PORTFOLIO

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Studio

Elective

1. Net-Negative Living:

A New Economic and Environmental Model for housing

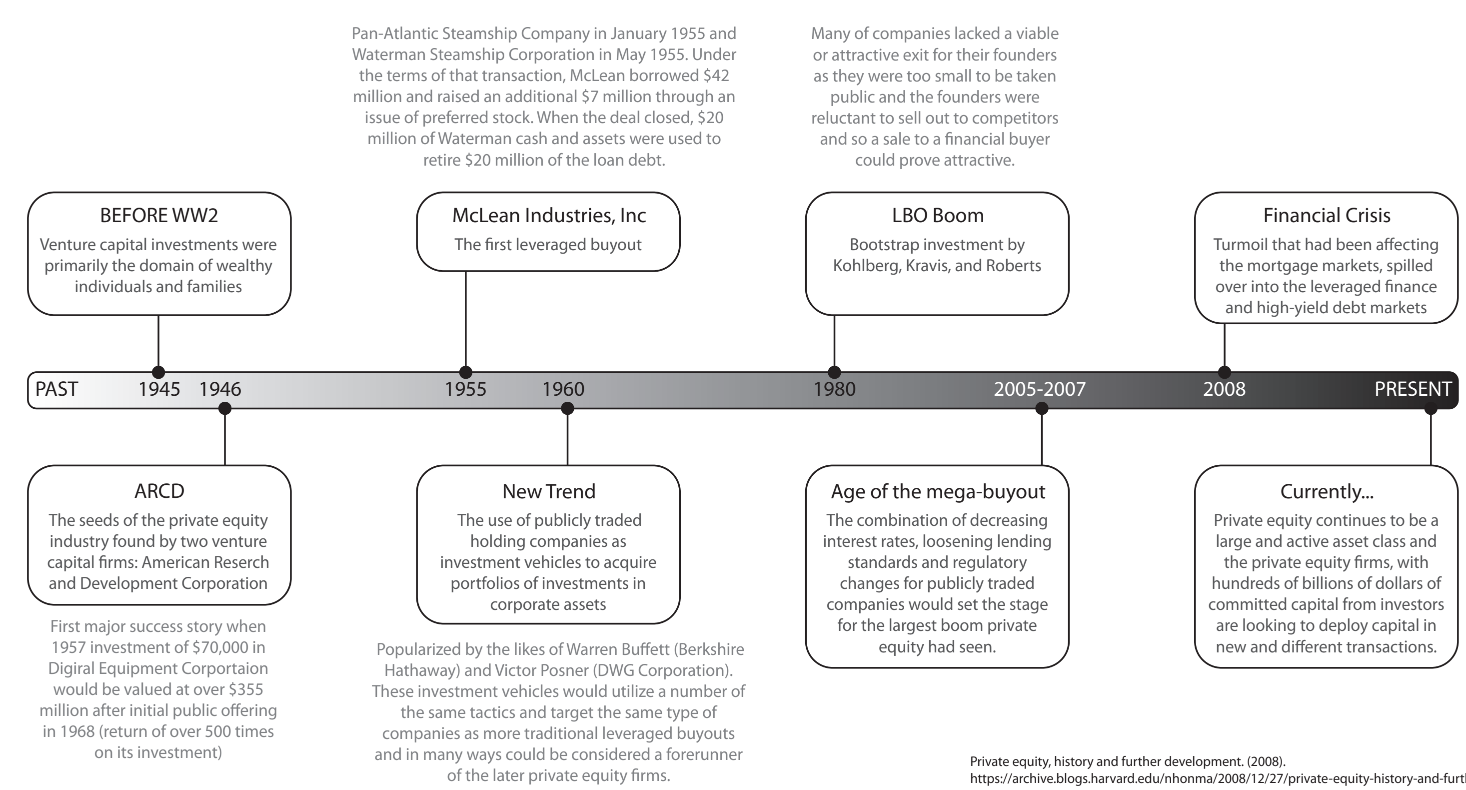
Spring 2025| Michael Bell

The development of single-family housing in the United States spans less than a century, yet within that brief period, it has experienced dramatic fluctuations shaped by wars, economic depressions, oil embargoes, financial crises, material shortages, and pandemics. Each disruption has left a mark on the built environment, influencing not only the pace of construction but also the accessibility and affordability of housing. Historical data from the Case-Shiller U.S. National Home Price Index, U.S. Census Bureau, CoreLogic, and the Federal Reserve show significant volatility in housing starts and prices, particularly during periods of crisis. In recent decades, single-family housing has also attracted the attention of private equity firms and institutional investors, who view these homes as lucrative, rent-generating assets. From 2011 to 2017, institutional investors purchased more than 200,000 homes, and during the COVID-19 pandemic, their activity surged—at times accounting for more than 60% of home purchases in certain counties. This surge in large-scale acquisitions has intensified competition in housing markets, making it harder for median-income individuals and families to afford homeownership.

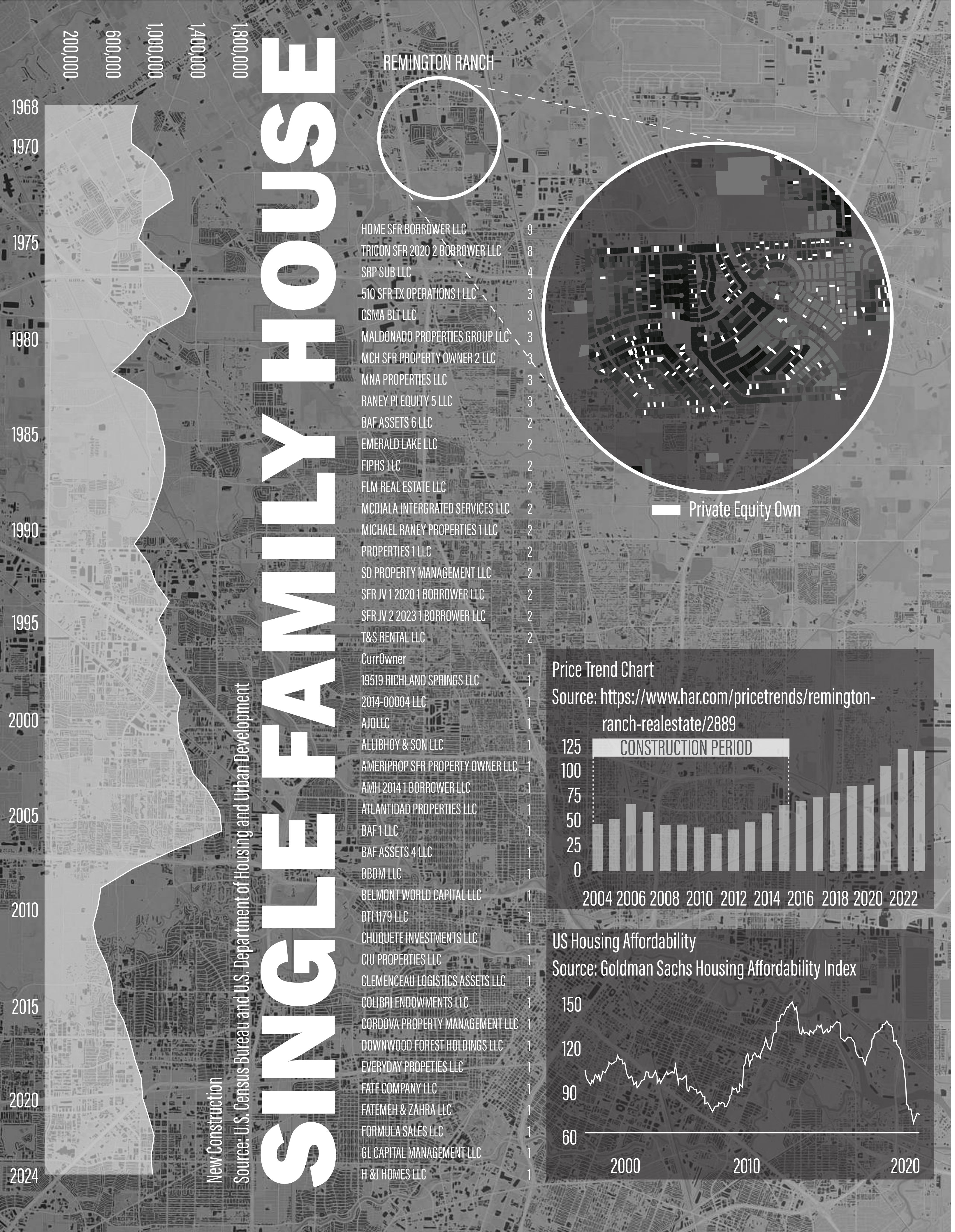
Beyond financial pressures, climate change has emerged as a parallel force exacerbating housing scarcity. The U.S. housing sector is heavily reliant on fossil fuels for energy production, construction, and operation. After multiple oil crises and steadily increasing energy consumption over the last century, households today face not just expensive mortgages but rising utility costs tied to energy inefficiency and environmental degradation. This raises a critical question: can innovations in energy and technology offer a path out of scarcity without requiring austerity? Breakthroughs in renewable energy, fiber optics, low-emission vehicles, and high-efficiency appliances demonstrate that resource limitations can sometimes be overcome through design, science, and systems thinking.

This paper explores how both private equity and climate pressures have reshaped the single-family housing landscape, and proposes architectural and policy-based interventions—including rethinking enclosure, energy systems, and land use—to disrupt scarcity-driven models and reclaim housing as a social good.

In classical economics, scarcity refers to the fundamental problem of limited resources in the face of unlimited human wants (Investopedia). Within the housing sector, this scarcity manifests not only in physical materials—such as lumber, concrete, and steel—but also in labor shortages, finite land supply, and restricted access to affordable financing. Unlike consumer goods, housing scarcity is magnified by its dual role as both shelter and financial asset. A refrigerator or smartphone may be scarce, but it is not speculative; homes, however, are increasingly treated as appreciating investments rather than essential social infrastructure. This shift has fueled housing commodification, particularly since the 2008 financial crisis, when single-family homes were repositioned as a high-yield asset class. The Case-Shiller U.S. National Home Price Index shows persistent upward pressure on housing prices, and U.S. Census and Federal Reserve data on housing starts illustrate how supply has failed to keep pace with demand (Federal Reserve Bank of St. Louis). Further exacerbating this issue is the rise of insti-



Private equity, history and further development. (2008).
https://archive.blogs.harvard.edu/nhonma/2008/12/27/private-equity-history-and-further-development/



tutional investors: between 2011 and 2017, firms acquired over 200,000 single-family homes, and by 2022 institutional ownership ballooned to approximately 700,000 properties (HUD). During the COVID-19 pandemic, investor activity spiked—reaching 28% of all single-family home purchases in early 2022, with even higher concentrations in specific counties (HUD). Simultaneously, households faced rising costs of living driven by high energy consumption and dependence on fossil fuels—a legacy of sprawling, energy-intensive housing typologies. This convergence of financialization and resource scarcity underscores the urgent need to rethink how we build, finance, and occupy single-family homes.

Private equity firms began entering the single-family housing market in earnest following the 2008 financial crisis, capitalizing on widespread foreclosures and plummeting home values. Large-scale investors like Blackstone and Invitation Homes acquired tens of thousands of distressed properties, often in cash, transforming formerly owner-occupied neighborhoods into rental portfolios. Between 2011 and 2017, institutional investors purchased over 200,000 single-family homes, and their activity accelerated during the COVID-19 pandemic (U.S. Department of Housing and Urban Development). In early 2022, investor purchases peaked at 28% of all single-family home transactions, with disproportionately high activity in regions like Tarrant County, Texas, where institutional buyers accounted for more than half of all sales (HUD). This surge has intensified competition, especially for first-time buyers, who cannot match the speed or financial leverage of institutional investors. As ownership rates stagnate, control over housing increasingly shifts to a rentier class, raising concerns about long-term wealth inequality and tenant vulnerability. While institutional ownership may enhance rental supply and introduce efficiencies in property management, it simultaneously restricts access to homeownership and consolidates power within a narrow set of corporate entities. This raises the question of whether private equity is helping to alleviate housing scarcity or merely profiting from it. The result is a housing market that increasingly serves financial returns over social stability, compounding scarcity under the guise of addressing it.

Climate change has heightened the urgency of addressing both operational and embodied energy in housing, exposing the vulnerabilities of a built environment long reliant on cheap, carbon-intensive energy. Post-World War II suburban sprawl, enabled by inexpensive fossil fuels and mass production, created vast low-density developments with high energy demands for heating, cooling, and transportation. The oil shocks of the 1970s were early indicators of this dependence, and today's volatile energy markets continue to impose disproportionate burdens on low- and middle-income homeowners, whose energy costs constitute a growing share of household expenses (U.S. EIA). Economist William Nordhaus emphasizes the importance of "pricing externalities"—that is, accounting for the environmental and social costs of emissions not reflected in market prices—as a tool to align economic systems with climate realities (Nordhaus). Despite these challenges, technological innovations such as solar panels, high-efficiency

Case study house | Single family rent house by private equity

Material	Area (sf)	Volume (cf)	Weight (lb/cf)	Cost	Labor	Time (days)
Concrete Foundation	2447	1286.64	150.28	$ 12,000.00	$ 13,000.00	7 to 14
Floor Finish (Vinyl Tile)	1560	16.25	74.91	$ 6,000.00	$ 3,000.00	3 to 5
Wood Framing	11655	757.41	34446.3	$ 180,000.00	$ 150,000.00	14 to 48
Gypsum Board	1399	71.12	68.67	$ 1,000.00	$ 3,000.00	7 to 14
Plywood Sheathing	7931	370.7	1240.57	$ 10,000.00	$ 18,000.00	7 to 14
Roof Shingle	1940	440.41	106.13	$ 2,000.00	$ 8,000.00	2 to 5
Insulation				$ 10,000.00		
Roofing Underlayment				$ 600.00		
Nails, Screws, and Fastener				$ 1,000.00		
Adhesives, Sealants, and Caulk				$ 500.00		

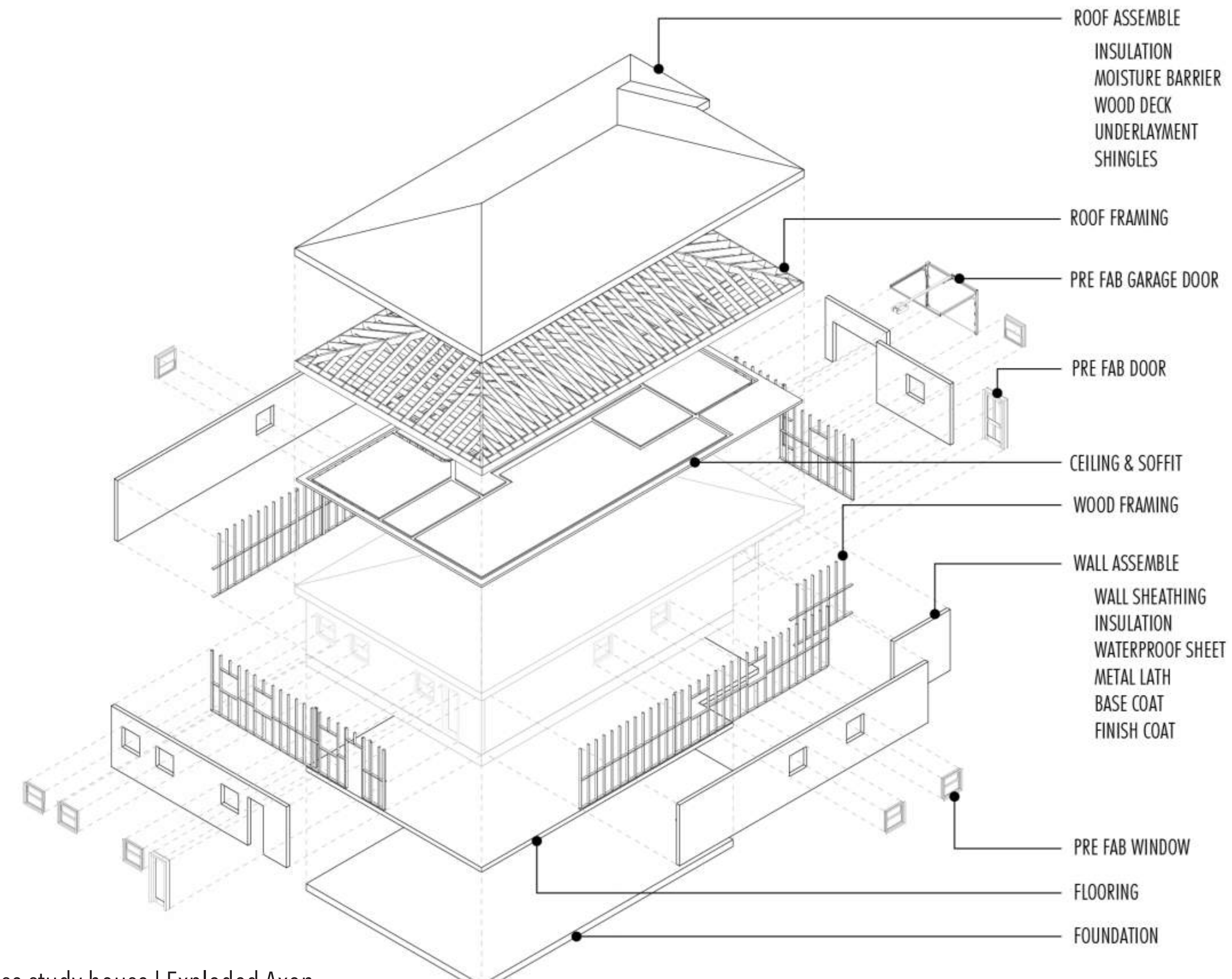
Componant	Count	Cost/count	Total
Window	7	$ 1,000.00	$ 7,000.00
Exterior Door	2	$ 2,000.00	$ 4,000.00
Garage Door	1	$ 4,000.00	$ 4,000.00

Case study house | Bill of material

appliances, and fiber-optic communication networks have offered pathways to reduce energy use and expand access to critical infrastructure. These breakthroughs suggest that climate adaptation does not have to mean austerity; rather, it could be a route toward greater economic equity. If homes can be designed to generate energy, conserve resources, and support local ecosystems, then climate-responsive architecture might disrupt traditional cost structures and help reverse the forces that drive scarcity.

The Scaling House proposal offers a radical architectural rethinking of the single-family home to directly challenge the resource inefficiencies and financial barriers embedded in current housing models. By enclosing the home within a transparent greenhouse envelope constructed of advanced solar glass or photovoltaic shingles, the design transforms the building into a renewable energy generator capable of surpassing its own consumption needs. This shift not only achieves energy independence but also introduces the possibility of generating surplus electricity as a new revenue stream for homeowners (Fraunhofer ISE). Removing the conventional roof and exterior walls reduces the use of materials, labor, and long-term maintenance, while redefining the architectural enclosure as a flexible system of floating programmatic planes within a controlled microclimate. These planes can be spatially reconfigured to support multi-family living or shared housing models, introducing new layers of adaptability and affordability. Internally, the greenhouse creates a thermally buffered environment, using passive solar heating and cooling to stabilize indoor temperatures and reduce HVAC demands (Zhang et al.). Beyond its functional innovations, the Scaling House disrupts traditional aesthetics, challenges zoning conventions, and reframes housing as an infrastructure of self-sufficiency rather than dependency. If widely adopted, such a model could lower life-cycle costs, encourage cooperative development frameworks, and help reclaim single-family housing as a socially equitable asset in the face of climate and financial pressures.

Policy and economic tools play a crucial role in scaling disruptive housing innovations like the Scaling House. Reimagining mortgage structures to account for the long-term savings generated by on-site renewable energy could open new financial pathways for low- and middle-income homeowners. Subsidies for homes that produce more energy than they consume, or carbon credits for households that export surplus electricity to the grid, could further incentivize energy-positive design (U.S. Department of Energy). However, beyond financing, there is a critical need to modernize the construction industry itself. While technological development has rapidly advanced in sectors like electronics and communications, construction practices have lagged behind. Emerging technologies such as 3D-printed housing offer promise, yet they remain in early stages and are not yet broadly compatible with on-site construction workflows (Perkins and Will). Traditional housing still relies heavily on manual labor–concrete must be mixed and poured on site, screws fastened individually, and wood components sealed due to grain imperfections. By contrast, materials like factory-cut architectural glass offer precise tolerances and can reduce labor, sealant use, and construction time. These innovations could lead to a more controlled building



Case study house | Exploded Axon

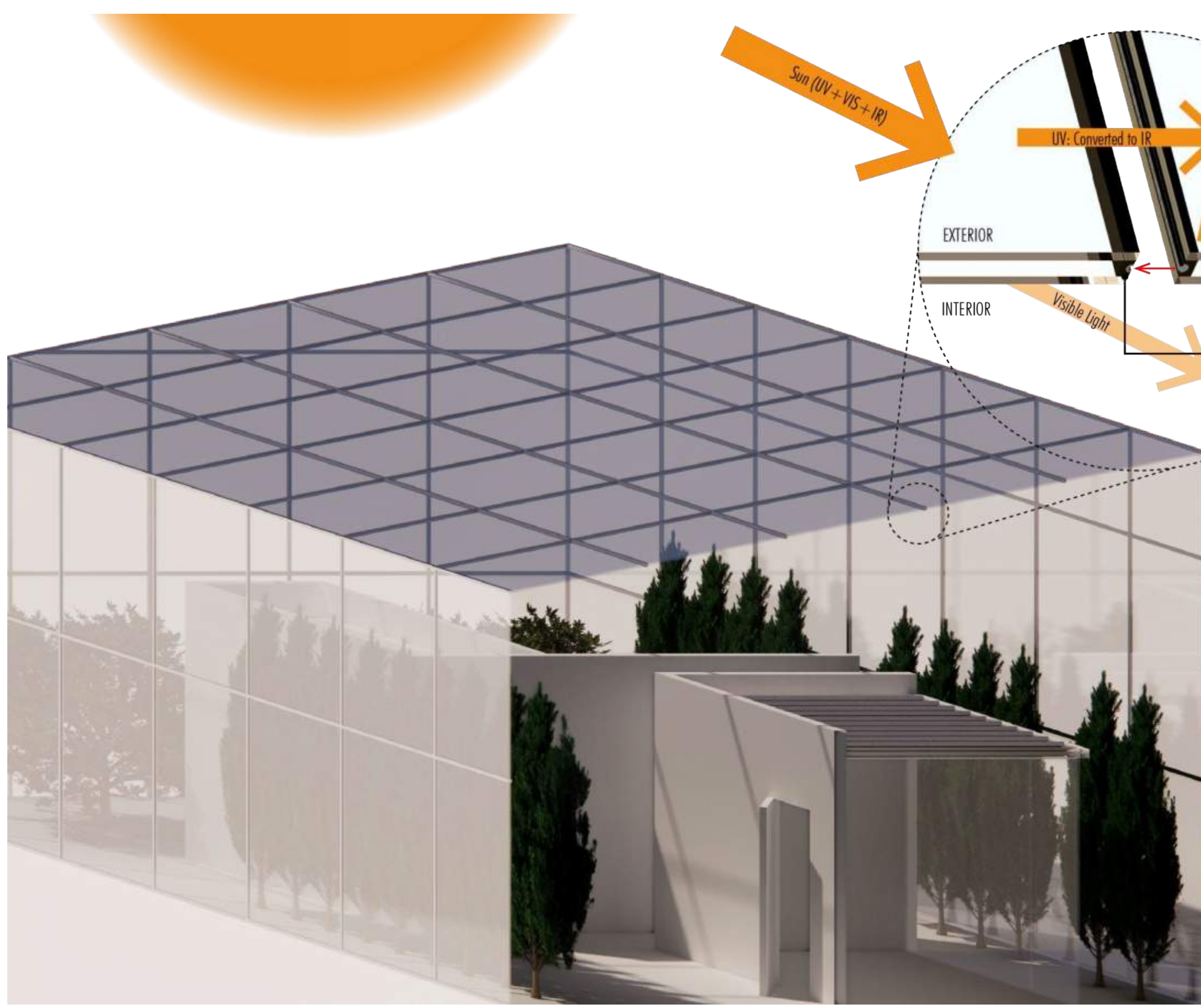

SOLAR PANELS

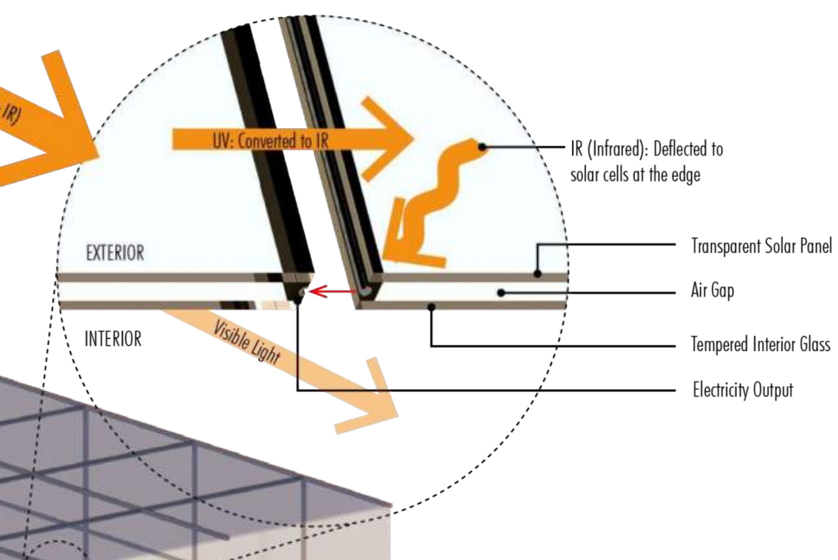
Transparent Solar Panels: Reforming Future Energy Supply

SOLAR MAG
Feb 29, 2020 EST

New solar panel technologies are set to transform the global solar energy landscape. Some of these promising technologies are already in the advanced stages of development, and could hit the market fairly soon. With these innovations, solar is no longer going to require extensive land parcels or unsightly roof spaces. (Aesthetically appealing and highly efficient solar shingles, for example, are already creating attractive solar roofs.)

Photo: Richard Lunt / Michigan State University





The average solar irradiance in Houston: 5 sun hours per day.
Solar glass efficiency: 15 %
Area of the solar glass: 255 square meters.

