

Draft – 10/30/05

Learning from Disaster – Adversity to Opportunity

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The history of humanity has always been a race between learning and disaster.- H. G. Wells

As the World watched Hurricane Wilma blow through the Yucatan, Cuba and on through Florida - one couldn't help but wonder what is to learn here? If this destruction has the sobering possibility of reoccurring every year for the next twenty years, as climatologists tell us, can the socio-economic structure bare it, can anybody?

After Hurricane Katrina and then Rita obliterated the settlements and infrastructure along the Gulf Coast many wondered when the region would be rebuilt, how long would it take and at what cost. Still others questioned if it should be rebuilt at all and if rebuilt, should it be in the same precarious location. Now after Wilma has taught us again about frequency and power, the blind rebuilding frenzy must be questioned if only for the value of making whatever actions chosen at least better, more informed ones.

New Orleans in particular, a place of considerable historic and cultural value, is presently rebuilding the same walls to the bowl that put it in harms way – except higher. Why, how, would one rebuild in a bowl surrounded with potential disaster at the whim of any storm? And if parts stay, which ones should stay and which must be relocated or raised up and how much? What about the ownership of land now underwater or gone altogether - now part of the sand in the bay bottom? Should this land be recovered, at what cost, who is to pay, how many times should it be rebuilt? These are not questions that are being asked, they are not part of our learning and thinking, and they need to be. Will we continue rebuilding if this happens again, how about twice more, how about 20 more times?

Though it may be ridiculous to consider not rebuilding the Gulf region it is likewise ridiculous to spend hundreds of billions of dollars and put people, places and pets back in harms way. The National dialog that must take place, a very difficult but necessary one concerns itself with the hundreds of places along the coasts and those in tornado corridors and those built on fault lines that represent post disaster rebuilding costs in the trillions of dollars.

The recent Hurricanes in the Gulf Region has produced unimaginable pain, anguish and physical changes from an energy approaching the nuclear scale. No matter how thick and high the concrete or the use of multiple hurricane straps - engineering feats cannot dismiss this huge force.

The decision to rebuild and where must be a local one, but it is a National discussion on rebuilding in areas that are disasters-waiting-to-happen that can have the most positive impact on the future of rebuilding efforts. Building, rebuilding and future growth patterns in all regions of the country can learn from post-disaster rebuilding efforts when they incorporate learning from the disaster. To learn from this season's storms is to recognize that they will come again, that they could be bigger and more numerous and no matter what the size and scale of infrastructure - this force will rearrange communities in a manner we won't like. All of the history of settlements has shown that communities that last - work with natural forces rather than against them.

Learning from the Place

It's quite clear that the United States is not prepared to handle multiple catastrophic events in a short time period, with many other countries being even less capable of bearing the economic consequences of catastrophic weather events. We probably will never be completely prepared, but we could do better. We can plan our communities better, we can design our buildings and infrastructure better, and we can manage resources better. And we should also be taking more active steps to reduce greenhouse gas emissions to help reduce the added risk of global warming. Pew Center on Global Climate Change

Design matters. The art of architecture and planning has always had as its goal the combining of the aesthetic and the functional. Urban and architectural form can be expanded so that it provides protection from natural disasters while providing for better, more sustainable communities. There are, after all, tents that can withstand 200 mile an hour winds.

Form is Knowledge. The form of a community and its civic realm evolves from the knowledge and technology that the designers possess when the programmatic process starts. Change the knowledge and the form is changed. Aerodynamics is an excellent example of this. One has only to look at the changes in form in just the last 20 years of planes, trains and automobiles to see that the incorporation of new criteria and computer analysis to reduce wind resistance has changed the designer's knowledge and consequently the resulting form.

Using wind as a generating principal of form is not a new or is it an untested idea. In Mikonos, Greece - the gales off the Sea often reach 50-75 miles per hour yet one can walk 20 feet inside the city and light a match. In comparison, Chicago, with similar wind challenges requires chains to assist pedestrians so that they will not be blown into the street. Architectural and urban form can function as a baffling structure to mitigate wind damage – Mikonos' form mitigates, Chicago's form concentrates.

Form matters! Architectural and urban form can be designed to pro actively help reduce, redirect and mitigate destructive wind forces. It is an opportunity for the design of architectural and urban planning form to make a difference to “communities in harms way” and is basic to the rebuilding effort. But it is always location that should begin the dialog - communities built in harms way will end up rebuilding forever and that is a regional design discussion grounded in local and State values.

Next Step: A National Dialog

A good beginning would be to convene a series of national town meetings to review “Communities in Harms Way” and establish post-disaster rebuilding plans prior to the disaster. These planning efforts will empower communities, establishing their vision for the future as due course and after the disaster these plans can continue to be implemented but fast-tracked - funded by rebuilding funds. This “adversity to opportunity” approach is learning from disaster - the inevitability drives planning action prior to the occurrence.

Deliverables from these town meetings will be community-based visions that will:

1. gain a deeper understanding of the disaster potential, learn from it; and establish regional and local guidelines for rebuilding and where – define un-buildable zones like: wetlands, flood plains, surge areas and areas with ecological importance to the region including those that must be reconstructed;

2. establish rebuilding and future growth patterns compatible with the climate, climate change and sustainable building principles these should include transportation, agricultural preservation, walkable community initiatives, and job incubators;
3. design structures and communities where the location, orientation and form will protect citizens and mitigate wind damage and other disasters – develop urban form criteria that will help mitigate wind damage.

In the US coastal regions, those areas within 10 miles of the coastline are the geographic location of over 90% of the population. In the Gulf States, this percentage is well over 90%. Hurricane landfall along the coast of the United States has been several 100 times since 1885 - we are at the beginning of a 20-30 year storm cycle. When the rebuilding effort gets underway it should answer all of the following – is it built well and is it located out of harms way? We need to be aggressive in the protection of our resources and communities are at the top of the list. Learning from these latest disasters will also create opportunities to rebuild better communities, create better longer lasting economic value and restore the natural system contribution to the region and in doing so create a national model for rebuilding – we watched, we measured, we learned - it is now time for action.