

EDUCATIONAL TRACK KEY



B Building Performance focuses on systems integration, materials and methods, operations, and metrics of a viable building that contributes to a healthy work and living space.



D Design topics include project planning, either new building or existing, from concept design through design development and documentation.



L Leadership is knowledge that inspires changes and transformations in thinking and practice, in regard to issues of society, firms, and organizational entities.



P Practice topics address processes, procedures, and policies involved in running a firm and/or managing projects, and may include discussions regarding safe and sustainable built environments, project delivery systems, contracts and agreements, intellectual property, ethics, and risk management as they are practiced within firms, corporations, government agencies, and other organizations.

Session One

9:30–10:30 A.M. 1 LU/HSW HOUR

Building a Resilient Pittsburgh

PRESENTED BY: Grant Ervin, Chief Resilience Officer, City of Pittsburgh

In 2015, the City of Pittsburgh was selected by the Rockefeller Foundation's 100 Resilient Cities initiative to join the second wave of cities participating in the global network. The aim of the initiative is to help people, communities, and institutions prepare for, withstand, and bounce back more rapidly from acute shocks and stresses. Grant Ervin, Chief Resilience Officer of the City of Pittsburgh, will provide a brief update on the Resilient Pittsburgh initiative; share insights into the practice of urban resilience, focusing on the challenges and opportunities that this new urban systems management process presents; and discuss the implications for southwestern Pennsylvania's built and natural environments, as well as lessons being applied through the development of the City's first resilience strategy.

9:30–10:30 A.M. 1 LU/HSW HOUR

Urban Acupuncture: Regenerative Revitalization through Public Interest Design

PRESENTED BY: Jeremy Knoll, BNIM Architects

This course will highlight a case study of a recently completed LEED-H Platinum development in Kansas City that was initiated through a public engagement process using the SEED principles, as well as the ripple effect emanating from the successful balance of social and sustainable aspects of the project. The case study will give a detailed account of the initial public engagement process, the ways this engagement adapted during the creation of a development team around the community's vision, the training and employment opportunities created during the design and construction process, and how the communication with the neighborhood is continuing into the next phases of community revitalization. Showcasing the emerging tools, metrics, and strategies focused on Public Interest Design will enable architects, planners, developers, and builders to more successfully engage a community or neighborhood in developing and acting on a clear vision for the future.

9:30–10:30 A.M. 1 LU/HSW HOUR

The International Codes and Resilience: You Can't Have One Without the Other

PRESENTED BY: David Karmol, International Code Council

This course will provide an overview of the International Codes that help increase the resilience of buildings by mitigating the risks from natural and man-made disasters and from climate-related impacts. The presenter will review the recent changes to the International Building Code (IBC), the International Residential Code (IRC), and the International Energy Conservation Code (IECC) that affect new construction and substantial renovations; the upcoming changes to the International Green Construction Code (IGCC); and how all of the codes relate to green building rating systems. Highlights of pending or proposed Federal policies impacting building codes will also be discussed.

Take this course to gain an understanding of the nature of resiliency, and how various definitions of the term affect what elements are seen as critical or important to new and existing buildings; the developing trends in the IECC, and how those trends intersect with other trends in residential and commercial construction; the development process of the International Codes, and how recent changes implemented by the organization make participation in code development easier and more accessible; and the issues and conflicts that affect the development of the codes, and how the resolution of such issues may impact future design and construction practices.

9:30–10:30 A.M. 1 LU HOUR

Add Art, Add Value: Public Art for Architects

PRESENTED BY: Sallyann Kluz, AIA, Office of Public Art, and Renee Piechocki, Office of Public Art

Works of art add value to the built environment. They can transform places with added meaning, interaction, beauty, and context, creating memorable encounters for people in those spaces. Bringing an artist onto a design team can enrich both the user experience and the design process as a whole.

This course will introduce architects, landscape architects, and engineers to the value of working with artists on projects of various scales and typologies by looking at local and national examples. Through a series of case studies, attendees will learn about different project types, discuss best practices, and learn about local and national resources for public art.

