

2017 NYSERDA Multifamily Summit Agenda

Sunday, October 22

- 4:00–6:00 p.m. **Registration**
Grand Pre South
- 6:00–7:00 p.m. **Cocktail Reception**
Grand Hall
Greet old friends and meet new colleagues while enjoying lite fare and a cash bar

Monday, October 23

- 8:00–9:00 a.m. **Continental Breakfast and Registration**
Grand Hall
- 9:00–9:15 a.m. **Opening Remarks and Welcome**
Grand Ballroom
Loic Chappoz, NYSERDA
- Welcome and Summit Overview
- 9:15–10:15 a.m. **Keynote Address: Alicia Barton, President and Chief Executive Officer, NYSERDA**
Grand Ballroom
- 10:15–10:30 a.m. **Break**
- 10:30–11:30 a.m. **Affordable Multifamily Passive House***
Hudson AB
Gina Buffone, The Association for Energy Affordability, Inc.
Adam Romano, The Association for Energy Affordability, Inc.
Gahl Spanier, The Association for Energy Affordability, Inc.
- Awareness and adoption of passive house principles have significantly increased within the development community, especially the multifamily affordable housing sector. However, scaling up passive house design and construction comes with a unique set of requirements and challenges. This session will provide an in-depth overview of enclosure and mechanical system design considerations, quality control testing methodology, and lessons learned from the construction of the Hellenic American Neighborhood Action Committee’s (HANAC) Corona Senior Housing development. Located in Corona, Queens, this 68-unit, 8-story affordable housing project addresses the affordability and comfort needs of low-income seniors. A healthy indoor environment is also a necessity for the children attending daycare center located on the ground floor.

Your Super Hero for Energy Savings: How Superintendents and Other Building Operators Play a Key Role in Reducing Energy Use*

Salon 1

Todd Rodgers, Energy Training Solutions

Building operators can make a significant difference in energy and water usage. But, how do these superheroes actually accomplish such conservation feats? Meet a few of the building operators who are making a difference and learn about the strategies that inspire management, operators, and residents to work together. This session will present examples from the field and discuss how building owners and contractors can utilize training opportunities to go beyond traditional ECM installation.

Multifamily Performance Program at Scale: Lessons from the Field*

Salon 2

Brian Jaffee, TF Cornerstone

Ryan Pastor, Cosentini Associates

Helen Rubinstein, Cosentini Associates

With great building size comes great advantages—both in terms of building energy savings and incentives under the NYSERDA Multifamily Performance Program. Large projects also offer an opportunity to reduce up-front costs, address schedule concerns, create synergies, and incorporate sustainability principles. Taking lessons from 33 Bond Street, a 714-unit market-rate residential building in Brooklyn, this session will present the means and methods in design, construction, and project management that large buildings can implement to make this program more cost-effective and time-efficient.

11:30–11:45 a.m.

Break

11:45 a.m.–1:15 p.m.

**Lunch: Plenary Session
Grand Ballroom**

1:15–1:30 p.m.

Break

1:30–2:30 p.m.

**Cogen in the City: Benefits, Impediments, and Helpful Hints for a CHP System in NYC*
Hudson AB**

Adam Faber, GEA Consulting Engineers

Davetta Thacher, NYSERDA

Local zoning and utility regulations along with the Department of Buildings can make CHP a complicated process. This session presents the arcane regulation in NYC, including the R-34 relay, black start capability, gas load issues, and more. Issues relevant to high-rise construction will also be addressed, such as spacing, weight loads, and exhaust flue requirements. The session will wrap up by discussing the unique issues presented by NYC's abundance of prewar buildings such as outdated boiler and hot water plants,

archaic water distribution zones and setup, nonexistent site drawings, opaque metering setup, and recalcitrant tenants.

Additionally, the NYSERDA Power Generation team will be on hand to provide information regarding incentives and support for CHP installations.

