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ABOUT GRO ARCHITECTS:

GRO Architects is an award-winning architectural practice that privileges the integration of emerging technologies to respond to client needs, project complexity, and collaboration between disciplines. As architects we are intimately engaged in providing creative and sustainable design solutions for a broad array of project types and budgets. The virtual design and construction tools we use to realize our design proposals also allow us to bring to each project a more efficient and optimized construction process. Additionally, these tools have allowed us to operate in a highly efficient manner while maintaining low overhead and a staff of two licensed architects and eight project designers. Through the conceptualization of how new digital protocols augment, challenge, and change the authorial process of design we create novel opportunities for our practice.

GRO’s urban infill prototype, PREttyFAB, won an AIA Merit Award in 2009, a 2010 PCI Design Award in 2010, and was named “Project of the Year” by the Jersey City Redevelopment Agency that same year. In July 2009, Metropolis Magazine named GRO a “Next Gen Notable” for their Docking Stations project. The scheme envisioned a series of publically accessible floating extensions from Manhattan into the Hudson and East Rivers that powered city street lamps by harnessing river currents. In 2007, GRO won re:Construction, a design competition curated by the Lower Manhattan Cultural Council and sponsored by the Alliance for Downtown New York. Fabricated at the FABLAB, the resulting work, “Best Pedestrian Route,” was installed at the corner of Broadway and John Street in Lower Manhattan. In 2008, the same project also won an AIA New York Merit Award and a New York Designs Award from the Architectural League of New York. The Jackson Green Redevelopment, a 22-unit housing project in Jersey City, NJ completed construction in 2014. GRO is presently working on several multi-family residential projects in Jersey City and a 40,000sf renovation to an existing building in Tribeca. The firm’s design work has been published in the New York Times, the (Newark) Star Ledger, Architectural Record, the Architect’s Newspaper, Fast Company, Azure, Dwell, and Metropolis Magazine.

Innovative Design Solutions

Each of the projects included herein has served as applied research that, through virtual design and construction, specifically explores and questions aspects of innovative design output including geometry, fabrication, energy simulation, logistical sequencing, data translation and parametrics. We have situated GRO in the space between design and construction in a way that privileges iteration between the virtual operations and the material actualization of our work so that novel typologies and processes emerge, a position that has yielded a growing practice, two provisional patents and numerous design awards since its inception.

Technical Capabilities

GRO has capitalized on methods of integration that allow us to simulate and share our intentions virtually and exert a greater degree of control over the translation and actualization of our work. Our interest in this method of working extends beyond the efficiencies that technology affords to the design and construction process. Information modeling tools have the capacity to radically change the way we conceive of, develop, iterate, and share design solutions through both commonplace aspects of cost estimation, clash detection of building components, or data output of CNC toolpaths, and more interestingly in generative design operations and the conceptualization of projects that are responsive and flexible.
PARTNERS

Richard Garber, AIA, is a partner at the award-winning New York-based firm GRO Architects. In his work, he utilizes technology as it relates to formal speculation, simulation, manufacturing, and building delivery to generate innovative design, assembly, and construction solutions. He is the author of BIM Design: Realizing the Creative Potential of Building Information Modeling (John Wiley & Sons, 2014), and guest editor of AD Closing the Gap: Information Models in Contemporary Design Practice (Wiley, 2009). Both publications examine the capacity of design computing and Building Information Modeling to augment design-side operations, as opposed to simply making them more efficient. This has led to his concept of the architectural workflow, and a new book, Workflows: Expanding the Territory of Architecture in the Design and Delivery of Buildings (Wiley, 2017). His newest essay, “Precision, Object Orientation, Simulation: New Standards in Information Modeling” explores the so called object-turn in architecture and its impact on computing. It was published in ARCH+ in September 2018. Garber has taught and lectured on design and technology internationally, including at Columbia University and NJIT, and most recently at the University of Pennsylvania. He holds a Bachelor of Architecture from Rensselaer Polytechnic Institute and a Master of Science in Advanced Architectural Design from Columbia University’s Graduate School of Architecture, Planning and Preservation. The December 2010 issue of Dwell Magazine named him as one of 32 new faces of design, and showcased GRO’s precast concrete housing prototype PREtttyFAB. He was previously a project manager at SHoP Architects and at Greg Lynn FORM. Garber is a licensed Architect in New York and New Jersey.

Nicole Robertson, AIA, LEED AP is a partner at the award-winning New York-based firm GRO Architects. Robertson was named one of 32 new faces of design in the December 2010 issue of Dwell magazine. She was the ‘Emerging Architect’ Visiting Assistant Professor at Barnard College in 2007 where she continues to teach design studios and advanced seminars with a focus on digital fabrication technology. Prior to joining the faculty at Barnard, she taught as an Assistant Professor in the School of Architecture at Syracuse University. She has taught graduate representation and introductory design studios in the Graduate School of Architecture, Planning and Preservation at Columbia University and graduate representation in the School of Constructed Environments at Parsons the New School for Design. Prior to forming GRO, she worked as a project designer for the Embryological House at Greg Lynn FORM in Los Angeles, and later as a senior designer at Skidmore, Owings & Merrill (SOM) in New York. Robertson holds a Bachelor of Arts from Princeton University and a Master of Architecture from the University of California Los Angeles. Robertson is a LEED Accredited Professional and a licensed Architect in New York and New Jersey.

GRO Architects is a registered Women’s Business Enterprise with the City of New York.
**Selected Awards**

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MULTI-FAMILY RESIDENTIAL
Located in the Journal Square neighborhood of Jersey City, Academy Micro-Housing is a new 38,000sf residential building comprising 122 micro-unit apartments, offering an alternative for young professionals seeking privacy, modern amenities, and economy. Designed to promote a sustainable urban living agenda, the building design maximizes density with units approximately 220sf in size. Automobile parking is replaced with bike parking for each unit, thereby promoting the use of nearby public transportation and an overall sustainable living agenda for residents of the building. The extremely small size of the unit interior is complemented by large common amenity spaces including a lounge, cafe, and laundry room on the ground floor, gym and a roof deck with views of Manhattan. The units themselves are custom designed to be highly efficient and flexible as a 24-hour life cycle is considered for the dwelling, allowing for living/dining and sleeping configurations, and multiple variations in between. Unique to the design is the organization of the unit into a wet zone and dry zone; entry into the unit is into the wet zone in which we have located a decentralized bathroom with separately enclosed shower and toilet room. The kitchen mediates between the wet zone and dry zone which comprises a desk, fold-down murphy style bed and coffee table that fits neatly below. The design of the shell and core is conceived as an entirely precast concrete solution, using insulated panels and integrated precast window boxes to streamline the fabrication and assembly process while minimizing wall thickness to ensure the interior unit dimensions can be maintained.
Typical 220sf micro-unit interior designed to be flexible and efficient.

