



**College of Design
University of Minnesota**

**School of Architecture
2021 Master's Final Projects**

preface

This booklet showcases University of Minnesota 2021 Master of Architecture final projects. Each project is chosen by the student as a culmination of the studio sequence and is designed under the guidance of a studio critic. The goal of the final project is two-fold: it allows students to demonstrate their ability to execute acquired skills, as well as to develop a personal voice regarding a set of architectural issues.

As can be seen from the diversity of work presented in this booklet, the faculty supports — and students pursue — a wide range of interests through their final projects. Students base a project on past studio experiences or a competition brief, explore a

theoretical proposition found in critical writing, pursue a social or cultural agenda affecting contemporary society, or investigate a technological issue which affects the manner in which we perceive the world. Each project considers the role of architecture in shaping the physical environment in which we live.

The final project semester is intellectually challenging for both students and faculty. The work presented is a testament to the dedication and sincerity of our students as they transition from an academic to a professional architecture environment. As faculty we have endeavored to fully support this pursuit, and are gratified to see the growth and accomplishments of our graduate students.

UMN School of Architecture Faculty
2021.05.06

acknowledgements

On 11 March 2020, while most students were away from campus on spring break, University of Minnesota President Joan Gabel released a system-wide email announcing that all in-person instruction was suspended due to COVID-19, and we would all be moving to online learning for “at least” three weeks.

As has been the story at architecture schools literally around the world, the mandate for alternative learning was soon extended not only to the end of the semester, but into the next academic year. For this reason, we aren’t hosting visiting faculty critics for MFP as we usually do in Rapson Hall, nor will we be filling Northrop Hall for a graduation ceremony a few days later.

Instead, most everything that our M.Arch candidates thought their final few semesters in the program might be has been up-ended, and what we had all envisioned for your post-graduation selves has likewise demanded a radical rethinking.

We are, by all accounts, living in an extraordinary time. We can adapt, we will pivot, and we will carry on, now paying

attention to new constraints and new opportunities. Along the way we get to feel everything we’re feeling about the situation that we are in, even as those feelings are shifting from moment to moment.

Zesho Susan O’Connell seems to understand not only our immediate global condition, but what we have been doing together at Rapson for years, when she states (and I paraphrase):

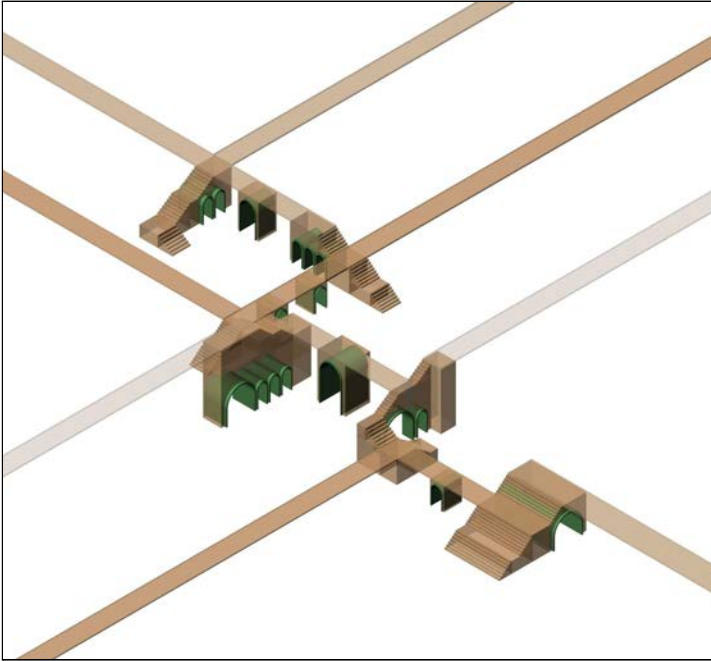
We are all vulnerable with one another right now ... we try, we make offerings, we see what happens, we get feedback. Our situation is calling us to pay exquisite attention to what is going on right now

So, let us have this two-day event and focus on the culmination of your final projects as well as years of your architecture education. Let us have this moment. Let us feel everything that we are feeling, and let us pay exquisite attention to what is going on right now. There is so much here to be proud of.

