

GSAPP COLUMBIA
UNIVERSITY

ADVANCED ARCHITECTURAL DESIGN STUDIO / Fall 2013

JOINT STUDIO WITH MS RED

Critics:

Kate Orff

ko2111@columbia.edu

Kate Ascher

kja2127@columbia.edu

w/ Gena Wirth, Johannes Pointl, Amelia Aboff

THE URBAN ESTUARY /

Jamaica Bay 2050

This design studio will look at design scenarios for “living with water” and the latent urban and ecological potential of Jamaica Bay as a place of resiliency and renewed economic vitality. The Bay, currently in a state of neglect, could become a harbinger of a new relationship between water, urban development, and park space in New York City. Our goal is to transform the conceptions of urban

waterfront to include an emphasis on coastal protection, soft infrastructure, robust marine habitat, and new forms of post-Sandy housing, commercial development, recreational programming and energy generation relative to the 21st century city. We will explore the past, present, and future of the Bay alongside projections for growth in the New York City region and the fact that hundreds of thousands of people living and working in this are now threatened by sea level rise and continued storm surge events. What are currently peripheral lands and waters will be conceived as a laboratory for innovation and experimentation. An emphasis will be placed on developing a science-driven design methodology that spans many scales, from macro-level hydrological studies at the scale of the outer Harbor to small settlement clusters, to targeted material prototypes. The studio will culminate in the development of a site and architectural scale intervention at one of several specific sites within the Bay. Our studio will benefit from the collaboration and interest and feedback of the MS RED students led by Prof. Kate Ascher as well as communication with the HUD rebuild by design process, Stevens Institute, SeaArc Marine Consulting, and involved scientists, hydrological engineers, and writers. Jamaica Bay, in all its complexity and peculiarities (in the biggest city in the U.S. in a National Park ...) is still in many ways a case study of a condition we see replicated up and down the east coast: complex interaction of a dynamic coastal geomorphologic condition, rich estuarine ecology, dense and diverse human settlement and with complex and critical associated infrastructures & economic contexts.

Background

Jamaica Bay is one of the America's most important estuaries. It is a key stopover for migratory birds, and contains ecological diversity within its boundaries that rivals the ethnic and social diversity of

the Brooklyn and Queens communities on its edges. Its status, since 1972, as part of Gateway National Recreation Area within the National Park Service has done little to protect it from the Bay's consistent use, over centuries, as a dumping ground for the detritus of urban life – dead horses, refuse, contaminated materials and processed sewage. Its bathymetry has been profoundly dredged and altered to create multiple airports and other upland areas, and it is losing precious tidal marshlands at an astonishing rate: between 1924 and 1999, half of the bay's vegetated marsh islands disappeared and state conservation officials have determined that the rate of loss is increasing. Assuming that the rate of loss between 1994 and 1999 (a doubling of the previous rate over the last 20 years) continued baywide into the future, it has been calculated that the marsh islands would completely vanish by 2024.

It is not just wildlife and the ecosystem that have felt the changes in and around the Bay. The communities around the Bay, both on mainland Brooklyn and Queens and along the Rockaway Peninsula, have become more vulnerable to storm events as the Bay's islands have disappeared and as sea levels have risen. Hurricane Sandy took its toll most significantly at Breezy Point, on the western end of the Peninsula, but other communities around the Bay – which together represent roughly 900,000 people, felt the force of its waters as well. The storm provided us with many lessons in both building design and in the relationship of nature and the built environment, making it an apt time to consider new approaches to waterfront design and development.

Our studio will aim to reverse this trend and aggressively intervene in the Bay based on these realities. It will ask what we can learn from the estuary relative to the economies and ecologies of the future. What are the new relationships of habitat, infrastructure,

new communal–residence typologies, marine biodiversity, and live–work models that will generate a truly productive zone? We will speculate as to how the Bay could be altered through both large and small–scale interventions, and recast as a harbinger of the future of cities and landscapes based on a reset relationship between urban politics, biology, architecture and nature. How can future buildings and landscapes be designed and seeded over time, and ultimately developed and managed, based on inherently changing estuarine flows and processes? Our design strategies will incorporate risk and change and forge new ecologies and infrastructure, as well as new community structures and recreational programs.

