A'22 MN Conference

Program Learning Objectives

PREC. Sustainability Entry Points for Smaller Firms, Day 1

1. Explore several accessible initial steps in the transition to a sustainability-focused practice.
2. Explain how AIA Resolution 19-11 and recent changes to AIA's Code of Ethics call for increased focus on sustainability in architectural practice.
3. Report on the energy and carbon performance of their projects using AIA's Design Data Exchange (DDx).
4. Introduce sustainable design concepts to less motivated clients using terminology that does not explicitly invoke sustainability or climate change.

PREC. Sustainability Entry Points for Smaller Firms, Day 2

1. Explain the barriers and potential solutions for small firms to pivot to a sustainable practice.
2. Identify the resources available that make the most sense for their firm.
3. Describe different elements within a Sustainability Action Plan that will enable teams to accomplish sustainable design within their projects.
4. Structure a Sustainability Action Plan that aligns with particular small-firm cultures.

W2. MPHA Family Housing Expansion: Confluence of Innovation

1. Examine how the 2040 plan (a Minneapolis shared vision to guide growth of the region over the next 30 years) has changed how architects and developers can approach affordable housing within the City of Minneapolis and describe how MPHA is utilizing it to meet the demand of their more than 8,000+ family waiting list.
2. Examine how modular construction is significantly aligned with both scattered-site development and MPHA's stringent design and quality standards.
3. Explain how the design is scalable to be utilized again in Minneapolis and major cities throughout the U.S.
4. Describe how this project approach is better for the neighborhoods impacted and for MPHA overall.

W3. Fall Protection Solutions and the New OSHA Rules

1. Interpret the new OSHA rule and consensus standards.
2. Recognize the timeline for application of codes and standards related to fall protection required for projects.
3. Examine design considerations for common hazards.
4. Examine installation options within fall protection product categories.

W4. Bridging the Digital Divide in Design through an Immersive Maker Space Program

1. Describe the findings of how to engage K-12 students in architecture early.
2. Examine cultural responsive design precedents to foster inclusive design.

3. Describe short term outcomes to providing equal access to immersive curricula to underrepresented students and how to bridge learning losses due to the impact of the COVID-19 pandemic.
4. Describe long term outcomes of increasing diversity in design and architecture.

W5. Using Passive House to Achieve the AIA 2030 Commitment

1. Explain the five principles of Passive House construction and how this approach increases comfort and reduces condensation and mold risk, along with reducing energy use.
2. Examine how applying Passive House will achieve Architecture 2030 challenge goals that are "aimed at transforming the practice of architecture to respond to the climate crisis in a way that is holistic, firm-wide, project-based, and data-driven."
3. Explore how the climate of the project location and the local site impacts design choices.
4. Identify the challenges applying Passive House to any building design and explain how the advantages contribute to a healthier building and positively impact climate change.

W6. Ethics: Designing/Constructing Public Projects through an Equity Lens

1. Examine persistent systemic barriers that limit the growth of BIPOC-owned construction firms and suppliers.
2. Discover new ways inclusion is being promoted on county facility projects.
3. Explain why targeted business contract goals, in and of themselves, are an insufficient method to achieve equity in contracting.
4. Examine how design professionals can further inclusion by identifying opportunities to unbundle portions of the construction work and ensuring that specified products can be offered by emerging small business suppliers.

W7. Mill City Museum Ruins

1. Describe the history of the Washburn Crosby A Mill Complex including how the increasing concern for fire and egress informed design on the complex historically and how exposure to fire impacted rehabilitation and the treatment of the site.
2. Discuss the analysis of historic materials, physical changes to materials over time due to exposures, and impacts of treatment options to materials, assemblies, and historic spaces.
3. Evaluate improvements to existing historic and non-historic circulation and accessibility, both for occupants and for maintenance of the site.
4. Compare and explain opportunities and challenges in meeting life safety needs and preservation requirements with budget constraints.

W8. Building Climate Action Design Cultures: Technology, Workflows, and Teams

1. Identify ways to apply the most impactful climate action strategies for each design phase and how they can be integrated into an iterative, holistic low-carbon design work flow embedded within a firm’s operating structure and culture.

