INDEX

ART INCUBATOR + HOUSING AT 2800 BISSONNET  
Houston, TX | Spring, 2022

PUBLIC SCHOOL 64  
New York, NY | Spring 2020

PENN STATION EXTENSION  
New York, NY | Fall, 2021

HOUSING COMPLEX IN BRONX  
Bronx, NY | Fall, 2020

RECENTERING REMEMBERANCE  
Ithaca, NY | Spring, 2021

CUT THE GRID  
New York, NY | Fall, 2019

FOLDING WALL  
Fall, 2019

RECI PROCAL JOINERY  
Spring, 2020

DUCK BATH  
Spring, 2022
ART INCUBATOR + HOUSING AT 2800 BISSONNET

ART INCUBATOR + HOUSING AT 2800 BISSONNET

The studio, “Buildings on Buildings,” asks two main questions: 1) How can we repurpose a former Coca-Cola bottling plant in Houston, Texas for an art incubator program? 2) How do we negotiate the 1.5-acre site for a program brief that only requires 1/6th of the site’s square footage?

Our project Art incubator + Housing in Houston responds to these questions firstly, by breaking down the building into a field of columns where art incubator programs can be plugged into, and secondly, by utilizing the additional space on site for 250 housing units to address the rising housing demands in Houston.

Building on the site’s history as a rapidly growing manufacturing plant, our adaptive reuse strategy is to preserve and expand on the existing field of columns and the existing roof system, to create a continuous ground floor condition where programs can be inserted without limit. Having studied Archisoom’s No-Stop City as a precedent, we adopt this non-hierarchical ideology for an art incubator program, where artists can work among a field of disciplines that are made available to them. Additional programs include theater, education, galleries, sports, and dining.
The Coca-Cola bottling plant was originally built in 1950, when there were three buildings on the site, for bottling, drive-through, and storage/advertising and repair. The prototype was designed by the architects Stone and Pitts, to provide maximum efficiency, which combined the skill of workers and the efficient of machines to bottle 1,200 bottles per minute.

Over the years as demand for Coca-Cola bottling increased, more warehouses were added. At the beginning of 21st century, the site is almost maxed out as the bottling plants grew. During the site visit, we were struck by two key features. First is the field condition of the ground floor that results from the extensive grid of columns of the original buildings. And second is the collage-like accumulation of roofs which resulted from the increase in buildings over the years.
Our adaptive reuse strategy is to preserve and expand on these two existing conditions.

First, we expand the column grid throughout the whole site. And then we add a new roof to fill in the gaps so that the site is completely covered. Through these two gestures.

We open up the ground floor into a continuous field where programs can be introduced without limit, in the same way that manufacturing functions were plugged into the grid of columns in the past. With our continuous roof and extended column grid that open the site into an urban corridor that is covered to provide shaded space from the strong Houston sun.

In addition to the given programs, we identified housing as an important need in Houston. We decided to add a housing component to our project to provide housing units for the rising population in Houston and also to add more value to the other programmatic spaces on the ground floor by bring in users.

The massing model represents the existing footprint in white, and our addition in gray. The housing strips are each 50 feet wide with a 100ft interval space, spanning the site east to west. They are built on top of the new roof without adding loads to the existing structure. The geometry of the housing derive from the existing footprint.
At the beginning of the studio, we were given detour cards to drift our thoughts away from the brief. We got an image of Ettore Sottsass Pattern Studies from the 1960s with a composition of abstracted geometric shapes. This made us think of No Stop city drawings where, as Andrea Branzi says:

"Architecture becomes an open structure that seeks to guarantee the greatest possible degrees of freedom for the user, within a figuration that is as rigid as possible."

We believe that the design for an art incubator should embrace this type of ideology where the artists can work among a field of other disciplines that they can explore freely. Therefore, our master plan builds upon these precedents of non-hierarchical compositions.
By breaking down the industrial scale into a field of smaller masses under the continuous roof, the open ground floor provide multiple routes for artists and residents to explore life in a city. Large programs are arranged next to the workshops, bringing about a more intimate shared space we identified as backyard. The oblique drawing to the left highlights the shared backyards that can be used in different ways according to the programs on each perimeter. For example when there is a gallery next to workshops, the backyard can be used for an exhibition opening for artists and visitors. (Image to the right)
When covering the site with the new roof, we have to think of a way to bring in light. Inspired by the existing clerestory of the drive-thru building, we extend this way of getting light throughout the whole site.

