

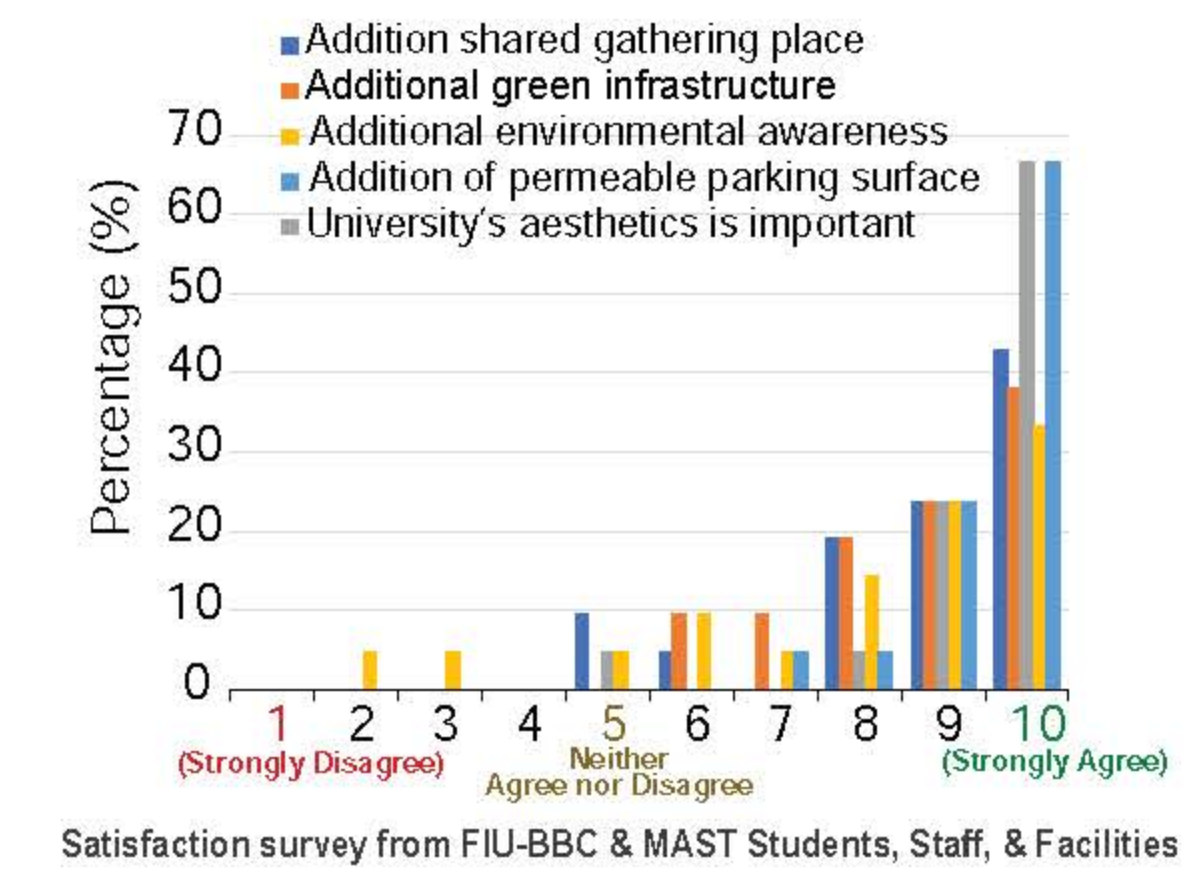
Coastal Flooding



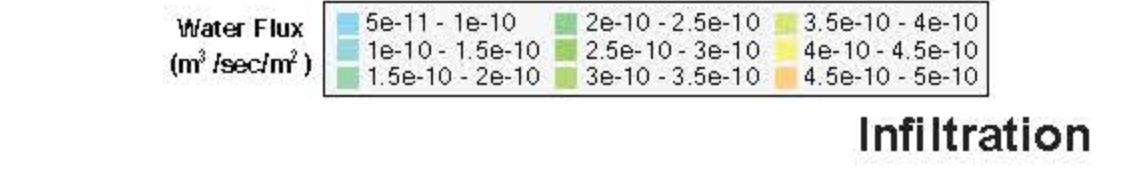
