

— LAMISA HAQUE —

MSAUD

COLLECTION OF
SPATIAL SPECULATIONS

ARCHITECTURE & URBAN DESIGN

COLUMBIA UNIVERSITY GRADUATE SCHOOL OF
ARCHITECTURE, PRESERVATION AND PLANNING



MASTER OF SCIENCE IN ARCHITECTURE & URBAN DESIGN

LAMISA HAQUE

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HELLO!

My perspective on the future of the built environment has been influenced largely by being raised in Dhaka, Bangladesh and living in the age of the climate crisis. I am passionate about data driven design and its role in addressing social and environmental inequities in the built world.

TEAM MEMBERS

Summer 2021 - Bianca Bryant - Cesar Delgado - Changbin Kim - Lamisa Haque | Fall 2021 - Changbin Kim - Jisoo Kim - Lamisa Haque - Govardan Rajasekaran Umashankar | Spring 2022 - Avani Agarwal - Riya Chadha - Lamisa Haque - Rhea Pai

FACULTY

Summer 2021 - Nans Voron - Galen Pardee - Tami Banh - Sagi Golan - Austin Sakong - Jae Shin - Sean Gallagher | Fall 2021 - Emanuel Admassu - Lexi Tsien - Nina Cooke John - Chat Travieso | Spring 2022 - Kate Orff - Thaddeus Pawlowski - Adriana Chavez - Lorena Bello Gómez - Geeta Mehta

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LAMISA HAQUE

ABSTRACT

Waste As A Resource That Becomes An Asset

A project that reinvents Newark, New Jersey's failing waste management system into a productive urban district driven by the community's health and wellbeing.

Like many instances around the country, Newark faced disinvestment as a Post-Industrial American City while also dealing with the continued effects of red-lined districts. As a city, the 20th century was filled with economic trouble, social injustice, and racial tension.

Back in 2021, the industry sector was stigmatized by heavily polluting companies. Manufacturing had lost terrain, instead, industry was relying primarily in transportation networks due to its convenient location, which reflected on clusters of underutilized sites at the industrial zones, increasing the number of commuters, and creating activity deserts, trigger-

ing inaccessibility to the riverfront and the deterioration of the city's image.

Time and time again, these industries failed to deliver the economic benefits they promised while simultaneously destroying Newark's environment and therefore Newarkers' quality of life. Our goal was to flip this narrative and mandate that industry shall not prioritize capitalistic gain over the community's health. Instead, community benefit must drive all industrial development.

Our project reclaimed industry as an agent of change for social and environmental justice.

In 2021, we saw the potential to use waste as a resource that becomes an asset to our local community rather than a burden.

TEAM

Bianca Bryant - Cesar Delgado
Changbin Kim - Lamisa Haque

SITE CONSTRUCTION

NEWARK, NEW JERSEY

COVANTA ESSEX, WASTE EXONERATER

Newark is in the state of New Jersey, which is located on the northeast coast of the United States, to the west of New York City. It has 280 000 inhabitants, and it is bordered to the north by the Passaic River. Newark faced disinvestment as a Post-Industrial American City while also dealing with the continued effects of red-lined districts. As a city, the 20th century is filled with economic trouble, social injustice, and racial tension

Newark's primary waste management system is Covanta Essex, a waste to energy incinerator. Even more importantly, Covanta became the root cause of many health issues that plagued the community due its emission of air pollutants. As a result, Covanta is an infamous figure in Newark, and most if not all people living in this city continuously battle for its removal.



COVANTA ESSEX UNDENIABLE FACTS

Burns 2800 tons of trash per day

5x more expensive

Only 70% of waste burned

300 EPA violations since 2013

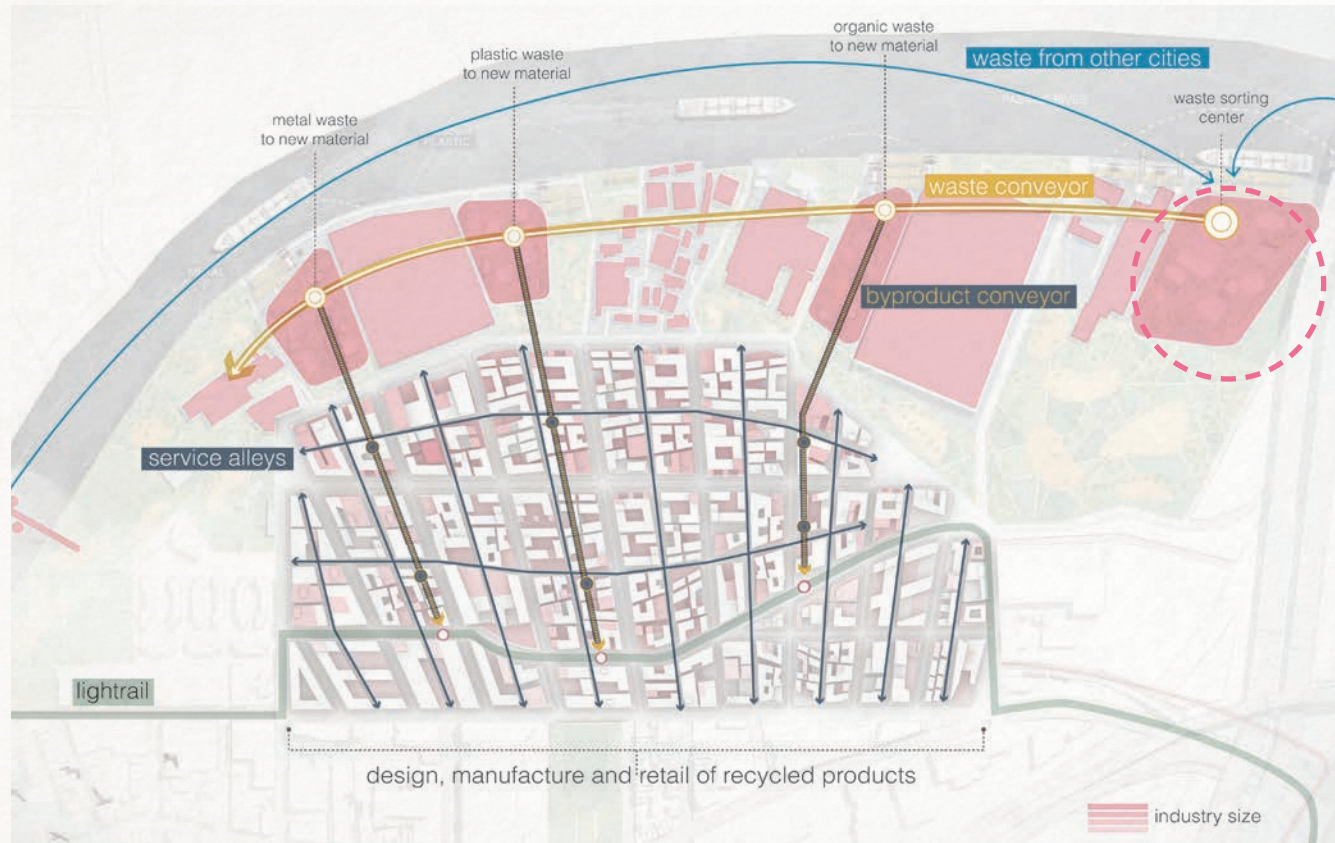
WASTE AS A BURDEN

Since 1906, Newark has been a hub for waste collection and treatment for the New York Metro Region and other counties in New Jersey.



WASTE AS AN ASSET

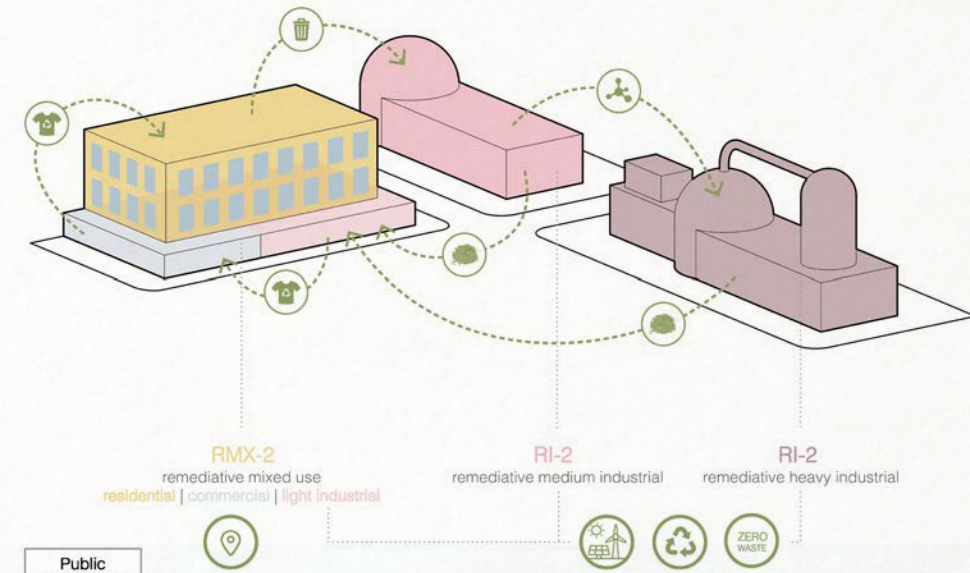
We saw the potential to use waste as a resource that becomes an asset to our local community rather than a burden.



A NEW DISTRICT

The framework that we discovered in Newark's development could be adapted to other sites and cities. An industrial belt introduces clean facilities that have their own materials which converge into a district flow. This system eventually allows organic growth with vibrant commercial corridors and convenient service alleys.

Covanta Essex got replaced with a waste sorting facility and a group of clean waste recycling plants. The recycling technologies served as a catalyst to re-activate existing manufacturers and ignite a new industry in the adjacent sites by using the recycled feedstock to manufacture new products.



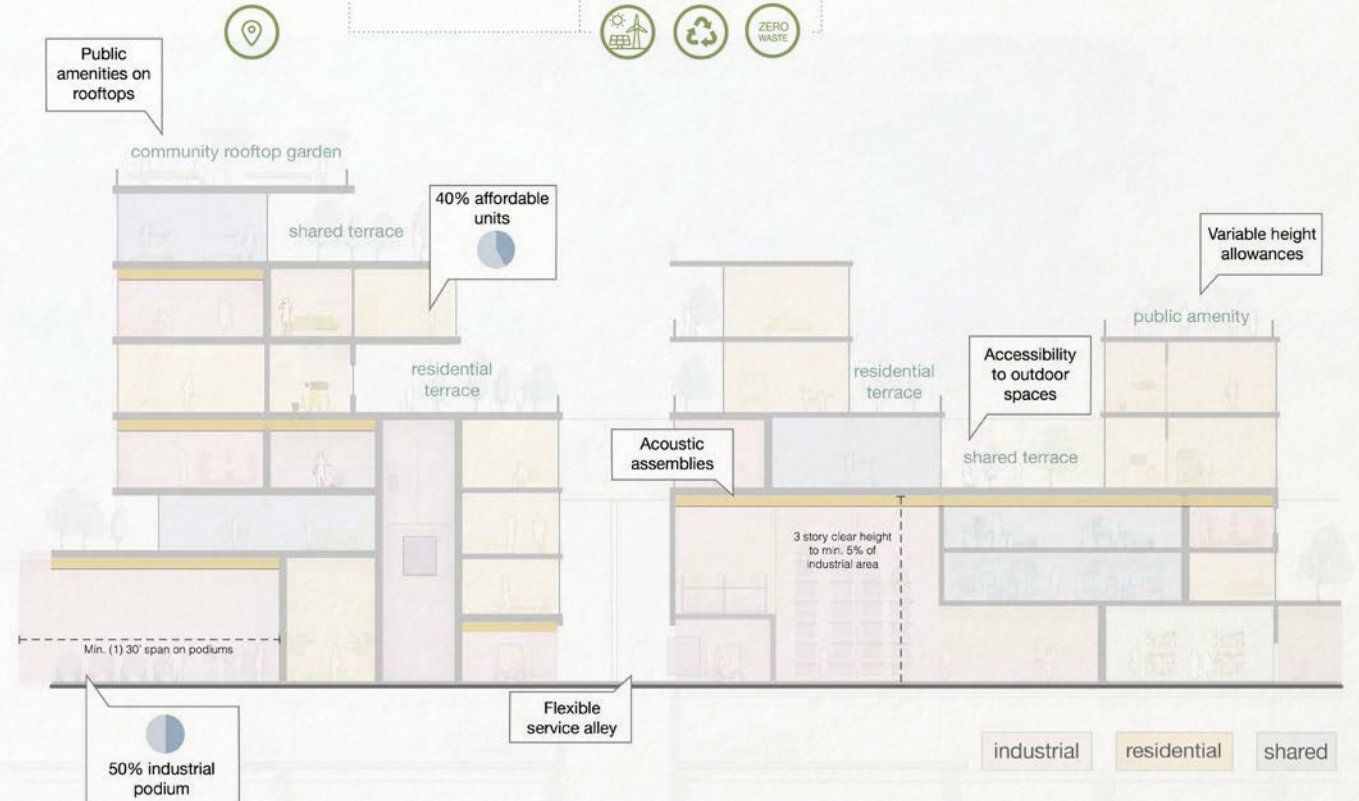
NEW ZONING

A major component of planning Upcycled Fabric was creating a new type of zoning to ensure equity and environmental protection.

We devised a set of regulations like renewable energy requirements and zero waste policies to ensure a healthy, zero waste, circular system.

Expanding Newark's inclusionary zoning policy in order to prevent gentrification and displacement to require that 40% of all new housing units be affordable within our district.

