



CHU-CENTER FOR
HYDRO-GENERATED URBANISM

COLLEGE OF DESIGN, CONSTRUCTION AND PLANNING
UNIVERSITY OF FLORIDA

2017 Florida Redevelopment Association Annual Conference

(re) imagine. (re) develop. (re) invigorate.

Professor Martha Kohen
School of Architecture
Director CHU
College of DCP - University of Florida



Community Partners for Visionary Projects

Academic practices with studios for multiple Florida towns and cities generating future possibilities for development and adaptation. We will highlight a range of scales from rural towns to metropolitan areas. In all instances the Communities were involved in providing guidance, feedback and public discussions of the proposals. In this short presentation I would like to focus on the range and scale of some of the projects . We believe these visions help advance new ideas.

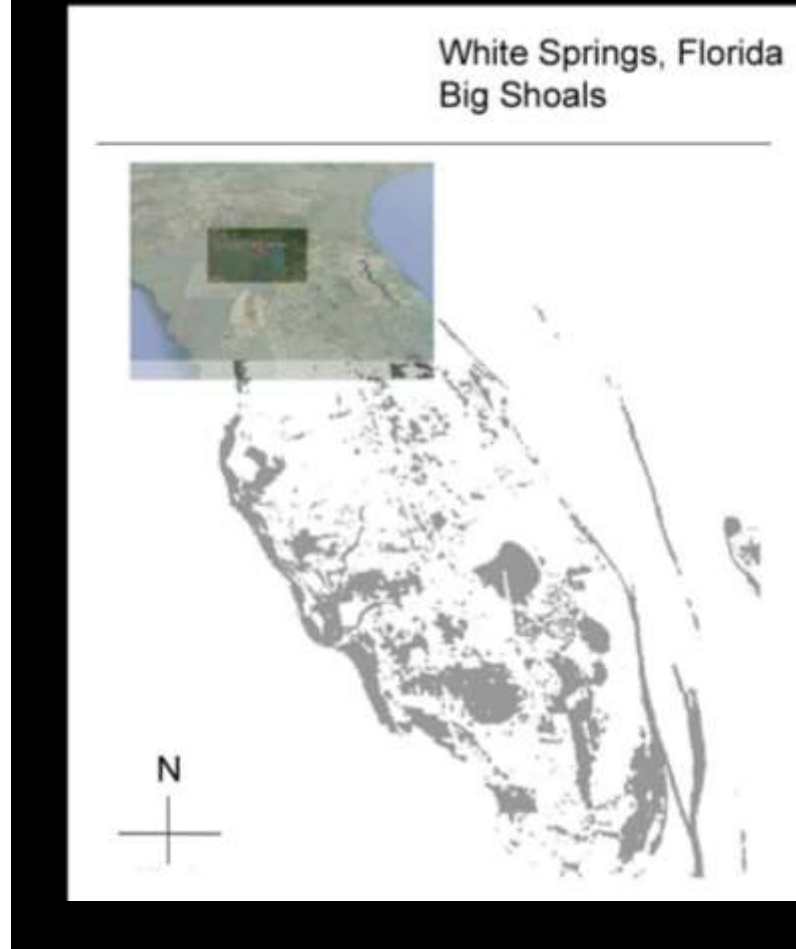
2010-17



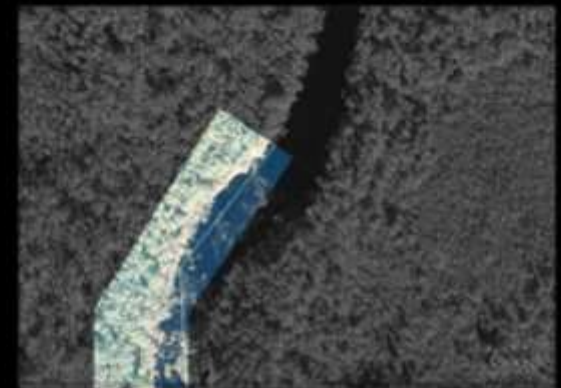
WHITE SPRINGS

Observatories on the Suwannee Shoals

In a pristine environment under the Park Service jurisdiction a 3rd year studio designed multiple alternatives for observatories on the Big Shoals of the Suwannee River emphasizing natural materials, sustainable building practices and spirit building programs to achieve a simple refuge facility to culminate the 1-hour wilderness trek through the wood to the Shoals.



Big Shoals



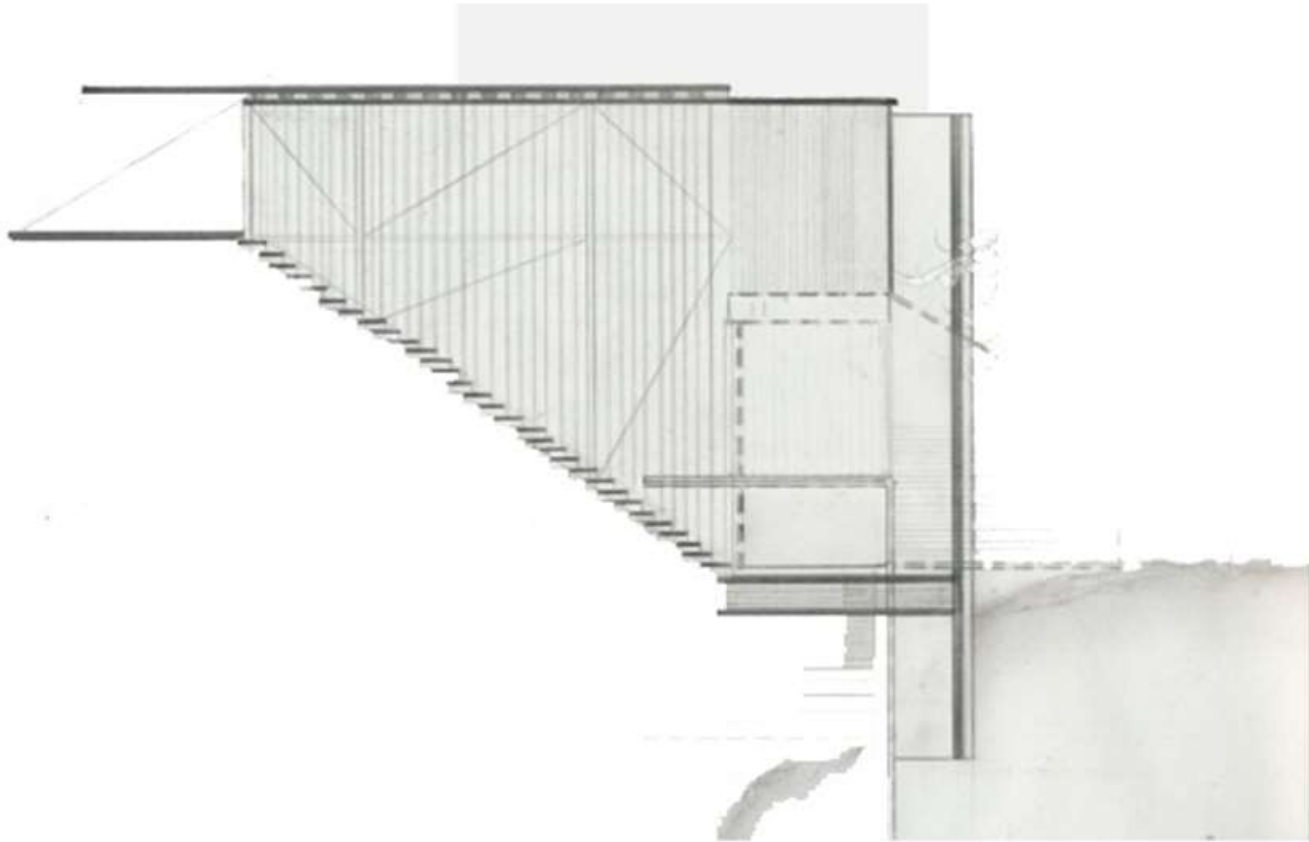
Site located on West Riverbank



J. Cruz | M. Kohen
Fall 2010

Glimson Pavilion

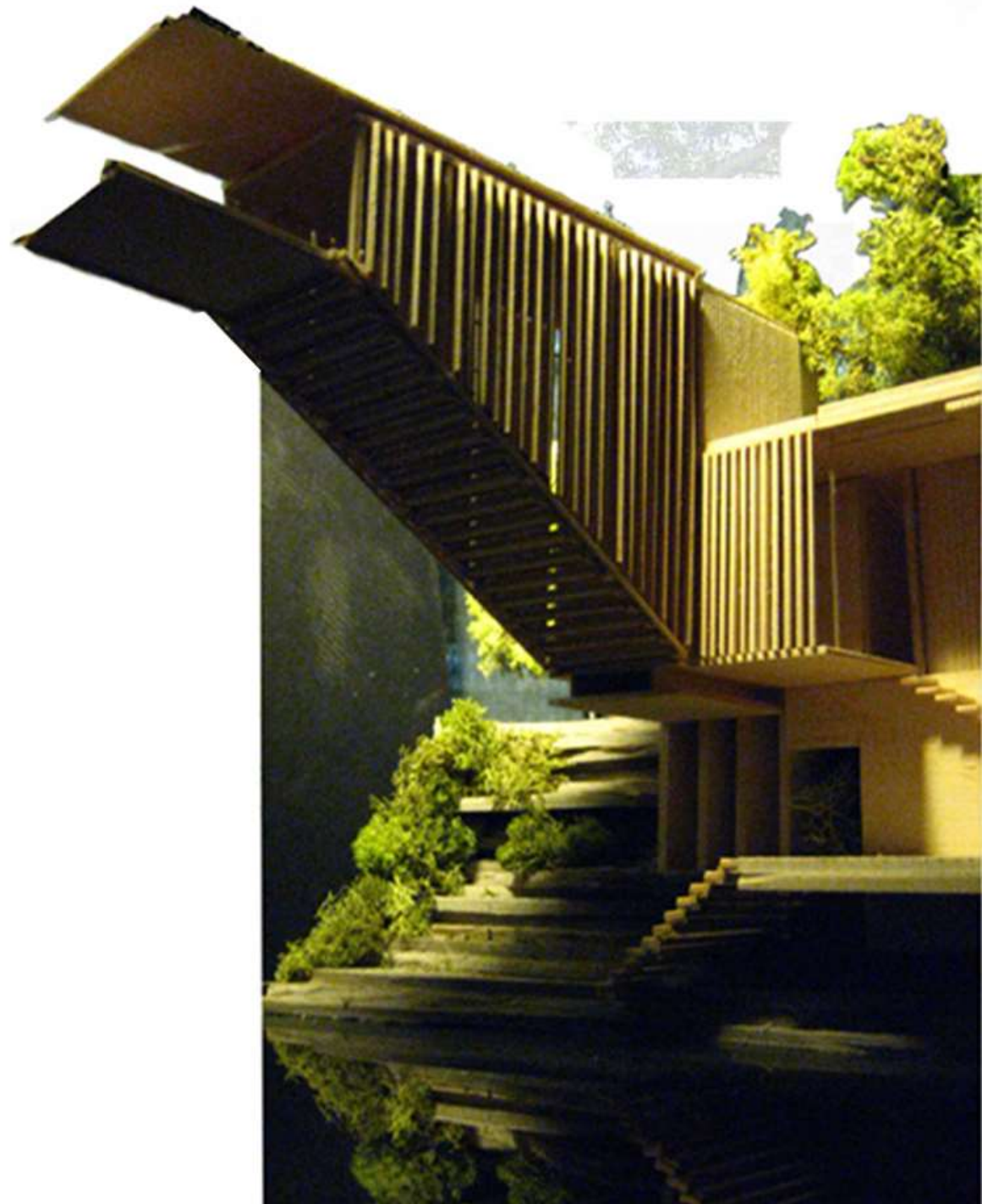
by Jose Cruz



Section North Facade

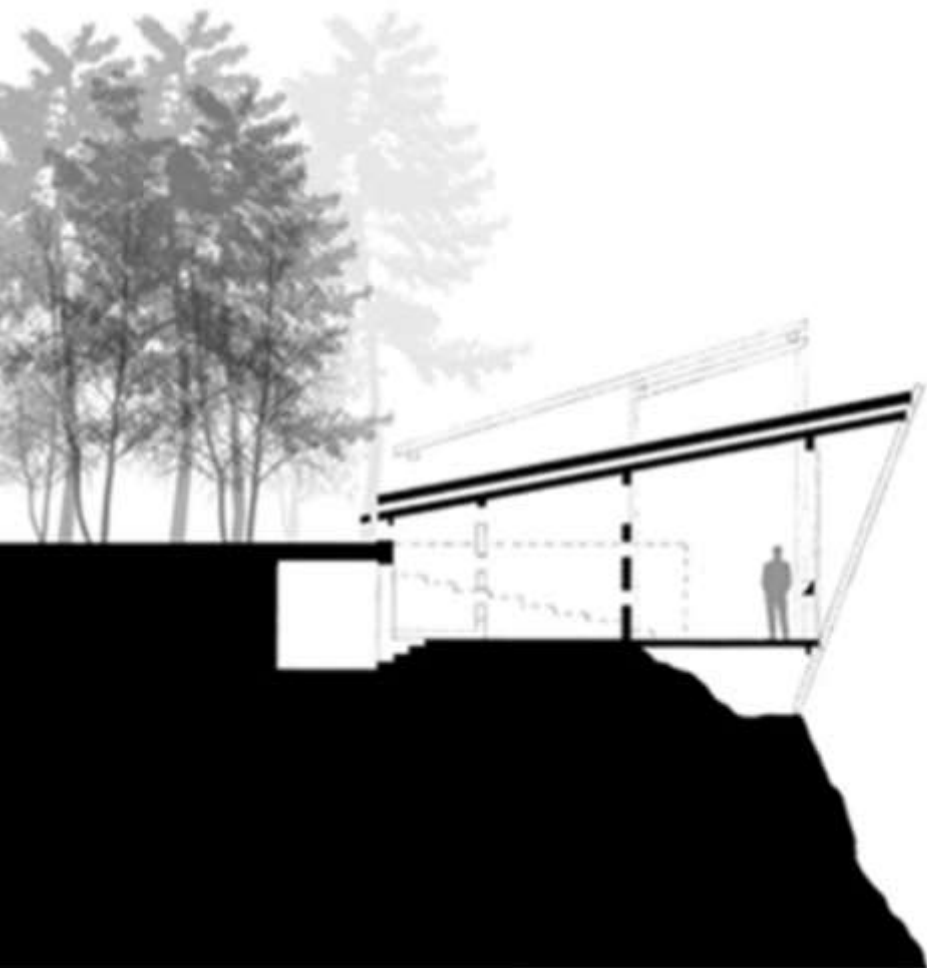
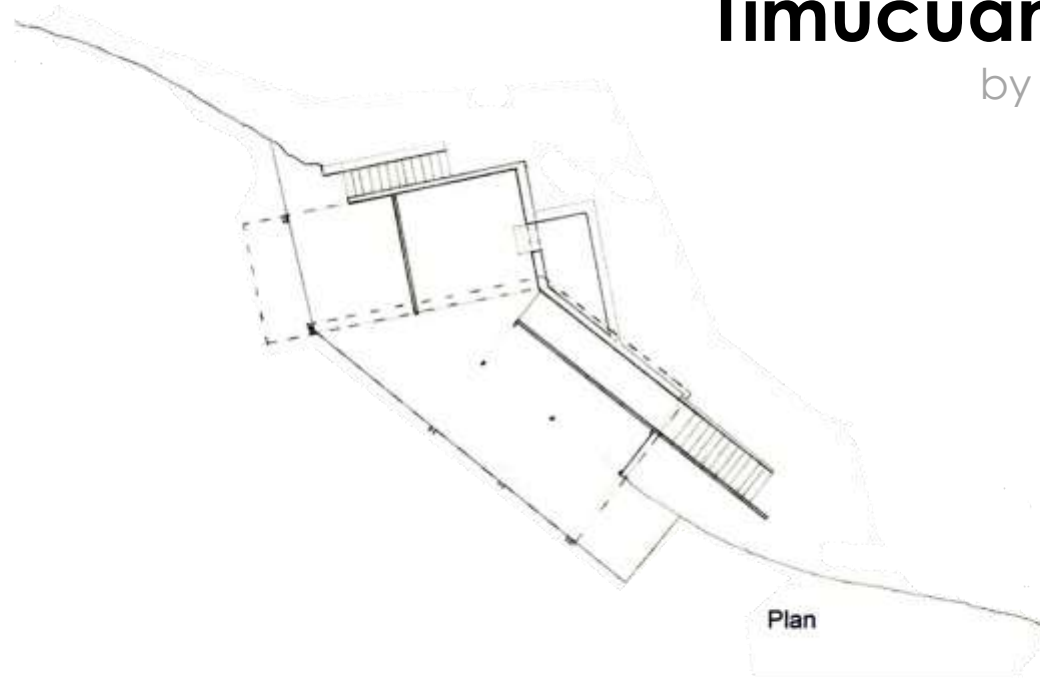
Striations

by Loi Flink

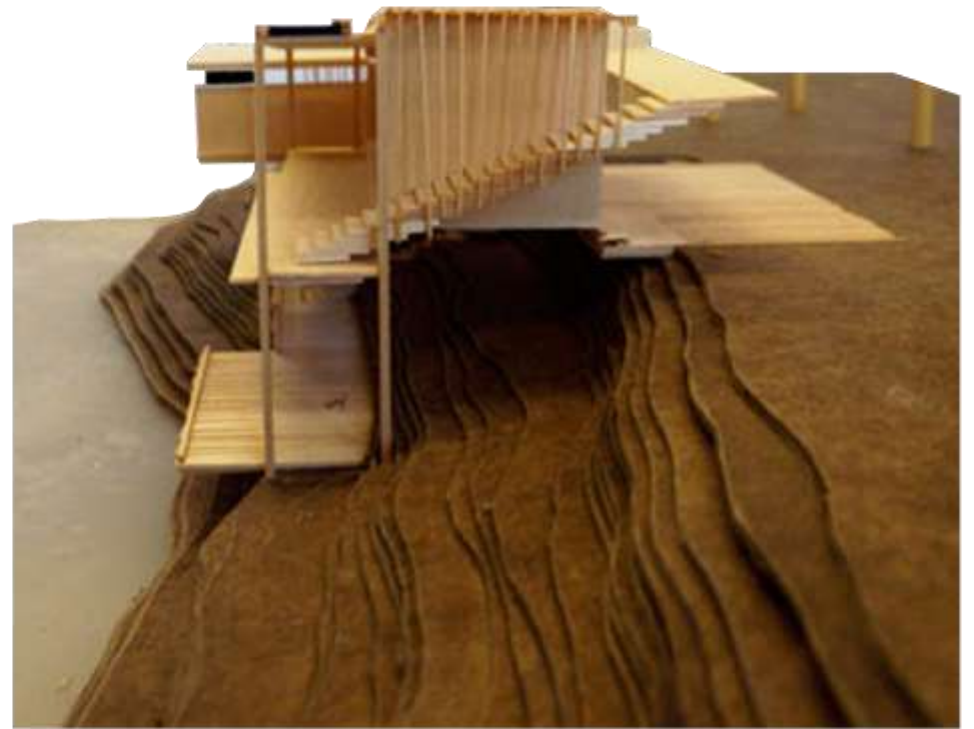
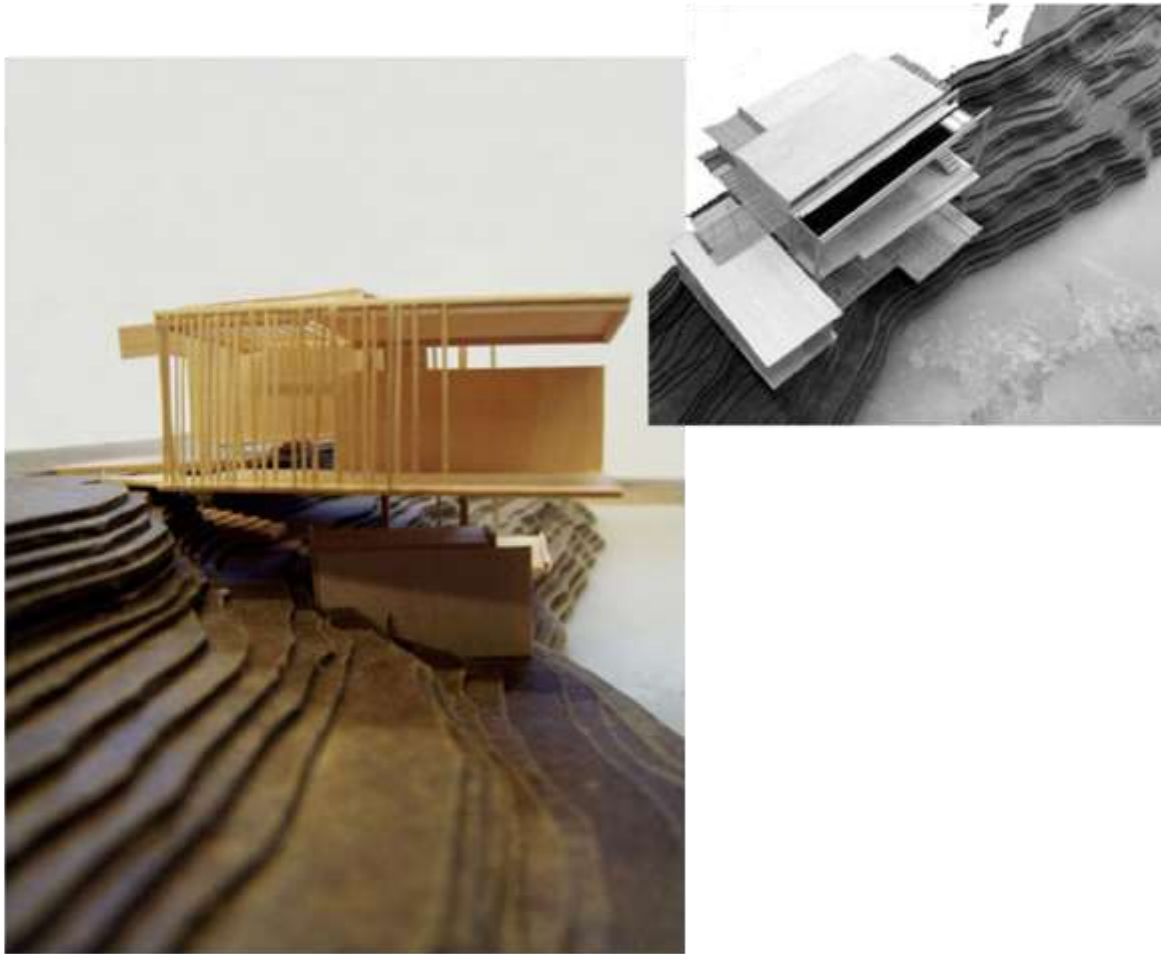


Timucuan Lookout

by Andrew Padron

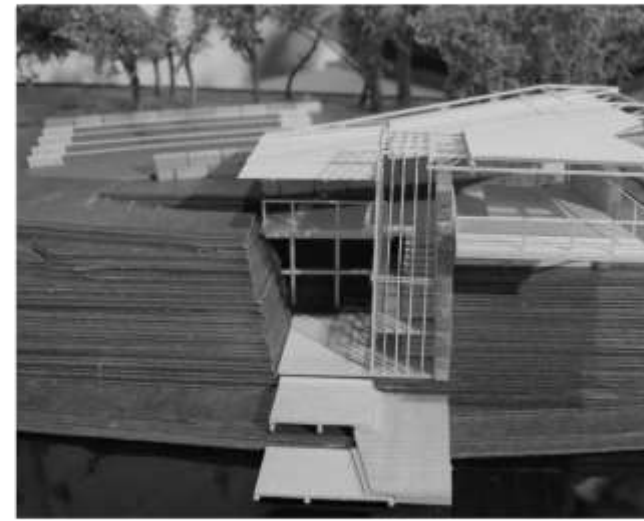


Section



A Rendezvous for Enghlightment

by Eda Tinoco



Archery and Stone Chipping

by Azhar Khan

Master planning the connection between the Stephen Foster Park and the Town of White Springs through interventions in a publicly owned track of land where innovative programs will attract park visitors to engage economically with the town. Five groups of students developed alternative proposals as well as programmatic innovations. This exercise was sponsored by the Mayor of the Town of White Springs and gathered funding from the Florida Department of Economic Opportunity.

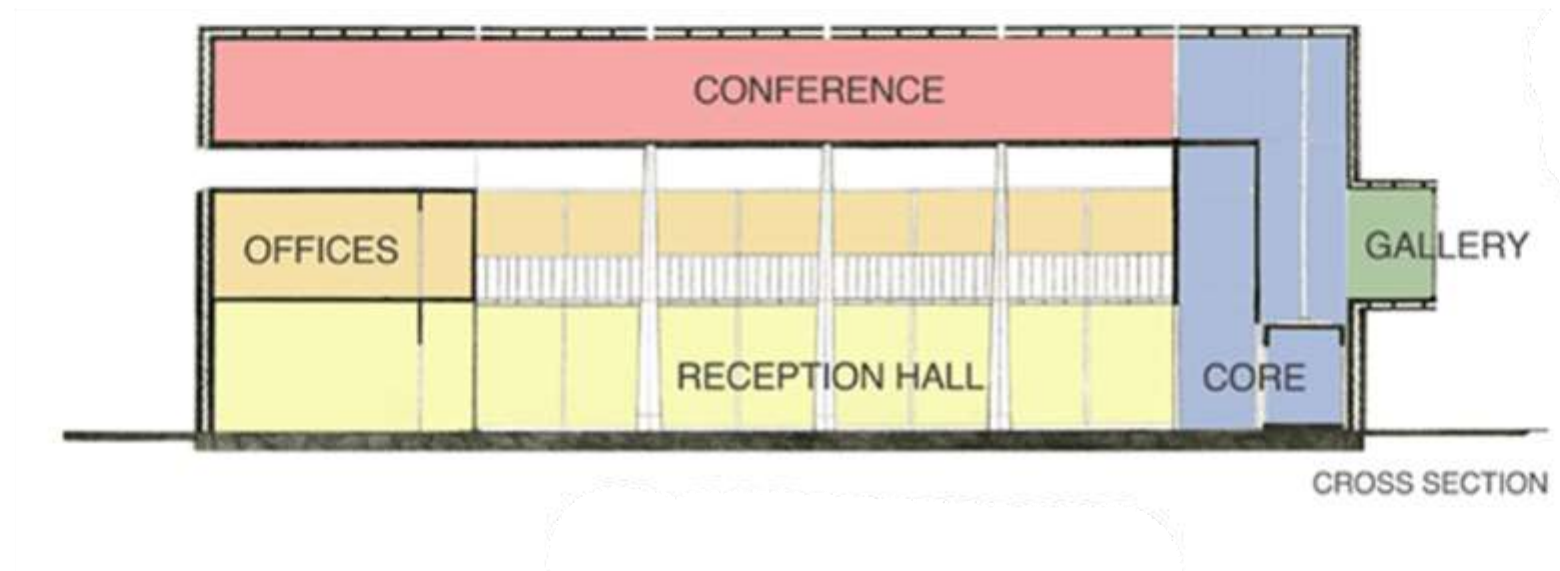
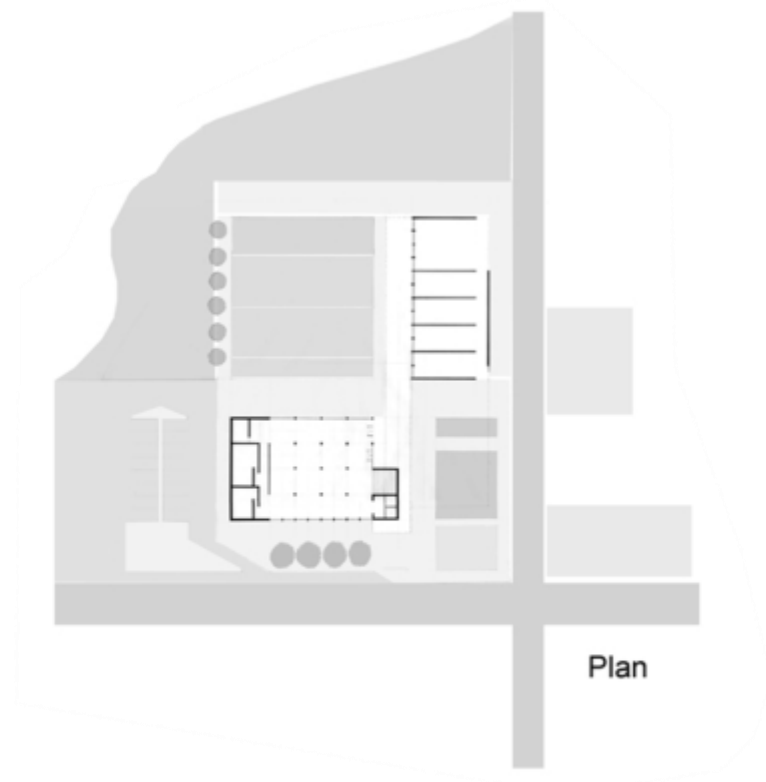


Masterplan Proposals

Economic Development Proposals

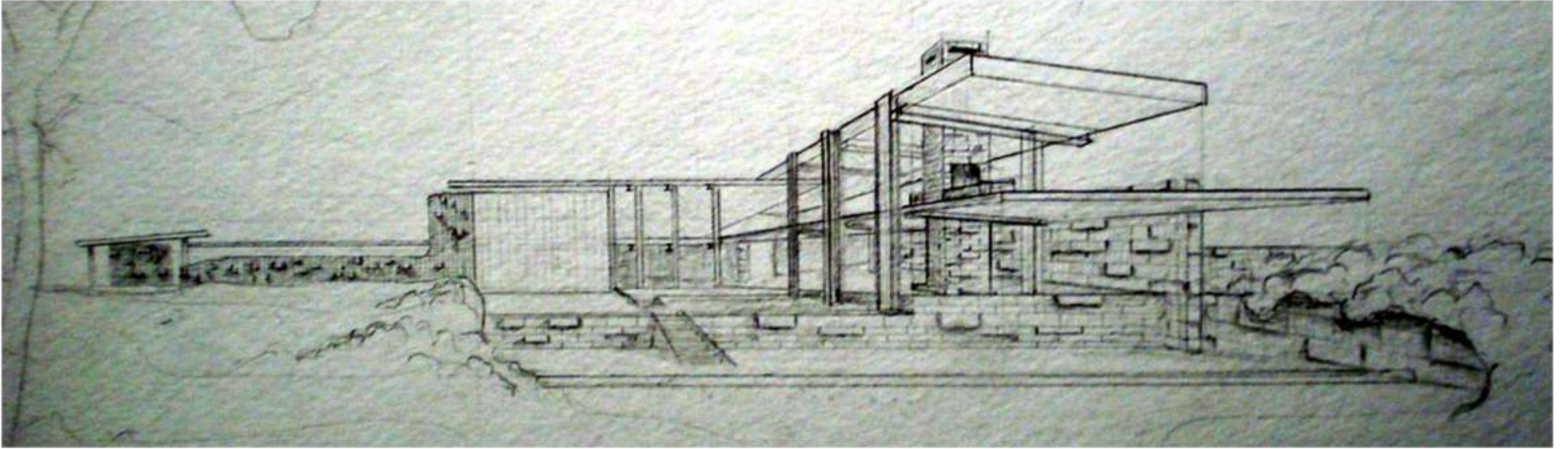
Programmatic Explorations

- Event Center
- Folk Arts School
- Restaurant
- Eco-Lodge



Suwannee Square

by Jose Cruz

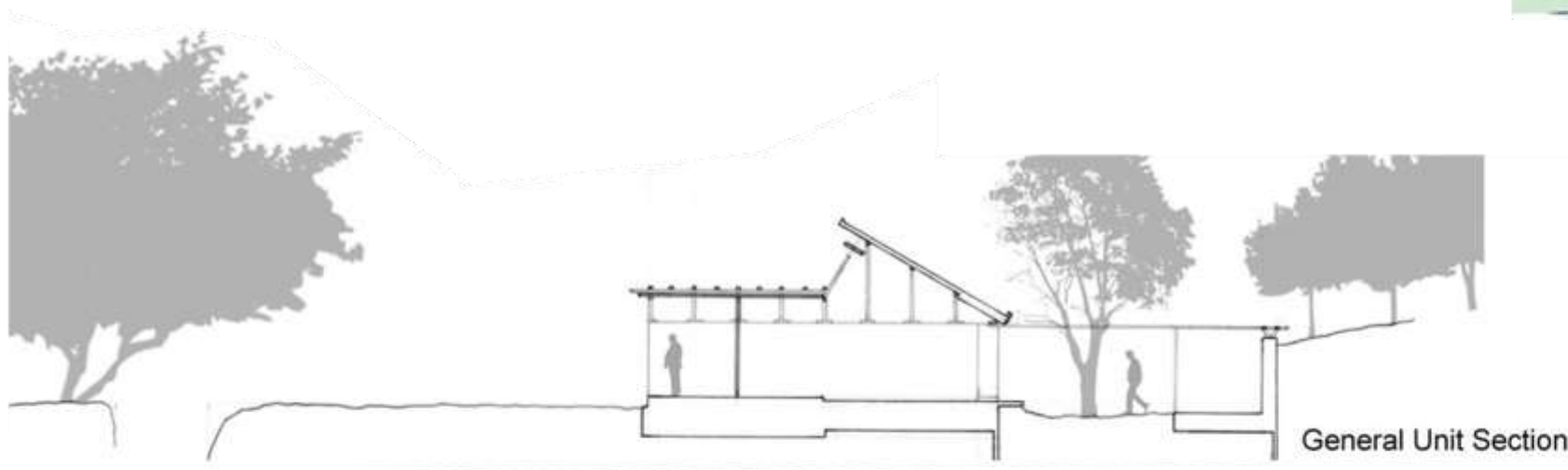
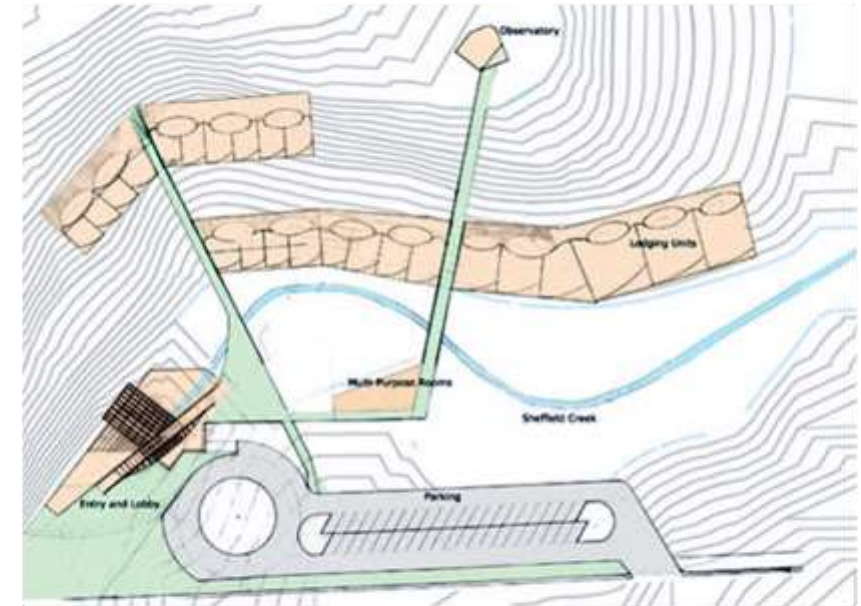
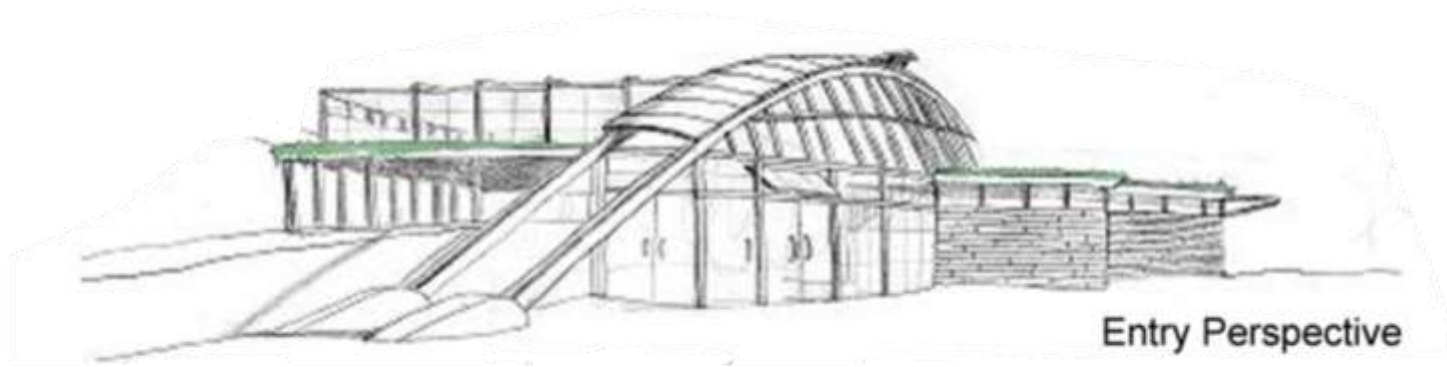


White Springs-Restaurant: Reviving an Identity

by Andrew Padron

Muscadine Eco-Lodge: Heritage Crossings

by Azhar Khan



Imagining alternative uses for the former Carver School 5-acre urban vacant lot with an emphasis in community building for a decaying neighborhood. In this case, students created inclusive programs and public space for sports, education, lodging, and entertainment. This exercise was followed by a design built project for a band shell that was built by another class the following year. Working with a class of economy students, we added a layer of economic feasibility choices

2014

Carver Recreational Center White Springs, Florida

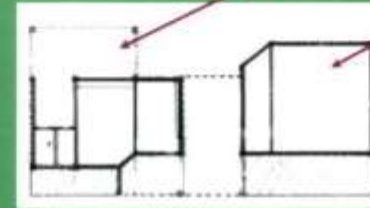
URP6541 - Fall 2014

Social Cost-Benefit Analysis: Catherine Culver
Conceptual Drawings: Erik Eslinger

Carver Recreational Center: Floor Plan

Building 1:

- Recreation space including restrooms, business & tech center, and administrative space 30' x 60' or 900 sq ft
- New office construction in N.E. Florida = \$66.00/sq ft
\$59,400 (BuildingJournal.com, n.d.)



