

Adapting Buildings for a Changing Climate Symposium



October 1, 2018 | 8:00am - 5:00pm
The Desmond Hotel Albany | Albany, NY



NYSERDA



University at Buffalo
School of Architecture
and Planning

NYSERDA's Promise to New Yorkers:

NYSERDA provides resources, expertise, and objective information so New Yorkers can make confident, informed energy decisions.

Mission Statement:

Advance innovative energy solutions in ways that improve New York's economy and environment.

Vision Statement:

Serve as a catalyst – advancing energy innovation, technology, and investment; transforming New York's economy; and empowering people to choose clean and efficient energy as part of their everyday lives.

Description

When Hurricane Sandy made landfall in October of 2012, more than 186 people were killed, over 600,000 homes were damaged, and infrastructure was devastated across New York State. During the "Snowvember" storm in November 2014, 70+ inches of snow fell in Western New York, causing 14 fatalities, and numerous roofs to collapse. These two events suggest that building design in New York needs to shift to address varying weather patterns caused by climate change.

This symposium draws together academics and practitioners from the Northeast and Great Lakes regions to address critical questions in climate resilience applicable to New York State, including how built environment professionals respond to a changing climate; how building stock can adapt to climate change in New York State; and how resilience is currently being addressed by these professions. Participants will also hear results from recent research conducted by the University at Buffalo (UB), L&S Energy Services, and Weather Analytics. The research, and this event, are supported by the New York State Energy Research and Development Authority and the UB School of Architecture and Planning.

Co-Sponsors



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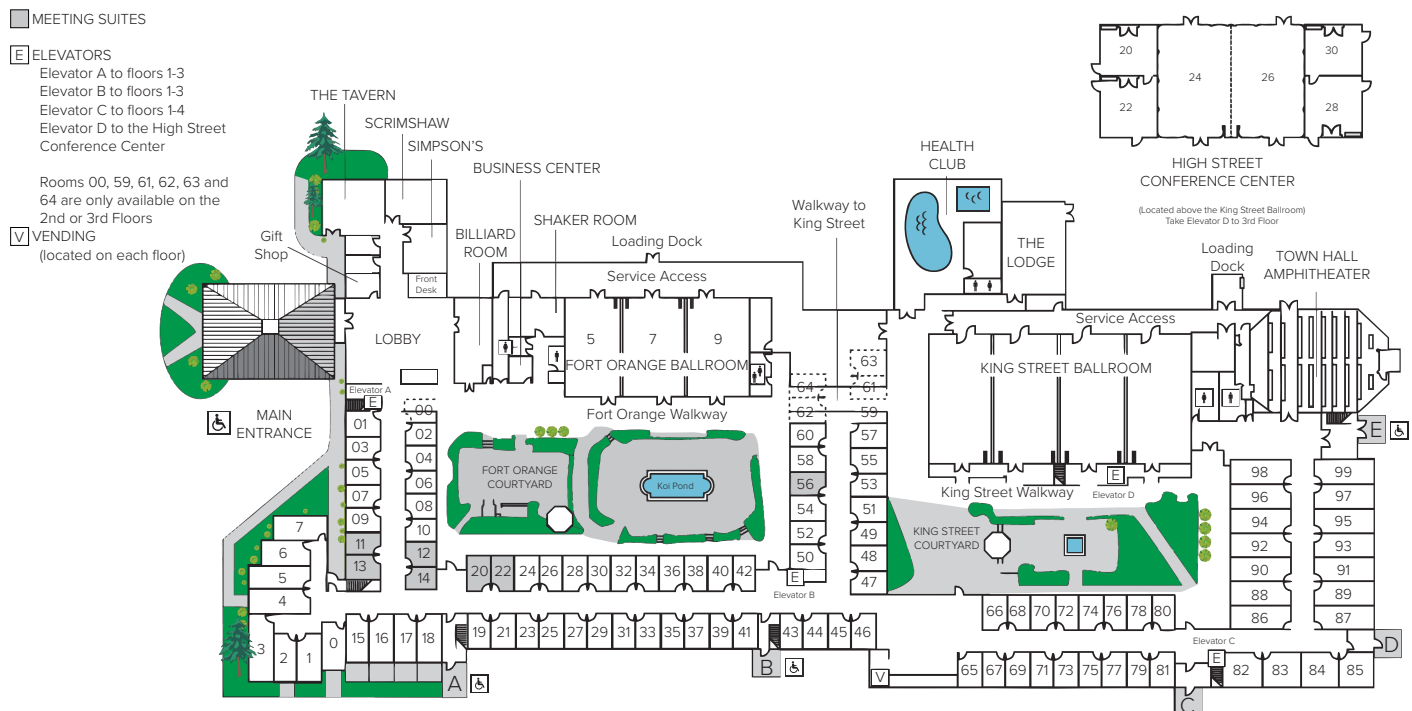
Logistics