2. Explain the motivations behind the 2030 Challenge and the need for the building sector to reduce its climate change impact and consumption of vital resources.
3. Examine key sustainability metrics, such as Energy Use Intensity (EUI), Spatial Daylight Autonomy, Embodied Carbon, and Renewable Energy Potential; their measurement, benchmarking, and reporting; and their place and timing within the design workflow.
4. Discover the applications and features of a variety of digital design tools recognizing the value of real-time analysis and visualization of specific environmental performance metrics as part of a design workflow.

W9. Mechanical System Selection and Architectural Impacts

1. Identify the most common types of systems used in newer buildings and explain the pros and cons related to high performance and reducing emissions.
2. Select the right mechanical system for your project based on space planning, building energy performance, aesthetics, and human health and comfort.
3. Recognize economic and health impacts of the HVAC system selection resulting in improved indoor air issues such as mold and mildew, combustion safety and water issues.
4. Examine the importance of architect and engineer coordination through the design phase.

W10. Celebrating Our State: MnDOT Rest Areas

1. Develop an understanding of the design factors involved in creating safe spaces for the traveling public in twenty-four-hour, unstaffed facilities.
2. Compare and contrast approaches to architectural and site design for three projects with very similar programs.
3. Explain the rigorous cost-benefit and design evaluation processes utilized in these publicly-funded projects.
4. Examine the strategies to foster client/consultant relationships to increase the probability that sustainable strategies are successfully implemented.

W11. Design + Performance Data = ESG? How to ask the right questions to achieve Environmental, Social, and Governance (ESG) requirements

1. Examine how market and investor demand are influencing the commercial real estate market and pushing for increased transparency in environmental sustainability during design, construction/renovation, and occupancy phases.
2. Explain the design team's responsibility to integrate ESG requirements into the design and delivery of high-performance buildings.
3. Explain how building performance analysis plays a critical role in achieving decarbonization goals and transparency and reporting requirements.
4. Examine the value and transparency of third-party certification and verification systems such as LEED and Arc, and ESG disclosure frameworks like GRESB.

W13. Code Provisions for Mixed Occupancies

1. Explain the issues and concerns of mixed occupancies in buildings.

2. Identify the different code compliance methods for addressing mixed occupancies.
3. Explain how and when to apply the different code compliance methods.
4. Examine how to clearly describe the selected compliance path on drawings.

W14. Designing for Diversity, Identity, and Accessibility: Pilot Opportunity Site Engagement

1. Identify key principles of inclusive urban design and learn how to advocate for their importance to fellow architects, designers, and clients to best serve and reflect a culturally diverse community.
2. Examine the wide range of community involvement and engagement opportunities available in large scale D.E.I. inspired transformational mixed-use developments.
3. Apply key design and planning strategies, as well as best practices, as they relate to the design of inclusive multifamily housing projects and large urban planning efforts.
4. Identify various means to make housing, both economically and culturally, accessible to a diverse range of end-users while creating a more inclusive public realm to enhance and celebrate the diversity of the broader community.

W15. Sustainable Design Tools: Technology's Role in Supporting Shared Sustainability Goals

1. Explore how technology can be applied to support a firm's sustainability goals.
2. Discover types of sustainability tools and describe their functions, strengths, and drawbacks.
3. Identify analytic criteria used to guide high performance design.
4. Describe the ROI value brought to your practice from investing in analytic technology.

W16. Local Lessons from the COTE Top Ten

1. Develop an understanding of how a team can navigate an integrated design process, construction documentation, and a COTE Award application for a highly sustainable project.
2. Examine various technology and documentation strategies that aid project teams in developing sustainable designs that improve the impact of buildings on global carbon emissions, indoor air quality and ecosystem health.
3. Examine the business case for the AIA Framework for Design Excellence and how different client/consultant relationships are fostered to increase the probability that sustainable strategies are successfully implemented on diverse project types.
4. Evaluate and generalize how the COTE Top Ten Award criteria and guidelines (now AIA Framework for Design Excellence) can serve as a template for impacting the trajectory and workflow of a firm beyond the project including guidance for related research.