Building 2:

- Multiple recreation open space for half-court basketball, volleyball, exercise classes, and general recreation activities. The recommended size is 60' x 80' or 4800 sq ft (Northern Arizona University, 1990)
- New commercial gym construction in N.E. Florida = \$74.73/sq ft
\$358,704 (BuildingJournal.com, n.d.)

The total construction cost estimate \$418,104

Carver Recreational Center: Site Plan



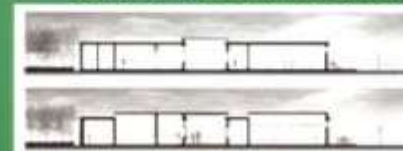
Multi-purpose
Recreational Center
Group meeting rooms
Individual meeting spaces
Covered walkway/entrance
Restrooms

Multi-purpose Outdoor Area
Covered gazebo
Large paved area

Carver Recreational Center: Business Center

Possible Use #1: Small business development using skills of unemployed to create a new business, such as:

- Telephone answering
 - Tourism, reservations, general business
- Basic accounting
- Customer service center
- Order-processing center
- Basic services business development



Possible Use #2: Tourism business development

- Bed & Breakfast training
- Small business training improve/develop
 - Café, retail, tour guides
- Historic preservation grant management
- Eco-tourism
 - Birding, hiking, biking, water, guides
- Heritage tourism
 - White Springs history
 - Black History Trail
- Tourism marketing
 - Website, signage, maps

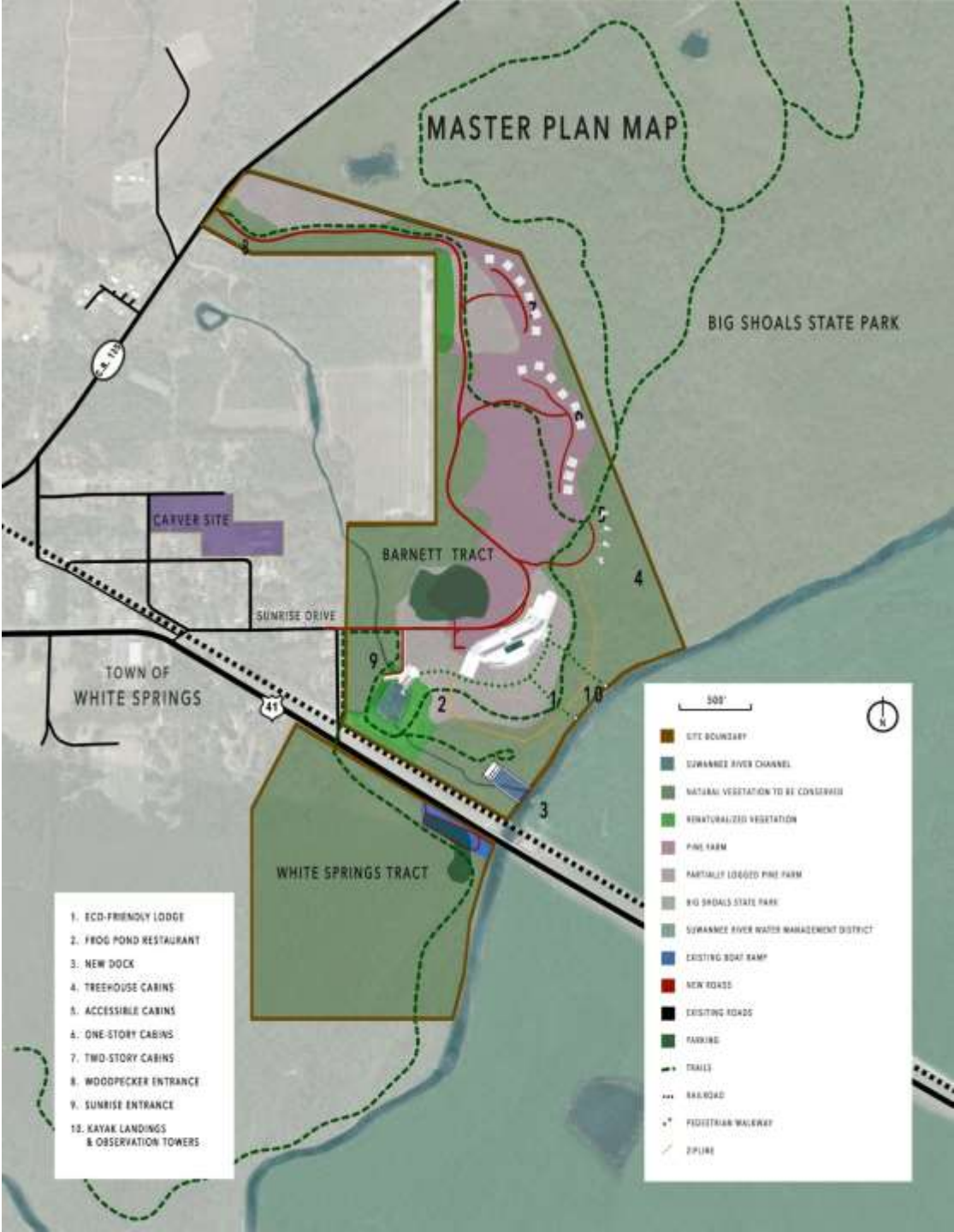
Carver Recreational Center

Recreational Center	2015	2020	2025	2030	2035	2040	2045
Costs							
Mortgage	418,104.00	378,164.67	329,398.88	269,856.03	197,154.40	108,395.96	0.00
Maintenance	4,560.00	4,560.00	4,560.00	4,560.00	4,560.00	4,560.00	4,560.00
Program Staff	16,640.00	33,280.00	41,600.00	49,920.00	99,840.00	124,800.00	149,760.00
Maintenance Staff	8,320.00	16,640.00	20,800.00	20,800.00	33,280.00	66,560.00	83,200.00
New business staff	16,640.00	33,280.00	41,600.00	49,920.00	99,840.00	124,800.00	149,760.00
Total Costs	464,264.00	465,924.67	437,958.88	395,056.03	434,674.40	429,115.96	387,280.00
Benefits							
Venue Rental Income	1,000.00	1,500.00	1,500.00	2,000.00	2,500.00	3,000.00	3,500.00
B&B Income White Springs	146,000.00	219,000.00	292,000.00	328,500.00	36,500.00	37,960.00	40,150.00
Retail Income	14,600.00	21,900.00	29,200.00	32,850.00	365,000.00	379,600.00	401,500.00
Bed taxes	2,920.00	4,380.00	5,840.00	6,570.00	7,300.00	7,592.00	8,030.00
Jobs	41,600.00	83,200.00	104,000.00	120,640.00	232,960.00	316,160.00	382,720.00
Total Benefits	206,120.00	329,980.00	432,540.00	490,560.00	644,260.00	744,312.00	835,900.00
Net Present Value	-258,144.00	-135,944.67	-5,418.88	95,503.97	209,585.60	315,196.04	448,620.00

Carver School & Barnett Track sites as a Community Resource

Masterplan

by Andrew Bawtinheimer, Hector García & Craig Nightingale





The Carver Green
by Hector García



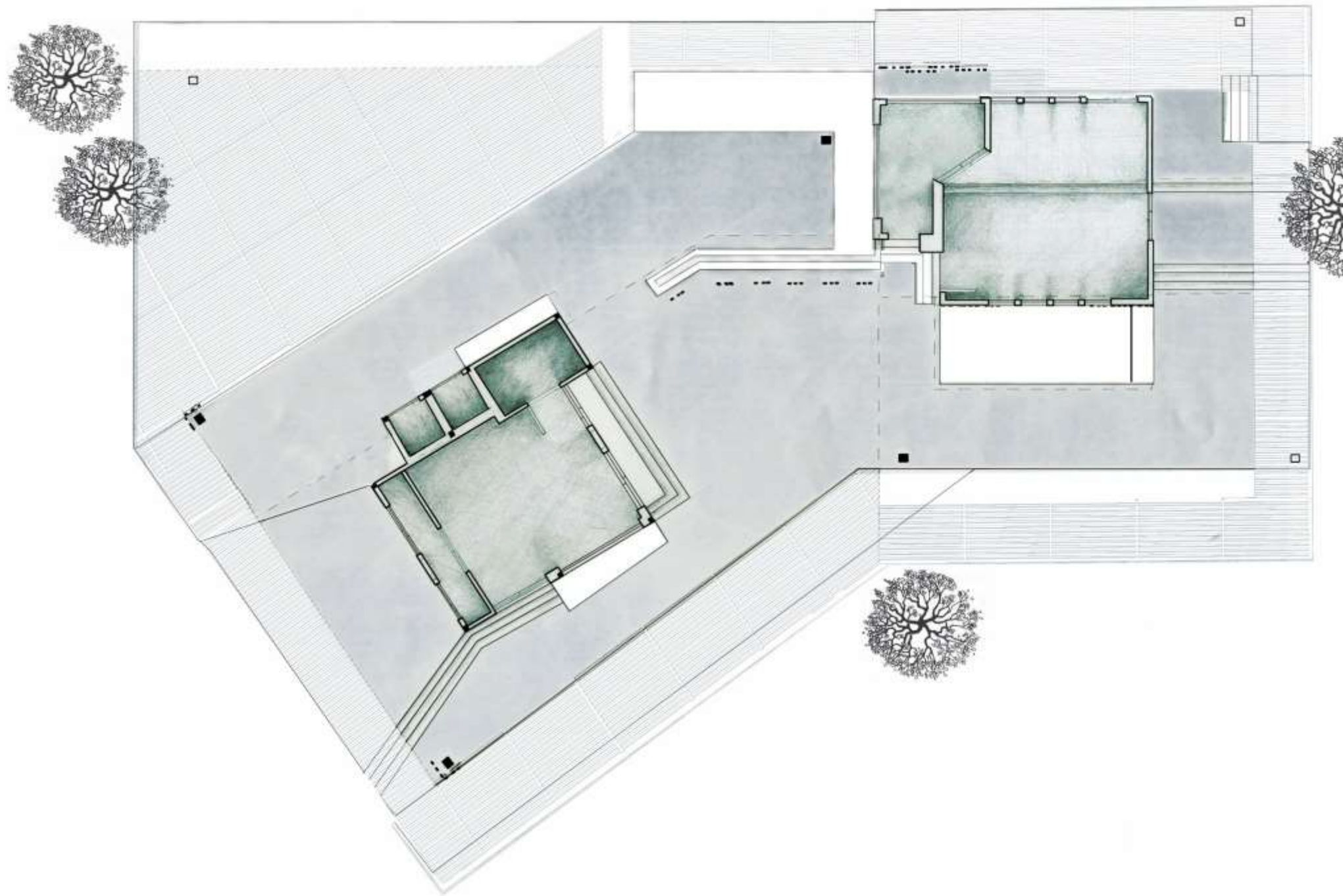


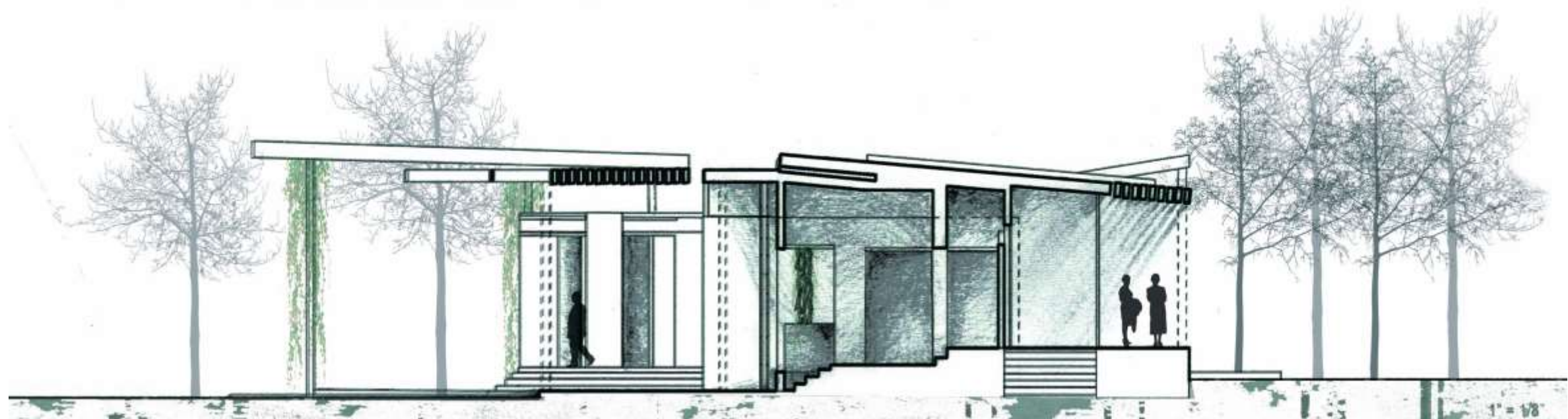


Canvas for the Youth

by Maria Camila Jaramillo





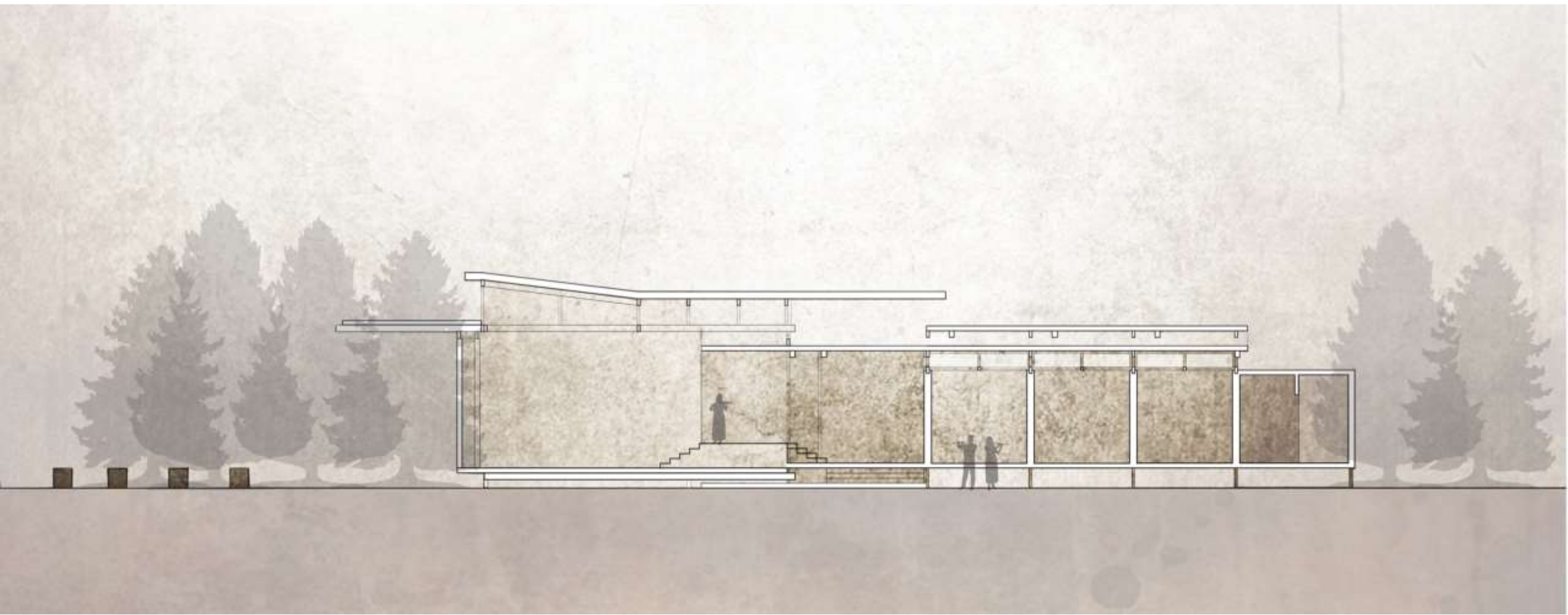


An architectural rendering of the interior of a modern building, likely a music venue. The space features a high ceiling with a complex network of dark metal beams and wooden planks. The walls are clad in vertical wooden slats. A wide, flat wooden floor leads to a raised platform with a textured, grey surface. On the platform, three people are standing, one holding a guitar. To the left of the platform, a set of wooden stairs leads up. The background shows a large window or glass wall looking out onto a lush green forest. The overall design is minimalist and naturalistic.

Music Bridge

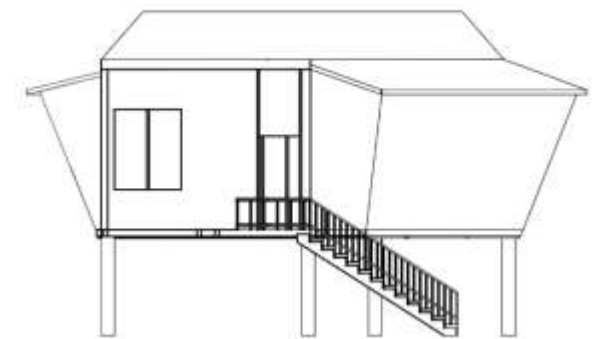
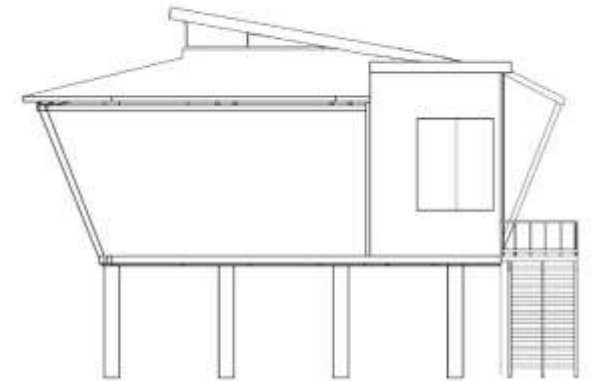
by Sofia Aguirre

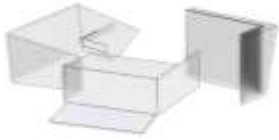






Yaha Lodge
by Kaitlin Myers





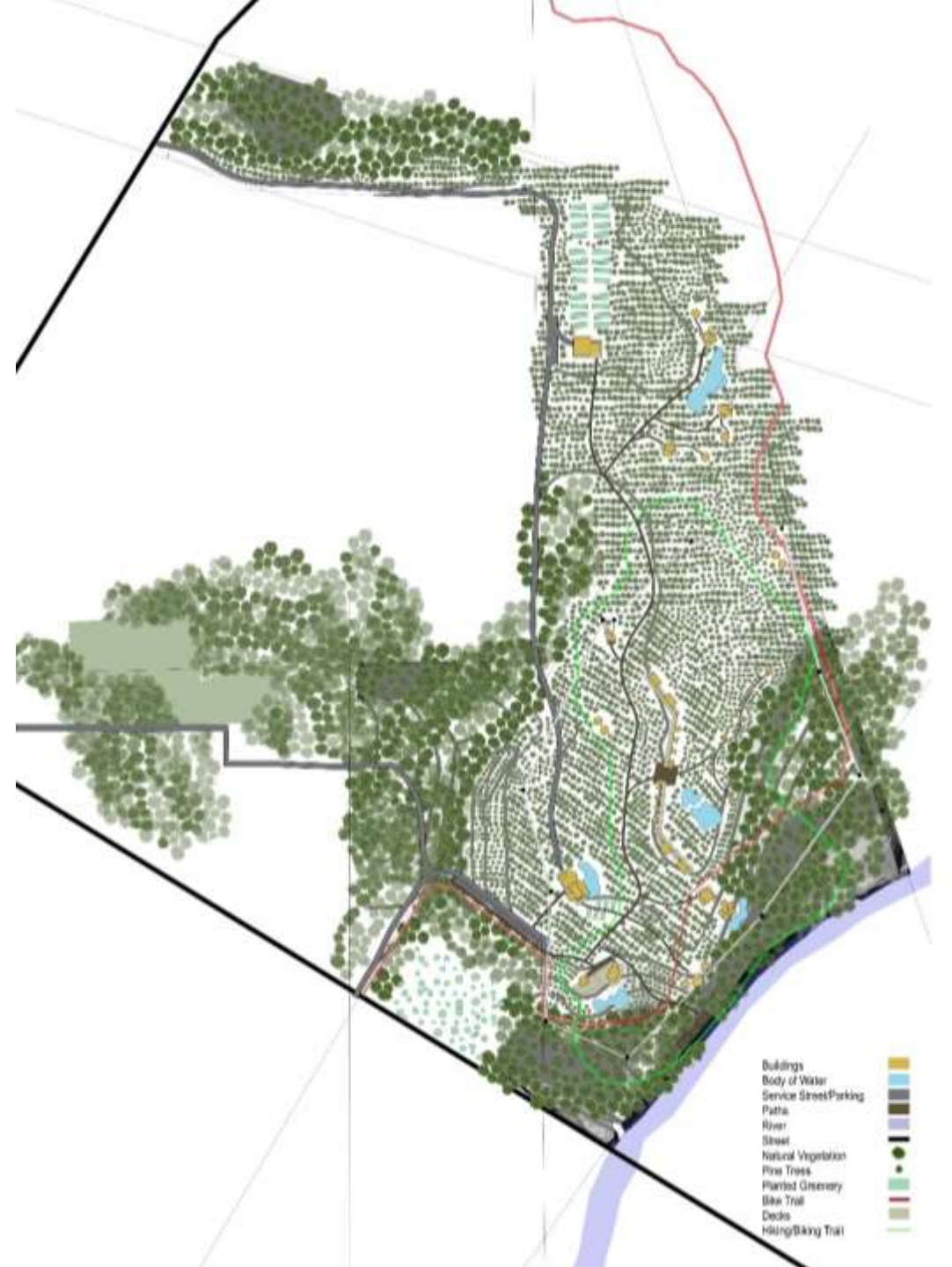
The Suwannee River Ecolodge proposal

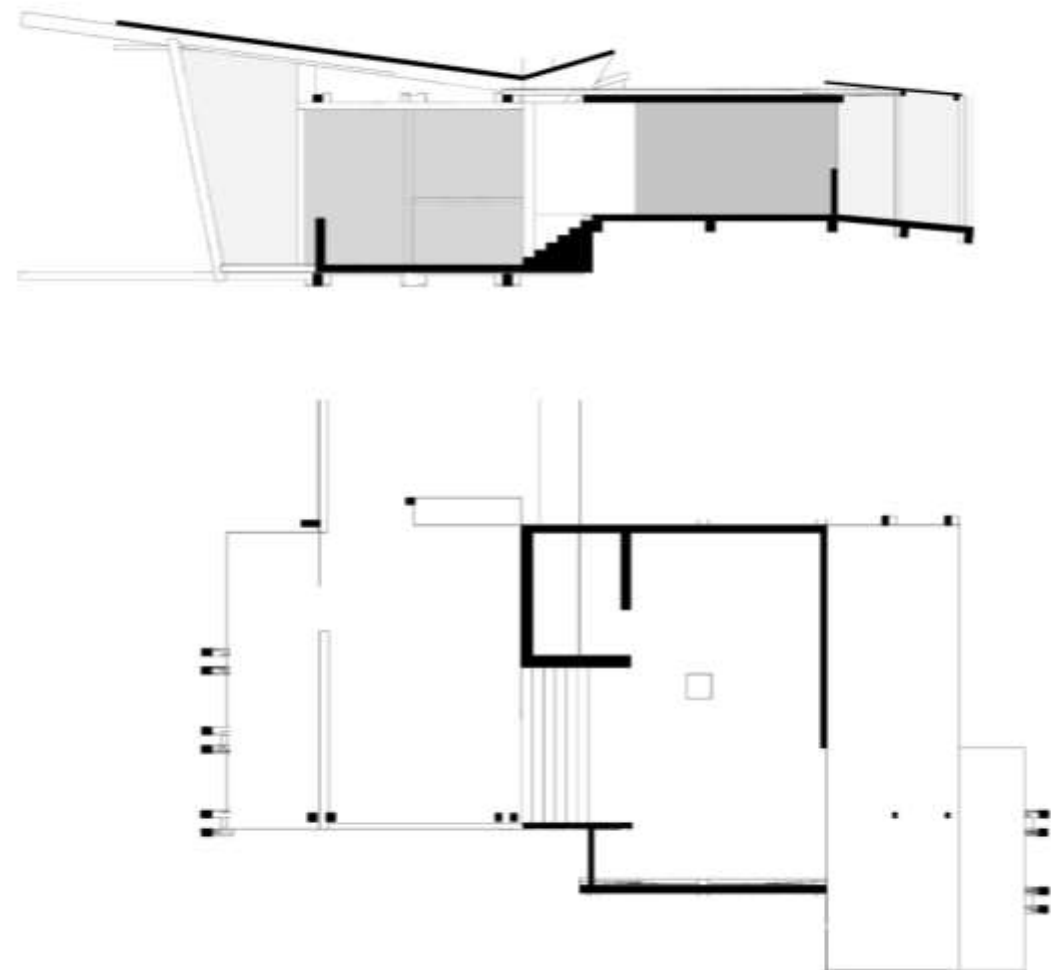
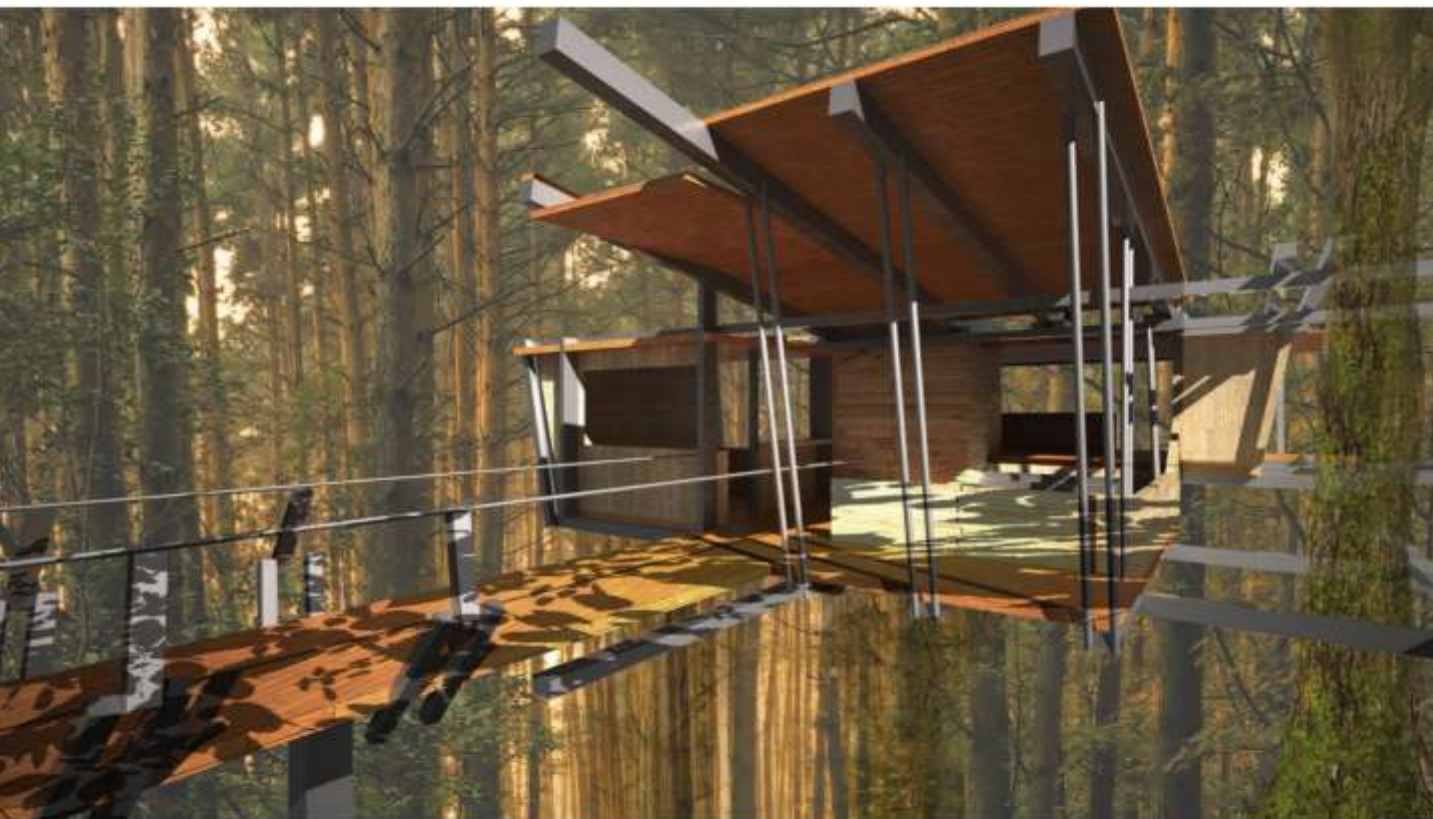
The 100-acre Barnett Track generated alternatives proposals by the students for a nature park area and the inclusion of a larger scale eco-friendly lodge and convention center as revenue generators and job creation for the town.

All the programs developed by the studio included economic feasibility considerations.

