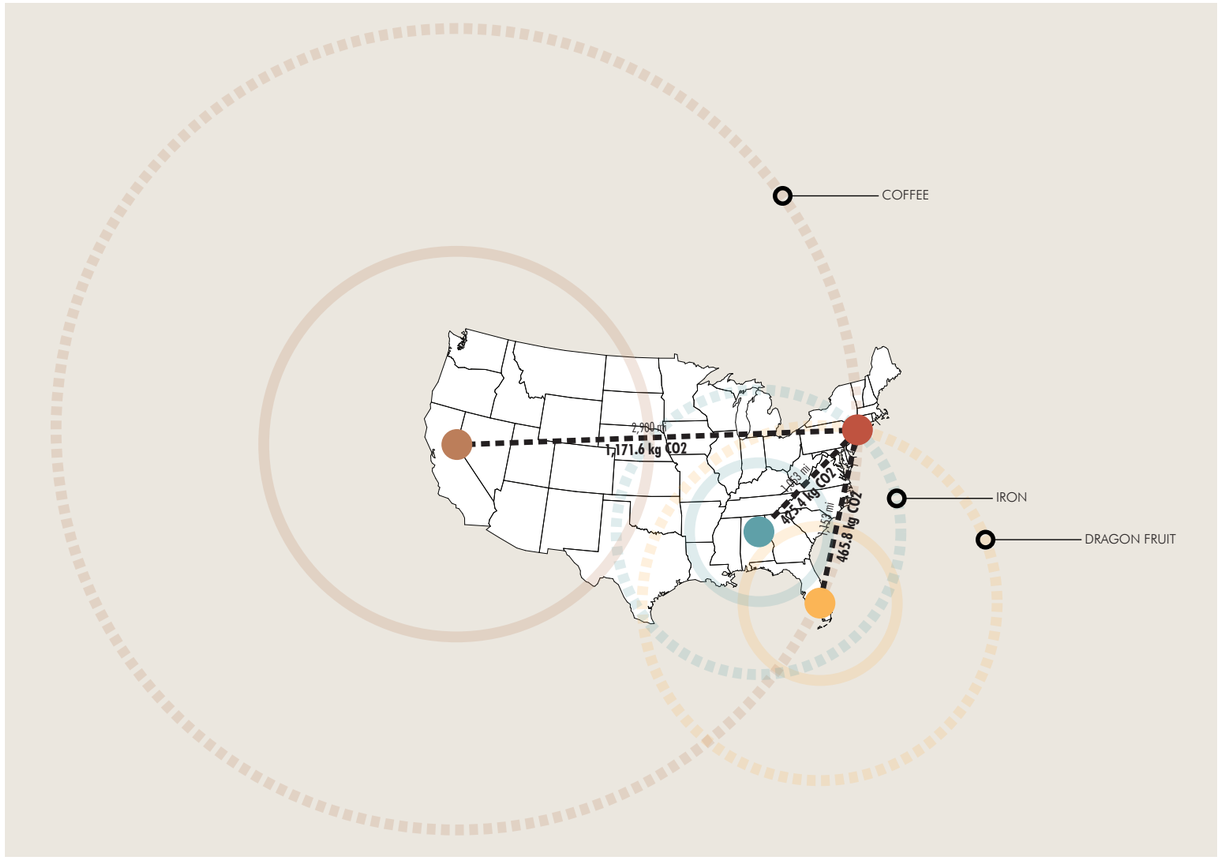
organizational diagram

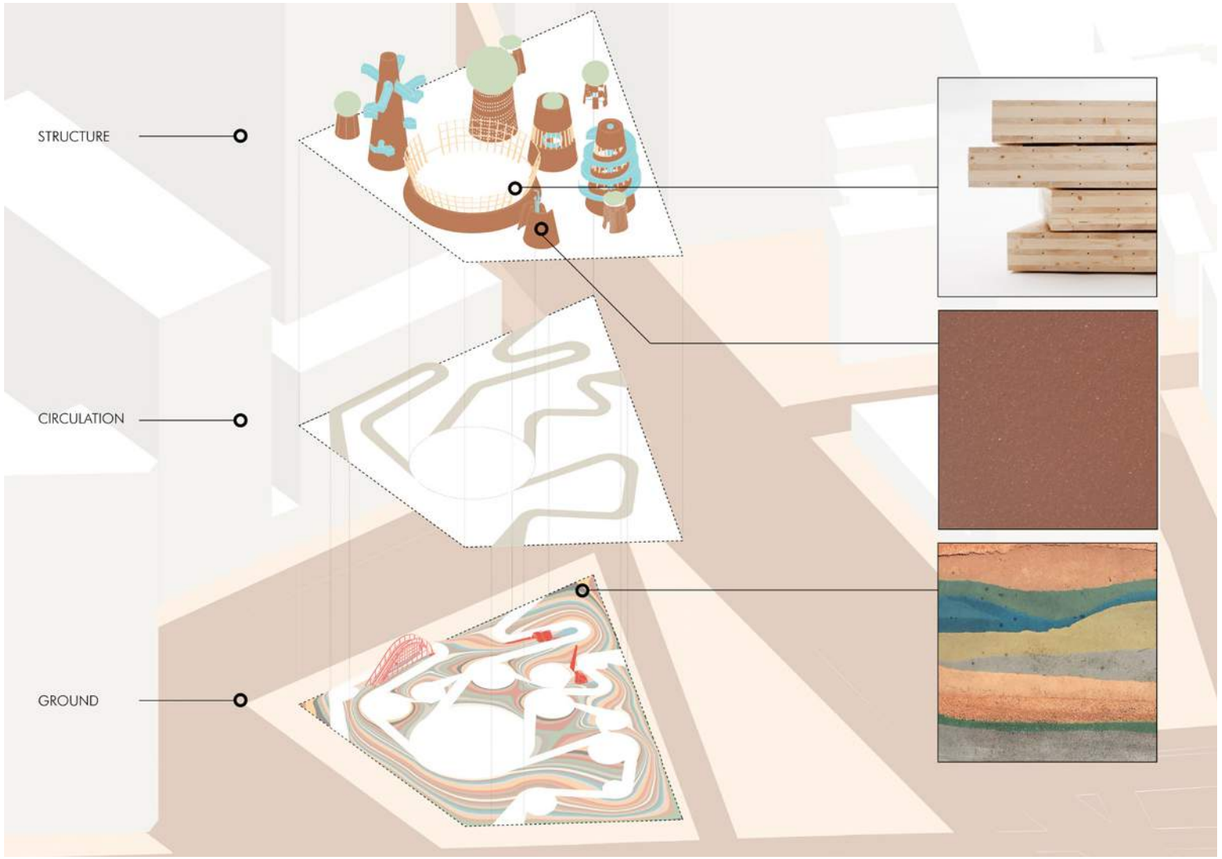


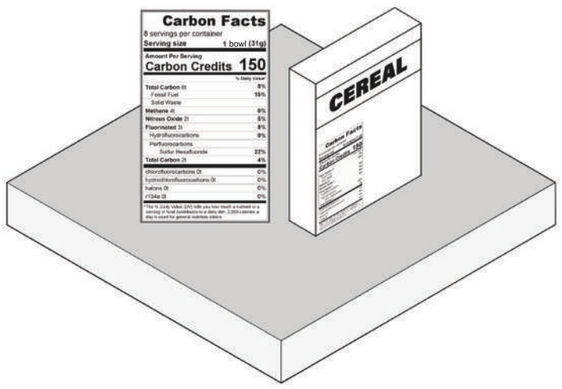
The programs are arranged in a linear form, where shops sit right next to one another without interior connection. People can circulate on the path above the shops or along the shop fronts.

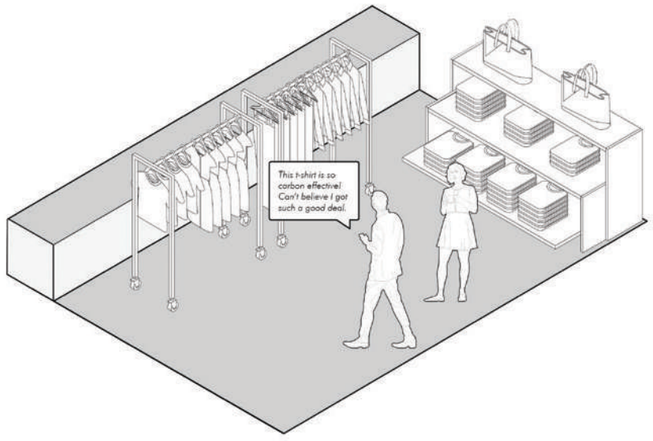
material black steel cladding & masonry	*temporality* hours according to program
social structure foundation-shop owners-users	*program* shop, restaurant, fitness, gallery, playground
urban implication merge into viaduct	*architect* EM2N
user group varied	*coverage* 53 arches

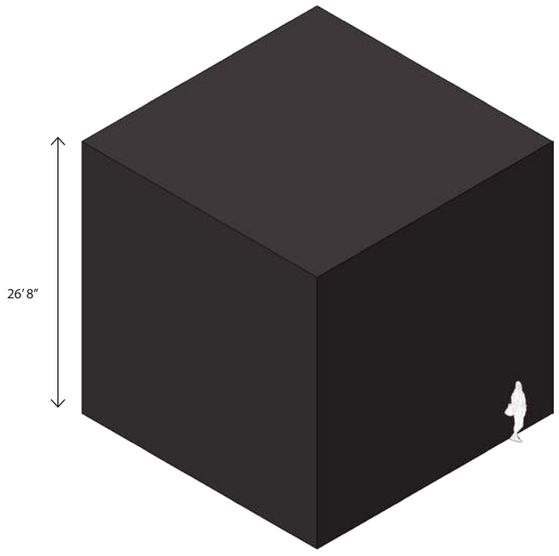
Sritoma Bhattacharjee and Neuy Buranasiri

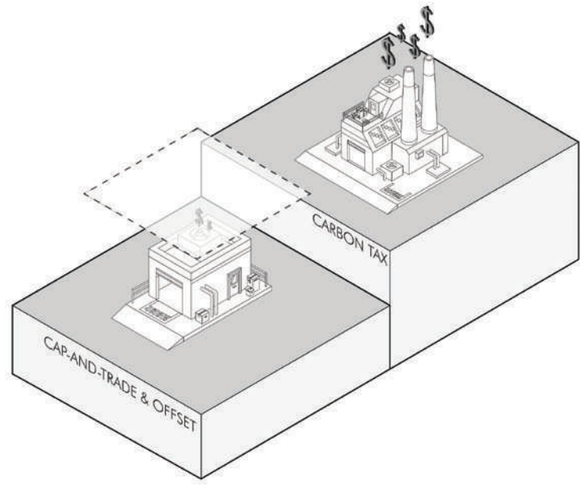

COFFEE
IRON
DRAGON FRUIT
2,200 mi
1,171.6 kg CO2
1,463 mi
425.4 kg CO2
1,152 mi
465.8 kg CO2

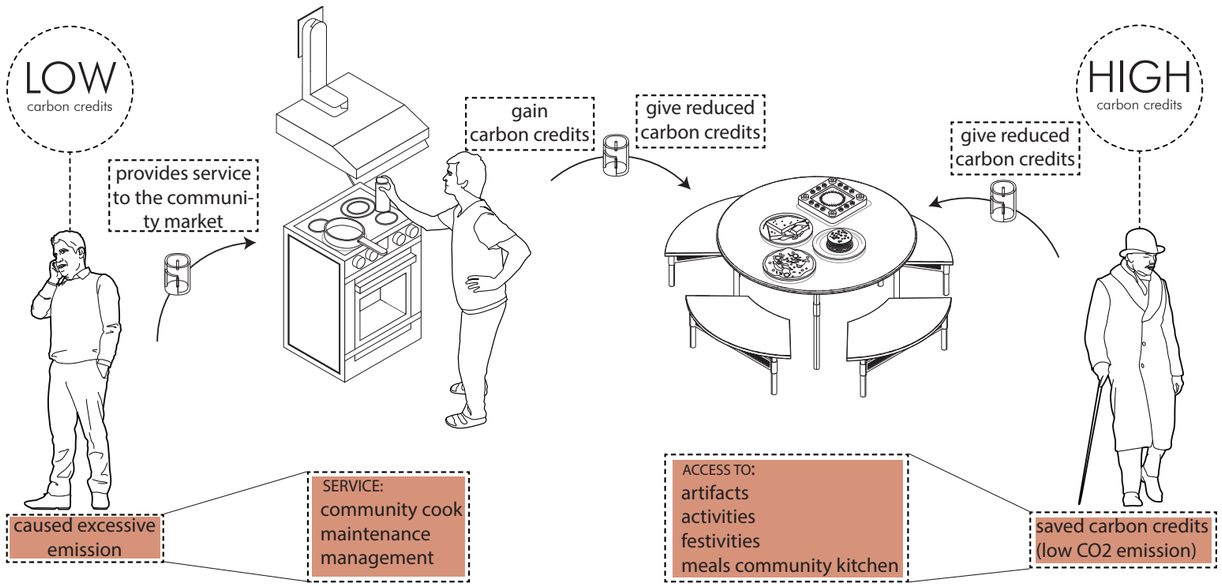

STRUCTURE
CIRCULATION
GROUND

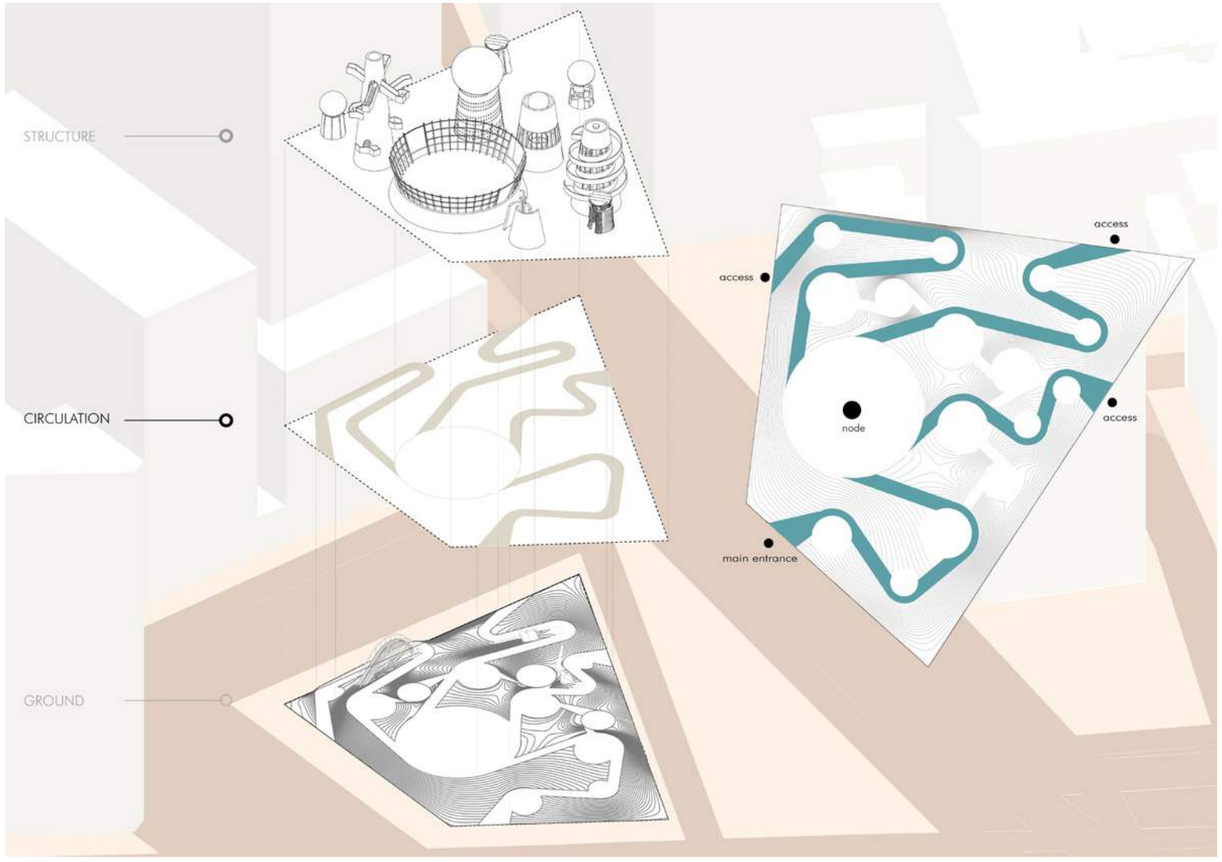

Carbon Facts
8 servings per container
Serving size 1 bowl (31g)
Amount Per Serving
Carbon Credits 150
CEREAL

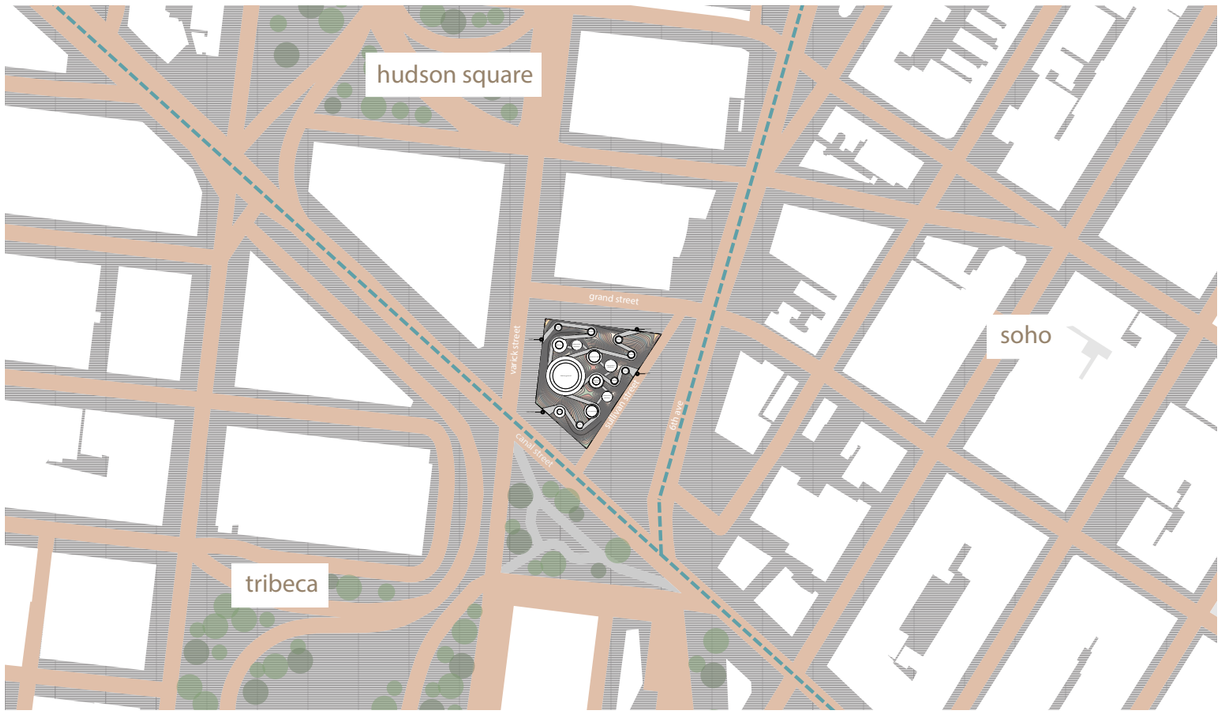

This t-shirt is so carbon effective! Can't believe I got such a good deal.


26' 8"

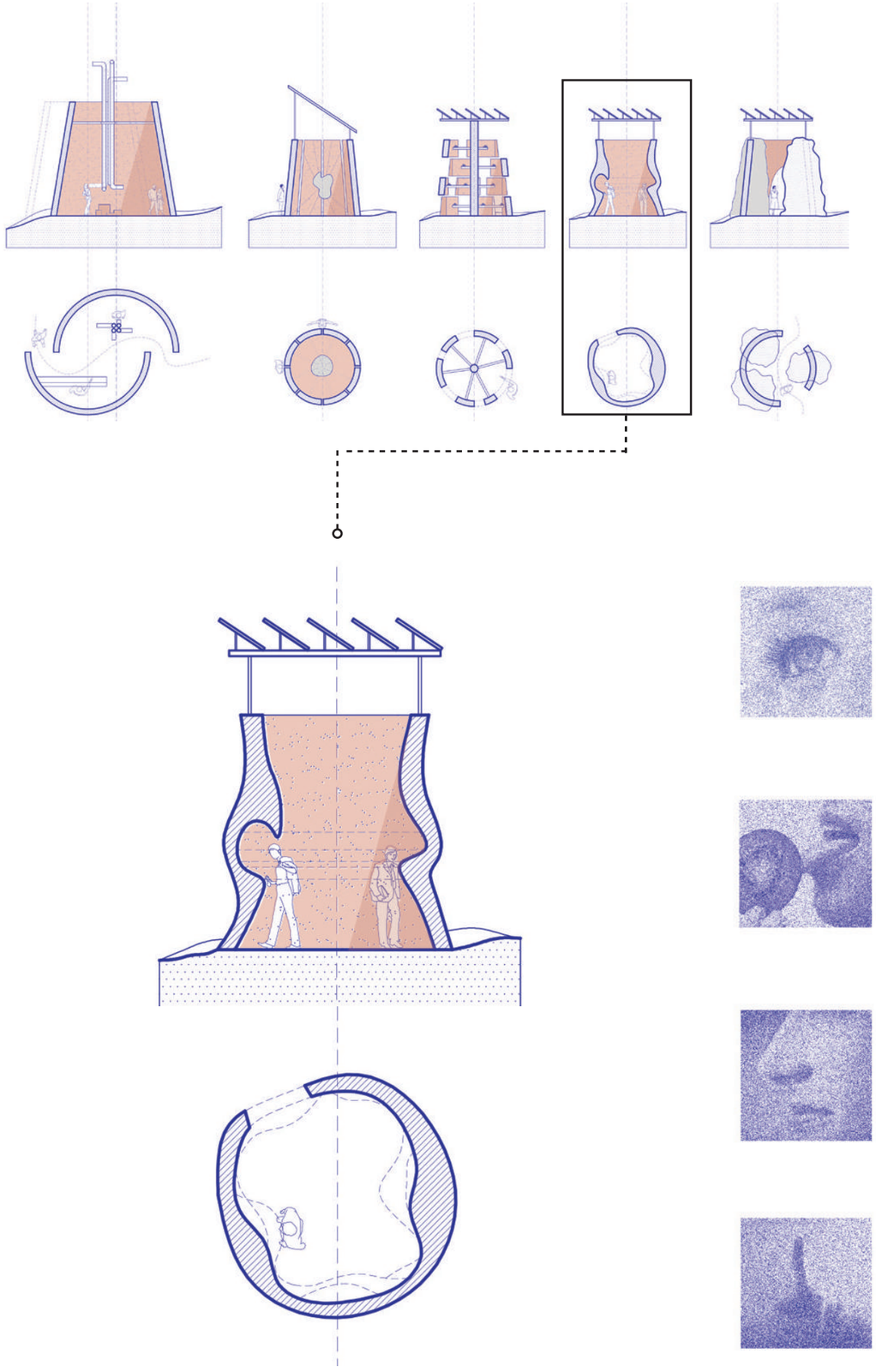

CARBON TAX
CAP-AND-TRADE & OFFSET


LOW
carbon credits
provides service to the communi-ty market
gain carbon credits
give reduced carbon credits
give reduced carbon credits
HIGH
carbon credits
caused excessive emission
SERVICE:
community cook
maintenance
management
ACCESS TO:
artifacts
activities
festivities
meals community kitchen
saved carbon credits (low CO2 emission)

