

Peter Russell CV







# Empowerhouse

New York, NY - Hoboken, NJ- Washington, D.C.

A multidisciplinary team comprised of undergraduate and graduate students from the Stevens Institute of Technology and Parsons the New School for Design were finalists in the Department of Energy's 2011 Solar Decathlon Competition. A certified passive house was designed and built for the competition and then later relocated to a permanent site in the underserved Washington, D.C. neighborhood of Deanwood where, in partnership with the D.C. Chapter of Habitat For Humanity and the D.C. Department of Housing and Urban Development, it was donated to a family in need. In addition to the competition house, a second house was subsequently built to form a side-by-side duplex. Each house of the duplex was designed as a "site net-zero" system, but each achieved peak efficiency when joined. Incorporating Passive House principles, the project had one of the smallest photovoltaic arrays in the competition and consumed 85% less energy for heating and cooling, thereby operated by no more than the power of a hair dryer. The project marked the first time in the Solar Decathlon's history that a team partnered from the outset with civic and government agencies to create a house specifically for a local D.C. community and demonstrated how net-zero building systems may be a way to provide affordable housing to low-income families. The project was such a success, and the house so cost-effective to build and live in, that Habitat D.C. broke ground on six more houses based on this prototype. The house earned a 2012 Washington, D.C. Mayor's Sustainability Award and was featured in World Environment Day.

2010-2011

## Industry Assistant Professor

Managed all aspects of project development including design, construction, deliverables, fundraising, budgeting, accounting, scheduling and communications.

# Superefficient Home With Big Ambitions, Built by Students on a Hoboken Lot



For a competition, students from three schools worked on a superefficient home.  
Richard Perry/The New York Times

By Joanna M. Foster  
Sept. 16, 2011



Solar Decathlon Contest Refocuses on Affordability of New Homes  
By Saskia De Melker



December 20, 2012  
Inside The Empowerhouse, A Gorgeous \$250,000 Passive Home  
By Zak Stone

## News

HOME — NEWS — STEVENS STUDENTS DESIGN ZERO ENERGY HOME AS PART OF SOLAR DECATHLON COMPETITION



14 JUN 2011 CAMPUS & COMMUNITY

## Stevens Students Design Zero Energy Home as Part of Solar Decathlon Competition

Construction has begun along the Hudson on the Stevens campus where students are designing and constructing a zero-energy home. The venture is part of the Department of Energy's Solar Decathlon Competition. Stevens students working on the project, along with Parsons The New School for Design, and Milano The New School for Management and Urban Policy make up the "Empowerhouse" team, which is creating the home – set to be a new vision for affordable housing.

"The students benefit from this experience – it probably gives them five years of experience in one year's worth of work," said John Nastasi, Stevens Industry Professor & Director of Product-Architecture Program. "They're dealing with green engineering, D.C. bureaucracy, and design build-criteria deadlines."

Along with strict restrictions set by the Department of Energy for the competition, the team has gone a step further, applying Passive House principles—today's highest energy standard—to this project. The home will consume 85 percent less energy for heating and cooling than a typical home.

"This project demands a more all-inclusive approach to design.... you need to have an understanding of things some people often disregard," says Peter Russell, Industry Assistant Professor at Stevens and Engineering Lead Faculty on the Empowerhouse project. "Students from different disciplines must rely on each other's input which is a valuable lesson for the real world".

The home should be complete and displayed for all to see along the waterfront by the end of August. Events are being planned during late summer, which include public viewings and tours, as well as demonstrations of some of the systems and technologies.

At the beginning of September, the house will be disassembled and moved to the National Mall in Washington, D.C. and as part of the competition (Sept.23- Oct.2), it will be judged in ten sub-contests. The Empowerhouse team is competing against 19 other teams.

"Unlike the other contenders our house has a life after the competition," says Keith Sheppard, Professor & Associate Dean of Engineering & Science. "From the mall, the home will move to the 7<sup>th</sup> ward in D.C. where it will become a Habitat for Humanity project."

Habitat for Humanity of Washington, D.C., and the D.C. Department of Housing and Community Development is working alongside the Empowerhouse team to build a second home in Deanwood, an underserved neighborhood in Northeast Washington, D.C. At the conclusion of the competition, the competition home will join the second home in Deanwood to form a side-by-side duplex for two families chosen by Habitat.

"We're building the home to not only win the competition, but to fulfill a real need, as well as provide a new standard for builders across America," says Sheppard.

While sustainability and solar energy are now global issues, the team has a vision that this home will set a model for affordable housing while remaining true to its unique design.

"This has been a unique opportunity.... as it has allowed the students to design, analyze and build in a multi-disciplinary environment", says Russell.

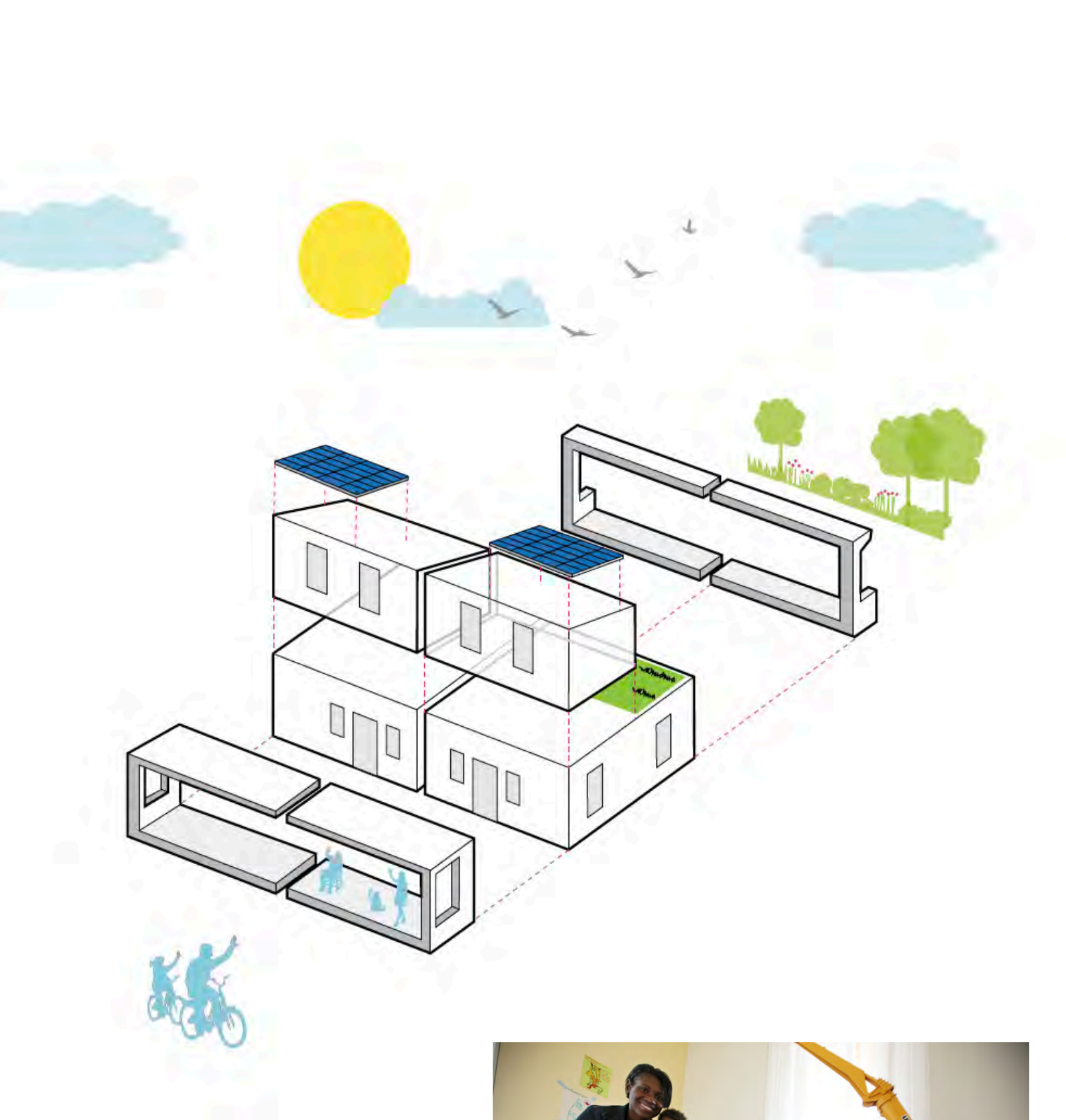


October 3, 2011  
Solar Decathlon 2011 Profile: Parsons the New School for Design and Stevens Institute of Technology  
By Alex Hoyt