Masterplan

by Ana Cordero





Canopy Walk
by Hector García



Masterplan

by Andrew Bawtinheimer, Hector García & Craig Nightingale



Cabins

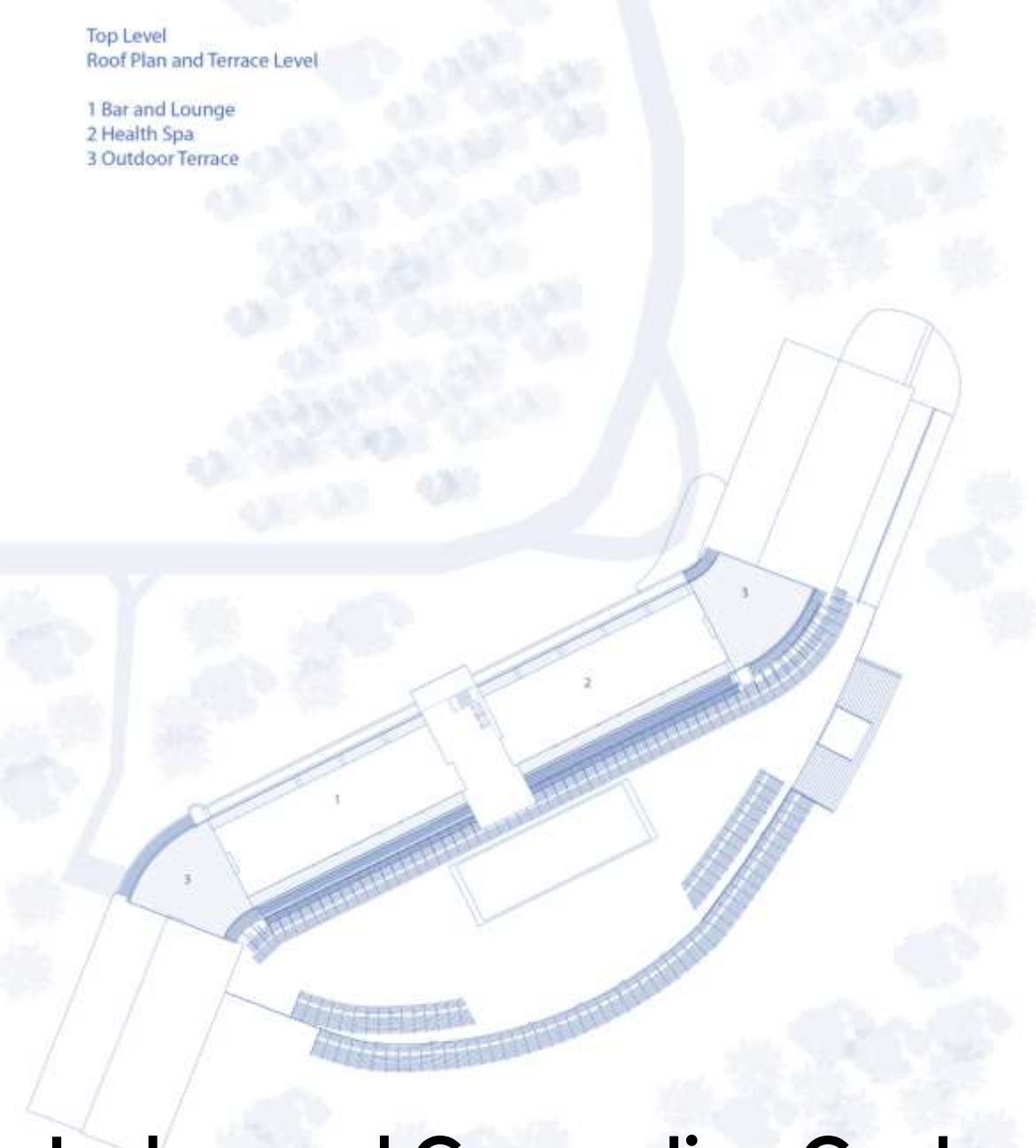
by Andrew Bawtinheimer, Hector García & Craig Nightingale



Cabins

Top Level
Roof Plan and Terrace Level

- 1 Bar and Lounge
- 2 Health Spa
- 3 Outdoor Terrace



Ground Floor
Lobby Level

- 1 Lobby Entrance
- 2 Front Desk
- 3 Lobby Lounge and Bar
- 4 Administration
- 5 Retail Shop
- 6 Living Room
- 7 Family Lounge
- 8 Restaurant
- 9 Breakfast Lounge
- 10 Reception
- 11 Service Space
- 12 Kitchen
- 13 Outdoors
- 14 Mechanical
- 15 Guest Rooms
- 16 Pool
- 17 Pool Deck
- 18 Stage



Sub-Ground Level
Convention Event Space

- 1 Exterior Entrance
- 2 Entrance from Lobby
- 3 Pre-Function
- 4 Bar and Lounge
- 5 Grand Ballroom
- 6 Banquet Room
- 7 Terrace
- 8 Meeting Room
- 9 Kitchen
- 10 Reception
- 11 Service Rooms
- 12 Outfitting



Second and Third Floors
Guest Room Level

- 1 Guest Rooms
- 2 Public Lounge
- 3 Hotel Services



Fourth Floor
Left Guest Suites

- 1 Guest Rooms
- 2 Left Guest Suites
- 3 Public Lounge



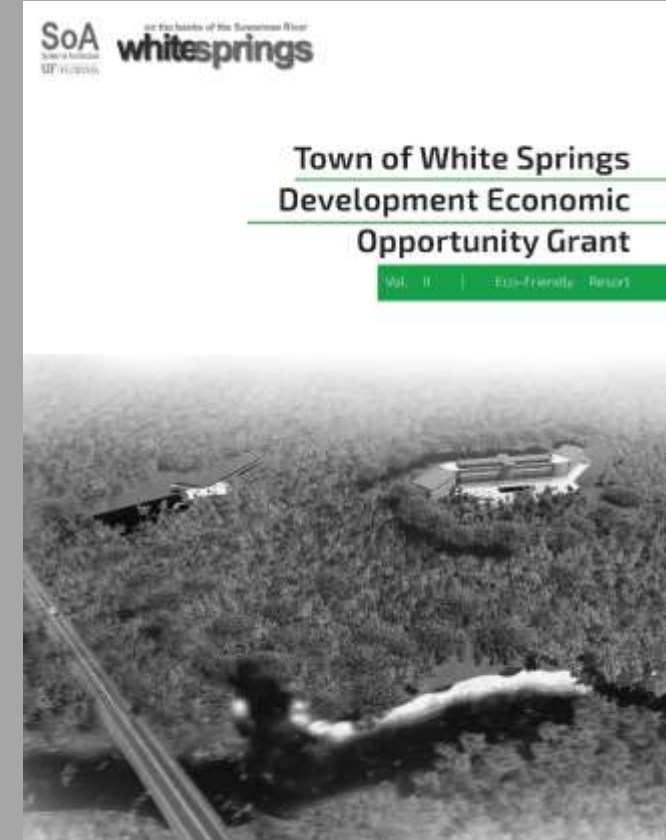
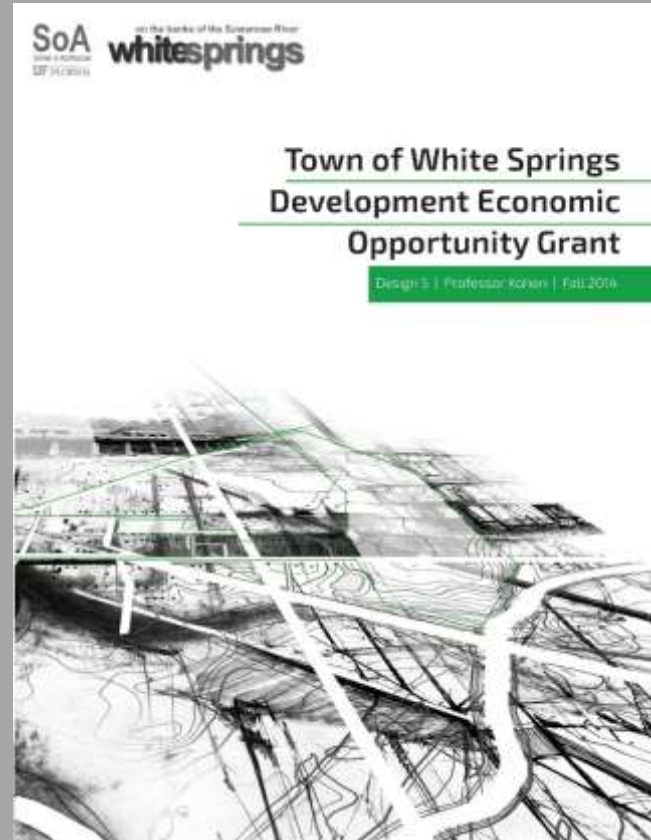
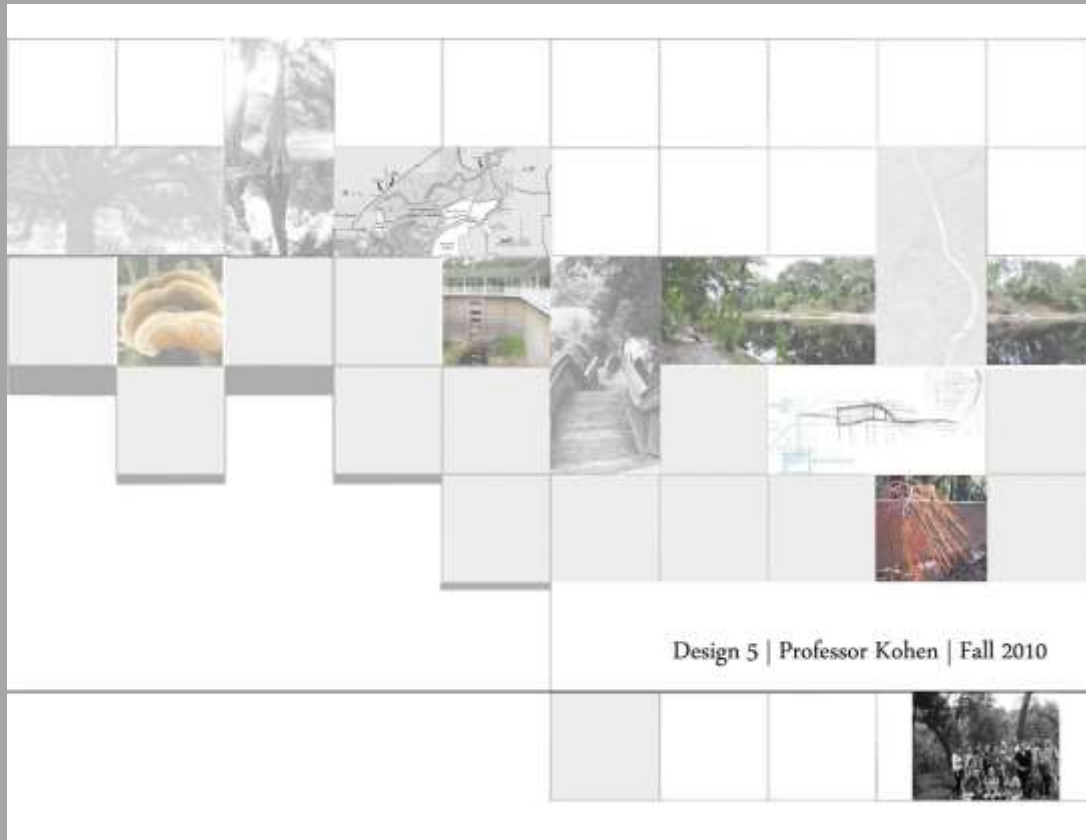
Lodge and Convention Center

by Andrew Bawltinheimer, Hector García & Craig Nightingale





Publications



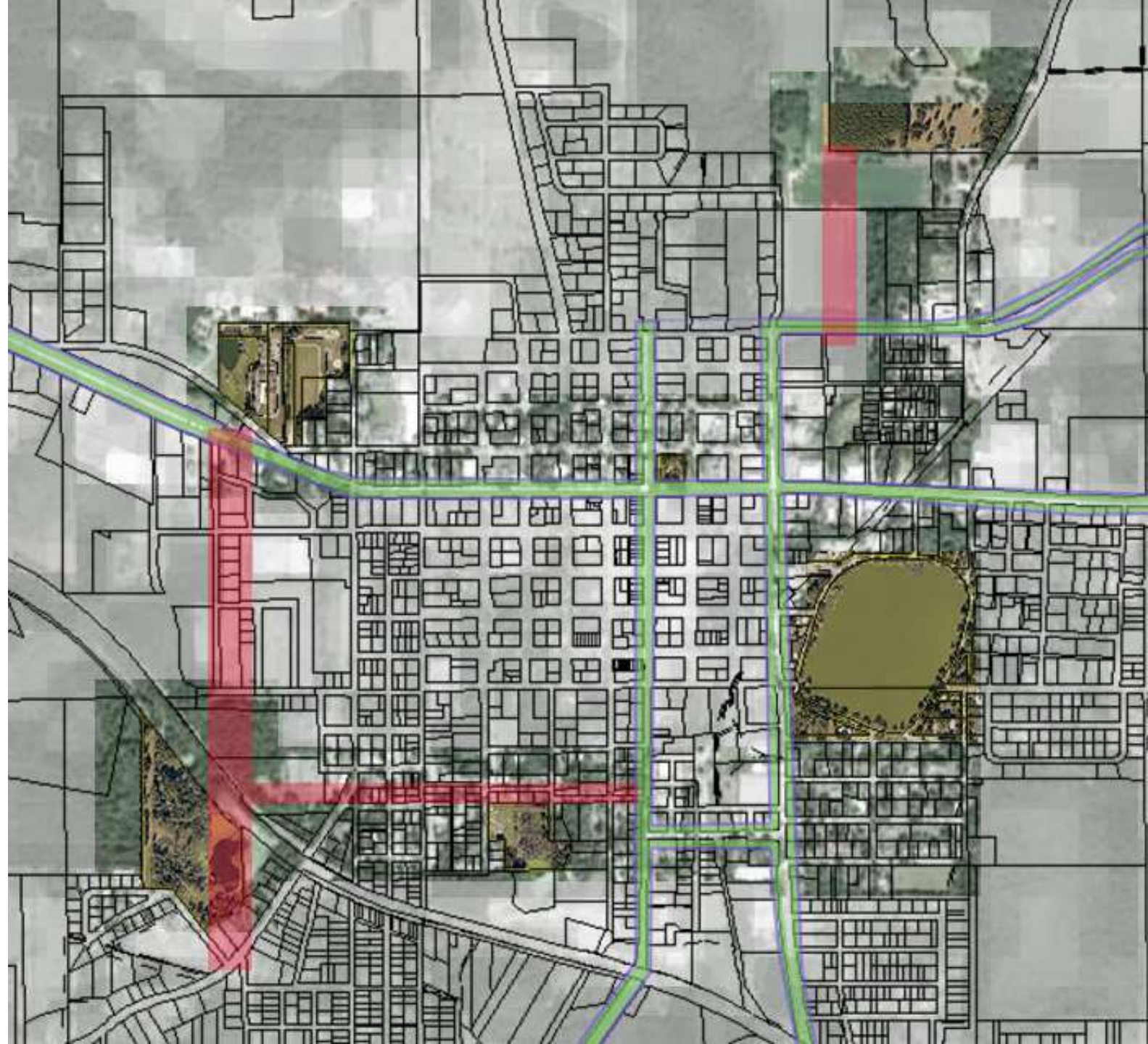
The city of Madison Park System was reviewed by another studio after the City obtained funding for renewal of facilities. The 6 parks vary in size as public spaces range from community squares to a nature preserve. Students adapted projects for the various scales with the objective of enhancing health promoting activities, connecting the different sectors of the city integrating the community college park and the sports facilities, by repurposing buildings and creating new venues. Always with the vision of supporting tourism and the generation of jobs for the city.

2015



MADISON

Madison



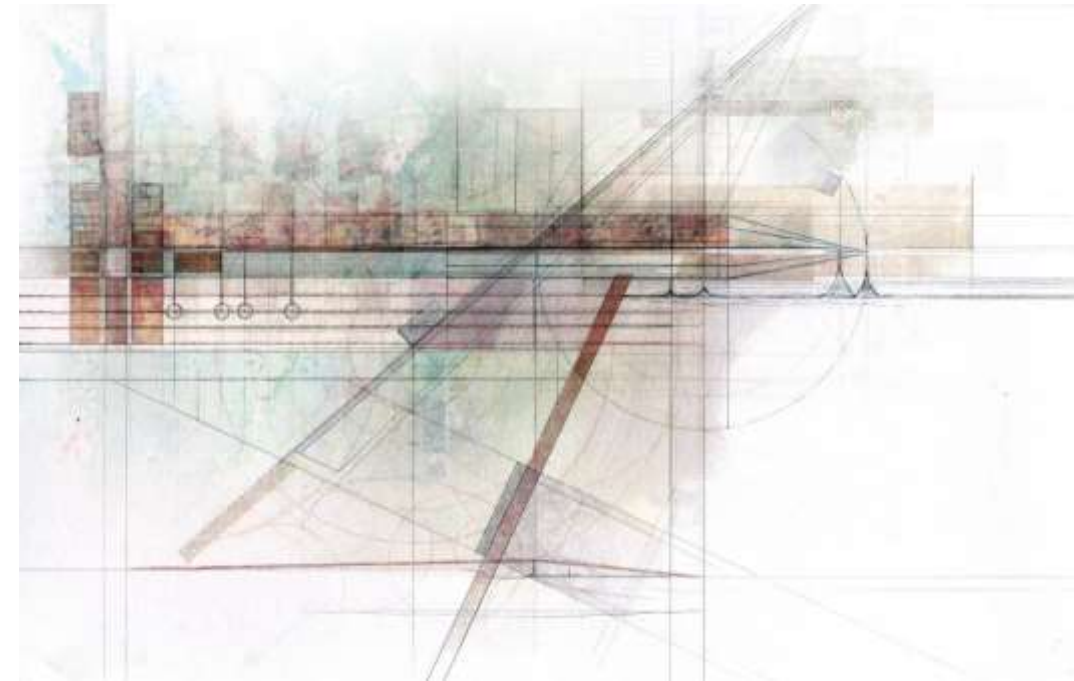


Power House
by Juan Carlos Velasquez



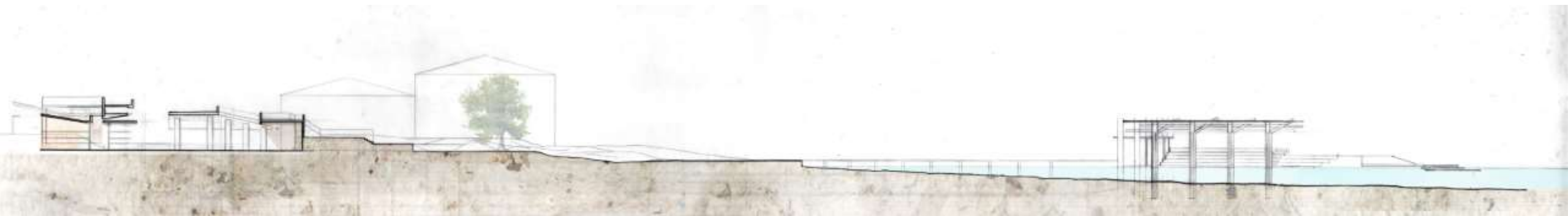
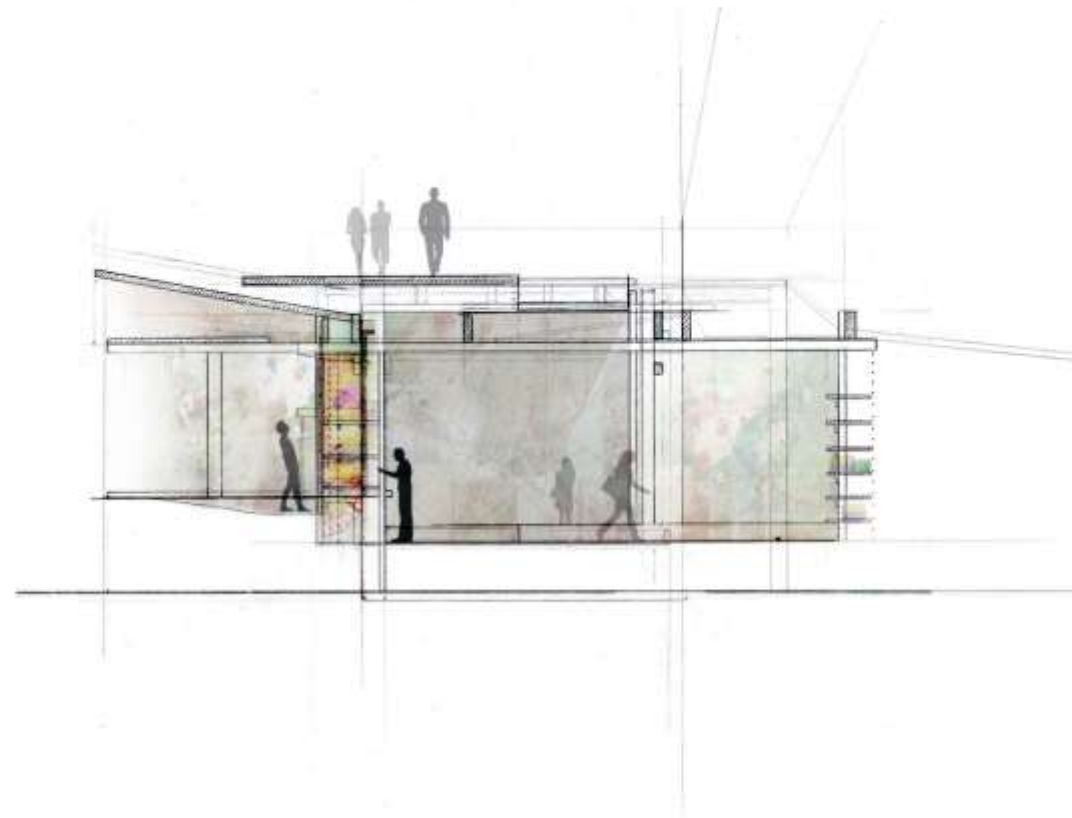
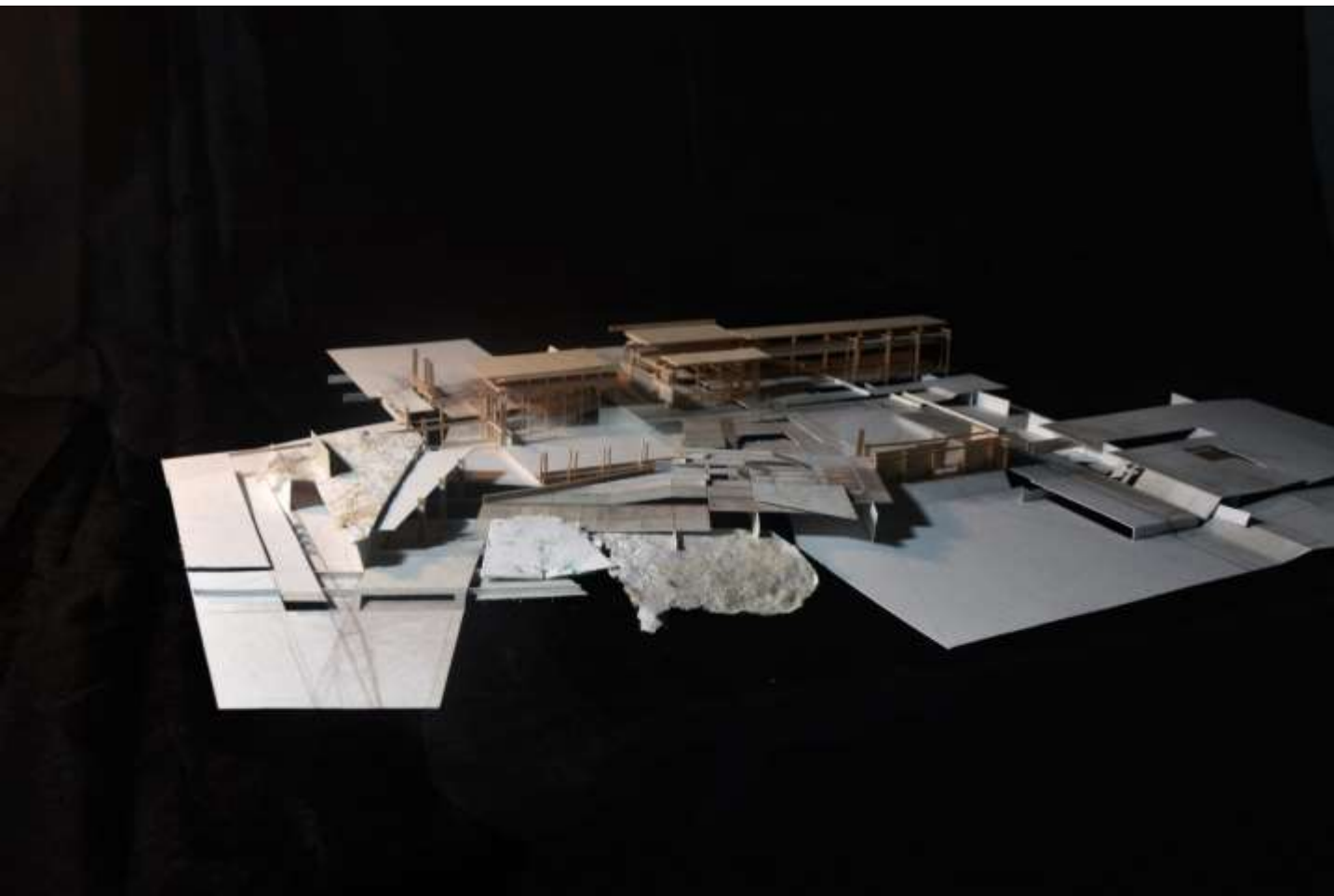


1. Existing Pavilion
2. Floating Stage
3. Covered Market
4. Public Bathrooms
5. Theater Storage



The Pier at Lake Frances

by Christopher Berry







The City of Crescent City

Through an independent study by 4 students and a small city grant, the proposal promoted the enhancement of character of the historic Center street and the opening of new waterfront facilities coupled with a landing and marina.

2012

An aerial photograph of Crescent City, Oregon, showing a coastal town with numerous houses, trees, and a marina. A semi-transparent circular overlay is positioned on the right side of the image, containing the text 'CITY of CRESCENT CITY'.

CITY of CRESCENT CITY

Google

CITY OF CRESCENT CITY

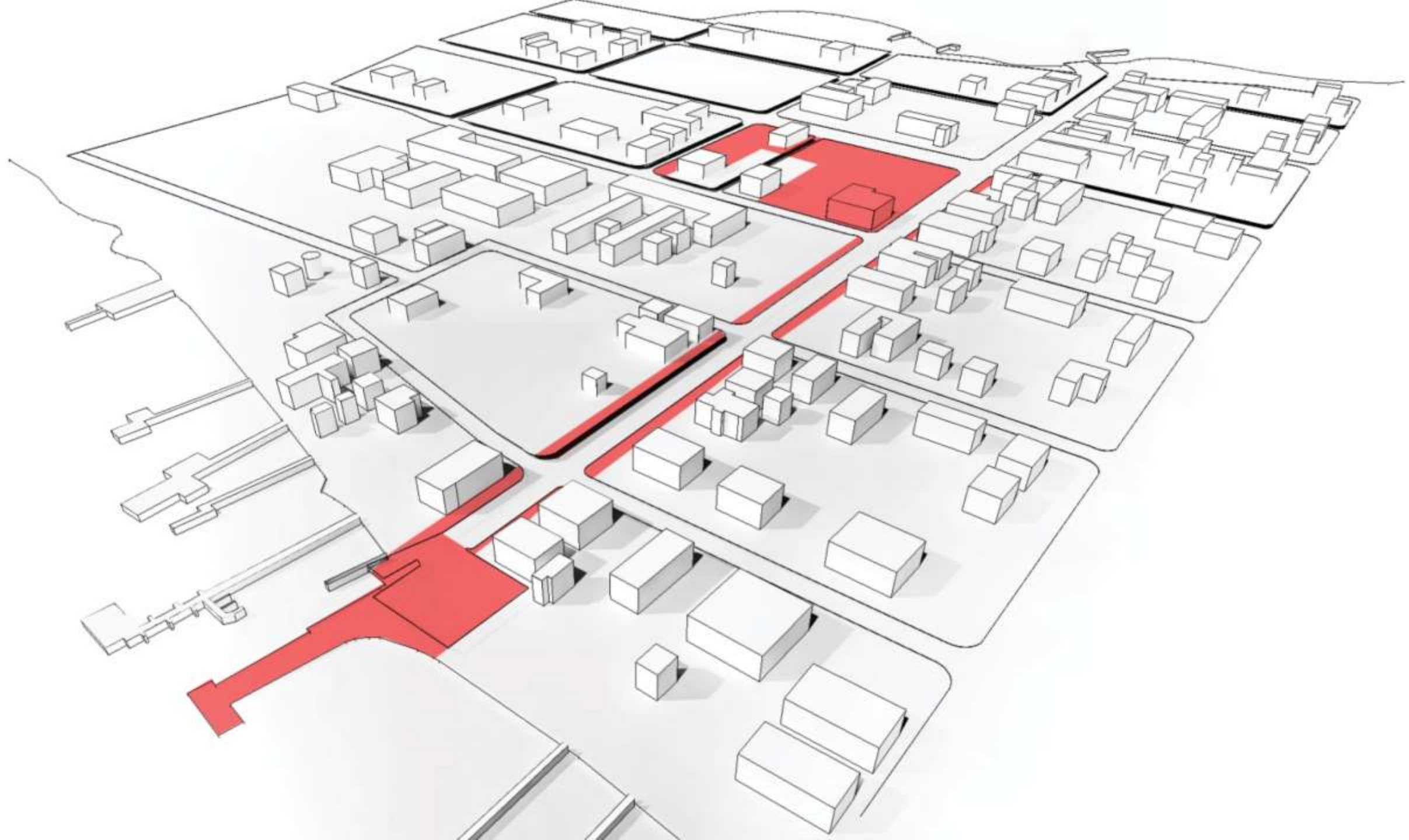


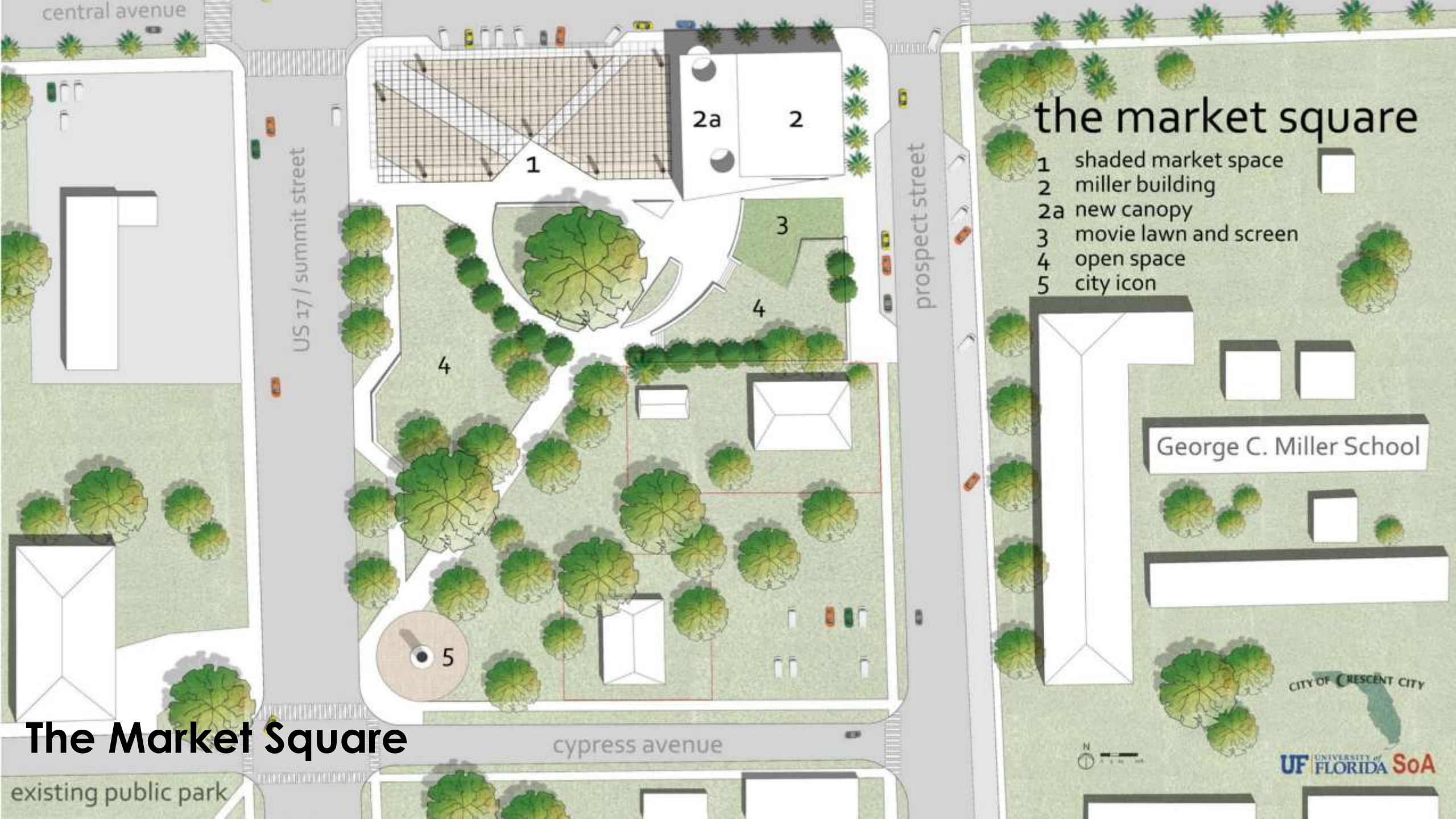
Central Avenue Revitalization

by Robert Connor, Trent McGugin, Stefan Oliver, and Stacy Witschen

lake stella to crescent lake

- 1 - lake stella walk
- 2 - city park
- 3 - the miller building
- 4 - the market square
- 5 - new boat ramp
- 6 - the landing / observation tower





central avenue

US 17 / summit street

prospect street

cypress avenue

The Market Square

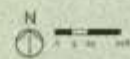
existing public park

the market square

- 1 shaded market space
- 2 miller building
- 2a new canopy
- 3 movie lawn and screen
- 4 open space
- 5 city icon