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Session Two

11:00 A.M.–12:00 P.M. 1 LU/HSW HOUR

Resilient Design: Considerations of Standard of Care, Contract Compliance, and Sustainable Initiatives

PRESENTED BY: Mike Cremonese, Esq., Burke Cromer Cremonese, LLC; Paula Selvaggio, RPLU, The Oswald Companies; and Eric O. Pempus, AIA, NCARB, LEED GA, The Oswald Companies

During the past few years, design resilience has entered the architectural vocabulary as a reaction to numerous traumatic weather events: flooding, hurricanes, tornadoes, and earthquakes. Events like these remind architects that no matter how energy efficient a building is, it's not sustainable if a 25-year flood puts it under water. This program will examine the standard of care in the practice of architecture, how it differs in various contexts such as location, and how the profession is evolving through increasing technology when delivering projects to clients. Participants will learn how architects are responding to resilient design challenges that impact the health, safety, and welfare of the public, and understand that the standard of care of their profession can be changed by contract provisions in agreements between themselves and their clients. Additionally, this course will examine how resilient design requirements impact not only their practice, but also their clients and the public welfare.

11:00 A.M.–12:00 P.M. 1 LU/HSW HOUR

Saw Mill Run: A Case Study for Managing Issues of Stormwater Runoff Across Municipal Boundaries

PRESENTED BY: Ruthann L. Omer, P.E., The Gateway Engineers, Inc., and Lisa Werder Brown, Economic Development South

Like most urban streams, Saw Mill Run is plagued by stormwater runoff and the resulting impacts of flooding and sewage overflows. In an effort to manage the impacts of runoff and overflows for the 12 separate municipalities in the watershed, Economic Development South (EDS) created the Saw Mill Run Watershed Association.

During this session, you will hear how these organizations embarked on an ambitious collaboration for the mutual benefit of the watershed communities that addresses the issue of stormwater runoff and sewage overflows across jurisdictional boundaries. In addition, you will learn what a watershed is and some insights on how to deal with the challenges of developing sites along streams and waterways.

11:00 A.M.–12:00 P.M. 1 LU/HSW HOUR

Integrated Wall Retrofit Solutions for Existing Masonry Construction for Commercial Buildings

PRESENTED BY: Amy Wylie, Covestro LLC, and Andre Desjarlais, Oak Ridge National Laboratory

Join this session to learn about the Integrated Wall Retrofit Project that aims to identify best-practice recommendations for an energy-efficient, cost-effective retrofit solution for the interior of existing masonry walls for commercial buildings in climate zones 4 & 5, which require insulation on the interior of the existing façade. The presenters will review air, thermal, and moisture performance impacts for a number of integrated retrofit packages and then discuss the best practice recommendations, which will be based on evaluation against critical parameters, simulation results, and laboratory tests, as well as field data collection.

11:00 A.M.–12:00 P.M. 1 LU/HSW HOUR

Tiny House Take Two

PRESENTED BY: Kevin Kunak, Assoc. AIA, Rothschild Doyno Collaborative; Eve Picker, Small Change; and Jeffrey Wetzel, AIA, AE7

The Tiny House movement has become popular for economic, social, and environmental reasons. So far, this movement has primarily seen houses on wheels. Building tiny houses on foundations presents an entirely different challenge—one that our two panelists are tackling in different ways. This course will provide a brief background on the history of the Tiny House movement, from roots in manufactured housing to modular homes, and discuss the pros and cons of the design, financial, permitting, and building processes. These case studies will share two very different experiences, driven by location and purpose, of an architect and a developer in the design and building of tiny homes.

