



By Bradley Kaufman, RA | Hill & Hurtt &
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September 08, 2023

Understanding Economics and Industry Trends

SESSION #7

@ Gensler DC
2020 K St NW, Washington, DC 20006



Understanding Economics and Industry Trends

PROGRAM SUMMARY:

This session will focus on the evolving Architecture industry and how current strategies and technologies can be used to adapt to the changing world.

LEARNING OBJECTIVES:

1. Identify the advantages and challenges of adapting vacant office buildings into housing, including the sustainability benefits of adaptive reuse, the economic hurdles, and the obstacles associated with fusing different typologies.
2. Evaluate the evolution of smart home technology, modular building, and 3D-model-based project delivery as means of achieving energy efficiency and a reduced carbon footprint.
3. Investigate applications for how to utilize Artificial Intelligence in the practice of architecture covering generative design, text-to-image prompting, and the implementation of aesthetic analysis with data-driven technologies for design documentation.
4. Analyze how emerging technologies, including Artificial Intelligence, are impacting the architecture industry and how Architects and Designers can adapt and incorporate these technologies into their designs and workflows.

PROGRAM ABSTRACT:

The first part of the session will study the benefits and challenges of implementing adaptive reuse as a strategy to transform increasingly vacant office buildings into much-needed housing. Part two of the session will introduce how innovative technologies have been put into practice through the evolution of Virginia Tech's award winning Solar Decathlon project, "FutureHAUS". It will also cover modular construction and 3D-model-based project delivery. The third and fourth part of the session will introduce and explore Artificial Intelligence as an imminent revolutionary component of the industry through demonstrations of available AI tools including visualization tools and workflow productivity tools. The session will end with a panel discussion focusing on the impact of cutting-edge technologies on the industry and the Architect's role in implementing them.

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Date: 08 September 2023

Location: Gensler DC, 2020 K St NW, Washington, DC 20006

Time: 12:00 pm – 5:00pm

AGENDA

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|---------------|--|
| 12:00 – 12:10 | Lunch Reception |
| 12:10 – 12:55 | Presentation #1: Adaptive Reuse Projects by Guilherme Almeida |
| 12:55 – 1:05 | Break |
| 1:05 – 2:05 | Presentation #2: Innovation in Modular Construction by Joseph Wheeler |
| 2:05 – 2:15 | Break |
| 2:15 – 2:45 | Presentation #3: AI in Architecture by Ricardo J. Rodriguez De Santiago |
| 2:45 – 2:55 | Break |
| 2:55 – 3:55 | Presentation #4: Underlying Technology and How AI Works by Kenneth Cheston and Olivia Morgan |
| 3:55-4:05 | Break |
| 4:05-5:00 | Presentation #5: Panel Discussion: How Design and Construction Practices are Being Disrupted by Emerging Technologies By Joseph Wheeler, Ricardo J. Rodriguez De Santiago, Kenneth Cheston, and Olivia Morgan |
| 5:00 | Conclusion & Housekeeping Bradley Kaufman, Madeline Sambor & the CKLDP Executive Committee |
| 5:00 – 6:30 | Happy Hour @ Tonic at Quigley's 2036 G St NW, Washington, DC 20036 |

Presentation #1: Adaptive Reuse Projects

The impacts of COVID and economic pressures have reshaped cities and work environments, leaving a surplus of vacant office space. Guilherme Almeida will delve into the advantages and obstacles involved in adaptive reuse projects, showcasing recent office-to-residential conversions and other innovative examples of how Hickok Cole has explored opportunities to reuse and adapt our existing infrastructure as the needs and demands of our cities change. He will also elaborate on the many sustainable strategies and benefits these projects can offer.

Guilherme A.M. Almeida, AIA, NCARB, LEED Green Assoc., Fitwell Amb.

