IDENTIFY
EXPOSE
EXAMINE
INVESTIGATE
DOCUMENT
CULTIVATE
TRANSFORM
UNRAVEL
HARMONIZE
ENGAGE
VISUALIZE
EXPERIENCE
BUILD
CYCLE

ARCHITECTURE
AS A CYCLE OF
ACTION VERBS

ZENAH SAKAAMINI//
SELECTED WORK
GSAPP2022 // MS.AAD

FORMULA H2O 1

H2O as having agency an international border-less bio-form with rights to Exist Expose Heal

Formula H2O explores the following question: What agents can lead the humanitarian efforts of speaking up for the Tijuana River? Formula H2O proposes a dual system consisting of human and non-human agents to represent this voiceless entity. First, a binational organization that can monitor and govern, and secondly, spaces of cultivation and remediation using various human and non-human agents.

INVERSE PANOPTICON 2

In this model of surveillance and brutal imprisonment conditions, the model of the panopticon turned on itself, resulting in the space of rebellion and home to the planning of the Cuban revolution.

URBAN CHICKS 3

Our proposal examines opportunities for re-introducing farms to an urban setting by producing a localized and sustainable farming solution. An early analysis of immigrant communities such as Afghan Muslims and Asian communities examines the relationship between non-western food consumption and environmental implications. We then identify typologies unique to Flushing Queens, finding spatial opportunities to mediate co-existence between humans and chickens. These typologies consider private and public realms of single-family homes, houses of worship, abandoned buildings, and community gardens. "Non-building" architecture is explored through mesh and timber construction, emphasizing the ease and flexibility.

URBAN FLUCTUATION OF IDENTITY 4

Our research delved into the historic spatial context of exclusion within society. The Yacoubian building symbolized the product of the cycles of creative destruction and social disconnect in 20th century Cairo. This pattern of creative destruction in the Yacoubian building created the characters in the film, each emblematic of a specific aspect of Egyptian society. The patterns led us to investigate spatial typologies in Cairo that possess characteristics similar to those our protagonists share.

PRE-WAR/ WAR-WAR/ POST-WAR 5

PWP Housing Typologies investigates Typologies in Syria, specifically within Damascus and Allepo, beginning its documentation in the early 19th-century maneuvering through war and post-war conditions. This study extracts two main typologies within each war type category, documenting them through collected images and architectural plans to further understand their resiliency and informal urbanism characteristics.

HEAL NYC 6

"Heal NYC" is an outpatient and inpatient treatment clinic that aims to bring healing into the foreground of new york city. The recent pandemic has had many short and long-lived consequences forcing us to reassess how we build and engage with one another. NYC saw a surge of substance abuse during COVID-19, with studies showing a 21% increase in overdose cases in 2020 compared to 2019. As a result, medical Staff often switched between handling overdose and covid-19 cases.

FORMULA H2O
Exist \ Expose \ Heal

Instructors: Ersela Kripa & Stephen Mueller

Formula H2O understands the Tijuana river as a bio-form. Formula H2O unravels the qualities and conditions of the river and the conditions surrounding this body of water. What comes to the surface of the investigation are pollutants leaking through canyons along the USA Mexico border and illegal dumping and stealing of the water by more giant American corporations conveniently located close to the Tijuana River and to clean water aqueducts. Formula H2O is concerned with the Tijuana River as a bio-form with the right to be understood, medicated, and healed.
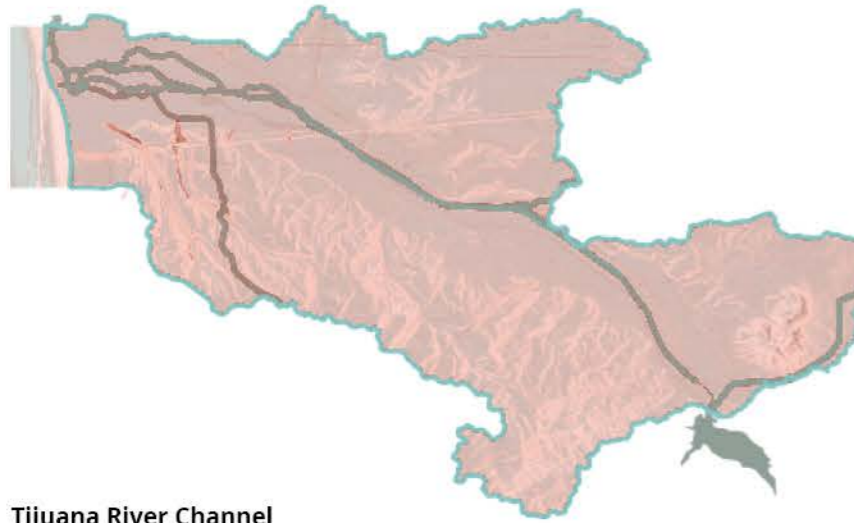
In February 2020, an independent audit of Baha's water agency CESPT commissioned by Governor Jaime Bonilla and investigated by a private auditing firm Fisamex alleges that former utility employees colluded with giant international corporations in the stealing and illegal dumping of water. Corporations like Walmart, Coca-Cola, Samsung, and The Home Depot have not paid their entire water bills for years and dumped sewage into the Tijuana River. Unfortunately, America has carried on this narrative which positions Mexico as the waste dumping agent onto USA beaches. Formula H2O poses that this is a bi-national problem and that these large American corporations need to take accountability for the pollution of the river.

Formula H2O explores the following question: What agents can lead the humanitarian efforts of speaking up for the Tijuana River? Formula H2O proposes a dual system consisting of human and non-human agents to represent this voiceless entity. First, a binational organization that can monitor and govern, and secondly, spaces of cultivation and remediation using various human and non-human agents. This organization would work with existing entities such as CESPT, The National Oceanic and Atmospheric Reserve, and specific American corporations operating within the Tijuana watershed, ultimately holding corporations accountable through visibility of crime and corporate involvement. The framework posed by the Binational Monitoring and Governing Agency would create initiatives such as the Phyto-Pods project. Phyto-pods proposes a layer against corruption and spaces for remediation of the river by using macrophytes to absorb pollutants. Additionally, the pods would act as containment pods for crime visibility. Macrophytes are very useful in reducing aquatic contaminants through the bioaccumulation of pollutants. There would exist two pods, one for cultivation and one for healing. Cultivation ponds are dug out and lined with silpauline sheets, a slurry made of cow dung and superphosphate, which mixes with water. Fresh Azolla is then placed in the water and quickly grown under a shade structure. In conclusion of the Phyto-pods initiative, we revisit the initial pollution sites. The framework BMEA established required large corporations to take accountability for their impact over the Tijuana River by enforcing fees and involvement in the Phyto-Pods Project. Ultimately and assumably, these large corporations will be at a financial loss and fleeing Tijuana, leaving the city with vacant lots and buildings, a significant decrease in water theft, and waste Dumping. Empty Buildings such as The Home Depot and Coca-Cola will develop as spaces of Macrophyte cultivation, greenhouses, vegetation growth, farmer markets, and areas of social organization around a common goal.
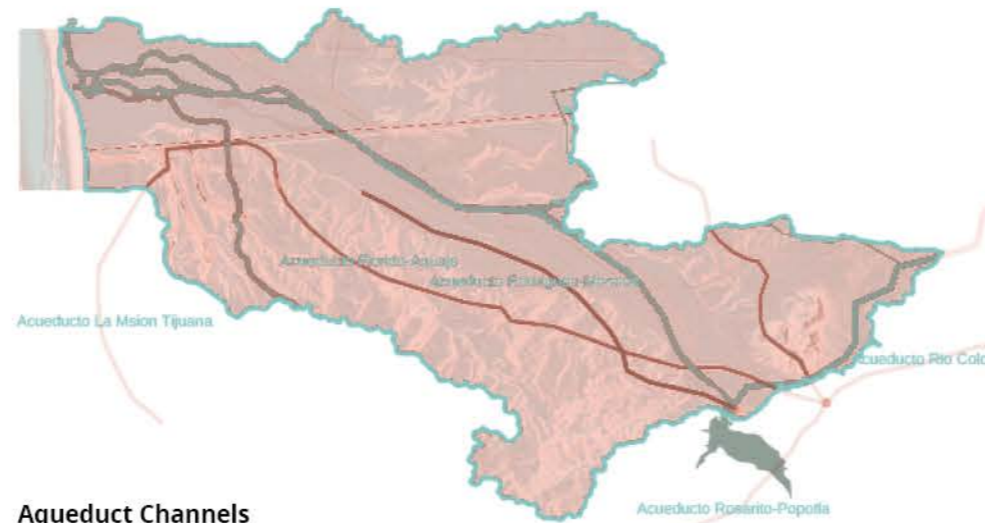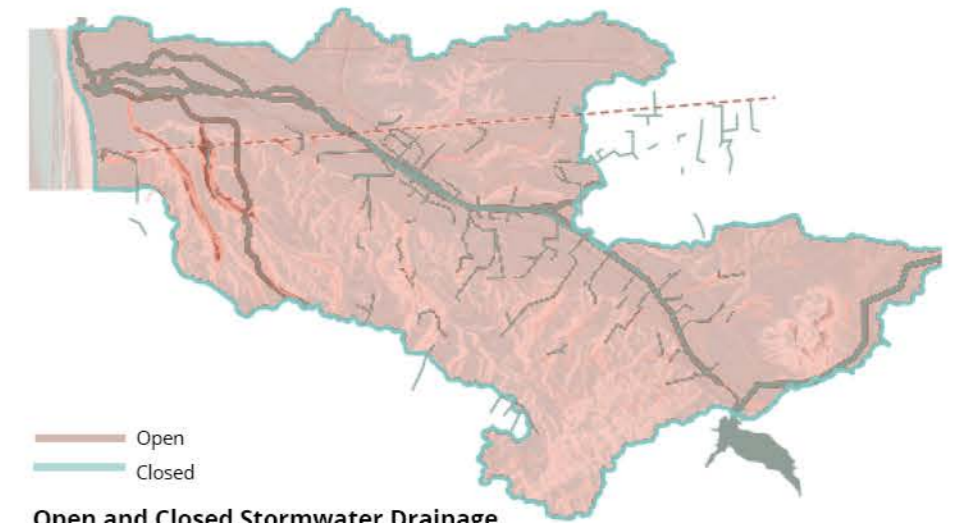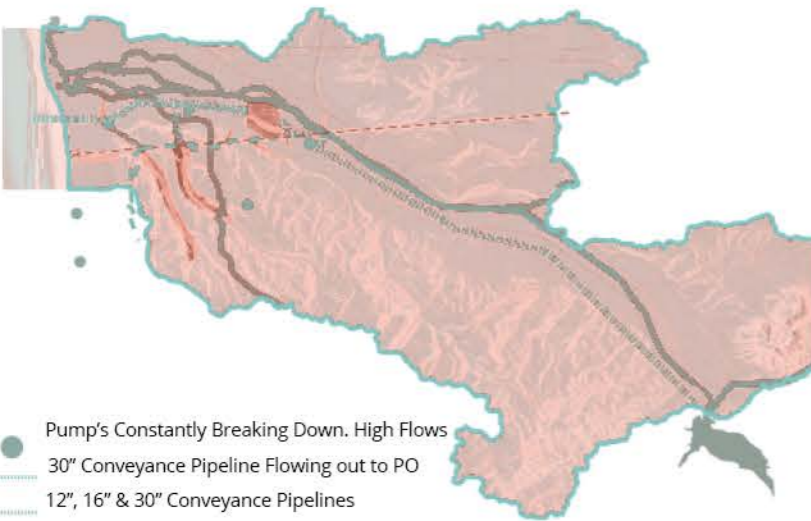
MS.AAD

GSAPP | Summer 21

Tijuana River Channel

Aqueduct Channels

Acueducto La Mision Tijuana
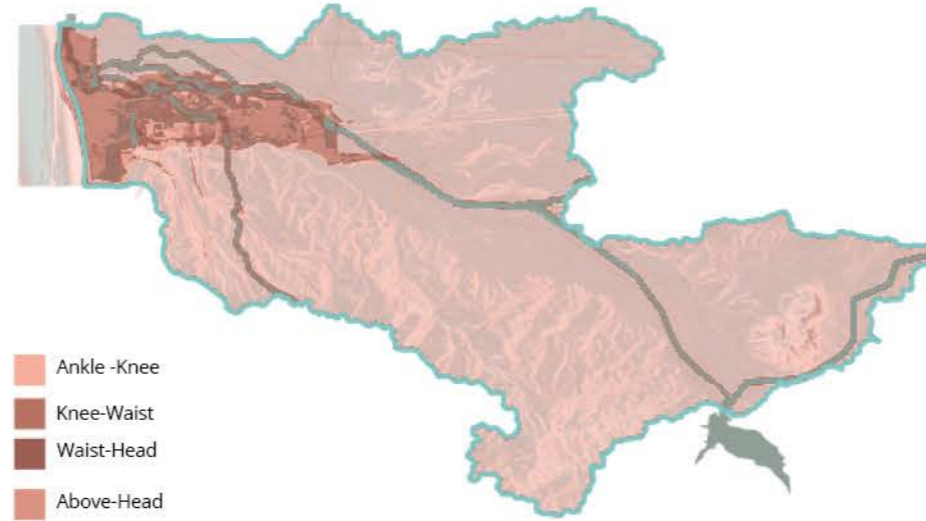Acueducto Rio Colon
Acueducto Rosarito-Popotla
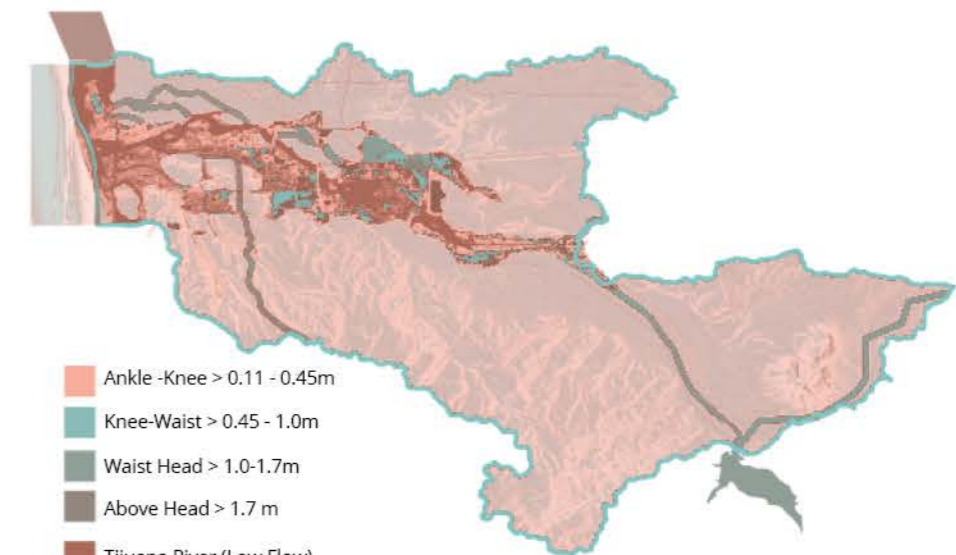

Open
Closed

Open and Closed Stormwater Drainage

Pump's Constantly Breaking Down. High Flows
30" Conveyance Pipeline Flowing out to PO
12", 16" & 30" Conveyance Pipelines

Waste-water Treatment Plant / Collectors / Pumps

Ankle -Knee
Knee-Waist
Waist-Head
Above-Head

Flood Depth

Ankle -Knee > 0.11 - 0.45m
Knee-Waist > 0.45 - 1.0m
Waist Head > 1.0-1.7m
Above Head > 1.7 m
Tijuana River (Low Flow)

WaterDepth

FORMULA H2O/
Action 1:Investigate

USA Corporations water theft and waste water dumping

Yogurt Canyon

Does not directly drain to the Tijuana River

Goat Canyon

Waste-water treatment plant / collectors / Pumps

Second Largest Canyon, includes concrete tunnels from the border to the canyon collector. This site has water flowing regularly throughout the year

Canyons as vessels of waste into the Tijuana River

Smugglers Gultch

Largest of 6 Canyons. Flows are downhill of the treatment plant so a lift station had to be constructed which conveys the flows captured by the collector to the treatment plant.
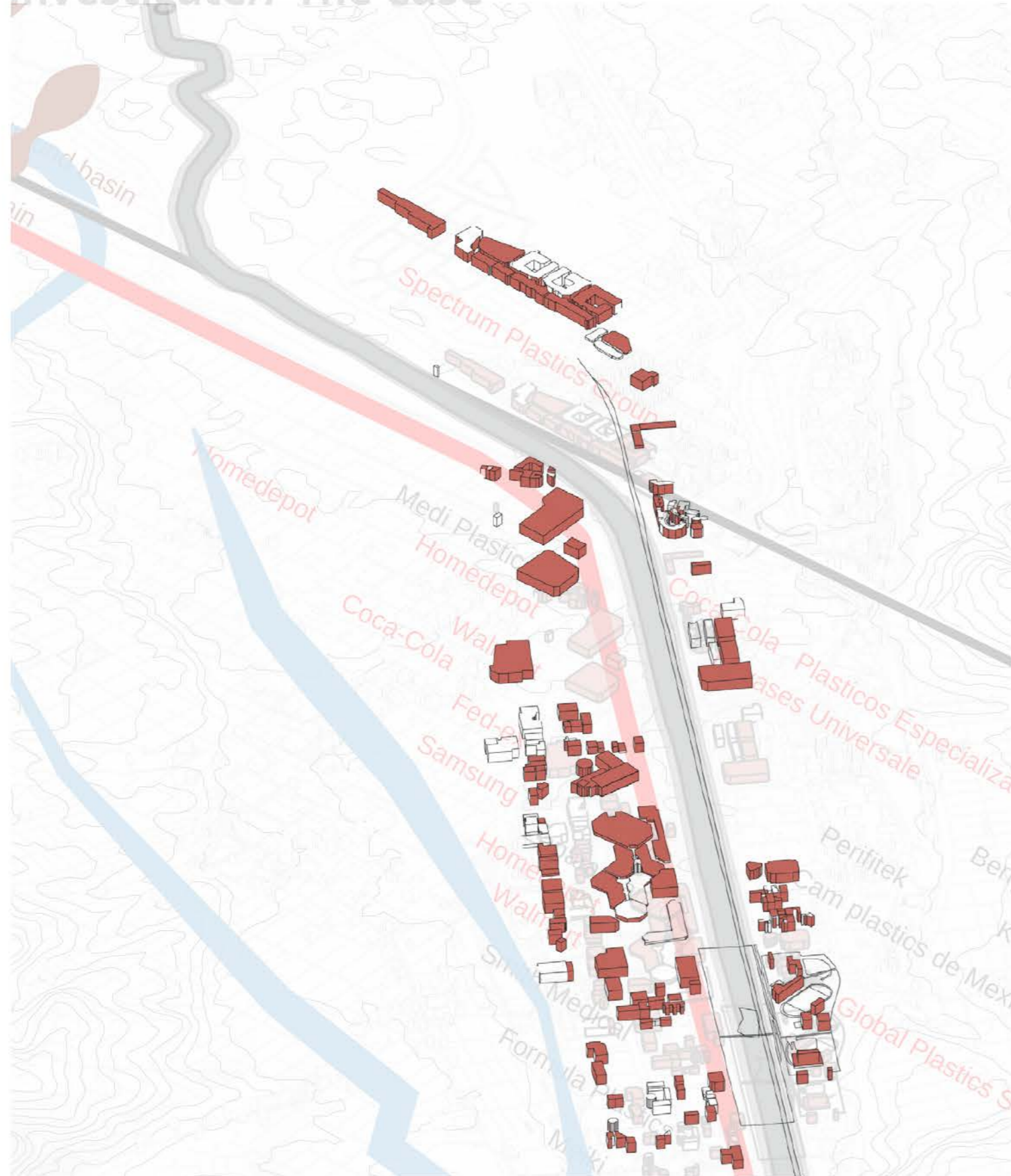
Aquaduct Channels

Network of Basins and Tunnels Network of basins-and tunnels built 30 years ago to try to capture the sewage from tijuana. The metal grates must remain open at times of high flow.
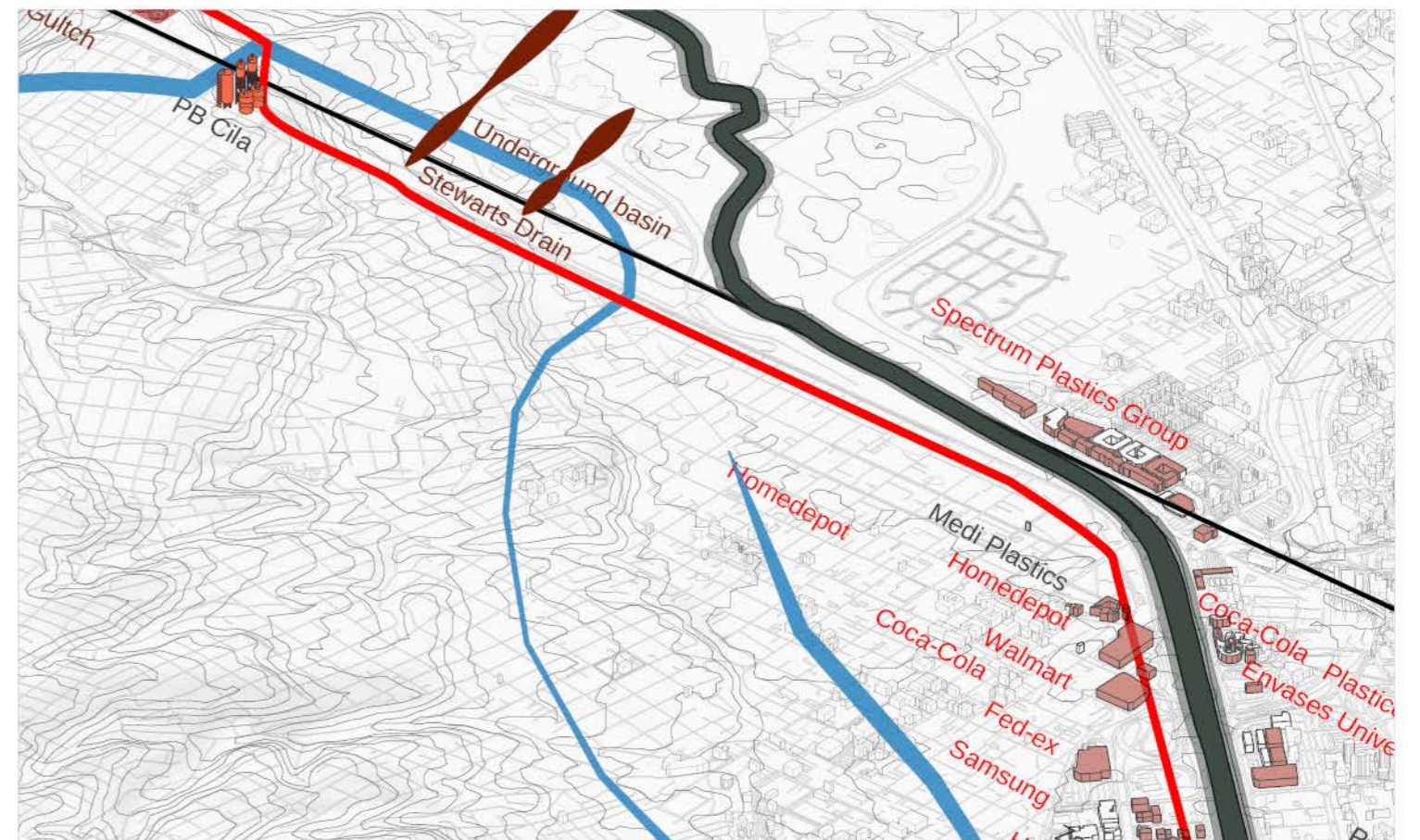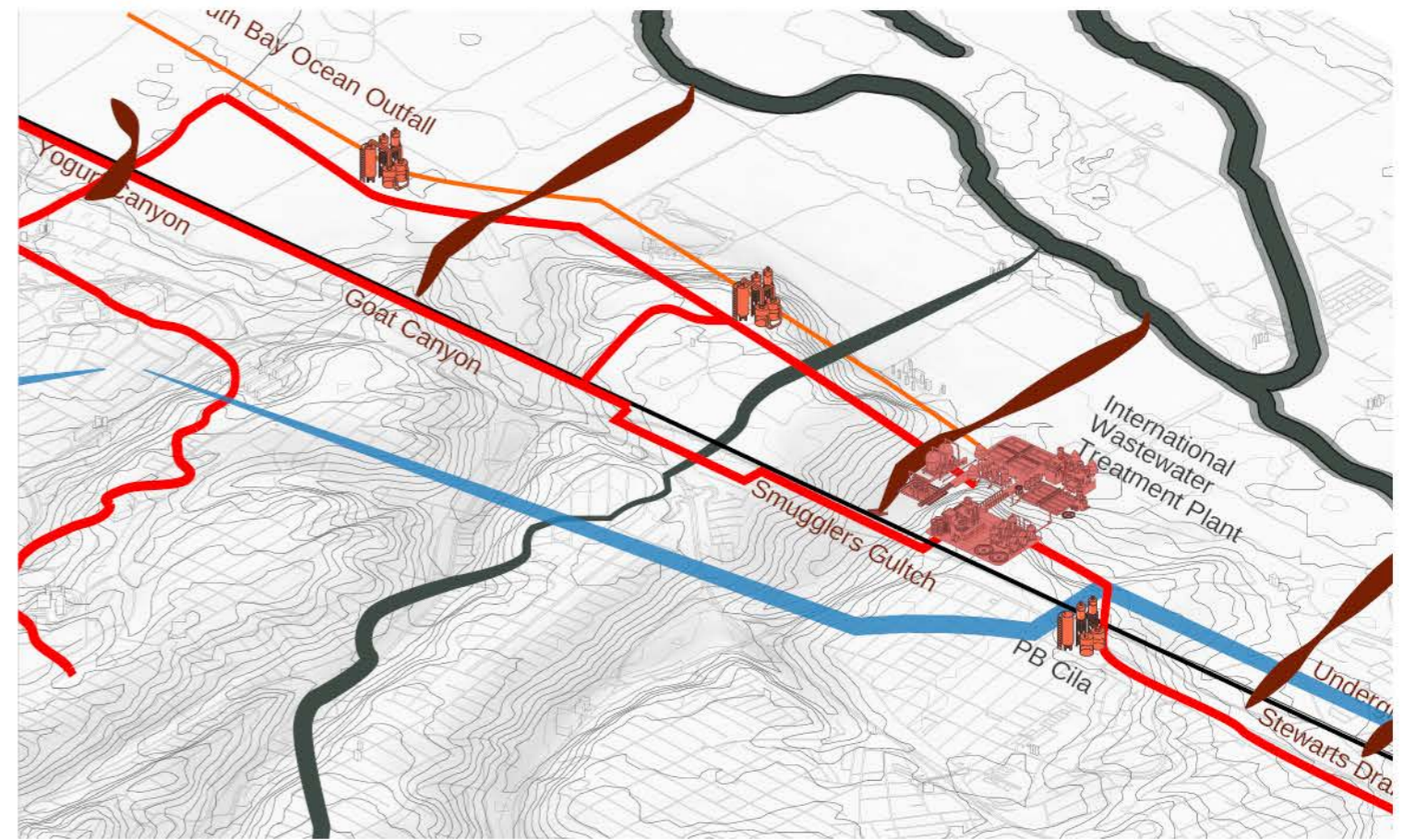
In February 2020, an independent audit of Baha's water agency CESPT commissioned by Governor Jaime Bonilla and investigated by a private auditing firm Fisamex alleges that former utility employees colluded with giant international corporations in the stealing and illegal dumping of water. Corporations like Walmart, Coca-Cola, Samsung, and The Home Depot have not paid their entire water bills for years and dumped sewage into the Tijuana River. Unfortunately, America has carried on this narrative which positions Mexico as the waste dumping agent onto USA beaches.

Governor Bonilla

Commissioned an audit that alleges former employees of the utility colluded with giant International corps. "What they are doing is criminal. And they want to be the victims?" - B "Even in Mexico, it is illegal to dump toxic material into a water channel. We are doing the right thing." - B

Manuel Garcia

President of the company FISAMEX. Commissioned by Governor Bonilla To date, the FISAMEX businessman has collected more than one billion pesos from the collection of water rights. From CESPT, CESPM and the rest of the commissions in the entity, from hundreds of companies installed in Baja California.
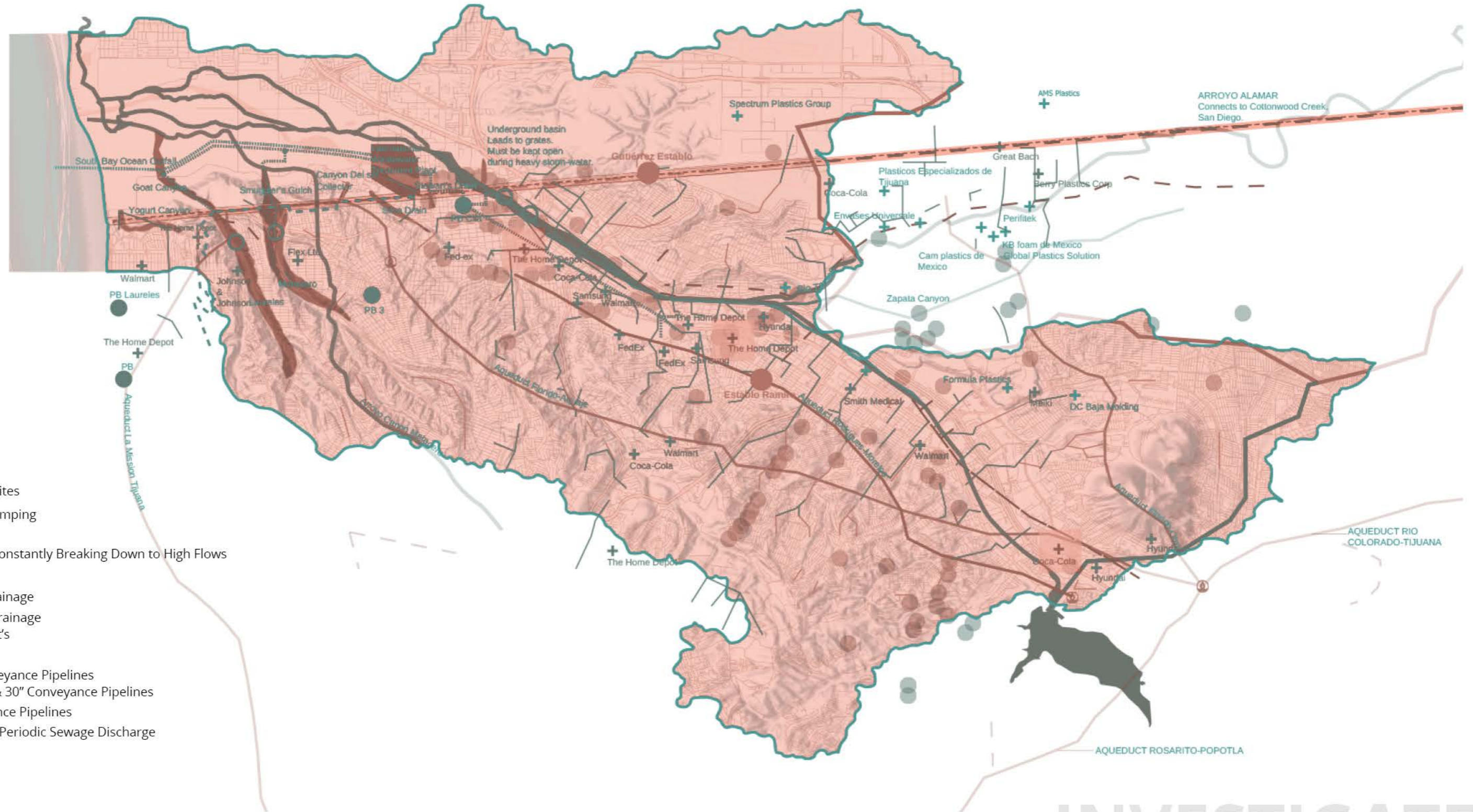
Juan Pablo Guerrero Mercado

Deputy director of CESPT. At least 80 employees of the state water agency have been suspended or fired.

