

Physics & Contemporary Architecture Guest Lecture Series Spring '22

These 9 public lectures are part of the course PHSC11800 *Physics & Contemporary Architecture* at the University of Chicago and they are open to anyone interested. All lectures take place on Thursdays at 5:30pm CST and they will be presented online as live video conferences.

Register at <https://uchicago.zoom.us/meeting/register/tJYvcuqvpsqG9RwSI0bSRr4mrez93IK18Ew>

After registering, you will receive a confirmation email with information that will enable you to attend the Guest Lectures via Zoom.

April 7 Caitlin Mueller (<i>Digital Structures, MIT</i>)	<i>Computational Physics for Architectural Design</i>
April 14 Chad Kraus (<i>Dirt Works Studio</i>)	<i>Tectonics of Earth Architecture</i>
April 21 David Benjamin (<i>The Living</i>)	<i>Living Materials</i>
April 28 Aleksandar Sasha Zeljic (<i>Gensler</i>)	<i>Shanghai Tower: Mega-Tall Structure Design</i>
May 5 Toby Mitchell (<i>Skidmore, Owings & Merrill</i>)	<i>Strength from Shape: Shell Structures in Architecture and Engineering</i>
May 12 Stefaan Lambreghts (<i>Grant Associates</i>)	<i>Urban/Landscape Innovations in Singapore: Local Projects by Grant Associates</i>
May 19 John Clark (<i>Cordogan Clark</i>)	<i>Designing the 41st & 43rd Street Chicago Pedestrian Bridges</i>
May 26 Xavier De Kestelier (<i>Hassell</i>)	<i>Adventures of an Interplanetary Architect</i>
June 2 Moshe Safdie (<i>Safdie Architects</i>)	<i>TBA</i>

This lecture series is supported by the College Curricular Innovation Fund and organized in cooperation with the Arts, Science + Culture Initiative at The University of Chicago.

For information on the lecturers see below.

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April 7



Caitlin Mueller (*Digital Structures, MIT*)

Caitlin Mueller is a researcher and educator who works at the creative interface of architecture, structural engineering, and computation. She is currently an Associate Professor at the Massachusetts Institute of Technology's Department of Architecture and Department of Civil and Environmental Engineering, in the Building Technology Program, where she has led the Digital Structures research group since 2014. Her work focuses on new computational design and digital fabrication methods for innovative, high-performance buildings and structures that empower a more sustainable and equitable future. Professor Mueller earned a PhD in Building Technology from MIT, a SM in Computation for Design and Optimization from MIT, a MS in Structural Engineering from Stanford University, and a BS in Architecture from MIT.

April 14



Chad Kraus (*Dirt Works Studio*)

Chad Kraus, AIA, is an Associate Professor of Architecture at the University of Kansas and a licensed architect. He teaches courses on architectural theory, mass timber, earthen architecture, architectural design studio, and the award-winning designbuild Dirt Works Studio. The studio has received multiple design awards including the Architecture Masterprize, AIA Design Awards, and the Architects' Newspaper Best of Design Award. In 2014, Kraus was the recipient of the ACSA Designbuild Award. His scholarship concentrates on designbuild pedagogy and natural material research. He is the editor of the book *Designbuild Education* (Routledge 2017) and an editor of the journal *Technology | Architecture + Design* (TAD). Prior to teaching, Kraus worked for Pritzker-prize laureate Shigeru Ban, where he worked on projects such as Metal Shutter Houses, the Nomadic Museum, and Furniture House 5. He studied architectural history and theory under Alberto Perez-Gomez at McGill University.

April 21



David Benjamin (*The Living*)

David Benjamin is Founding Principal of The Living and Associate Professor at Columbia GSAPP. His work combines research and practice, with a focus on an expanded and actionable framework of environmental sustainability. Exploring the intersection of biology, computation, and a circular economy, Benjamin has articulated three frameworks for harnessing living organisms for architecture: bio-processing, bio-sensing, and bio-fabricating.

The Living has won many design prizes, including the Emerging Voices Award from the Architectural League, the Young Architects Program Award from the Museum of Modern Art and MoMA PS1, and a Holcim Sustainability Award. Recently, Benjamin appeared in Rolling Stone as one of "25 People Shaping the Future," and The Living was ranked third on Fast Company's list of World's Ten Most Innovative Architecture Firms. Recent projects include the Airbus NIS Engine Factory (a low-carbon lighthouse project for the future of manufacturing), the Princeton University Embodied Computation Lab (a new building for research on robotics and IoT), Pier 35 EcoPark (a floating pier in the East River that changes color according to water quality), and Hy-Fi (a branching tower for MoMA PS1 made of a new type of biodegradable brick).

April 28

Aleksandar Sasha Zeljic (*Gensler*)



Aleksandar Sasha Zeljic has over 22 years of experience on a wide range of complex, high-profile projects – including award winning Shanghai Tower, Manila's Finance Centre Tower, World Plaza and the Shirley Ryan Ability Lab in Chicago. Sasha strives to design beautifully crafted, high performance buildings for clients around the globe.