October 1, 2018 from 8:00am - 5:00pm

The Desmond Hotel Albany (<https://www.desmondhotelsalbany.com>)

660 Albany Shaker Road
Albany, New York 12211

To register, please visit <https://projects.erg.com/conferences/nysenda/register-symposium.asp>



Schedule

8:00am	Registration Opens
8:00 - 9:00am	Coffee + Carbohydrates
9:00 - 9:15am	Introductions / Overview: Robert Shibley (University at Buffalo), Amanda Stevens (NYSERDA) + Nicholas Rajkovich (University at Buffalo)
9:15 - 10:45am	KEYNOTE SPEAKERS [Approved for 1.5 AIA LU HSW + 1.5 PDH] <ul style="list-style-type: none">• Kristin Baja (Urban Sustainability Directors Network) <i>Building equitable urban resilience</i>• Illya Azaroff (New York City College of Technology) <i>4D! Resilient design in four dimensions</i>
10:45 - 11:00am	Coffee Break
11:00am - 12:30pm	SESSION #1: Anticipating an Uncertain Future [Approved for 1.5 AIA LU HSW + 1.5 PDH] Moderator: Seth Holmes (University of Hartford) <ul style="list-style-type: none">• Bess Krietemeyer (Syracuse University) <i>Tools for community energy empowerment: a co-design approach</i>• Michelle Laboy (Northeastern University) <i>RHOnDA: an online tool to help homeowners and tenants increase resilience</i>• Brittany Perez + Krista Macy (University at Buffalo IDeA Center) <i>Using inclusive design to reduce risk for vulnerable populations</i>• Kim Knowlton + Lindsay Robbins (Natural Resources Defense Council) <i>Climate change + health: connecting the dots, building a more resilient future</i>
12:30 - 1:30pm	Lunch + Networking Opportunities
1:30 - 3:00pm	SESSION #2: From the Atmosphere to the Detail [Approved for 1.5 AIA LU HSW + 1.5 PDH] Moderator: Jodi Smits Anderson (Dormitory Authority of the State of New York) <ul style="list-style-type: none">• Parag Rastogi (arbnco) <i>Prepare, don't predict: planning for a changing climate without precise predictions</i>• Seth Holmes (University of Hartford) <i>Resilient design modeling: where are we and where can we go?</i>• Alex Wilson (Resilient Design Institute) <i>Passive survivability: a new design criterion for New York's changing climate</i>• Laura Garófaló-Khan + Omar Khan (University at Buffalo) <i>Architectural terra cotta revisited: a skin-deep response to climate change</i>
3:00 - 3:15pm	Coffee Break
3:15 - 4:45pm	SESSION #3: From Discourse to Policy [Approved for 1.5 AIA LU HSW + 1.5 PDH] Moderator: Kevin Stack (Northeast Green Building Consulting, LLC) <ul style="list-style-type: none">• Martha Bohm (University at Buffalo) <i>Tracking the discourse from sustainability to resilience</i>• Josh Stack (Northeast Green Building Consulting, LLC) <i>Adaptive law as a tool to design resilient cities and communities in New York State</i>• Jamie Vanucchi (Cornell University) <i>Community floodplains along the Susquehanna River: disturbance + uncertainty as drivers for design</i>• Dana Kochnowier (New York City Mayor's Office of Recovery and Resiliency) <i>Policy approaches to multifamily building resiliency</i>
4:45 - 5:00pm	Closing Remarks: Nadav Malin (BuildingGreen)
5:00 - 7:00pm	Cash Bar Reception