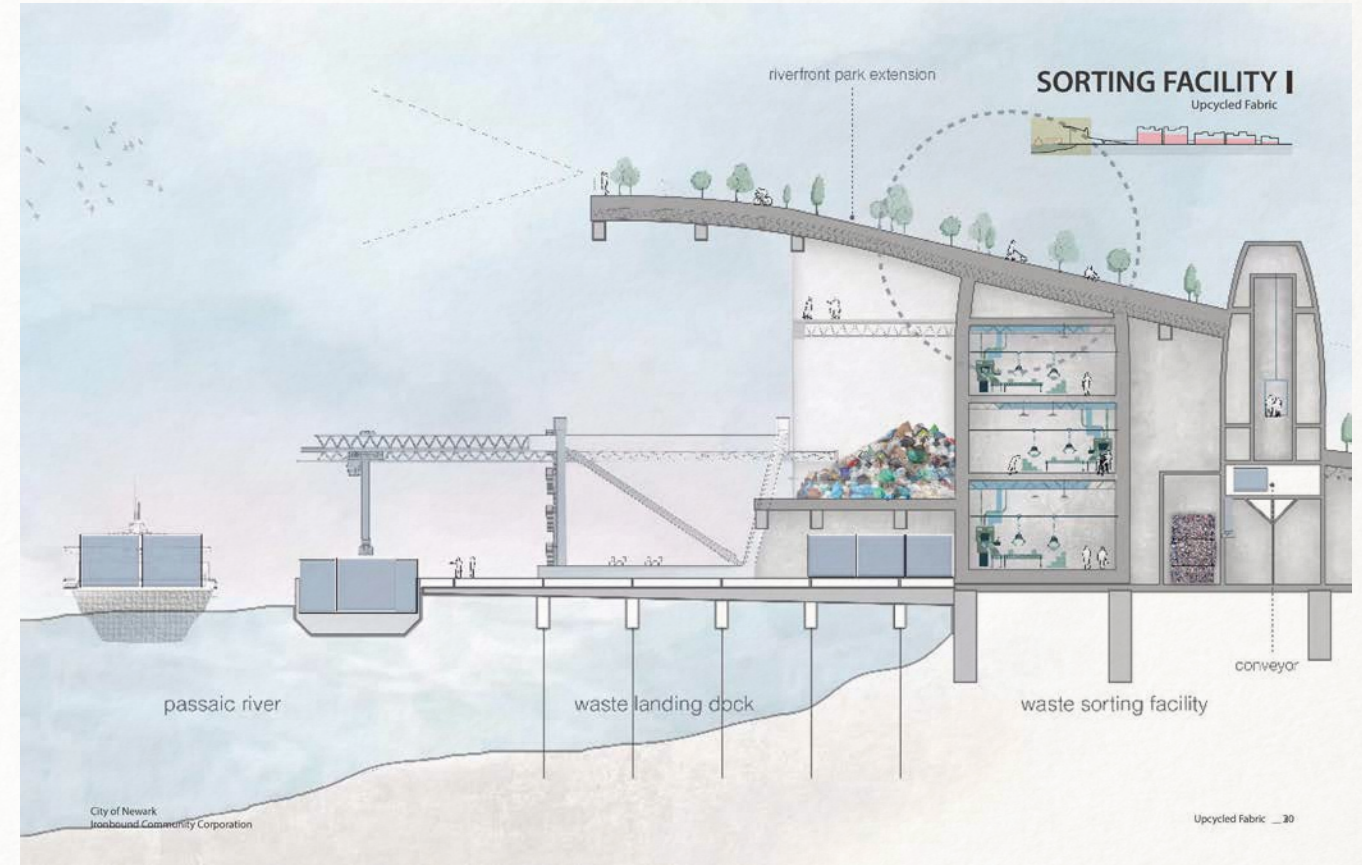
Establishing performative zoning rules which ensure comfortable living amongst different industries - one of these measures includes requiring construction of noise mitigating structures between industry and residential units.





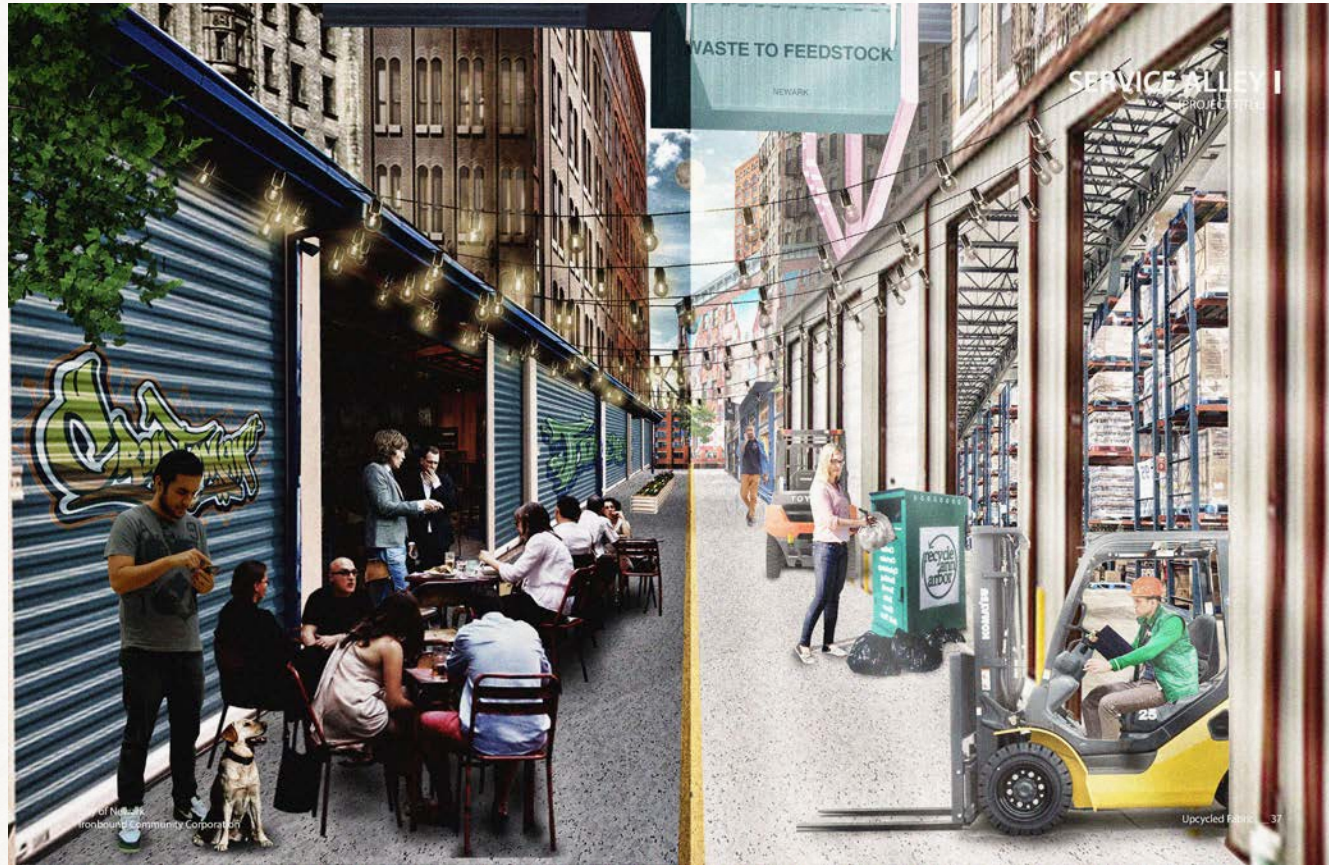
SORTING FACILITY

The green roofs, open skylights and courtyards to let people see the waste management processes, with the intention to educate in a programmatic manner and contribute to the interrelations of the industry and the neighbors.



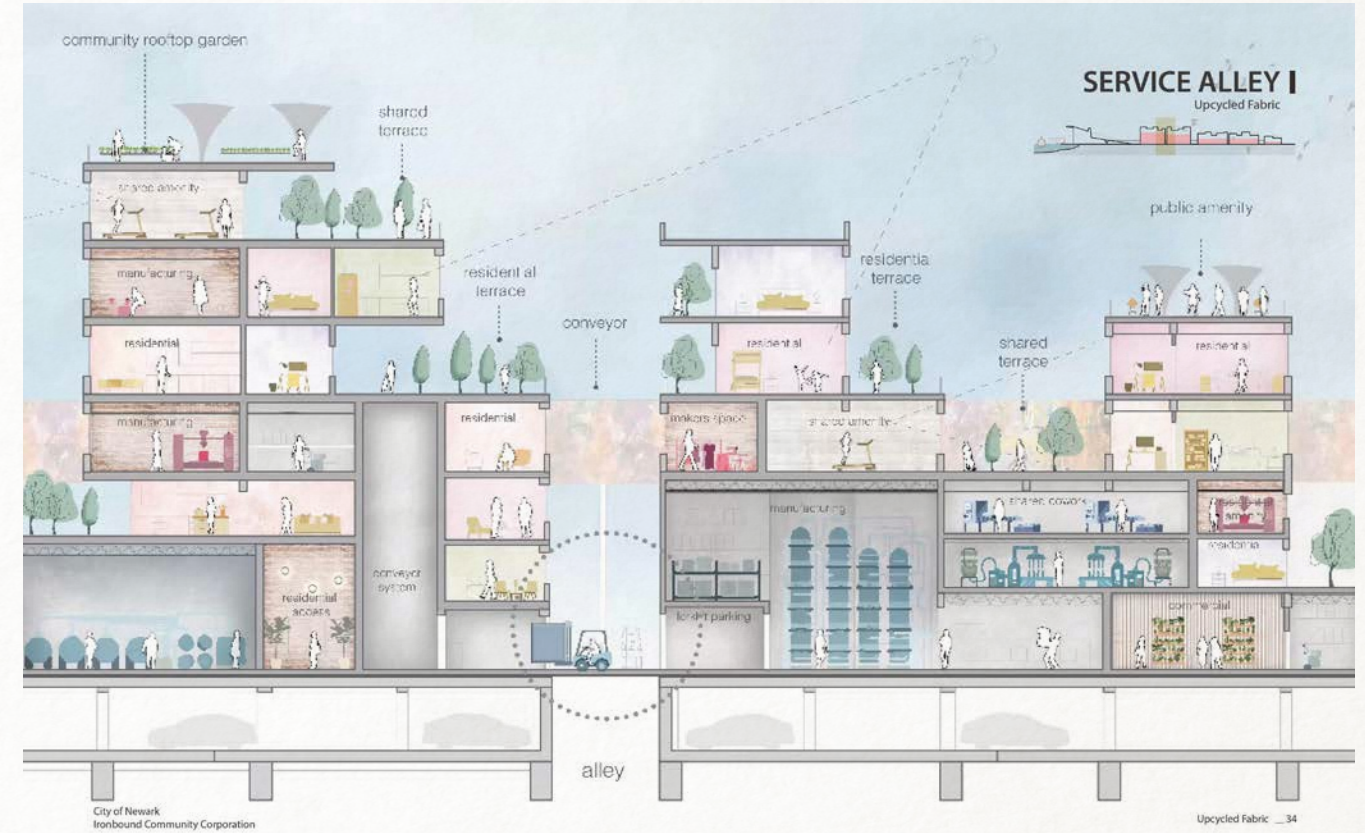
SORTING FACILITY

This drawing shows how the waste arrives at the site and gets sorted. The decision on using barges was made together with environmental advocacy groups worried about air pollution. The riverfront park continues through a series of green roofs.



SERVICE ALLEY

While an industry focused space during the day with forklifts transporting materials could be co-opted as a community gathering space at night for block parties and other functions when the forklifts are stowed away. These forklift storage areas also double as residential waste drop off points, where we receive discounts at local shops.



