



WCS - NOAA REGIONAL PARTNERSHIP GRANT

Bronx Council for Environmental Quality

P.O. Box 265
Bronx, NY 10464-0265

dlandstudio

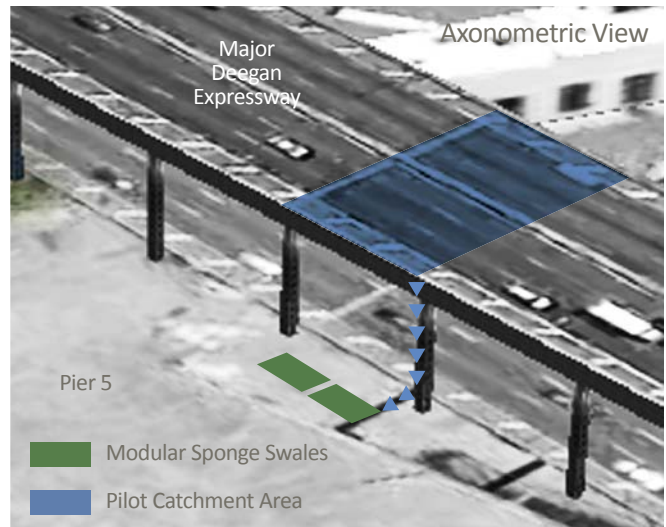
137 Clinton St.
Brooklyn NY 11201
T 718-624-0244



SITE OVERVIEW

The proposed site for the proposed storm water and phytoremediation modular sponge swales is located on Pier 5 in Bronx, NY. Currently, Pier 5 is an under utilized parcel bound by elevated vehicular infrastructure on East and South and by the recently constructed Mill Pond Park on the North. Runoff from Major Deegan Expressway drains into Harlem River via existing storm drains on Exterior Street and Pier 5 is a brownfield site.

The storm water and phytoremediation modular sponge swales will be located on Pier 5, West of the Major Deegan Expressway near the historical intersection of 150th and Exterior Streets. Currently, stormwater runoff from the Major Deegan Expressway is directed to the storm drains located on Exterior Street. The pilot will intercept the runoff by redirecting the downspout into Pier 5 and channeling the runoff into a hybrid conveyance system that will collect sediments and direct the runoff into the modular sponge swales. The modular sponge swales will be sized to manage up to 1” storm volume per NYC DEP Green Infrastructure Guidelines.

