

Adapting Buildings to a Changing Climate

Nicholas Rajkovich, PhD, Assistant Professor, University of Buffalo

James Leahy, Senior Consultant for DNV GL

ABSTRACT

Anthropogenic greenhouse gas emissions have increased the average air temperature, changed precipitation patterns, exacerbated the frequency and intensity of storm events, and promoted sea level rise in New York State. Most statewide policy efforts focus on reducing greenhouse gas emissions, necessary to limit additional warming. However, even if greenhouse gas emissions were halted immediately, the warming trend will continue for several centuries because of the inertia of the atmosphere.

Therefore, policymakers will need to select effective adaptation strategies to cope with climate change. Although the building stock interacts with energy infrastructure, transportation systems, and public health, most climate change assessments do not address how the building stock should prepare for a changing climate.

This presentation will describe a research project funded by the New York State Energy Research and Development Authority to understand how climate change may affect the building stock of New York State. The project includes four parts: (1) a qualitative study to understand how built environment professionals are addressing climate change; (2) economic modeling to determine sector-wide impacts; (3) the identification of relevant resilience strategies for buildings; and (4) a building energy modeling study estimating the effectiveness of coupled greenhouse gas mitigation and adaptation strategies.

BIOGRAPHY

Nicholas B. Rajkovich, PhD, AIA is an Assistant Professor at the University at Buffalo in the Department of Architecture. His research investigates the intersection of energy efficiency, renewable energy, and adaptation to climate change in buildings and communities. Prior to earning a PhD in Urban and Regional Planning from the University of Michigan, he was a Senior Program Engineer at the Pacific Gas & Electric (PG&E) Company Customer Energy Efficiency Department. At PG&E, he was responsible for coordinating a new Zero Net Energy Pilot Program. He has a Master of Architecture from the University of Oregon and a Bachelor of Architecture from Cornell University.

James Leahy PE, LEED AP is a Senior Consultant for DNV GL. He is a licensed Civil/Environmental Engineer (California) who specializes in strategic planning for cities on issues relating to energy, sustainability and resilience. As a participant in the London School of Economics Executive Program on Cities, Mr. Leahy works with researchers and a multi-disciplinary cohort of architecture and urban planning professionals to explore and address some of the most pressing issues facing communities today including climate change and its effects on social and physical systems. As an engineering consultant, Mr. Leahy has worked

with cities in Massachusetts, California and New York, on sustainable and resilient design strategies, energy planning, climate action planning and adaptation.