FLOOR PLAN LEGEND
1. entrance into wet zone
2. customized wet zone screen
3. shower
4. refrigerator
5. cook
6. eat
7. sleep
8. 5’ window box
479 Broadway
Bayonne, New Jersey
2016 - present

KEY PROJECT INFORMATION
Client: Velios Capital & Penta Restoration
Architect: GRO Architects: Richard Garber + Nicole Robertson, Principals; James Piccone, Project Manager; Sai Ma, Sirada Laomanutsak
Site Engineering: Dynamic Engineering
Square Footage: 104,000 sf
Project value: $19,800,000
Dates: 2016 - Present
Construction: June 2018

479-481 Broadway is a new 104,000 square foot, 8-story building being developed on one of the last remaining vacant sites on Broadway in Bayonne, New Jersey. The project proposes 7,800 square feet of ground floor retail on Broadway with 7 residential floors above for a total of 79 units. As a through-lot, the building also has the ambition of better activating Del Monte Drive, a previous service road behind Broadway. Del Monte will provide access to a basement parking level for 30 cars via elevator. The building façade, while contemporary, required us to draw from a six-story historic structure to the site’s south and established the building’s proportion. The exterior is conceived as a brick masonry facade with copper-colored metal accents at the windows, referencing the industrial character of Bayonne’s waterfront. The interior of the lobby continues this gesture towards the industrial language, using perforated metal curtains and super-graphic text to bring a playful feel to the building’s brand identity. The unit interiors celebrate Bayonne’s relationship to the waterfront, utilizing industrial-beach materials such as driftwood veneer cabinetry, and horizontal kerf-cuts to detail the doors.

Entrance hallway to 479 Broadway. Supergraphic text and industrial finishes create a playful atmosphere for the identity of the building and its residents.

above: Rendering of Broadway facade.
opposite: Rendering of courtyard.
The Waterview is a new, ground-up 97-unit residential building at the city's former Military Ocean Terminal, a former Navy and Army base on a human-made peninsula that projects into New York Harbor. The area, which officially closed in 1999, is considered the “last frontier for urban development” in Bayonne. The building features a mix of studio, one- and two-bedroom units over a ground floor with amenity spaces and approximately 6,000 square feet of retail. Residential units range in size from 650 square feet to 1,300 square feet. The area's redevelopment plan calls for a certain amount of context sensitivity, which meant taking inspiration from local structures – for us, namely the passenger cruise ships that dock at the end of Goldsborough Drive. Instead of subdividing the 5-story building, which has some 270 feet of street frontage, vertically - a typical gesture for such buildings - a horizontal frame system was developed to provide movement along the façade which departs from repetitive vertical datums usually seen on long and low buildings.
above: Main entrance hall to lobby of the Waterview. The ceiling design features an array of wooden slats to evoke the boardwalk for Waterview tenants.

right: Residential hallway for Waterview tenants. The bold graphic signage and flooring work together to continue the design from the lobby entrance into the residential apartments. Blue carpeting and streaming light effects playfully draw on the aquatic theme of the Waterview’s location.
720-726 Bergen Avenue
Jersey City, New Jersey
2014 - 2019

With street frontage on both Bergen and Fairmount Avenues in the McGinley Square neighborhood of Jersey City, the dark grey brick and perforated metal facades frame an existing building that will remain at the corner.

720 Bergen Avenue is a new 58,000sf residential dwelling building comprising 58 apartments, with a mix of studios, one and two-bedroom units. The design uses clean geometric lines and large windows to create a modern feel that will translate into bright and spacious interiors. The use of dark grey brick is detailed with a projecting frame around the primary mass fronting on both Bergen and Fairmount Avenues. Within this framework the vertical and horizontal divisions appear to be woven, creating a dynamic effect on the facade. Perforated metal is used to conceal PTAC units that sit below the windows, integrating them seamlessly into the design. Ground floor commercial space fronts on Bergen Avenue and is articulated with black aluminum frame storefront and floor to ceiling glass. The residential lobby is expressed as part of a vertical treatment on the Fairmount Avenue facade, clad in perforated metal with glass storefront; and adjacent is the entrance to the parking area for 29 cars. The look of the exterior is carried into the design of the interior lobby, common hallways and units where graphic wallpaper, black fixtures, and clean lines make a strong graphic statement.

KEY PROJECT INFORMATION
Client: KABR Group
Architect: GRO Architects: Richard Garber + Nicole Robertson, Principals;
Jennifer Switala, Jay Piccone
Site Engineering: Maser Engineering
MEP Engineering: ARCO Engineering
Square Footage: 55,000sf
Project value: $6,400,000
253 Academy Street is GRO’s third micro-housing project, bringing 77 studio units and two larger apartments to a corner lot in the Journal Square section of Jersey City, adjacent to the Hudson Community College campus. The project’s average unit size is approximately 350 square feet. The project makes use of an existing basement from a previous structure and provides amenity spaces including two multifunction community rooms, bike storage, laundry, a gym, and tenant storage over the basement and ground floor levels. The ground floor is split to allow for raised units along Tuers Avenue. The project will be constructed in prefabricated modules as micro-housing lends itself particularly well to modular construction, with each residential studio being assembled as a stand-alone modular unit. Units along the Tuers Avenue façade employ storage areas which are cantilevered from the façade. In addition to providing additional storage space for the studios, the cantilevered masses cast a shadow over the fresh air intake locations of the building’s heating and cooling systems, minimizing their visual impact.
left: Typical residential floor plan for 253 Academy. The diagram indicates location of prefabricated boxes that will be set into place and compose of most studio apartments for the building. The modular design allows for the boxes to be stacked and repeated throughout the floor plans of the building.