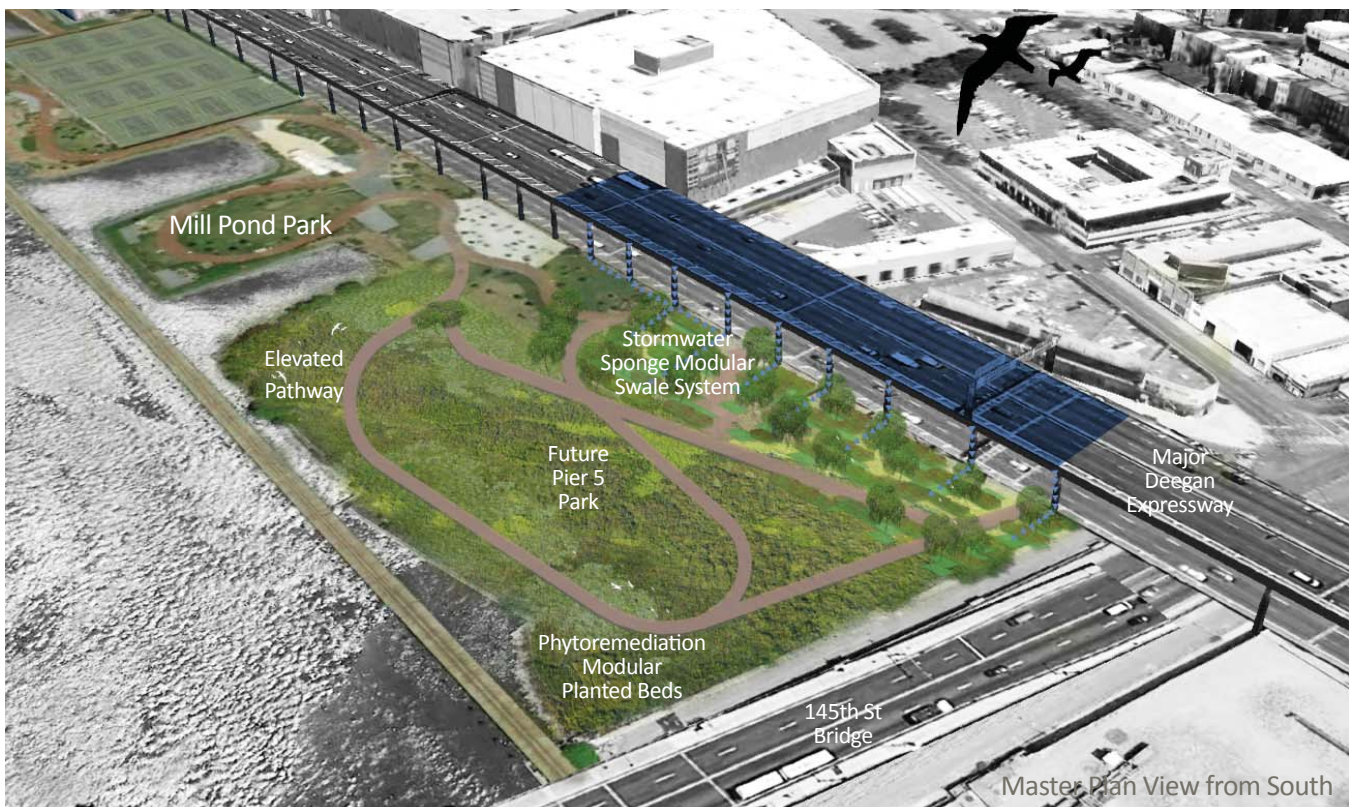


POTENTIAL STORMWATER CATCHMENT AREA CALCULATIONS:

- Tributary Area = 60' X 90' Section = **5,520 sf or 0.126 acre**
- P = 1.0 (Per NYC DEP)
- I = 100% (percent impervious cover)
- Rv = 0.05+0.009*(I) = 0.95
- WQv = (P*Rv*A)/12 = **0.009975 acre-feet or 434.51cu ft or 3250 gallons**



The stormwater and phytoremediation modular sponge swales can be expanded to create a park which provides a public amenity and utilizes ecological strategies to remediate existing and future soil and water contaminations.





I. PHYTOREMEDITATIVE PLANTS

- Extraction of First Flush Contaminants
- Water retention
- Evapo-Transpiration
- Promotes Microhabitat

Redirected Runoff from
Major Deegan Expressway

II. NEW ENGINEERED SOIL

- Filter media
- Water retention

III. PREFABRICATED STRUCTURE BASE

- Waterproof separation between BMP installation and brown field site
- Precast Structure

HYDROCARBONS DEGRADATION / ACCUMULATION

Little Blue Stem
Scoparium Schizachyrium m (Michx.) Nash

PAH



Switchgrass
Panicum virgatum

PAH



Red Fescue
Festuca rubra L.

