sample of visions scrutinizing social and environmental justice [and injustice] and its implication for human and ecological livelihoods within the built environment

urban design studios
I. mending the river continuum
II. collective reparations
III. upscaling fabric

seminars
IV. displa[y]ced
V. preservationist production
VI. boundless brooklyn
VII. venice
VIII. the malcolm shabazz harlem market

research proposals
IX. space of the invisibilized
X. strengthened by collective care: the fujian tulou

césar delgado rodíguez. ms. architecture and urban design. columbia university. gsapp 2021-2022.
The evolution of agriculture from indigenous to corporate practices has compounded the pollution of the river continuum within Belize, leading to the destruction of natural ecosystems from headwaters to reef. Independence and Mango Creek will restore and revitalize the river continuum—including the communities that depend on it—by transitioning to a transitional integrated system of agriculture and conservation that actively prepares and protects the communities from the economic and environmental effects that will stem from climate change.
A colonial legacy has compressed the regenerative time scale the Maya recognized in the name of extractive mass production. In the process, agriculture has ignored its 3 base accountabilities of community, economy, and environment, exploiting land and people alike.

Independence and Mango Creek will implement a new form of community-owned agriculture and conservation system based on scaled up indigenous practices that will both adapt and fortify the coast and its inhabitants against threats of sea level rise and biodiversity loss. Inspired by the Mayan milpa agricultural system, Independence and Mango Creek will diversify and cycle agricultural fields through different plots of land to encourage the secession and regeneration processes vital to Belize's ecosystems. When fields have completed their active cultivation cycle, farmers will clear the crops (secession) and prepare the land for subsequent natural growth (regeneration).

The project will propose strategies that respond to the current harm done to the land and the water, the future climate and political migrants and the need for efficient production.

Strategy: Conservation - Precision Agriculture
Stage of Agricultural Logistics: Production
Location: Field

Strategy: Alliance to localize wealth
Stage of Agricultural Logistics: Management and Processing
Location: Urban Settlement

Strategy: Coastal Adaptation
Stage of Agricultural Logistics: Export/Production
Location: Coast
The project proposes re-centering the local community and their connection to the land as a way to build wealth and protect ecosystems. Beginning with the Alliance River Continuum as a catalyzing unit of change, Independence and Mango Creek can transform agriculture into a practice of healing the river continuum through knowledge sharing, policy building, and strategic planning.

We are proposing a block system as a unit of change to simultaneously protect the landscape and build local wealth by diversifying revenue streams.

The proposal implements a framework for organizing the blocks. First, riparian corridor blocks surround water bodies and create revenue with carbon and biodiversity credits. Next comes a layer of production blocks agriculture or carbon sinks. These blocks generate wealth through credits as well as agricultural production. Production in this system comes from conservation agriculture, which is an all-natural agricultural strategy that utilizes inter-cropping and rotational methods to prioritize soil health which in turn keeps water bodies and the reef clean and healthy. Another revenue stream, agri-tourism, can be applied to carbon sink and conservation agriculture blocks. Lastly, urban blocks fill the city core, where management, training, processing, packaging, and recycling facilities assist with preparing agricultural goods for export.
After forming the river continuum alliance, government land concession initiates the creation of the land trust and leasing system. Then, the alliance will launch their competitive "reef-certified" brand to establish their place in local markets. Policy initiatives like biodiversity offset requirements and chemical fertilizer ban assist the alliance to ultimately buy private land using profits from local production and the climate reparation fund.

Our first intervention begins at the production stage of the logistical chain, nested within the pine savanna of Mango Creek Reserve #4. Ceded land within the reserve will support land leases for local farmers participating in the alliance. In return for land and aid in start-up costs, 10% of profits go back to the alliance.

Government land concession and local ag land leases - 10% profits go to alliance (smaller scale plots)
By 2080, corporations can lease agricultural or carbon credit-generating land, with 40% of profits going to the alliance. Precision agriculture technology is used to help further manage the fields. Corporate lease - 40% profits go to alliance (large scale plot)
Field 2080
These blocks come together to form a mosaic where agricultural production is bordered by ecotourism and carbon sinks, with agrovoltaics and precision agriculture technologies interspersed throughout. Native fauna provide natural pest control and fertilizer.
In 2023, the alliance implements a co-op headquarters with training facilities. They also establish a buffer zone between the urban core and agricultural land.