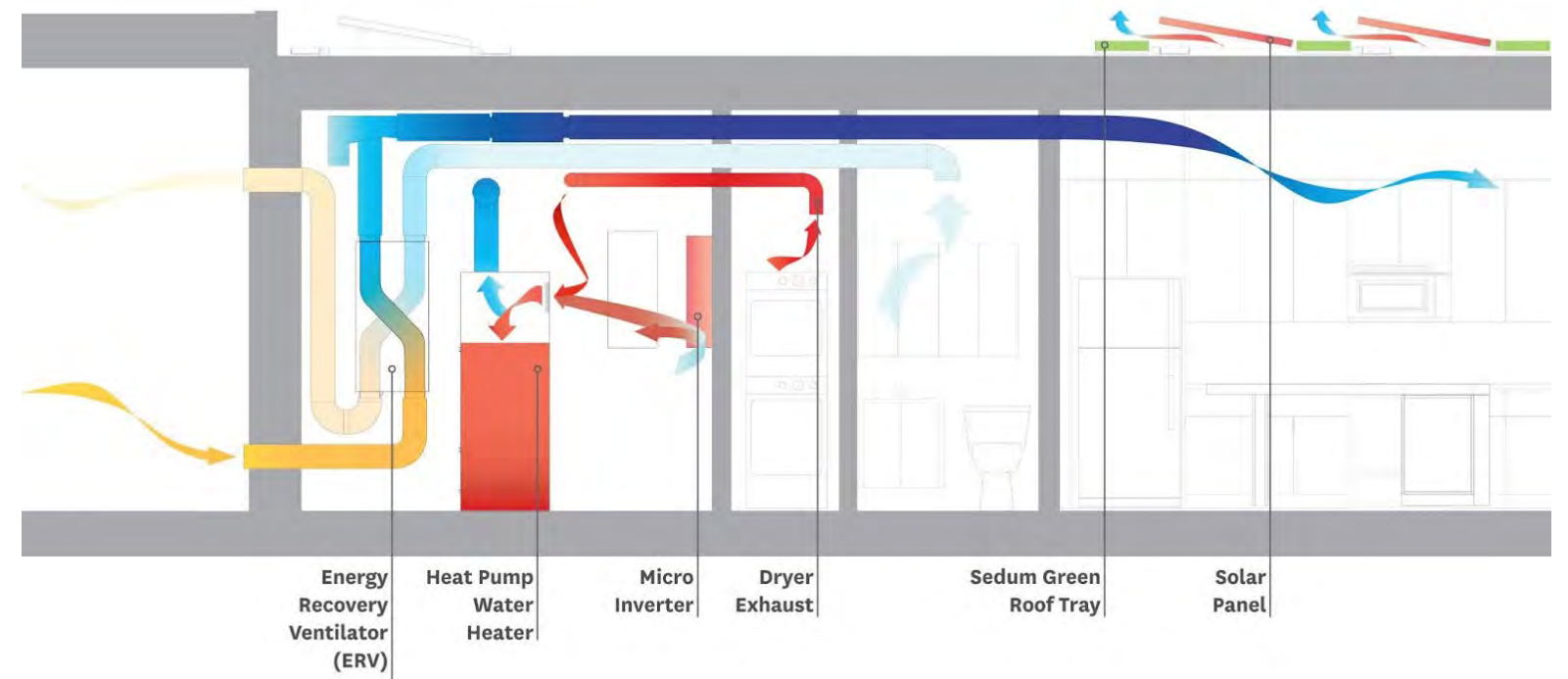
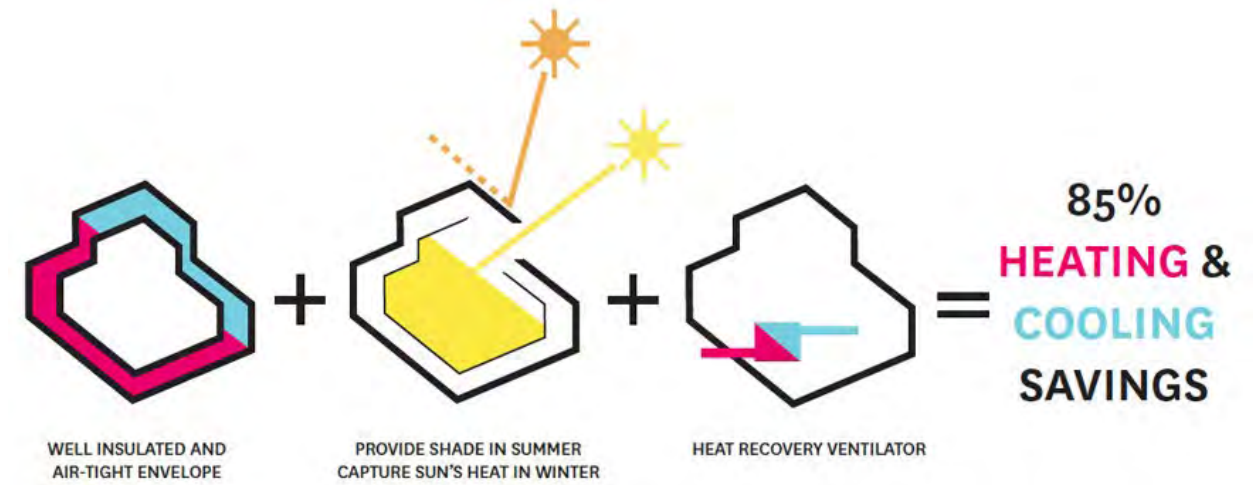


December 21, 2012  
Collaborative brings affordable green home to Deanwood  
By Kathy Orton



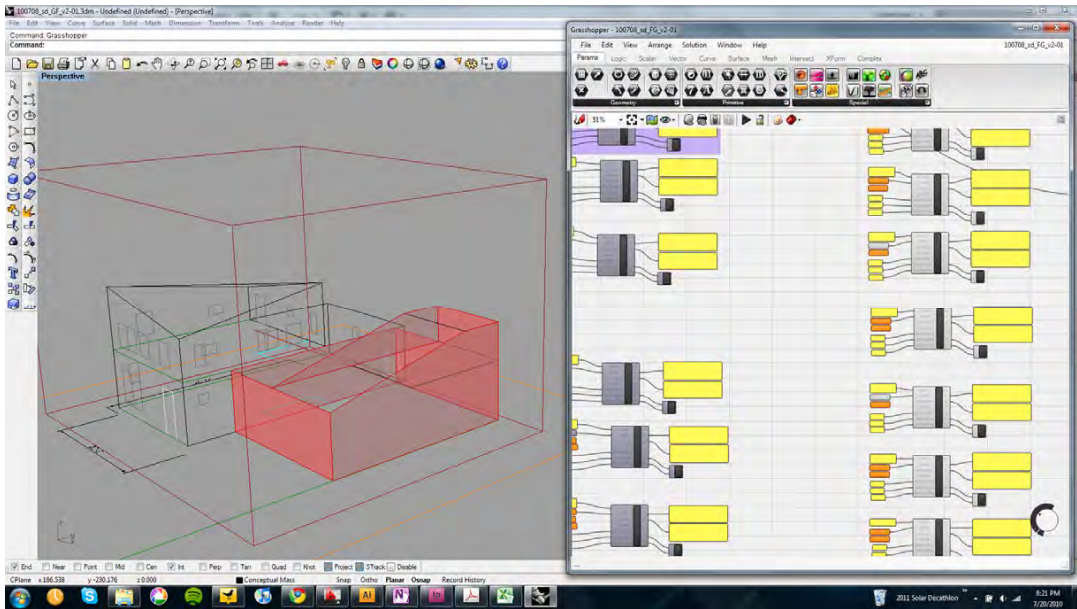
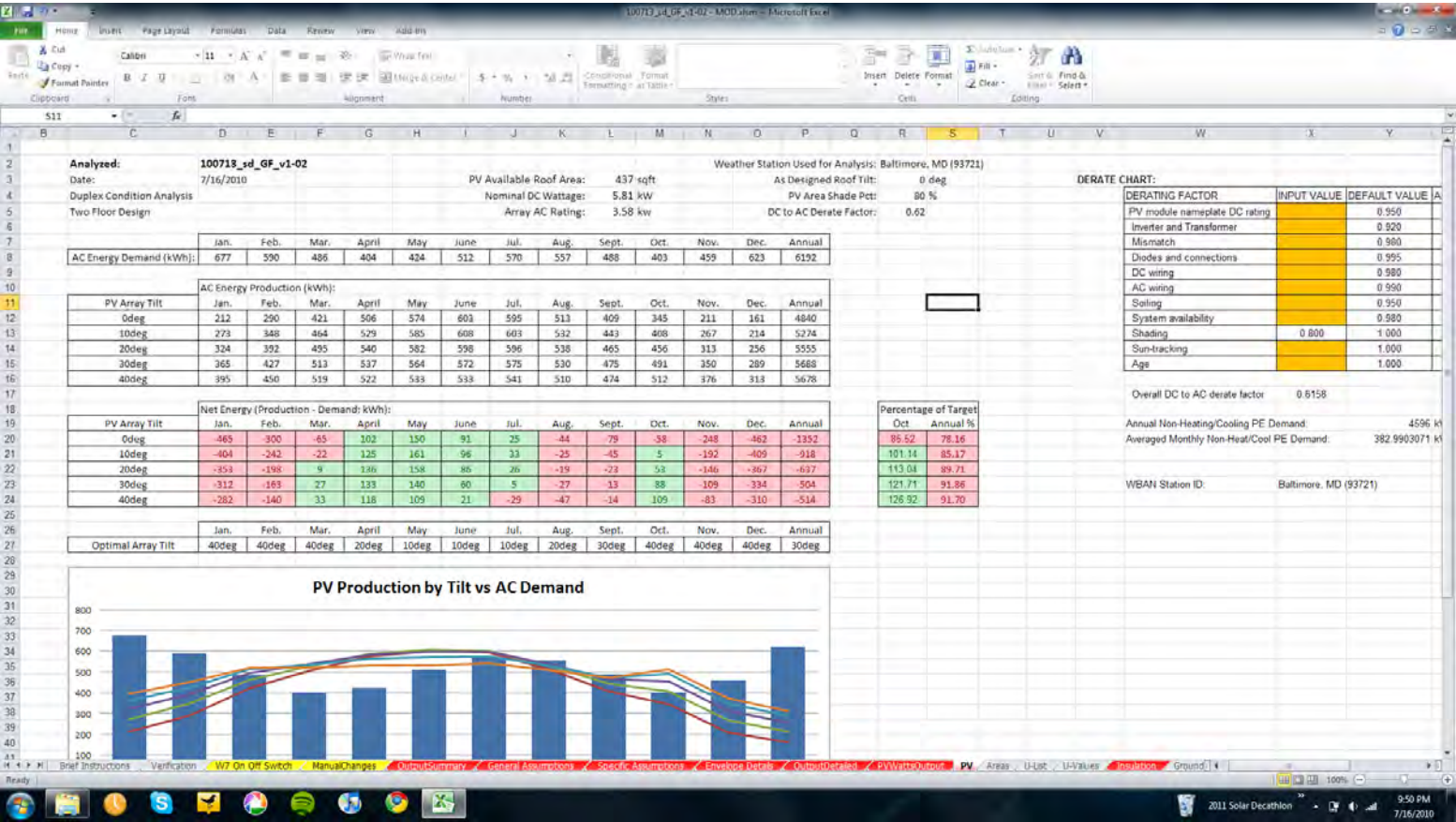
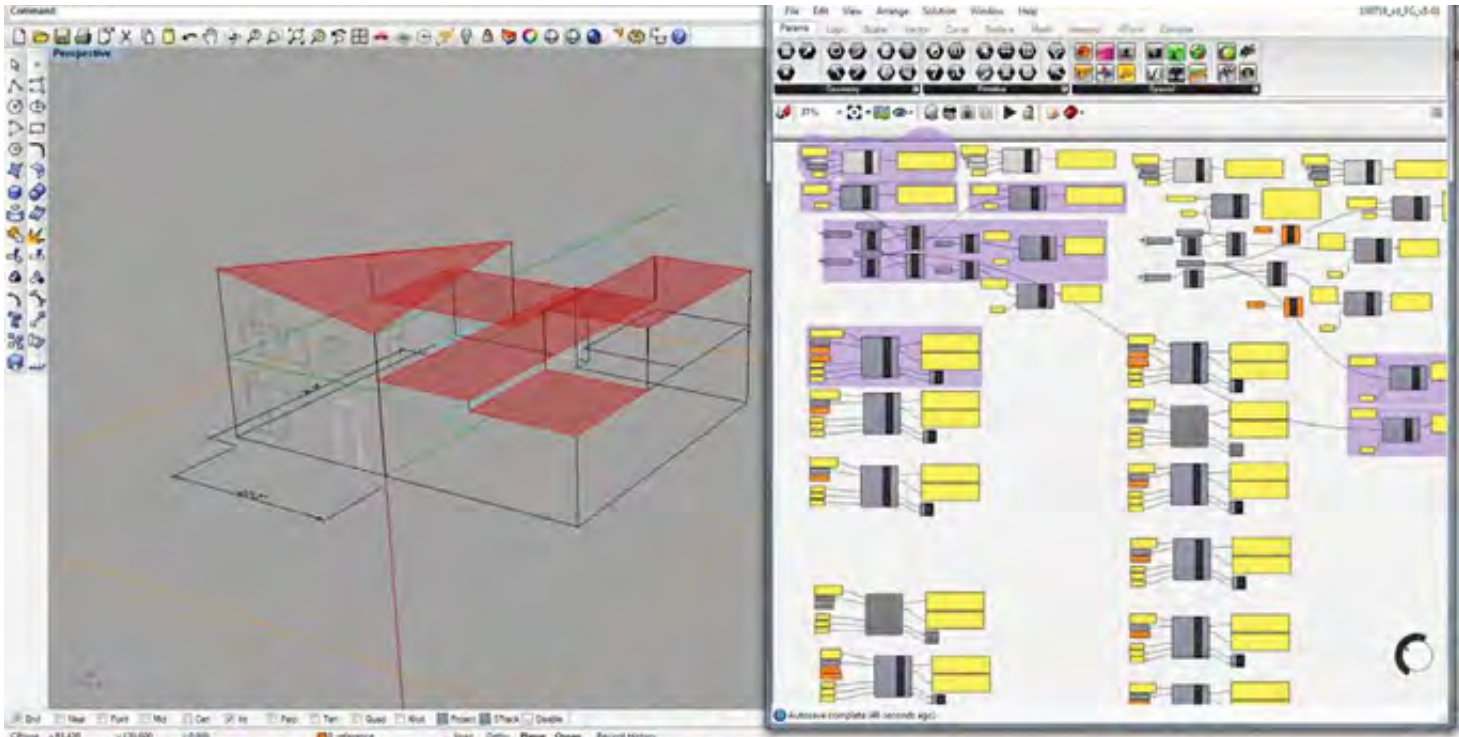


