

Session 1 | Whole Building Life Cycle Analysis

Jordan Woodson, PE, Associate Structural Engineer, Arup
Erin Heidelberger, Environmental Performance Analyst, KPF

Title: A Case Study on Structural Systems and the Impact of Height

Description: Through a combined effort between Arup and KPF, research was completed to examine a whole building life cycle assessment on 17xM, a new 300,000-square-foot trophy office building in downtown Washington, DC. The analysis sought to examine if alternative structural systems (steel, timber) would offer potential carbon savings against the shorter, conventional post-tensioned concrete buildings of our nation's capital. This course will share our combined findings, as well as communicate lessons learned and insights gained during our research.

About the Speakers:



Jordan Woodson, PE, is an Associate in Arup's New York office, where he excels in providing innovative structural solutions for design-focused projects. Woodson has been with Arup over 11 years, delivering structural design for a diverse array of building typologies and materiality, including commercial and residential high rises, bandshells, airports, and sculptures in steel, mass timber, and concrete. Driven by technical excellence and design innovation, Woodson is a frequent collaborator across Arup offices, assisting in design reviews, project delivery, and staff mentorship.



Erin Heidelberger is an Environmental Performance Analyst at Kohn Pedersen Fox (KPF), where she collaborates extensively with design teams, setting ambitious goals to minimize global impacts. Specializing in whole building life cycle assessment, building performance simulation, and urban building energy modeling, Heidelberger is a recognized leader in environmental design. As a key figure in environmental leadership, Heidelberger co-founded and leads the annual Environmental Life Cycle Assessment in Design (eLCAd) symposium. Acknowledged by the American Center for Life Cycle Assessment (ACLCA), she received the Student Leadership Award.

Session 2 | Materials

Adam Jaffe (Moderator), Senior Materials Engineer, Arup

Cindy McLaughlin, Head of Product, Carbon Built

Title: Why Concrete Masonry Offers the Greatest Near-Term Opportunity to Reduce a Building's Embodied Carbon

Description: New York architects recognize the urgency of reducing embodied carbon in projects from the design stage, with new tools and EPDs facilitating eco-friendly material choices. However, few materials combine deep decarbonization with cost-effectiveness. Concrete blocks, with inherent carbon-cutting qualities, can reduce emissions by 70-100% while matching traditional blocks' performance. NY and NJ offer incentives via LECCLA for low-carbon concrete block use. Construction robotics and smart design can offset block costs compared to carbon-intensive alternatives like tilt-up walls. To swiftly advance carbon reduction in the NY region, architects can take the lead by incorporating ultra-low-carbon concrete blocks into their projects.

Steve Rys, PE, Building Solutions Specialist, Nucor

Title: Steel's Role in Decarbonization

Description: The iron and steel industry plays a pivotal role in the decarbonization of the building design and construction sector. Steelmakers have a responsibility to reduce their own GHG emissions, while also providing designers with innovative and high-strength products to allow for material quantity reductions. Explore the basics of steel production and sourcing. Then learn about the advancements being made in the industry and acquire some basic design tips to make your projects more sustainable.

Mujib Hisham, International Architecture Specification and Key Accounts Manager, Saint-Gobain

Title: Decarbonization of Buildings Through Low Embodied Carbon Glass

Description: Saint-Gobain and Saint-Gobain Glass present their strategy on sustainability and the roadmap to achieve their targets. One big step: their low carbon glass, Oraé. Why did they decide to launch it? How is it possible? How does it help to decarbonize buildings? How do they address circularity and what do they do regarding building glass recycling?

John Bachenski, Architectural & Technical Services, Glenwood Mason Supply Co., Inc.

Title: Low-Embodied Carbon Concrete Masonry Units

Description: The NYC concrete masonry unit (CMU) has evolved to reduce operational and embodied carbon. It uses sequestered CO₂ and partial cement substitution, uniquely incorporating local CO₂ and recycled materials. This approach not only benefits the environment but also boosts the local economy by creating jobs, aligning with New York's circular economy goals.

About the Speakers:



Cindy McLaughlin joined CarbonBuilt in 2021 as Head of Product, responsible for end-user awareness, carbon monetization, and policy. Prior to joining CarbonBuilt, McLaughlin started and led technology companies across a range of industries, from prison education to commercial real estate. She's a former Chair of the Urban Land Institute's Tech and Innovation Council in NYC; serves on the Editorial Board of Propmodo; and advises sustainability startups. She has an MBA from

MIT/Sloan, and served as a water/sanitation volunteer in Peace Corps Congo.



Steve Rys, PE, is a Building Solutions Specialist at Nucor, North America's largest steel producer. He serves as a mill representative for the New York City AEC community. Rys has over a decade of design and construction experience, specializing in tall/slender buildings and complex structures. Merging his prior experience with unique steel manufacturing and supply chain knowledge, Rys advises design teams on maximizing efficiencies in structural design, sustainability, schedule, and cost. Prior to joining Nucor, Rys worked as a structural engineer in WSP's New York City office.