Keynote Speakers

Illya Azaroff, AIA

4D! Resilient design in four dimensions



Illya is the founder and Principal of +LAB architect PLLC, an Associate Professor at New York City College of Technology, and a leader in disaster mitigation, resilient planning strategies, and design. He consults with design teams across the U.S. Currently, he is working with FEMA/ANCR on developing curriculum for resilience and with the City of New York on the 2019 Hazard Mitigation Plan. Prior to this, he served as a Technical Advisor to the Assistant Secretary for Preparedness and Response informing the National Disaster Recovery Framework. His guidance is evident in the NYC Department of City Planning - *Housing Retrofit Guidelines*, Federal Alliance for Safe Homes, *Resilient Housing Guidelines*, and Enterprise Community Partners' *Multi-Family Resilient Strategies*, and can be found via TEDx, *We are not Alone*. He served as a subject matter expert with the Rockefeller Foundation's 100 Resilient Cities, and his studio is engaged in resilient design prototypes under construction in Breezy Point, New York. Illya received a BA in Geography and a BSAS in Architecture from the University of Nebraska at Lincoln and a BArch and MArch from Pratt Institute. Prior to coming to New York, Illya worked in Berlin, Germany and Milan, Italy.

Kristin Baja

Building equitable urban resilience



Kristin is the Climate Resilience Officer for the Urban Sustainability Directors Network (USDN). In this role, she is responsible for helping cities identify strategic ways to advance climate resilience planning and implementation, and build capacity to take action. Kristin supports cities directly by facilitating deeper relationships between local governments and other stakeholders while advancing collaboration, education, and momentum around climate resilience and equity. Kristin has over a decade of experience in climate resilience, climate adaptation, hazard mitigation, floodplain management, and equity. She earned a MUP and a MS from the University of Michigan. In 2016, Kristin was recognized by the Obama Administration as a Champion of Change for her work on climate and equity.

Session Speakers and Moderators

Martha Bohm

Tracking the discourse from sustainability to resilience



Martha is an Assistant Professor in the Department of Architecture at the University at Buffalo, part of the SUNY system. She teaches design, ecological practices, sustainability, resilience, and environmental systems. Her interests include finding ways to integrate analytical tools into design processes in order to better see the unseeable: energy, comfort, climate, air movement, and so on. She was the faculty lead on UB's GRoW Home, the 2nd-prize winner in the 2015 U.S. Department of Energy Solar Decathlon. She is the co-editor of the book *Beyond Patronage: Reconsidering Models of Practice*, published in 2015 by Actar. Before coming to UB, she was the Sustainable Design Coordinator at William McDonough + Partners in Charlottesville, VA. Prior to that, she taught at Cornell. She was a Ginsberg Research Fellow at USGBC and authored the USGBC Research Committee's *National Green Building Research Agenda*. She earned her MArch at the University of Oregon, where she was the director of the Ecological Design Center and the co-founder of Design-Bridge, a community-oriented student design-build program. Before graduate school, she worked as a Natural Resource policy analyst at the National Governors' Association Center for Best Practices. She got her BA in Earth and Planetary Sciences from Harvard.