We chose mass timber structure for the new to contrast the existing steel and to bring warmth to the experience. We clad the housing with corrugated metal that echoes the existing condition. The floor underneath housing is paved with terrazzo to inform the housing entrance. The programs on the ground floor are enclosed by polycarb on wood frame, with 9ft tall opaque wall. The floor of the backyards are paved with gravel to give a sense of a covered outdoor space.
Rather than inhabiting the existing structure with solitary programs, the new PS 64 interprets the old as an envelope and intertwines a series of interconnected void spaces as a new learning structure. It provides a counterpart to the enclosed educational rooms in the form of ‘weaving playscape’.

The intervention includes building scale thresholds as well as corridors connecting the internal classrooms and urban scale thresholds facing the external open space. It connects 9th and 10th street with welcoming urban programs accessible to the community. While enclosed rooms are still characterized by the orthogonal shape and rough texture of the old masonry structure, the new play sequence provides interactive interfaces with curve shape. The new structure connects communal programs and flexible play spaces with circulation in itself, thus offering a meandering experience of learning from surprise and uncertainty.
Inspired by Froebel’s curriculum of using physical materials to explore three dimensional space, a series of abstract models are made to explore potential volumetric relationships: part-to-part, part-to-whole, part-to-outside, whole-to-outside.
The existing PS64 building has double height space with delicate cast iron columns. The proposal try to dance upon these elements and explore the potential of them. Started with prototypes that interweaves two sets of spatial systems, this project then further differentiate the two weaving systems not only in spatial configuration but also in geometry that brings about contrasting spatial character.
PENN STATION EXTENSION

In order to establish new connections in the decentered chapels context, and to produce a new face of Penn station which people can remember it, this project first utilizes the reflectivity of the polished black granite at an urban scale. The extension is a free standing, diamond looking object landed on the site. While maintaining the permeability of the site, it reflects and collects images from the surroundings and visually stitches the elements together, especially juxtaposing the Madison Square Garden and the Moynihan Hall, which respectively represent different eras and identities.

Inside the extension, this project tries to bring back the missing part of Penn Station after the demolition, in the form of an outdoor water garden. It acknowledges the part of Penn Station as a machine of fast movement, and add back the part of Penn Station as civic space which is the opposite of efficiency. It created another reality that allows a moment of repose, encounter or contemplation. It also contrast Madison Square Garden being not a garden.
In this studio I am given the task to choose and investigate one type of granite and bring it into the proposal for Penn Station extension.

This project is triggered by the investigation of the Miles Davis Black granite tombstone in Woodlawn Cemetery in Bronx. It is fascinating to see the polished surface being so reflective that the etching on it conveys information without adding extra color. The contrast between rough and polished surface of the black granite is further explored and utilized in the Penn Station Extension.

Most of the black granite tombstones here in New York come from quarries in Shansi China. Black granite was drilled, split, cut, moved to the factory, then polished, etched, packed, and then shipped to the US. which normally takes 30-60 days. The dense black granite is known as Shantung Black. It is quarried at Datong with production of 10,000 cu.m. per year worked between February and October to avoid the severe climate at the 2000m elevation. It is then shipped to various destinations across the globe.

Although black granite is popular in the use of countertops and other building capacities, it has traditionally been used for tombstones and other monumental items. Due to its durability and striking natural beauty, nowadays this material has also been used in many monuments, including Vietnam Memorials in Washington, Astronaut Memorial at the Kennedy Space Centre in Florida and Atom Bomb Victims Memorial in Hiroshima. These monuments utilize either the reflection of the polished surface to merge themselves into the natural surroundings, or the rough surface as dark and durable floor for moments of repose.
The old Penn station used to be an urban living room, where people gathered. Whereas, in 1964, Penn Station went through the demolition, with Madison Square Garden landing right on top of the train level. The main waiting room with which people remember Penn Station, then no longer exist. The current station is purely driven by efficiency of movement, without any extra place to stay.

I start to think about how black granite - a very monumental, memorial, everlasting material, would situate itself within the temporary, fast changing, chaotic context at the existing Penn Station.

In order to establish new connections in the decentralized chaotic context, and to produce a new face of Penn station with which people can remember it, this project first utilizes the reflectivity of the polished black granite at an urban scale. As shown in the figure ground drawing, the extension is a free standing, diamond looking object landed on the site. While maintaining the permeability of the site, it reflects and speaks to the context with its angled surfaces. It collects images from the surroundings and visually stitches the elements together, especially juxtaposing the MSG and the Moynihan Hall, which respectively represent different eras and identities.
This object might look non-referential, but instead its proposing something quite the opposite inside. It tries to bring back the missing part of Penn Station after the demolition, in the form of an outdoor water garden. It acknowledges the part of Penn Station as a machine of fast movement, and add back the part of Penn Station as civic space which is the opposite of efficiency. It created another reality, that allows a moment of repose, encounter or contemplation. It also contrast Madison Square Garden being not a garden.

