

## EDUCATION

**Cornell University College of Architecture, Art & Planning** | Ithaca, NY | *January 2016*

Master of Architecture (Professional M. Arch I)

**Duke University Pratt School of Engineering** | Durham, NC | *May 2012*

Bachelor of Science in Structural Engineering (Civil and Environmental Engineering)

Architectural Engineering Certificate

**KTH, Royal Institute of Technology** | Stockholm, Sweden | *Autumn 2010*

Semester spent studying green building and sustainable construction

## SUMMARY OF ACADEMIC AND PROFESSIONAL HISTORY

Catherine Joseph is an Architect at FXFOWLE Architects in New York City. She is currently working on the design of a commercial tower in the Hudson Yards Development. In addition to responsibilities as a member of the original design team and a current designer on the building core team, her role on the project has expanded to include coordinating BIM standards among the core, shell, and interior design teams, assisting with the coordination of mechanical and structural systems, and managing BIM and graphic standards for a team of 10-15 architects.

She earned her Master of Architecture at Cornell University. While at Cornell, she served as a graduate teaching assistant for two courses. Structural Concepts covered structural mechanics and dynamics as well as an introduction to the material properties of structural systems. Building Technology 1 focused on the practicalities of construction, including egress and accessibility requirements, facade and waterproofing systems, and composite structural systems. She earned her Bachelor of Science in Structural Engineering at Duke University, completing undergraduate research in energy modeling for affordable housing developments. While at Duke, she identified a gap in the sustainable design curriculum and developed a Sustainable Structures course that covered a broad survey of topics, including design and construction tactics and energy auditing and modeling for structures.

## RESEARCH AND DESIGN FOCUS

Combining engineering and architecture was prompted by Catherine's desire for an integrated design process, both in concept and in practice. Her current interests focus on pushing beyond the status quo in all aspects of design. This includes thinking beyond the current practice of structural design to rethink how structural failure is understood within the built environment. Further, she is focused on rethinking how space is designed to accommodate all users, currently manifest in a design study of gendered bathrooms.

Another aspect of her passion for architecture is pushing the boundaries of current building practices within the context of local traditions and expertise. Her Master Design Thesis, Splicing the Weave, is a small-scale urban infrastructural system that is reactive and adaptive. Located in Tacloban, Philippines, the design for typhoon resiliency amplifies the expertise of local weavers by strategically injecting new techniques and material technologies into the construction process. In each of her design proposals, her goal is to go beyond what is typical while engaging local traditions and maintaining a social consciousness for the community on whom the architecture will have an effect.

## PROFESSIONAL EMPLOYMENT HISTORY

**Architect** | **FXFOWLE Architects** | New York, NY | *March 2016 - Present*

*3 Hudson Boulevard:* Primary member of design team of 1.8 million square foot commercial tower in the Hudson Yards development. Completed extended pre-schematic design phase, schematic design phase, and currently in design development phase. Worked with scripting consultant and FXFOWLE Technology Director to develop parametric workflow for Revit modeling of warped building facade and structure. Currently assisting with coordination of mechanical and structural systems design within the architectural design intent and client desires. Also managing BIM and graphics standards for project team of 10-15 people.

*NJ Office Tower:* Participated in concept development for RFP for 1 million square foot office tower in Jersey City, New Jersey.

*846 6th Avenue:* Construction Administration for Manhattan Residential Tower.

*Long Island City Hospital:* Compiled DOB analysis and drawing set for fast-tracked multi-use project.

*Humanities Center:* Completed design drawings and competition submission booklet for RFP for a 5,000 SF humanities center.

# Catherine R. Joseph, LEED AP BD+C, M. ARCH, B.S. ENG

## **Architecture Intern | Bade Stageberg Cox | New York, NY | *May-August 2014, May-August 2015***

Completed design diagrams, construction drawings, and building and health department permitting drawings for a pool house on Long Island. Participated in schematic design charrettes, project proposals and RFQ/RFP submittals, and pre-design (site analysis, code research) for a variety of residential projects.