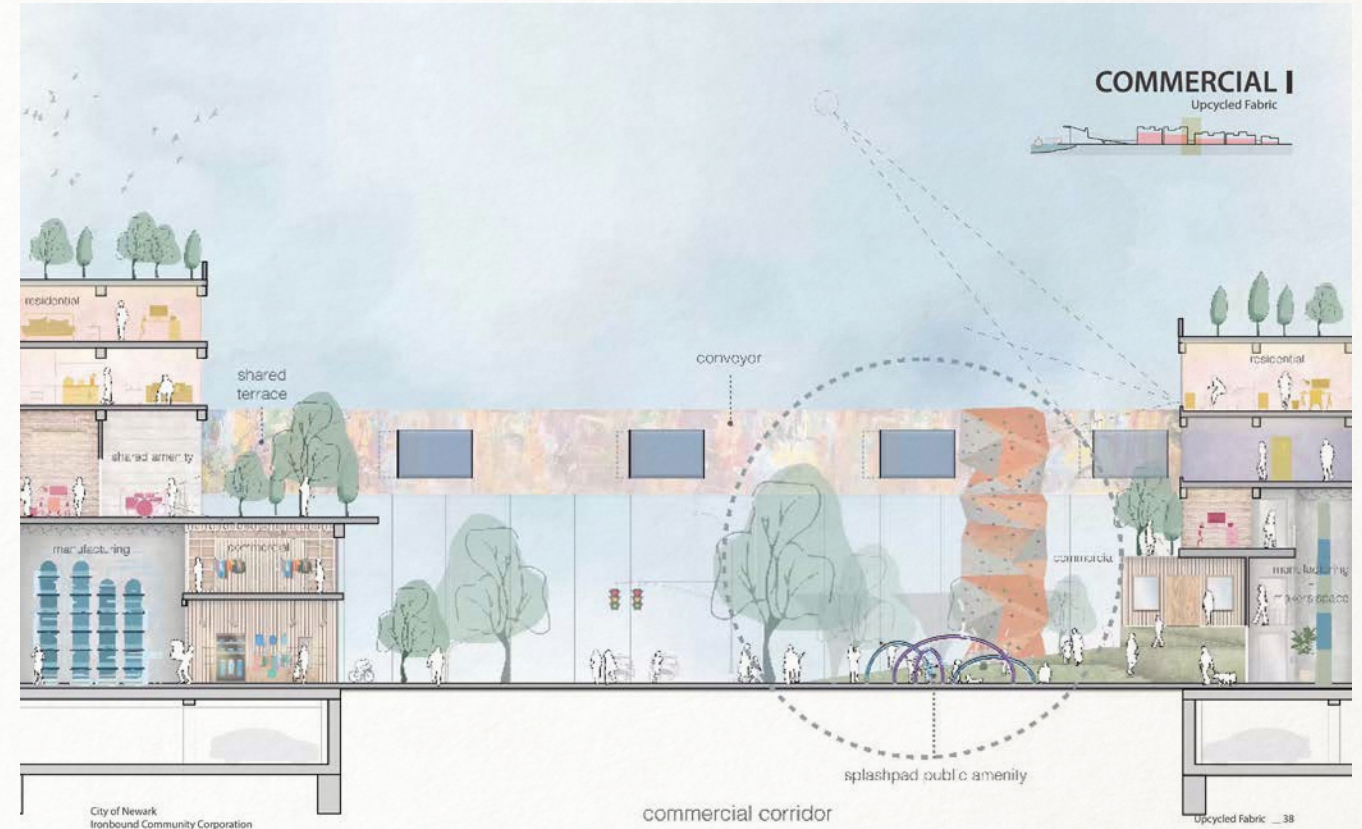
SERVICE ALLEY

The re-activation of the industry diffused into the adjacent parcels to design, manufacture and commercialize products that take advantage of the recycled materials, creating jobs and triggering housing. A series of interactions that generate a new district with service alleys opening the way for forklifts to pick up and deliver material and final products, that can also end up being distributed regionally.



PUBLIC AMENITIES

This particular instance, there is a splash pad and rock climbing area utilizing the conveyor as part of an amenity before you enter buildings which include shared maker spaces and residential units, allowing jobs to be more localized, giving people the opportunity to spend more time near their homes with their families.



COMMERCIAL CORRIDOR

Here you see one of the commercial corridors where public transportation is available and the street extends to become a public corner. As you see here, this area not only serves as a means of transportation, but also serves as a public plaza and center in Newark's local industrial ecosystem.



A VIBRANT POSSIBILITY

Through creating a new district the relationships between the interrelated systems of industry, waste and urbanism can be re-imagined by implementing new synergistic strategies, where healthier neighborhoods, public engagement, and economic growth become a vibrant possibility.



INDUSTRY SHALL NOT PRIORITIZE CAPITALISTIC GAIN OVER THE COMMUNITY'S HEALTH. INSTEAD, COMMUNITY BENEFIT MUST DRIVE ALL INDUSTRIAL DEVELOPMENT.

LEARNING AFTER PROPERTY

LAMISA HAQUE

ABSTRACT

REPARATIONS THROUGH THE DISSEMINATION OF EDUCATION

The regimental structure of the education system as we know it today, is designed to encompass forms of education that support or propagate the capitalist agenda of the regime of property. It fails to accept or even acknowledge forms of learning that lie beyond the current social and systemic constructs.

Education has been commodified and offered as the only path to knowledge. Currently Institutions commodify and claim ownership over disciplines, knowledge production and ways of learning. A system that actively segregates learning methods which confer and resist the regime of property.

Q. What does it mean to use reparations as a tool to imagine a new city which redefines learning by de-centering the traditional academic campus?



TEAM

Changbin Kim - Jisoo Kim

Lamisa Haque - Govardan Rajasekaran Umashankar

CITY AS THE CAMPUS

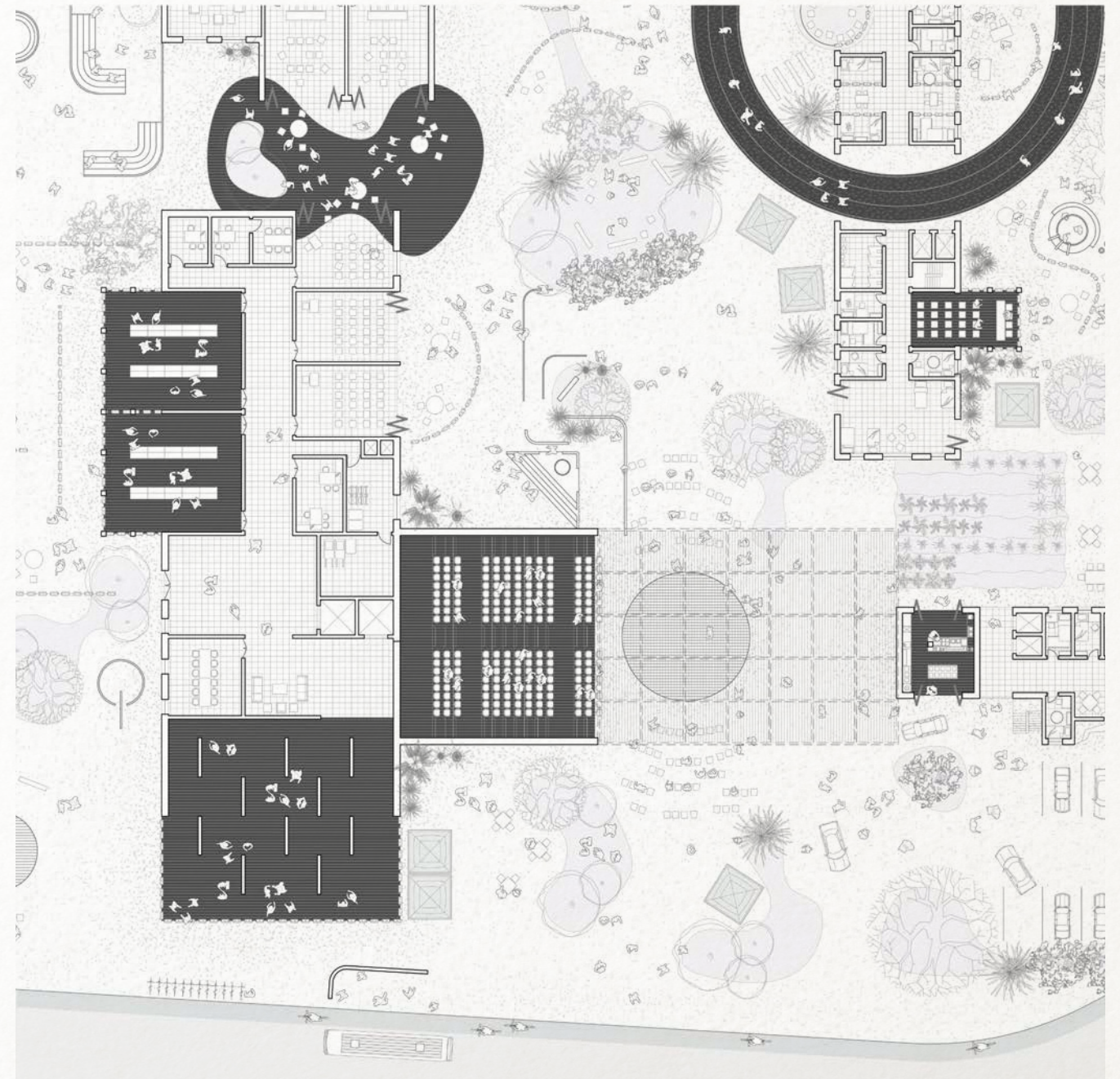
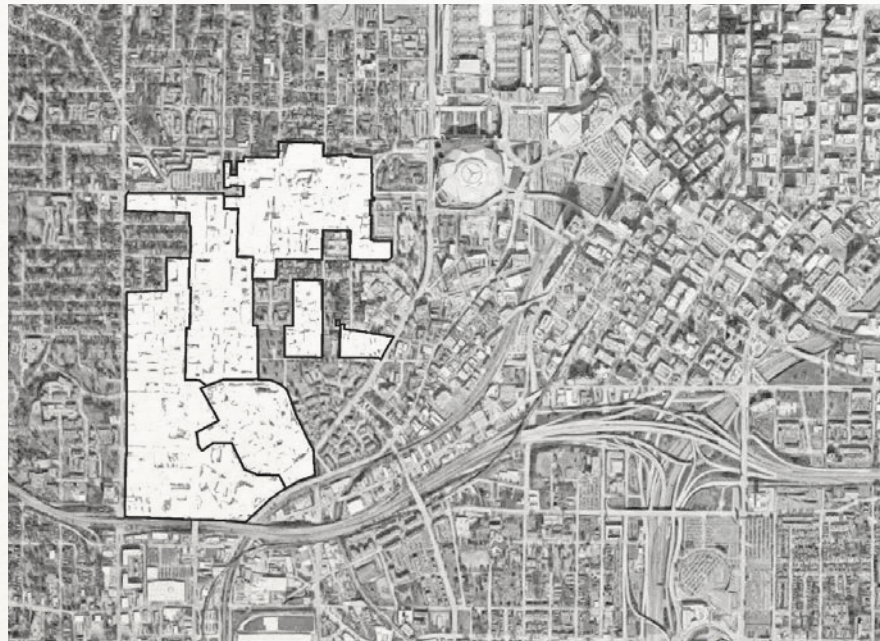
ATLANTA, GA

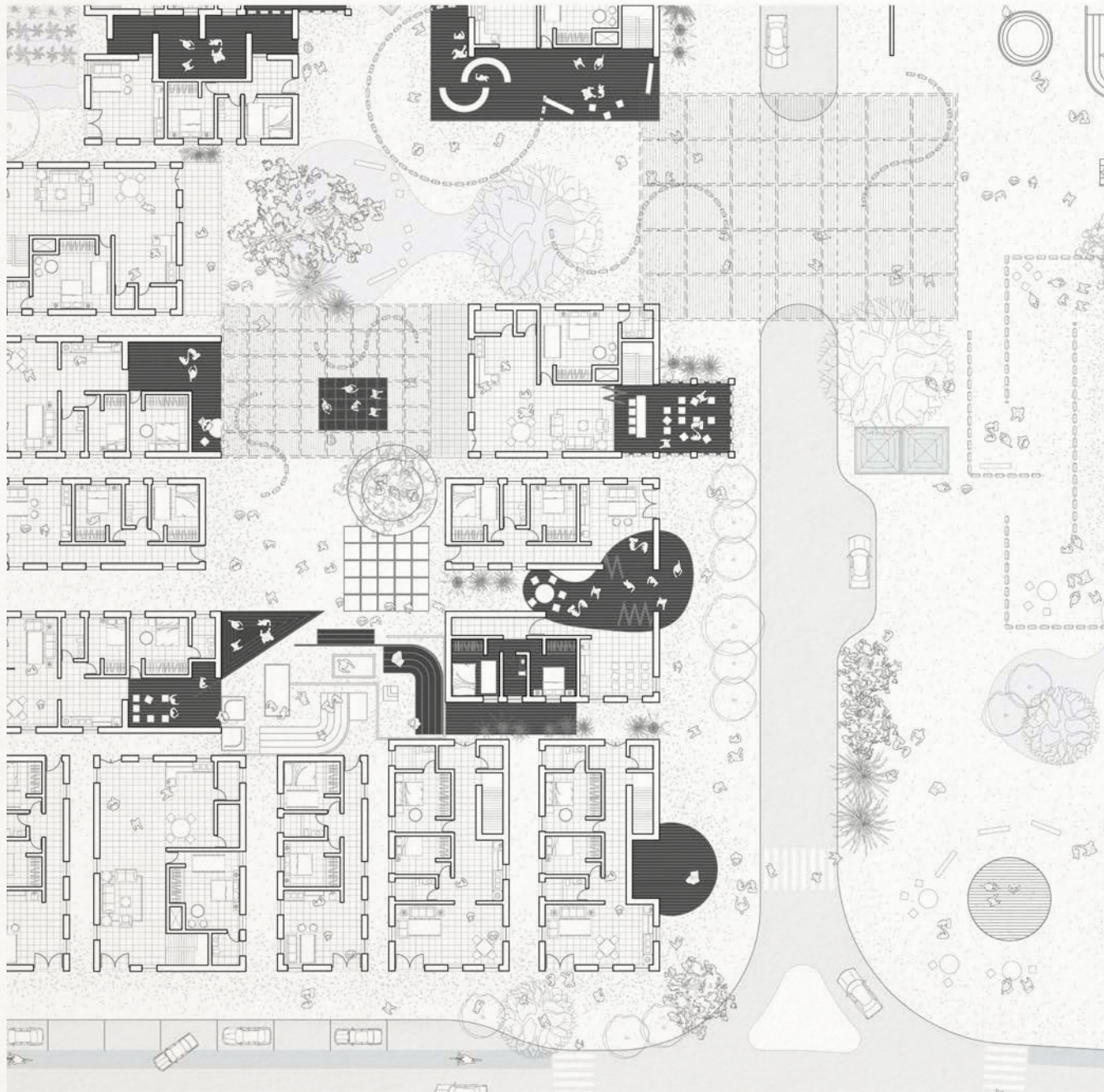
ATLANTA UNIVERSITY CENTER

The regimental structure of the education system as we know it today, is designed to encompass forms of education that support or propagate the capitalist agenda of the regime of property. It fails to accept or even acknowledge forms of learning that lie beyond the current social and systemic constructs. In Atlanta, segregation is embedded into its urban system, with infrastructure and boundaries - that have led to the red lining of neighborhoods which in turn formed inner cities such as West downtown Atlanta where the AUC is located. The formalization of learning into an educational system established the HBCU's that form the Atlanta University Center -

however by doing so the community was engulfed by the regime of property. By building on the existing infrastructure and system - that were designed to segregate. We connect the AUC to the neighborhood.