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Session Three

1:45-3:15 P.M. 1.5 LU/HSW HOURS

Re-Inventing Microgrid Power Systems for Net Zero Buildings

PRESENTED BY: Brian T. Patterson, IEEE, Emerge Alliance; Douglas B. Hambrosky, AIA, Nextek Power Systems; Gregory Reed, Ph.D., University of Pittsburgh; and Nana Wilberforce, PNC Financial Services Group

This course will explain the underlying interconnection infrastructures and technologies that make a network of electric power microgrids—the ENERNET—work within buildings and on building campuses. Sometimes referred to as “inside the meter” microgrids, electric power microgrids (described as “The Next Big Thing” in electrical energy) are inherently scalable, from personal desktops to utility scale. The focus of this course is on those used in buildings and their relationship to utility power grids. It is in buildings that the challenge of powering the “Internet of Things” will take place and where the sole reliance on hundred-year-old AC power technology is increasingly becoming wasteful and technically inadequate.

The course will give a basic understanding of the concepts involved and what technical characteristics of building/campus-level microgrids can be leveraged to achieve net-zero energy use. Several strategies that can allow a green building design professional to get involved in the continued growth and deployment of the ENERNET from a building design and construction perspective are presented. The course will include a live demonstration of a wirelessly controlled room-level microgrid powered by LVDC as typically sourced from a site-based solar PV system.

As an added feature, Gregory Reed, Ph.D., professor of electrical and computer engineering at the University of Pittsburgh's Swanson School of Engineering and Director for Pitt's Center for Energy in the Swanson School, will give a brief overview of the Hybrid AC/DC Microgrid activities at Pitt's new Energy Innovation Center in downtown Pittsburgh. The Center is expected to be a continuing resource for course-related work and additional educational opportunities for interested participants. Also, at the conclusion of the course, a case study report on the net-zero solar-powered PNC Bank branch in Ft. Lauderdale, Florida, will be given.

1:45-3:15 P.M. 1.5 LU/HSW HOURS

Green Roofs: Hard Data to Support the Hype

PRESENTED BY: G. Eric French, Eisler Landscapes; F. Jeffrey Murray, FAIA, CH2M Hill/IDC Architects; John Buck, Civil & Environmental Consultants, Inc.; and Darla J. Cravotta, Office of Allegheny County Executive Rich Fitzgerald

Green roofs are said to last longer, reduce energy costs, absorb stormwater, improve air quality, and help to lessen the heat island effect. In 2010, Allegheny County set out to test most of those claims by installing four different types of green roof systems on half of the County Office Building roof, leaving the remainder for comparison. An important part of the installation was an extensive data collection system. Members of the project team will explain the project concept and present the data in terms of water infiltration and thermal analysis, showing what has been learned to date from the different roof types and proving that there are definite advantages to green roofs.

1:45-3:15 P.M. 1.5 LU/HSW HOURS

The Race is Really the Prize: Ecodistrict Planning and Aggregated Action

PRESENTED BY: Christine Mondor, AIA, LEED AP, evolveEA

Pittsburgh has a history of innovative leadership in green building and is now helping to define the national conversation on sustainability planning. An ecodistrict describes a neighborhood or community whose plan considers both the physical assets of a community as well as the community's resource flows, such as food, energy, and water. This session will present the emerging trends that are defining ecodistricts and urban planning and how the concept is being implemented nationally and regionally. Learn how to: distinguish between various frameworks for addressing community sustainability and apply them in part or whole; identify the various physical systems and resource flows, i.e., the “hardware” that can be measured in ecodistrict planning; recognize the importance of the “software” of community capacity and how the design process can activate as well as engage a community; and understand the different types of ecodistrict metrics, processes, and outcomes through regional and national examples.

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Session Four

3:45-5:15 P.M. 1.5 LU/HSW HOURS

Designing Smart Environments: Integrating Resilience, Sustainability, Information and Experience

PRESENTED BY: F Jeffrey Murray, FAIA, CH2M; Ozzie Gonzales, AIA, CH2M; and James Godfrey, P.E., CH2M

When clients start asking about smart buildings, you have to find answers. The typical definition of a smart building is one that uses information technology and computing power to enhance building performance. However, a few years ago, when team members at CH2M began looking into smart buildings for their clients, the marketplace seemed confusing as manufacturers of everything from building management systems to window blinds were claiming to own the 'smart building' space. This confusion became the inspiration to begin a research project that would try to define what a truly 'smart' environment (room/building/campus/city) could be in terms that would actually help clients and direct change in the approach to design. This resulted in a group of thought leaders from different design and engineering disciplines to work on this problem.