Gayla Lindt, MFP studio coordinator
2021.05.06

Noor Abdelhamid

Housing Networks and Sub-centralities



Influenced by the study of informal settlements, architect John F. C. Turner defined housing as a verb rather than a noun — an ever-changing, unpredictable, and incremental definition. Informality consists of self-perpetuating networks: it spatially infiltrates inconsiderate city plans to street sidewalks; it structurally increments over time; and it socially forms nodal communities that grow and protect its boundaries.

The case of Al-Warraq Island, located in Cairo, Egypt, serves as a vulnerable site for housing settlements threatened to be wiped out by a government-supported redevelopment plan. Learning from architectural elements of informal settlements, this design effort proposes a spectrum of networks, both spatial and social, that form boundaries for incremental housing. Existing networks of transportation access, street patterns, and prayer acoustics influence the creation of multi-level self-sufficient sub-centralities. These consist of socially driven paths connecting, bridging, and occupying spaces of economic activity, religious practice, educational gathering, and housing structure.

housingnetworks.cargo.site

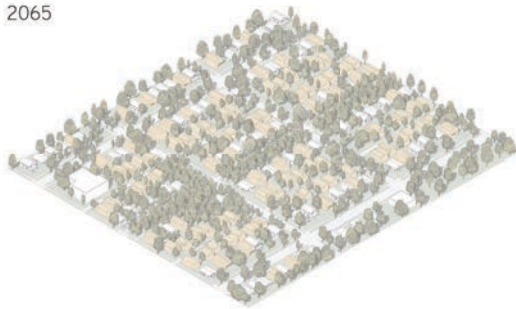
Nathan Anderson

Incrementality for Redesigning the Urban Fracture

2021

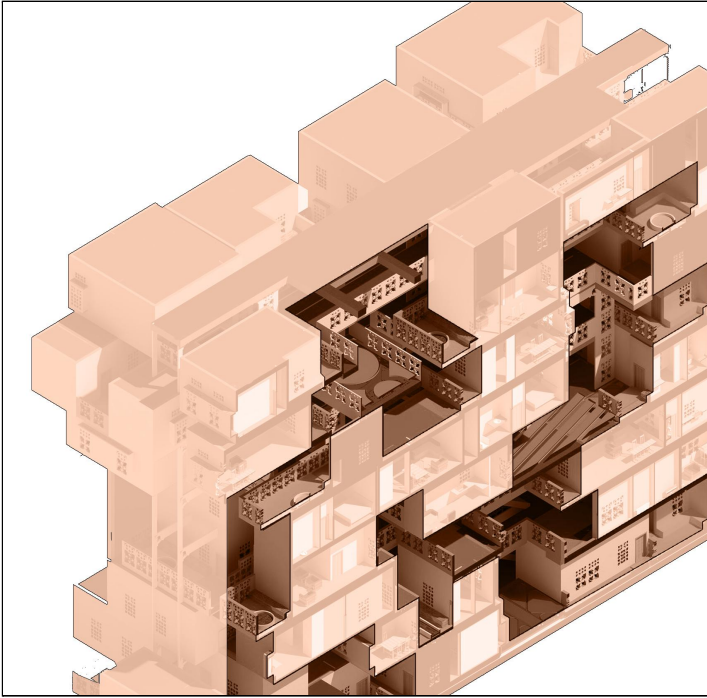


2065



With climate change being an underlying issue for society, this project looks towards ecological growth as Minneapolis becomes more dense. Incrementality for Redesigning the Urban Fracture challenges the Minneapolis 2040 Plan, considering infrastructural changes far past the proposed timeline. The project questions society's need for the owned automobile and what neighborhoods will look like with less car-centric infrastructure. In the past, forests and cities have always been seen as separate entities that struggle to co-exist, but as car dependency decreases, there is an opportunity for a symbiotic relationship between forests and the urban fabric. If planted and harvested sustainably, the urban forests can start to meet the building needs for the growing city using timber. This will create a regenerative building system that will establish an urban carbon sink to tackle issues of climate change.