We questioned, what it means to use reparations to redefine learning through de-centering the academic campus. We use the AUC as an agency along with local activists and organizations, to disperse federal endowment to the university and the surrounding neighborhoods that historically have been discriminated against.

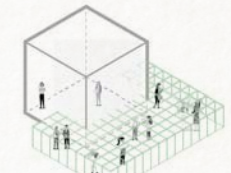




observation



need based



events



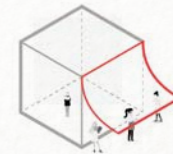
observation



gathering



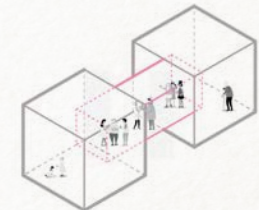
contemplation



exposure



interpersonal



connection

Learning After Property

Based on equity and nuanced local knowledge, reparations are made in the form of dispersing resources at multiple scales among the HBCUs and defunded neighborhoods. Existing spaces of learning are augmented to redefine the relationship between the city and university.

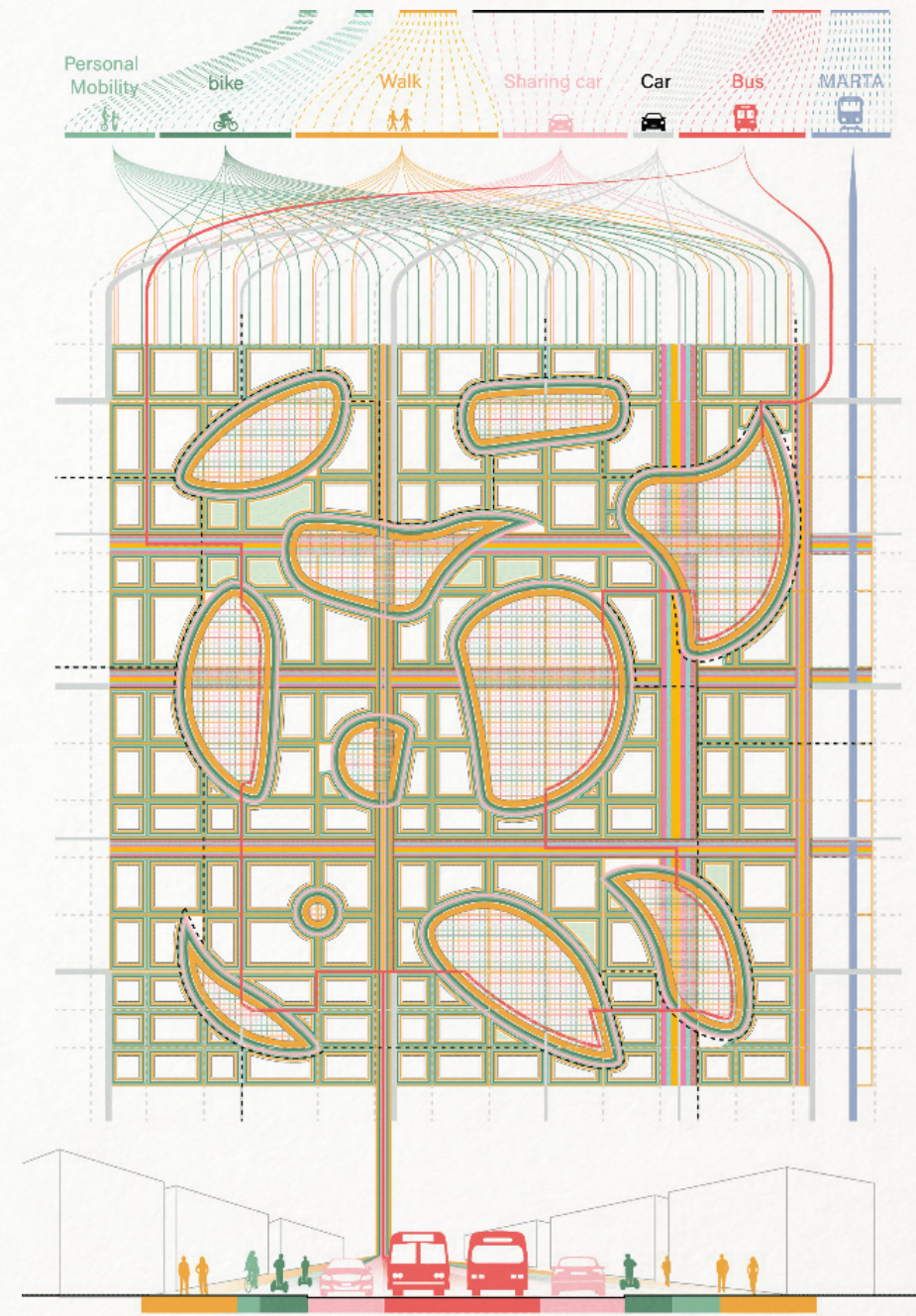


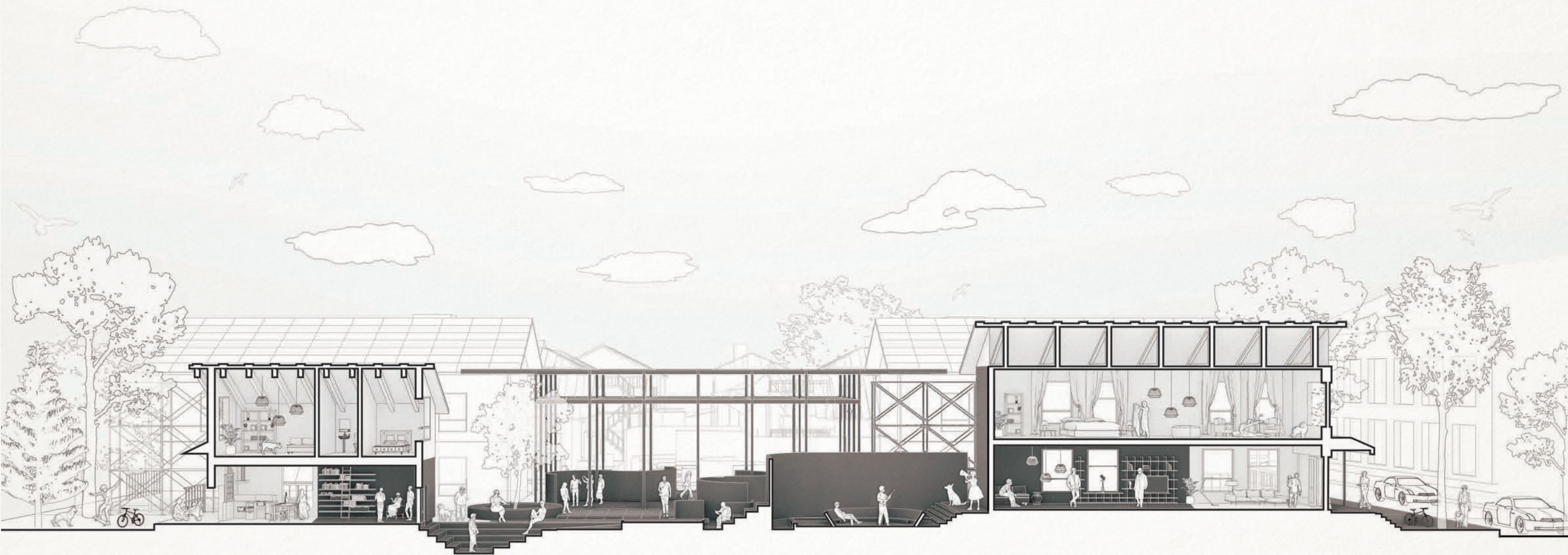
MOBILITY

As a lead up to this vision, we focus on understanding that limited mobility access prevents those who do not have the privilege of a personal automobile to be disadvantaged when it comes to accessing education

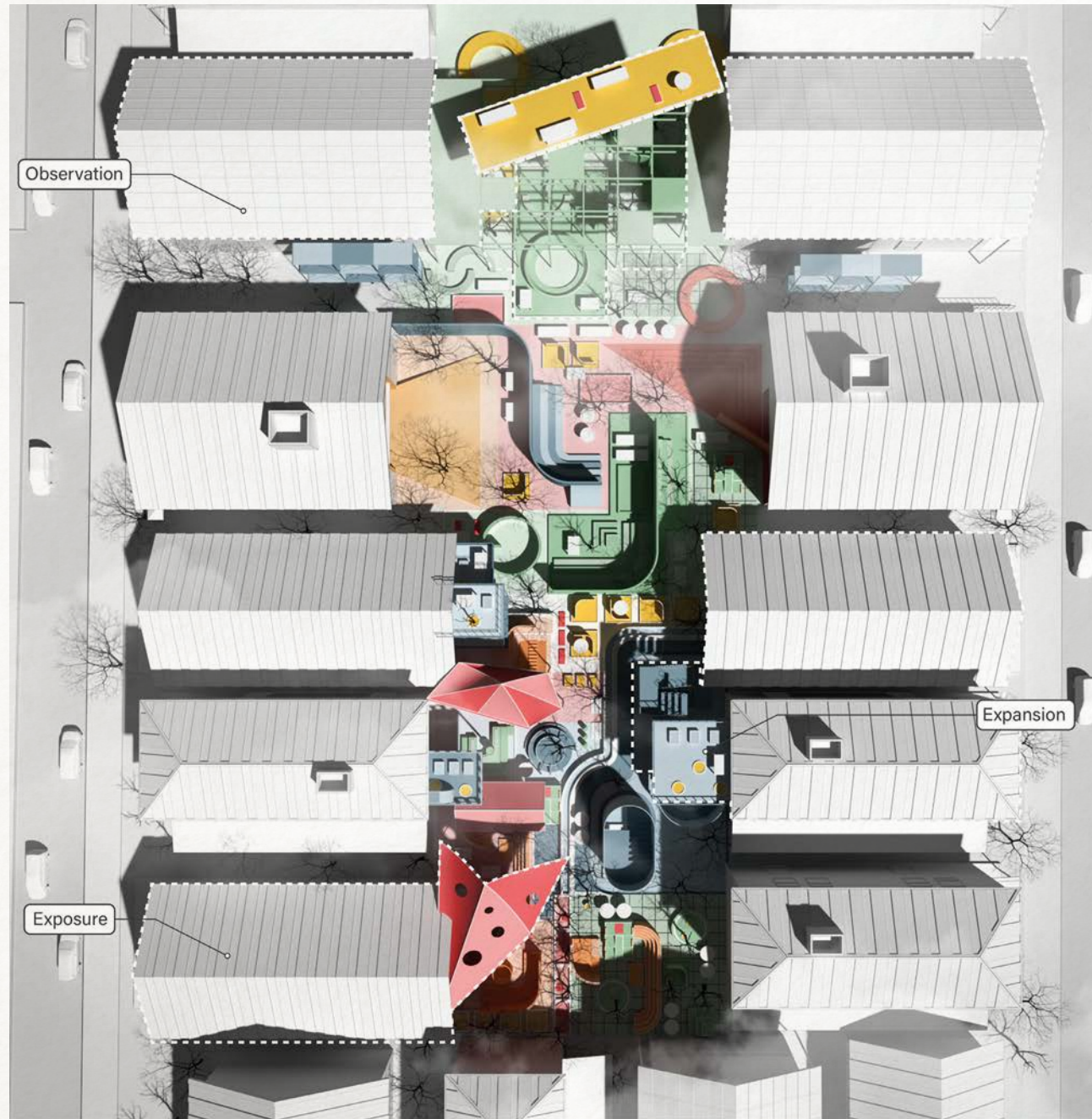
To connect our constellations of learning, the urban fabric is forced to change through an embedded multi-modal transportation network that transforms the existing grid infrastructure.

The highway which has long been the physical threshold between the campus and community would become an educational axis that negotiates between the stakeholders of education. Dismantling zones with lack of access and demarcated boundaries such as the highway. By intervening at these sites, there is the opportunity to connect communities that have been historically separated while using an underutilized area of the city.









SPATIAL BOUNDARIES ARE DECONSTRUCTED TO CREATE MORE EQUITABLE SPACES OF LEARNING.

Interstitial spaces of learning are negotiated with neighborhood organizations that act as agents to distribute the reparation funds and resources. We could potentially transform shared backyards and porches to facilitate learning and assimilate local knowledge.



—
Learning After Property re-appropriates knowledge from structures of power and redefines education's role in society. Consequently redefining the relationship between the city and university promoting vibrant possibilities of learning.
 —

learning through nutrition

learning through making

dissemination of knowledge

learning through business

learning through storytelling

learning through mental wellness



REWILDING CAYE CAULKER

LAMISA HAQUE

ABSTRACT

What if Caye Caulker became a model for redefining protected areas?

The barrier islands, particularly Caye Caulker, are imperiled due to extractive tourism and speculative real estate development which have caused the clearing of mangroves, excessive dredging, and coral bleaching, disrupting natural ecological systems.

We envision the barrier islands as a chain of interconnected national park lands that redefine protected areas. By restoring mangrove cover, protecting reef health, and adapting existing infrastructure value is redefined through long-term landscape first strategies. This nature-based approach of knowledge production, conservation, and scientific tourism increases civic engagement

and empowers the local community to protect the barrier islands as critical infrastructure - restoring and rewilding the inherent ecological balance in nature.