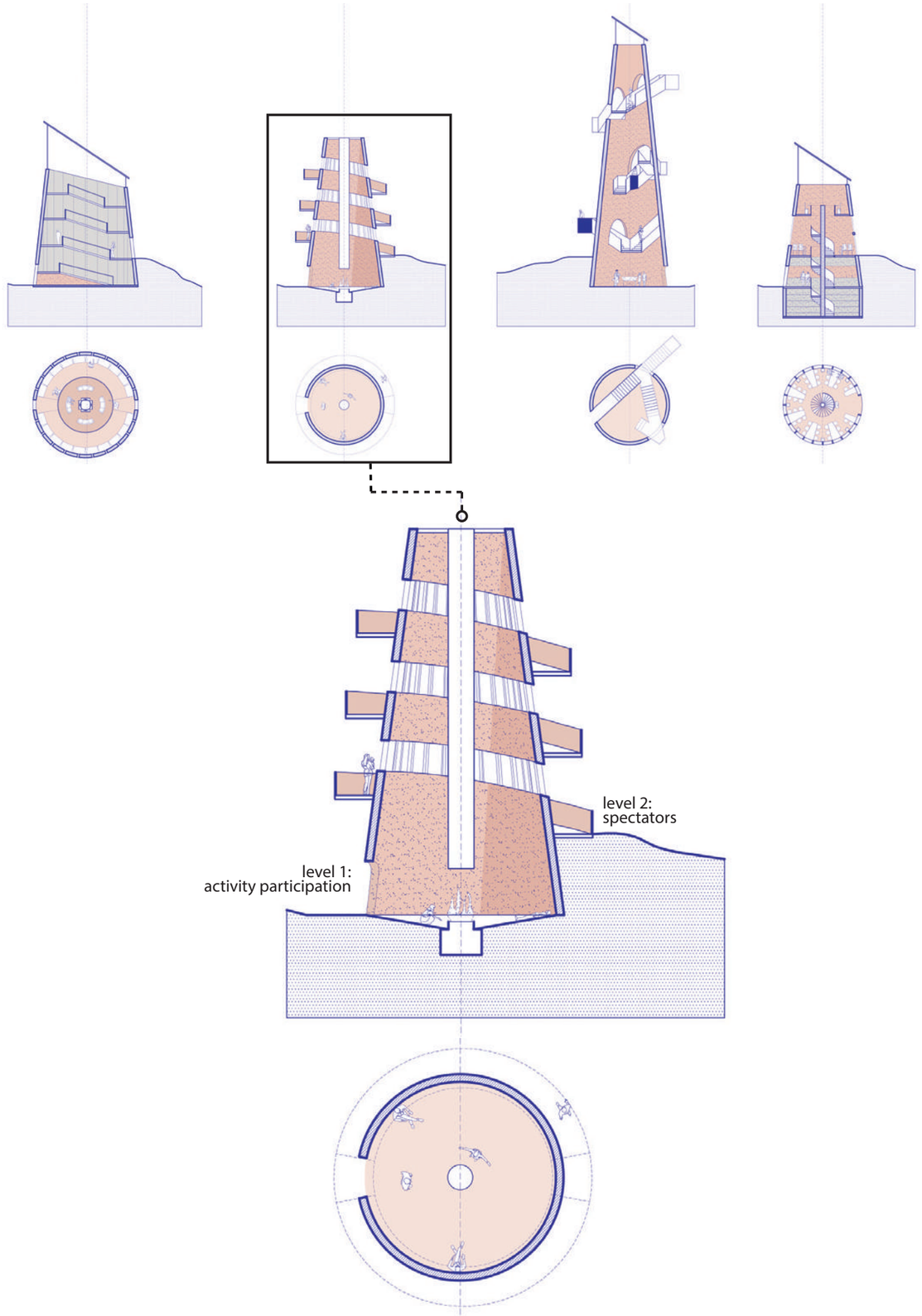

STRUCTURE
CIRCULATION
GROUND
access
access
access
node
main entrance

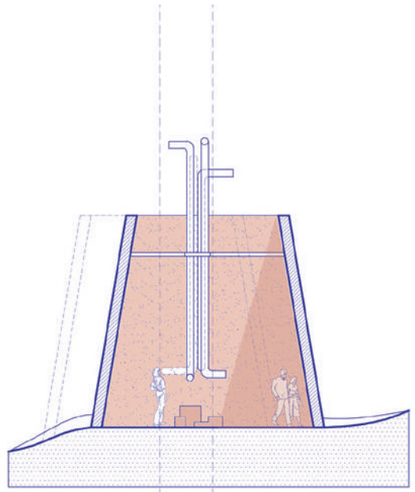

hudson square
soho
tribeca
grand street
sixth avenue
canal street
varick street

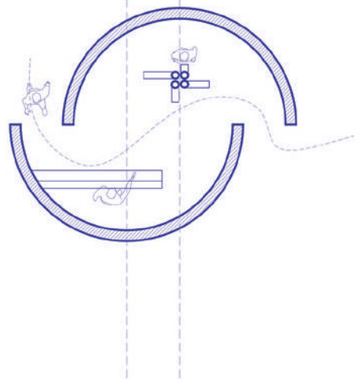
//Artifact: Smelling the Coffee from Ghana

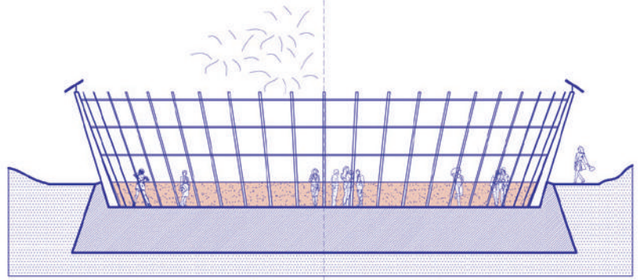


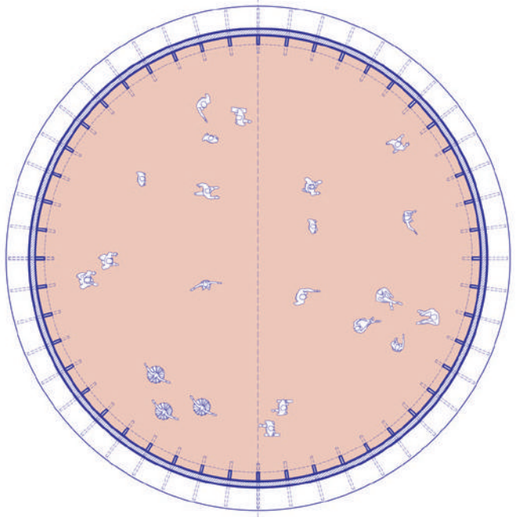
//Activity: Experiencing a Fireplace





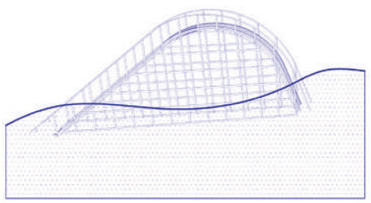


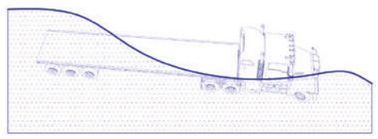


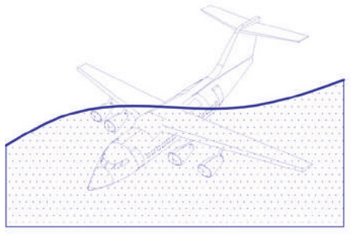


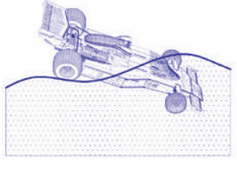
//Festive: Collectively Celebrating Carbon Intensive Festivals

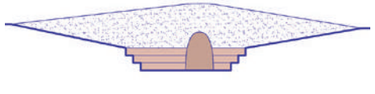
//Embeded Objects fallen into disuse in a Carbon Economy

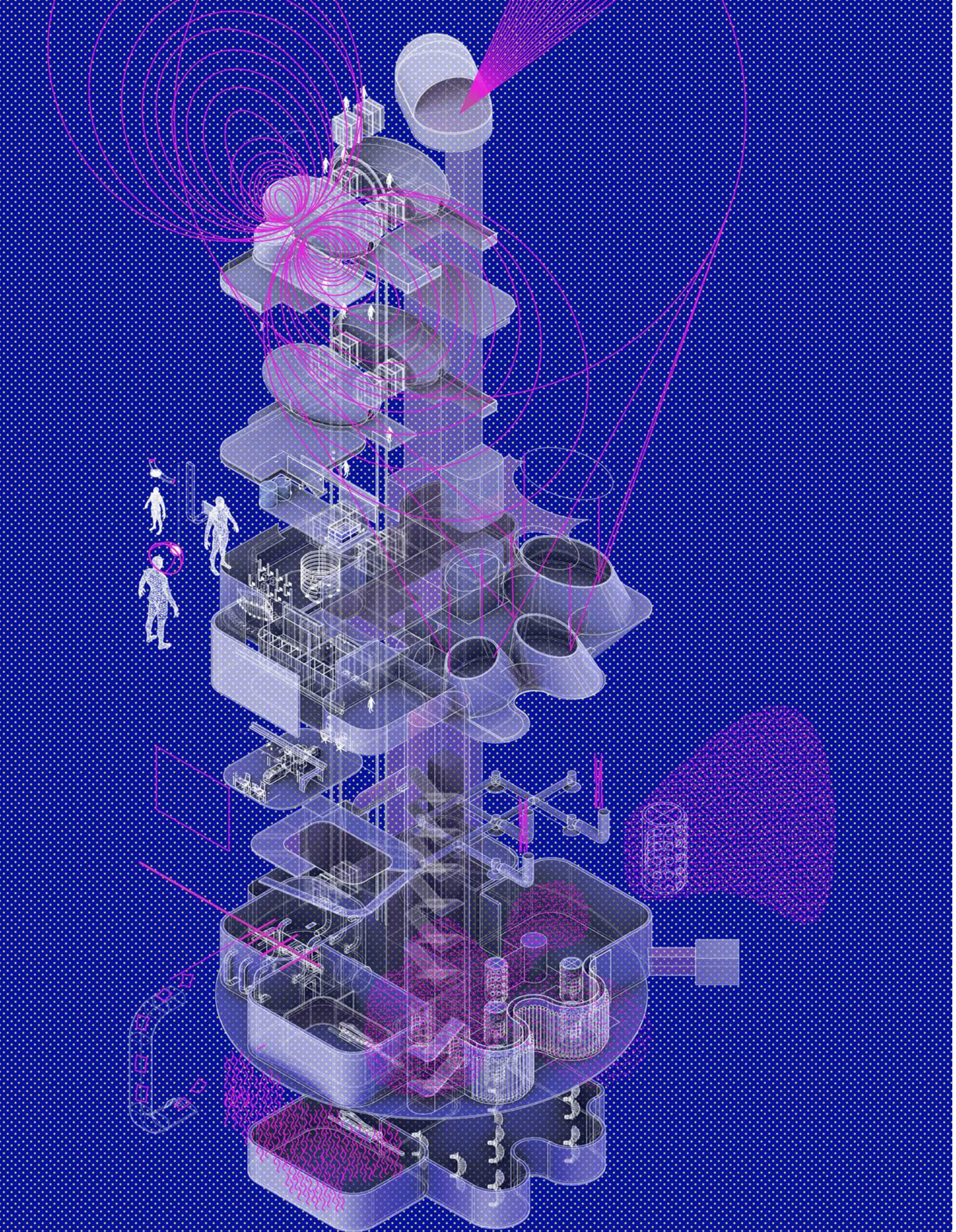












Engineering Consent

Understanding the Embassy as a Space of Saturation of Messages and Messaging Systems through the Architecture of Media Dissemination during the Vietnam War

Spring Studio 2020 Cultural Agents Orange

Critic: Mark Wasiuta
TA Jarrett Ley

It was only after 20 years, after the war ended, that was any indication of diplomatic ties forming again between the US and Vietnam. The US is now allowed to build an embassy on Vietnamese land. While the pre-war embassies were all in Saigon, this embassy will be located in Hanoi, in the heart of the city of State control.

If these were the media techniques chosen by the US government to communicate with the people of Vietnam during the war, today when the US-Vietnam relationship is walking a tightrope, how would the two countries choose to communicate?

The design of an embassy usually captures the zeitgeist of the relationship between the two countries. In this era of 2020s, US's policy on embassy design dictates a more "free and transparent" embassy to reflect the openness and trust between the two countries. It thus often becomes a container of all political diplomatic ambitions.

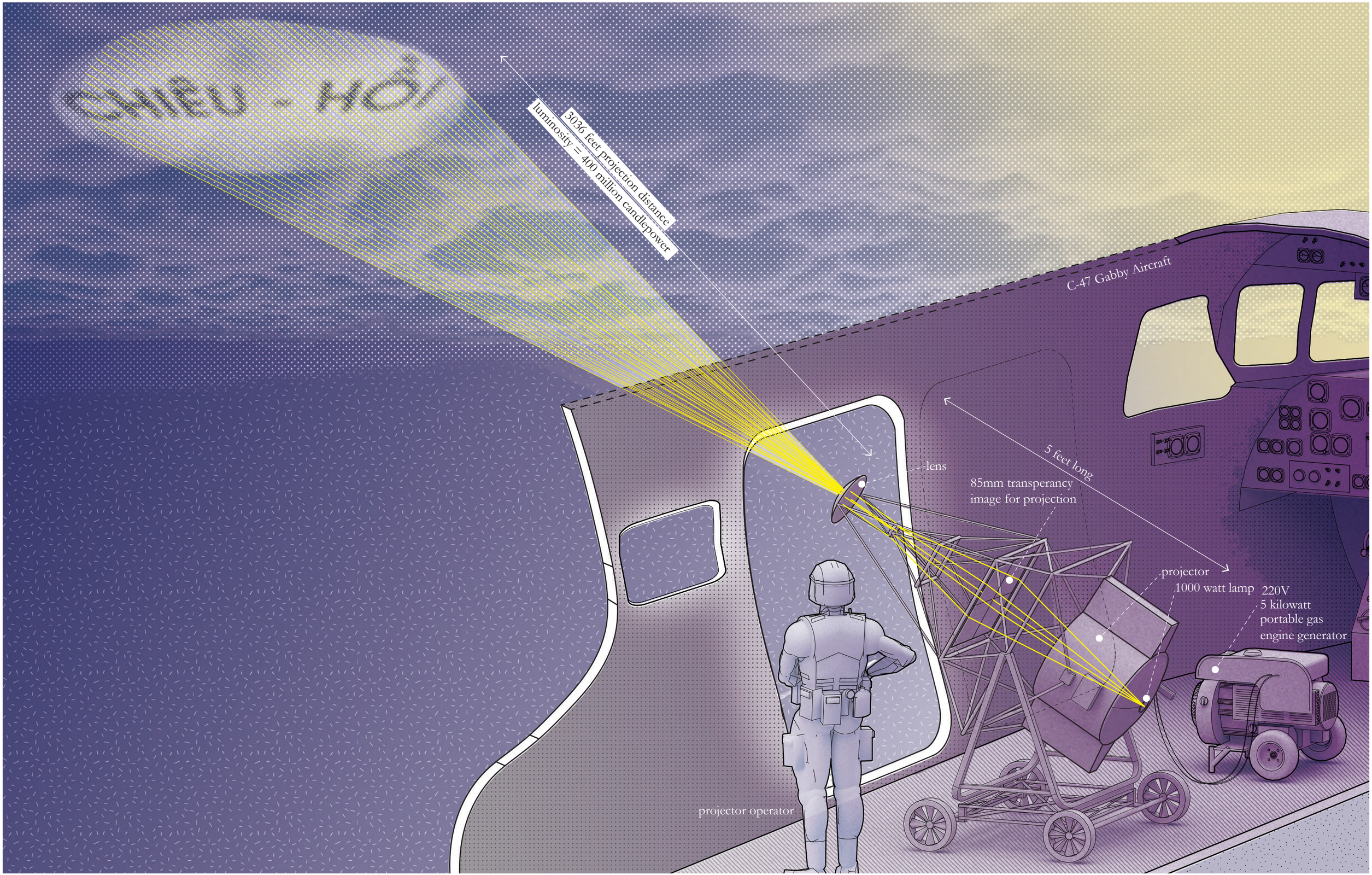
So when the US embassy is rebuilt today, how do we imagine they would employ their technological prowess and advancement to maintain their identity and stronghold?

The architecture of this embassy uses the war time media techniques by the US to physicalise and advance the narrative of diplomacy that the US plays out in Vietnam. Through some obvious and some less obvious messaging systems, it communicates the ideals of a free democratic country & human rights, while showing support to the citizens of Vietnam.

The design of this embassy relies on the careful delineation of the public and private spaces with specific modes of exchange between the two. All interactions are curated.

Diplomacy is a multi layered activity. It is a function of the big gestures that are experienced by the public either personally or through news sources. It happens today in the form of the empire state building lighting up in national flag colours or the white house lighting up in pride colours- these are all architectural diplomatic moves. At the same time diplomacy is also an act of the small and subtle incisions into your life that influence you.

The embassy is thus a journey through environmental mediums of diplomatic messaging- affecting the Vietnamese citizen across scales. The experience is meant to project the US as not just a useful ally but a trustworthy friend.


3036 feet projection distance
luminosity = 400 million candlepower
C-47 Gabby Aircraft
lens
5 feet long
85mm transperancy
image for projection
projector
1000 watt lamp
220V
5 kilowatt
portable gas
engine generator
projector operator

Angel 3 (3000 ft)
safe height for aircraft flight

cumulus clouds
flat
opaque
mattress type

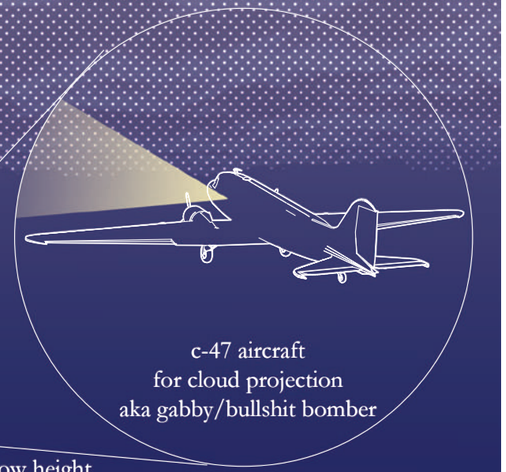
cloud level

projection distance = 3036 feet

1500 ft

cloud height
= 3000 feet

c-47 at 1500ft below cloud level
c-47 at 1500ft above ground level



c-47 aircraft
for cloud projection
aka gabby/bullshit bomber

aircraft flying at low height
easily shot down by vietcong

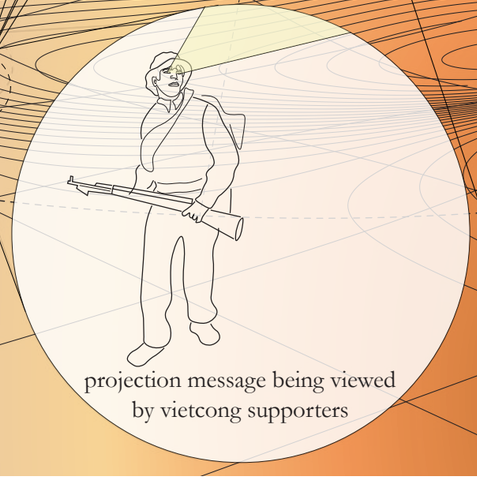
1500 ft

vietcong
battalion

vietcong frontline

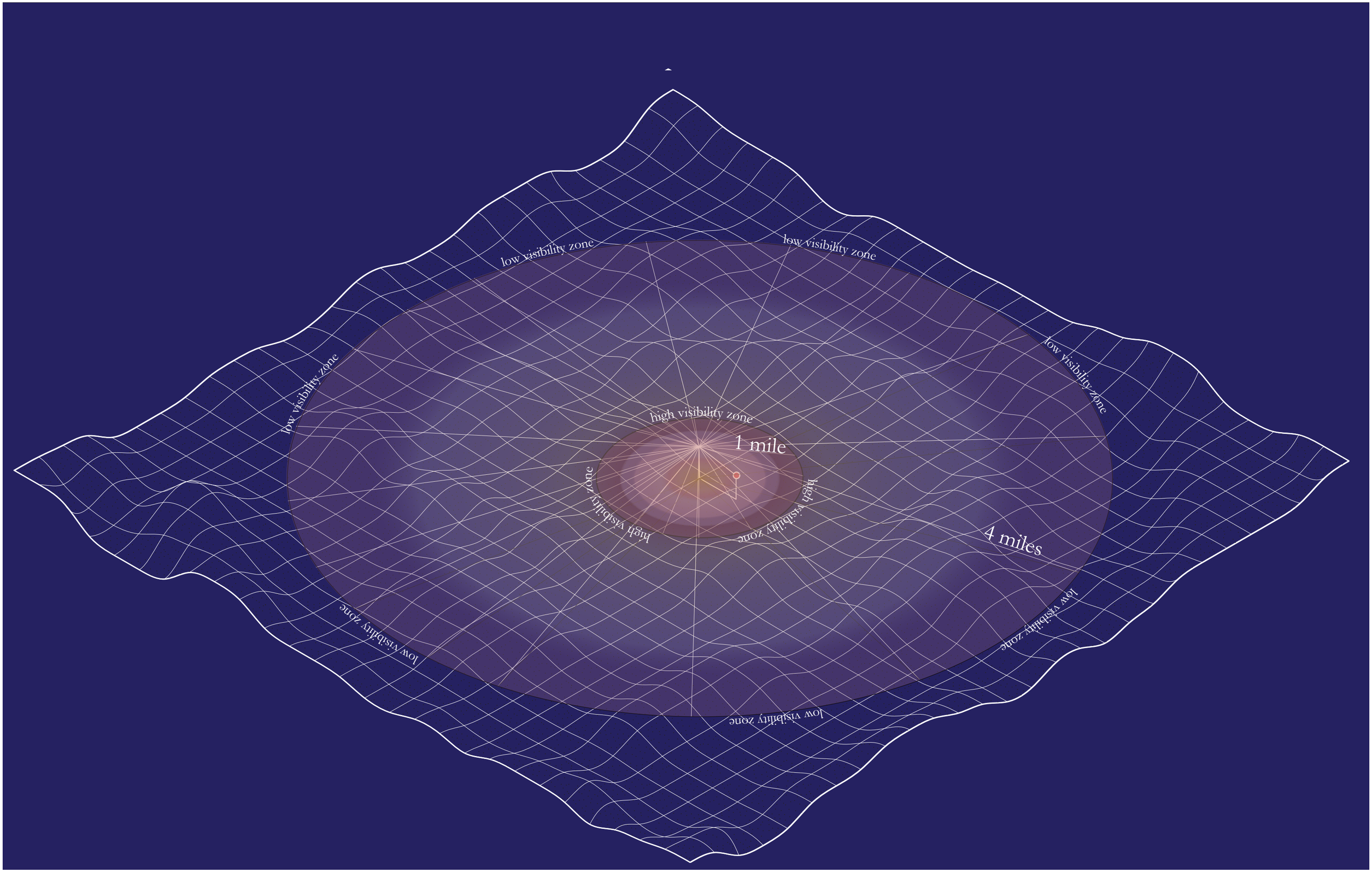
distance from frontline = 0.5 miles

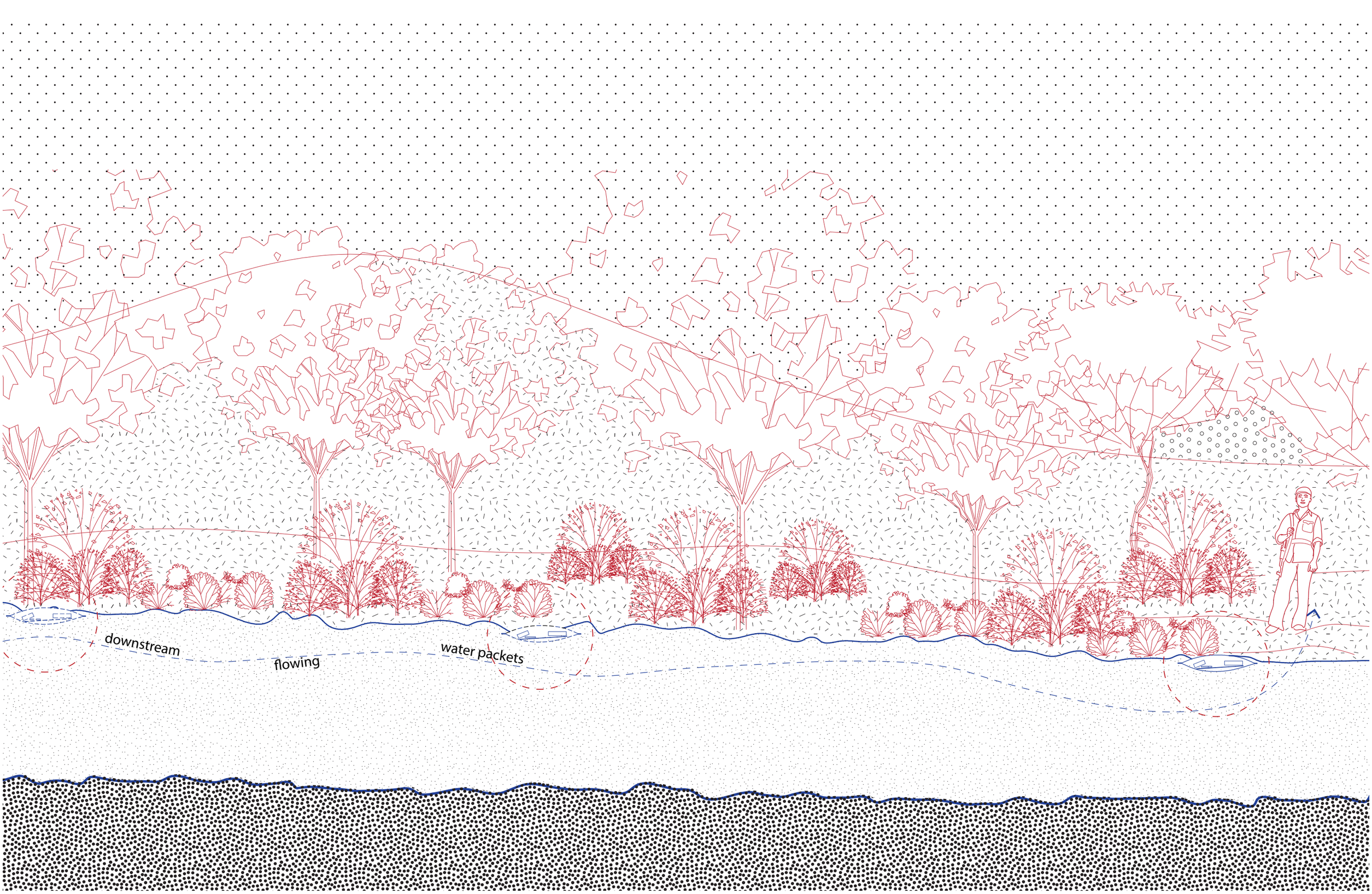
max visibility under poor sky conditions = 1 mile