For access to the trains, stairs in front of the Moynihan building is extended down to the underground level, with two outdoor escalators added on the MSG side. For access to the open water garden, a threshold is created as a buffer zone to condition people before entering.
Apart from visually tying things together, the extension also shelters the new open shortcut to enter the station. With its angled reflective surfaces, it creates visual and circulatory connections across facades, drawing people’s attention to this new entry way.
1. entry threshold
2. auditorium
3. gift shop
4. outdoor gathering
5. meditation space
6. tea room
7. water garden

INTERIM LEVEL

3RD LEVEL

4TH LEVEL

5TH LEVEL
Rough unpolished black granite is used in the inner perimeter to help form the water garden. It hosts plants that change seasonally. It carries water that falls down and mutes the sound of the city. It offers intimate occupiable spaces for people.
Two types of walls in the project use black granite in two different ways. One utilizes polished surface to speak to the surroundings. The other uses rough surface to construct a water garden.

In the specific context of Penn Station, black granite establishes visual and circulatory connections, and add back a civic space that has been missing after the demolition of the old Penn Station.
In between the inner perimeter and the outer perimeter, there are two intertwining circulations that connect all the indoor and outdoor programs including a reading area, meditation hall, tea room, and gift shop. The outdoor circulation is designed with stairs, while the indoor uses ADA accessible ramps, adaptable to be a gallery space.
HOUSING COMPLEX IN SOUTH BRONX

This project articulates 'room' across scale, from city to building, to unit, to architectural element, to furniture, to body.

Located in South Bronx, NY, with the need for internalized protected open space for child care in the neighborhood, this project unlocks the interstitial spaces on the site and give it back to the community. Through both carving in and aggregating out, the project seeks duality of difference versus coexistence, diversity versus efficiency, variation versus repetition.
Located in South Bronx, this housing project is surrounded by P.S. 001 Courlandt School, A361 Bronx Haven High School and other children's daycare centers. From the site visit we learn that there is a urgent need for normalized open space for children's daycare and after-school activities. We identify the void spaces inside the residential blocks as enclosed open space, which can potentially be transformed into spaces for children. Therefore, our first approach is to carve out interconnected urban rooms at different scales. In doing so, we unlock the interstitial space of our site and give it back to the community.
Through carving in, series of urban scale rooms are created to accommodate various need for outdoor space, from room for community event, to the middle scale courtyards for small gatherings, and to the small scale for intimate conversation.

At a micro scale, rooms we occupy everyday are listed out as elements to be recomposed and rearranged, from a transitional room like a foyer or a stairs, to the room with a full size bed, room with plumbing fixtures and to the rooms that are shared with multiple users.

Through aggregating out, a variety of units are created, from micro to 2b 3b, and to various types of co-living units. With these essential rooms for daily living, this project explore not only the minimal living unit, but also the possibility of living together.
Through carving in and aggregating out, the two sets of geometry intersect and generated a third layer of space in between. This layer consists of intimate rooms between the inside and outside. We classify these intimate spaces based on their depth, defining them as various types of occupiable poche. Materials are used to distinguish such space from the rectangular interior rooms.
The roof is carved with different angles to maximize sunlight both for the residential units and for the internalized outdoor space that is shared with the community outside this housing block.

Similar to the occupiable poche in plan, here the external cut intersects with the internal residential grid vertically. Together, they create another buffer layer between indoor and outdoor. This layer consists of skylights and intimate pocket balconies. Through the use of materials, these spaces are distinguished from the interior rooms.

Bracing is incorporated in the checker board facade pattern to support cantilever corners.
Reflective material at the threshold brings the living image of the side walk inside the protected courtyards. Visual connections are established here to balance the enclosure for safety purpose. Through the approach of massing configuration, circulation design and material usage, the inner space of our proposed residential block is unlocked and given back to the children around.
RECENTERING REMEMBERANCE

Islamic Cemetery
Spring 2021
Team members: Aya Abdallah, Nash Taylor

RECENTERING REMEMBERANCE

Through the addition of a new ‘sacred’ infrastructure, Isamberg is being ‘recentered’ within the regional Muslim community. Starting as a peripheral small town, it becomes a place of sacred importance through time and burial.