By creating a National Park Alliance, Caye Caulker can become a model for redefining protected areas. Dissolving arbitrary borders value is redefined through ecosystem services with long-term landscape first strategies. This framework of knowledge production, conservation, and scientific tourism increases civic engagement and empowers the local community to protect the Barrier Islands as critical infrastructure - restoring and rewilding the inherent ecological balance.

TEAM

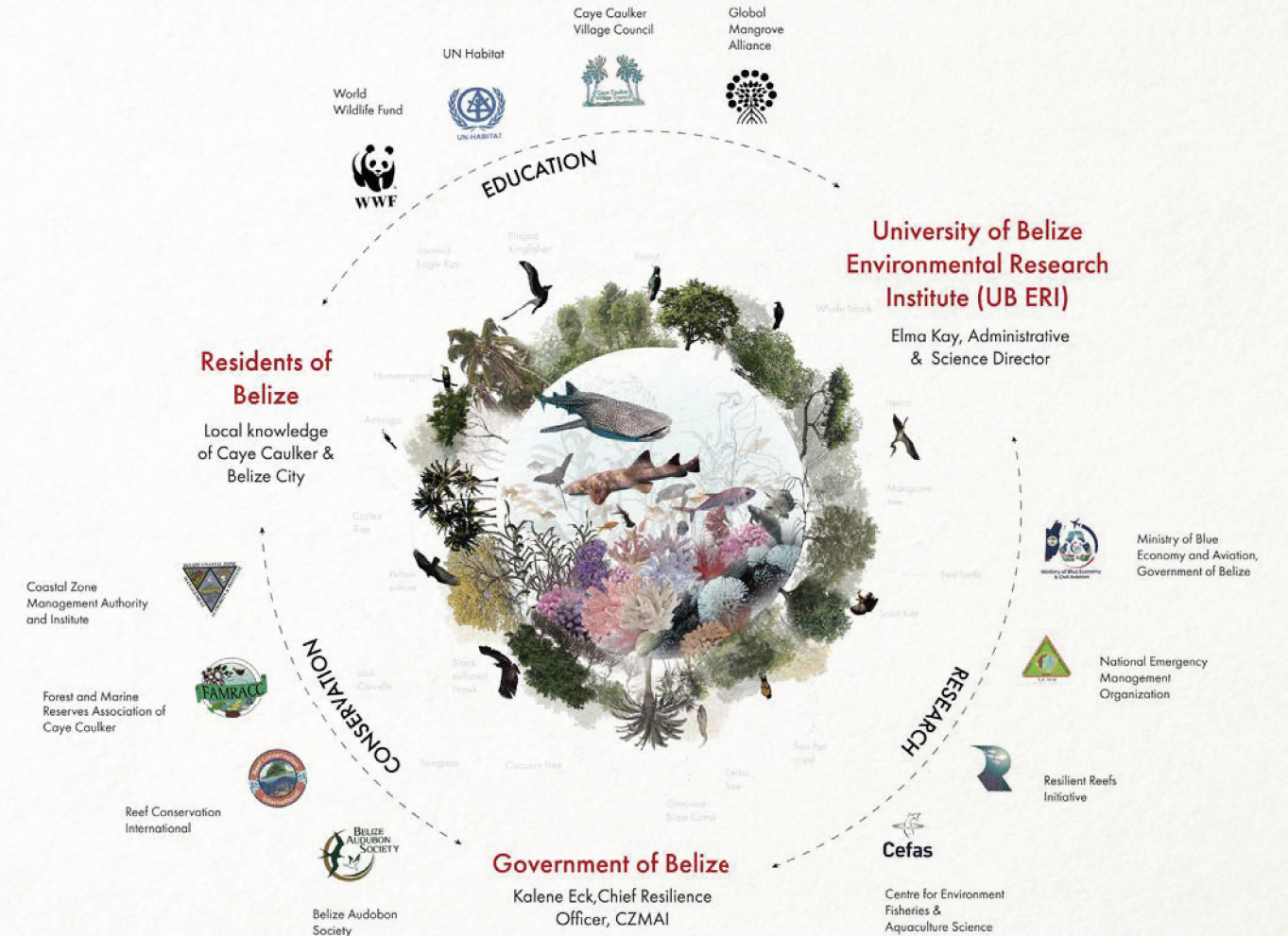
Avani Agarwal - Riya Chadha
Lamisa Haque - Rhea Pai

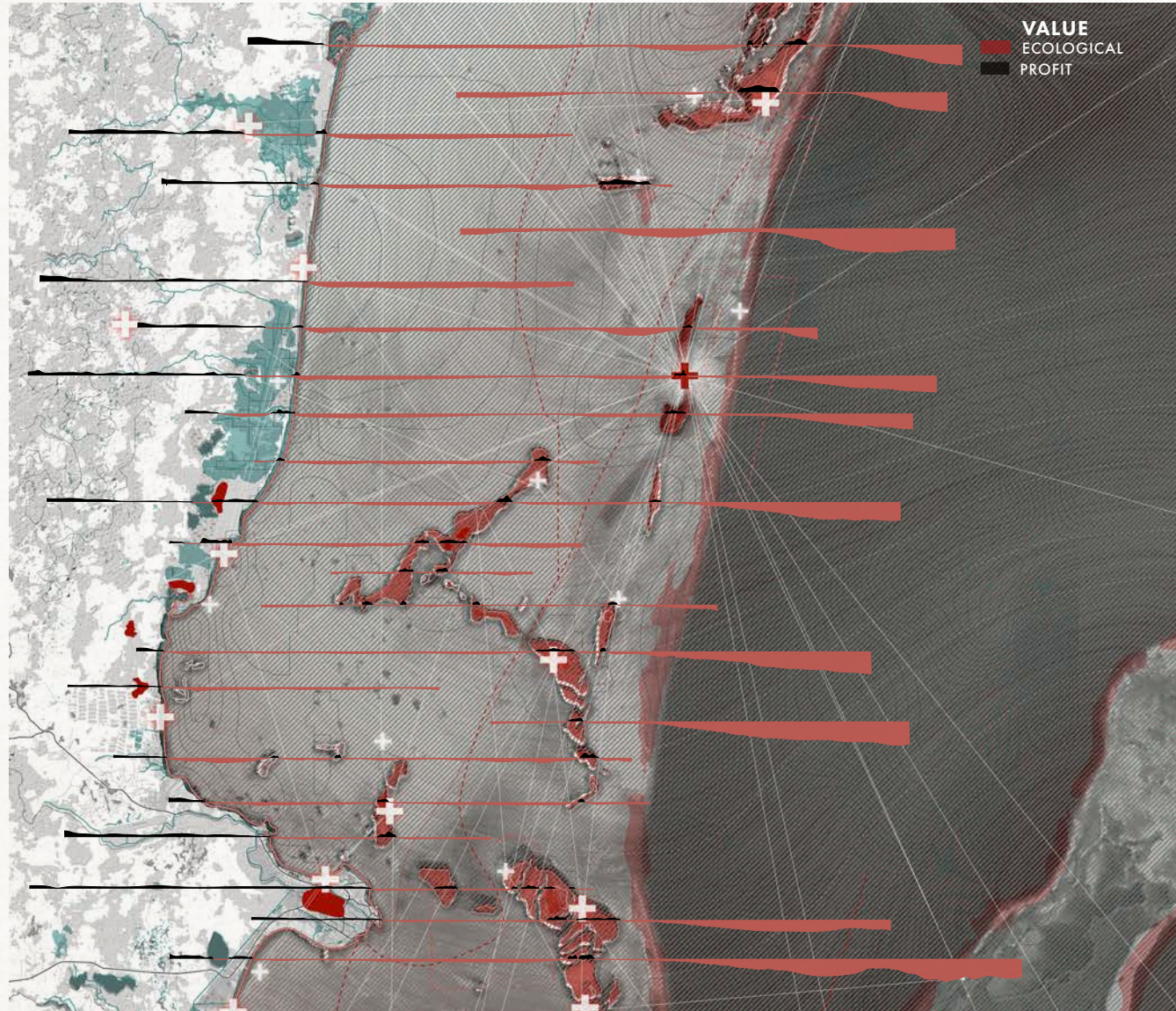
BARRIER ISLAND ALLIANCE

NORTH CAYE CAULKER, BELIZE
MARINE PROTECTED AREA

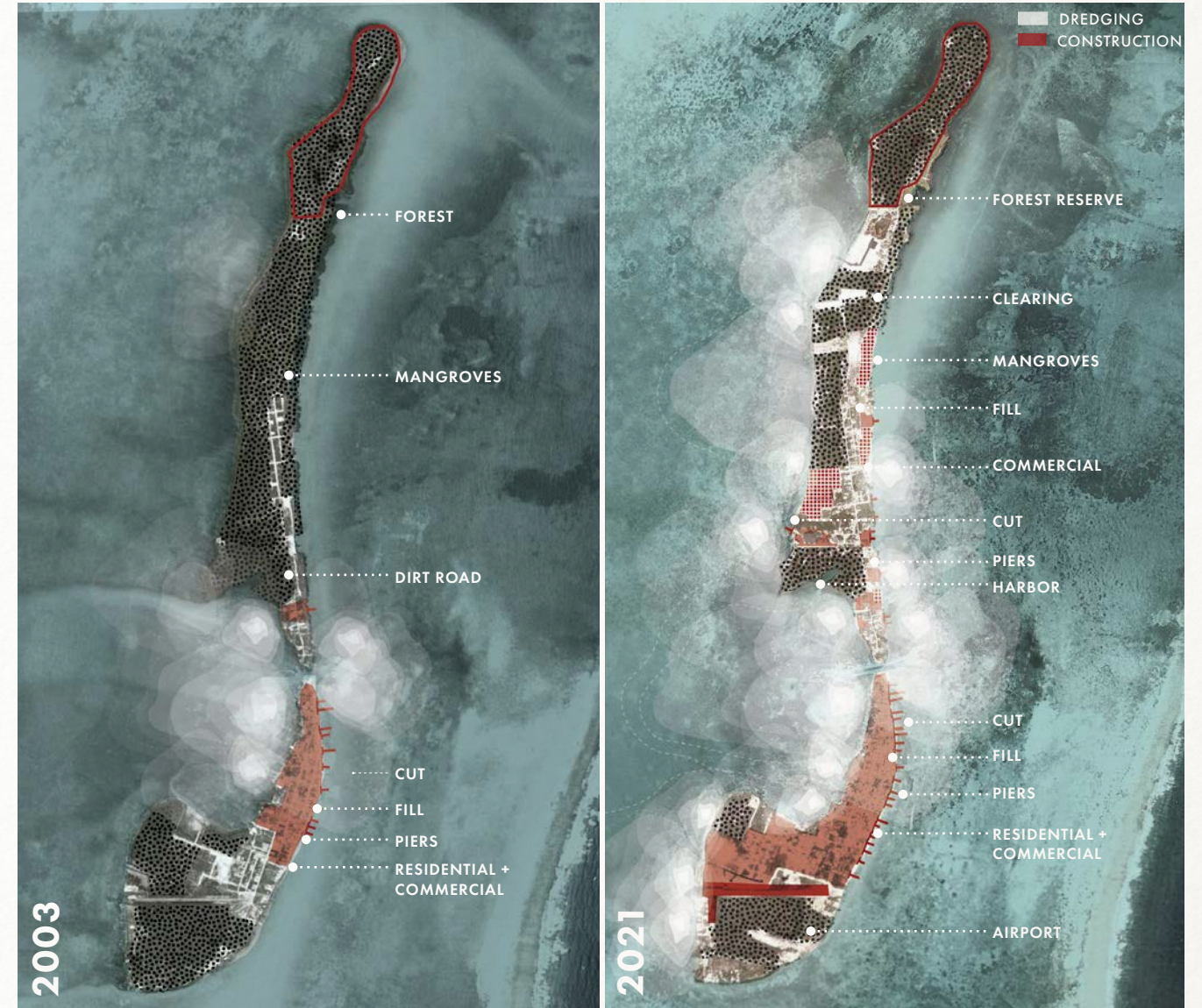
Caye Caulker is among the collection of barrier islands that shelter and protect Mexico and Belize from wind, waves, and hurricanes. "Moreover, there is a rich diversity of natural resources along the transects as shown from the red peaks and some have been designated as protected areas. However, extractive pressures of tourism and real estate speculation have exploited the landscape. The peaks in black show the areas where land has been commodified to create profit value, a short-term planning strategy.

Barrier Islands are critical infrastructure and if they didn't exist the intensity of hurricanes would be felt inland, compounded by sea level rise of 1.2m and storm surge of up to 3m by 2080. How can population growth continue while preserving the biodiversity for which Belize is justly famous? How can these communities prepare for the coming climate emergency?





VALUE-ECOLOGICAL VS PROFIT DRIVEN



RESOURCE EXTRACTION | SELF DEVOURING GROWTH

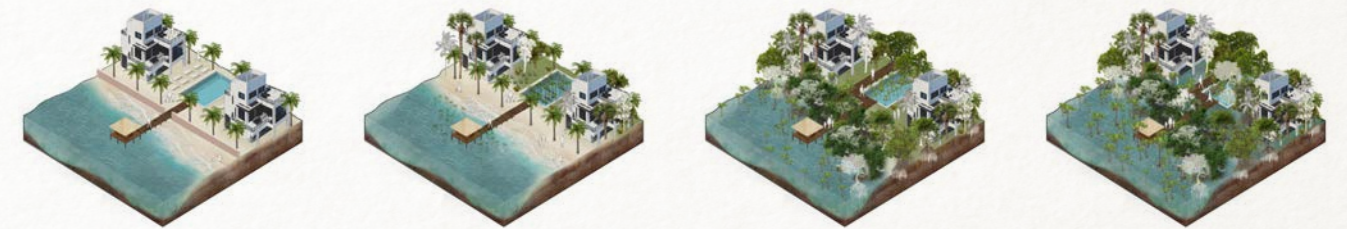


SELF DEVOURING GROWTH

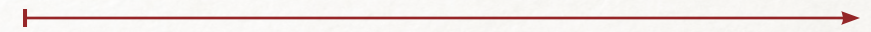
This rapid developer driven urbanization has caused the clearing of mangroves, excessive dredging, and coral bleaching which have disrupted natural ecological systems. This self devouring growth has altered the delicate balance of marine ecosystems and edge conditions.

