SUMMARY

“The Humanitarian Charter is concerned with the most basic requirements for sustaining the lives and dignity of those affected by calamity or conflict, as reflected in the body of international human rights.”

Sphere Standards

Civic architecture that meets the needs of everyday community life is designed to dignify its purpose. Schools, libraries, and sports arenas are spaces for public institutions, anchors and social hubs that signify long-term stability and the proper functioning of the institutions they house. However, in a disaster, by default, rather than design, these buildings become shelters of last resort, to protect people during some of their most difficult moments. As shelters, these public buildings fail the public they are designed to serve, leading to overcrowding, a loss of privacy, a lack of safety, and inability to accommodate the wide-ranging needs of a diverse population.

Traditionally, public architecture has been conceived with an idealized vision of the “normal,” designed to operate within a narrow band of increasingly inadequate averages. As climate change accelerates, and disasters such as Irma and Maria, become increasingly common and severe, architects need to develop new tools to design public buildings to meet the needs not just for a future of averages, but a
future of extremes. This studio therefore takes on the challenge of a specific place, Puerto Rico, in a specific time, still recovering from the devastation of fiscal crisis and Hurricanes Irma and Maria. The studio will reconceive a common public architecture, the high school, to meet all the “everyday” needs of a community while at the same time exploring how it can transform by design into a safe haven for evacuation from the surrounding territory in extreme, disaster times. Puerto Rico needs both new models for education that encourages economic dynamism and training for the global economy, and shelters that can support people before, during, and after extreme disruptive events. By merging these two programs, the studio will be developing architecture for a wide range of future use scenarios, not just the ones for which we might naively hope.

The studio will develop strategies, tools, and methods to find synergies between these drastically different use scenarios, between classroom and shelter, between traditional infrastructure and resilient local networks, between the routine, important work of the school day and the most intense events most people will ever live through. These strategies will be applied across scales, from the analysis and design of the town-sized territory, including how a school / shelter should be embedded in it, all the way down to the human scale of transformable architectural details and furniture.

SITES – In 2017, Puerto Rico had to close 167 schools due to financial issues. Now, after Hurricanes Irma and Maria, they are planning to close another 265 schools. Parents and teachers are protesting all over the island, emphasizing the fact that closing schools may cause even more people to leave the island.

Out of all the 265 schools slated to be closed, there are currently 28 high schools which will be repurposed as new innovation high schools. Puerto Rico has 7 educational regions, so 4 schools per region have been selected as an effort to bring new energy into the both the education system and the entrepreneurship space within the island. During our site analysis phase, we will be selecting schools for our studio interventions with our partners at Echar Pa’lante (http://echarpalante.com/).

Students will be asked to analyze the existing schools and then make decisions based on their concept as whether to retrofit, add to or design a completely new school for the site.

STUDIO STRUCTURE

The studio is broken into three main phases which layer on each other to culminate in a final, comprehensive design project.

1. PRECEDENTS + PROGRAMS: In the first part of the semester we will research school precedents – ranging from regular high schools to innovation centers to vocational schools. Students will be asked to look at all of the programs and spaces with the school to imagine each for dual use potentials. In parallel, students will also be asked to analyze guidelines and precedents of evacuation centers. Through this research we will create the program for each student project. As part of our program and spatial analysis, we will create a game to develop empathy for the people evacuating to the shelter, their mindset, psychology and spatial needs.

2. DYNAMIC TERRITORY: The second part is analyzing the dynamic territory of the site and program. The multiple hazards that face the island, understanding the ebbs and flows both of populations and environmental factors that will influence design decisions. We will diagram daily patterns, annual patterns as well as growing and shrinking use of spaces. Students will be
encouraged to try new modes of representation (including large format drawings, fold outs, transparencies, projections, videos) which makes TIME an active part of the representation.

3. SAFE SCHOOL: The results of each of these assignments will be carried into the final module to design a fully integrated project that takes into account three use scenarios and the transformations between them. The first is the school phase, the second is emergency evacuation + event sheltering phase, and the third is the longer term sheltering phase, with the gradual transformation back into a school.