PAH TPH



HEAVY METALS ACCUMULATION

Yarrow
Achillea millefolium

Cd



Drooping Sedge
Carex Pendula

Pb Zn Cd



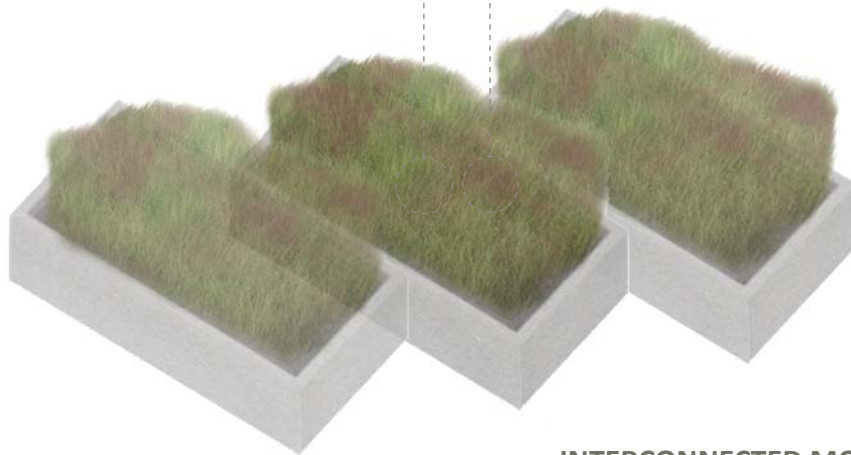
Indian Mustard
Brassica juncea

Mg Pb Zn



Canadian Wild Rye
Elymus canadensis L.

HC



INTERCONNECTED MODULES

- Overflow strategy allows water to flow from one module to another
- Increase capacity and flexibility of the Stormwater management system



I. PHYTOREMEDITATIVE NATIVE PLANTS

- Extraction of contaminants in soil
- Promotes Microhabitat

II. EXISTING CONTAMINATED SOIL

- Excavated soil from modular sponge swale

III. PREFABRICATED STRUCTURE BASE

- Waterproof separation between BMP installation and brown field site
- Precast Structure

PROJECT IMPLEMENTATION

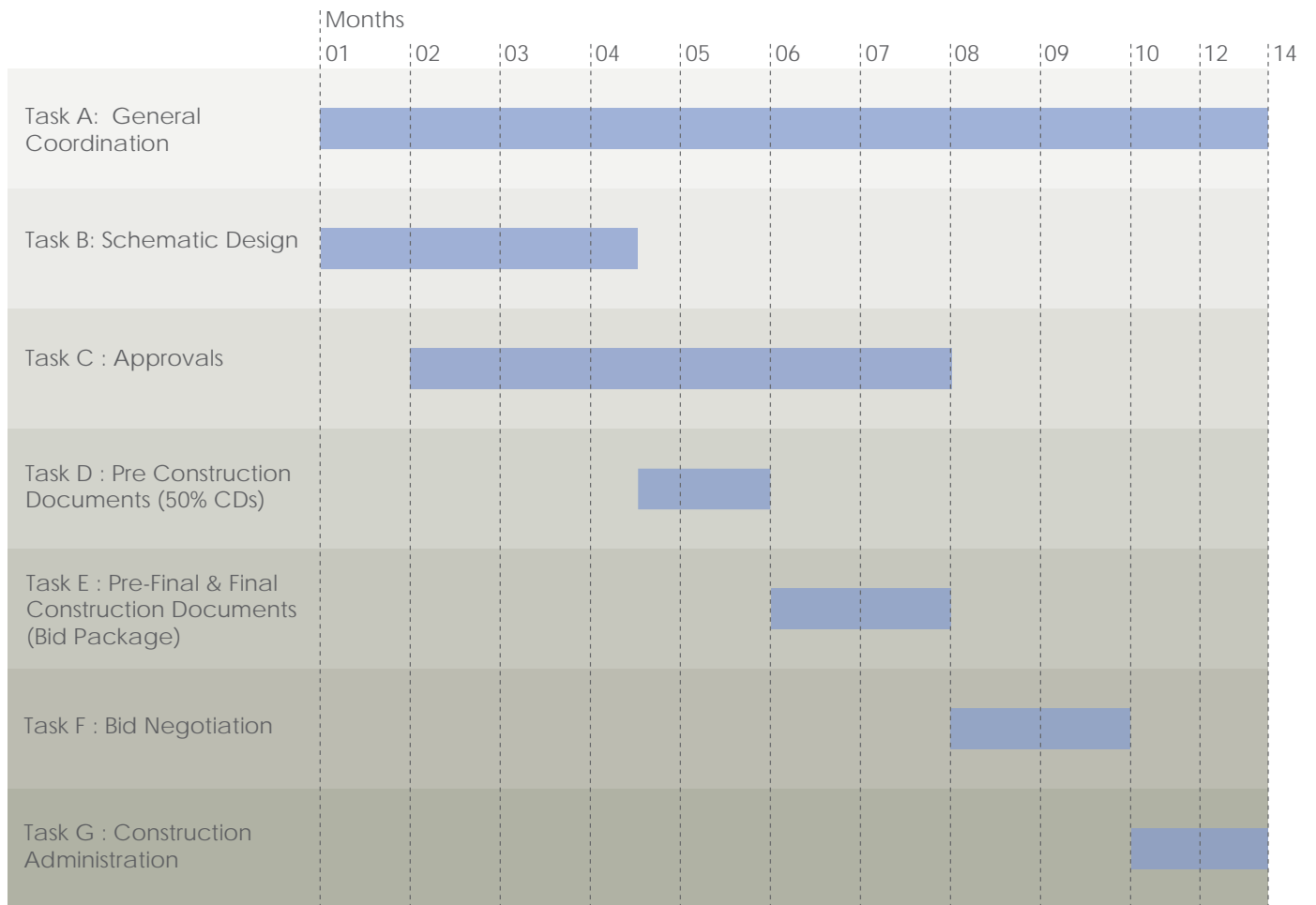
PROJECT DURATION:

14 Months from signing of contract

EXPECTED COMPLETION DATE:

SPRING, 2013

IMPLEMENTATION:



FIRM PROFILE

dlandstudio is an interdisciplinary design firm founded in 2005 by Susannah C. Drake. Prior to starting an independent practice, Susannah worked for architects and landscape architects in New York, Cape Cod, New Hampshire, Wyoming, and San Francisco. Exposure to diverse ecosystems, population densities, and scales of operation enriched her vision of what makes places truly special.

The firm provides an integrated approach to planning, programming, and design. As leader and collaborator on large consultant teams that include architects, artists, landscape architects, planners, and engineers, **dlandstudio** helps enrich team consideration of expressions of landscape meaning while maintaining focus on project goals throughout the development process. The firm is committed to creating projects with a strong conceptual basis drawn from an understanding of the place, the client, the program, and appropriate construction techniques. Our goal is to create beautifully designed, ecologically intelligent, and well-executed projects that work well at the large scale and are executed in rigorous detail.

Since its establishment in 2005, **dlandstudio** has grown both nationally and internationally. The firm's recent public projects include "A New Urban Ground" designed in collaboration with Architectural Research Office for the Museum of Modern Art's Rising Currents Exhibit, the Gowanus Canal Sponge Park™, a public open space system designed to absorb and remediate urban storm water, the Scupper Sponge project a bioremediation cell to collect and direct stormwater from a highway scuppers, BQGREEN: Reviving South Williamsburg a project developing strategies to add more open space and mitigate the noise and air pollution of the Brooklyn Queens Expressway, the Brooklyn Bridge Pop-up Park, a temporary waterfront open space that attracted almost two hundred thousand visitors over six weeks of operation in 2008, and the security for the New York City Police Department headquarters in lower Manhattan. **dlandstudio's** current international work includes the site master planning, storm water management, and landscape design for the Raising Malawi Academy for Girls outside of Lilongwe, Malawi, and the masterplan of a new 1200 acre resort complex and public park in Abuja, Nigeria. The firm's Brooklyn Queens Expressway trench study and Gowanus Canal Sponge Park™ project are the recipients of numerous awards including recent recognition by the American Institute of Architecture and American Society of Landscape Architects.

dlandstudio is a State and City certified WBE.



