

# GREENING THE HOSPITALITY SECTOR IN PUERTO RICO

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Greening the Hospitality Sector in Puerto Rico is a **strategy** of the PRTC to pursue a variety of goals:

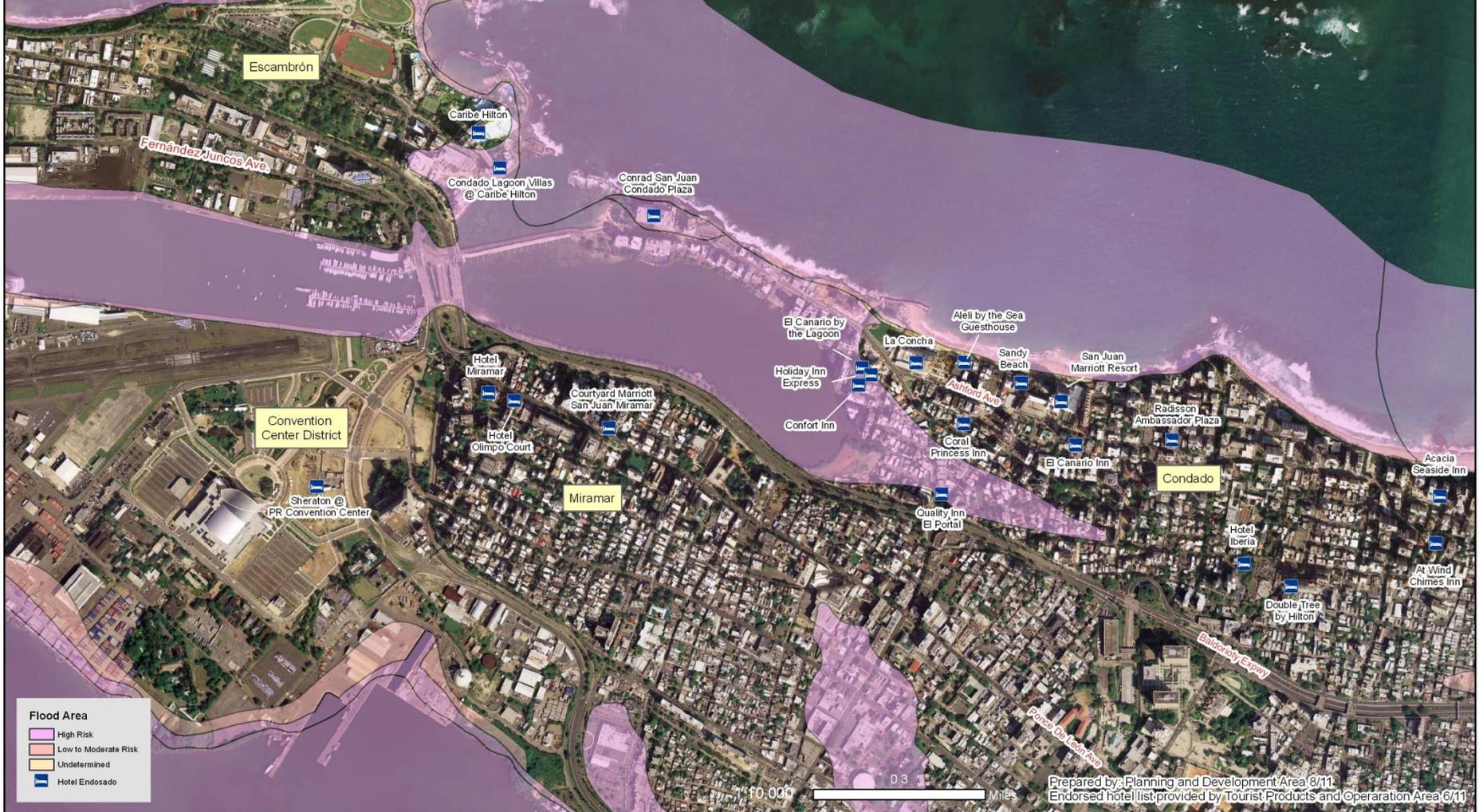
- Reduce local environmental impacts of hotel construction and operation to maintain ecosystem functions, the quality of natural attractions, and the health of the human environment
- Reduce health risks to employees and visitors
- Lower operational costs of hotels
- Cater to environmentally-conscious guests
- Develop a sustainable approach to the tourism industry
- Reduce greenhouse gas emissions and the ecological footprint of tourism, as part of our **mitigation response to Global Climate Change**

- ▶ The impact of GCC on the tourism industry in PR might be significant during the next 100 years