Ebtehal Bahnasy **Reimagined Dar**



The traditional Arab house, usually referred to as Dar, was designed in response to cultural, social, and environmental conditions. This was manifested through many design decisions such as the building layout, connection to outdoor spaces, and the windows' design. Colonization and technology advancement led to the loss of many of these structures. This shifted the urban fabric of Arab cities to vertical, highly dense areas, and dwellings are now more enclosed with limited opportunities for social interaction with neighbors.

This proposal aims to reimagine the Dar within the spatial limits of the contemporary Egyptian city. A cluster of courtyard units is proposed to promote social relationships. The design takes into consideration the concepts of flexibility, modesty, hospitality, and ephemerality. Environmental forces guide the clustering process to increase the porosity and openness of both the building and the city block. The reimagined Dar takes inspiration from past innovations to address current challenges.

Joshua Brellenthin

Net Zero & Adaptive Reuse



With our changing climate and the short amount of time we have to repair it I wanted to look into what it will mean to bring our current building stock up to the performance levels required to meet this challenge.

These design adaptations are enacted upon a midsize, medium density commercial building. At the same time I am exploring the tenets of reuse; taking one building and changing its programming. I look into the materiality, spatial properties, and the key actions taken across the spectrum of reuse projects.

Together these investigations create the kind of building we might see a lot more in the near future as our efforts to lower our carbon footprint start to gain momentum.

Pria Cooper

The Liminal Localities



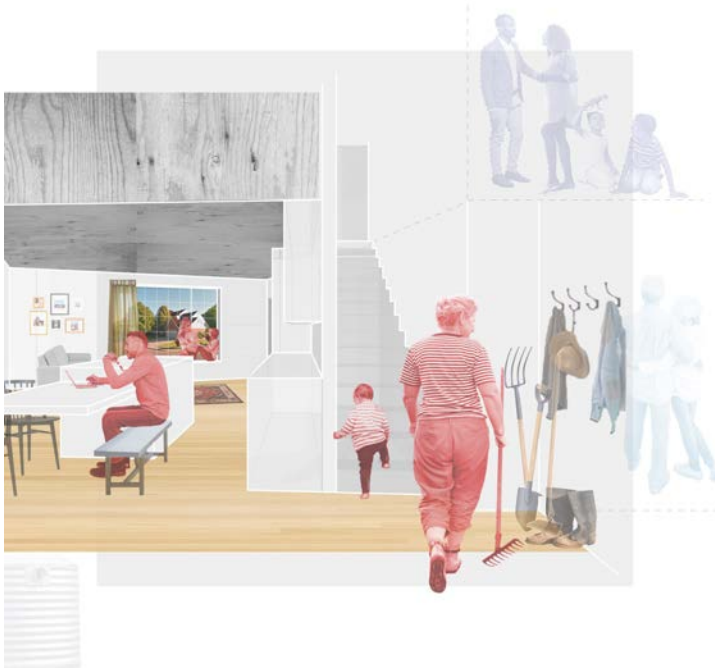
Liminality is mundane. The liminal space in architecture is space in-between. It serves as connection with little definition. Similarly, the liminal experience is one that is personal and utterly common. It is ephemeral and perpetual. Both are often overlooked, yet are intrinsic in the participation of architecture.

The liminal localities focus on the timeless element of a liminal experience. These corridors are meant to be experienced in movement. Real minutes and real people pass, yet time stands still. Senses are heightened or deafened. They respond to the conditions of their site and create an experience that is fleeting and phenomenal. The sites themselves - ocean, mountain, and desert - are non-specific, but their distinct experiential qualities define them. The corridors can thus operate within these specific factors anywhere in the world.

This project explores a reconciliation of the physical and experiential nature of liminality. These liminal localities are reminders of the “in-between,” to remember to experience the extraordinary common.

