ZACH SEIBOLD

Lecturer in Architecture and Research Associate, Harvard University Graduate School of Design
Adjunct Professor, Wentworth Institute of Technology
Co-founder, VHS Office

Curriculum Vitae

EDUCATION

Harvard University: Graduate School of Design: Cambridge, MA: 8.2013 - 5.2015

Master of Design Studies: Technology

Thesis: Adaptive Frames

Courses in computational design, digital fabrication, material systems, art design + the public domain.

Massachusetts Institute of Technology: School of Architecture + Planning: Cambridge, MA: 08 - 12.2014

Course in Media Arts and Sciences: How to Make Almost Anything

Syracuse University: School of Architecture: Syracuse, NY: 8.2003 - 12.2008

Bachelor of Architecture awarded Magna Cum Laude

Thesis: From the Ashes of Fordism

Spring 2006 Study Abroad: Florence, IT

Cornell University: College of Architecture Art + Planning: Ithaca, NY: 6 - 8.2002

Courses in architecture theory and design.

SELECT RESEARCH + DESIGN WORK

Material Processes + Systems Group, Harvard GSD: Research Associate: 2016 – Present: Cambridge, MA

Post-tensioned Ceramics: Lead Designer of a novel structural system using post-tensioned slender ceramic extrusions and custom 3D printed connectors. Responsibilities included mechanical testing, development of parametric models for fabrication and analysis, prototype fabrication, and project management for the fabrication of a full-scale mock-up.

Ceramic Tectonics - Tile Grid Shell: Project lead for an all-ceramic grid shell structure exhibited at Cevisama 2018.

Ferro-tiles: Development of a dynamic, reusable mold system for various cast-able building materials.

Ceramic 3D Printing: Ongoing research of additive manufacturing techniques for ceramic building components, including research of functionally-graded materials, 5-axis robotic printing.

Ceramic Morphologies: Development and project management of a novel 3d printing strategy for ceramic building components, including the fabrication of a pavilion exhibited at Cevisama 2017.

Laboratory for Design Technologies, Harvard GSD: Research Associate: 2019 – Present: Cambridge, MA

Future of Air Travel: Research lead developing methods for quantifying the human experience in air travel, including how travelers navigate airports and planes, metrics for understanding spatial ambiance, and models for predicting human behavior in particular environments. Outcomes include the research book *On Flying: The Toolkit of Tactics that Guide Passenger Perception* and an accompanying website, airtraveldesign.guide.

VHS Office: Co-Founder, Principal: 2012 – Present: Somerville, MA

William Street Residence, Tisbury, MA: Schematic design through construction administration for redesign and renovations of an existing structure into a single family residence. Ongoing.

Farm Lane Residence, Westwood, MA: Schematic design through construction administration for renovations to an existing single family residence. Construction completed summer 2018.

Massey-Norman Residence, Brooklyn, NY: Design and construction of renovations to an existing multi-family residence. Construction completed in 2013.

Höweler + Yoon Architecture: Designer/Fabricator: 2015 – 2016: Boston, MA

FloatLab, Philadelphia, PA: Schematic design and project management of a 75' diameter floating platform devoted to art and ecology on the Schuylkill River, including the testing and deployment of an occupiable design prototype. Honorable Mention: 65th Annual Progressive Architecture Awards

Swingtime 3.0, Boston, MA: Design, prototyping, fabrication and installation of translucent roto-molded swings, including the design and production of custom electronics.

Empathy Pavilion, Dubai Expo 2020, Dubai, UAE: Concept design of 80,000sf Expo Pavilion, including the development of parametric tools for evaluating design iterations.

Peppertree Residence, Great Falls, VA: Produced construction documents, preliminary cost estimates and managed the bidding process for a 6,000sf residence.

Fabrication: Managed in-house fabrication shop, including 3-axis CNC mill, laser cutter and wood shop. Generated 3d models for CNC production and direct communication with fabricators.

MOS Architects: Intermediate Architect: 2011 - 2012: New York, NY

Foreclosed: Rehousing the American Dream: Produced physical models and films for 2011 MoMA exhibition.

226 W 135th St: Produced DoB submittal, coordinated consultants, designed details and managed construction.

Syracuse University: Project Manager: 2009 - 2011: Syracuse, NY

The 601 Tully Project, Syracuse NY: Collaborated with multiple organizations to convert an abandoned residence into a center for art, writing and entrepreneurship. Created graphic and written content for major grant applications, governmental approval hearings, social media, speaking engagements, press packets and community events. Coordinated the sourcing, processing and re-purposing of local building materials.

SELECT PUBLICATIONS

Seibold, Z: Mhatre, S; Alhadidi, S; Garcia del Castillo, J.L; Bechthold, M: "Janus Printing: Co-extrusion based Multi-material Additive Manufacturing for Ceramics" in Ubiquity and Autonomy: Proceedings of the 39th Annual Conference of the Association for Computer Aided Design in Architecture, 2019.