# Endorsed Lodgings and Potential Flood Risk

## Map 2: Condado, Miramar & Convention Center District



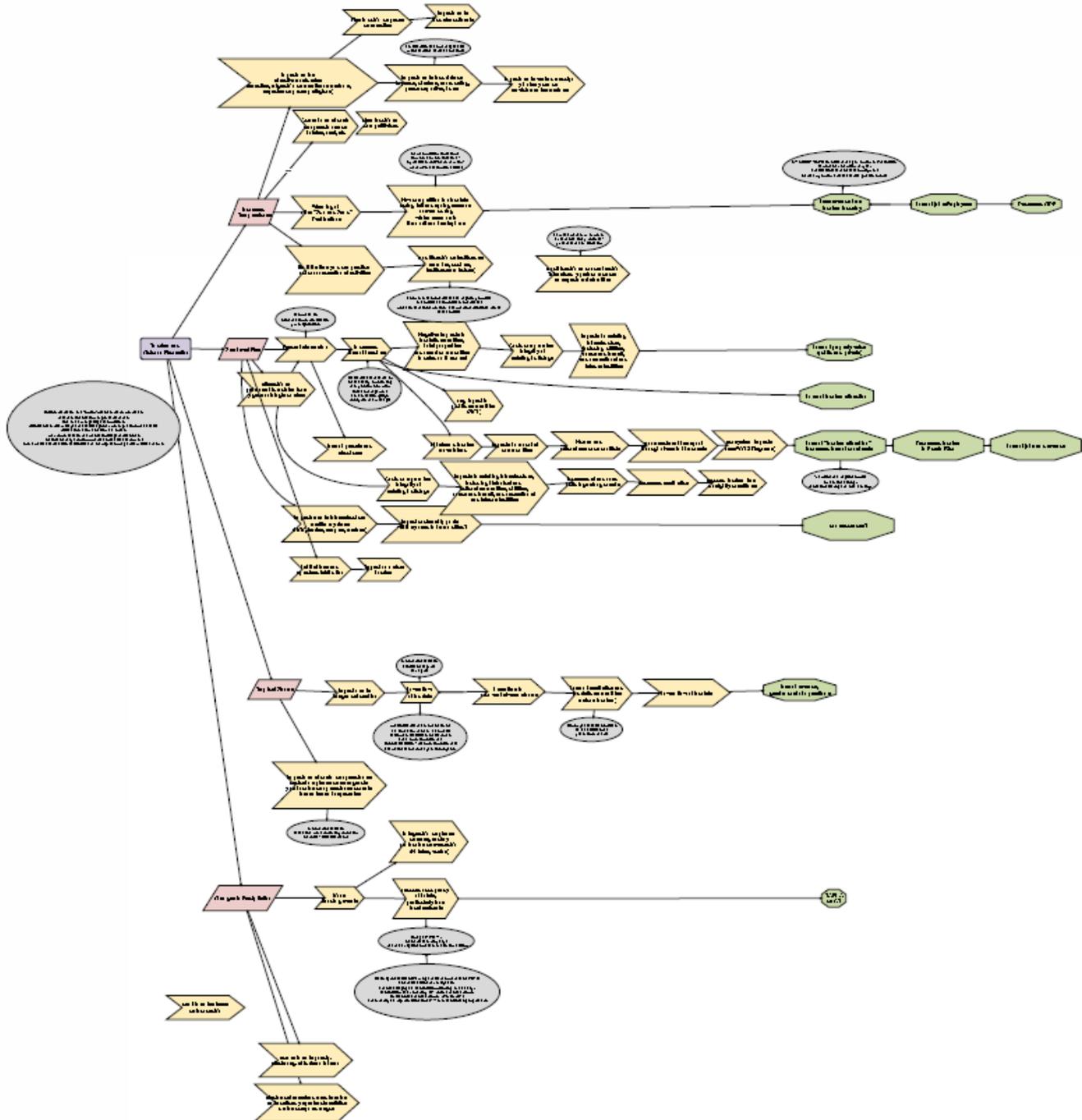
**POTENTIAL IMPACTS  
OF GLOBAL CLIMATE CHANGE  
ON THE TOURISM INDUSTRY  
IN PUERTO RICO**

## ▶ Direct Impacts

- Touristic facilities (hotels)
- Infrastructure near or at the coast
- Touristic attractions and amenities

## ▶ Indirect impacts

- More rainy days, maybe
- Impacts to coastal ecosystems, incl. beaches
- Impacts to historical and cultural sites



