GREEN BUILDING UNITED
2019 NEW GRAVITY HOUSING CONFERENCE

August 1 - 2, 2019
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Welcome to New Gravity: Climate Change and the Imperative of High Performance Affordable Housing! We are thrilled to welcome presenters and attendees, and to express a warm thank you to our host, Temple University, as well as our event sponsors and vendors for helping make this conference possible for a third year. We are also tremendously grateful to our Conference Steering Committee for all their work in helping make this conference a reality: Jeremy Avellino, Leslie Billhymer, Jaque Camp, Matt Fine, Michael Hindle, Jon Jensen, Hank Keating, Tim McDonald, Wade Romberger, and David Salamon.

New Gravity embodies Green Building United’s mission to improve quality of life in our communities through green building education and advocacy. We recognize that climate change has already fundamentally changed the way buildings are designed, built, and operated, and this change will need to be more rapid in the coming decades. At the same time, the need for quality affordable housing that can withstand increasingly extreme and volatile weather continues to grow. Building healthy, safe, and accessible places to live that will both limit and adapt to climate impacts is a key challenge for the 21st century.

This conference will explore the tools, techniques, and practices that the building community is using to address this challenge. New Gravity offers 17 education sessions from 50+ presenters and three tours, as well as important messages from two keynote speakers. We are very pleased that the program includes presenters from our local community as well as those who have traveled from across North America.

This conference is notably informed by the PHFA Project, an effort to scale the adoption of high performance affordable housing in the United States.

Thank you,

Alex Dews and Green Building United Team

Left to Right:
Katie Bartolotta, Policy & Programs Director
LeAnne Harvey, Program & Communications Manager
Alex Dews, Executive Director
Margaret Salamon, Development Director
Leah Wirgau, Education & Engagement Director

There’s something for everyone at Green Building United!

2030 District -- Demonstration Projects -- Building Codes -- Green Schools
Awards -- Conferences -- Networking -- Climate Resilient Communities

Learn about these and more at:

greenbuildingunited.org
August 1st Conference Schedule

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<th>Time</th>
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<td>8:00 - 9:00 am</td>
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<td>Keynote</td>
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<td>Keynote</td>
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<tr>
<td>5:00 - 6:00 pm</td>
<td>Happy Hour on the Expo Floor</td>
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<th>Room 110A</th>
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<tr>
<td><strong>Session 1</strong></td>
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<tr>
<td>9:30 - 10:30 am</td>
<td>The High-Performance Affordable Housing Design MANUAL*</td>
<td>Exterior Deep Energy Retrofit Solutions: The REALIZE Project</td>
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<td><strong>Session 2</strong></td>
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<td>Creating and Maintaining Resource Efficient Healthy Homes: An overview of federal programs*</td>
<td>Using Smart Technology to Deliver Energy Retrofits for Multifamily Buildings</td>
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<tr>
<td>12:00 - 1:00 pm</td>
<td>Dr. Jonathan Foley, Project Drawdown</td>
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<td><strong>Session 3</strong></td>
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<tr>
<td>1:30 - 2:30 pm</td>
<td>How Can We Leverage Public Policy to Promote Passive House and Net Zero Buildings*</td>
<td>The Regenerative Design Imperative</td>
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<tr>
<td>4:00 - 5:00 pm</td>
<td>Katie Swenson, Enterprise Community Partners</td>
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**Continuing Education**

Conference attendees must sign in at the registration table to receive AIA and PHIUS credits, and in select session rooms to receive GBCI credit.