Anonymous Businesses

The CESPT's deputy director notifiedmany corporations of their debt of several million pesos detected by an external auditor FISAMEX and given short notice to repay the debt. "They're charging for like ten times the amount of water you used. Its way too high," said one businessman who asked not to be named. "And you have to go wait five to seven hours in line to pay the bill. We were only consuming five cubic meters, and they charged us for fifty"

EXPOSE

Legend:

- Chosen Sites
- Trash Dumping
- Pump's Constantly Breaking Down to High Flows
- Pump
- Open Drainage
- Closed Drainage
- Aqueduct's
- River
- 30" Conveyance Pipelines
- 12", 16" & 30" Conveyance Pipelines
- Conveyance Pipelines
- Flows Of Periodic Sewage Discharge Canyons
- Farms

Map labels:

Spectrum Plastics Group

AMS Plastics

ARROYO ALAMAR
Connects to Cottonwood Creek,
San Diego.

Underground basin
Leads to grates.
Must be kept open
during heavy storm-water.

Gutiérrez Establo

Great Bach

Plasticos Especializados de Tijuana

Coca-Cola

Berry Plastics Corp

South Bay Ocean Outfall

Canyon Del Sol Drainage Collector

Envases Universale

Perifitek

Goat Canyon

Smuggler's Gulch

KB foam de Mexico
Global Plastics Solution

Yogurt Canyon

Drain

Cam plastics de Mexico

Home Depot

Flex Ltd.

Fed-ex

The Home Depot

Coca-Cola

Zapata Canyon

Walmart

Johnson & Johnson/Morales

PB 3

Samsung

Walmart

The Home Depot

Hyundai

PB Laureles

FedEx

The Home Depot

Formula Plastics

The Home Depot

PB

FedEx

Samsung

Smith Medical

Miziki

DC Baja Molding

Aqueduct Florido-Alamar

Estáblo Ramir

Aqueduct La Mission-Tijuana

Walmart

Coca-Cola

Walmart

AQUEDUCT RIO COLORADO-TIJUANA

Coca-Cola

Hyundai

The Home Depot

Hyundai

AQUEDUCT ROSARITO-POPOTLA

FORMULA H2O/ Action 1:
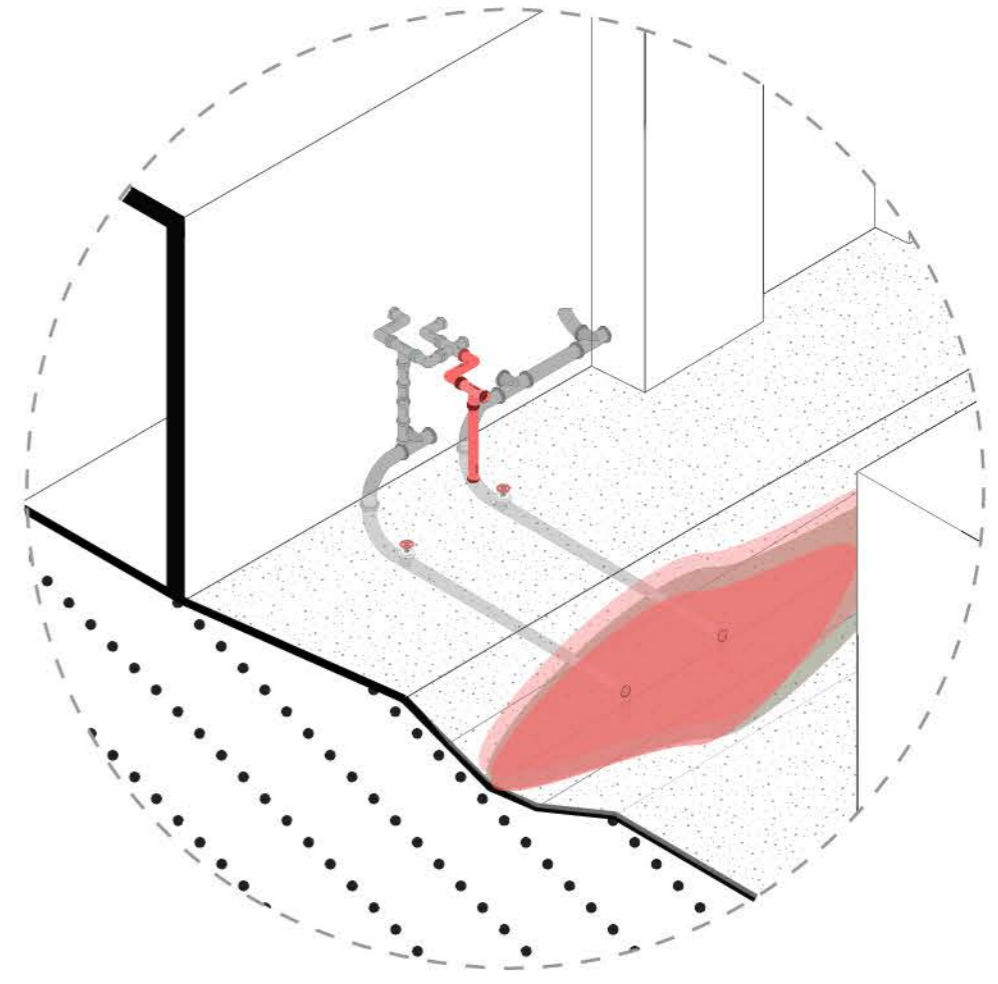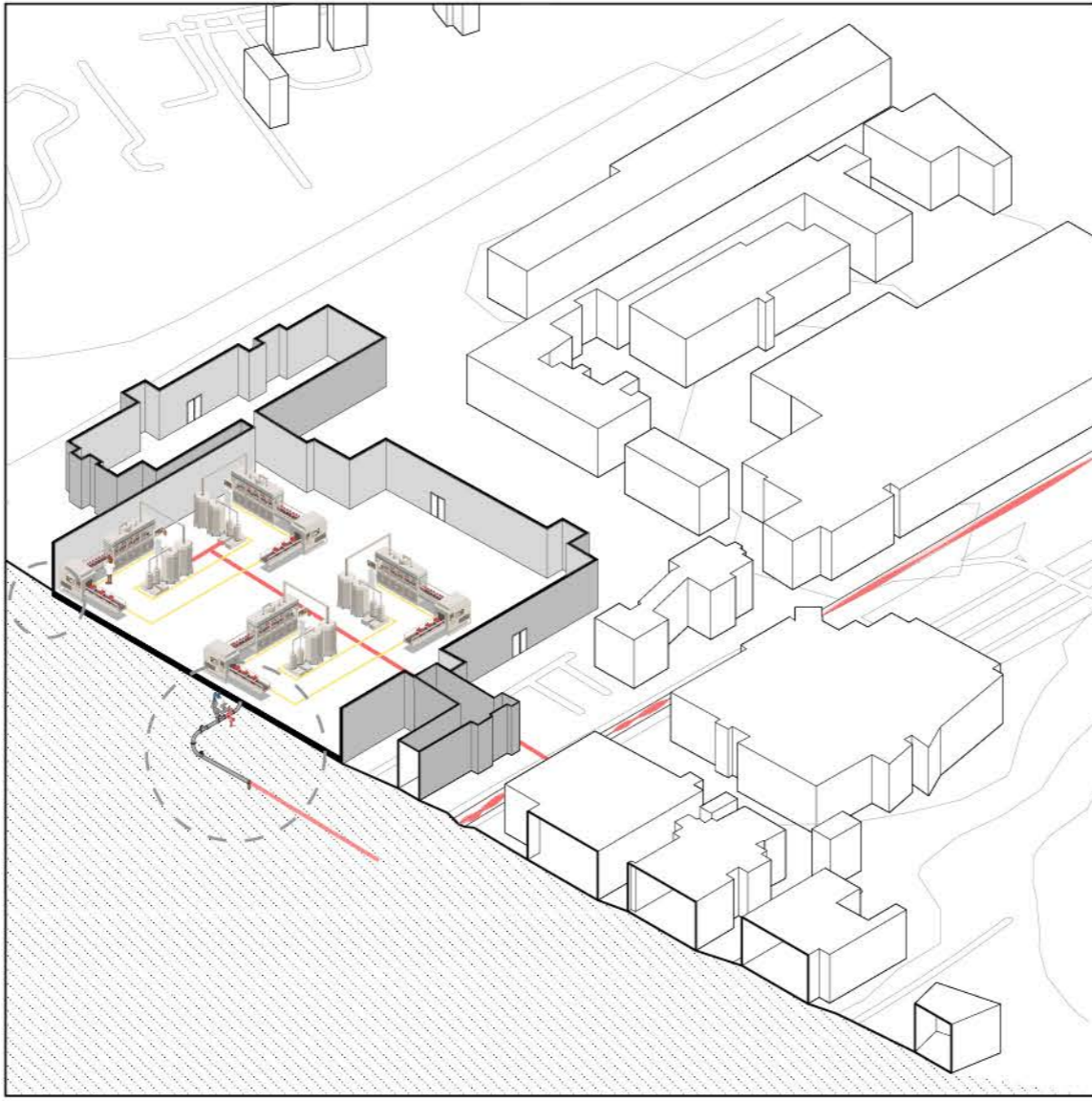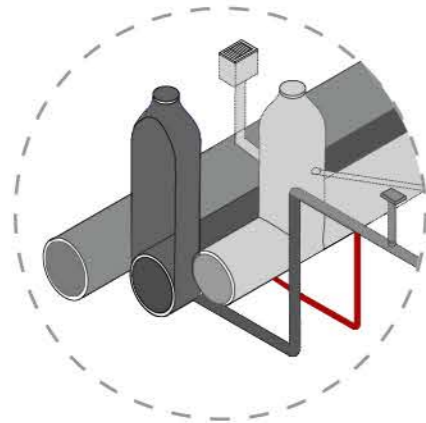## Investigate// Theft & Dumping of Waste
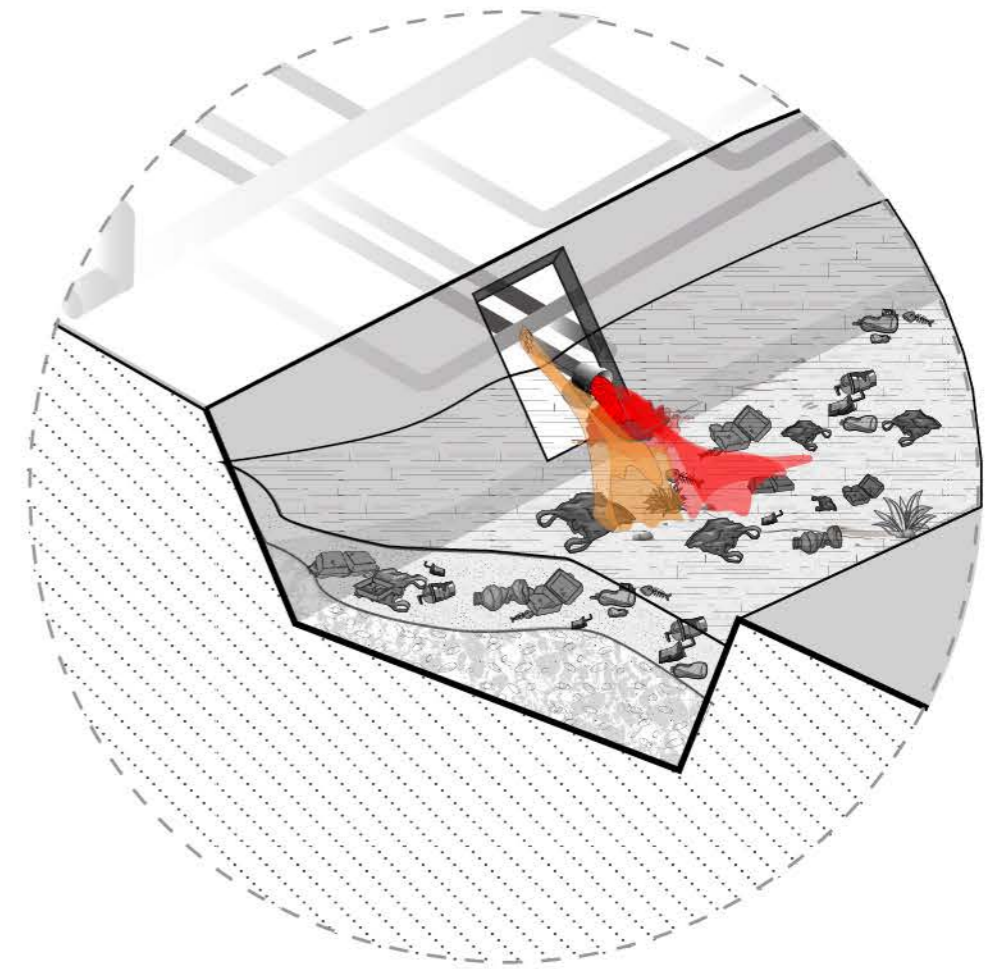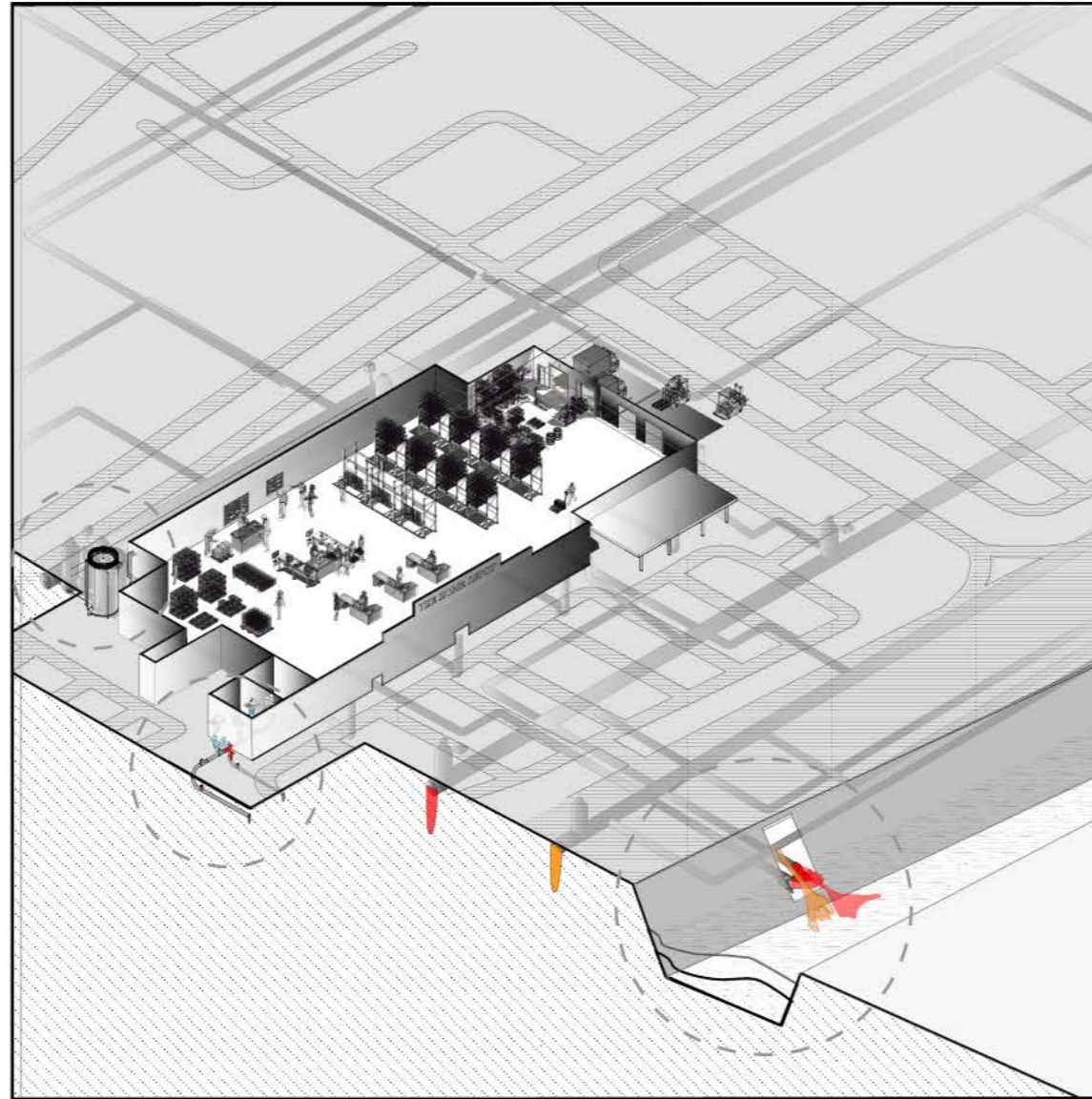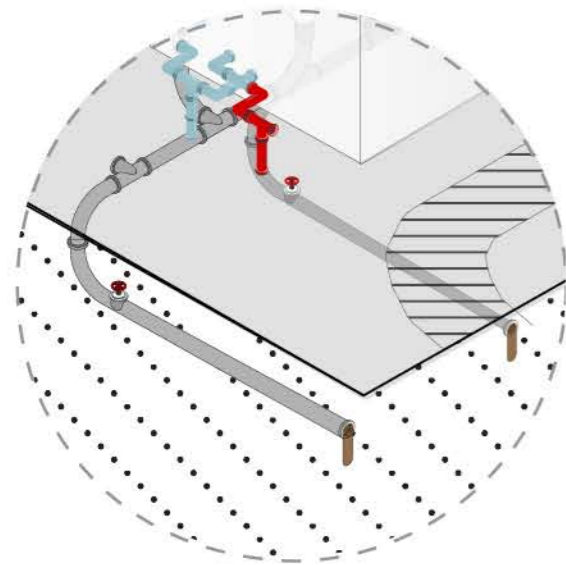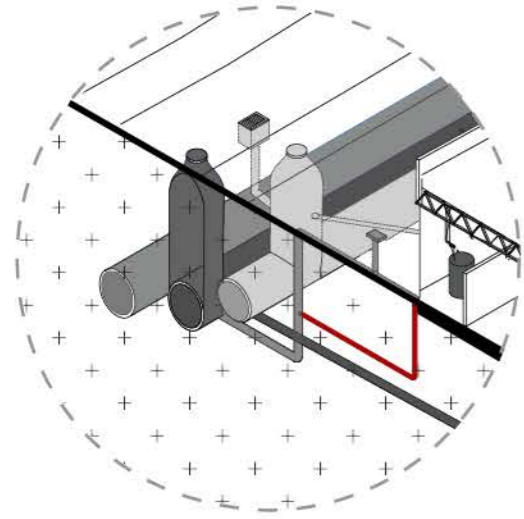
The Home Depot
Typical Water Usage:
1 Gal of Paint / 13 Gallons of Water.
1 Ton of Steel / 62,000 of Water
1 Ton Cement / 360 Gallons of Water

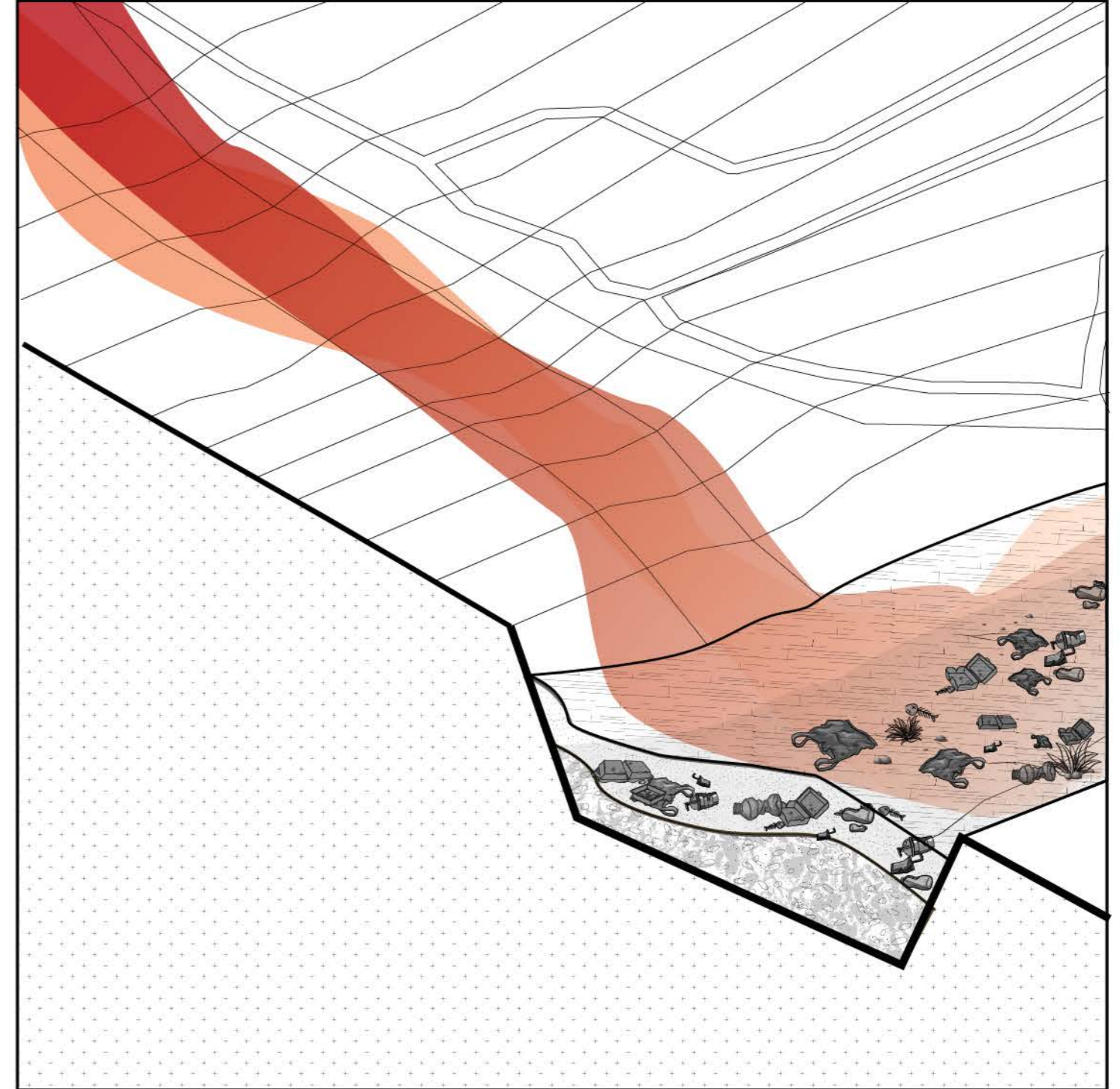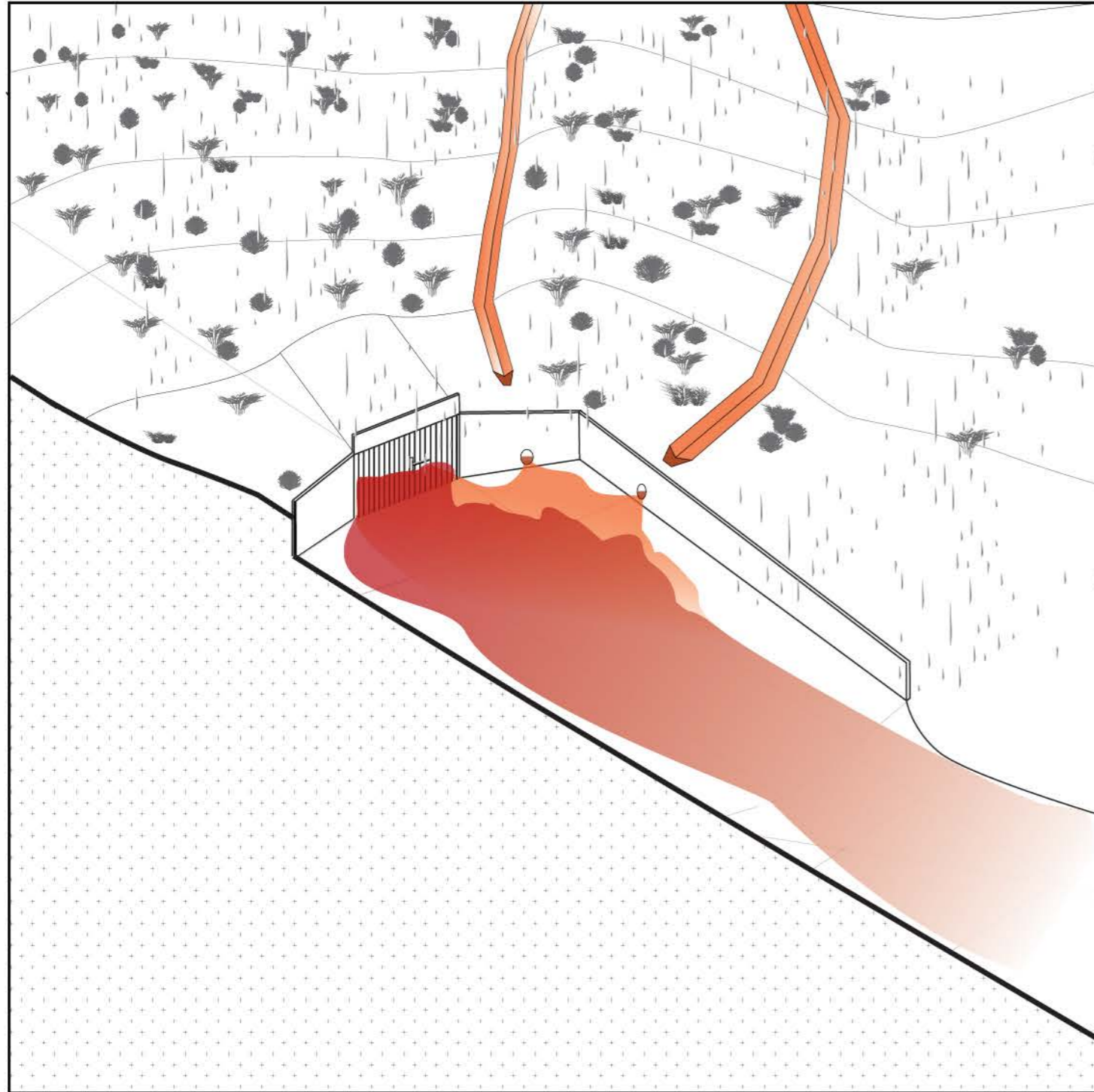Audit Reports: One Million 782,000 Pesos Worth of Water Hasn't Been Paid.

Coca-Cola
Typical Water Usage:
500 ml bottle of Coca-Cola takes roughly 1.9 liters of water to make

Audit Reported to use 5 l / Sec of Water.
5 l / Sec = Amount Needed Per Person / Apartment

DOCUMENT

Largest Drainage Canyon of the 6 Canyons.
The Storm-Water Drainage Infrustructure that was reconstructed in 2008 by the U.S. Department of Homeland Security. The Infrustructure Included Concrete Tunnels From the Border to the Canyon Collector. This Site Has Water Flowing Regularly During the Entire Year. The Capacity of the Collector in This Canyon is 4.7 MGD (205lps) With a Peak Capacity of 14 MGD(613 lps). The Flow From this Canyon are Downhill of the Treatment Plant, So a lift station has to be constructed at hollister street, which conveys the flows captured by the collector to the treatment plant.

DOCUMENT

The reserve is managed by the California State Park System and the U.S. Fish and Wildlife Service. NOAA's Office for Coastal Management provides funding, National guidance, and technical assistance.

The State Commission of Public Services of Tijuana (Comisión Estatal de Servicios Públicos de Tijuana, Cespt) is a public and decentralized Mexican institution created in Tijuana in 1991. - Supplies drinking water and sewage services in the cities of Tijuana and Playas de Rosarito.
- In charge of the treatment of waste water to prevent the pollution of the sea.
- Cespt is also responsible for the operation of the water purification plants for public service, of the collection system and waste water treatment, and inspect the construction and extension of the required infrastructure to provide those services, as well as the maintenance and repair of pipes.

Mexican Water Authority Comision Estatal del Agua (CEA) is a government agency responsible for regulating Baja California states water and sewage industry and promoting water efficiency and conservation

CANAL AL MENTADOR CENTRAL

CESPT CENTRAL MONITORING

CESPT TREATMENT PLANT

CESPT

START HERE

BMEA

CESPT

CESPT employees

END HERE

Accountability

CESPT

BMGA

END HERE

NOAA

BMEA

PHYTOPODS INITIATIVE

CORPORATIONS

NOAA

Formula H2O proposes a dual system consisting of human and non-human agents to represent this voiceless entity.
First, a binational organization that can monitor and govern, and secondly, spaces of cultivation and remediation using various human and non-human agents. This organization would work with existing entities such as CESPT, The National Oceanic and Atmospheric Reserve, and specific American corporations operating within the Tijuana watershed, ultimately holding corporations accountable through visibility of crime and corporate involvement. The framework posed by the Binational Monitoring and Governing Agency would create initiatives such as the Phyto-Pods project.