## Effects of increased air/water temperature

<b>Impacts on touristic facilities and operations</b>	<b>Impacts on touristic attractions and amenities</b>
Higher energy costs	Coral bleaching and its indirect effects on protected areas, recreation, amenities, seafood, etc.
Higher landscape maintenance costs	Ecological impacts to natural attractions
	Increase in water-borne vectors
	Reduction in tourist comfort

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## Effects of sea level rise

<b>Impacts on touristic facilities and operations</b>	<b>Impacts on touristic attractions and amenities</b>
Direct impact to hotels: damage and repair/relocation costs	Direct impact to the coast and beaches
Damage to infrastructure	Impact to coastal aquifers
Indirect impacts: coastal erosion, land and beach loss, increased coastal flood events	Damage to mangroves and wetlands
	Impacts to other coastal ecosystems
	Impacts to islets and cays
	Coastal bacterial pollution through more frequent sewage spills
	Impacts to tourism-based commerce

## Effects of increased precipitation

<b>Impacts on touristic facilities and operations</b>	<b>Impacts on touristic attractions and amenities</b>
Decline in hotel occupancy because of rainy days (domestic tourism sector)	Discomfort and difficulties for some outdoor activities
Impacts to stormwater infrastructure	Increased frequency of bacterial pollution by sewage spills
Impacts to other infrastructure	Increase in water-borne vectors
	Impacts to coral reef ecosystems

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## Effects of decreased precipitation

### Impacts on touristic facilities and operations

Higher probability of drought and water rationing

### Impacts on touristic attractions and amenities

Impacts to activities in rivers and reservoirs

Ecological impacts to amenities such as *El Yunque National Forest*

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## Effects of increased atmospheric disturbances (hurricanes)

### Impacts on touristic facilities and operations

Higher probability of physical and capital damage

Impact to the touristic image of the destination

Higher risk and vulnerability to the tourism industry near the coast

Impacts on infrastructure

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### Impacts on touristic attractions and amenities

Higher probability of physical and capital damage

Impact to the touristic image of the destination

Short-term ecological disturbances

**PUERTO RICO TOURISM COMPANY  
INITIATIVES TO ADDRESS CLIMATE  
CHANGE**

## LEGAL BACKGROUND

- Act No. 267 of September 10, 2004, known as the "Public Policy Act for Sustainable Development".
- Act No. 254 of November 30, 2006, known as the "Public Policy Act for the Sustainable Development of Tourism in Puerto Rico", defines sustainable tourism as "tourism that meets the needs of tourists and host regions while protecting and enhancing opportunities for the future. It involves the management of all resources so that they can satisfy the economic, social and aesthetic needs while maintaining cultural integrity, essential ecological processes, biodiversity, and ecological life support systems."

## WHAT CAN WE DO?

- Mitigation Strategies
  - Reduction in the Ecological Footprint of Tourism
  - Better Planning and Design of new facilities
- Adaptation to GCC, including the retro-fit or reuse of existing touristic facilities

**REDUCTION IN THE ECOLOGICAL  
FOOTPRINT OF TOURISM BY, FOR  
EXAMPLE:**

- Reducing energy consumption
- Transition to renewable energy sources
- Use of recycled and local materials for construction
- Recycling of solid waste

## **BETTER PLANNING AND DESIGN OF TOURISTIC FACILITIES BY:**

- Promoting responsible development along the coast
- Include the effects of climate change in Environmental Impact evaluations for all new proposed projects
- Locally-developed Green Hotel Certification Program that includes Design Criteria

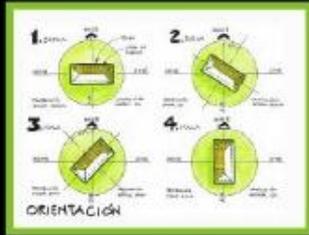
## **PRESENT SUSTAINABLE INITIATIVES**

- Energy efficiency efforts since 2008
- Recycling Program since 2008
- Collaborative agreement with the PR Solid Waste Management Authority
- Climate Change as a factor in future facilities planning and design

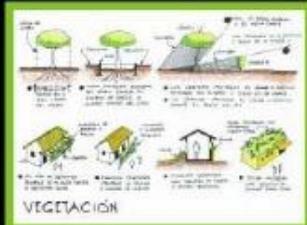
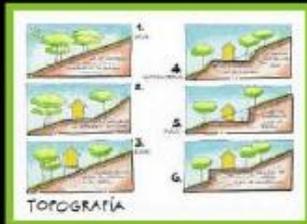
# PRESENT SUSTAINABLE INITIATIVES

(CONT)

- Development of the PRTC **Design Guidelines** for Ecotourism and Sustainable Tourism Facilities
- Development of the PRTC **Operational Guidelines** for Ecotourism and Sustainable Tourism Facilities
- Development of the PRTC **Guidelines for Ecotourism Activities**



guías de diseño  
para instalaciones  
**ecoturísticas**  
y de  
turismo  
**sostenible**