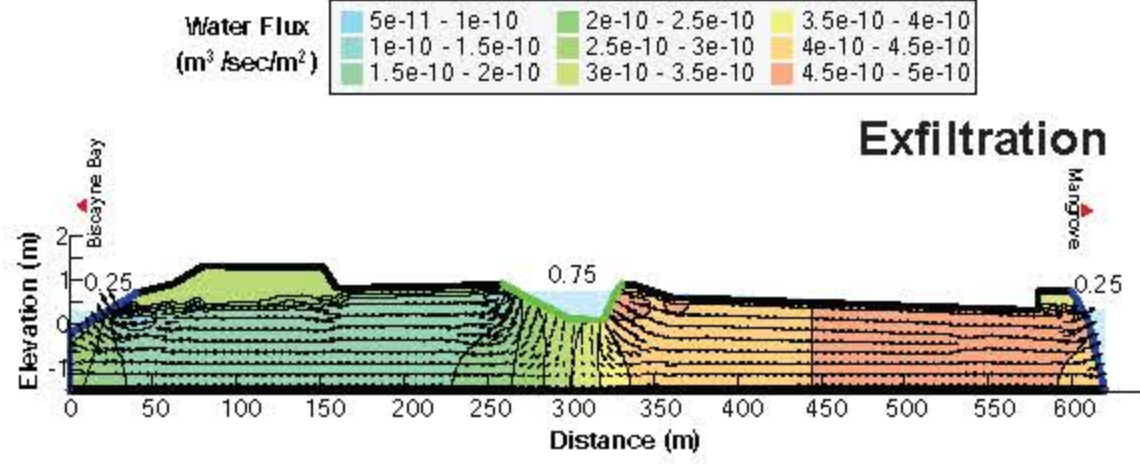
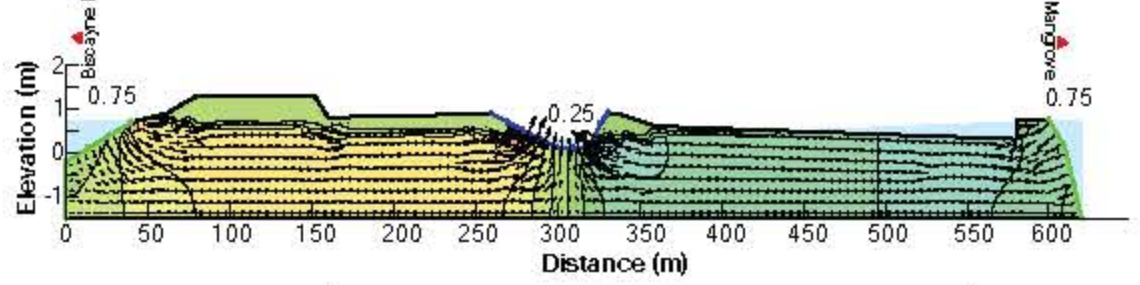
Lack of Fresh Water Irrigation



