TERRA-SORTA-FIRMA: SEEKING RESILIENT URBANISM ALONG THE C-11 BASIN

General Description

With nearly 20 million residents, Florida is one of the country’s fastest growing states. Its ubiquitous suburban landscape is enabled by the continued manipulation of a dynamic estuarine environment and a pervasive real-estate-driven housing pattern. Thirty-five miles of levees and 2,000 hydraulic pumping stations drain 860 acres of water per day, resulting in the ‘world’s largest wet subdivision’ with $101 billion worth of property projected to be below sea level by 2030. The overall structure that defines Florida’s cities emerges from the combination of hard infrastructural lines, developer driven master plans, reductive normative zoning, and rigid form-based codes. These conventional tools have proven marginally effective in dealing with the increased vulnerability caused by Florida’s inherently dynamic ecological forces and constantly fluctuating environment. This renders traditional static “object-based codification,” which has defined much of contemporary urban design, inadequate and in urgent need of innovation.

By recognizing that it is exactly in the process of design and physical planning that we may be the most operative and strategic agents, this Urban Design Studio puts front and center the agency and efficacy of urban designer’s tools as they deal with issues of 21st century urbanism. It starts by rendering the exclusivity of building cities on dry ground insufficient, and accepts a state of constant hydrological flux - that is neither wet nor dry but always shifting - as the starting point of a novel and contextual “process-based” language for the future of Floridian urbanism.

Student teams will design projects that cover many scales ranging from large-scale landscape infrastructural systems to the design of housing prototypes of varying densities. The teams will work to develop a systemically driven approach that takes the hydrological extremes and ecological resonance of the context as the foundations of their formal proposition. Through the design process, students will then devise a set of unique resiliency zoning, codes, land uses, programs, and typologies that are precise, yet dynamic, flexible, and responsive. These new codes and designs will be collected in a compendium of urban design guidelines to be handed to the practicum’s clients as they reconsider their policy documents. By incorporating the indeterminacy of the shifting broader environmental systems, with the pervasiveness and exactitude of planning code, we establish an opportunity for the instrumentality of policy to be a part of the design process and a progeny of it.

Site

Several counties in South Florida began a review of their comprehensive physical planning documents since executing the Southeast Florida Regional Climate Change Compact in 2010. Accordingly, Broward County (north of Miami-Dade) will serve as the studio and practicum’s client. Five sites of exploration follow the C-11 and Dania Cut-off Canals from the Everglades in the west, out to the Atlantic Ocean. Along the Canal is a representative range of urban, suburban, agricultural, infrastructural, and ecological, variations of Florida’s urbanization. Student teams composed of architects and planners will have the opportunity to select their site and specific programs will be developed after an initial research and mapping phase.
Team 1: The Everglades Coast  
Team 2: The Ranches  
Team 3: The Transitional PUDs (Planned Unit Developments)  
Team 4: The Logistical Spines  
Team 5: The Atlantic Coast

Studio Structure

The studio is broken into three main phases, first a mapping exercise, followed by code research and dynamic multi-scalar design strategies, concluding with an urban catalyst affected by the shifting terrain. The first half of the semester is interlaced with several guest lectures to understand the core principles of the science behind the dynamic flows. The lectures include Groundwater Hydrology by Charles Harvey, MIT Professor of Civil and Environmental Engineering and Urban Ecology of Southern Florida by Peter Del Tredici Botanist and Adjunct Faculty in DUSP. There will also be several workshops with optional additional help to build up skills in both software programs and representation techniques.

Students will have the opportunity to attend the 2016 Southeast Florida Regional Climate Leadership Summit during the class trip to Florida October 5th - 9th. www.southeastfloridaclimatecompact.org/the-summit/summit2016/. At the summit, student will get to hear “real stories of real success in communities, business and political sectors examining the environmental, economic and direct consequences of climate change” from experts and leaders. Students will have a more targeted meeting with County officials on the Friday following the summit and then spend the Saturday and Sunday analyzing their sites.

The results of each of the following assignments will be carried into the following module to build into a final integrated project. There will be structured pinups at the end of each assignment, one mid review and one final review during the semester. This is an intense production and review schedule, necessary to cover the required ground in this studio. These presentations are not only moments of graphic and design presentation, but also of ways to practice public speech and leadership skills. Furthermore, the work of this studio will be highly integrated with the Samuel Tak Lee Lab interactive multi-media case-study initiative. This means the design and research generated in the studio will be shared with audiences across the Institute and around the world.

Weekly Meetings and Desk-crits:

Studio meeting are every Tuesday and Thursday 1-6 pm in 10-485. Students are expected to be in the studio environment for entire duration of that time, and keep their friends and social contacts out both physically and digitally. If you have a documented disability, or any other problem you think may affect your ability to perform in class, please see us early in the semester so that arrangements may be made to accommodate you.