W17. The Return of the Adjacent Possible: Thinking Like a Generalist for Better Community Projects

1. Apply the power of big ideas and generalist thinking to directly improve and expand their current practices.
2. Architects as "reflective practitioners," will learn how to use experiences from professional practice to reflect back on big ideas and modify their thinking by connecting theory and practice.

3. Use big ideas to learn and grow, have more fun, and design better projects for our communities.
4. Identify new sources - books, magazines, blogs, podcasts, etc., - of new ideas that can aid us in our thinking and practice.

W19. Working Conditions, Prosperity, and Culture Change in Architecture

1. Explore the considerations most important to firm decision-making related to economic well-being of the firm and employees.
2. Analyze how the context that firm leaders consider, and that architectural designers and architects consider, has changed as a result of the pandemic, reflecting broader societal reconsideration of work and life.
3. Compare the intentions leaders often have going into their leadership roles — as related to changing the business of architecture, working conditions, prosperity, and firm culture — to the reality of what it takes to fulfill those intentions.
4. Support young leaders in architecture in providing insight and mentorship to senior leaders (beyond understanding of technology, which is the most often cited reciprocal mentorship opportunity) and in bridging the gaps between what was learned in architecture school in pro practice and the actual work of architecture.
5. Identify the questions leaders of firms and leaders of culture change need to be asking — of themselves and of others.

TH22. Walking Backward into the Future: Indigenous Design Thinking

1. Examine architectural co-design methods specific to Indigenous communities.
2. Examine the breadth and depth of Indigenous design input and inspiration, including ancestral systems.
3. Examine the relationship between Indigenous peoples and the natural environment.
4. Explore how Indigenous philosophies can be used in support of sustainable, resilient, nature-based technologies.

TH23. How Will a Weakening Economy Impact the Recovering Construction Sector? The Construction Outlook for 2023

1. Develop a better understanding of forces shaping our economy.
2. Interpret economic trends and apply them to construction-related business decisions.
3. Examine the implications of evolving issues related to the construction industry, and explain how they will shape the industry over the coming years.
4. Predict how different nonresidential building sectors are likely to perform over the coming year.

TH24. Designing Schools to Revitalize Rural Communities

1. Describe the unique challenges of connecting rural communities to their schools.
2. Identify specific design elements that can facilitate the integration between the rural community and its school.
3. Discover the benefits of daylight in the classroom, particularly as it improves the learning and teaching environment for teachers and students of all abilities.

4. Explain how to incorporate daylight modeling into their project.

TH25. Good Energy Haus: Minneapolis' First Certified Passive House Plus

1. Discover design considerations for Passive House in a cold climate zone, which can be applied to projects in an effort to make more sustainable, comfortable and energy efficient buildings.
2. Identify materials, products, and systems suitable for Passive House buildings, which can be leveraged in project designs and improve the building's quality and performance.
3. Examine the connection between Passive House planning and construction through review of a case study project, which generally lowers learning curve and reduces hesitation to adopt Passive House paradigms and designs.
4. Explain the tangible benefits Passive House provides with regard to indoor environmental qualities, as well as meaningful climate action. Understanding these benefits enables attendees to make the connection between the building standard and its sustainable value for owners, inhabitants, and our society at large.

TH26. Cladding MSP Airport's Silver Ramp and Transit Center

1. Discover how a façade system can be designed to ensure public safety while maintaining access to views, daylight and natural ventilation.
2. Develop a façade system that complies with building codes for naturally ventilated parking structures and that meets federal, state, and local regulatory standards.
3. Examine how unitization and mass customization can reduce environmental impacts by minimizing waste, increasing efficiencies with material shipping and transportation, and shortening on-site construction time.
4. Craft customized details and specifications for publicly bid projects that include third party material testing, delegated design, and rigorous material and mockup review protocols.

TH27. Networking Session with Women in Architecture

1. Engage with industry leaders on contemporary architecture topics.
2. Examine strategic planning and problem solving skills from industry leaders.
3. Practice networking skills and strategies.
4. Identify resources for resilient architectural practice.