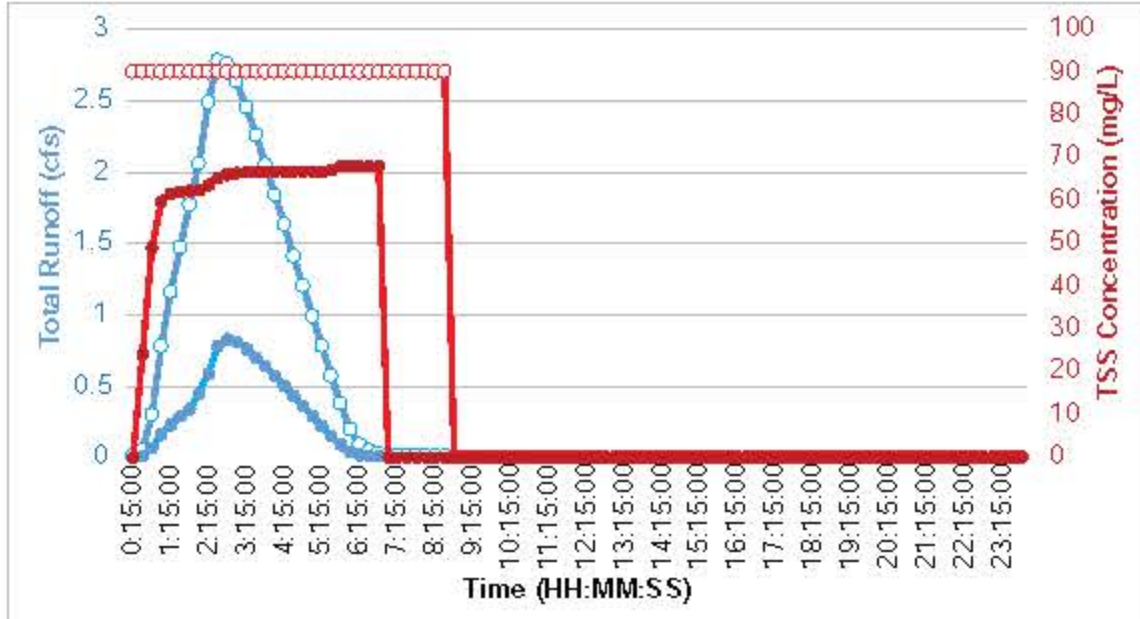
Lack of Shared Gathering Space



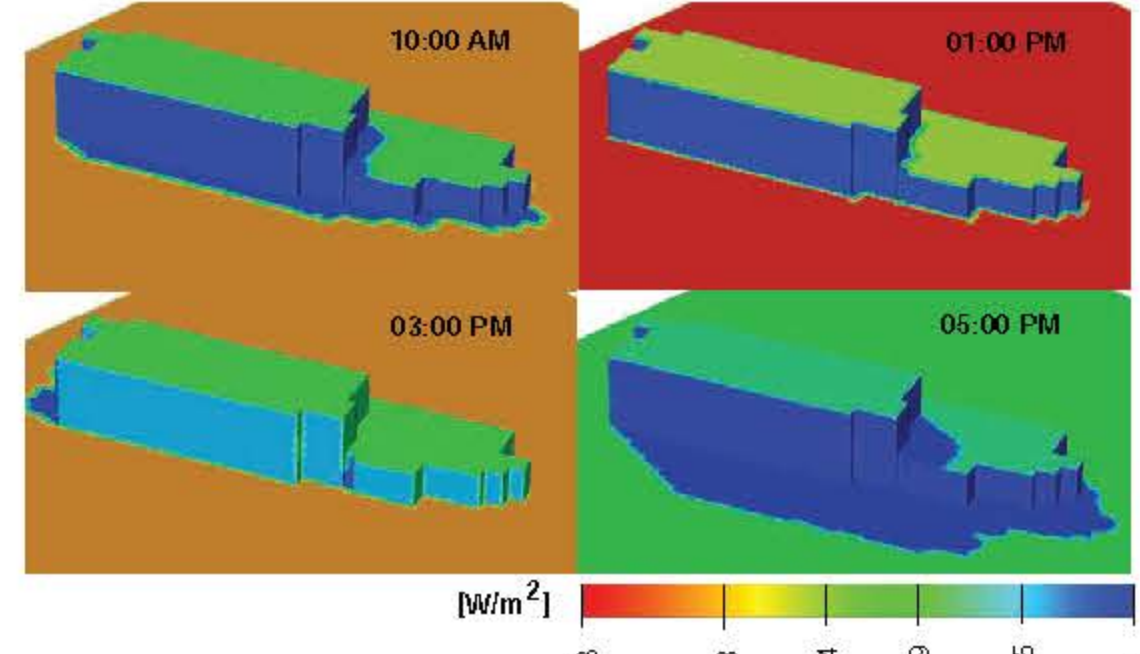