During this presentation, the CH2M representatives will report the group's findings to date, and present a comprehensive perspective that integrates system resilience, resource sustainability, information technology, and human experience. The presenters will discuss these four factors and how they influence each other, sometimes converging and at other times diverging, and then present a framework that can be useful in helping clients better define their needs while helping designers uncover emergent design opportunities.

3:45-5:15 P.M. 1.5 LU/HSW HOURS

Transformation in Mobility: Impacts of Connected and Automated Vehicles in the Built Environment

PRESENTED BY: Stan Caldwell, Carnegie Mellon University's Traffic21 Institute

New disruptive mobility trends and technologies have us on the cusp of a transformational change on par with the advent of the motorized vehicle and the creation of the interstate highway system. As with those two historic moments in time, this current transformation in mobility will have significant impacts on the way we build and traverse our communities long into the future.

Join this presentation to learn about future disruptive technologies of connected and automated vehicles, along with current trends in the shared economy and the proliferation of big data associated with mobility. The presenter will speculate upon potential positive and negative impacts of these disruptive technologies, particularly with regard to mobility and urban design, and discuss how architects and design professionals might prepare for the future.

3:45-5:15 P.M. 1.5 LU/HSW HOURS

Akron Children's Hospital: Success Achieved through REAL Integrated Project Delivery

PRESENTED BY: Cliff Greive, Akron Children's Hospital and Tim Ziga, Akron Children's Hospital

Akron Children's used a non-traditional Integrated Project Delivery (IPD) approach for the design and construction of the new Kay Jewelers Pavilion, a six-story, 360,000-SF tower. The project allowed patients and staff to participate in the design. This collaborative approach brought everyone involved in the project together to provide input during design in an effort to eliminate waste, cut costs, improve productivity, and create positive outcomes.

Join this presentation to learn how the composition of this IPD team—extending well beyond the owner, architect, and contractor—benefited from Lean Process Improvement principles to reduce waste and translate direct value back to the project. This methodology will continue to contribute to Akron Children's success and ensure better quality and efficiency of the spaces within. Presenters also will discuss the importance of IPD as an extensive data-driven process and share the lessons learned from this recent journey where these newer approaches to design and construction were utilized.

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2030 Challenge

1:30–5:30 P.M. 4 LU/HSW HOURS AND 4 GBCI CEUs

The 2030 Challenge: Setting + Achieving Energy Goals with Integrated Design

Integrated Design is fundamental to the creation of next-generation 2030 Challenge-compliant buildings. In this kickoff to the 10-session AIA+2030 Professional Education series, we will take a fresh look at what the latest best practices are for design teams now that Integrated Design has been a part of the vernacular for more than a decade.

It is now well known that the Integrated Design Process (IDP) is a critical component of high-performance building design. We will explore how it can be used to select collaborative strategies that collectively achieve the latest targets outlined in the 2030 Challenge, which now require 70% energy reduction on newly constructed buildings. In particular, we will examine the utility of IDP, as well as new tools and processes that can be used in defining core, early design decisions such as building form and orientation.

Kicking off the 2030 Series will be **Lance Hosey, FAIA, LEED Fellow** and Chief Sustainability Officer at Perkins Eastman. Author of “The Shape of Green,” his work challenges those who perceive beauty and sustainability as being mutually exclusive. **Anna Siefken** of the Green Building Alliance will describe the Pittsburgh 2030 Districts, the most ambitious in the nation. **Marc Mondor, AIA, LEED Fellow** of evolveEA, will describe the Integrated Design Process in theory and practice.