Hisham Mujib has worked in the construction industry for over 15 years. He has worked in India and Middle East for almost a decade before moving to the USA. He has been creating, managing and delivering optimal Saint-Gobain Glass Facade specifications for 10 years now for projects all over the world. Low Carbon Glass will now be a part of the language for optimal Glass Facade design and specifications.



John Bachenski of Masonry Sustainability Solutions LLC has worked and provided technical support for masonry and concrete since the early 90's. He has focused on wall systems that use cavity, rain screens, and thin veneer solutions. Since leaving his post of 22 years as the NYC Director at the International Masonry Institute, Bachenski has been educating the design and construction community about the sustainable benefits of using both masonry systems and concrete.



Adam Jaffe is a Senior Materials Engineer in Arup's New York office. He has experience in the specification, production, and use of construction materials, particularly as regards durability and sustainability, and is active in disciplines as varied as nanomaterials, structural dynamics, and resilience to extreme heat.

Session 3 | Circular Economy

Dan Bergsagel, Sustainability Lead, Schlaich Bergermann Partner

Title: A Steel Stadium and a Wood Stair: Two Circular Economy Case Studies

Description: Stadium 974 and Circulating Matters—one a steel-frame stadium built for the 2022 FIFA World Cup, the other a small temporary timber installation—are two different case studies in implementing Circular Economy principles in construction. This brief presentation highlights some of the design methods used to allow for design for disassembly, and for the use of salvaged materials in new construction projects.

Alan Solomon, Partner, Sawkill Lumber

Title: Salvaging Five Woods that Built New York City

Description: During this presentation, Alan Solomon will discuss lumber salvage in New York City, profiling five old growth woods, their forest and tree sources, dimensional sizes, and the building types served. The presentation will briefly chronicle the wood from a single historical building at 261 11th Avenue, starting from an old growth forest in the 1500's and following its journey to the present day; as the wood is salvaged and remanufactured for modern architectural and design applications. The session will address the challenges of wood salvage in New York City (logistical, economic, aesthetic) and current efforts to expand the practice through current public advocacy that address' the issue of embodied carbon.

About the Speakers:



Dan Bergsagel is Schlaich Bergermann Partner's Sustainability Lead and an engineer in its New York City office. He is also a Visiting Scholar with the Circular Construction Lab in the Cornell University College of Architecture, Art and Planning; an Adjunct Professor in structures at Kean University's School of Public Architecture; and a co-founder of educational non-profit Scale Rule.



Alan Solomon is a partner at Sawkill Lumber, a Brooklyn-based supplier of reclaimed woods. Solomon has spent a life in salvage, starting with a family scrapyards in the Boston area. He was profiled in a *New Yorker* article in 2008. He is the co-author of *Reclaimed Wood: A Field Guide* (2019, Abriams).

Session 4 | Building Envelope Life Cycle Assessments

Heather Walters, LEED AP BD+C, Fitwel Amb., WELL AP, LFA, Vice President, Thornton Tomasetti

Title: Thinking About the Box—Pushing the Boundaries of Envelope LCAs

Description: This session will explore the intricate world of Life Cycle Assessments (LCAs) building envelope. We emphasize the importance of defining clear system boundaries and navigating various LCA phases. It's not just about assessing the environmental impact of building envelopes; rather, we advocate for a comprehensive approach that considers both embodied carbon and operational carbon. We will discuss when we should consider expanding the boundaries of our assessments and embracing the entire lifecycle, enabling us to make informed decisions about building design.

About the Speaker:



Heather Walters, LEED AP BD+C, Fitwel Amb., WELL AP, LFA, is a Vice President in Thornton Tomasetti's sustainability practice where she works with teams on a wide variety of project typologies to identify project goals around embodied carbon, operational energy, water use, equitable development, occupant health, and more. She leads her company's east coast sustainable strategies and certification group and has a specific interest in whole life carbon, understanding the interaction of embodied and operational carbon throughout a building's life cycle. She acts as Co-Lead of TT's Education and Resources Working Group for their Embodied Carbon Community of Practice where she is committed to understanding and reducing building's lifecycle GHG impact.

Session 5 | Resiliency

Pallavi Mantha, LEED AP, WELL AP, Associate Carbon & Sustainability Consultant, Arup
Scott Bondi, PE. PhD. Principal, Simpson Gumpertz & Heger

Title: The Role of Passive Survivability in Resilient Decarbonization and Envelope Futureproofing

Description: This talk will introduce strategies to achieve and maintain long-term performance in our buildings through robust enclosure systems. We will also discuss a key component of resilience called survivability (passive and active) and the role it plays in the decarbonization of buildings. We will explore synergies between building-scale measures, emphasizing how durable and reliable building enclosure systems can simultaneously improve passive survivability while reducing emissions.

