
Beyond Barriers:

Engineering, Ecology, and Design at the Water's Edge

SUN-B02

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Conference on
Landscape Architecture
November 15-18
San Diego

Session

Sunday, November 17, 2019

2:00 PM - 3:00 PM / Location: 20A

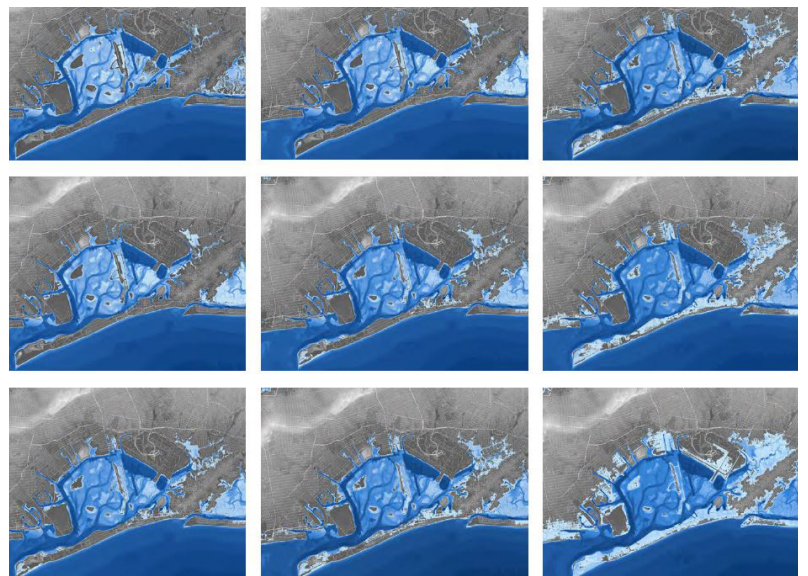
1.0 PDH, LA CES/HSW, AIA/HSW, AICP, FL, NY/HSW

Synopsis - Engineering, ecology, and the design of coastlines are evolving rapidly in a time of intensifying storms, coastal development, and wetland loss. Join us to discuss new frameworks like ecologies of the city, equitable retreat, and natural and nature-based features that offer landscape architects ways of working at the water's edge.



Learning Objectives

1. Understand the overlaps in the design, scientific, and engineering fields in coastal ecology and flood infrastructure.
2. Explore new analytical tools being used to visualize, study, and shape coastal landscapes.
3. Learn how the USACE's Engineering with Nature initiative presents opportunities for practitioners designing coastal landscapes.
4. Discover how design research and community engagement support environmental justice in climate resiliency efforts.



Isaac Hametz, ASLA
Mahan Rykiel Associates, Inc.



Isaac Hametz is Principal and Research Director at Mahan Rykiel Associates. He collaborates with clients and strategic partners to study, imagine, and shape landscapes that enrich the human condition and support vibrant natural systems. His work emphasizes ecological integrity, economic uplift, and cultural identity. He leads the Design with Dredge program and manages the firm's design research portfolio including partnerships, projects, and publications. Prior to joining Mahan Rykiel Associates, Isaac founded and ran two non-profit organizations that utilized landscape as a vehicle for civic engagement and design activism.

Catherine Seavitt Nordenson, ASLA
City College of New York



Catherine Seavitt Nordenson, ASLA, AIA is an associate professor of landscape architecture at City College of New York and Principal of Catherine Seavitt Studio. Her research explores adaptation to climate change in urban environments and the novel transformation of landscape restoration practices. She is also interested in the intersection of political power, environmental activism, and public health, particularly as seen through the design of public space and policy. Her recent books include *Structures of Coastal Resilience* (Island Press, 2018); *Depositions: Roberto Burle Marx and Public Landscapes under Dictatorship* (University of Texas Press, 2018); and *Corridor Workbook* (Regional Plan Association, 2017).

Rob Holmes, ASLA
Auburn University



Rob Holmes is an Assistant Professor of Landscape Architecture at Auburn University. His research and creative work concerns infrastructure design, urbanization, and landscape change. He co-founded the Dredge Research Collaborative (DRC), an independent nonprofit organization working with sediment infrastructure. Recent and current DRC projects include participating in the Resilient By Design Bay Area Challenge as part of the Public Sediment team, organizing the DredgeFest event series, and collaboration with the USACE's Engineering with Nature program. Prior to joining Auburn, he practiced landscape architecture in Virginia, and taught in Florida, Virginia, Louisiana, and Ohio.

Design with Dredge

Baltimore, Maryland

Every year in the Baltimore Harbor natural and anthropogenic siltation processes infill waterways and navigation channels, necessitating the removal of 1.5 million cubic yards of sediment to keep the port operating. The Design with Dredge research program brings together practitioners, community members, academics, regulatory and policy officials, and industry representatives to advance shared conceptual frameworks, planning priorities, and applied landscape strategies for resilient dredged material management in the Baltimore region. Through cross-disciplinary collaboration, compound research methods, and direct stakeholder engagement the program provides a lens through which to explore emerging and future landscape infrastructure issues facing port cities and coastal communities.



Head of Bay Coastal Resilience Study at Jamaica Bay

New York, New York

The Head of Bay coastal resilience study at Jamaica Bay, New York seeks to pair the necessary protection of John F. Kennedy International Airport with additional flood risk reduction strategies for the communities located along the northern and eastern perimeter of the airport. Straddling the administrative boundary of eastern Queens and Nassau County, the design proposal embraces a multi-layered topographical approach to the complex problem of flooding—including rainfall inundation, “sunny day” tidal flooding, and storm surge inundation—at the scale of the watershed. These layered systems allow for a strategy of incremental urban adaptation while supporting the ecological health of the bay and providing public recreational spaces for residents. The project is informed by advanced probabilistic computational modeling of future flood hazards, and addresses climate adaptation at ecological, urban, and architectural scales. By proposing an integrally designed “floodway” that supports wetland migration as well as adaptation scenarios, the project also encourages the development of actionable and equitable strategic retreat.



Engineering With Nature

USA

The US Army Corps of Engineers (USACE) is the federal agency with primary responsibility for the majority of the nation's coastal infrastructure, which serves functions that include navigation, flood control, and coastal storm risk management. This infrastructure has traditionally been designed as a mixture of "structural measures", like floodwalls, levees, and revetments, and "non-structural measures", such as buyouts of flood-prone structures and the elevation of buildings. Recently, the "Engineering With Nature"® initiative (EWN) within the USACE has been promoting new approaches to coastal infrastructure that integrate natural processes into engineering design. These "natural and nature-based features" clearly overlap with the interest and expertise of landscape architects in ecological infrastructure. Their adoption presents an opportunity for landscape architects to both learn from colleagues in scientific and engineering fields, and to become more involved in the design of coastal infrastructure. Recent and on-going collaborative work with EWN is discussed, tracing a trajectory of increasingly substantial involvement with coastal infrastructure projects in partnership with local USACE districts.



Notes

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Resources

<http://structuresofcoastalresilience.org/>
<https://ewn.el.erdc.dren.mil/index.html>
<https://www.mahanrykiel.com/research-development/>
<https://ssa.ccny.cuny.edu/blog/people/catherine-seavitt-nordenson/>
<http://cadc.auburn.edu/explore-cadc/faculty-and-staff/view/151>
<http://landscapearchipelago.com/>
<http://dredgeresearchcollaborative.org/>

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