In 2050, business opportunities arise for local entrepreneurs to create and sell products made with locally produced goods. We also see agri-tourism in the fields, where tourists pay premium prices to learn about conservation agriculture. The urban core becomes a hub for agriculture-related knowledge, training, technology, and innovation.
Facilities are provided to improve logistical chain. Members of the alliance can get training to learn about operations within the field.
Downscaled shipping infrastructure is controlled by the alliance, keeping wealth local. Products are marked “Reef Certified” and sold to companies willing to pay the premium for an environmentally friendly product.
Acting in tandem, all of these interventions help to build local wealth through redefining agriculture as part of the River Continuum. The Mosaic is not a sprawl scheme, but a transformation of current agricultural land and its rotation among the palette of blocks.
Collective Reparations

Fall 2021
Studio: Atlanta After Property

Instructors:
Emanuel Admasu (Coordinator),
Nina Cooke John, Chat Travieso,
Lexi Tsien, Nupur Roy

Collaborators:
Praditi Singh,
Galina Novikova,
Lucas Coelho Netto,
César Delgado Rodríguez

Collectiveness
Mobility
Adaptation

Transparencies
Property is a constructed system of spatial and psychological parameters projected onto lands, bodies and minds. Invisible and visible boundaries and borders lay weightless claims to ownership aimed to restrict and exploit the marginalized from the right to movement and expression of self. Power then is manifested through property, and it systemically overpowers the property of the personhood itself.

Collective Reparations
[The Proposal]

- BANKHEAD COURTS
  - 550 units
  - Demolished: 2011
  - SSS HOPE VI grant
DEFUNDING

A series of failed urban policies and disinvestment in social infrastructure turned the Bowen neighborhood into an inaccessible area, where fast food chains replaced locally owned businesses. In response to these issues we envision a self-sufficient system for the community wherein production, distribution, and consumption of food can happen locally. Automotive repair and fast food stops in conjunction with dense green areas become sites for collective caring. Pocket farm and local markets evolve additively while socio-economic ethos evolves as residents begin to grow these modules for self-sustenance and create learning experiences.
Forced settlement implies forced domesticity and mobility through repeated spatial expressions, gendered spaces and lack of access and connections. To the community, it meant power associated with movement. Our tactic reorganizes the communal and private nature of typical living units wherein private components flexibly intertwine with common spaces and ecology. A former gas station turns into an ecology centered daycare and after school. A catalyst for additional modules of mutual care: housing, transportation and spaces for cultural and educational pop-ups expand based on inhabitants’ needs. Private and shared balconies host gardens as spaces for production of assets and create varied levels of opacity.
Dispossession can be seen through the overpowering impact of auto-centric infrastructure, highways and industry upon ecology and residents, which resulted in polluted landscapes, deforestation and neglected tire dumping grounds across the Hollowell drive. We propose that Ecology becomes the protagonist, in order to reverse trends of pollution and harm. In the process of remediation, industrial facilities transform into sites of sustainable production. Recycling the materials from demolitions empowers the local residents to become active stewards of the land. The Chattahoochee river gains agency, and flows beyond defined edges, under an elevated regional bike path that claims the right of way underneath transmission lines.
Upscaling Fabric

The industry sector in Newark, New Jersey is stigmatized by heavily polluting companies. Manufacturing has lost terrain, instead, industry is relying primarily in transportation networks due to its convenient location, which has reflected on clusters of underutilized sites at the industrial zones, increasing the number of commuters, and creating activity deserts, triggering inaccessibility to the riverfront and the deterioration of the city’s image.

Through creating a new district the relationships between the interrelated systems of industry, waste and urbanism can be re-imagined by implementing new synergetic strategies, where healthier neighborhoods, public engagement, and economic growth become a vibrant possibility.
The project reclaims industry as an agent of change for social and environmental justice by turning a waste incinerator into a recycling facility that serves as a catalizer to start a progressive development of a district constructed by recycled materials and responding to the logistics of recycling, designing and manufacturing new products.

The proposal is dictated by the movement of waste, recycled feedstock, design and distribution of materials and products.

The definition of the site is based on a careful research of current industrial businesses and use of plots along the Passaic River at the Ironbound neighborhood.
The goal is to mandate that industry shall not prioritize capitalistic gain over the community's health. Instead, community benefit must drive all industrial development.

Waste management facilities become active part of the public space, for education and community making.
Amendments to zoning regulations are done to ensure the right development of typologies that meet the interest of the industry and the inhabitants working together to repair the harm done to the environment.