Rendered view of 253 Academy Street during the day. Storage and PTAC units extruded from the front facade animate the surface, producing shade for the building and a bold visual effect.
Located in the Tribeca South Historic District, 72 Reade/112 Duane Street was originally used as a warehouse circa 1850 and later converted to commercial and office space on the first and second floors respectively, with residential units on the upper floors. This project is the conversion of the existing second floor office space into two luxury condominium units, approximately 4,500sf each. The first floor and basement are also included in the scope to create retail spaces for future tenants, with a focus on restoration of the two cast-iron storefronts which required extensive review by the Landmarks Preservation Commission. The second floor windows were also included in the scope, establishing a larger plan for the future restoration of all windows on the two historic facades. The size of the floorplate at 9,000sf presents design challenges for bringing natural light and air into this through-lot configuration. To achieve this, we created a new exterior space which is carved into the second floor, below an existing courtyard at the floors above. This new covered deck provides desirable private outdoor space to each of the units, all of which will be constructed without disturbing the apartments above.
above: Rendered kitchen view of Unit 2B. The dining area extends into the deck area, where new outdoor space was created to allow more light into the apartments and programmatic diversity.

1. Unit 2B living room
2. Unit 2B kitchen/dining area
3. Unit 2B alcoves
4. Unit 2B outdoor deck area
5. Unit 2A outdoor deck area
6. Unit 2A kitchen/dining area
7. Unit 2A alcoves
8. Unit 2A living room
9. Unit 2A master bedroom
400 Linden is a new townhouse project in Brooklyn with alternating duplex residencies and a private outdoor yard. Balconies are added to the project that either face Linden Street or the backyard which differentiate the building from similar housing blocks in the surrounding neighborhood. The six floor walkup is divided by a common core staircase that opens up to shared landings on each floor and separates the mirrored living/dining units on each side of the building. Duplex residencies span the rear side of the building linking floors 1 and 2 as well as floors 4 and 5 with interior spiral staircases. The fourth floor opens up to a penthouse master bedroom suite with private patio access facing the back yard. Located on the edge of Bushwick, residents will find access to public transportation conveniently close to home and minutes away from the city.
Main Entrance from Linden Street

- Electrical Room
- Pump Room
- Sprinkler Room
- Stairs

Public Hall

Unit A Duplex - 3BR Living/Dining/Kitchen

- Exit to Unit A private yard

- Exit to balcony facing Linden Street

Bedroom

1 BR Living/Dining

Kitchen

- Exit to penthouse balcony

- Exit to penthouse balcony facing yard

Stairs

- Exit to penthouse balcony facing yard

- Exit to penthouse balcony facing yard

Exit to Unit A private yard

Exit to balcony facing private yard

First Floor Plan

Third Floor Plan

Penthouse Floor Plan

Rendered view of 400 Linden in daytime.
Located within walking distance to mass transit, 342 Johnston Ave occupants include a mix of one-bedroom and two-bedroom residencies as well as ground floor commercial tenants. In response to the events of Hurricane Sandy in 2012, the design of the building complies with Jersey City’s redevelopment plan which grants height increase bonus. The building opens public access to a resiliency space equipped with first aid supplies in the case of an emergency event on the second floor where the elevation above sea level is 17.7 feet. The roof deck located on the second floor and setbacks above create more outdoor space which extends the living area and makes the living rooms and bedrooms appear larger and more spacious.
SECOND FLOOR PLAN LEGEND

1. Stair A.
2. Stair B.
3. Elevator
4. Elevator Lobby
5. Corridor
6. Resiliency Space
7. Unit 01: 1 bedroom
8. Unit 01 terrace
9. Unit 02: 1 bedroom
10. Unit 03: 2 bedroom
11. Unit 03 terrace
12. Unit 04: 1 bedroom
13. Unit 05: 1 bedroom
14. Unit 06: 2 bedroom
15. Unit 07: 1 bedroom
16. Unit 08: 1 bedroom
17. Unit 09: 2 bedroom
18. Private roof deck for residents
19. Cedar mechanical screen
Virginia + Ocean
Jersey City, New Jersey
2013 - present

Three attached two-family houses are expressed at once as an urban mass anchoring the corner of the MLK Hub District while projections from each unit signal the individuality of each unit.

One of three projects which constitute the second phase of development of the area following the success of Jackson Green, V+O is located at the gateway to the MLK Hub District in Jersey City. A highly constrained site, three two-family townhouses are spatially interlocked, creating a complex set of overlaps which are expressed at the exterior of the facade. Projected cubes which align with interior living spaces are differentiated from the grey of the main building mass with large windows and a bright yellow fiber-cement board cladding. The project offers a vibrant and optimistic alternative to typical affordable housing models, its playful form signalling broader changes underway in the neighborhood creating a formal dialogue with Jackson Green and the other sites planned for development.

KEY PROJECT INFORMATION
Client: Jersey City Redevelopment Agency and TRF Development Partners
Architect: GRO Architects: Richard Garber + Nicole Robertson, Principals; James Piccone, Ahmed Emara
Site Engineering: Atlantic Consulting Engineers
Modular Fabricator: Future Home Technologies
Square Footage: 10,000sf
Project value: $1,500,000
Dates: 2013
SITE PLAN LEGEND

1  Garage
2  Unit 3A Kitchen/Living
3  Unit 3A Bedrooms
4  Unit 3A Bedrooms
5  Unit 3A Roof Deck
6  Unit 3B Kitchen/Living
7  Unit 3B Bedrooms
8  Unit 3B Roof Deck
The existing warehouse at 1001 Second Avenue in Asbury Park had served many purposes since its construction in the late 19th century. Most recently it was home to a guitar factory, a clothing manufacturer, and a cabinet-maker. The site is located between the growing business district of Asbury Park and a residential neighborhood, making our proposal to convert the existing structure into residential condominium lofts a suitable program for adaptive reuse. The interior of the existing warehouse was entirely gutted to allow for true loft dwelling units with 20’ ceilings and an industrial feel. A third and fourth floor were added, recalling some of the geometries found in the existing warehouse, while allowing its modern form and materials to contrast with the existing brick structure.
above: The masonry of the existing warehouse was restored and openings enlarged to create new entrances to the first floor units.