Multifamily Building Resiliency: Applications and Case Studies*

Salon 1

Michael Scorrano, EN-POWER GROUP

Many people are still affected by the devastation caused by Superstorm Sandy. Unfortunately, extreme weather events are expected to occur more often due to climate change, and multifamily buildings in coastal states are increasingly vulnerable due to aging building systems. This session will begin with actual examples of Superstorm Sandy's impacts on multifamily buildings and then will shift the focus to current resilient technologies and how to apply them in specific multifamily buildings. In addition, Mr. Scorrano will highlight applications of various resilient technologies by sharing three examples. The installations of an emergency power system at two multifamily residential buildings in Greenwich Village, a cogeneration system at the Luna Park Housing Cooperative in Coney Island and the installation of solar photovoltaic panels at The Fairview, a large-scale multifamily building in Forest Hills.

Envelope Sealing Breakthrough: Changing the Way*

Neal Walsh, AeroSeal LLC

Salon 2

The U.S. Department of Energy and the EPA have long identified the building envelope as the single largest factor in determining building performance. Today, ensuring a tight envelope is a labor-intensive, multistage process fraught with opportunities for error and ineffective results. Given these critical implications, researchers at the University of California's Western Cooling Efficiency Center have been working on the development of a game-changing approach to envelope sealing to simplify the process and guarantee effective outcomes. The result is a single-step process that can effectively seal an entire building structure in minutes. This session will provide attendees with one of the first public disclosures of the technology, an in-depth look at the process, and an examination of several NYC-based projects.

2:30–2:45 p.m.

Break

2:45–3:45 p.m.

The Lockport Housing Authority Geothermal Conversion*

Salon 1

Jens Ponikau, New York Geothermal Energy Association

Scott Smith, NYSERDA

During 2015, the Lockport Housing Authority converted 72 low-income tenant units from electric heat to geothermal, all while the apartments remained occupied. The geothermal system was designed to cover the entire heating and cooling load, and provide all the domestic hot water without a backup system. The data shows the energy impact of converting a multifamily housing to geothermal technologies, and demonstrates that it can be accomplished on an extremely small footprint with minimal disturbance of tenants. This project won the 2017 Top Job Competition of the New York Geothermal Energy Association.

Additionally, the NYSERDA Renewable Heating and Cooling team will be on hand to provide information regarding incentives and support for Geothermal installations.

Technology's Role in getting to Net Zero*

Salon 2

Ben Locke, Tecogen

In an effort to achieve Net Zero in a passive house design in the commercial, industrial and multifamily residential markets, design engineers and builders are looking at a multitude of products and technologies. This session will give an overview of the approaches that allow load shifting, demand management, and time-of-use strategies to reach these efficiency objectives. As the energy industry shifts from a centralized to distributed generation model, integrating multi-generation sources such as solar, battery, and cogeneration systems is crucial. These systems also have built-in microgrid functionality permitting seamless transfer of multiple units from grid-connected to island mode with no external controls, significantly reducing the cost and complexity.

Fostering a Culture of Cooperation within High Performance Building Teams*

Hudson AB

Gwen McLaughlin, TRC Energy Services

Robert Grindrod, CLEAResult

Michelle Tinner, CLEAResult

In the field of high performance building, a lack of communication between those who design details and those who install them can lead to increased costs and performance losses. Integrated Project Delivery (IPD) develops a culture of cooperation, provides transparency, and ultimately eliminates waste and inefficiencies. According to Integrated Project Delivery for Public and Private Owners, IPD is “based on principles of mutual respect, mutual benefit and reward, collaborative decision-making, early involvement of key project participants, early goal definition and intensified planning, and open communications.” This session will explore the methods used to foster collaboration among the members of the design and construction teams.

3:45–4:00 p.m.

Break

4:00–5:00 p.m.

The IPNA: A New Opportunity for Multifamily Service Providers

Salon 1

Lindsay Robbins, Natural Resources Defense Council

Ian Shapiro, Taitem Engineering, P.C.

It's common knowledge that the time of recapitalization or acquisition is an ideal time to incorporate efficiency measures into affordable housing, but until now, it has been very challenging to shoehorn an energy audit and improvement plan into the already complicated process of retrofit and refinance. This year, New York State's and New York City's housing agencies have taken a bold step to address that challenge by adopting the Integrated Property Needs Assessment (IPNA) as a requirement for all preservation projects. The IPNA is a unique tool that wraps several disparate assessments into a single, powerful bundle. By combining a traditional property needs assessment with an energy and water efficiency audit, health assessment, and evaluation of solar potential, the IPNA provides owners and lenders alike with the information they need to make informed decisions about the best way to upgrade their properties. Come learn about the new IPNA Tool and Standard, the opportunities it offers you and your projects, and how to become a qualified provider.