TH28. Lighting Art: Techniques, Tools and Technologies

1. Identify the most appropriate LED light source parameters for illuminating art pieces.
2. Explain the geometric considerations of light sources and the art pieces for best illumination.
3. Evaluate methods for incorporating light sources within integrally luminous artworks.
4. Select appropriate controls for dimming, tunable white and dynamic color control of LED light sources for artworks.

TH31. Chasing Net Zero with Groundwater Enabled Geothermal

1. Explain the technical basics of groundwater-enabled geothermal technology, as well as the differences between it and traditional geothermal technology.
2. Explain how groundwater-enabled geothermal technology interfaces with and impacts building mechanical (heating and cooling) systems.
3. Examine the energy impact of using groundwater-enabled geothermal technology and how it fits into Net Zero sustainability efforts.
4. Describe the first and life-cycle costs of groundwater-enabled geothermal.

TH32. Manufacturing, Constructing, and Evaluating Low Embodied Carbon Cast-in-Place Concrete

1. Specify low embodied carbon cast-in-place concrete.
2. Select and evaluate low embodied carbon cast-in-place concrete.
3. Identify the factors to consider when constructing with low embodied carbon cast-in-place concrete.
4. Examine local project examples of low embodied carbon cast-in-place concrete.

TH33. (Sustainable) Design is in the Details

1. Explain how building science concepts of thermal bridging, air infiltration, and moisture mitigation impact building performance and examine how designing details can resolve these issues.
2. Develop an understanding of how the artistic expression and building science inherent in detailing impacts health, safety and welfare.
3. Explore the opportunities to maximize attendees' professional value through development of details that lower operational costs, increase occupant comfort and well-being, reduce risk of building failures, and minimize embodied carbon.
4. Explain how different client/consultant relationships are fostered to increase the probability that sustainable strategies are successfully implemented on diverse project types.

TH34. A Bio-Inspired Design Process: Translating Principles of Biology to Inform Architectural Design

1. Explore the concept of bio-inspired design as a tool for inspiration and problem-solving.
2. Examine a bio-inspired design process that can inform design thinking.
3. Identify and translate a design issue into a list of analogous, biological functions and explore the "AskNature" database for biological ideas.
4. Translate and analogize biological solutions to inform bio-inspired architectural design.

TH35. Generational Concerns in a Hybrid Work Environment

1. Identify the five different generations now in the workforce.
2. Recognize how generational differences can affect someone’s work and learning style and examine how to effectively meet the needs of various generations.
3. Explore how hybrid work environments have successfully navigated the diverse generational needs.

4. Discover specific tools and skills to enhance communication in a hybrid work environment.

F37. New Tall Wood Code Provisions: Understanding Advanced Design Topics

1. Explore the three new tall wood construction types and discuss related code provisions such as allowable heights and fire-resistance ratings.
2. Discuss code-compliant options for exposing mass timber, where up to 2-hour fire-resistance ratings are required, and demonstrate design methodologies for achieving these ratings.
3. Review code requirements unique to tall wood buildings, focusing on items such as sprinklers, shaft construction and concealed spaces.
4. Highlight design options for addressing topics such as fire stops at penetrations through mass timber assemblies and exterior walls fire-resistance in tall timber.

F38. 2+2: Design for Integration

1. Describe how project design can integrate context and connect with place, climate, culture, and people.
2. Examine approaches to lasting, timeless design that ensure a project passes the test of time to be considered for preservation.
3. Explain how designers can address social, economic, and environmental value.
4. Examine how to start with a big idea, and through integrated design, carry it through to project completion.

F39. Building a More Equitable Future

1. Discuss the importance of meaningful community engagement and the impact on pride, positive behavior, and increased health and well-being for residents.
2. Discover ways to balance community engagement-driven goals, sustainability goals, and funding sources in order to meet multiple needs.
3. Examine examples of how affordable housing can reach SB2030 and other sustainability goals resulting in a healthier community and planet.
4. Discover ways to make contracting opportunities on projects more accessible to small- and minority-led business.