Lakiya Culley was awarded the three-bedroom Empowerhouse by D.C. Habitat for Humanity



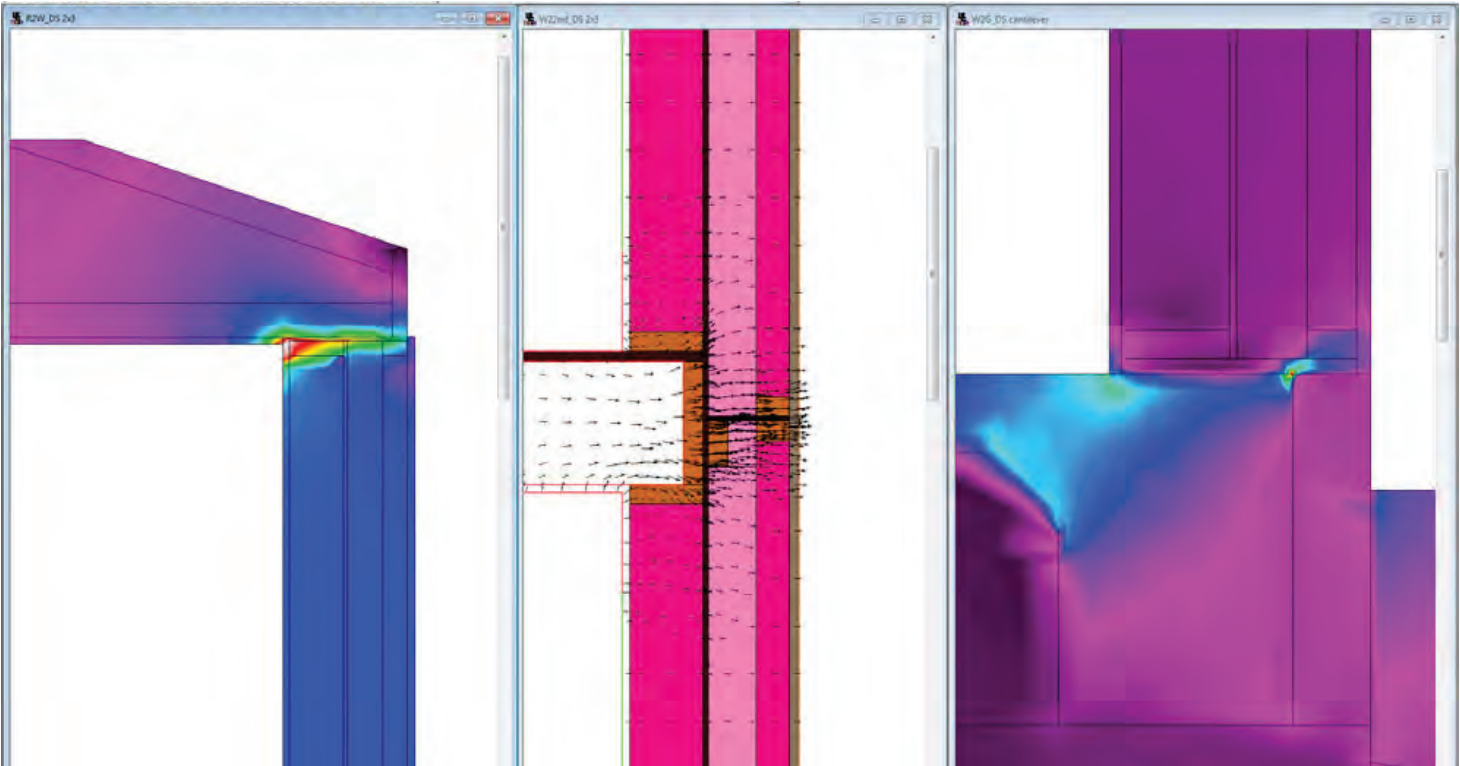
# Tool Development (PHPP - Grasshopper - Rhino)

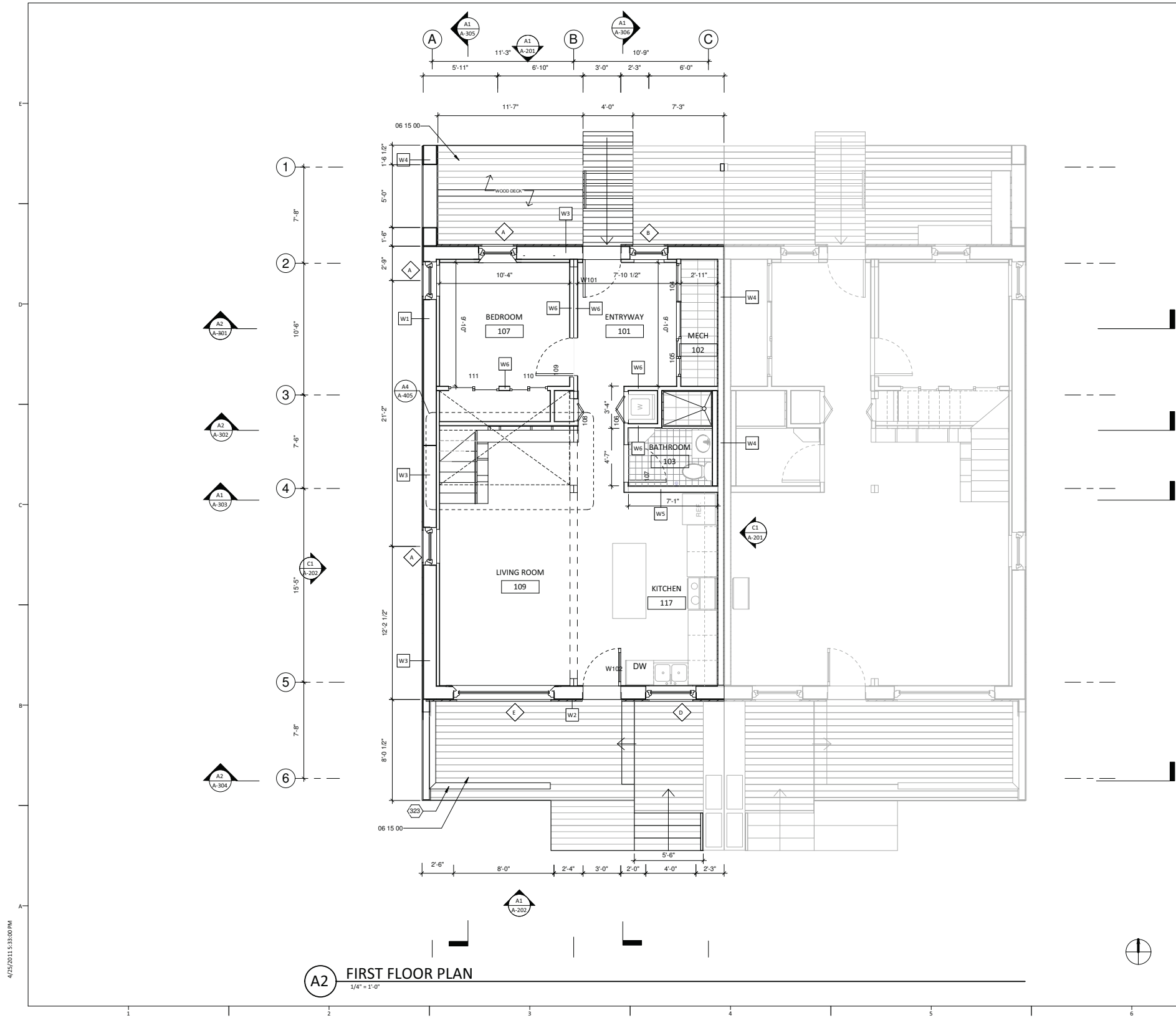
The team created a Grasshopper script linking the Rhino model to PHPP for analysis.



