Exhibition overview

*Designing for Disaster*

May 11, 2014 through August 2, 2015

Chrysanthe Broikos, Curator

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DESIGNING FOR DISASTER

From high-profile hazards such as earthquakes and hurricanes, to flooding, the nation’s most frequent and widespread threat, the stakes could not be higher: lives, livelihoods, property, and the pursuit of happiness. As climate changes, infrastructure ages, and more of us settle in desirable but highly vulnerable coastal and forested areas, the human and financial costs attributed to these hazards are likely to rise.

Natural disasters—defining events for the communities and individuals directly affected by them—are reminders of Mother Nature’s power. They are also warnings that alert us to potentially greater dangers, and drivers of change aimed at reducing long-term risks. Some become important national markers or even global watersheds.

This exhibition features mitigation projects from across the nation, all addressing efforts to prepare for, prevent, and reduce the impact of natural disasters before they occur. The scale and complexity is as varied as the solutions, from engineering bridges to dikes, to protecting reservoirs with fire, to mobilising people through interactive games. The message: We can design for disaster.

At every level, from family preparedness to federal policy, acceptable standards of safety and risk are being recalculated and redefined. Beyond survival, the aim is to increase our capacity to quickly and effectively respond and recover. Not simply to rebuild, or even rebuild better, but to build resilience.

Natural disasters change lives. But even simple actions can save them.
Mitigation is more demanding than simply rebuilding, it requires rethinking. And after a disaster, it sometimes runs counter to a community’s desire to quickly return to normal.

Mitigation is the only preemptive phase of emergency management: Preparedness, response, and recovery, are essentially reactive. The Stafford Act, the federal law which authorizes the Federal Emergency Management Agency (FEMA), defines mitigation as “sustained actions to reduce or eliminate long-term risks to people and property from hazards and their effects.”

Designed to break the cycle of disaster, rather than repeat it, mitigation can not only help save lives, protect property, and reduce losses, it can also help individuals, communities, and regions recover more quickly after a disaster. Mitigation translates into safer, more resilient communities. Even more compelling, every dollar invested in mitigation now, typically saves four dollars later. Despite all the positives, it can be a hard sell. Understanding the risks of inaction is often key.
RISK = (PROBABILITY \times VULNERABILITY) \div PERFORMANCE
Earthquake Country Alliance
Southern California Earthquake Center, University of Southern California
Los Angeles, California

The Earthquake Country Alliance is making "earthquake news" among several earthquake and tsunami planning real and relevant for residents. Their signature event, the Great California ShakeOut, is a simulation and drill that coordinates emergency responders and community participants through scripted scenarios developed by the U.S. Geological Survey and the Southern California Earthquake Center. The drill, released in 2006 and has since spread to schools and regions across the nation. The primary message: Drop, Cover, and Hold On, in a powerful reminder that earthquakes, performed in a timely manner, cost lives.

To help participants prepare for the "Seismid," the Southern California Earthquake Center developed "Beat The Quake," an engaging online game that challenges players to prevent damage to a typical family room, before an earthquake hits. The game is a catalyst for families to discuss—and take—actions that ensure the safety of their homes.

More detailed preparedness guidance is available in a series of handbooks titled "Putting Down Roots in Earthquake Country."
More than just a pretty brace.

In California, the City of Pasadena's Water & Power Operations Building uses innovative buckling restrained braced frames (BRBF) that are engineered to stretch and bend to resist earthquake forces. Visit Designing for Disaster at the National Building Museum to learn more about how design can save lives. Opening May 11.
WHAT CAN YOU DO?

Here are some practical steps you can take to ensure your safety before a TORNADO or HURRICANE.

1. Make an emergency plan for you and your family—and practice.
   - Identify the safest place to ride out the storm.
   - Be familiar with evacuation routes in your area.
2. Keep and maintain an emergency preparedness kit or “go-bag” in an easy-to-access location.
3. Clear or secure objects in your yard that could become projectiles such as patio furniture and playground equipment.
4. Seal cracks around your doors, windows, and any gaps in outer walls with caulk.
5. Reinforce your garage door with vertical aluminum braces.
6. Schedule an annual inspection of your roof. Make sure any loose shingles are secured.
7. Install storm shutters or impact-resistant doors and windows.
Long committed to preserving and restoring coastal habitats, the Nature Conservancy has drawn attention to the critical role oyster reefs play in healthy ecosystems.
MISSISSIPPI RIVER HIGH WATER MARKS

- 66.38 ft, on 5/16/2011 at Greenville, Mississippi
- 65.30 ft, on 3/23/1987 at Red River Landing, Louisiana
- 63.10 ft, on 5/19/2011 at Wilesburg, Mississippi

50 ft
- 66.00 ft, on 5/1/1993 at Nejapa, Illinois
- 66.00 ft, on 3/17/1983 at St. Louis, Missouri
- 65.00 ft, on 3/15/1986 at Cape Girardeau, Missouri
- 64.00 ft, on 3/15/1986 at Cape Girardeau, Missouri
- 63.00 ft, on 3/17/1983 at Baton Rouge, Louisiana

40 ft
- 62.00 ft, on 3/17/1983 at St. Louis, Missouri

30 ft
- 60.00 ft, on 3/17/1983 at St. Louis, Missouri

20 ft
- 58.00 ft, on 3/17/1983 at St. Louis, Missouri

10 ft
- 56.00 ft, on 3/17/1983 at St. Louis, Missouri

Recolonizing Vidalia, Illinois

The Great Flood of 1993 left devastation in its wake, including the Mississippi River. The disaster affected one state and was the nation’s costliest flood, with economists estimating billions in damages and victims numbering in the tens of thousands.

In one small farming community in Southwestern Illinois, the Mississippi changed its course at the flood’s peak, burying buildings and filling homes with water. The town faced a choice: remain or rebuild. Haying faced a major decision: would they rebuild or relocate? The decision would impact their community, their futures, and their way of life.

By 1995, the town had moved. The new city, a new start, is 38 ft above sea level free from any history of flooding. With the help of federal and state money for flood control and relocation, the town began a new chapter, a new beginning.

Today, Vidalia is home to more than 1,000 residents.