Seepage Analysis



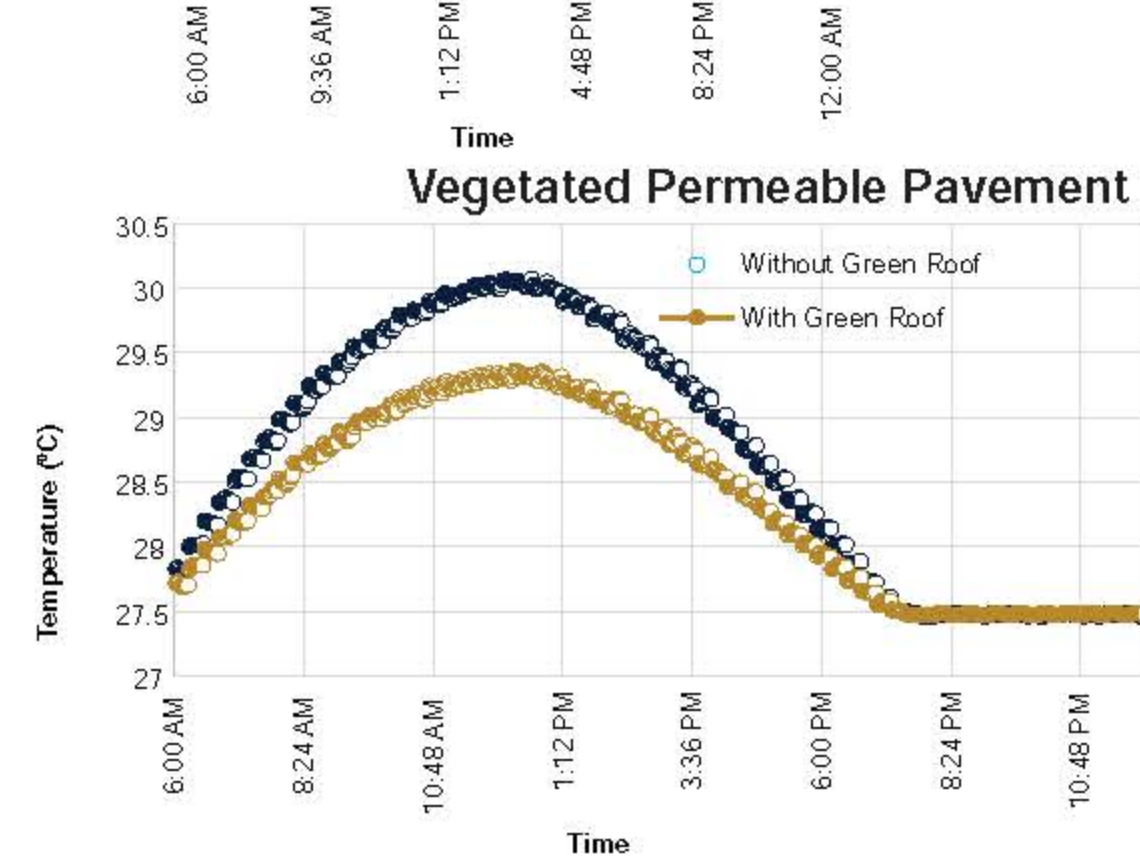
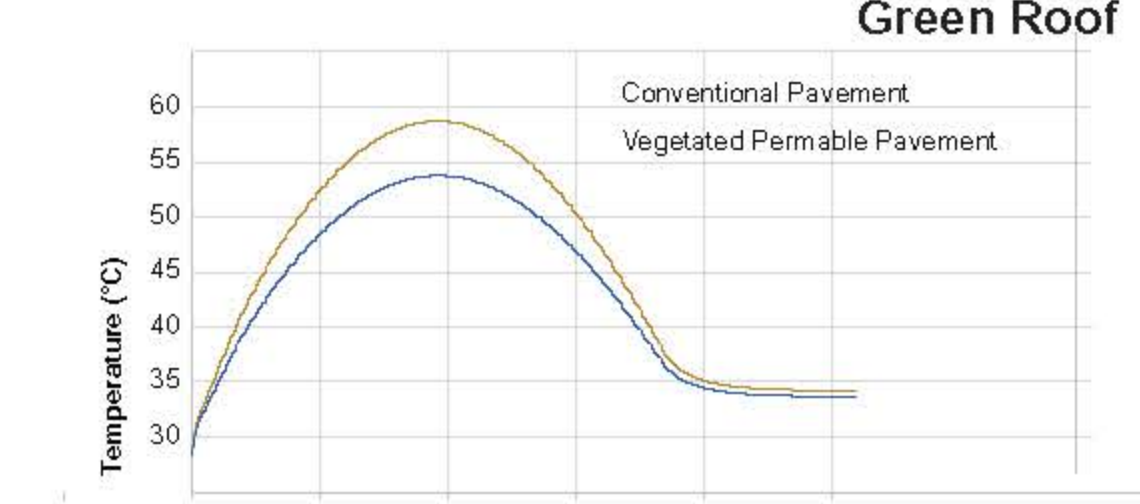
SWMM Analysis