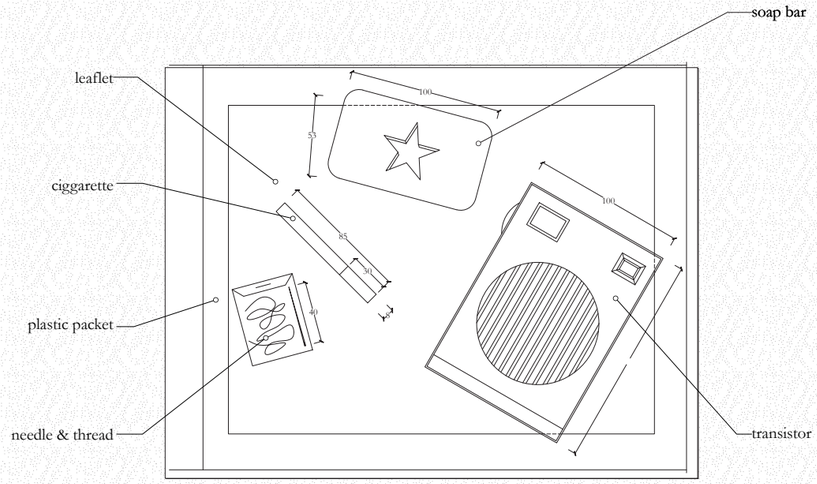


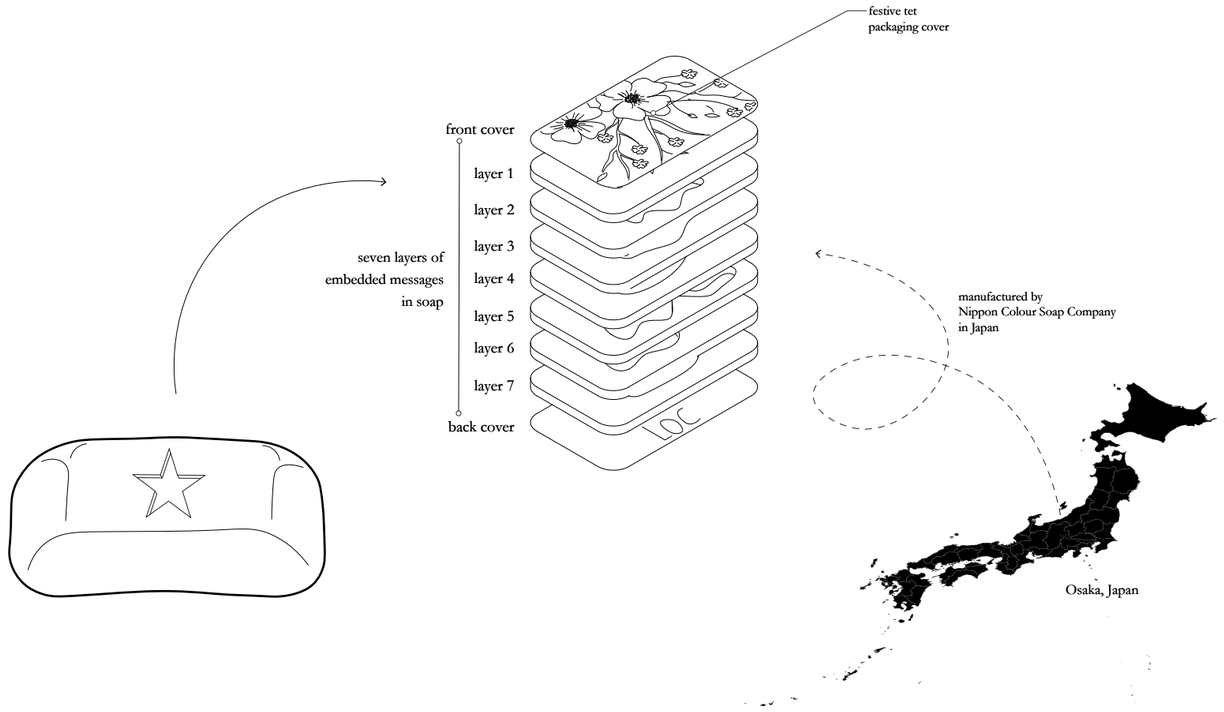
projection message being viewed
by vietcong supporters

vietcong soldier firing at
projection aircraft


low visibility zone
low visibility zone
low visibility zone
low visibility zone
high visibility zone
1 mile
high visibility zone
high visibility zone
4 miles
low visibility zone
low visibility zone
low visibility zone


downstream
flowing
water packets





Chieu Hoi program was an operation of message dispersion by the US Army to make the North Vietnamese Army rally against their own and submit themselves to the Chieu hoi centers placed throughout the country. Chieu Hoi means return back home, also called the open arms program in English.

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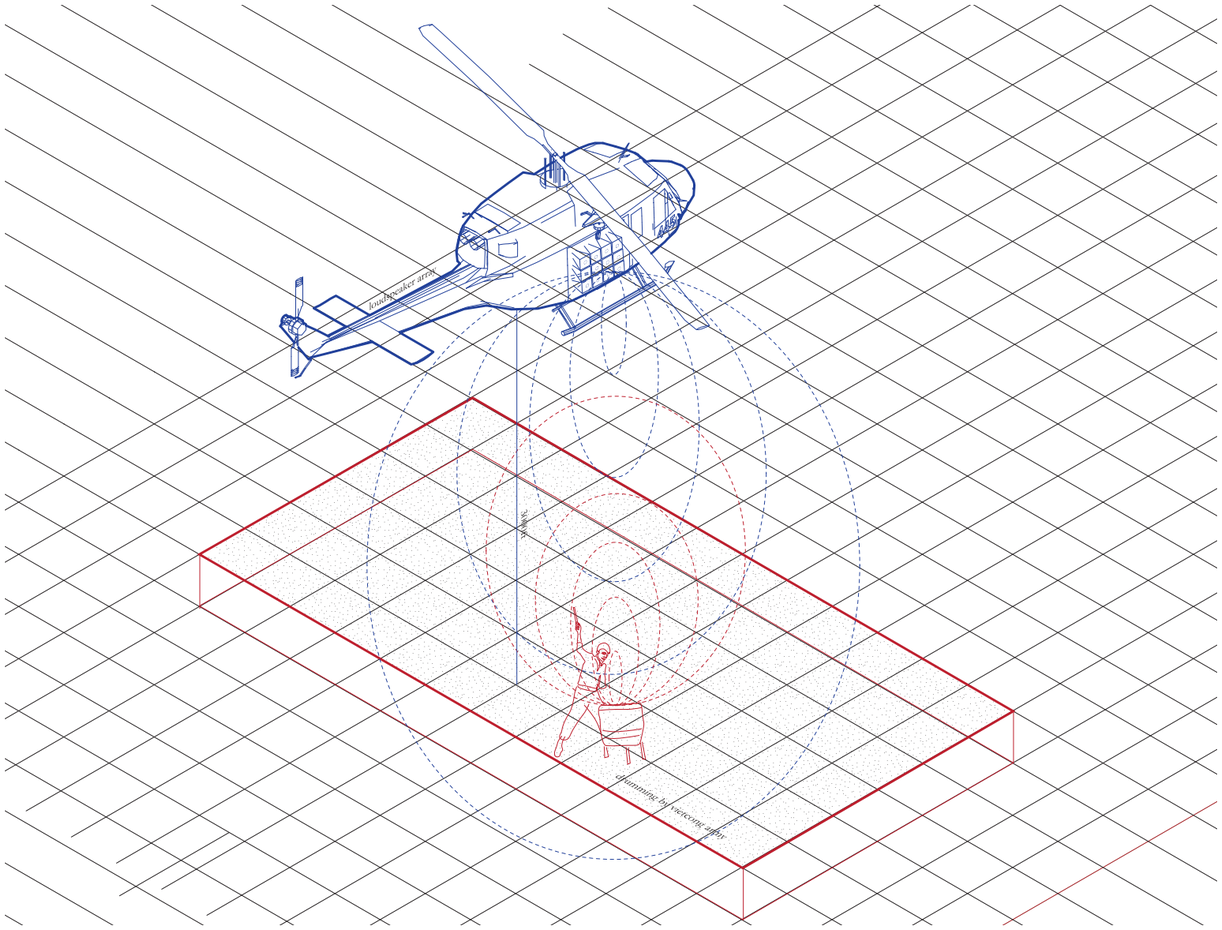
This message dissemination required carefully constructed media tactics. The first tactic is that of cloud projection. A 5 foot long projector was used to project an image of the Vietnamese national flag or Chieu Hoi Symbol. It was essentially a slide projector which used a high intensity 1000W lamp which threw light onto 85mm transparencies printed with the words or symbols.

The equipment was loaded onto a C-47 military aircraft and flown to as close as ½ a mile from the enemy frontline. The clouds required for this type of operation were the cumulus kind- forming an opaque mattress in the sky. The clouds form at a height of 3000ft and the aircraft would have to fly at a dangerously low height, at about 1500ft below the clouds. The projector would then be set up to project upward towards the clouds. This low height of the aircraft flight put the aircraft in danger of VietCong gun fire.

Plastic packets were packed with messages and floated downstream in areas that were otherwise inaccessible by air. They would be chanced upon by the fishermen or the northern army patrol. These packets would contain a leaflet, a cigarette, a transistor that played the american radio station, soap, needle and thread. All items that were very personal and intimate to a body. An interesting one was the soap which was embedded with 7 layers of messaging. These messages would be revealed as the soldier washed himself or herself over the days- the message slowly seeping in.

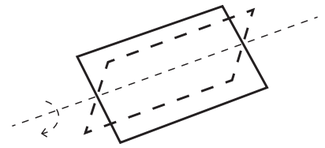


//Loudspeaker in the Sky

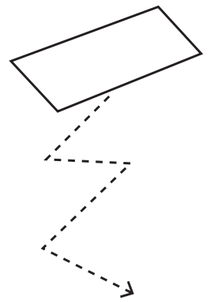
The use of airborne leaflets as a media tactic became more and more precise during the vietnam war. The size, weight and rotation of the leaflet paper is extremely important in determining the spread of the information while being dropped from the sky. Leaflets usually settle around an axis. The primary challenge is to maximize the spread of the leaflets. Another important factor affecting the paper is the wind speed and direction. The leaflets were dropped using the L-19 skymaster using the box, stack or bomb technique through a chute or floor hatch. This particular scenario is a box technique for a non-auto rotating, 16 pound paper with no backing.

Messages were recorded and played over and over through a loudspeaker array mounted on a helicopter to Vietnamese communities. Fearing defection, the North ordered its soldiers to start drumming upon hearing the helicopter to drown out the sound of the messages.

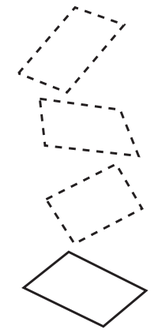
Human loudspeaker: This piece of equipment brings down to the scale of media dispersal to the body. This gear is worn by the body of an army personnel who walks through villages spreading their message. It consists of an array of loudspeakers, a satchel pack containing an audio player, cords connecting them, leaflets and at times a microphone- accompanied by a vietnamese dissident relaying the messages live. An important part of this is also the rifle which towers over the whole set up.



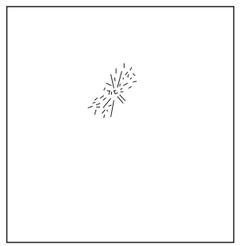
auto-rotating along axis



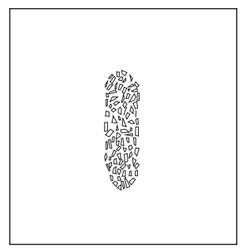
zig-zag swaying motion



spiralling motion

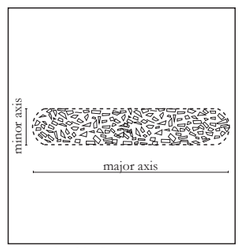


leaflet bundle at the point of burst

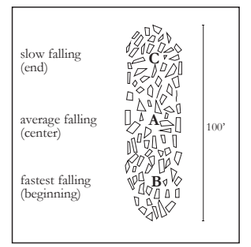


leaflet cloud falling to the ground

leaflet cloud settling on the ground

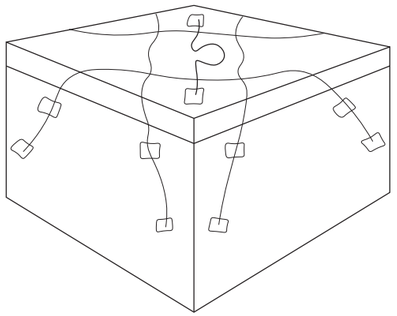


major axis of leaflet pattern
(top view)

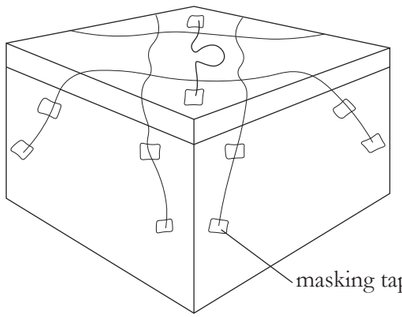


leaflet pattern on the ground

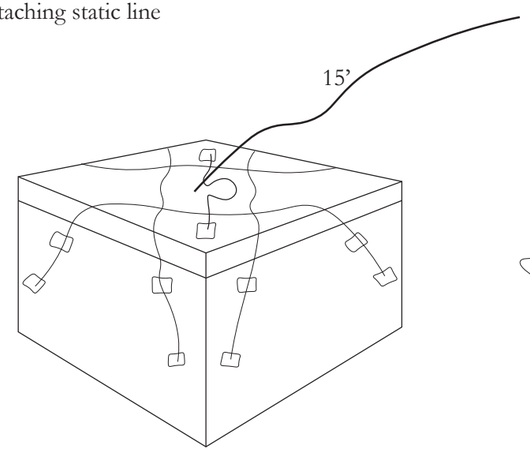
rigging a leaflet box



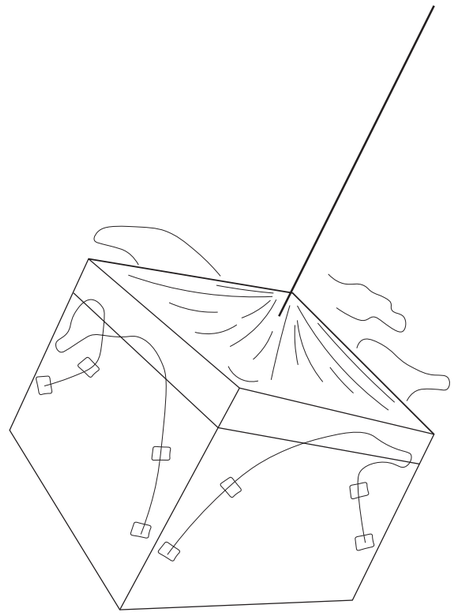
mealboxes sometimes used as leaflet box



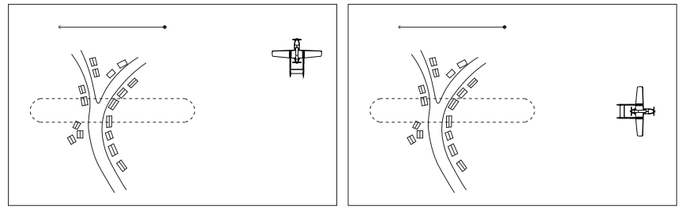
attaching static line



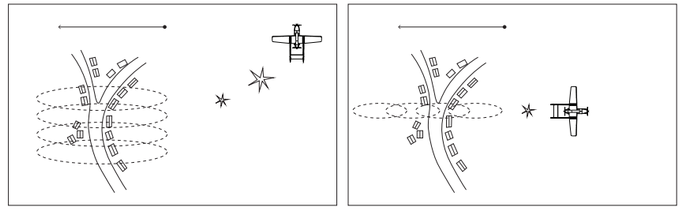
webbing



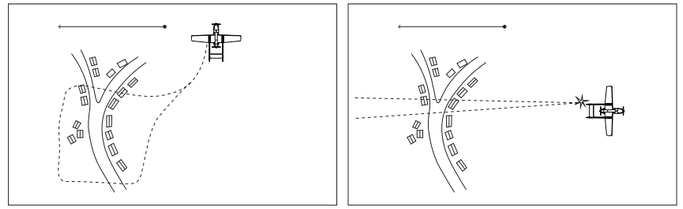
release and pulling back static line



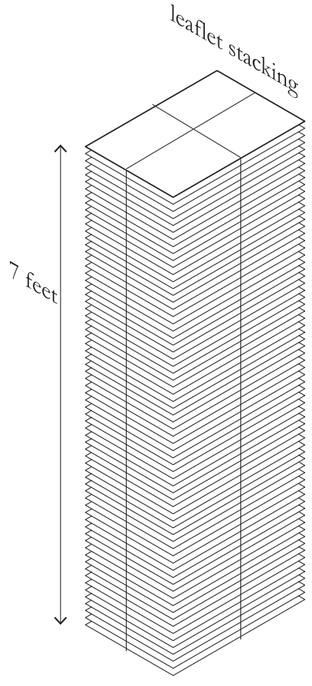
single cluster release

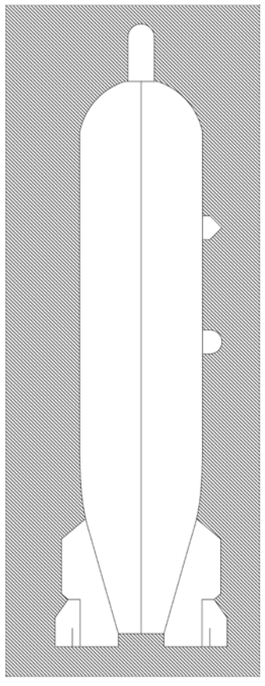


distributed cluster release



hopper or continuous release





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cessena L-19 skymaster

floor hatch release

release point

5000ft

wind direction | speed = 10 knots

wind direction | speed = 10 knots

leaflet burning by vietcong army

2.9 nautical miles
near point

gunshots fired by vietcong

42hours to reach ground

3.3ft/second

4.2 nautical miles
center of leaflet mass

major axis

5.5 nautical miles
far point

5000ft

0.0m
500m
1000m
1500m
2000m
2500m
3000m
3500m
4000m
4500m
5000m
5500m
6000m
6500m
7000m

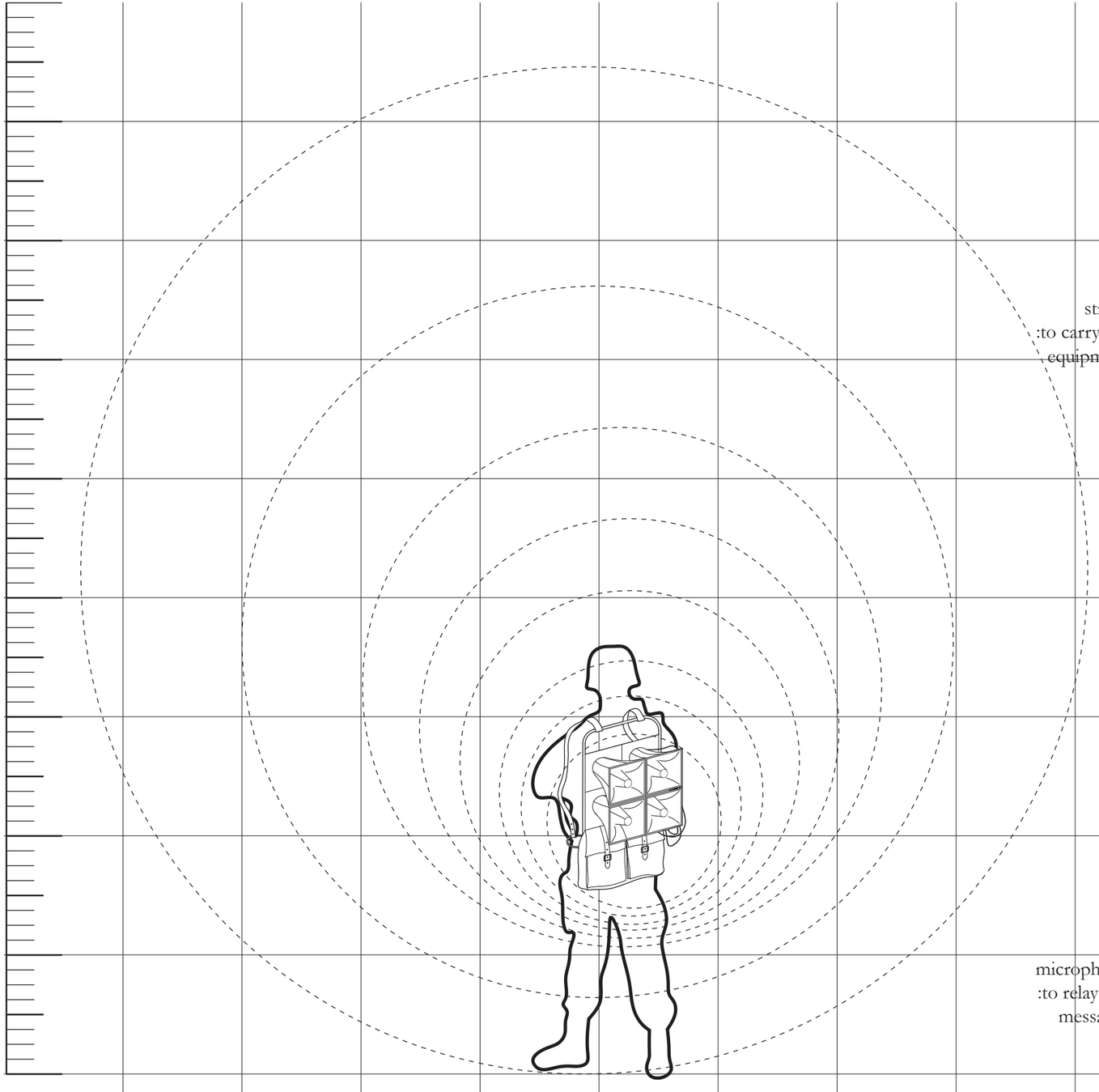
gunshots fired by the vietcong army

leaflet encounter & perception by vietcong army

6”

4”

#16 pound paper
not underlined
non-autorotating



+ 1 vietnamese
translator

straps
:to carry the
equipment

microphone
:to relay live
messages

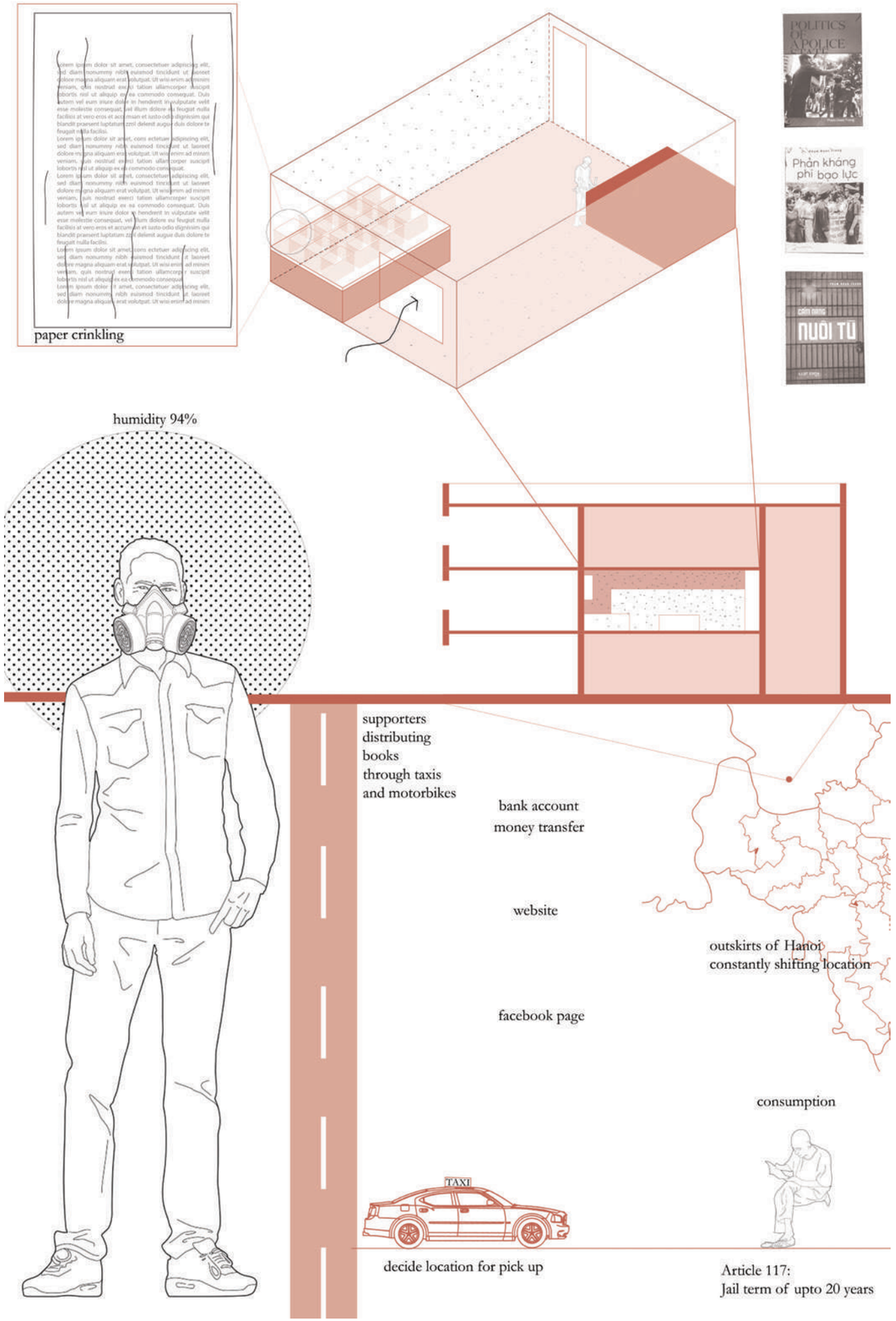
+ 1 rifle

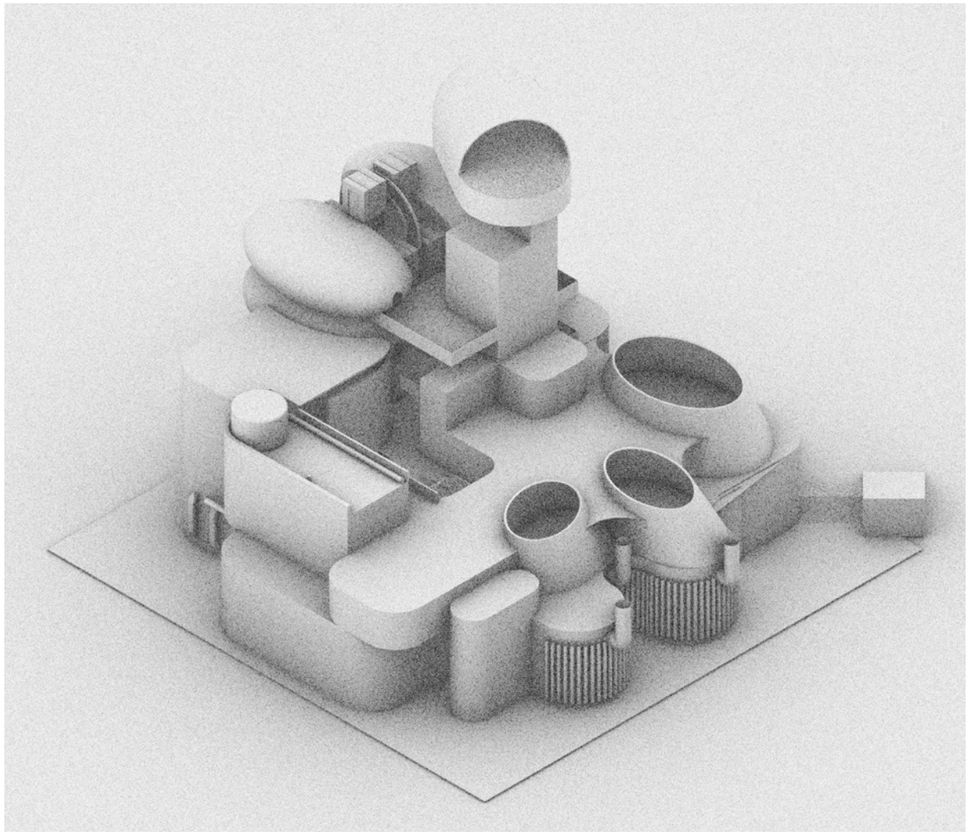
loudspeaker
:broadcasting messages
to villagers