Panelized Construction: ICF and Timber*

Salon 2

Dick Struthers, Bensonwood

Steve Bluestone, ICF Panels LLC

This in-depth session will center on how to apply panelized building technology in cost-effective and energy efficient capacities. Participants will hear presentations from pioneers in the building industry who are applying panelized construction successfully. Steve Bluestone, a builder, developer and property manager of mixed used residential buildings throughout the NYC metropolitan area, has been a leader in the field of producing high performance structures for decades. Steve's section will focus on how using Insulated Concrete Form (ICF) panels and Helix Micro Rebars have allowed him to meet and exceed Net Zero Energy and Passive House standards at very affordable costs. Dick's section will focus on how a modern approach to timber and panelized construction adds higher levels of design flexibility, precision, and predictability, while significantly condensing the on-site construction schedule, reducing the carbon footprint, and adding warmth and beauty to low to mid-rise multifamily projects.

Where do Con Edison's Gas Efficiency Programs fit in the age of REV?

Hudson AB

Philip Madnick, Con Edison

Reforming the Energy Vision or REV has strategically changed the electricity business for all utilities in New York State. Its greatest impact can currently be seen in the increased aggressiveness of electric efficiency programs which offer incentives and services towards the latest technologies intend to reduce peak demand on the grid. But what about gas efficiency? In this session we will discuss how Con Edison's Gas Efficiency Programs, particularly in the Multifamily sector, have undergone some dynamic changes over the last few years. This includes strides made in incorporating incentives for new

gas technologies as well as in delivering better opportunities for affordable housing. Lastly, we will also address Con Edison's exciting gas efficiency growth plans for 2018.

5:00–6:00 p.m. **Cocktail Hour**
Grand Hall
Continue networking while enjoying light fare.

6:00–8:00 p.m. **Dinner**
Grand Ballroom

Tuesday, October 24

7:30–8:30 a.m. **Continental Breakfast**
Grand Hall

8:30–9:30 a.m. **Real-World Challenges of Passive House in the Mainstream Market***
Hudson AB
Jordan Dentz, The Levy Partnership
David Finehirsh, Urban Artisan, LLC

This session will address the technical, financial, and design challenges encountered while developing a passive house infill project and evaluate the effectiveness of various solutions and potential improvements. Using a 6-unit condominium project in Manhattan, attendees will have a firsthand look at a variety of construction issues, energy modeling challenges, and marketing/finance considerations for multifamily urban passive house development.

Multifamily Performance Program Data Deep Dive
Salon 1
Tim Allen, Taitem Engineering, P.C.
Betsy Parrington, Taitem Engineering, P.C.

Learn how the Multifamily Performance Program is performing overall. This session will discuss the quality control and quality assurance processes that watch over the program to ensure savings are achieved. Review common problems found during the QC/QA process and the methods in place to help avoid those issues. The bright spots will be highlighted as well to glean lessons for projects considering the high-performance component. Program-wide results will be covered; specifically, the results of years of post-construction utility data to show how savings do or do not persist after construction.

Wireless Systems & Sensors – A Game Changer for Multifamily Buildings*
Salon 2
David Gordon, Green Building Partners, LLC

While wireless controls for systems have been around for quite some time, other energy savings applications have recently become more developed and cost effective. This is a game changer for the multifamily housing segment where conventional building automation systems have not been practical or affordable. Prime applications for wireless energy management include HVAC controls and energy data collection (e.g., submetering). Along with security, robustness, network compatibility, maintenance, and reliability, learn about the factors that contribute to wireless controls being the next big thing.

9:30–9:45 a.m.

Break

9:45–10:45 a.m.

Air Source Heat Pumps: New Findings*

Grand Ballroom

Ian Shapiro, Taitem Engineering, P.C.

There has been recent discussion surrounding air-source heat pumps, from small mini-splits to multi-splits and larger VRF systems as replacements for inefficient heating systems. What are some early findings in real-life experience with these conversions? What are actual costs? What is the savings potential, and are these savings being delivered? What are pros and cons? Participate in the discussion about this emerging energy-saving strategy, which will cover the following topics:

- Converting steam to ASHP
- Converting electric resistance to ASHP
- Latest findings in steam to ASHP conversion
- Latest findings in electric to ASHP conversion
- Differences between VRF and smaller ASHP's
- Results of a survey of actual ASHP efficiency (literature survey, and field results)
- Results of the survey about how much steam is used in MF buildings in NYS How ASHP's are being used for multifamily deep energy retrofits in the Netherlands

10:45–11:00 a.m.