Seibold, Z: Grinham, J; Geletina, O; Ahanotu, O; Sayegh, A; Weaver, J; Bechthold, M: "Fluid Equilibrium: Material Computation in Ferrofluidic Castings" in Re/Calibration: On Imprecision and Infidelity: Proceedings of the 38th Annual Conference of the Association for Computer Aided Design in Architecture, 2018.

Seibold, Z; Hinz, K; Garcia del Castillo, J.L; Alonso, N.M; Mhatre, S; Bechthold, M: "Ceramic Morphologies: Precision and Control in Paste-Based Additive Manufacturing" in Proceedings of ACADIA Conference: Re/Calibration: On Imprecision and Infidelity: Proceedings of the 38th Annual Conference of the Association for Computer Aided Design in Architecture, 2018.

Seibold, Z., Mesa, O., Stavric, M., Bechthold, M.: Ceramic Tectonics: Tile Grid Shell – Proceeding of the IASS Symposium 2018, MIT Press Journals, Cambridge. 2018.

Seibold, Zach, et al. "Voxel Beam: Re-Fabricating a Structural Beam." Proceedings of the 20th International Conference of the Association for Computer-Aided Architectural Design Research in Asia, CAADRIA 2015.

Seibold, Zach, et al. "Robotic Fabrication of Components for Ceramic Shell Structures." Journal of the International Association for Shell and Spatial Structures 55.4 (2014): 237-42.

Seibold, Zach, et al. "Robotic Fabrication of Components for Ceramic Shell Structures. Presented at the International Association for Shell and Spatial Structures IASS-SLTE 2014 Symposium, Brasilia, Brazil, September 15-19, 2014; paper 319.

ARCHITECTURE FACULTY POSITIONS

Harvard University Graduate School of Design: Cambridge, MA

Lecturer in Architecture: 07.2019 - Present

Instructor: Digital Skills Workshop: 08-09.2014, 08-09.2015

Architecture Studio Instructor: Career Discovery: 6-7.2015

Wentworth Institute of Technology: Boston, MA

Associate Graduate Faculty 08.2020-Present

Adjunct Professor: 01.2017-7.2020

ORIGINAL ACADEMIC COURSEWORK

Fall 2021

VIS-2228: Digital Media: Models

Harvard University Graduate School of Design

An introduction to fundamental concepts, techniques, and methods in digital design, with a focus on reciprocal processes of translation between digital media and material artifacts. Key topics are explored via an investigation of the various forms of the 'model' deployed in contemporary architectural design practice. Developed in collaboration with Hyojin Kwon.

SCI-6317: Material Systems: Digital Design and Fabrication

Harvard University Graduate School of Design

An advanced seminar exploring applied research methodologies and investigation into the opportunities and challenges afforded by digital fabrication techniques, with a focus on ceramic material systems. Developed in collaboration with Nathan King.

Spring 2021

HAA-96A: Transformations

Harvard College/Graduate School of Arts and Sciences

An introductory architectural design studio focused on building foundational architectural concepts and design methodologies studied through a process of making. A series of physical modeling/fabrication assignments explore spatial and organizational transformations as a consequence of the changing interactions among material, fabrication technique, and form.

Fall 2020

VIS-2228: Digital Media: Artifacts

Harvard University Graduate School of Design

An introduction to fundamental concepts, techniques, and methods in digital design, with a focus on reciprocal processes of translation between digital media and material artifacts. Key topics are explored through techniques of photogrammetry, image processing and mesh editing. Developed in collaboration with Hyojin Kwon.

SCI-6317: Material Systems: Digital Design and Fabrication

Harvard University Graduate School of Design

An advanced seminar exploring applied research methodologies and investigation into the opportunities and challenges afforded by digital fabrication techniques, with a focus on home-based fabrication methods. Developed in collaboration with Nathan King.

ARCH 3850: Digital Design: Techniques and Technologies

Wentworth Institute of Technology

A graduate-level elective course on advanced digital fabrication techniques in architecture, with a focus on parametric design strategies and the fabrication of full-scale design prototypes using a variety of digital fabrication techniques.

Spring 2020

SCI-6365: Enactive Design: Creative Applications through Concurrent Human-Machine Interaction

Harvard University Graduate School of Design

An advanced research seminar on human-machine interaction which explores the role of real-time, bidirectional communication between human and digital agents in a design context. The seminar explores the design of concurrent human-machine interactive platforms, with a particular focus on the computational aspects of the system. Exercises experiment with real-time robotically-controlled fabrication techniques, interactive installations and artistic interventions. Developed in collaboration with Jose Luis García del Castillo y López.

Fall 2019

VIS-2228: Digital Media: Manipulations

Harvard University Graduate School of Design

An introduction to fundamental concepts, techniques, and methods in digital design, with a focus on reciprocal processes of translation between digital media and material artifacts. Key topics are explored through techniques of robotic hot wire cutting and projection mapping. Developed in collaboration with Hyojin Kwon.