Kaitlin DeAngelis

Reframed



Reframed is a proposition that imagines how suburbia in 2050 could function as a more sustainable and affordable model for living while negotiating between societal norms and climate necessities. While there are many ways to address the impending climate and housing crisis, the pervasiveness of the suburbs exists as something entirely inefficient while occupying critically valuable land. Nudging, rather than upending the ingrained suburban lifestyle introduces a nuanced solution to what will likely become a crucial, yet grudging cultural reassessment for many.

Regions less negatively affected by climate change will need to prepare for an influx in population while mitigating sprawl into arable land. As such, this project speculates on a shift in American values and attitudes towards land use and ownership through the deconstruction and reorientation of a suburban development outside of Denver, Colorado, demonstrating how these ubiquitous neighborhoods can gradually achieve greater density, affordability, and utilize less resources.

Trever DeSautel

Re-Think, Re-Build, Re-Imagine I-94



Almost 70 years ago, as part of the Federal Highway Act, construction workers dug a broad trench through much of the Twin Cities to make way for Interstate 94. The trench literally divided and separated several predominantly minority neighborhoods in both Minneapolis and St. Paul, destroying homes, businesses, and places of worship. In many ways, these neighborhoods have never recovered from this physical and social division.

Given that the interstate continues to age and is in need of significant repair, this project proposes capping the interstate to reconnect communities that were torn apart, as well as addressing negative effects associated with interstate traffic such as noise, pollution, and vast paved surfaces.

Design solutions operate at a variety of scales and across multiple programs, including affordable housing, recreational amenities, gentrification, and multimodal transportation access.

Whitney Donohue

The Pavilion of Work at Falls Park



The Pavilion of Work at Falls Park provides a space for work that merges the dichotomy of isolation and connection through broken boundaries, transparent and reflective surfaces, and the collision of forms resulting from voids.

Sited in Falls Park in Sioux Falls, South Dakota, with a view of the rapid waters that fall over Sioux Quartzite, this all seasons pavilion seeks to provide an escape from a traditional work setting and allow its occupants to enter into a space that provides a connection to nature, while minimizing external distractions. A variety of spaces offer the flexibility to work in a setting that best suits individual working needs.

Ben Dosch

A Fragile Four-Piece Suit



Our society has created — and grown accepting of — a penal system without enough long-term consideration of what happens when those who are incarcerated are eventually released from a correctional facility. After spending countless months, years, or decades within an oppressive facility, the residents become detached from societal norms, but are still expected to immediately resume their lives as productive members of this society.

This project addresses the oppressive physical, mental, and social environment that architects have historically created by considering the broader systems and conditions of a correctional facility.

This reformation is done by reimagining what a correctional facility can be, how it functions on a daily cycle to provide a healing environment, and how it might serve as a stepping stone in the transformation of the entire penal system.

Matthew Efteland

The Architecture of Invitation: Opening Up + Reaching Out



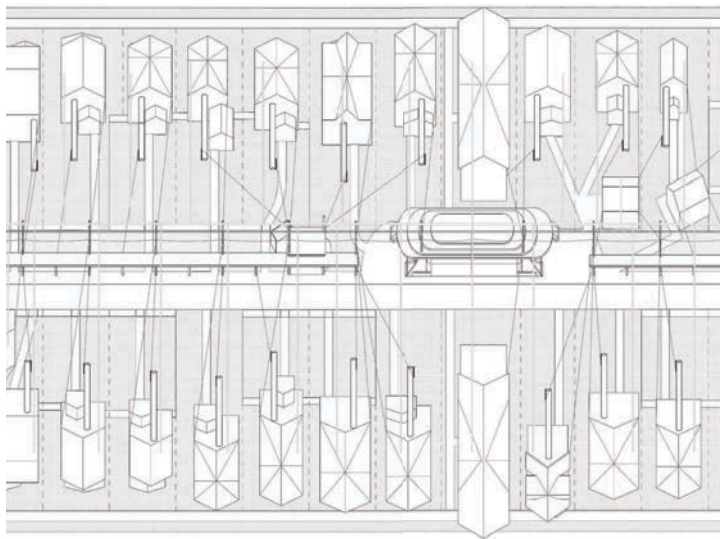
How can architecture attract people to itself? What makes it alluring, inviting, welcoming?