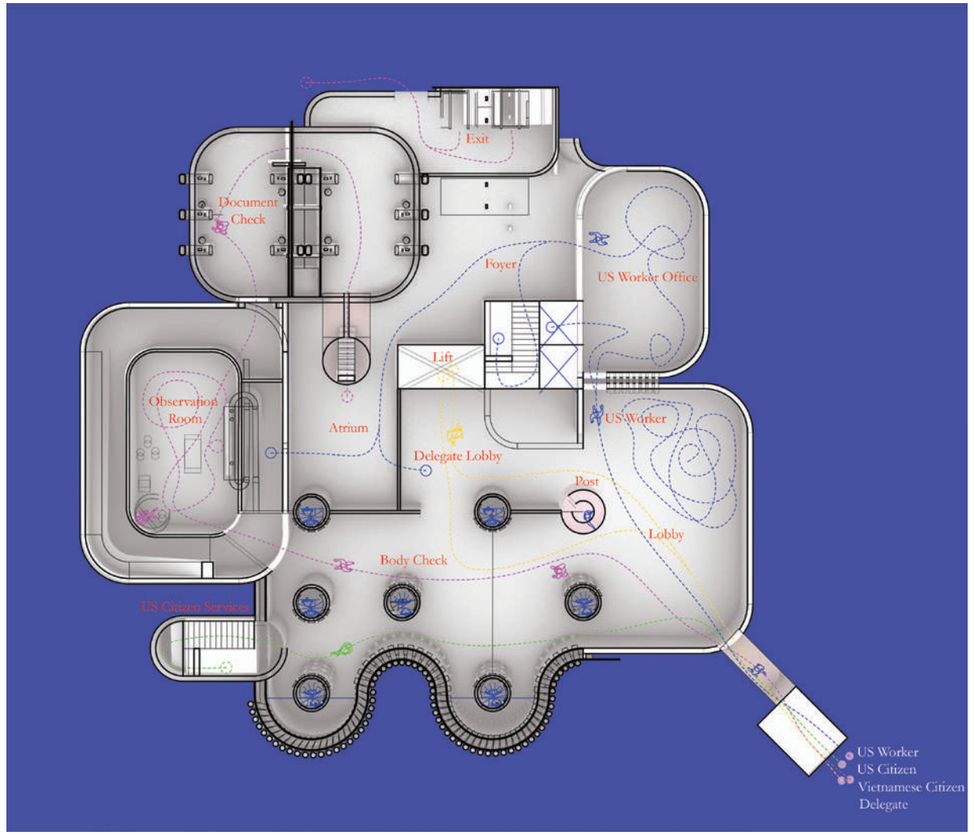
powersource cord
:to play the messages

backpack
:to store recording
equipment and player

Inside a cramped room in a secret - and temporary - location in northern Vietnam, a printer whirs to life, spitting out sheets of paper covered in text. Neat piles are stacked on nearby tables and a man wearing an air respirator places one of them into a machine that cuts and binds the pages to a cover. "The dampness in the room has caused the paper to crease. This isn't good," said the editor in chief of Vietnam's Nha Xuat Ban Tu Do - Liberal Publishing House - as he flipped through the newly-printed book. In Vietnam, as in the former Soviet Union, such publications are known as Samizdat - the illegal copying and distribution of books - and are banned by the government as "antistate" activity. Under Article 117 of Vietnam's criminal code, anyone involved in Samizdat risks a jail term of 20 years. The Liberal Publishing House editor prefers not to share their name. Immediately after the press was set up, Ha had to move it from Vietnam's largest city to an undisclosed location due to pressure from police trying to shut it down and arrest them. "We're unable to stay anywhere for a long period of time or our work may be revealed. If we're discovered even the community will be at risk," added Ha.





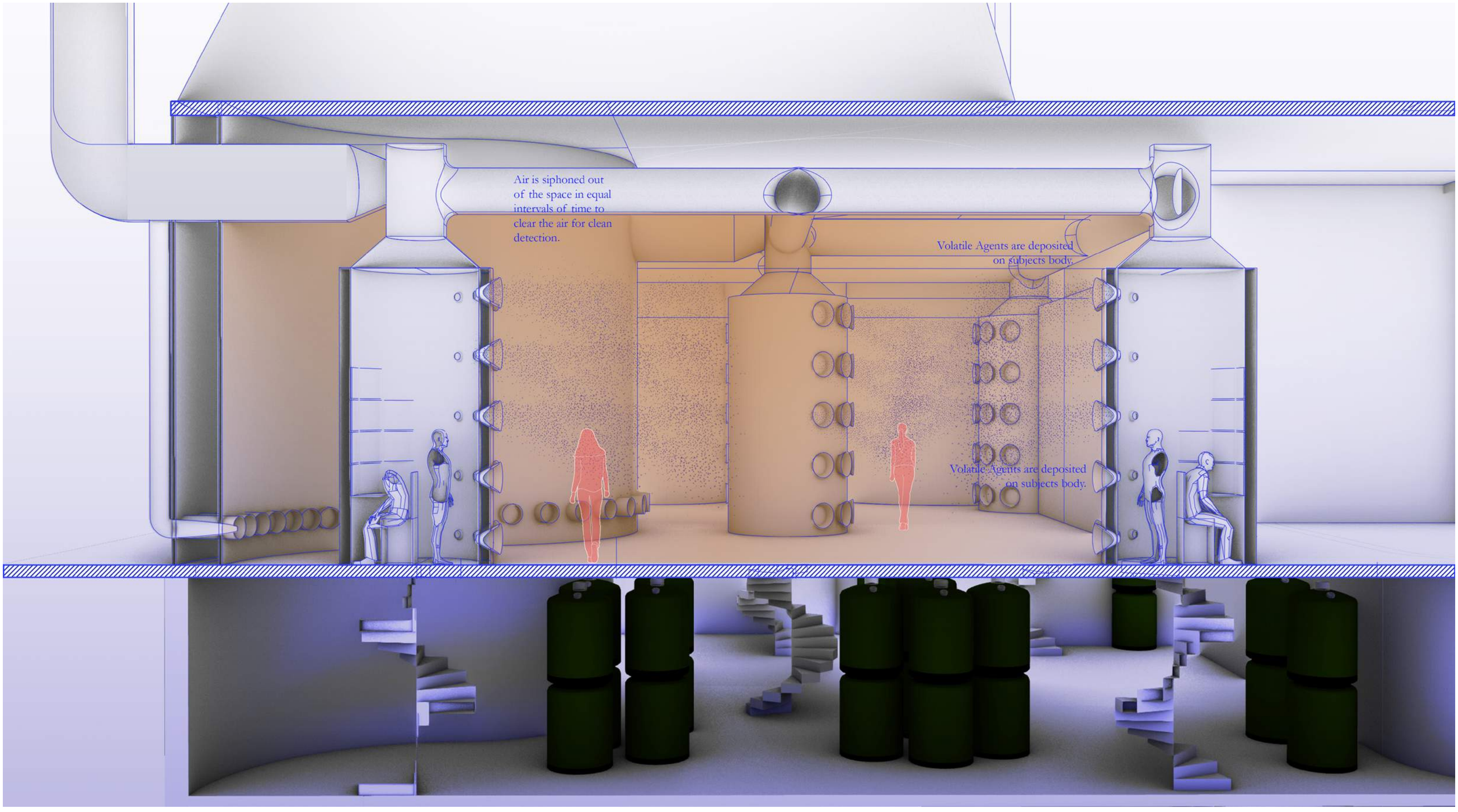


//Facade

Enclosed in a blast proof glass facade, it feigns transparency while creating an environment of control within it. The building is an introverted one, that cuts off the visitors from outer influences. However, it manipulates the outdoor environment through the movement of air, vapour and chemicals through its skin. With its most public element, the facade, it forges a relationship of communication with the people around.

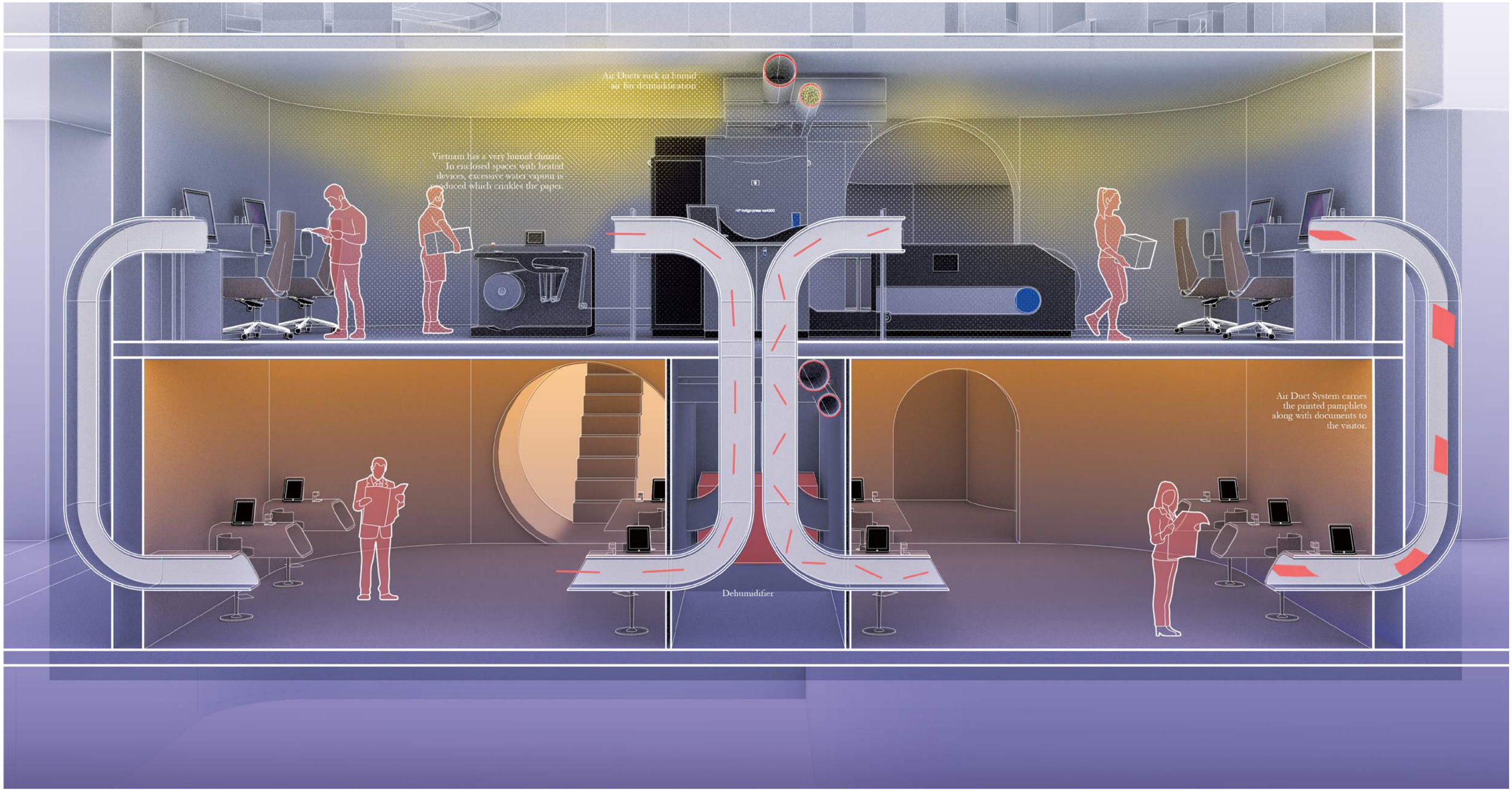
//Access

The US builds an embassy which utilises its war time messaging techniques to control and manipulate the Vietnamese citizens visiting the embassy to seek consular services. The US citizens working in the embassy manage and maintain the functioning of these systems. Delegates from Vietnam and other countries intending to form ties/negotiate with the US visit for cultural exchange and US Citizens seeking help or protection services.



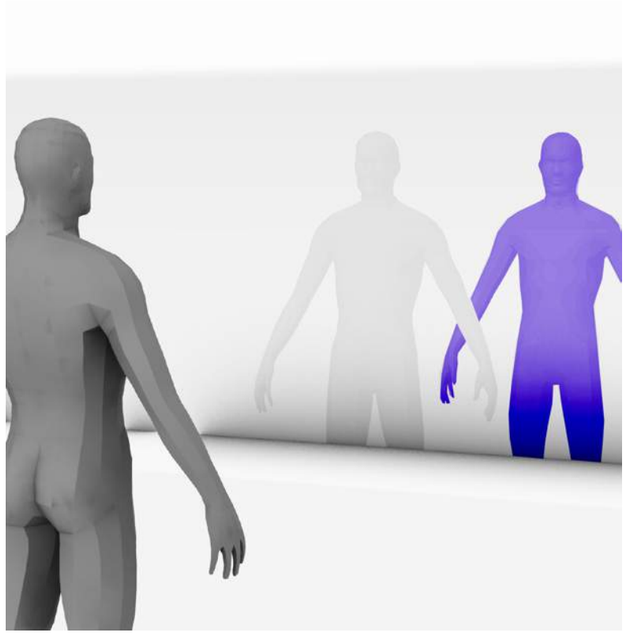
//Olfactory Body Check

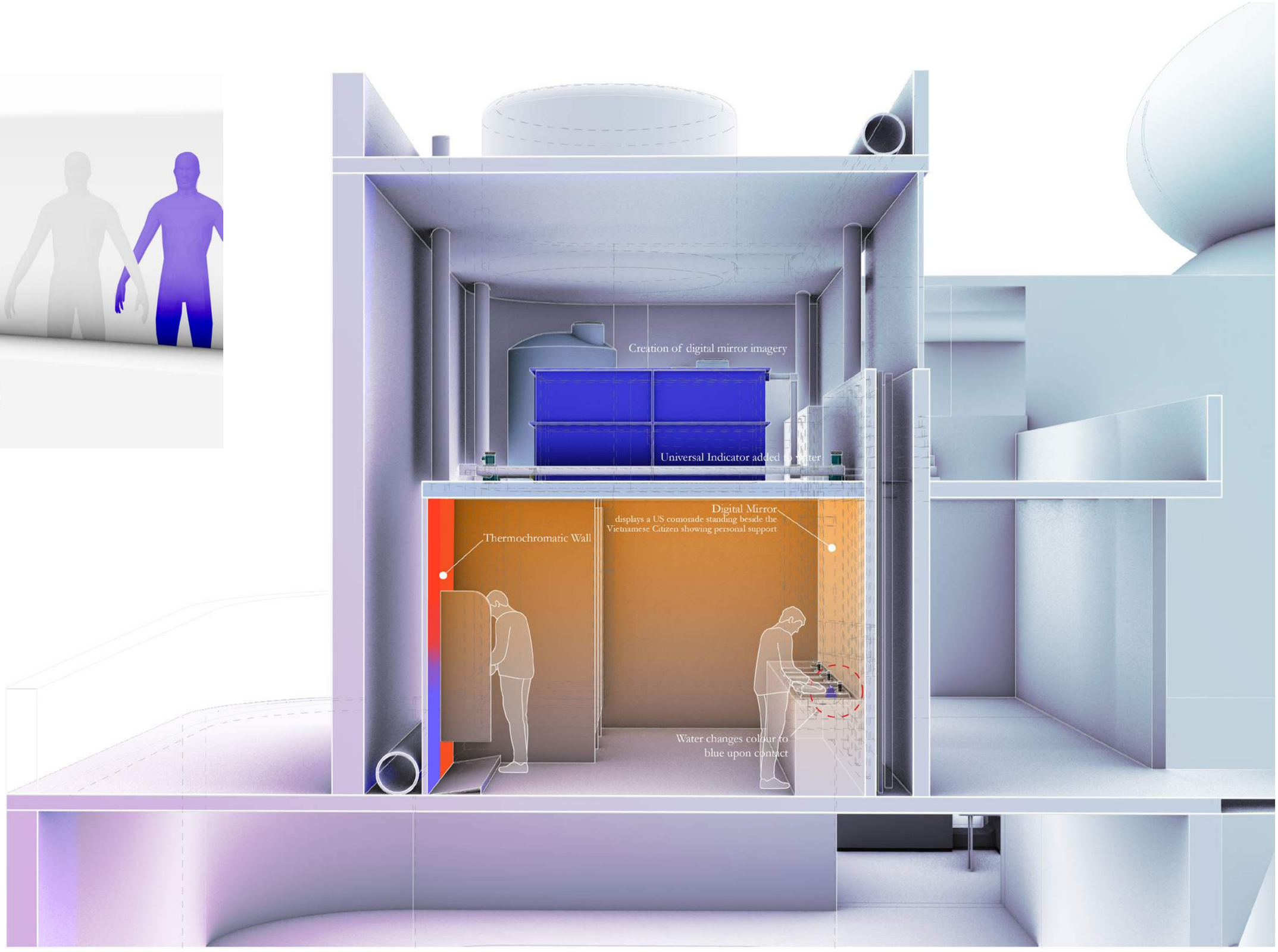
The body check is done through olfactory means by testing the chemicals effused by the subject's body to verify their identity. The subjects are made to walk through this forest of columns which are fitted with diffusers. US personnel standing inside the column initiates the diffusion of volatile chemicals in the air which help evaporate the body odor which is then collected for testing and matching by the US personnel at the desk. This section provides a distinction between the space of the US personnel and the space of the visitor. The intimate scale of this operation is perhaps not far from the incision of the soap bar into the soldier's body.



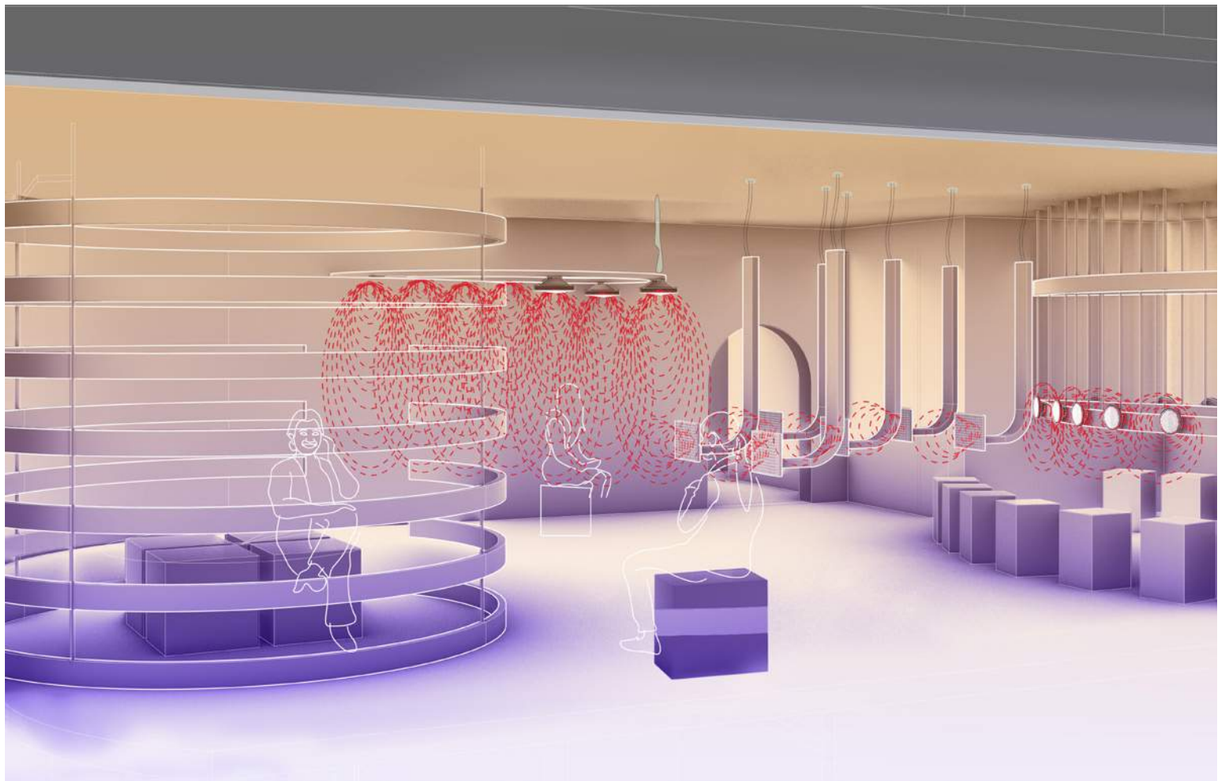
//Document Check

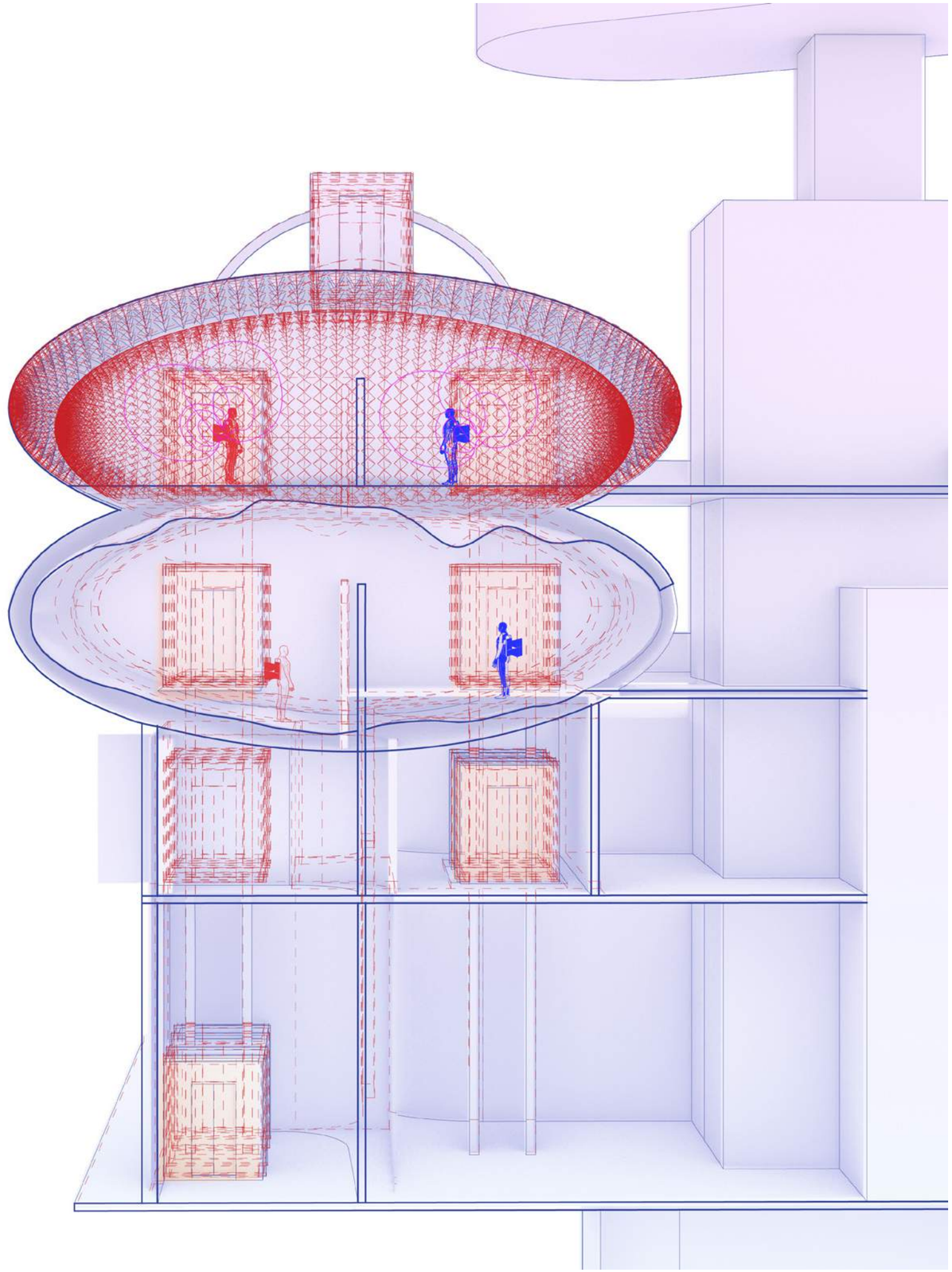
The visa aspirants are then led to the document checking room. A duct system collects documents from the Vietnamese citizens. The documents are delivered back through the system incorporating message pamphlets from the US.