TOWARDS A NATIONAL PARK

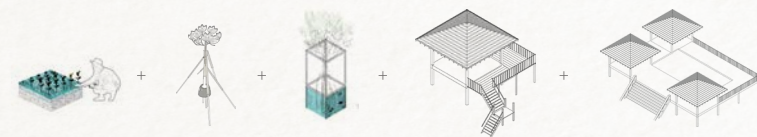
The goal is to create a National Park Alliance among the Barrier Islands to empower the local community to protect their home. Through this we shift the current trajectory of development to a landscape based approach by redefining protected areas. The future resilient landscape enhances the inherent interconnectedness between the human and natural ecosystems.



PRESENT CONDITIONS

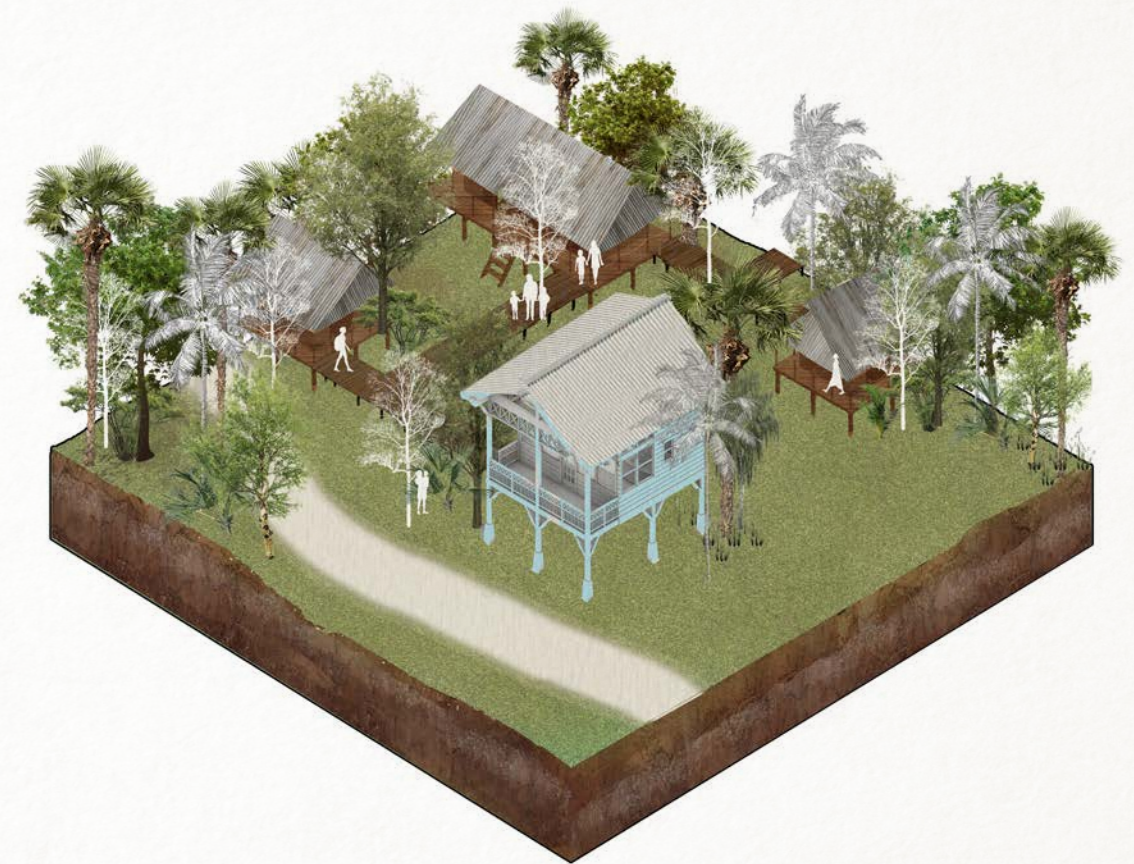


RESILIENCY

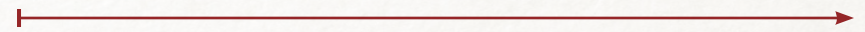


TRANSITIONAL LANDSCAPE

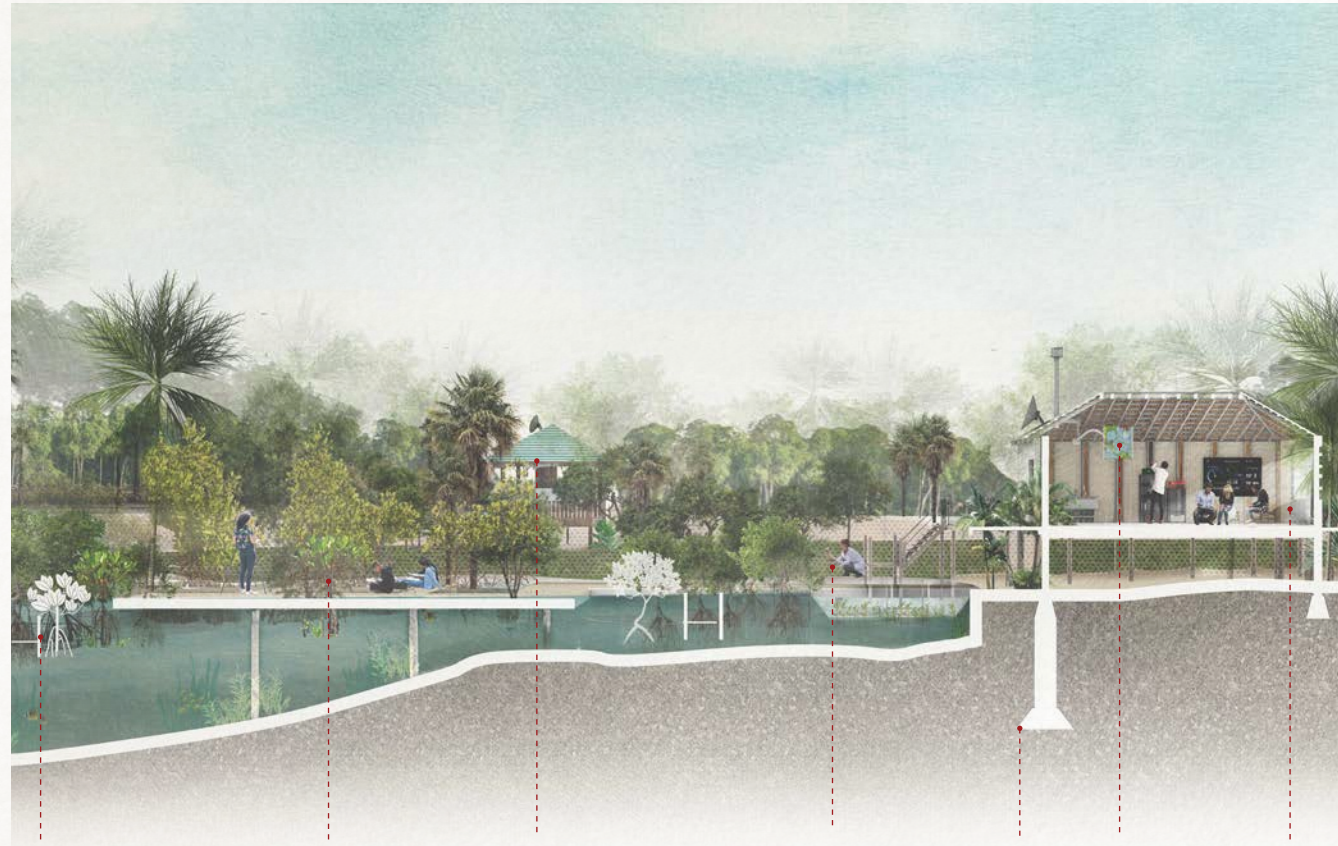
By 2080, the future re-wilded landscape is able to withstand the increased onslaught of hurricanes and sea level rise. Our strategy, similar to that of a National Park model, entails striking a balance between people's needs and environmental protection. Building on the existing, we cluster the new settlement around existing infrastructure. Scattering research outposts and monitoring stations on the island and along the water to generate knowledge with the aim to re-wild the area.



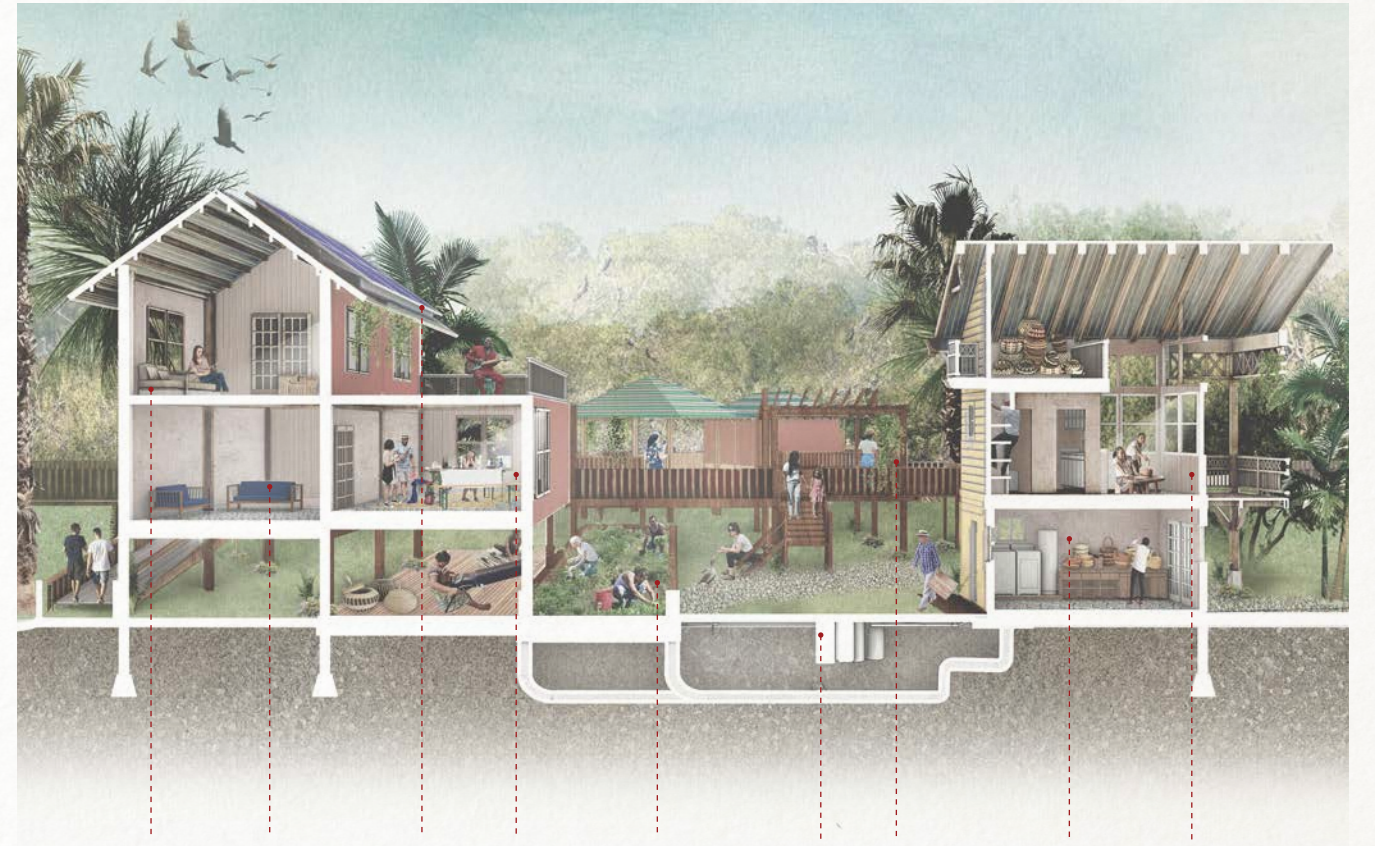
PRESENT CONDITIONS



RESILIENCY



- INTEGRATED MANGROVE ECOSYSTEM
- EXPERIMENTAL LEARNING
- CLIMATE WEATHER MONITORING
- CARBON SEQUESTRATION
- DEEP PILING
- HURRICANE WARNING SYSTEM
- SAMPLE PROCESSING LAB



- NEW HOUSING TYPOLOGY
- HOMESTAYS
- SOLAR ENERGY
- COMMUNAL DINING
- FOOD PRODUCTION
- SEPTIC TANK
- SHARING HUB
- ADAPTIVE REUSE
- LOCAL CRAFTS WORKSHOP



RIDGE TO REEF CONNECTION

The ridge to reef shows an interconnected network of systems. Generating knowledge on site reveals an opportunity to reposition humans within the natural order rather than against it.

By dissolving arbitrary borders we redefine value through ecosystem services with long-term “landscape first” strategies. We envision a framework of Knowledge Production, Conservation, and Scientific Tourism that would be implemented in stages with local empowerment creating social and ecological capital as Caye Caulker is re-wilded.