# Green Lodging Certification Program



**Basic**



**Meritorious**



**Exemplary**

# **PRESENT SUSTAINABLE INITIATIVES**

**(CONT)**

- MOU with EPA and PRSWMA
- Training Program aimed at the Tourism Industry
- Web page for Certified Green Hotels

**[http://www.seepuertorico.com/green\\_hotels](http://www.seepuertorico.com/green_hotels)**

- Development of an Ecotourism Center at the Humacao Nature Reserve in SE Puerto Rico
- Development of the Agrotourism Regulation

## WHAT'S NEXT?

- Certification Program for Ecotourism Activities
- Formal development of an Agrotourism Program

# ADAPTATION TO GCC

- Great interdisciplinary challenge
- In PR, we need more interest from the design disciplines that deal with the human environment (landscape architecture and architecture)
- Long-term Planning
- Speculative Design

# SPECULATIVE DESIGN

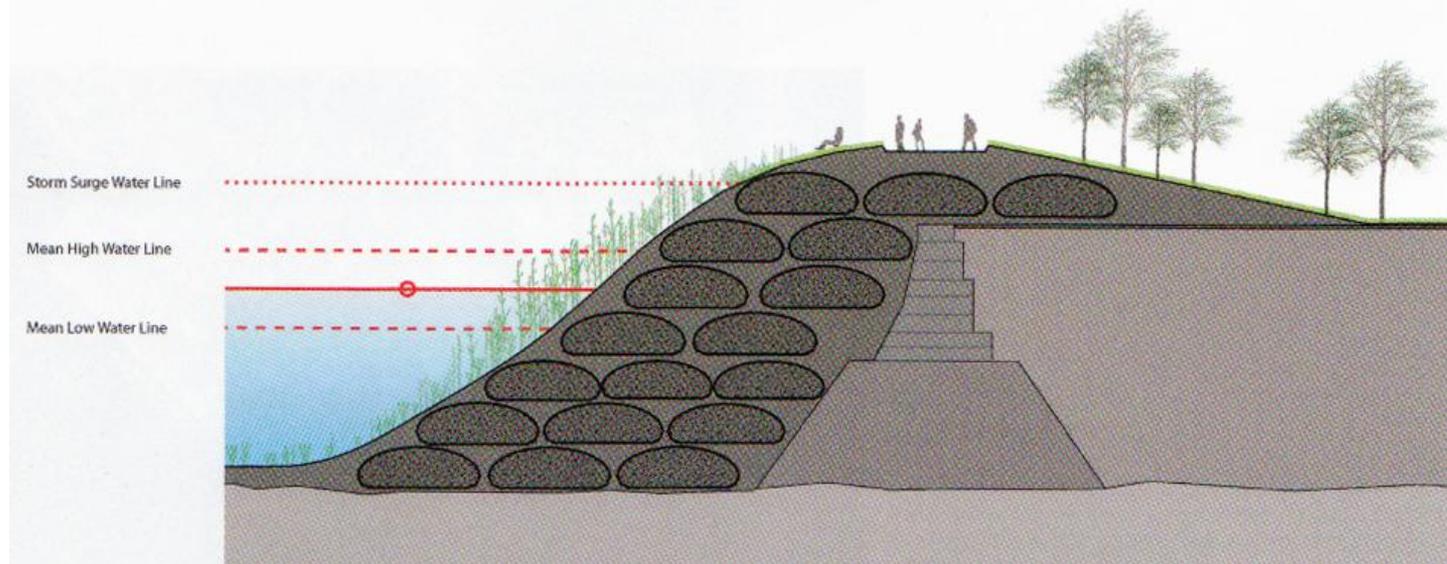
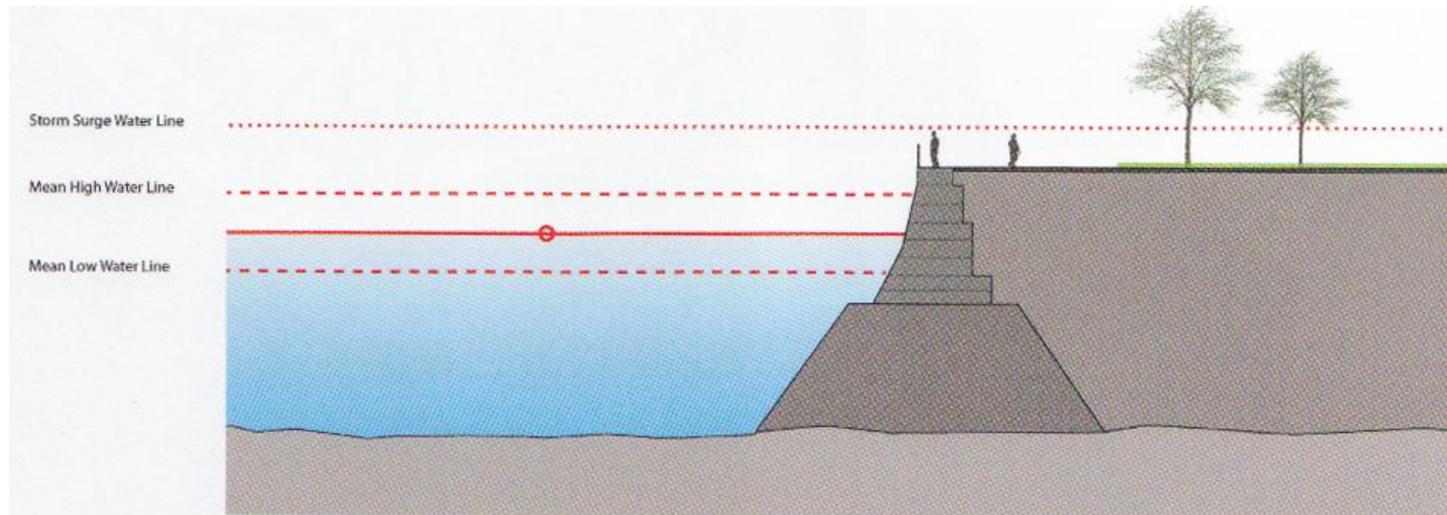
- Tool to develop new visions of the future, to imagine new possibilities, and to identify opportunities
- Themes: Green infrastructure, the *Cyborg* landscape, the Recycled landscape, Urban ecology, Recycling of buildings and structures