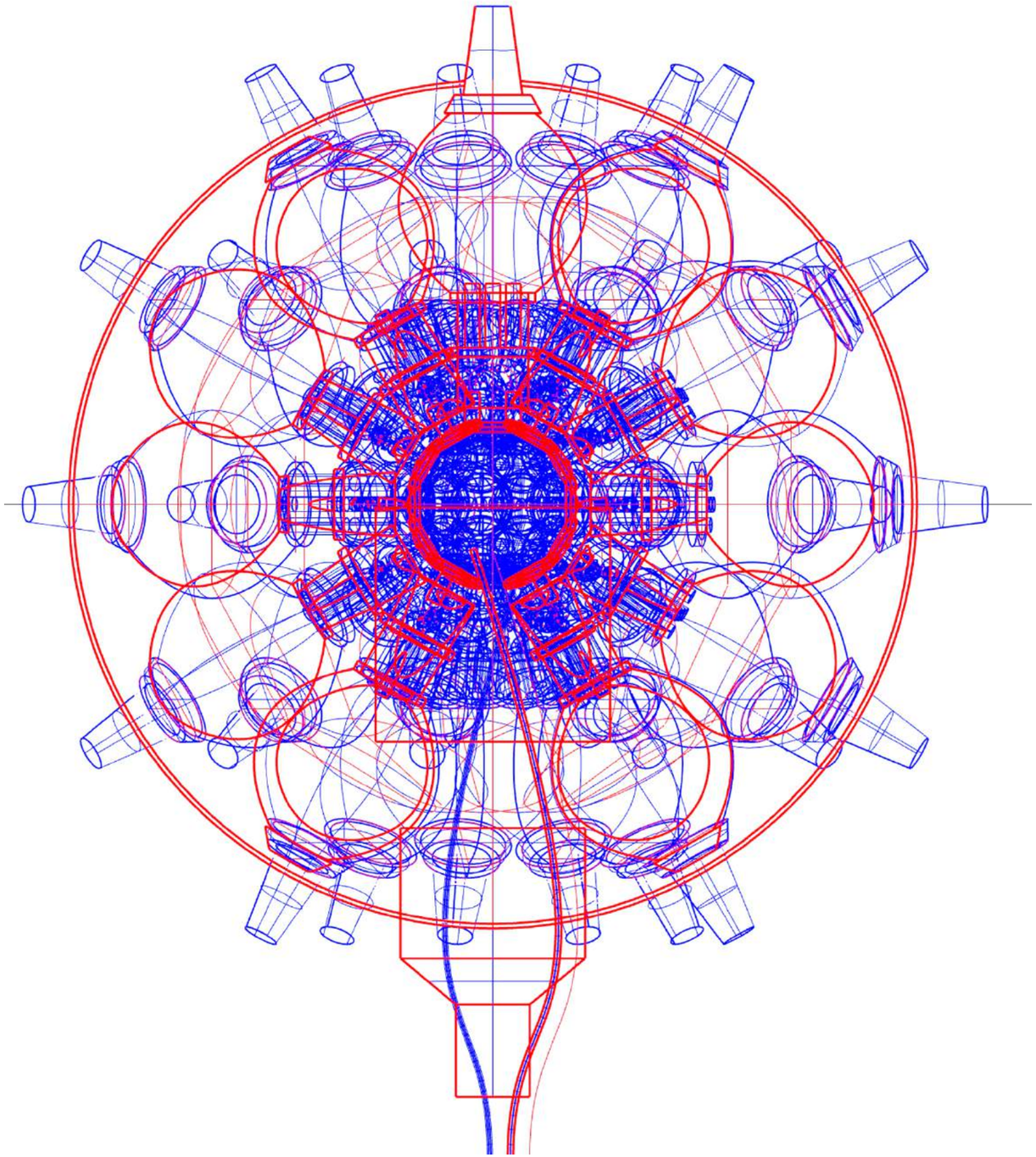

Creation of digital mirror imagery
Universal Indicator added to water
Digital Mirror
displays a US comorade standing beside the
Vietnamese Citizen showing personal support
Thermochromatic Wall
Water changes colour to
blue upon contact

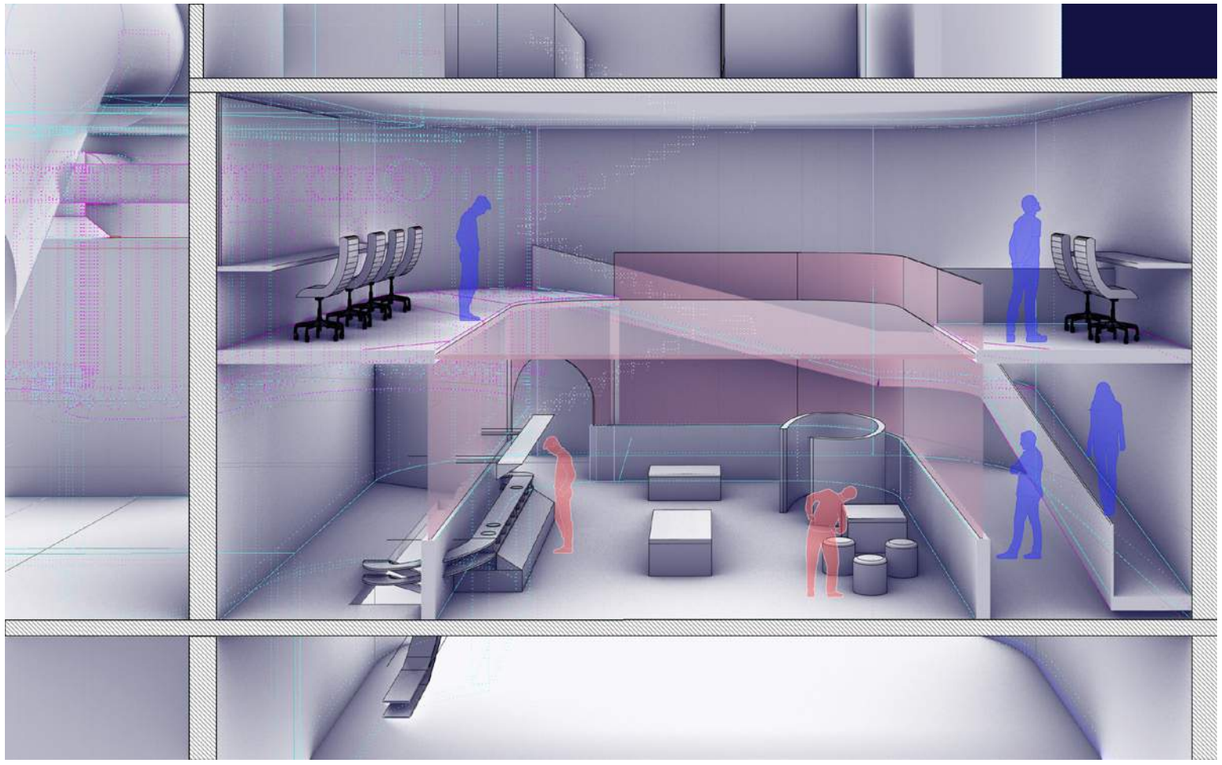
WE SUPPORT THE
PEOPLE OF VIETNAM

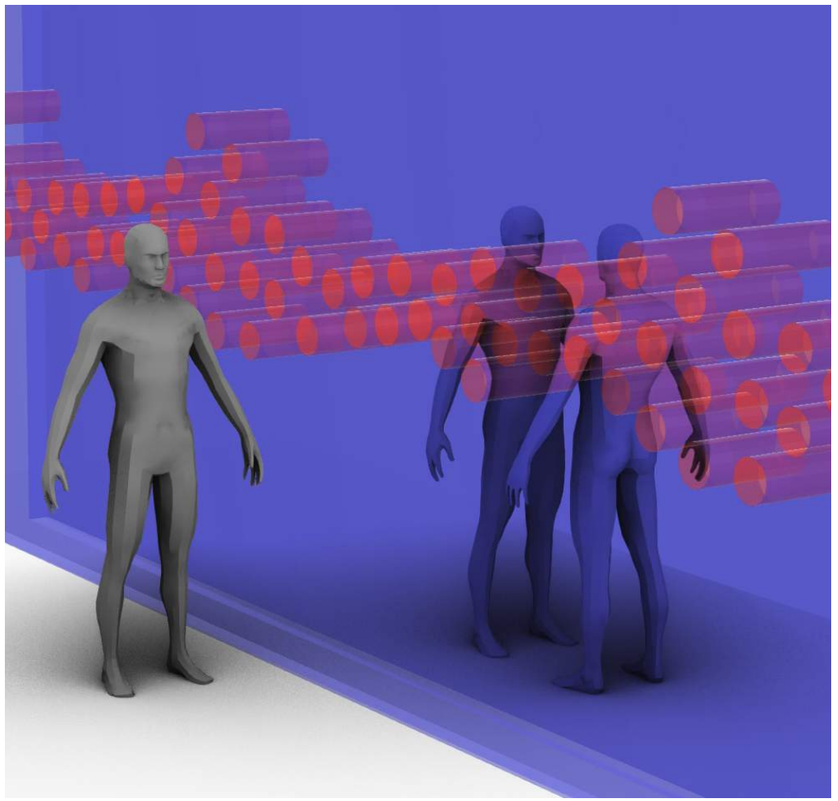




//Cloud Details







//Observation in Confinement

The first part of the waiting area is designed to assess the Vietnamese citizens through their behavior while in confinement. As subjects of study, they are allowed to relax, play games, read or order food. The assessment is done in the room wrapped around the confined space. Post assessment, the citizens are categorized into typologies and moved to the documentation check.

//Lobby

The lobby of the Embassy gives a hint of the embassy's ongoings through murmurs that can be heard through the wall in the waiting area. Vietnamese citizens seeking a visa enter through the body check area.

Atomizer Sphrere

Level 7
Height: 60 meter

Level 6
Height: 30 meter

Laser Projector

Video Rack

Digital Image Control

Projector Cart

Projector Case

Truss Tripod

Propylene Gylcol Supply

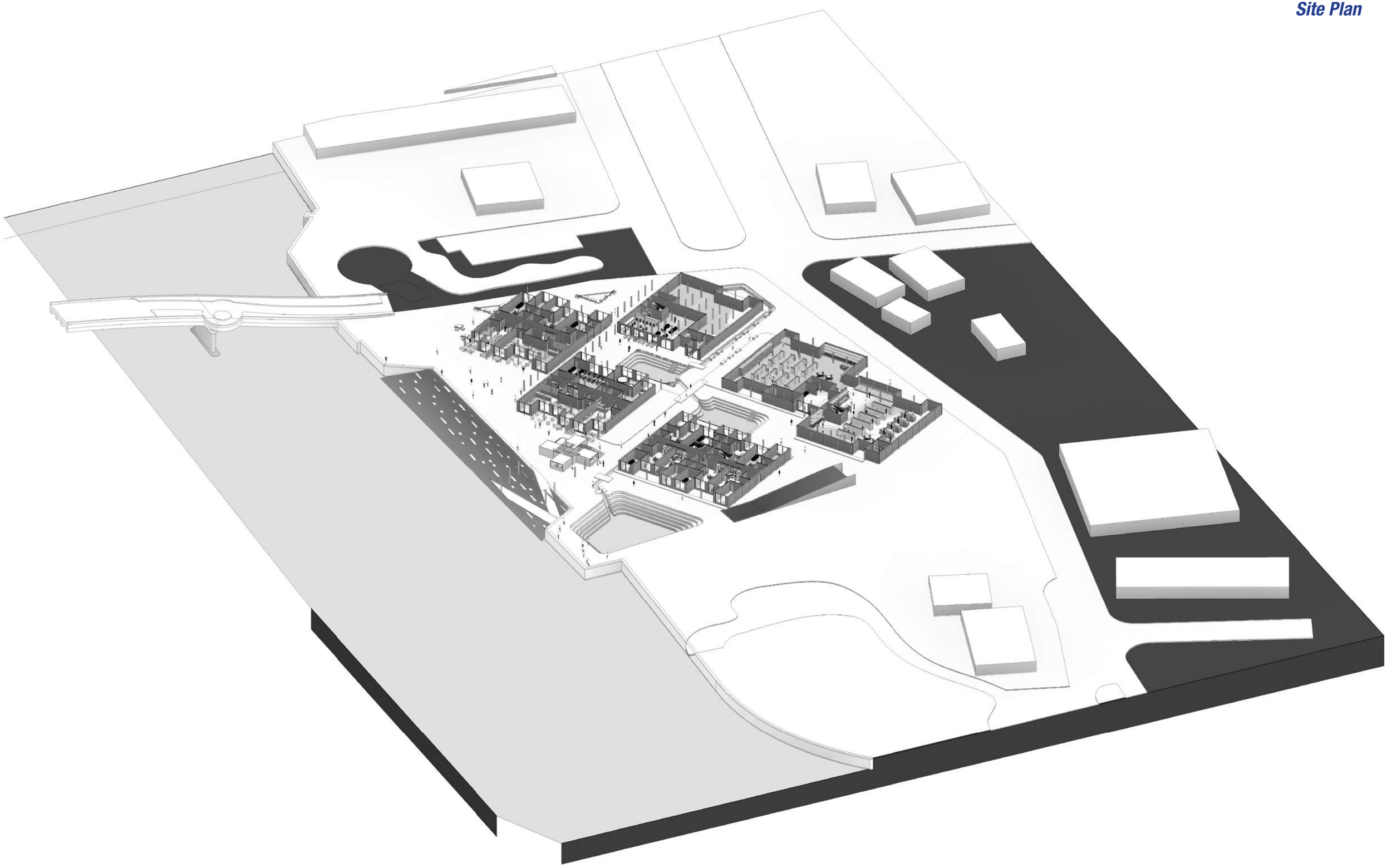
River Terraces

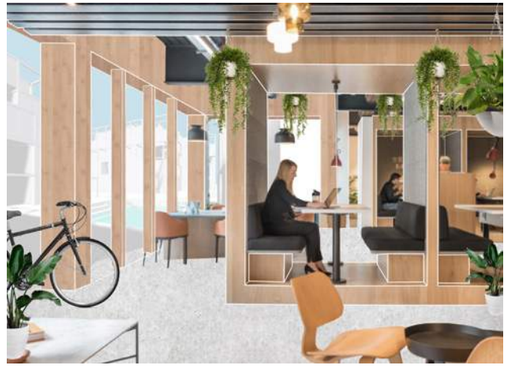
Intergenerational Housing tackling Flood Resilience and Economic Resilience in the Post Industrial City of UpState Amsterdam, New York

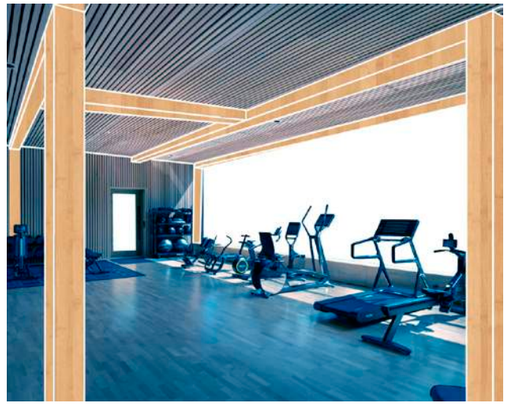
[A]x2 Fall 2019 Joint Real Estate and Architecture Studio

Critic Kate Ascher
Critic Christoph Kumpusch
TA Megan Taylor

Site Plan







Market Analysis

"River Terraces at Chalmers" is a multi-family housing proposal to invite people to live and consume in Amsterdam.

Amsterdam is 25 minutes away from Schenectady and 45 minutes from Albany. Therefore, many employees who work in those cities can live in a high-quality housing at an affordable price and easily commute through highways.

Our site is located in the downtown core zone, thus in a space of high geographical importance. Being a waterfront property with lush landscape and Erie Canalway Trail around it, our project provides an attractive and unique opportunity for living with water. While the access to water is not

After Chalmers Mill was demolished in 2012, remedial activities followed in this brownfield site. Current owner of the 2.5-acre vacant land is the City of Amsterdam. Unfortunately, 6' high flood wall is blocking a riverview and access to water from the site.

Amsterdam has seen a population decline since its industrial era. Since 2010, however, the city has had a young population growth of 7.6%. We also found this article which talked about a trend of young artists who want to stay at a cheaper place moving from New York City into Upstate New York.

We also noticed that there is a higher ratio of elderly population in the city compared to nearby towns.

Coupled with the fact that the schools close to our site are underperforming, we determined that our target market would be single adults, young couples, empty nesters and retirees.

Amsterdam has a housing stock with most of its type being single family homes and a few ill-maintained apartments. There is a clear demand for good-quality multifamily housing which is a new typology to the city.

To make our project more appealing to the target demographic, we address some potential aspects that have been ignored in the city.

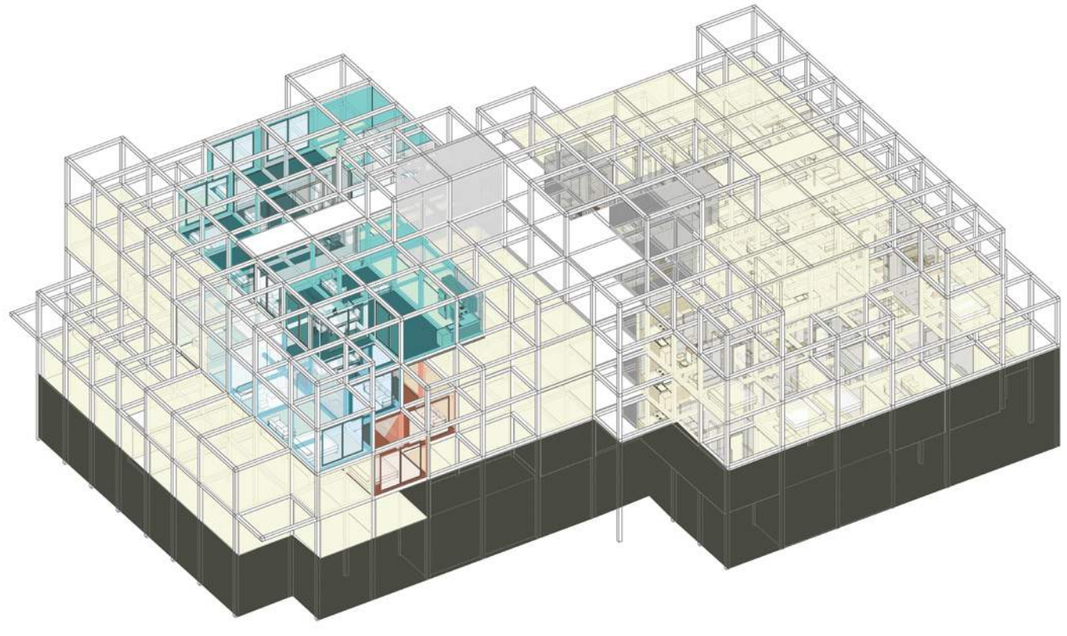
The site has low access to supermarkets and vehicle. We thus propose a grocery store as a part of our commercial endeavors.

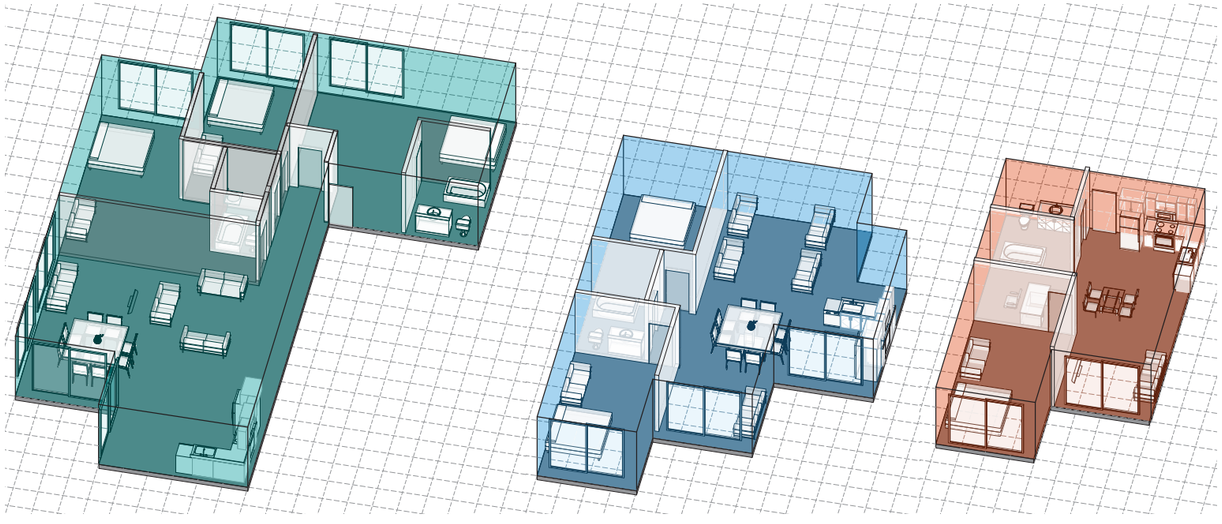
F&B: In addition to that, we have cafes, restaurants and bars to serve not only the residents but also the empire state trail users.

A large multi-purpose space with commercial grade kitchens will support different events of various scales such as weddings and private parties. This facility is another source of income.

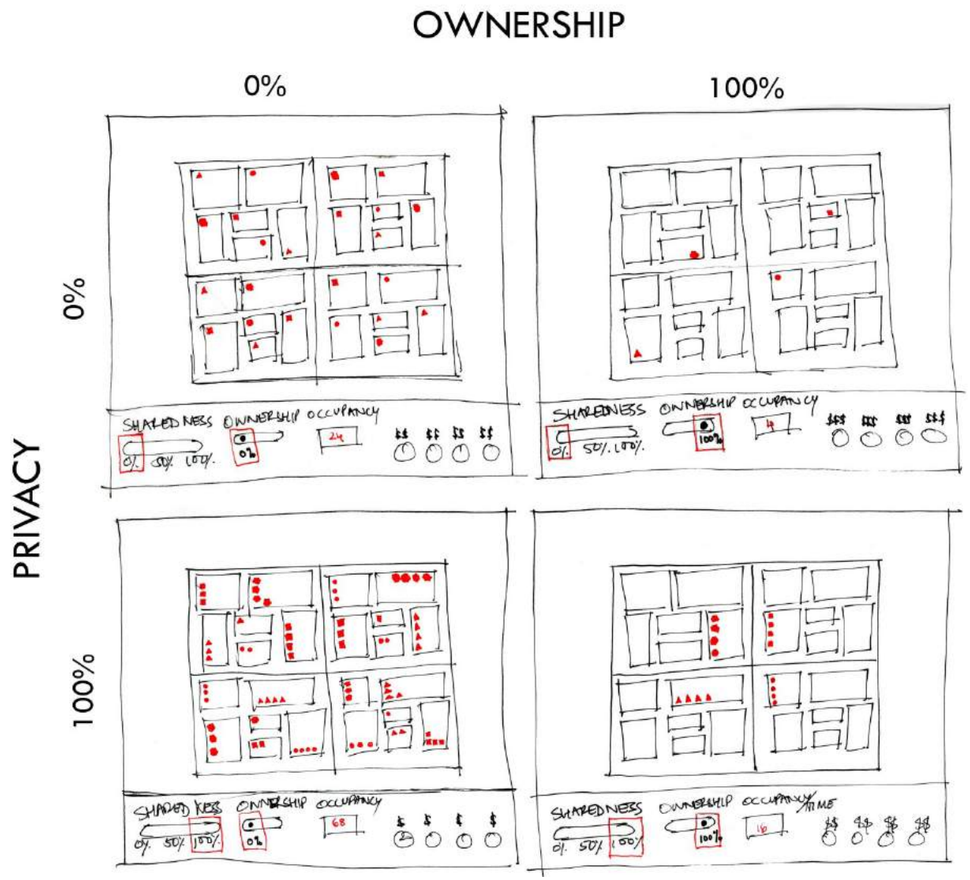
The kitchens will be also used by food entrepreneurs want to try out their ideas before starting a real business or local farmers who need to add value to their raw agricultural products through processing.