## **Architecture Intern | Richard Renner Architects | Portland, ME | *May-August 2013***

Developed method of analysis and graphic representation for energy monitoring data the firm collects on its buildings. Built models, completed construction drawings, and participated in design charrettes for primarily single-family residential projects.

## **Structural Engineering Intern | Harriman Architects + Engineers | Auburn, ME | *May-August 2012***

Coordinated with architects and engineers to draft construction documents for several projects. Assisted in design of structural elements, including retaining walls and spread footings.

## **ACADEMIC EMPLOYMENT HISTORY**

### **Graduate Teaching Assistant | Cornell University | Ithaca, NY | *January-May 2015***

*Structural Concepts:* Course covered structural mechanics, dynamics, and an introduction to material properties of structural system. Served as coordinator among six teaching assistants assigned to course, managing workload distribution, monitoring and maintaining quality of teaching and grading, managing the grade record, and upholding ethics standards for homework completion. Developed practice problems based on homework, taught review sessions, provided weekly office hours and graded homework for class of 70 students.

*Building Technology I Course:* Course focused on practicalities of construction, including egress and accessibility requirements, facade and waterproofing systems, and composite structural systems. Provided weekly office hours for homework assistance and general study questions and graded weekly homework for class of 70 students.

*Both courses* were a mix of undergraduate and graduate students. Consistently received positive feedback from students and professors for proficiency and ability to assist students productively.

### **Undergraduate Teaching Assistant | Duke University | Durham, NC | *August 2011-May 2012***

*Introduction to Environmental Engineering:* Course covered a broad range of topics related to environmental engineering, including energy, water, and waste management. Developed weekly quizzes based on course content. Offered office hours and graded homework.

*Engineering Communications:* Course focused on skills of engineering practice including technical writing and graphical analysis and presentation. Provided technical support and course preparation assistance to professor. Offered office hours and graded midterm and final essays.

### **Course Developer, Instructor | Duke University | Durham, NC | *January 2011-May 2011***

*Sustainable Structures:* Identified gap in sustainable design curriculum and sought to fill the need for a class focusing on sustainable structures. Developed the curriculum for and co-taught the weekly course covering energy monitoring and auditing, renewable energy systems in buildings, sustainable design and construction strategies, sustainable urban development tactics, and global certification systems.

## **RESEARCH EMPLOYMENT HISTORY**

### **Pratt Engineering Undergraduate Fellow | Duke University | Durham, NC | *January 2011-May 2012***

Studied energy consumption and performance of affordable housing constructed by Builders of Hope, an NGO focused on providing high-quality affordable housing that achieves low operating and maintenance costs over the home's lifetime. Developed method of relating real-time energy saving data to motivate changes in user behavior.

### **NAE Grand Challenge Scholar | Durham, NC + Lesotho, Southern Africa | *January 2011-May 2012***

Completed portfolio focused on affordable, sustainable housing options, locally and globally. Performed a housing assessment in mountainous regions of Lesotho, Southern Africa.

### **NSF REU Researcher | University of Houston | Houston, TX | *May-August 2009***

Developed code to model seismic response of a 3D building under the advising of Dr. Y. L. Mo. Sponsored by National Science Foundation as part of the Research Experience for Undergraduates (REU) Program.

## AWARDS, RECOGNITION

### **Cornell University Summer Design Studio Design Jury | Ithaca, NY | August 2016**

Served on final design jury for summer design studio.

### **COLDSCAPES//Adapt Design Competition | Center for Outdoor Living Design | February 2016**

Independent Submission awarded Second Place in Design Competition. Brief focused on adaptable urban landscapes in regions with repetitive freeze/thaw cycles. Design proposed leveraging these natural physical cycles for adaptive facade management and earth-based thermal energy production.