Heat Flux



Temperature Variation Plot

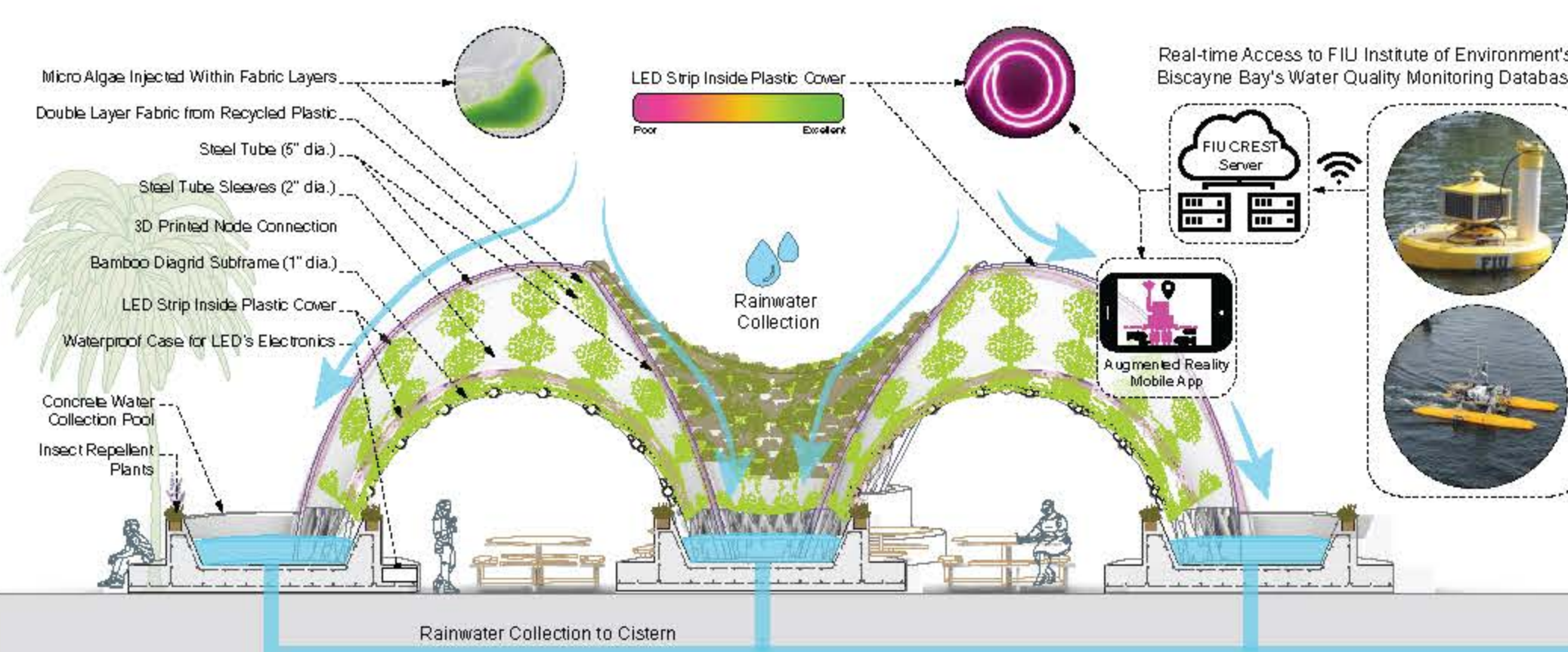


Site Plan

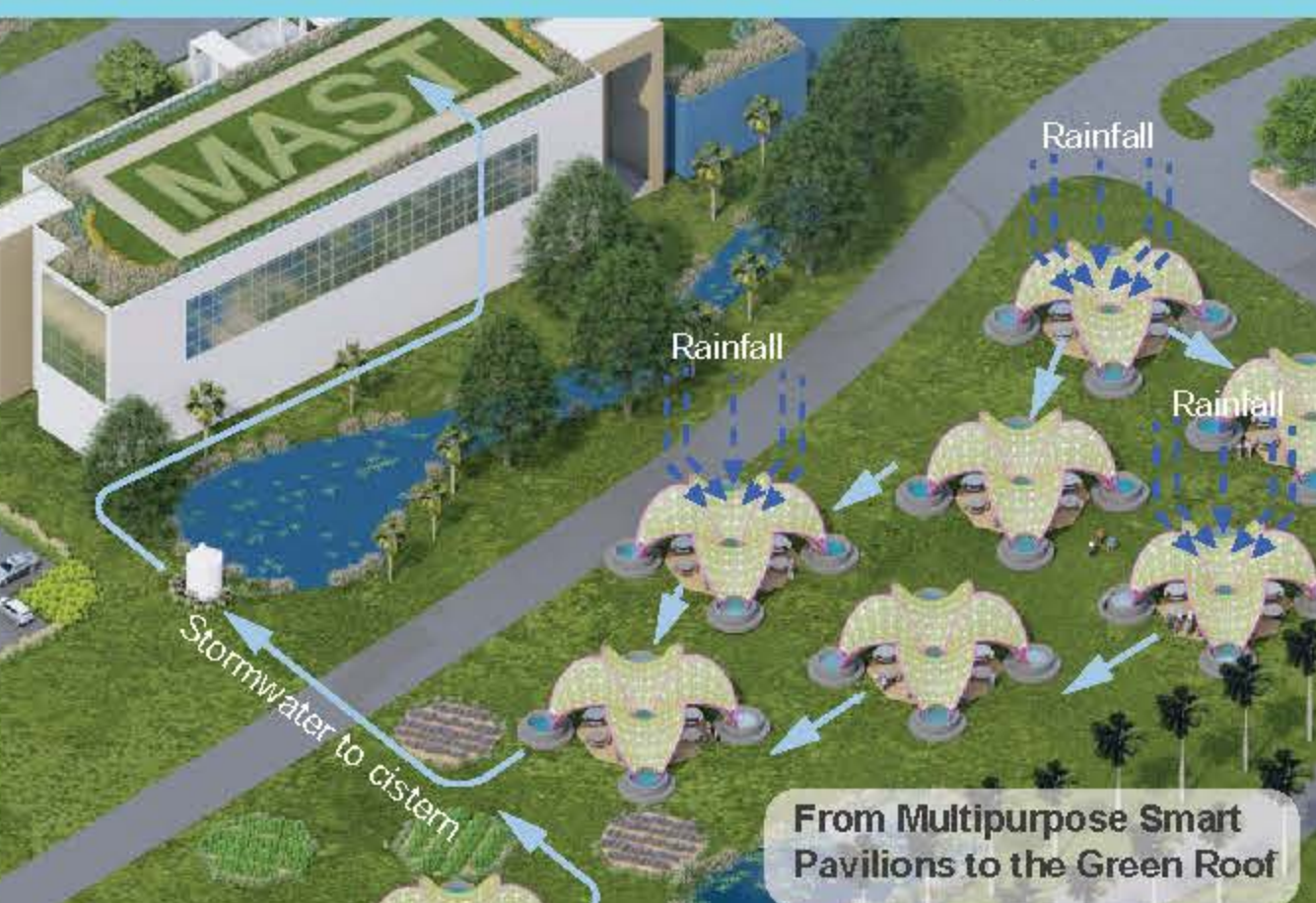


Multipurpose Smart Pavilion