F40. Demystifying B3 for Small Projects

1. Understand the intent of the B3 Guidelines and SB 2030 Small Buildings Methods and when they can be used.
2. Explain how the updated B3 Guidelines Site and Water section fits alongside other small project thresholds within the B3 suite of programs and tools.
3. Describe the major changes incorporated in the B3 Guidelines Small Buildings Method compared to the full set of B3 Guidelines.
4. Provide guidance for project design teams to evaluate strategies for small projects and sites during project planning and design.

F41. The Ethics of Ableism

1. Describe what ableism is.
2. Explain how ableism affects architectural design and practice.
3. Identify, address, and adjust mindsets and behaviors when they encounter ableism.
4. Recognize the ethical obligation to be inclusive of those with disabilities in their designs, practices, and lives.

F42. Culture Definition Workshop: Doing the Work Most Firms Skip

1. Explain what culture is and is not, and how to begin defining your culture in a meaningful, tangible manner.
2. Explore how culture drives business and people strategy, and how that relationship can be used to create competitive advantage.
3. Discover how to evolve and embed culture to address emerging needs.
4. Improve your ability to speak specifically about your work culture and how it plays out in the day-to-day of the work experience.

F44. Honor Award Jurors Show Their Work

1. Compare and contrast the work of three award-winning firms with national and international influence.
2. Identify the design details that make their projects unique.
3. Assess how the design processes and practice philosophies are similar or different from your own.
4. Compare the ways in which the three represented firms have been able to achieve advanced sustainable design across their projects.

F45. How Community Takes Root: Addressing Equity and Climate Change through Neighborhood Design

1. Examine how the Root District framework at the Urban Design scale is in line with the AIA Framework for Design Excellence, specifically Design for Equitable Communities, Design for Energy, and Design for Economy.
2. Discover place-based community values, programs, and infrastructure opportunities being leveraged to advance human health beyond individual building sites to the community at large.
3. Examine specific examples of how centering equity in the planning process advances long-term community resilience including community networks and relationships, emergency preparedness, health and mental outlook.
4. Connect local environmental, social, and human health initiatives to the larger framework of the United Nations Sustainable Development Goals.

F46. Density, Efficiency, Flexibility: Rising (Vertically) to the Challenge

1. Discover how to maximize efficiency within the project team at every stage of a complex design and construction process.
2. Explain the difference between a challenge and a limit as it relates to phasing and constructability.

3. Discover how to design to both meet short-term needs and maximize options for long-term growth.
4. Examine how to create the flexible and adaptable spaces that are increasingly important in healthcare.

F47. Elizabeth Scheu Close, FAIA, and the Modern House

1. Explain the barriers Elizabeth Close faced as an early woman architect in Minnesota and how she paved the way for women in architecture today.
2. Discuss some of the influences Elizabeth Close took from European modernism.
3. Identify some characteristics of Elizabeth Close's residential designs.
4. Explain how Elizabeth Close contributed to Minnesota Modernism.

F49. Community-Led Urbanism as a Foundation for Equitable and Regenerative Cities

1. Identify the key differences between ‘"green", "sustainable", and ‘"regenerative" paradigms of ecological design and development.
2. Examine the ideological differences between Western and non-Western views of “sustainability”.
3. Describe how collaborative urbanism and community-led development are unlocking more equitable and inclusive growth models in our cities and communities.
4. Examine how community-led housing is changing the nature of healthy and sustainable urban living.
5. Examine how resident-involved design processes are setting new benchmarks for architectural excellence and place-based design.

F50. (Re)Generation House: A Solar-Powered Home in a Walkable Neighborhood (tour)

1. Compare the features of an architect-designed house against those typically available from a homebuilder.
2. Examine the operation of a house that does not use fossil fuels and is mostly solar powered.
3. Recognize how fully utilizing the volume of a house can make a small amount of square footage feel larger.
4. Discover how all of the critical needs of an aging-in-place house can be accommodated in a small footprint.

F51. Experience the New Minneapolis Public Services Building (tour)

1. Identify elements of a human-centric model of design focused on transparency, accessibility, and connection.
2. Analyze opportunities to foster an inclusive, equitable, and collaborative workplace culture through design.
3. Develop sustainable design strategies focused on health and wellness through the use of natural materials, biophilic design elements, indoor climate, and ample daylighting.
4. Explain how our public spaces can better reflect the communities they serve.