George C. Miller School

CITY OF CRESCENT CITY



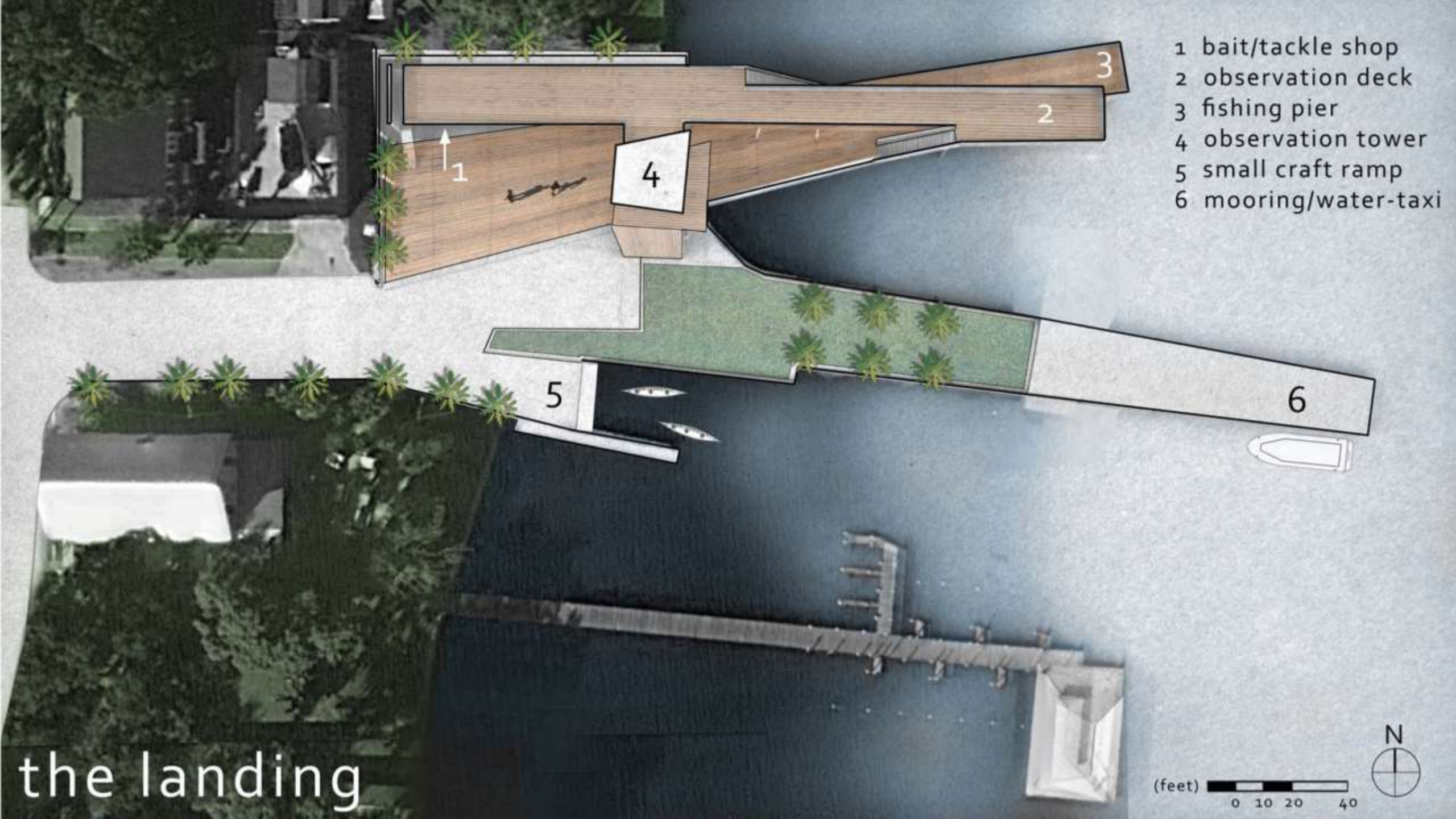
UF UNIVERSITY of FLORIDA SoA



The Miller Building

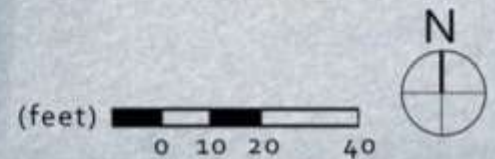


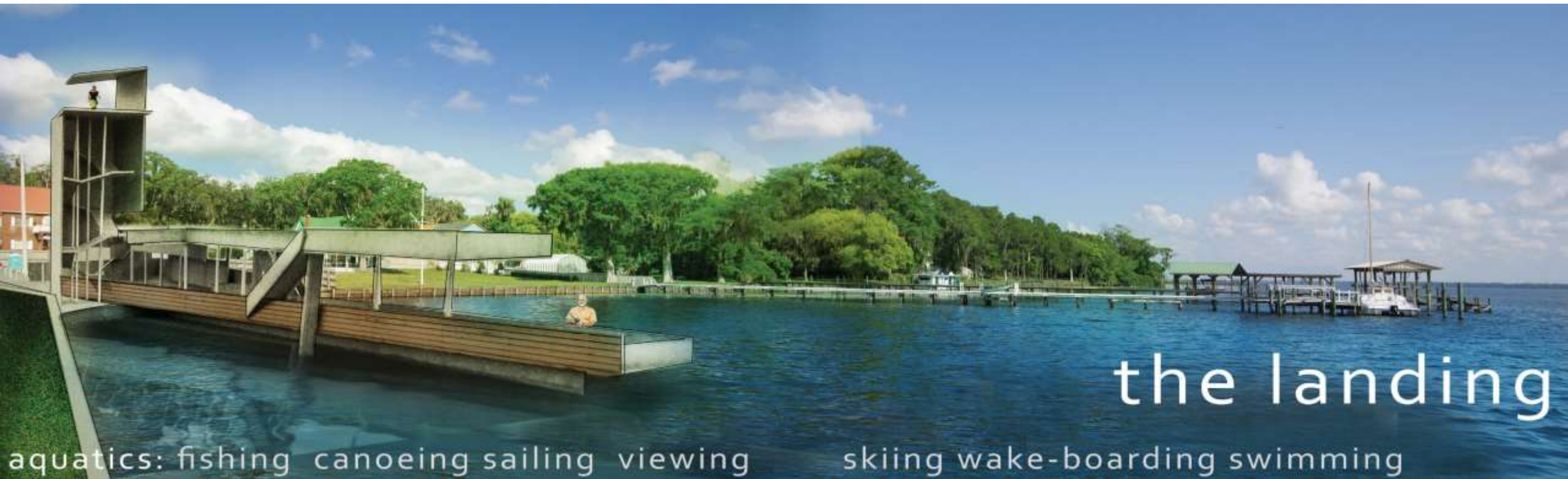
movie night in the park



- 1 bait/tackle shop
- 2 observation deck
- 3 fishing pier
- 4 observation tower
- 5 small craft ramp
- 6 mooring/water-taxi

the landing





the landing

aquatics: fishing canoeing sailing viewing

skiing wake-boarding swimming

Promoted by the **City of Longboat Key** an interdisciplinary team from the college of Design Construction and Planning a graduate studio developed an integrative vision for the resiliency of the barrier island as well as specific economic development proposals after identifying opportunities areas.

2015

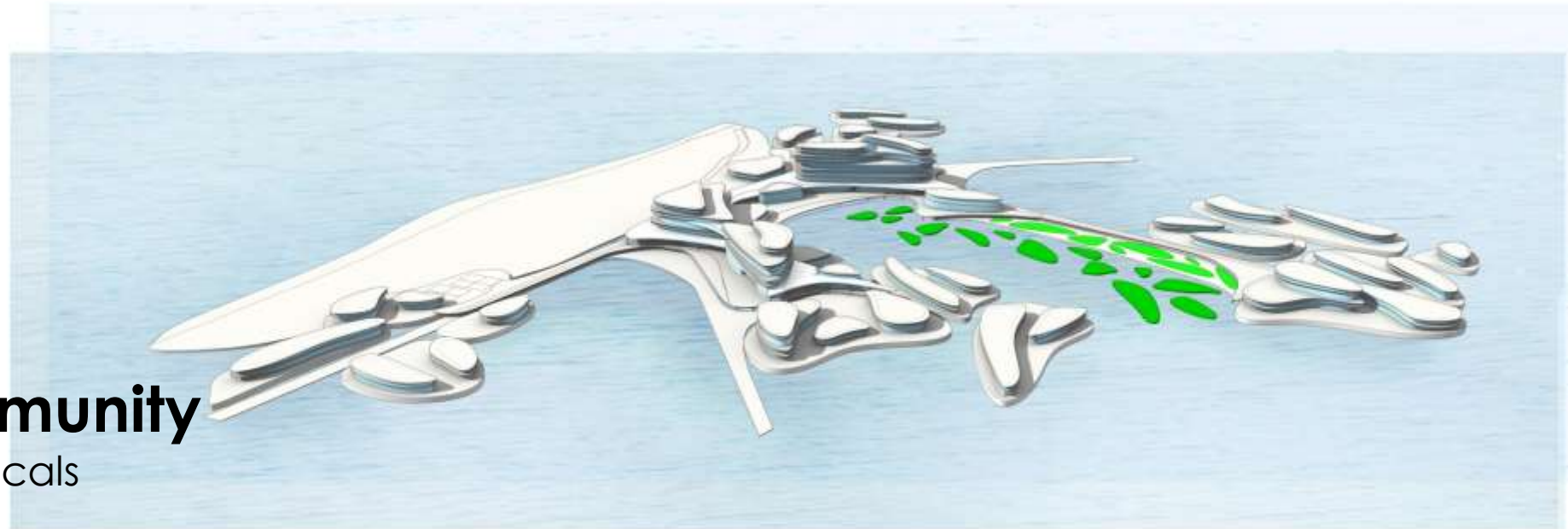
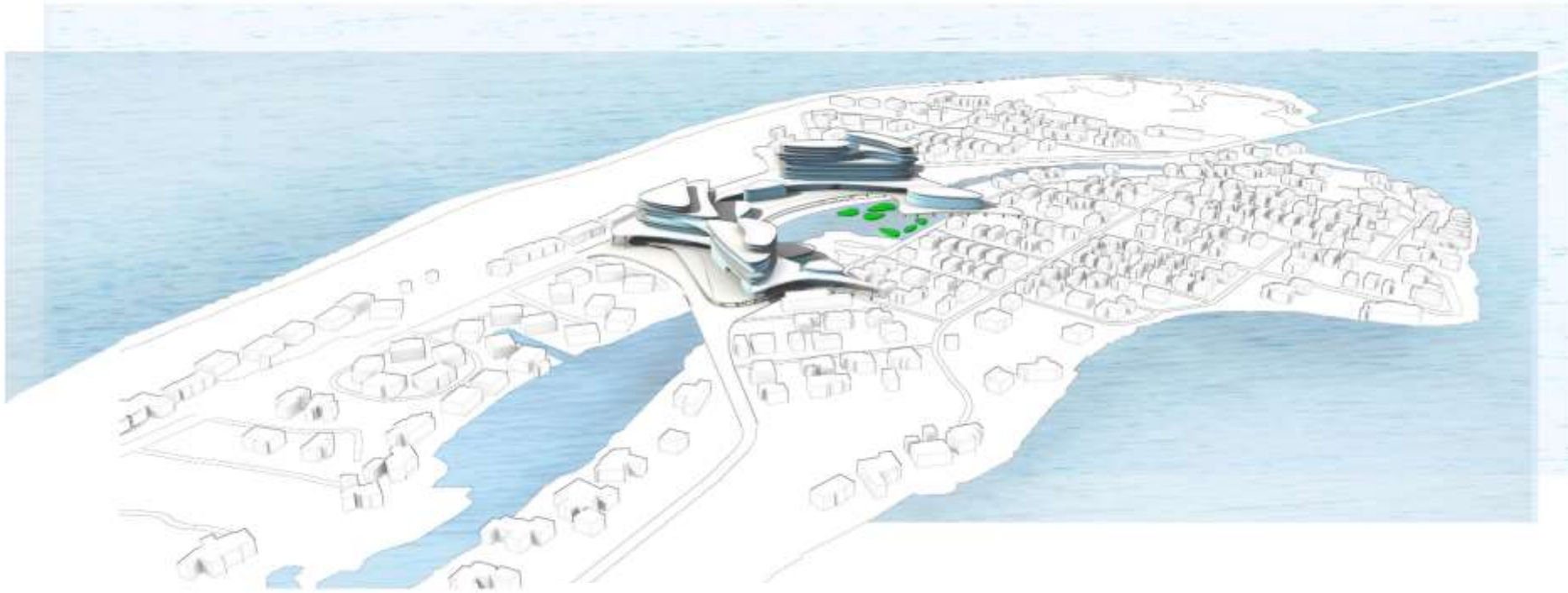


LONGBOAT KEY



Locations of Opportunity





Amphibious Community

Gateway for Visitors and Locals

by Jesse Mantohac







Resiliency through Floating Fabric

by Silvia Aloisio



SEA LEVEL RISE IS COMING



STRATEGIES ■■■■ TIPOLOGIES:



staying dry losing soil
RELOCATION OF THE INHABITANTS IN DIFFERENT TIPOLOGIES (FLOATING HOMES - FLOATING ISLANDS)



soft merge
STRUCTURE TO REDUCE IMPACT OF RISING SEA LEVELS BY CULTIVATING MANGROVE FORESTS



water connection
A SYSTEM OF WATER CONNECTION BY BIOGAS WATER BUSES IS ADDED TO REDUCE THE ROAD TRAFFIC AND CONTRIBUTES TO CREATE PUBLIC SPACES CAR



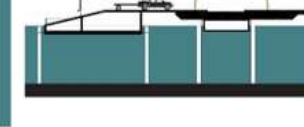
crossing the island
BUILDING BRIDGE THAT RE-CONNECTS THE TWO PARTS OF THE TOWN AND CONTRIBUTES TO TIE THE ENTIRE URBAN SYSTEM.



floating isolated home



plant

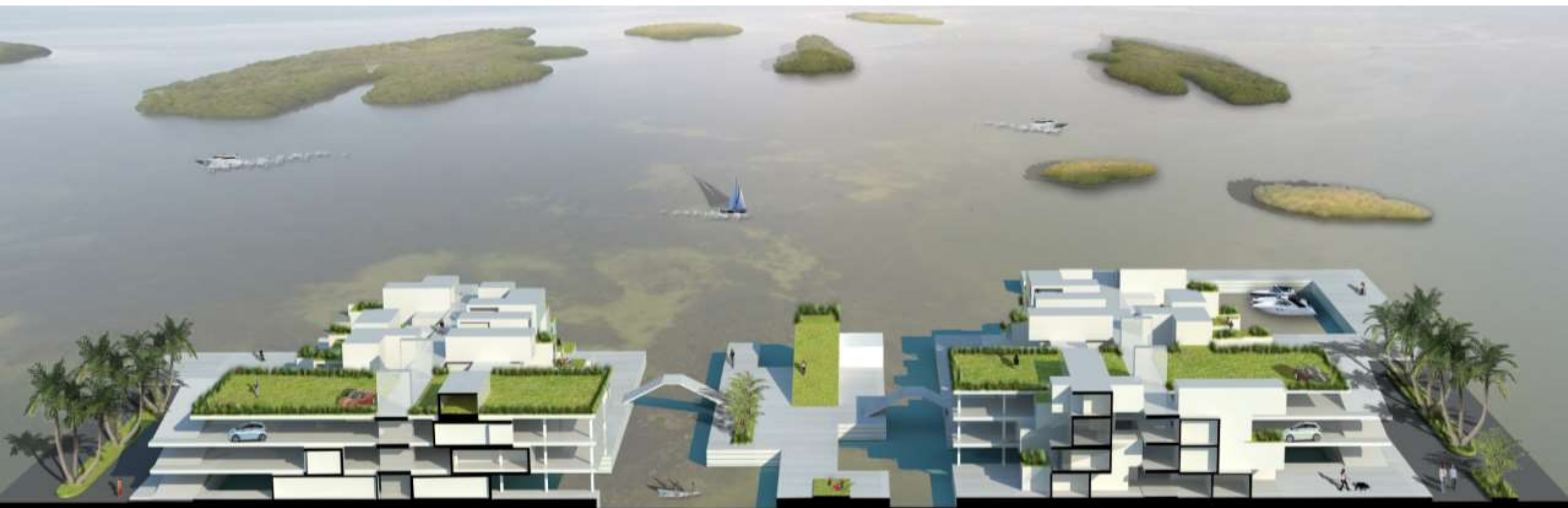
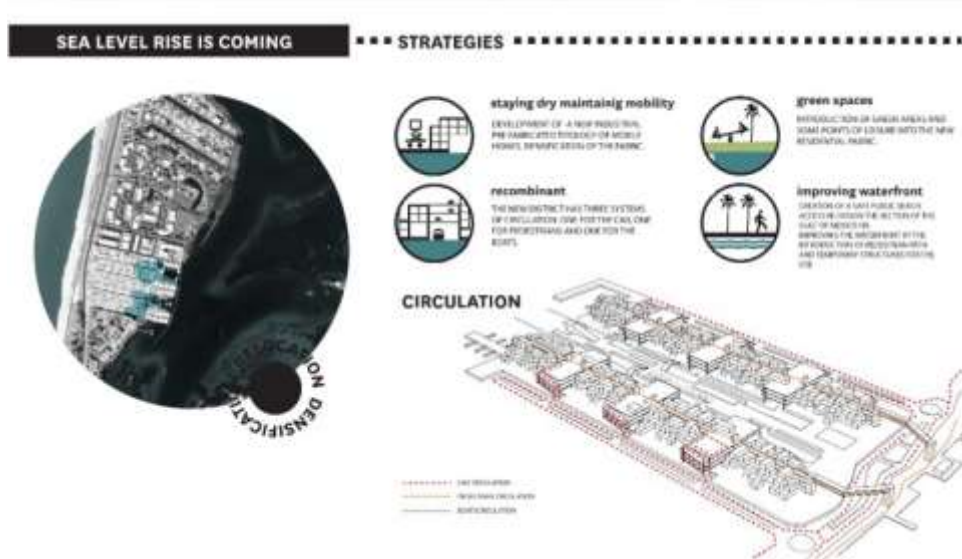


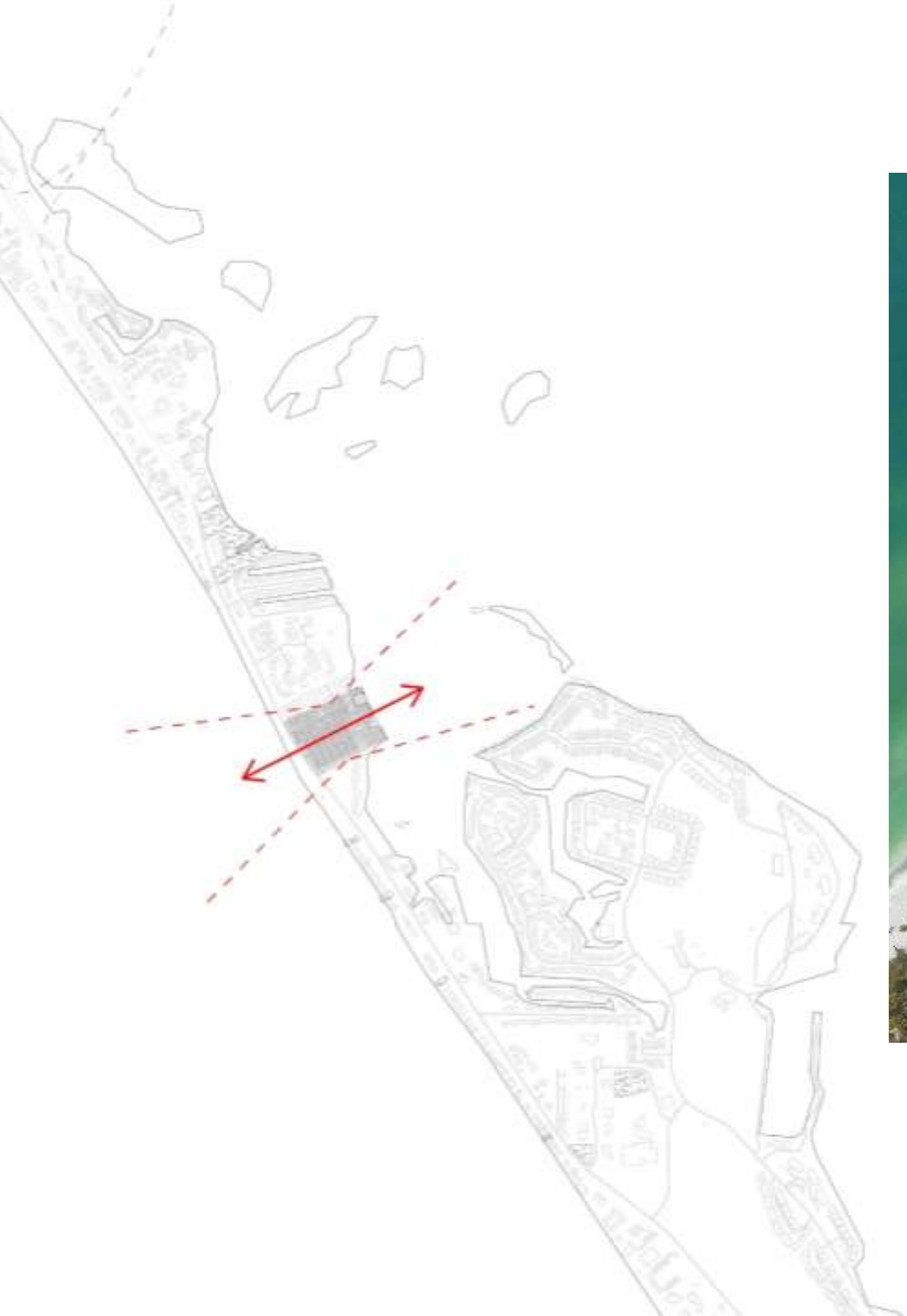
section



model







Resilience Podium Community

Mobile Parking Home
by Di Hu





Reef Resort at Longboat Key

Reconstructing the Beach
by Craig Nightingale

Sustainable Artificial Reefs to combat Beach erosion

Improving recreational and charter fishing, scuba diving and snorkeling opportunities

- Small boat activity
- Priority ersonion
- Reef balls placement



North end Beach erosion

The north end received about 125,000 cubic yards of sand that was dredged from Longboat Pass, since it is one of the most erosive parts of the key.



Fish life is abundant in and around Reef Balls since they are designed specifically to create marine habitat. Over 1/2 a million Reef Balls have been used in over 3,500 projects in 43 countries as designed artificial reef habitat.

Reef Balls have be used as submerged breakwaters to protect a beach from erosion or even to build up a beach that has already eroded



Central/ downtown Beach erosion

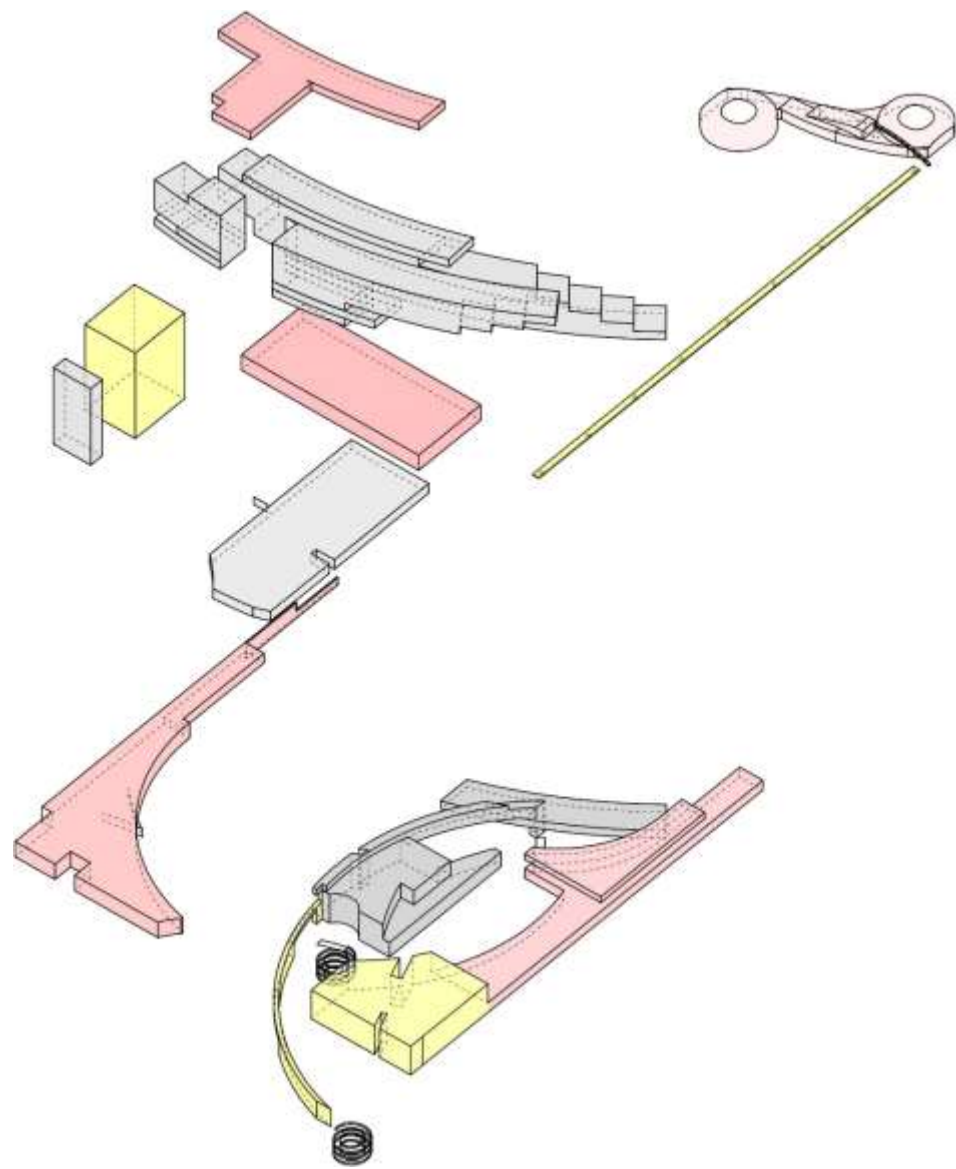
The main road runs very close to the edge of the beach. Protection is needed to protect the roads from future storm surge and increasing erosion.



Islandside must weather receding beach

South end Beach erosion


Up to 350,000 cubic yards - from Longboat Pass in the same dredging operation that will serve the north end next year.





Graduate collaborative studio focused on infrastructural challenges for the sea level rise conditions for the **Cities of Miami and Miami Beach**. The issues of flooding urban area, energy generation, transportation , ports and airports, alternative housing typologies, the creation of new protective barrier islands were explored through designs to promote and facilitate public discussion. Proposals were displayed at the Miami Center for Architecture in coordination with public colloquiums involving South Florida stakeholders.

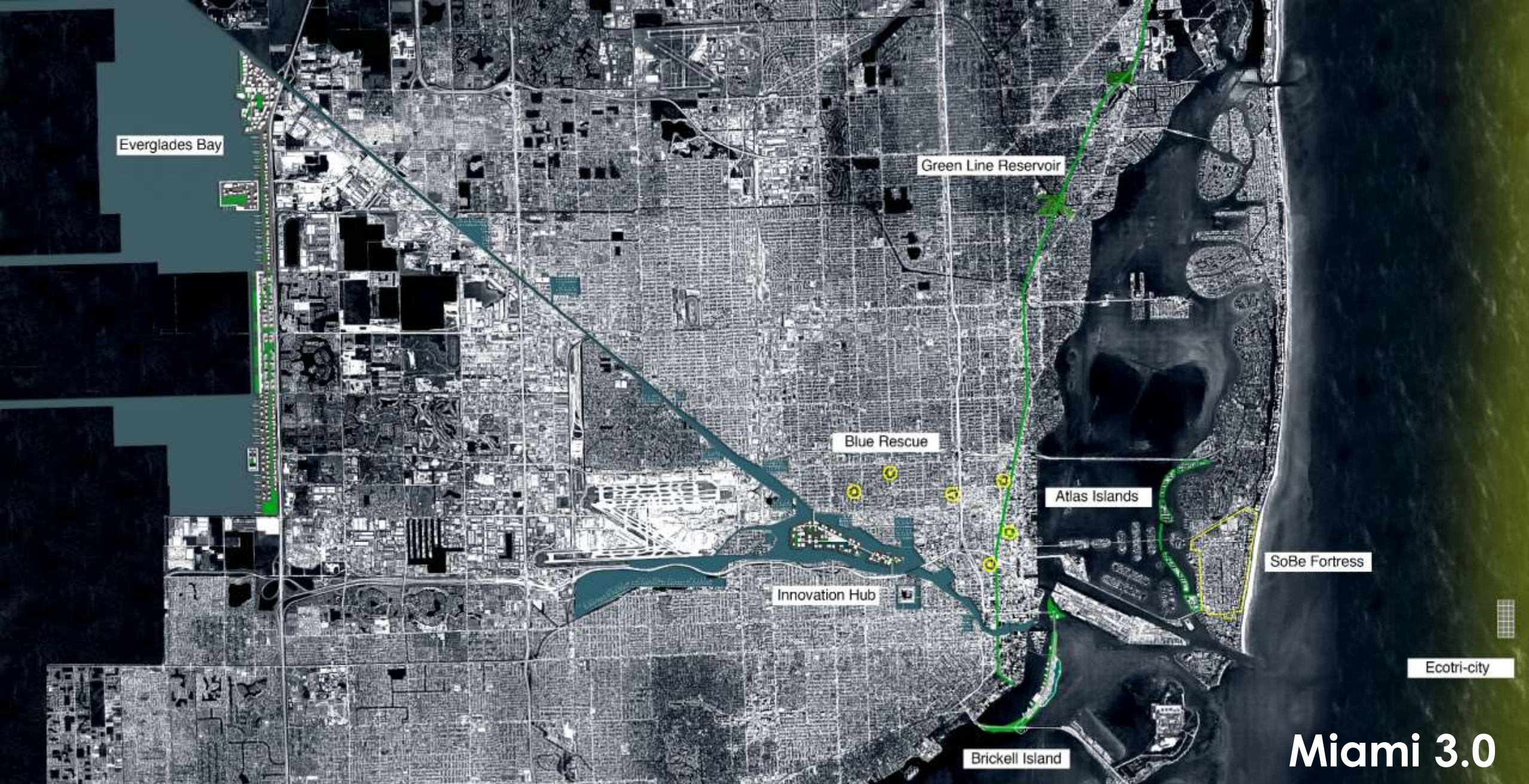
2015

An aerial photograph of Miami, Florida, showing the city's grid-like street pattern, the Miami River, and the coastline. The water is a deep blue-green, and the land is a mix of brown and green. A large, semi-transparent circular graphic is overlaid on the right side of the image, containing text.