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 World Bank Disaster Risk Reduction and Urban Resilience efforts in the Caribbean by Keren Carla Charles, Lily Bui (MIT DUSP PhD Student researching disaster management in Puerto Rico), and MIT Faculty Caitlin Mueller. There will also be workshops and lectures to build up skills in both software programs and representation techniques.

There will be studio trip to Puerto Rico from October 5-9th to visit the sites and learn from the challenges people faced during the hurricane and in this recovery process.

There will be structured pinups at the end of each part, 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 speaking and leadership skills.

Weekly Meetings and Desk-crits:
Studio meeting are every Tuesday and Thursday 1-6 pm in 7-434. 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.

Mid-term Review
November 6 - with invited jury

Final Review
TBD: with invited jury

Part 1 – PRECEDENTS & PROGRAMS
Typology / Program / Spatial Analysis (Global)
Letter size – Horizontal
List names of precedents here to avoid overlap
https://docs.google.com/spreadsheets/d/1k1NxArudckjKg7zBzpphdvyvCH8ZpvV86n4F31scETA/edit?usp=sharing

Team A (4 students) - High Schools
   A. Guidelines / Codes
   B. Precedents
   C. Use-case Stories (newspaper articles etc)
Team B (4 students) - Innovation/Fabrication Centers/Vocational Schools
   A. Guidelines / Codes
   B. Precedents
   C. Use-case Stories (newspaper articles etc)

Everyone - Evacuation Centers
   A. Guidelines / Codes
   B. Specific Relevant Precedents
   C. Use-case Stories (newspaper articles etc)

**Part 1b – Evacuation Center Game** – this will be run as a workshop so additional directions will be given on that day.

**Part 2 – Dynamic Territory**

*Hurricane/Flooding (2 students)*
   A. Frequency
   B. Precedents
   C. Use-case Stories (newspaper articles etc)
   D. Puerto Rico Hazard Profile

*Earthquake/Landslide (2 students)*
   A. Frequency
   B. Precedents
   C. Use-case Stories (newspaper articles etc)
   D. Puerto Rico Hazard Profile

*Tsunami (2 students)*
   A. Frequency
   B. Precedents
   C. Use-case Stories (newspaper articles etc)
   D. Puerto Rico Hazard Profile

*Heat/Drought (2 students)*
   A. Frequency
   E. Precedents
   F. Use-case Stories (newspaper articles etc)
   G. Puerto Rico Hazard Profile

**Part 3 – SAFE SCHOOL - Three Transformations**
1. During Everyday School
2. During Immediate Evacuation first 24 hours - population 1000 - include access, evacuation routes, signage
3. During Medium-term Temporary Shelter 2 days – 1 year, population 100, sharing the space with the students and including the gradual transformation back into the full time school.

**Absence Policy**
Work in the studio will build sequentially. Therefore, student commitment to incremental development on a daily basis is of great importance. The demanding nature and pace of this studio necessitates regular attendance and requires that deadlines are consistently met. Attendance in studio and for the duration of all formal reviews is mandatory. Greater than two absences from studio without medical excuse supported by a doctor’s note or verifiable personal emergency could result in a failing grade for the studio.

**Disabilities**
If you have a documented disability, or any concerns which 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](http://web.mit.edu/conduct/academics.html) and [http://web.mit.edu/academicintegrity/](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.

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<th>Assignment</th>
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<td>Final Presentation</td>
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**Final Studio Deliverables for archiving purposes**
Selected projects need to be properly prepared and formatted, and delivered to the Archiving TA. Studio TA’s will collect project archives from each student immediately following the review.

Given the great interest of the studio topic with our partners in Puerto Rico, we will also be creating a studio booklet to present to them. Students are required to aid in this process of formatting and submitting their work on time.

**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 design process.

**Contact**
Please do not hesitate to reach out to the professors and the TA should you have any suggestions or concerns.
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