/ Action 2&3: Govern & Monitor (Proposed)

1: BMEA Bi-national Monitoring and Governing agency. CESPT Comisión Estatal de Servicios Públicos de Tijuana. CESPT employees: Coordinated effort with BMGA volunteers in walking sites to ensure that no illegal drainage or piping to a water source is activated. If criminal activity is found, the CESPT must investigate the duration and enforce a penalty on the company for a currency amount/ gal of water used. The fee fined must be used towards
2. CESPT: Comisión Estatal de Servicios Públicos de Tijuana
3. BMGA Bi-national Monitoring and Governing agency.
4. Corporations: Coca Cola/ The Home depot/ Hyundai / Walmart/ Samsung
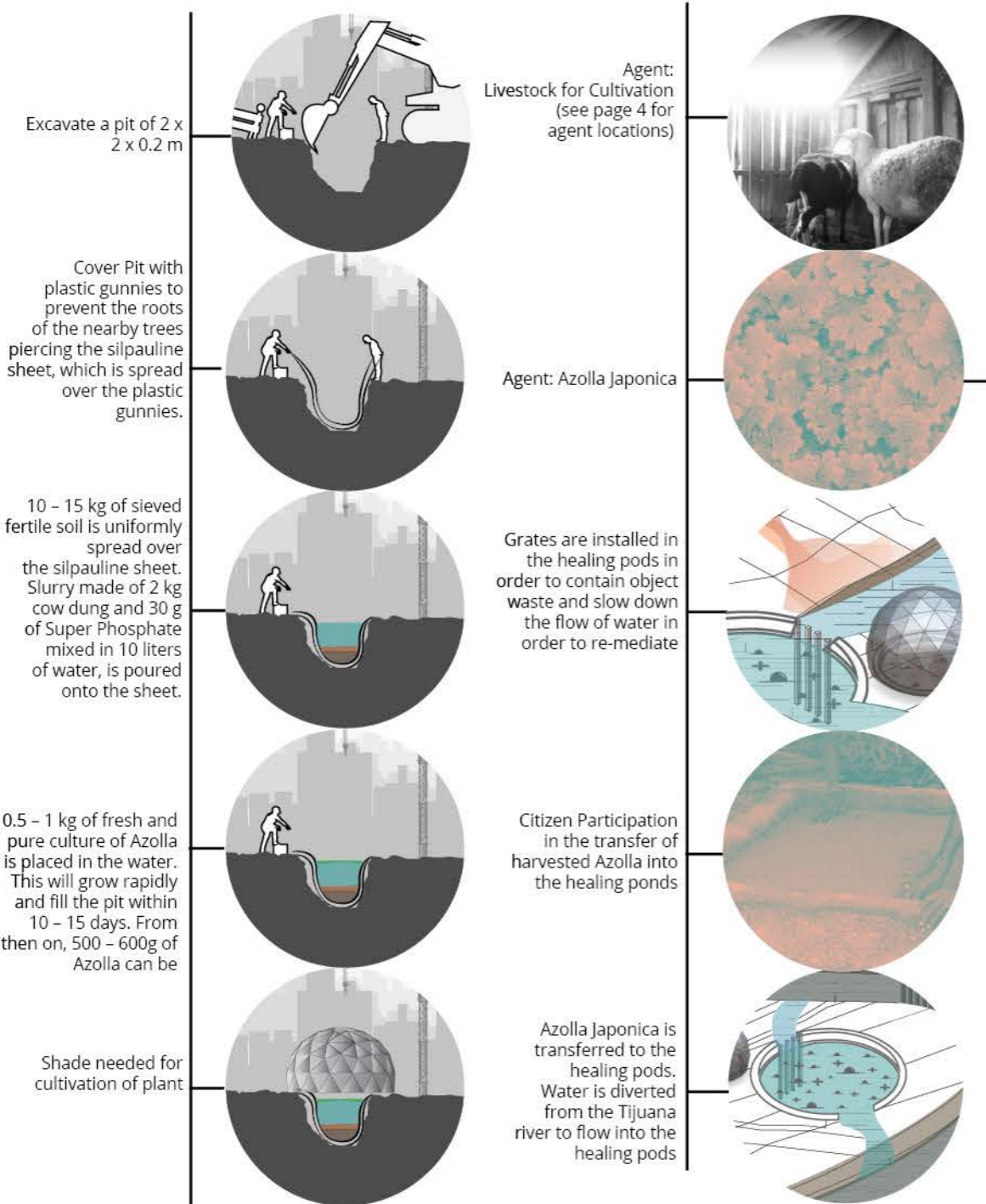*4. National Ocean and Atmospheric Administration. Tijuana River National Estuarine Research Reserve*
5: CESPT's wastewater treatment & towards BMGA PHYTO-PODS initiative. National Ocean and Atmospheric Administration currently provides funding, national guidance, and technical assistance. Through this entity BMGA will utilize it's research efforts, volunteers and the shared interest of the betterment of the Tijuana watershed. BMGA will also campaign for endorsement from NOAA towards the PHYTOPODS INITIATIVE
5. Factories & Corporations operating within the Tijuana Watershed must adhere to the standard of water consumption per specific factory needs. In addition these factories must contribute 5% of profits earned to the PHYTO-PODS initiative in medicating the Tijuana River

Excavate a pit of 2 x 2 x 0.2 m

Cover Pit with plastic gunnies to prevent the roots of the nearby trees piercing the silpauline sheet, which is spread over the plastic gunnies.

10 – 15 kg of sieved fertile soil is uniformly spread over the silpauline sheet. Slurry made of 2 kg cow dung and 30 g of Super Phosphate mixed in 10 liters of water, is poured onto the sheet.

0.5 – 1 kg of fresh and pure culture of Azolla is placed in the water. This will grow rapidly and fill the pit within 10 – 15 days. From then on, 500 – 600g of Azolla can be

Shade needed for cultivation of plant

Agent: Livestock for Cultivation (see page 4 for agent locations)

Agent: Azolla Japonica

Grates are installed in the healing pods in order to contain object waste and slow down the flow of water in order to re-mediate

Citizen Participation in the transfer of harvested Azolla into the healing ponds

Azolla Japonica is transferred to the healing pods. Water is diverted from the Tijuana river to flow into the healing pods

Benefit: The ability of the water fern Azolla japonica to re-mediate phosphorus (P), nitrogen (N), and iron (Fe) contamination. Azolla floats on ponds and grows fast, fixes nitrogen in the air, and stores in leaves. Additionally, this macrophyte has a high absorption rate of the critical wastewater pollutants, ammonium, and phosphorus.
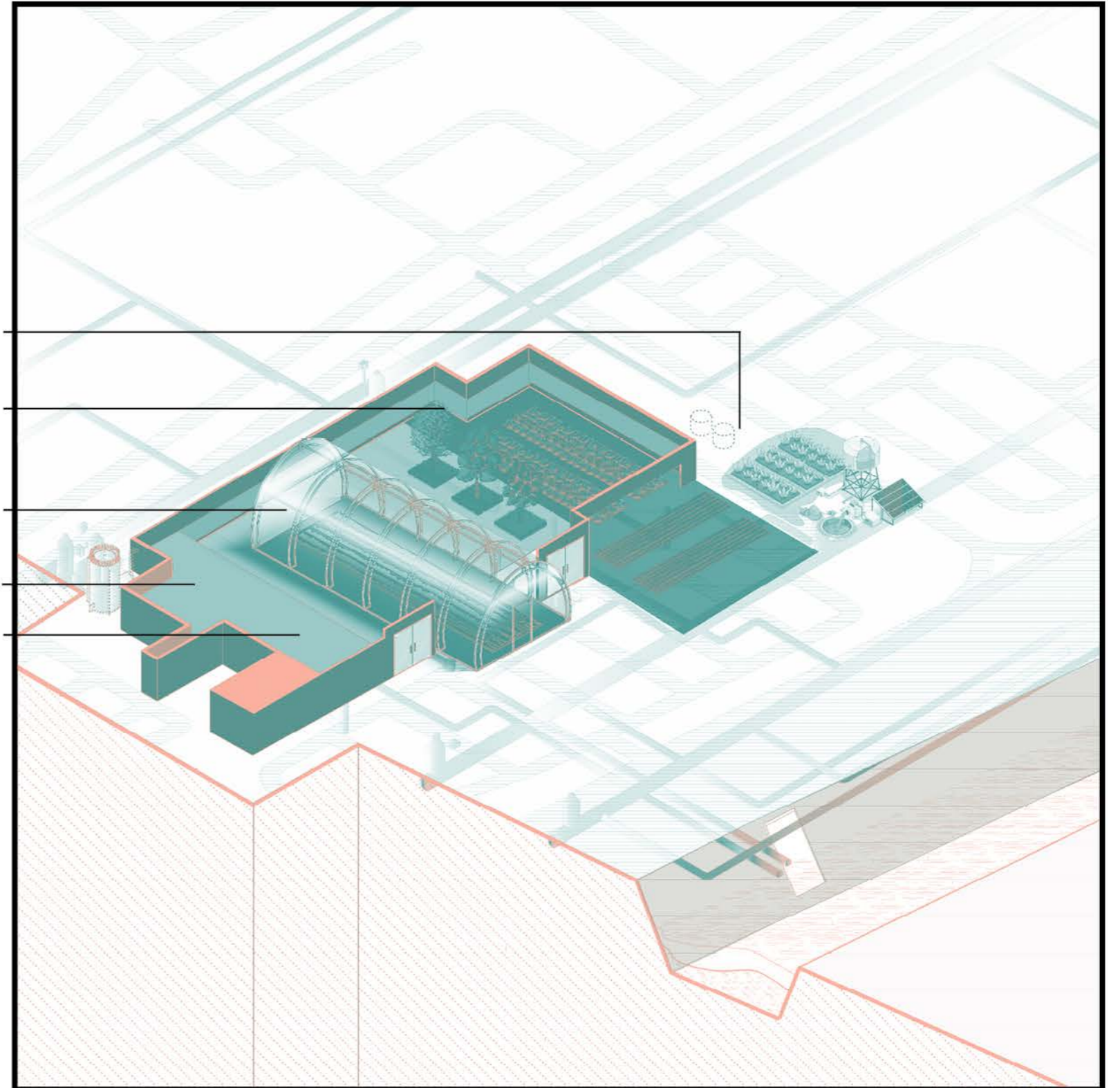
Cultivation Pods

Healing Pods
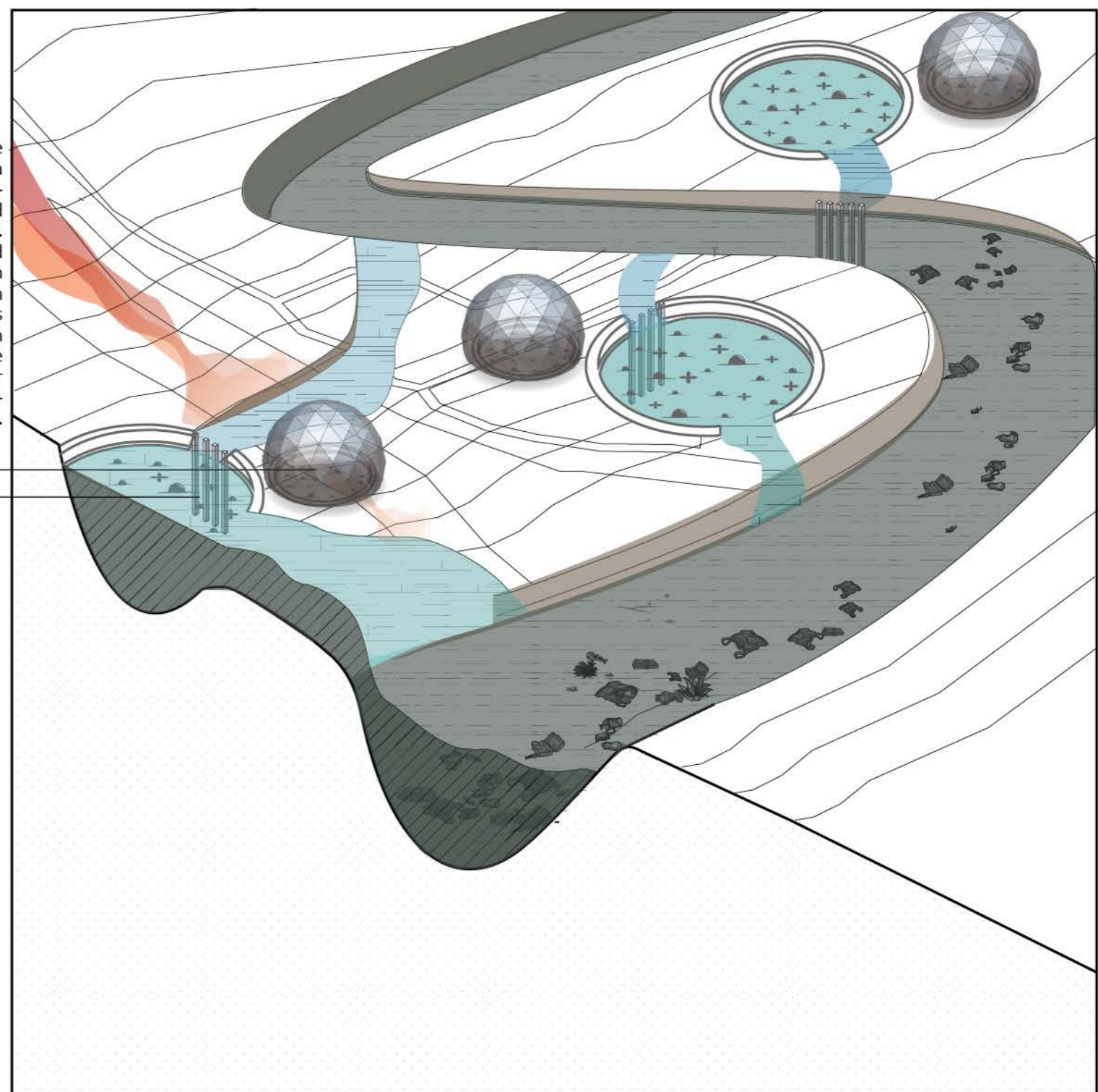
CULTIVATE

FORMULA H2O/Action 5:
Spaces as Agents// Consequential Vacancy &
a Vernacular Alternative.


DEMLOISH & EXCAVATE
Pollutant Agent: The Home Depot

The Space Utilitizes
Rain Harvesting &
Grey-Water System to
Irrigate Vegetation

Vegetation Growth

Glass House To Shelter
Cultivation Pond

Roof-Less Spaces

Grocery Store At Ground Level
Employment Opportunities

The framework BMEA established required large corporations to take accountability for their impact over the Tijuana River by enforcing fees and involvement in the Phyto-Pods Project. Ultimately, these large corporations were at a financial loss and fleeing Tijuana, leaving the city with vacant lots, buildings, a significant decrease in water theft, and waste Dumping.

1- Vacant Spaces to Serve as Spaces Of Cultivation, and Emplyment OPPORTUNITIES.
2- Vacant Concretelots to be demolished and used for vegetation.
3- Through Visibility and Accountability Large, Medium, and Small Companies are Less Likely to steal and dump.
4- Vacant Lots to use Temporary Permanent Construction of Green Houses.
5. Phyto-Pods / Streams / Cultivation Pond
6. Concentration Of Phyto-Pods Resulting in a Reture to a Stable Native Ecosystem

TRANSFORM

14
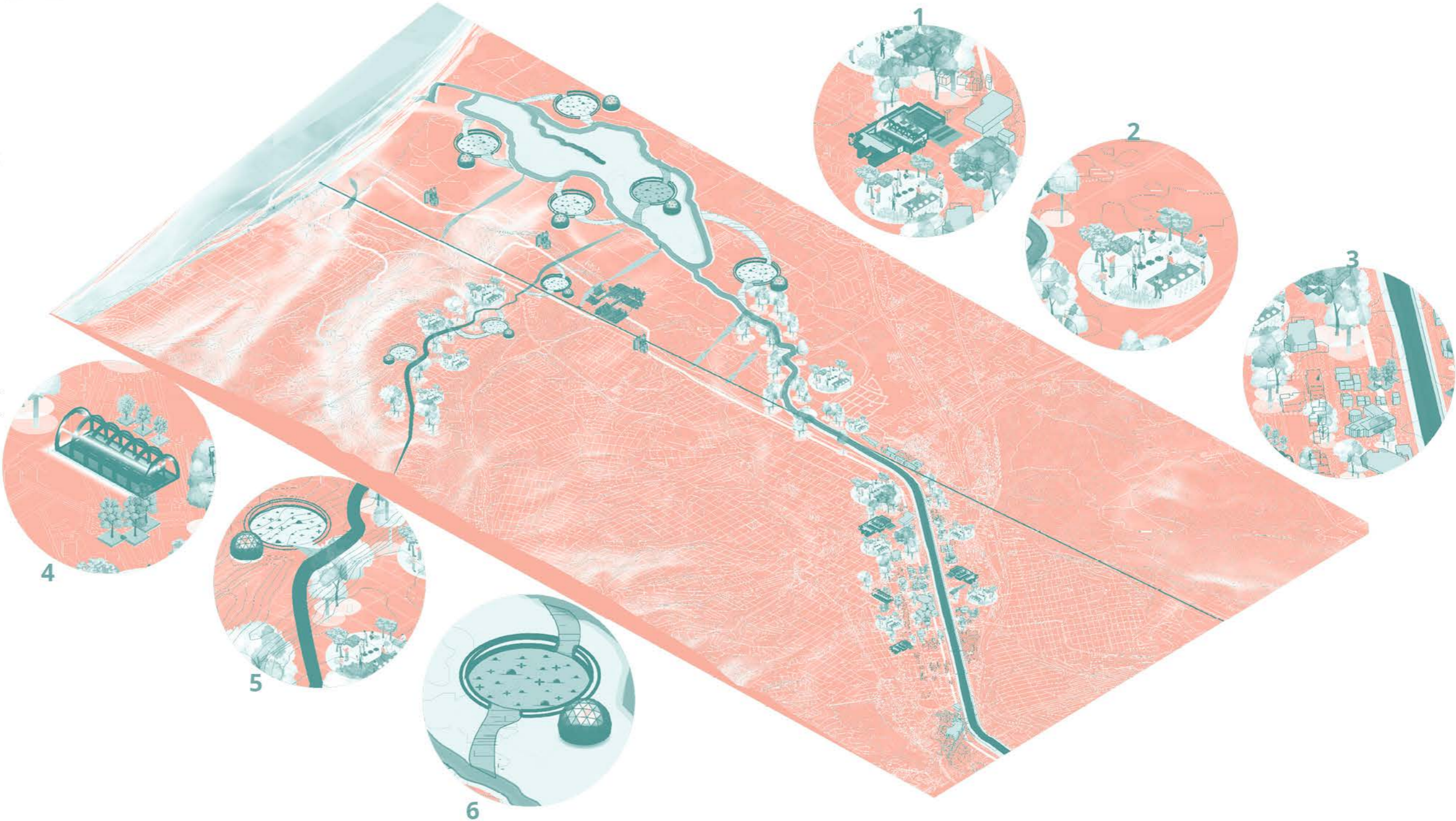
INVERSE PANOPTICON

"Presidio Modelo"

Zenah Sakaamini

Transcalarities Workshop
Andres Jacque
&
Yara H. S. Saqfalhait
August 08, 2021

The Presidio Modelo in Nueva Gerona, Cuba, inspired by Statesville Correctional Centre follows the theory of Jeremy Bentham's Panopticon. Presidio Modelo was built prior to the Cuban revolution representing a time of poverty, colonization, and rebellion. Reflective of its time, the prison represents an infrastructure of control and domination that later turns against itself representing a failed operating model.

Jeremy Bentham, an English philosopher and social theorist, devised a process by which spatial design may intervene in the natural orchestration of human movement and freedom. The initial concept of the panopticon was not only exclusive to prisons although this concept became hyper-focused on prisons and became the "symbol for modern authority and discipline in the western world." [1] I believe Bentham's Panopticon philosophy has informed modern thinking on the right of power, social control, and surveillance. What once stood as a concrete structure of control has shattered, fragmented, and spread internationally. The carefully devised spatial system of the panopticon extends from materials, spatial arrangement, and hierarchies of programs and ultimately into the mental infrastructure of the prisoners. The tower amidst a sphere of cells is the point of complete social domination. The tower stands alone and, at times, is void of any guards, yet its mere presence establishes an authority that penetrates the minds of prisoners and creates a system of self-regulation.

The prison consists of five circular blocks, each surrounded by cells monitored by a single central tower. Post Fidel Castro's revolutionary coups in 1959, Presidio Modelo became home to anyone considered a threat to the regime of Gerardo Machado, political and social dissidents such as counter-revolutionaries, Japanese and German prisoners. [4] The prison was set for the capacity of 2,500 but quickly grew to 6,000 following the fall of Machado. In this model of surveillance and brutal imprisonment conditions, the model of the panopticon turned on itself, resulting in the space of rebellion and home to the planning of the Cuban revolution.[6] The dictator Fulgencio Batista assigned all the political activists to the same hospital wing; this oversight resulted in the congregation of political activists whereby meetings were held and strategies contrived to overthrow the dictatorship. [6] "What a fantastic school this prison is! From here I'm able to finish forging my vision of the world ...". [6] The museum was closed shortly after Castro's Victory in 1959 and has been used as a museum to the revolution with photographs of each activist over their bed as tribute. [6]

UNRAVEL

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig 1. Prisoners stand at attention outside their cells in one of the rotundas c.1940.[2]
Fig 2. Interior of the abandoned Presidio Modelo, 3
Fig 3. "The preserved hospital wing at the Presidio Modelo, a former prison that held Fidel Castro, has become a shrine" [6]
Fig 4. Fidel and Raul Castro leaving Presidio Modelo at 1955[7]
Fig 5. Tourist navigating Presidio Modelo [6]

1 Brown, "Internalized Authority and the prison of the mind: Bentham and Foucault's Panopticon"
2 John Ryle, "A visit to the Panopticon"
3 Tod Seelie, "Inside an abandoned panopticon prison in Cuba"
4 Kaushik Patowary, "The abandoned Panopticon Prison of Cuba"
5 McAteer, Ben. "Forgotten Structures (pt. 4) - Presidio Modelo."
6 PressReader.com – "From prison to paradise".
7 Hidden Architecture, Panopticisim: Presidio Modelo

URBAN CHICKS
Flushing, Queens

Instructor: Phu Hoang

In Collaboration with: Joyce Zhou & Richard Sa

Our proposal examines opportunities for re-introducing farms to an urban setting by producing a localized and sustainable farming solution. An early analysis of immigrant communities such as Afghan Muslims and Asian communities examines the relationship between non-western food consumption and environmental implications. We then identify typologies unique to Flushing Queens, finding spatial opportunities to mediate co-existence between humans and chickens. These typologies consider private and public realms of single-family homes, houses of worship, abandoned buildings, and community gardens. "Non-building" architecture is explored through mesh and timber construction, emphasizing the ease and flexibility. A typical house explores coexistence between humans and chicken. In contrast, a community garden interweaves public human activities with chicken coops. The abandoned building then includes exhibitions and a butcher adhering to non-western poultry practices catering to Halal, Kosher, and non-faith-based meat processing. Finally, the House-Mosque serves as the table end restaurant and herb garden engaging visitors and chickens. A system currently exists that is inherently immigrant based revolving around chicken farming. This system is more sustainable than large scale industrial farming. Co-existence allows for a deeper understanding of immigrant based farm to table process.

MS.AAD

GSAPP | Fall 21

URBAN CHICKS /
Food Distrubution in NYC

SHARTLESVILLE, PA

SHARTLESVILLE, PA

FARM

250 MILES

SUPPLIER

WHOLESALE

144

COMMUNITY HATCHERY /

MARKET

HOUSE

3 MILES

COMMUNITY

RESTAURANT

3 MILES

SALISBURY, MD

FLUSHING, NY

BUTCHER

3 MILES

FARM

WORSHIP
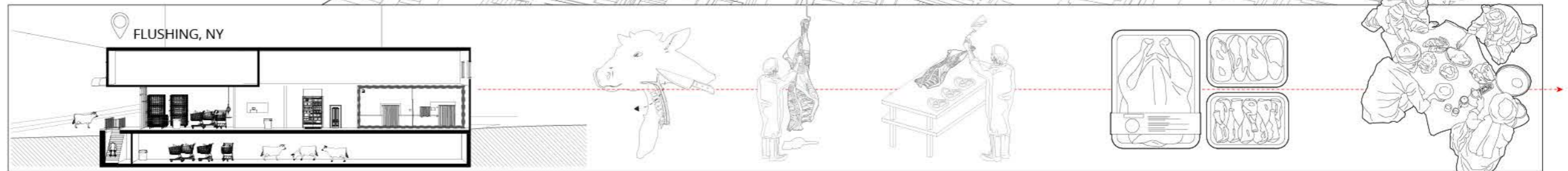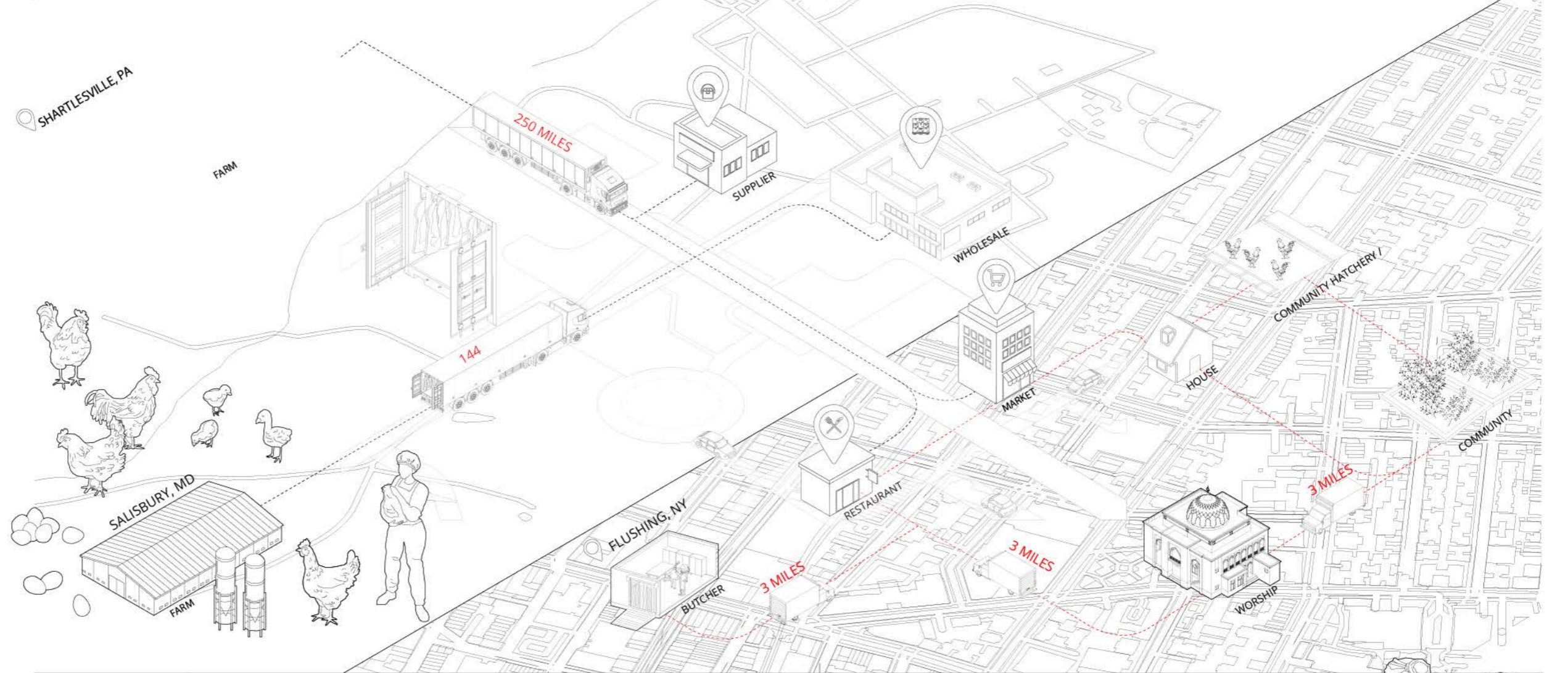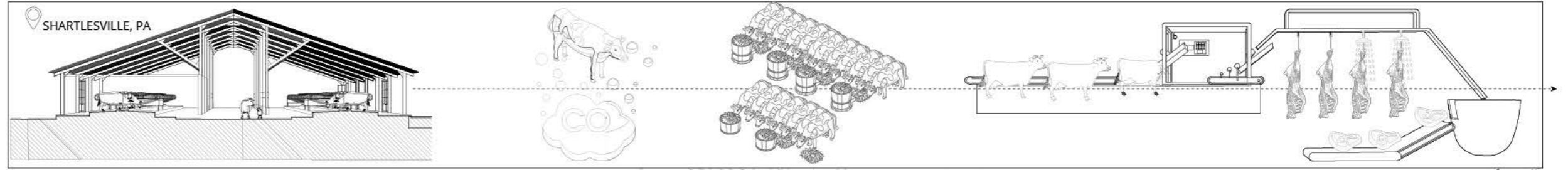
This diagram compares the typical process of farm to table to that of halal meat processing. The top row shows the process of large scale beef production in Pennsylvania. Located 250 miles away, the population of Flushing relies on long-distance transportation for their food. In contrast, a butchery located in the basement of a building in Flushing serves local communities within a 3 mile radius.

FLUSHING, NY
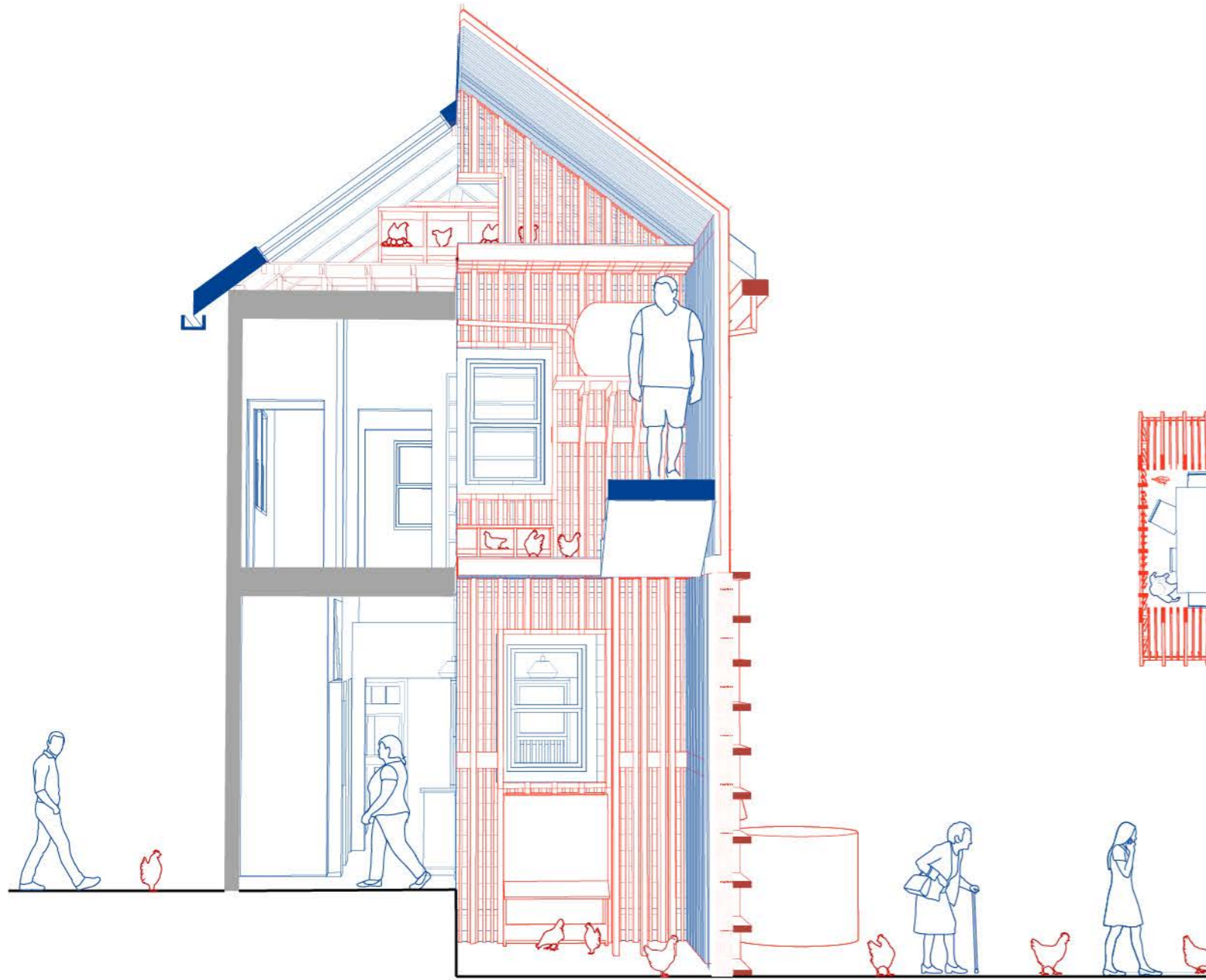
DOCUMENT

URBAN CHICKS / Planetary Scale

Looking at Flushing we examined the typologies that make up Flushing's land. These include about 32 abandoned buildings, 1,200 houses, 100 houses of worship, and 2 community gardens.
By localizing the food distribution and production we observe that these spaces are all possible sites. We are proposing a system to connect these possible sites through technology smart farming.


