**Department of Architectural Technology**

Bachelor of Technology in Architectural Technology

**ARCH 3510 ARCHITECTURAL DESIGN V**

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**Overview:**

In response to the recent storm and in consideration of its long term impact on our communities this semester’s design projects will focus on disaster response issues, specifically for Zone-A communities such as Coney Island, Red Hook, The Rockaways, Staten Island, etc.

Months later we are still discussing cleanup.  For example, as a community Coney Island struggles on a daily basis to provide basic services, to keep people fed, to keep them warm and hopefully get them back into their homes.  The New York Aquarium located next to the boardwalk has not re-opened.  A visit to their website shows images of the storm and the words “The New York Aquarium is closed until further notice due to storm damage.”  Nathan’s, a mainstay of Coney Island open continually since 1916, is still shuttered.

The storm surge damaged our houses, our infrastructure and moved the coastline. In low lying communities like Coney Island after the water receded there was still the sand. With piles forty feet high, manholes filled to the brim, the restoration of services like electricity and street and traffic lights shifted from short to long term goals.

Neighborhoods like Coney Island are still in the process of recovery. While most of the city was without power for a few days it was several weeks until Coney had working street and traffic lights and as repairs continue to be made on the large housing complexes residents have to cope with periodic outages of water, power, heat and other services as things are taken offline to make repairs. Unlike other weather-related disasters that affect some of the residents of a community, the tidal surge affected everything and everyone from the amusement area to housing to the commercial strip to community services including schools, fire and police departments to public and private transportation. For weeks there were no local banks or pharmacies, no places to buy food and no local schools and hospitals and limited means of transportation.

In addition to any loss of life that may occur when a storm hits, there are incidental losses that occur over the months that follow as sanitation and lack of health services contribute to additional illness and death. When the storm surge retreated everything was moved from sand to furniture and the debris of houses to cars left behind during the storm, to trash and the contaminated soil from local brownfields. All of these factors complicate an effective and safe response.

Statistics from hurricane Katrina show that 60% of the residents displaced from the storm did not return after they were displaced. The result was not just the loss of property and the cost of recovery but the destruction of community and long-term and life-long roots. Of those that did return another 40% left within the next 5 years. To prevent a repeat of these statistics here in New York, the city has pushed several initiatives that are intended to quickly return residents to their homes and to maintain community including the Rapid Repair program.
<http://www.nyc.gov/html/misc/pdf/nyc_rapid_repairs.pdf>

Temporary housing used in such situations has a history of becoming permanent. In addition such housing can be difficult to deploy for a number of reasons including lack of infrastructure to connect to (electricity, clean water, sanitation) to the lack of space to locate the housing and the space requirements of ongoing cleanup and relief.

**The New "Container Community:"**

The city has asked us to study a new response alternative. In theory since all of our Zone-A areas are coastal, relief efforts after a storm could be supplied along our coastal edges. This semester we will begin to look at the issues surrounding disaster relief housing and services, specifically through using shipping containers. Taking the study of residential living in modular containers to the next level we will site our containers on a vessel that would be moored at the edge of a community. As a standalone community this type of solution can be deployed relatively quickly and could solve many of the critical issues including lack of infrastructure and the downside of temporary housing becoming permanent. When no longer needed this "container community" can be prepped to be ready for the next response.

This type of response will bring up a number of questions:

**Housing Related Inquiries:**

* How do we design housing within the dimensional limitations of a container?
* How efficiently can we design—is a single container large enough for a family or should several be combined?
* How do we keep our design flexible for the different family makeups, sizes and needs we might encounter?
* Since we cannot determine the orientation of the vessel prior to deployment, how do we design in a flexible manner to adjust for local climate conditions?

**Community Related Inquiries:**

* What makes a good community?
* In addition to housing, what community services should we provide? Do we include healthcare, education, retail and commercial?
* What other activities should we provide for? Play, Sports, Daycare?
* How do we develop a system of infrastructure for water, power & sanitation?
* What activities are critical to maintain a sense of community at a time when a community is as fragile as it is after a storm?

**Sustainability Related Inquiries:**

* What sustainable systems & strategies can we integrate into our housing & community?
* Since this type of response may be deployed for up to two years do we consider including community gardens to supplement our food supply?
* Can we develop a sustainable sanitation solution? Should we promote composting, recycling of grey water, collection of rain water or other strategies?

As part of your research into these questions please visit OpenLab's Storm Stories website which includes Prof. Paul King’s story and those of his students. We encourage each of you to add your own story to the site.

 <http://openlab.citytech.cuny.edu/groups/storm-stories/>