LIVING LANDSCAPES:
Combining Education and Ecology for a more Resilient New York Harbor

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BILLION OYSTER PROJECT

Restoring Oyster Reefs to New York Harbor through public education
EDUCATION PLUS
RESTORATION.
What are oysters?
Why oysters?
BILLION OYSTER PROJECT

- NON-PROFIT, FOUNDED IN 2014
- BASED AT & BORN OUT OF THE NEW YORK HARBOR SCHOOL
- 30 EMPLOYEES, $4.5 MILLION ANNUAL BUDGET
- OYSTERS RESTORED: 30 MILLION
- NUMBER OF SCHOOLS ENGAGED: 70
- RESTAURANTS ENGAGED: 70
- POWER BOATS: 9
- BEAT UP VAN: 1
S C A P E
HOW CAN DESIGNERS ACT?
REVIVE LANDSCAPE SYSTEMS
FORGE CONNECTIONS
GENERATE ECOSYSTEMS
EMBRACE PHYSICAL REALITY
ENGAGE PEOPLE
DESIGNERS VISUALIZE CHANGE.
1% ANNUAL CHANCE STORM WITH 40" OF SEA LEVEL RISE
DESIGN PROVIDES THE PHYSICAL CONTEXT FOR ECOLOGICAL AND SOCIAL LIFE
LIVING BREAKWATERS
EDUCATION PLUS
RESTORATION PLUS DESIGN.
"Climate change is presenting unprecedented threats to communities across the country. Rebuild By Design is a model for how we can use public-private partnerships to spur innovation, protect our communities from the effects of climate change, and inspire action in cities across the world."

Shaun Donovan
Chair of the Hurricane Sandy Rebuilding Task Force
Secretary of the Department of Housing and Urban Development
Designing the Process

The Task Force, with a core group of advisers and staff, created a unique structure for the competition. A successive and connected set of stages was established to orient the design process around in-depth research, cross-sector, cross-professional collaboration, and iterative design development.

The design process incorporated a variety of inputs to ensure that each stage’s deliverables were based on the best knowledge and talent, and that the final proposals would be replicable, regional, and implementable.

Making room for a collaborative and innovative approach was a step away from the institutional world. A detour around negotiations, the process aimed to build understanding and trust.
**Adjacent shell mounds**

Breakers are designed at a maximum 3:1 slope and incorporate artificial tidal pools that invite water between littorals, introducing additional habitat opportunities.

**Emergent habitat and lie zone**

Allowing the freshwater tidal flats and emergent wetlands to function like a natural barrier, as well as providing nursery habitat for larval species.

**Shallow sloping intertidal habitat**

Near edges are designed at a minimum 2:1 slope to incorporate soft materials that retain water between tides, introducing additional habitat to intertidal communities.

**Steep subtidal habitat**

Vertical and densely inclined surfaces are placed within the subtidal zone and incorporate the enhanced concrete at one end and smooth-size grits at the other. This creates prime opportunities for fish colonization and cripling organisms.

**Reef streets create complex habitat**

These rocky projections and the spaces between are formed by storage of large rocks and the coastal current and wave. Wildlife is disproportionately placed by large flat rocks and coastal current and wave, making these places more attractive to other species, particularly juveniles.

**Oyster restoration opportunity**

The reef restoration create many opportunities for the restoration. Larger oysters at the reef's side along with increased water circulation within the reef create oxygen conditions for the setting and growth of oysters.

**Horizon crab spawning habitat**

Additional hand-placed ecological or sand that extends over time with oyster restoration would provide benthic invertebrates needed for horizon crab spawning.
THANK YOU!

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