+32
ABANDONED
BUILDINGS

+1,200
SINGLE FAMILY
HOMES

+100
HOUSES OF
WORSHIP

+2
COMMUNITY
GARDENS
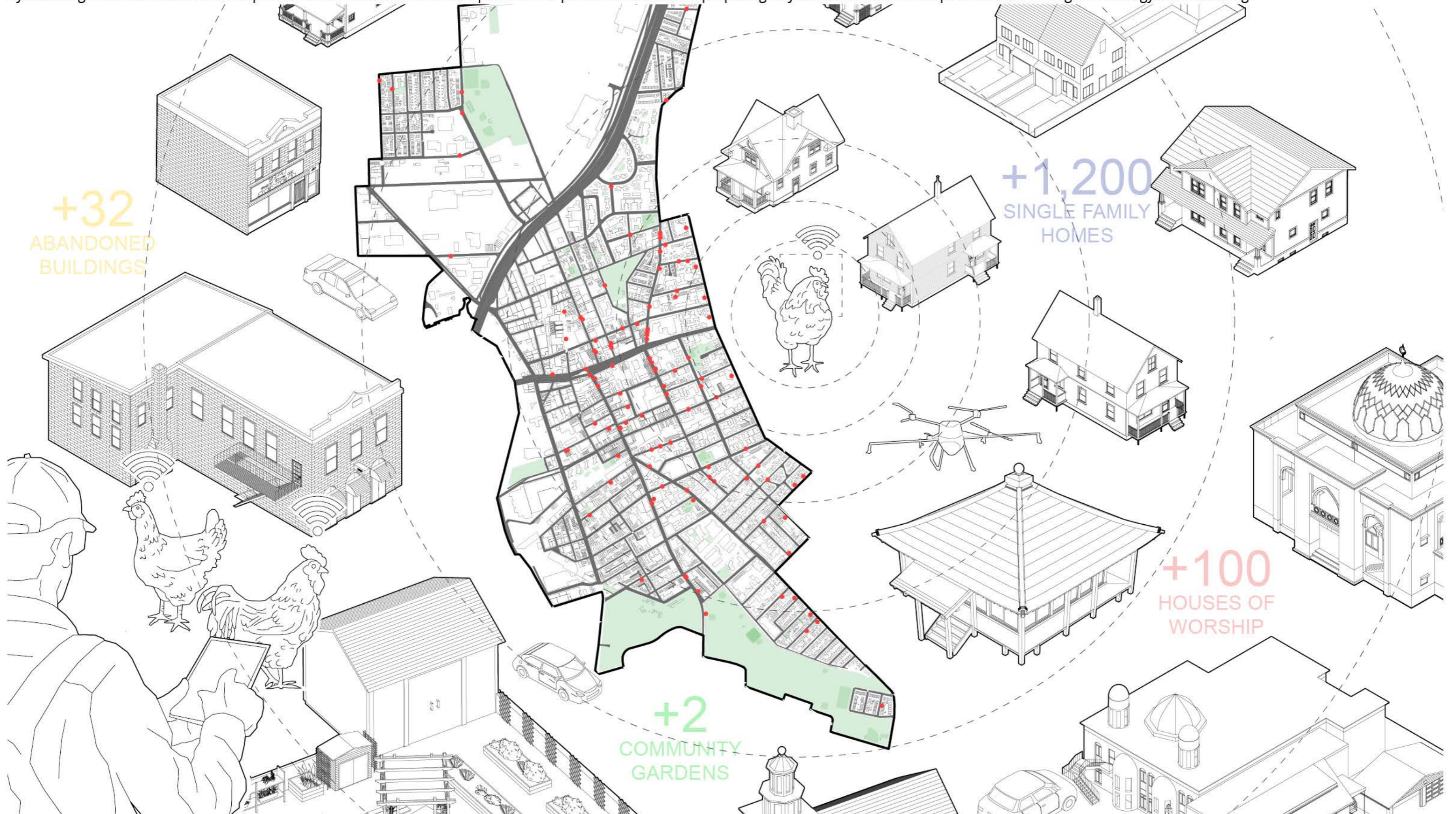
URBAN CHICKS /
House-House

Through the repurposing of the attic space of a single family home, we transformed the attic into a chicken coop. It is sloped to allow for the collected greywater to clean the surface. Attached to the single family home is an impermanent structure that is comprised of 2x6 that gets denser closer to the building. The house has chicken only programs, human only programs and programs that allow for human and chicken interaction. The splitting of the programs can be seen in the model, where behind the mesh, are the chicken designated spaces. Where as the areas not enclosed in the mesh are shared areas between the chickens and the inhabitants of the house.
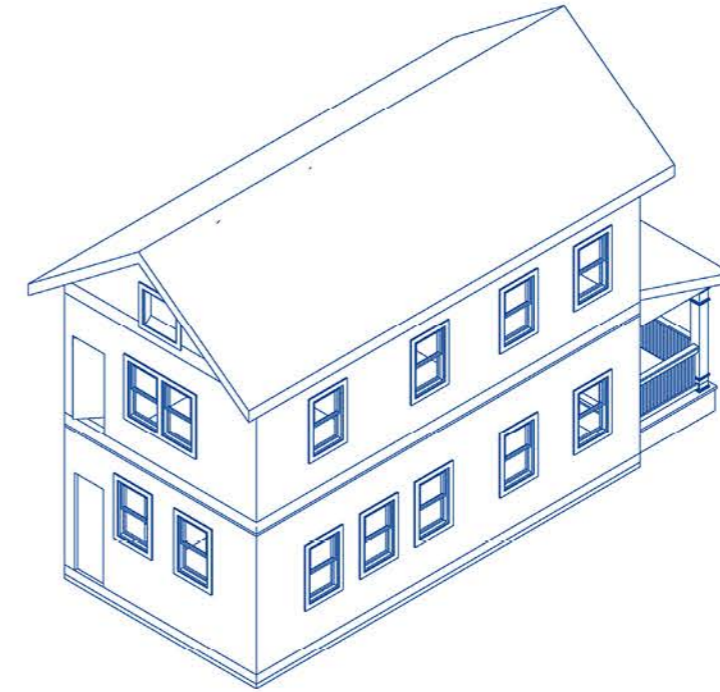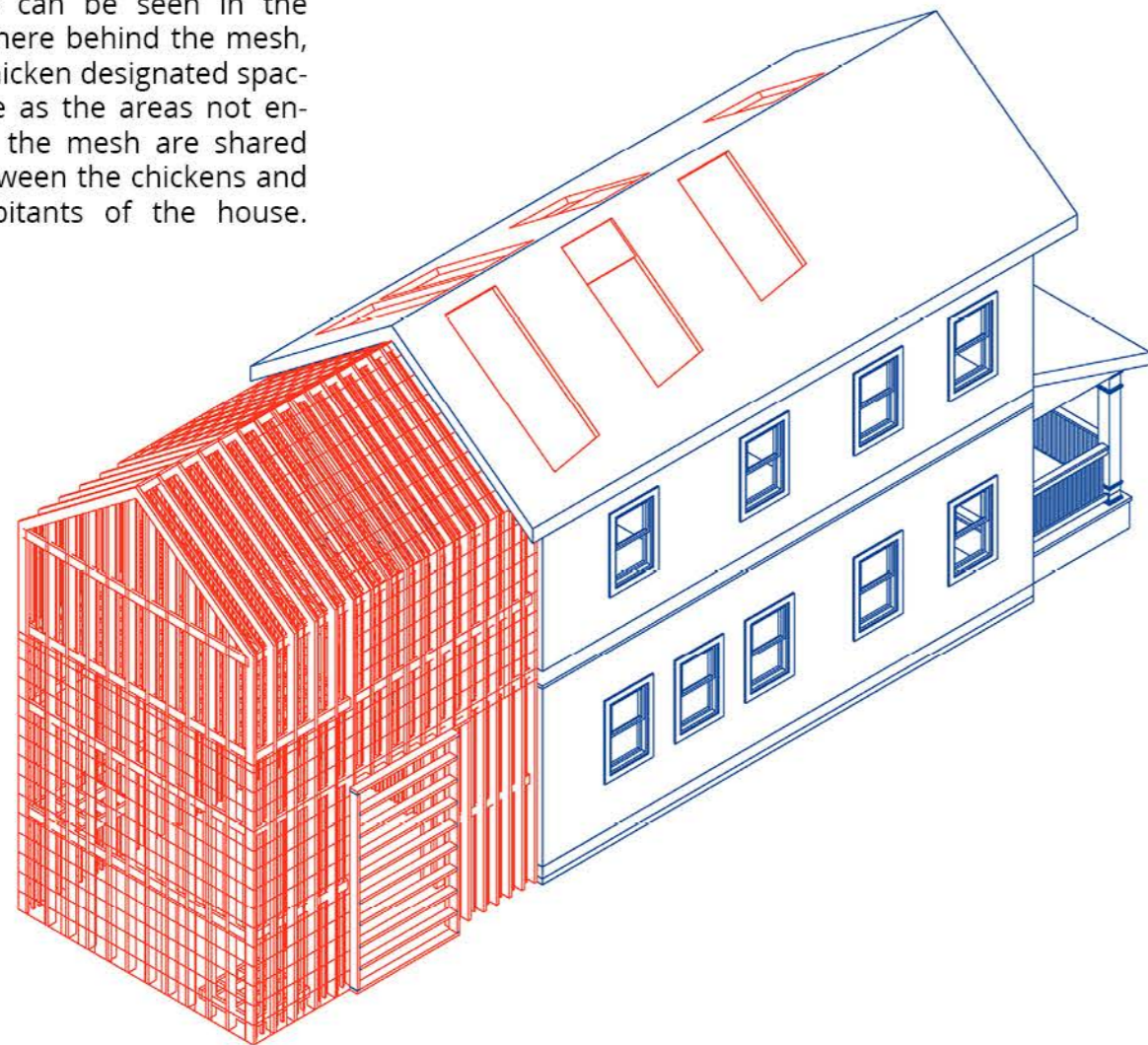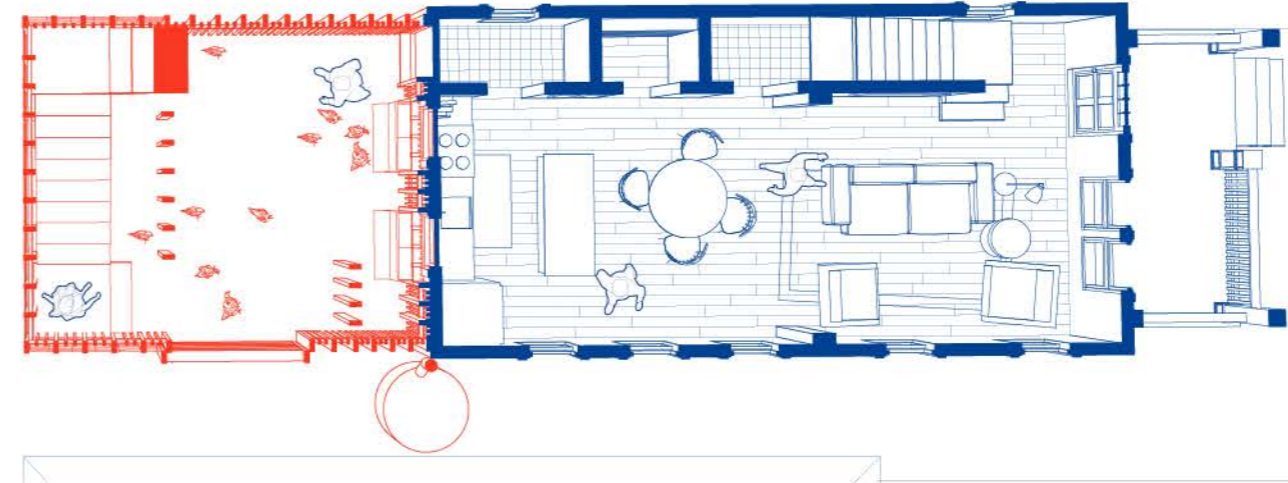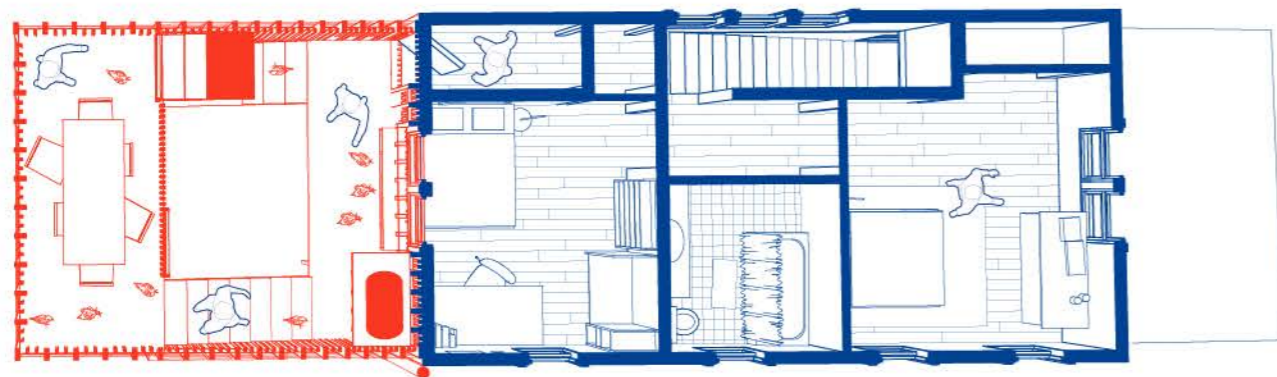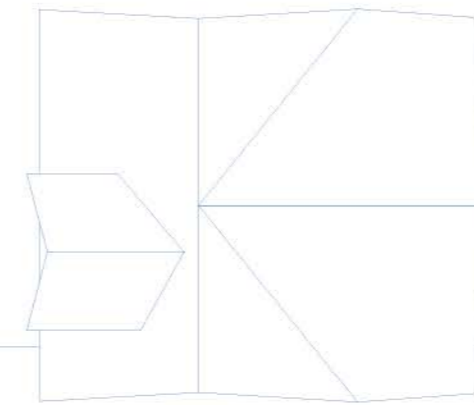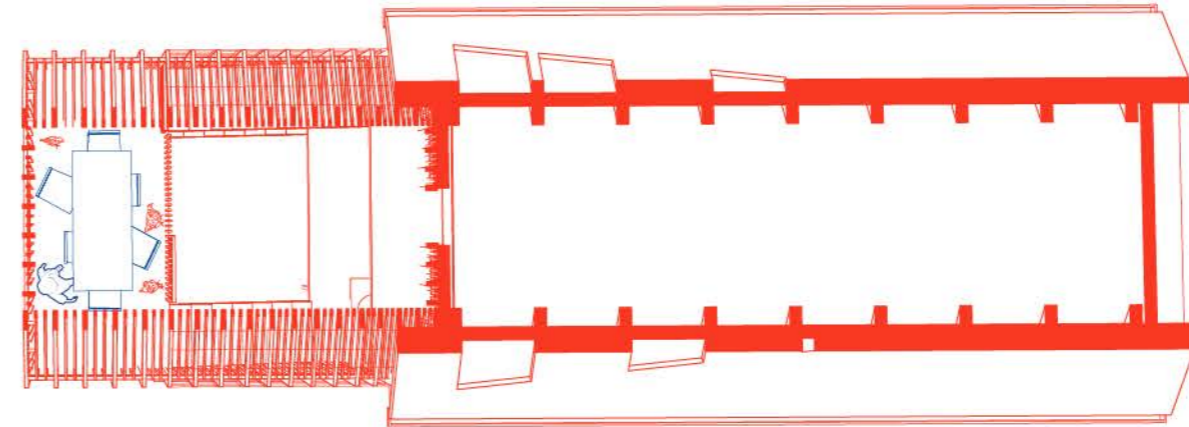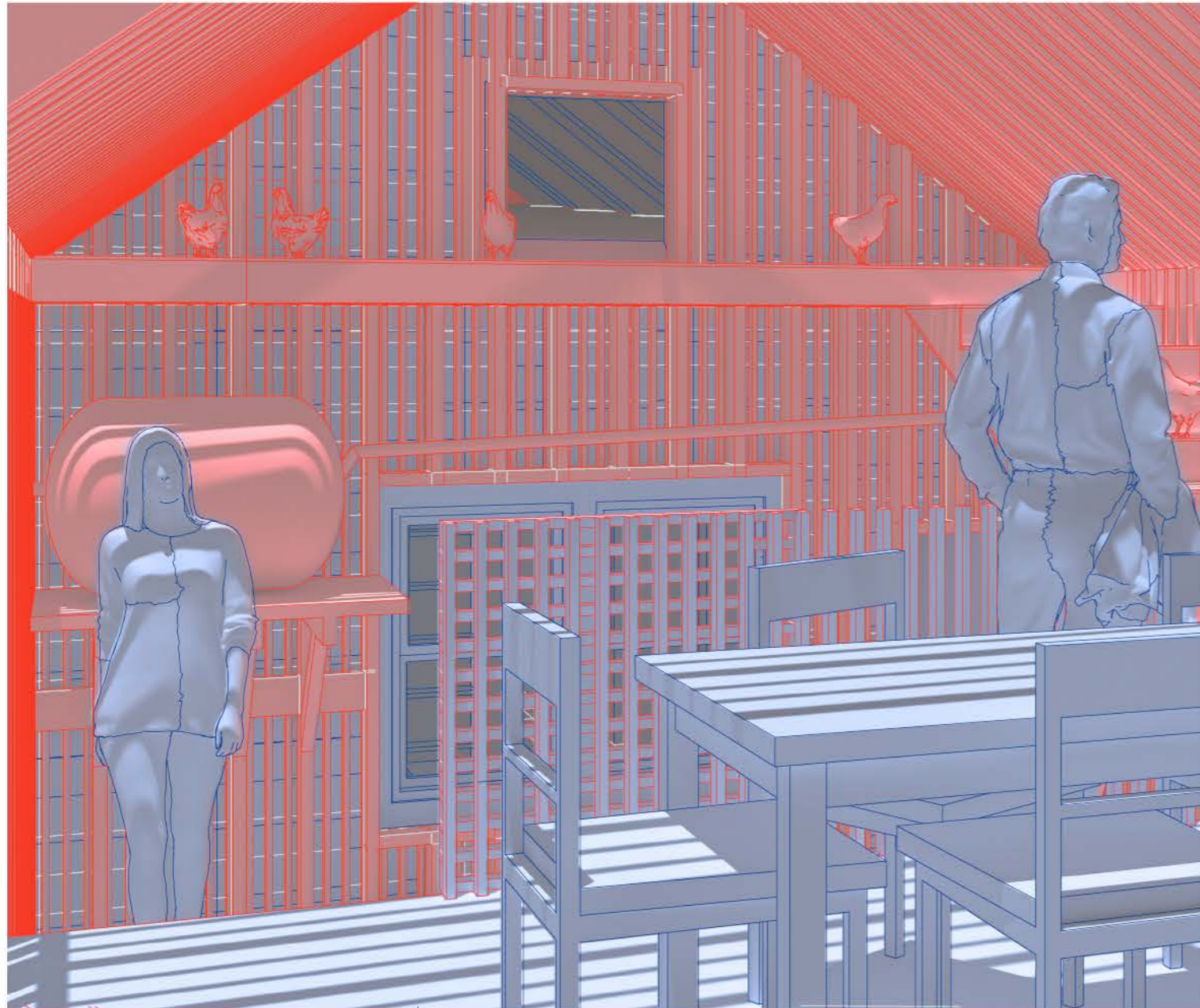
EXPERIENCE

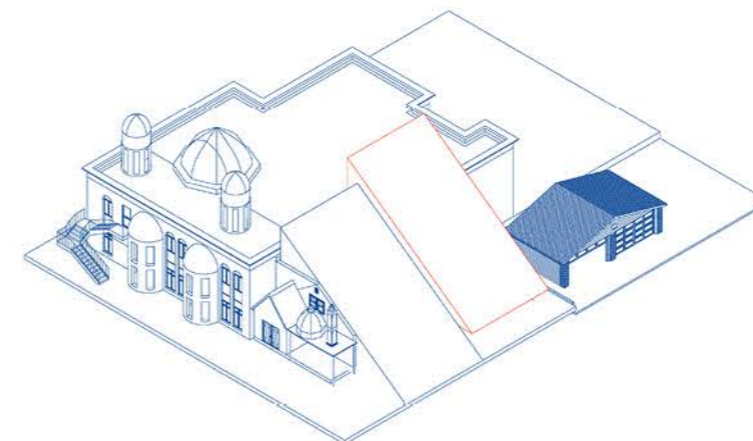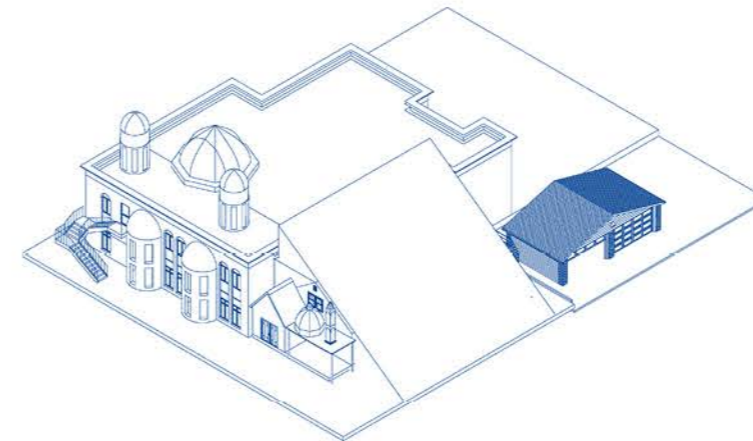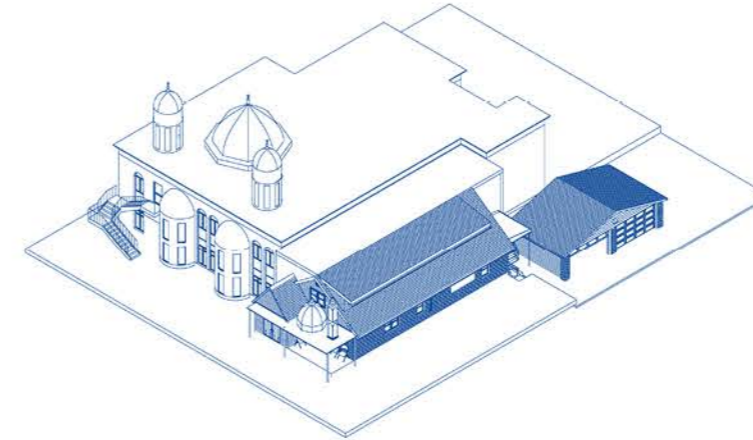# URBAN CHICKS /
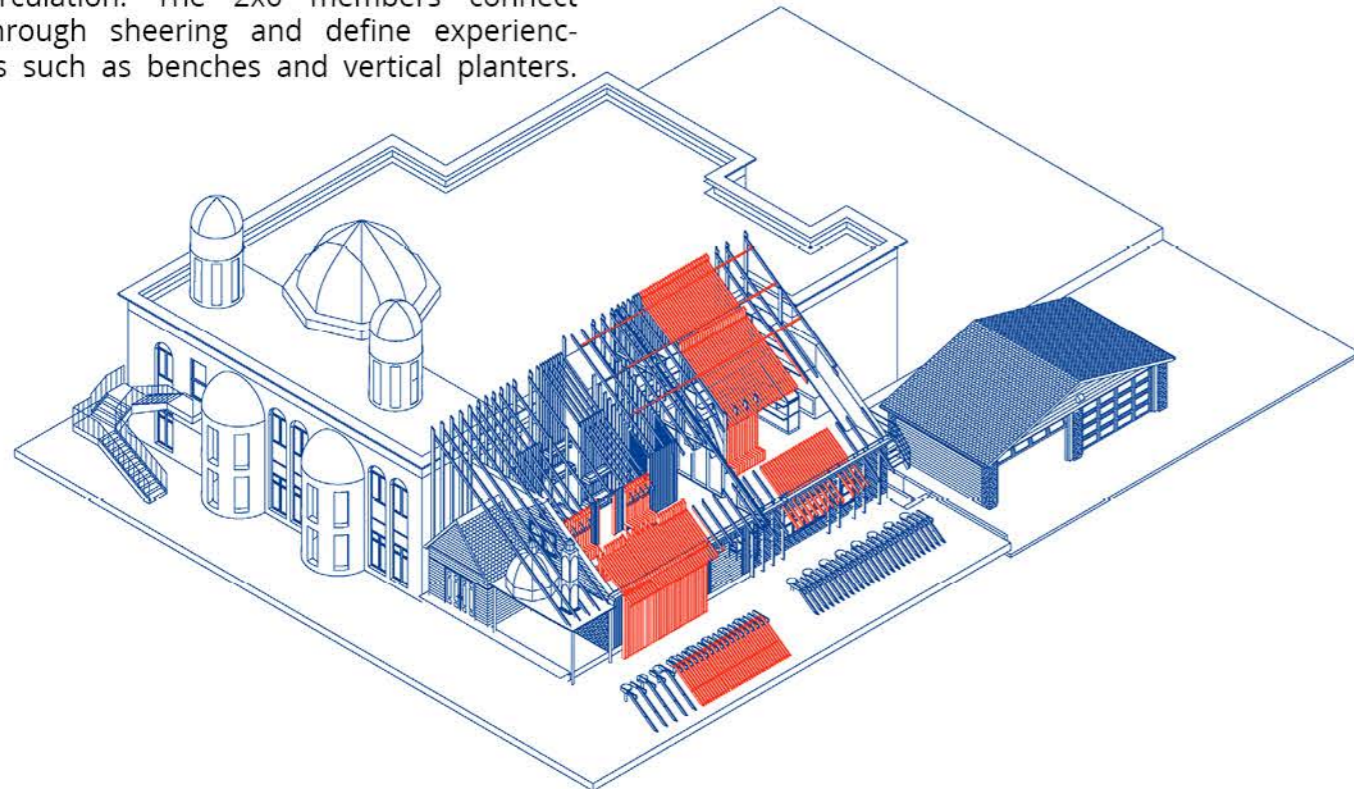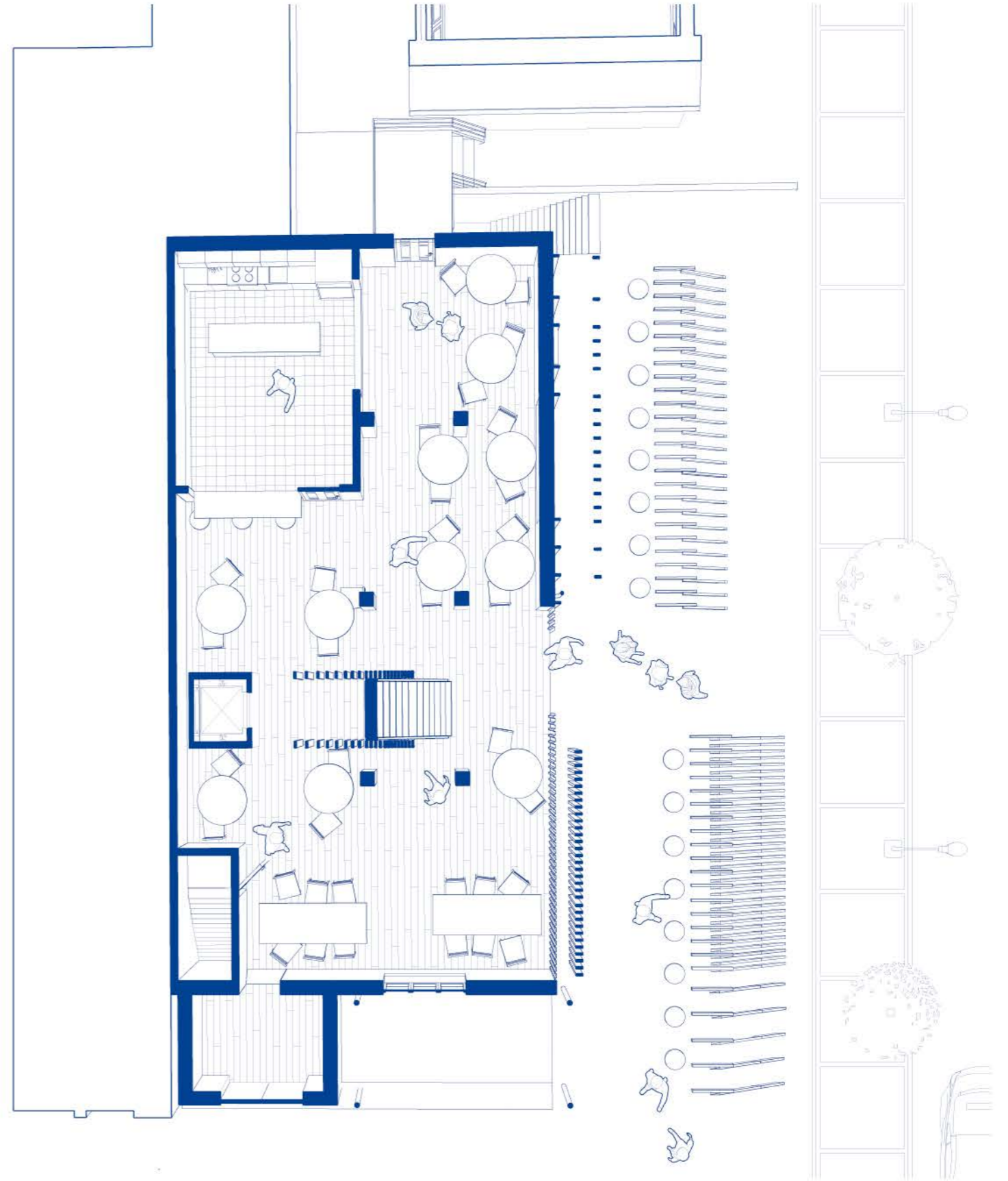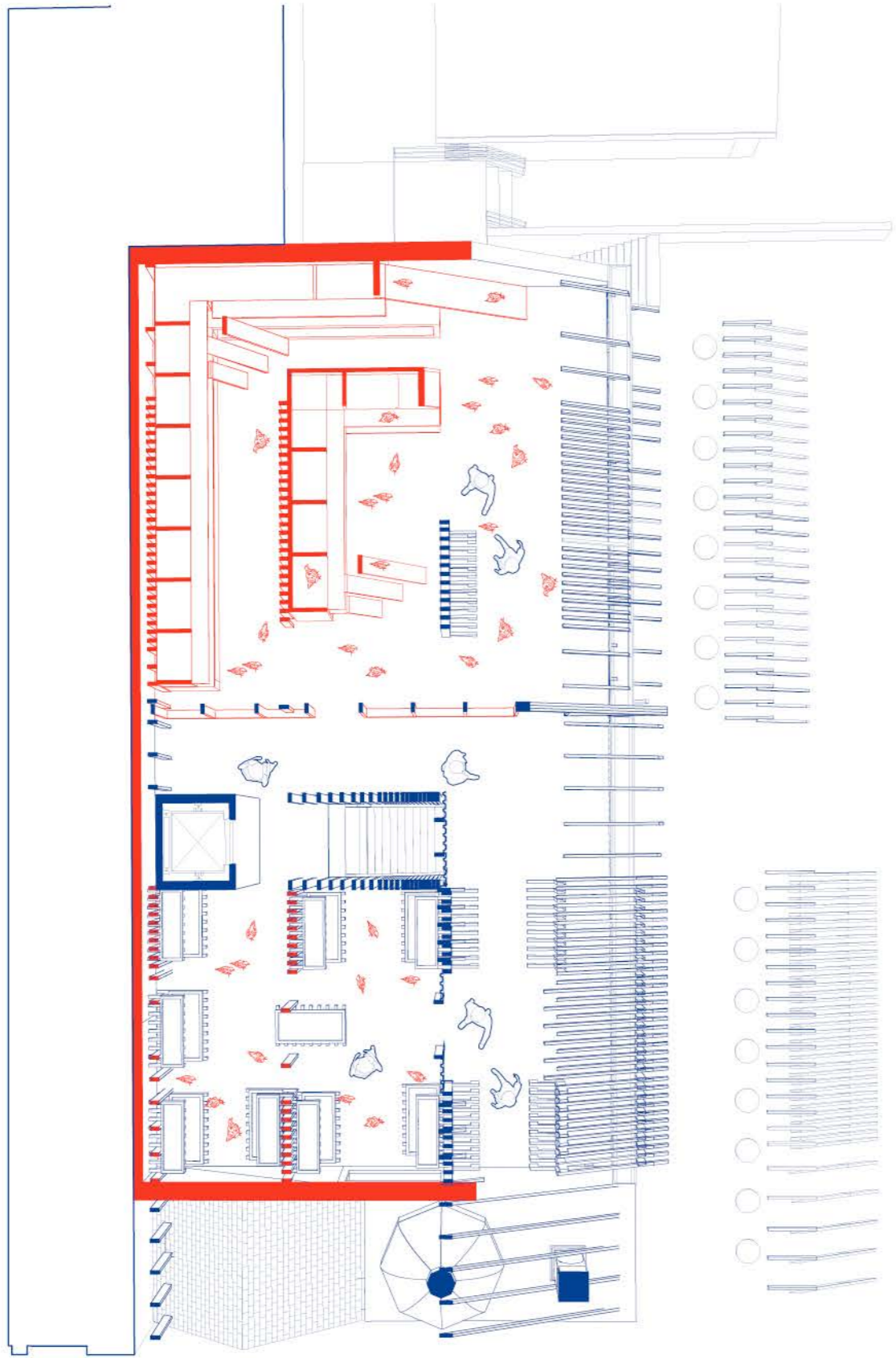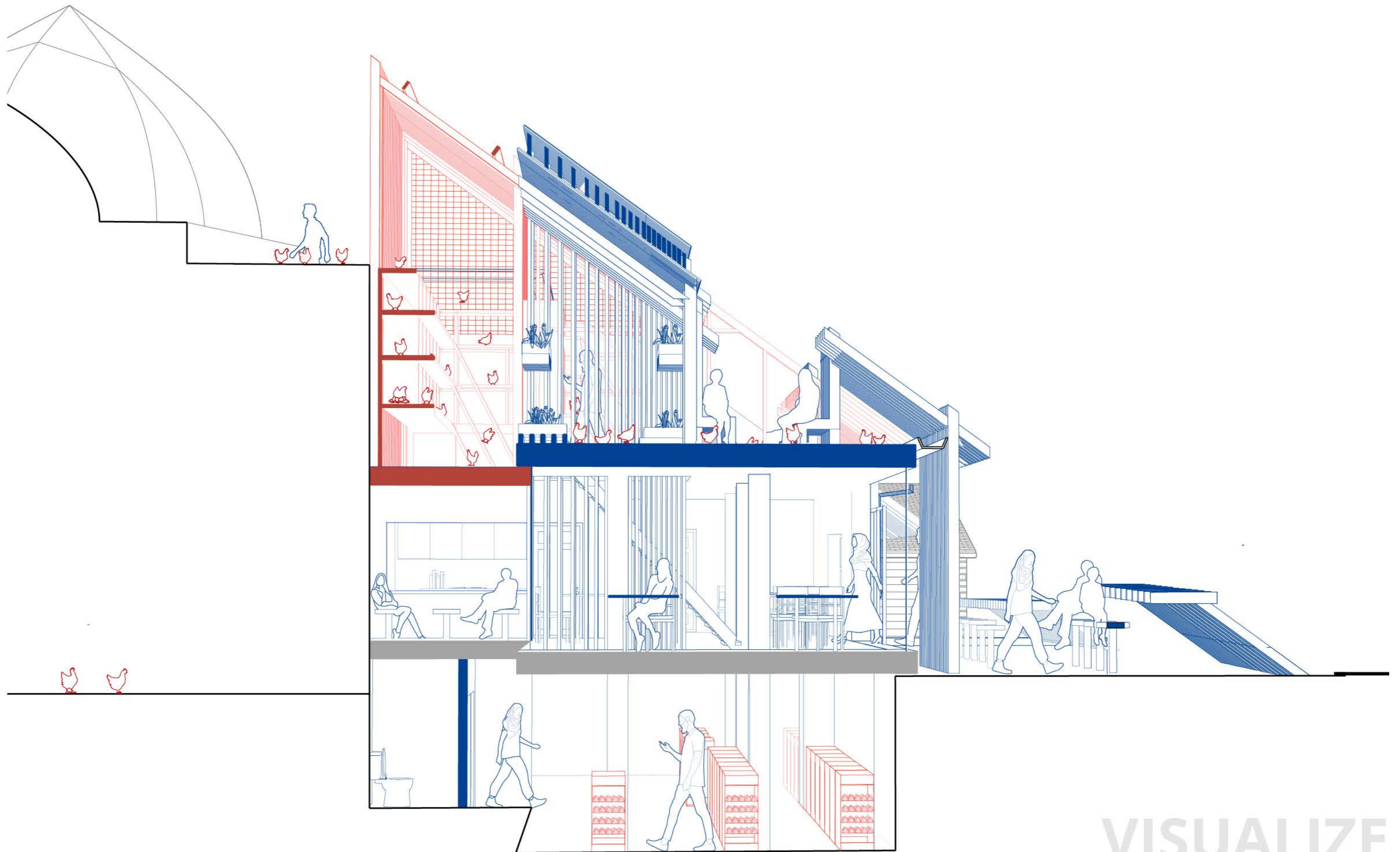## House-House