## THERM

Analyzing Heat Transfer





GENERAL SHEET NOTES

8 RISERS @ 7.5" = 5' - 0"  
7 TREADS @ 10"  
1 LANDINGS  
8 RISERS @ 7.5" = 5' - 0"  
7 TREADS @ 10"

REFERENCE KEYNOTES

06 15 00 WOOD DECKING

SHEET KEYNOTES

323 PAINTED STEEL RAILING

DRAWING KEY



**EMPOWERHOUSE**

Parsons The New School for Design  
Alliant The New School for Management and Urban Policy  
Brown Institute of Technology

In partnership with  
Habitat for Humanity, Washington DC  
Government of DC  
and the Empower community

ARCHITECT OF RECORD

Zavos Architecture + Design, LLC  
323 West Patrick St.  
Frederick, MD 21701  
(p) (301) 698-0020  
(f) (301) 698-0920

CIVIL ENGINEER OF RECORD

Vika Capital, LLC  
DC CBE #1534893122010  
4910 Massachusetts Avenue, NW  
Suite 214  
Washington, DC 20016  
(p) (202) 344-4340  
(f) (202) 344-4196

MEP & STRUCTURAL ENGINEER OF RECORD

Burns Haggard Consulting Engineers P.C.  
100 Broadway  
New York, NY 10005  
(p) (212) 334-2025  
(f) (212) 334-5528

DESIGN TEAM

**EMPOWERHOUSE COLLABORATIVE**  
c/o Parsons The New School for Design & Stevens Institute of  
Technology  
25 E. 13th Street, Floor 2  
New York City, NY 10003  
empowerhouse@newschool.edu  
info@empowerhouse-dc.org

CLIENT

Habitat for Humanity of Washington, DC  
2115 Ward Court NW, Suite 100 Washington, DC 20037  
www.dchabitat.org



MARK DATE DESCRIPTION

01	FEB. 18, 2011	ADR/EOR REVIEW
02	APRIL 4, 2011	PERMIT SUBMITTAL
03	APRIL 14, 2011	ADR/EOR REVIEW
04	APRIL 25, 2011	PERMIT SUBMITTAL

PROJECT ADDRESS

West Lot  
Gault Place N.E.  
Ward 7, Washington D.C.  
20019

DRAWN BY

JH

CHECKED BY

Faculty

COPYRIGHT

NONE: PROJECT IS PUBLIC DOMAIN

SHEET TITLE

FIRST FLOOR PLAN

**A-101**



# Advanced Expeditionary Housing System

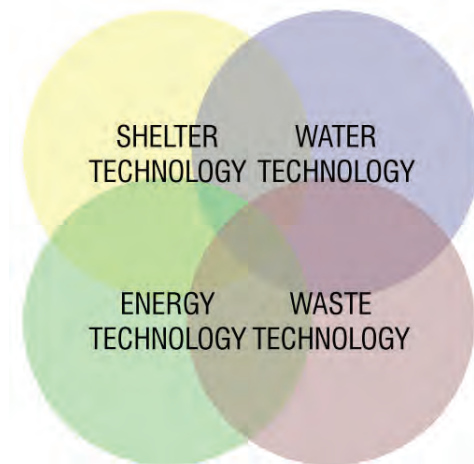
Hoboken, NJ

Stevens Institute of Technology undertook a high profile interdisciplinary project within a systems engineering framework. A team of 24 graduate and undergraduate seniors from five separate engineering disciplines were assembled to design an expeditionary housing system for the U.S. Department of Defense. The program was supported through the Assistant Secretary of Defense for Research and Engineering (ASD(R&E)) and had the explicit interest of their senior leadership. The goals of the project included: a low environmental footprint; minimized reliance on supplied fossil fuel and water; and a focus on integrated energy sources in an associated micro-grid. The project design was directed at a 100-person combat outpost (COP) that could be rapidly deployed in a remote location for a 6-12 month period. Four primary areas of focus were critical to the project: shelter, energy, water and waste. The team developed an integrated "out of the box" solution that was adaptable to local requirements and was not dependent on skilled labor to assemble. To avoid single point system vulnerability there was an effort to de-centralize what is often understood as a centralized system. The approach to providing energy-efficient shelter technology involved developing systems designed to retrofit any existing tent with an enhanced skin to increase R-value and air-tightness while reducing the demand on active heating and cooling systems. Energy systems research included a focus on trigeneration- a combined heating, cooling and power generation system. Adaptability and resiliency were addressed by the ability to interchangeably plug-in multiple, alternative energy sources, as appropriate, as an integral part of the design approach. Incorporation of ruggedized, rapidly deployable solar arrays was a key contributor to this. Necessary to managing the efficiencies of any chosen system, was the utilization of an intelligent microgrid. Introducing an adaptable and resilient microgrid management system would allow communication between multiple power sources to better manage distribution and underused capabilities and respond to failures. Early analysis of the systems approach identified significant potential reductions in both fuel and water dependency, thus minimizing both the size and frequency of supply missions. Such missions are of critical significance in combat zones. A fully functioning, small-scale and adaptable physical prototype of the expeditionary housing system was developed on the Stevens campus.

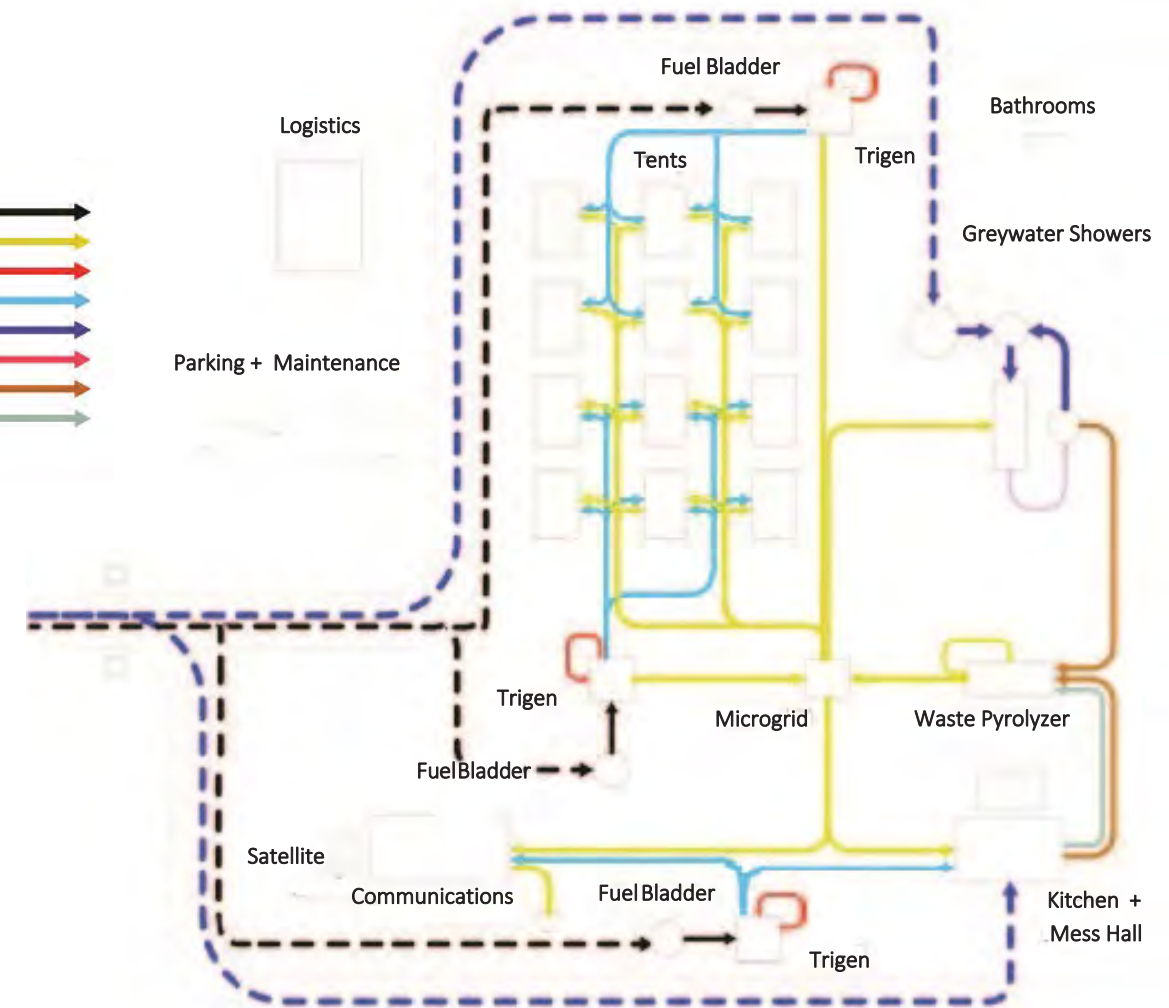
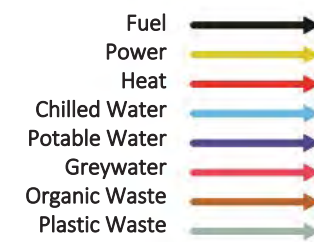
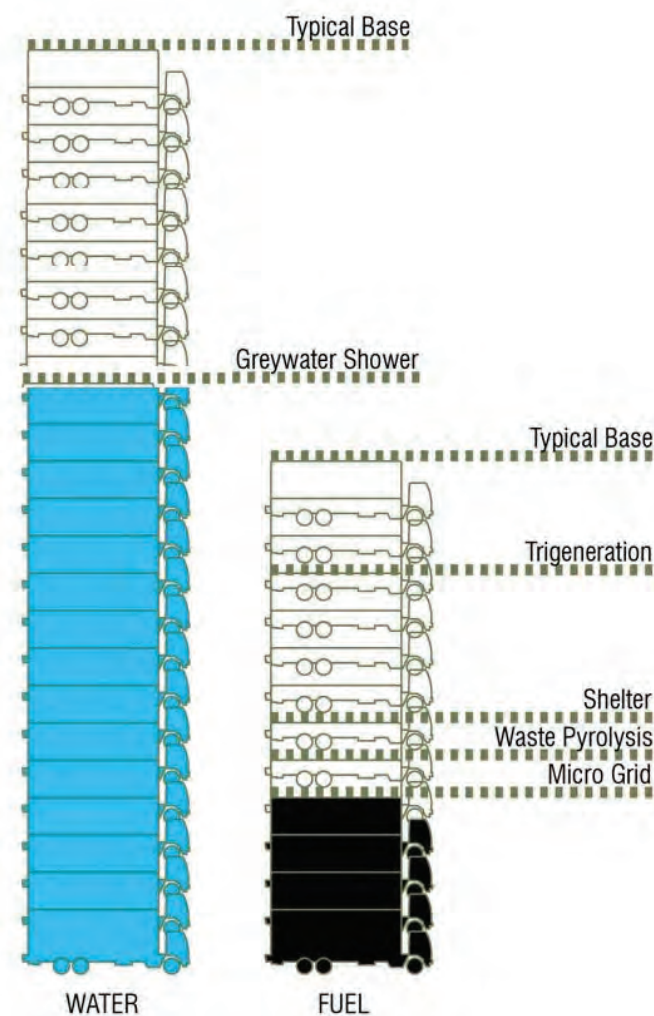
2010-2011

## Industry Assistant Professor

Managed all aspects of project development, including: disciplinary research, interdisciplinary coordination and design, presentations, instructor critiques, internal assessments, and prototyping of major subsystems.