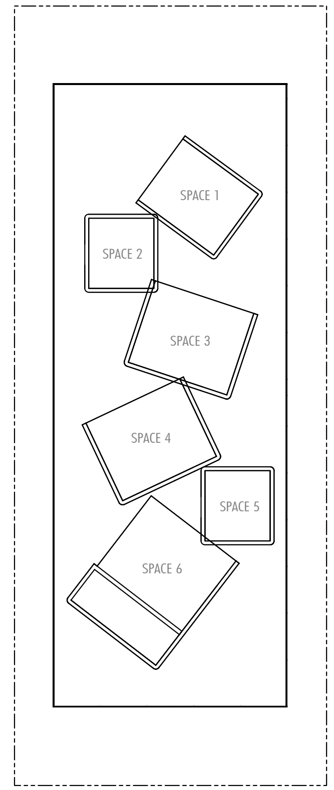
Energy per day = 255 sm x 5 kWh/sm/day x 0.15 dfficiency = 191.25 kWh/day
Energy per year = 191.25 kWh/day x 365 days = 69,806.25 kWh/year

The solar buyback rates in Texas can range from approximately 3 cents to 16.9 cent/kWh
Annual revenue to sell energy back to grid if the rate is 9.91 cents per kWh
69,806.25 kWh/year x 0.0991 USD/kWh = 6,917.80 USD/year

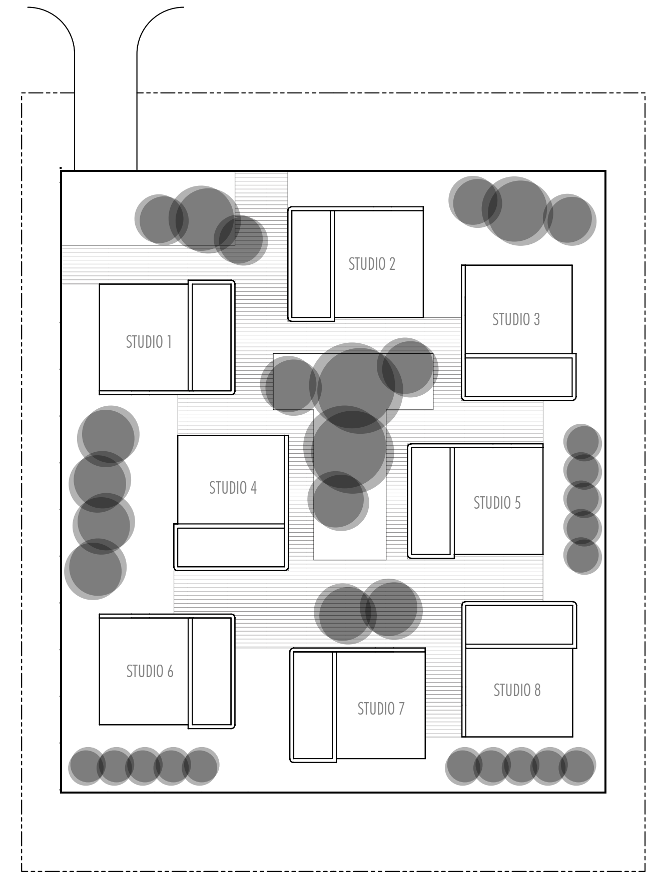
Assume a single-family home uses about 90 kWh per month
90 kWh x 12 months = 1,080 kWh/year
69,806.25 kWh/year - 1,080 kWh/year = 68,726.25 kWh/year back to grid
68,726.25 kWh/year x 0.0991 USD/kWh = 6,810.77 USD/year
6,810.77 USD/year / 12 month/year = 567.56 USD/month

environment and even shift the nature of construction labor toward higher-skill, tech-integrated tasks. Thus, advancing housing affordability and sustainability depends not only on new policy tools, but also on embracing new materials and methods that reconfigure labor, reduce waste, and accelerate efficiency.

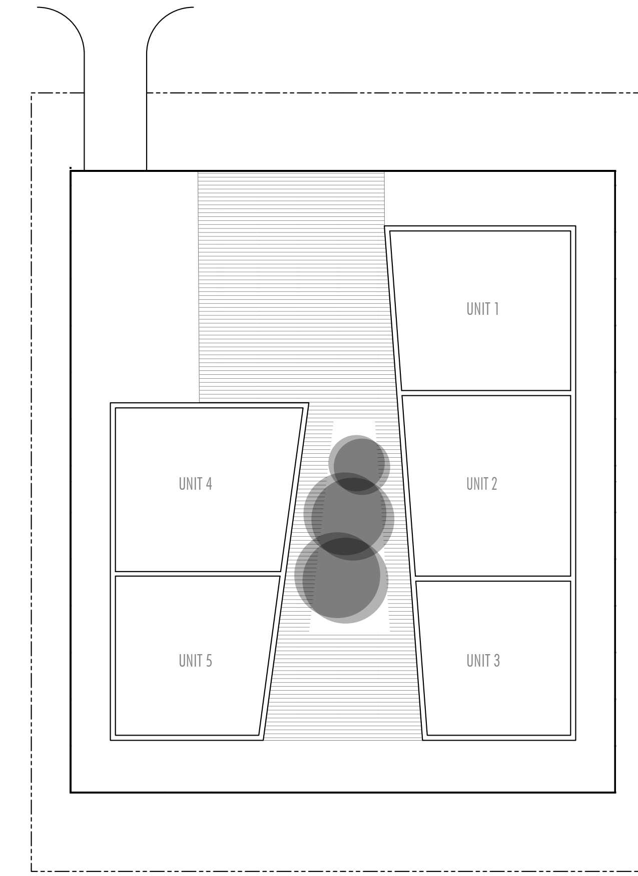
In the face of converging crises—financialization, climate change, and outdated construction paradigms—the single-family home must be radically rethought. Institutional investment has altered the housing landscape, concentrating ownership and driving up prices, while climate pressures demand a break from our fossil-fueled dependence. The Scaling House offers a provocative yet plausible alternative: one that transforms the home into an energy-producing, self-contained system and invites reconfiguration of use, ownership, and spatial arrangement. Through material innovation and policy reform, this model challenges scarcity not by limiting growth but by reimagining how housing functions within ecological and economic systems. As climate adaptation becomes inseparable from affordability and equity, architecture must act not just as shelter, but as infrastructure for a more just and sustainable future. Housing, long treated as a commodity, can once again be seen as a social good—scalable, flexible, and shared.



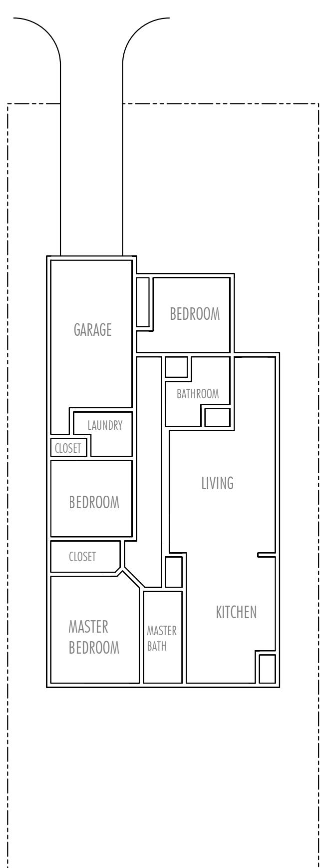
FLOATING SPACE
BOUNDED BY GREENHOUSE



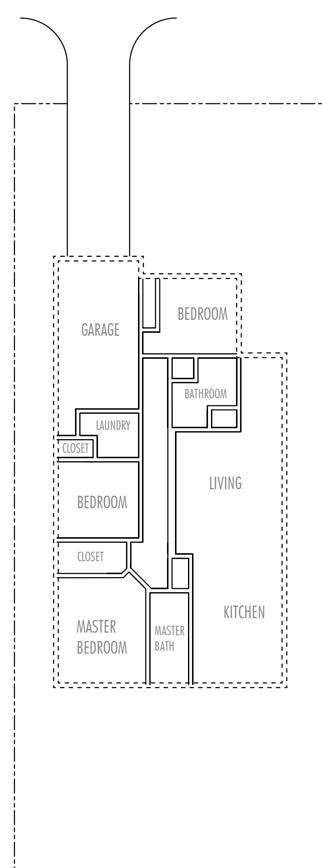
EXPANDATBILITY/FLEXIBILIGY OF PROGRAM
LIVE-WORK STUDIO



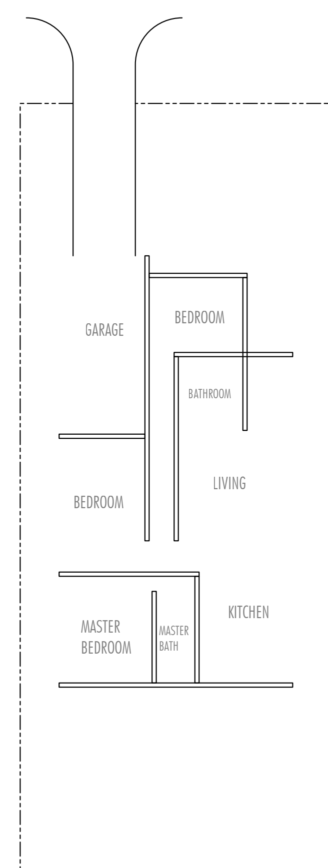
EXPANDATBILITY/FLEXIBILIGY OF PROGRAM
MULTI-HOUSING



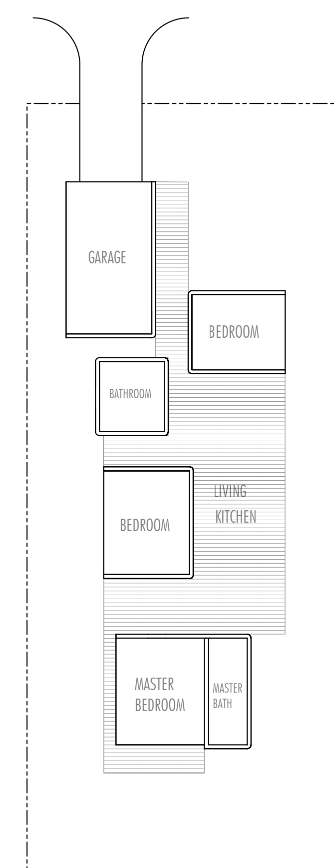
EXISTING FLOOR PLAN



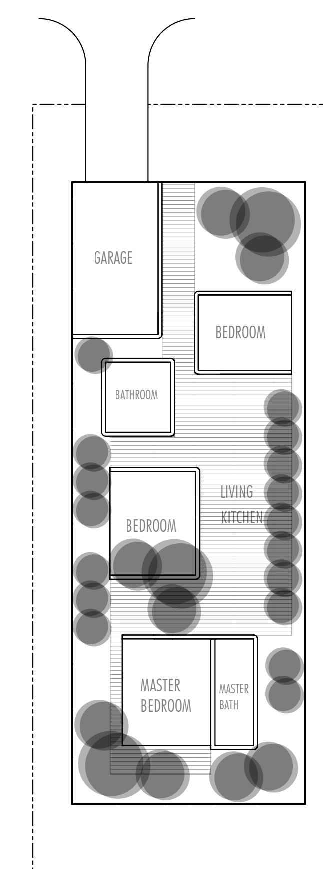
REMOVAL OF EXTERIOR WALL



SPACE DEFINED WITH
FOLDED PLANES

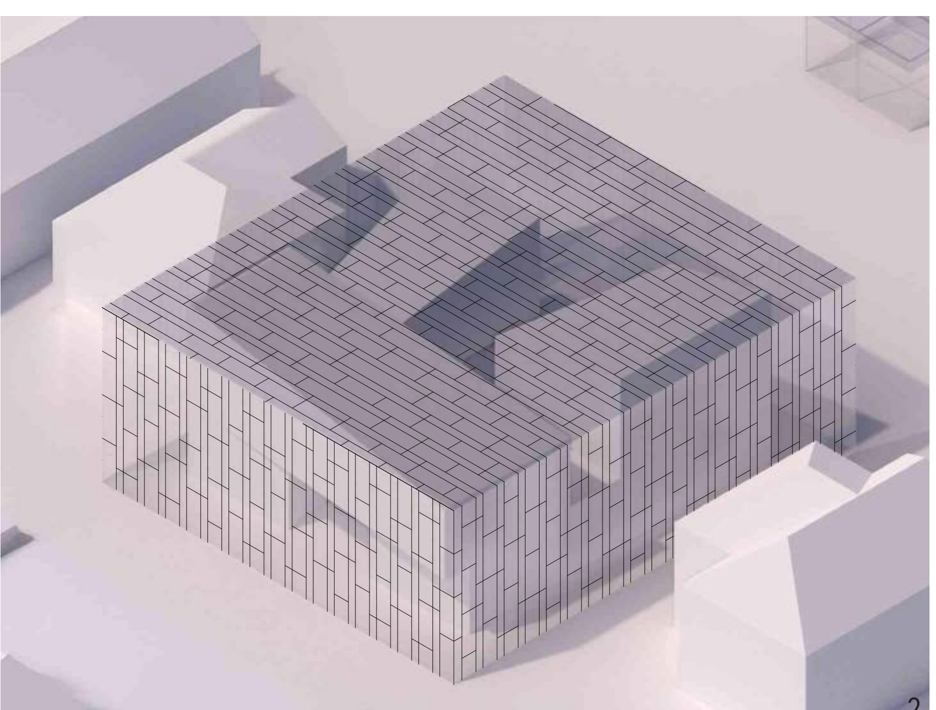


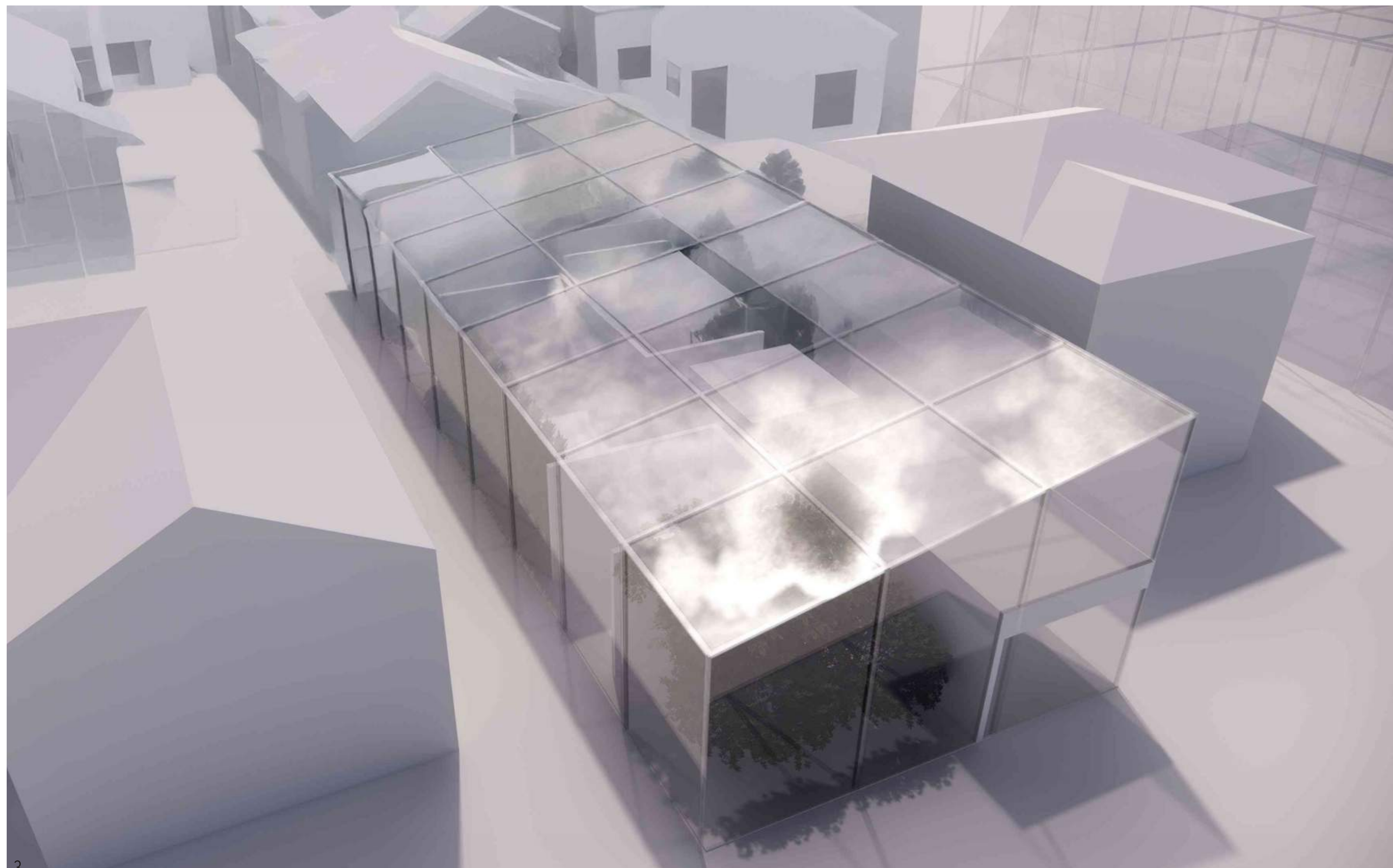
RECONFIGURATION OF
FLOATING SPACE

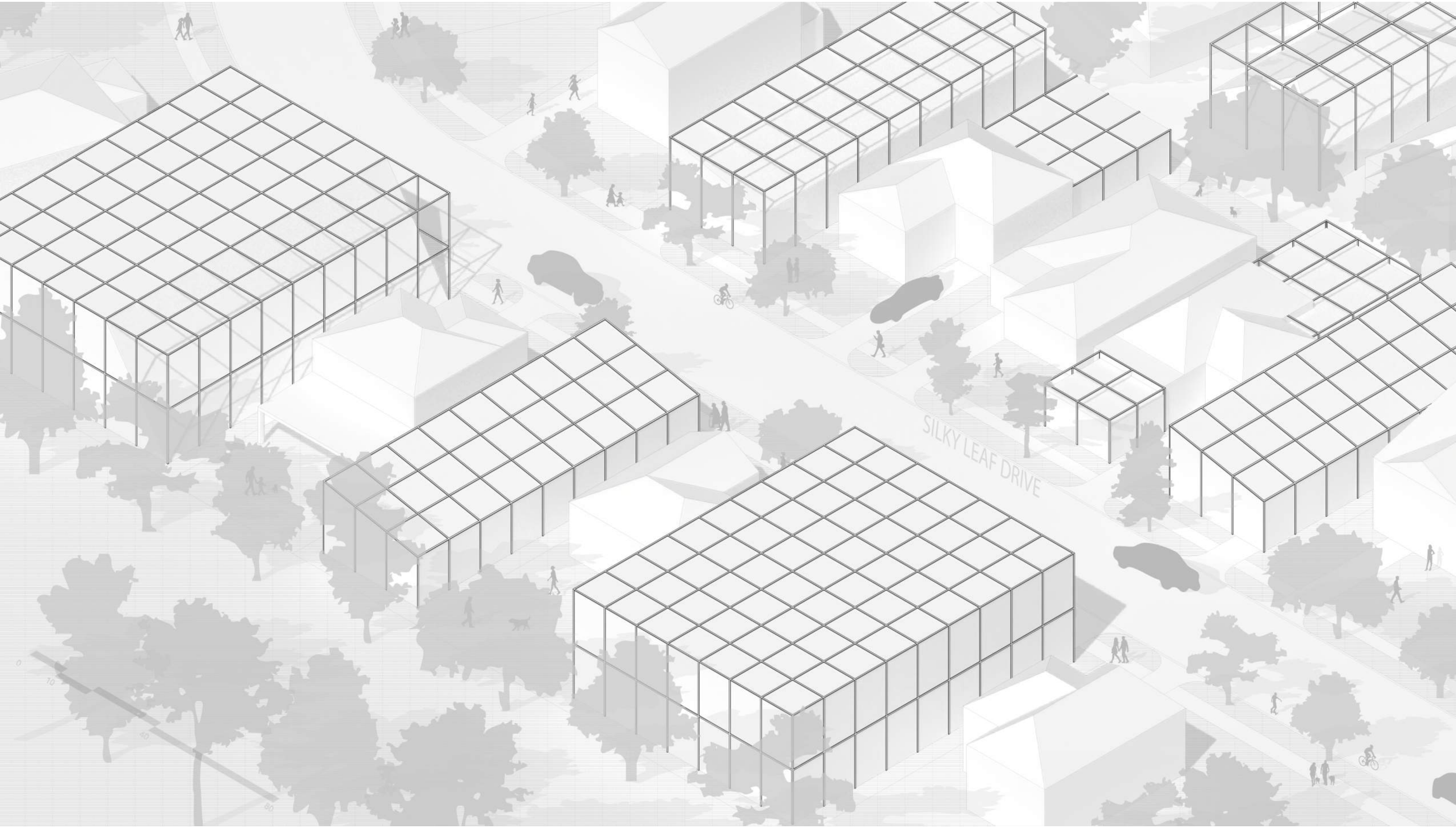


NEW GREENHOUSE ENVELOPE

1. Live-Work Studio
2. Multi-Housing
3. Single Family Greenhouse






SILKY LEAF DRIVE

2. Architecture of Invisibility:

New York City Job Training Center for Homeless | Substation

Summer 2023| Dan Wood

This semester we will research the history of air architecture and work to understand how wind power works – at every scale from the atmosphere to the apartment - and its physical requirements for a new age of sustainable electricity. We will work with representatives from NYSERDA to understand the new wind power strategy for New York. We will speak with people involved in building ports, power stations and vessels. We will visit sites for this new infrastructure including a trip out into the ocean. New infrastructure is by nature a new form of public architecture and new ideas and forms of infrastructure can be used to imagine and create new forms of public spaces and public experiences.
Based on what we learn, you will work individually to create new structures to support the new investments in wind power, public buildings and public spaces that utilize the invisible forces that shape our cities as inspiration. We will design civic and public wind infrastructure for the future. You will design a structure that integrates networks, education, social equity, public space – and DESIGN – in the creation of a new radically green visible-invisible-icon for the city.

WIND

I

People used wind energy to propel boats along the Nile River as early as 5,000 BC. By 200 BC, simple wind-powered water pumps were used in China, and windmills with woven-reed blades were grinding grain in Persia and the Middle East.

Different methods to harness wind power began to spread all around the world during the Early Middle Ages. During the 9th century in now-Iran, Afghanistan and Pakistan, wind-powered machines were developed to mill cereals and pump water. Throughout the Middle Eastern region, windmills were used in food production.

In 1887, Professor James Blyth of Anderson's College, Glasgow, Scotland, created the first wind turbine for electricity production, which he used to power the lighting in his holiday cottage.

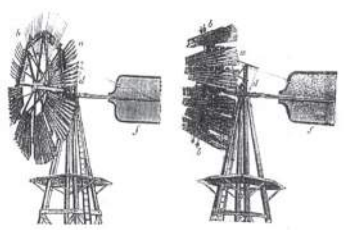
In the United States, Charles F. Brush created the world's first automatically operated wind turbine generator between 1887 and 1888. The machine was a lot bigger than Blyth's, with a 17-metre rotor diameter and mounted on an 18-metre-high tower. The machine turned very slowly and had 144 blades, only producing 12 kW.

In 1890, farmers and ranchers started using wind power to pump water for irrigation using windmills that generated electricity for homes and businesses.

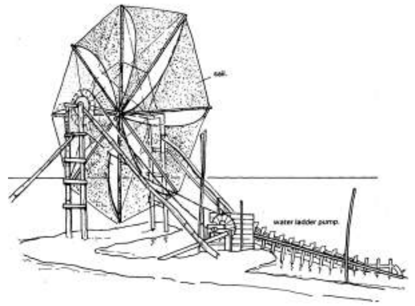
The invention of steel blades for windmills made them more efficient and as homesteaders moved west, more than 6 million windmills were erected throughout the countryside. Soon after, in 1970, the price of oil skyrocketed and so did interest and research in wind turbines and the power that they generate, which eventually made the president sign the Public Utility Regulatory Policies Act in 1978. This act required companies to buy a certain amount of electricity from renewable energy sources, including wind.

In 2011, the U.S. Department of Energy released the National Offshore Wind Strategy in partnership with the Department of the Interior to reduce the cost of energy through technology development. Soon after, the amount of wind energy produced in the United States reached the point of being able to power 15 million homes by having intalled capacity reaching 60 gigawatts. In 2016, the first U.S. offshore wind farm started operating off the coast of Rhode Island. In 2021, the first commercial scale offshore wind project in the United States got approved which was capable enough to power 400,000 homes and businesses. In 2022, the DOE launched interagency Energy Earthshots Initiative to reduce the cost of floating offshore wind by more than 70%.

Figure 1. The world's first offshore wind farm in Windeby in Denmark https://windeurope.org/



1850
U.S. Wind Engine Company Established
Daniel Halladay & John Burnham start the US. Wind Engine Company & build the Halladay Windmill, which is designed for the landscape of the American West.



1890
Wind Power Used for Pumping Water and Electricity
Wind power in North America is used to help farmers and ranchers pump water for irrigation and windmills generate electricity for homes and businesses.

1941
Largest Turbine Powered Local Utility During WWII
The largest wind turbine of the time operates on a Vermont hilltop. Its 1.25 megawatts feed electric power to the local utility network for several months during World War II.

1981
NASA Scientists Developed Method to Predict Turbine Performance
NASA Scientists Larry Viterna & Bob Corrigan develop the most common method for predicting wind turbine performance, thus increasing the efficiency of turbine output to this day.

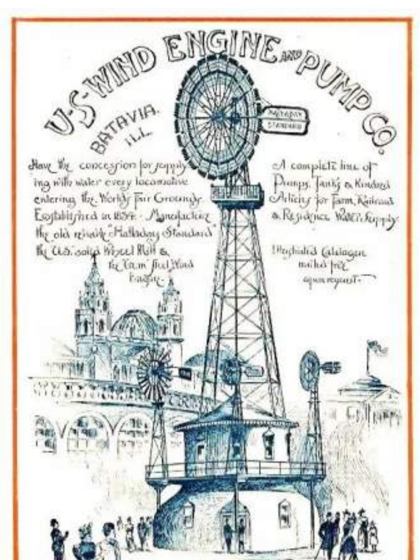
2011
National Offshore Wind Strategy Announced
The US. Department of Energy releases the National Offshore Wind Strategy to reduce the cost of energy through technology development. In the following year, 3 offshore wind projects are choses as a part of this $168 million initiative.

2016
First U.S. Offshore Wind Farm
The 30-megawatt, 5-turbine Block Island Wind Farm started operating off the coast of Rhode Island in December 2016

1850 1890 1893 1941 1980 1981 1993 2011 2013 2016

1890
Steel Blades Invented for Windmills
The invention of steel blades for windmills makes them more efficient and as homesteaders move west, more than six million windmills are erected throuhgout the countryside.

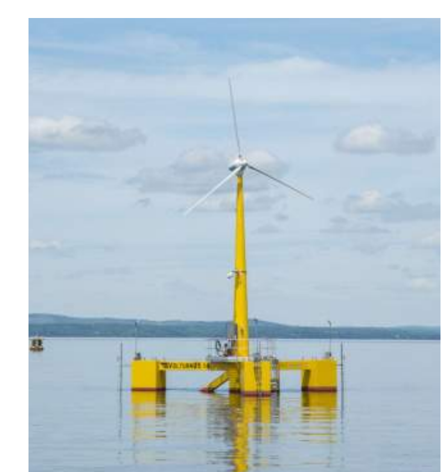
1893
Wind Power if Showcased at the World's Fair
The Chicago World's Fair showcases 15 windmill companies and their wind turbine designs.