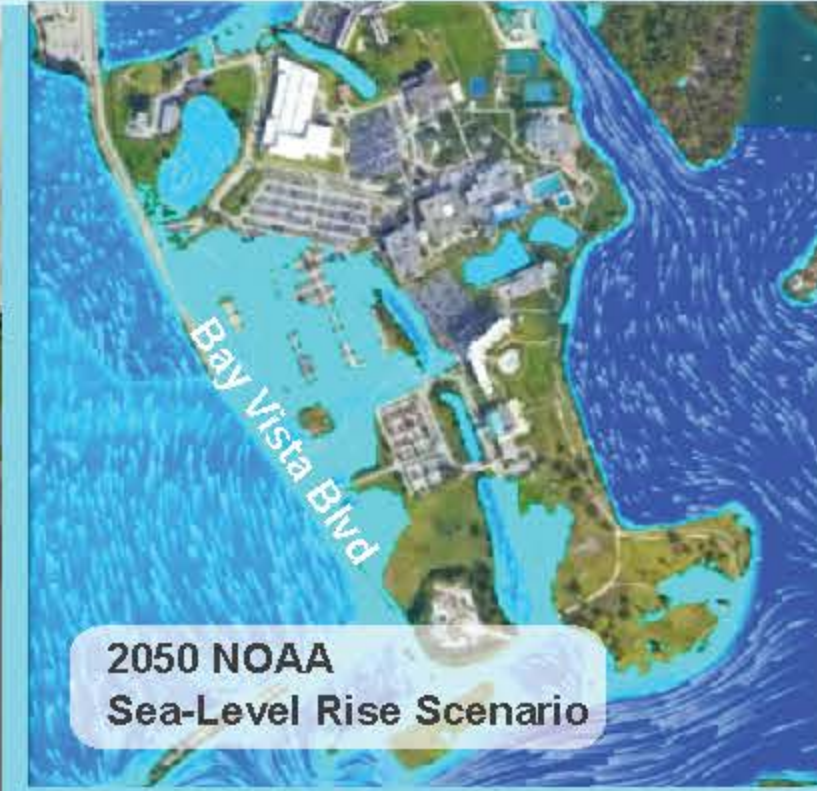
Pavilion Section: Sustainable Construction, Water Collection System, & Real-time Water Monitoring Data Display