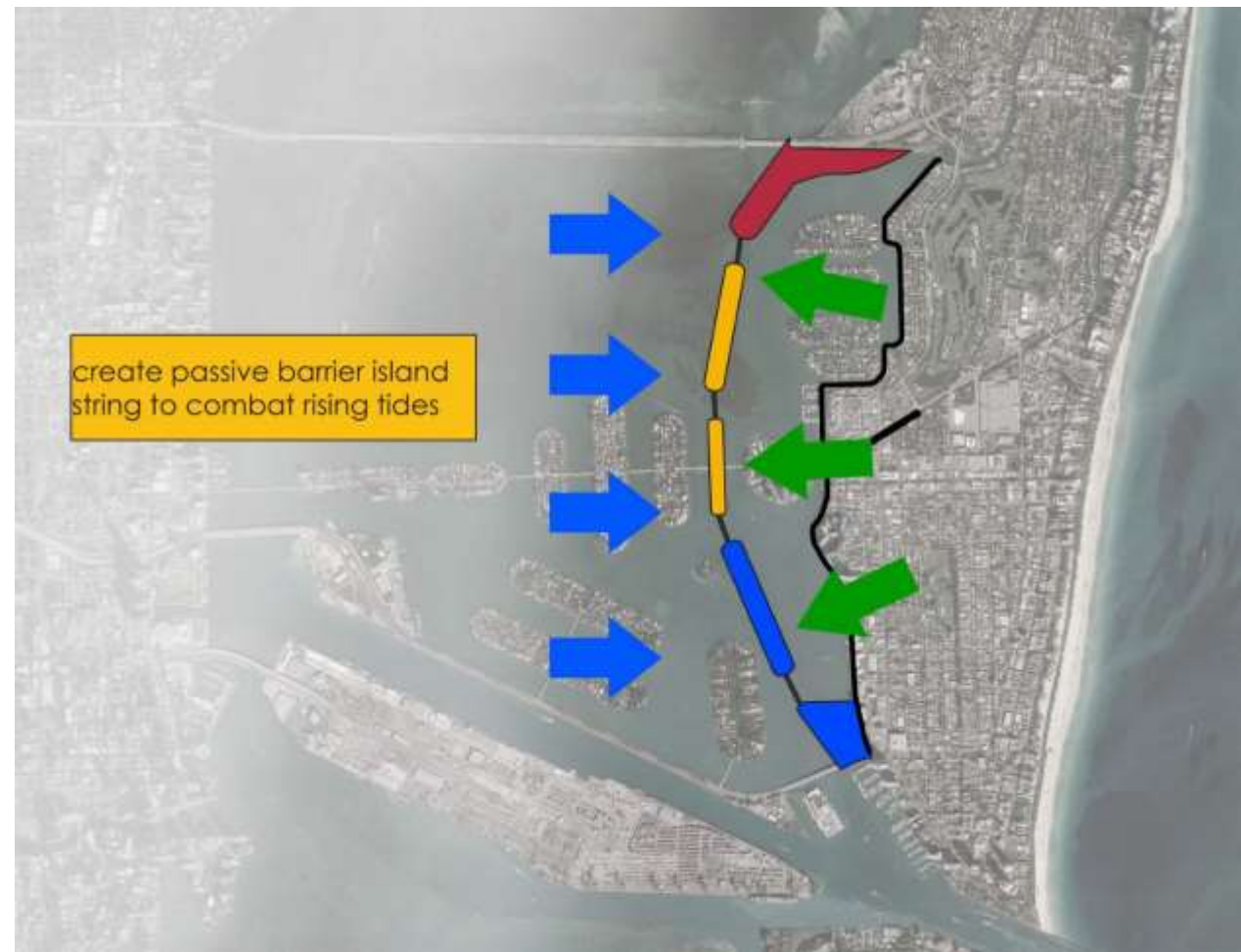
City of MIAMI
MIAMI BEACH
Miami-Dade

+3 feet





Miami 3.0







Atlas Islands

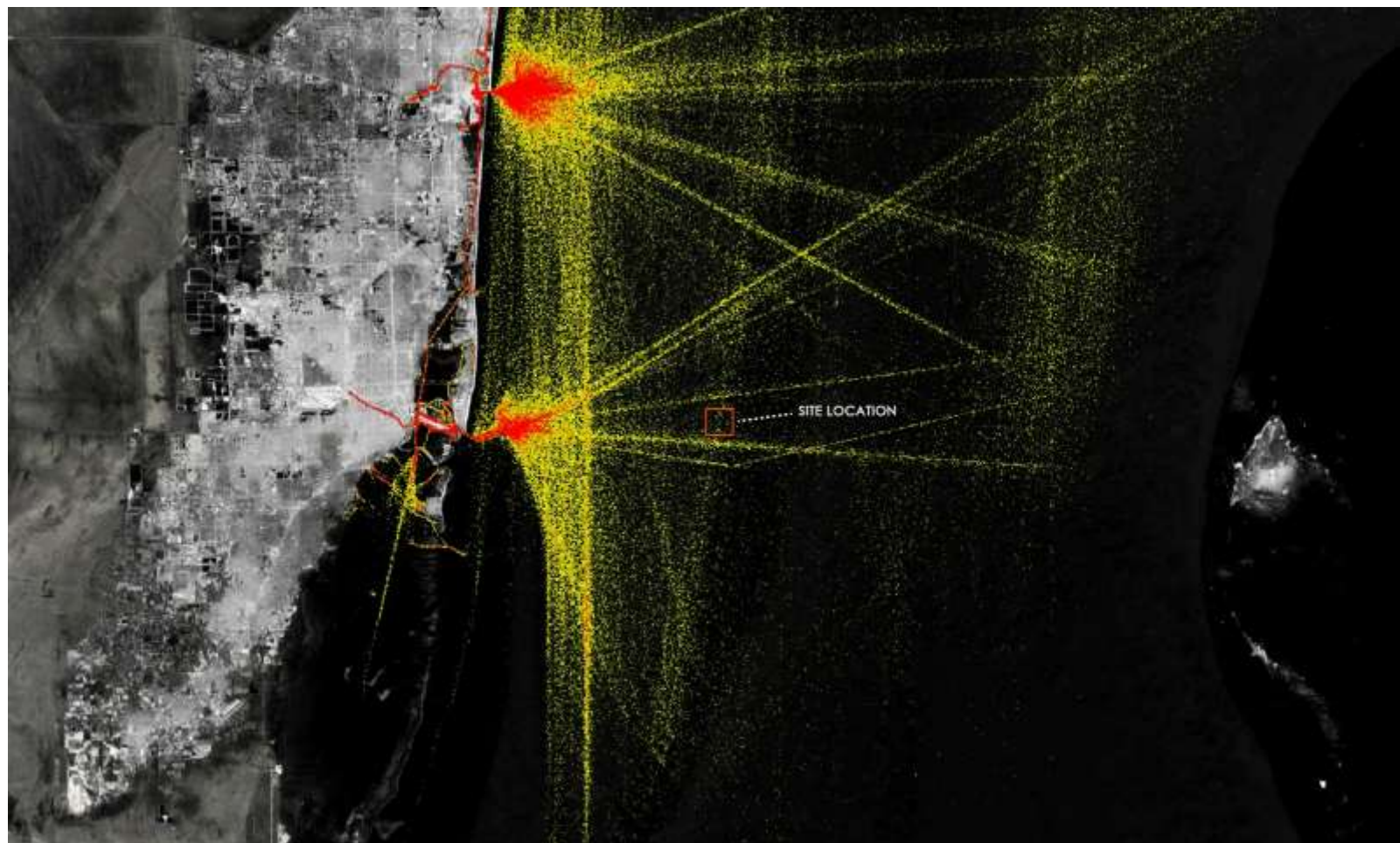
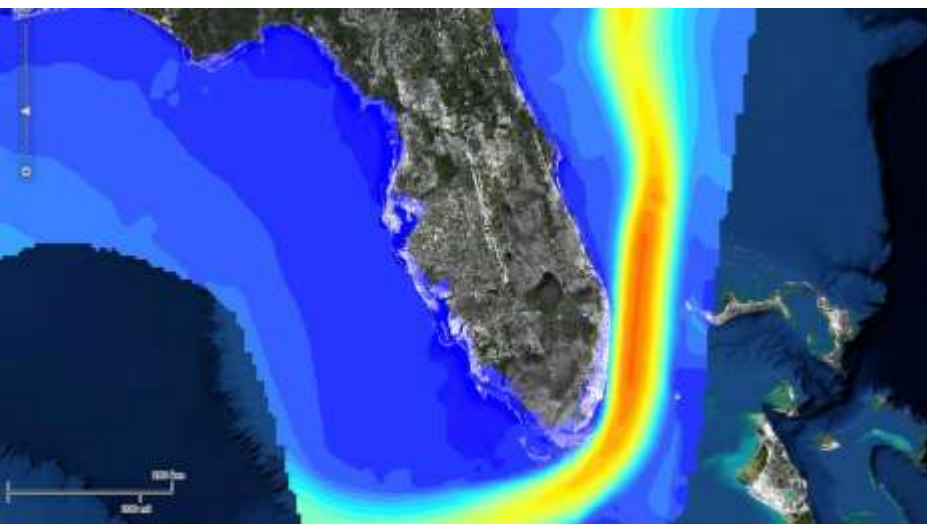
by J. Alex Fernandez & Evan Vander Ploeg





Entertainment Loop

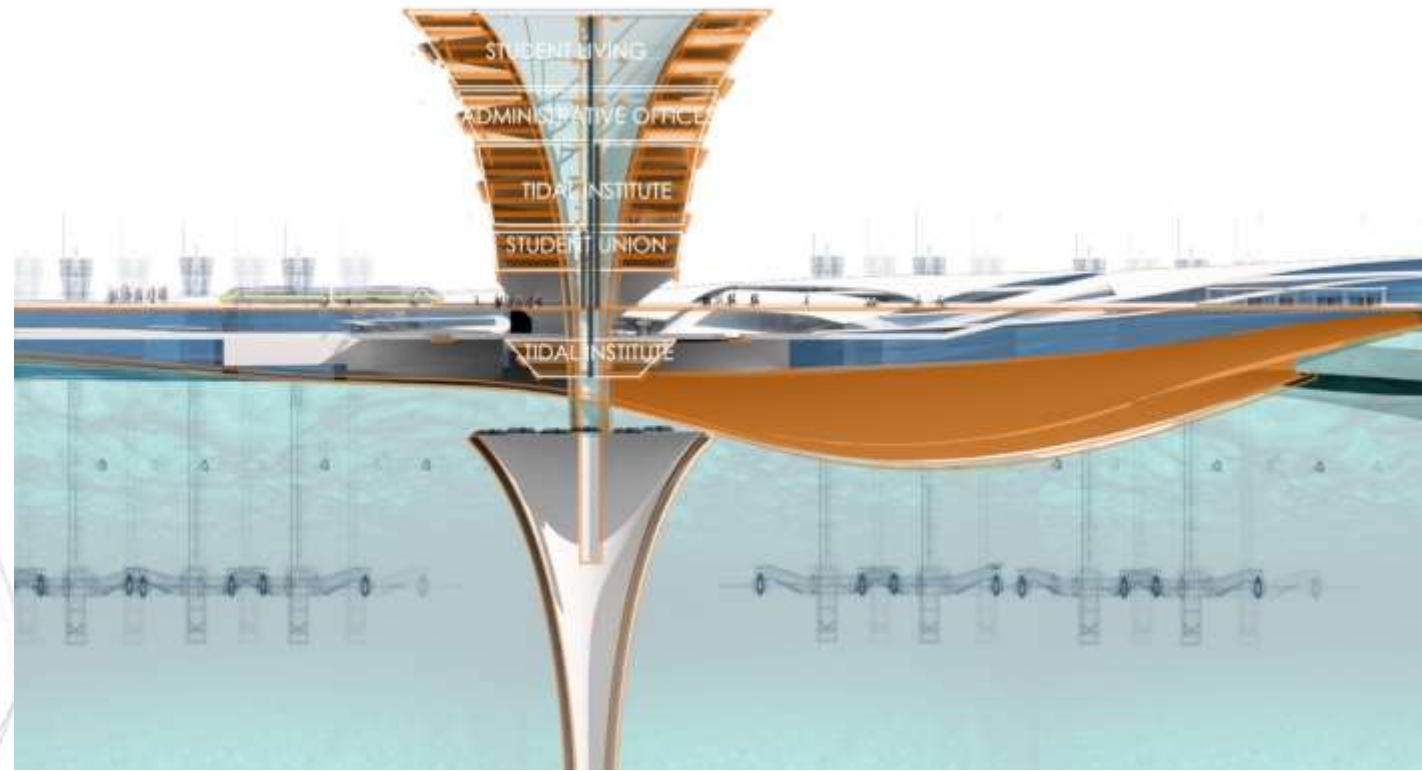
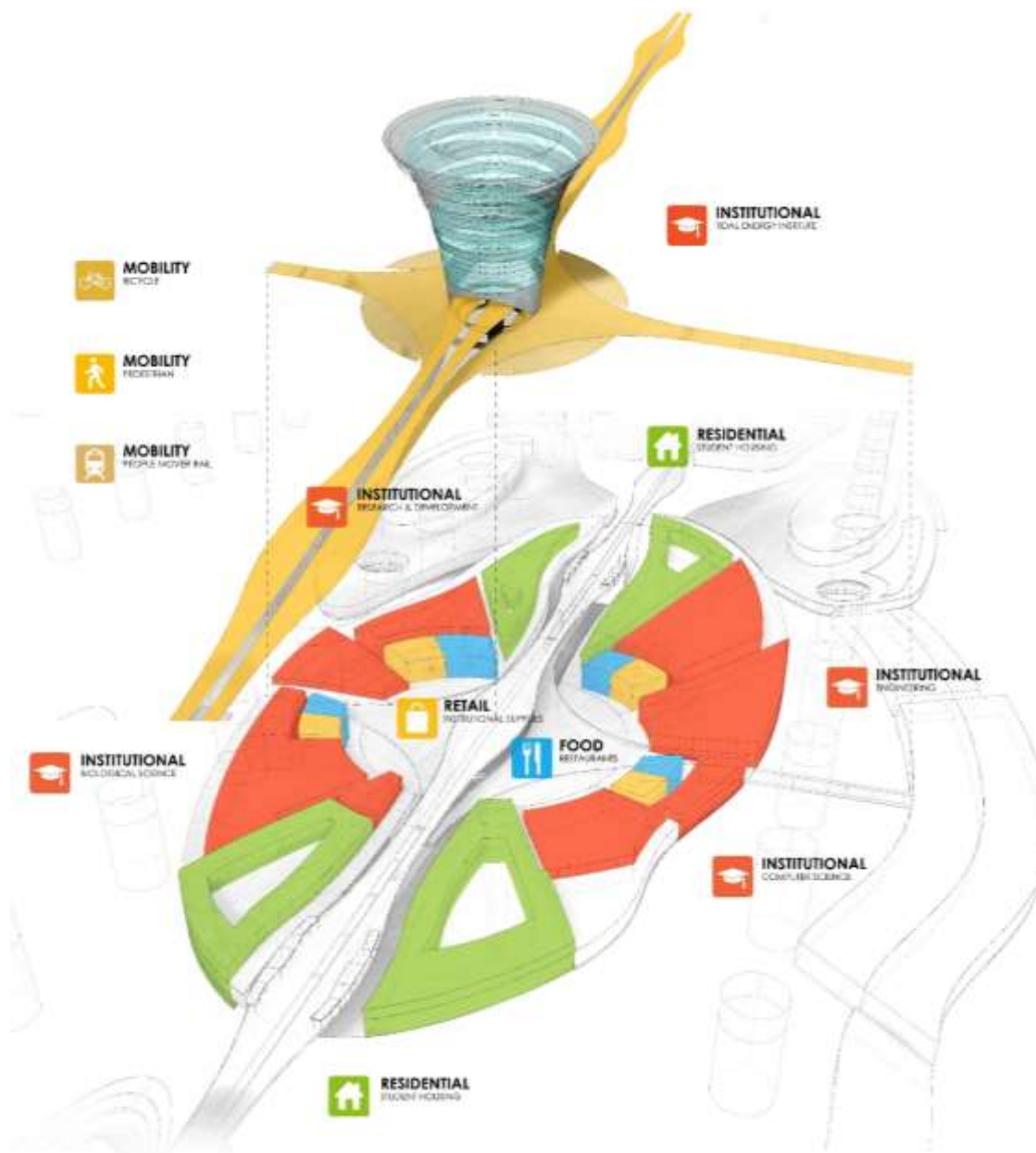




Power to the People

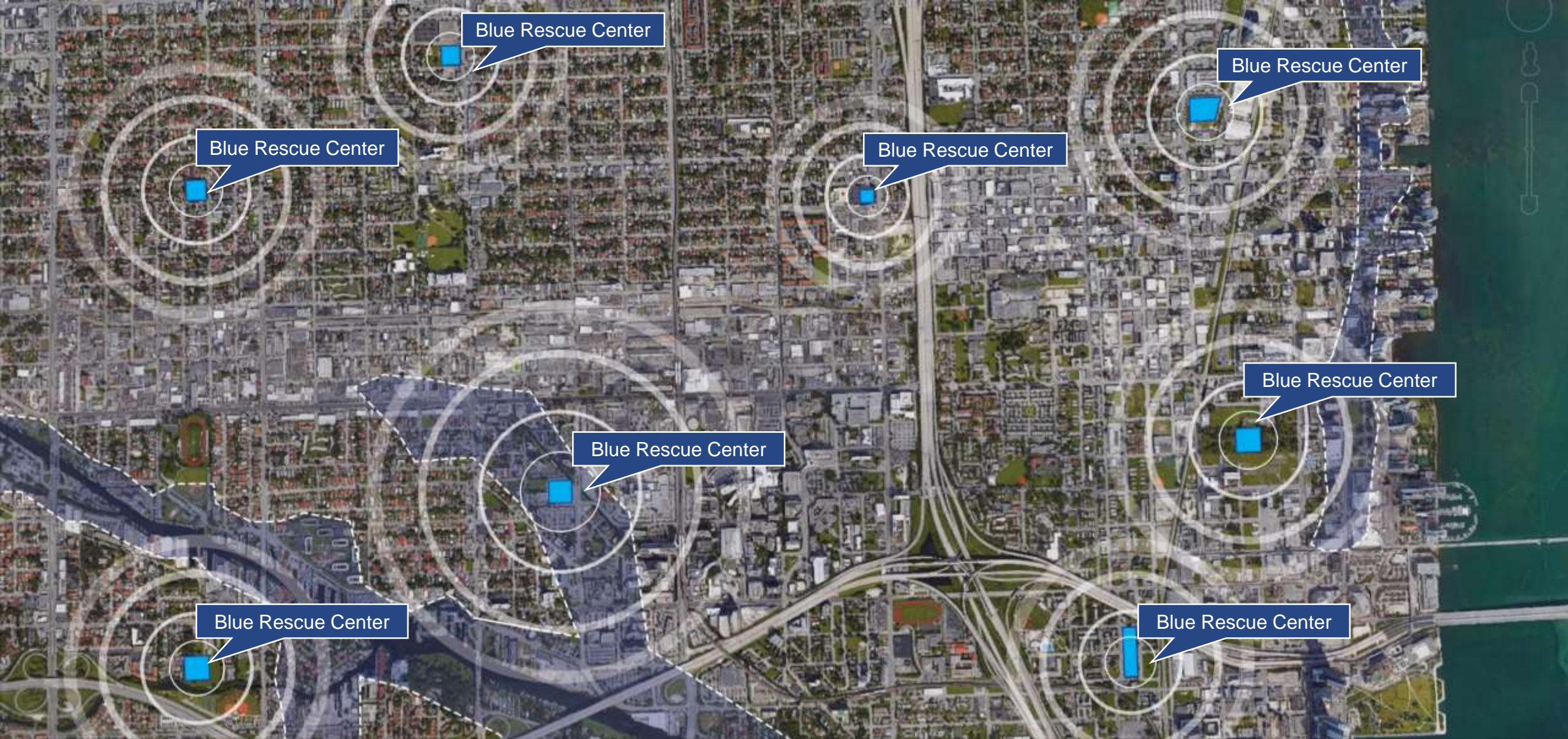
Vulnerability of Electrical Infrastructure in Miami and the Impact of Sea Level Rise

by Blair Davis and Mason Ip



Institutional Plaza



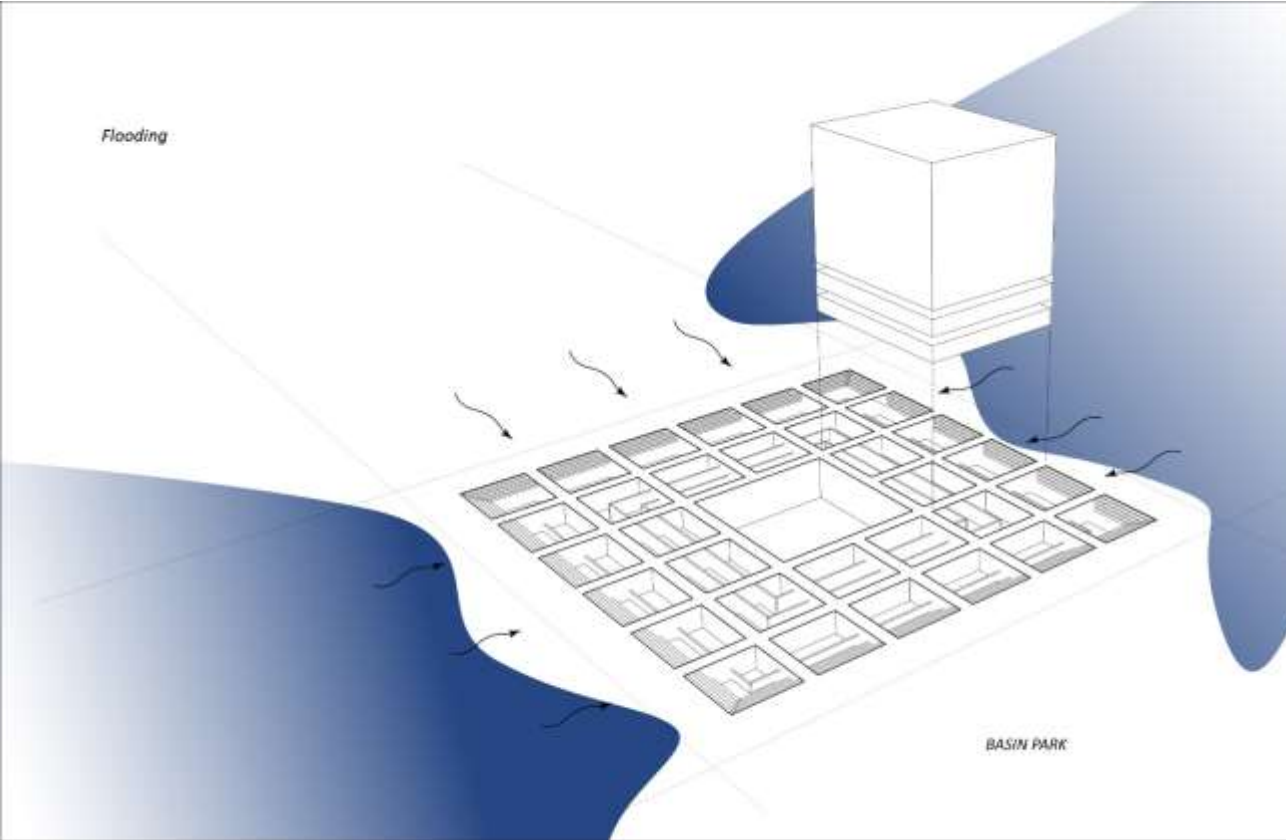


The **BLUE** Rescue

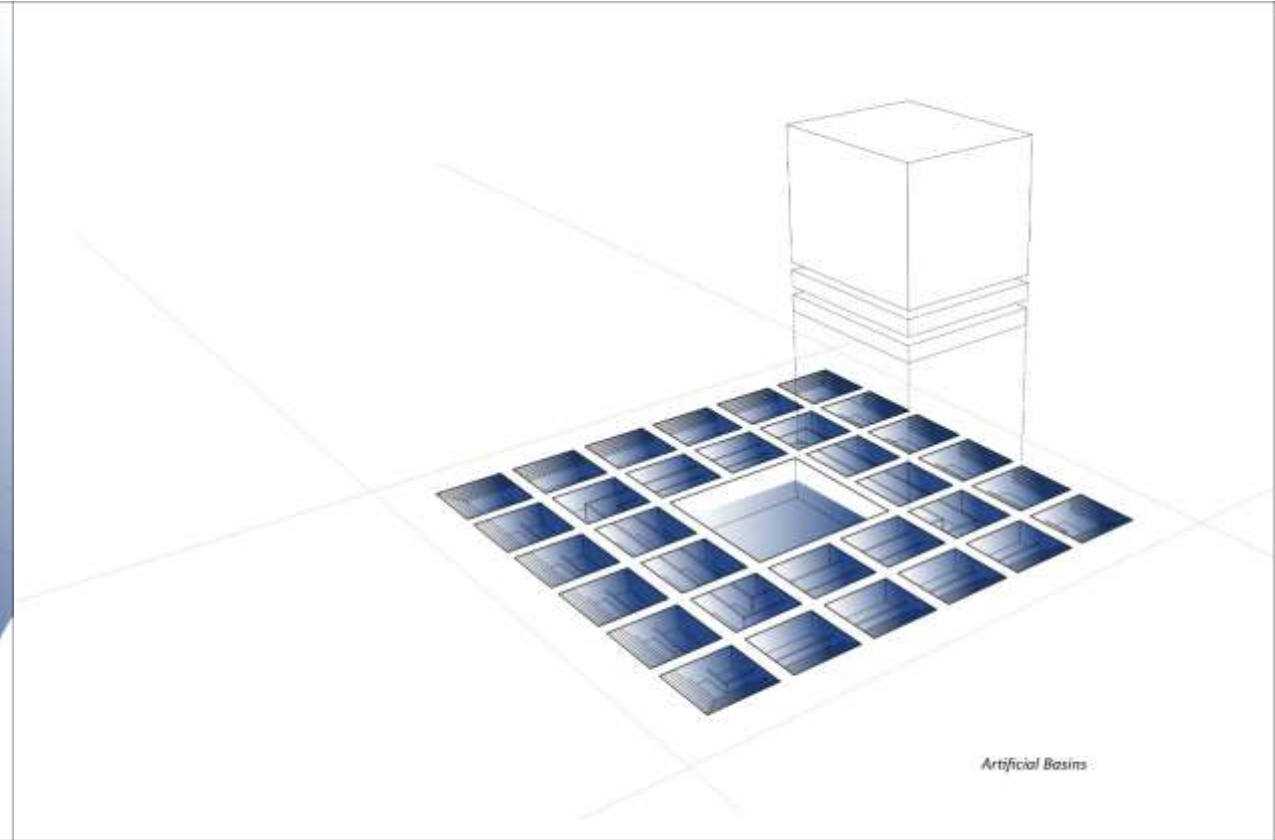
Pump Stations with social infrastructure for saving Miami against water flooding

by Chang Liu, and Jaeyoung Joo

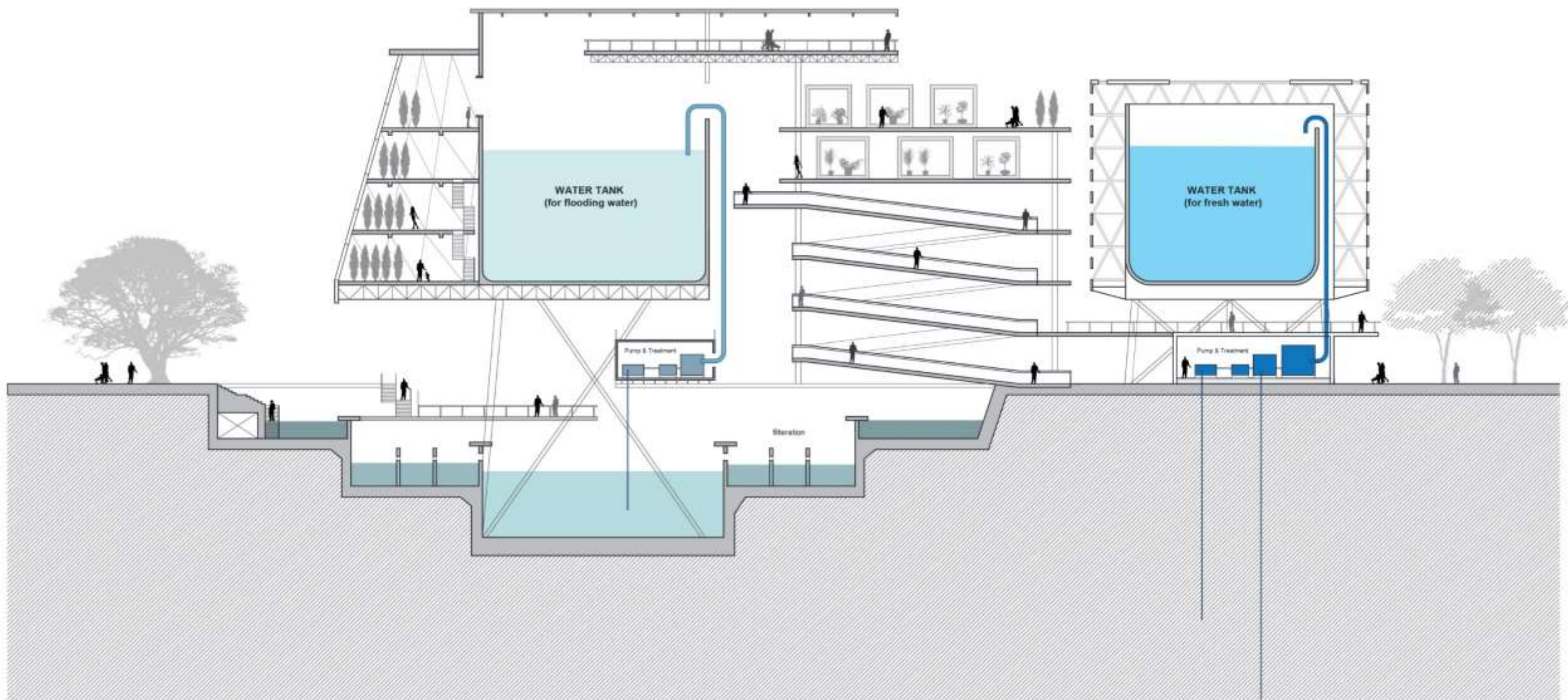
Flooding



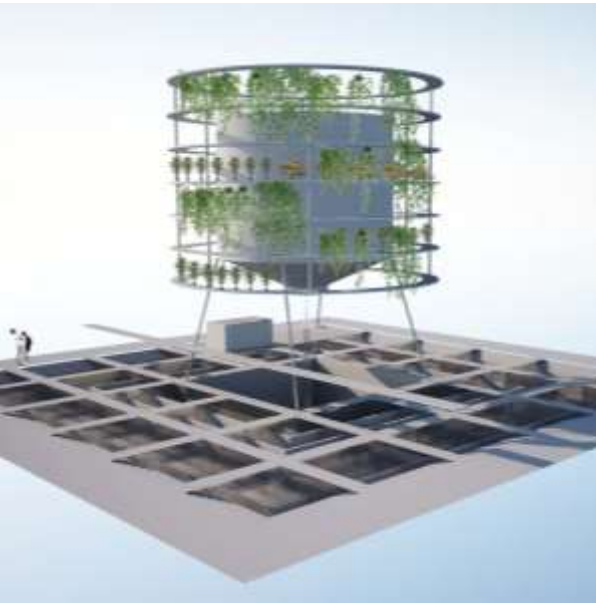
BASIN PARK



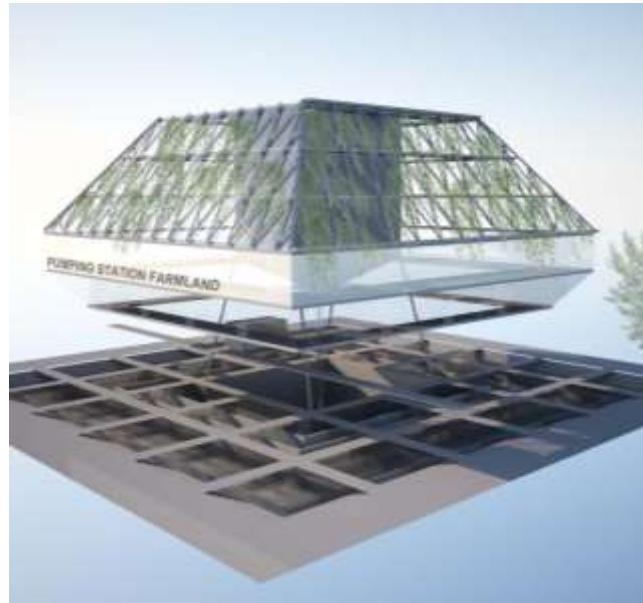
Artificial Basins



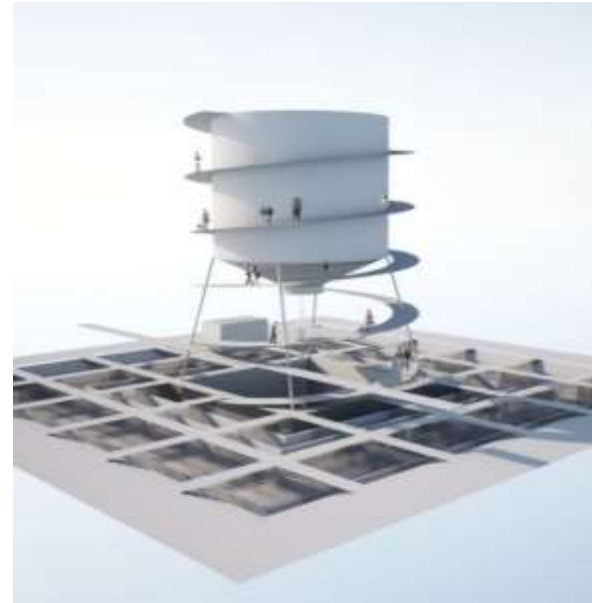
What kind of design do we need in our neighborhood?