Mid-term Review  
Thursday November 8: With invited jury - Skype Presentation with Broward County to be schedules

Final Review  
Thursday December 15: With invited jury and clients

Graphic Template

A consistent and mandatory graphic template for all drawings and posters will be made available to students. This is meant to streamline the exhibition and publication post-production process. Adobe Illustrator and InDesign packages will be given to the teams at the start of each assignment.
Disabilities
If you have a documented disability, or any other problem you think may affect your ability to perform in class, please see me early in the semester so that arrangements may be made to accommodate you. For MIT’s policy on accommodations for disabilities, please follow this link http://mit.edu/uaap/sds/students/

Academic Integrity
Plagiarism and cheating are both academic crimes. Never turn in an assignment that you did not write or draw yourself or turn in an assignment for this class that you previously turned in for another class. “Unethical behavior in research and scholarship strikes at the heart of the scholarly and educational enterprise. A shared understanding of expectations and responsibilities is, therefore, critical--not only to the quality of the research enterprise but also to the collegial life of this community.” Please refer to MIT’s policy on academic conduct http://web.mit.edu/conduct/academics.html and http://web.mit.edu/academicintegrity/ for more information.

Evaluation
The final grade will represent the balance of attendance, verbal participation, and engagement in workshops, completion assignments and the quality of work produced in studio. The grading will include individual growth over the semester. There will be an emphasis on clarity and originality.

Exercise 1 25%
Exercise 2 25%
Exercise 3 25%
Final Presentation 25%

Communication
Communication is essential to a healthy studio environment. Students are encouraged to work within the studio as much of the time as possible. Learning to work with and around people, discuss ideas and share precedents are all part of the urban design process.

Contact
Please do not hesitate to reach out to the professors and the TA should you have any suggestions or concerns.
Miho mmaz@mit.edu 857-389-3502
Fadi Masoud fmasoud@mit.edu 617-324-5673

PLEASE NOTE THIS SCHEDULE IS A DRAFT ONLY
Schedule

Week 1
Tuesday, September 6: Studio Lottery / Showcase – Site Research Kick off
Thursday, September 8: Studio Introduction / Site Selection Assignment 1A distributed – Canal Modeling

Week 2
Tuesday, September 13: Workshop 1 - Rhino 101 + GIS (building the site model) – Matthew Spremulli
Thursday, September 15: Workshop 2 - Rhino / Grasshopper (transforming – flooding the model) – Matthew Spremulli Assignment 1A due by end of class - Assignment 2B distributed: Research Mapping

Week 3
Tuesday, September 20: desk crits Lecture: Alan Berger: Research Mapping (TBC)
Thursday, September 22: Workshop 3 - Parametric Urbanism / Animation – David Birge (TBC) Mayank Ojha (TBC)

Week 4
Tuesday, September 27: desk crits
Assignment 1 Pin-up Assignment 2A distributed – Dynamic Territory
Thursday, September 29: desk crits

Week 5
Tuesday, October 4: desk crits Lecture: Peter Del Tredici: Urban Ecology (TBC)
Thursday, October 5-10: CLASS TRIP + South Florida Climate Summit (Oct 5-6)
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<tr>
<th>Week 6</th>
<th>Tuesday, October 11:</th>
<th>COLUMBUS DAY HOLIDAY – MONDAY CLASSES</th>
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<td>Thursday, October 13:</td>
<td>desk crits</td>
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<th>Tuesday, October 18:</th>
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<th>Tuesday, November 1:</th>
<th>Lecture: Charles Harvey: Ground Water Hydrology (TBC)</th>
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<td>Thursday, November 10:</td>
<td>Assignment 3B distributed – Dynamic Catalyst</td>
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<th>Tuesday, November 22:</th>
<th>Lecture: Eran Ben-Jospeh - (Codes and Standards) (TBC)</th>
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<th>Week 14</th>
<th>Tuesday, December 6:</th>
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<td>Thursday, December 8:</td>
<td>Pen-ultimate Review</td>
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<th>Week 15</th>
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<td>Thursday, December 15:</td>
<td>FINAL REVIEW – Invited Jury + County Staff (tentative date)</td>
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**Bibliography** (preliminary list)


Reducing Climate Risk and Creating Economic Opportunity

King Tide Tool Kit

Southeast Florida Regional Climate Action Plan

Regional Impacts of Climate Change and Issues for Stormwater Management

Webinar: Nature Conservancy Coastal Resilience Visualization Tool

Guidelines to Local Governments for Temporary Coastal Armoring Seaward of the Coastal Construction Control Line

Nature-Based Coastal Defenses in Southeast Florida


http://c-11.org/

http://www.broward.org/Pages/Welcome.aspx