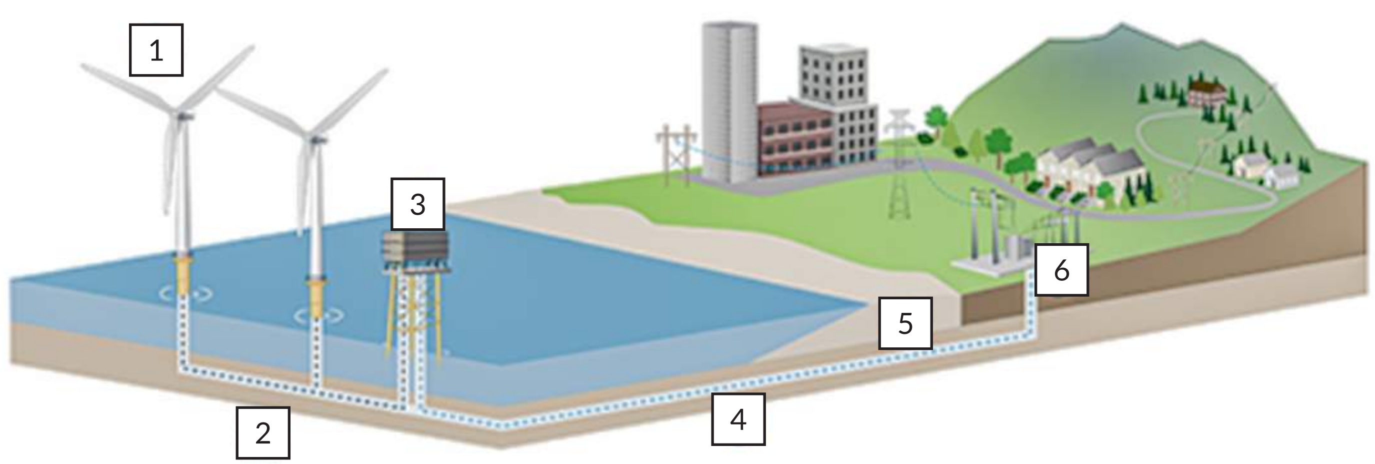


1980
First Large Wind Farms are Installed
The first large wind farms are installed in California. Greater awareness of environmental affects lead to development of lower impact designs.

1993
National Wind Technology Center Built
The NWTC is built to be the nation's premier wind energy technology research facility, and continues to help industry reduce the cost of energy so that wind can compete with traditional energy sources.

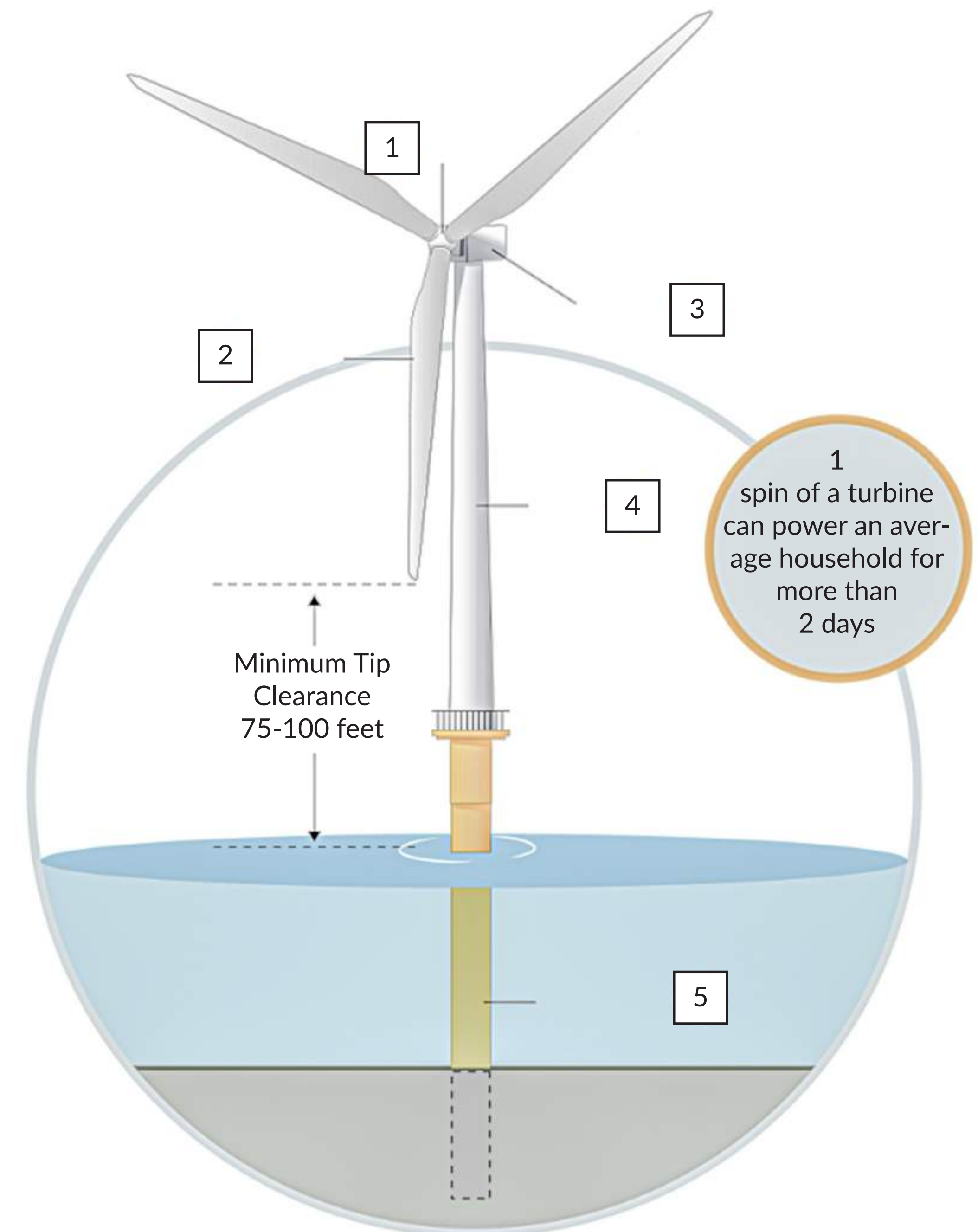
2013
First Grid-Connected Offshore Wind Turbine in the U.S.
With the support of $12 million investment from the U.S. Department of Energy, 20-kw concete-composite floating platform wind turbine is deployed.

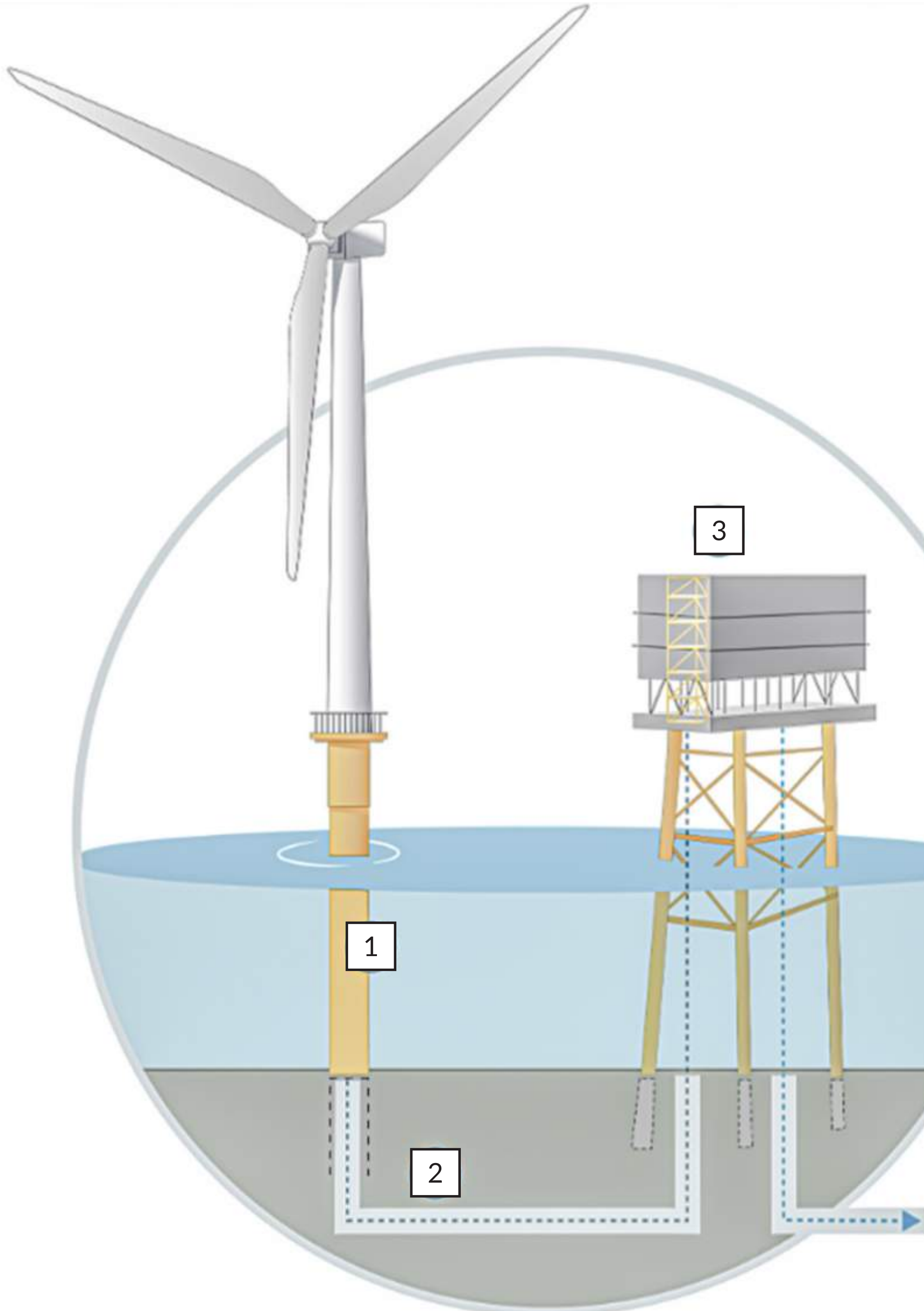




Electricity moves to the onshore substation through a buried cable where it is then transferred to the existing transmission network.

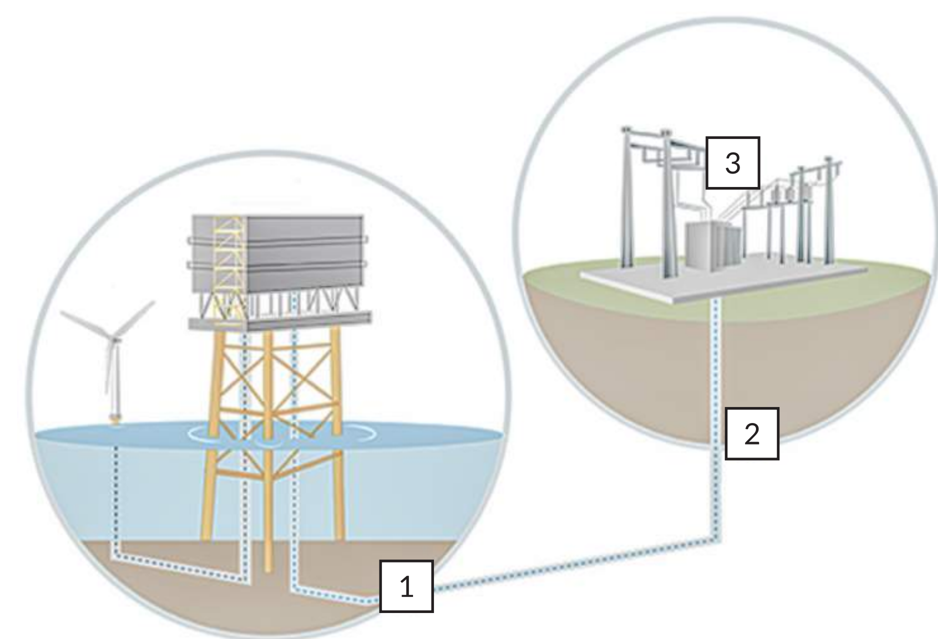
1. HUB - The hub supports the blades and houses the pitch system, which optimizes blade angle and rotation speed.
2. BLADES - Blades capture the wind's energy and convert it into mechanical energy.
3. NACELLE - The nacelle houses the components that convert mechanical energy to electrical energy.
4. TOWER - The tower supports the mass of the nacelle, hub and blades.

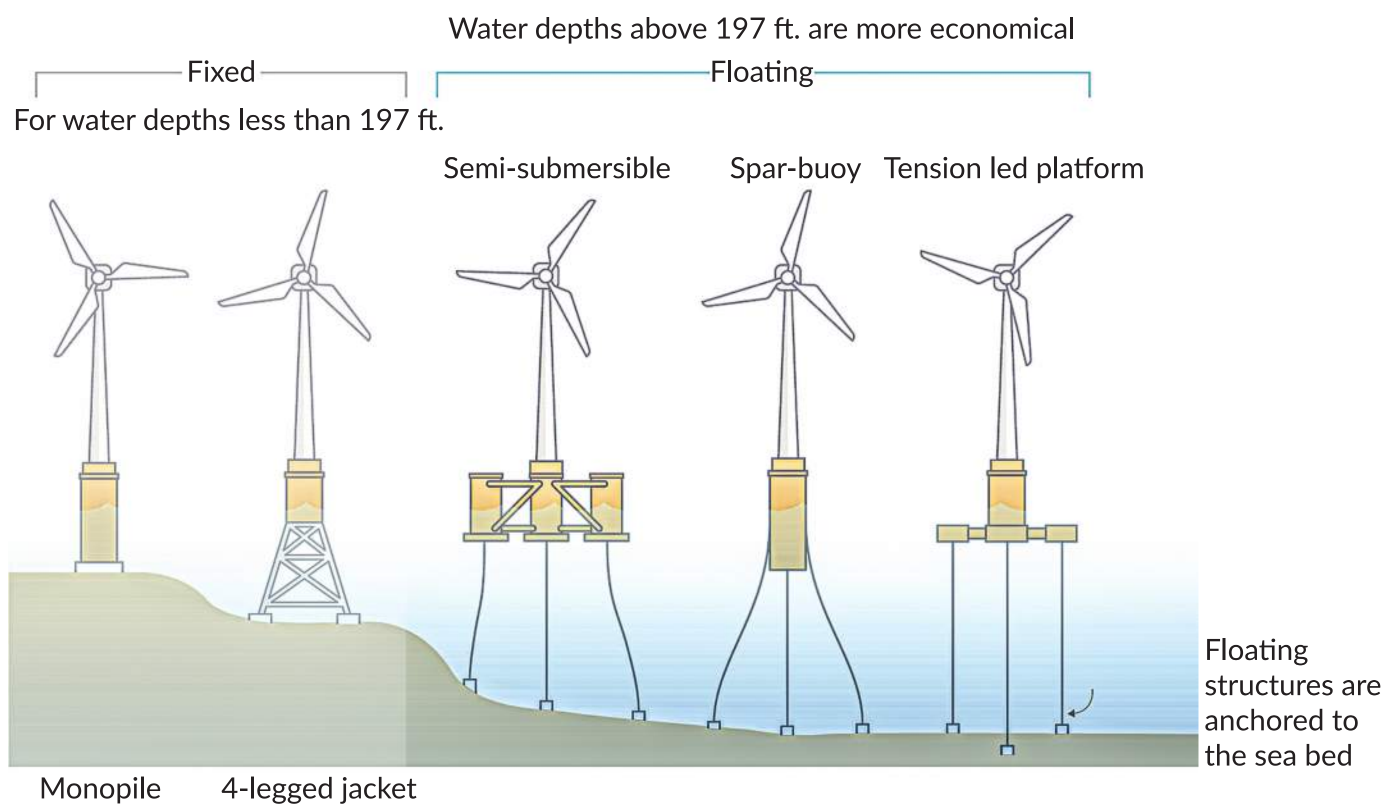




1. FOUNDATION - Foundations secure the tower and above-water turbine components to the sea floor. A variety of technologies are available, including jackets, monopiles, and gravity-based foundations.
2. ARRAY CABLES - A network of array cables link the wind turbines together and deliver power from the turbines to the offshore substation.
3. OFFSHORE SUBSTATION - The offshore substation collects and stabilizes the power generated by the turbines, preparing it for transmission to shore.

1. EXPORT CABLE - The export cable is buried deep enough to avoid disturbing ocean users and wildlife, and it transmits power from the offshore substation to the onshore substation.
2. CABLE LANDING - Horizontal direction drilling, a common method for landing export transmission cables from offshore wind farms, minimizes environmental impacts and disruption to beaches and the shoreline.
3. ONSHORE CONNECTION - Electricity is transferred to the existing transmission network.

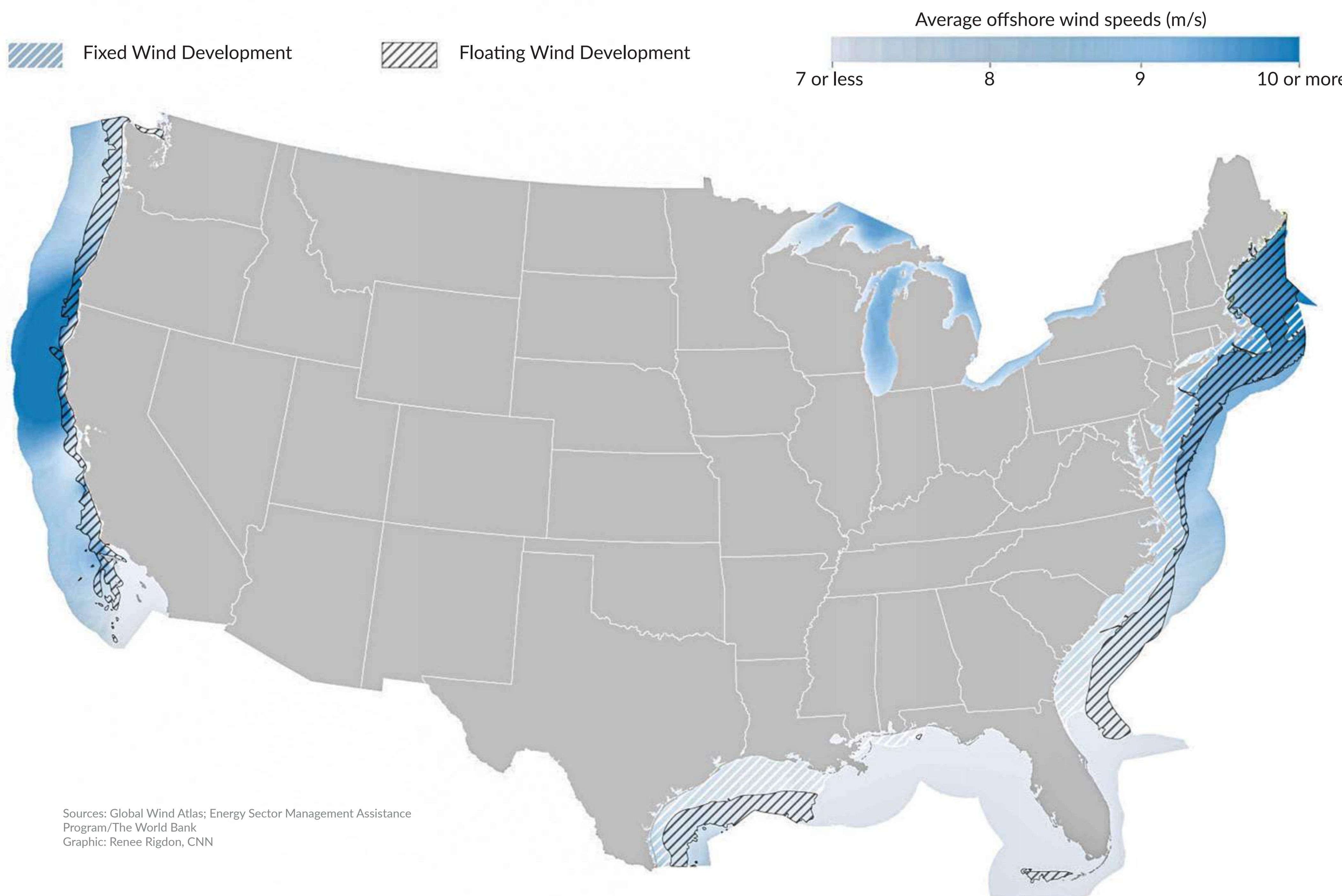




“Most of these machines will not be seen from land. They will avoid the classic visual impact concerns that caused a lot of projects to be delayed because they could be seen from the

Goals set by the New York State Energy Research and Development Authority -

The law mandates that at least 70% of New York’s electricity come from Renewable Energy sources by 2030 and calls for development of 9,000 megawatts of offshore wind energy by 2035.

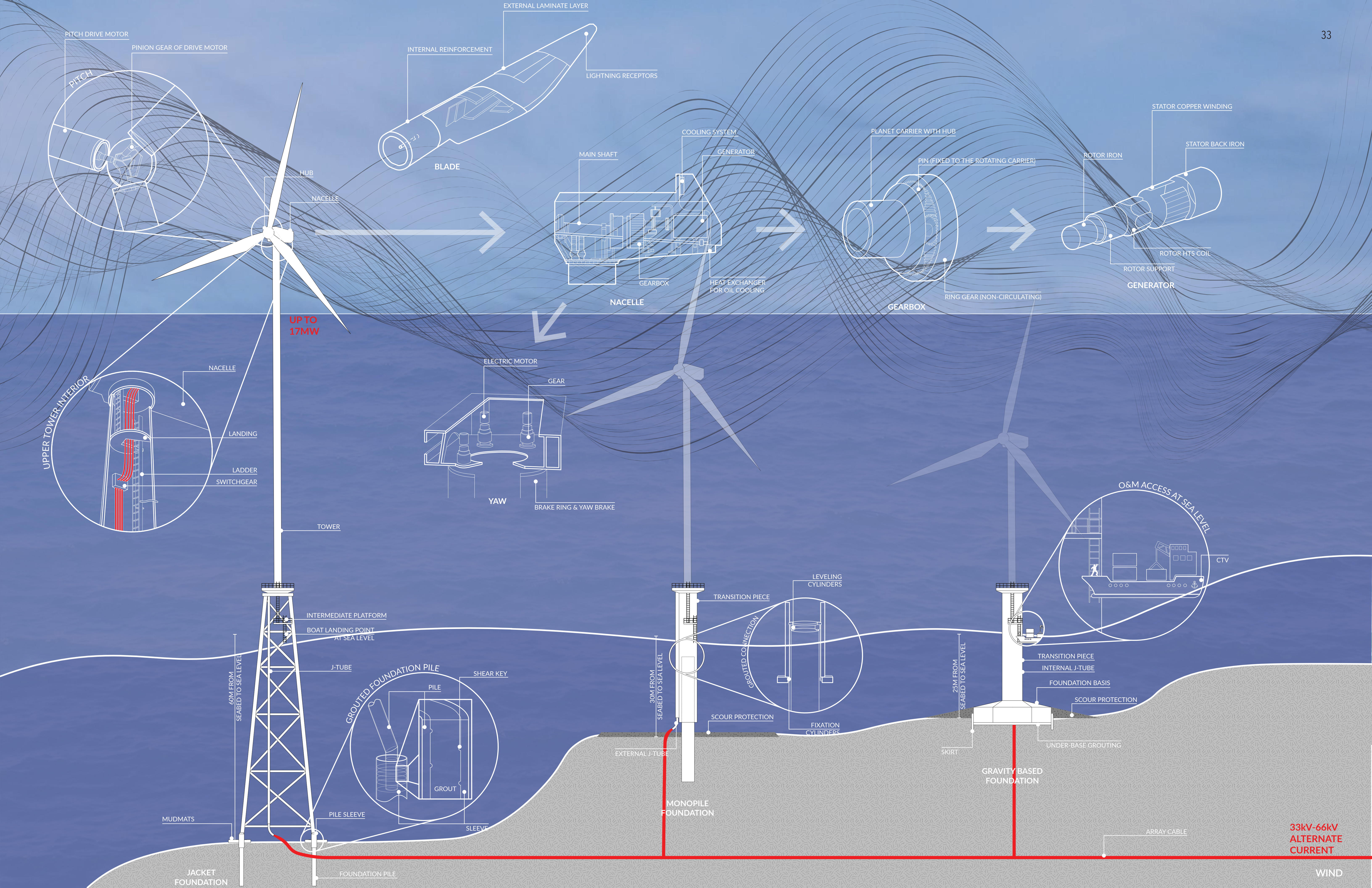


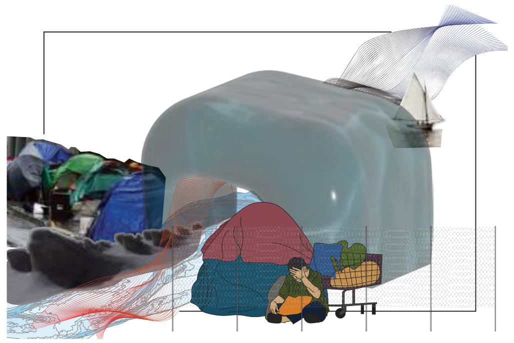
The Future of Wind Energy in the U.S. is Floating Turbines as tall as 30 Rock-

Floating wind farms have enormous energy potential, capable of producing more energy than solar panels or onshore wind. A robust set of floating turbines could unlock up to 2.8 terawatts of clean energy in the future – more than double the country's current electricity demand.

The vast majority of offshore wind turbines around the world are affixed to the bottom of the sea floor on sturdy foundations. But those turbines also are limited to shallower waters closer to the coast.

Pushing wind farms into deeper water means more area can be developed, and the farms themselves will be much farther away from the coast – and away from the view of homeowners.

