SARA BRANDT ARCHITECTURAL WORKS | PORTFOLIO

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CARVING A COMMUNITY

REVITALIZING FARRAGUT PUBLIC HOUSING

Project with Priyashi Galiawala SITE: FARRAGUT HOUSES | BROOKLYN, NY FA 2020 | PRATT GAUD

* Recipient of Award of Excellence 2021 - *SOCIETY OF AMERICAN REGISTERED ARCHITECTS, NATIONAL* * Recipient of Award of Honor 2021 - *SOCIETY OF AMERICAN REGISTERED ARCHITECTS, NEW YORK*

This project explores the use of carving as a form of interconnectivity, a generator of community, and a unification of existing and new. The Farragut community has been historically isolated from surrounding resources. This carving intervention subverts this closed atmosphere as it wraps around the new tower and extends to the existing towers, providing existing residents with direct access to multi-level exterior circulation, and outdoor community space.

The carving system creates a more open typology that encourages community cultural gathering and blends with the existing Farragut towers. Residents have an active hand in the revitalization of their community, where carvings and alteration to the existing towers are based off of an additive and subtractive process that is adapted according to community need. The new curtain wall facade merges with the existing brick materiality, blending old and new.

The resources afforded by the carving system intend to merge with the existing Farragut community while creating active spatial conditions and agency in creative infrastructure.







CARVING (-)



ADDITION (+)

Alteration to the existing Farragut towers are based off of an additive and subtractive process that can be adapted according to community need. This commutative process allows as much space to be added as is subtracted from the existing towers, acting as a uniting force that merges new and old. Residents whose apartment is carved can be relocated to a new unit in their existing building or a unit in the new main tower. The translative system allows for an endless number of iterations for carving into the existing buildings. As a result, if a existing resident cannot move, an apartment can be carved and added elsewhere in the existing tower.



The addition of a new residential tower to the Farragut community explores the creation of a more open typology through a system of carving. These carved spaces provide existing Farragut residents with direct access to multilevel exterior community space and circulation.

EXTERIOR COMMUNITY SPACE RENDER



EXTERIOR COMMUNITY SPACE RENDER



PROPOSED GROUND



GROUND STUDY I



EXISTING GROUND



GROUND STUDY II



Carvings wrap around the towers, creating new opportunities for exterior multi-level circulation and gathering within Farragut community. The ground serves as a merging factor between existing Farragut towers and the new tower addition. The carving system grows from the residential towers into the ground, providing a more open typology, opportunities for gathering, and direct connection to existing Farragut towers at the ground level.





BEAM 6" TYP.

YELLOW CONCRETE PANEL CLADDING AIRSPACE INSULATION

CAST-IN-PLACE

CONCRETE SLAB TYP.

ALUMINUM SNAP CAP

BLUE INSULATING VISION GLASS





4

A-102

ALUMINUM

MULLION CAP

CURTAIN WALL SECTION AND ELEVATION











3 TERRACOTTA SECTION DETAIL











The carving intervention wraps around the new tower and extends to the existing towers, opening residents to direct access to multi-level exterior circulation, and outdoor community space. This system creates an interplay of public and private space throughout the interior and exterior of the building.

CHUNK SECTION PERSPECTIVE













MACHINE IN THE GREEN SYMBIOSIS, ECOLOGY, AND COMMUNITY

Project with Ayesha Agha SITE: Navy Yard | BROOKLYN, NY

SP 2021 | PRATT GAUD

*Project chosen to be presented at the Spring 2021 Midterm Super Jury - PRATT GAUD

Machine in the Green proposes the symbiotic intersection of a waste-to-energy and recycling facility with an educational and community greenhouse space. The harmonization of these various programs is achieved through visual juxtaposition and systemic integration of the public and utility programming.

The project uses these program elements to revitalize the waterfront through community engagement. The relationship of the industrial elements of the factory with the ecological growth of the greenhouse is framed through a symbiotic rather than oppositional approach, allowing the community to immerse themselves in both environments. The two systems come together where the waste to energy facility provides energy that powers the greenhouse.

The materiality of the building provides a spectrum of transparency on the facade, allowing for different clarity of visual connection from exterior to interior through the use of ETFE, vision glass, and frosted glass. The vision glass enclosing the factory space displays and celebrates the machinery for community engagement. The light airy texture of the ETFE, provides light to the plants and breaks down the scale of the building through its translucent and inviting energy.



EAST SECTION

22 | MACHINE IN THE GREEN

In section, we begin to explore the vertical layering of programs. The flooded site provides an aquatic environment upon which the machinery sits. The stratified layers of education and community program dip in and out of each other. These layers are interdigitated to varying degrees, with bits of machinery popping up into the greenhouses, and vegetation spilling down into the machine rooms.





In the main greenhouse there is no barrier between human and plants allowing visitors to be fully immersed in the fecund humid forest atmosphere. Visitors engage with machinery that emerges into the greenhouses from the factory below. This visual and tactile juxtaposition emphasizes the undulating datum line between machine and green.