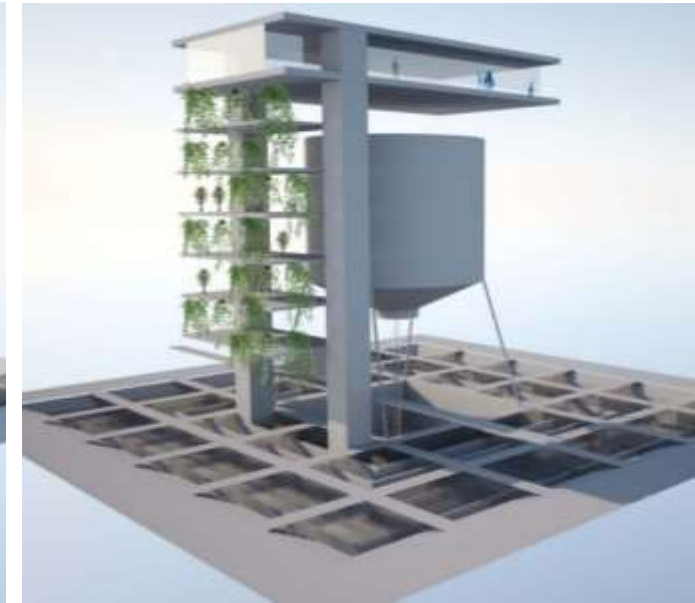
Vertical farming



Botanical Garden



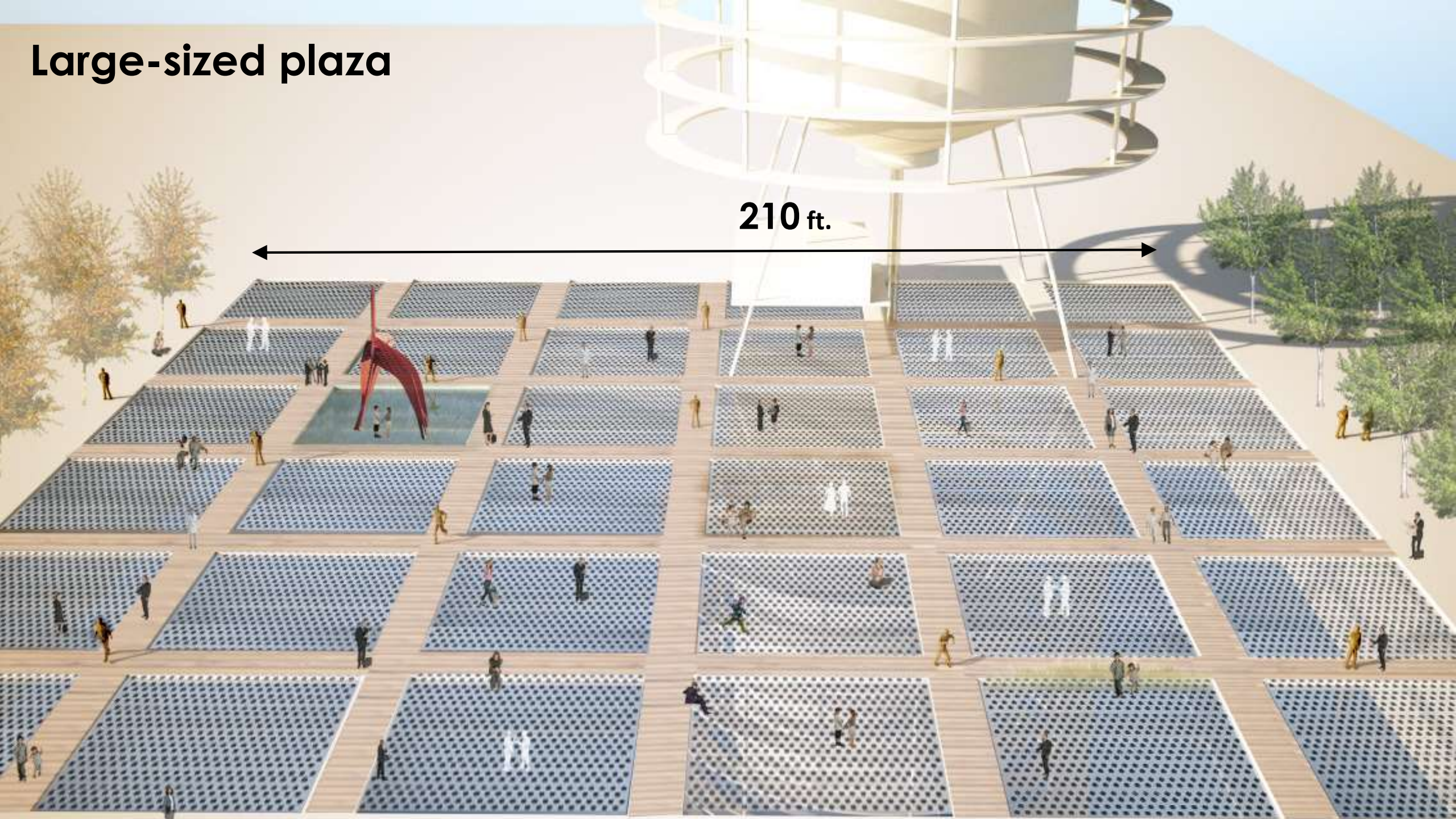
Promenade



Observatory

Design variation

Large-sized plaza

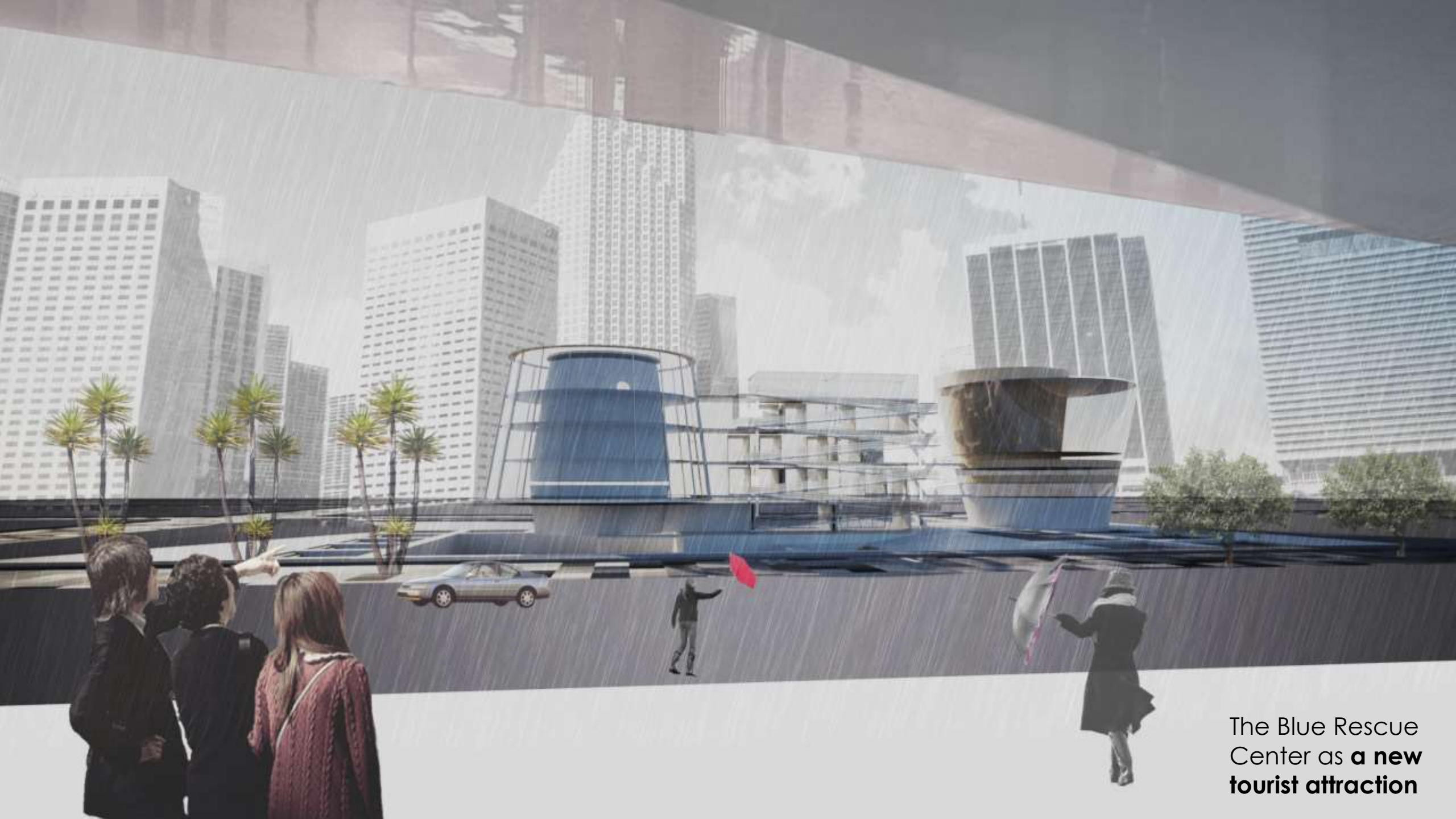


210 ft.

Small-sized plaza



Capacity: 1. Pumping
Field : about 980,000
gallon / 2. Water Tank :
156,000 gallon



The Blue Rescue
Center as **a new**
tourist attraction

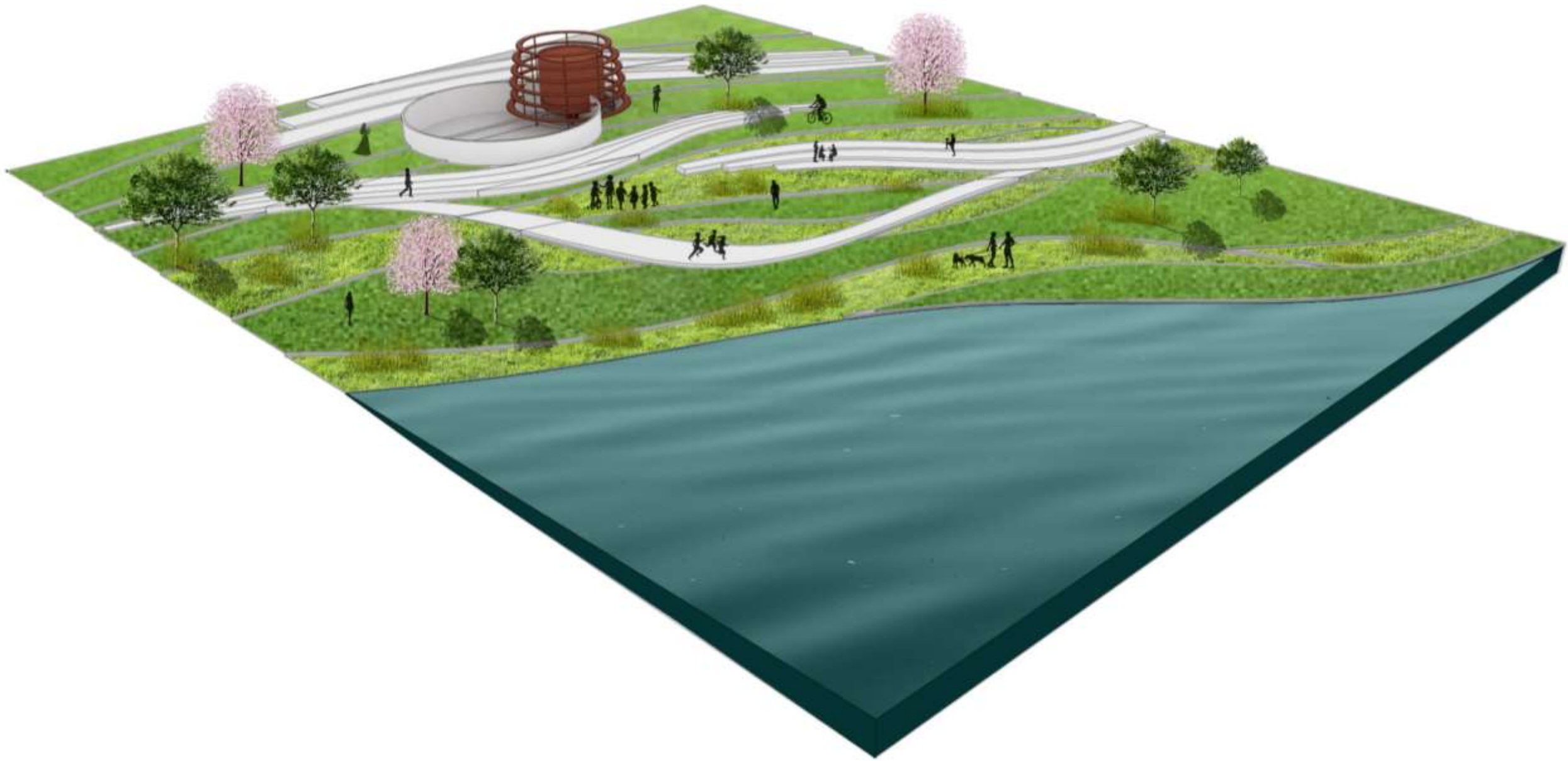
Greenway Project Themes

"The Miami River is a Destination Landscape"

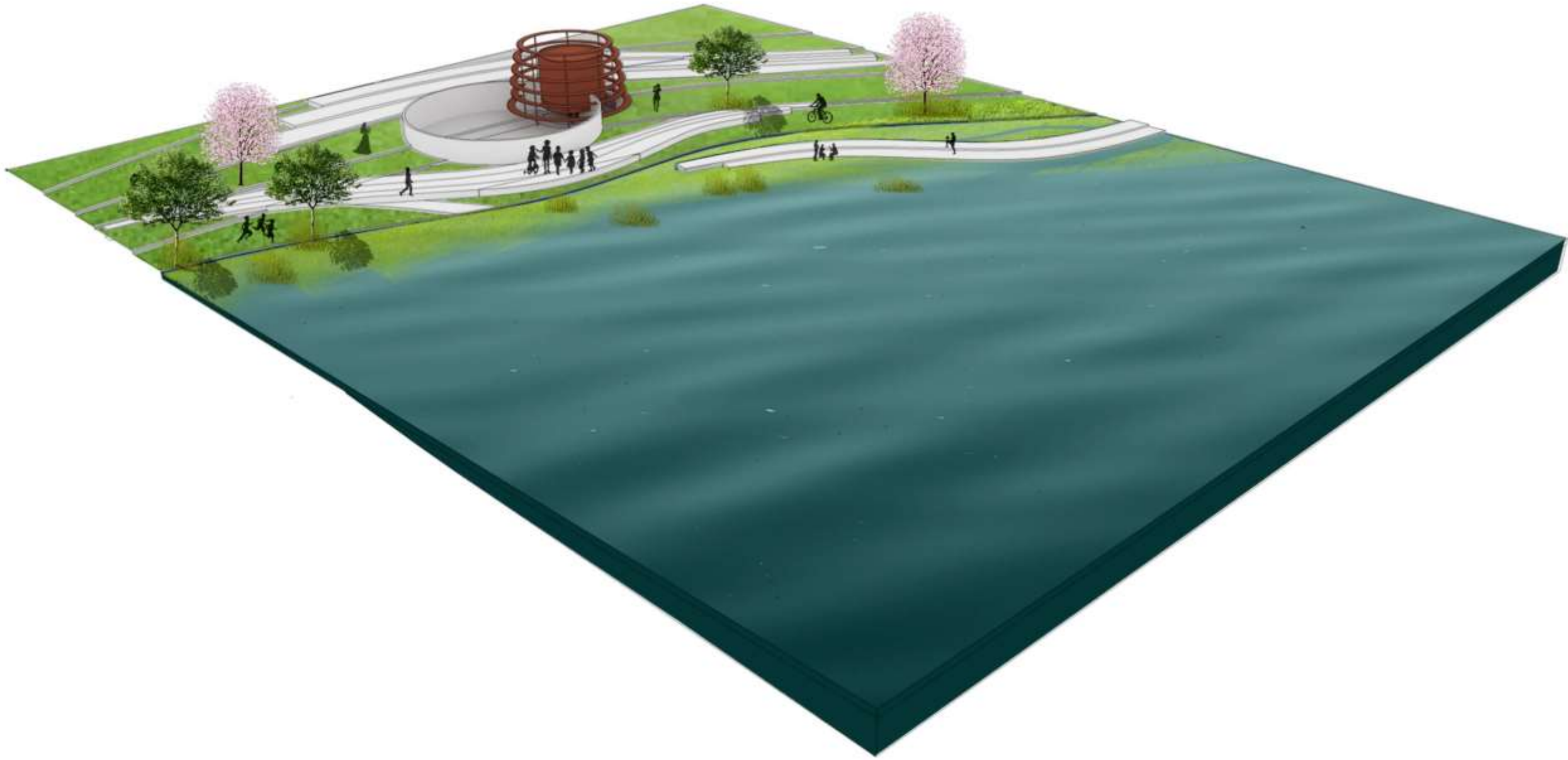
A destination landscape is one that serves as an attraction for people and activity.



Sewell Park is the largest park along the riverside



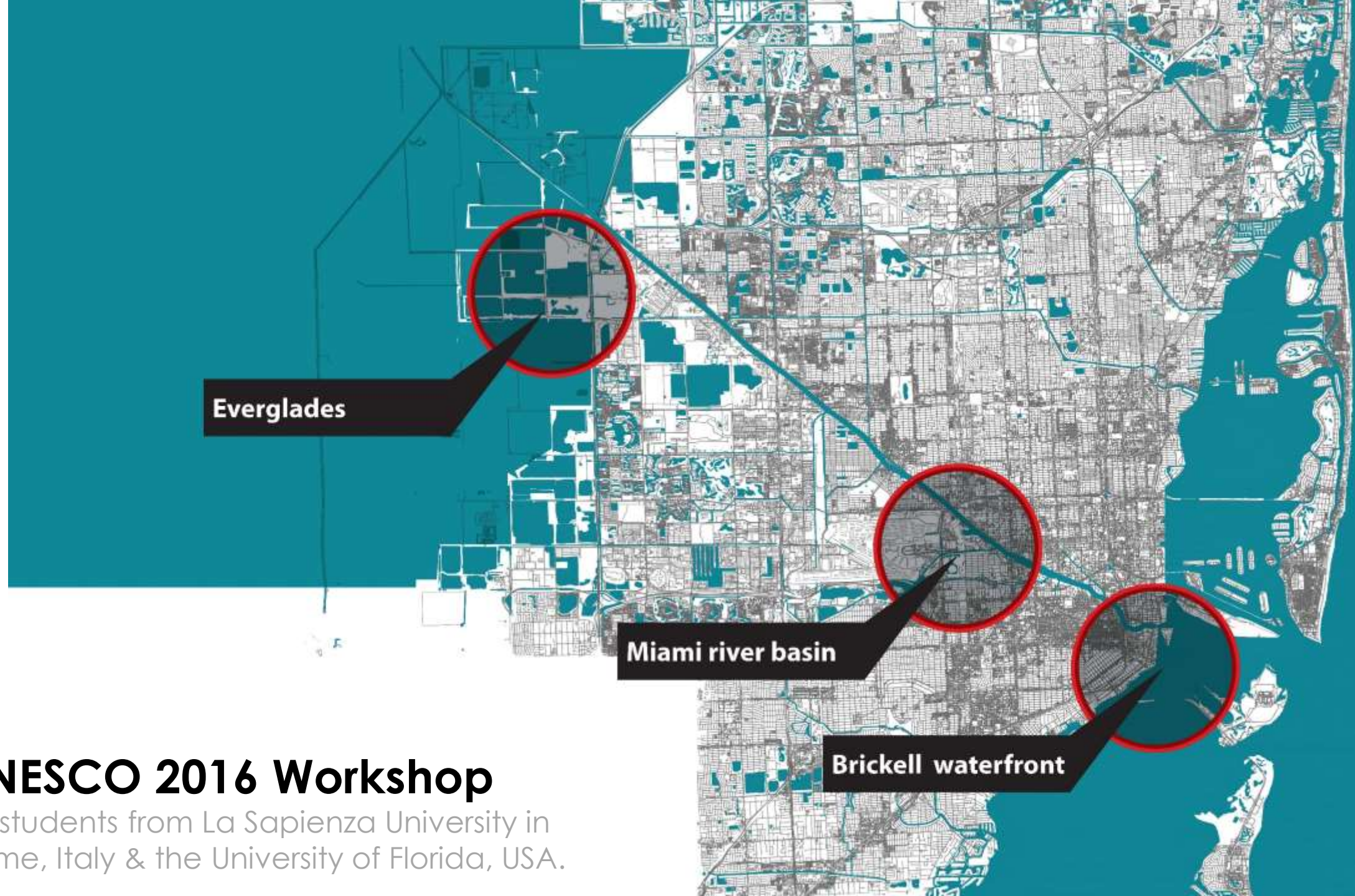
Changing Edge - Current



Changing Edge - by 2100



Perspective by 2050



UNESCO 2016 Workshop

by students from La Sapienza University in Rome, Italy & the University of Florida, USA.

3 PROPOSALS





tower

protective berm

new metromover loop

private piers

public "podium"

public amenities and services

Brickell Waterfront

A New Front for Miami

by T. Monestiroli, V. Matteis, M. Petroli, F. Cucchi, L. Pozzati, & A. Riccomagno



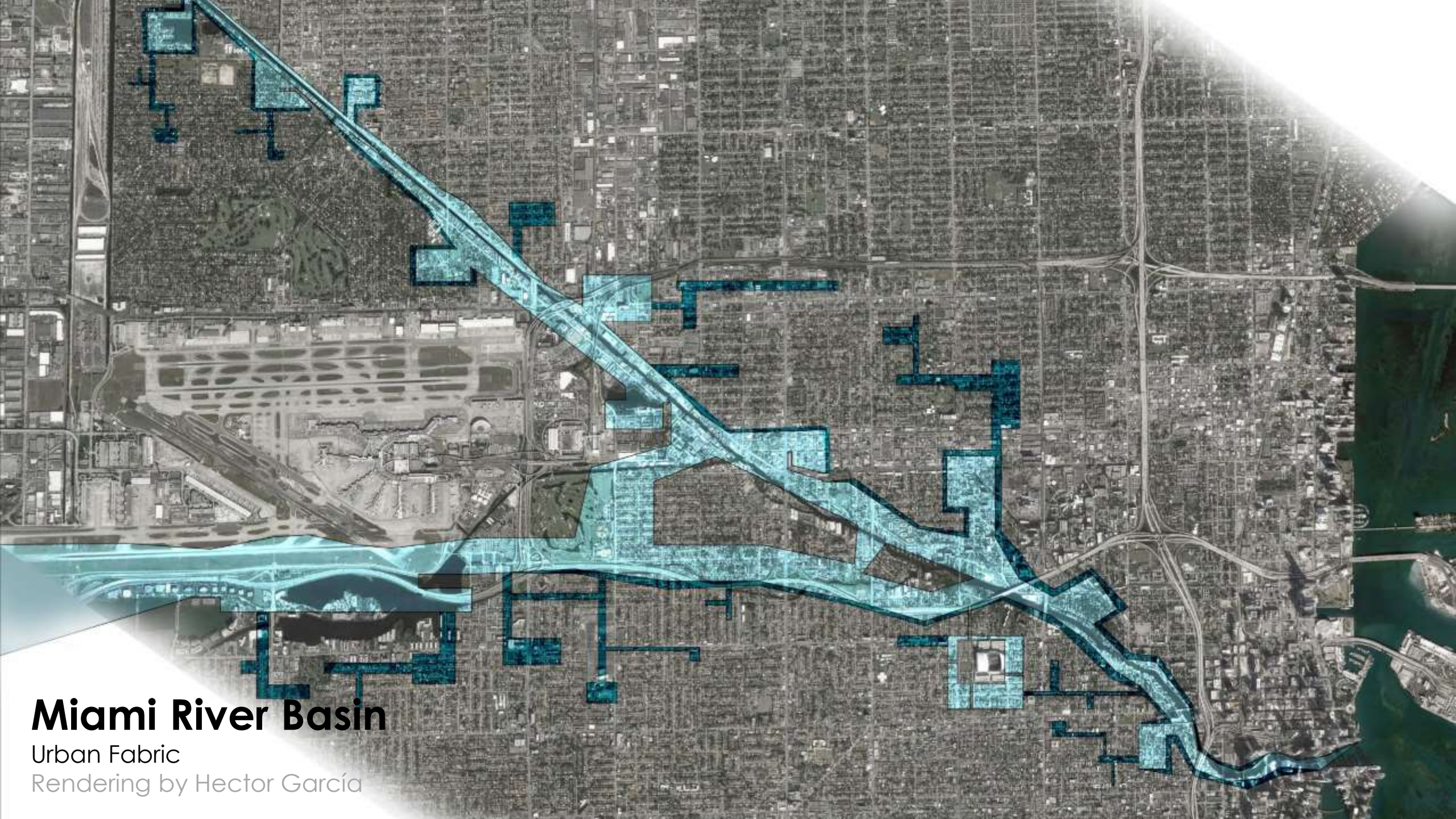
Brickell Island



Rendering by Hector García



Metropolitan Scale Protective Public Space and Infrastructure



Miami River Basin

Urban Fabric

Rendering by Hector García

THE FORMULA

Introduction

Hypotesis:

1) the aim is to save the maximum quantity of built soil elevating it up to 7' above the present Sea Level

2) the built areas are grouped in two cathegories:

a) blocks and plots with an above sea level average height of 3'

b) blocks and plots with an above sea level average height of 5'

A = Part of the urban block affected by flooding

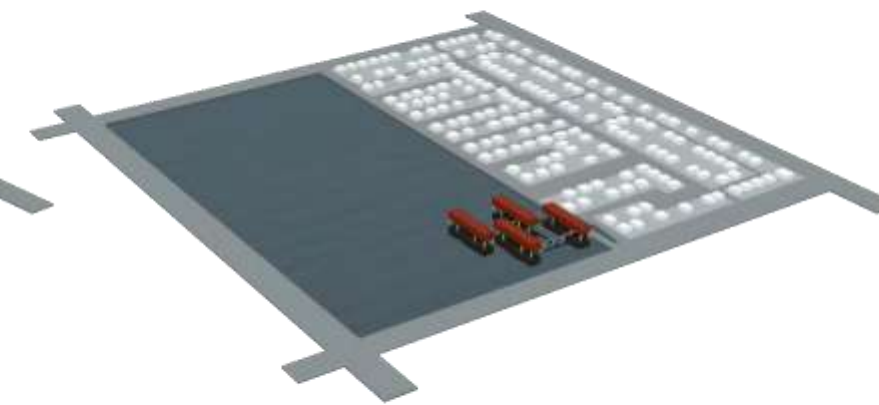
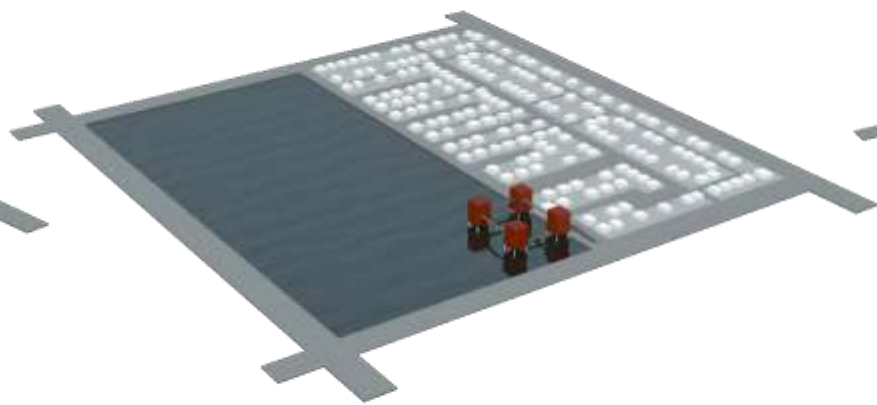
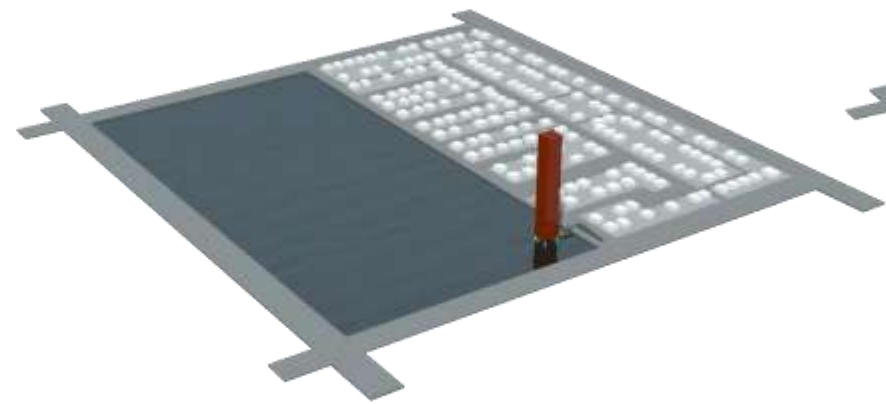
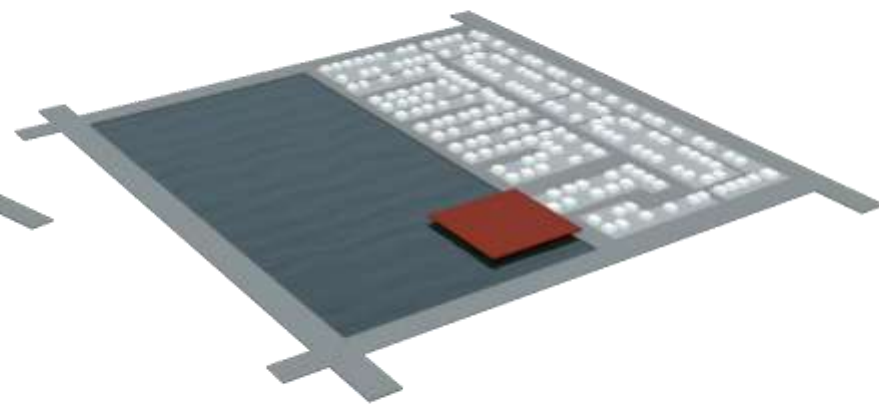
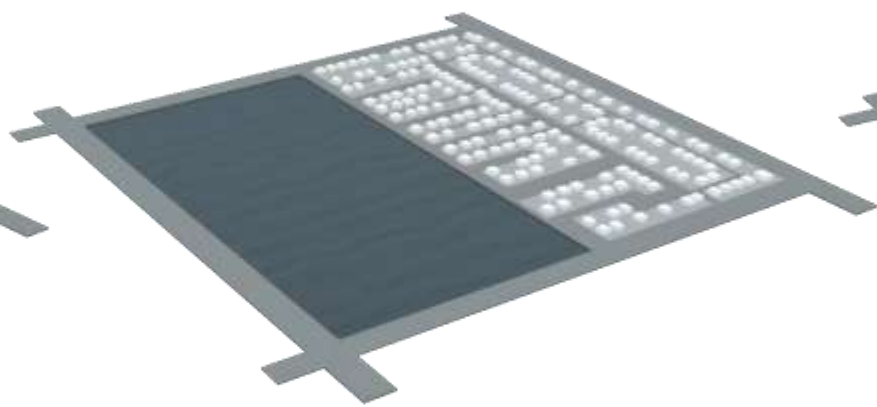
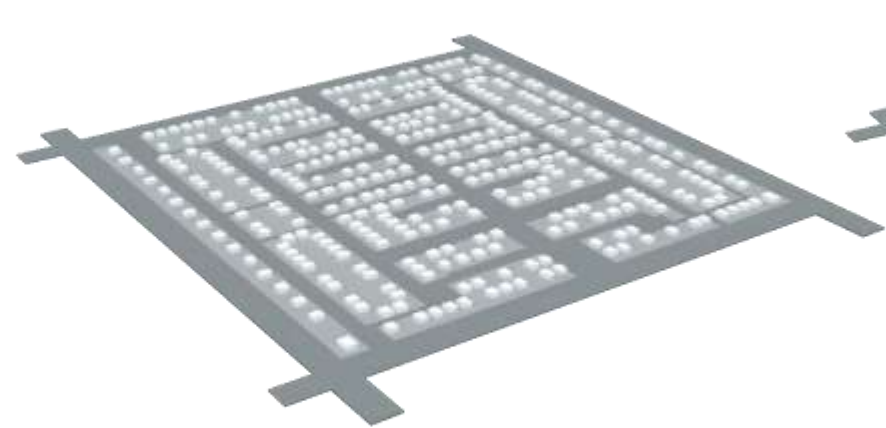
X = Area of A to be dug

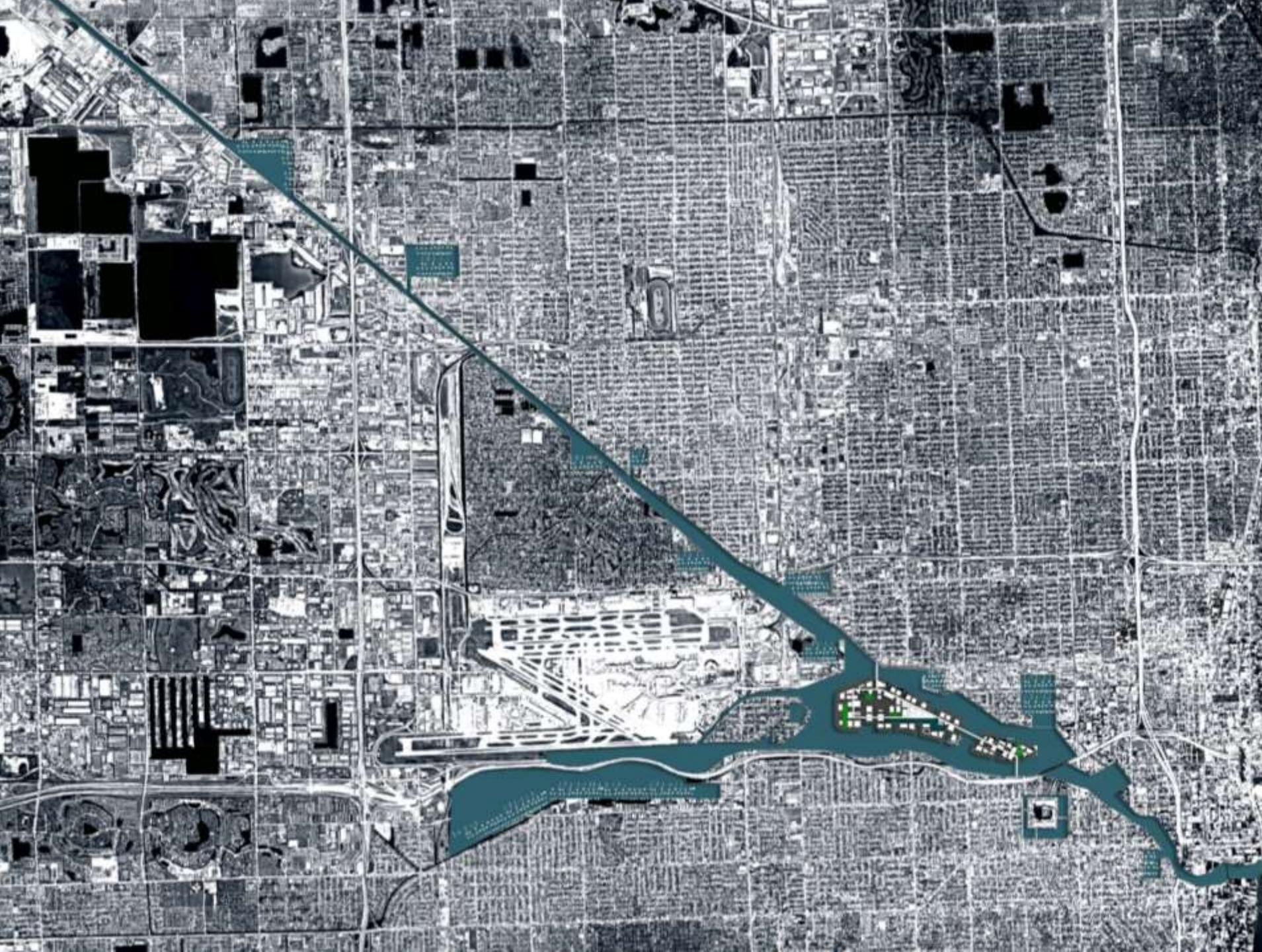
h1= Refill Hight

h2 = digging depth

general formula

$$(A-X)h1=Xh2$$





**Substituting
floodable
industry in Basin
with Technology
Innovation Hub
Economic
Opportunities
and Resilient
Water-Based
Housing**