URBAN CHICKS /
House-Mosque

An Afghan Muslim community currently utilizes a house renovated in the 90s to function as a mosque. This community has gathered donations and is now building an adjacent formalized mosque. In addition, we've considered the old mosque-house as a site for our urban chicken farming. Starting at the roof is a coop housing 45 chickens and an herb garden. The herb garden serves as the space for chicken and human co-existence. The first floor is a r e s t a u r a n t promoting social engagement, and the basement acts as a space for incubators to fully capitalize on the existing/unused areas. A vertical shear occurs at the split between the herb garden and the coop to allow roof access to the adjacent mosque, which both chickens and humans access. The structure uses 2x6 joists; the joists level of density depends on the program. For example, a more dense network implies chicken concentration, whereas an open structure implies human concentration or circulation. The 2x6 members connect through sheering and define experiences such as benches and vertical planters.
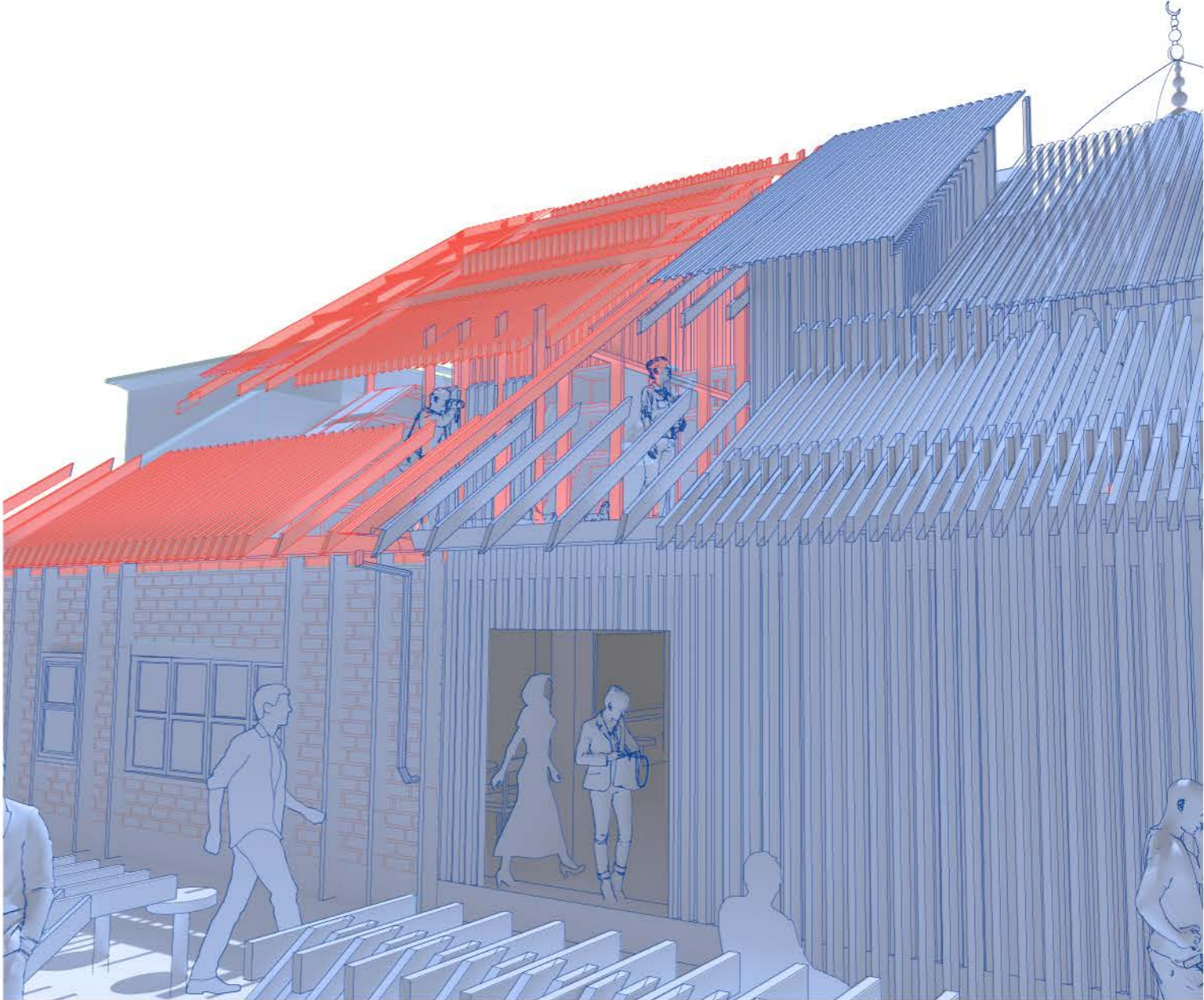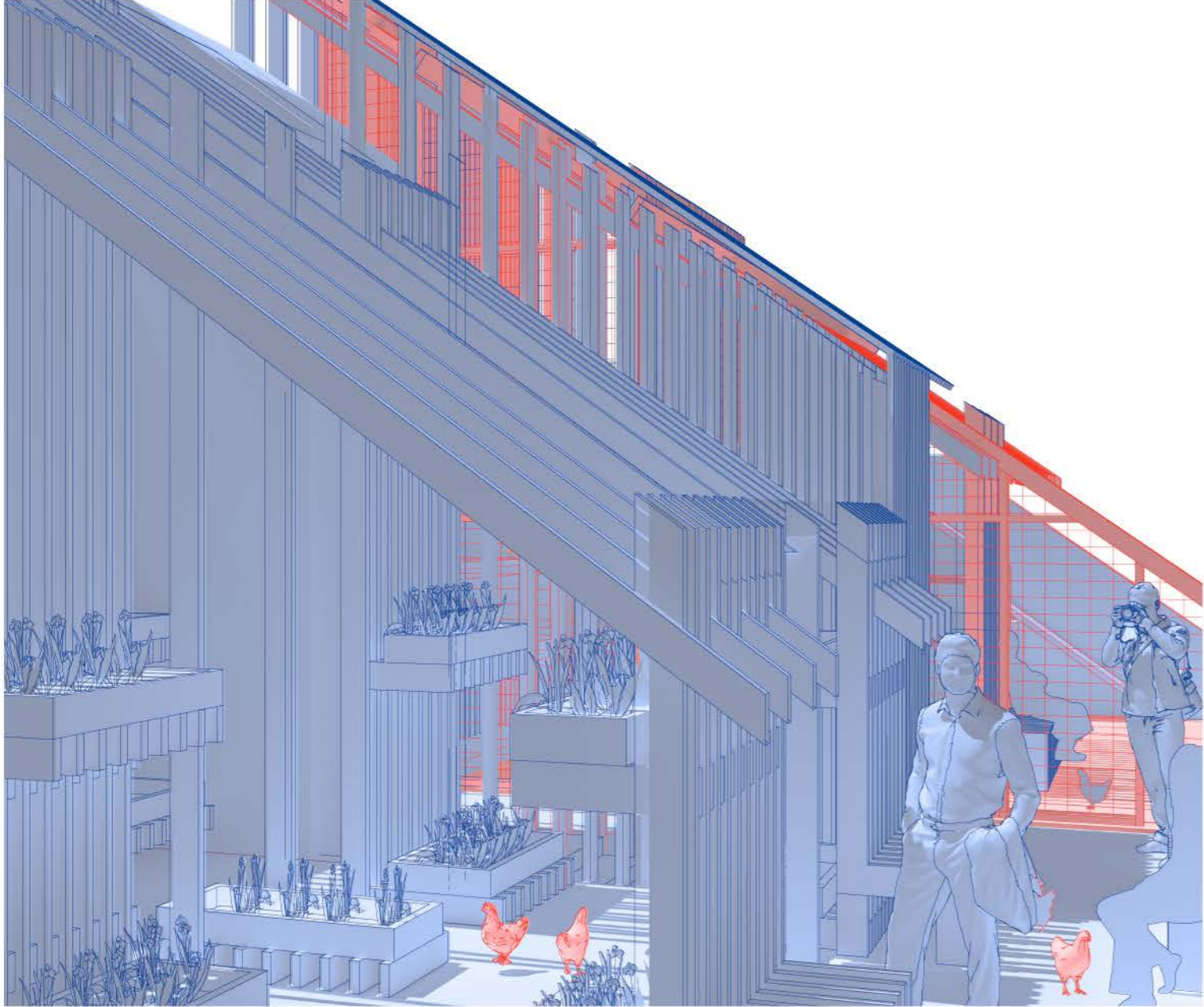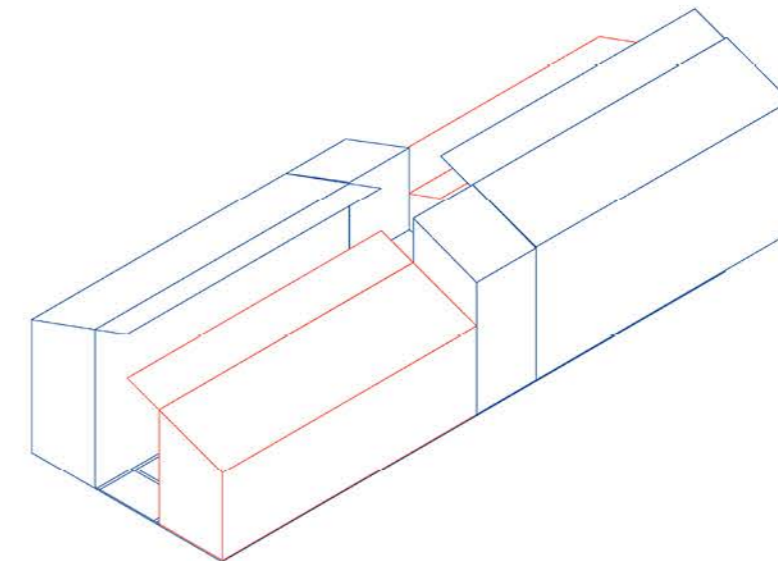
TEST

URBAN CHICKS /
Community Garden

The third site is A community garden housed in Kissena Park, which caters to an older Asian immigrant demographic. The garden intervention expands 8' into the community garden, bridging 8' over the sidewalk, and extending 8' in the opposite direction onto the street. This modular design sits along with the community garden, housing a variety of programs. The coop connects by a seemingly floating bridge leading to human activity through the vertical shift. When the module repeats, the Chicken coop is connected to a playground, chess adult play, and a market where produce from the community garden is sold. The sheds that do not connect by bridge consist of support spaces such as restrooms, cisterns, organic waste storage, farmer tools, and a space to house chicken tractors. This shed-like structure shears vertically, creating a bridge marking the movement overlap between the chicken and humans. The structure uses 2x6 joists with the members sheering to make benches. The enclosures at the chicken coops are semi-enclosed with hay insulation sandwiched between a double corrugated wall.

The training center is designed to educate those who are not co-existing with chickens through a variety of programs such as chicken rearing coops, a kitchen classroom, classrooms and lab spaces. In addition, there is a butcher, an IT office and exhibition spaces in order to facilitate casual learning. The exhibition space will showcase the technological advancements of contemporary farming methods that will be used in our poultry farming system.

EXPLORE
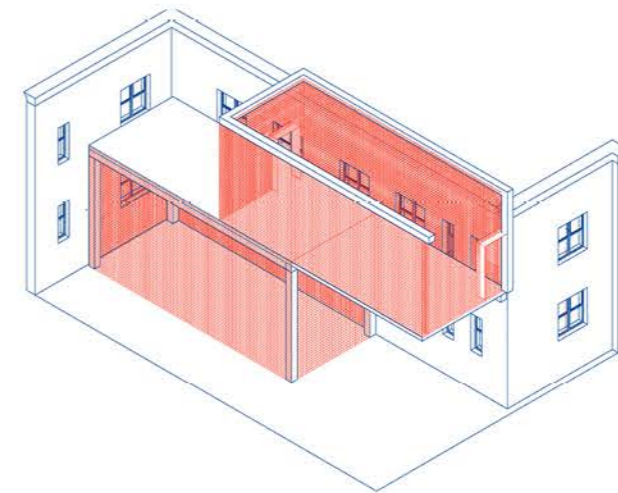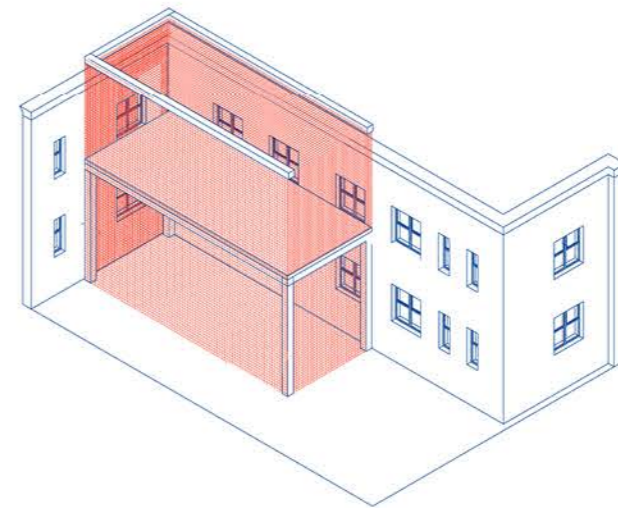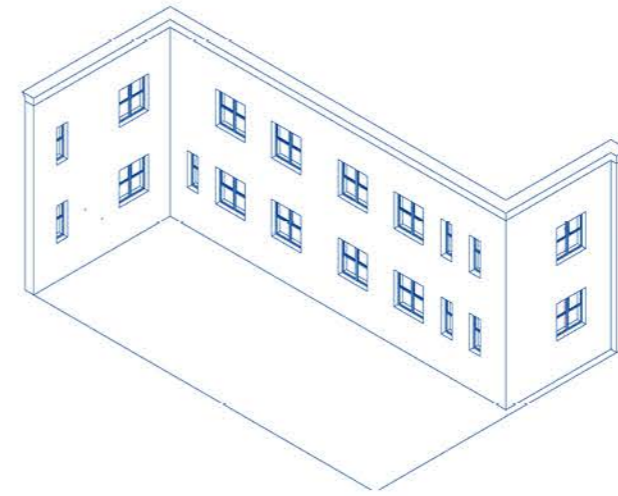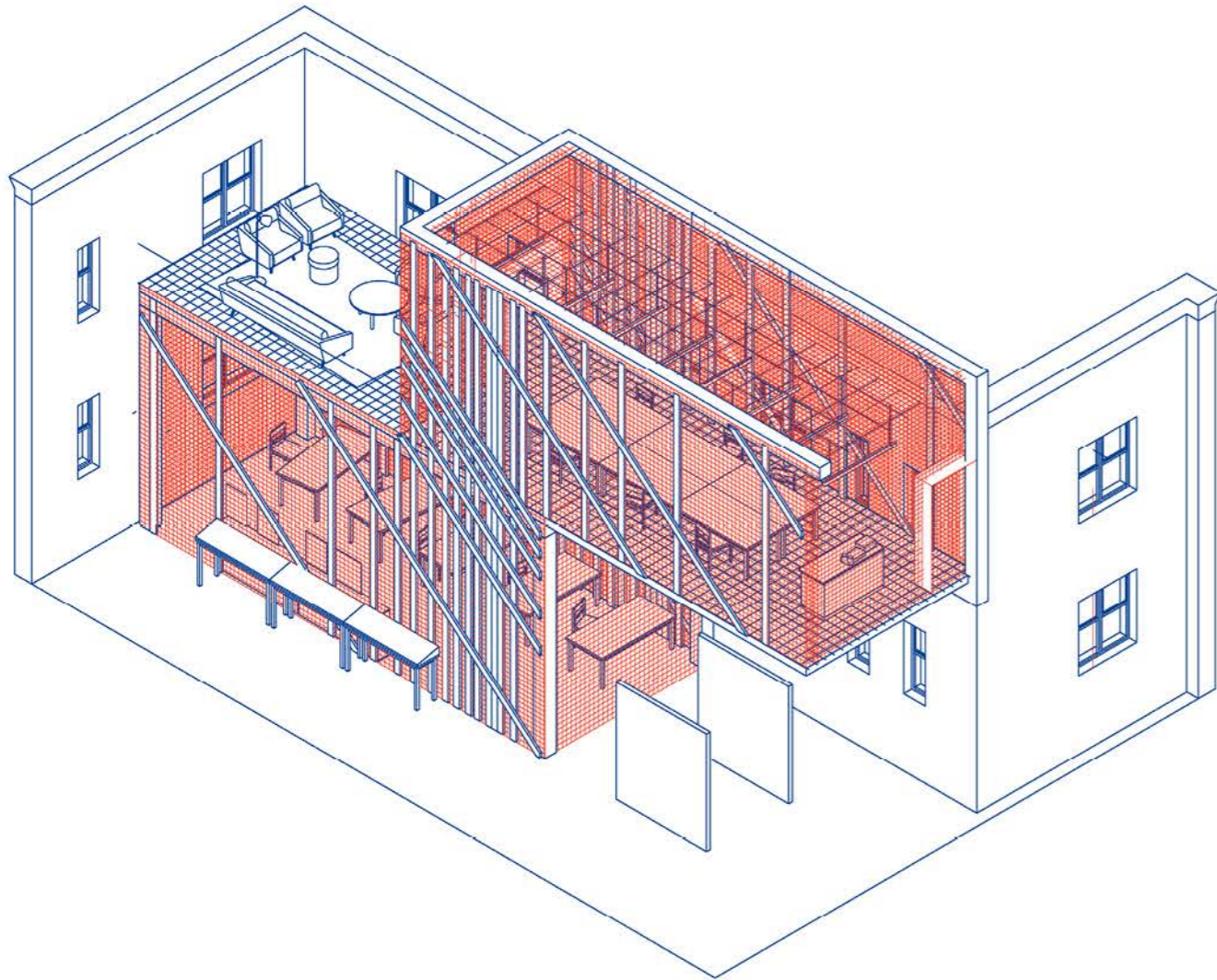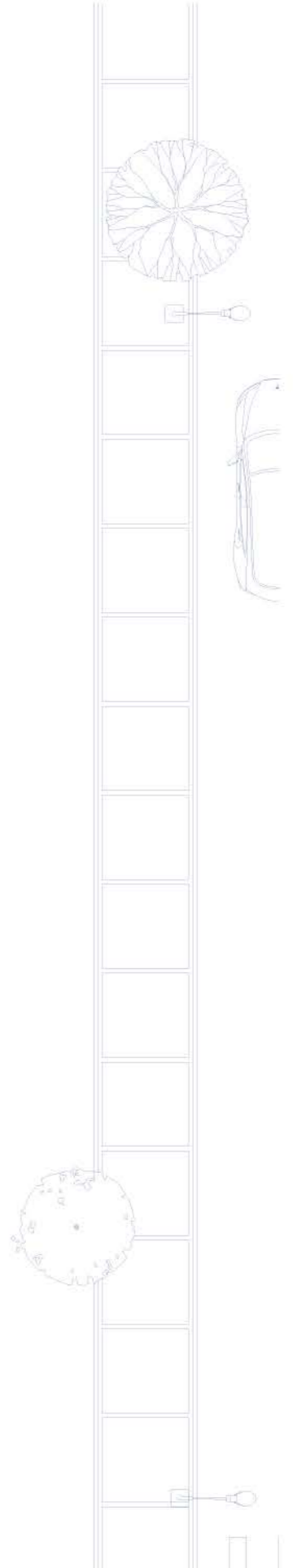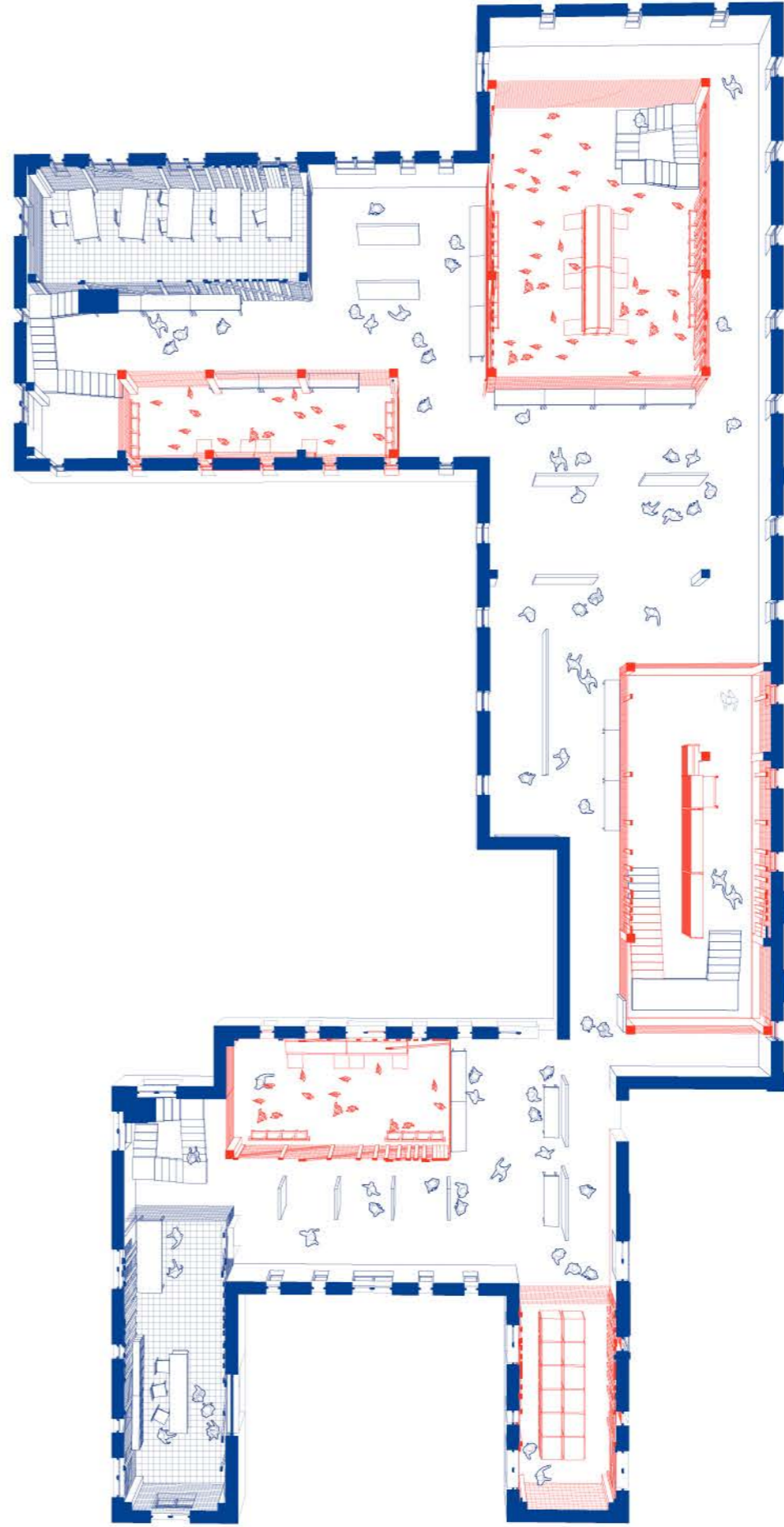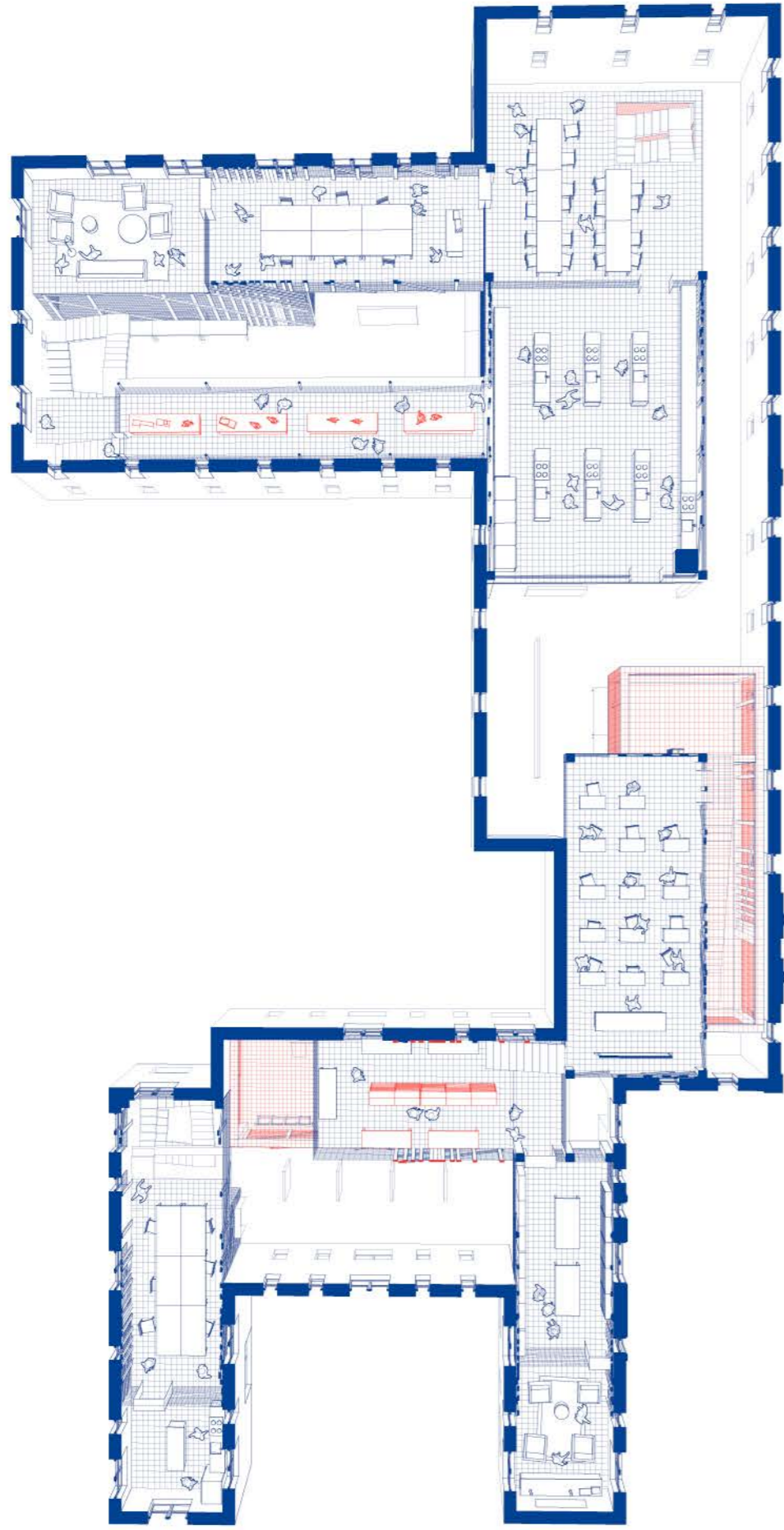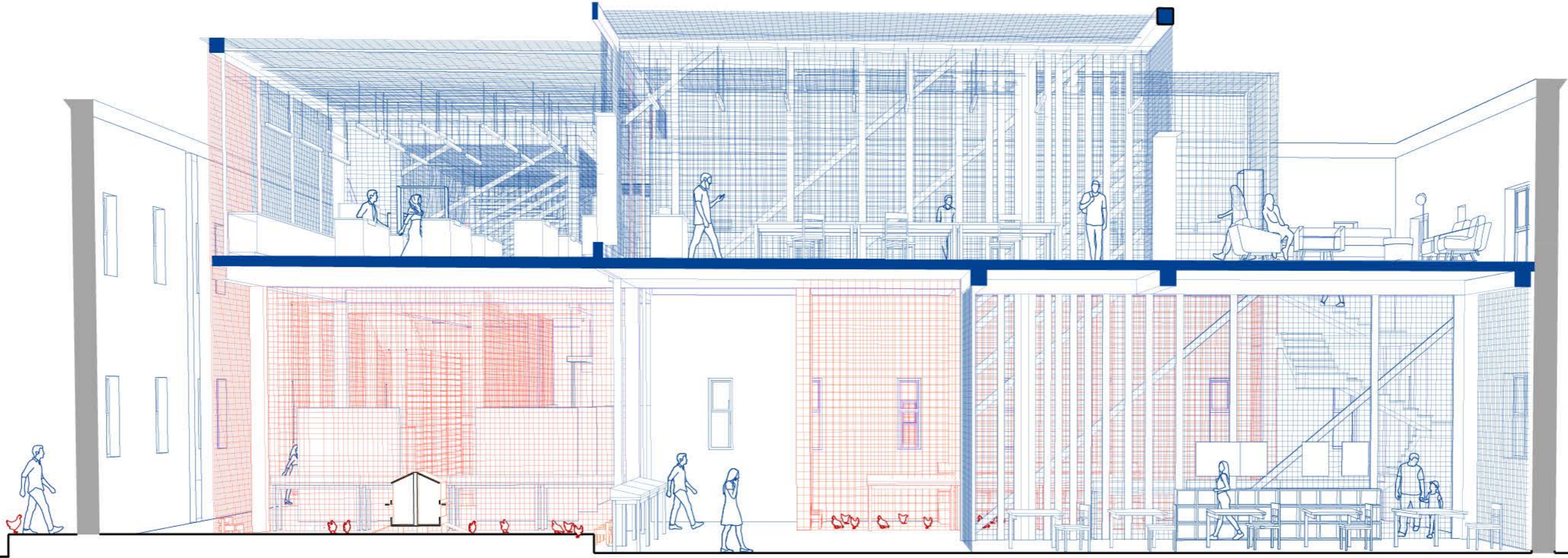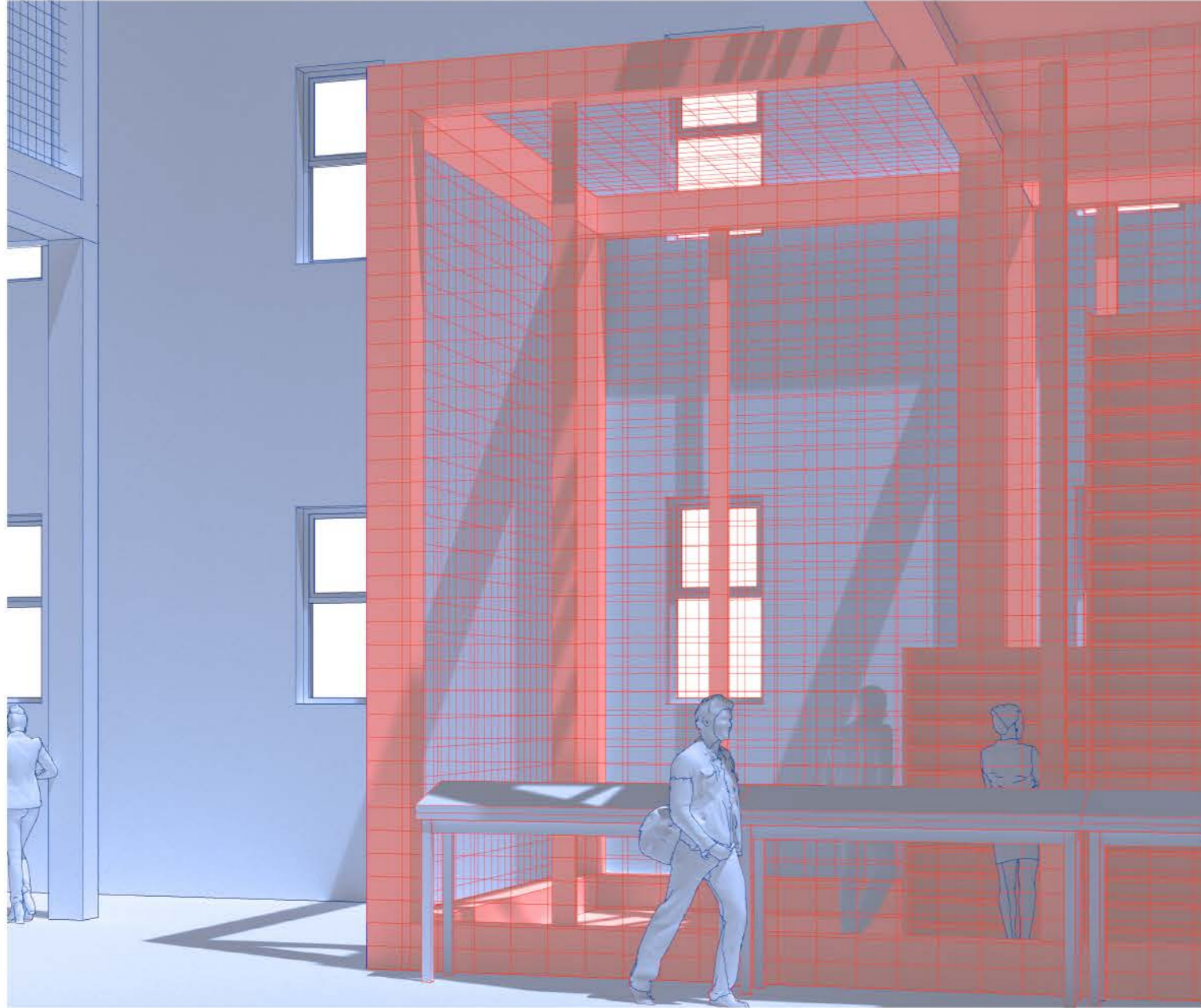
EXPERIENCE

