

Rising above the storm: Design for urban flood resilience

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ABSTRACT

Utilizing our work in Brooklyn and Troy as case studies, the presentation will address design requirements for working in flood zones. Cycle was architect of record for over 30 elevated and reconstructed homes following hurricane Sandy in Brooklyn, and is currently developing a new, modular, 2-family passive house in the South Troy neighborhood of Troy NY. While greenfield development within flood areas is generally discouraged, many already developed urban areas and historic areas lie within flood zones. The focus of our presentation will address flood resilience design and planning in these already developed areas. There will be a brief description of how and why urban areas in New York developed in places subject to flooding, and will include a discussion of recent flood events that impacted New York (Sandy, Irene, Lee). The presentation will include a brief description of how to use and access flood maps (FEMA's Flood Insurance Rate Maps (FIRM)) and a summary of building code and FEMA requirements for floodproof construction. Using our work in Brooklyn as a case study, we will review the process of elevating an existing small wood frame home. This will include a discussion of the preliminary investigations required (survey, geotechnical, flood risk) as well as foundation types that can be utilized for wet flood-proofing. Using our work in Brooklyn and Troy, we will address issues of design and urbanism in constructing new flood-proof buildings within the context of existing, old urban neighborhoods. This will include a discussion of design elements including porches, landscaping, and stairs that can be used to mitigate or bridge the difference between older, non-floodproof construction and new floodproof construction.

BIOGRAPHY

Tony Daniels, principal of Cycle Architecture + Planning, is an architect with a demonstrated commitment to green building and sustainability over 2 decades of practice in New York. His work on major civic projects has given him a deep and practical understanding of how to build outstanding architecture that is valuable to cities and communities.

Caitlin Martusewicz, a project manager at Cycle, is a Cooper Union Irwin S. Chanin School of Architecture graduate and an Irma Weiss Fellow with a passion for international sustainable development. She has worked abroad in West Africa and Southeast Asia, designing and building triple bottom line child-friendly spaces, as well as in New York designing homes for flood resilience.