Miami River Flood Basin Today





Innovation Hub 2100

Tech Island

Rendering by Hector García

Innovation Hub 2100

Water-Based Housing



Canal Communities

Rendering by Hector García

Everglades Today



**Creating Resilient
Urban Densities
for Growth and
Relocation**

**Reprogramming
Mining Lakes**

Everglades Edge

Embracing Future Navigability of a Western Gulf Link



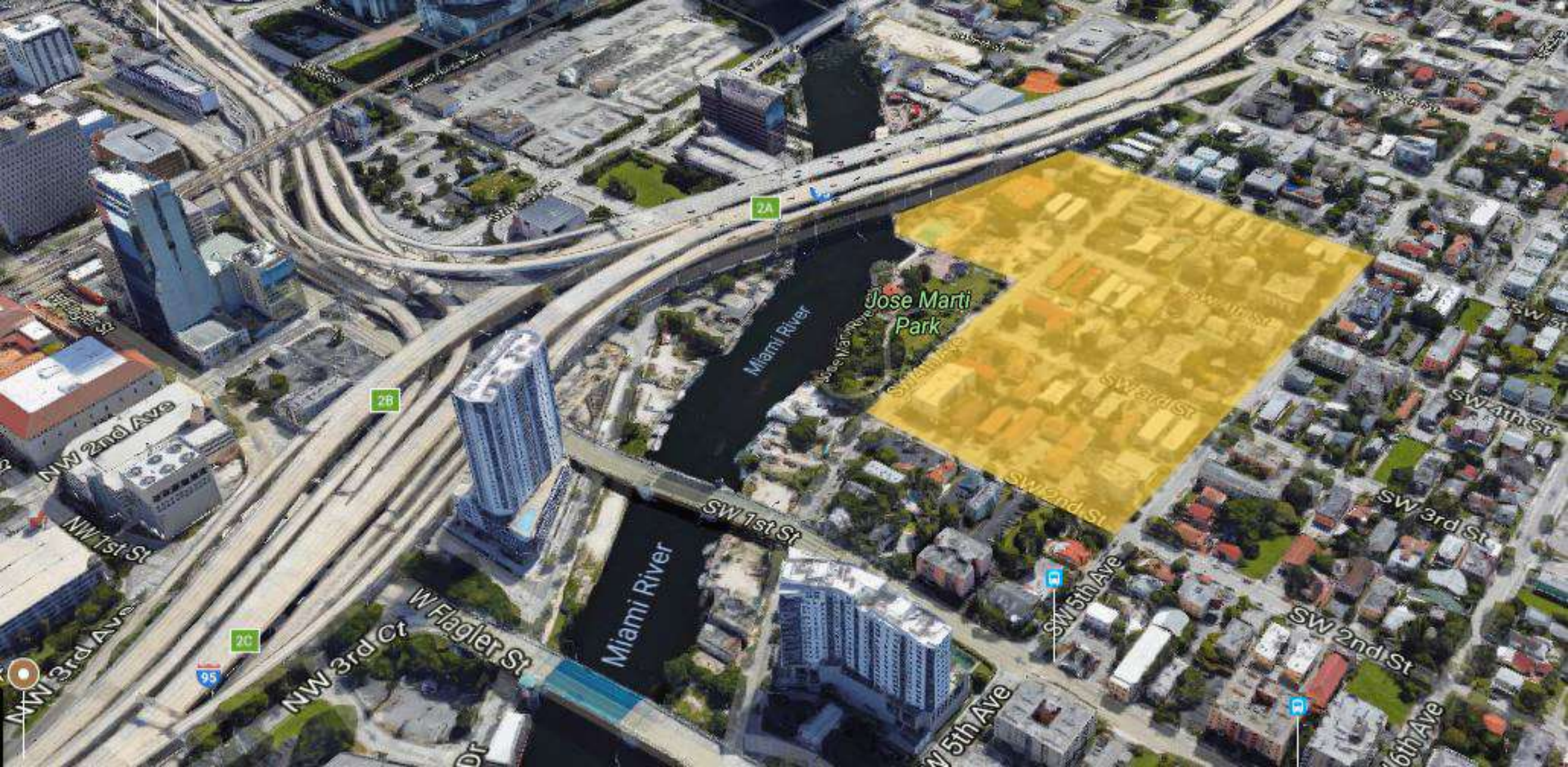
Everglades Bay 2100

Rendering by Hector García



Rendering by Hector García

Localized interventions on the Miami River

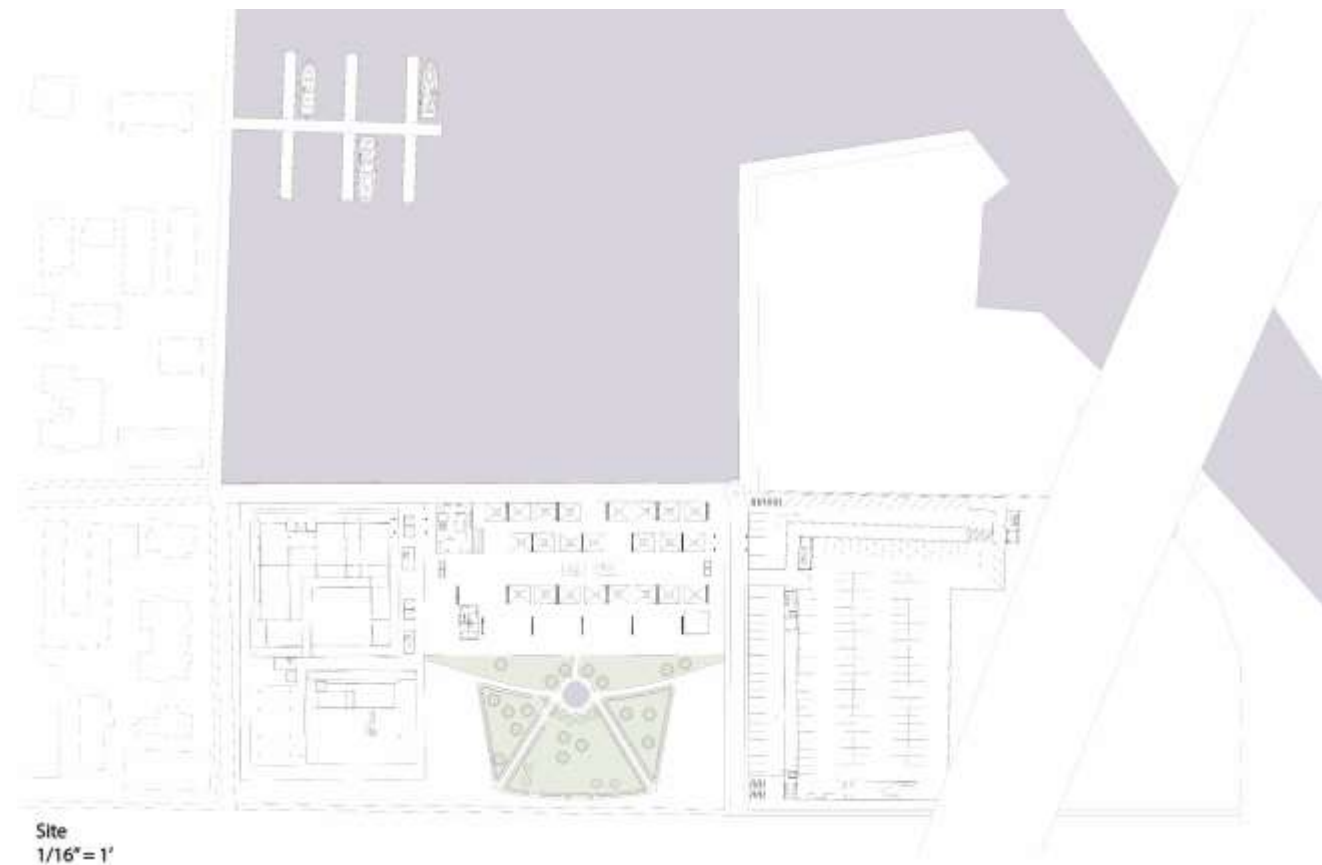


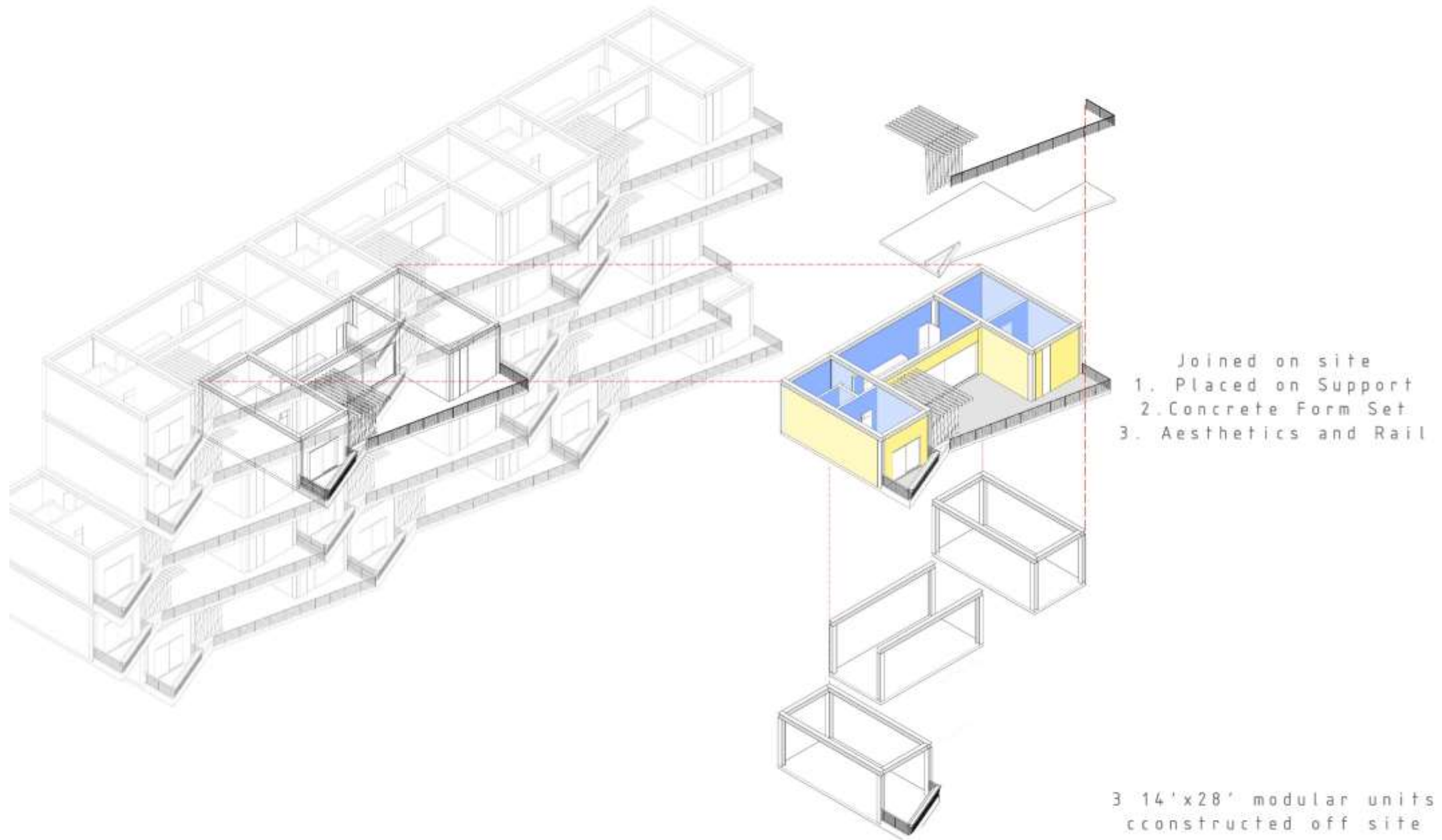
La Marina Metropolitana

by Ben Peace

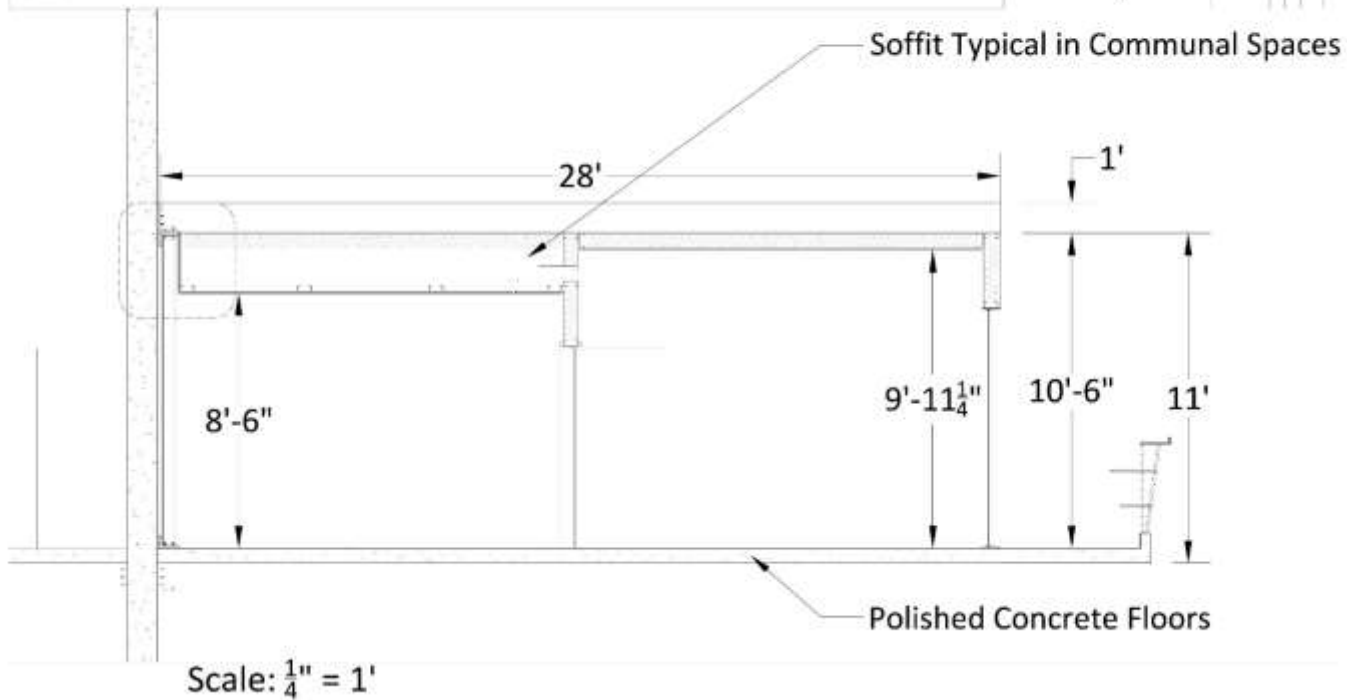
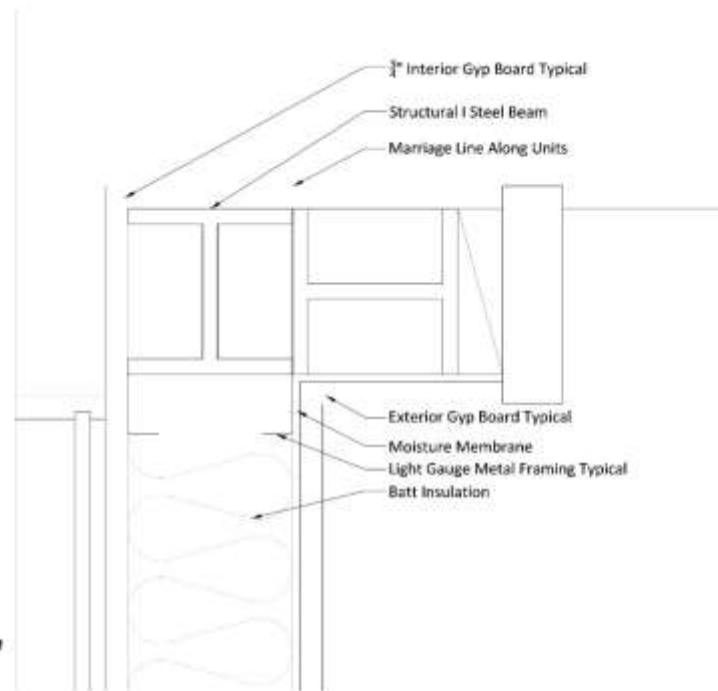
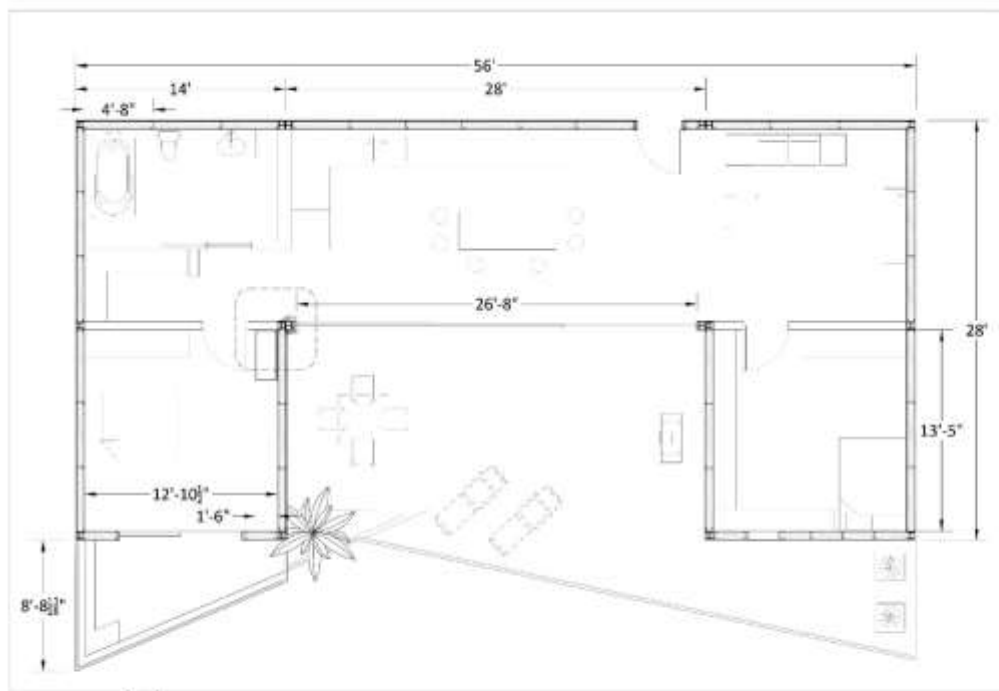


Affected Area Statistics:
 105 Buildings
 428 Households
 1282 People
 2.995 people per household





Modular Construction



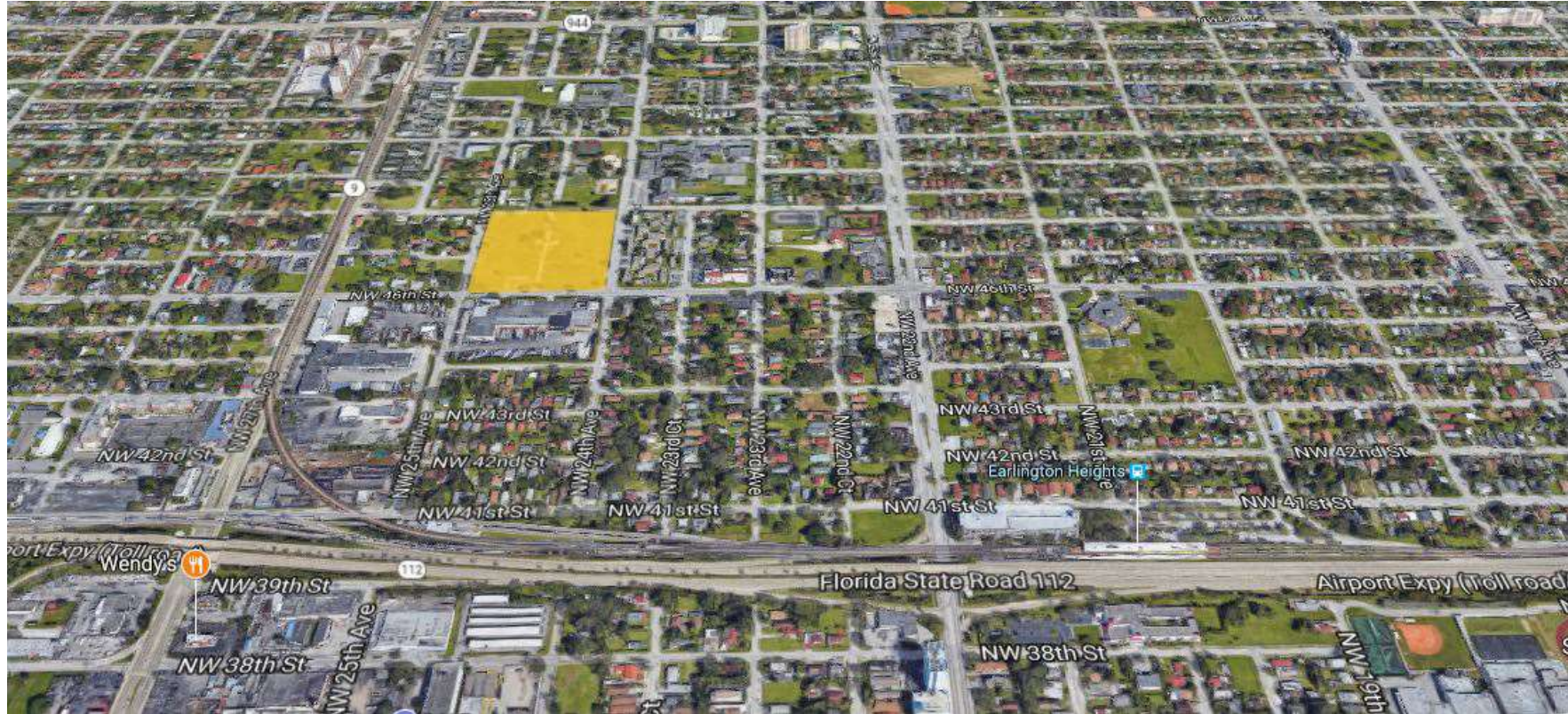


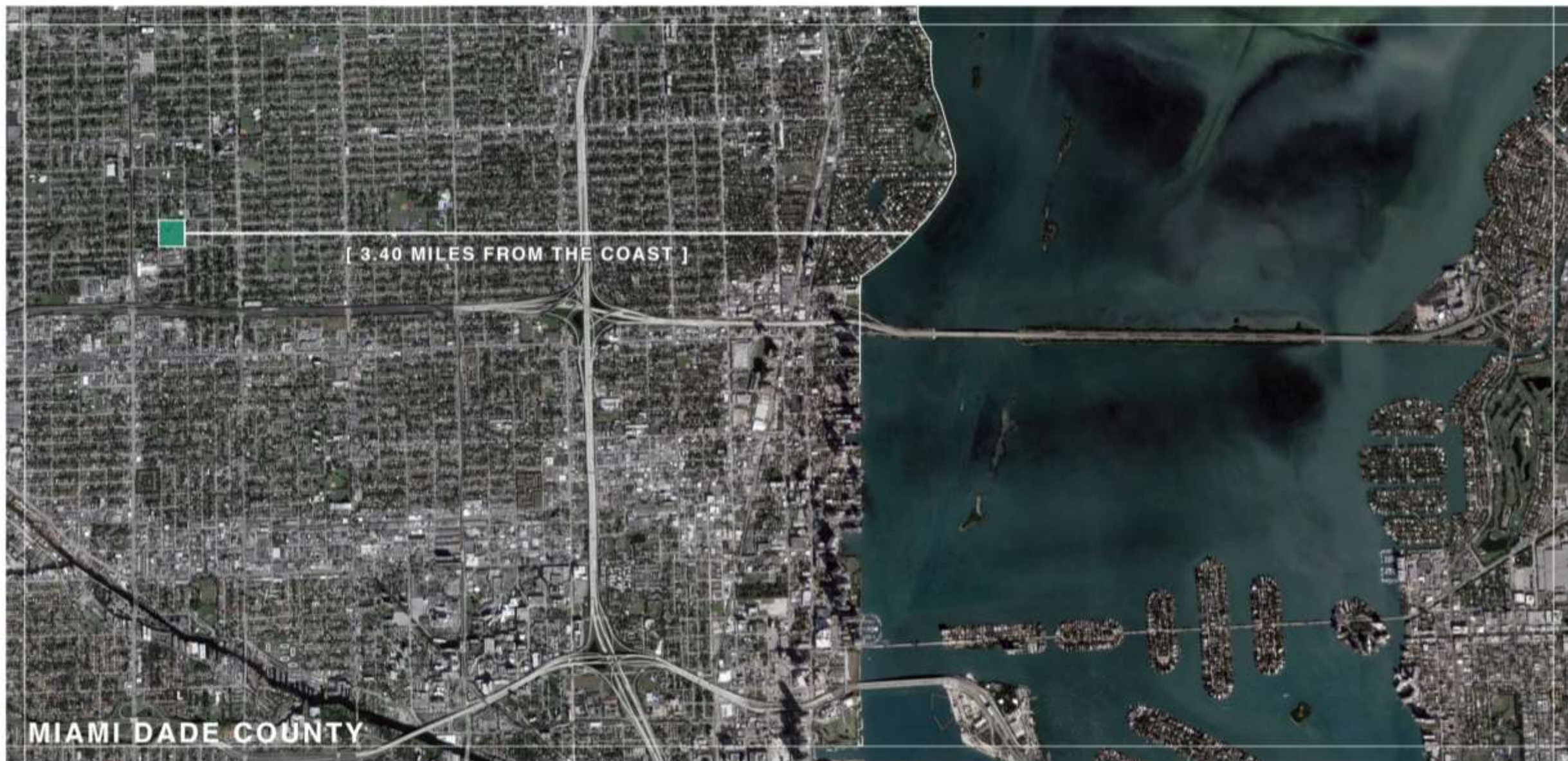


Liberty Peak

Affordable High Density Modular Community

by Anthony Nasko, Aayush Shah, and Pruthvi Tallurd





RELATIVELY SAFE FROM SEA LEVEL RISE - CONSCIOUS OF FLASH FLOODING – SQUARE DIMENSIONS

SITE – 4701 NW 24TH CT.



LOW INCOME HOMES SURROUNDING SITE – GOVERNMENT OWNED, NON-PROGRAMED FLAT LOW-LAND



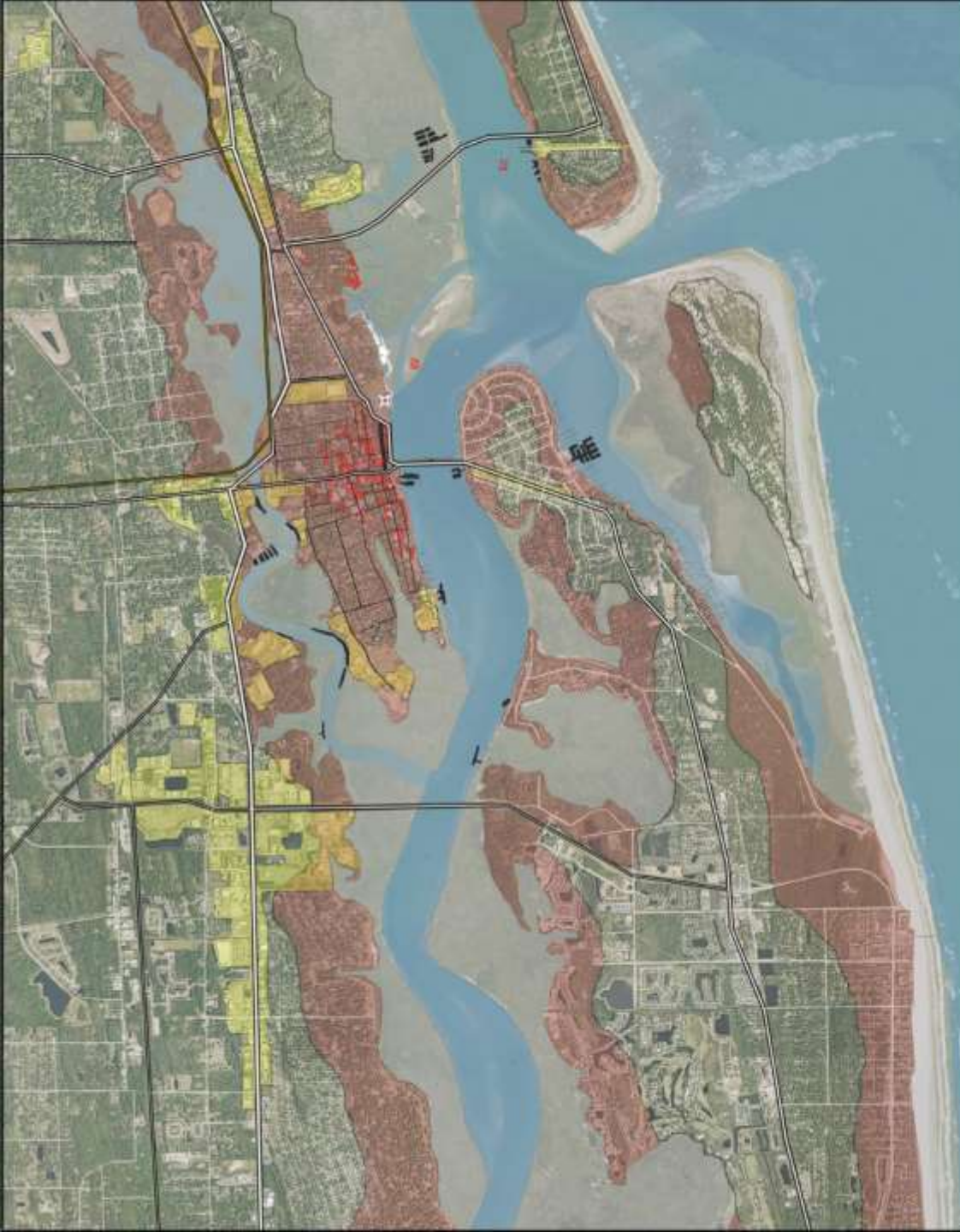
The City of Saint Augustine

Protecting the Heritage City from climate change consequences.

2010-17



SAINT AUGUSTINE



-  Flooding Risk Area
-  Commercial
-  Historic Buildings
-  Historic Commercial Areas
-  Wetlands
-  Arterial Roads
-  Secondary Roads
-  Railroad
-  Docks

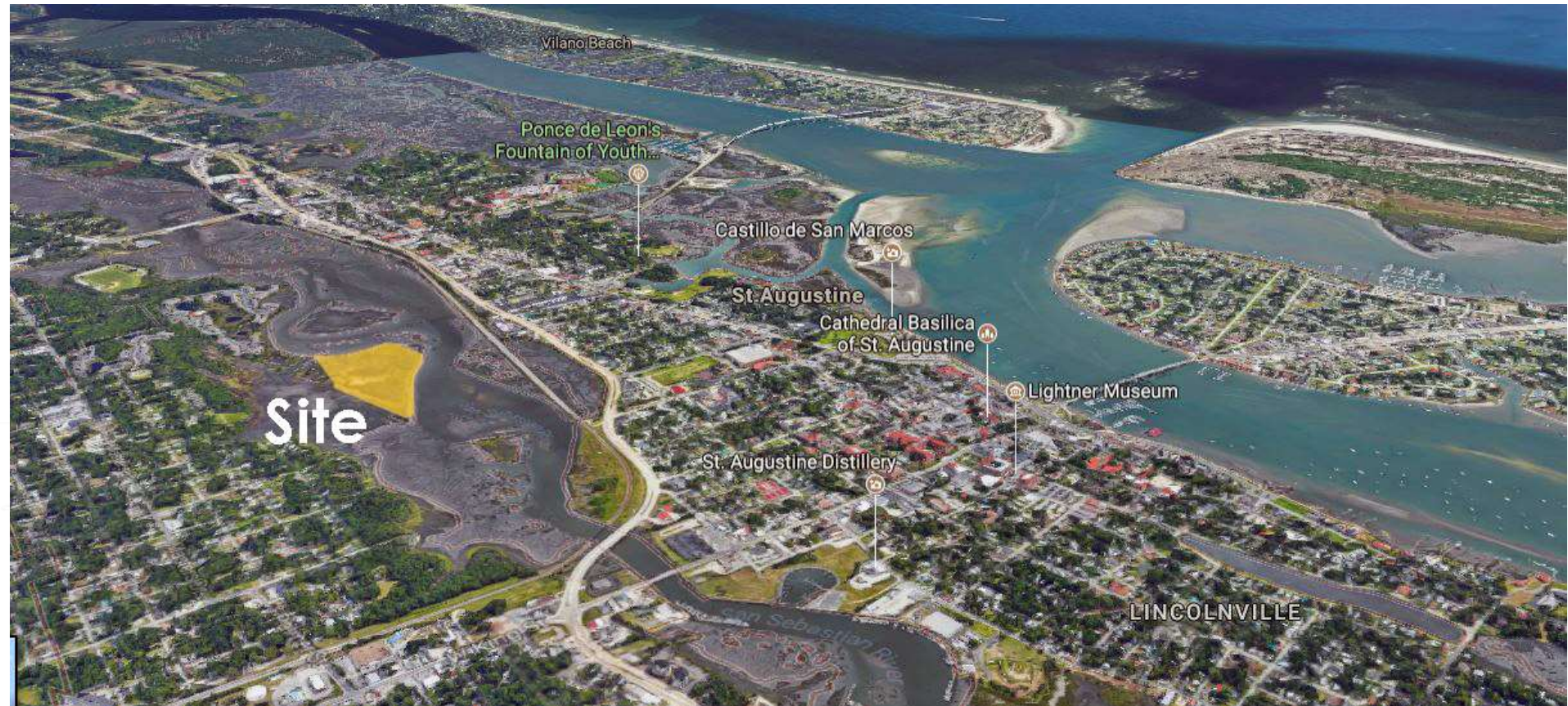
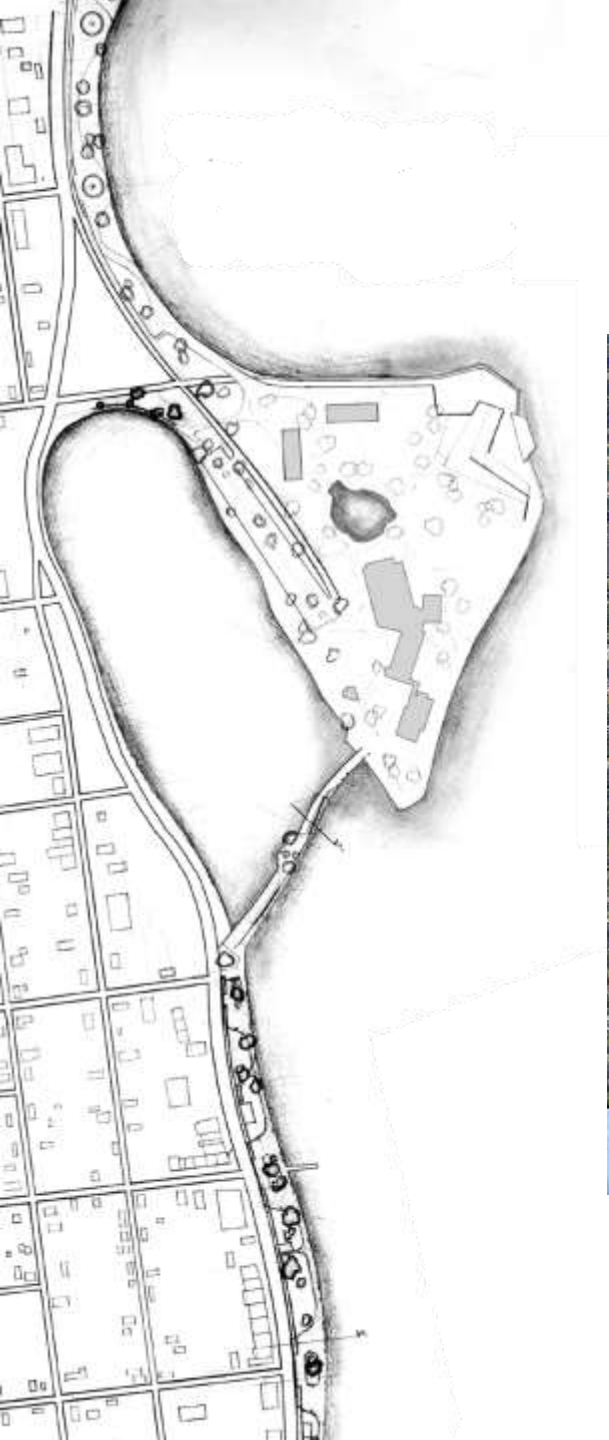
St. Augustine Inundation Intervention Analysis

by Chad Horton & Maria Medina

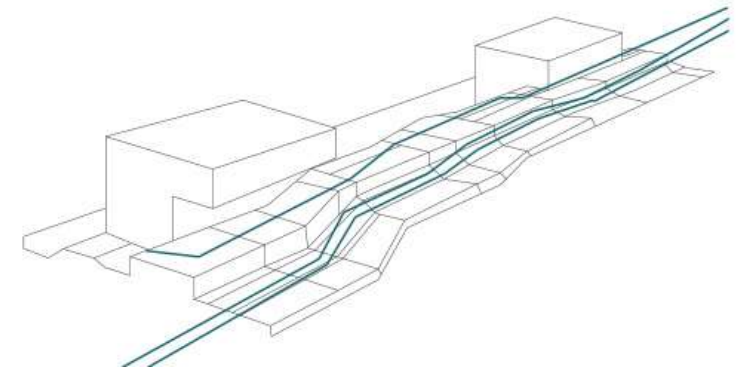
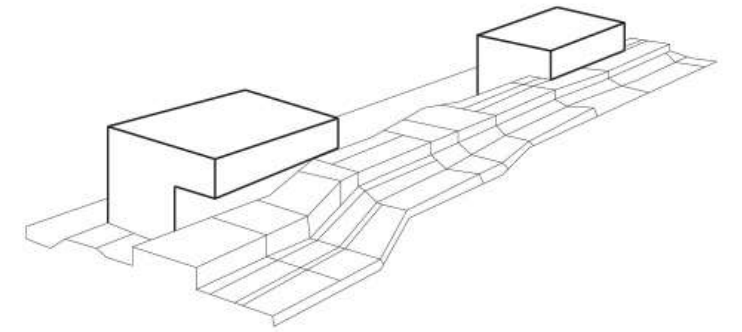
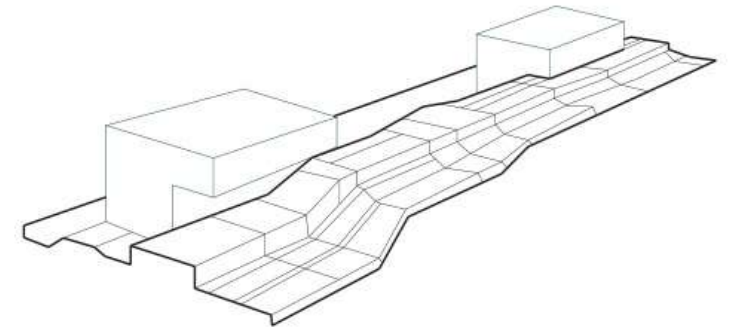
Music Island