Laura Garófalo-Khan

Architectural terra cotta revisited: a skin-deep response to climate change



Laura is an Associate Professor in the Department of Architecture at the University at Buffalo, where she is a member of the Ecological Practices Graduate Research Group. Her research addresses the role of architecture as an active environmental steward through ecologically and hierologically centered buildings and landscape interventions. Her current focus is on architectural ceramic systems and speculative passive thermally active façade systems. She has been an award winner in the International Garden Festival Jardins de Métis, the Architecture for Humanity Charleston Transit Hub Competition, and the What if New York City... Post-Disaster Housing Competition. Her award winning firm, Liminal Projects, was selected by the Architectural League of New York as Notable Young Architects and has been exhibited at multiple venues, including the Architectural League of New York and the National Building Museum in Washington D.C. She has recently been a fellow at the University of Tasmania and the European Ceramics Work Center (Sundaymorning@EKWC) in Holland.

Seth Holmes

Resilient design modeling: where are we and where can we go? / Symposium Organizer and Session Moderator



Seth is an Associate Professor of Architecture at the University of Hartford in West Hartford, CT. His research addresses climate change adaptation and resilient design, with more specific focuses on the integration of climate change projections with building performance modeling and modeling methods for predicting overheating in buildings. His adaptation and resilient design publications include a chapter in *Planning for Community-based Disaster Resilience Worldwide* (Ed. by A. Awotona), two articles for Building Research and Information Journal, three articles in ASHRAE and IBPSA Conference Proceedings, and recent advising to the forthcoming update to the LEED Resilient Design pilot credit. Seth also continues to practice architecture with his firm, Benefit Street Design.

Omar Khan

Architectural terra cotta revisited: a skin-deep response to climate change



Omar is an Associate Professor in the Department of Architecture at the University at Buffalo. His research and scholarship spans the disciplines of architecture, installation/performance art, and digital media. Khan's projects and teaching explore the intersection of architecture and pervasive computing for designing responsive architecture and environments. At UB, he is a Co-Director of the Center for Architecture and Situated Technologies, an editor of the *Situated Technologies Pamphlet Series*, and a co-leader of the Sustainable Manufacturing and Advanced Robotics Technology (SMART) Community of Excellence. He has exhibited nationally and internationally, including the Incheon Digital Art Festival (Korea), Urban Screens Melbourne, ZeroOne San Jose, Storefront for Art and Architecture, the National Building Museum, and the Urban Center. He is a Co-Principal of Liminal Projects, an architecture and design office, with Laura Garófalo-Khan.

Kim Knowlton, PhD

Climate change + health: connecting the dots, building a more resilient future



Kim specializes in the public health impacts of climate change. She is Senior Scientist at the Natural Resources Defense Council (NRDC), Deputy Director of NRDC's Science Center, and an Assistant Professor of Environmental Health Sciences at Columbia University's Mailman School of Public Health. She has served as the chair of the Climate Change Topic Committee of the American Public Health Association's Environment Section, a co-convening lead author for the human health chapter of the *2014 U.S. Third National Climate Assessment*, and a member of the 2nd New York City Panel on Climate Change. She participated in the Intergovernmental Panel on Climate Change's 2007 Fourth and 2013 Fifth Assessment Reports. Dr. Knowlton has published her research on climate-health impacts from extreme heat, air pollution, coastal storms and flooding, and infectious diseases; valuations of the health-related costs of climate change; and various strategies to reduce vulnerabilities to climate change-fueled events and create healthier communities.

Dana Kochnower

Policy approaches to multifamily building resiliency



Dana is an Acting Deputy Director at the NYC Mayor's Office of Recovery and Resiliency, where she focuses on building resiliency, flood risk, flood insurance and climate change data. Prior to joining the Mayor's Office, Dana worked as a broadcast journalist at CNN, FOX Business Network and ABC News Radio. She earned a Master of Advanced Studies from the Center for Marine Biodiversity and Conservation at Scripps Institution of Oceanography and an Executive Certificate in Conservation & Environmental Sustainability from the Earth Institute at Columbia University.