Underwater field sites for conducting scientific diving protocols, monitoring the inter-tidal zone, reef health, and coral hospitals to understand processes of recovery and conservation. This data collection aims to distribute knowledge for future restoration



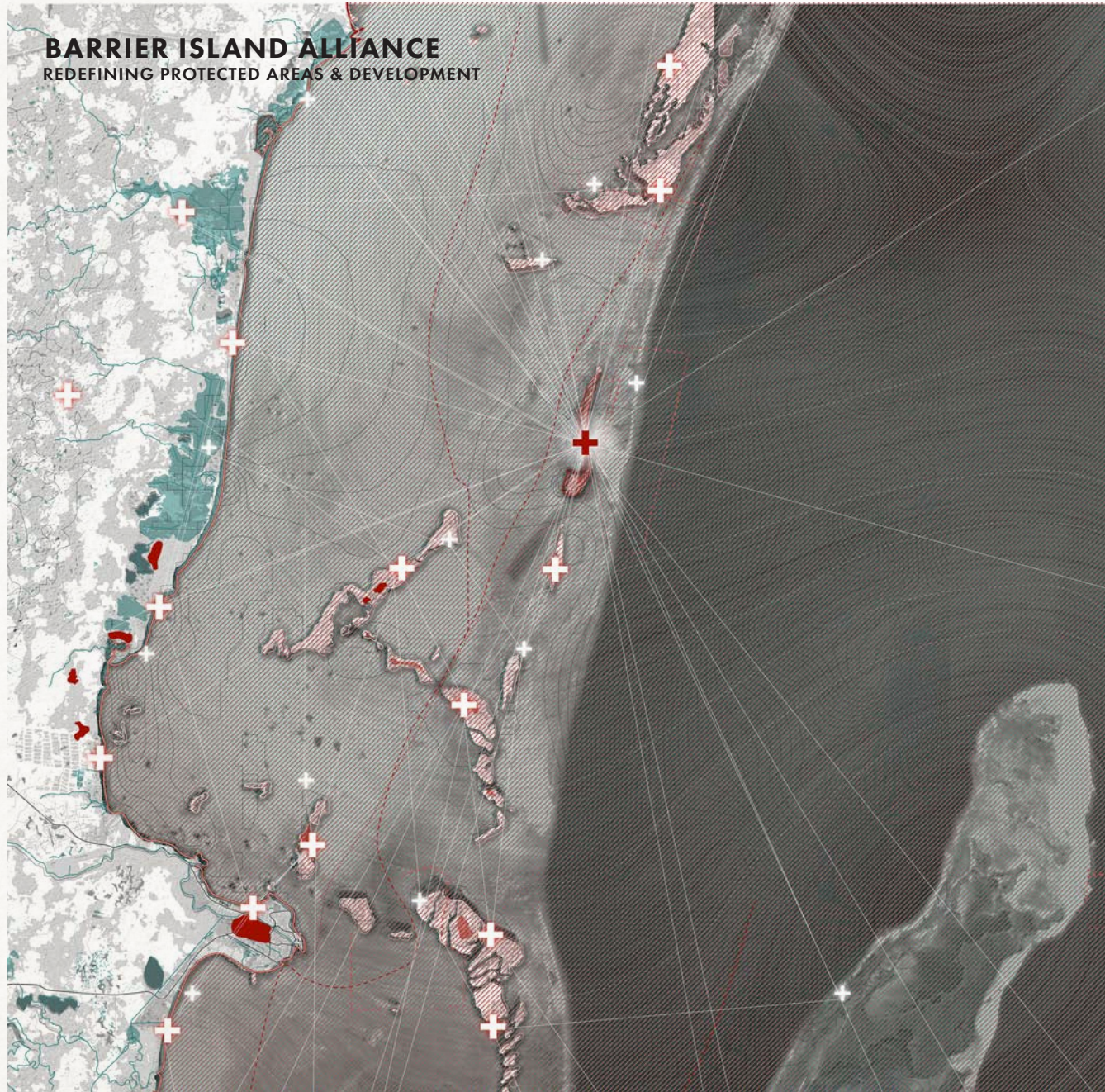
DATA COLLECTION

CORAL NURSERY

HEALTH MONITORING

CORAL HOSPITAL

REGENERATING REEFS





LIVING WITH NATURE

A community of care is created through local stewardship by harmonizing the needs of people and the environment. Simultaneously Local wealth is generated through self sustaining agriculture and energy production.

The new settlement is built upon stilts around existing infrastructure plugging into the Island's sewage, water, and energy systems. The new modular housing is connected through elevated walkways and can thus withstand sea level rise and storm surge.



LIVING EDGES

Together visitors and local stewards are studying, planting and experiencing the biodiversity, by interacting with the mangrove ecosystem and aiding the conservation efforts. Systems of climate monitoring, hurricane warning, weather tracking. Integrated mangrove ecosystem provides nurseries for fishes and

enriches the marine life. Soil research, water temperature and carbon sequestration all provide data that allow for a better understanding of how to create a dynamic living edge that exists in harmony with human and ecology



BY CREATING A NATIONAL PARK ALLIANCE THAT PROMOTES CONSERVATION + RESEARCH + EDUCATION, CAYE CAULKER CAN BECOME A MODEL FOR REDEFINING PROTECTED AREAS.

AFTER BELONGING

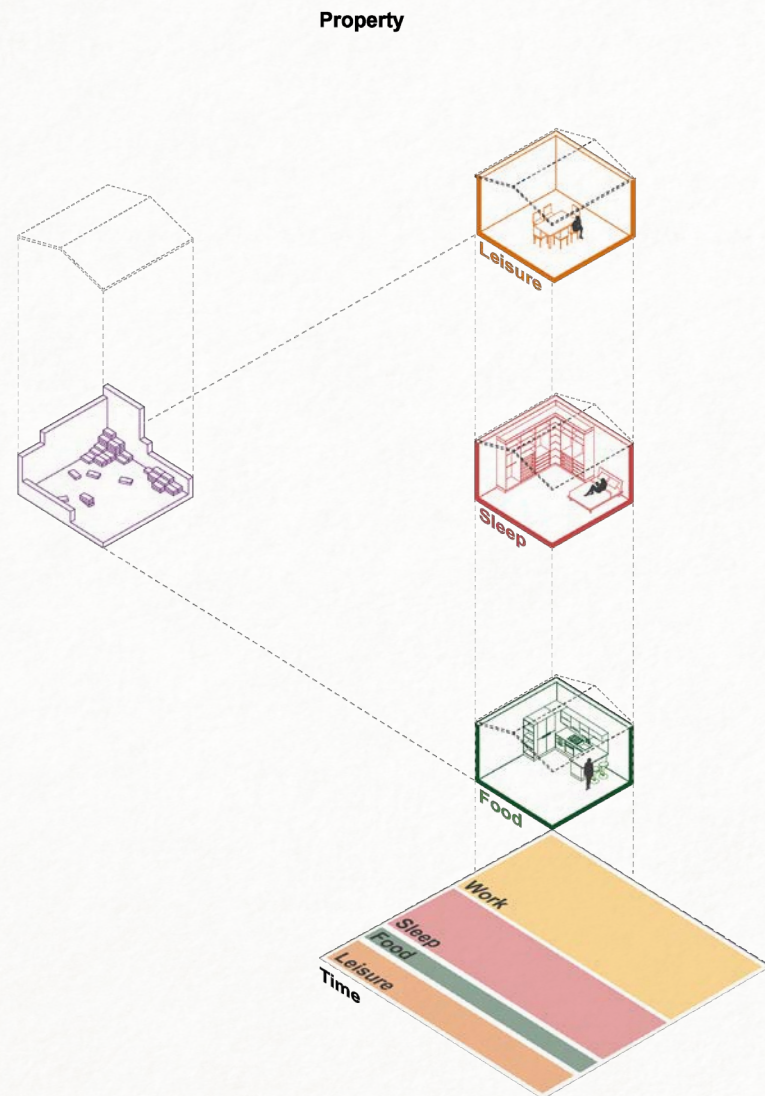
Close Reading and Drawing
by Hao Ma, Lamisa Haque, Riya Chadha, and Rongxin Tang

Prisoners of the Present: Transient Populations, Sovereign Thoughts, and the Depoliticization of Housing in the Postwar Era by Ijla Muzaffar

The reading talks about “those who own the means of production set the standard of time, or define time as a standard whereas the workers are meant only to follow this standard”. Even after work, “time is defined as time for rest, for leisure, for sleep, for food, and for rejuvenation of the body so it could return to work the next morning.” In that way, the workers are not recognized as a thinking being but as being someone who does bodily work.

The roof-loan scheme or the ‘core house’ concept from the reading where the future inhabitants are asked to build their own houses over time by putting the roof before the walls. It makes the present an opportunity of potential as inhabitants start living under the roof while building up the rest of the house.

“It does not just provide a shelter to work under, it defines the time and space that the worker works in. The roof sets the foundation of time as flexible, and the living spaces tied to that time as overlapping.”



Our diagram depicts the progression of how the initial idea of shelter has evolved to become a place of organizing time over space which permits autonomy- **A place that is not defined by physical boundaries or structures of ownership.**

KEY QUOTATIONS

“This complexity must be displaced or re-placed, in time, by invoking transitions and systems....The plan, instead of being an instrument of organizing space, becomes one of organizing time.”

“Architecture is summoned not as an object, but as an absence, a potential. Order is invoked not by presence, but by promise, not by form, but by the sequence in which architecture is made to appear.”

DEFINITION OF AFTER PROPERTY

After Property is a world where spatial permanence is destabilized, transgressing the boundaries of programmatic spaces and the standards of time. Spaces become overlapping, operating as temporal infrastructure, anticipating the possibilities of all variations undefined by structures of ownership.

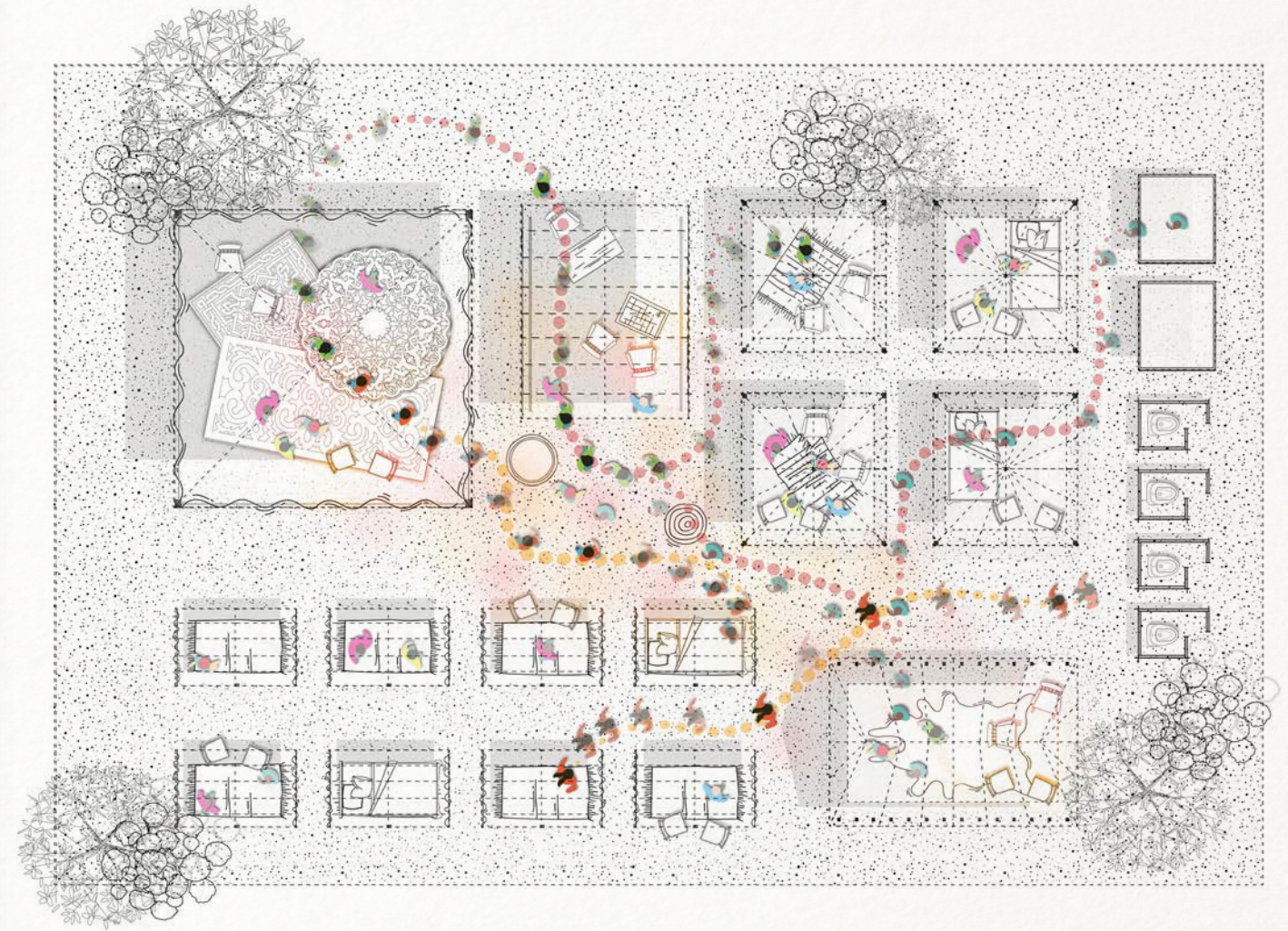


SITES AND SAMPLES

Challenging Property
by Lamisa Haque and Govardan Rajasekaran Umashankar

BUFORD HIGHWAY

Defying the determinism of physical structures. Bounded by the constraints of property, ebb and flow of communities occur. Sometimes, they transform the regime into a cultural amalgamation. However, they are still in the bounds of property and it's only a glimpse of diversity and freedom