Center for Interdisciplinary Research in Music Media & Technologies

by Sami Gerwick







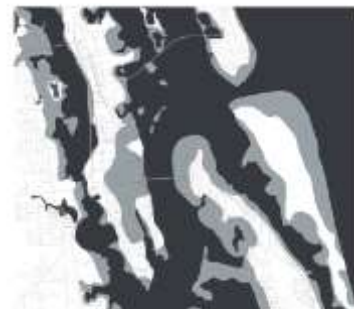
Protecting Heritage Settlements

Interlaced Ecologies: Edge Adaptations for St. Augustine

by Kimberly Connell



Current Coastal Conditions



Inundation 1 Foot



Inundation 3 Feet

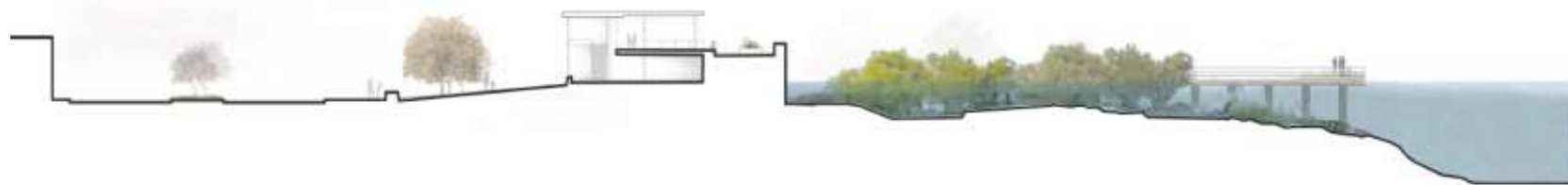


Inundation 6 Feet





0 25 50 75
Feet



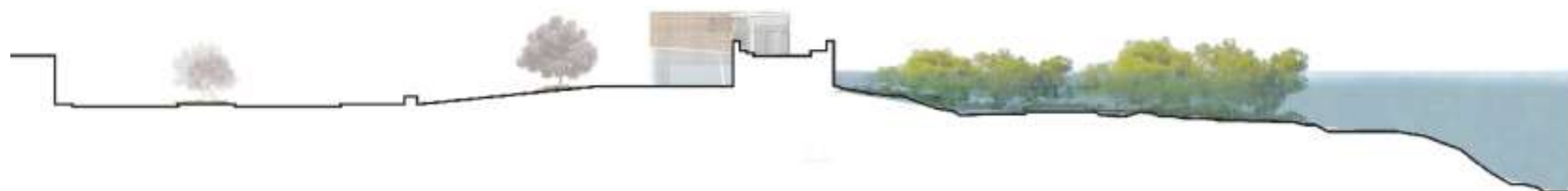
HISTORIC CITY	CITY FRONT WALK	COMMERCIAL	BARRIER	SALTWATER MARSH	HIGH SEA LEVEL
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Promenade Barrier and Commercial Entry Section: 1/16" = 1'0"



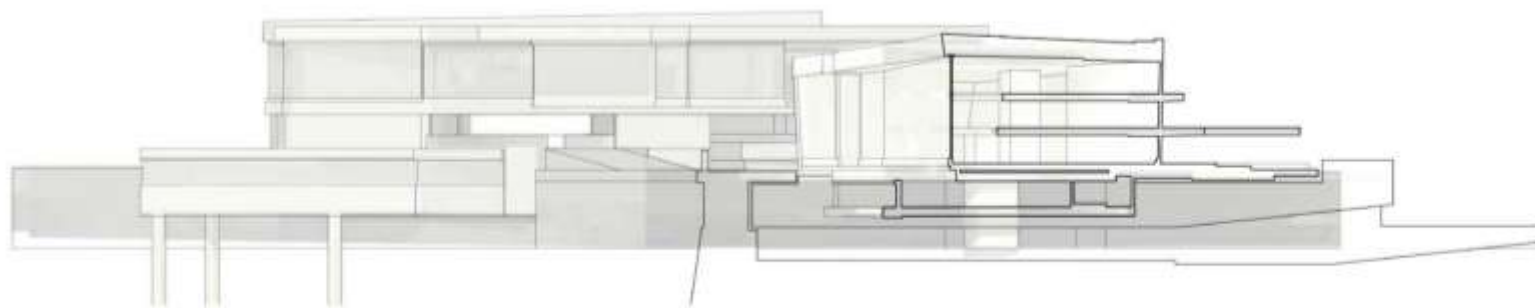
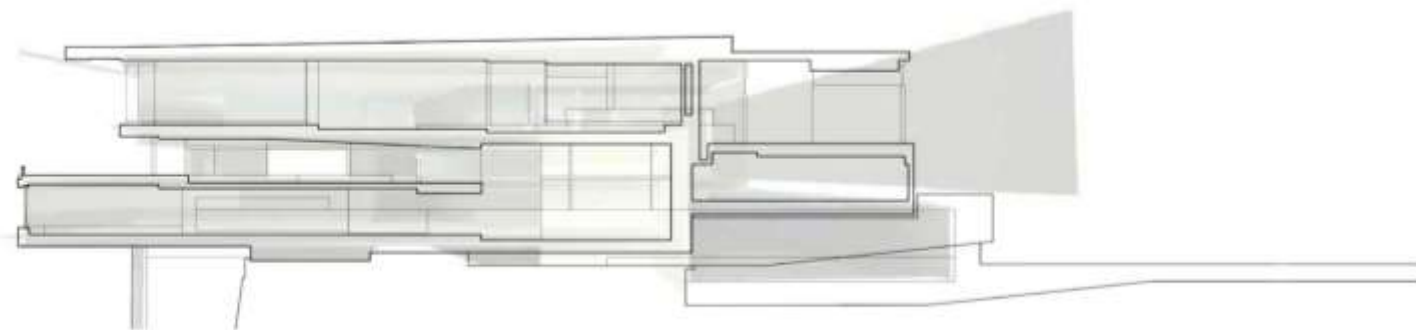
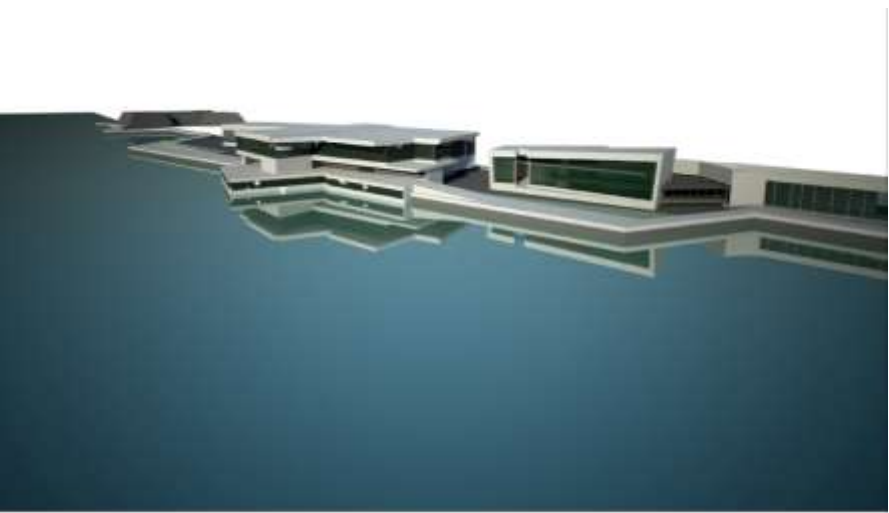
HISTORIC CITY	PUBLIC PARK	SALTWATER MARSH	BARRIER ISLAND	HIGH SEA LEVEL
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Constructed Barrier Island Section: 1/16" = 1'0"



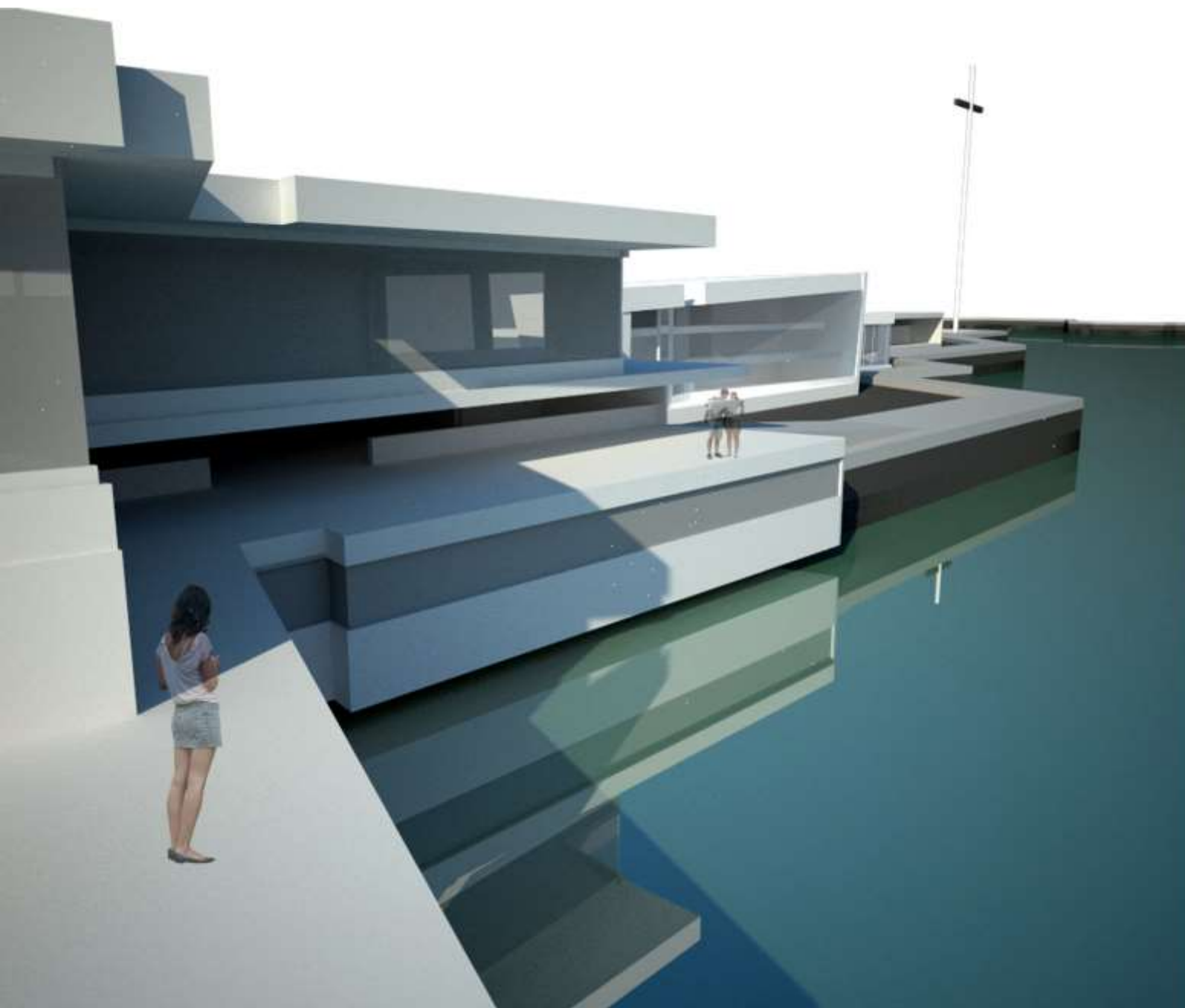
HISTORIC CITY	CITY FRONT WALK	BARRIER	SALTWATER WETLAND	HIGH SEA LEVEL
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Barrier Section and Wetlands: 1/16" = 1'0"



St. Augustine: A Coastal Link

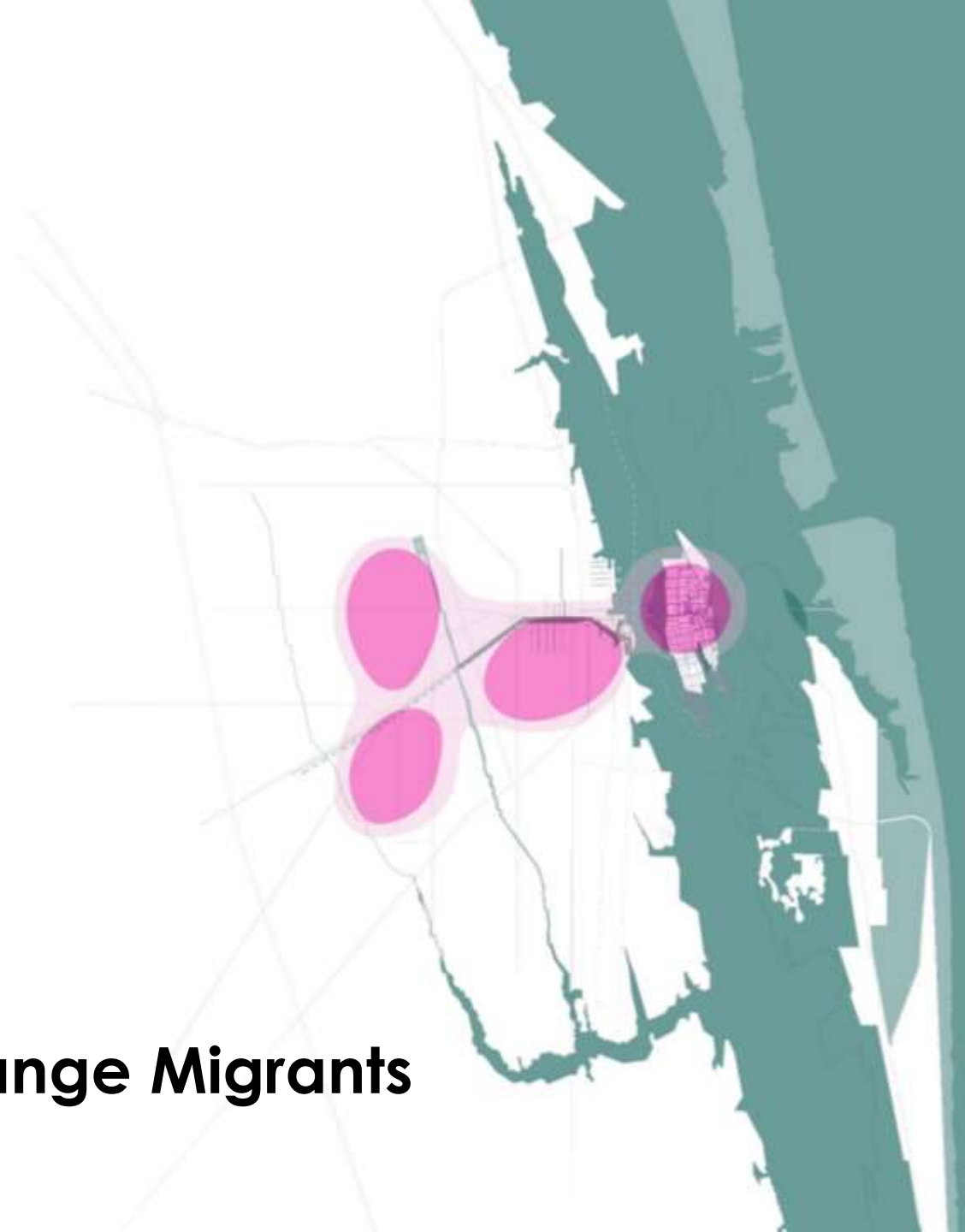
by Maria Medina



Embracing larger scale infrastructural
proposals

New St. Augustine
Urban Programs and Attractors

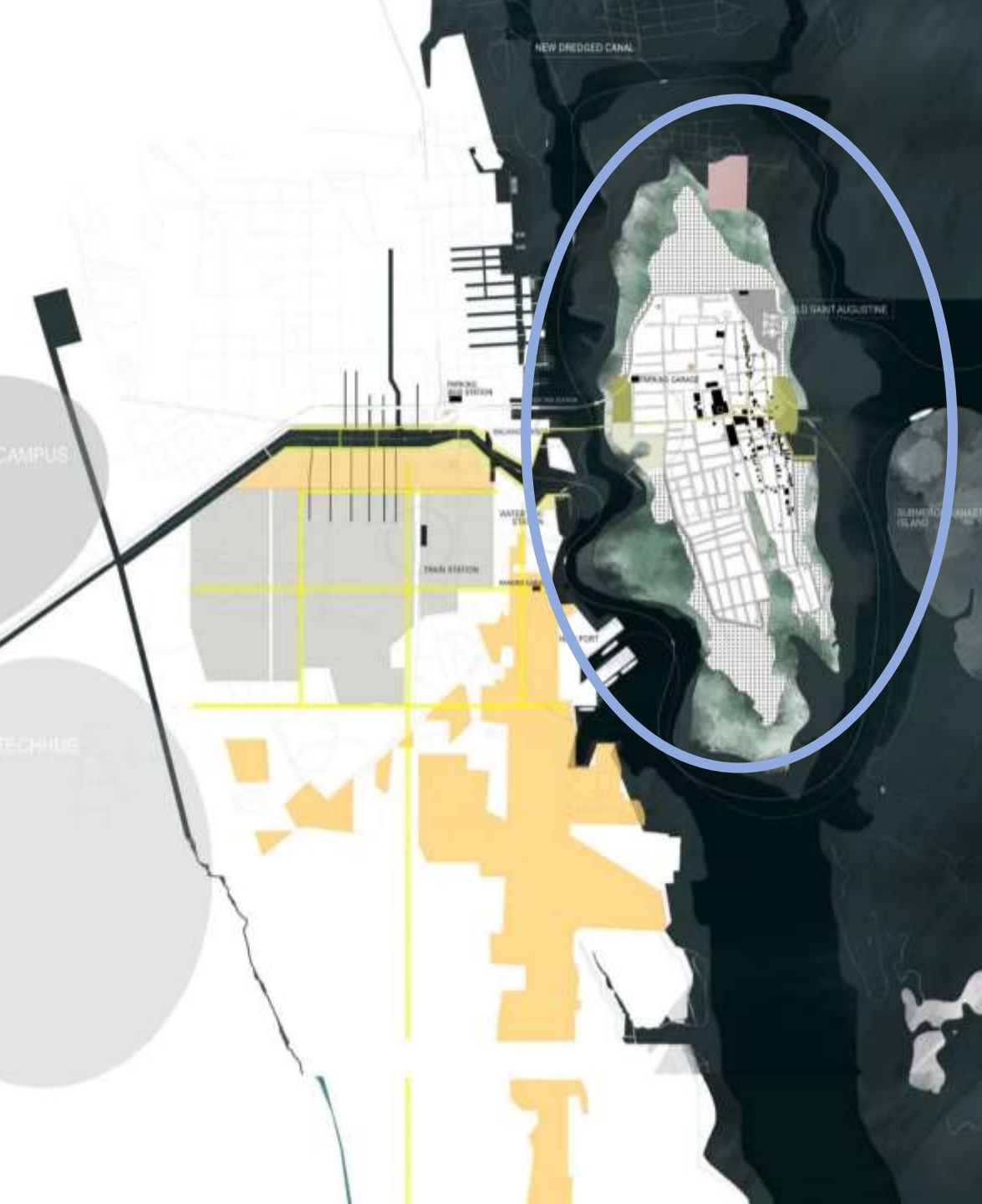
1. Flagler College Extension
2. New Economic Hub
3. Downtown
4. Historic District

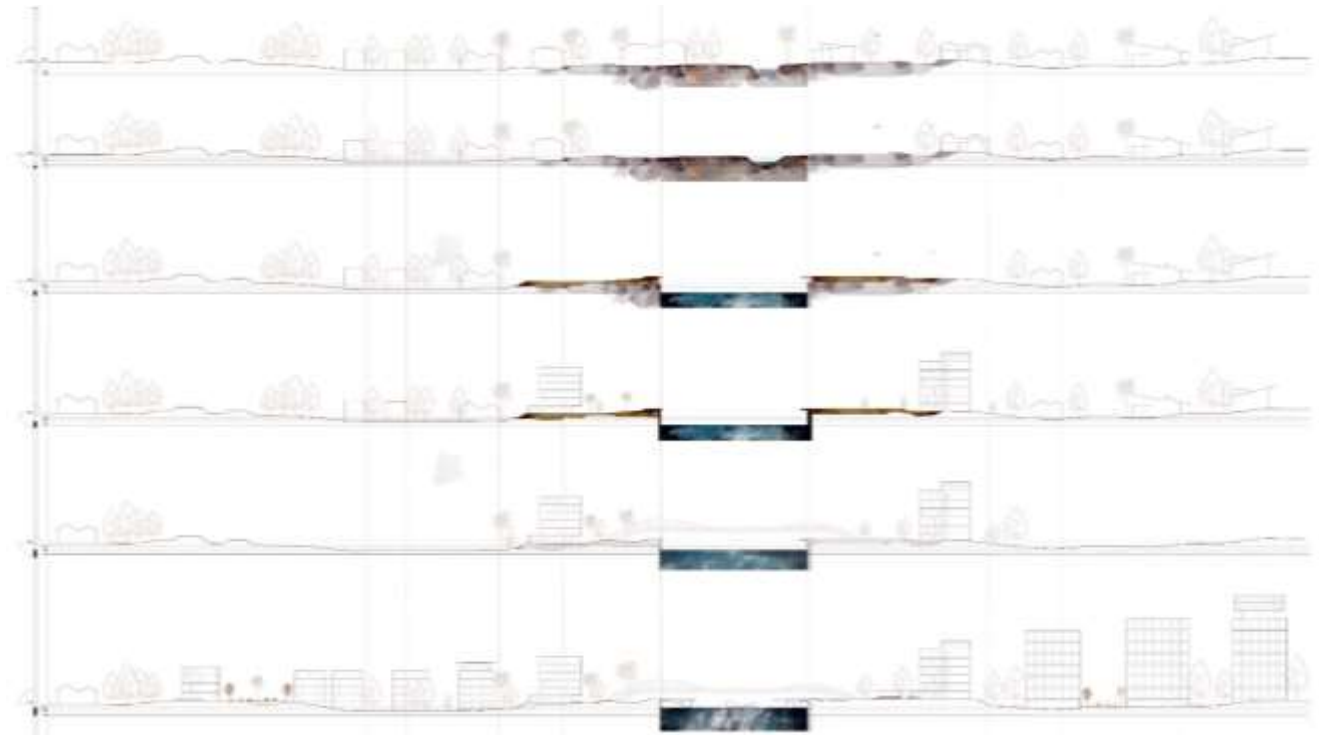


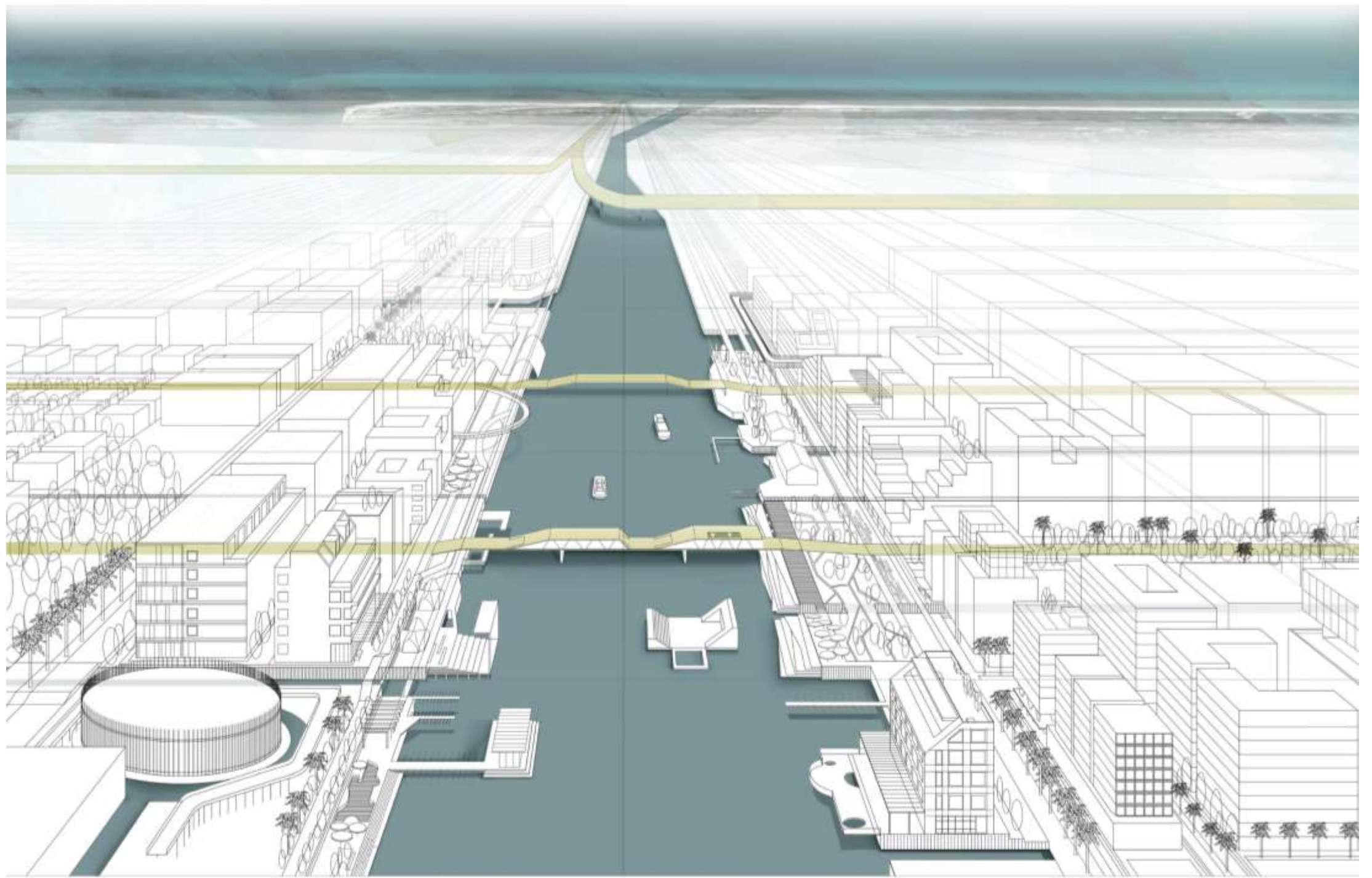
New Urban Settlement for Climate Change Migrants

Saint Augustine River Place
by Anzhelika Arbatskaya

Protect Heritage Assets







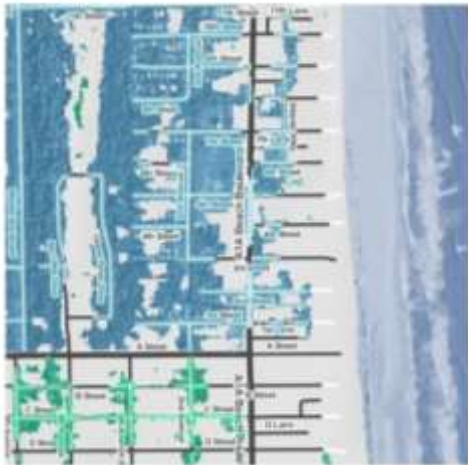
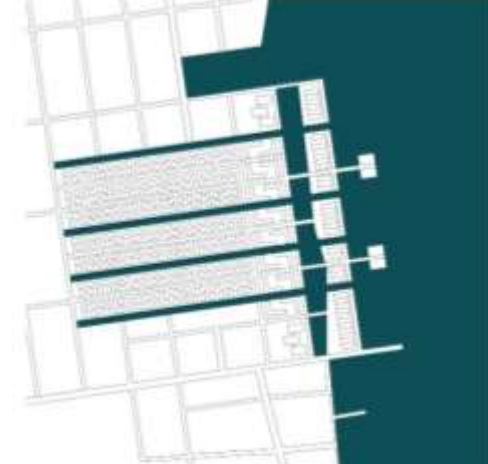
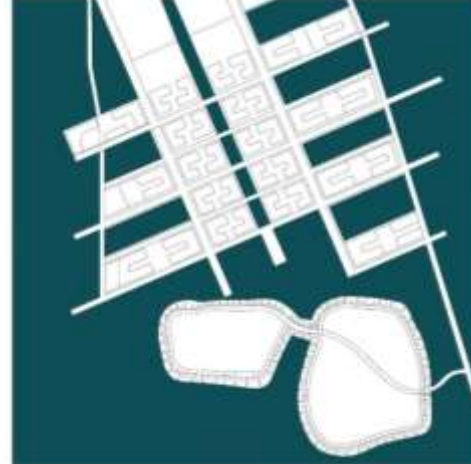
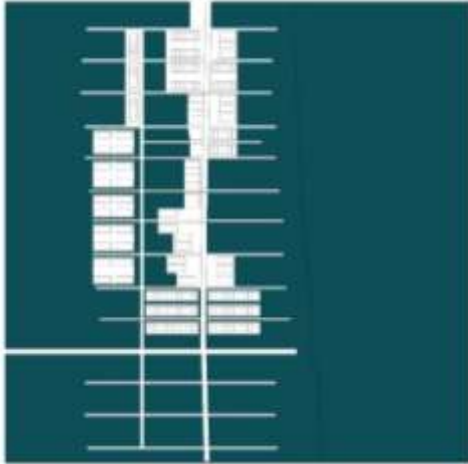
Rebuild in Place

Canal Communities



Dredge/Fill Development

Canal Community Typologies



Barrier Island
Linear Development

Barrier Island
Beach Front

Estuarine
Peninsula Development

Atlantic Ocean

Secured Historic District

Rebuild in Place
Communities

Rebuild in Place
Communities

New Urban Core

Oyster Canal





Scales of intervention

From single lot ideas to regional planning the School of Architecture is engaged at partnering with cities and counties to dare investigating imaginative alternatives for the future.

We believe that academia capitalizes on the strength of younger minds' imagination to allow the unconstrained and daring exploration of visions to promote public discussions for a resilient future.

Community & stakeholders involvement

We welcome community stakeholders as a generators of ideas and discussion partners that give the students real life experiences while allowing meaningful creativity.

Center for Hydro-Generated Urbanism

Martha Kohen
mkohen@ufl.edu

Nancy Clark
nmclark@ufl.edu

We thank the students of the School of Architecture and the College of Design, Construction, and Planning for their contribution to the development of the State.





CHU-CENTER FOR
HYDRO-GENERATED URBANISM

COLLEGE OF DESIGN, CONSTRUCTION AND PLANNING
UNIVERSITY OF FLORIDA

Thank you