RETFITTING TO SCALE
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Welcome to Urban Green Council’s annual conference!

As the world’s timeframe to prevent irreversible damage from climate change grows smaller, the time for resolute action is now. And to achieve the necessary emissions reductions, existing buildings will have to become drastically more efficient over the next decade.

New York City is tackling this head-on with Local Law 97 of 2019—the most ambitious climate legislation for buildings enacted by any city in the world. While the global significance of this law is evident, many details remain unknown.

However, one thing is clear: this law will skyrocket the need for retrofit work over the coming decade. Billions will have to be spent, and the surge in demand will transform the industry as we know it, creating huge challenges and opportunities.

This conference, *Retrofitting to Scale: 50,000 Buildings in 10 Years*, will explore this imminent transition. Experts will attempt to answer the most pressing questions facing the building industry today, and paint a clearer picture of the retrofit market’s future.

I extend a warm welcome to our Urban Green Council members today, and look forward to continuing the conversation at our Member Reception on June 20. Your support makes events like this possible.

Sincerely,

John Mandyck
Chief Executive Officer
Urban Green Council
SCHEDULE

8:30 AM  BREAKFAST & REGISTRATION

9:00 AM  OPENING
Caren Kittredge, Carrier

WELCOME REMARKS
Cecil Scheib, New York University

INTRODUCTION: MARKET GROWTH
John Mandyck, Urban Green Council

9:20 AM  GREATEST OPPORTUNITIES FOR SCALE
Chris Cayten, CodeGreen
Nicole Ceci, Steven Winter Associates

9:50 AM  INNOVATIONS AND EXAMPLES OF SCALE
Loic Chappoz, New York State Energy Research and Development Authority (NYSERDA)
Anne Evens, Elevate Energy
Tom Feeney, Peter Cooper Village Stuyvesant Town
Clay Nesler, Johnson Controls

11:00 AM  BREAK

11:10 AM  SCALING IT UP
Richard Benkowski, United Associated Department of Education
Kelly Dougherty, FirstService Residential New York
Dan Friend, NORESCO
Robert Johnson, Hannon Armstrong
Sabrina Kanner, Brookfield Properties

12:25 PM  CLOSING REMARKS
John Mandyck, Urban Green Council
WELCOME REMARKS

Cecil Scheib | @CecilScheib
Assistant Vice President of Sustainability and Chief Sustainability Officer, NYU

Prior to becoming an environmental leader at New York University, Scheib formerly served as Chief Program Officer at Urban Green Council and as the Managing Director of the Building Resiliency Task Force for the City of New York. As Director of Energy and Sustainability at NYU from 2007 to 2012, Scheib was intimately involved in guiding the campus toward environmental excellence.

INTRODUCTION & CLOSING

John Mandyck | @JohnMandyck
Chief Executive Officer, Urban Green Council

Mandyck joined Urban Green Council in 2018 as its first-ever CEO. He capped a 25-year career as Chief Sustainability Officer for United Technologies Corporation. He also serves as a Visiting Scientist at the Harvard University T.H. Chan School of Public Health and as an Adjunct Professor at the University of Connecticut School of Business. Mandyck is the founding chair of the Corporate Advisory Board for the World Green Building Council, a former board chair of Urban Green, and co-author of the book Food Foolish.
RETROFIT MARKET ANALYSIS

RETROFIT MARKET VALUE AND GROWTH
New York City’s building emissions law, Local Law 97 of 2019, is arguably the largest disruption of the NYC real estate industry. In order to meet the challenges ahead, we must do retrofits differently, and at scale. New technologies and new business models will be needed, and labor and professional services must significantly ramp up. Many changes lay ahead, but there’s also an enormous opportunity for market growth if we invest now.

If all buildings choose retrofits to meet the carbon caps, our 2030 forecast shows a $16.6B to $24.3B energy retrofit market opportunity in New York City. In 2018, just $235M was spent on building improvements to save energy, and the law could trigger a 13-fold increase over today’s annual market depending on how soon owners begin investing in their properties.

These are big numbers with a wide range of uncertainty with regard to timing and carbon reduction costs. Early changes will enable a smoother growth trajectory, less costly retrofits and reduce the global warming impact of building emissions.

The mid-range estimate of market opportunity $20B

The annual retrofit market will expand by 13x

THE MARKET MUST GROW NOW
The first compliance period will need the retrofit market to at least double in annual investment, and the second compliance period will require over $3B in annual investment.

Current market (1x) First compliance: annual market grows 2.5x Second compliance: annual market grows 13x

Annual Project Value (billion USD)

Note 1: The cost of carbon reductions is assumed to be equivalent to the cost of similarly sized energy reductions. Energy retrofit costs were estimated for residential and commercial buildings on a per square foot basis.

Note 2: Affordable housing retrofits are assumed to yield the same carbon savings and costs as market rate properties.