below: The unit interiors maintain the open industrial feel of the former warehouse, exposing the concrete beams and cathedral ceiling of the original structure along with exposing the brick at selected interior walls.
Jackson Green is a 22-unit first phase of development of substantial plots of vacant land in Jersey City’s Dr. Martin Luther King Jr. Hub district. The project is a joint venture between the Jersey City Redevelopment Agency and TRF Development Partners, a Philadelphia-based not-for-profit developer, and serves as a model for future development efforts of the Jersey City Redevelopment Agency. GRO was asked to envision a series of ground up townhouses that would demonstrate the city’s commitment to dense, but sustainable urban development just outside of Manhattan. Each of the 22 units contain 3 bedrooms and 2.5 bathrooms over 3 floors, with amenities such as double height living spaces and outdoor spaces on at the rear of the second floor and on the roof. Given the unique jog in plan of Rose Avenue, the street that bi-sects the project, a level of variation is introduced into each unit, culminating with an eight foot cantilever in the mid-block units on the western side of Rose Avenue. Units are designed to be of modular wood construction. GRO has worked seamlessly with the modular fabricator to ensure the proper integration of all building systems while delivering modular units of high design quality. The project was designed with specific site and climate information so as to passively respond to its environs. Sustainable features of the project include a solar hot water system for each unit as well as a cable trellis system which supports the growth climbing plants and helps to visually express to the community the project’s commitment to sustainable living.
Laser-cut physical model: 22 individual townhouses are conceived as two masses in scale with the surrounding urban context.

14 unique unit types are varied at the interior with double-height spaces and at the exterior where a two-level cantilever tapers from 8’ to 2’.
Varick Micro-Housing
Jersey City, New Jersey
2012 - 2013

Located at a prominent corner in the Van Vorst Park district, the building facade is articulated to address historic Varick St. and the more eclectic facades on Bright Street.

Varick Micro-Housing is a new 40,000sf residential dwelling building comprised of 88 micro-unit apartments. Designed to promote a sustainable urban living agenda, the building design maximizes density with units averaging 325sf in size while minimizing parking to promote the use of nearby public transportation and an overall sustainable living agenda for residents of the building. Envisioned as an “incubator” for young professionals, Varick micro-housing offsets the relatively small size of individual living units by providing large common amenity spaces including a lounge, coffee bar and communal work space on the first floor which opens to a private exterior courtyard, along with a staircase that doubles as a vertical fitness center which projects over the building entrance, and a roof deck with community garden. The units themselves are custom designed to be highly efficient and flexible as a 24-hour life cycle is considered for the dwelling, allowing for living/dining and sleeping configurations, and multitude variations in between. Designed more like a ship or car interior, the units are highly customized with the intent that residents arrive to a fully fit-out apartment with only a laptop, mobile phone and some clothing. The design of the exterior reflects the varied character of the streets which intersect at this corner; the rhythm of historic brownstones along Varick Street is echoed in the patterning of fiber-cement panels and window proportions, while on the more eclectic Bright Street the facade deviates from the regular pattern to create a more dynamic expression of massing. Building components including pre-cast concrete panels and modular boxes will be fabricated off-site to minimize cost, construction time and waste while ensuring a high-level of quality for this new typology in the expanding housing market of Jersey City.

KEY PROJECT INFORMATION
Client: RushmanDillon Projects
Architect: GRO Architects: Richard Garber + Nicole Robertson, Principals; Jennifer Switala, Jay Piccone, Ahmed Emara
Site Engineering: Maser Engineering
MEP Engineering: EP Engineering
Square Footage: 40,000sf
Project value: $7,000,000
Dates: 2012 - 2013 Project on Hold.
Typical 300sf micro-unit interior designed to be flexible and efficient.
Located on Division Street in Jersey City, the project is situated at the edge of the downtown area. With the NJ Turnpike extension in its backyard, this new residential development reflects the unique feel of the neighborhood, mixing industrial and playful design elements with a sustainable living agenda. The project is also located in a FEMA designated flood zone which requires the first floor to be elevated 1’ foot above the 100 year flood plain or 68” above grade. The first floor sits elevated on a precast insulated concrete panel foundation system set on deep pilings. Public elements such as the entry stair, ramps, and commercial space are designed as a light-weight infrastructure articulated with expanded metal mesh, perforated metal and glass components that appear to float, in contrast to the heavy concrete base. The residential floors above cant forward at an angle on the front facade which is clad in an expanded aluminum mesh with large square openings that frame the recessed surface clad in lime-green compressed paper-board panels. At the south side of the building a trellis grid supports the growth of natural greenery, an expression of other sustainable features employed in the project including ample bike storage, solar hot water, grey-water collection, and renewable materials at the interior.

KEY PROJECT INFORMATION

Client: 17-19 Division Street, LLC
Architect: GRO Architects: Richard Garber + Nicole Robertson, Principals; Jen Switala, Teresa Maria Santas
Square Footage: 19,545 sf
Project value: $3,000,000
Dates: 2014  Project on Hold
Elevated more than five feet above grade to meet flood plain regulations, the first floor is comprised primarily of public elements such as entry stair and ramp and a small commercial space. These elements are conceived as ‘floating’ features, articulated through the use of light materials such as perforated metal ramps, expanded aluminum mesh guardrails, and a floor-to-ceiling glass box enclosure.
804 Newark is a new mixed-used development proposed for a prominent corner site in the Little India neighborhood of Jersey City. The first and partial second floors are designated as commercial space providing an open plan with a double-height floor-to-ceiling glass storefront which opens to the corner, contributing to the lively retail environment of the area. The front facade on Newark is narrow relative to the long side of the building, extending out over the corner and returning to align with the adjacent building. The long facade is designed as an articulated metal surface that undulates to accommodate variations in the residential programs at the interior. Clad in corrugated aluminum siding, textured pre-cast concrete panels at the street level and compressed paper-board panels at the front of the building, this material palette executed in a monochrome brings texture and interest while maintaining a level of restraint amongst the busy visual language of the street.
PRIVATE RESIDENTIAL
This alteration and addition project to an existing townhouse in Chelsea builds on a four story structure, adding luxury space for a private single family household. The street where the townhouse is located is mainly residential and illustrative of the different housing typologies found within the neighborhood. With the Highline, Chelsea art galleries, and riverside parks a few blocks to the west, the project responds to the domestic needs of the client as well as the rich public life of the neighborhood. The major addition of a private elevator to the structure reorganized the interior and opened up space for the client who is keen on street culture. A glass hoist way for the elevator exhibits graffiti art and the building’s original exposed brick. A unique exposed steel beam construction develops the framework for concrete floors and inspires the industrial look throughout the townhouse.