These questions were explored in a case study of a campus church desiring to reach the students all around them, but limited by an outdated building that is anything but inviting. The church is at the edge of the University of Minnesota's East Bank in Minneapolis.

The updated design serves to bring the physical space into alignment with the character of the congregation and their mission and vision to mentor and equip students to reach their full potential. This is achieved through the addition of student-facing programs and the use of the Architecture of Invitation, which engages its surroundings and invites interaction.

Eden V Garton

Work We Share: Collective Housekeeping



Domestic work has always been undervalued and expressed as such through the everyday architecture of neighborhoods and homes. In redesigning a residential alley with spatial methodologies of Material Feminism and Queer Spatial Theory in mind, a particular lens of collectivized domestic chores is considered. “Work We Share” designs counter-narratives and visualizes untold histories.

This project goes beyond “reckoning with the past” and deliberately changes the timeline with the goal of imagining a better present condition. Creating rifts in the history of the past 100 years led to design decisions, experimenting with the impacts of historical events that create lasting cultural changes. Located along a residential alleyway in the Longfellow Neighborhood of South Minneapolis, the reimagined infrastructure subverts the isolated single family home ideal, facilitating a collective domestic work reality.

<https://workweshare.cargo.site/>

James Goman

The Architectural Education Artistically Reconsidered



This project examines the role and process of the education and development of architects today and historically, and proposes an alternative solution to the existing model. It is a project, a manifesto, and perhaps also a final review.

Our profession was once of an artistic nature, valuing and respectful of its past, and possessing a culture of beauty. The buildings which this culture created are timeless and delightful. We find them endearing and even inspiring.

This project endeavors to preserve and promote that culture which made this kind of architecture possible; to become united with its rich tradition and participate in the age-old culture of beauty. In this way, to move forward we are taking a step backward. In uniting ourselves with the past we orient ourselves properly to then move forward. The old then is made new, the new becomes old; the two become one.

Michael Johanns

REhabitation



With the impact of Covid-19 the unsheltered population has increased immensely. This project proposes a homeless shelter typology that brings together a range of housing types to help people move through and out of the shelter system: temporary shelters, transitional shelters and affordable housing.

The site is located just south of downtown Minneapolis, between the Phillips and Powderhorn neighborhoods, taking advantage of the surrounding amenities along the Greenway bike path.

The building has a range of amenities and resources to support people experiencing homelessness or transitional housing needs. The goal of the project is to provide residents with more freedom and dignity in a single location as they work on their education, job placement and more permanent housing.

Ritah Kagezi

Formalized Informality: Nakasero Market



Nakasero Market, one of the oldest food markets in Kampala, Uganda, has been in operation since colonial times in the 1920s. Yet, the informal operations in spaces with no physical infrastructures have prevailed.

In an informal economy, users dynamically utilize whatever resource they have at their disposal. Their resourcefulness highlights external/internal forces that influence their survival like weather, social dynamics, culture, and an unfavorable economy.

Architecture can facilitate the transition towards a formal economy through catalyst interventions and creations. By investigating existing dynamics and patterns, this research speculates and identifies opportunities rooted in the anthropological and sociological settings of Nakasero. The goal of this project is to facilitate a hybrid Nakasero towards a more equitable economy for all vendors. This format promotes the coexistence of informal vendors within an unavoidably formal context. Further, it sets them up for a transition towards formally operating for the good of the economy in general.

Gabrielle Laliberte

Manufactured Landscapes : Take 2



The excavation of iron ore in Northern Minnesota has left permanent markings on the natural landscape. After the extraction is completed, the Iron Range will be left with a manufactured landscape of mining pit lakes that can be reclaimed for future economic success of the surrounding communities. This project aims to imagine a possibility for this land that will recognize the opportunities that these rich locations hold.