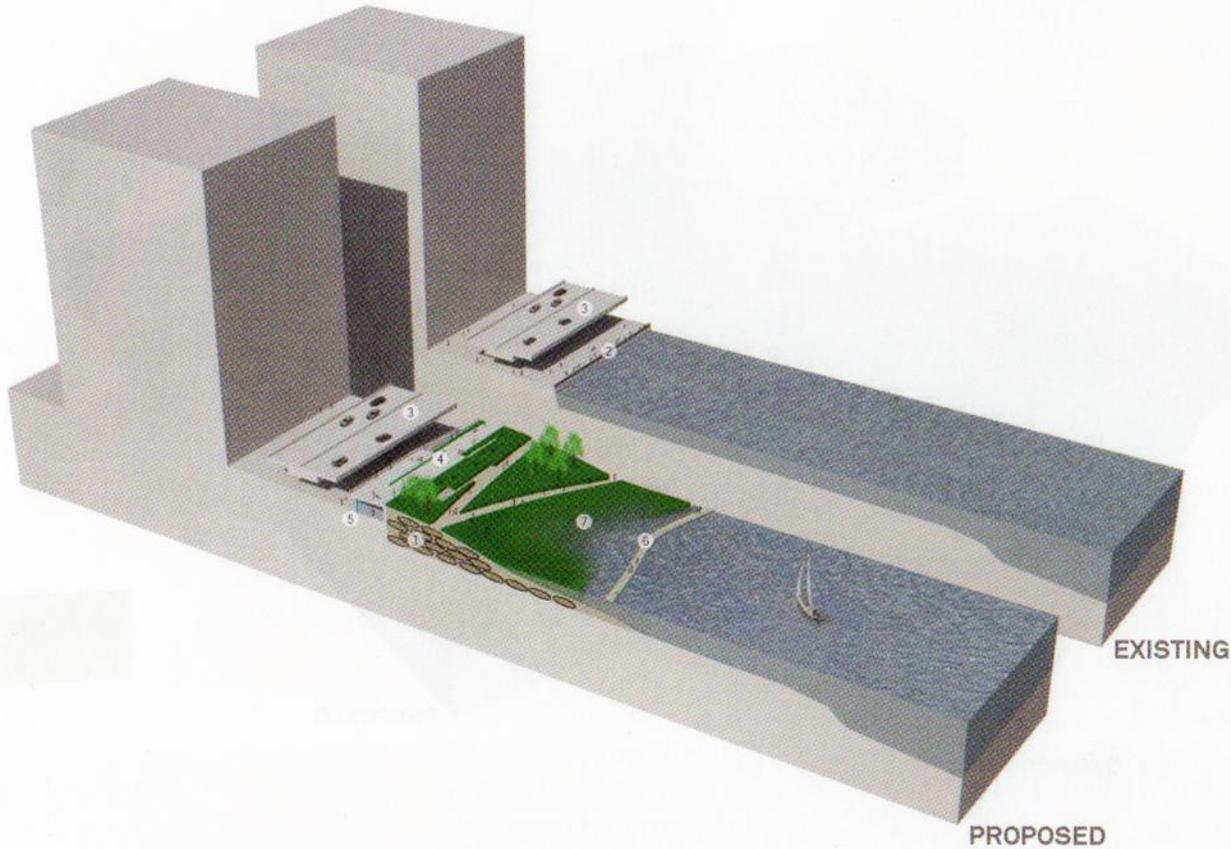
**LONDON LAGOON**  
(Peter Cook, 1984)  
The creation of a large lake in Lambeth totally reorients the focus and activities of South London.