SUSANNAH C. DRAKE
Principal in Charge + Lead Designer

Susannah C. Drake, AIA, ASLA is the principal of **dlandstudio architecture + landscape architecture, pllc**, an award winning multi-disciplinary design firm. As the Principal in Charge and Lead Designer, Susannah will oversee and lead the conceptual framework and overall management of the projects. Susannah brings over 16 years of landscape and architecture design experience with implementation of complex urban projects in New York City.

dlandstudio is the recipient of National and International design urban design awards from the AIA, ASLA and Chicago Athenaeum among others. As one of very few designers of her generation with professional design qualifications in Architecture and Landscape Architecture, Susannah paved the way for more synthetic thinking about urban ecological infrastructure.

Susannah is the recipient of grants from the Graham Foundation, New England Interstate Water Pollution Control Commission, The James Marston Fitch Foundation and the New York State Council on the Arts for research on campus landscapes and large scale urban infrastructure projects. Susannah is the former President and Trustee of The New York ASLA, Trustee of the Van Alen Institute and visiting studio professor at the Cooper Union and Harvard University. She is the author of *Elastic Landscape: Seeding Ecology in Public Space & Urban Infrastructure* which was recently published in the collection of essays entitled *Infrastruktururbanismus*.

Susannah received a Bachelor's of Arts Degree from Dartmouth College and Master in Architecture and Master in Landscape Architecture degrees from the Harvard University Graduate School of Design.

sdrake@dlandstudio.com

EXPERIENCE

dlandstudio architecture + landscape architecture, pllc, Brooklyn, NY, Principal, 2005 - present
allied works architecture, New York, NY, Associate, 2005
Rogers Marvel Architects, New York, NY, Associate, 1999-2005
Dennis Wedlick Architects, New York, NY, Designer, 1998-1999
Beyer Blinder Belle, Architects & Planners, New York, NY, 1995-1998

EDUCATION AND AFFILIATIONS

Harvard University, Graduate School of Design
Master in Landscape Architecture, 1995
Master in Architecture, 1995

Dartmouth College
Bachelor of Arts, Major in Art History and Fine Arts, 1987

PROFESSIONAL QUALIFICATIONS

Registered Architect, New York
Registered Landscape Architect, New York, New Jersey, Missouri
CLARB & NYSCLA Certified
Registered Women's Business Enterprise, New York
Registered Disadvantaged Business Enterprise, New York

LEADERSHIP

Van Alen Institute, Trustee, 2009 - present
Dartmouth College, Design & Planning Advisory Board, 2007-2009
New York City Department of Environmental Protection
Green Infrastructure Steering Committee, 2011 - present
American Society of Landscape Architects, NY Chapter
Past-President, 2008-2010, Former-Trustee, 2010-2011
New Yorkers for Parks, New York, NY, Director's Council, 2008-2010
Fine Arts Federation, New York, NY, Director, 2007-2010
Brooklyn Bridge Park Community Council, New York, NY, Member, 2008 - present

TEACHING

Cooper Union
Studio Professor, 4th Year Design Studio, School of Architecture, 2011

Harvard University, Graduate School of Design
Adjunct Professor in Landscape Architecture
Option Studio Professor, *Planning and Design of Landscapes*, 2010
Core Studio, 2009

The City College of New York, New York, NY
Adjunct Professor, *Introduction to Design & Large Scale Planning*, 2008, 2009
Professor, *History and Theory of Landscape Architecture*, 2007

New York Botanical Garden, Bronx, NY
Lecturer and Instructor, 1995-2007

Middlebury College, Dartmouth College, Virginia Tech, Columbia University, Harvard University, Parsons The New School for Design, Syracuse University, University of Texas Austin
Visiting Critic and Lecturer

LECTURES

"VISION 2020: What Does It Mean for the Planning and Design of New York City's Waterfront?"
APA Biennial Conference, Columbia University, 2011

"Glimpses of New York/Amsterdam 2040"
Center for Architecture, New York City, ARCAM, Amsterdam, 2011