Break

11:00 a.m.–12:00 p.m.

Multifamily New Construction: Beyond Modeling - Real Data & Results*

Salon 1

Ryan Merkin, Steven Winter Associates, Inc.

Steven Winter Associates, Inc. recently completed a study comparing energy usage data in newly constructed multifamily buildings. This study takes an in-depth look at a subset of completed and occupied multifamily buildings. The results of costs to run the different subset types of buildings provided interesting insights. Do ENERGY STAR buildings perform better than conventional new construction? What can we expect with the strengthening of building and energy codes? How much further can a standard such as Passive House take us?

On a more granular level we compare and contrast the design characteristics (envelope, HVAC, renewables) in an attempt to answer such questions as what are the most important factors driving electricity and fuel consumption in newly constructed multifamily buildings as well as what design decisions are perhaps of less importance. The data presented will serve as an invaluable resource to the development community and program administrators alike.

Energy Savings Potential by Repairing and Eliminating Crossover and Controlling Recirculation in Multifamily Central DHW Distribution System*

Salon 2

Gabriel Ayala, Enovative Group, Inc.

Jordan Dentz, The Levy Partnership, Inc.

Crossover between hot and cold lines in a DHW distribution system can result from a faulty fixture mixing valve, or an uncontrolled open circuit where cold water and hot water pipes join to mix, and a pressure imbalance between the hot and cold water subsystems. Buildings with crossover may experience compromised hot water service with tenants complaining of fluctuating or inconsistent water temperature at the tap. However, in many cases the effects may not be readily felt by the user, and therefore it will not receive proper attention or repair, and thus persist over a long period of time. We will present the results of a CEC-funded study of over 100 multifamily buildings throughout California where over 50% tested positive for crossover. Analysis on a sample of these buildings showed that repairing the crossover reduced water heating energy consumption by an average of 16%. We will discuss the frequency, causes, energy impact and solutions for crossover in multifamily buildings.

Another way to reduce waste in multifamily DHW systems is by implementing demand controls on the DHW recirculation pump. Typical recirculation systems operate the majority of the time, even if they use temperature or timer controls. By doing so, hot water return lines radiate heat continuously, requiring the boiler to run more frequently to replace that heat as water moves throughout the building. Demand controls reduce much of this waste by limiting recirculation time by 90% or more. We will discuss the results of a NYSERDA emerging technologies program that is installing demand controls in 40 New York buildings. Energy savings, and tenant and super feedback will be presented for approximately 25 buildings. We will also cover the control algorithm, when buildings are suitable for demand controls and important installation tips.

12:00–1:00 p.m.

Lunch: Summit Wrap-Up and Closing Remarks

Grand Ballroom

Loic Chappoz, NYSERDA

1:00–3:00 p.m.

Air Tightness Requirements of the Passive House Standard*

Salon 1

Lois Arena, Steven Winter Associates, Inc.

Michael O'Donnell, Steven Winter Associates, Inc.

The Passive House (PH) building standard is the most stringent energy efficiency standard in the world. It is quickly being identified as one path to achieving the carbon reduction goals set forth by New York’s governor and NYC’s mayor. Several affordable housing authorities in the US are currently including it or are preparing to include it as one of the sustainability options in their applications for funding. Achieving the stringent air tightness requirements of the PH standard requires careful coordination through all phases of design development and construction. In this training, the team will take you through the steps and tools necessary to meet these strict requirements. They will share successes and failures and make recommendations to help the audience reach these targets. The training will describe the necessity for integrated design, air barrier documents, and inspections and testing tools and protocols.

1:00–3:00 p.m.

Energize NY PACE, Clean Energy Improvements, and Multifamily Buildings—An Overview and Breakout Discussion Sessions

Salon 2

- CHP, multifamily, and PACE
- Community solar in multifamily buildings funded by PACE
- New NYSERDA commercial PACE Guidelines—How to become a PACE project approver