**KEY PROJECT INFORMATION**

Client: private
Architect: GRO Architects: Nicole Robertson, Principal; Eunmee Hong
Structural Engineering: Wexler & Associates
MEP Engineering: EP Engineering LLP
Square footage: 7,600sf
Project value: $2,500,000
As the centerpiece for the newly renovated townhouse, the double height family room exposes the steel frame construction that allows for the concrete flooring throughout the building. Above, a glass barricade outlines the double height space from which views to the ground floor and rear yard are accessible.
The existing house provided an unique challenge at only 12 feet wide and two stories. The project proposed a two story and rear addition to create a four-story structure with dramatically tall proportions. At the front, the addition is setback and clad in a neutral grey fiber-cement board panel to highlight the existing facade with its distinctive cedar siding. At the rear, the tall proportions of the structure are highlighted with the vertical cedar slat rain screen which provides depth a variation to the facade and a location for stairs to the new roofdeck. The interior of the first floor is open maximizing light with a vertical cedar screen continuing the material palette of the exterior.

KEY PROJECT INFORMATION

Client:          Bird + Larson
GRO:           Richard Garber + Nicole Robertson
               Brent Klokis, John Chuang
MEP & Structure: ARCO
SF:              1,200sf
Value:                $250,000
Dates:          2015 - Construction Completed 2017
Photos:        GRO
The interior of the first floor is open, allowing light to permeate the living, kitchen and dining areas, all with a visual to the green wall at the rear yard. The wood stair floats in the space, separated by a vertical cedar slat screen.

Viewed from the alleyway at the rear the addition is dramatic in its proportion and bring a fresh contrast to the dreary backside on Monmouth Street.
Designed for a pair of graphic designers, this project involved the complete gut renovation to an existing garden level apartment that was dark and out-dated. The focus of the design was to open up the existing kitchen to the living area and exterior windows with a view to the verdant garden at the rear. Keeping to a strict budget, the kitchen cabinetry was designed to utilize IKEA boxes with custom cabinet doors in a walnut veneer at the base and custom painted orange and blue doors for the uppers and built-in credenza area. New floor tiles were installed over the existing concrete slab with radiant heating. The overall feel of the space is an updated version of mid-century modern with playful graphic accents.

KEY PROJECT INFORMATION
Client: Thompson and White
GRO: Richard Garber + Nicole Robertson
 MEP: ARCO
 SF: 800sf
 Value: $80,000
 Dates: 2012 - Construction Completed 2014
 Photos: Ben Bloom
The renovation opened up the existing apartment to natural light from a series of perimeter windows through the removal of all but two interior walls and the introduction of translucent fixed and sliding panels.

The project consisted of a complete renovation to an existing 650sf apartment located on the Upper West Side of Manhattan. While limited in square footage as is common to New York apartments, unique to this unit is an extensive exterior perimeter wall with numerous windows that bring southern light into the space throughout the day. In order to maximize this quality, all interior walls were removed and replaced with interior sliding 'Panelite' honeycomb panels which provide privacy between the long hallway and adjacent bathroom and bedroom spaces while allowing natural light to filter through. Even the backsplash of the kitchen/bathroom is translucent, heightening the sense of balance required between privacy and light within the apartment.
above: Unit interiors are designed to feel modern and open. The large windows at the front of the building are designed with operable gliders above and fixed panels below to maximize the glazing.

below: The continuity between living and kitchen spaces is emphasized through the use of continuous bamboo flooring throughout and an open layout for the kitchen and breakfast bar.
The original kitchen was opened up to connect the an adjacent library while maintaining separation from the main living area. Glass french doors can be opened, or closed, depending upon the occasion making a bright and lively space.

This apartment complete gut renovation on Manhattan's Upper East Side involves the combination of two adjacent dwelling units into one spacious 2,400sf apartment for our client. The location of structural, electrical and plumbing systems within the existing apartment presents a particular challenge, limiting the dimensions and configuration of the new hallway which connects to the bedroom and the master suite. The design of the apartment is a combination of traditional detailing in the living spaces and modern kitchen and bathroom design. Plaster mouldings, carefully selected walnut hardwood floors, and dramatically veined marble tiles bring a sense of pre-war luxury to the space. These finishes complement and contrast with the sleek white lacquer cabinets of the kitchen, and custom floating walnut vanities. Wall sconces and accent lighting were designed throughout.

KEY PROJECT INFORMATION
Client: Cano and Kohler
GRO: Richard Garber + Nicole Robertson, Principals; Ahmed Emara
MEP: DNV Engineering
SF: 2,400
Value: $400,000
Photos: Ben Bloom
above: The kitchen is equipped with glossy white lacquer cabinetry crafted in Italy, and accented with slab carrara marble at the countertop and backsplash.

below: The custom walnut vanity of the master bathroom floats, lighting below enhancing this effect while providing a soothing atmosphere. Large marble tiles are individually selected to provide continuity in the veining pattern.
The renovation opened up the existing apartment, eliminating most walls that separated the living spaces, creating a visual flow between spaces emphasized by diagonal ceiling soffits which organize lighting and are reflected in the high-gloss finish of the epoxy-coated floor.