Identify & Utilize Synergies Across Sub-Systems

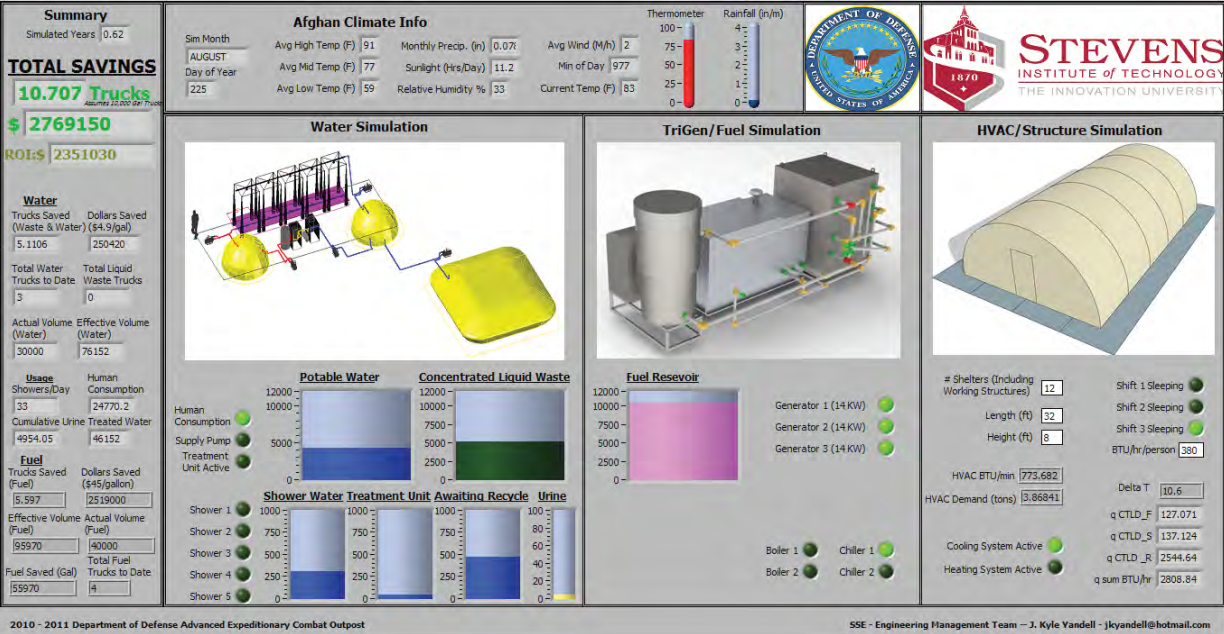


Proposed Base (Combat Outpost (COP)) with a decentralized plug-in-play systems layout for Energy, HVAC, Water and Waste

Proposed Base Design resulted in an estimated reduction of

- = 7 Fuel Trucks (Trigeneration & Shelter)
- = 1 Fuel Truck (Microgrid)
- = 7 Water Trucks (Greywater Showers)

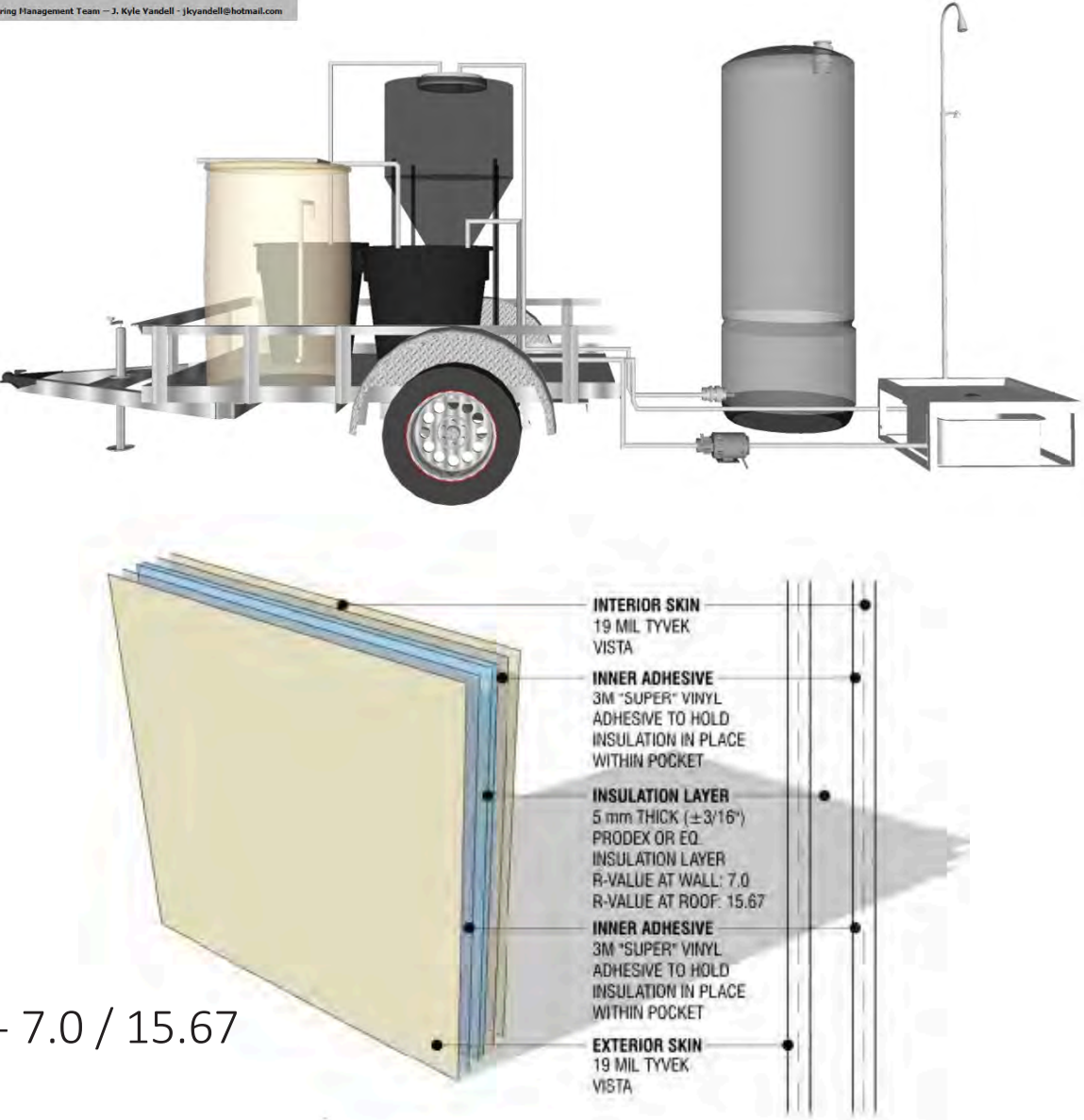
Total = 15 Truck Reduction @ 16,500gal



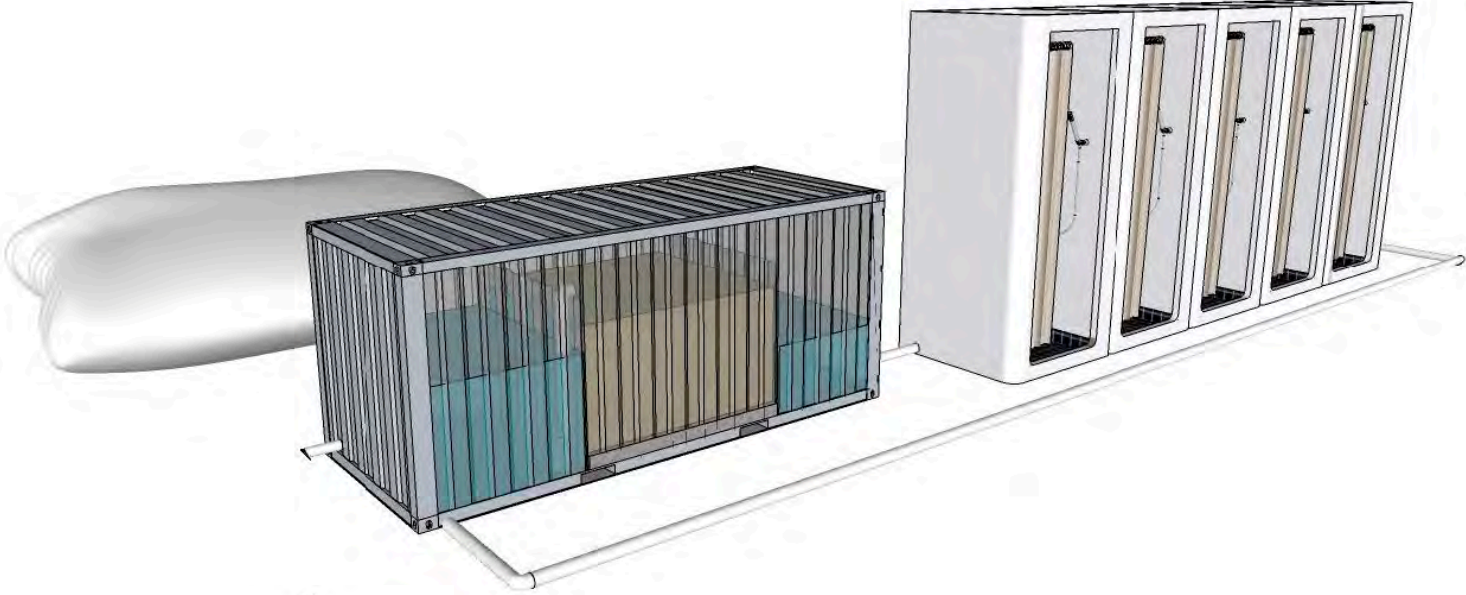
Systems Performance Simulator



Biofilm and Sand Filtration Demonstrator



Example of added multi-layer insulated and airtight skin for retrofitting any existing tent structure



Greywater Management System for showers



Mobile Tri-Generation Cooling Unit Demonstrator





## Hudson Yards Design Competition

New York, NY

The largest parcel of undeveloped land in Manhattan, twenty-six acres in total, and overlooking the Hudson River, the competition required the master planning of up to twelve million square feet of development. On behalf of Brookfield Properties, Inc., Skidmore Owings and Merrill led a diverse team of architects and engineers including Field Operations, SOM Structures, Diller Scofidio + Renfro, Kazuyo Sejima + Ryue Nishizawa/SANAA, Buro Happold, ShoP Architects PC, and Thomas Phifer and Partners among others. Brookfield's program consisted of sixteen buildings with over 7.4 million square feet of commercial space, 4.3 million square feet of residential/hotel, cultural components, retail, and 15.4 acres of public open space.

2007-2008

### Project Manager

Provided multi-firm coordination, oversight of the master plan effort and the design of two tall towers. Coordinated weekly meetings with the client and Team, presentations and exhibitions. Monitored project data, manpower and fees.









## Manhattan West

New York, NY

A 7 million square foot mixed-use development by Brookfield Properties, Inc. on the west side of Manhattan near Penn Station. The location of this project, over active railroads and one of New York's most complex, necessitated the careful planning of the construction of a platform spanning the site. The project features three towers, the tallest of which is 996 feet separated by a 2-acre grand pedestrian space flanked by retail and amenities. Formerly an undeveloped part of the Far West Side of Manhattan, the site now forms the gateway to the Hudson Yards district. Construction planning and document development at the track level foundation were developed on a fast track schedule to allow for maximum flexibility in the above-grade program.

2005-2007

### Project Manager

Responsibilities included overall team coordination as well as in conjunction with a Project Partner drafting service agreements, fees, and schedules. Performed weekly reviews of manpower projections and time cards, as well as maintenance of updated project data to ensure accurate reporting of earnings, billings and collections. Served as a contact with the client and consultants, managed weekly coordination and client meetings and monitored services vis-à-vis the contract requirements to identify changes to project scope, schedule or service that will result in supplemental and additional services. Paid particular attention to reconciling the priorities of SOM with those of the client while protecting the firm from financial and legal risk.