Spaces for production and storage become flexible for the use of the inhabitants and spaces for the active participation of the community as part of the recycling processes.
The Upscaling Fabric becomes an active exporter of recycled feedstock and products. It turns into a role model for cities to take advantage of the existing waste management infrastructure.
DISPLAYCED puts Columbia's gentrification and displacement of the Manhattanville community on display, literally. Asking what traces of Manhattanville's past remain and what was fully erased, the work contends with the numerous scales of displacement, from families to local businesses to entire community networks. In comparing multiple time periods, disputes, and phases of change, the DISPLAYCED also grapples with the many nuances that come with displacement at such a large scale: the discrepancies of settlements, the other various agents of change and exploitation, as well as the archives that remain lost.

The work uses an empty display case as both a physical and virtual signifier. Physically, the display case suggests a curated museum space as well as the affect of sheer absence. Jarring and peculiar, visitors are encouraged to go up to these cases where they can scan a QR code to take them to an augmented reality on their phones, whereby they can see objects, buildings, and stories from various pieces of Manhattanville that no longer remain. While primarily clustered around the Manhattanville campus, some of these cases are dotted along the walk from Columbia's main campus, suggesting a longer tour that takes into consideration Columbia's ever-growing domain.
Mexico was the first land that cultivated corn, but the amount of land that produces it has reduced from 7.7 to 6.6 million hectares in the last 30 years. There are more than half a million families with indigenous origins that depend on corn production, and by making the land productive again, we will be helping them to not lose their land and its production, and we will be preserving the cultural heritage that corn represents to Mexico.

The proposal is to equip the current micro-farmers in the state of Oaxaca with tools to practice precision agriculture. Preserving their corn crops means keeping the ownership of the plots where they produce and live. The equipment is organized by clusters of producers to stimulate their correct use and share of knowledge.
Small Farmers in Oaxaca

Mexico has about 1.5 million corn farmers, including a third in Chiapas, Oaxaca, and Puebla; Mexico’s corn farms have an average 3.6 hectares or nine acres of corn. Small farmers in southern Mexican states that rely on rain have yields of two to three tons per hectare.

Oaxaca’s extension is 9.4 million hectares, and 4.6 million produces corn involving almost 170,000 farmers.

Oaxaca is the second state with the most amount of corn farmers, but their production is not being efficient to keep their land active in production.

Precision Agriculture is a crop production management system that uses GPS to monitor equipment field position to collect information and apply inputs as required at each location.

In the longer term, we will be able to use these interventions on determining what specific varieties of corn might come for following seasons together with weather forecasts and soil conditions. Easier access to more sophisticated technologies such as automated selection will be easier, and farmers will be able to invest in storage infrastructure for a better optimization of their harvest.
By empowering small and medium corn producers in Oaxaca we can maintain the land’s production and with it, cultural heritage that represents Mexico in the world.

With Precision farming, we won’t only improve by 20% the production, but have the tools to preserve at least 80% of the productive land that was going to be lost from 5 years from now, and then preserve the 100% of it after that if the systems are well maintained.

Distribution

Access to mobile data in rural Mexico is no longer a challenge. For distribution, it is key to utilize the existing networks of both government programs that already support through economic stipends and private transport infrastructure.
Boundless Brooklyn

Fall 2021

Elective: The Art of the Development Proposal

Instructor: Brian Loughlin

Collaborators: Javier Ortiz (MSAUD), Brian Turner (MSRED), Jingren Zhou (MSRED)

Additional to providing 100% affordability of housing units and enhance proper design and performance, Boundless Dean will address social issues that the neighborhood and city faces such as senior isolation.

SITE CONTEXT

Boundless Brooklyn will:

- Design and develop a high quality affordable building that is financially feasible.
- Prioritize community goals and visions.
- Create a physical and visual connection with Dean playground.
- Respond to the community voices for what is need in the neighborhood.
Our answer is to integrate the neighborhood design charrettes while enhancing the prerequisites. Our vision becomes what we saw at the site: Indoor outdoor flex spaces for daycare tenants, after schools programs, rooftop gardens, and aquatic recreation. We aim to capture and integrate the extremely active and playful energy of the park and area.

In the distribution on floor plans, one can notice the connections on the ground, and the distribution of community and common spaces along the entire project.

Shared balconies and shared vestibules at all units are a key design strategy to enhance communication among seniors.
The rooftop is a community garden with agrivoltaics, that contribute to the energy used in the building, and provide shade to optimize a local production that helps connecting the neighbors.
The city’s fabric is built up of fascinating historic churches, residential neighborhoods, commercial markets, and small arts and crafts shops dotting the narrow lanes of the city. Over the years, subsidence, the gradual lowering of the surface of Venice, has contributed—along with other factors—to the seasonal Acqua Alta ("high water") when much of the city’s surface is occasionally covered at high tide. Between autumn and early spring, the city is often threatened by flood tides pushing in from the Adriatic. Due to this phenomenon, Venice is sinking at a substantial rate.