**Entire Conference:**
- 7 AIA LU-HSWs
- 7 PHIUS CPHC CEUs

**Select sessions** worth GBCI CE hours:
- Noted by * in schedule above and with session descriptions
August 2nd Conference Schedule

8:00 - 9:00 am.................................Registration, Breakfast, and Expo
9:00 - 10:00 am...............................Session 5
10:00 - 10:30 am.............................Coffee Break and Expo
10:30 - 11:30 am.............................Session 6
11:45 am........................................Closing
2:00 pm.........................................Tours

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<td>The Story of the New Hughson Street Baptist Church with Affordable Housing: How we got to Passive House</td>
<td>Three Passive House Projects: A builder’s and MEP engineer’s perspective batting .666</td>
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Keynote Speakers

**Dr. Jonathan Foley**, Project Drawdown

Dr. Foley is the Executive Director of Project Drawdown — the world’s leading source of climate solutions. He is a world-renowned environmental scientist, sustainability expert, author, and public speaker. His work is focused on understanding our changing planet, and finding new solutions to sustain the climate, ecosystems, and natural resources we all depend on. Dr. Foley’s groundbreaking research have led him to become a trusted advisor to governments, foundations, non-profits, and business leaders around the world. He has published over 130 peer-reviewed scientific articles, including often-cited works in Science and Nature. He has been named a Highly Cited Researcher, placing him among the top 1 percent most cited scientists worldwide.

*Based in San Francisco, Dr. Foley will be presenting to conference attendees by video in an effort to reduce the climate impacts associated with travel.*

**Katie Swenson**, Enterprise Community Partners

Katie is a nationally recognized design leader, researcher, writer, and educator. She is the vice president of Design at Enterprise Community Partners, a national community development nonprofit organization. Her work investigates how critical design practice can and should promote economic and social equity, environmental sustainability, and healthy communities. A member of the second class of Enterprise Rose Fellowship, Katie was tapped to grow and lead the program in 2007, after completing her fellowship with the Piedmont Housing Alliance in Charlottesville, Virginia. Under her leadership, Swenson has recruited and mentored 85 fellows who are the next generation of leaders in architecture and community development. A 2019 Loeb Fellow at the Harvard University Graduate School of Design, Katie is the co-author of Growing Urban Habitats: Seeking a New Housing Development Model and a memoir In Bohemia, to be published in Fall of 2020.
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Session 1 | 9:30 - 10:30 am

Solving the Wooden Building Puzzle - Combining Passive House + Wood Fiber + Pre-Fab - Room 108B
Learning Level 200: Understanding/Comprehension

Architects, builders, and owners face multiple challenges when considering which choices will allow their construction projects to have the most significant positive impact towards combatting climate change:

- Substantially reducing carbon emissions through building requires addressing both embodied + operational energy.
- New challenges of health, indoor air quality, and building durability stemming from the new normal of tight building construction require a sharper focus on the design and execution of moisture management and vapor resilient assemblies.
- Implementing good building science and ultra-low carbon assemblies can be complicated and cost prohibitive for many architects, builders, and building owners.

In this session, a passive house architect, builder, and fully integrated off-site manufacturing company describe how combining repeatable passive house construction details, a multiple perspective design approach, carbon storing and vapor-open building materials, and efficient offsite manufacturing offer an affordable and predictable alternative to common passive house construction methods. Their case study of a 4800-square-foot single family passive home describes how the resulting benefits and efficiencies of combining new cutting edge materials, integrated design strategies, and offsite construction processes led them to further explore the potential of this collaboration. The team will share their findings on the hygrothermal performance and embodied energy of these assemblies and fabrication methods and preview how they are developing the process to include vapor-open multi-family passive housing, including factory installed MEP to further leverage efficiency in the pursuit of affordability.

Ilka Cassidy, Holzraum System llc; C2 Architecture
Steve Hessler, Holzraum System llc; Hugh Lofting Timber Framing & High Performance Building
Marlee Beres, Blueprint Robotics
Martin Lettenmeier, Blueprint Robotics

The High-Performance Affordable Housing Design MANUAL - Room 110A
Learning Level 300: Application/Implementation | Worth 1 GBCI CE hour

One of the most significant challenges the design and construction industries face in the next 11 years is normalizing the design of net-zero energy (NZE) housing for everyday developers, architects, engineers, and builders. Simplified, demystified, and comprehensive straightforward strategies for approaching any-sized NZE multifamily building will be necessary in order to effectively and quickly train industry professionals. While there is an ever-increasing array of products and systems currently flooding the sustainable building market, how does one begin to ask the right questions?