Rising Currents  
(MoMA, 2010)



Rising Currents (MoMA)

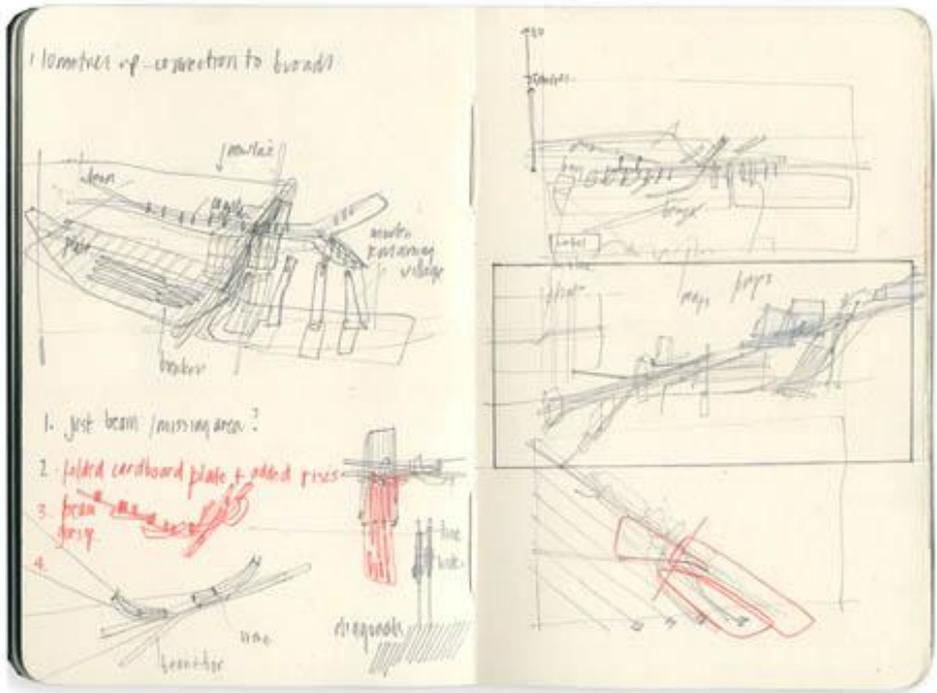
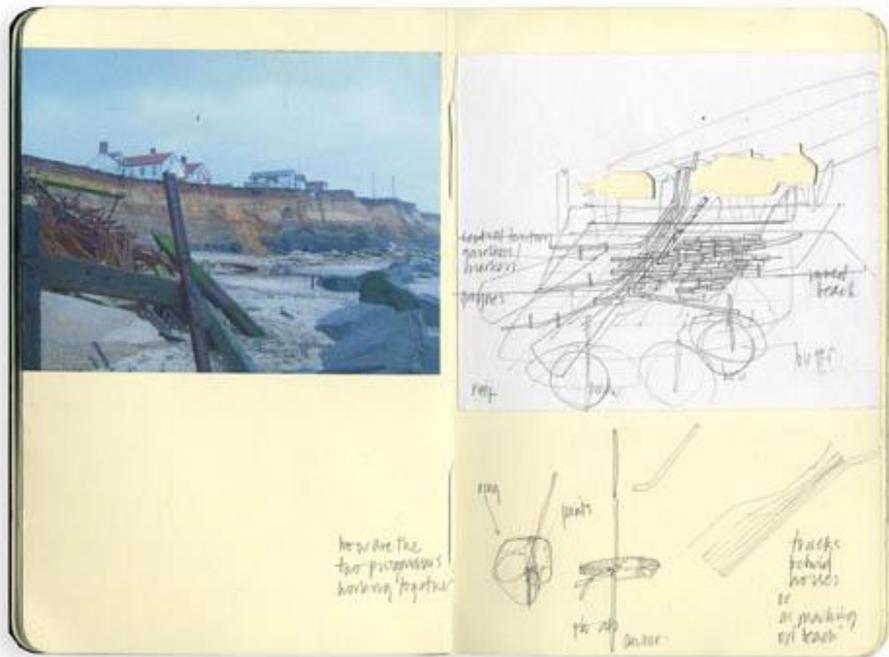