## East River Master Plan

New York, NY

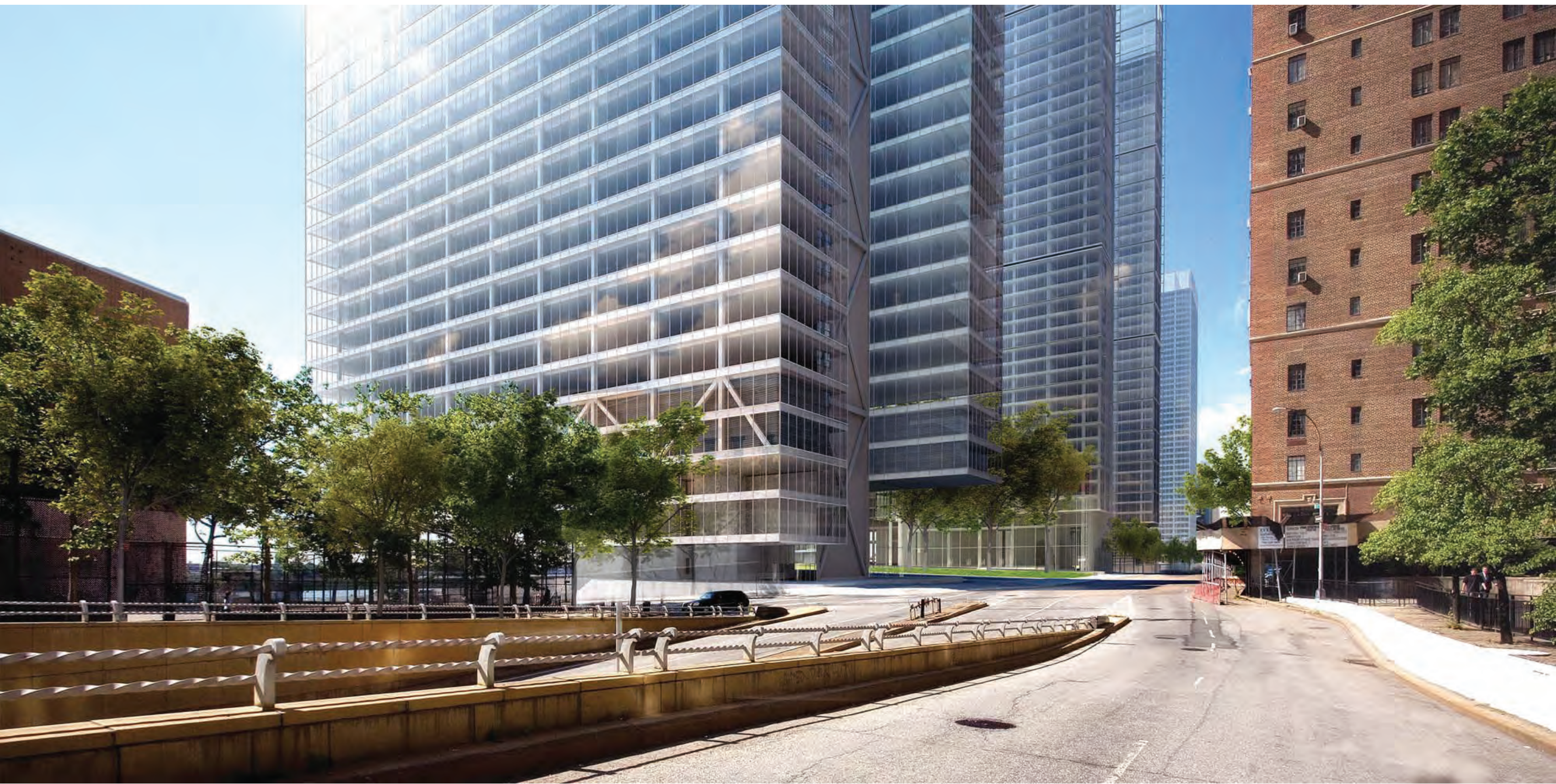
Master Plan for a 6.5 million square foot office and residential complex on 9-acres adjacent to the United Nations in Manhattan.

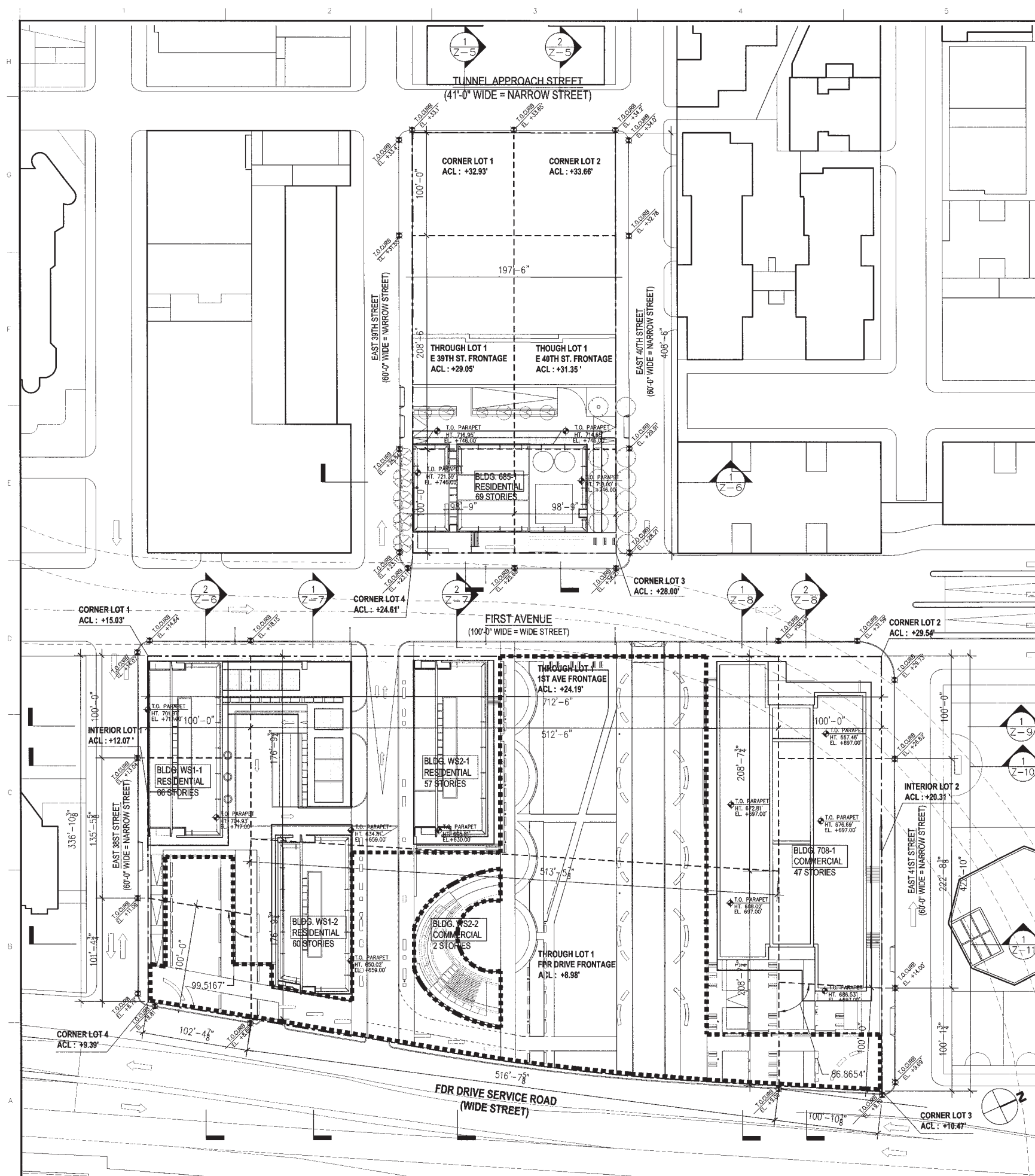
2005-2007

### Designer

Responsibilities included development of a Master Plan, a 1.5 million square foot commercial office tower and preparation of a ULURP submission. Responsible for specific design of commercial tower chosen by client.







**NOTE:**  
**BULKHEAD LOCATIONS**  
**SUBJECT TO CHANGE**

■■■■■ **EXTENT OF PUBLIC PLAZA**

□ **AREA OF ZONING ENVELOPE ABOVE GROUND FLOOR**

**685 FIRST AVENUE**  
**AVERAGE CURB LEVEL (ACL) CALCULATIONS**

CORNER LOT 1	$\frac{31.55' + 33.4' + 33.1' + 33.65'}{2}$	$\frac{32.475'}{2}$	= EL. +32.93' ACL
CORNER LOT 2	$\frac{33.65' + 34.2' + 34.0' + 32.78'}{2}$	$\frac{33.925'}{2}$	= EL. +33.66' ACL
CORNER LOT 3	$\frac{29.91' + 28.21' + 28.21' + 25.65'}{2}$	$\frac{29.06'}{2}$	= EL. +28.00' ACL
CORNER LOT 4	$\frac{25.66' + 23.11' + 23.11' + 26.54'}{2}$	$\frac{24.385'}{2}$	= EL. +24.61' ACL
THROUGH LOT 1 E 39TH ST. FRONTAGE	$\frac{26.54' + 31.56'}{2}$		= EL. +29.05' ACL
THROUGH LOT 1 E 40TH ST. FRONTAGE	$\frac{32.78' + 29.91'}{2}$		= EL. +31.35' ACL

**WATERSIDE & 708 FIRST AVENUE**  
**AVERAGE CURB LEVEL (ACL) CALCULATIONS**

CORNER LOT 1	$\frac{13.04' + 14.07' + 14.84' + 15.15'}{2}$		= EL. +15.03' ACL
CORNER LOT 2	$\frac{30.23' + 31.59' + 29.73' + 26.62'}{2}$		= EL. +29.54' ACL
CORNER LOT 3	$\frac{14.00' + 9.69' + 9.10' + 9.09'}{2}$		= EL. +10.47' ACL
CORNER LOT 4	$\frac{11.09' + 8.79' + 8.81' + 8.86'}{2}$		= EL. +9.39' ACL
INTERIOR LOT 1	$\frac{11.09' + 13.04'}{2}$		= EL. +12.07' ACL
INTERIOR LOT 2	$\frac{26.62' + 14.00'}{2}$		= EL. +20.31' ACL
THROUGH LOT 1 SR AVE FRONTAGE	$\frac{18.15' + 30.23'}{2}$		= EL. +24.19' ACL
THROUGH LOT 1 FDR DRIVE FRONTAGE	$\frac{8.86' + 9.09'}{2}$		= EL. +8.98' ACL

**02 AVERAGE CURB LEVEL CALCULATIONS**  
SCALE: NTS

# East River Masterplan

685 FIRST AVENUE  
708 FIRST AVENUE  
WATERSIDE

Client  
**EAST RIVER REALTY COMPANY, LLC**  
9 WEST 57TH STREET  
NEW YORK, NEW YORK 10019

Architect  
**SOM**  
SKIDMORE, OWINGS & MERRILL LLP  
14 Wall Street  
New York, NY 10005