### **Independent Art Grant | Cornell Council for the Arts | Ithaca, New York | 2015-2016**

Team submission with colleague Sida Zhang. The project, *Soft Process*, investigated slip-cast ceramic production through the use of a soft membrane. Work completed during the grant period was exhibited in Cornell University's Olive Tjaden Hall Experimental Gallery during September 2016.

### **Engaged Learning Grant | Cornell University Southeast Asia Studies Program | Ithaca, NY | June 2015**

Awarded grant money for thesis study travel to the Philippines. Designed and arranged intense two week trip in the Philippines, visiting a variety of locations throughout the country, including Manila, Tacloban, and the Batanes to study traditional rural building traditions, current urban practices, and the rebuilding efforts in Tacloban since Typhoon Yolanda.

### **Thesis Travel Scholarship | Cornell Univ. Dept. of Architecture | Ithaca, NY | June 2015**

Awarded grant money for thesis study travel to the Philippines. Designed and arranged intense two week trip in the Philippines, visiting a variety of locations throughout the country, including Manila, Tacloban, and the Batanes to study traditional rural building traditions, current urban practices, and the rebuilding efforts in Tacloban since Typhoon Yolanda.

### **Architecture Workshop | Museum of Modern Art PS1 | Long Island City, New York | August 2013**

Selected as one of nine students for a two-week design charrette about large-scale rebuilding strategies for The Rockaways. Student Architect-in-residence at The Colony, part of the EXPO 1: New York exhibition at Museum of Modern Art PS1, for two weeks. Presented work in Mid- and Final Reviews publicized by the museum and attended by the public. Proposal focused on accepting structural failure during storm events for strategic portions of the peninsula and designing a system that utilizes this failure as a protective mechanism.

### **Architecture Scholarship | Cornell Univ. Dept. of Architecture | Ithaca, New York | 2012-2015**

Merit scholarship awarded for all seven semesters of graduate school

### **Alice M. Baldwin Scholars Program | Duke University | Durham, NC | Autumn 2008 - Present**

Selected as one of 18 women from the Class of 2012 for Duke's only women's leadership Program

## PUBLISHED WORKS

**"Between Resiliency and Adaptation";** peer-reviewed journal article; Rhode Island School of Design Int|AR Journal; September 2017.

Forthcoming - **"Bathrooms for Humans: redesigning the bathroom for modern gender schemas";** co-authored peer-reviewed journal article; FXFOWLE Architects Podium Journal; January 2018.

Forthcoming - **"Soft Process";** experimental study and exhibition included in Cornell University ASSOCIATION publication, Autumn 2017.

**"Splicing the Weave: a resilient system of event-based adaptation";** Master of Architecture Design Thesis; Cornell University; January 2016.

**"Eccentric";** public library design included in Cornell University ASSOCIATION publication, Autumn 2015.

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## PRESENTATIONS

*"Walls, Bathrooms, Abortion Clinics"*; TED-style talk to be presented at Leadership Summit for Alumnae of the Duke University Alice M. Baldwin Scholars Program; Smith College, Northampton, MA; 15 June 2017.

*"Engineering Error"*; Cornell University Thumbnail; humorous Pecha Kucha-style presentation on Engineering Failure; Ithaca, NY; Autumn 2014.

*"Duke University Home Depot Smart Home"*; World Future Energy Summit 2010 Project Showcase Seminars; Abu Dhabi, UAE; January 2010.

## EXHIBITIONS

*Soft Process*; Experimental study of material properties and casting conditions of slip-cast ceramic; exhibited in Tjaden Experimental Gallery in Ithaca, New York in September 2016; Co-Designer with Sida Zhang.

*Rebuilding the Rockaways*; Architecture Residency with Public Design Reviews; Museum of Modern Art PS1; Long Island City, NY; August 2013

## LICENSURE

LEED AP BD+C, License #: 11073581

Engineering in Training (EIT), passed Fundamental of Engineering Exam in October 2011