Informed by 20 years of designing multi-family high-performance buildings and more recently, five years of working on multifamily Affordable Passive House projects, this lecture is designed to provide design, development, and building professionals with a step-by-step guide to cost-effective strategies for approaching multi-family, Affordable Passive House buildings.

This MANUAL is delivered in the form of a “decision tree” with pros and cons associated with the two or three most cost-effective and energy efficient strategies for managing all aspects of designing a multi-family Passive House building, including metering, monitoring, heating, cooling, ventilation, hot water, site-built and prefabricated envelopes, foundations, and airtightness. Integrated Project Delivery (IPD) provides a strategic backbone to the MANUAL and is demonstrated through several case study projects.

David Salamon, Re:Vision Architecture
Tim McDonald, Onion Flats
Exterior Deep Energy Retrofit Solutions: The REALIZE Project - Room 110B
Learning Level 100: Awareness

This session will provide an overview of the REALIZE project, which is bringing an exterior retrofit solution for deep energy conservation in multi-family buildings to market. The goal of the project is a complete, panelized exterior retrofit and mechanical upgrade with minimal disruption to tenants. REALIZE is funded by the Department of Energy and led by Rocky Mountain Institute and PHIUS, with design and technical support from Re:Vision Architecture and Staengl Engineering.

The presenters from Re:Vision and Staengl will share a range of precedents for exterior retrofits and how these inform the next wave of thinking. Appropriate building typologies for these emerging panel and systems technologies will be shared.

Justin Weisser, Re:Vision Architecture
Galen Staengl, Staengl Engineering
Moderator | Jennifer Rezeli, Re:Vision Architecture

Session 2 | 10:45 - 11:45 am

Lessons Learned: First generation of affordable multi-unit passive house buildings in British Columbia - Room 108B
Learning Level 200: Understanding/Comprehension

This session will present case studies of four multi-unit Passive House buildings, all constructed to meet affordable housing criteria. These case studies will include enclosure and mechanical details that illustrate how wood-frame affordable housing can be affordably constructed. These completed buildings will be followed by details of projects in progress that show how Passive House is evolving in British Columbia. The session will also include an overview of policies the City of Vancouver and the province of British Columbia have implemented to incentivize the development of more than four million square feet of Passive House.

Monte Paulsen, RDH Building Science

Creating and Maintaining Resource Efficient Healthy Homes: An overview of federal programs - Room 110A
Learning Level 100: Awareness | Worth 1 GBCI CE hour

The EPA will provide an update on the built environment aspect of its Sustainable Material Management (SMM) program. The application of SMM in the built environment includes best practices for reducing, reusing, and recycling construction site generated waste in a cost-effective manner. The EPA Indoor Air Quality Plus Energy Efficiency program seeks to provide optimal health and energy efficiency in its projects. MaGrann Associates will describe the challenges and successes of a Passive House senior housing project which used the Air Quality Plus Energy Efficiency program as its goal.

The HUD Healthy Homes Program takes a comprehensive approach to addressing resident health and injury prevention at home by focusing on housing-related hazards in a coordinated fashion. Working through local governments and nonprofits, Healthy Homes reaches home owners and renters regarding prevention of environmental health and safety concerns including mold, lead, allergens, asthma, carbon monoxide, home safety, pesticides, and radon.

David Iacono, U.S. EPA - Region 3
Jon Jensen, MaGrann Associates
Edward Thomas, U.S. Department of Housing and Urban Development - Region 3
Moderator | Lorna Rosenberg, U.S. EPA - Region 3
REMOVING BARRIERS
to green buildings + sustainable communities
Using Smart Technology to Deliver Energy Retrofits for Multifamily Buildings - Room 110B
Learning Level 200: Understanding/Comprehension

In the City of Philadelphia, there are 425 buildings considered as “income qualified” housing (NHPD). Utilities are a significant factor for the building owners, residents, and federal assistance programs that contribute to these buildings’ expenses.

In November 2017, BlocPower, a New York-based company that uses data to make buildings greener, healthier, and smarter, completed an ECM feasibility study for four income-qualified multifamily properties in Philadelphia. BlocPower’s study recommended installing smart thermostats with indoor sensors (x15) and providing resident training. The Pilot Scope included smart thermostat installations in four properties owned by Mission First Housing Group and Friends' Rehabilitation Program.