Bess Krietemeyer, PhD

Tools for community energy empowerment: a co-design approach



Bess is an architectural designer, educator, and researcher whose expertise lies at the intersection of advanced building technologies, interactive visualization tools, and human and energy feedback systems in the design of sustainable built environments. She received her PhD in Architectural Sciences from the Rensselaer Polytechnic Institute Center for Architecture Science and Ecology before joining the faculty as Assistant Professor at the Syracuse University School of Architecture. Dr. Krietemeyer is also a Faculty Research Fellow at the Syracuse Center of Excellence, where she leads the Interactive Design and Visualization Lab (IDVL). Her research focuses on developing simulation software that merges techniques for energy modeling with new visualization and interactive methods to facilitate the integration of user input and energy feedback systems in the design process. Her research has been sponsored through numerous grants, including a National Science Foundation grant through the Smart and Connected Communities program.

Michelle Laboy

RHOnDA: an online tool to help homeowners and tenants increase resilience



Michelle is an Assistant Professor of Architecture at Northeastern University and a co-founder of FiELDworkshop, a research-based design firm in Boston. With degrees in architecture, engineering and urban planning, her work explores interdisciplinary approaches that advance socio-ecological thinking in the design of buildings and communities in changing environments. Her work on RHOnDA, a Resilient Home Online Design Tool that makes information on sustainability and resilience of the existing urban fabric accessible to homeowners and tenants, was awarded the 2015 AIA Upjohn Research Initiative Grant. She is co-PI of a research project titled *Future-Use Architecture: Design for Persistent Change*, which was recognized with the 2017 Latrobe Prize by the AIA College of Fellows.

Krista Macy

Using inclusive design to reduce risk for vulnerable populations



Krista is in her final semester of the Master of Architecture program at the University at Buffalo and is a Research Assistant at the Center for Inclusive Design and Environmental Access in the Department of Architecture and Planning. At the IDeA Center, she has participated in home modification research and design projects; universal and inclusive design research; local advocacy work; and usability studies. Prior to her time at the IDeA Center, Krista worked under the guidance of Nicholas B. Rajkovich, as a Research Project Assistant, collecting data, and participating in literature reviews and writing under a grant from NYSERDA that investigated the impacts of climate change on the buildings sector in New York State.

Nadav Malin, LEED

Session Moderator



Nadav is the building industry's acknowledged go-to resource for perspective on materials and design solutions that define sustainable building practice. A former member of the national LEED Faculty, he is an experienced trainer and facilitator, convening the network of the architecture firm Sustainable Design Leaders and teaching diverse groups about LEED and green building. He facilitates workshops and ongoing dialogs for USGBC, AIA, multinational corporations, and local organizations around the world. He serves as a consultant to architecture firms and government agencies alike. As president of BuildingGreen, he oversees the company's industry-leading information and community-building resources on BuildingGreen.com and the project certification help tool LEEDuser.

Brittany Perez, OTD \ OTR/L

Using inclusive design to reduce risk for vulnerable populations



Brittany is a Research Assistant Professor and Director of Outreach and Engagement at the Center for Inclusive Design and Environmental Access in the Department of Architecture and Planning, the Assistant Director for Community Outreach in the Center for Successful Aging, and an adjunct instructor in the Department of Occupational Therapy at the University at Buffalo. At the IDEa Center, Brittany is a Co-Lead Investigator on a Field Initiated Research Project on wheelchair securement in public transportation, and she manages research activities in both of the Rehabilitation Engineering Research Centers (RERC) for Universal Design and Accessible Public Transportation. Brittany coordinates usability studies and leads IDEa Center efforts in advocacy and community engagement. She co-founded and co-directs a local advocacy network called Age Friendly Erie County, Western New York's first AARP/WHO Age Friendly Community.