#### AREA 4: ELEVATED HIGHWAY WITH TALL BUILDINGS

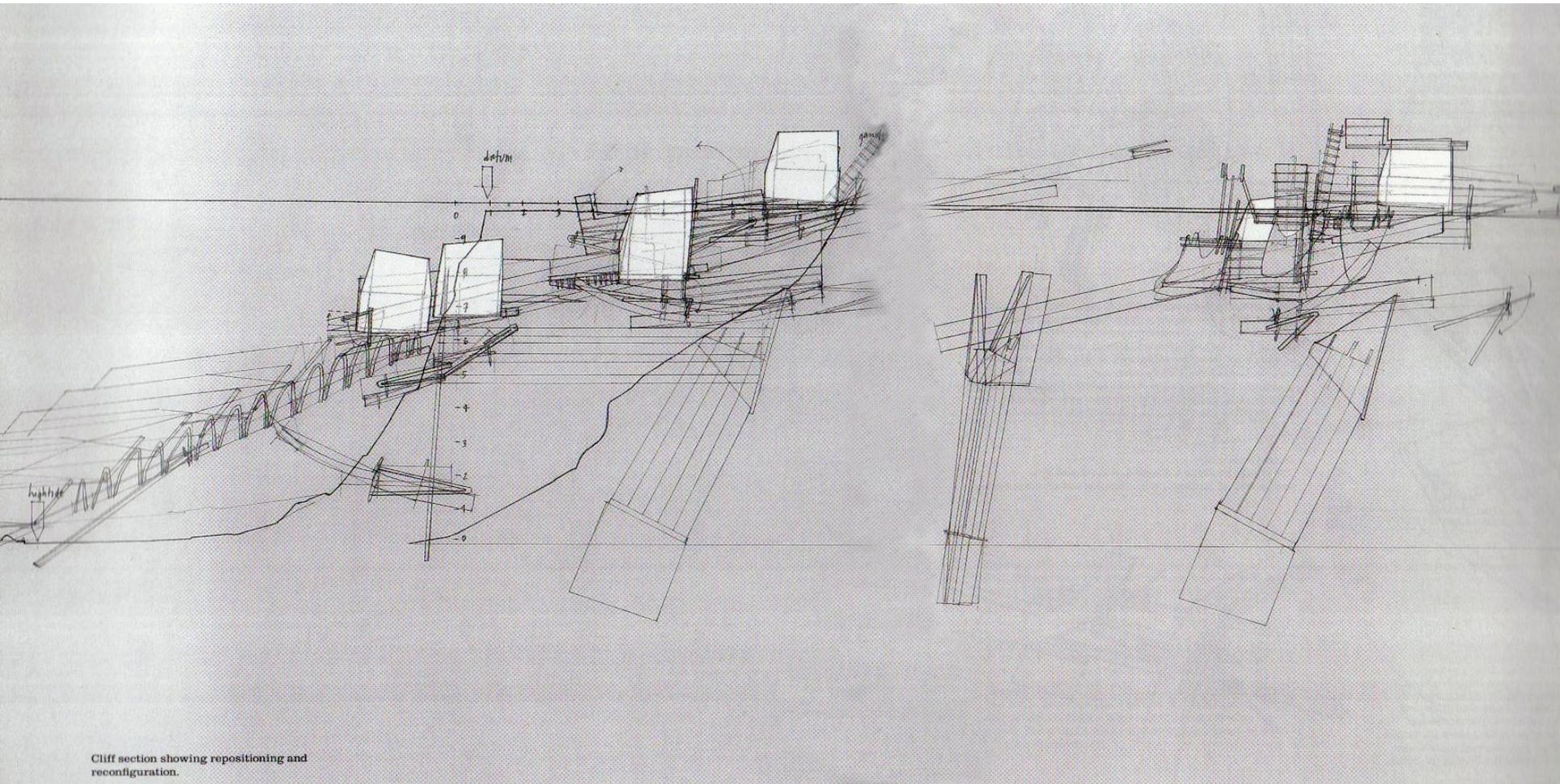
The elevated Franklin D. Roosevelt East River Drive along the southeast portion of the tip of Manhattan constitutes a narrow linear strip with a seawall/boardwalk on one side, and a row of dense highrises on the other. The seawall adjacent to the Franklin D. Roosevelt East River Drive is elevated as a linear berm with a hard edge facing the city. This interior edge contains commercial space for stores and restaurants, supporting a new elevated boardwalk that feathers into the river as a wetland landscape.