Panelists will review the scope of the pilot as well as the following questions:

- What are the opportunities and challenges associated with the intersection of human behavior and smart devices?
- What is the role of internet-connected networks in smart device development?
- How can energy conservation organizations partner with utilities for pilot programs?

Alon Abramson, Philadelphia Energy Authority
Ian Harris, BlocPower
Charlie Hill, STRATIS IoT
Moderator | Emily Schapira, Philadelphia Energy Authority

Session 3 | 1:30 - 2:30 pm

Case Study: Overheating in a multi-unit passive house seniors residence - Room 108B
Learning Level 400: Mastery

This case study will examine a 19-unit seniors’ housing project in northern Canada that is certified to the Passive House standard. Attendees will learn which passive and active cooling strategies are most effective in affordable multi-unit buildings, how Passive House projects assess whole-building overheating risks, how dynamic (hourly) modelling can be used to address overheating risk of individual apartments in multi-unit buildings, and how to incorporate future climate predictions into either monthly or hourly energy models.

This session will:

- Present unit-by-unit monitoring data of an overheating event
- Review design and construction decisions that led to overheating
- Present methodology and results of an hourly modelling exercise that analyzed remediation options
- Conclude with lessons applicable to all affordable multi-unit projects

Monte Paulsen, RDH Building Science

How Can We Leverage Public Policy to Promote Passive House and Net Zero Buildings? - Room 110A
Learning Level 200: Understanding/Comprehension | Worth 1 GBCI CE hour

Following Tim McDonald’s lead, in December 2017 Passive House Massachusetts (PHMA) began advocating for the Massachusetts Department of Housing and Community Development (DHCD) to add QAP bonus points for affordable multifamily Passive House (PH) projects. That effort is ongoing, but it led to two realizations:
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Continued How Can We Leverage Public Policy to Promote Passive House and Net Zero Buildings?

First, all QAPs that mention PH do not necessarily produce PH projects; Second, there are several other State agencies that can be asked to promote PH buildings. These include the office of the Secretary of Energy and Environmental Affairs (EEA), Massachusetts Department of Energy Resources (DOER), Mass Clean Energy Center (MassCEC), the Energy Efficiency Advisory Council (EEAC) advising the utility companies rebate programs, and the Board of Building Regulations and Standards (BBRS).

In addition, it became clear that PH advocacy could become more effective when combined with a host of regional groups advocating for Net Zero standards in communities across the State. The results have been impressive and should provide replicable models for other states.

Hank Keating, Passive House Massachusetts
Brendan Giza-Sisson, Eversource
Emily Powers, Massachusetts Department of Energy Resources
Brooks Winner, Metropolitan Area Planning Council

The Regenerative Design Imperative - Room 110B
Learning Level 100: Awareness

The effects of climate change have been coming faster and stronger than scientists predicted.

Passive House is not enough! Can we extend the building-as-a-system logic of Passive House into other sectors or do these systemic solutions already exist in other schools of thought? Holistic, regenerative community design is that mindset, and is fundamental to a living future.

Buildings should be crafted to be resilient, regenerative, and fit seamlessly into the life of the community and the natural world. We seem to believe we can use the same building forms and just use less energy, when in fact, the problem is more fundamental. The “forms” of contemporary buildings and communities have evolved around systemic dependence on massive inputs of fossil fuels. Much will have to change to achieve a future in which humans meet their needs without destroying the potential of future generations to do the same.

The ultimate manifestation of regenerative design would be communities that reverse climate change and foster localized regenerative systems, networks, and economies. Luckily for us, past civilizations have more than a few blueprints for how to create vibrant, resilient, regenerative, and community-centered places. Cohousing, pocket neighborhoods, and live/work downtowns are traditional forms that encourage interaction and engagement. This scale community typically has ample opportunity for systems of self-reliance such as localized agriculture, cottage industries, self-governance, responsive markets, and biophilic environments.

Chris Fuller and Michael Hindle will present general principles of regenerative design and show examples of several projects of various scales that seek to realize these goals.