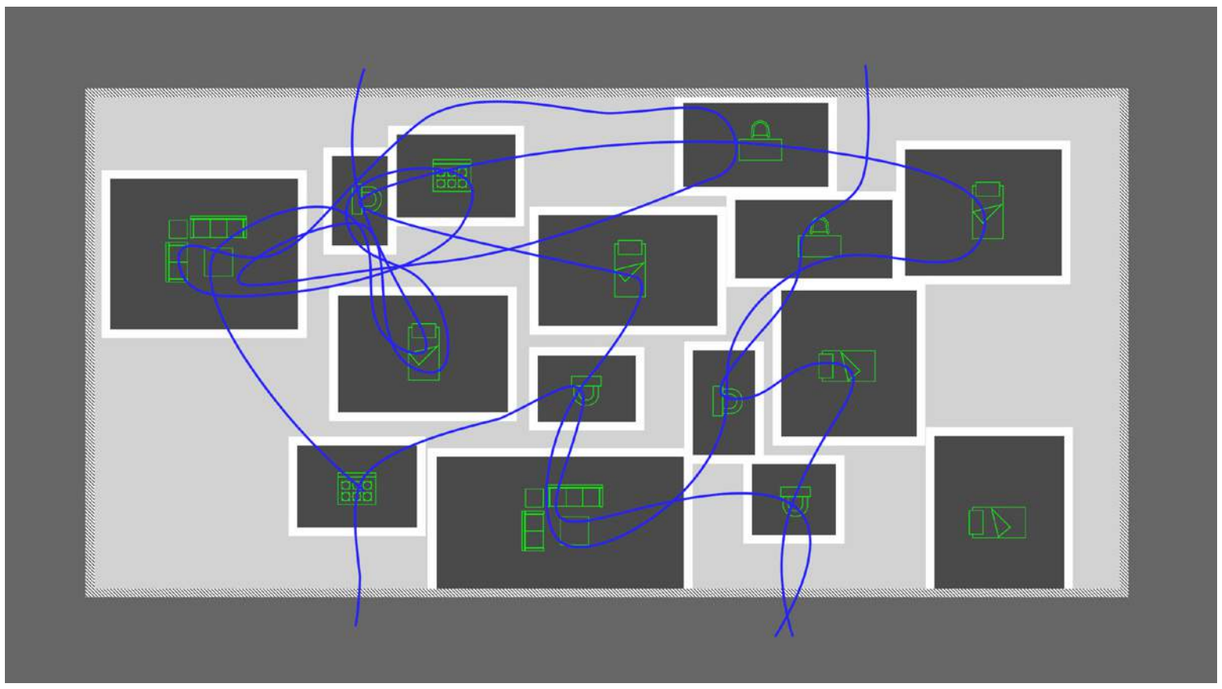
Interlocking Units





3 BEDROOM	2 BEDROOM	1 BEDROOM
x	x	x
8	39	49





Fall 2019 Data Mining the City
with Violet Whitney

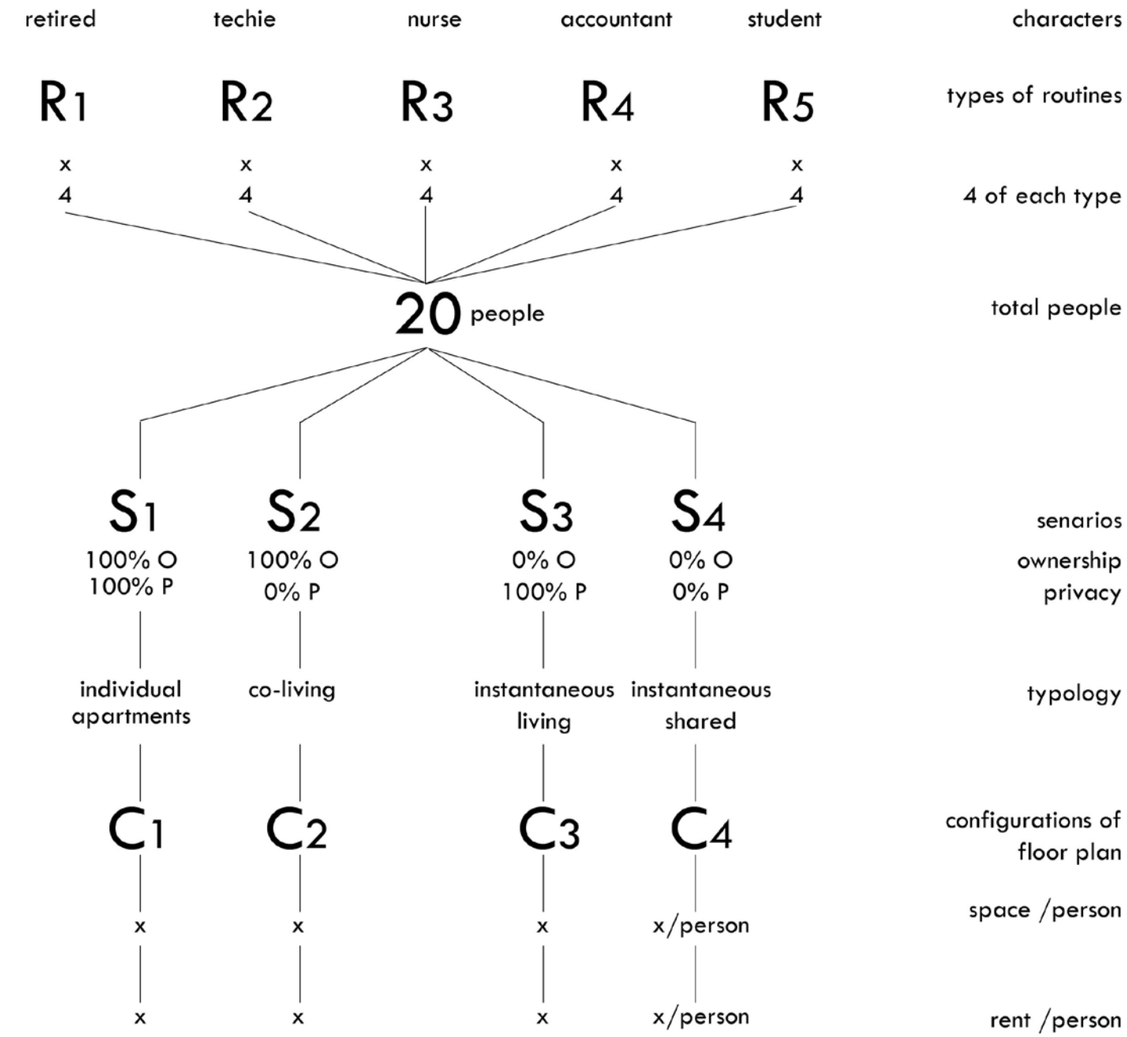
Spring 2020 Generative Design
with Danil Nagy

Team of 2

The project aims to rethink the design of future neighborhoods in order to improve the quality of life, while tackling the challenges of rising inequality, densification, increasing costs and globalization in cities today. Due to rapid urbanization, there has been a resurgence of co-living all over the world. The high prices of real estate and an increasingly solitary lifestyle are leading people to seek new ways of living. Cities that we inhabit now are the result of the huge transformation in our lives with the arrival of industrialization, the separation of the place of living and the place of work, and the idea that you leave the home to work However, our houses and neighborhoods should be changing in relation to the fact that 80 per cent of young professionals are working from their beds (wall street journal article). Now workers coordinating across different time zones are returning to a flexible sleep schedule, in order to make conference calls with offices on the other side of the world. Shifting attitudes to sleep are already creating new typologies of urban architecture such as new hotels that have sleeping pods, are very reminiscent of the Archigram designs of the 1960s," Community living also brings into question the relationship of men, women and children in today's world as theorized by Dolores Hayden in The Grand Domestic Revolution through domestic reorganization and creating community services. The combination of smart-phone technology, the flexible and un-tethered nature of work, the sharing economy, and the rise of co-living has given the "horizontal architecture" of the bed a new significance, claims Architectural Historian Beatriz Colomina. What are we doing — a new way of organizing apartments. The co-living models being tried out today concern themselves only with space optimization. The potential, instead, it seems would lie in being able to optimize space through time. It thus presents itself as a spatial as well as a temporal problem. An agent based scheduling and space organization simulation has been attempted to unlock the potential of such an approach.

Ownership

Historically, certain sects of people have been treated in inhuman ways. When it comes to ownership of land and space, they fall into a great disadvantage as ownership of land and space is very much a factor of time. It is an asset that builds through generations and can be used to build other assets.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techie
nurse
accountant
student
characters
R1
R2
R3
R4
R5
types of routines
x 4
4 of each type
20 people
total people
S1
S2
S3
S4
senarios
100% O
100% P
0% O
100% P
100% O
0% P
0% O
0% P
ownership
privacy
individual apartments
co-living
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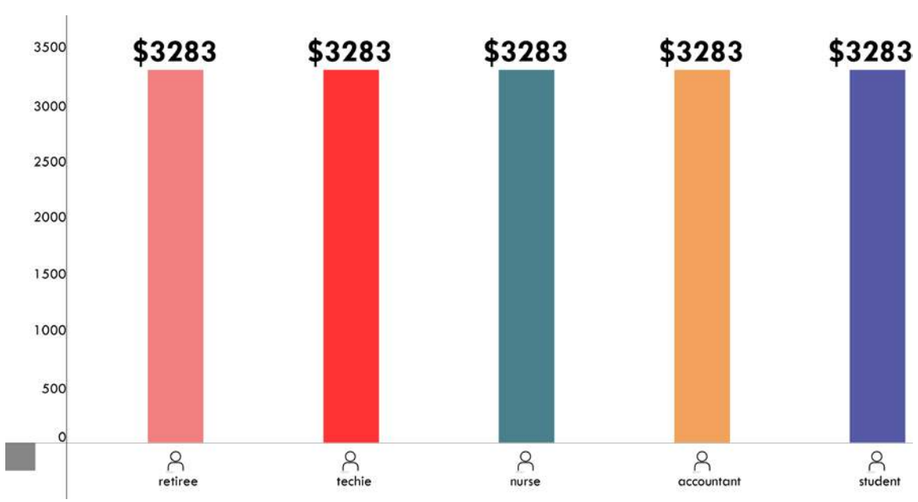
C3
C4
configurations of floor plan
x
x/person
space /person
rent /person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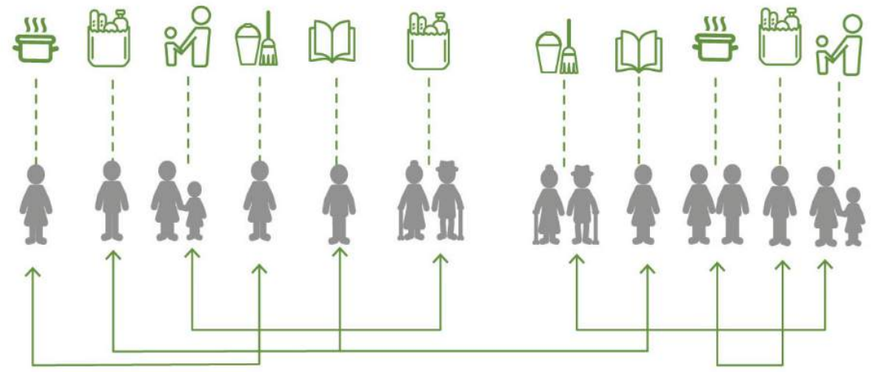
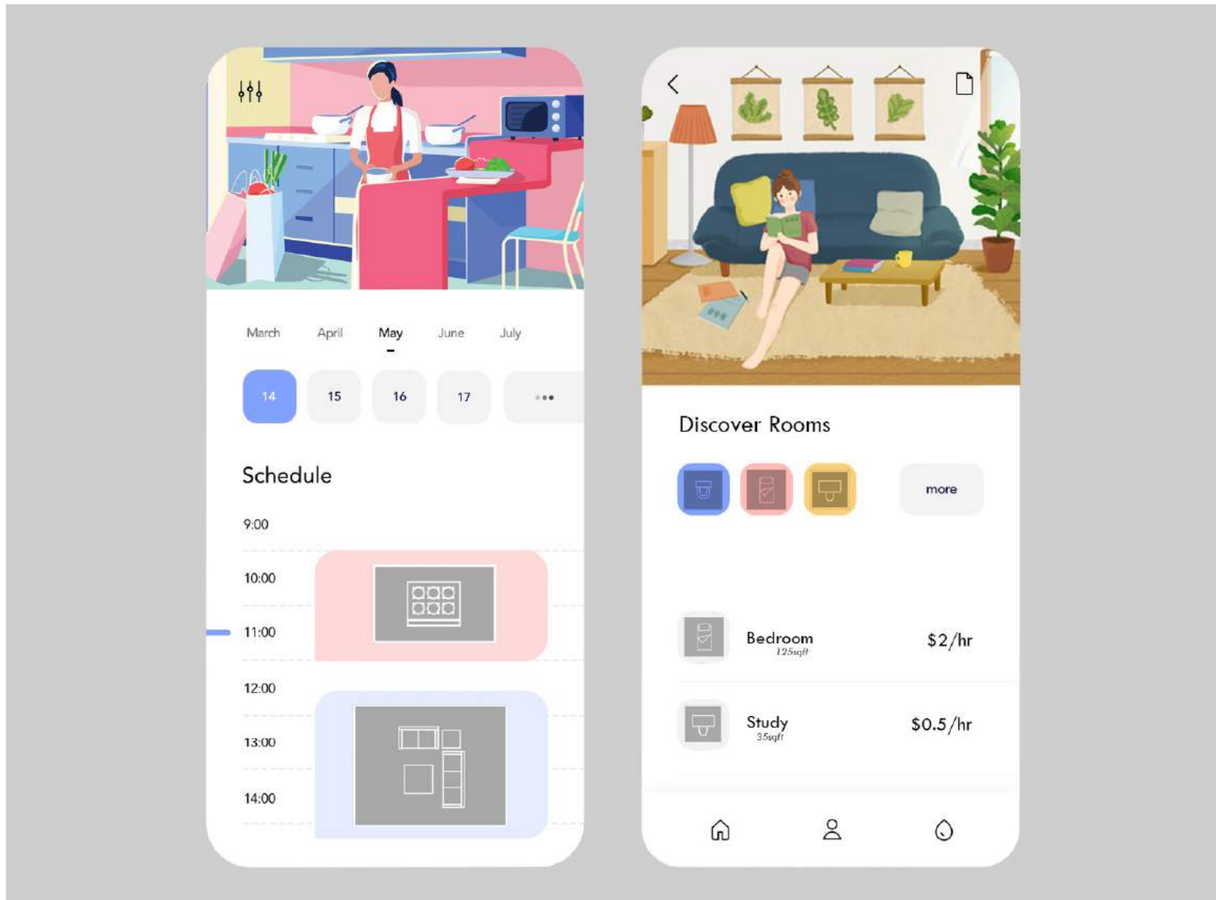
accountant
student

NEEDS

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May
June
July
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15
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10:00
11:00
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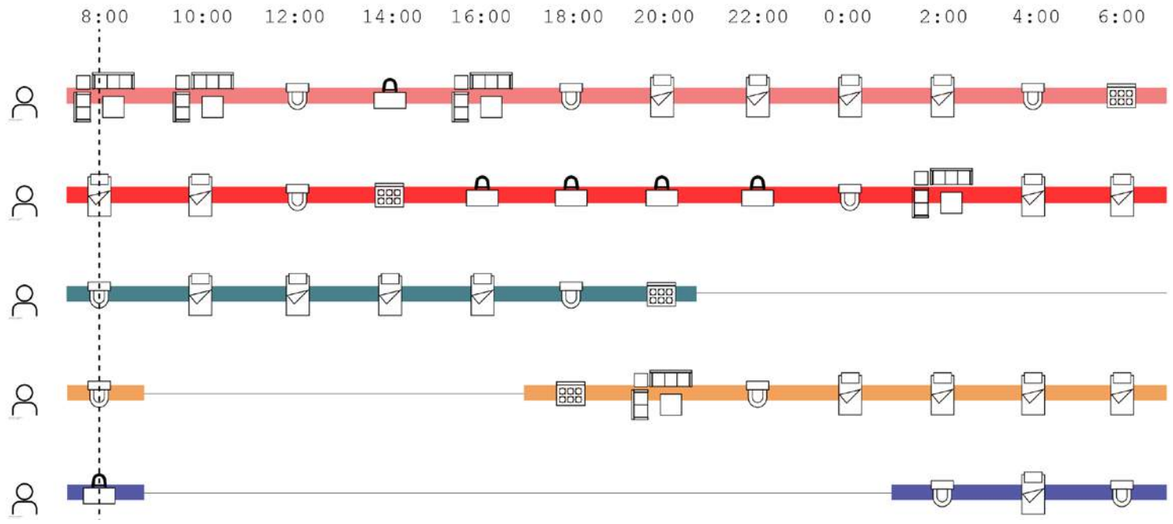
14:00
Discover Rooms
more
Bedroom
125sqft
$2/hr
Study
35sqft
$0.5/hr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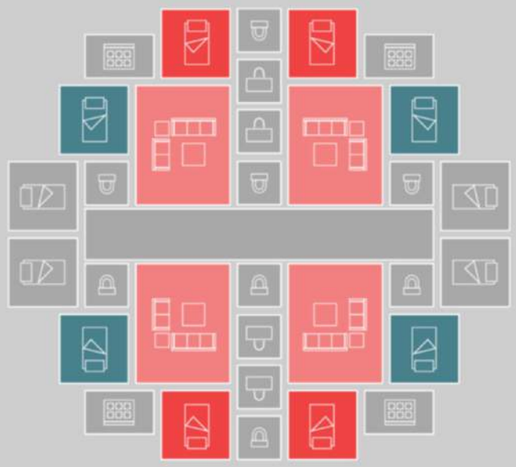
OWNERSHIP
PRIVACY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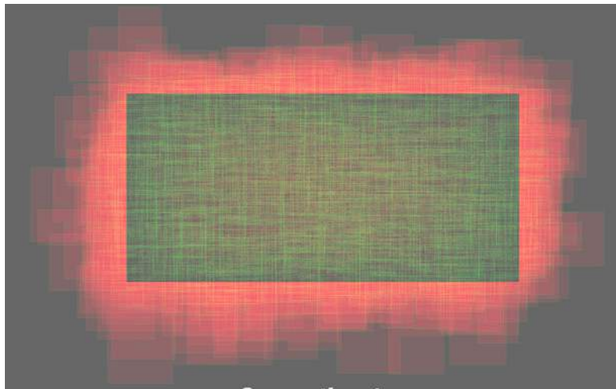
PRIVACY

OWNERSHIP
PRIVACY



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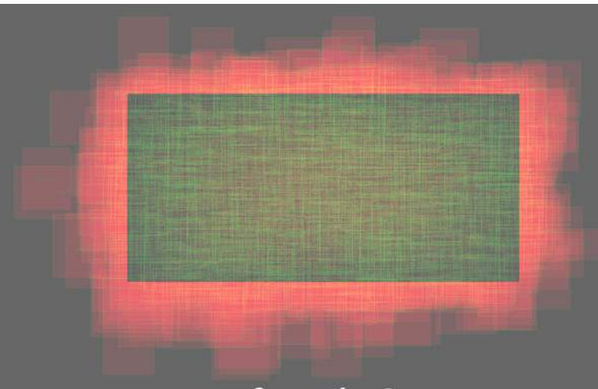

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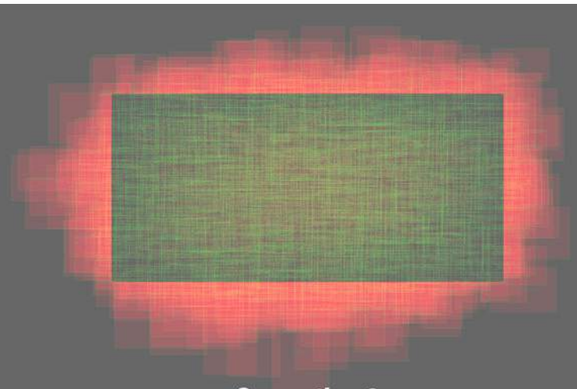

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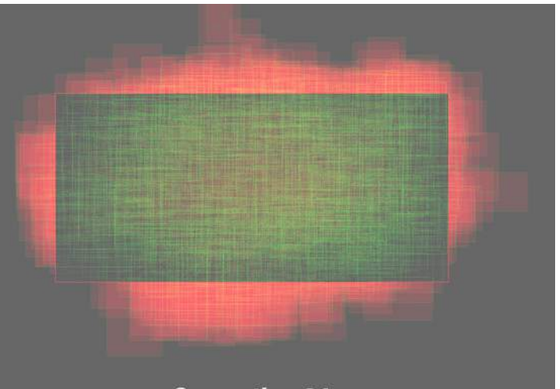

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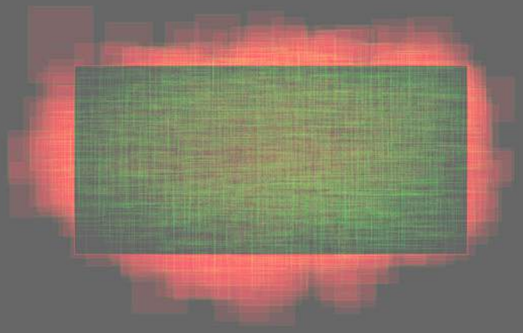

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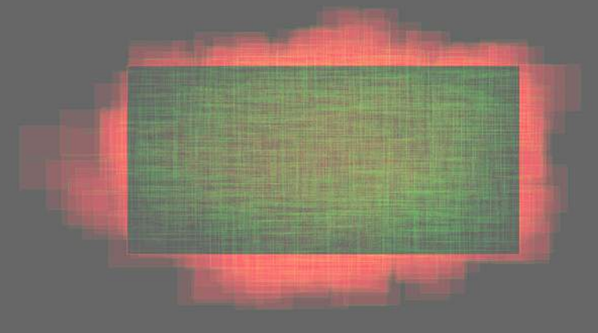

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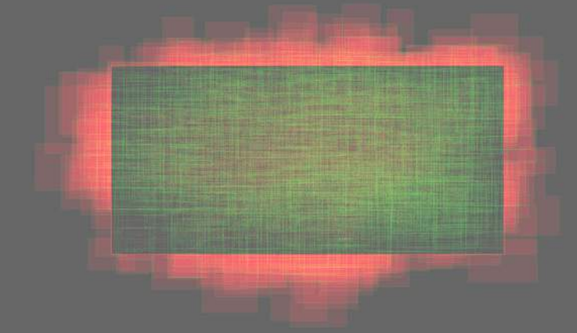

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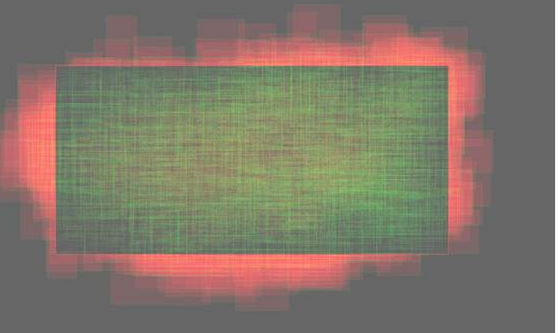

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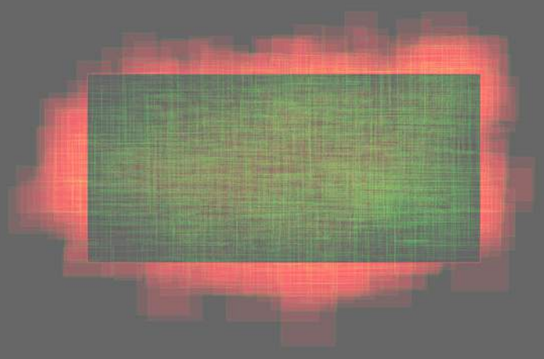

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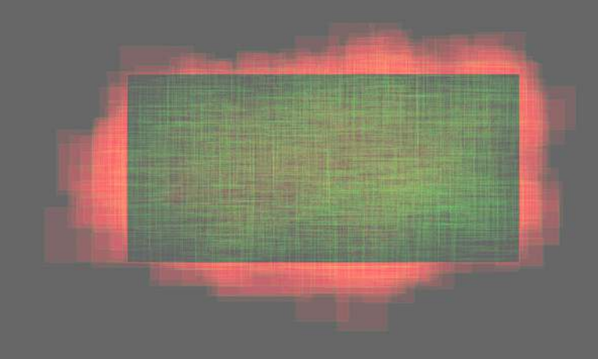

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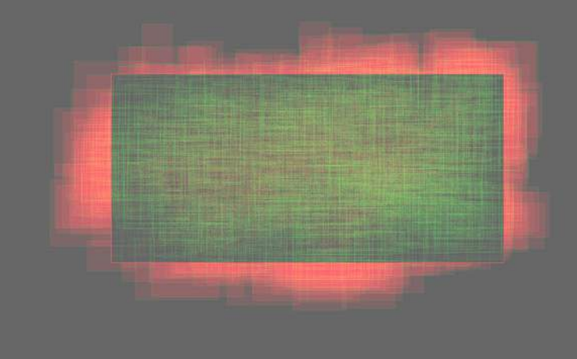