Approach

A series of concrete assignments will structure a broader investigation that links the regional scale with detailed student investigation of specific sites, occupations, and ecological processes. The initial few weeks of the studio will revolve around understanding the Bay in its historical context and on broader–scale speculation, mapping and modeling of the kinds of effects that large–scale morphological change of the Bay would have on water quality, velocity, and flood protection. We will collaborate with Philip Orton, a Post Doctoral Research Associate from the Stevens Institute to test these Jamaica Bay design scenarios and develop new estuarine edge typologies that catalyze biological life and human activity.

Using this initial research and scientific feedback, students will select one of five study sites and pair this area with a joint marine–and–development program, which will be the focus of the final design project. During the studio we will also engage in a 3–D material workshop targeted towards the exploration of digital design parametric tools, fabrication and proto–typing, to test

performance of specific geometries and surfaces relative to the enhancement of underwater marine habitat and public programs.

Our work will be informed by the H209 Conference in September, and the two-day Jamaica Bay Watershed “State of the Bay” symposium in October. This symposium will be held on October 17–18 at CUNY’s Kingsborough College, located in Brooklyn just west of Jamaica Bay. Our work will also be informed by “real time” post-Sandy planning and design initiatives, including the NYC SIRR Report findings and the State of New York’s CRZ (community reconstruction zones) planning initiative and the ongoing HUD Rebuild by Design initiative. A boat trip will be scheduled to tour the bay with experts and policy makers, and students will be invited to hear both local and international coastal resilience experts discuss both the ecology of the Bay and the formal program and objectives of the new “Science and Resilience Institute at Jamaica Bay,” tasked with bringing multiple disciplines and entities together to rehabilitate it over the next decade and beyond.

For the Real Estate Development students enrolled in the joint Urban Estuary studio, work will focus on connecting existing knowledge of market analysis and financial modeling with new concepts in sustainability, resiliency, and waterfront urban development. Nearly all of the Rockaway Peninsula, Broad Channel and Howard Beach are categorized by FEMA into high-risk areas that will force residents to purchase flood insurance and follow new guidelines for home construction, with the implication that different development models would make greater economic sense. Using skills developed during the summer Real Estate studio course, students will review the relevant demographics, markets, and financial constraints of their assigned site; they will work in active exchange and dialogue with their teams to represent relevant real estate considerations throughout the broader design exercise. At the end of the course,

the Real Estate Development students will be responsible for supporting their team's design with a pitch or business case, participating in and defending both physical and financial elements of the selected approach.

Potential Sites and Programs

Beyond the estuary-wide concepts of sea level rise, climate change, resiliency planning, densification, integrated transport scenarios, and coastal protection, students are asked to explore at a site/architectural scale the following programs and specified locations.

Site 1: Floyd Bennett Airfield (2 groups)

This former airfield is part of the Gateway National Recreation Area and the future site of the resilience institute. Potential programming includes staging grounds for a cordgrass and salt-marsh restoration nursery, a facility for the institute, a potential new "wetlands center" tourist destination, and a redesigned National Park experience.

Site 2: Howard Beach, JFK Airport & Marsh Islands

Howard Beach was hard hit during Sandy, but since it is primarily a neighborhood of single family home owners, disaster assistance directed towards rebuilding of homes was relatively available. Potential transformations may include densification of key zones, transition to multi-family housing, retail corridor enhancements, shoreline reinforcement and transportation upgrades including ferry and bus service in addition to salt marsh restoration and other in-Bay protective measures.

Site 3: Far Rockaway

Pockets of NYCHA housing and an extremely vulnerable Atlantic coast line and Bay frontage characterize this zone. Exploration of new forms of clustered & sustainable affordable housing, retrofitting of multi-family housing, integration of shoreline enhancement and protection and public space strategies should be considered alongside social justice and community programming goals.

Site 4: Coney Island & Off shore breakwater

This zone was greatly affected not only by wave action but by “backwash” through Gravesend Bay and Sheepshead Bay. Wave attenuating structures and absorptive inland landscapes coupled with densified up-zoned parcels and strategies for potentially living with still water flooding will be considered.