The newly proposed fabric of Venice aims to integrate its diverse built form and programming such as the commercial, residential and public spaces while weaving the canals, piazzas, moments of faith, and the characteristically narrow passages into the fabric. It aims to tackle the phenomenon of Aqua Alta or the seasonal high tides of the Adriatic Sea surrounding the lagoon by the use of water channels that can hold the excess water during the floods. These channels also function as public spaces during dry conditions.
While retaining the characteristic gondolas for transportation through the canals, we also propose designated parking for the gondolas at regular intervals. Each grid consists of 2-4 cores with a central water tank that captures rainwater and further segregates it from the surrounding seawater. These function as central communal courtyards during dry conditions as well. Arcades articulated with the historic Greek columns would adorn the ground floor allowing for partial flooding and these spaces function as temporary open markets – retaining the energy of this vibrant city.

The grids are planned with canals of varying widths bordering them to set a sense of hierarchy that distinguishes each grid. The grids consist of commercial spaces on the ground floor level and are stacked with residential units up to 4 stories high.

Through the incorporation of these principles of design involving grid planning, hierarchy, diversity, historic preservation while also addressing the sea level rise by creating partially and fully floodable spaces, the design aims to adapt to a future condition of existence in the ongoing epoch of climate crisis and geographical instabilities. The proposed fabric is aimed at fitting a future of amphibious living conditions wherein humans are a part of both land and water.
While walking in Harlem for the first time, I found the Malcolm Shabazz Harlem Market, a semi-open-air series of small vendor spaces that transport you to Western Africa with a year-round offer of a large diversity of products, a community that shares roots and faith, and have overcome obstacles through time. The market site will be developed, and its community needs to be heard before moving again.

"clients are mainly people from the surrounding communities, neighbors coming from all Harlem, retailers from other cities and tourists..."

"...people come here to buy fabrics, then they go to the tailor at [number] 11. Sometimes they bring the fabrics and have something [a design] in mind..."

"...yeah, from all over the place, Senegal, Kenya, Nigeria, Ghana, Gambia, Mali, Niger and also South Africa."

The government plays a fundamental role in the wellbeing and representation of the African community in Harlem, and it should be the government who procures that no future development endangers the economic and cultural stability of the people that forms the Malcolm Shabazz Harlem Market.
Abstract

Afro-descendants in Mexico were counted in the country’s census in 2020 for the first time in history yet Mexico had more African slaves than any other western colony in the beginning of the sixteenth century [¹]. Their culture and traditions have been systematically erased from history by ignoring their presence and not providing equal access to the basic resources of housing, health, education and jobs. The group is in need of recognition in the pursuit of social and spatial equity because it wasn’t included as an existing minority in the Mexican Constitution since its enactment in 1824 and it is still not the case. In an effort to work towards recognition, this research will identify and document the factors that make the population identify as afro-mexican. It will document how Afro-Mexicans have shaped the built environment they inhabit, how they use the natural resources and the limitations in these two aspects along the coast of Oaxaca; a region that hosts more than 200 000 of the 2.5 million afro-descendants in Mexico[²].

Bibliography

The Project

During the 2020 Census, the question that identified the Afro-descendant community was the following: “By your customs and traditions, do you consider yourself Afro-Mexican, Black, or Afro-descendant?”[3]. But what are these customs and traditions, and where do they develop?

The project is to tour 8 of the most Afro-descendant dense communities in the Costa Chica of Oaxaca during 15 days. Through photography, diagrams, interviews and letters, I will document how the Afro-Mexicans have maintained a cultural identity over centuries.

I have established contact with 3 grassroots organizations that work on the recognition of the Afro-Mexican community. I aim to build up on their efforts and they will help me out to be in touch with community leaders, shopkeepers, fishermen, and hopefully other stakeholders like teachers, housewives and children. These stakeholders will play an active role in the documentation of spaces for housing, education, learning, producing, transiting and social encountering. I aim to produce knowledge that hopefully will become a piece that the Afro-Mexican community feels part of.

Carta a mis Ancestros

When I think of making a community visible, I cannot avoid thinking of their direct participation in the process and how intimate this should be. The project includes the exercise Carta a mis Ancestros (Letter to my Ancestors), which will exhort members of the Afro-Mexican community to reflect on their history, their stories and their day to day activities through writing a letter to their black ancestors. It will serve as a platform for expression, and for the identification of gaps in their access to resources and their understanding of their historic origins.