"MoMA Rising Currents: A New Urban Ground" IFLA Zurich, Switzerland, 2011

"The Future Waterfront & Funding for the NY-NJ Harbor"
Metropolitan Waterfront Alliance, Waterfront Conference, New York, NY, 2010

"Infrastruktur Urbanismus". Munich, Germany, 2010

"Sewerama" Brooklyn, NY, 2009

"Retrofitting the Urban Landscape" U.S. Green Building Council,
Urban Green Expo, New York, NY, 2009

EXHIBITIONS

"Glimpses of New York/Amsterdam 2040" Center for Architecture, New York City, ARCAM, Amsterdam, 2011

"AIA NY Chapter Award Exhibition" Center for Architecture, New York City, NY, 2010, 2011

"Rising Currents: A New Urban Ground" MoMA, New York, NY, 2010

"Ecotones" Center for Architecture, New York City, NY, 2008

PUBLICATIONS

"Rising Currents: Projects for New York's Waterfront" Museum of Modern Art, 2011

"Gowanus Canal Sponge Park" *Ecological Restoration*, Rutgers, The State University of New Jersey, 2011

"Term - Definition - Identity" *Topos 71*, 2010

"Sponge Park, New York City" *Topos 68*, 2009

AWARDS

Gowanus Canal Sponge Park™

National AIA, Honor Award, Regional and Urban Design, 2011

National ASLA, Honor Award, Analysis and Planning, 2010

AIANYS, Award of Merit, Unbuilt, 2009

Green Dot Awards: Service Category, Honorable Mention, 2009

BSA Award for Urban Regeneration, 2009

Chicago Athenaeum & European Centre for Architecture Art Design & Urban Studies, "Good Design Awards," 2009

ASLA Un-Built Works Merit Award, 2008

Rising Currents: A New Urban Ground

AIANY Chapter Award, Urban Design, 2011

BQE Trench: Reconnection Strategies for Brownstone Brooklyn

Chicago Athenaeum & European Centre for Architecture Art Design & Urban Studies, "Good Design Awards," 2010

AIANY Chapter Award, Urban Design, 2010

ASLA Un-Built Works Merit Award, 2007

Pop-Up Park™ @ BBP Pier 1

Brooklyn Bridge Park Conservancy, Emily Roebling Award, 2009

GRANTS

Long Island Sound Futures Fund, "Flushing Creek Sponge Park", 2011

New York City Department of Environmental Protection Gowanus Canal and Flushing Bay and Creek Watershed Initiative Grant, "Flushing Creek Sponge Park", 2009

New England Interstate Water Pollution Control Commission New York & New Jersey Green Infrastructure Grant, "Gowanus Canal Pilot Sponge Park™", 2010

New York State Council on the Arts, Individual Artist Grant,

"Strategies for improving the Brooklyn Queens Expressway in Brownstone Brooklyn", 2006

"The Ecology of Waterfront Architecture", 2009

Graham Foundation for the Advanced Studies in the Arts Individual Grant

"Campus landscapes of Beatrix Farrand", 2007

James Marston Fitch Fellowship, Individual Grant, "Study of campus landscapes of Beatrix Farrand at Princeton, Yale, and The University of Chicago", 2005



YONG K. KIM
Project Manager +
Senior Architectural Designer

Yong K. Kim is an associate and an urban designer at **dlandstudio architecture + landscape architecture, pllc**.

Yong will be the day to day project manager coordinating among the client, design architect and team of subconsultants. Yong will also be the Senior Architectural Designer bringing extensive design and project implementation experiences in design development and construction documentation phases in various architectural and landscape architectural projects.

At **dlandstudio**, Yong is working on public projects such as the Gowanus Canal Pilot Sponge Park™ and the One Police Plaza Security Upgrade. He has worked for architecture offices in Los Angeles, Providence, and Seoul, Korea. Yong's design experience includes participation in design teams of residential and institutional projects including the KidSpace Children's Museum, the University of Notre Dame DeBartolo Performing Arts Center and the winning entry for the masterplan of Giardini Di Porta Nuova competition in Milan, Italy.