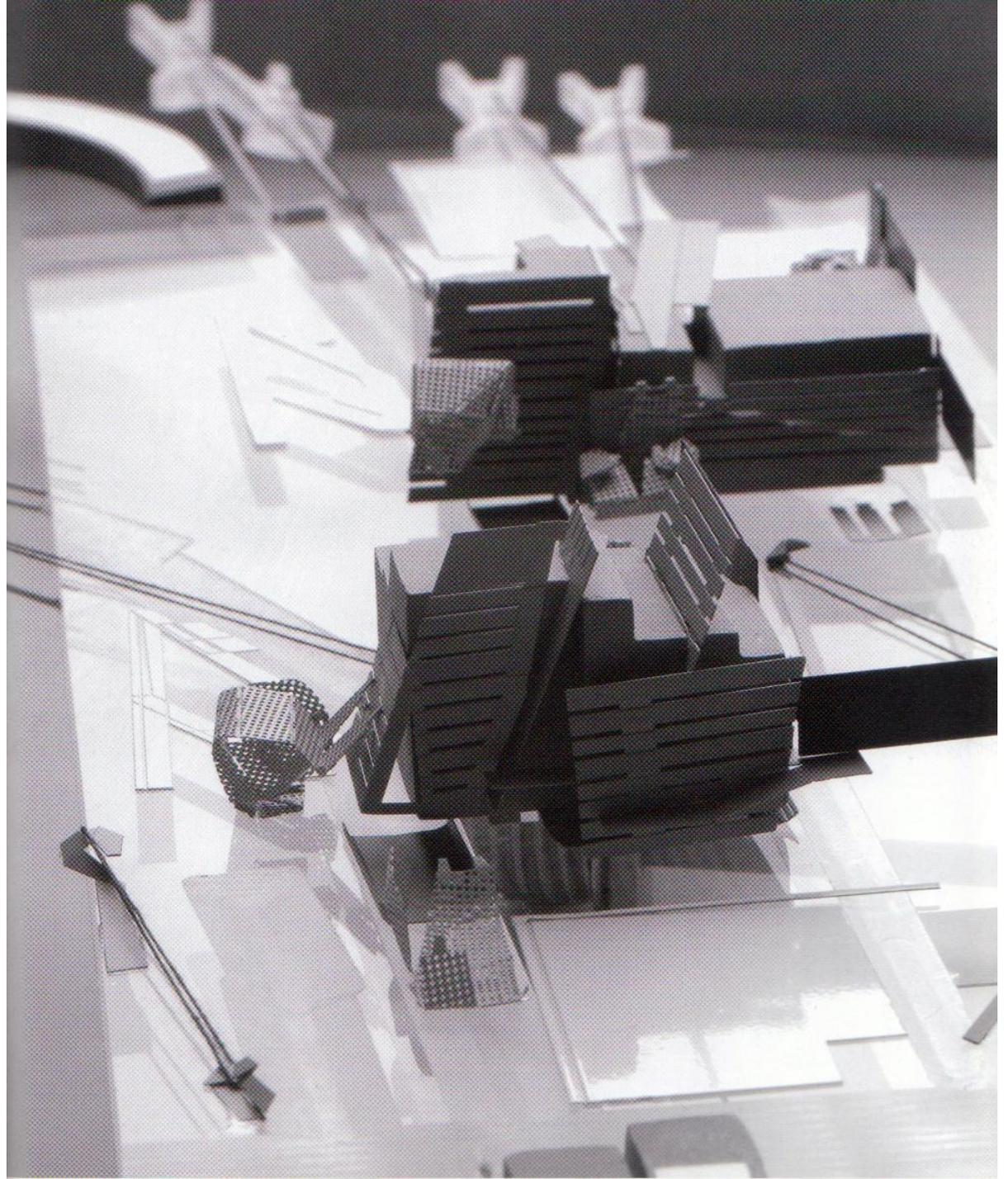
- ① Geotextile tube/recycled dredge material construction
- ② Existing seawall boardwalk
- ③ Existing elevated Franklin D. Roosevelt East River Drive
- ④ New elevated pedestrian/bike path
- ⑤ Embedded commercial real estate
- ⑥ New wetlands boardwalk
- ⑦ Tidal wetlands



Mark Smout + Laura Allen, 2007



Cliff section showing repositioning and reconfiguration.



Mark Smout + Laura Allen

**QUESTIONS?**