Specific Objectives

1. Identification and documentation of the factors that make the Afro-mexicans identify themselves as so besides the skin color.
2. Documentation of spatial conditions and the spatial characteristics tied to the self-identification as Afro-descendants with the intention to call out spatial needs in 4 categories: housing, spaces for labor, production and learning, public space and spaces for social encounter.
3. Produce knowledge in a collaborative manner by promoting the participation of the Afro-mexican people in the investigation of their own communities through dialogue and reflection through the exercise “Carta a mis Ancestros”
4. Point out issues of spatial equity disparity to gubernamental agencies
5. Generate a mean of expression and recognition for a historically marginalized community

The Final Product

1. 3D diagrams depicting the self-identification factors of the Afro-mexicans and their relationship to the built and natural environments including quotes from interviews.
2. Series of anonymous letters from the exercise “Carta a mis Ancestros” where members of the Afro-mexican community write letters to their black ancestors.
3. Collection of Photographs portraying 8 Afro-mexican communities, their day-to-day activities, traditions and the spaces they inhabit.
4. A .pdf booklet compiling 3D diagrams, letters and photographs targeted to be delivered to local and federal governmental Mexican agencies.
5. An online page as a stage for publication of the diagrams, pictures and letters that serves as a reference, evidence and tool for potential future research.

Bibliography

Strengthened by Collective Care: the Fujian Tulou.

Spring 2022

Research proposal for the RAMSA Fellowship

Status: 3rd place of 69 submissions

Individual Work

The current social and spatial systems in our cities require us to invest more attention into future collaborative typologies of inhabitation and production. My trip will document the Fujian Tulous constructed primarily by the Hakkas as evidence of collaborative living that serve as reference for the envisioning better typologies for self-sustainable communities.

The Hakkas are an ethnic group originally active around the Yellow River. They migrated from ancient Central China between the 5th and 13th centuries to the south. They were known to feel strongly about defending their cultural heritage, so they fled from the northern influence and settled in the mountains and built the Tulous as protective structures against animals, thieves and locals who didn’t welcome migrants.

The Fujian Tulous buildings are a series of hundreds of mega dwelling structures located freestanding or clustered in the mountains of Fujian at the southeast of China. They were built in different sizes to house entire communities of up to 800 individuals each. The height of four stories, the shape and the thickness and enclosed character of the outer wall was intended for defense, and used to remain closed to the exterior for long periods of time. They are found in circular, rectangular and in five phoenix shapes in order to reduce blind spots to the outside and to generate an open space in the center in case the intruders get in. The dwellings are organized along the perimeter, and families occupy vertically stacked segments of it, while the central space, the hallways, and the exterior paths surrounding them are shared spaces for social encounter, production, exchange and leisure. The structures are built of wood, rammed earth walls and natural reinforcement fibers. The readily available materials allowed the typology to multiply exponentially and therefore to preserve the tradition of sharing space and labor.

My interest in the Tulou buildings started during my studies of resilient architecture and urban typologies and strategies. The built environment is in urgent need of resilience strategies towards climate and social transformations, which needs responses to global warming and racial justice. I strongly believe that the collective practices of living, producing and caring play an important role in this transformation process. The study of traditions that reference collective ways of living and use of materials responding to the ever-changing social and environmental conditions is essential to envision social and environmental justice through the built environment.

The final product of the research and the visit to the 30 most remarkable Tulous is a documentation of how the inhabitants of the Tulou buildings interact with the spaces that the buildings generate nowadays. The documentation will include photographs and sections in different scales, documenting the evidence of the functionality, adaptation and diversity of relationships between activity and space among the different Tulous. It will serve to spread evidence of the success of sharing commons, and as reference for the development of future innovative typologies inspired in tradition.

[Itinerary]

Week 1
1. Hong Kong
2. Xiamen
3. Yunshuiyao

Week 2
2. Hekeng Tolou Cluster
3. Gaobei Tolou Cluster
4. Heguilou Tolou
5. Huaiyuanlou Tolou
6. Hongkeng Tolou Cluster

Week 3
7. Zhongchuan Tolou
8. Chuxi Tolou Cluster
9. Nanxi Tolou Cluster
10. Taxia Tolou Cluster

Week 4
11. Yuchanglou Tolou
12. TianluokengTolou Cluster
13. Hekeng Tulou Cluster

Xiamen
Hong Kong

[Budget]

Air Transportation $4000
Land Transportation $1500
Accommodation ($80/night) $2400
Food ($25/day) $750
Entrances and Guides $500
Contingency $500
Total $9,650

[Preiminary Research Bibliography]

Huang, Hanmin. Fujian Tulou. Fujian ke xue ji shu chu ban she, 2012
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Thank You.

César Delgado Rodríguez

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