Yong received his BArch and BFA degrees from Rhode Island School of Design, his MAUD degree from the Harvard University Graduate School of Design and studied architecture as a guest student at the Swiss Federal Institute of Technology in Zurich, Switzerland.

ykim@dlandstudio.com

PROJECTS

Project Manager

Gowanus Canal Pilot Sponge Park™, Brooklyn, NY
"AIA Glimpses of New York/Amsterdam in 2040" Exhibition, New York City, Amsterdam
MoMA Rising Currents Exhibition: A New Urban Ground, New York, NY
One Police Plaza Security Upgrade, New York, NY
Metropolitan Homes Showtime House, Tribeca Summit, New York, NY
Gowanus Canal Sponge Park™, Brooklyn, NY
Edgar Plaza Conceptual Design, New York, NY
Emerson Place Residences, Brooklyn, NY

Designer

Pop-Up Park at Pier One, Brooklyn Bridge Park, Brooklyn, NY
Schermerhorn Residence, Brooklyn, NY
KidSpace Children's Museum, Pasadena, CA, *Micheal Maltzan Architecture*
Rainbow Apartments, Los Angeles, CA, *Micheal Maltzan Architecture*
Giardini Di Porta Nuova, Milan, Italy, *Micheal Maltzan Architecture*
Leona Drive Residence, Beverly Hills, CA, *Micheal Maltzan Architecture*
2002 Venice Biennale International Exhibition of Architecture, Venice, Italy, *MMA*
Notre Dame University, DeBartolo Performing Arts Center, Notre Dame, IN, *HHPA*

EXPERIENCE

dlandstudio architecture + landscape architecture, pllc, Brooklyn, NY, Associate, 2007 - present
Harvard University, Graduate School of Design Exhibition Department, Cambridge, MA, Assistant Designer, 2005-2006
Michael Maltzan Architecture, Los Angeles, CA, Designer, 2001-2004
Hardy Holzman Pfeiffer Associates, Los Angeles, CA, Designer, 2000-2001
Rhode Island School of Design Museum, Providence, RI, Intern, 1998
Friedrich St. Florian, Architect, Providence, RI, Designer, 1997
Kesson International Interior Architecture, Inc, Supervisor, Seoul, Korea, 1996
Miekiyoung Kin, Landscape Architect, Designer, Providence, RI, 1996

EDUCATION

Harvard University, Graduate School of Design
Master in Urban Design, 2007

Rhode Island School of Design
Bachelor of Architecture, 2000
Bachelor of Fine Arts, 1999

Swiss Federal Institute of Technology, Zurich, Switzerland
Study Abroad, 1998-1999

TEACHING AND LECTURES

Harvard University, Graduate School of Design and Citizen Schools
Youth in Design Workshops, Instructor, 2007

Rhode Island School of Design
Teaching Assistant, 1996, 1999

Open House New York, Gowanus Canal Sponge Park™, 2010, 2011

FELLOWSHIPS

Samothrace Archeological Museum, Samothrace, Greece, Fellow, 2005, 2007, 2009

EXHIBITIONS AND PUBLICATIONS

"Glimpses of New York/Amsterdam 2040"
Center for Architecture, New York City, ARCAM, Amsterdam, 2011
"Rising Currents: A New Urban Ground" MoMA, New York, NY, 2010
"Colors" Harvard University Graduate School of Design Student Exhibition, Cambridge, MA, 2006
"Freeway" Roark Gallery solo exhibition, Los Angeles, CA, 2005
"Architecture at RISD Exhibition" Providence, RI, Professor Shanyne O'Neil Studio, 1998
"Monterrey: a Mexican City and Landscape in Transition" Studio publication, Macro Plaza Extension, 2006
ETH Jahrbuch 98-99, Professor Axel Fickert Studio, published by ETH, Zurich, 1998