Serving as a Studio Director and Design Principal in Gensler's Chicago Office, Sasha also leads the Commercial Office Buildings Practice for the North Central Region, and sits in the firm's Global Practice Area Management Committee, working to deliver innovative solutions for clients through his continued passion for excellence. Sasha's most recent work includes projects in Chicago's West Loop: Fulton West – 1330 West Fulton which was completed in 2017 and 333 North Green which was completed in 2020.

May 5

Toby Mitchell (*Skidmore, Owings & Merrill*)



Toby Mitchell studied engineering physics at the University of Michigan, structural engineering at the University of Illinois at Urbana-Champaign, and received his doctorate in structural engineering from the University of California at Berkeley. His doctoral research was in grid and continuum shell structure optimization.

Since joining SOM as an engineer in 2013, Toby Mitchell has worked on various high-rise building projects and on several pedestrian bridge and long-span roof structures. His specialty is the design and optimization of complex structural geometry, and he has been an active leader in these topics in SOM's internal structural research group, as well as publishing papers in several journals and proceedings in this area.

May 12

Stefaan Lambreghts (*Grant Associates*)



Now fully immersed in landscape design, Stefaan started his career as an Architect and Urban Planner in Belgium. Wanting to broaden his design horizon, he moved to London to pursue an MA in Housing and Urbanism at the Architectural Association. Within a couple of years, he made the transition to landscape, recognising his underlying passion for the environment and caring as much about trees as about buildings. After more than a decade in London, mostly working on complex public realms, Stefaan joined Grant Associates in 2014. He currently leads the Singapore studio, running a wide variety of Asian projects. His architectural background and his extensive landscape experience allow Stefaan to integrate architecture and landscape seamlessly. For his design narratives, he draws his inspiration from his experiences of sites and surroundings. He won several awards for his projects and gets regularly invited to lecture about landscape.

May 19



John Clark (*Cordogan Clark*)

A founding principal of Cordogan, Clark & Associates, John Clark manages the firm's Chicago office, and together with his partner, John Cordogan, is responsible for the architecture, design, and construction quality of the firm's projects. John has won national and international design and design/ build competitions for a variety of projects, including the new bridge-based Pavilions for the Illinois State Toll Highway Authority; for the 41st and 43rd street bridges, Chicago; and the Florida Oasis redevelopment. He has designed a broad range of projects in the Chicago area, the Midwest, and internationally. These have ranged from large-scale municipal, institutional, and educational facilities to high-rise, multi-use office and hotel complexes. John has completed a wide variety of significant projects involving urban planning, municipal design, and historic and contextual design. Recent designs include major planning projects in China, with a particular emphasis on integrating architecture with nature. John has served on design award juries for The American Institute of Architects and has been a visiting design juror at the University of Illinois, Illinois Institute of Technology, and at the Art Institute of Chicago, where he has also served on the design faculty.

May 26



Xavier De Kestelier (*Hassell*)

Xavier is Head of Design at international design practice Hassell, where he leads design technology and innovation across all disciplines and regions. For the last decade, Xavier has been an industry leader in the field of parametric design, digital fabrication and additive manufacturing. Prior to joining Hassell, he was Co-head of Foster+Partner's internal research and development team where he worked on the Apple Headquarters, Kuwait and Beijing Airports, Yachtplus and the NBK Headquarters. At Hassell, Xavier is developing the practice's global digital design strategy for computational design, building information modelling, visualisation and virtual reality. Alongside this he is developing technology for cross-studio design review processes. In recent years, Xavier has built up a portfolio of architecture in extreme environments with a particular focus on space with habitat projects for clients such as NASA and ESA.

Xavier is also a Director of Smartgeometry, a non-profit educational organisation for computational design and digital fabrication. This organisation has grown to become an independent worldwide network for computational and digital design specialists. Xavier has held academic positions at Syracuse University (London), University of Ghent (Belgium) and The Bartlett (London).

June 2



Moshe Safdie (*Safdie Architects*)

Moshe Safdie (CC FAIA FRAIC OAA) is an architect, urban planner, educator, theorist and author. Over a 50-year career, he has explored the essential principles of socially responsible design through a comprehensive and humane design philosophy. Safdie has had impact through his multiculturalism, commitment to geographic, social and cultural elements that define a place, and constant search for typological and technological innovation. His exemplary projects have inspired generations of architects and include cultural, educational, and civic institutions; neighborhoods and public parks; housing; mixed-use urban centers; airports; and master plans for both existing communities and entirely new cities. Safdie has had projects in North and South America, the Middle East, and throughout Asia. He is most identified with designing Marina Bay Sands and Jewel Changi Airport, as well as his debut project, Habitat 67, originally conceived as his thesis at McGill University.