CLIMATE-ADAPTIVE DESIGN

NEW YORK STATE OF OPPORTUNITY. | Hudson River Estuary Program

A studio research effort *using design to inspire climate adaptation*, in partnership with Cornell University Department of Landscape Architecture and Water Resources Institute.

The Climate-Adaptive Design (CAD) Studio links Cornell Landscape Architecture students with Hudson riverfront communities faced with flooding and sea-level rise to explore *design alternatives for more climate resilient, beautiful, and connected waterfront areas.*

The Process

Students work with community stakeholders, non-profit partners, and technical experts in an interdisciplinary process of waterfront design. The project culminates with an open house to share student ideas with the community.

CAD designs show the community options for development and revitalization that also deal with expected sea-level rise and flooding.

By taking a comprehensive design approach, the student teams incorporate human and natural systems to inspire adaptation and innovation.

Students present design ideas to stakeholders in Catskill, NY (L. Zemaitis)

STUDENT DESIGN: 'HYDROPHILIC KINGSTON'

C. Zhang and P. Chang imagined a future for Block Park and Island Dock in Kingston, NY that integrates boardwalks, boating access, and habitat protection.

Trends in our climate

- 71% increase in **intense precipitation** in the northeast since 1958.
- Up to 60 inches of **sea-level rise** on the Hudson River by 2080.
- In 2080, we expect today's **1% ("100-year") flood** to occur as much as **six times** more frequently.

Cornell University College of Agriculture and Life Sciences

New York State Water Resources Institute Cornell University

Background

After historic flooding from Hurricanes Irene and Lee in 2011, and Superstorm Sandy in 2012, the Estuary Program and partners began working on innovative ways to adapt to climate change in the Hudson Valley. To provide inspiration, Cornell Landscape Architecture brings student design teams to local communities.

"Thank you so much for coming… the work that I saw has completely changed the way I think about waterfront development"

Mayor Hamilton, City of Hudson, NY

STUDENT DESIGN: 'CATWALK'

J. Romualdez and X. Tang proposed green infrastructure in alleyways in Catskill, NY.

STUDENT DESIGN: 'TIME REFRACTOR'

M. Chi and X. Li proposed envisioned elevated train tracks and pathways through restored marsh in Hudson, NY.

Resilience strategies

- **Plan** - Understand the projections for future climate and sea-level rise, and incorporate them into planning.
- **Partner** - Work with other communities, New York State, and local universities, organizations, and businesses to develop adaptation options.
- **Adapt** - Work with nature by using nature-based features that protect and enhance communities. Promote water-dependent uses and open space along waterways; strategically relocate high risk uses from repeated flood areas; rebuild waterfronts to be floodable.

Partners

Sustainable Shorelines, NYS DEC
Cornell University Department of Landscape Architecture Associate Professor Joshua Cerra
Scenic Hudson
New York State Water Resources Institute
New York Department of State
Cornell Cooperative Extension

Resources

Climate-Adaptive Design
http://tinyurl.com/CornellCAD

Cornell Water Resources Institute
http://tinyurl.com/WRIresilience

NYS DEC Hudson River Estuary Program
http://www.dec.ny.gov/energy/82168.html

CONTACT INFORMATION

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