

Mark Collins

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Mark Collins, in collaboration with Toru Hasegawa, is principal of **Proxy**, an innovation-focused design firm working across a range of scales and platforms. Proxy develops design thinking, software and projects using the latest technologies and innovative methods. More information can be found at <http://proxyarch.com>

Mark is co-director of the **GSAPP Cloud Lab**. The Cloud Lab is an experimental lab that explores the design of our environment through emerging technologies in computing, interface and device culture. The lab is directed by Toru Hasegawa and Mark Collins and resides at the Graduate School of Architecture, Planning & Preservation, Columbia University. More information can be found at <http://thecloudlab.org>

Selected Exhibitions and Publications

- Forthcoming **Digispeak**, edited by Gregory Luhan. Published by Taylor & Francis, London
Scripting Cultures: Architectural Design Primer, by Mark Burry. Published by John Wiley and Sons
Full-Scale, edited by Avery Digital Fabrication Laboratory
Perspecta Architectural Journal, "Processing Architecture"
Volume Magazine, "Internet of Things"
- 2011 **OpenJapan NYC**, community design charette for disaster relief. Organized with OpenSimSim and hosted by Studio-X and the GSAPP Cloud Lab.
THERE Issue 06: Craft, "Good Objects Make Themselves" Article describing Proxy's algorithmic approach to architectural design. University of Minnesota
ALGODE 2011 Algorithmic Design for Architecture Conference, selected paper and presentation "Human Computer Interaction in Architecture: Exploring the Brain-Body-Environment Continuum"
Japan Tech Conference Paper
Machinic Processes: Architecture Biennial Beijing 2010
"Computing Kaizen" studio exhibited as part of a curated presentation of innovative student work from around the world.
Cloud Computing and Architecture Symposium, Osaka Sangyo University
Organized with Takashi Yamaguchi
- 2010 **A+U "New Directions: Sustainability and Technology in New York"** Proxy is a featured architect in a focus on innovative architectural practices.
"Programming Bodies: Last Computing Counter-Culture" symposium. Hosted by Hosei University
Processing.org Digital Exhibitions, "Computing Kaizen"
AIA New York Design Awards Program, "Stabile Student Center" Architecture Honor Award
Featured in "Small Shifts Bring Large Changes: Kaizen and Innovation", Japan Business Press
- 2009 **Rouse[d]** Exhibit, invited exhibitor
The Brian Lehrer Show "Applying Government Data" Proxy's *BuildingBeat for iPhone* featured as part of the NYC BigApps Competition.
AD Closing the Gap: Information Models in Contemporary Design Practice edited by Richard Garber
The Columbia University School of Journalism interior, a collaboration with Marble Fairbanks, is featured.
Out of Water: Innovative Technologies for Arid Climates University of Toronto
Proxy exhibits *Liquid Wrap*, a system for water purification using computational form and rapid prototyping in the context of water stressed populations. Curated by Aziza Chaouni and Liat Margolis.

- Algorithmic Design: New Methodologies of Architectural/Urban Design** Architectural Institute of Japan. Proxy's work with the N Maeda Atelier is featured in this publication, focusing on the solar cartography produced during the collaboration. Published by the Kajima Institute.
- 2008 **(Im)material Processes: New Digital Techniques for Architecture**
Proxy exhibits recent work as part of the East Coast Section of the 2008 Beijing Architecture Biennial, curated by Neil Leach and Alisa Andrasek..
- Oficina des Ideias** Exhibition supporting the release of *Informal Toolbox*
Filling a large public space in the Edificio Matarazzo, São Paulo Brazil, the exhibition featured images and text from the *Informal Toolbox*.
- Informal Toolbox** Co-Editor, Author and Designer
In 2008, the SLUM LAB visited Paraisópolis, a Brazilian favela in the heart of São Paulo and site of upgrading efforts by the municipality. The collaboration between these entities is presented alongside a series of architectural 'tactics' conceived to integrate and transform sprawling tracts of informal housing that support a dynamic social and spatial life. ISBN 9780982078303
- SUPERFRONT** - "Something About Rooms and Walls"
Proxy exhibits the StatWall, a surface visualization of NYC 311 statistics.
- 2007 **ScriptedByPurpose** - "explicit and encoded processes within design"
Proxy exhibits four works, entitled "Rich Fields" as part of the F.U.E.L. Collection's ScriptedByPurpose show, curated by Mark Fornes and Skylar Tibbits
- Maker Faire 07** - "Build, craft, hack, play, MAKE"
the Happy Family Lamp is exhibited, sponsored by the publishers of Make and Craft Magazine.
- Strutting Space** *Architecture Week* – article detailing design and construction of the 'Trusset Wall'
- 2006 **Architecture 'Made in the USA'** ON MADRID no 17 2006 features Inside/Out as part of a feature on 'Imagined Spaces' exhibition
- Columbia 125th Anniversary**
'Trusset wall' exhibition sponsored by the GSAPP Office of Development + Office of Special Events
- Architecture Biennial Beijing 2006** - "Emerging Talents, Emerging Technologies"
display includes the Happy Family Lamp and (un)Natural Selection
- Build Boston 2006**
the 'topological house' exhibited as part of BSA's Young Designers Exhibition
- ACADIA 2006: Synthetic Landscapes**
the hexEnvelope prototype is included in a range of exhibits pertaining to the conference theme of digital design and production in a pluralistic software environment
- ACADIA 2006 Proceedings** - *The hexEnvelope system: a cross-platform embedding of material and software logic into descriptive geometry*
- Imagined Spaces: Emerging New York City Architects** includes Inside/Out in exhibition, Picasso Mio Gallery, Barcelona Spain. Limited edition prints of hexEnvelope also selected for display.
- (un)Natural Selection** – hexEnvelope metal structure exhibited - Avery Hall, Columbia University
- 2004 **Object[s] of Architecture**, Atlanta Contemporary Gallery
Work with Brock Green Architects exhibited in a group show of Atlanta architects

Professional Experience

- 2006-present **Proxy** Architecture and Design, New York - Founding Partner and Director
A research based practice that looks for concurrent ideas and processes across disciplines, defining a new domain of architectural production. Recent projects include:
Modular Ceiling Systems for Arktura, a commissioned series to be retailed by Arktura.
Solar Chimney, a continuing research into green building structures and urbanism.