This existing three-bedroom apartment was large in size but organized into several disconnected smaller living spaces and hallways, made to feel smaller by low ceilings. Our design sought to open up the existing spaces by removing as many interior partitions as possible, opening up the kitchen, dining and living spaces to an expansive view of Liberty Harbor and abundant natural light. The use of a diagonal to reorganize the interior minimized the amount of space lost to hallways and made possible the creation of a small media room at the center of the apartment, forming a linkage between bedrooms while clearly separated from the main living and dining areas. Dropped ceilings with recessed lights in this area emphasized the spatial definition and contrasted with the higher ceilings of the main living spaces. Diagonally arranged soffits drop down from the higher ceiling of the main living area to organize lighting along paths of movement within the space, guiding the eye to views to the harbor and establishing different program zones such as the bar height countertop backed by a Carrara marble slab or the dining area which is punctuated by a pendant fixture mounted to the end of one of these soffit arms, asymmetrically placed over the table in front of a built-in walnut veneer cabinetry and credenza. The pattern of these ceiling soffits is reflected in the metallic lines that artifact the high gloss epoxy floor finish. Designed to be clean and airy, with high-gloss lacquer cabinetry reflecting the light, metal reveals at the base make walls appear to float, and built-in vanities and accessories designed to float for easy cleaning. Storage is maximized throughout the apartment with Italian crafted lacquer cabinets. In the bathrooms where natural light is unavailable, virtual light is created through a subtle play of diagonally patterned tiles in tones of grey.
above: Diagonal soffits light the living room and create program partitions in the space for the open floor plan.

below: The design for the bathroom extends the airy and lightfilled atmosphere of the residence’s main living interiors. Diagonal wall tiles guide the eye to feel a natural lightness about the space so that it is compatible with the other rooms as well.
PREtty FAB
Jersey City, New Jersey
2008-2009

Promoting sustainable living, PREtty FAB is an alternative to economical urban infill housing in contrast to houses on the street.

PREttyFAB is an award-winning prototype for energy efficient, pre-fabricated housing designed for vacant infill sites in urban neighborhoods. In early 2008 our design for this specific house at 1 Minerva Street in Jersey City won the praise of the city’s zoning and planning boards who likewise saw its potential as the first of many of its kind, providing a viable bridge across the perceived schism between green design and economic viability. This 1600sf residence uses geometry to optimize solar collection, drainage, and passive heating and cooling while adhering to a low budget. Pre-cast concrete insulated-panels (PIPs) fabricated by Northeast Pre-cast of New Jersey are utilized as high energy performance structural walls between which the small structure is framed. The energy performance of this house is 30% better than a typical single-family home, making this design viable both in the short and long terms. PREttyFAB received an AIA New Jersey Merit Award for Built Projects in 2009 and a Jersey City Green Awards ‘Project of the Year’ 2010 from Jersey City Redevelopment Agency.

KEY PROJECT INFORMATION
Client: Denis Carpenter
Architect: GRO Architects; Nicole Robertson + Richard Garber, Principals; Scott Corey, Justin Foster
Fabrication: Northeast Precast of New Jersey
Contractor: Octagon Construction
Photography: Fabian Birgfeld, PHOTOtectonics
Square Footage: 1600sf
Project value: $250,000
Dates: Construction Completed July 2009

A cedar rain screen at the front and rear facades softens the appearance of the concrete.
Parametric prefabricated components were assembled in three days to minimize on-site construction costs.

above: The house is comprised of 19 unique pre-cast insulated concrete panels which were craned into place over three days.

right: Organized as a split level, the bedrooms are partially below-grade while the main living space is open and airy. Interior walls are eliminated at this level, instead spaces are defined by varied ceiling heights.
MASTER PLANNING
The Westside Avenue Redeployment Plan, alternatively titled Westside City Walk, is a 10-year phased development that will bring substantial residential, civic, and retail programs to the western-most parts of Jersey City. The redevelopment area encompasses approximately 15 acres of former industrial space owned primarily by a single entity. A primary goal of the plan is to provide retail opportunities to amplify pedestrian circulation along a less-walked portion of Westside Avenue which in turn will decrease reliance on automobiles in an area of the city that has limited public transportation. Pedestrian amplification will additionally decrease loitering and crime, a primary concern of the surrounding community. The plan imagines 3,200 new residential units, 1,900 structured parking spaces and over 250,000 square feet of new retail and civic space, which will be accessible via Westside Avenue, Route 440, and a proposed extension to Mallory Avenue. The plan has been presented to several community groups and reviewed by city agencies in anticipation of City Council adoption in 2017. Implementation of phase one of the plan is expected in 2018-19.
This feasibility study focused on creating a 25 story mixed-use residential tower in the Journal Square Redevelopment Plan. The building comprises 380 micro-unit apartments ranging in size from 300-400sf. Amenity spaces such as a fitness center, lounge, and common work space on the second and third floors offset the small size of the units above. The ground floor features commercial retail space anchoring this important corner in Journal Square. Parking is provided, however public transportation is emphasized as the site is in close proximity to the Journal Square PATH Station.

KEY PROJECT INFORMATION
Client: Tall Pines, LLC
Architect: GRO Architects: Richard Garber + Nicole Robertson, Principals; Anthony Klokos, Jennifer Switala
Square Footage: 185,000sf
Project value: Withheld
Dates: 2015 feasibility study
GRO, in collaboration with NJIT recently had the opportunity to undertake a pilot project exploring potentials for Chinese “New Ruralism” for the Wuhan Planning and Design Institute (WPDI) in the Zhangdu Lake Region in the Xinzhou District of China. The scheme was submitted to the planning and design institute in July 2014 and is currently being evaluated for implementation at Zhangdu Lake. If successful, the project will serve as a prototype for responsible development in the countryside, where there is still great opportunities to provide dense yet ecological responsible communities that provide necessary housing for the populations of villagers while demonstrating a commitment to sustainable environmental practices. The planning of the Zhangdu Lake Eco-Community involved the registration of three distinct scales at which the integration of architectural, ecological, and landscape systems come together to form a new model for dense countryside living. Within this framework, the landscape design of individual cells proposes a layering of four spaces that transition the residents from the very public streets to the cell’s natural interior. The four spaces range from formal designed areas to very natural storm water retention spaces. Groups of cells (neighborhoods) are joined to form clusters, which take advantage of open spaces and public squares around proposed streets for public gatherings as well as a small amount of parking spaces. The project’s ecological infrastructure primarily operates at the scale of a cluster – which are 4 or 5 neighborhoods that are grouped for efficient and cost-effective stormwater management and wastewater treatment. The community consists of several clusters that are in mixed use with slightly different functions. The majority of the clusters are primarily for residential use, but there are ones for commercial use, public facilities and municipal administration.
Through natural lighting and environmental analysis, towers are planned within residential cells to permit an abundance of day lighting and to minimize shadow casting from tower to tower. These studies allowed the team to propose building organizations that were not true east/west, or south facing, while maximizing day lighting and ensuring that environmental variables were fully understood. Programmed green rooftops, planned on all “bridge” buildings help contain storm water run-off, while rain gardens provide structured storm water management that connects with the larger constructed and natural bio-swales at the edges of each neighborhood. Solar hot water and photovoltaic systems are integrated into each of the residential tower’s façade design.
INSTITUTIONAL
Located on Westside Avenue in Jersey City, The University Lofts will serve as an important anchor to the future residential development of this neighborhood, included in our vision for the Westside Redevelopment Plan. This warehouse is the only existing building that will be maintained as part of the plan, and will be the first one constructed. This project is an adaptive re-use project to convert the existing 50,000sf warehouse into 121 residential dwelling units that will be used by the university community nearby, providing housing for students and faculty. This multi-family residential program will serve as a buffer between the one- and two-family houses across the street and the commercial corridor of Route 440 at its backside. The project maintains the industrial feel of the warehouse, restoring the exterior masonry facade and factory-style steel windows. In order to make this large floorplate work for residential units, we have added a second floor within the nearly 30’ high interior space. Our design also creates two courtyards that will bring light and air into the units, and provides a green amenity space. The courtyards are conceived as light-wells, their walls clad in a subtly reflective corrugated steel. The interiors are designed to maintain the industrial feel while bringing a playful use of color and material to the common entries and hallways. The diagonal is used as a motif which is inspired by the steel cross bracing in the interior which is exposed in the units and echoed in the patterning of the lobby ceiling treatments, hallway carpeting and accent lighting.
New courtyards make the 50,000sf floorplate viable for conversion to residential. The courtyards are clad in corrugated steel, serving as light wells providing a green amenity space.