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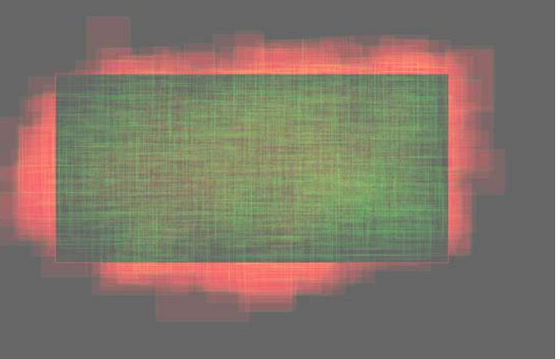

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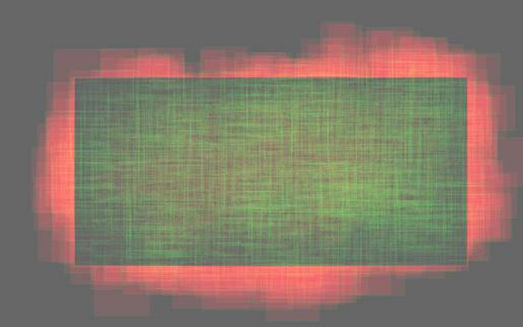

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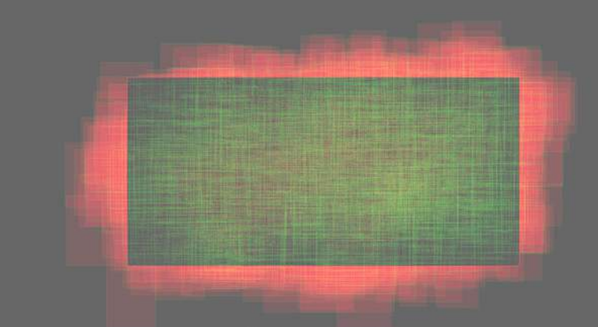

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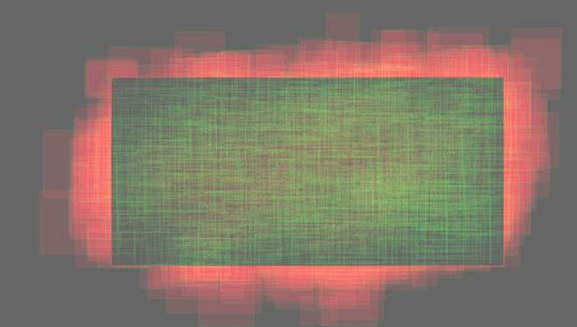

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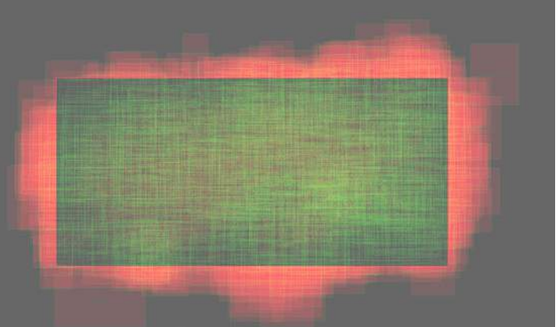

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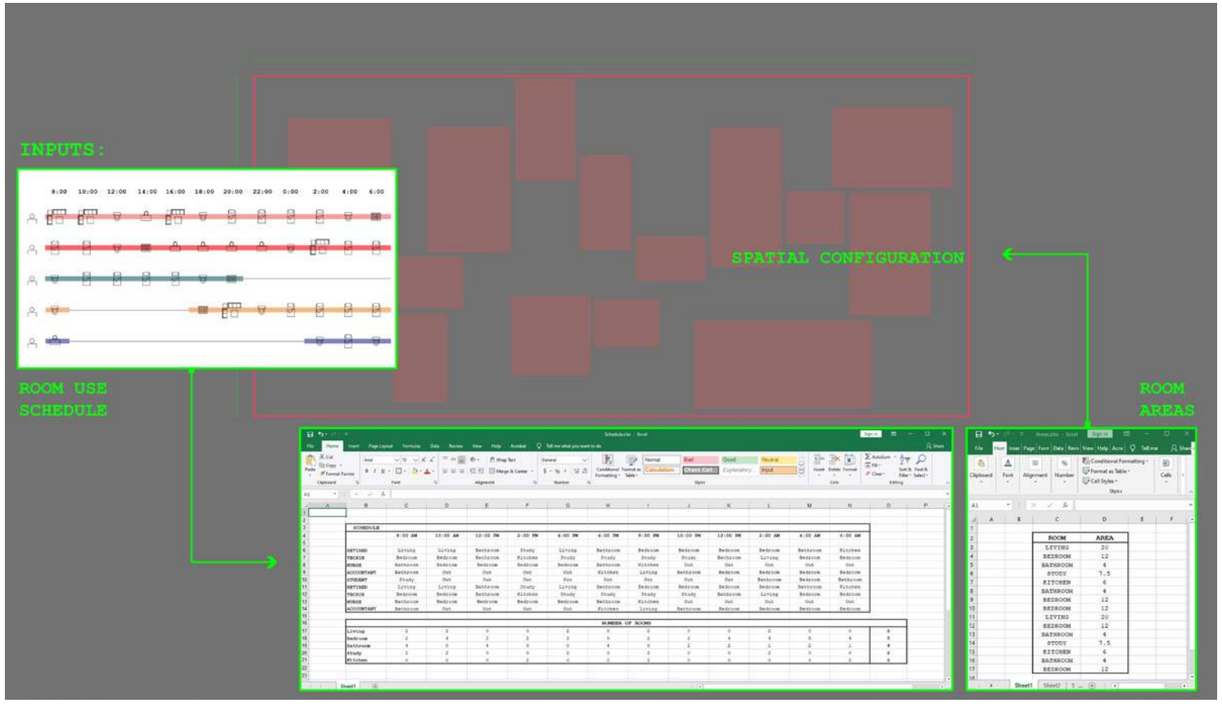
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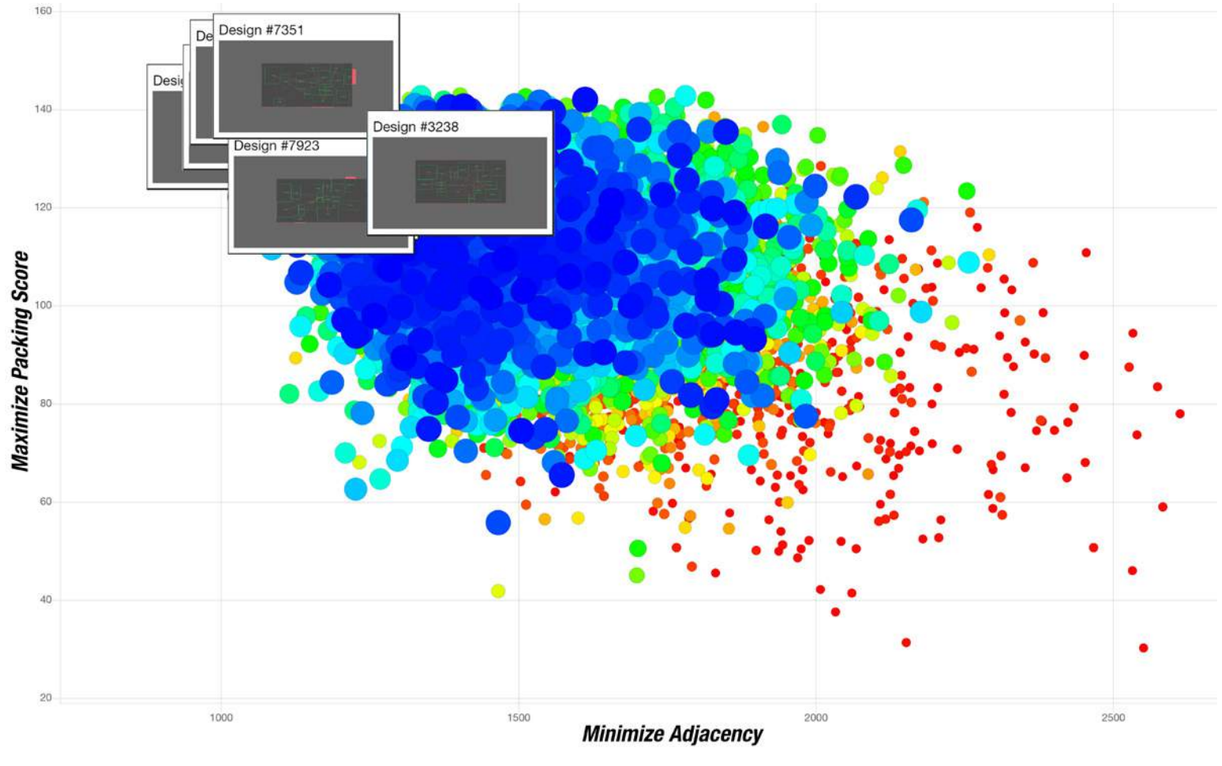
ROOM USE SCHEDULE
ROOM AREAS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Design #3238
Design #7923
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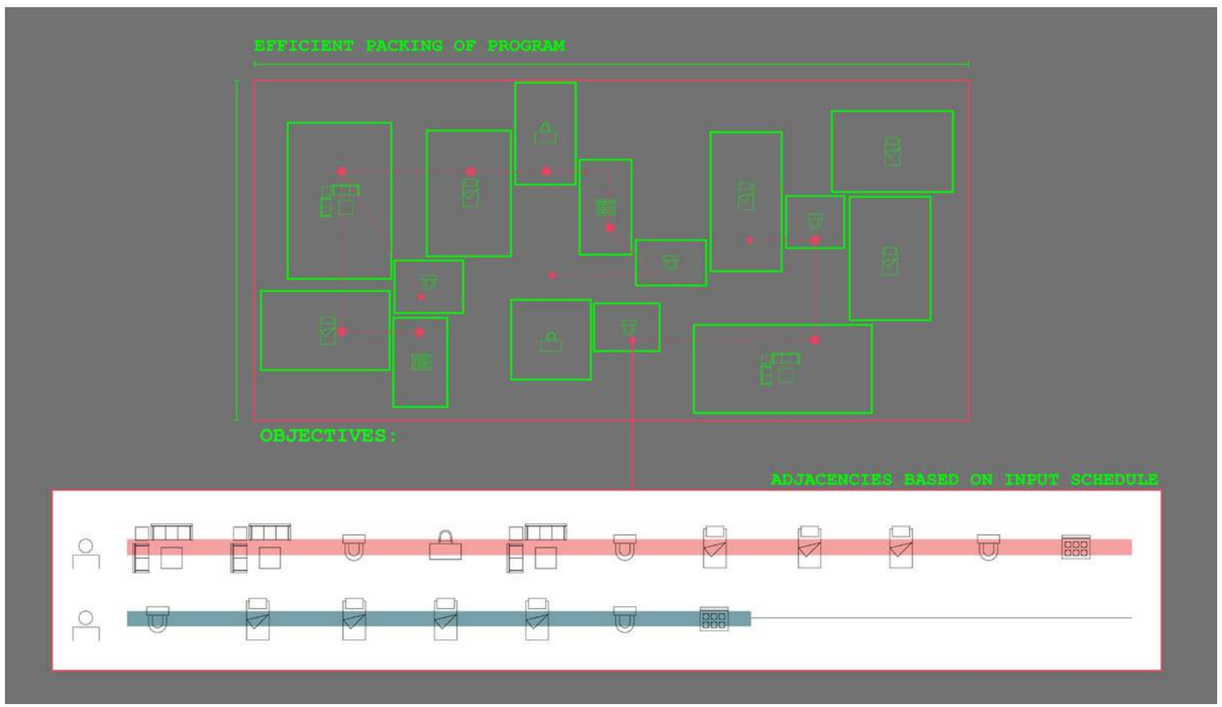
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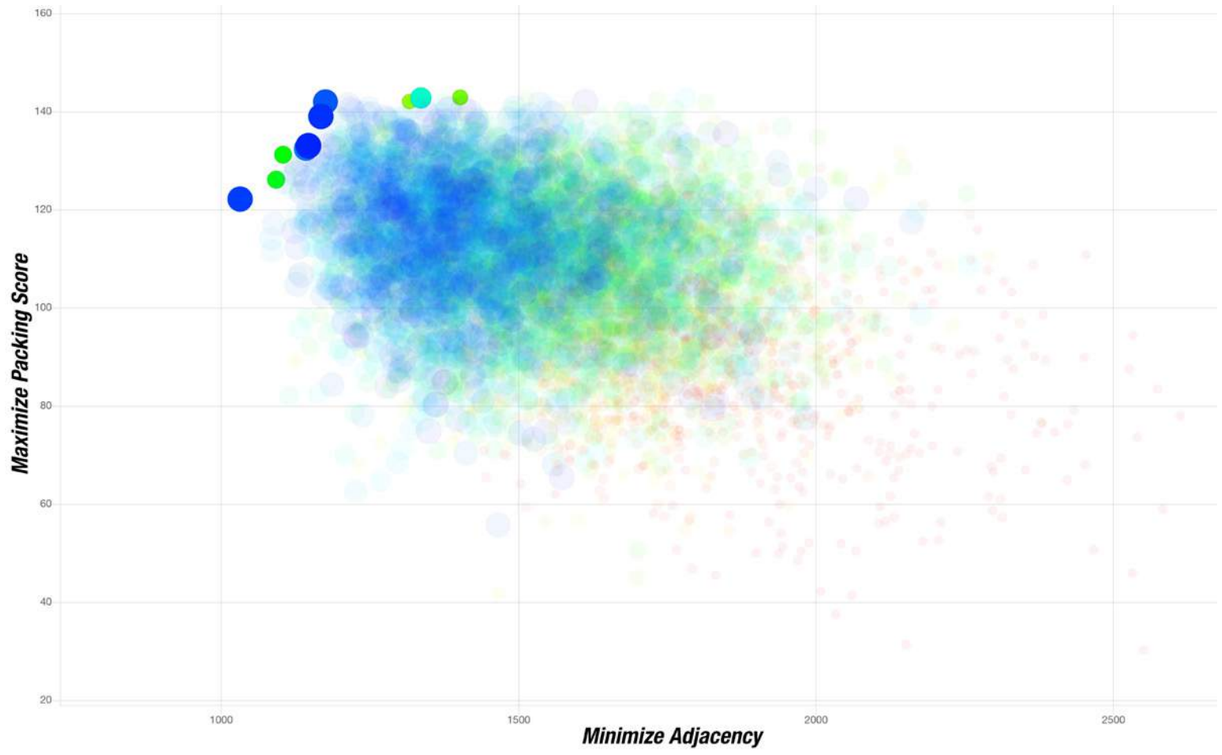
OBJECTIVES :
ADJACENCIES BASED ON INPUT SCHEDULE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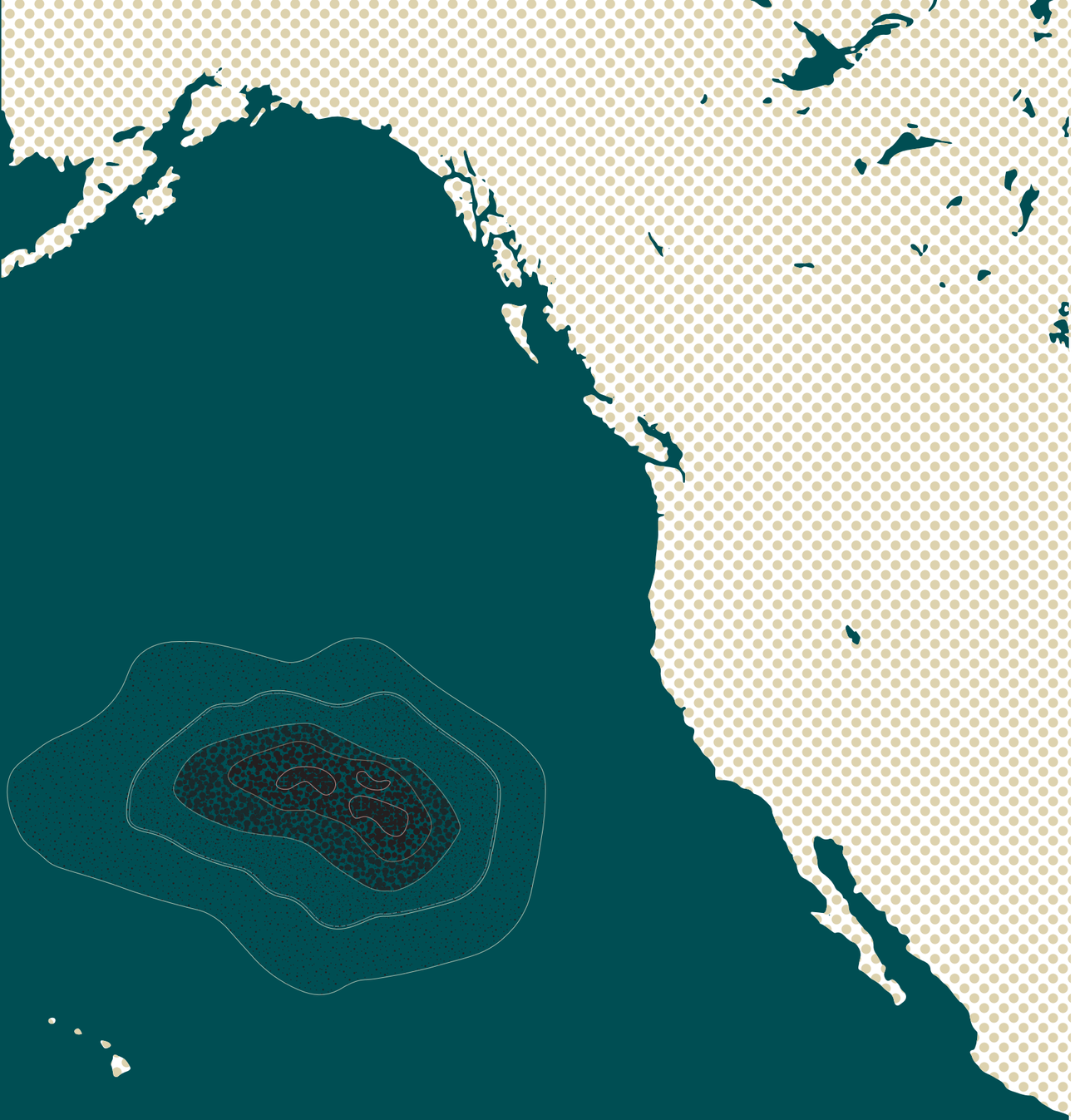


TRASH CITY

Trash City

Designed as part of Fall 2019 Seminar
Theories of City Form

Team of 5 students

Professor Vishaan Chakrabarty
TA Skylar Bisom Rapp

Introduction:
Problems and Purpose

For the entire history of civilization, humans have failed to utilize a dominant resource of the Earth -- ocean water. Ocean water covers roughly 71% of the Earth's surface, compared to 29% of the land mass. Yet, humans have historically associated the ocean with fear than opportunity.

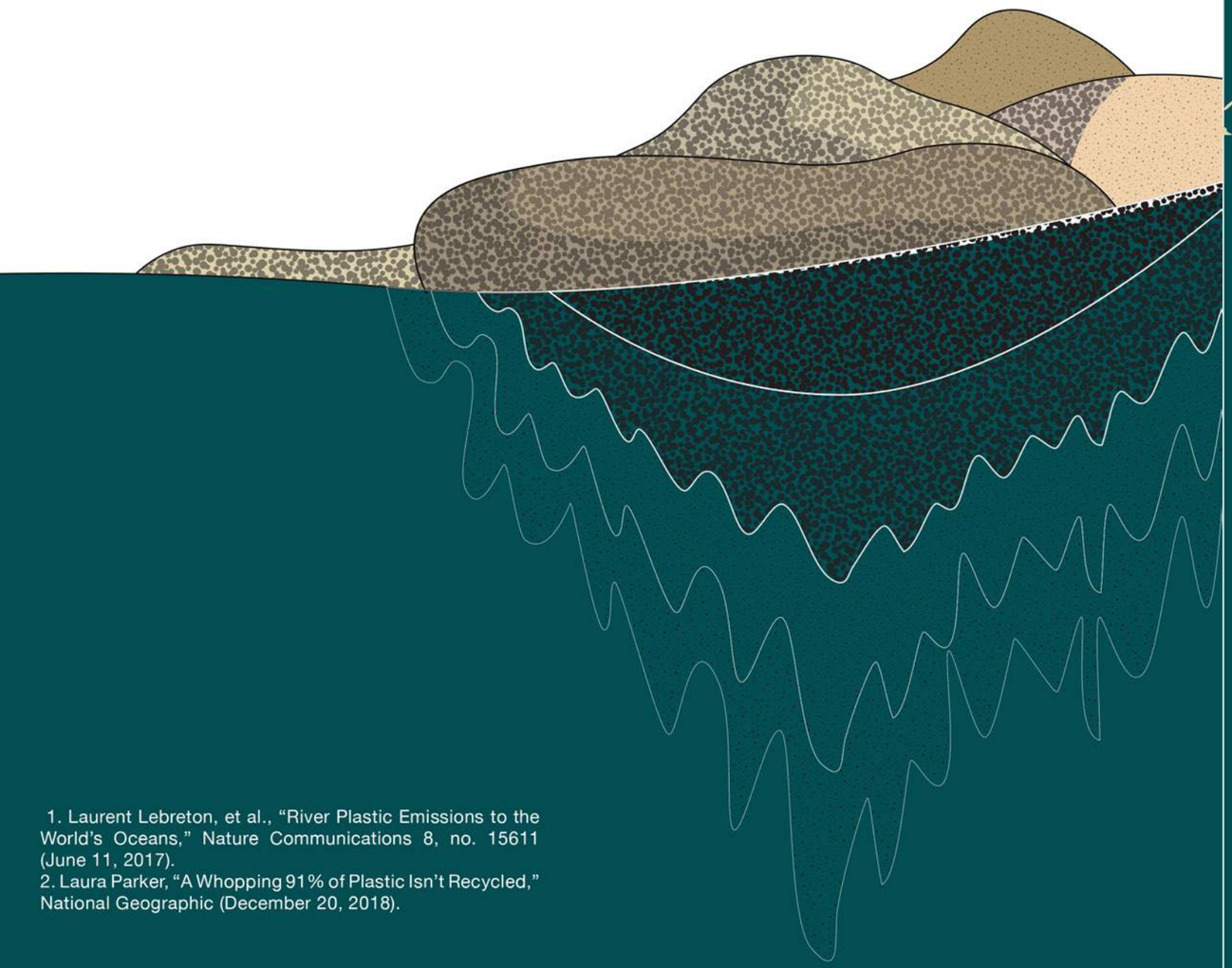
One of the most bad-tempered and vengeful Greek mythological gods, Poseidon, roamed the sea. Herman Melville created a mythical creature Moby Dick, stronger and mightier than humans, living in the treacherous waters. Ernest Hemimway's magnum opus tells the story of a battle between an aging fisherman and a large marlin. In Jaws, a man-eating shark attacks causal beachgoers in New England.

Instead of fearing the water, we believe that people should find mechanisms to use ocean water as a resource. Our belief stems from our collective understanding that cities on land are becoming increasingly dense and we should find ways to combat rises in sea level, which further reduces the amount of land. We believe humans can use water in a sustainable and equitable manner to benefit the globe and our civilization.

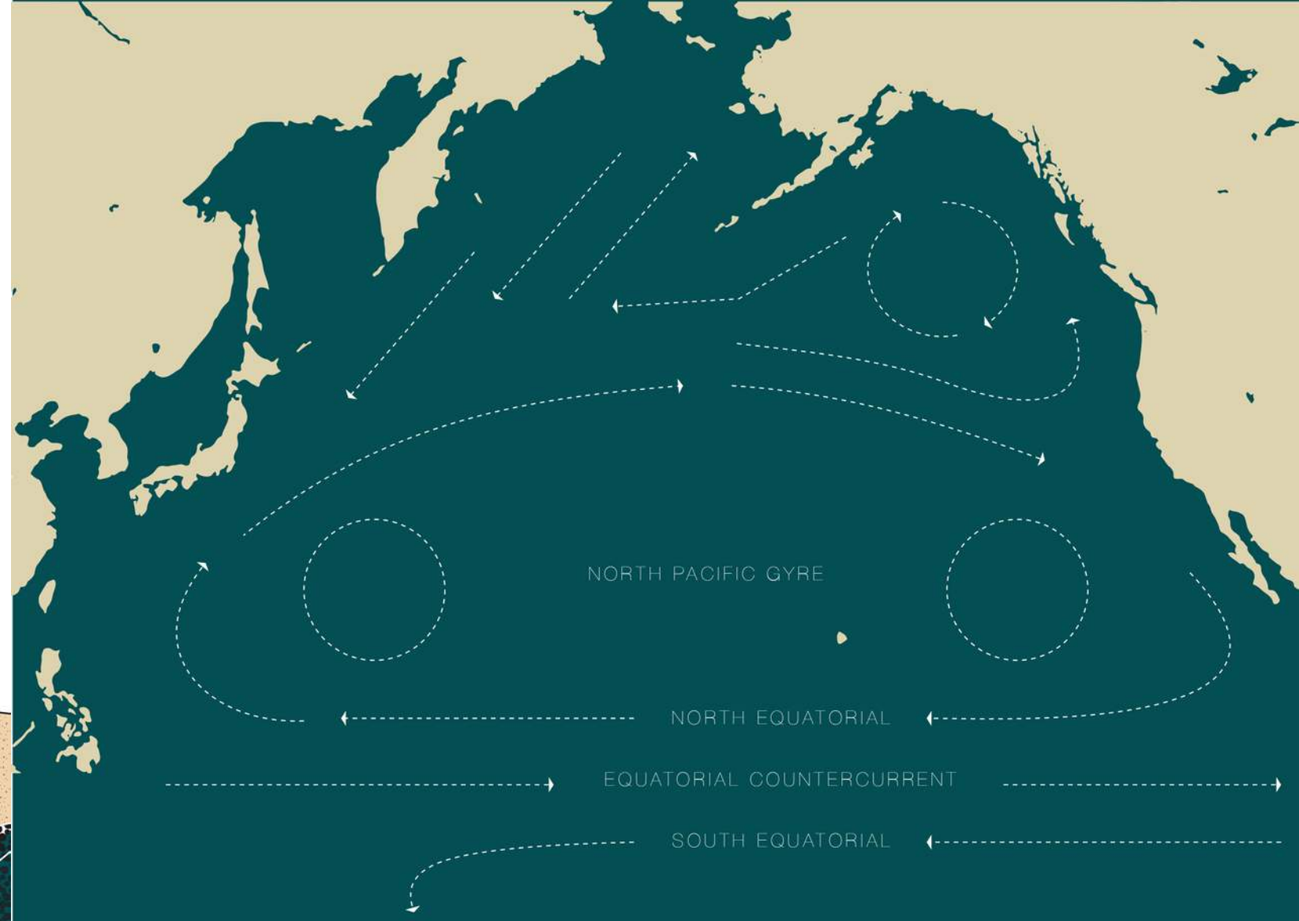
We hope that humans can see water as a habitable place. However, in the recent past, people have not found ways to make those goals achievable; in fact, we have contaminated the ocean and made it a less-habitable place.