This proposal has a strong emphasis on revealing the scale of one single marking that is located in the community of Chisholm, Minnesota. This notion of bigness is played out at four locations based on an axis that runs from the furthest ends of the inactive mining lake. Each location provides a specific amenity that reveals site characteristics through engagement with the land.

Kenos Leong

HI-RISE: an approach to collective urban living



Global megacities face ongoing challenges accommodating the influx of migrants coming for better jobs and opportunities. This phenomenon stresses the capacity of infrastructure and housing systems. As a result, cities densify by building out and up to meet demand. In Macau and many Chinese cities, this resulted in the mass production of a common high-rise typology with ground-floor retail, a private podium level with shared amenities, and stacked floors connected by a central and utilitarian circulation core. Although it is successful in accommodating high density housing and supports an active street life, it does not foster community between its residents.

HI-RISE studied ideas of collectivity and spatial form to cultivate community inside a 32-story residential high-rise. This project challenges normative grid urbanism to propose a curvilinear urban form that embraces human spatial experience.

Terri (Chung Wan) Leung

Extrastatecraft-Urban Factory (in Hong Kong)



One of the infrastructures, the free zone was described by Keller Easterling as EXTRASTATECRAFT. The zone is developed drastically from an out-of-way area for manufacturing custom-free goods as a postwar surviving method to a model for thriving cities like Hong Kong, Singapore, and Dubai.

This project focuses on Hong Kong and proposes change to this bleeding pattern of infrastructures. Ongoing trade war, the Umbrella Revolution in 2014, Extradition Law in 2019 and the global pandemic this year have provoked the problem of over-reliance from the thriving cities on the manufactory in the developing countries (urban-space-to-be).

What if one day trade war becomes more serious, could people in Hong Kong still survive without the imported food? What if one day another wave of pandemic comes, and China or other countries are not capable of transporting goods, would the economy of Hong Kong die? What if the main ports in the world lost their resources, could developing cities pick up the manufacturing technology and speed to provide the city's need?

Yiyue Lin

Hutong: Void

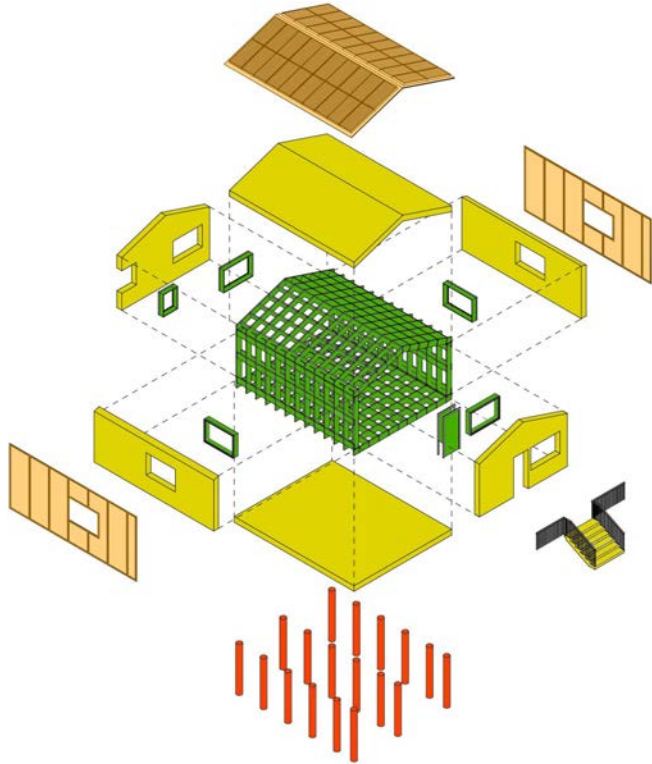


Hutong and Siheyuan (courtyard houses) are the most iconic architectural structures of Beijing. This project uses the existing structure, environment, history, and mentality to amplify the beauty of the city, through working with Nanluogu Alley, the most popular and commercialized hutong.

The goals: Firstly, to back the commercialization by a notch and bring back the "hutong living" on Nanluogu Alley. Secondly, to share the historical space with the public without major interruption further into the neighborhood. And lastly, to amplify the beauty of the Nanluogu Alley by creating interventions that interact with the voids.