Michael Hindle, Passive to Positive
Chris Fuller, Staengl Engineering

Session 4 | 2:45 - 3:45 pm

The Vertical Urban Village: Crosstown Concourse - Room 108B
Learning Level 300: Application/Implementation

Originally constructed in 1927, the Sears Distribution Center in Memphis’ Crosstown neighborhood grew into a major economic engine for the city; however, by 1983 the building sat abandoned, indicative of the modern trend of disposability and urban disinvestment. By the turn of the 21st century, this massive, deteriorating building was considered too expensive to demolish, let alone renovate. Unwilling to accept these limitations, the
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Meriden Commons | Meriden, CT | Passive House, Mixed-Use, Mixed-Income Property
Continued The Vertical Urban Village: Crosstown Concourse

founders of Crosstown Arts envisioned the building as a home for their small start-up organization, with plans to organically revive the structure. With local backing and federal Historic Tax Credits, the project evolved into a “vertical urban village” blending retail, restaurants, fitness, health, education, arts, and professional spaces with market-rate and subsidized housing to create a new, equity-focused community paradigm meeting rigorous sustainability and energy use goals. Crosstown Concourse has been the recipient of more than 15 national and international awards since its opening in August 2017, including the Grand Prize from the Congress for the New Urbanism, the AIA Honor Award for Architecture, and the designation as the largest historic adaptive-reuse LEED Platinum project in the world.

Krissy Buck Flickinger, LRK
Jim Prillaman, OGCB
Brad Teplicky, Trane Commercial Systems & Services

The Tricky Business of Financing Solar on Affordable Housing - Room 110A
Learning Level 300: Application/Implementation | Worth 1 GBCI CE hour

Climate action requires a steep reduction in greenhouse gas (GHG) emissions and utilizing all tools in the clean energy toolbox. If affordable housing projects are to reach net zero energy usage and contribute to GHG emission reductions in meaningful ways, viable financing options to incorporate renewable energy systems into projects are critical. Multifamily buildings have great real estate for rooftop solar, yet solar installations are especially difficult to finance on affordable housing. Over the past five years, the National Housing Trust (NHT) and its partners have become experts in deploying different financing options to get solar installed on affordable housing. NHT’s portfolio financing model aligns solar incentives for property owners, investors, and lenders. This session elaborates on how to think through the different financing options available for solar on affordable housing, how to evaluate the best option for a project, and shares an affordable housing solar installation success story.

Jared Lang, National Housing Trust
Lauren Zullo, Jonathan Rose Companies
Moderator | Bahareh van Boekhold, Applied Energy Group

Engaging the Climate Spectrum: Passive House for all - Room 110B
Learning Level 200: Understanding/Comprehension

Americans perceive climate change along a diverse spectrum of beliefs beyond the binary of denial and alarm. Although connections are being forged in the public mind about the egregious effects the built environment has on climate, cultural polarization keeps us conveniently divided along political lines. As design professionals, we are primarily responsible for cultivating both an inclusive and truth-telling atmosphere on a project team so the full spectrum of climate beliefs can be explored without sacrificing the rigorous goals of low-embodied-carbon construction. But is everyone truly welcome to the table the environmentalists set? Do developers have to be eco-conscious before they can de-carbonize planet earth, or are they gracefully invited on the journey with us?

Instead of constructing defense mechanisms against the realities of climate change, our panelists constructed climate change resilient housing. This panel will explore what they faced, why they did it, and how their lives have changed forever.

David Ross, Partner, Argo Property Group
Erin Murray, Passive House Owner
Co-Moderator | Jeremy Avellino, Bright Common
Co-Moderator | Rachael Kerns-Wetherington, Independent Psychology Practice
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Session 5 | 9:00 -10:00 am

Getting to Zero through Advanced Energy Codes - Room 108B
Learning Level 100: Awareness

Passive House and LEED are the stars of low-carbon emissions new construction, but the humble building code has proven to be one of the most effective policy tools to advance efficiency in the broader market. Between 2006 and 2012, model energy codes had driven an efficiency improvement of 30 percent in both states and municipalities upon prompt adoption. Since then, the model codes have plateaued in the face of increasing payback periods and pushback from the building industry. Many are now wondering how to get energy codes back on track to achieve zero-carbon emissions buildings and meet climate imperatives.