Rendered views (clockwise from top):

Front entry from Westside Avenue uses the diagonal motif inspired by steel cross bracing to organize the linear lighting at the reclaimed wood ceiling. A view to the interior courtyard is seen upon entry.

Rear Entry from Parking Area introduces perforated metal, reclaimed wood, and concrete to celebrate the industrial, and fun, vibe.

Typical Corridor uses contrast in the carpet at circulation intersections to define the space, highlighted with orange accents.
Traditionally, mosques have been designed as a free standing structure. However, this Jersey City mosque is site on infill lot which fundamentally constrains orientation, circulation, access to light and air, and façade design. The new Mosque is also restricted to the lot’s existing orientation which impacted our approach to the design. Internally, this required a rotation of the main prayer space toward the North Eastern corner of the lot. This rotation is signaled in the second floor and mezzanine prayer spaces by graphic prayer space markings on the carpet. This gridded layout combines with the play of light and shadow from the patterned window screens creating a dance between grid and curvilinear lines. The infill lot also constrains all circulation to the street facing West side of the building. This called for an extra emphasis of the entrance to the mosque as the main start and end point of the building’s circulatory system. This accentuation is achieved through a recessed entry under cantilevering upper floors creating a large gathering area along the front of the building. The patterned screen of the soffit from behind throws soft forms on the granite steps adding texture and atmosphere to the entrance. The first floor contains the mosque’s amenity spaces and offices as well as a multi-purpose space used for daily gatherings and celebratory occasions. The upper floors are the main prayer spaces in the mosque. Within the main prayer hall, we employ minimal ornamentation and indirect natural light from skylights to help carve out a spatial experience. The round skylights highlight the Imam’s (leader of prayer) podium on Friday at the major congregational prayer. The exterior will be clad in natural stone, structured by grooves and reveals. Bronze metal panels outline the window assemblies. Operable windows are covered in decorative patterns, a classic design element in mosque architecture. This project was approved by the Jersey City Planning Department in 2014 and is under construction.
Rendered views show the interior of the main prayer space which includes a main level and a mezzanine above. Circular skylights bring in natural light and a constellation of dropped pendant lights create a dynamic ceiling scape for daily prayers.
GRO is working with St. Catherine’s Parish and the Newark Archdiocese to create an expansion to the existing parish center to provide more spaces for community meetings. The proposed expansion is simple and modern, a transparent glass box with metal framing, and makes an elegant addition to the existing brick structure. An important aspect of the design is to accommodate a variety of uses - to create a flexible environment that could accommodate a range of different groups, from large administrative meetings to intimate classes. This is achieved through the design of movable partitions which can slide to separate or join spaces. The furniture is modular and can be reconfigured to fit within the spaces.

**KEY PROJECT INFORMATION**
- Client: St. Catherine’s Parish Center
- Architect: GRO Architects, PLLC
- Square Footage: 2,000sf
- Dates: 2014 - present
Rendered view of new parish center interior illustrate the flexible design of the space, using movable panels and modular furniture that can be configured to accommodate (top) large gatherings, (middle) multiple groups, or (bottom) a focused classroom setting.
MoC MoC Japanese Cuisine
Princeton, New Jersey
2009-2010

Located in downtown Princeton, MoC MoC Japanese Cuisine occupies 2,400sf of GRO’s building renovation project at 14 South Tulane Street. The design for the restaurant is conceived around an interest in expanding the dining space, both literally and experientially. We imagined a system of wood slats that forms a ceiling infrastructure throughout the first floor, operating at multiple scales in the space. At its largest scale, this curvilinear system of mahogany wood slats is used to organize the main dining area into a series of unique alcoves formed as the ceiling slats curve down to create screen partitions. The dining areas are designed to accommodate larger groups as tables are pushed together, or intimate meals as retractable fabric screens are pulled from tracks between the ceiling slats. As partitions, the slats allow for a screened view between dining spaces, and along the length of the perimeter walls diners see through the slats to a reflective surface that suggests a space beyond, enlarging their experience. The use of this system allows diners to have a unique experience each time they visit MoC MoC, at varied degrees of distance from the preparation of their meal as diner’s progress from the main dining areas to the sushi bar at the rear of the firstfloor, to the private dining room and chef’s table in the basement with views to the kitchen. This system of wood slats seeks to spatialize and foreground the infrastructural elements essential to the operations of the restaurant; the slat infrastructure houses retractable privacy screens and conceal linear LED lights that glow along their length.

KEY PROJECT INFORMATION
Client: MoC MoC LLC
Architect: GRO Architects: Richard Garber + Nicole Robertson, Principals; Justin Foster
Square Footage: 2,400 sf
Project value: $250,000
Dates: 2011 - 2012
PLAN LEGEND
1 Reception
2 Waiting
3 Main Dining
4 Sushi Bar
5 Wait Station
6 Women’s Bathroom
7 Men’s Bathroom
8 Private Dining
9 Kitchen
10 Office
11 Lockers
12 Staff Bathroom
INSTALLATION
Best Pedestrian Route

New York, New York
2007

Inspired by the graphic symbols of construction sites and the instability of their spatial and temporal boundaries, this temporary pedestrian walkway blends in with its surroundings at the base of the landmarked Corbin Building at the corner of Broadway and John Street.