Nicholas B. Rajkovich, PhD \ AIA

Symposium Organizer and Session Moderator



Nicholas is an Assistant Professor in the Department of Architecture at the University at Buffalo. He researches the intersection of energy efficiency, renewable energy, and adaptation to climate change. He was a Senior Program Engineer at the Pacific Gas & Electric (PG&E) Company Customer Energy Efficiency Department, where he was responsible for coordinating a new Zero Net Energy Pilot Program, and chair of the San Francisco American Institute of Architects (AIA) Committee on the Environment. He taught several courses on lighting, acoustics, and building systems in Cornell University's Department of Architecture. He worked at Einhorn Yaffee Prescott in Albany, NY, where he helped architects and engineers reduce the overall environmental impact of buildings under contract to the New York State Energy Research and Development Authority and the U.S. Department of State. He has a PhD in Urban and Regional Planning from the University of Michigan, a MArch from the University of Oregon, and a BArch from Cornell University.

Parag Rastogi, PhD

Prepare, don't predict: planning for a changing climate without precise predictions



Parag is a building scientist with a background in civil engineering. He has a PhD from EPFL (Switzerland), and both a bachelor's and a master's degree from Purdue University. He is the lead building physicist at arbnco, an innovative building simulation company based in Glasgow, UK, and a visiting scientist at the University of Strathclyde, Glasgow, and the RIKEN-AIP Institute in Tokyo, Japan. His research and consulting work integrates building physics and meteorology with modern statistics and AI-inspired methods to understand simulated and measured data from the built environment. The objective of his work is to create affordable and scalable tools, methods, and services for uncertainty-aware decision-making, enabling stakeholders to assess risks and impacts, climate-related and other, of planned works on energy and human characteristics of large, diverse real estate portfolios.

Lindsay Robbins

Climate change + health: connecting the dots, building a more resilient future



Lindsay Robbins serves on the Strategy & Operation team for NRDC's Healthy People & Thriving Communities program—advising on overall strategy for the program's substantive work, facilitating cross-program and cross-institutional coordination and collaboration, and leading the coordination of the program's building efficiency and decarbonization work. Robbins also serves as a senior lead on the Energy Efficiency for All project, a partnership among NRDC, the National Housing Trust, the Energy Foundation, and Elevate Energy that aims to increase energy efficiency in affordable housing. Robbins oversees the project's implementation-related work including program design advocacy and financing initiatives. Prior to joining NRDC, she worked at the New York State Energy Research and Development Authority, where she ran multifamily energy efficiency initiatives as well as a sustainability planning and implementation program. She works out of NRDC's New York office.

Robert Shibley, FAIA, FAICP

Dean of the University at Buffalo School of Architecture and Planning



Bob Shibley is dean of the University at Buffalo School of Architecture and Planning as well as UB's Campus Architect. In these capacities he has guided the school to a top tier position in research generation among the nation's schools of architecture and planning and led the development of UB's three campus master plan. His tenure began at UB in 1982 as professor and chair of Architecture. Bob has been inducted into the College of Fellows of the American Institute of Architects and the American Institute of Certified Planners. In addition he is the recipient of the AIA's Thomas Jefferson Award in recognition of his lifetime of contributions to planning and design excellence. As campus architect he led the development of the Climate Action Plan for UB and is the co-chair of the Environmental Stewardship Committee.

Jodi Smits Anderson, LEED AP BD+C \ AIA

Session Moderator



Jodi is the Director of Sustainability Programs for DASNY. She is an architect and has served the U.S. Green Building Council in local and national committees. Jodi is working with many state agencies on sustainability implementations in government processes. She has spoken at the ILFI (International Living Futures Institute), the Greenbuild, NESEA's Building Energy, and the NYS Green Building Conferences. She is a Conquer the Energy Code trainer and has contributed in research and writing for Project Drawdown, which cites the 100 market proven ways we already have to reduce CO2 in our atmosphere. She received the 2018 Green Building Advocate award from the NYS Green Building Conference. Her goals are to incorporate sustainable practices into design, construction and living; to share whatever she has learned; and learn from whomever will talk with her.