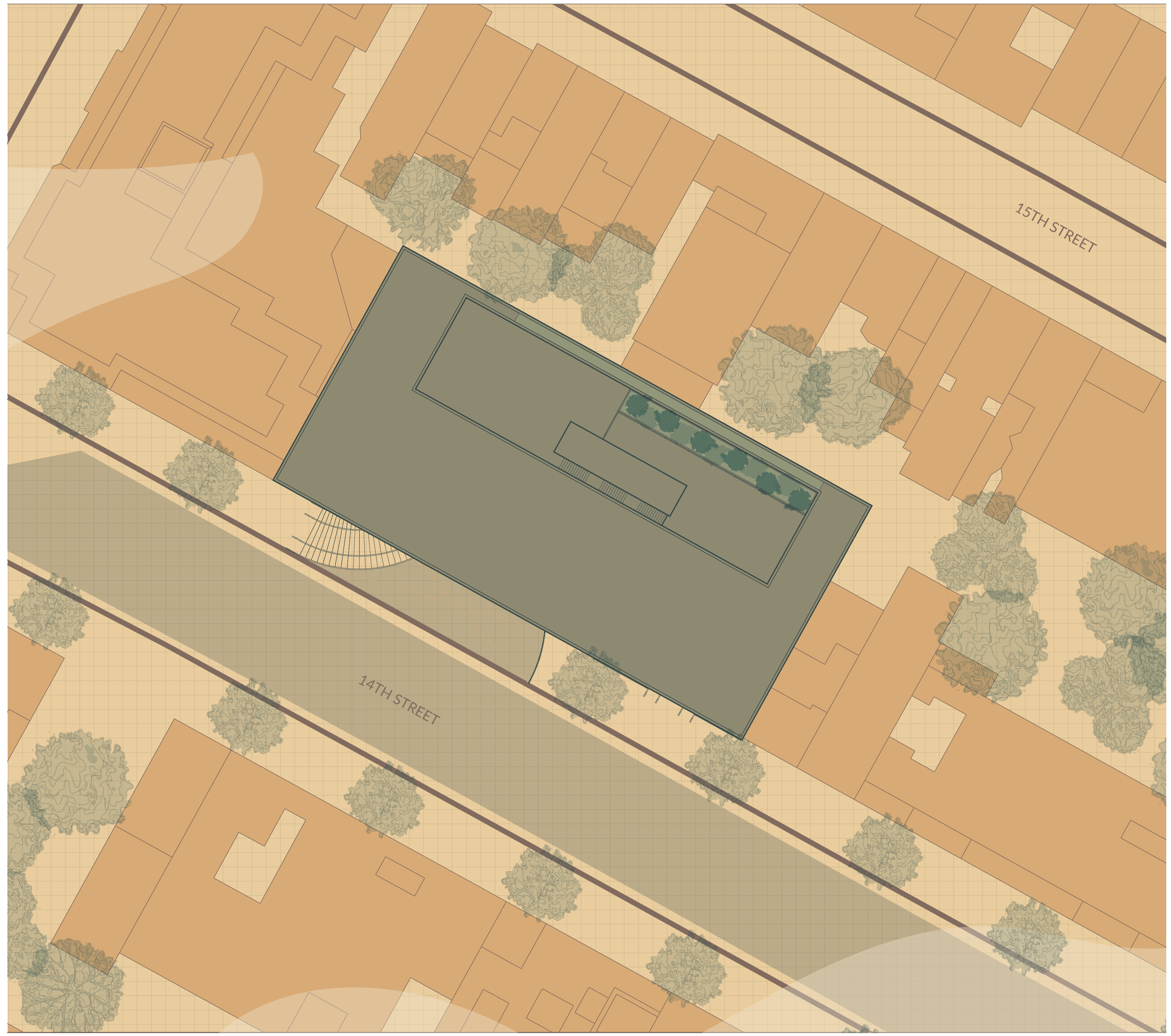

EXTERNAL LAMINATE LAYER
INTERNAL REINFORCEMENT
LIGHTNING RECEPTORS
BLADE
PITCH DRIVE MOTOR
PINION GEAR OF DRIVE MOTOR
PITCH
HUB
NACELLE
MAIN SHAFT
COOLING SYSTEM
GENERATOR
GEARBOX
HEAT EXCHANGER
FOR OIL COOLING
NACELLE
PLANET CARRIER WITH HUB
PIN (FIXED TO THE ROTATING CARRIER)
RING GEAR (NON-CIRCULATING)
GEARBOX
STATOR COPPER WINDING
STATOR BACK IRON
ROTOR IRON
ROTOR HTS COIL
ROTOR SUPPORT
GENERATOR
UP TO
17MW
UPPER TOWER INTERIOR
NACELLE
LANDING
LADDER
SWITCHGEAR
ELECTRIC MOTOR
GEAR
YAW
BRAKE RING & YAW BRAKE
TOWER
O&M ACCESS AT SEA LEVEL
CTV
INTERMEDIATE PLATFORM
BOAT LANDING POINT
AT SEA LEVEL
J-TUBE
60M FROM
SEABED TO SEA LEVEL
GROUTED FOUNDATION PILE
SHEAR KEY
PILE
GROUT
PILE SLEEVE
SLEEVE
MUDMATS
JACKET
FOUNDATION
FOUNDATION PILE
TRANSITION PIECE
LEVELING
CYLINDERS
GROUTED CONNECTION
FIXATION
CYLINDERS
30M FROM
SEABED TO SEA LEVEL
SCOUR PROTECTION
EXTERNAL J-TUBE
MONOPILE
FOUNDATION
25M FROM
SEABED TO SEA LEVEL
TRANSITION PIECE
INTERNAL J-TUBE
FOUNDATION BASIS
SCOUR PROTECTION
SKIRT
UNDER-BASE GROUTING
GRAVITY BASED
FOUNDATION
ARRAY CABLE
33kV-66kV
ALTERNATE
CURRENT
WIND

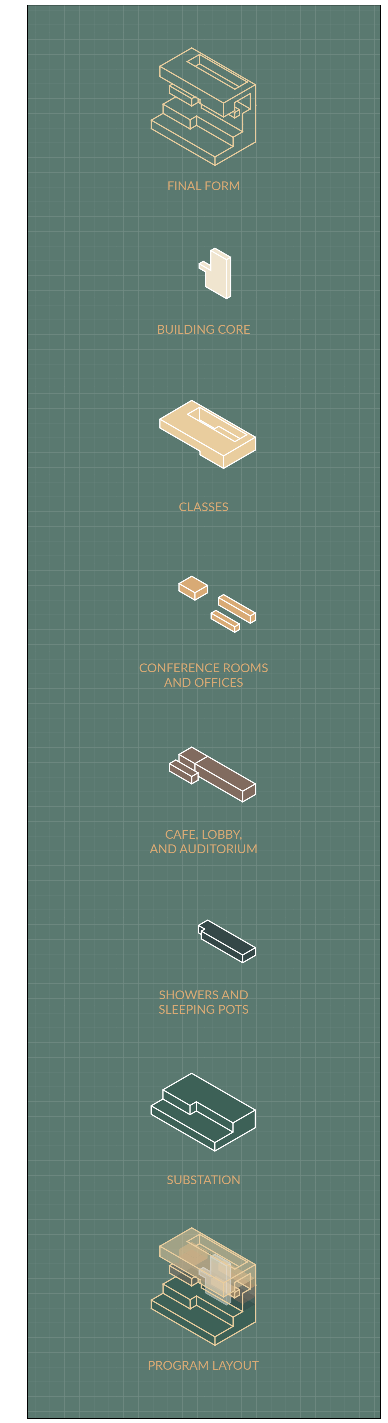


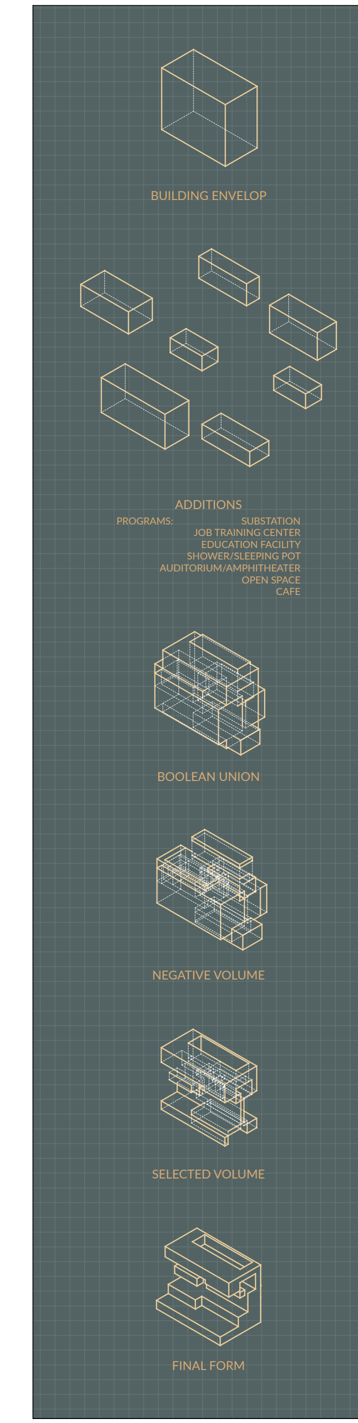
Public Work

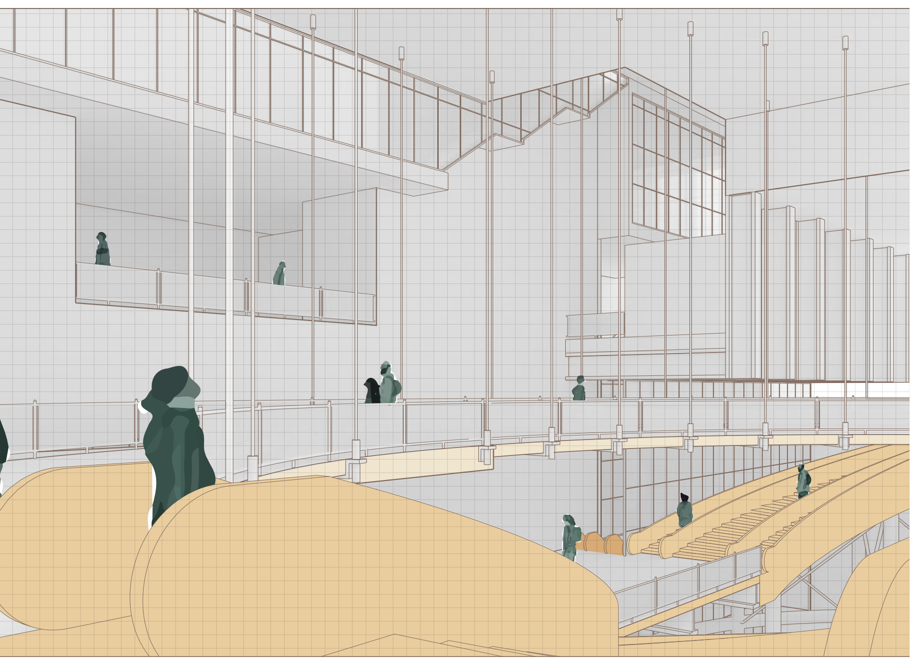
1. Substation
2. Job Traning Center

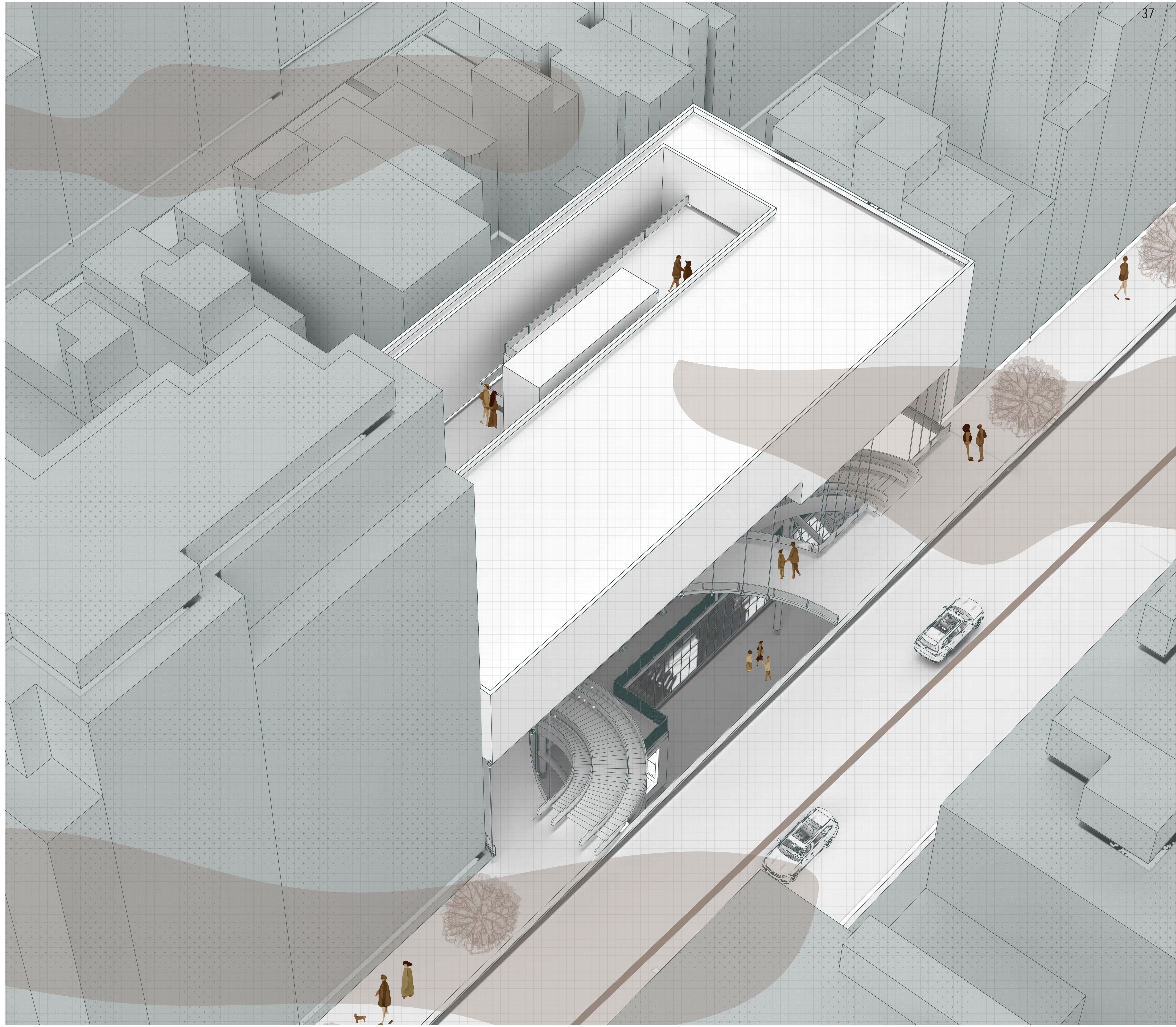
New York City has long grappled with a significant homeless population, a persistent challenge that has marked its history. Their presence has become ingrained in the cityscape, often overlooked as people pass by without a second glance. Though they exist, they are often intentionally unseen. Perhaps invisibility in architecture extends beyond physical structures to include city occupants who are easily disregarded. This project seeks to restore their visibility and reclaim their identity. Through proposed programs, the project aim to transition them from invisibility to visibility, ensuring that they are recognized and supported within the urban fabric.

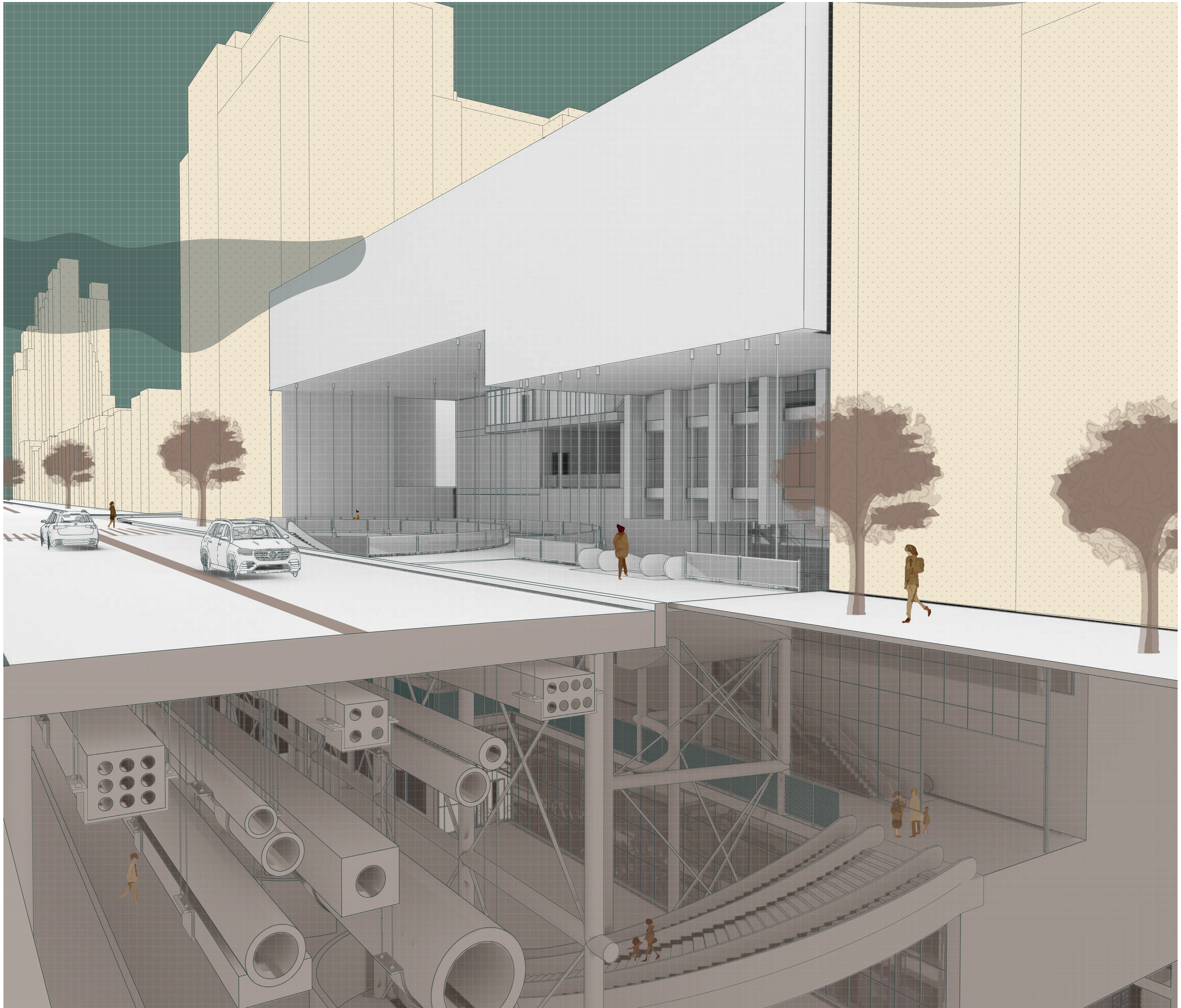


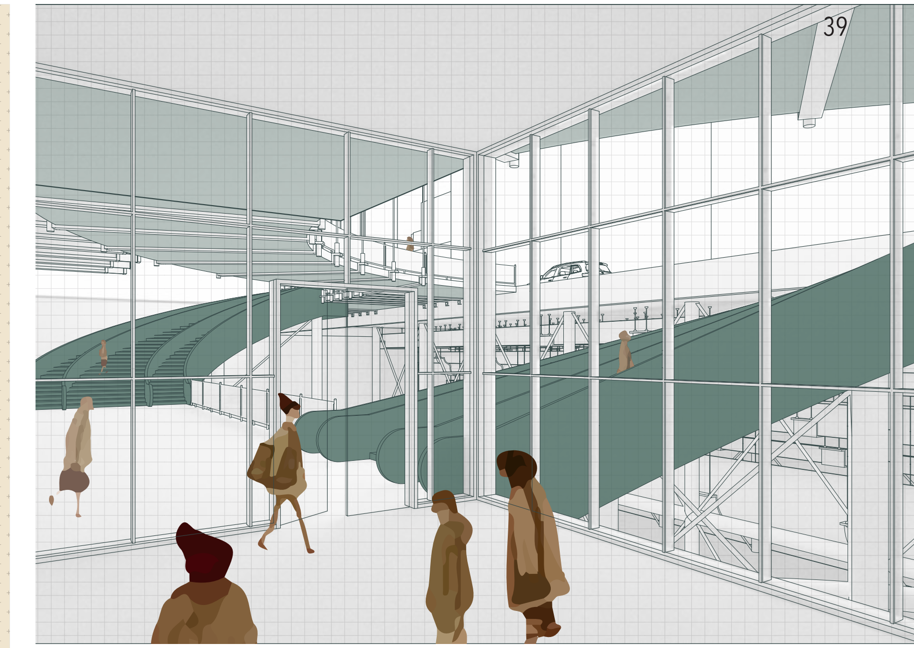


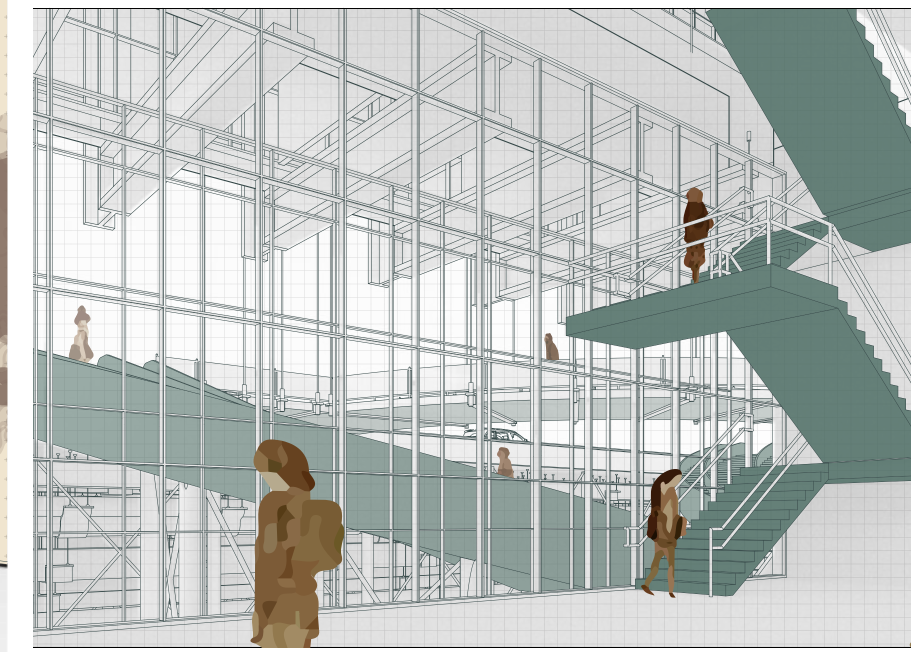


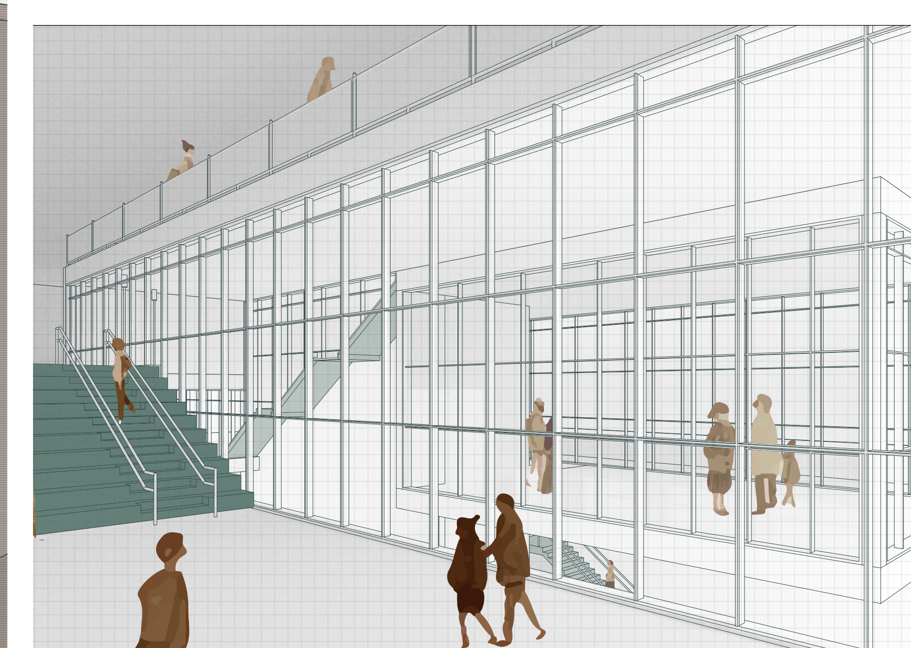


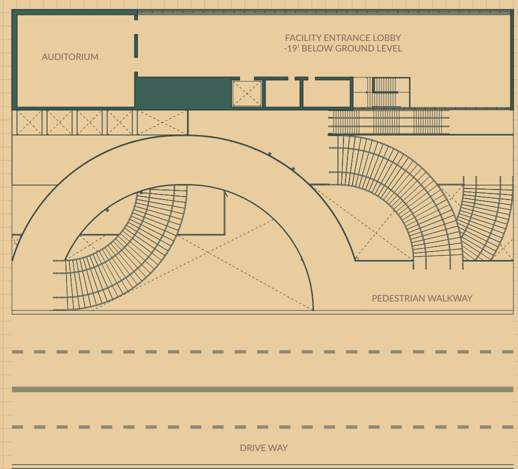




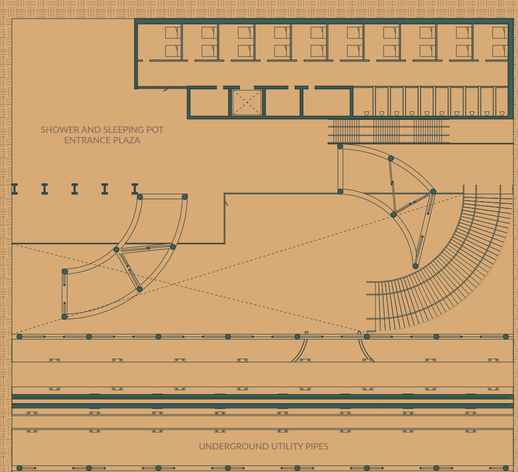




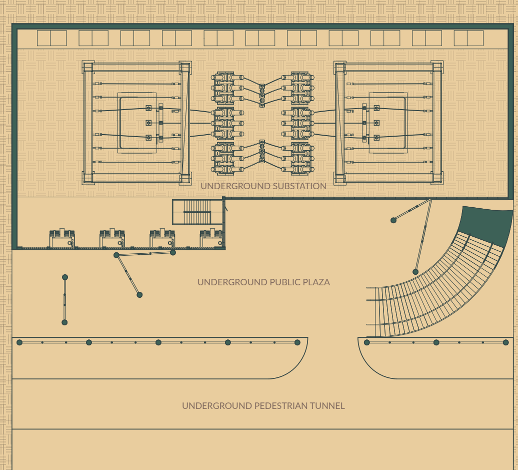




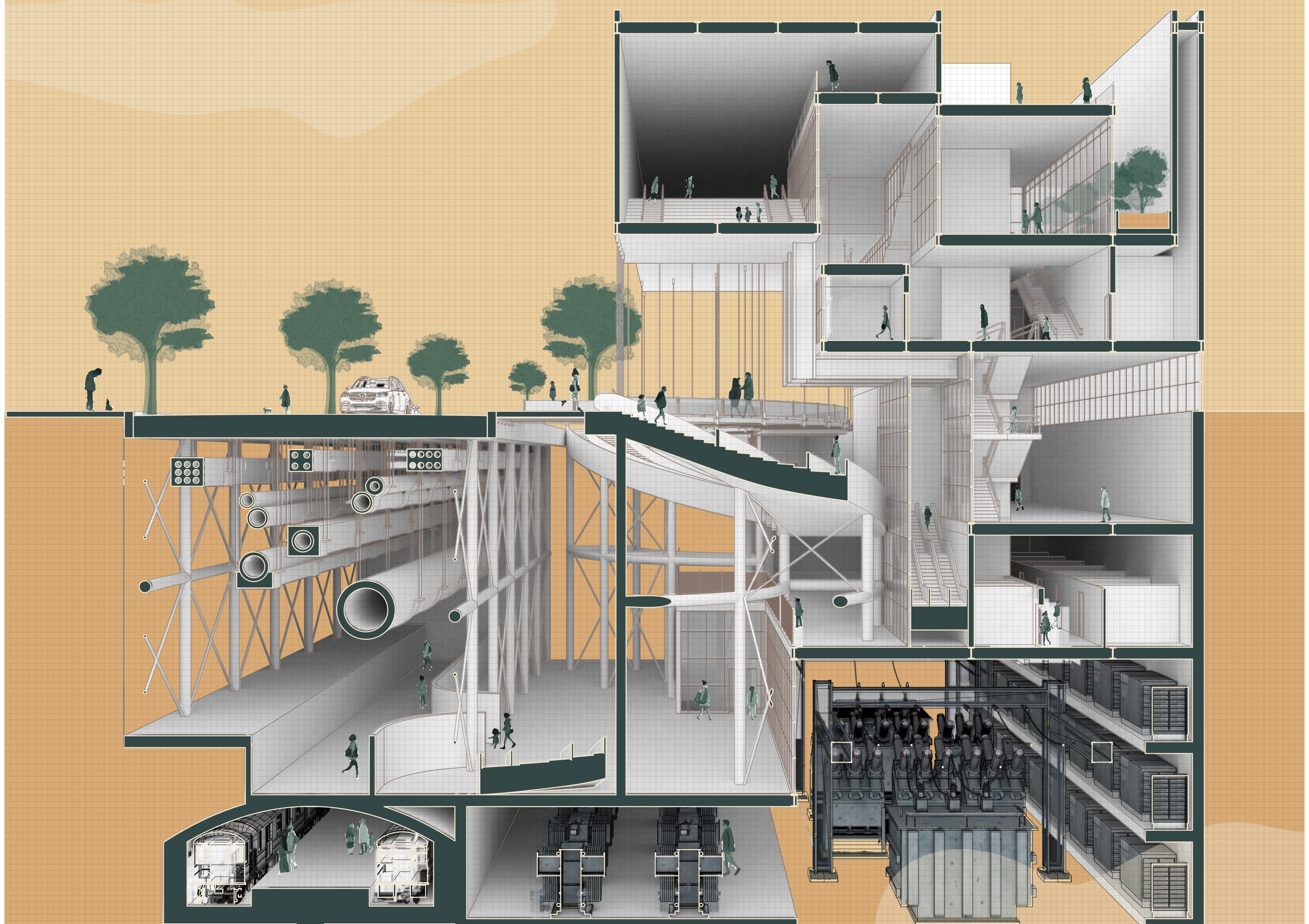
FLOOR PLAN AT GROUND LEVEL SCALE 1/32" = 1'-0"