Architect  
**RM&P**  
Richard Meier & Partners Architects LLP  
475 Tenth Avenue, 6th Floor  
New York, New York, 10018

Landscape Planning  
**fo**  
FIELD OPERATIONS  
475 TENTH AVENUE, 10TH FLOOR  
NEW YORK, NY 10018



Construction Manager  
**TURNER CONSTRUCTION CO.**  
375 HUDSON STREET  
NEW YORK, NEW YORK, 10014

Structural Engineer  
**CANTOR SEINUK GROUP**  
228 EAST 45TH STREET  
NEW YORK, NEW YORK, 10017

Traffic/Transportation Planning  
**ENG-WONG, TAUB & ASSOC.**  
TWO PENN PLAZA  
NEW YORK, NEW YORK, 10121

Civil Engineer  
**PHILIP HABIB & ASSOCIATES**  
226 WEST 28TH STREET  
NEW YORK, NEW YORK, 10001

MEP Engineer / Vertical Transportation  
**COSENTINI ASSOCIATES**  
TWO PENNSYLVANIA PLAZA  
NEW YORK, NEW YORK, 10121

04	31 OCT 07	ULURP SUBMISSION
03	17 OCT 07	ULURP SUBMISSION
02	15 AUG 07	ULURP SUBMISSION
01	01 JUNE 07	ULURP SUBMISSION
No.	Date	Issue

## AVERAGE CURB LEVEL DIAGRAM & CALCULATIONS

© Skidmore, Owings & Merrill LLP 2005  
Date: 17 OCT 07  
Scale: AS NOTED  
SOM Job No.: 201206  
CAD File Name: Z-004A.DWG

**Z-4**



## W Club Hotel and Residences

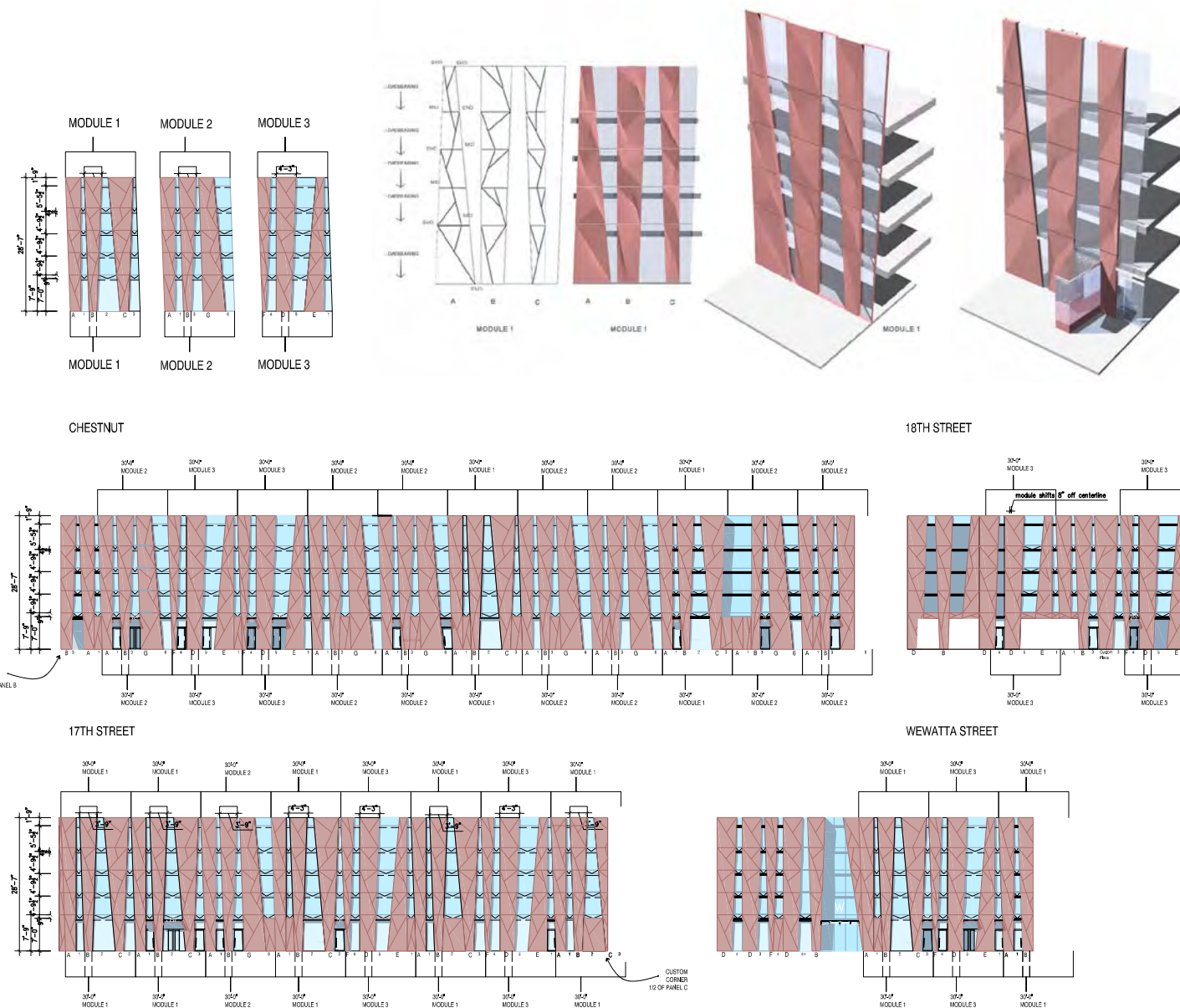
Denver, CO

A 500,000 square foot 175-room hotel and 110 W-branded condominium with shared amenities in Denver, Colorado by East/West Partners and W Hotels and Resorts.

2005-2007

### Designer

Involvement from the initial planning and concept stages through the preparation of construction documents. The amenities and check-in functions, typically located at grade, are lifted to the roof of the hotel and underneath the condominiums to stitch the two programs together and to visually connect this public experience to the city and mountains beyond.



## Elevation + Panel System

Scale: 1" = 16'-0"  
Oct 21, 2005





○ —————





## Starwood Feasibility Study

Portchester, NY

A Master Plan study for a 1.5 million square foot mixed-use development north of New York City for Starwood Capital Group.

2006

Senior Designer

Deliverables included site analyses, typology analyses, precedent studies, and design strategies along with additional density and massing studies.







## Washington Headquarters Services Office Headquarters

BRAC 133, Engineering Proving Ground (EPG)  
Fort Belvoir, VA

A Pre-Concept and Macro Programming Study for a 2.3 million square foot Office Headquarters south of Washington, D.C. for the US Department of Defense.

2006

### Designer

Development of Pre-Scheme and Site Building Studies along with the Program of Requirements (POR) served as the "basis of design" documents for the client. These documents established the rules that influenced strategies and approaches to evaluate the design process. Non-dimensional site organization diagrams were explored as potential site strategies that complied with project criteria and were further developed during the Scheme Design Phase.

**DRAFT**

**WHS/BRAC 133**

ENGINEERING PROVING GROUND (EPG)  
FORT BELVOIR, VIRGINIA

JANUARY 30, 2007 DRAFT

**PRE-SCHEME AND SITE BUILDING STUDIES**



**SOM** + PBS & J

Skidmore, Owings & Merrill LLP

Department of Defense  
Washington Headquarters  
Services US Army Corps of  
Engineers

**FOUO** For Official Use Only



## 14200 Lakeshore Rd   Lakeside, MI

New exterior rainscreen facade and kitchen to contemporary house on bluff overlooking Lake Michigan