Best Pedestrian Route is one of three projects selected as part of the RE:Construction Pilot Program sponsored by the Alliance for Downtown New York (ADNY) and curated by the Lower Manhattan Cultural Council (LMCC). Working with the ADNY and the LMCC, and with the support of the Metropolitan Transit Authority and the Department of Transportation, we sited Best Pedestrian Route along the north side of John Street between Broadway and Nassau Streets, installed against the south side of the MTA-owned historic Corbin Building. Situated along the southern boundary of a future entry into the new Fulton Street Transit Hub, this route will guide pedestrians across a changing streetscape, immersing them for a few moments in an environment that transforms the familiar symbols of construction into dreamy recollections of summer. Graphic arrow symbols are multiplied and rotated across the length of the iconic orange and white interior cladding, arranged in a flow pattern that transforms the familiar directional symbol into abstract 'leaves', guiding visitors through a dynamic interplay of light and shadow. Through these 'leaves' passersby can read information about the project, construction plans for the area, and cultural events occurring in Lower Manhattan. The tilted and swooping form of Best Pedestrian Route is possible using digital fabrication technologies to precisely cut all of the components off-site on a computer-numerically-controlled (CNC) mill. The pre-fabricated component parts make the assembly of this temporary structure possible in the course of several hours, not unlike the construction barriers that shift daily. Best Pedestrian Route is conceived as a system of walkways, this being the first of several variations to be located throughout Lower Manhattan. Encompassing more than 80 individual sites, work is expected to be in progress until at least 2012, giving the usually temporary environment of construction a permanence that requires thoughtful design consideration.

KEY PROJECT INFORMATION
Client: Alliance for Downtown New York and Lower Manhattan Cultural Council
Architect: GRO Architects: Richard Garber + Nicole Robertson, Principals; Justin Foster
Square Footage: 320 sf
Project value: $39,000
Illuminated at night, the cladding of this temporary pedestrian walkway emits light through arrow-shaped apertures that recall the graphic symbols of construction signs while maintaining the structural integrity of the panels by acting as a diaphragm between ribs.
Docking Stations is a system of modular floating docks that are designed to harness the clean energy produced by tidal action of New York City rivers in order to power urban infrastructure. Docking Stations literally “plug-in” to the conventional piers of New York City, extending them further into the river to optimize clean energy generation while increasing public green space and tidal pools for wildlife. Energy awareness is encouraged by increased visibility of the connection between water’s edge and the city’s interior. Much work has been done in reclaiming access to New York City’s 578 miles of waterfront; and this relationship of the river to the city, not simply its edges, is at the core of our proposal for Docking Stations. What if the creation of a modular docking system to expand public access to the rivers and create recreational opportunities could actually produce energy by utilizing the flow of river current? Energy produced could then be fed back to the city’s power grid through existing underground transmission lines to power urban infrastructure, in this case streetlamps. There is already precedent for turbines creating energy in the waters off of New York City though the Roosevelt Island Tidal Energy project (RITE), however, our scheme seeks to generate a similar amount of energy while creating new public spaces and tidal pools through which expanded contact with river-based programs can occur. The floating, programmable surfaces of Docking Stations serve to link the idea of energy production with a physical space and the effect of powering the city’s infrastructure. Unlike the RITE scheme, which proposes horizontal turbines that require directional current, Docking Stations are equipped with three vertical turbines that spin regardless of the direction of current. Their shape, which responds to both ebb and flood flow is more efficient for continuous energy generation. Docking Stations was selected as a “Next Gen Notable” by Metropolis Magazine for the Next Generation 2009 Competition. We are continuing to develop the project under a provisional patent as we seek to realize its potentials for a local and global market.
Rendered view of Docking Stations deployed along New York City’s East River. Each module has three turbines and can power up to 350 LED streetlamps. The stations would be deployed to extend existing piers for public space, increasing access to the water. Each Docking Station has a triad plan configuration of 1760 sf to support a range of recreational programs: wading pools, watercraft docks, and synthetic wetlands for migratory birds.
A series of “Skein” Objects 3D printed in full color sandstone represent phase 2 of the Skein project which began as a collaboration with a filmmaker and continue to evolve as they move between virtual and actual space.

The basis for these objects was a collaboration with filmmaker Redmond Entwistle on a film called “Skein” (2007). The objects were created by initially mapping the negative spaces and boundaries around bodies interacting with the landscape, on a real path that loosely follows the Dover Line, a freightline that travels west from New York City into New Jersey. The objects present a different reality to what can be described as one’s sensual experience in and beyond the city. New Jersey served as the starting point for “objectifying” the negative spaces around bodies and gestures that were then modeled three-dimensionally. For Entwistle, “Each fragment of filmic space was intersected with the following fragment according to a system reflecting the distance traveled, this would sometimes add to and sometimes erase elements of the previous form.” These objects withdraw from the very relations that bore them, thereby breaking notions of cinematic continuity and time. The philosopher Graham Harman has described such objects as dark crystals “veiled in a private vacuum: irreducible to” their own pieces (Harman, Quadruple Object, 9). For it was the sensual relationship between humans and their landscape in the film that precisely allows these real objects to withdraw, forming these breaks in the film - a sort of “boundary zone” according to Entwistle. Similar to Harman’s hammer, the objects are the relational products of pieces that are still (more deeply) withdrawn; these object-pieces (like hammer-pieces) in turn are relational compounds of other withdrawn real objects, and thus presumably to infinity (Harman, Prince of Networks, 215). The objects are reimagined here with a further development of their own “skein”, in which they are color-scaled based on an analysis of their own mesh components, that form a more localized, yet equally withdrawn expression of these objects. The colors not only show variation of faces, but also reveal a color schema based on geometric relations. The objects were 3D printed in full color using a sandstone printer that deposits binder material onto a bed of gypsum powder, layer by layer. Color is achieved by linking a texture file to the original geometry for printing, with inks similar to those utilized by an Ink Jet printer.