CAIRO:

Urban Fluctuation of Identity, Formal and Informal Exclusion

NEW SHEPHEARD HOTEL, 1957

THE YACOUBIAN
BUILDING, 1937

OLD SHEPHEARD
HOTEL,
1851 - 1891

MANSHEYA NASIR,
FARMER IMMIGRATION/1940'S
TRASH CITY// 1967

DREAMLAND, 1999

The Arab City In Film
Yasser Elsheshtawy

Investigation by:
Jon Liang / Zenah Sakaamini

URBAN FLUCTUATION OF IDENTITY, FORMAL & INFORMAL EXCLUSIONS

In Collaboration w/ Jon Liang

Professor: Yasser Elsheshtawy
Course: Arab city in Film

The Yacoubian building was set during the early 1990s and portrayed Egyptian society after the revolution of 1952. With its plot and the arcs of each of the film's protagonists, the movie demonstrated a fragmented Egyptian society and the clashing social identities represented throughout the levels of one building. Our research delved into the historic spatial context of exclusion within society. The Yacoubian building symbolized the product of the cycles of creative destruction and social disconnect in 20th century Cairo. This pattern of creative destruction in the Yacoubian building created the characters in the film, each emblematic of a specific aspect of Egyptian society. The patterns led us to investigate spatial typologies in Cairo that possess characteristics similar to those our protagonists share.

The   Yacoubian   Building:
The Yacoubian building was formerly a luxury apartment owned by the elite of Egyptian society. The vertical layer of each building possessed an identity. At the ground level, the doorman and janitor. The apartments housed the wealthy, and the roof was initially designed to support the units serving as laundry and storage spaces. (The Yacoubian Building) Following the Fires of 1952 and the dissolution of the kingdom of Egypt, foreigners and the rich moved out of downtown Cairo. Population growth, rural-urban migration, and the lack of affordable housing led to the modification of storage and other service spaces into informal housing for the poor.

CAIRO: URBAN FLUCTUATION OF IDENTITY, FORMAL AND INFORMAL EXCLUSION

Urban Fluctation of identity, formal and informal exclusions is an investigation exploring identity concerning Egyptian identity concerning the spaces people occupy. As a start, the Yacoubian Building symbolizes the clashing social identities of the nation presented in one building. Post revolution, Cairo was filled with multiple identities embodis by a range of formal and informal spaces.

POSTAGE CLEAR ZONE

34 Talaat Harb, Bab Al Louq, Abdeen, Cairo Governate, Egypt

1937
Typology: Luxury Apartment

THE YACOUBIAN BUILDING (pre & post revolution)

Inthe example of the Shepheard, the hotel possessed a British colonial identity. After the revolution, it attempted to reconcile Arab and western identities while shedding glamour and other associations to its predecessor. In our investigatiom, we then navigate to two very exlusionary spaces on opposite ends of society to inderstand the remnants of the past and implicatins for the future of Cairo

POSTAGE CLEAR ZONE

34 Talaat Harb, Bab Al Louq, Abdeen, Cairo Governate, Egypt

1937
Typology: Luxury Apartment

Yacoubian Building Rooftop

The Yacoubian Building was formerly a luxury apartment complex with apartments owned by the elite of Egyptian society. The roof was initially designed as laundry and storage spaces for each tenant.

POSTAGE CLEAR ZONE

34 Talaat Harb, Bab Al Louq, Abdeen, Cairo Governate, Egypt

1937
Typology: Luxury Apartment Storage

SOURCE: Hamed, Marwan, The Yacoubian Building, Arab Co for Cinema Production & Distribution, 2006

Shepheard   **Hotel:**

The Shepheard hotel was built in 1937 and constructed by Hagop Yacoubian, a second infrastructure we explored further. This hotel possessed a British colonial identity during its height and was a space of leisure for the British colonizer. It was known for its opulence, famous guests, and role in creating a European Cairenes identity. Its stained glass windows, Persian carpets, lavish gardens, terraces, and great granite pillars reinforced the European influence in Downtown Cairo which isolated itself from the rest of the city. (Elsheshtawy 215) After the revolution, the shepherd hotel attempted to reconcile Arab and western identities while shedding glamour and other associations to its predecessor.

The Shepheard Hotel and Ezbekieh Square served as a cultural center and a base for the military. The spaces both represented a formal attempt (architecturally and militarily) to alter the Egyptian urban landscape and identity to a European city while also moving away from native and vernacular identities. (Elsheshtawy) On January 26, 1952, the hotel was completely destroyed during the Cairo Fire and the anti-British riots that led to the Egyptian Revolution of 1952. (Elsheshtawy) The new Shepheard Hotel sought to incorporate Western modernism with classic Arabic lines. It was presented as the "face of a new Egypt," symbolizing the country's movement towards modernism and nationalism under Nasser's leadership but losing the connotations of luxury associated with its predecessor. (Elsheshtawy)

Yacoubian Building Rooftop

Following the Cairo fires and the dissolution of the kingdom of Egypt, foreigners and the rich moved out f downtown Cairo. Population growth, rural-urban migration, and a lack of affordable housing led to the modification of storage and other service spaces into informal housing for the poor.

POSTAGE CLEAR ZONE

34 Talaat Harb, Bab Al Louq, Abdeen, Cairo Governate, Egypt

1950's
Typology: Informal Housing

SOURCE: Hamed, Marwan, The Yacoubian Building. Arab Co for Cinema Production & Distribution. 2006

Shepheard's Hotel

Shepherd's Hotel was known for its opulence, its famous guests and its role in creating an European Cairo. It's stained glass windows, persian carpets, lavish gardens, terraces and great granite pillars reinforced the European influence in Downtown Cairo that isolated itself from the rest of the city.

POSTAGE CLEAR ZONE

154 El Mosky, Cairo Governorate, Egypt
1851 - 1891
Typology: Luxury Hotel

Shepheard's Hotel

The Shepheard's Hotel and Ezbekieh Square served as a cultural center and a base for the military. The spaces both represented a formal attempt (architecturally and militaristically) to alter the Egyptian urban landscape and identity to that of an European city while also moving away from native and vernacular identities.

POSTAGE CLEAR ZONE

154 El Mosky, Cairo Governorate, Egypt
1851 - 1891
Typology: Luxury Hotel

SOURCE: Elsheshtawy, Yasser (forthcoming, 2016). "Urban Rupture: A fire, two hotels and the transformation of Cairo." In Nelida Fuccaro (Ed.) Violence and the City in the New Middle East. Stanford: Stanford University Press.

URBAN FLUCTUATION OF IDENTITY, FORMAL & INFORMAL EXCLUSIONS

Manshiyat   Nasser:

On the outskirts of Cairo, "Manshiyat Nasser" is a city of more than 16 million people with no organized trash removal system. This site represents a substantial fragment of Egypt's society marked by 90% majority of Coptic Christians in a Muslim-majority country. The village is home to around 60.000 Zabaleen – Arabic for garbage collectors. Its economy revolves around the collection and recycling of Cairo's garbage. It lacks infrastructure and often lacks running water, sewers, or electricity. Despite the grand scale of trash, through the shattered walls and informality of infrastructure lays order and discipline as family units start their days together at dawn, making journeys to Cairo collecting the cities garbage. The community recycles 80% of the trash they collect, a ratio much higher than the European average. (PHmuseum

Dream   Land:

In the mid to late twentieth century, private developments were influenced by American consumerism. Egyptians, who were becoming more saturated with American symbols of wealth and prosperity, tried to emulate Western developments that embodied the lifestyle of success. (Elsheshtawy) However, these developments only catered to Egypt's "super-rich" minority (Mitchell 28), which only accounts for less than 5% of the total population. Dreamland was based on the ideals of creating gated communities which are exclusive to only those who can afford it. Private developments in Egypt and the Middle East continued to be the catalyst for social inequity and further promote and exclusive and insular mass consumerism and consumption community based on the idealistic and symbolic perceptions of American and Western prosperity. (Ritzer G) The developers (Baghat) aimed to model Dreampark after Disneyland, seeing the American park as a symbol for affluence, success, and a primary source of capital growth. (Baghat)

Shepheard Hotel

The new Shepheard Hotel sought to incorporate Western modernism with classic Arabic lines. It was presented as the "face of a new Egypt," symbolizing the country's movement towards modernism and nationalism under Nasser, but losing the connotations of luxury associated with its predecessor.

POSTAGE CLEAR ZONE

Corniche El Nil, Egypt
1957
Typology: "Luxury" Hotel

SOURCE: Elsheshtawy, Yasser (forthcoming, 2016). "Urban Rupture: A fire, two hotels and the transformation of Cairo." In Nelida Fuccaro (Ed.) Violence and the City in the New Middle East. Stanford: Stanford University Press.
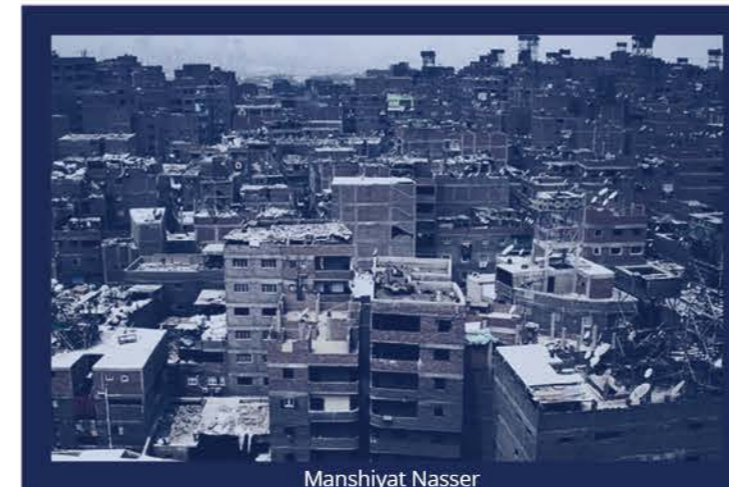
Manshiyat Nasser

On the outskirts of Cairo, Manshiyat Nasser, is a city of more than 16 million people with no organized trash removal system. A slum settlement was founded to store garbage in 1976 at the base of Mokattan hill.

POSTAGE CLEAR ZONE

Manshiyat Naser, Al Abageyah, El Khalifa, Cairo Governorate, Egypt
1976
Typology: Informal Housing

SOURCE: https://phmuseum.com

Shepheard's Hotel (1952)

On January 26, 1952 the hotel was completely destroyed during the Cairo Fire and the anti-British riots that led to the Egyptian Revolution of 1952.

POSTAGE CLEAR ZONE

154 El Mosky, Cairo Governorate, Egypt
1851 - 1891
Typology: Luxury Hotel

SOURCE: Elsheshtawy, Yasser (forthcoming, 2016). "Urban Rupture: A fire, two hotels and the transformation of Cairo." In Nelida Fuccaro (Ed.) Violence and

Manshiyat Nasser

The community recycles more than 80% of the trash they collect, a ratio much higher than the European average.

POSTAGE CLEAR ZONE

Manshiyat Naser, Al Abageyah, El Khalifa, Cairo Governorate, Egypt
1976
Typology: Informal Housing

SOURCE: https://phmuseum.com

EXAMINE

Findings and Conclusions:

The Yacoubian Building is a symbol of a city with a plethora of clashing identities, yet it is still trying to find its own identity to this day. The film, its characters, and the city's architecture might serve as a critique of 20th century Egypt's desire to fixate itself on one cohesive national identity, especially when this elusive identity could possibly be found in its diverse cast of characters and typologies.

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Elsheshtawy, Y. (2004) 'The Middle East City: Moving beyond the Narrative of Loss' in Y. Elsheshtawy (ed), Planning Middle Eastern Cities (pp261–273), New York, USA: Routledge.
Elsheshtawy, Yasser. "Urban Rupture: A fire, two hotels and the transformation of Cairo." In Nellida Fuccaro (Ed.) Violence and the City in the New Middle East. Stanford: Stanford University Press.
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"Manshiyat Naser: The Garbage City." PhMuseum. Accessed December 1, 2021. https://phmuseum.com/manelquiros/story/manshiyat-naser-the-garbage-city-35102aafcd.
Mitchell, T. (1999) 'Dreamland: The Neoliberalism of Your Desires.' Middle East Report, Vol. 210 pp. 28–33: Middle East Research and Information Project
Ritzer, G. (2008) The McDonaldization of Society, New York, United States of America: Pine Forge Press

Dreamland

Private developments in the mid to late twentieth century were influenced by American consumerism. Egyptians, who were becoming more saturated with American symbols of wealth and prosperity, tried to emulate Western developments that embodied the lifestyle of success.

POSTAGE CLEAR ZONE

Anwar El Sadat St, First 6th of October Giza Governorate, Egypt
1995-1999
Typology: Gated Community

SOURCE: Elsheshtawy, Y. (2004) 'The Middle East City: Moving beyond the 'Narrative of Loss' in Y. Elsheshtawy (ed), Planning Middle Eastern Cities

Dreamland Gold Resort

However, these developments (including the golf course) only catered to the "super rich" minorities of Egypt, which only accounts for less than 5% of the total population of Cairo.

POSTAGE CLEAR ZONE

El Wahat Rd, First 6th of October, Giza
Governorate, Egypt
1995-1999
Typology: Luxury Resort

SOURCE: Mitchell, T. (1999) 'Dreamland: The Neoliberalism of Your Desires.' Middle East Report, Vol. 210 pp. 28–33: Middle East Research and Information

Helnan Dreamland Hotel

Dreamland was based on the ideals of creating gated communities which are exclusive to only those who can afford it. Private developments in Egypt and the Middle East continued to be the catalyst for social inequity and further promote and exclusive and insular mass consumerism and consumption community based on the idealistic and symbolic perceptions of American and Western prosperity.

POSTAGE CLEAR ZONE

Al Wahat Al Baharia, 6th of October,
Giza Governorate 12566, Egypt
2008
Typology: Luxury Resort

Dreampark

The developers (Baghat) aimed to model Dreampark after Disneyland, seeing the American park as a symbol for affluence, success, and a primary source of capital growth.

POSTAGE CLEAR ZONE

El Wahat Road, Entrance 1, Giza Governorate, Egypt
1995-1999
Typology: Amusement Park

SOURCE: Bahgat Group (2010) Dreampark, www.bahgat.com/dpages.aspx?id=121. Accessed May 7, 2011.

EXAMINE

Pre-War
War-War
Post-War

PRE
WAR
POST
WAR
WAR
WAR

BY: ZENAH SAKAAMINI

HOUSING TYPOLOGIES

PRE/ COURTYARD HOUSE

Zenah Sakaamini Inside Azem Palace, once a home now a musuem
Image by Marwah Sakaamini, 2008

courtyard & iwan [6]

Private Living room [6]

[6] Fest, Syria. "Old Damascus Houses." Medium, Medium, August 15, 2017. https://medium.com/@SyriaFest/old-damascus-houses-38463de09a54.

PRE/ COURTYARD HOUSE

house to restaurant [7]

house to bath house [7]

house to hotel [8]

[7] Associated Press Feb. 1, 2022 "Power Cuts Help Revive Syrian Tradition of Public Bathhouses." Tribune, San Diego Union-Tribune, February 2, 2022. https://www.sandiegouniontribune.com/news/nation-world/story/2022-02-01/power-cuts-help-revive-syrian-tradition-of-public-bathhouses.
[8] "Beit Al Wali - Boutique Hotel in Damascus - L'Hôte Libanais." L'Hôte Libanais, October 24, 2020. https://www.hotelibanais.com/travel/guesthouses/beit-al-wali/

INVESTIGATE

PWP Housing Typologies investigates Typologies in Syria, specifically within Damascus and Allepo, beginning its documentation in the early 19th-century maneuvering through war and post-war conditions.
This study extracts two main typologies within each war type category, documenting them through collected images and architectural plans to further understand their resiliency and informal urbanism characteristics.

Prewar housing typologies in Syria vary based on its modernization timeline, which shows a movement from a
multi-generational courtyard style home to a more traditional-style family
structure, consisting of husband, wife, and children, often housed in a mid-rise tower.

The second phase of documentation identifies the reality of how Syria's vernacular architecture transformed through the crises of war. Through various acts of war such as airstrikes, buildings often lose their facade structure and privacy to the outside world. As a result, informal
settlements are created underground and in undocumented locations. (2)
Underground Housing became a tool for protection where families were now sleeping, storing, playing, cooking, eating, and living underground. (2)

Camp Settlements became a part of Syria's housing infrastructure during and past 1948's
Palestinian exodus and illegal occupation of Palestine. Camp Settlements began as tent
structures and evolved into low-rise permanent settlements with schools, hospitals, and social ecosystems.
(1)

Through first-hand personal knowledge, vacant lands became used by opportunistic squatters claiming ownership over land and property. In addition, vacant homes left behind by those who have fled Syria were also prone to be used by internally displaced refugees.

Post-War Housing is what is left behind after the war has "ended." The most common typology is what I am defining as "Face-less" housing.

How does Architecture respond to needs arising from religiously, geopolitically, relevant, and war-prone regions?

(1) "Syria." UNRWA. Accessed May 3, 2022. https://www.unrwa.org/where-we-work/syria.

(2) Bubacz, Kate. "Syrians Have Been Living Underground in Response to Airstrikes." BuzzFeed News. BuzzFeed News, April 14, 2018. https://

1919 -
"Emir Feisal backs Arab self-rule at the Versailles peace conference, following the defeat of Germany and the Ottoman Empire in World War I." (3)

1920 June -
"San Remo conference puts Syria-Lebanon under a French mandate and
Palestine under British control. King Feisal flees abroad ahead of French occupation forces the following month."
(3)

1918 October - "Arab troops led by Emir Feisal, and supported by
British forces,
capture Damascus, ending 400 years of Ottoman rule." (3)

1920 March -
"National Congress elected the previous year
proclaims Emir Feisal King of Syria from the Taurus mountains of Turkey to the Sinai desert in Egypt." (3)

1925-1943
"Nationalist agitation against French rule develops into uprising.
- France agrees to work towards a syrian independance
- British and Free French troops occupy Syria." (3)

1947 -
"Michel Aflaq and Salah - Al-Din- Al Bitar found the Arab Socialist Baath party." (3)

1947 -
"Michel Aflaq and Salah - Al-Din- Al Bitar found the Arab Socialist Baath party." (3)

1963 March - "Baathist army officers seize power." (3)

1967 June -
"Israeli forces seize the Golan Heights from Syria and destroy much of Syria's air force in the Six Day War with Egypt, Jordan and Syria." [3]

1973 October -
"Syria and Egypt go to war with Israel, but fail to retake the Golan Heights seized in 1967." [3]

1966 February - "Salah Jadid leads an internal coup against the civilian Baath leadership. Hafez al-Assad becomes defence minister" [3]

1970 November -
"Hafez al-Assad overthrows president Nur al-Din al-Atasi and imprisons Salah Jadid." [3]

1976 June -
"Syrian army intervenes in the Lebanese civil war to ensure that the status quo is maintained, keeping its Maronite Christian allies in a position of strength." [3]

1982 June - "Israel invades Lebanon and attacks the Syrian army, forcing it to withdraw from several areas. Israel attacks the PLO base in Beirut."

1983 May - "Lebanon and Israel announce the end of hostilities. Syrian forces remain in Lebanon." [3]

1982 February -
"Muslim Brotherhood uprising in the city of Hama suppressed by army, tens of thousands of civilians killed."
[3]

2000 June -
"President Assad dies and is succeeded by his second son, Bashar." [3]

[3] "Syria Profile - Timeline." BBC News. BBC, January 14, 2019. https://www.bbc.com/news/world-middle-east-14703995.

THE   COURTYARD   HOUSE

The most crucial form of Housing in Syria, historically and architecturally, is the Courtyard House belonging to the urban fabric of "Bilad Al-Sham," the region between the two rivers Tigris and Euphrates. The concept of the Courtyard House was a response to the environmental condition and the need to provide shelter and security to cattle. (5) This early idea utilized tents designed around an open space. (5) The Courtyard House can be found in various areas within Bilad Al-Sham with variations specific to its region. The emergence of the Islamic world in the 7th century further shaped the transformation of the Courtyard House's architectural elements positioning privacy and boundaries between openness and closeness in the center. The cultural conditions of extended family structure housing drove the scale of the courtyard house. They programmed the space with the possibility of semi-independent subunits functioning independently but still maintaining strong family ties (4). The courtyard house typology consists of unique elements that repeat throughout buildings. The primary sectional program consists of a basement floor, a ground floor comprising the main living area "Al Salamek," and a first floor including the private rooms called "Al Haramlek" (4) With the slow migration into more urban midrise development in the mid-1900s, more damascene-style homes became vacant and later transformed into hotels or restaurants.