Josh Meiners

Fragile Architecture



This project is aimed at an alternative type of construction and maintenance procedure as well as alternative material methodologies. Building from the fact that residential structures alone produce nearly 10 million tons of solid waste every year in Minnesota, this project proposes different materials and building methods to both extend the life cycle of our buildings while also decreasing the amount of artificial waste that cannot be reintroduced into our natural cycles.

This type of construction and material usage will hopefully reduce our reliance on unsustainable materials, reduce our waste by more than 50%, and spread to project types beyond residential and small-scale construction in order to have a bigger impact.

The most radical part of this design proposal is the change in the role of the owner, requiring more in-depth knowledge and expertise of their own environment to ensure their buildings longevity through hands-on repair and upkeep.

Enrique Mendoza

Seattle Powerhouse + Park



A project initially conceived as simply a re-evaluation of the renewable energy producing typology now puts forth a design proposal centered around the integration of various forms of power onto a singular site.

The project is situated on a split site in southwest Seattle, Washington, wedged between a historic industrial district to the east and a protected state forest which outlines a new bustling residential neighborhood to the west. The site is also divided by a body of water known as the Duwamish River, effectively establishing a dialogue between the two halves of the site.

Throughout the design proposal key frames or instances are preserved, raising questions about the tumultuous past of the city, the manner in which we create or extract new material matters, and patterns of consumption embedded in people's everyday lives.

Jonathan Osborne

Natural Transitions: Outdoor Education



This project proposes a Nature Center and Summer Day Camp for some of the most disadvantaged children in Connecticut. The project location is a family farm in Watertown, which for years has been used as a children's day camp.

Watertown is about 30 minutes from Waterbury, a medium-sized, ex-industrial city. Its brass mills used to employ $\pm 50,000$ workers until the 1980s when employees dwindled to $\pm 5,000$ workers. Over the several decades since, Waterbury has been languishing, and its residents are among the most disadvantaged in Connecticut: one in four children live below the poverty line.

The Nature Center and Summer Day Camp gives children from Waterbury a place to have outdoor fun and experience nature in a rural setting, an experience they might otherwise never have.

Hannah Packard

Spirala Ecovillage Community Home



Rooted in the values of life, integrity, peace, freedom, awareness and cooperation, the Spirala Ecovillage is an intentional community created in order to provide a social and physical platform for people to fulfill their potential as human beings. Located on farmland in northern Portugal, the Spirala Ecovillage has put out a competition brief asking for submissions for the design of their shared community home.

The Spirala Community Home will act as the heart of the community, the place in the village where people will come to share and experience things together. Here, residents can celebrate special occasions, run sharing circles to develop a deeper connection and understanding of one another, run workshops, practice yoga and meditate among many other things.

Driven by the village's goals of sustainability, education and community, the proposed design creates a harmonious space in which residents of the community can build connections between the landscape, nature and themselves.

Mary Roggenbuck **(th)INFILL**



As we continue to develop the built environment, the land that is left behind to develop keeps getting more constricted. This project is an exploration of how to build in a highly restrictive space of the urban fabric.

The site selected to iterate on is an existing pathway near 50th and France in Edina, Minnesota. The proposed infill structure will complement the surrounding context rather than subtracting from the current uses. In complementing the surrounding, the structure takes on a thinner footprint so that the current pathway remains viable. Meanwhile, the upper floors cantilever out to fill the gap of the larger site context.

Living and moving through the infill structure's thinness and verticality creates a challenge of circulation. This circulation challenge is met with thin elements that encase and create different programs and modes of circulation.

Payal Nitin Shah **Relishing the Travel Experience**



Indira Gandhi International airport is the busiest airport in India with a footfall of 190K daily. Irrespective of the efficient and strong network, the stress levels experienced by the air passengers are high especially with those who experience long overlays, delayed flights, or who need to change the terminals.