INTERIOR RENDER

The unique heat conditions of the factory create different temperature and plant zones throughout the building. Larger warm climate plants are grown in the atrium spaces that are directly heated by the factory and exposed to the most solar radiation from the south. An artificially lit vertical farm occupies the center of the building, providing food to the community. On the upper level a cactus forest couples with an educational public lecture and co-working space, and access to the roof with an outdoor amphitheater and green walls.

24 | MACHINE IN THE GREEN









VIEW FROM KENT AVE

Upon approach, the building lifts at the ground level creating transparency that allows visual connection through to the water. This creates a more inviting atmosphere at ground level, breaking down the scale of the building and drawing the community inward. The facade operates on a spectrum of transparency that is composed of ETFE, frosted glass, and vision glass in order to soften the visual impact of the building's scale.

WEST ELEVATION



26 | MACHINE IN THE GREEN





SITE PLAN





The building chunk describes all the key ideas that make up the project: integration and symbiosis of the various programs, layered horizontally and orbiting centripetally around the central LED lit, hydroponic farm. The sectional view shows the juxtaposition and interdigitation of the main programs, with green and machine protruding up and down through the central datum.











GREEN VILLAGE PROPOSAL FOR LOW-RISE AFFORDABLE HOUSING IN LA Project with Ayesha Agha

FA 2021 | PRATT GAUD SITE: South Los Angeles | CALIFORNIA

Green Village is an affordable housing project that embraces cooperative community living, densifying the Los Angeles low-rise urban fabric and providing vertical layering of green space in order to support and embrace the needs of South LA residents.

We propose a solution to low-rise LA housing that is flexible and adaptable, with seven units total and three unit types. The diverse array of units and the use of prefabricated modular elements across the site accommodates different ways of living, giving families the opportunity to customize their living spaces. Window modules project outwards towards the street, keeping the village engaged with street life, while community life thrives both above on the crowning roof-scape urban farm, and below on the green spaces in the center of the site surrounding the accessory commercial unit. Community gathering and urban farming merge in these central green spaces.

Providing vertical layers of amenities and green spaces to the site reduces reliance on cars and gives families room to grow, work, and share their small businesses, making community living accessible, safe, and desirable.





EAST SECTION



CORNER VIEW

Public and private spaces are layered vertically providing a diverse array of gathering across each level. Visually permeable planting runs along the open perimeters of the site, creating ground-level spaces for gathering and areas for children to play in a secure environment. Units are painted with bold colors that give them a sense of place and ownership. These patterns both accentuate the angular nature of the roofs and interplay with angular shadows projected on the facade by the window modules, further connecting the site to the surrounding environment.

34 | GREEN VILLAGE





SCAN FOR VIDEO OF SHADOW STUDY

Our site is located in a low income area of South LA and combines two R1 lots that are normally filled with single family homes. We are proposing a denser affordable housing complex that provides vertical layers of green space and public/private program. The main entrance to every unit faces the interior shared courtyard spaces, as to accentuate this interwoven village typology and provide central community space where residents interact on a daily basis as they enter their homes.

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Site Plan



















Living/Kitchen

Bedroom

Bathroom

Stairwell

5 Private Outdoor Space

2

3

(4)

5 3 2 a Π

6

2

4

4

SECOND FLOOR 5 8 2 2 8 4 0 6



	THIRD FLOOR
•	





3









Single Person or Couple Unit - 1 Bedroom (670 SQFT)

There are seven units total and three unit types that support diverse living conditions. The ACU features a resident run cafe and community store, with produce from the urban farm. By centering the ACU and arraying units of varying typologies around it, we aim to create a supportive interior network and provide a central space for gathering. On the second level, balconies connect units and provide semi-private spaces that merge the different unit and family typologies.



ENERGY STRATEGIES AXONOMETRIC









The use of prefabricated modular elements provides high efficiency construction and diverse opportunities for exterior space and flexibility within the units. Stair cores are attached and shifted to the edges of the units allowing for vertical circulation while bringing more space and light into the interiors. Exterior entry into the stair core also allows for organizational unit flexibility. Balcony modules provide additional spaces for private outdoor respite and remote working.





44 | GREEN VILLAGE



Rooftop Farm

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The site supports a diverse array of planting and farming. Plants are chosen based on their low maintenance and high efficacy for shading and food production. Centralizing green spaces with lush planting provides different areas for gathering and connects the site with the community center across the alley.



ARTIST'S RESIDENCE BLURRING BUILDING AND GROUND SITE: GOVERNORS ISLAND | MANHATTAN, NY FA 2019 | PRATT GAUD

*Project featured in the Pratt GAUD exhibition "RE:Siding" on Governor's Island *Project chosen to be presented at the Fall 2019 Final Super Jury at the Pratt GAUD

This artist's residence located on Governors Island challenges traditional notions of building and ground. The building merges with, shapes, and responds to the surrounding landscape, providing deep inhabitable space that is vertically lit.