For a list of additional assumptions and data sources, please visit urbangreencouncil.org/retrofit-market
COSTS FOR COMMERCIAL AND RESIDENTIAL BUILDINGS
Residential buildings account for more square footage, but commercial buildings have more complicated systems and requirements that will likely result in higher retrofit costs.

WORKFORCE GROWTH
According to Dr. David Hsu from MIT, the demand for building energy improvements has the potential to create 15,000 jobs by 2024 and an additional 126,000 jobs by 2030 across the economy in the NYC metro area. These jobs include architects, engineers, sustainability consultants and HVAC professionals. It will also include jobs in other industries such as retail, food services and product manufacturing that are needed to meet demand created by industry growth.

But timing is critical. If building owners and contractors wait until just before each compliance deadline to retrofit their buildings, then the skilled labor necessary to support their projects may not exist.

Number of jobs created across the NYC metro area by 2030 141K

Note 1: Jobs analysis provided by Dr. David Hsu of Massachusetts Institute of Technology. These estimates were made using the U.S. Bureau of Economic Analysis’s economic impact model (RIMS II).
Note 3: “Energy Efficiency Services Sector: Workforce Size and Expectations for Growth,” Berkeley, CA; Lawrence Berkeley National Laboratory. Estimate in 2010 by hours that the energy efficiency services sector (EESS) is 2% of the national workforce; key assumption is that existing firms will expand in similar lines of work to do EE services.

ADVISORY COMMITTEE
Jeffrey Carleton, Carleton Energy Consulting
Chris Cayten, CodeGreen Solutions
Amalia Cuadra, En-Power Group
Greg Hale, NYSERDA
David Hsu, MIT
Laurie Kerr, LK Policy Lab
Richard Leigh, Pratt University
Charlie Marino, AKF Group
Shreshth Nagpal, Elementa Engineering
Justin Pascone, Building Congress
Jeffrey Perlman, Bright Power
Cecil Scheib, New York University
Michael Scorrano, En-Power Group
Marc Zuluaga, Steven Winters Associates, Inc.
SESSION 1: GREATEST OPPORTUNITIES FOR SCALE

The first session will identify building systems that have the most potential for efficiency and assess effective energy reduction strategies in residential and commercial buildings.

Nicole Ceci PE
Principal Mechanical Engineer, Steven Winter Associates, Inc.

Steven Winter Associates specializes in energy, sustainability and accessibility consulting to improve commercial, residential and multifamily buildings. Ceci helps clients meet their energy savings goals and has provided sustainability services for over 30 million SF of multifamily buildings. In addition, she has completed citywide studies on New York City energy usage performance for New York City Energy Efficiency Corporation and Fannie Mae, and advises the Mayor’s Office of Sustainability on data-driven approaches to policies promoting energy savings.

Chris Cayten LEED AP | @ccayten
Principal, CodeGreen Solutions

CodeGreen is a leading sustainability and energy efficiency consulting firm based in New York City, working with over 550 million SF of property across the country. Cayten works with large real estate organizations to develop and implement successful energy and sustainability management programs that improve building performance, increase occupant health and reduce environmental footprints. Since 2009, he has worked with New York City policy makers on numerous initiatives to improve the energy performance of existing buildings across the city.
SESSION 2: INNOVATIONS & EXAMPLES OF SCALE

New technologies, practices and business models are being piloted to reduce energy consumption on a large scale. In this session, industry experts will present how state-of-the-art innovations can help achieve scalability and reduce costs.

Loic Chappoz LEED GA | @LoicChappoz
Multifamily Team Lead, New York State Energy Research and Development Authority (NYSERDA)

NYSERDA promotes energy efficiency and the use of renewable energy sources. Chappoz leads NYSERDA’s multifamily team, focusing on improving the efficiency of existing residential buildings across the state. Prior to his work with NYSERDA, Chappoz worked as an independent consultant on energy efficiency policies in Europe, as a fuel efficiency specialist in the airline industry and as a commercial pilot.

Anne Evens PhD | @Elevate_Energy
Chief Executive Officer, Elevate Energy

Elevate Energy is a nonprofit organization in Chicago dedicated to designing and implementing clean energy and efficiency programs that lower costs, protect the environment, and ensure that the benefits of energy efficiency reach those who need them most. Evens manages a growing staff of over 100 talented professionals and provides oversight for programs related to energy efficiency retrofits in multifamily buildings, building energy performance, regional energy and climate planning, and dynamic electricity pricing initiatives. Evens has worked in energy efficiency and affordable housing for over 25 years in both the nonprofit and governmental sectors in the U.S. and in southern Africa.
Tom Feeney
Vice President of Operations and Engineering, Peter Cooper Village Stuyvesant Town

Peter Cooper Village Stuyvesant Town is a private real estate development in Manhattan consisting of 110 residential buildings. In 2018, the development became the first-ever multifamily community in New York to be awarded LEED Platinum certification. Feeney leads operations and engineering for the development. He has over 38 years of experience in property management and building operations.