This project investigates how architectural interventions can help relieve passenger stress levels and make the travel journey more experiential and memorable. The project proposes the need for experience within the terminal buildings apart from that of commercial corridors. The proposed structure is between Terminal 3 and Terminal 4 and acts as a bridge, connecting the two terminals and helping to redirect the flow of passengers.

The primary design strategies of the project are Prospect, Refuge and Mystery, i.e., an unimpeded pedestrian connection between the terminals (prospect); a place for relaxation and withdrawal from the main directed flow (refuge); and creating partially obscured views to find more interesting spaces as passengers explore the places (mystery).

Martin Smith

Miami 2050: Hybrid Housing Island B



In 2032, the Miami 2050 Development Committee signed a contract with the firm FutureVelvet to create three breakwater islands off the coast of the Morningside neighborhood in Miami, Florida. These islands would provide raised dry land for building much-needed housing, and would have the capacity to break storm surge waves from incoming monster hurricanes, effectively sheltering the mainland.

As of July 8th, 2050, Phase 1 of Hybrid Housing Island B has completed construction and begun occupancy. The bulk of this presentation covers the design and construction update for Phase 1 and reviews occupancy survey submissions.

Jordan A. Strickland

Kujenga Tena



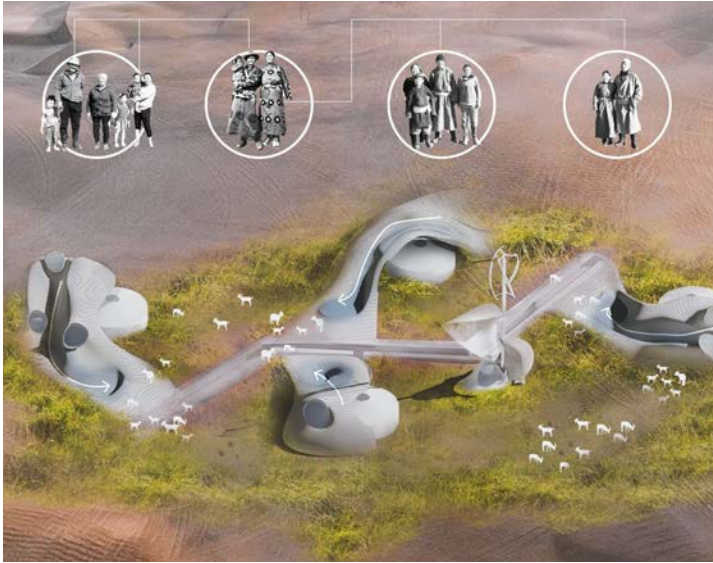
Historically, Black Americans have been present in the United States since the early 1600s. We were present for the American Revolution, fought in many other American wars, built the earliest of American infrastructure and have contributed significantly to American culture through our music and art. Yet, from the reinvention of old voter suppression laws, the constant violation of our constitutional rights, and the millions of unjust murders by the hands of the state, our place in American society is still not evident.

This project explores the ideas of placemaking through the lens of black urbanism. The site of the project is in an old neighborhood in East Baltimore, a city that is uniquely American and uniquely Black. Present on the site are two schools, a community center, a park, housing, and two churches.

The project focuses on three main architectural concepts — gathering, history, and art — and then introduces a new concept, *Kujenga Tena*, which means "rebuild" in Swahili.

Drew Tangren, Javkhlan Nyamjav

/OTOR/ - encampment, seeking good pasture



To approach the conflict of climate change in the country of Mongolia, we wish to develop two scales of devices for mitigating the traditional nomadic lifestyle and conserving the natural ecosystem — starting at the family scale by providing needed resources for families and their livestock, and extending to the global-market scale through deployable Collection Centers.

To address degrading steppes (grasslands), we plan to move the livestock into the Gobi Desert to allow for natural healing of the grasslands. These Outposts aim to continue traditional nomadism while supplying sustainable and equitable cashmere to reverse its impact on the natural environment.

We are also developing a decentralized short-chained global market to allow nomadic farmers to have a safe and resilient lifestyle separate from the rapid modernization of Ulaanbaatar.

Master's Final Project 2021

Studio Critics // Students

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