2019-2020

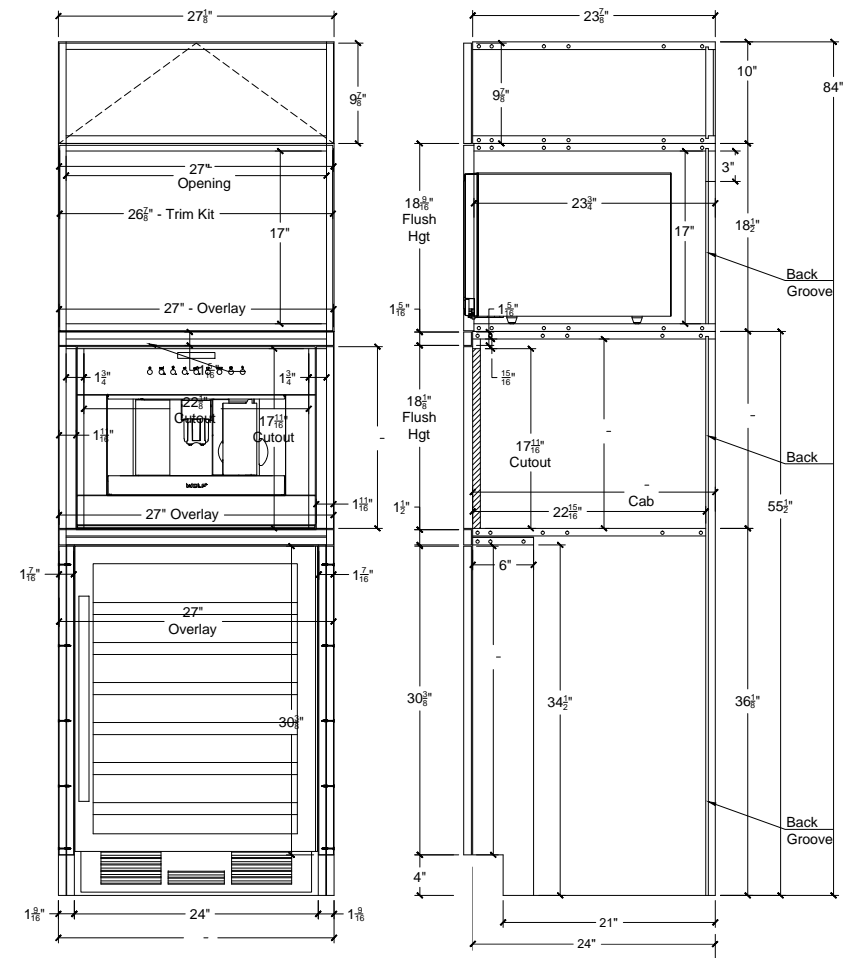
Designer

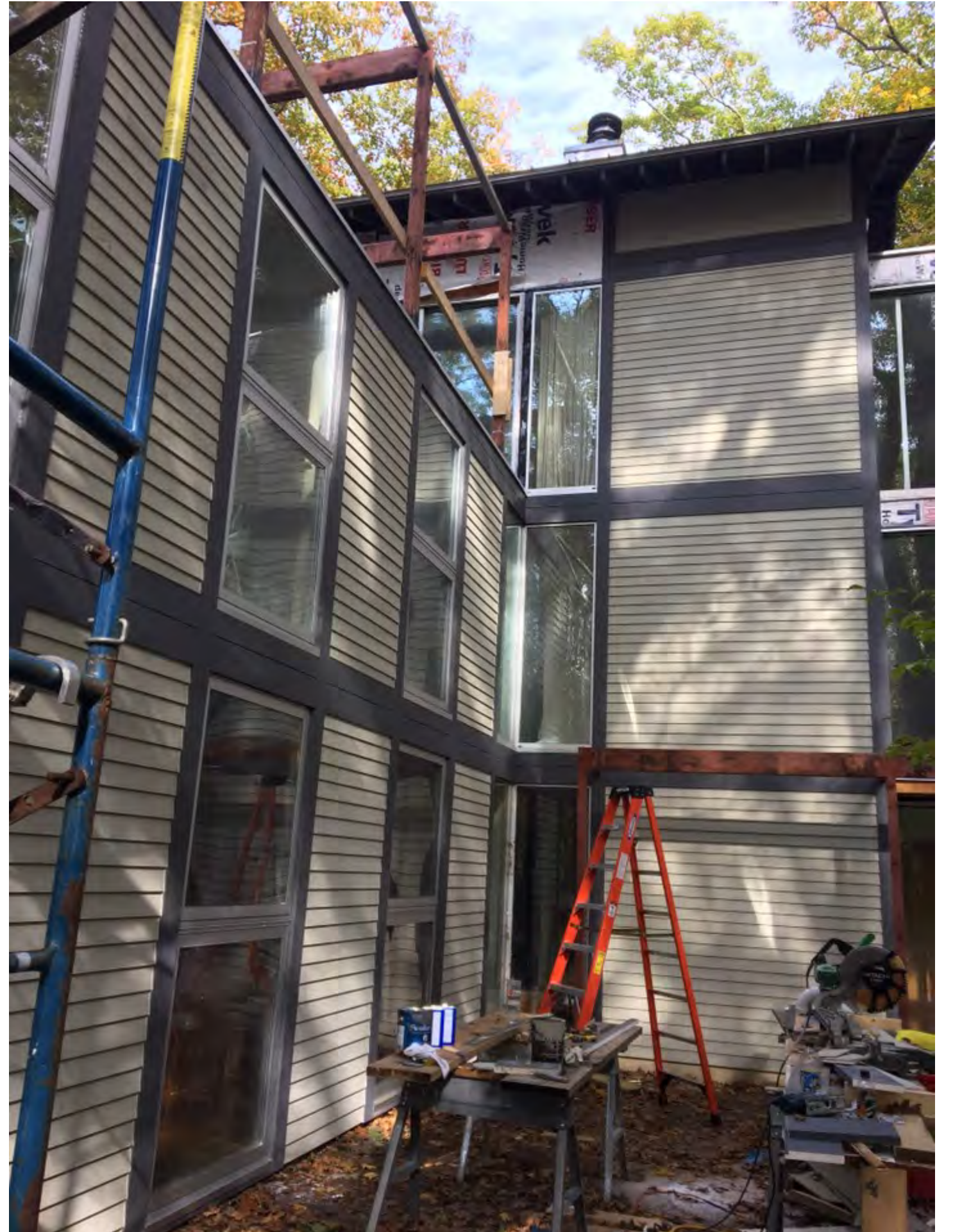
## 240 E47   New York, NY

Complete renovation of three-bedroom apartment in luxury residential mid-rise building in Midtown Manhattan

2013-2014

Designer





John & Wynne Kim  
405 East 54th Street, 5D  
New York, NY 10022

110 E. 25th Street  
New York, NY 11201  
P 917 447 0558

Burnham Nationwide Inc.  
86 Chambers Street  
New York, NY 10007  
P 212 577 2541

Douglas Elliman  
Property Management  
675 Third Avenue  
New York, NY 10017  
P 212 692 6191

5.09.14

## As-Builts

## CONSTRUCTION PLAN

8 of 17





## Rising Waters: Photographs from Hurricane Sandy

Presented to mark the one-year anniversary of Superstorm Sandy, *Rising Waters* drew on work submitted by over a thousand photographers, both professional and amateur, who responded to an open call for images in the storm's wake. The juried exhibition featured before-and-after images of the hurricane's impact on the New York region, including preparations, the storm's destructive effects, and the ongoing rebuilding efforts. The exhibition was presented in conjunction with the International Center of Photography.

2013

Exhibition Designer

This exhibit continues to be the most visited exhibition in the museum's history.

## In a World of Their Own: Coney Island Photographs by Aaron Rose

70 images were on display capturing New Yorkers in the 1960's.

2014

Exhibition Designer



Note: All Labels are to be 4" from corresponding framed or unframed artwork as indicated on drawings.



Peter L. Russell  
301 E 45th Street  
New York, NY 10017  
P 917 447 0558

Museum of the  
City of New York  
1220 5th Avenue  
New York, NY 10029

10.17.13

## INSTALLATION PLAN

**A-5**  
5 of 5

# Not Over

...550 people from 165  
households still in hotels  
Summer 2013: estimated 50%  
decline in visitors to Rockaways



## Relief

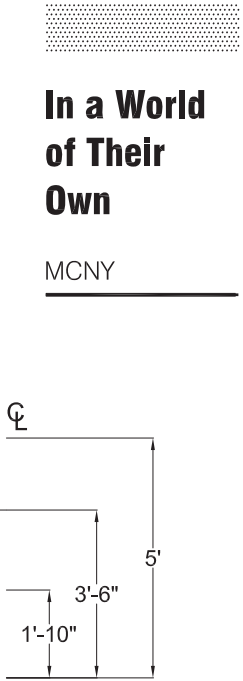


New York State's disaster relief  
program is still in effect  
NYC emergency services have  
received over 12,000 people  
stranded by hurricanes

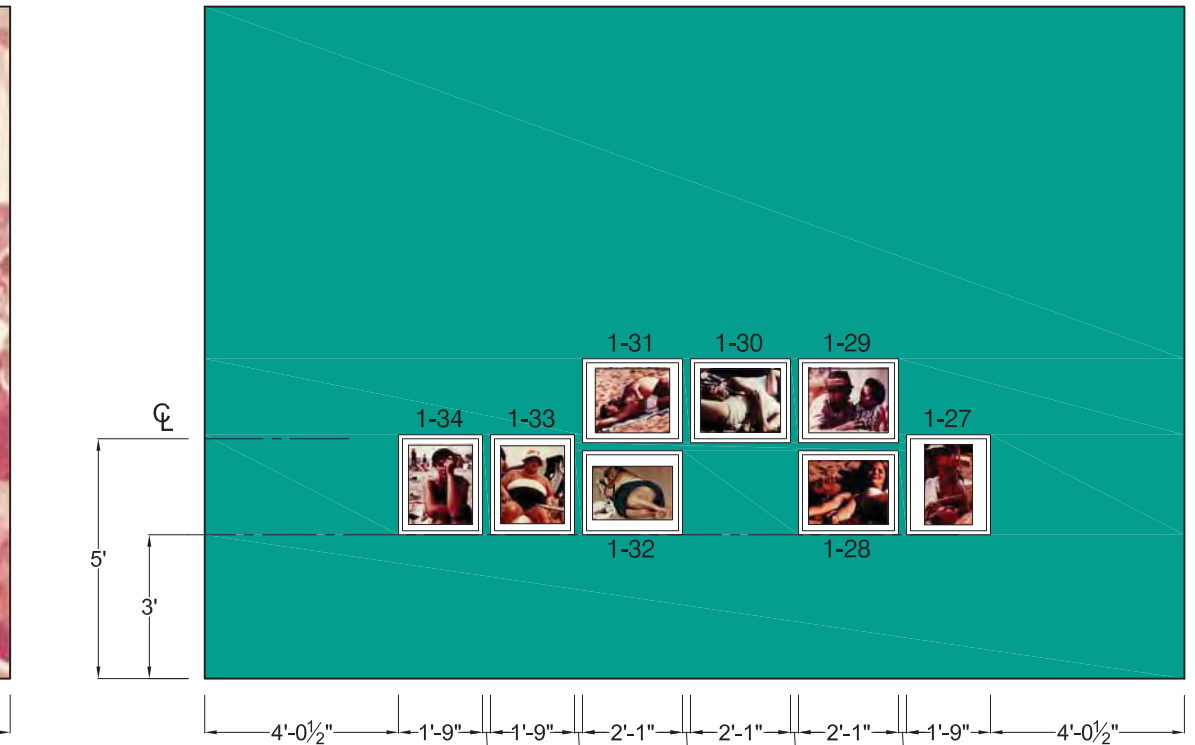


## Media

Media coverage of the disaster  
has been extensive, with  
numerous news stories and  
documentaries produced.  
The media has played a  
crucial role in raising  
awareness of the disaster  
and the needs of the  
affected community.



1

$$1/4'' = 1'-0''$$


2

$$1/4'' = 1'-0''$$

**client**  
Museum of the  
City of New York  
1220 5th Avenue  
New York, NY 10029

**date**  
05.01.14

sheet name  
INSTALLATION  
PLAN

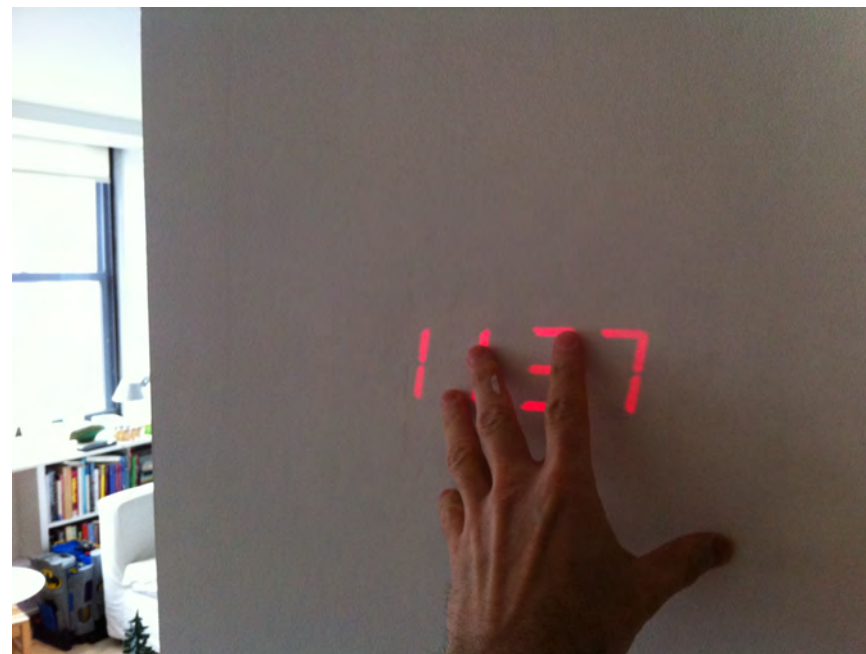
4 of 5







Parametric Study Model (Analogue), 2009



*Clock*, 2010