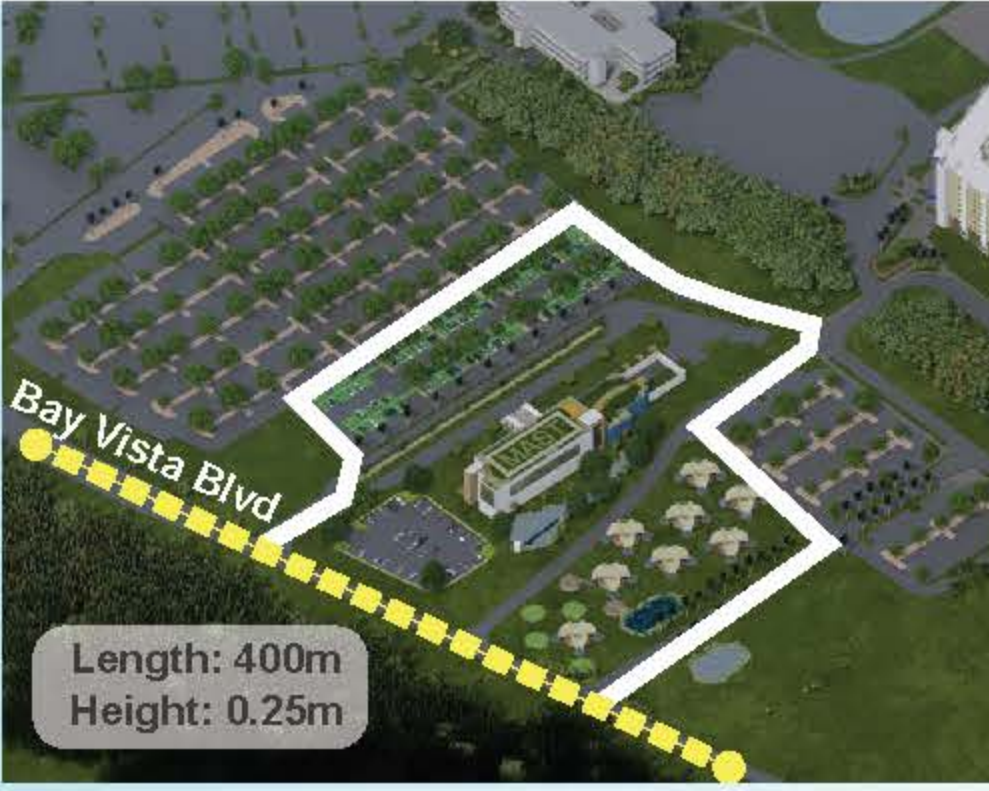
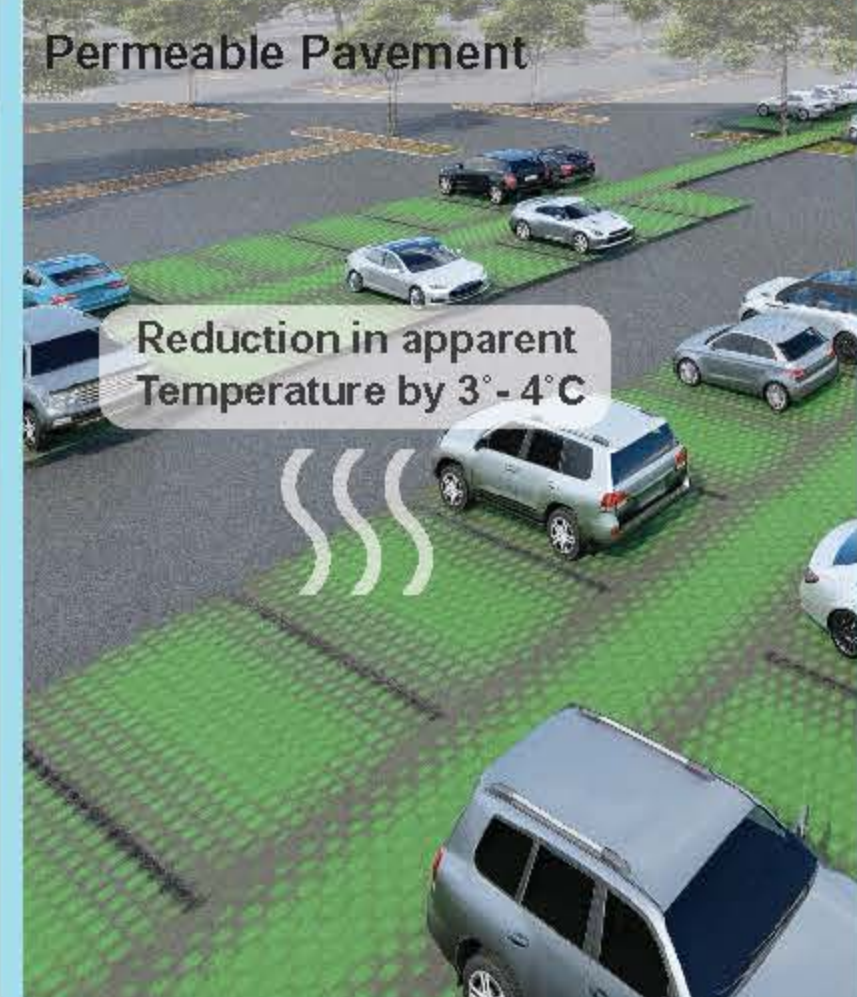
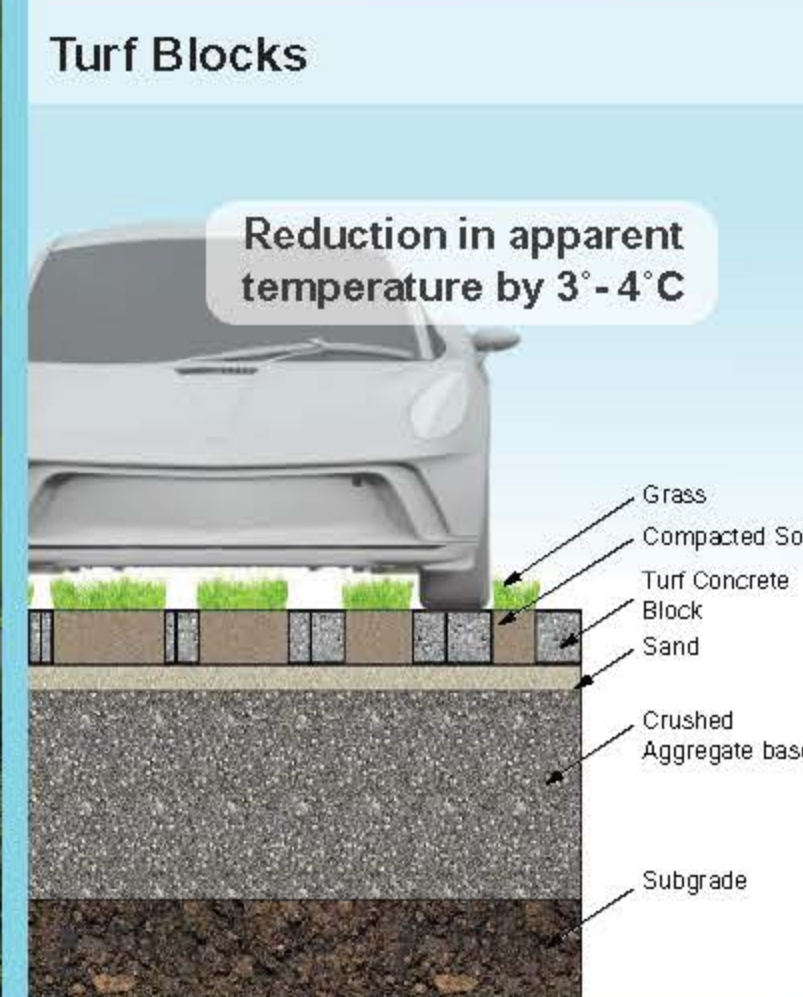
Rainwater Collection for Irrigation



Elevated Road



Green Infrastructures



Augmented Reality Mobile App Displays Geo-located Information about the Pavilions & Biscayne Bay



Summary of Problems and Solutions

ELEVATED ROAD	GREEN INFRASTRUCTURE	MULTIPURPOSE SMART PAVILIONS
<ul style="list-style-type: none"> Eliminate coastal flooding associated with category III hurricane (NOAA Sea-level rise scenario 2050) 	<ul style="list-style-type: none"> TSS removal increased by 75.41%, heavy metal by 83% CO₂ sequestration increased by 55% Stormwater runoff reduced by 73% 	<ul style="list-style-type: none"> Water collection for green infrastructure irrigation: 169,911 gal per year Shared gathering space Recreational & aesthetic value Water quality alert system Augmented reality mobile app
<p>Solution:</p> <p>Elevating 400m of Bay Vista Blvd by 0.25 m</p>	<p>Vegetated Permeable Pavement:</p> <p>Apparent temperature reduced by 3°-4°C</p> <p>Green Roof:</p> <p>Indoor temperature reduced by 3.5°C</p> <p>Energy saving of \$643.47 per year</p> <p>Stormwater runoff retained by 42" per year</p>	