Attend this session for an update on the International Code Council’s 2021 IECC development process and learn how organizations are pushing for meaningful efficiency improvements. Also, learn how states and municipalities are meeting their climate goals by developing and implementing unique energy codes, modifying the model codes, or encouraging adoption of “stretch” codes.

Mike Turns, Performance Systems Development
Michelle Britt, International Code Council
Lauren Urbanek, NRDC

Living Building Challenge and Affordable Housing - Room 110A
Learning Level 200: Understanding/Comprehension

In this session, Living Building Challenge will be presented with a focus on affordable housing solutions. With the rollout of LBC 4.0, barriers to success and entry for previous projects are being addressed to align effort with results. Pathways will be explored to achieving net-positive carbon and net-positive water for dense project sites with competing resource needs. LBC’s framework for healthy interior environments will also be presented.

Following the LBC introduction, leaders from the Living Future Community of Green Building United will present an innovative, volunteer-led, Demonstration Project as a prototype LBC affordable infill housing solution in Philadelphia. The collaborative, community-driven process will be reviewed and the solutions and barriers to LBC will be discussed.

Community Ventures, the client for the Demonstration Project, will then discuss their interest in LBC and how it has changed their organization’s approach to housing development. The session will conclude with a moderated panel discussion.

Shawn Hesse, International Living Future Institute
Wolfram Arendt, LAYER Architecture
Patrick Isaac, Community Ventures
Moderator | Drew Lavine, Re:Vision Architecture

Affordable Housing through Mass Timber - Room 110B
Learning Level 300: Application/Implementation

Mass timber building provides a faster, safer, more thermal, durable, healthier, sustainable, natural, and cost effective building system for affordable housing. By way of examples in European social housing and comparison of the process of building multi-family with different building systems, the merits of building with mass timber will be detailed. A real world example of a mass timber passive house affordable housing project in design in New Haven, Connecticut will be examined by way of example.

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Session 6 | 10:30 - 11:30 am

The Story of the New Hughson Street Baptist Church with Affordable Housing: How we got to Passive House - Room 110A
Learning Level 300: Application/Implementation

This session will discuss Passive House lessons learned for a growing downtown Baptist church in the planning phases for a new building who decided to go Passive House and add affordable housing to the mix. Starting with the initial conversations through design and construction of this 60,000 square-foot mixed use building in an urban setting, the presentation will share how the project got from an idea to reality. In 2016, Hughson Street Baptist Church partnered with Indwell, a leading developer of affordable housing in Ontario who had recently committed to Passive House. Leading the design team is Invizij Architects, one of Canada’s leading Passive House designers, with clients ranging from non-profits to institutional projects. This workshop is ideal for builders, developers, civic institutions, and others interested in building mixed use low-carbon buildings.

Graham Cubitt, Indwell
Emma Cubitt, Invizij Architects

Three Passive House Projects: A builder’s and MEP engineer’s perspective batting .666 - Room 110B
Learning Level 200: Understanding/Comprehension

Three different multifamily Passive House projects, one renovation with a new addition and two new construction, will be discussed from the builder’s perspective. Details and execution of the thermal envelope as well as construction sequencing will be discussed along with cost effectiveness lessons learned and experience with Aerobarrier for air sealing. MEP engineering approaches for Passive House will also be discussed by the design professional for one of the projects.

Two passed but one did not meet the final infiltration requirements – come to the session and find out which ones passed!

Ernest Sota, Sota Construction Services Inc.
Alexander Radkoff, Iams Consulting, LLC
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August 2nd Tours

Tours start at 2:00 pm and are capped at 25 attendees each. Attendees are responsible for transporting themselves from the conference venue to the tour meeting site. Ticket required - please see the registration table to sign up for a tour.