Melody Shafie Memorial, a sculpture that honors the memory of a victim of Neuroblastoma. The memorial provides a contemplative space for the family as well as an educational tool for the Melody Shafie Foundation.

NYU Advanced Media Studio, a rehabilitation of an existing space that serves the NYU community with Rapid Prototyping services. The new space features the potential of RP equipment to realize tangible, intelligent spaces.

FDNY Engine House Facade, a procedurally generated façade pattern produced in collaboration with Marble Fairbanks architects. Using custom software, Proxy designed a complex façade that is based the science of light refraction.

"I Remember You..." House in Tokyo, Japan with N Maeda Atelier. Using solar analysis tools and custom software, Proxy and the N Maeda Atelier were able to create a unique home that strategically opens itself to the available light.

Toni Stabile Student Center at the Columbia School of Journalism, with Marble Fairbanks, a folded-metal ceiling that features a complex perforation pattern generated from acoustic simulation. Winner, NY 2010 AIA Honor Award.

The Trusset, a structural system that can assume an arbitrary shape and is suited for complex shapes, rapid deployment and unskilled assembly. Research is supplemental to initial design and prototyping by Phillip Anzalone and Cory Clarke in the context of the GSAPP FABCON Lab.

The Topological House, an experimental structure that uses topological description to motivate programmatic layout and construction technologies.

2003-2005 **Davis Brody Bond Architects**, New York

2001-2003 **Brock Green Architects**, Atlanta, GA

Education

2003-2006 **Columbia University** GSAPP Master of Architecture Program

2000-2001 **Ecole Nationale Supérieure d'Architecture de Paris La Villette**

1997-2001 **Georgia Institute of Technology** Bachelor of Science, Architecture Program

Academic Teaching Experience

2006 – present **Studio** Advanced Studio VI: Brain Hacking Studio, Columbia University GSAPP
with the Columbia University Laboratory for Intelligent Imaging and Neural Computing

The "Brain Hacking" studio explored new advancements in Brain-Computer interfaces, allowing the electrical activity of the brain to guide design and selection. In partnership with the LIINC lab, the studio pioneered a series of experiments studying spatial processing in the brain.

Studio Advanced Studio VI: Computing Kaizen, Columbia University GSAPP

The "Computing Kaizen" studio explored evolutionary architectural structures and their potential to anticipate change and internalize complex relationships. The studio used Processing, an open source platform for writing computational "sketches", to create intelligent building blocks that could self-organize into innovative forms.

Seminar Search: Advanced Algorithmic Design, Columbia University GSAPP

The seminar attempts to bring genetic algorithms, and other advanced algorithmic techniques, into a productive discourse within the worlds of architecture design and theory. This seminar surveys a broad set of tactics for algorithmic deployment of architectural thinking.

Seminar Fabricating Information, NYU Interactive Telecommunication Program, Tisch School of the Arts

The seminar functions as both an introduction to different CNC + prototyping equipment as well as a studio in which to test the possibilities and constraints of new methods of production.

Seminar Digital Detailing : Testing & Analysis. Columbia University GSAPP

This seminar explores simulation and prototyping as different modalities in which feedback can be explored and incorporated back into design.

Legacy **Seminar** Fabricating Information, NYU Interactive Telecommunication Program, Tisch School of the Arts

The seminar functions as both an introduction to different CNC + prototyping equipment as well as a studio in which to test the possibilities and constraints of new methods of production.

Studio Participating Bodies, WUSTL Sam Fox School of Design, Fall 2010

A graduate-level options studio that examined the “internet of things” as an opportunity to revitalize education and campus life.

Workshop 2GBX Workshops, Southern California Institute of Architecture, Spring 2010

Using Processing to untangle the relationships between geometry, human capacity for perception, computational structures and algorithms and output protocols and capacities (such as CNC machines, monitors, LCD displays).

Studio Slum Lab Studios, Columbia University, GSAPP

with Alfredo Brillembourg and Hubert Klumpner, from 2006 to 2009

The Sustainable Urban Model (Slum) studios explore the relationship between complexity, mapping and growth models in the context of 3rd world slum conditions. The studios form the basis for the GSAPP Slum Lab, an initiative to direct design and technology towards underserved populations.

Seminar ‘Digital Detailing/Complex Assemblage’ Columbia University, GSAPP

with Toru Hasegawa and Phillip Anzalone, Spring 2007

Intended not only as a forum to develop the relationship between parametric design and CNC fabrication, the class also seeks to explore alternative methods and economies of production, ranging from industrial manufacturing, micro-economic fabrication, personal fab, and pre-fab.

2006 – present **Invited Lecturer** Columbia University, Hosei University, Osaka Sangyo University, University of Toronto, University of Nebraska

2006 – present **Jury Critic** Columbia University, Harvard University, Yale University, Georgia Institute of Technology, Pratt Institute