The retaining walls grow into the ground, creating a tectonic landscape composed of an interlocking network of spaces and forms. The building program and the interior morphology blurs notions of public and private space as it roots deeper into the ground, allowing the artist to let visitors into their world.

The design of the residence was heavily informed by material testing and model making which provided a framework of development. Casted pieces became inhabitable spaces. Their formation was dictated by the 3D printed pieces that grew into the structural retaining wall system.



CASTED 3D PRINTED

The white retaining wall growth system shapes and merges with the surrounding ground, creating deep vertically lit inhabitable space. The landscape physical model was created based on a system of casting where 3D printed pieces (the growth system) shaped how the casted forms were molded and proliferated. The boundary between ground and building is blurred as the two merge into interlocking forms.

dyes. The base is milled from foam.



LANDSCAPE DIAGRAMMATIC SKETCH

The final chunk section physical model was created by analyzing the forms created by the tectonic landscape and generating inhabitable space that grows into the ground. The physical model is composed of PLA, and rockite casted with plaster, and dry





MATERIAL TESTS



TECTONIC LANDSCAPE PHYSICAL MODEL







PHYSICAL MODEL DETAILS





Notions of public and private space are blurred as you travel deeper into the residence, allowing for visitors to be completely immersed in the artist's world. Rooms interlock allowing for fluid circulation throughout the space.

52 | ARTIST'S RESIDENCE

SECTION





Figure 1 Figure 2 PROPOSAL FOR A MASS TIMBER ADDITION TO SUNY ESF MOON LIBRARY Project with Ayesha Agha

SITE: Syracuse | New York

[Helio]Canopy proposes a 12,900 SQFT mass timber addition to the SUNY College of Environmental Science and Forestry Moon Library. Tree-like glulam column structures grow out of the existing structural system to create a canopy that captures and diffuses light across the addition and down into the existing library. The new structure envelopes the existing unused skylights in order to maintain and boost light in the space. Openings in the floorplate provide a visual and photometric connection to the space below, either directly or through frosted glass bricks.

The southern roof of the mass is sloped to maximize summer and winter sun capture through the tree columns and solar panels that provide energy for the library. The columns act as light wells, flooding the interior with warmth and creating a dynamic luminous environment while minimizing glare. Each column is capped by wood-framed insulating and operable vision glass, projecting out from the roof to provide access for maintenance and ventilation. The columns merge into an intricate glulam structural beam system that provides a majestic quality to the space.



56 | [HELIO]CANOPY

circulation to the floor above. Beams grow like branches projected onto the roof of the canopy, creating geometric patterns that blend the organic and orthogonal typologies.



INTERIOR RENDER





- Steel tension member
- 12" x 6" Glulam beam



Detail 1 Bolted steel plate - column to beam connection

12"x12" Glulamn column

Steel tension cable

Steel drum with built in



Detail 2 Steel tension cable connection

Supportive steel member with built in table

Bolted steel plate

Wood floor cladding

Existing concrete slab

New 6" CLT Cladding to match above

Existing concrete



Column Base Type A 1" x 2" (left) 4" x 6" (right) Glulam





column to concrete connection





SITE RENDER

Column Base Type C 1" x 2" (left) 4" x 6" (right) Glulam



PS 557 | MIDDLE SCHOOL INTERCONNECTIVITY AND MATERIALITY IN THE LEARNING ENVIRONMENT SITE: SUNSET PARK | BROOKLYN, NY SP 2020 | PRATT GAUD

This project explores the promotion of interconnectivity and immersion, and enhancement of the student experience through the use of light, void, and materiality. The middle school, located in Sunset Park, Brooklyn, inspires a collaborative and creative learning environment through a central circulation pathway that provides lateral and vertical connection between three interiorized forms.

The ramping system creates moments of fit and misfit with these three forms allowing students and faculty to access every floor of the three interior solids from this pathway. This creates a more open inclusive atmosphere where there is visual connectivity throughout the school. The textural system of the facade is meant to reflect the internal formal syntax of the school, shaping the light that enters the void space and providing visual connection with the surrounding community.

The juxtaposition of the steel materiality of the ramp and facade with the warm cross laminated timber of the interior forms, amplifies the reflection of light throughout the school and provides a more inviting, immersive atmosphere.





CHUNK SECTION

Fit and misfit of the ramping path creates vertical and horizontal circulation, and void between inhabitable solids. The solids both shape and are shaped by the pathway. The steel pathway reflects the light from the exterior and elements of its surroundings, immersing students in this creative space as they circulate through the school.







EXPLODED AXONOMETRIC

The facade is composed of apertures and larger openings that act as an envelope, providing selective visual connection between the school's three interior forms, the ramp system, and the surrounding community. The steel and glass facade pattern reflects the angularity of the interior void space and the syntax of the three interior forms, flooding the open pathway with shaped light and bringing interior form to the exterior.

GHOSTED RENDER





The ramping system allows multi-level access to the solid programmatic spaces along its continuous route. A narrative is created by inviting and connected atmosphere.







Sites.