[4] Alhawasli, Hiba. A., and Zeinab B. Farhat. "Response of Domestic Damascene Architectural Elements to the Climatic Factors between the Traditional and Modern Times." American Journal of Civil Engineering and Architecture. Science and Education Publishing, March 4, 2017. http://pubs.sciepub.com/ajcea/5/2/2/index.html.
[5] "Typologies of Traditional Buildings in Syria - Meda-Corpus.net." Typologies of Traditional Buildings in Syria. Accessed May 4, 2022. http://meda-corpus.net/libros/pdf_manuel/syria_eng/ats_eng_2.pdf.
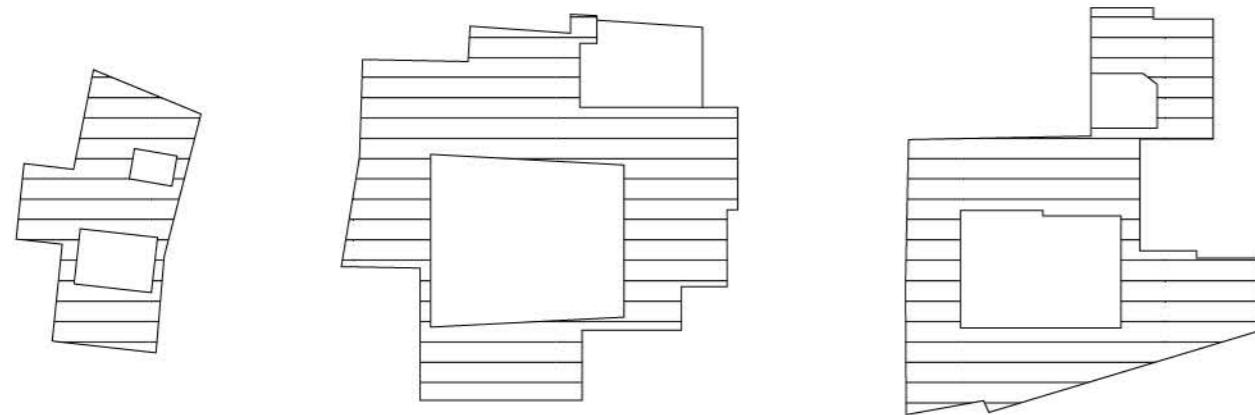
INVESTIGATE

Fig.1
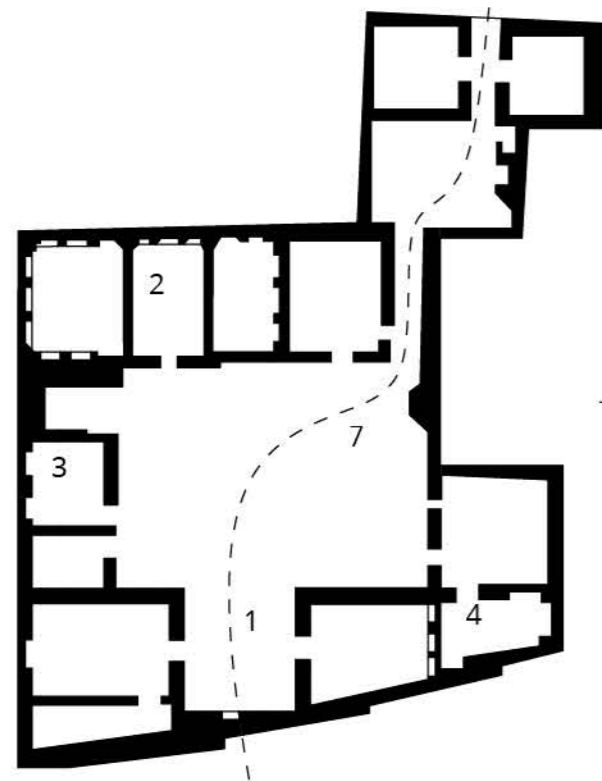

Fig.2

"1. Al- Iwan: with marble fountain or lake in its center and 2 rooms, one in east and the other in west.
2. Luxury drawing- room located beside the open yard or Al-Iwan.
3. Living rooms, not that important as the drawing room.
4. Services: bedrooms and kitchen.
5. One room or more relatively located in the middle above corridors or services zones, and it is called "Al- Nasseiah".
6. First floor consisting of northern room open to the south.
7. Stairs made of stone having decorative iron handrail.
8. The flying room which is a sitting room at the highest roof with windows in each of its four walls.
9. Wooden stairs, from the first floor to the roof, with walls and inclined ceiling " [4]

Fig 1: Courtyard style house variation of layout
Redrawn by Zenah Sakaamini
Fig 2: Ground Floor / 1/64" = 1'-0" [4]
Redrawn by Zenah Sakaamini
Fig 3: typ. Courtyard house floor plans[4]

Basement level

1. Laundry space
2. Rain water storage
3. Well
4. Entrance or Squifa
5. Intermediate space
6. Reception room
7. Room
8. Room
9. Courtyard

Ground level

Intermediate floor

First floor

10: Kitchen
11: Toilet
13: Covered gallery
14: Room
15: Maq'aad or loggia
16: Storage
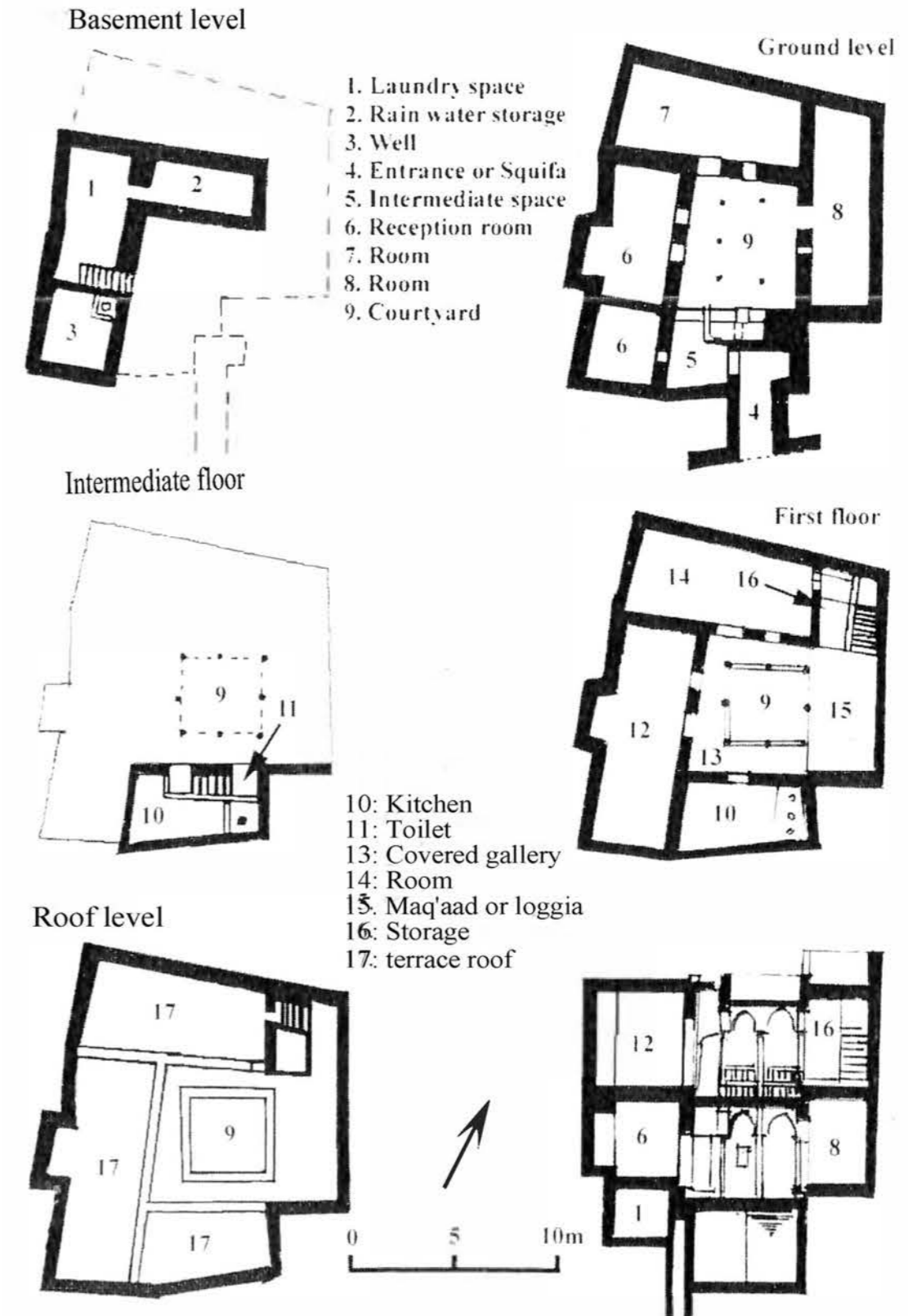17: terrace roof

Roof level

0   5   10m

Fig.3

(4) Alhawasli, Hiba. A., and Zeinab B. Farhat. "Response of Domestic Damascene Architectural Elements to the Climatic Factors between the Traditional and Modern Times." American Journal of Civil Engineering and Architecture. Science and Education Publishing, March 4, 2017. http://pubs.sciepub.com/ajcea/5/2/2/index.html.
(5) "Typologies of Traditional Buildings in Syria - Meda-Corpus.net." Typologies of Traditional Buildings in Syria. Accessed May 4, 2022. http://meda-corpus.net/libros/pdf_manuel/syria_eng/ats_eng_2.pdf.

INVESTIGATE

Zenah Sakaamini Inside Azem Palace,
once a home now a musuem

house to restaurant [7]

courtyard & Iwan [6]

house to bath house [7]

Private Living room [6]

house to hotel [8]

[6] Fest, Syria. "Old Damascus Houses." Medium. Medium, August 15, 2017. https://
medium.com/@SyriaFest/old-damascus-houses-38463de09a54.
[7] Associated Press Feb. 1, 2022 "Power Cuts Help Revive Syrian Tradition of Public Bathhouses." Tribune. San Diego
Union-Tribune, February 2, 2022. https://www.sandiegouniontribune.com/news/nation-world/story/2022-02-01/pow-
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[8] "Beit Al Wali · Boutique Hotel in Damascus · L'Hôte Libanais." L'Hôte Libanais, October 24, 2020. https://www.hoteliba-
nais.com/travel/guesthouses/beit-al-wali/.

INVESTIGATE

PRE-WAR/URBAN MID-RISE

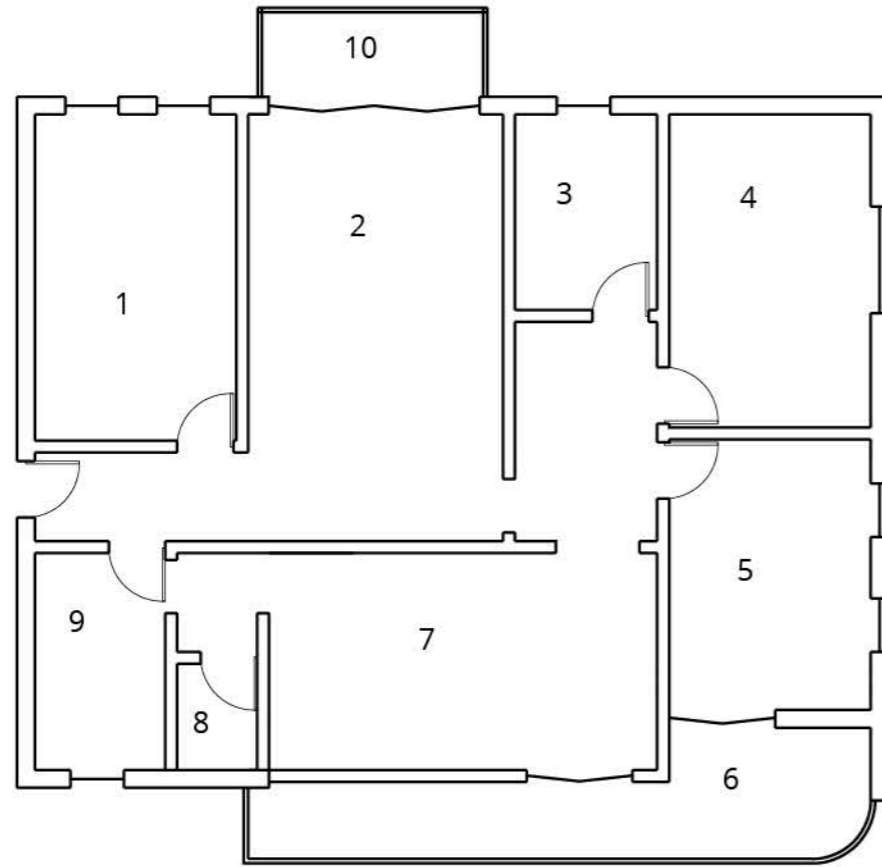*Fig.4*

1. Guest Living Rm.
2. Family Living Rm.
3. Bathroom
4. Bedroom 1
5. Bedroom 2
6. Great Balcony Leading views to the neighborhood block.
7. Family Living rm. 2
8. Toilet.
9. Kitchen

Fig 4: Floor Plan of a TYP. single family housing unit in a midrise building in damascus,Syria. This Floor plan was drawn from memory from my uncles house to which i grew up in (on and off) from ages 2-7.
Fig 5. My Uncle Riad Sabban and I inside Family Living Rm 2 taken by Marwah Sakaamini, 2008
Fig 6. Midrise Housing, Image by Zenah Sakaamini, 2008
Fig 7. Midrise Housing, Image by Zenah Sakaamini, 2008

Fig.5

*Fig.6*

Fig.7

INVESTIGATE

Vacancies in both Damascus and Allepo resulted from previous occupants fleeing the war and the destruction of buildings. Syrians who stayed in Syria, affected by the war, sought shelter in underground spaces. Underground Housing created an informal housing typology that connected the occupant with the street level uniquely. Occupants living underground would only leave to get food and air out wet laundry. Adults created make-shift furnaces, storage, sleep, and play areas.

Below are exerpts from an article -

"The family seen in these photos had been living largely underground in the beleaguered eastern Ghouta neighborhood as the Assad regime sought to gain control from the rebels." [2]

"The living conditions underground were inhospitable at best, according to the International Rescue Committee." [2]

"There is little fresh air and the high humidity in close quarters was causing mold and respiratory infections to flourish. Cooking, cleaning, playing, and sleeping all had to be done below ground to protect from airstrikes. To go upstairs and outside to retrieve household items or food rations was risky at best," the IRC said." [2]
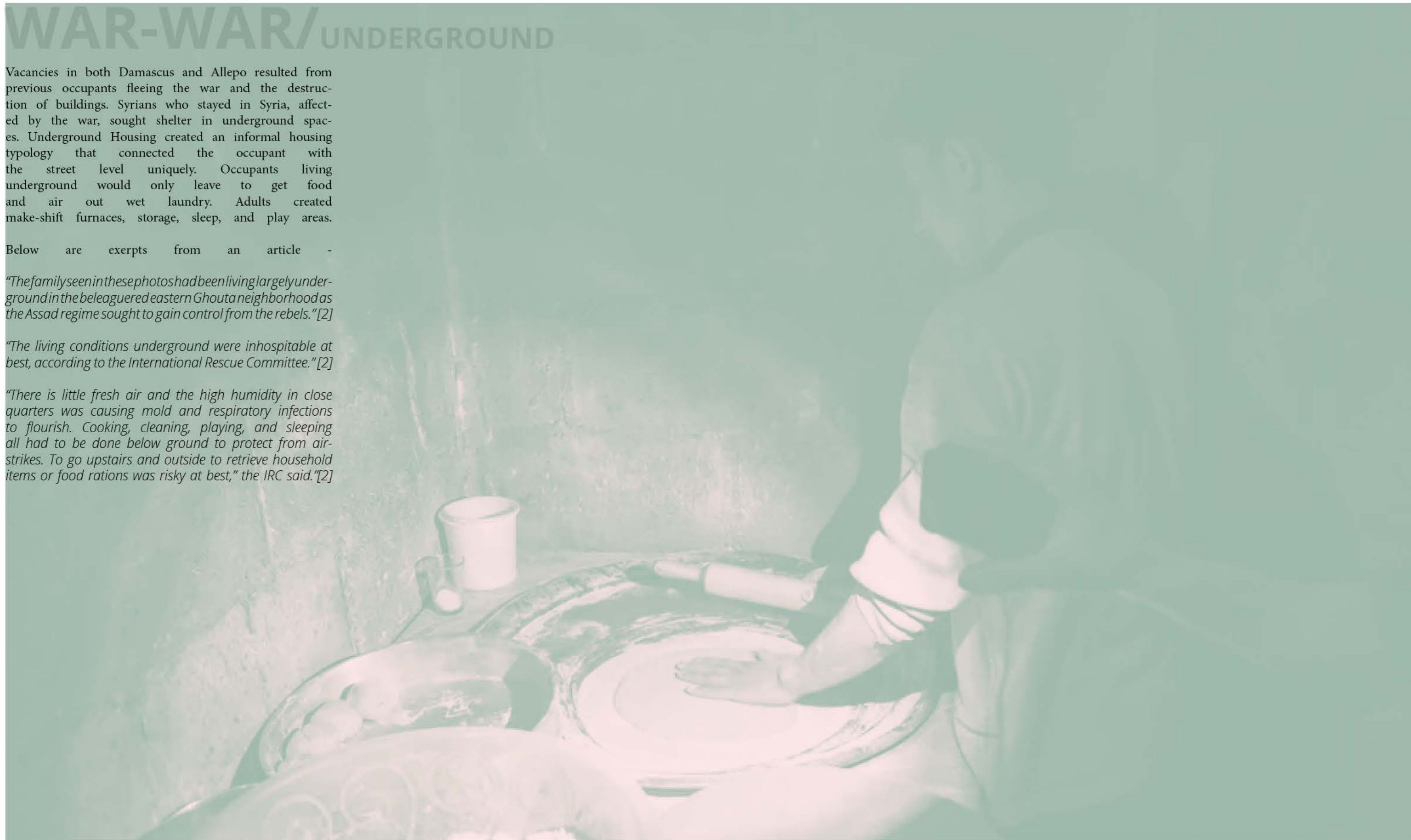
(2) Bubacz, Kate. "Syrians Have Been Living Underground in Response to Airstrikes." BuzzFeed News. BuzzFeed News, April 14, 2018. https://www.buzzfeednews.com/article/katebubacz/syria-citizens-live-underground.

INVESTIGATE

WAR-WAR/UNDERGROUND

"Syrian children climb out from their underground shelter in eastern Ghouta."

Abdullah Hammam /
International Rescue Committee
2018
[2]

"Laundering clothes poses a serious risk to families in Douma, as they must go outside — the poor ventilation and high humidity of the underground basements make drying their garments impossible."

Abdullah Hammam /
International Rescue Committee
2018
[2]

"Sitting next to her family's belongings, U said, "I hope the world will look at me, listen to my voice, and stand with me. I wish to go back to my home with my family." Many are worried that the structures they live in won't take any more shelling — and are especially worried for the fate of their children.."

Abdullah Hammam /
International Rescue Committee
2018
[2]

"F's family and the other people living with her do not have access to a proper kitchen — the basement isn't prepared for such use."

Abdullah Hammam /
International Rescue Committee
2018
[2]

"The children living in the basement bunker make time to play. F's family and the other people living with her can't turn on any lights for fear of being spotted or attacked. F. said, "They [her grandchildren] describe it as if they've been buried alive or like living in a grave."

Abdullah Hammam /
International Rescue Committee
2018
[2]

"Due to the siege, food prices in eastern Ghouta are on average five times higher than elsewhere in Syria — the cost of bread has increased by 1,500%"

Abdullah Hammam /
International Rescue Committee
2018
[2]

[2] Bubacz, Kate. "Syrians Have Been Living Underground in Response to Airstrikes." BuzzFeed News. BuzzFeed News, April 14, 2018. https://www.buzzfeednews.com/article/katebubacz/syria-citizens-live-underground.

INVESTIGATE

"Syria has nine official refugee camps and three unofficial refugee camps, [1] and 499,189 registered refugees." [1]

Jaramana Camp in Syria following al Nakba [1]

"Jaramana Camp is a 0.03-square-kilometer (7.4-acre) Palestinian refugee camp in the outskirts of the city of Damascus. The camp was initially populated by refugees from the 1948 Palestinian exodus, and later by Palestinian refugees who had moved to the Golan Heights and were forced from their homes in the 1967 Palestinian exodus. During the Syrian proxy war, the population of the camp rose from 18,000 to 49,000 due to an influx of internally displaced Palestinian refugees from other parts of Syria, including the Yarmouk Camp." [1]

"Yarmouk Camp]) is a 2.11-square-kilometer (520-acre) district of the city of Damascus, populated by Palestinians, with hospitals and schools. It is located 8 kilometers (5.0 mi) from the center of Damascus and within municipal boundaries (but not initially when established in 1957). Yarmouk is an "unofficial" refugee camp. Now depopulated, it was home to the largest Palestinian refugee community in Syria. As of June 2002, there were 112,550 registered refugees living in Yarmouk." [1]

During the Syrian Civil War, Yarmouk camp became the scene of intense fighting in 2012 between the Free Syrian Army and the PFLP-GC supported by Syrian Army government forces. The camp then was consequently taken over by various factions and was deprived of supplies, resulting in hunger,[2] diseases and a high death rate, which caused many to leave. By the end of 2014, the camp population had gone down to just 20,000 residents." [1]

[1] "Syria." UNRWA. Accessed May 3, 2022. https://www.unrwa.org/where-we-work/syria.

INVESTIGATE

"Using satellite imagery captured between 2013 and 2017, UNOSAT (UNITAR's Operational Satellite Applications Programme) has conducted a comprehensive damage assessment of eight of Syria's largest cities. Detected damaged structures are assigned one of four categories: 1) moderately damaged, 2) severely damaged, 3) destroyed, or 4) no visible damage. Eight of Syria's largest cities were assessed, namely Aleppo, Damascus, Daraa, Deir ez Zor, Hama, Homs, Idlib and Raqqa" [9]

"Moderately damaged structures
Aleppo comes in first place in number of moderately damaged structures with a total of 16,256
 structures. Followed by Damascus, Raqqa, Homs, Deir ez Zor, Hama, Idlib and Daraa, respectively." [9]

Number of moderately damaged structures | Ratio of moderately damaged structures | Density of moderatley damaged structures
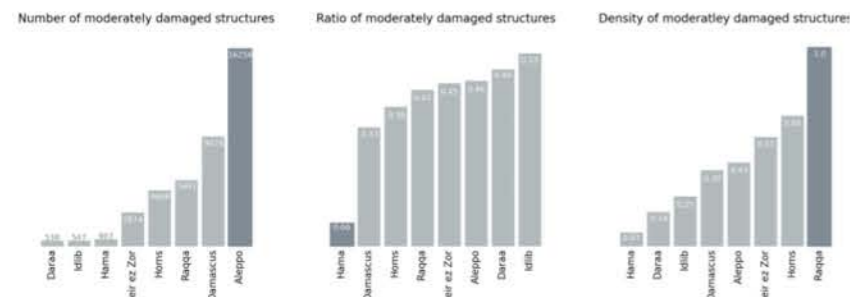
Aleppo comes first in number of severely damaged structures with a total of 14,671 structures. Followed by Damascus, Homs, Raqqa, Deir ez Zor, Hama, Daraa and Idlib, respectively" [9]

Number of severely damaged structures | Ratio of severely damaged structures | Density of severely damaged structures
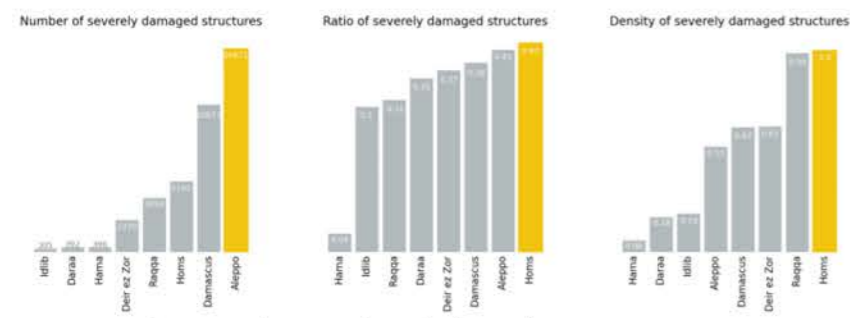
Hama comes first in number, 90% of Hama's damaged structures are destroyed." [9]
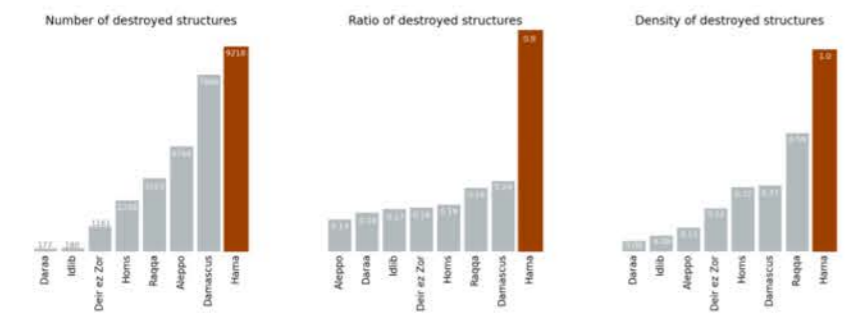
Number of destroyed structures | Ratio of destroyed structures | Density of destroyed structures

[9] Najjar, Ameen. "Damage Caused by the Syrian Civil War: What the Data Say." Medium. Towards Data Science, August 24, 2018. https://towardsdatascience.com/damage-caused-by-the-syrian-civil-war-what-the-data-say-ebad5796fca8.

"Syrian government forces on a destroyed street in the Hajar al-Aswad area on the southern outskirts of Damascus" [10]

"Syrian soldiers walk in front a destroyed building in Aleppo, Syria. The Syrian government is advertising Aleppo, along with other destinations in Syria, at the Fitur International Tourism Trade Fair in Madrid.(AP)" [10]

[10]

[10] Saad, Hwaida. "Syria Regains Control of Damascus, after Seven Years of Fighting." The New York Times. The New York Times, May 21, 2018. https://www.nytimes.com/2018/05/21/world/middleeast/syria-damascus-rebels.html.

INVESTIGATE

Syria is a region prone to war due to its geopolitical significance and historical context. Therefore, we can assume that Syria and adjacent countries of similar vernacular and cultural identities are prone to conflict. With this in mind, how can we think of post-war spaces and Architecture?

The architecture of protection should be both flexible and resilient. Materiality is crucial to consider when designing for "Post-War" living. Materials of war consist of micro-reinforced concrete, SEB walls, Blast resistant glazing, and a temporary solution for access to electricity and filtering the air coming in from the outside. These are potential solutions should the economy develop in Syria and access to such materials become available.

So what of vernacular solutions?

Syria's historic formal vernacular language and the Courtyard house are identified in this essay as a protection strategy. The walls of the courtyard house are made of thick stones with very minimal punctures in both quantity and size throughout the exterior facades of the home. In addition, subunits are a defining element of the courtyard house that allows multiple families to occupy the same protected area. I propose that the thick black and white stones used in the damascene courtyard house be considered a "cushion" and a space within a space yielding protection and an extended time for occupants to seek cover. The basement level of the courtyard house, previously used as a storage space for dried foods, can continue to serve that purpose and extend to provide cover for occupants during a war. In addition, the subunits of the courtyard house can provide placement for internally displaced refugees and create an underground network that connects communities.

INVESTIGATE

"During a detonation event, materials adjacent to the source (such as the casing of a bomb) are converted into "primary fragments." In close proximity, this shrapnel is deadly. But for most building occupants, the main concern is the "secondary fragments" generated from the disintegration of building materials themselves in reaction to the shockwave released by an explosion." [11] "One strategy is to construct a secure building envelope, increasing load resistance and debris containment using enhanced reinforcing." [11] "Micro-reinforced concrete systems employ multiple layers of densely spaced "MicroMat" steel reinforcement for increased strength and blast-resistance. the technology is ideal for securing bulk structural concrete as well as concrete used in building façade assemblies, and may be employed in both site-cast and precast applications. high ductility and energy-absorption, with a tensile strength of up to 2,000 psi, an elastic modulus of up to 4,600 ksi, and a compressive strength of up to 18,000 ksi. The system may be applied to existing as well as new structures, and the MicroMat's flexibility and 1/2-inch minimum thickness help facilitate construction" [11]

Columns after detonation experiment (reinforced concrete, DUCON, SIFCON, UHPFRCC) [13]

Reinforced Concrete [13]

Micro-reinforced Concrete [13]

"Another approach is the transformation of multi-material assemblies into tightly interconnected composites. This strategy is exemplified by the SEB-Wall, an enhancement of the conventional cold-formed steel (CFS) stud assembly. Developed by Simpson Gumpertz & Heger, with support from the U.S. Army Research Laboratory, the system uses the inherent lightness and multilayered qualities of the steel stud wall to help resist explosions. Critical augmentations include the use of Sure-Board sheathing panels (sheet steel and reinforced cement board) on both sides of the studs, shear stiffeners, and additional lateral bracing. The resulting composite assembly is ductile, stable, and structurally redundant, with predictable behavior." "resist high blast threats equivalent to large vehicle bombs or very long duration vapor cloud explosion events." - "The SEB-wall system relies on the flexural capacity of ei-

[14]

[11] /author/blaine-Brownell. "How to Make a Building Blast Resistant." Architect, August 17, 2020. https://www.architect-magazine.com/technology/products/how-to-make-a-building-blast-resistant_o.
[12] "Blast Resistant Products." Blast Structures. Accessed May 4, 2022. https://www.blaststructures.com/blast-resistant-products/.
[13] English - Fraunhofer EMI, December 16, 2021. https://www.emi.fraunhofer.de/en.html.
[14] "Blast Resistant Products." Blast Structures. Accessed May 4, 2022. https://www.blaststructures.com/blast-resistant-products/.

INVESTIGATE

"The tough plastic interlayer holds the glass together after an impact, and with the proper framing systems, the glazing will be retained in the opening. Thus, the amount of flying glass, as well as the consequential injuries, can be dramatically reduced. This glass can only perform as intended when installed in a qualified framing system designed to meet each project-specific application, with the proper framing system and anchoring design. Glass fragmentation hazards have been identified as a main cause of injury in the targeted site, as well as the peripheral sites; sometimes many blocks from the site of the bomb." [15]


[15]
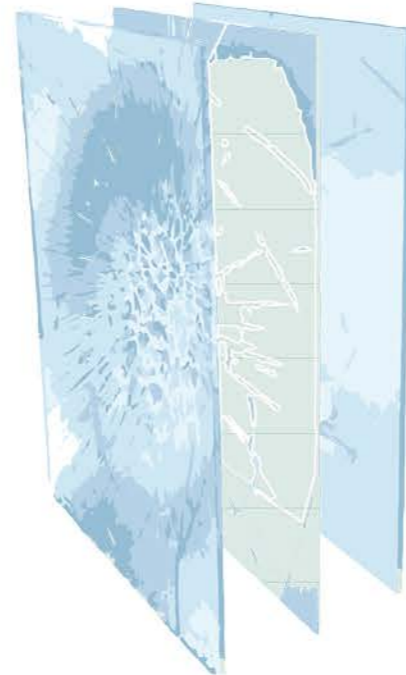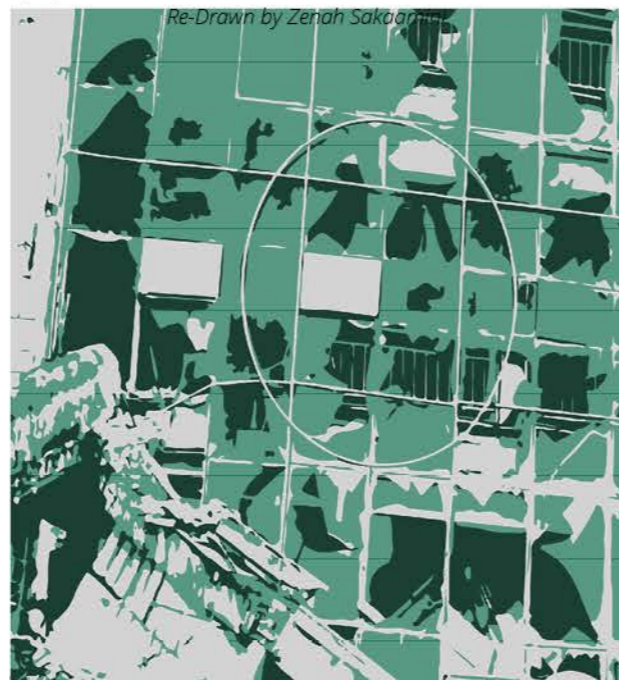
Re-Drawn by Zenah Sakaamini
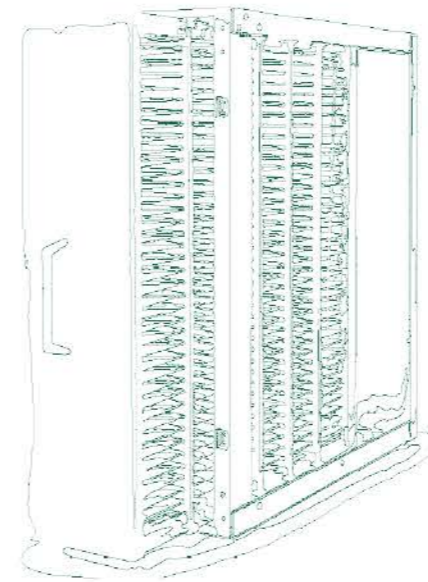
[15,16]
Re-Drawn by Zenah Sakaamini

In addition to building materials and strategies to use - the need for backup electricity is on the list of post war and war readiness design. Adding solar panels may not be a secure solution seeing as it's placed in a vulnerable setting. Having a portable power generator may be more realistic for conditions of war.