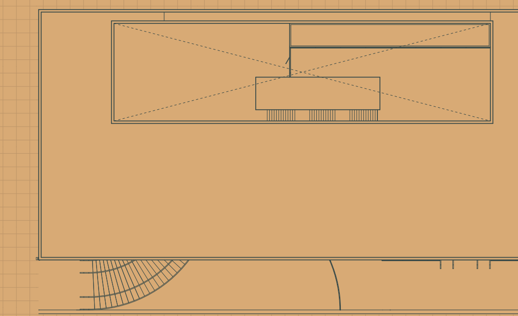


FLOOR PLAN -44' BELOW GROUND LEVEL SCALE 1/32" = 1'-0"

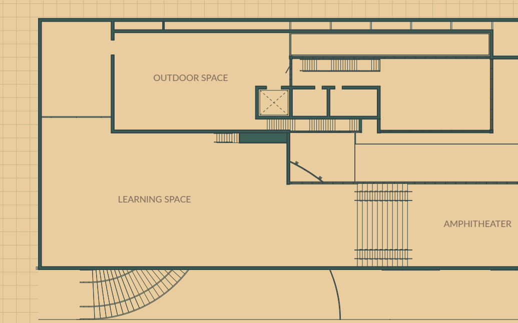


FLOOR PLAN -88' BELOW GROUND LEVEL SCALE 1/32" = 1'-0"

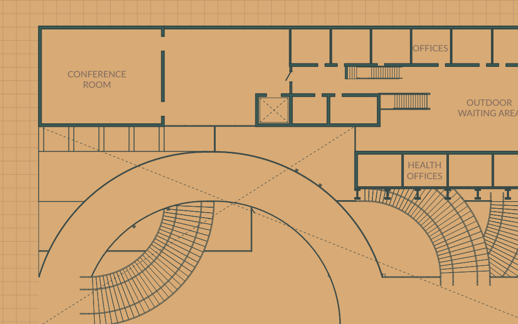




ROOF PLAN SCALE 1/32" = 1'-0"



FLOOR PLAN 42' ABOVE GROUND LEVEL SCALE 1/32" = 1'-0"



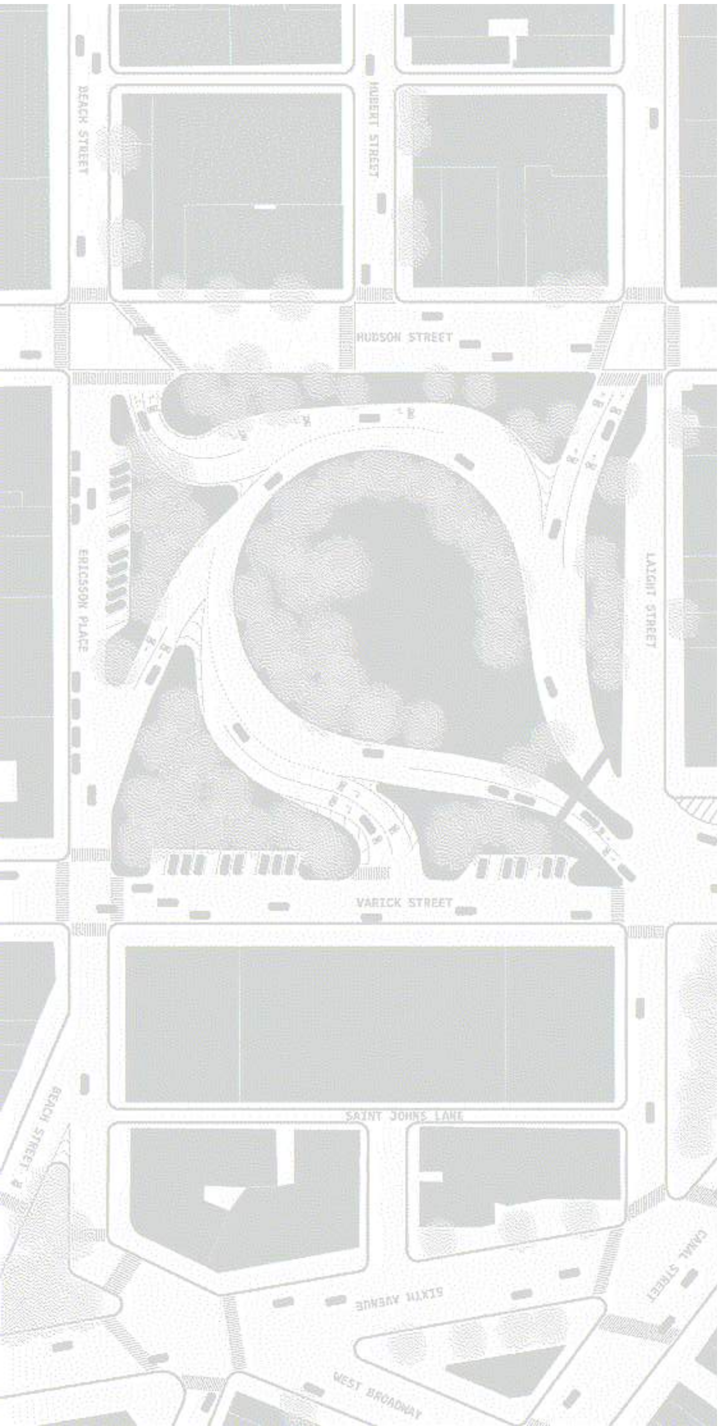
FLOOR PLAN 22' ABOVE GROUND LEVEL SCALE 1/32" = 1'-0"

3. Wetropolis:

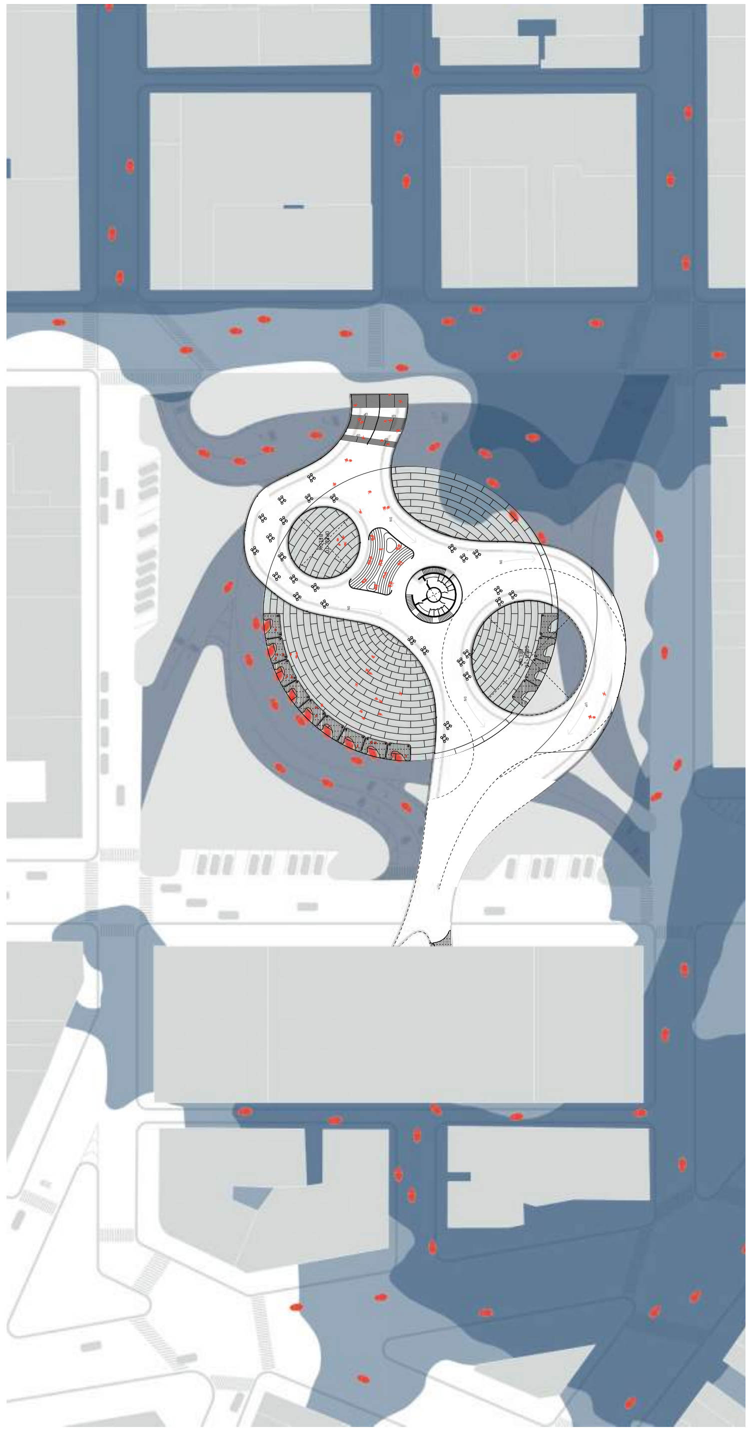
Tribeca Bazaar

Fall 2023| Amina Blacksher

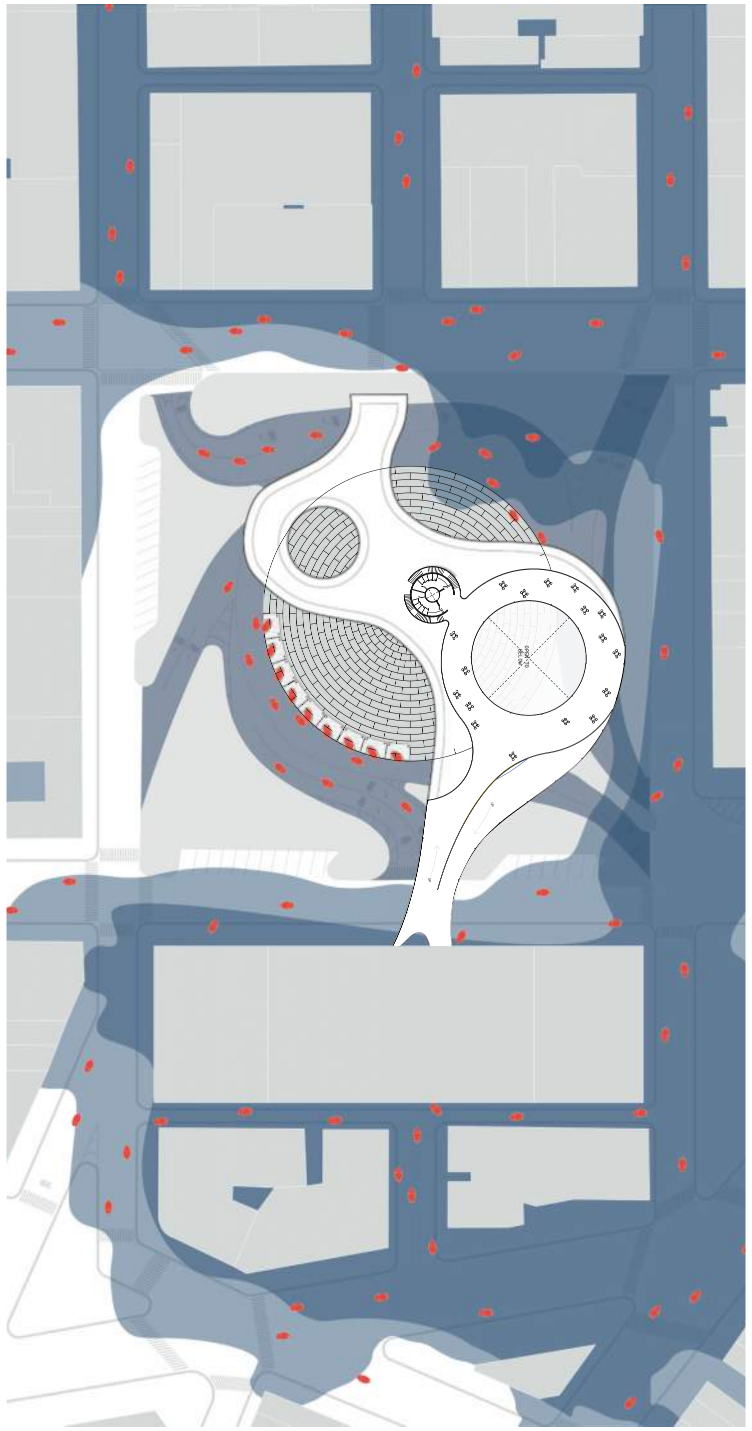
This project reimagines the early waterfront life of New York City in response to the challenges posed by rising sea levels. Set in Tribeca, it introduces a new typology of food culture anchored at the shifting intersection of land and water. By treating the ground floor not as a fixed datum but as a fluid threshold, the design reinterprets storefronts, galleries, and public interfaces to align with a future "eye-level" defined by the waterline. This speculative proposal explores how urban heritage and everyday culture can be retrofitted to adapt, persist, and thrive within new environmental paradigms.