Clay Nesler | @ClayNesler
Vice President of Global Sustainability and Regulatory Affairs, Johnson Controls

Johnson Controls delivers integrated building technologies and solutions to customers in over 150 countries. Nesler is responsible for global sustainability and policy initiatives. He currently serves on the board of the American Council for an Energy-Efficient Economy, the General Services Administration Green Buildings Advisory Group, the executive group of the US DEP/EPA Senior Environmental Employment Action Network, and the International Energy Agency’s Energy Efficiency Industry Advisory Board. Nesler helped establish the UN Sustainable Energy for All Building Efficiency Accelerator with World Resources Institute, where he serves as industry co-convener and senior advisor.
SESSION 3: SCALING IT UP

What are the biggest barriers to fast, cost-effective, high-quality retrofits? Leading building retrofit experts will discuss the challenges and potential solutions to achieving scale.

Robert Johnson | @HannonArmstrong
Senior Vice President, Hannon Armstrong

Hannon Armstrong Sustainable Infrastructure Capital, Inc. is a finance company that provides debt and equity financing for sustainable infrastructure projects. Johnson is responsible for growing the federal and industrial market sectors. He leads Strategic Client Accounts, where he structures financing solutions for sustainable infrastructure projects. Johnson has been at the leading edge of the building systems and energy efficiency industries and has built businesses across a range of products and related systems, including building controls, lighting, HVAC, renewable energy, communications and life safety.

Richard Benkowski LEED AP | @UAPipeTrades
Training Specialist, United Association Department of Education

The United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States, Canada (UA) is affiliated with the national building trades and represents approximately 340,000 plumbers, pipefitters, sprinkler fitters, service technicians and welders in local unions. Benkowski develops programs for energy efficiency and water conservation initiatives to increase the awareness and skill sets of UA journey workers who construct, maintain and service high-performance buildings.

Kelly Dougherty LEED GA | @FSenergy
Director of Energy Management, FirstService Energy

FirstService Residential is the largest manager of residential communities in North America. Kelly Dougherty develops and implements long-term efficiency strategies for FirstService Residential properties to reduce energy use, emissions and costs. She works with industry leaders and government agencies to keep clients informed on the latest technologies and regulatory requirements. Dougherty also develops training seminars on efficiency best practices for property managers and building staff. Her efforts have strengthened FirstService Residential’s commitment to reducing their portfolio’s energy consumption.
SESSION 3 (continued)

Dan Friend
Regional Sales Manager, NORESCO

NORESCO uses design-build and performance-based contracting to deliver energy and maintenance savings and infrastructure upgrades to existing facilities. For over 28 years, Friend has helped municipalities, universities, schools and hospitals lower energy and operational costs and use the savings to improve their working, learning and healing environments. In his work, Friend addresses customer-specific objectives, recognizes cost-effective opportunities, and presents strategies to ensure customers achieve their long-term goals.

Sabrina Kanner
Executive Vice President and Head of Design and Construction, Brookfield Properties

Brookfield Properties provides industry-leading portfolio management and development capabilities. In her 36-year tenure with the company, Kanner has played a key role in the construction, design and development or redevelopment of more than 40 million SF of signature Brookfield projects. She serves on the board of directors of Urban Green Council, the New York Building Congress, the Salvadori Center, the Opus Group, Cedar Realty Trust and the Regional Plan Association, and on the board of trustees of the National Building Museum and the Beverly Willis Architecture Foundation.
ABOUT US
Urban Green Council’s mission is to transform buildings for a sustainable future in New York City and around the world. We help develop cutting-edge policy, we educate a broad range of professionals, and we research solutions that drive policy and best practices nationally and globally. By working with both the public and private sectors, we leverage our effectiveness.

urbangreencouncil.org

UPCOMING EVENTS
Summer Member Reception and Service Awards
Thursday, June 20
6:00 - 8:00 PM
COOKFOX Architects
250 West 57th Street, New York, NY

ABOUT LOCAL LAW 97
New York City recently enacted Local Law 97 of 2019, which sets strict emissions limits for large buildings. Learn more:

urbangreencouncil.org/LocalLaw97
THANK YOU

TO OUR HOST

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TO OUR OUTREACH PARTNERS

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American Council of Engineering Companies of New York
The Architect’s Newspaper
Building Energy Exchange
Connecticut Green Building Council
Green City Force
Green Roofs for Healthy Cities
New York Academy of Sciences
North American Passive House Network
Northeast Sustainable Energy Association
NYC Retrofit Accelerator
Urban Design Forum

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https://www.surveymonkey.com/r/VNN5RNB
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Together, we’re building a brighter future.

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