Access to clean air is now associated with providing virus proof environments. Air Purifying systems can extend to protecting residents from the remanents of war and ongoing explosives. [17] The filters that are the most effective at removing particles of toxic chemicals from the air are industrial HEPA air filters and gas phase filters. HEPA filters, AKA High Efficiency Particulate Air filters, are capable of absorbing tiny particles of either liquid or solid air pollutants. [18]
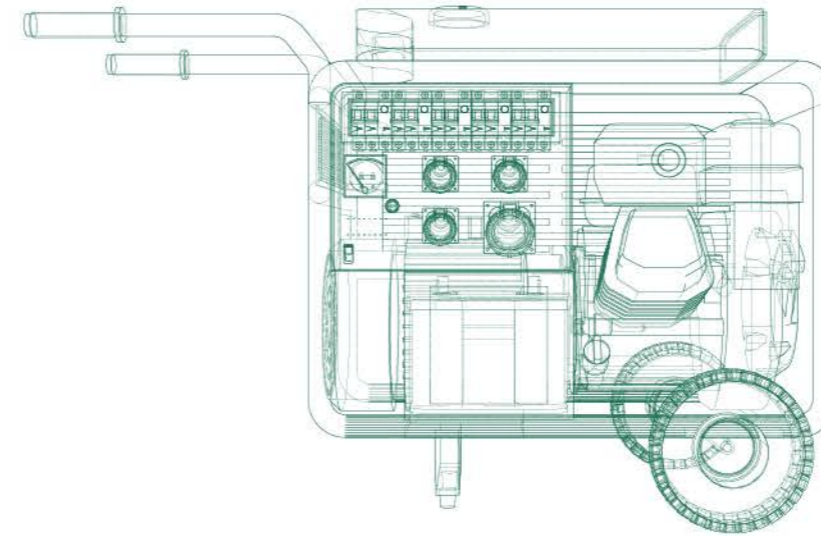
Re-Drawn by Zenah Sakaamini

[15] "Blast Resistant Glass." OBE, May 27, 2021. https://obe.com/products/blast-resistant-glass/.
[16] "Blast-Resistant Glazing | Vas - Vasiliou Glass Technologies." Accessed May 4, 2022. https://en.vasglass.gr/en/content/blast-resistant-glazing.
[17] Alexander, Max. "4 Types of Whole House Air Filters." This Old House. This Old House, November 23, 2020. https://www.thisoldhouse.com/green-home/21014891/whole-house-air-purifier.
[18] "Why Hazardous Wastes in Chemical Labs Can Be Toxic without Commercial Air Filters." Air Filters for Clean Air, April 25, 2018. https://cleanair.camfil.us/2018/04/25/chemical-labs-can-be-toxic-without-commercial-air-filter

INVESTIGATE

"The major material used in building walls is limestone, and some frameworks can be made from alabaster or other kind of decorative stones with thickness of walls 60~80 cm. This thickness is built with two fronts that would be linked together where the outer front is made from trimmed stone while the inner front would be built rather from trimmed stone or from coarse stone. As for the filling, it is made of small stones, clay, and mortar prepared from crushed limestone which helps in fixing the mixture in the wall. The carrying walls lift the vertical structure of the building whereas the horizontal structure is represented by intersecting and continuous cellars in Al-Iwan and the rooms especially the upper floor rooms." [19]

"The outer walls are left empty and and abstract unless for the shown stones that are carved; however the inner walls are strained with lime in blue color. Besides, we could find base of floors in some rooms made from ceramics with height 1.5m. Paving is done with the yellow stones in the courtyard and the inner rooms with using alabaster in crucial zones. Also, it is possible to find a courtyard paved with black and white stones" [19]

TYPICAL DETAIL of STONE & MUD BRICK WALL with FLAT ROOF
Fig. 27
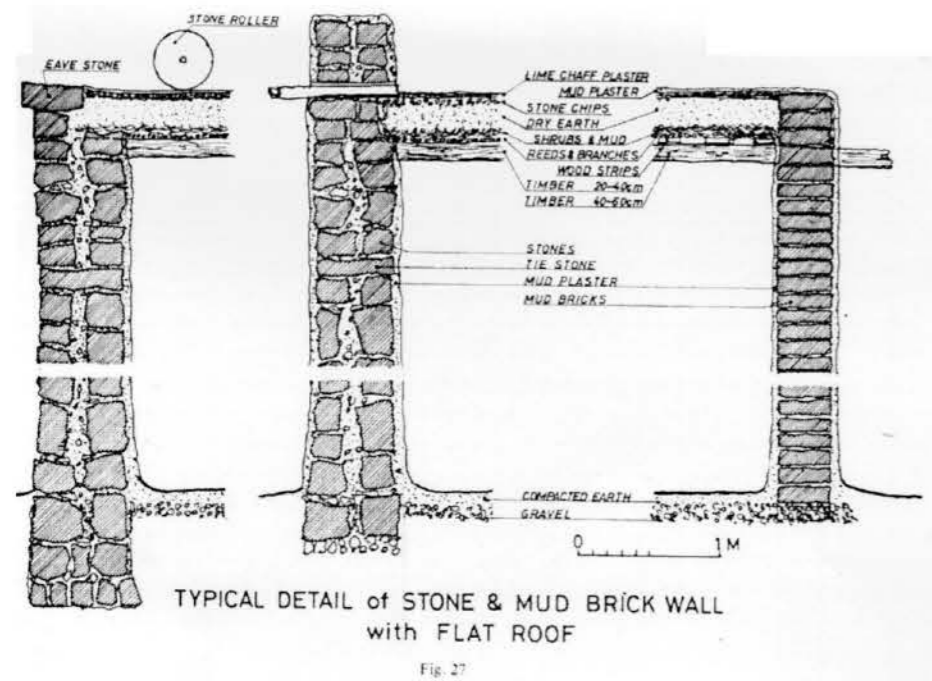
[20]

[19] Mikhael, Salwa, Arab Architects Peculiarity and Role in Solving Domestic Architecture Problems, 2004, Damascus University Magazine for Engineering Sciences. 20(2), 28.

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[5] "Typologies of Traditional Buildings in Syria - Meda-Corpus.net." Typologies of Traditional Buildings in Syria. Accessed May 4, 2022. http://meda-corpus.net/libros/pdf_manuel/syria_eng/ats_eng_2.pdf.

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[18] "Why Hazardous Wastes in Chemical Labs Can Be Toxic without Commercial Air Filters." Air Filters for Clean Air, April 25, 2018. https://cleanair.camfil.us/2018/04/25/chemical-labs-can-be-toxic-without-commercial-air-filter

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INVESTIGATE

HEAL NYC
Manhattan
Instructor: Hilary Sample

"Heal NYC" is an outpatient and inpatient treatment clinic that aims to bring healing into the foreground of new york city. The recent pandemic has had many short and long-lived consequences forcing us to reassess how we build and engage with one another. NYC saw a surge of substance abuse during COVID-19, with studies showing a 21% increase in overdose cases in 2020 compared to 2019. As a result, medical staff often switched between handling overdose and covid-19 cases. As a response to the reverberating effects of the pandemic and the ongoing substance abuse crises in NYC, HEAL NYC questions how to rebuild communities to foster healing in a post-pandemic setting. The site takes over an abandoned building on a 25' x 100' corner lot and utilizes its FAR to maximize its vertical usage. The ground floor extends vertically To the second floor as spaces where social lines blur between community, clinic staff, and patients. Each level includes socialization pods the utilize curtains made of both wool and shear to allow for comfort and light to flow in from adjacent windows. The use of frosted glass at the storefronts and curtains rather than walls for the social pods promotes the notion of softness and plays with the idea of semi-public and private spaces.

Housing begins at the third level for inpatient accommodation and offices for Staff while levels 4-6 accommodate staff housing. The scissors stairs allows for two modes of access to both the clinic and housing. Balconies provide access to air and light - a common element on each floor and an open atrium connected all housing levels. "Equity" was an element that drove each unit's spatial organization reverberating the idea that visitors could become patients as well as staff members echoing the notion of healing as a cycle. The use of materials and colors were intentional throughout the design. Hues of blues, yellows and greens are associated with enabling cognitive functions (blue), yellows with and joy and socialization, green with peace and relaxation. The pigmented baked earth terracotta used at the facade invokes protection and comfort. Perforations are soft and intentionally placed to provide views into social spaces where curtains are drawn communicating use of space. Throughout the project are ways of blurring the lines between the outside and inside, private and semi-public, introverted vs extroverted.
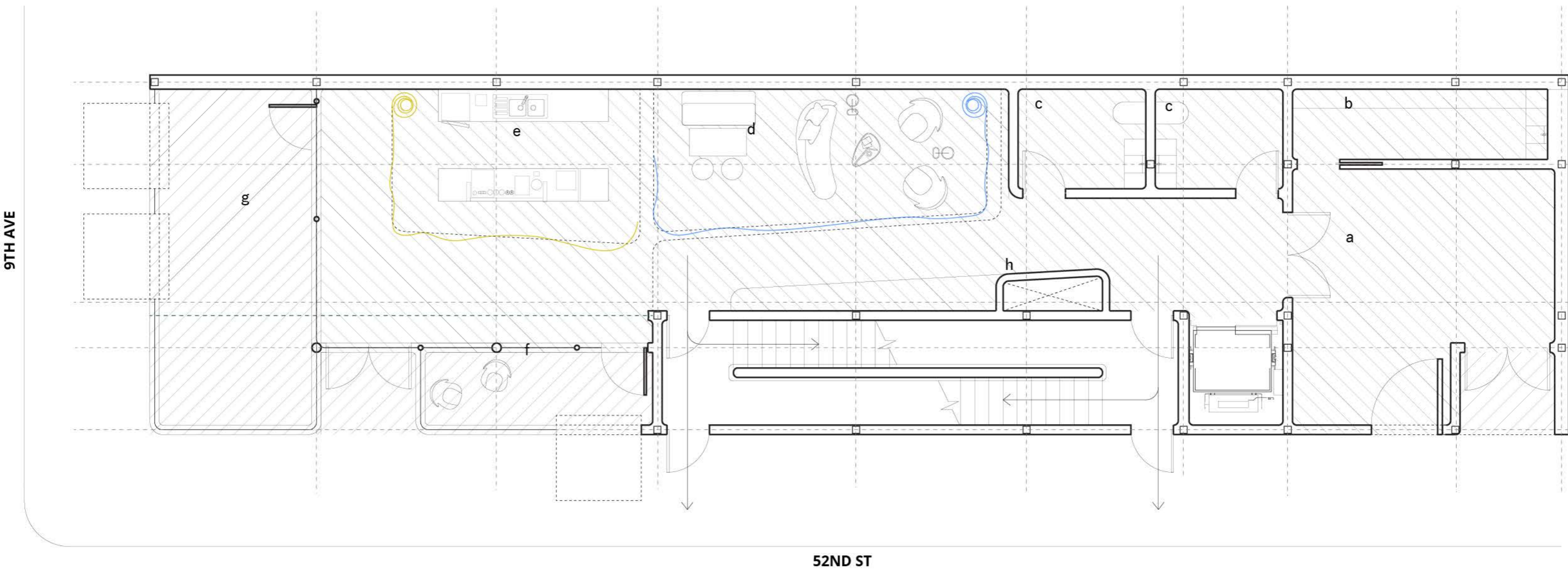
9TH AVE

c

c

b

e

d

a

g

h

f

52ND ST
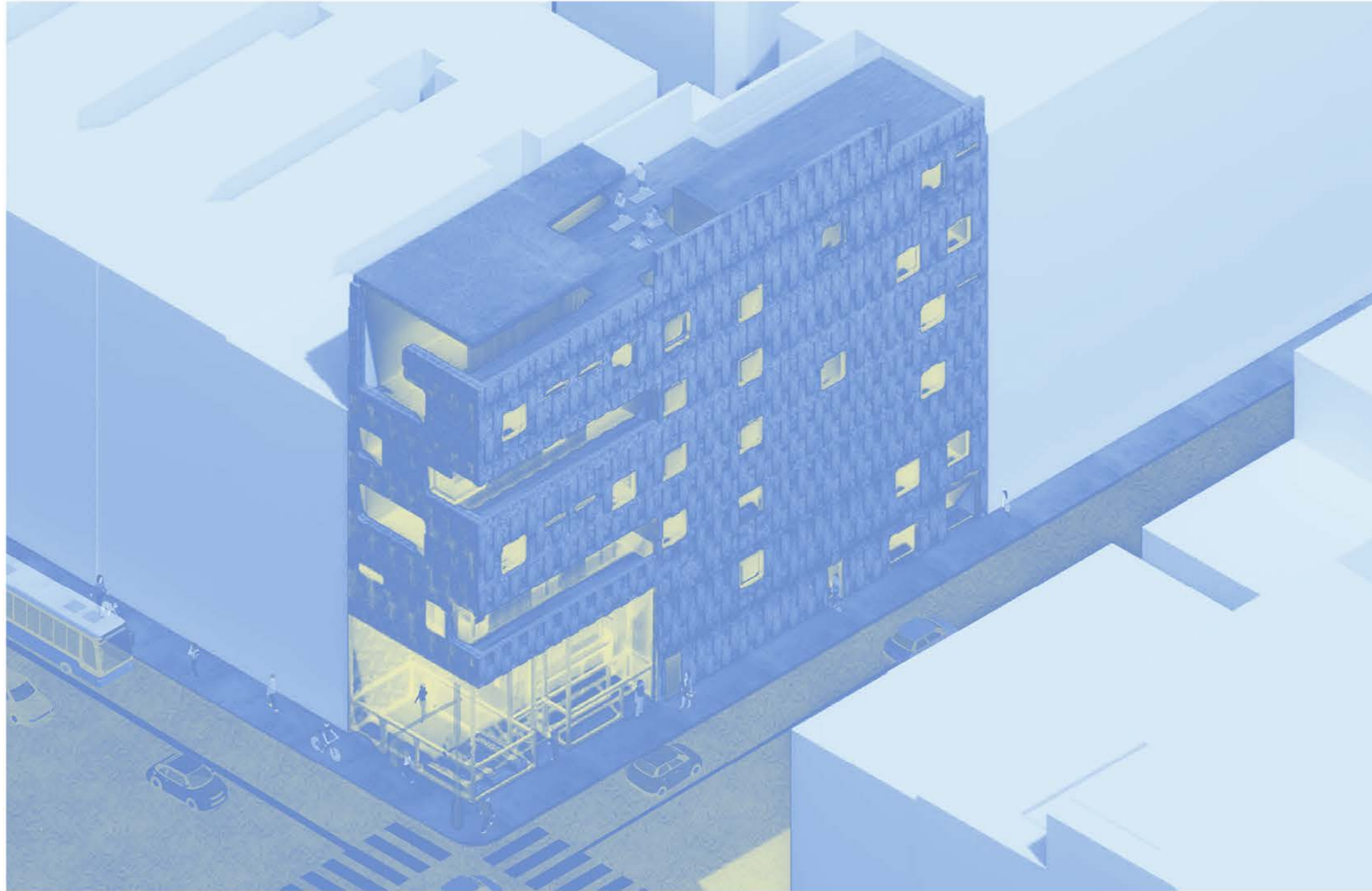
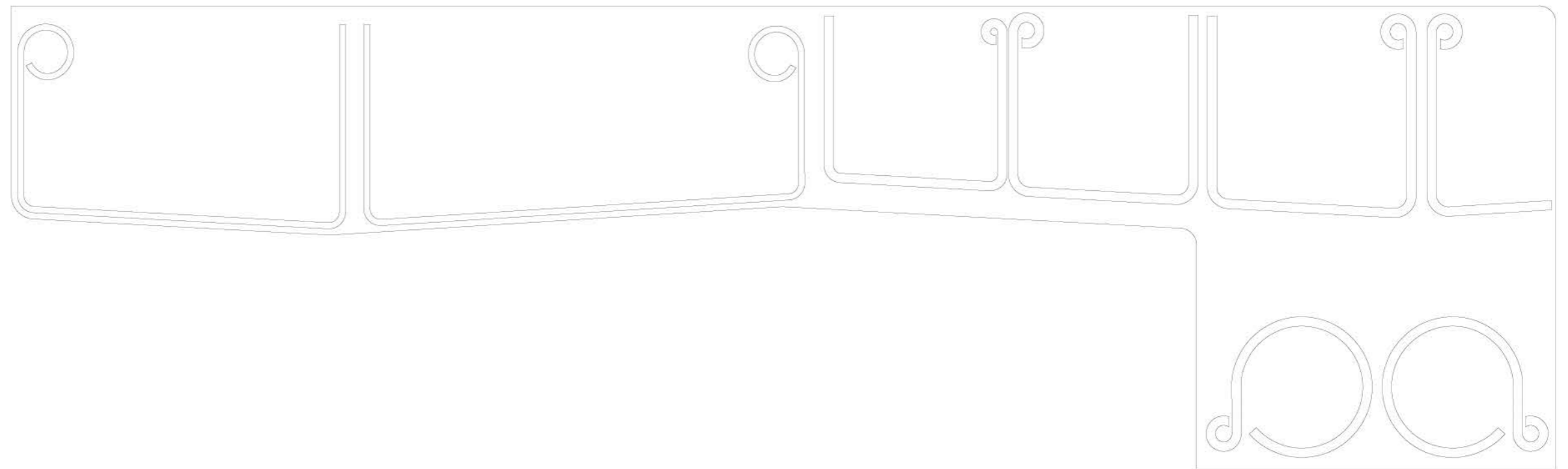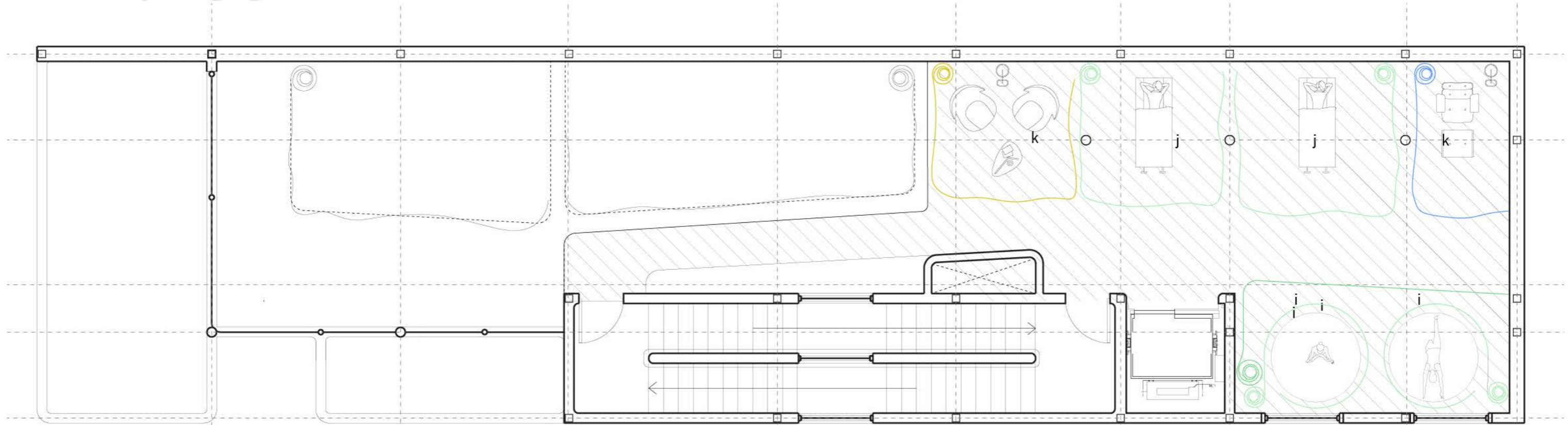**GROUND FLR**

Legend

a. gallery
b. storage
c. G.N RR
d. living pod
e. cafe
f. conversation Storefront
g. living Storefront
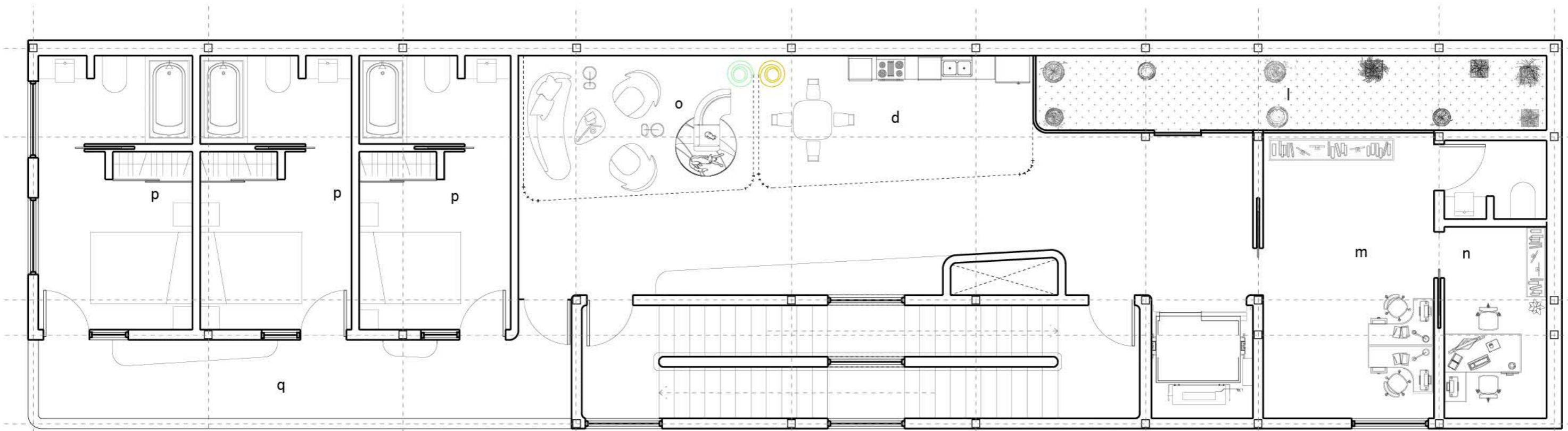h. mech.

ENGAGE

SECOND FLR & RCP

Legend

i. meditation pod
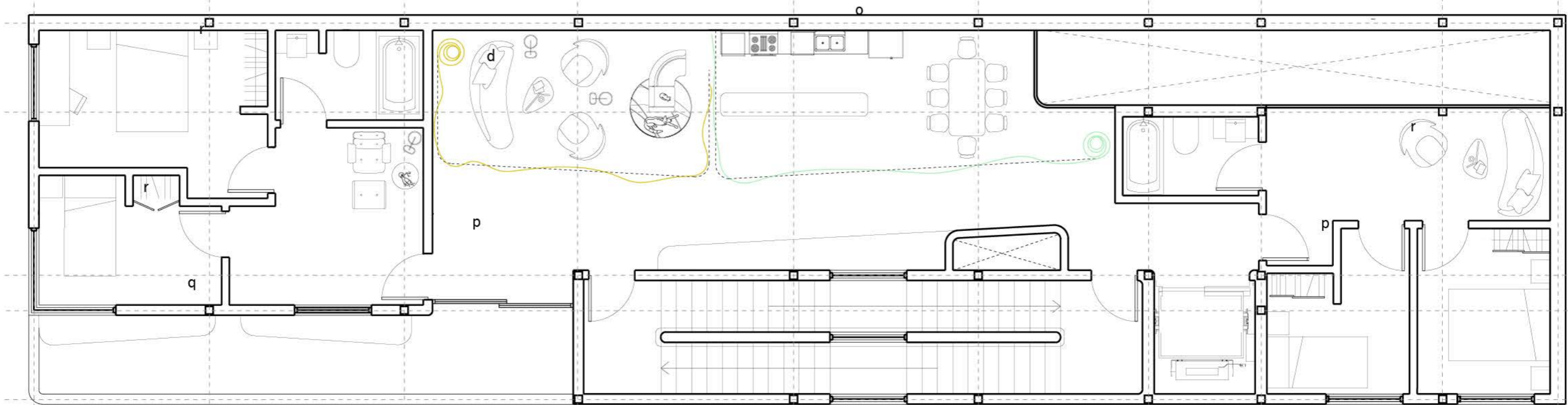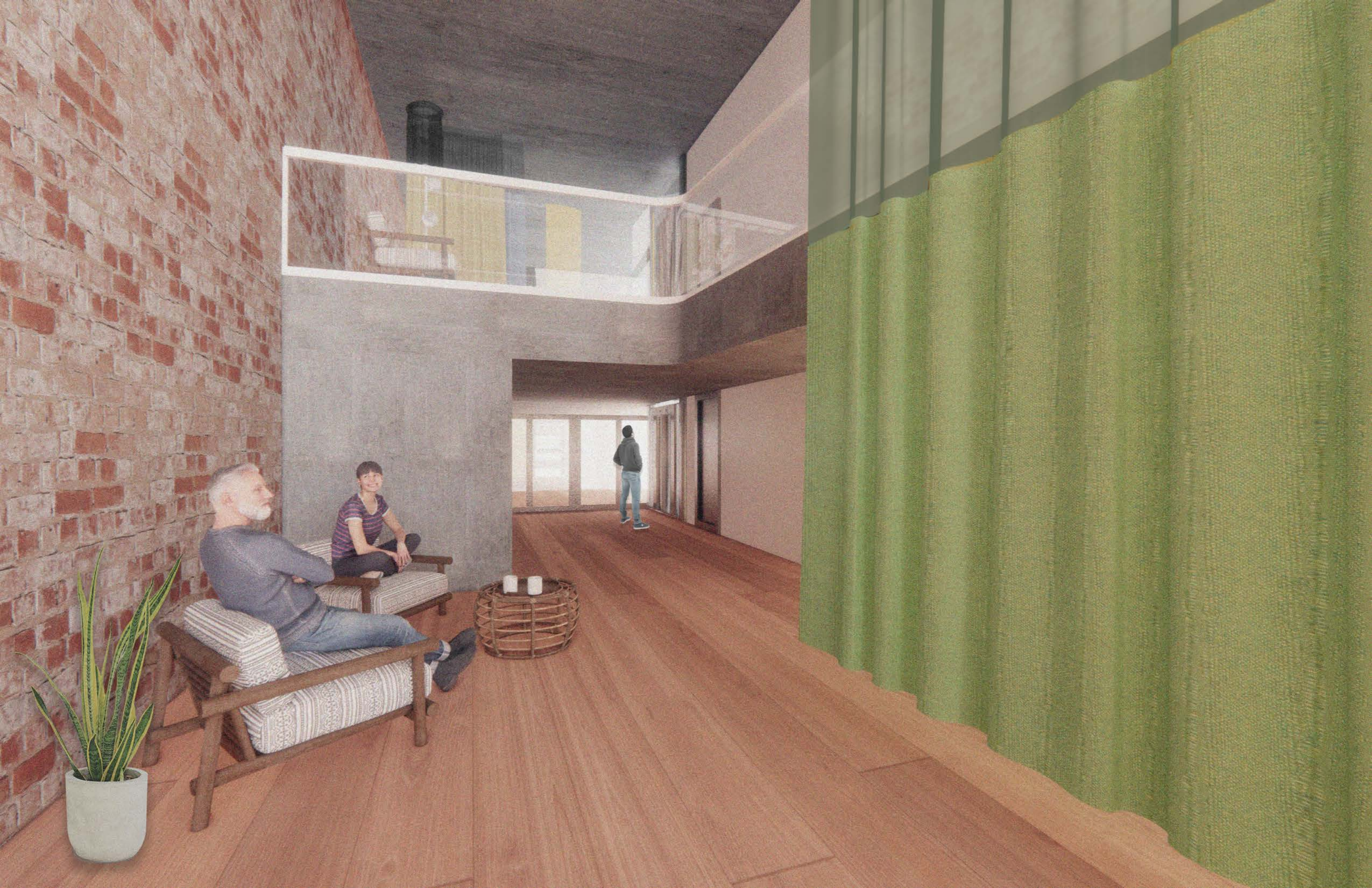j. acupuncture pod
k. conversation pod

ENGAGE

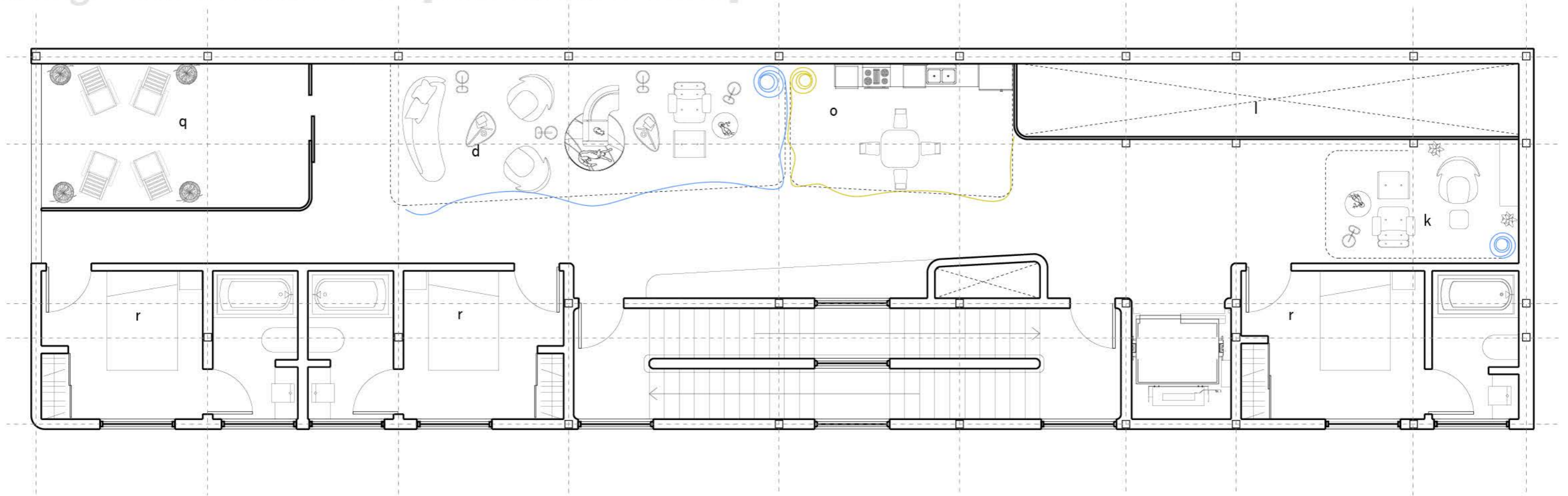**THIRD FLR/ inpatient housing**

FIFTH FLR / staff family housing

Legend
l. atrium garden
o. dining
r. unit
q. shared balcony
m. staff office
n. counsling. rm

ENGAGE

q

d

o

l

k

r

r

r

ENGAGE

Legend

l. atrium garden
o. dining
r. unit
q. shared balcony