Born in Brazil, Gui grew up in Boca Raton, Florida before moving to the DMV for college. He's been with Hickok Cole for 14 years, steadily rising the leadership ranks and working across typologies. Gui takes pride in shaping the future of urban landscapes and believes architects have a responsibility to mitigate the built environment's impact on climate change. He has worked with a wide range of clients on projects ranging from a 35-unit boutique multifamily project, to a 345-unit mixed-use development. He has a keen interest in shepherding the highest levels of sustainability on all projects at the firm, large and small. Having designed the first net zero energy renovation in the Mid-Atlantic, Gui embodies his commitment to sustainability, seizing every opportunity to advocate for the incorporation of high-performance strategies within his projects while helping establish best industry practices in his role as a Strategic Council member within AIA



Guilherme A.M. Almeida, AIA, NCARB,
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Presentation #2: Innovations in Modular Construction

The construction industry has long struggled to adapt with technological progress and finding more efficient building methods. In this presentation, Joe Wheeler will reveal Virginia Tech's journey in embracing technology within the design and construction realms, using their accomplishments in the FutureHAUS project as a prime example. He will explain the project's unique approach to modular construction, its innovative integration of cutting-edge technologies into its design, and his explorations in 3D-model-based project delivery.

Joseph Wheeler, AIA

Joe Wheeler is a professor of architecture at Virginia Tech, co-director of the university's Center for Design Research, and a globally recognized innovator in the areas of housing industrialization, environmental sustainability, and technology integration.

His areas of expertise include smart home technology; the use of modular and industrialized processes in homebuilding; energy efficiency and green innovation in homebuilding; housing accessibility for diverse age groups and aging populations; and the engineering of "flex spaces" for smaller homes that still deliver on occupants' needs. Wheeler's teaching and research has long focused on the areas of environmental and sustainable design. He has lead Virginia Tech's interdisciplinary Solar Decathlon projects in 2005, 2009 and 2010 and 2018 to build the world's best solar home. The 2010 Virginia Tech entry, Lumenhaus, won first place overall in the international competition in Madrid, Spain, as well as the first national Honor Award for a university from the American Institute of Architects. Most recently, further validating his future building concept, his FutureHAUS Dubai won first place overall in the 2018 Solar Decathlon Middle East.

In 2016 he received the HIVE 100 Award as one of the top innovators in housing in the country by Builder Magazine. Other awards include a national design honor award from the AIA, the NCARB Prize for creative collaboration between the academy and the profession, the Virginia Society AIA Research Prize, and the Xcaliber University Prize for Excellence in Outreach. He has offered testimony before Congress regarding national energy issues and worked with U.S. international government agencies on issues of sustainability, affordable housing, disaster relief, and modular construction.



Joseph Wheeler, AIA
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Presentation #3:

AI in Architecture

With the increasing prevalence of Artificial Intelligence, architects will need to understand its implications for our profession and practice. Ricardo J. Rodríguez De Santiago, a notable leader in the field, will provide insights into the expected impacts of these technological advances and the necessary tools for adaptation and growth in this evolving landscape. Furthermore, Ricardo will showcase real-world examples of how Artificial Intelligence is already enhancing the creative process and achieving previously unattainable results.



Ricardo J. Rodríguez De Santiago,
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Ricardo J. Rodríguez De Santiago, Assoc. AIA, LEED-AP BD+C

Fascinated by the intersection between “bytes & mortar,” Ricardo is a versatile leader with 15+ years of experience turning innovative ideas into tangible solutions. Passionate about driving digital transformation, entrepreneurship, and tackling challenges within the construction and real estate industries, Ricardo is adept at securing strategic partnerships and assessing the potential value of opportunities that bridge the gap between physical & digital.

Ricardo has worked with Gensler, NIKA Solutions, and WDG Architecture business leaders. After practicing corporate architecture for 12+ years, managing and designing over 2M sqft of real estate worldwide, Ricardo transitioned to a global enterprise role at BASF. Upon Master Builder Solution’s divestiture from BASF, Ricardo’s industry expertise served the organization globally. Firstly, working within the Virtual Design & Construction team, managed digital innovation pilots, and sourced con-tech startups as part of the Digital Excellence team. In 2022, Ricardo transitioned into a Global Digital Transformation Evangelist role within the Corporate Development department. In 2023 was named Global Head of Digital Marketing Excellence.