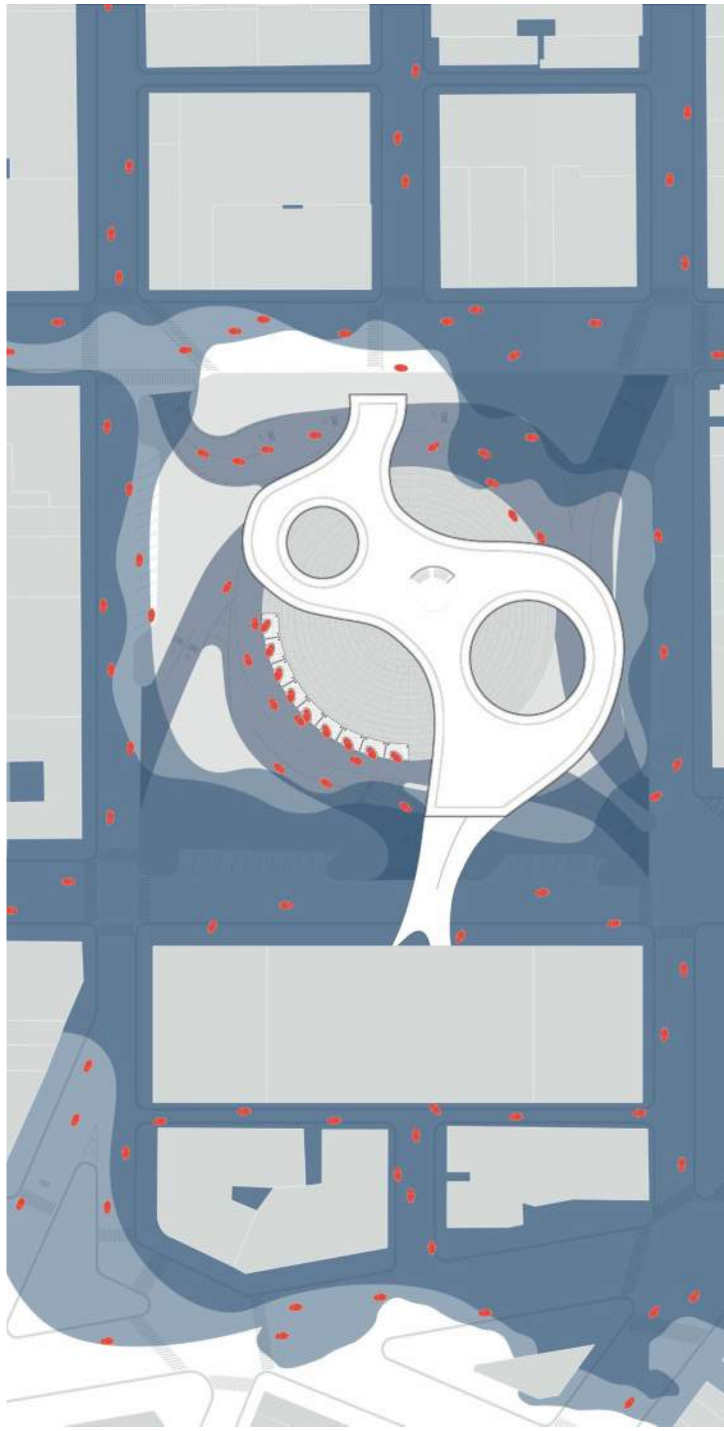
XISTING SITE PLAN



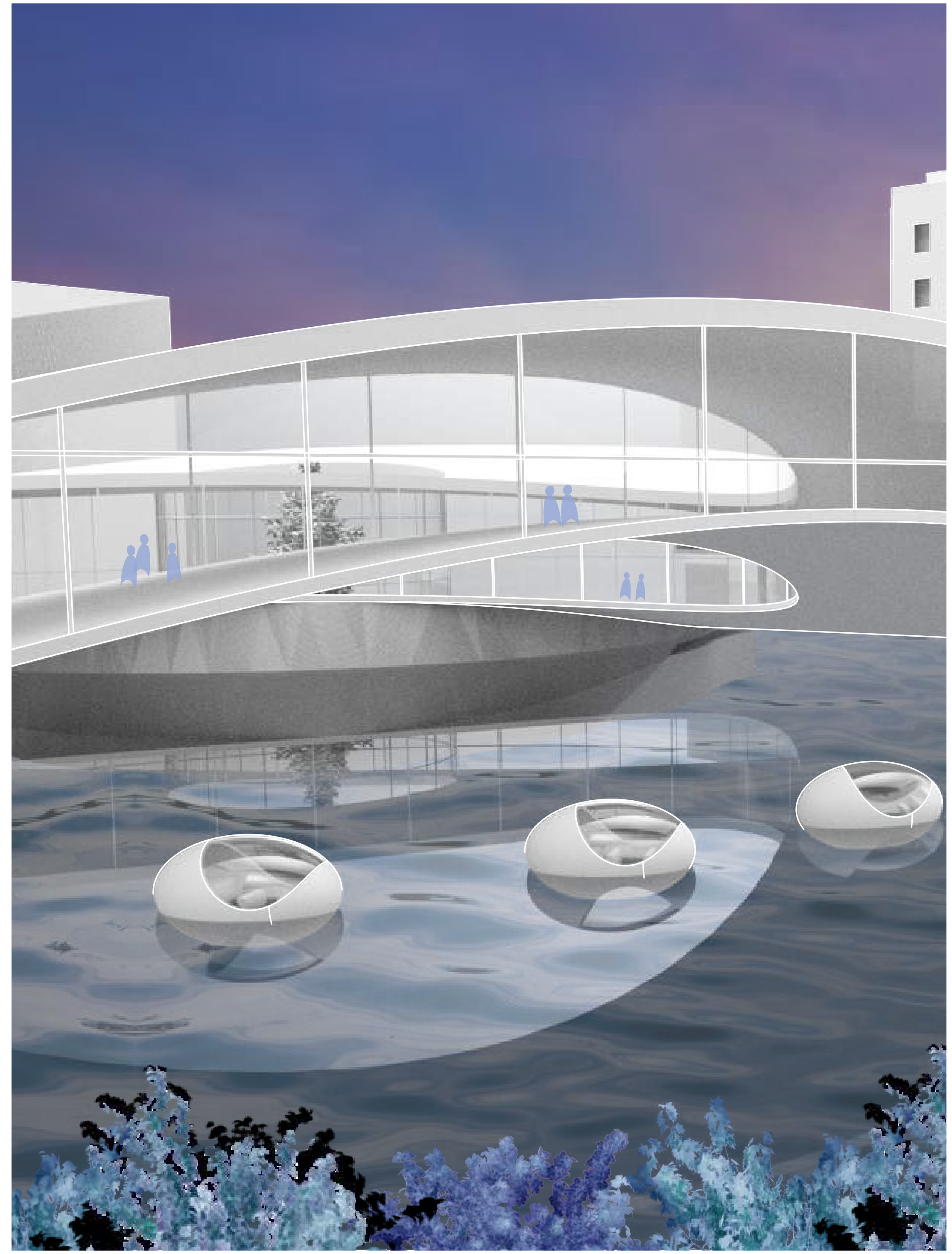
30 YEAR WATER LINE W/ PROPOSED LOWER LEVEL FLOOR PLAN

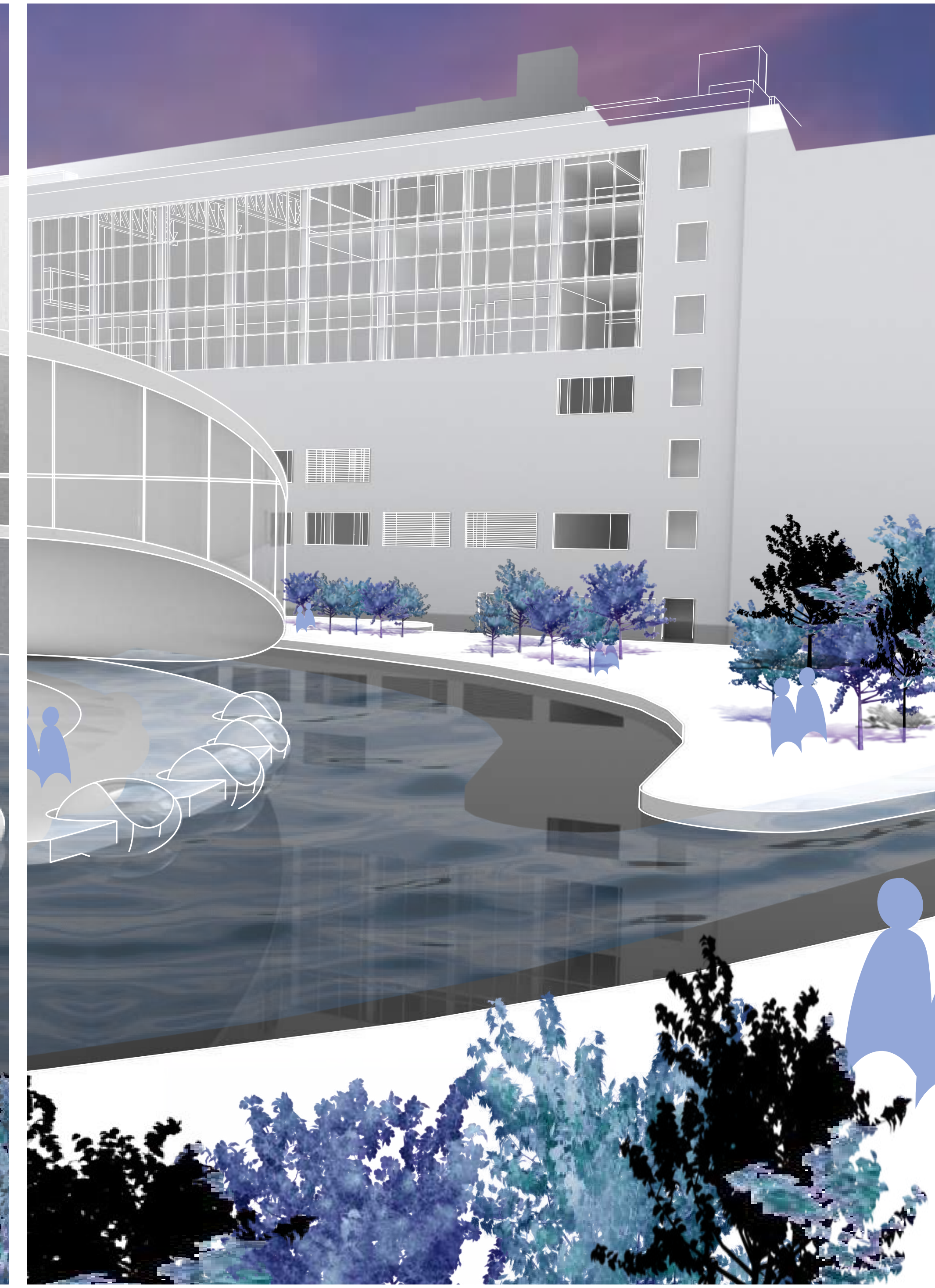


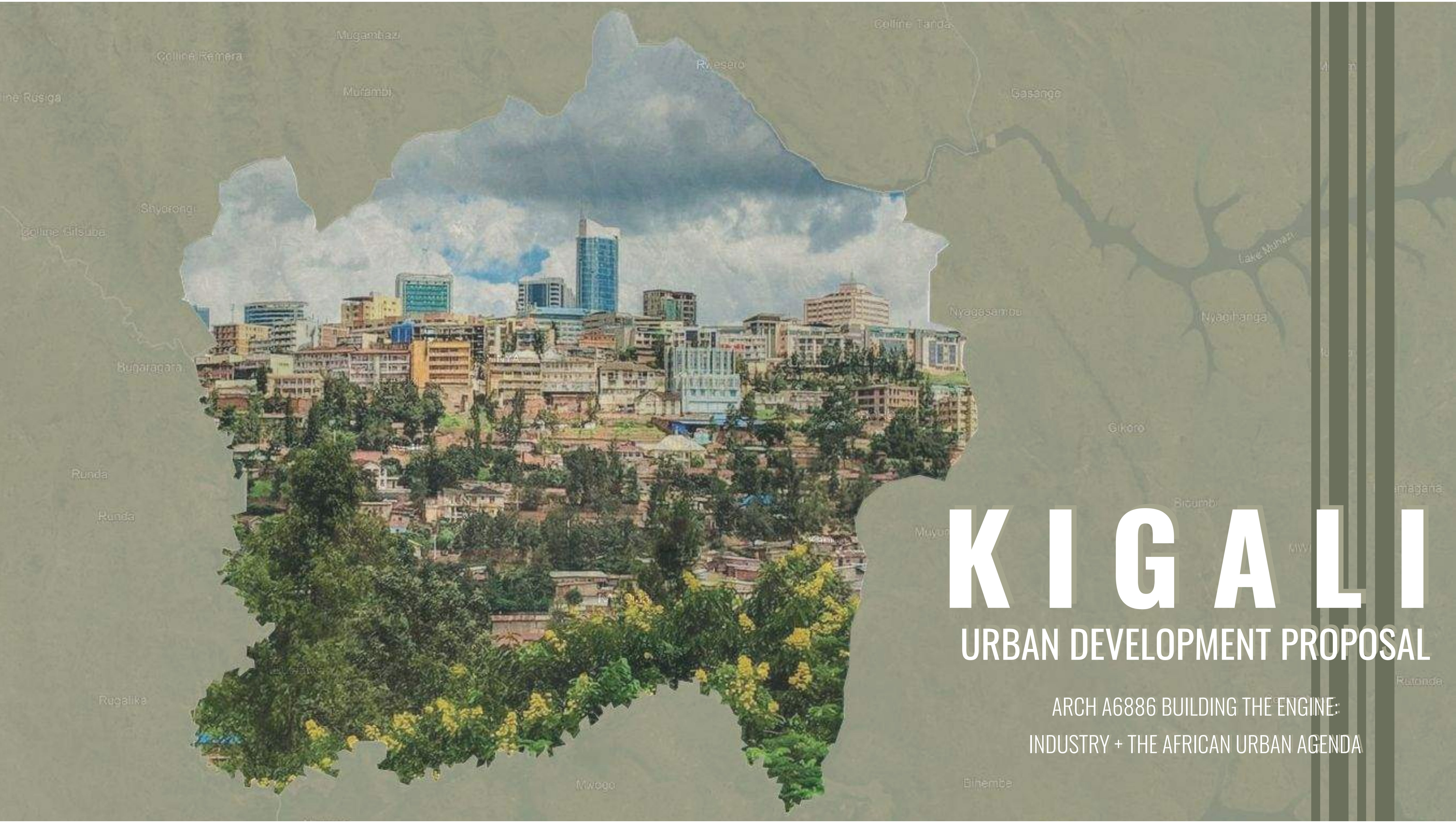
100 YEAR WATER LINE W/ PROPOSED UPPER LEVEL FLOOR PLAN



500 YEAR WATER LINE W/ PROPOSED ROOF PLAN





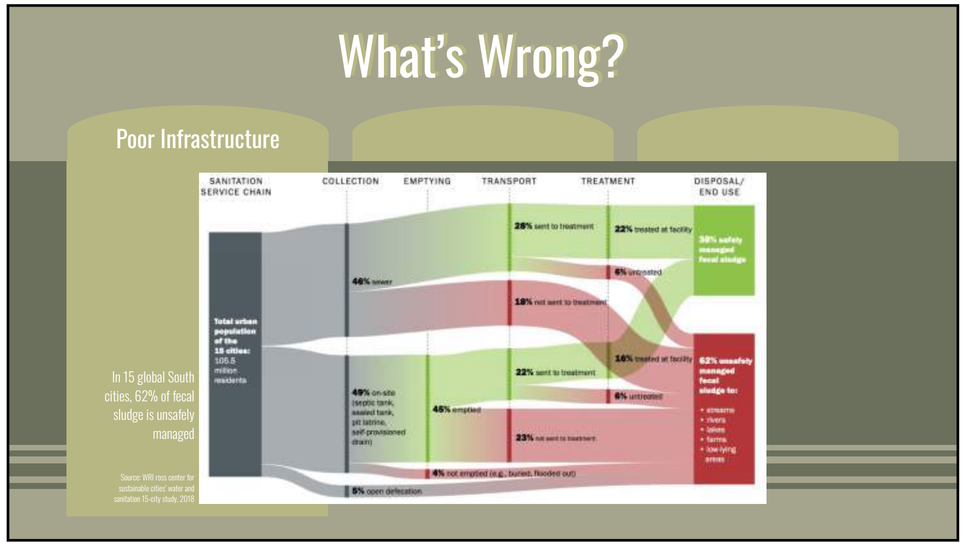


K I G A L I

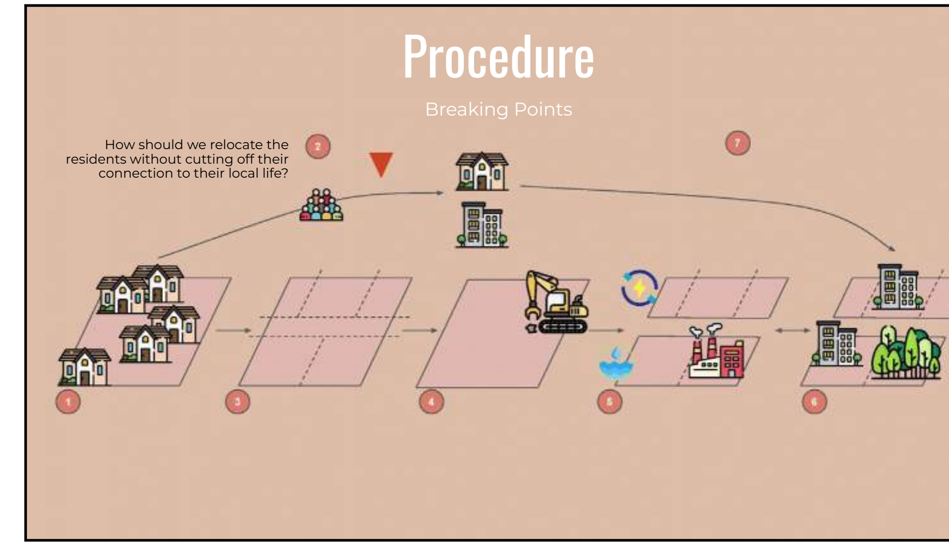
URBAN DEVELOPMENT PROPOSAL

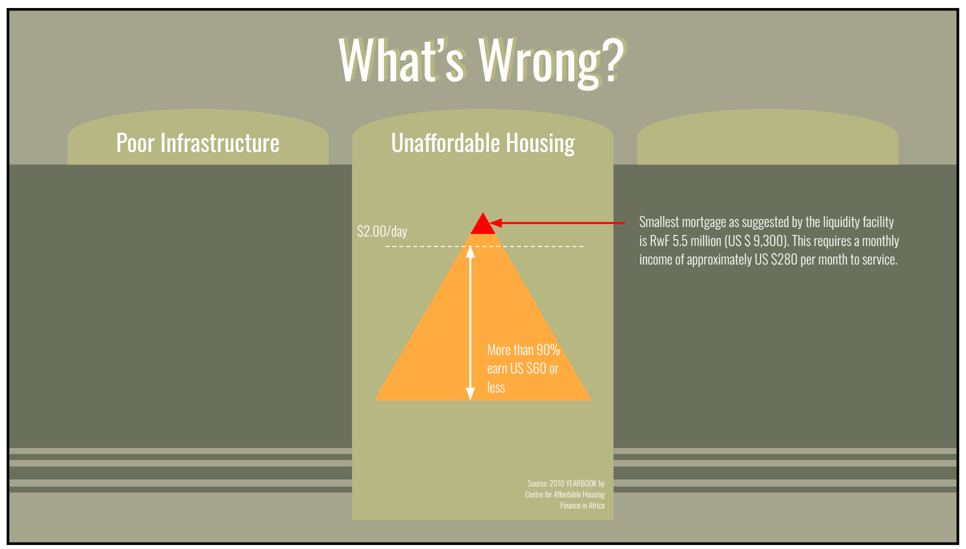
ARCH A6886 BUILDING THE ENGINE:

INDUSTRY + THE AFRICAN URBAN AGENDA

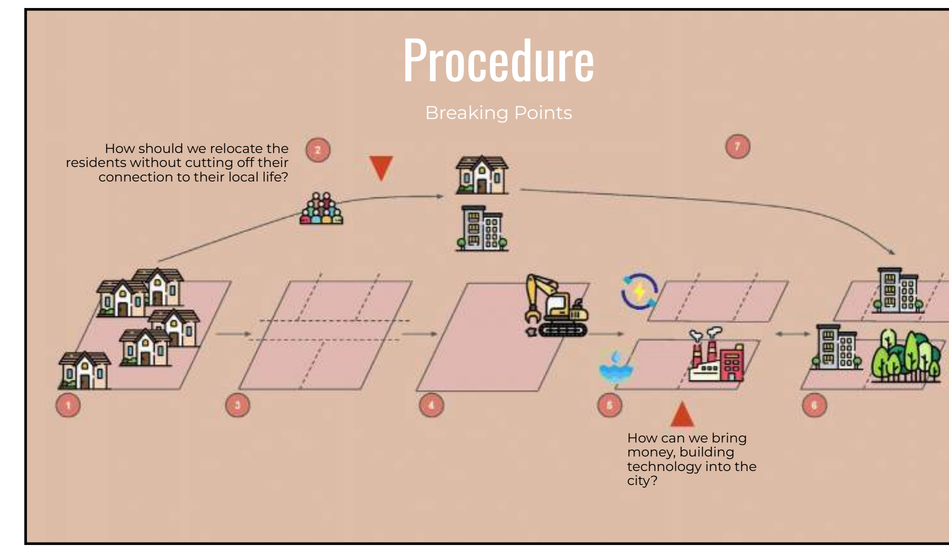

What's Wrong?
Poor Infrastructure
SANITATION SERVICE CHAIN
COLLECTION
EMPTYING
TRANSPORT
TREATMENT
DISPOSAL/ END USE
In 15 global South cities, 62% of fecal sludge is unsafely managed

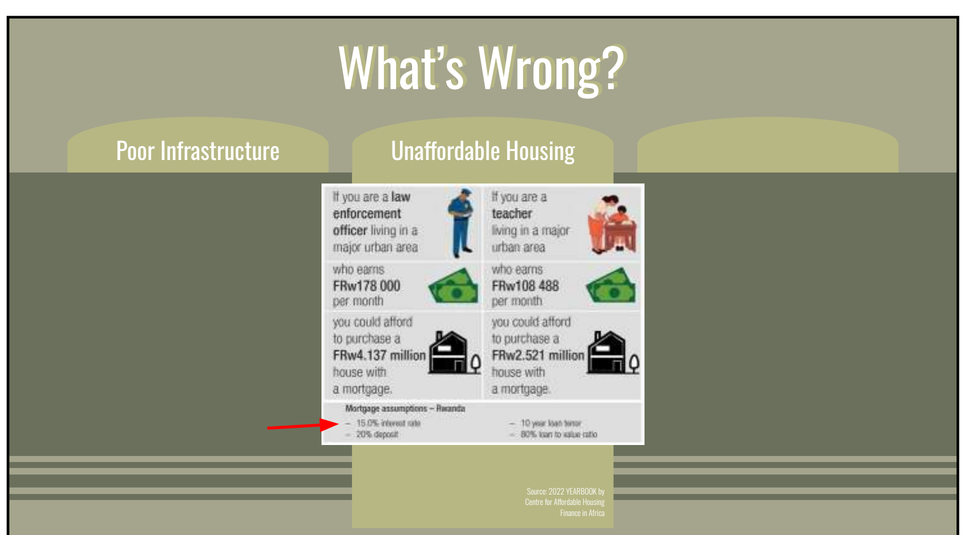

What's Wrong?
Poor Infrastructure
Unaffordable Housing
Impoverished Policy
There is broad consensus that planning laws in Africa need to be changed. Laws designed to regulate urban development in Europe or North America in the early and mid 20th century are an inappropriate blueprint for contemporary Africa. Leading international urban development organisations including UN-Habitat, the World Bank and Cities Alliance are committed to legal reform.
HOW TO MAKE PLANNING LAW WORK FOR AFRICA
Africa Research Institute
COUNTERPOINTS

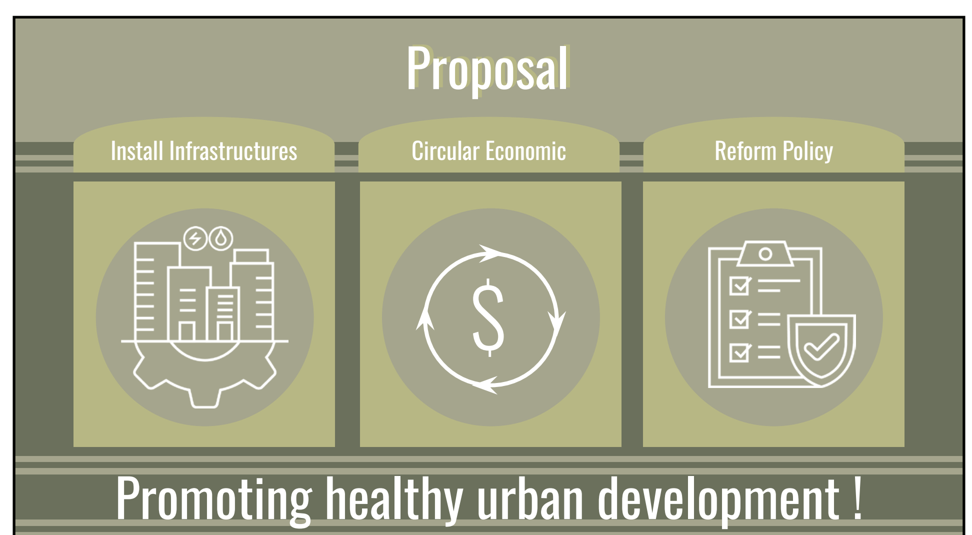

Procedure
Breaking Points
How should we relocate the residents without cutting off their connection to their local life?

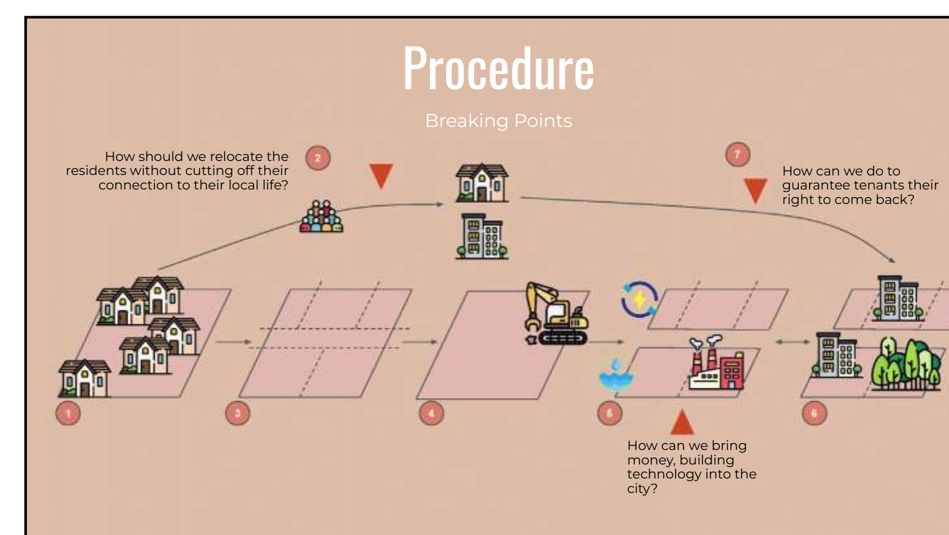

What's Wrong?
Poor Infrastructure
Unaffordable Housing
$2.00/day
More than 90% earn US $60 or less
Smallest mortgage as suggested by the liquidity facility is RwF 5.5 million (US $ 9,300). This requires a monthly income of approximately US $280 per month to service.


What's Wrong?
Poor Infrastructure
Unaffordable Housing
Impoverished Policy
2015 Yearbook projected that the city needs over 1,000 units per year and City of Kigali will require at least 344,068 dwelling unit by 2022
2020 Yearbook indicated that the annual average increase in the number of households between 2014 to 2017 was at 24,773 and housing need will grow from 345,079 in 2018 to 718,205 in 2032
2022 Yearbook did not include a projection in the statistical value
2015 YEARBOOK
2020
HOUSING FINANCE IN AFRICA
2022 YEARBOOK


Procedure
Breaking Points
How should we relocate the residents without cutting off their connection to their local life?
How can we bring money, building technology into the city?


What's Wrong?
Poor Infrastructure
Unaffordable Housing
If you are a law enforcement officer living in a major urban area
who earns FRw178 000 per month
you could afford to purchase a FRw4.137 million house with a mortgage.
If you are a teacher living in a major urban area
who earns FRw108 488 per month
you could afford to purchase a FRw2.521 million house with a mortgage.
Mortgage assumptions – Rwanda
15.0% interest rate
20% deposit
10 year loan tenor
80% loan to value ratio


Proposal
Install Infrastructures
Circular Economic
Reform Policy
Promoting healthy urban development !


Procedure
Breaking Points
How should we relocate the residents without cutting off their connection to their local life?
How can we do to guarantee tenants their right to come back?
How can we bring money, building technology into the city?


Relocation Strategy
Relocated but still connected
1. Define target lots or areas.

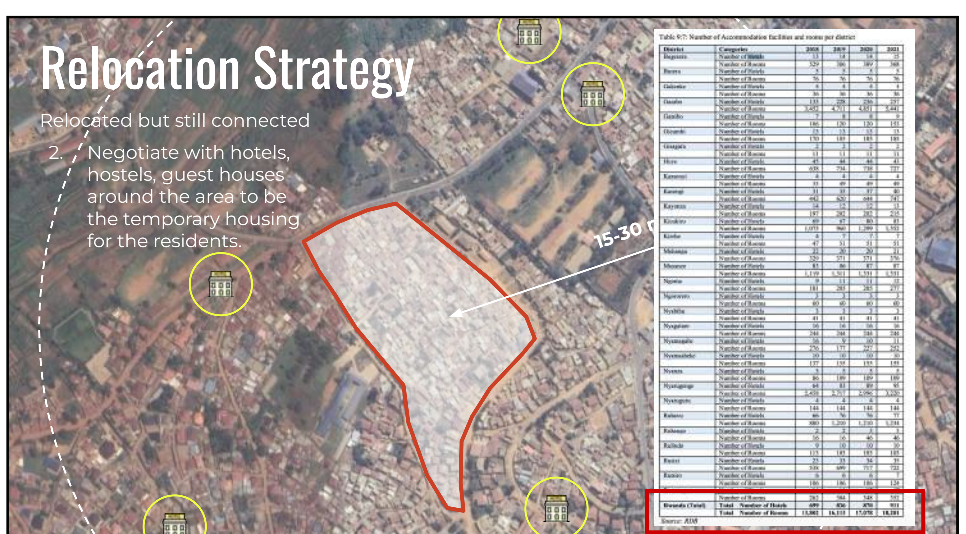

Relocation Strategy
Relocated but still connected
3. Determine land readjustment sequence.
1
2
3
4
5
6

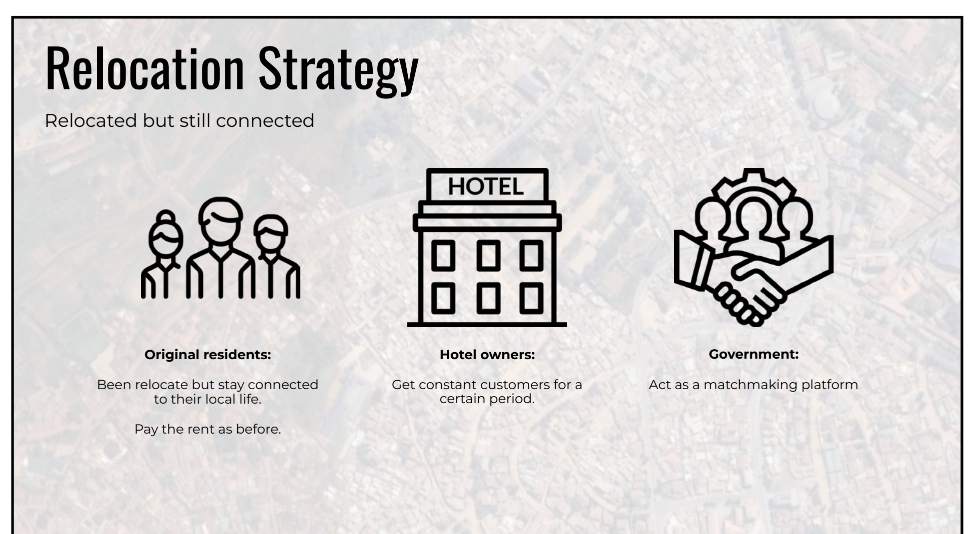

HOUSING ECONOMIC ZONE (HEZ)
1 Site Selection
2 Infrastructure Development
3 Housing Design & Planning
4 Economic Incentives
5 Sustainable & Inclusive Planning
6 Community & Amenities
7 Partnerships
8 Monitoring, Regulation & Feedback
Kigali Special Economic Zone (KSEZ)
Rwanda Vision 2020
Rwanda Vision 2050


Relocation Strategy
Relocated but still connected
2. Negotiate with hotels, hostels, guest houses around the area to be the temporary housing for the residents.
15-30 minutes

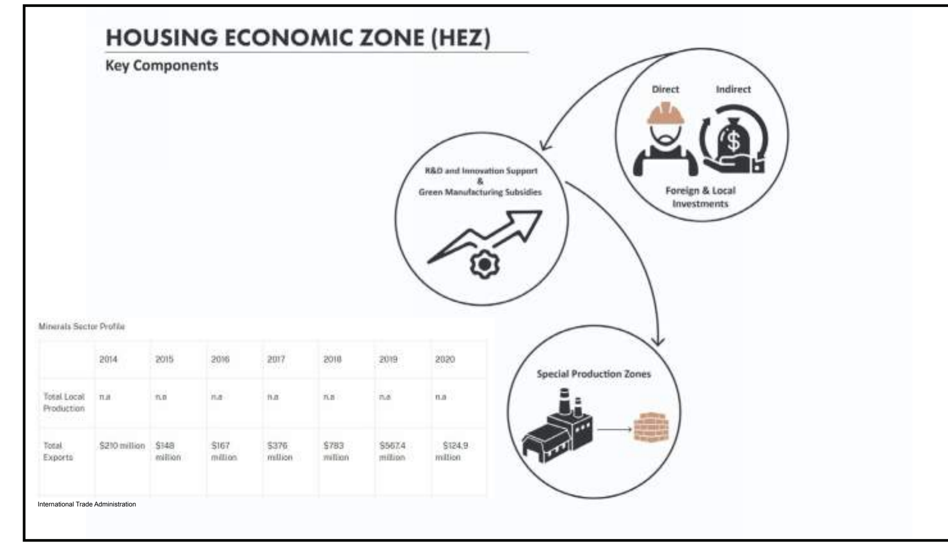

Relocation Strategy
Relocated but still connected
4. During the readjustment and construction phase, residents can move to the nearby stays.


HOUSING ECONOMIC ZONE (HEZ)
1 Site Selection
2 Infrastructure Development
3 Housing Design & Planning
4 Economic Incentives
5 Sustainable & Inclusive Planning
6 Community & Amenities
7 Partnerships
8 Monitoring, Regulation & Feedback
Kabale
KIGALI
Gitarama
Kibung
Butare


Relocation Strategy
Relocated but still connected
2. Negotiate with hotels, hostels, guest houses around the area to be the temporary housing for the residents.