Tour 1

Bank Flats: 28-unit net positive and affordable experiment on the fringes

An edgy site adjacent to the El - between abandoned buildings, in the middle of Kensington - this 28-unit project features a 176kW PV array and is designed to generate more energy than the building needs. It will also house the offices of Onion Flats and is their most recent multi family project.

Tour Guide | Tim McDonald, Onion Flats

Tour 2

Oxford Green: A case study in affordability and efficiency

Habitat for Humanity Philadelphia is currently constructing 20 row homes in the Sharswood community that will be affordable homeownership units for households between 30 - 60 percent of Area Median Income (AMI). The first new construction affordable units in the community in over a decade, they represent a paradigm shift for Habitat Philadelphia in scale and approach to projects. Efficiency - both energy and construction - was essential to the project’s design strategies. From an efficiency standpoint, the project focused on building envelope and stormwater management as a response to construction materiality, city regulations, and homeowner affordability.

The tour will include walk-throughs of units at different stages of construction to show the techniques utilized to meet efficiency goals. We will discuss the role of the architect, civil engineer, green roof designer, energy rater, an owner to address coordination amongst the team, and how design decisions impacted schedule and construction methods in the field. Oxford Green serves as a case study to highlight how design considerations and efficiency planning can streamline construction processes and lead to a quality, affordable product, and forward Habitat’s vision of Philadelphia where everyone lives in safe and affordable homes.

Tour Guide | Neil Goldman, Habitat for Humanity

Tour 3

Solving for ZERO: Senior housing edition

Westville Senior Housing has been designed and built with the annual goal of Net-Zero. Using PHIUS+2015 as a guide to load reduction, a team of RPM Development, Inglese Architecture and Engineering, and MaGrann Associates set out to design a LIHTC project of 64 units that produced more kWh per year than it consumed. A high efficiency envelope, VRF central heating and cooling, “neighborhood” heat pump water heaters, and individual HRVs draw on known strategies to reduce consumption below the projected production of the area available for PV panels on the roof and a parking canopy. Jon will share legal, incentive, design, and construction team successes and struggles throughout the process. Currently LEED v4 Platinum, Zero-Energy Ready, Indoor airPLUS, and Energy Star certified with PHIUS+2015 Source Zero certification pending.

Tour Guide | Jon Jensen, MaGrann Associates
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- Philadelphia Energy Code Changes for Additions and Alterations
- How Do We Get from Passive House to Truly Low-Carbon Net-Zero Buildings?
- Hard Lessons Learned: Architects, engineers, and achieving high performance buildings
- Is Pennsylvania on the Brink of Creating an Energy Policy?
- and more!

bit.ly/GreenBuildingWebinars
Individual Membership

When you become an individual member of Green Building United, you invest in our mission, and have the opportunity to engage at the local level in green building issues that have community, regional, and global impacts.

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* Must be employee of a USGBC Member Company to be eligible. See if your company is a USGBC Member by searching at usgbc.org/organizations

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*** Members who take advantage of the Pro option receive free access to all webinars, valued at up to 30 CEUs

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> Discounted admission to Green Building United events including educational programs, tours, and LEED exam preparation courses, with opportunities for earning GBCI and AIA continuing education credits

> Free admission to Green Building United happy hours and networking events

> Opportunity to participate in selection of educational topics

> Eligibility to serve on committees and run for seat on Board of Directors

> Opportunity for special recognition in newsletters, social media, and blog

> Select invitation to vote on important Green Building United issues

> Other Member discounts

Leadership Level Members

Members can also support Green Building United by donating at the individual leadership level as a Champion ($1000), Steward ($500), or Supporter ($250). Leadership Members receive all Pro Membership benefits and are specially recognized on our website.

Every single event I attend with Green Building United makes me energized and optimistic about our future. My involvement keeps me engaged with movers and shakers in the green building industry. The professional connections I have developed through Green Building United membership have been a huge business advantage.

– Kristen Suzda, Re:Vision Architecture

Contact Us: For questions about Sustaining Partnership and Event Sponsorship, please contact Margaret Salamon, Development Director, at msalamon@greenbuildingunited.org. For questions about Individual Membership, please contact Leah Wirgau, Education and Engagement Director, at lwirgau@greenbuildingunited.org.
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