Josh Stack

Adaptive law as a tool to design resilient cities and communities in New York State



Josh studied ecology, evolutionary biology, and law at Cornell University, University at Buffalo's School of Law, and NYU. He is a (sometimes) recovering attorney and alumni of the Peruvian rainforest, advising clients in deliberating for our children's adaptive health and resilience. Recent projects include adapting and applying law and resilience science to the design and construction of city scale initiatives, ecosystem scale biomimicry, and utilizing law as a tool to design for resilience in the human built environment.

Kevin Stack, LEED (Fellow + Faculty) \ BaDT

Session Moderator



Kevin works as a builder, building scientist, and ecoliteracy educator to teach, support design, and Build in Nature's Image™. He is founder and CEO of Northeast Natural Homes and Northeast Green Building Consulting, which focus on innovation and sustainability in the built environment, and verifies the performance of innovative, sustainable, and affordable construction projects. He is a credentialed LEED for Homes Green Rater, certified HERS Rater, ICC 700-2012 National Green Standard Verifier, and Building Performance Institute certified Building Analyst and Envelope Professional. He is a Biologist at the Design Table (BaDT) and presents on biomimicry, resilience, and building homes using ecological knowledge. He was on the USGBC National Board of Directors and now sits on the USGBC Advisory Board. His work has won national recognition, including the National Consortium of Housing Research Center's first Excellence in Building Science Education, and a nomination for the 2009 Hanley Award for Vision and Leadership in Sustainable Housing.

Amanda Stevens

Symposium Organizer and Session Moderator



Amanda is a Project Manager in the Environmental Research Program at the New York State Energy Research & Development Authority (NYSERDA). There, she manages the program's climate change adaptation research projects. She has been with NYSERDA since 2006. Before beginning work at NYSERDA, Amanda was an intern in the Environmental Protection Bureau of the NYS Attorney General's Office. She has a Bachelor's degree in geology from Hartwick College.

Jamie Vanucchi

Community floodplains along the Susquehanna River: disturbance and uncertainty as drivers for design



Jamie is an Assistant Professor in the Department of Landscape Architecture at Cornell University. Her research involves water flows associated with hydraulic fracturing, hydropower, and flood risk in the Susquehanna Basin, and the roles of novelty and uncertainty in design. Jamie is interested in generative and adaptive design, and using design research methods to address wicked problems. The work she will present for this conference includes aspects of a two-year research project, funded with Federal Capacity Funds, called *Increasing the Success of Community Adaptation to Climate Change: Assessing FEMA buyouts of flood-prone housing*.

Alex Wilson

Passive survivability: a new design criterion for New York's changing climate



Alex is the President of the Resilient Design Institute, a nonprofit organization that seeks to advance the adoption of resilient design into buildings and communities. He founded and now works part-time for the consulting and information company, BuildingGreen, Inc. He is widely published on green building and resilience and is the author or co-author of several books, including *Your Green Home*, *The Consumer Guide to Home Energy Savings*, and *Green Development: Integrating Ecology and Real Estate*. Alex served on the national board of the U.S. Green Building Council from 2000 to 2005. In 1993, he received the organization's Leadership Award for Education and, in 2010, he received the second annual Hanley Award for Vision and Leadership in Sustainability. Alex and his wife renovated, and now live in, a 200-year-old farmhouse in Dummerston, Vermont to achieve net-zero-energy performance and to demonstrate sustainability and resilience.

NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and support to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean-energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York State since 1975.

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The University at Buffalo School of Architecture and Planning is guided by a culture of experimentation, a core belief in learning by doing, and a spirit of public service and inclusion. The school has shown that design and planning are agents of change for community, place, culture, social justice and the natural world since 1969.

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