Given his commitment to the construction industry, he’s received AIA| DC’s Emerging Architect of the Year award and Young Architect of the Year Award from the DC Council of Engineering and Architectural Societies. Ricardo has been a frequent speaker presenting at over 40 international events over the past several years. In 2018, he was honored by BuiltWorlds, naming him one of the Nation’s Top 50 Adoption Leaders. Ricardo’s leadership and advocacy resulted in AIA appointing him to the National Strategic Council, serving as an At-Large Representative, a board advisory role developing a framework to accelerate Digital Transformation. Ricardo has been focusing on kicking off a Leadership Development Program in his native Puerto Rico. In his spare time obsesses with AI-generated digital art on @bytesandmortar, and mentors four startups. In June 2023, he was a guest panellist at the BuiltWorlds Summit in Paris, France, discussing the Challenges & Opportunities in Digital Supply & Manufacturing.

Presentation #4:

Underlying Technology and How AI Works

Kenneth Cheston and Olivia Morgan will be taking a deep dive into how Artificial Intelligence models work, such as large language models (LLMs) and Generative AI for imagery. Ken and Olivia will share how these programs and technologies are being implemented for design and productivity workflows at Gensler. This session will also be interactive and will invite scholars to follow along and explore some of these programs for themselves.



Kenneth Cheston, RA, AIA

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Kenneth Cheston, RA, AIA

Ken is an architect with a versatile skillset and wide spectrum of experience. He began working on high-profile competitions in Asia while employed by Skidmore Owings & Merrill in San Francisco with a focus in high-rise mixed-used. Thereafter he moved on to Gensler where he continued his high-rise expertise based out of Washington D.C., but traveling to Shanghai for a won competition. Upon returning to D.C., Ken diversified his portfolio with aviation, retail, hospitality, and office. In 2022, Ken switched over to Design Technology where he can support projects at scale with Computational Design and Artificial Intelligence. He continues to innovate and roll out cutting-edge technologies on Gensler's most impactful projects around the world.



Olivia Morgan

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Olivia Morgan

Olivia is a Design Technology Leader at Gensler Architects and an AEC Training Consultant.

Olivia is a CAD generalist specializing in all major software used in the AEC industry including AI productivity tools. She has a passion for continuing education and leads the training outreach effort in Gensler's Southeast region. Olivia is a data capturing specialist at Gensler as certified FAA Drone pilot. Before Gensler, Olivia was the owner and founder of Model Space, a visualization consulting firm for AEC companies specializing in digital and physical model building.

Presentation #5:

Panel Discussion: "How Design and Construction Practices Are Being Disrupted By Emerging Technologies"

This panel will focus on the impact of cutting-edge technologies on the industry and the Architect's role in implementing them. Each member of the panel has a unique background and perspective of how they have been exploring these emerging technologies, their implementation, and the impact they will have on the design and construction industry.

Joseph Wheeler, AIA

Ricardo J. Rodríguez De Santiago, Assoc. AIA, LEED-AP BD+C

Kenneth Cheston, RA, AIA

Olivia Morgan

Session 7 Organizers

the Scholars

Bradley Kaufman, RA



Bradley Kaufman, RA
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Bradley Kaufman is a licensed architect with Hill and Hurtt Architects and is well versed in both commercial and residential architecture. Bradley holds degrees in Architecture from Kent State University and Virginia Tech. A native of the Washington area, Bradley has also lived, worked, and studied in San Miguel de Allende, Mexico, and co-founded Kaufman + Guerrero during that time.

Bradley's passion for architecture stems from his curiosity about how our built environment affects us and the way historical and societal factors contribute to shaping it.

Madeline Sambor, AIA WELL AP



Madeline Sambor
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Madeline is a Project Architect at Teass \ Warren Architects where she has worked since 2017 after receiving her Master of Architecture from Virginia Tech. Madeline leads her firms philanthropic efforts and serves as a leader to her studio. Madeline's interests lie in projects that serve the greater community, whether through affordable housing, green initiatives, or contributing to DC's historic fabric. She works on all phases of projects of all shapes and sizes. Her recent portfolio includes an Embassy renovation, an affordable housing project in Historic Anacostia, and one of Arlington County's first Expanded Housing Option projects.

Madeline is a self-proclaimed Code Nerd. She is also member of the AIA|DC Emerging Architects Committee and served as Team Leader for AIA|DC Small Firm Exchange in CANstruction 2022, leading them to an honorable mention. Outside of work, Madeline is always seeking creative outlets such as pottery and painting classes or freestyle cooking.

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