Relocation Strategy
Relocated but still connected
HOTEL
Original residents:
Been relocate but stay connected to their local life.
Pay the rent as before.
Hotel owners:
Get constant customers for a certain period.
Government:
Act as a matchmaking platform

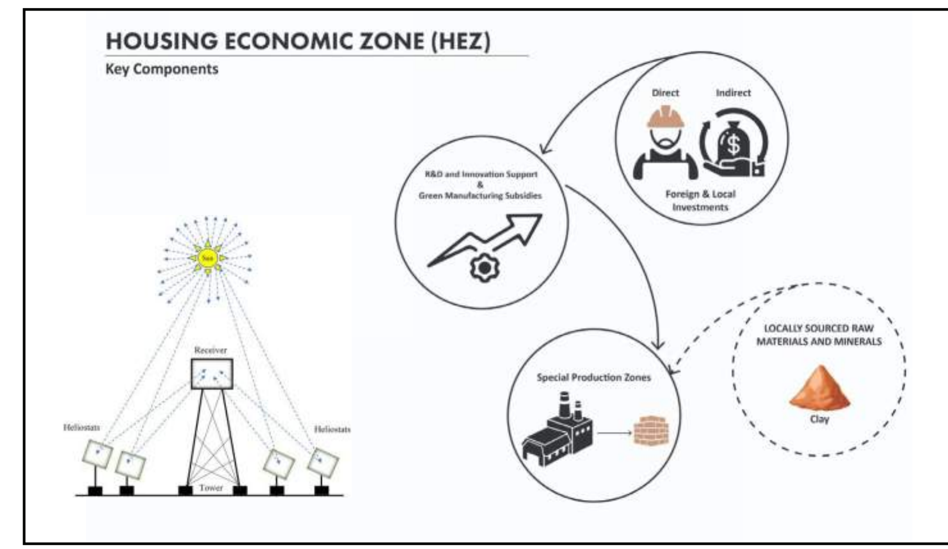

HOUSING ECONOMIC ZONE (HEZ)
1 Site Selection
2 Infrastructure Development
3 Housing Design & Planning
4 Economic Incentives
5 Sustainable & Inclusive Planning
6 Community & Amenities
7 Partnerships
8 Monitoring, Regulation & Feedback

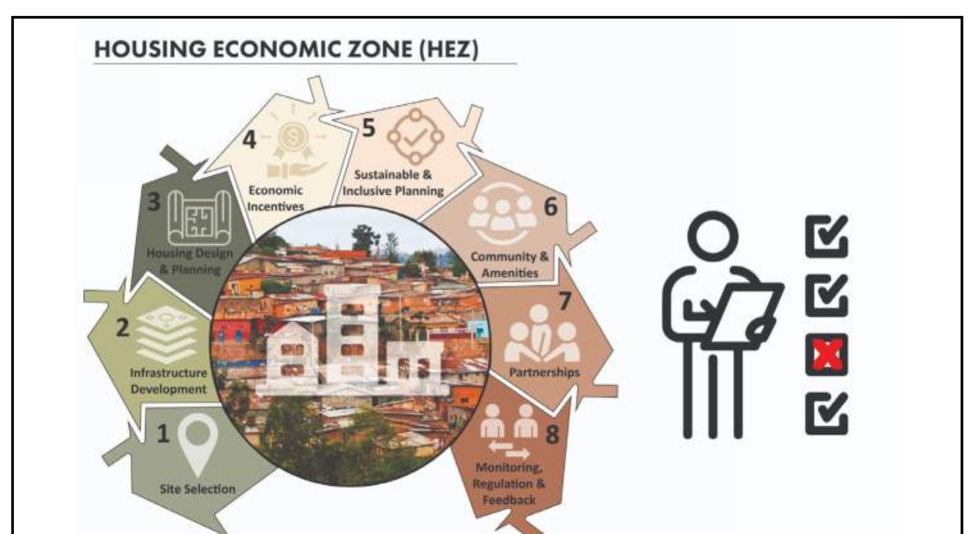


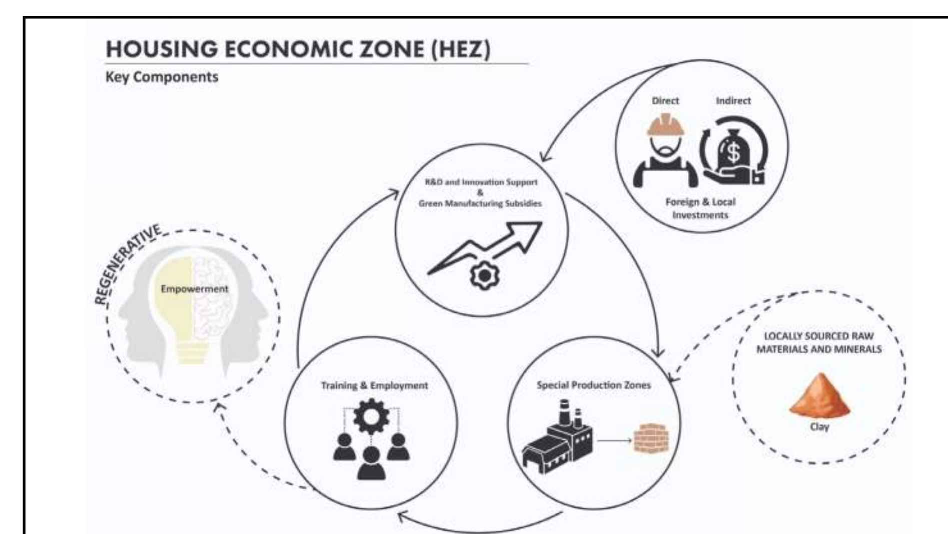
Minerals Sector Profile

	2014	2015	2016	2017	2018	2019	2020
Total Local Production	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Total Exports	$210 million	$148 million	$167 million	$376 million	$783 million	$567.4 million	$124.9 million

International Trade Administration







Speculative City

SILENT SKYLINES

REQUEST FOR PROPOSAL ARCHITECTURAL DESIGN SERVICES

The RFP was initiated with a deep curiosity about the complex relationship between urban change and infectious diseases. By examining how cities respond to diseases and adapt to resulting changes, this RFP aims to gain insights for the future development of cities.

Prepared by:
YEWON HONG
M.S.AAD, GSAPP

In New York City,

the once-luminous glass facades of office skyscrapers now stand as silent sentinels to the unprecedented disruptions caused by the COVD-19. The vacancy of these high-rise building has triggered a reevaluation of architectural principles, challenging traditional notions of urban design and the purpose of these mega structures. The primary reason behind the vacancy of office spaces during the COVID-19 was concerns about health and safety due to the virus. The spread of the virus led to social distancing measures and a surge in remote work, prompting businesses to reconsider the necessity of physical office presence. The repercussions of the COVID-19 extend far beyond the mere emptiness of office spaces. While the economic fallout is undeniable and has jeopardized job security, the virus has also wrought significant psychological distress on individuals. Furthermore, it has fueled xenophobia, inevitably against the Chinese community, and has unfortunately escalated into broader anti-Asian sentiments and violence.

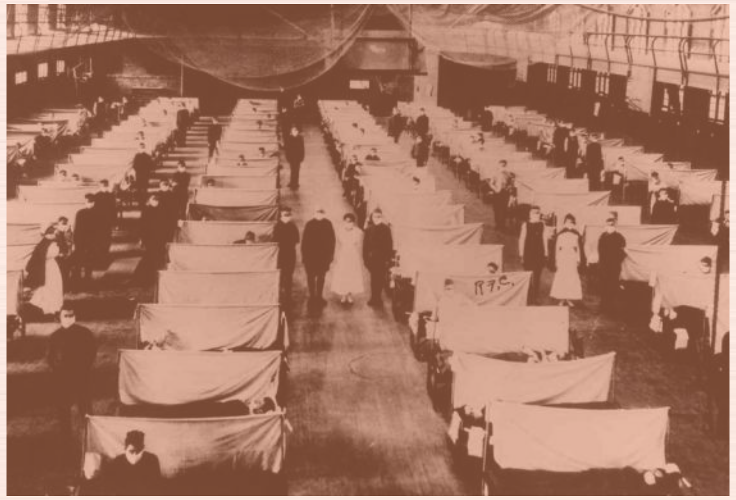
The onset of COVID-19 was not the first instance of a pandemic wielding significant influence. Looking back through history, there have been several precedents of formidable contagions, each leaving an indelible mark on the course of human events.

One of the earliest and most devastating pandemics in human history is The Black Death, which swept through Europe in the 14th century. This plague resulted in the death of an estimated 75-200 million people, causing significant demographic and social disruption.

The Spanish Influenza pandemic of 1918-1919 marked another significant moment. Caused by H1N1 influenza A virus, it infected on-third of the world's population and claimed 50-100 million lives. The aftermath witnessed significant changes in public health infrastructure, with many countries strengthening their healthcare systems in response to the devasting impact of the influenza.

As of January 2023, the global estimated death toll due the COVID-19 pandemic is approximately 55 million. This worldwide pandemic brought tremendous sadness, anger and fear with its fast and unavoidable spread through the air.

1. "Plague Victims" is a photograph by *Library Of Congress/science Photo Library* which was uploaded on September 20th, 2018.



2. Spanish Influenza 1918 Image credit: Universal History Archive/Universal Images Group via Getty Images.

3. A memorial honoring those who have died from COVID-19. Image credit: Mario Tama/Getty Images.

4. Rally and march honoring the victims of Asian-hatred. Image credit: Trevor Huges, usatoday.com

5. *The Protesters*. Bruce Plante/Tulsa World/PoliticalCartoons.com

6. Persecution of Jews during the Black Death. *dou Tielt*, Pierart (c.1353), illustration from illuminated manuscript, Bibliotheque Royale de Belgique.

The unforeseen population decline caused by unexpected viruses brings conflicts across various sectors, including the economy, politics, society, health, and more. The closure of numerous public and medical facilities, alongside the economic downturn triggered by the shutdown of businesses, has not only led to financial strain but has also fueled mental health concerns, pervasive anxiety, career uncertainties, and more, thereby precipitating societal tensions.

Inadequate government solutions and somewhat coercive measures such as social distancing, mask-wearing, lockdowns, and quarantine have eventually led to social actions such as racial hatred, protest, and distrust in the government, fostering criticism and resistance towards policies. Such issues find parallels throughout history, with example like the persecution of Jews during the Black Death.

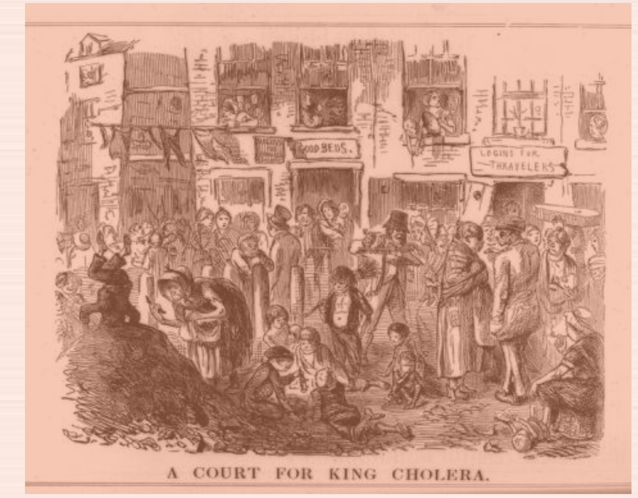
Throughout history, architectural intervention and urban planning have contributed to improved living conditions and health outcomes.

In 1854, during a cholera outbreak in London, John Snow, a physician, mapped the cases and traced the source of the outbreak to a contaminated public water pump on Broad Street. His actions highlight the importance of the linkage between infrastructure and public health and encourage large-scale urban planning efforts for healthy living in the city.

Haussmann's renovation of Paris in 1850 included, first, widening narrow streets to enhance traffic flow and air circulation, potentially helping disperse pollutants and improve air quality. Second, improving sanitation infrastructure, including the installation of sewage and water supply systems to provide cleaner water to people, reducing waterborne diseases. Lastly, the creation of public parks and green spaces aimed not only to provide areas for exercise and fresh air but also to improve mental health and well-being.

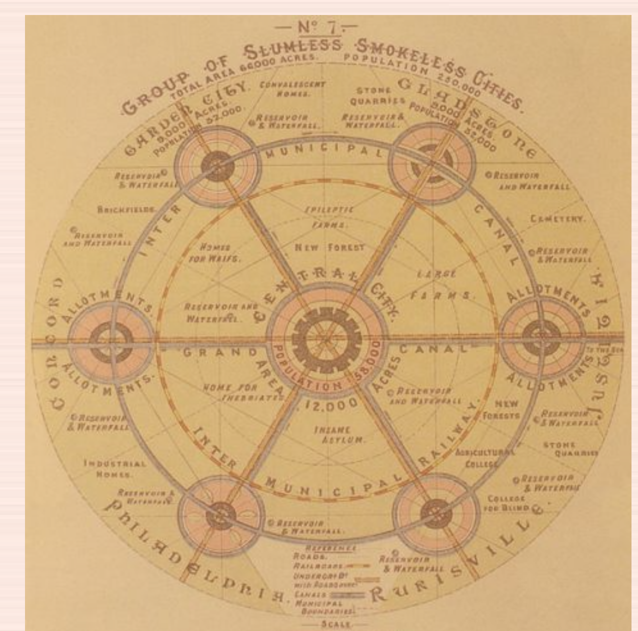
In the early 20th century, the Garden Cities movement emerged as a response to the negative health effects of rapid urbanization. Their vision emphasized planned communities with green space, affordable housing, and an integrated approach to living, working, and recreation, eventually leading to healthier and more livable urban environments.

As mentioned, architecture has played an important role in protecting urban life and its citizens from diseases. It should also be able to respond to the results of what COVID-19 has caused.



7. John Leech's cartoon in Punch, 23 (25 September 1852): 139) Image credit: Wellcome Library, London.

8. *The Avenue de l'Opera*, created by Haussmann, painted by Camille Pissarro 1898.



9. The Garden City Concept by Ebenezer Howard, 1902. Image credit: Sonnenschein publishing.

1. Purpose and Objective

The purpose of this Request for Proposal (RFP) is to obtain proposals from qualified design firms interested in providing architectural solutions that embrace flexibility, inclusivity, and adaptability to reshape the New York City skyline and foster a resilient, economically vibrant future.

2. Background

As the dust settles on four years since the onset of the COVID-19 pandemic, New York stands as a testament to unwavering resilience and relentless efforts. Many aspects of life have returned to a semblance of normalcy, with fading fears of the virus. The end of social distancing measures has seen a revival of businesses, the easing of mask policies has tempered anti-government sentiments, and the violent rhetoric and actions against Asians have subsided. Yet, amid these positive strides, the stark reality persists — significant challenges linger. This RFP delves into the issues surrounding vacant office spaces in high-rise buildings and explores potential architectural solutions in the post-COVID era.

One of the most conspicuous issues post-COVID is the prevalence of empty offices in skyscrapers. The remote work revolution has left corporate spaces underutilized, prompting a reassessment of the role of traditional office structures in the evolving work landscape.

Architects and urban planners face the challenge of reimagining office spaces to align with the changing dynamics of work. Innovative designs that prioritize flexibility, collaboration, and employee well-being are crucial. Co-working spaces, shared facilities, and hybrid models that accommodate both remote and in-person work are potential solutions to breathe life back into these vacant spaces.

As New York navigates the post-COVID landscape, the vacant office spaces in high-rise buildings serve as both a symbol of change and a challenge to traditional norms. Architectural solutions that embrace flexibility, inclusivity, and adaptability are crucial in reshaping the city's skyline and fostering a resilient, economically vibrant future. The measure of success lies in ensuring that the benefits of these changes reach all New Yorkers, creating a city that thrives on innovation, equity, and collective prosperity.

3. Scope of Services

The architecture firm shall propose a design prototype that can serve as an example for multiple different locations in NYC high-rise buildings, with minimal editing based on existing structural limitations and use. The prototype design shall be created for the following location:

One Vanderbilt.
45 E 42nd St. New York, NY 10017

Current available spaces can be found in Diagram 1.

- The design must promote hygienic conditions and be prepared for unexpected disease outbreaks.
- Consider recent social and political conflicts that have arisen due to COVID-19 and aim to encourage positive interactions with others.

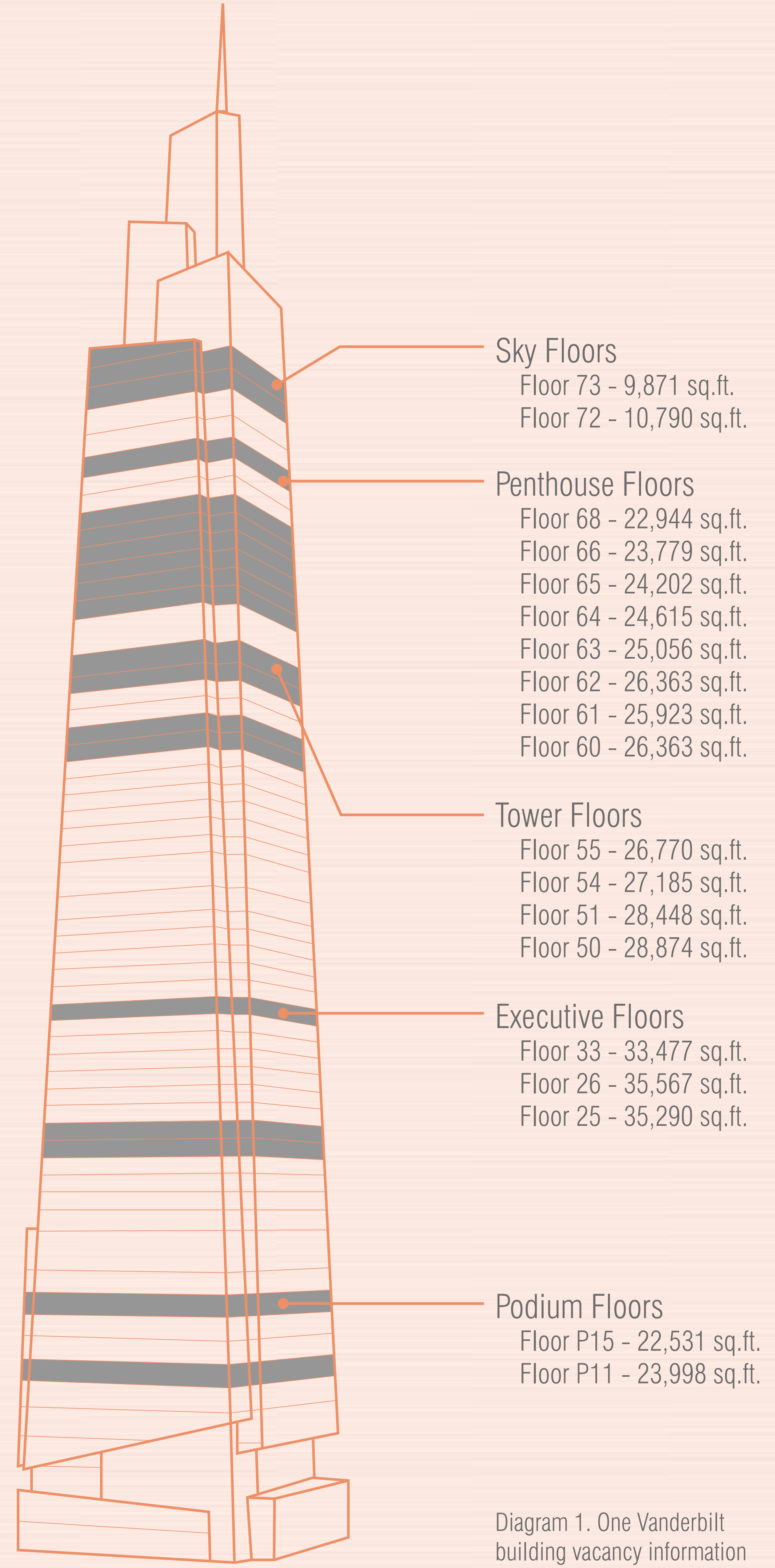


Diagram 1. One Vanderbilt building vacancy information

4. Notes

Detailed scope of service, design guidelines, timeline, proposal response and evaluation, and submittal requirements will be provided shortly, along with information about the selection process and agreement award.

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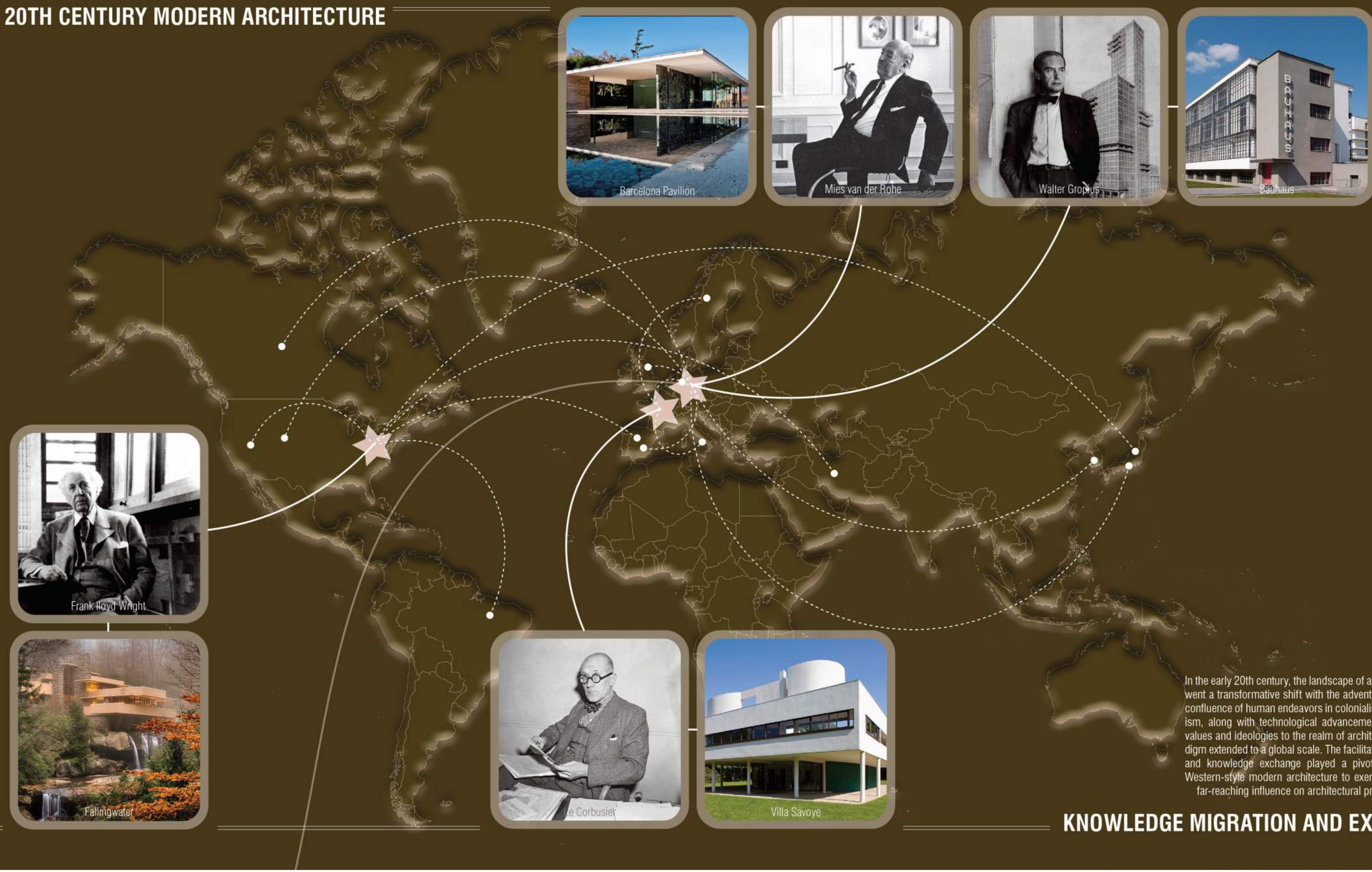
EARLY 20TH CENTURY MODERN ARCHITECTURE

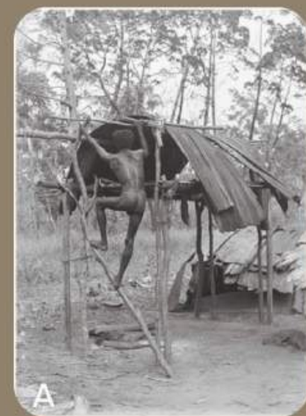


In the early 20th century, the landscape of architecture underwent a transformative shift with the advent of modernism. A confluence of human endeavors in colonialism and industrialism, along with technological advancements, brought new values and ideologies to the realm of architecture. This paradigm extended to a global scale. The facilitation of technology and knowledge exchange played a pivotal role, enabling Western-style modern architecture to exert a profound and far-reaching influence on architectural pratices worldwide.

KNOWLEDGE MIGRATION AND EXCHANGE

HOLOCENE

During the Holocene epoch, architectural knowledge remained localized within communityes, primarily transmillted through oral traditions. The tranditional architecture of indigenous communities was deeply embedded in local cultures, environments, and available resources. The limited tools and skills during this period led to the development of sustainable and nature-friendly architectural practices. The necessity for collaboration not only fostered a sense of unity but also brought the community together in the construction and preservation of their architectural heritage.



A. Wet season camp of Kakani, A Mildjinggi, at Gaatji, Arnhem Land, 1937. Photographed by Donald Thomson. Source: Museums Victoria.

B. Sleeping platform with fire place below to repel mosquitos in the wet season, Cape Steward, Arnhem Land, 1937. Photographed by Donald Thomson. Source: Museums Victoria.

C. Aboriginal camp in Palmerston. Photographed by Paul Foelsche. Source: Northern Territory Library.

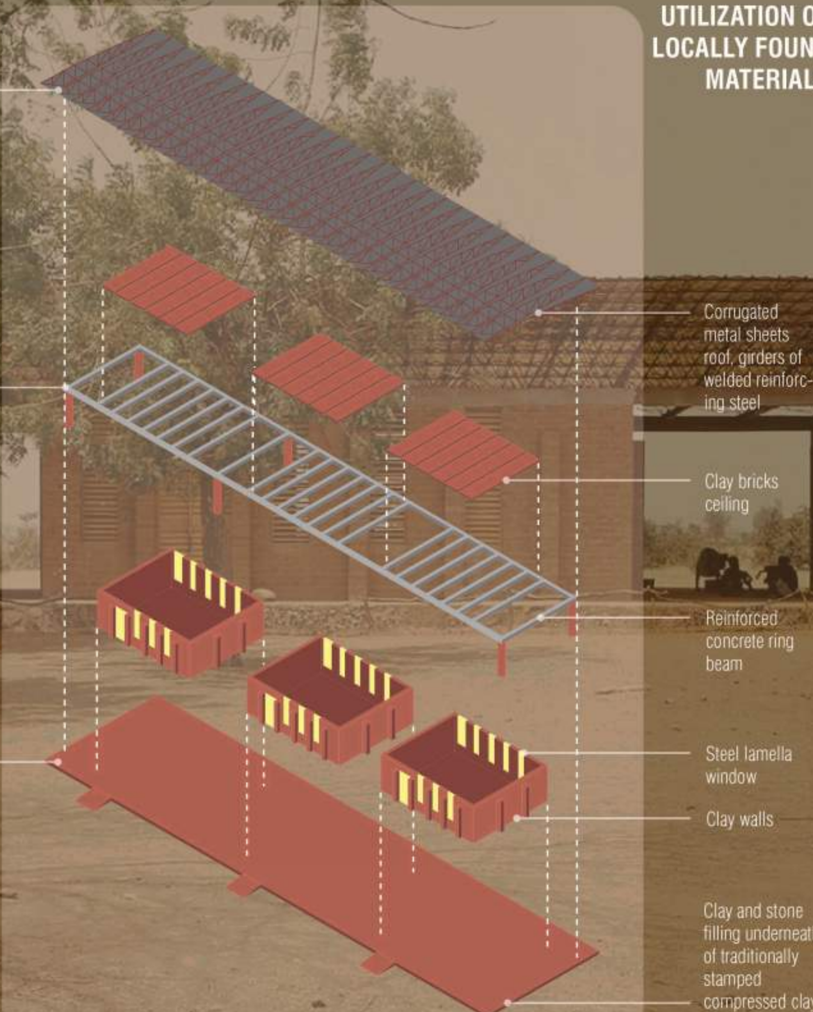
D. Aboriginal camp in Palmerston. Photographed by Paul Foelsche. Source: Northern Territory Library.