Site 5: Belle Harbor & Neposit

This zone is located at the tip of the barrier island peninsula and raises questions of managed retreat, temporary occupations, and tourism.

Schedule

Week One	Intro to the Studio
Wed Sept 4	Lottery Presentations
Fri Sept 6	First studio meeting / KO/GW/JP presentation / meet Room Avery 115 2pm Review base materials. Distribute Assignment 1

Week Two Measuring and Mapping the Region

Mon Sept 9 H209 Forum 11:30am–12:30 pm Museum of Jewish Heritage <http://www.h209forum.org/>

How to keep Jamaica Bay Safe and Resilient” David Waggoner & Carter Strickland Free tickets available for Columbia students in this studio

Tues Sept 10 Optional: “Shirt Sleeves” WORKSHOP Lectures, Presentations – Dutch Water Design

A joint design and policy focus on designing for & living with water

Wed Sept 11 FAYERWEATHER 206 / framing the studio: Kate Ascher & Kate Orff

Fri Sept 13 Desk Crits GW, JP

Week Three Landscape as Infrastructure – Hydro–dynamic Design

Mon Sept 16 Pin up Assignment 1 / Mapping & Catalytic layers

Wed Sept 18 Presentation: Adrian Benepe, Trust for Public Land, Former Comm. NYC Parks

Fri Sept 20 Desk Crits

Week Four Habitat Structure typology

Mon Sept 23 Desk Crits GW JP

Wed Sept 25 Presentation: Rob Pirani, Regional Plan Association, Jamaica Bay Greenway

Fri Sept 27 Site Visit Jamaica Bay (to be confirmed)

Week Five Developing a Framework: Site and Programs

Mon Sept 30 Desk Crits

Wed Oct 2 Presentation: Mattjis Bouw, One Architecture

Fri Oct 4 Desk crits / PROGRAM STATEMENT DUE

Week Six Economics & Ecology

Oct 7 Desk Crits

Oct 9 Joint Pin up – Site Strategy / Room 115

Oct 11 Desk Crits

Week Seven Time as strategy

Mon Oct 14 Desk crits / KO

Wed Oct 16 Pin up Storyboard – Time based movie due

Thurs Oct 17 Jamaica Bay Resiliency Symposium – please register

Fri Oct 18 Jamaica Bay Resiliency Symposium, CUNY Kingsborough College

Week Eight MID REVIEW

Mon Oct 21 Desk Crits & “dry run”

Wed Oct 23 Mid-review Room TBD

Fri Oct 25 Desk Crits GW JP / storyboard Time based movie
/ Photograph Models

Week Nine

Mon Oct 28 Desk crits – Sandy evening symposium at
Museum of City of NY

Wed Oct 30 Pin up – MSRED Students Economic Strategies &
Scenarios

Fri Nov 01 Desk crits

Week Ten Model Study

Mon Nov 4 Desk crits

Wed Nov 6 Dry Run (Room TBD)

Fri Nov 8 Dry Run (Room TBD)

Week Eleven Sharpening the Narrative

Mon Nov 11 Desk crits

Wed Nov 13 $\frac{3}{4}$ Pin up

Fri Nov 15 Desk Crits

Week Twelve	Habitat overlay & Densification Strategies
Mon Nov 18	Desk crits / JP
Wed Nov 20	Workshop: Economic / ecological integration
Fri Nov 22	Dry Run (Room TBD)

Week Thirteen	Model study
Mon Nov 25	Desk crits
Wed Nov 27	Dry Run – Room TBD
Fri Nov 29	No class – Thanksgiving Holiday

Week Fourteen	Final Review Week
Thurs Dec 5	Final review

References

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POTENTIAL RESOURCES & PARTNERS

Matthijs Bouw / One Architects Amsterdam NL

Cynthia Rosenzweig

National Park Service

Philip Orton, Ph.D. Postdoctoral Research Associate Stevens
Institute of Technology

Shimrit Perkol-Finkel, Ph.D. and Ido Sella SeArc Ecological marine
consulting

Jamaica Bay Greenway Coalition