One study estimates about 1.15 to 2.41 million metric tons of plastic waste are entering the ocean every year[1]. Plastic is one of the cheapest and most durable materials, which takes at least 450 years and up to 1000 years to decompose. Another similar study estimated that over 8.3 billion metric tons of plastic has been produced in history. Of that, only 9% were recycled, about 79% accumulated in landfills, and the rest went to the water. Simple mathematical calculations approximates 756 million metric tons of plastic waste has ended up in the ocean[2].

For the project, we hope to address these issues by proposing a city that remediates polluted areas of the ocean and spreads density from the land over to the ocean.



1. Laurent Lebreton, et al., “River Plastic Emissions to the World’s Oceans,” Nature Communications 8, no. 15611 (June 11, 2017).
2. Laura Parker, “A Whopping 91% of Plastic Isn’t Recycled,” National Geographic (December 20, 2018).



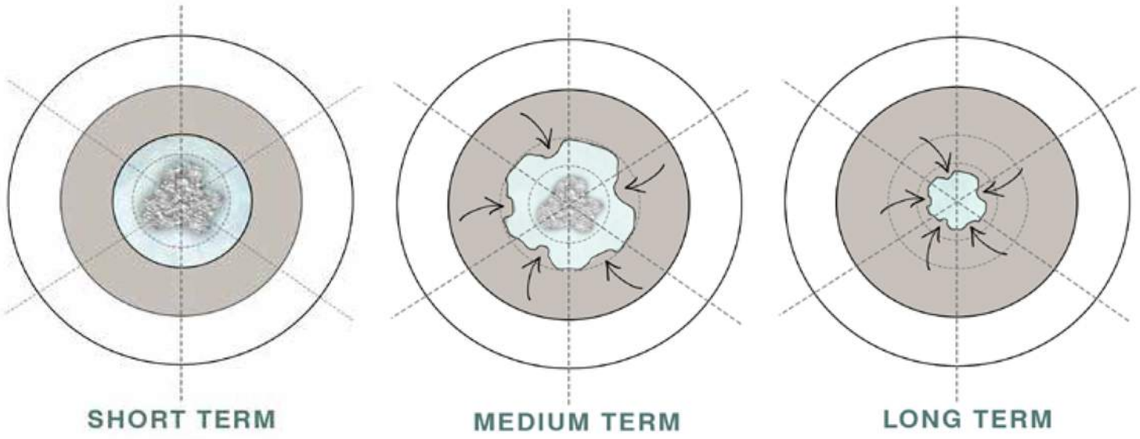
Site Selection

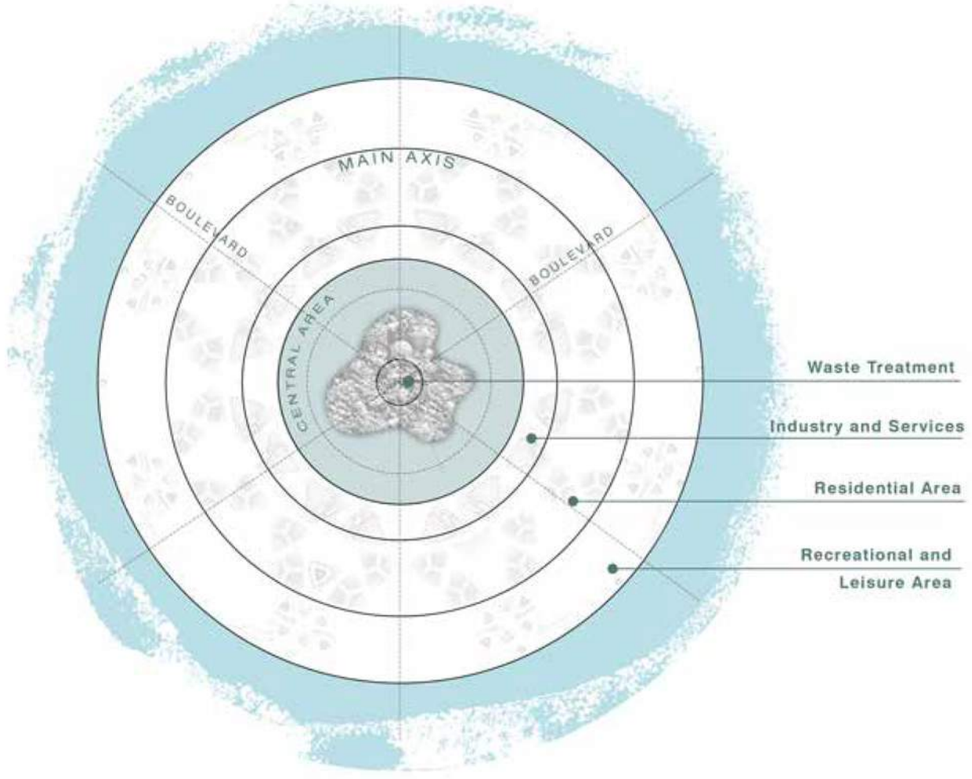
We have selected a specific site, the Great Pacific Garbage Patch. The site is the largest accumulation of plastic waste in the water located in the Northern Hemisphere of the Pacific Ocean. The current surface of the garbage patch is approximately 1.6 million square kilometers, which is twice the size of Texas[3].

There are two large garbage patches in the Northern Pacific Ocean, one located near the coast of Japan and one located between Hawaii and California. Both places are at the center of a gyre, the circular motion of ocean currents. Hence the water surrounding the Garbage Patch is relatively stable - ideal for our site selection.

One study estimates about 1.8 trillion pieces of plastic weighing 80,000 tonnes are in the Garbage Patch, which is an underestimate if one considers a larger boundary than 1.6 million square kilometers[4]. Yet, based on those calculations, every human being is responsible for 250 pieces of plastic in the Garbage Patch. The same study estimates about 70% of the garbage sinks to the bottom of the ocean, deteriorating the ecology below the surface as well. The numbers are staggering, yet, no nation or international agency are leading efforts to clean up the waters.

3. Laurent Lebreton, et al. “Evidence that the Great Pacific Garbage Patch is rapidly accumulating plastic,” Scientific Reports 8, no. 4666 (March, 2018).
4. Ibid.





Floating City Concept

We were inspired by the concept of a floating city. Kenzo Tange's plan for Tokyo Bay in 1960 and Bjarke Ingels's Oceanix City proposal in 2019 served as references in our discussions. Tange saw Tokyo Bay as an opportunity for urban sprawl and proposed a city based on metabolist principles. He advocated for a system transient megastructures floating on the water attached to a fixed transportation corridor. Each floating megastructures will house certain programs for the city and these structures can be attached or detached based on the demand[5]. Similarly, Bjarke Ingels recently proposed a Oceanix City, a floating city on the ocean to accommodate rises of sea level, to the United Nations. He imagined a self-sustaining floating city for 10,000 residents arranged in a hexagon. Like Tange, Ingels thought his city would grow and develop organically over time[6].

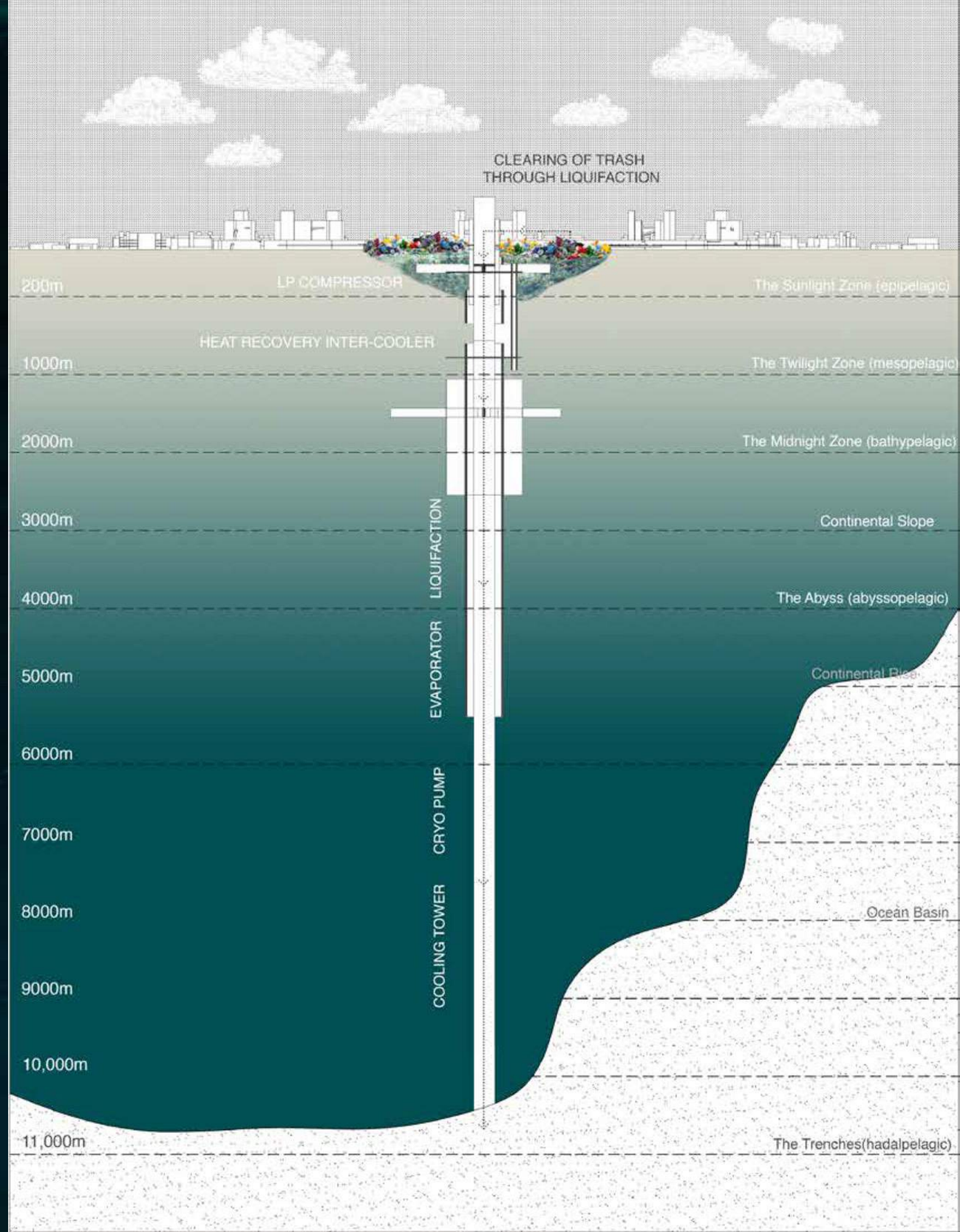
The idea of transience of Tange and Ingels is manifested in our proposed city. Our proposed city is not a fixed entity, but like Tange and Ingels, the city will grow and ebb based on the demand. Each units hosting different programs can be attached and detached. The city will grow if there is a lot to clean and slowly recede based on the removal of waste. The scale of the city will also depend on the density of people. We are also trying to claim the water as a residential space for humans, instead of solely relying on the land mass as places for habitation.

5. "A Plan for Tokyo, Kenzo Tange," ArchEyes, published January 26, 2016, http://archeyes.com/plan-tokyo-1960-kenzo-tange/.
6. "Mission," Oceanix, accessed October 16, 2019, https://oceanix.org/.

The city will also have a hierarchical arrangement in the beginning. We were inspired by Ebenezar Howard's Garden City concept. In our city, the most central function of the city will be trash. The inner layers will support the industry based on waste removal, middle layers will house residential units, and the outer will be recreation and leisure areas. We would like the residents to live and enjoy in places further away from the trash in the center. However, the hierarchy of layers is not fixed. As the waste recedes, we would imagine the hierarchy to dissolve as well.

Unlike Tange, Ingels and Howard, our proposed city has a vertical element to the organization alongside a floating horizontal layer. Since there are a lot of waste in the ocean water or on the seabed, the center of the city will go deep into the ocean. This system will utilize different mechanisms to clean the waste lying on the ocean floor, in the water, and on the surface of the water. The regeneration of waste will fuel the power of the city. Hence, we are proposing a system that uses the ocean waste as a commodity for the city.

Ultimately, our primary goals are twofold: make the ocean a habitable space for humans and clean the ocean waste for our environment. The ideas of transience, hierarchy, and verticality determined the form of our floating city. We hope that humans could perceive the waters as an opportunity for growth and be more conscious about the environment.


CLEARING OF TRASH
THROUGH LIQUIFACTION
200m
LP COMPRESSOR
The Sunlight Zone (epipelagic)
HEAT RECOVERY INTER-COOLER
1000m
The Twilight Zone (mesopelagic)
2000m
The Midnight Zone (bathypelagic)
3000m
Continental Slope
4000m
The Abyss (abyssopelagic)
5000m
6000m
7000m
8000m
9000m
10,000m
11,000m
The Trenches(hadalpelagic)
LIQUIFACTION
EVAPORATOR
CRYO PUMP
COOLING TOWER

Trial Run for Hudson Yards
Time Warner Center

Written as part of the Summer 2019
seminar Contentious New York
within Transscalarities

Team of 4 students

Professor Andres Jaques
TA Elliott Sturtevant

"The building doesn't know where the money is coming from. We're not interested in it." says Rudy Tauscher, a former manager of the condos at Time Warner Center. Time Warner Center enables a growing proportion of wealthy mysterious buyers to make the multimillion-dollar purchases with few questions asked because of US laws that foster the movement of largely untraceable money through shell companies. Under the glitz of its curved glass facade, we find architecture performing as a vehicle for laundering money on an international scale.

In 2005, 39% of the residences in Manhattan were purchased through shell companies. By 2014, this percentage rose to 54%. It is nearly impossible to establish with certainty the source of money behind these shell companies. Ownership can be shifted at any time, with no indication in property records. Condominium 74B is owned by the family of Vitaly Malkin, a Russian senator suspected of having connections to organized crime. Anil Agarwal, who runs a mining company fined for polluting rivers, purchased units 72B and 51E. Though coming from all sectors of society around the world, they have something in common: at least 16 have been the subject of government inquiries, either personally or as heads of companies. The cases range from housing and environmental violations to financial fraud. Four owners have been arrested, and another four have been subject of fines or penalties for illegal activities.

Having been embroiled in controversy for years, the project, at the turn of the century, was in financial trouble. Following the attack of 9/11, the residents of New York were weary of living in high rises. Coupled with that, the financial downturn of 2000 forced the developers- Related Companies- to look beyond the borders for buyers.

In the light of these events, the developers and marketing agents had to find novel ways of selling the building. Louise Sunshine, who marketed the Time Warner Center, prefers to look at luxury buildings as art pieces. In the advertising of TWC, she used digital images of international art- Willem de Kooning painting, a Matisse sculpture, and a 19th century African sculpture, all borrowed from a gallery in Manhattan. An expert in naming buildings, she called TWC One Central Park as opposed to its address 25 Columbus Circle, despite there not being any street called Central Park. "We wanted people to think it is on Central Park, and has spectacular views", Ms. Sunshine says, "and if we didn't call it that, how would anyone know." Although a common financial model now, at the time, carefully calibrated promises- of ostentatious luxury, views to the central park and the city, and an art piece for an apartment were key to appealing to foreigners.

Due to the steady stream of foreign buyers willing to invest in the building, the Time Warner Center is prohibitively more expensive than the buildings around it. Priced at $6831 per square feet, it greatly surpasses the median rate of $2891 per square feet of the neighbourhood around columbus circle, disabling the New York dwellers from buying or renting homes here. The high rate alienates the very people of the city while catering to the international clientele. A clear economic divide can be seen emerging. Under such circumstances, architecture stops reflecting its people.

A look into the condo reveals the extent of re-engineering that was done to entertain these potential buyers. Most of the units in the building have more than 3 bedrooms with the biggest one going upto 9 bedroom units taking up the full floor level. Circular beds and grand pianos in the apartment establish a grandeur not too far behind that of the Playboy mansion. The interiors done in marble, wood and metal match the opulence of the buyers. Against the backdrop of a city struggling to find space to place a bed, a pre-kitchen, two separate dressing rooms and a personal gym paint an amusing juxtaposition. "House" means something different in this context. The fantasy, emotions and ideas that each architectural project is approached with, is stripped away. The arduous journey from the rough uncut stone to the smooth marble on the kitchen countertop, lies uncherished in these empty apartments.

Since the construction of TWC, the idea of luxury architecture as a safe haven for parking wealth, has determined much of the skyline of New York. The New York we see and know today has been completely transformed by the forces similar to those that were operating on the Time Warner Center. Recent buildings like the 432, Hearst Tower and the starchitect museum- Hudson Yards have all been designed geared towards affluent patrons beyond the country borders. TWC has had an impact on New York that far exceeds its footprint, forming a gateway for foreign investors to partake in its economy. The audience for these new upcoming buildings has expanded to the world, excluding its own city residents in the process.

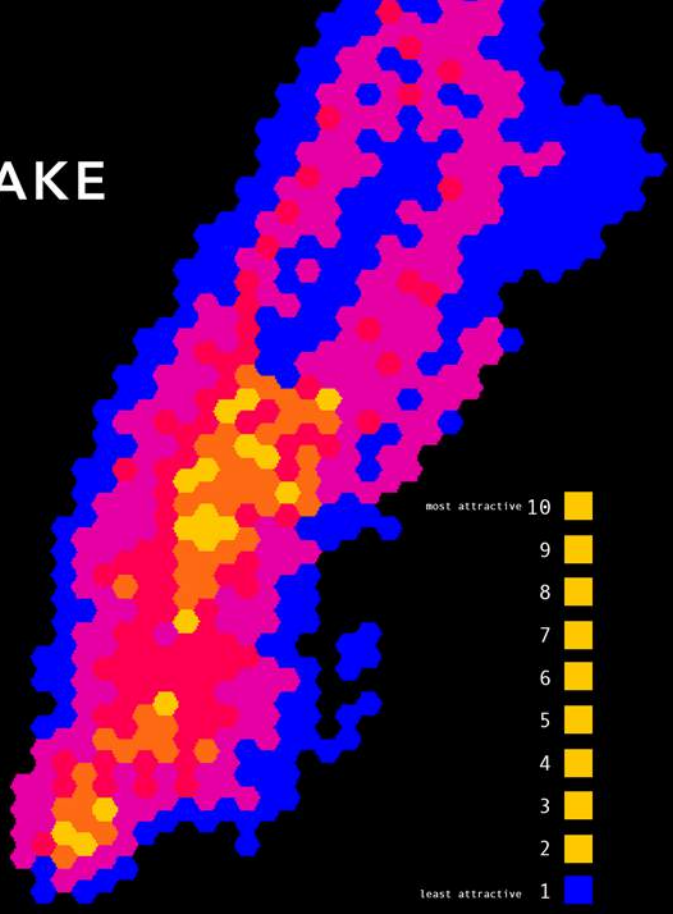
The FBI is investigating the facilitators of money laundering- the bankers, accountants, lawyers, agents setting up the limited liability companies and non-profits who aid in masking the identity of the owners of these shell companies. In 2016, the Financial Crimes Enforcement Network put forth regulations requiring the real estate companies to record the identity of the beneficiary owners for sales above 3 million dollars. However, these regulations face resistance from the real estate companies since it cuts down on their market. If implemented rigorously, the regulations might aid in reducing the scale of the impact investors disconnected from the fervor of the city have on its architecture.

The transparent glass box of the Time Warner Center turns opaque for the residents of the city. Barred from accessing this safe box in the sky, it adds no value to their lives, housing money instead of people. They have no role to play in the design and in the life of the building. So who are we even building for, if not for people?

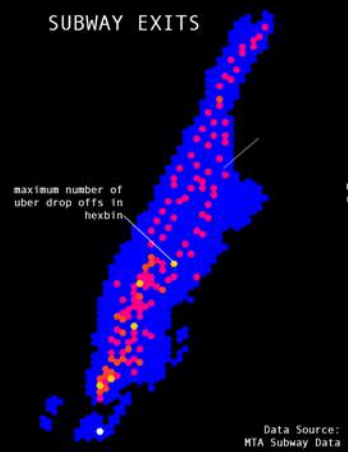
URBAN PROJECTION FOR AUGUMENTED REALITY UPTAKE BY NAVIGATIONAL APPS

Academic | Columbia GSAPP | Individual | Sem III | Urbanism & Algorithm | Professor: Luc Wilson

The proof of concept is tested in Manhattan using Google Lens as the base AR application. The final heatmap for suitable locations for AR uptake is a weighted overlay of all the data points, standardised through hexbinning.

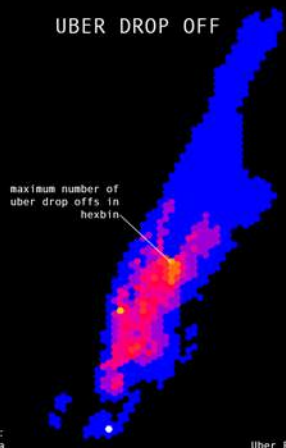


SUBWAY EXITS



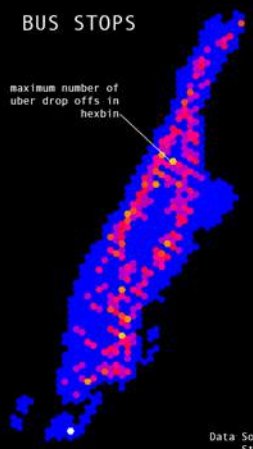
Data Source: MTA Subway Data

UBER DROP OFF



Data Source: Uber Public Data for June DropOffs

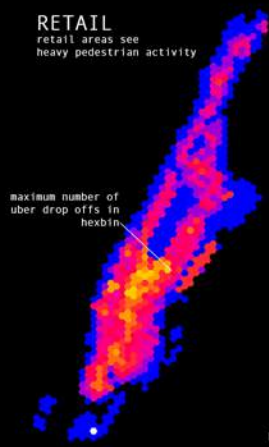
BUS STOPS



Data Source:MTA Bus Stop Locations

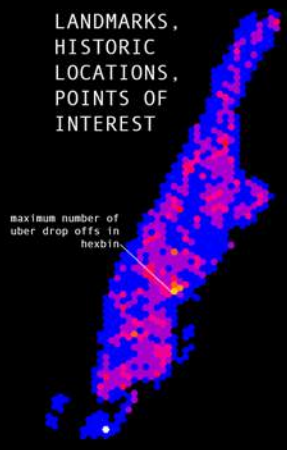
RETAIL

retail areas see heavy pedestrian activity

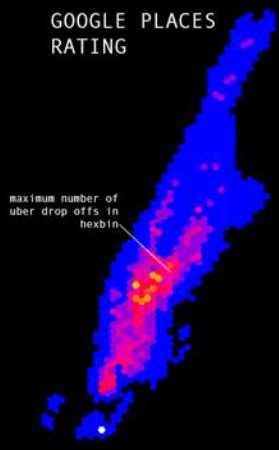


Data Source: PLUTO Data

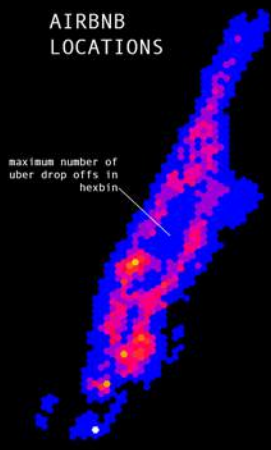
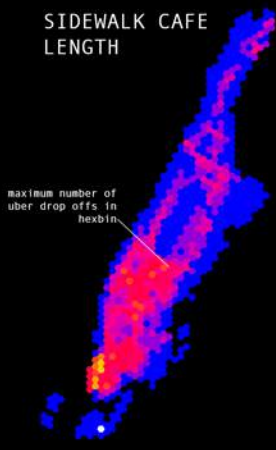
LANDMARKS, HISTORIC LOCATIONS, POINTS OF INTEREST



GOOGLE PLACES RATING



AIRBNB LOCATIONS



SIDEWALK CAFE LENGTH