KNOWLEDGE ACQUISITION AND ADAPTATION IN RESPONSE TO THE CIRCUMSTANCES

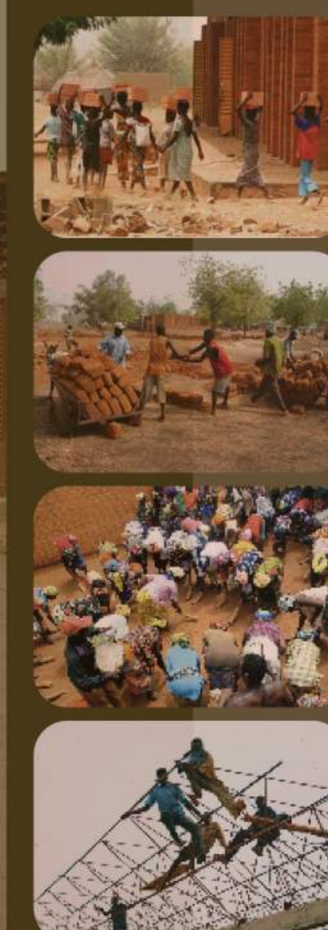
Date completed:	2001
Site:	Gando, Burkina Faso
Size:	520 sqm
Client:	Community of Gando/ Kere Foundation e.V.
Architect:	Francis Kere
Construction:	Residents of Gando

A significant aspect of Francis Kere's inaugural project, the Gando Primary School in Burkina Faso, lies in the dissemination of knowledge. Having undergone architectural studies in Germany, Kere familiarized himself with Western architectural styles and construction methodologies. However, the challenge arose when attempting to replicate these practices in Gando, where a deficiency in tools, skills, and resources posed a significant obstacle. In response, Kere ingeniously eschewed the conventional approach of importing external resources and instead devised a system that integrated local resources and labor. This strategic adaptation facilitated a seamless and efficient assimilation within the community. Beyond the completion of the project, this approach cultivated a skilled labor force, consequently generating employment opportunities for the local populace.

UTILIZATION OF LOCALLY FOUND MATERIALS



UTILIZATION OF LOCAL LABOR



TRANSFER KNOWLEDGE AND CULTIVATION OF SKILLED LABOR

CASE STUDY EXAMPLE

STUDIO REMEDY

ABOUT

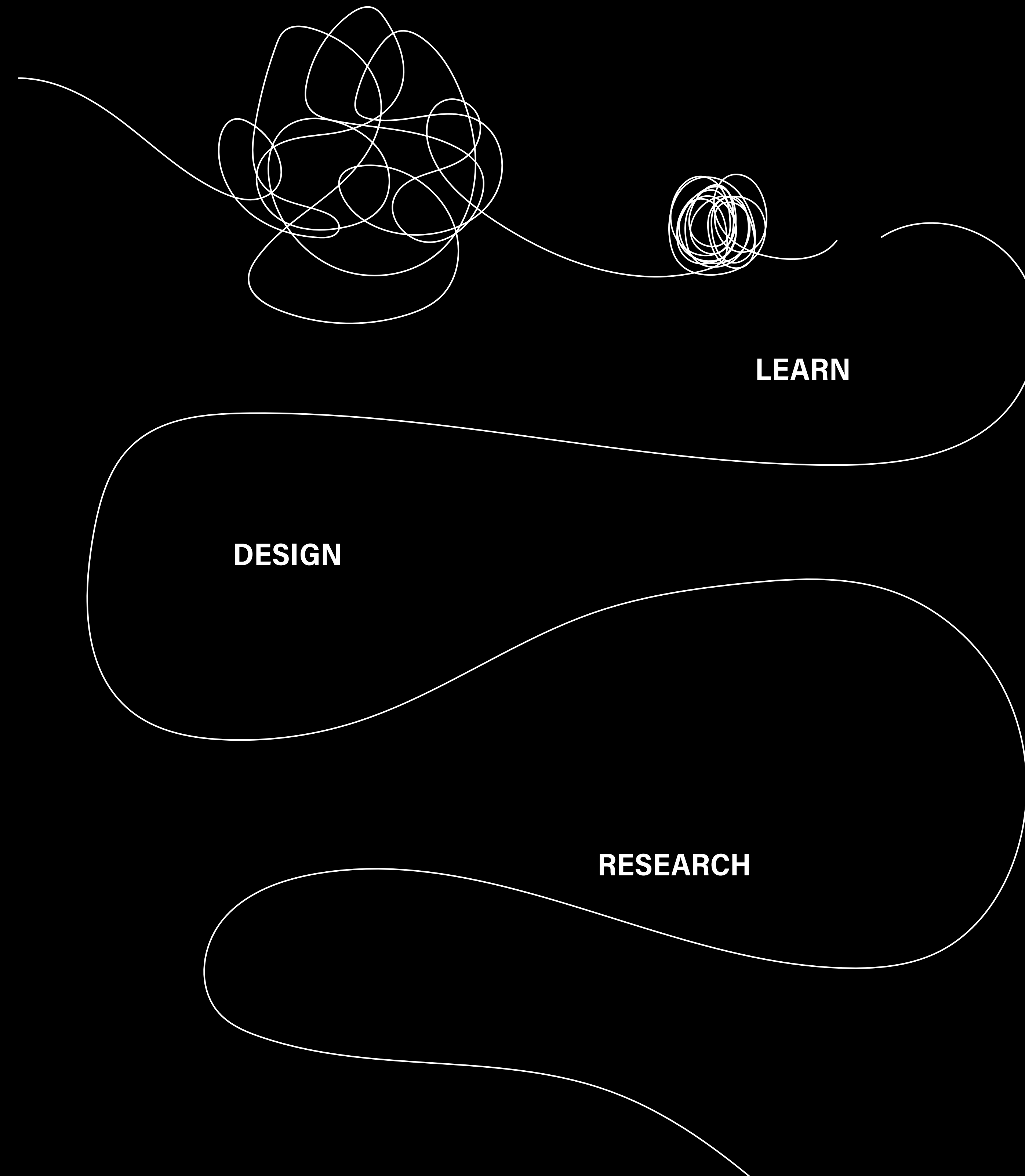
At Studio Remedy, we are driven by a commitment to create thoughtful, sustainable, and equitable design solutions that address both housing and environmental scarcity. We believe that architecture is not just about buildings; it's about improving lives, promoting fairness, and healing our planet.

In today's housing market, there is a growing imbalance. Median and low-income families face increasing challenges as access to affordable and livable housing becomes more limited, often exacerbated by issues such as gentrification. At Studio Remedy, we are focused on remedying this crisis. Our designs aim to alleviate the negative impacts of rising housing costs by creating innovative, affordable housing solutions that prioritize accessibility and inclusivity. We are dedicated to developing spaces that empower communities, provide dignity, and offer long-term solutions for families who are often left behind by traditional housing markets.

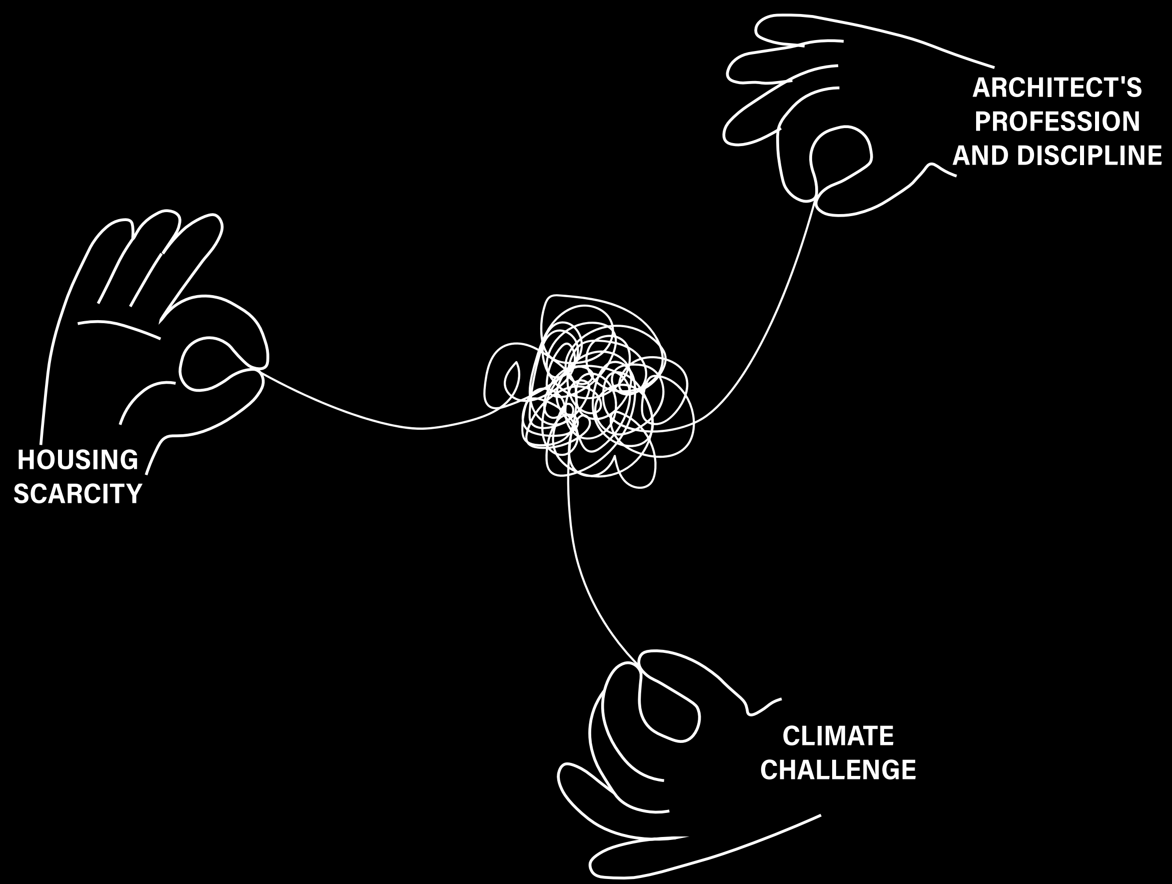
In response to environmental scarcity, Studio Remedy is committed to pushing the boundaries of sustainability in architecture. Our research into renewable materials, such as transparent photovoltaic glass, enables us to incorporate both aesthetic and environmental considerations into every design. By integrating cutting-edge technologies with sustainable practices, we strive to create buildings that minimize environmental impact while enhancing the quality of life for their occupants.

Additionally, we are deeply committed to improving the working environment within the architecture field. The architectural profession has long been plagued by disproportionate compensation and undervaluation of its intellectual contributions compared to other industries. At Studio Remedy, we actively challenge these issues, ensuring that our team is provided with fair compensation, respect, and a healthy work-life balance. We believe in fostering an environment where architects are empowered to thrive professionally and creatively, free from burnout and exploitation. By promoting better working conditions and challenging traditional power structures within the field, we are working to reshape the future of the architecture profession for the benefit of both our workers and the communities we serve.

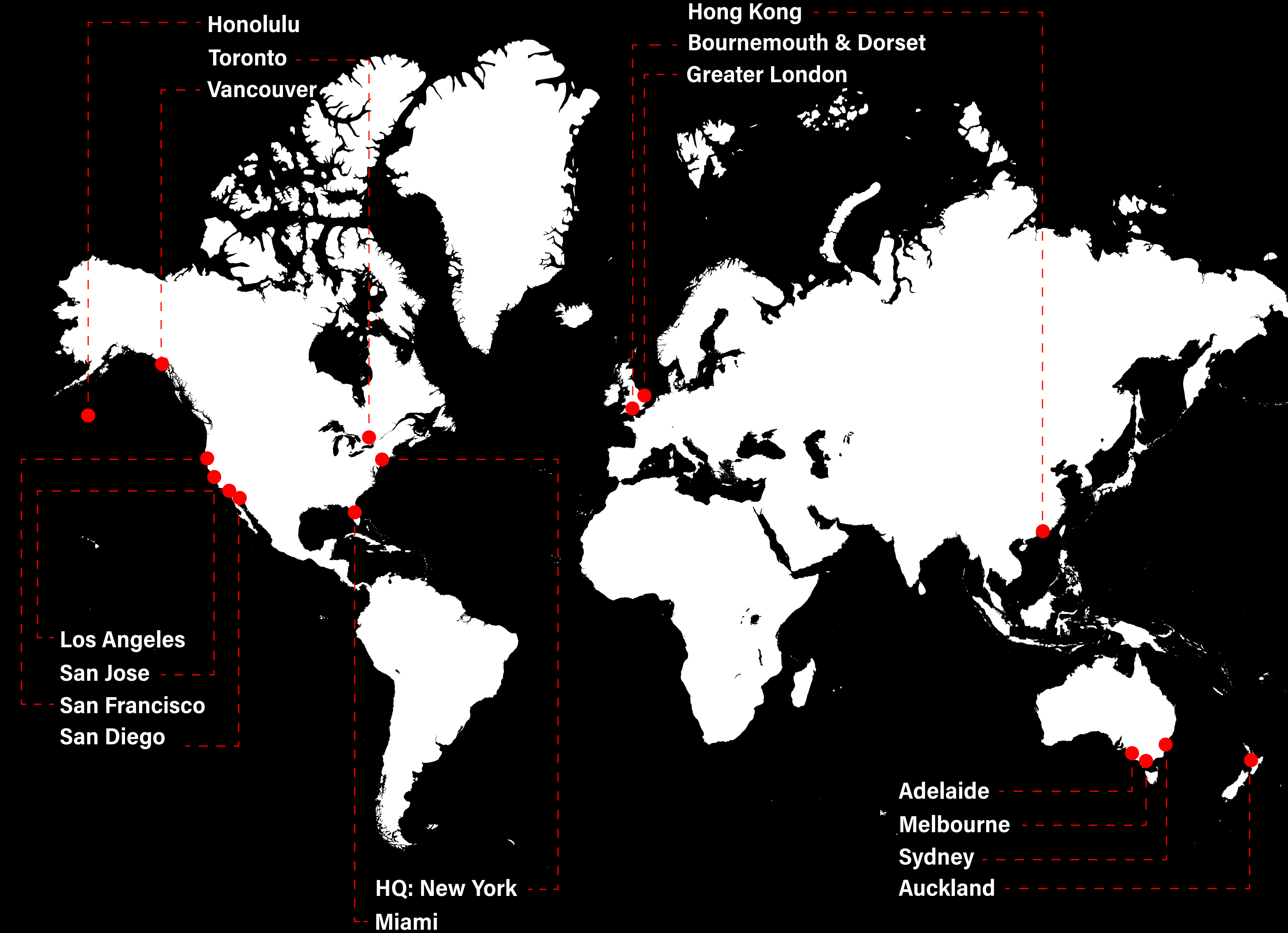
At Studio Remedy, our purpose goes beyond design. We are architects with a mission—to create lasting, positive change through architecture that addresses scarcity, promotes sustainability, and fosters social justice.



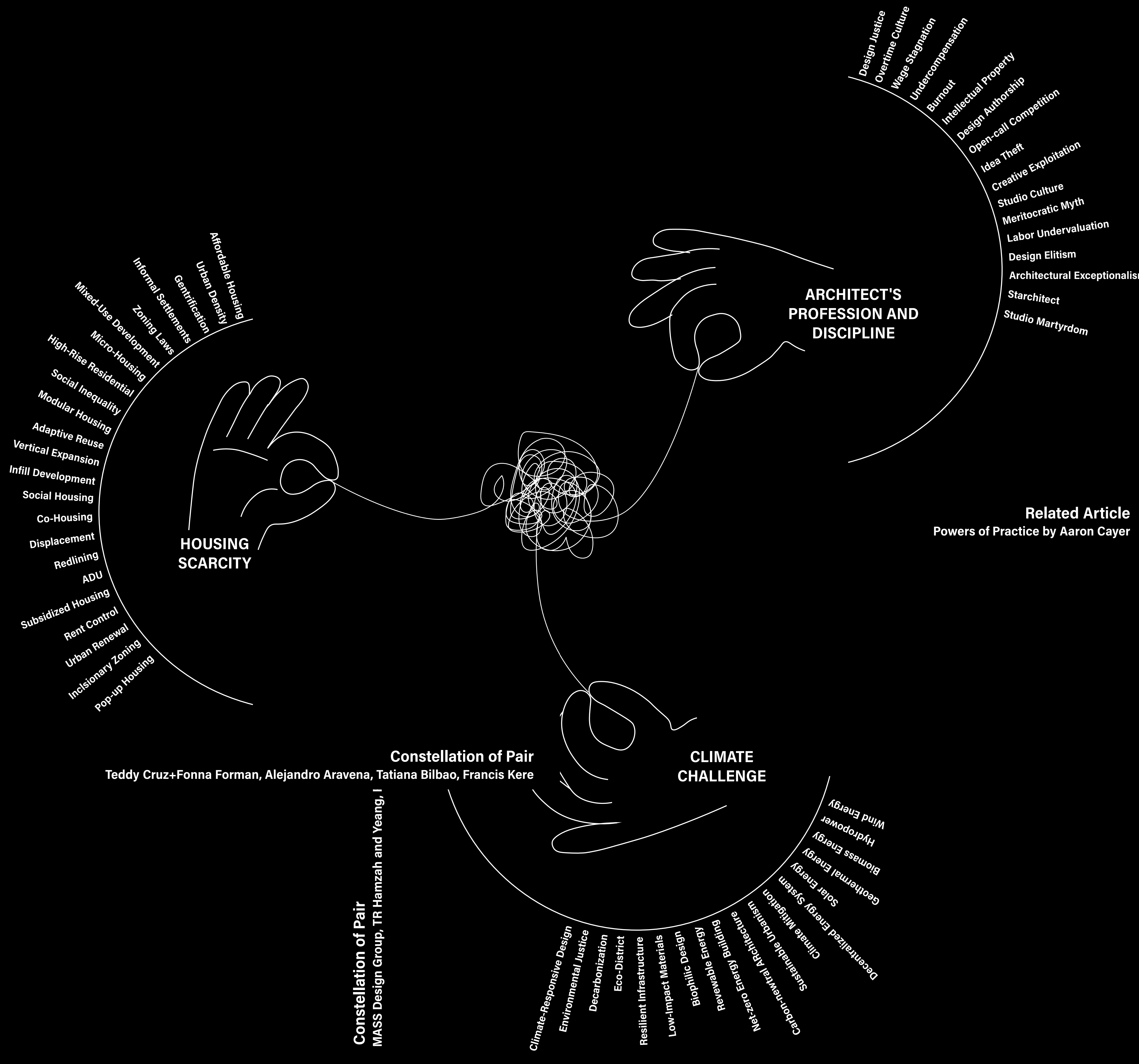
INSIGHT



LOCATION



The least affordable housing Market
Source: Demographia (2023)



Related Article
Powers of Practice by Aaron Cayer

STRUCTURE

OUTREACH

STUDIO REMEDY

IH ARCHITECTURE Inc

Architectural Service Proposal

Prepared for:

Shady Lane
Shady Lane Development LLC

Prepared by:

Ivie Hong
IH Architecture Inc

Letter of Interest

Please find enclosed our detailed proposal for your kind consideration.

On behalf of IH Architecture, I am pleased to submit the enclosed proposal for the design of your planned 20-story condominium tower in Tribeca. We are honored to be considered for this project and grateful for the opportunity to participate in the invited competition.

IH Architecture is a New York-based practice established in 2015 with a focus on thoughtful, context-driven design. Our team combines deep experience in multifamily residential architecture with a studio culture that prioritizes collaboration, technical rigor, and responsiveness.

Our recent projects—including the award-winning design of a ground-up residential building in a New York landmark district, and two adaptive reuse conversions in Brooklyn—demonstrate our ability to deliver high-quality, sustainable work within the demanding parameters of urban development. We understand and value Shady Lane's goals for efficiency, market appeal, and timely delivery, and are confident in our ability to meet those expectations through a proactive, team-based approach.

We believe this project represents a unique opportunity to contribute meaningful architecture to the Tribeca neighborhood and to support your company's first entry into the condominium market with distinction and success.

Please let us know if you have any quesstions, suggestions or changes to the proposal.

We appreciate your consideration and welcome the opportunity to further discuss our qualifications and ideas.

Your Turly,

IH Architecture Inc
info@iharchitecture.com | 012.345.6789 | iharchitecture.com

Company Credential

IH Architecture is a New York-based architecture firm founded in 2015 by GSAPP graduate Ivie Hong, following four years as a project architect with Yale Architecture PLLC. The firm was established with a clear mission: to create thoughtful, innovative architecture that responds to context, elevates the human experience, and meets the practical demands of urban development.

Since its founding, IH Architecture has grown into a tight-knit team of six full-time professionals—two of whom are licensed architects and three of whom previously worked alongside the principal at Yale Architecture PLLC. The studio also benefits from the organizational support of a part-time office manager, allowing the team to stay focused on design excellence and client service.

The firm's early work focused on small-scale apartment renovations and residential interiors. In 2022, Axis completed two adaptive reuse projects in Brooklyn, converting ten-story office buildings into vibrant rental communities—each involving complex regulatory coordination, structural intervention, and modernized building systems. That same year, the firm completed a ground-up six-story rental apartment building in a New York City landmark district, which received an Honors Award from AIA New York for its sensitive yet contemporary approach to infill development.

Principal Ivie Hong brings to the firm deep experience in high-rise residential design, having served as project architect on several condominium towers in Boston, New Haven, and Chicago during their tenure at Yale Architecture PLLC. That knowledge base—combined with the studio's proven design and delivery record in New York—positions IH Architecture as a nimble, highly capable partner for Shady Lane Development LLC's first condominium tower.

From zoning analysis and schematic concepts to full contract documents and construction administration, IH Architecture offers full-service architectural delivery. The firm's collaborative structure ensures direct principal involvement, efficient communication, and a responsive, engaged design process. Our studio has also built strong working relationships with local consultants, engineers, and contractors—ensuring seamless coordination across all phases of development.

IH Architecture is licensed to practice in the state of New York and carries full professional liability insurance.

Firm's Profile

Principal	Ivie Hong	Before founding IH Architect, Ivie Hong served as Project Architect at Yale Architecture PLLC, where you led design and documentation for several condominium buildings in Boston, New Haven, and Chicago. This experience laid the foundation for your firm's fluency in mid- and high-rise multifamily design, navigating zoning complexities, and managing multidisciplinary teams.
Project Manager	Samantha Li	Licensed Architect; Yale Architecture alum; expert in zoning, DOB filing, and CD sets
Senior Designer	Carlos Ramirez	M.Arch, Cornell; Specializes in residential planning, BIM modeling, and envelope detailing
Technical Lead	Priya Desai	Licensed Architect; LEED AP; coordinates consultants and sustainability strategy
Project Architect	Emily Tran	Detail-oriented, manages submittals/RFIs, supports CA phase
Junnior Designer	Jonah Wright	Assists with 3D visualization, renderings, and competition presentation materials
Office Manager	Megan Ford	Supports team coordination, scheduling, and financial tracking

Fee & Services Summary

IH Architecture proposes a comprehensive fixed fee of $3,640,000, which includes complete architectural services as well as the retention and coordination of all key consultants.

This total represents approximately 7% of the projected $52,000,000 in hard construction costs and reflects a bundled, single-contract delivery model that streamlines communication and ensures accountability throughout the project.

Fee Breakdown

Service	Fee
Architectural Services	$2,600,000
Structural Engineering	$300,000
MEP/FP Engineering	$330,000
Civil Engineering	$95,000
Geotechnical Engineering	$60,000
Facade Consultant	$85,000
Energy/Sustainability Consultant	$85,000
Zoning & Code Consultant	$85,000
Total	$3,640,000

Note: We have prequalified these consultants based on successful collaborations on similar multifamily projects across New York City. All subconsultants will be retained and managed directly by IH Architecture.

Fee Payment Schedule

The total fee will be billed monthly in proportion to progress, based on the following projected phase allocation:

Schematic Design:	15%
Design Development:	25%
Construction Documents:	35%
Bidding / Negotiation:	5%
Construction Administration:	20%

Additional Services & Hourly Rates

Services beyond the standard scope will be billed hourly and only initiated with prior written client approval.

Principal Architect:	$250/hour
Senior Project Architect:	$175/hour
Junior Designer / Staff:	$125/hour
Administrative Support:	$75/hour

Examples of additional services may include:

- Major design changes after design development approval
- 3D visualizations or marketing collateral beyond standard deliverables
- LEED, WELL, or Passive House documentation
- Zoning challenges, BSA filings, or LPC approvals (if required)

Construction Administration

IH Architecture will remain engaged through the full duration of construction, providing:

- Biweekly site visits by the principal or senior project architect
- Review and tracking of submittals, RFIs, and field coordination
- Review and certification of monthly contractor pay applications
- Final inspections, punch lists, and project closeout support

These services are included in the base fee and will ensure close alignment between the design intent and built outcome.

Project Milestones (Estimated)

Phase	Duration
Schematic Design	4 weeks
Design Development	8 weeks
Construction Documents	12–14 weeks
Permitting & Bidding	8–12 weeks
Construction (Estimated)	24 months

IH Architecture is prepared to support a fast-track delivery strategy, including the development of early release permit and foundation packages to help keep construction aligned with the lease commitment from Target.

Insurance

IH Architecture maintains comprehensive professional and commercial insurance coverage in accordance with industry standards and client requirements. This includes:

Professional Liability (Errors & Omissions):
$2,000,000 per claim / $2,000,000 aggregate
Commercial General Liability:
$1,000,000 per occurrence / $2,000,000 aggregate
Workers' Compensation & Employer's Liability:
Statutory limits
Automobile Liability:
$1,000,000 combined single limit

Certificates of insurance naming Shady Lane Development LLC as an additional insured will be provided upon contract execution. While architects are not typically bonded, our consultant team and the general contractor will be required to carry performance and payment bonds. If requested, we are open to coordinating with Shady Lane's legal team to align insurance provisions with lender or investor requirements.

Copyright Notice

All drawings, designs, renderings, models, specifications, and other documents prepared by IH Architecture in connection with this proposal or the subsequent project shall remain the intellectual property of the architect and are protected under U.S. copyright law. IH Architecture retains all rights, including the right of reproduction. Upon execution of a formal agreement and full payment of all fees, Shady Lane Development LLC will be granted a non-exclusive license to use the instruments of service solely for the construction, use, and maintenance of the project. This license does not extend to future projects or unauthorized reproductions or modifications without the written consent of the architect.

We are honored to be invited to this competition and look forward to the opportunity to bring Shady Lane Development's vision to life with a dynamic, sustainable, and market-attractive condominium tower.

Respectfully submitted,
Ivie Hong
Principal | IH Architect
ivie@iharchitect.com
213 999 8864
www.iharchitect.com

THANK YOU