ARCH 3800: Techniques and Technologies in Digital Fabrication

Wentworth Institute of Technology

A graduate-level elective course on advanced digital fabrication techniques in architecture, with a focus on parametric design strategies and the fabrication of full-scale design prototypes using a variety of digital fabrication techniques.

Spring 2018

ARCH 3800: Techniques and Technologies in Digital Fabrication

Wentworth Institute of Technology

A graduate-level elective course on advanced digital fabrication techniques in architecture, with a focus on parametric design strategies and the fabrication of full-scale design prototypes using CNC machining, vacuum forming and 3D printing.

Spring 2017

ARCH 3700: Techniques and Technologies in Digital Fabrication

Wentworth Institute of Technology

An advanced undergraduate-level course on advanced digital fabrication techniques in architecture with a focus on parametric design strategies and the fabrication of full-scale design prototypes, focused on the CNC machining wood sheet materials.

WORKSHOPS

Welcome Machine: Workflows for the At-Home Fabricator (4/2021)
Human +: 12th Annual Symposium on Simulation for Architecture and Urban Design (SimAUD). 15-17 Apr 2021, Virtual. A workshop which positioned material systems and the numerically controlled machines which manipulate them as a venue for speculative design research in an at-home setting. With Nathan King and Erin Linsey Hunt.

Master of Design Engineering – Pre-term Workshop - Harvard University Graduate School of Design (8/2019)
Introduced incoming students to software, workflows, model-making techniques and hardware prototyping commonly used in the Master of Design Engineering program.

Master of Architecture Digital Skills Workshop - Harvard University Graduate School of Design (8/2015)
Workshop Lead. Developed a curriculum to introduce incoming M.Arch 1 students to software, workflows, model-making techniques and conceptual expectations within the GSD. With Patrick Burke and Thena Tak.

Master of Architecture Digital Skills Workshop - Harvard University Graduate School of Design (8/2014)
Introduced incoming M.Arch 1 students to software, workflows, model-making techniques and conceptual expectations within the GSD. With Juan Pablo Ugarte and Ling-Li Tseng.

AWARDS

2021 Harvard Excellence in Teaching Award – Harvard Office for Undergraduate Education

2021-2022 *"Sustainability – Perceptions and Choices"* Center for Green Buildings and Cities Faculty Grant. (with Martin Bechthold) Harvard Graduate School of Design. $20,000.

INVITED CRITIC

Wentworth Institute of Technology, invited by Rob Trumbour as guest critic to the Graduate Architecture Studio final review. April 15, 2021.

Wentworth Institute of Technology, invited by Rob Trumbour as guest critic to the Graduate Architecture Studio final review. December 11, 2020.

Harvard Graduate School of Design, invited by Hyojin Kwon as guest critic to the Pre- and Post- final review. May 8, 2020.

Harvard Graduate School of Design, invited by Jose Luis García del Castillo y López as guest critic to the Introduction to Computational Design final review. December 17, 2019.

Wentworth Institute of Technology, invited by Rob Trumbour as guest critic to the Graduate Architecture Studio final review. December 11, 2019.

Wentworth Institute of Technology, invited by Rob Trumbour as guest critic to the Graduate Architecture Studio final review. April 18, 2019.

Wentworth Institute of Technology, invited by Carol Burns as guest critic to Graduate Architecture Thesis reviews. April 9, 2018.

Northeastern University, invited by Mark Rukamathu as guest critic to the Third Year Architecture Studio final review. December 12, 2016.

Boston Architectural College, invited by Puja Patel as a guest critic to the introduction to digital fabrication course. March 10, 2016.

Wentworth Institute of Technology, invited by Christopher Meyer as guest critic to the Second Year Architecture Studio final review. June 5, 2015.

ADDITIONAL ACTIVITY

PRESS

Raskin, Laura. Architects, Engineers, and Physicians Develop COVID-19 Patient Isolation Hood. www.architecturalrecord.com, https://www.architecturalrecord.com/articles/14570-architects-engineers-and-physicians-develop-covid-19-patient-isolation-hood.

Pacheco, Antonio. "Harvard PPE Team Uses Slack to Design Patient Isolation Hood for Hospital Use." Archinect. archinect.com, https://archinect.com/news/article/150193745/harvard-ppe-team-uses-slack-to-design-patient-isolation-hood-for-hospital-use.

Bernstein, Fred. "The Brilliant Trick That Turned an Old Brooklyn Storefront Into a Modern Pied-à-Terre." New York Magazine Design Hunting Fall/Winter 2018, Oct. 2017, https://www.thecut.com/2017/10/the-trick-that-turned-a-storefront-into-a-pied-terre.html.

GSD Platform 7, Harvard GSD: Work from the spring 2014 semester featured in publication and exhibition of current research at the Graduate School of Design

OTHER CONTRIBUTIONS

Digital models and illustrations for the book: Martin Bechthold, et al. *Ceramic Material Systems: In Architecture and Interior Design*. Birkhauser, Walter de Gruyter GmbH, 2015.