About the Speakers:



Pallavi Mantha, LEED AP WELL AP, is an Associate and co-leads the climate and sustainability team at Arup in New York. She is the Americas Decarbonization Skills Leader. She has over 15 years of experience in energy and carbon planning across building, portfolio, and city scales. She has worked with New York City agencies on topics such as extreme heat resiliency and carbon planning to meet 80x50 goals. Her work focuses on the intersection of decarbonization, resilience, equity, and digital. Through her work with NYSERDA and NYCHA, she led the development of resilient electrification pathways for affordable homes in disadvantaged communities. In 2022, she was awarded the 40 under 40 award for her work in Sustainability.



Scott Bondi, PE, Ph.D., is a Principal at Simpson Gumpertz & Heger (SGH) specializing in building enclosure design, building physics, and numerical analysis. With extensive experience in high-rise buildings, museums, healthcare, education, airports, and industrial facilities, he consults on projects from conceptual design to construction administration. Dr. Bondi provides forensic engineering services and expert witness support for building enclosure and mechanical systems. His expertise covers diverse facade designs, including unitized curtain walls, structural glass walls, and rainscreen cladding systems. Proficient in Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD), he predicts structural performance, optimizes building mechanical systems, and designs facades with stringent energy goals. Scott is an Adjunct Professor at The Cooper Union, Scott lectures on Finite Element techniques, Computational Fluid Dynamics, and Solid Mechanics.

Dena Prastos, AIA, Founding Principal, Indigo River

Domenica Stasiak, PE., Founding Principal, Indigo River

Title: Futureproofing and Resilience

Description: This segment will be a discussion on futureproofing infrastructure for resiliency. Designers must find opportunities in the design challenges they are faced with today to overcome resilience issues. There are solutions that can lead to an improved built environment that will last and operate for decades. We will address these issues and discuss how to overcome them.

About the Speakers:



Dena Prastos, RA, a licensed Architect and engineer, brings a transdisciplinary and progressive outlook to her work. With a Civil Engineering graduate degree, she has led global projects in infrastructure construction and waterfront architecture, forming the foundation for her venture, Indigo River. Raised in Alaska, Prastos values nature's resilience, inspiring her commitment to sustainable infrastructure. Actively contributing to the architectural community, she volunteers with NCARB's Future's Collaborative, serves on the 2022 AIA Resilience and Adaptation Advisory Group, and contributes to the Planning Board in Grand View-on-Hudson, NY.



Domenica Stasiak, PE, earned a Bachelor's in Civil Engineering from Villanova University and a Construction Management certificate from NYU. After starting as a structural building engineer, she discovered her passion for waterfront design, accumulating over 20 years of expertise in the field. Stasiak is a respected leader in waterfront and marine engineering, contributing to diverse projects from container ports to waterfront parks. Her career includes structural analysis, resident engineering, construction inspections, and support for container ports, piers, bulkheads, and engineered shorelines locally and internationally. Stasiak is dedicated to giving back, volunteering at organizations like Professional Women in Construction, The Waterfront Center, and the Waterfront Alliance. She actively participates in the ASCE Coastal, Oceans, Ports, and Rivers Institute and the SEAoNY Resilience Committee.

Session 6 | Policy Response to the Climate Crisis

Carl Ian Graham, PE., Independent Consultant Former Deputy Direct, Building Emissions, NYC DOB

Title: Compliance with LL97—Finding the Carats Among the Sticks

Description: In passing LL97 in 2019, New York City took a bold step toward combating climate change by limiting greenhouse gas emissions from buildings. Since passing, the law has been modified by additional local laws, and compliance clarified by rules promulgated by the NYC DOB. Beginning January 1, 2024, the energy use of covered buildings will count, and by May 1, 2025, building owners must submit their first accounting of their greenhouse gas emissions. For the first time owners will be subject to penalties for excess emissions. Whether owners will actually accrue penalties for their GHG emissions

will depend on their energy use, their knowledge of LL97 and its rules, their ability to take advantage of the compliance rules under LL97, and the actions taken to transition away from using fossil fuels.

About the Speaker:



Carl Ian Graham, PE, recently returned to the private sector after taking a leadership role with the DOB to develop their building emissions enforcement program for over three years. At the DOB, Graham was also instrumental in developing the technical details for the rules related to LL97. He has been a recognized leader in energy efficiency consulting for more than 30 years. His career has afforded him leadership roles in the energy efficiency and sustainable design industry with a detailed background in energy modeling, energy audits, sustainable design, environmental awareness, and regulatory development for energy codes and green buildings. He has also supported and given back to the ESG and AEC communities for years by developing and delivering training seminars related to sustainable design, energy efficiency, energy code, and decarbonization for organizations like Harvard Graduate School of Design, NYC Department of Buildings, NYSERDA, and Urban Green Council.