Isamberg is a small hamlet in upstate New York, hosting a population who migrated from the big city several decades ago to practice Islam in peace. Through a system that uses contaminated soil from regional brownfield sites, a cemetery is built in a nearby quarry.

The soil is first remediated on site and then used for burial of Muslims from the nearby towns. Through time and burials, other structures are needed to support the new sacred infrastructure: a place to wash and pray over the body as well as a place to meditate and mourn. These structures use the newly remediated soil as a means of architectural formwork.

The project aims to re-center Isamberg among its larger Islamic urban context, re-center sacredness and heal the landscape.
Islamic communities are mostly concentrated in urban areas. Mosques are represented by circles, unlike other religions, for example, Christianity.

Despite the unique rural context, Islamberg is both isolated while having a transcalar reach. It has a regional scale as it is easily accessible from other communities around New York State. The largest concentration of Muslim communities is in NYC and that's only 2.5 hours drive away. Other major communities are all under 3 hours drive. It also has a national outreach. Islamberg is the headquarters of The Muslims of America's organization, a prominent group in the US.
Federal suit alleges religious discrimination against Islamic cemetery in Va.

We chose the quarry as our site for the cemetery. It’s about 1 mile away from Islamberg, which is a 2 min drive or 17 mins walk. Compared with other popular and recognizable cemeteries, the scale of our site fits into the scale of the project and the outreach that it is targeting.

The stark contrast between the soft rural landscape and the hard surface of the quarry brings us to a challenge - where do we bring the soil used for the quarry?
Soil is excavated from different parts of the region, and therefore there is a range of soil types brought to the site. The different types of soil lend themselves to different angles of repose and texture. This therefore determines the soil type as formwork, or fill, or both.
Once there is an excess of soil remediated at the quarry, some of it is used for a means of architectural production of new related programmatic spaces. It is used as formwork (negative) to cast the structures at first, then recycled as the fill for the landscape (positive).
The first phase is the transportation of the soil from the different regional contaminated sites to the quarry. The soil is then remediated on site through a hydrocarbon focused remediation process that uses mostly heat and vaporization of toxins. Once the soil is remediated and stabilized, it can now safely be used for burial. Simultaneously, soil is continuously being brought on site and being remediated.

Once there is an excess of soil remediated at the quarry, some of it is used for a means of architectural production of new related programmatic spaces. It is used as formwork (negative) to cast the structures at first, then recycled as the fill for the landscape (positive).

Over the years, as more soil is being remediated, it can be used for the construction of adjacent housing to host visitors to the cemetery as well as provide new agricultural terraces for Islamberg to use. As Islamberg grows, they can start to take over these new structures.
1. Transportation and remediation of soil
2. Burial and continuous remediation

CEMETERY

5. Cemetery pavilions

4. Prayer and gathering site

3. Funeral ablution site

6. Housing and agriculture

ISLAMBERG

BURIAL GROUND
BURIAL GROUND

1. existing quarry surface
2. soil contained in concrete box
3. moving remediation machinery
4. remediated soil
5. tomb
6. burial ground shelter
7. new soil layer for vegetation
Structures are built in place of the remediation machinery to house gathering spaces, for both mourners and the inhabitants of Islaamberg. These structures break the buzza grid, and allow for moments of respite, wayfinding and gathering. Islaamberg can also use these spaces to host local religious classes, or even regional conferences that they previously could not accommodate for. Over the years, the cemetery is transformed into a lively park that is shared by both the visitors and the town.

Other related programs are built in a similar way using soil remediated at the quarry, including a funeral ablution site and a prayer site for larger gatherings.
FUNERAL ABLUTION SITE

1. reception
2. laying out
3. bathing and shrouding
4. gathering
5. prayer room
6. utility room
7. restroom
8. Imam's office
9. Imam's living area
PRAYER SITE

1. entrance
2. ablution
3. main prayer area
4. small chamber
5. restroom
6. utility room
7. kitchen
8. fire place
9. outdoor prayer area
CUT THE GRID

Similar to how Broadway cuts through public squares within the Manhattan grid, this project carves out secret public space within the existing “grid” of residential units vertically. Located at Union Square West, the newly inverted open spaces serve as a mediator between public and private. Intimacy and openness. Public stairs are built with materials reclaimed from the cut to ensure the accessibility.
DUCK BATH

This project plays with materiality in the design of a bath house. A journey towards the bath is thought through - from walking in the falling snow, to climbing down the ladders, to walking through an almost religious hallway, and to bathing in a silicone ball with skylight.