KUMBH MELA

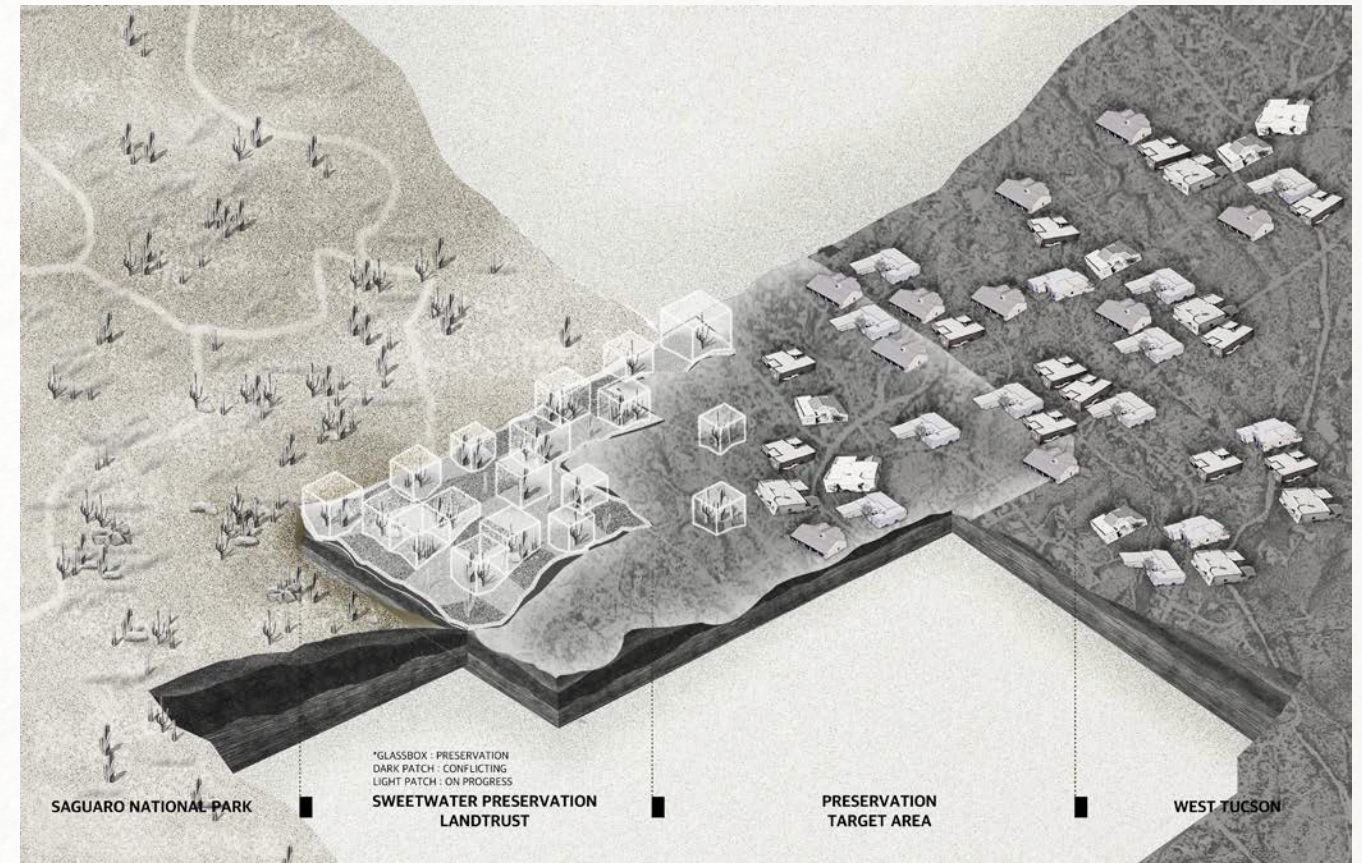
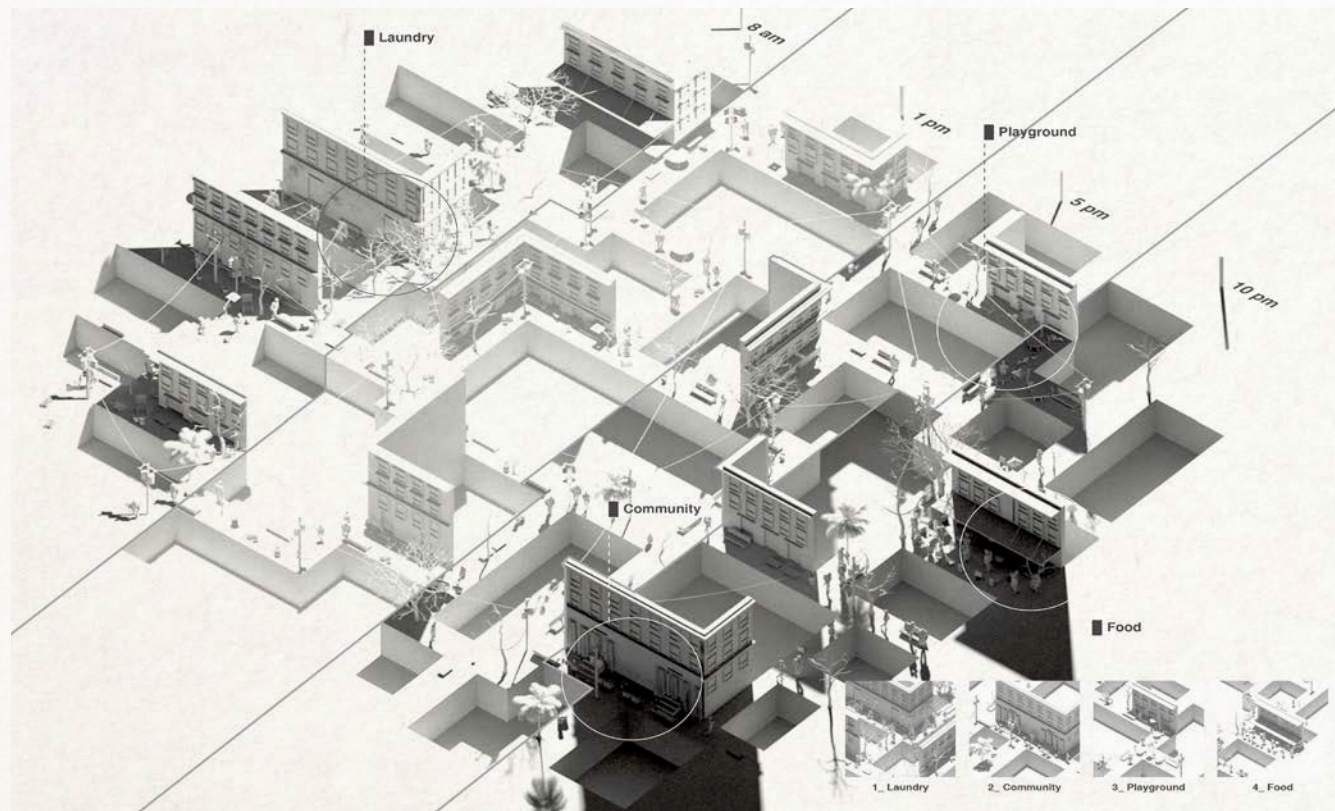
Collective, co-existing ways of living in a short time. Dissolving the boundaries of privacy allows you to gain collective space. Layers of informal and formal organizations of space that facilitate constructive friction among inhabitants

SITES AND SAMPLES

by Changbin Kim, Jisoo Kim, Lamisa Haque and Govardan Rajasekaran Umashankar

LILONG

Lilong, by definition means the community centered along a lane or interconnected lanes. They are residual spaces created between the private properties of the Shikumen housing. The high density of the neighborhood and its compact spatial arrangement leads to the spill out of activities into the lanes, transforming them into a communal space, facilitating activities and gatherings.



SAGUARO NATIONAL PARK

The newly acquired land linking Saguaro National Park to Sweetwater Preserve aims to protect a wildlife corridor and the natural desert landscape from future development. A variety of actors including the National Park Service and local residents continue to work against the regime of property as the ultimate symbol of capitalism by buying, selling, and donating land parcels in an effort to preserve rather than to monetize the pristine landscape.



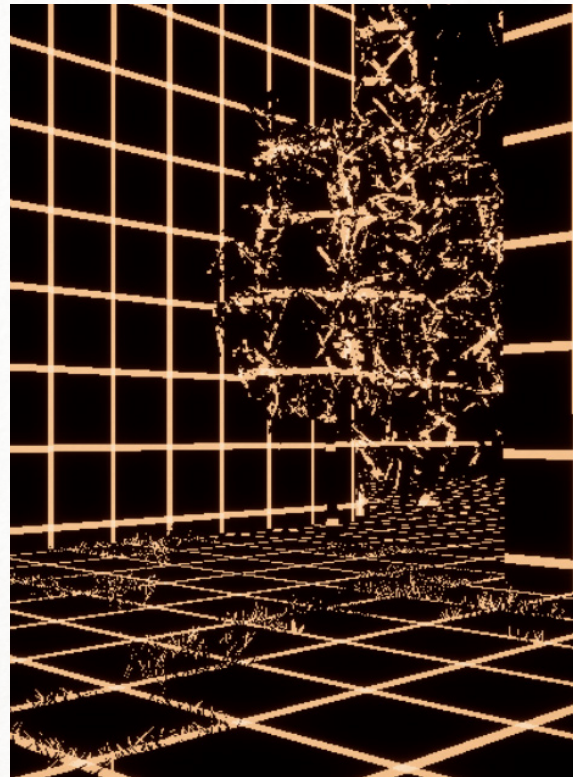
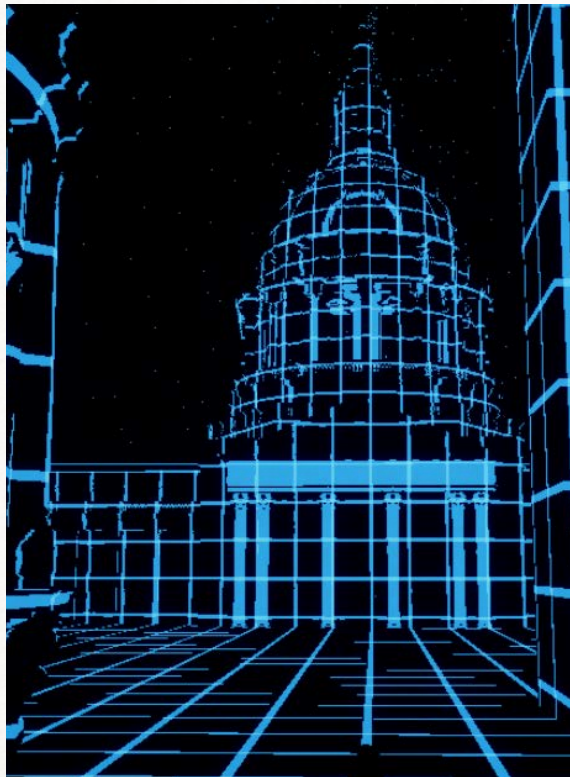
BEYOND THE GRID

VISUAL STUDIES

A virtual environment created with Unreal Engine 5
for Virtual Architecture

by Lamisa Haque

https://www.youtube.com/watch?v=ixUf_LzPjCs&t=1s



A CITY OF THE DISPLACED

Kutupalong Rohingya Refugee Camp

Excerpt from paper written for *Urban Theory & Design*
- *Post Industrial*

by Lamisa Haque

As the world's most densely populated refugee camp Kutupalong can serve as a case study for how the response to emergency shelters needs to be addressed not only by humanitarian efforts but by multiple disciplines such as urban designers and architects. It's very disheartening to see how many people have had to flee their home and to come and live in such congested areas which do not meet the UN minimum acceptable area of meters per person. Although displacement through violence and persecution isn't predictable, the issue of displacement will only increase as the climate crisis inevitably worsens.

Climate change is the defining challenge of our time: "a challenge which interacts with and reinforces the other global mega-trends such as population growth, urbanization, and growing food, water and energy insecurity. It is a challenge which is adding to the scale and complexity of human displacement" This past July in 2021, there have already been several instances of flooding and landslides in Kutupalong. These events immediately affect 21,000 Refugees with 4,000 shelters being destroyed.

If refugee camps end up becoming impromptu cities, there should be a framework for how they are built in emergency situations. Planners and designers could play larger roles in setting regulations

that are easier to implement in emergencies. Instead of viewing these settlements as temporary - which host countries tend to do in order to repatriate the refugees - a methodology of designing impromptu sustainable settlements which will allow for longer periods of stay if needed could mitigate the big problems that host countries inevitably face due to lack of long term thought. Addressing the impending climate crisis in early stages of building refugee settlements is a must.

No longer can there be any new materialization in the built environment without consideration of how climate change will be affected or how those shelters in question will be affected by climate change.

To conclude, humanitarian aid and urban development professionals must join efforts and prepare for unprecedented events. The Rohingya may have faced exodus due to persecution but soon they may face yet another misfortune of climate displacement. Shifting the conversation to become more about development rather than humanitarianism would be an effective way to transition towards building sustainable solutions and avoid the production of a 'lost generations', which are entire cultures and generations left without the opportunities to live, thrive, and contribute to the world.

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