



By Carolyn Raffensperger

Disasters' Lesson: Greener Buildings

We've had several catastrophes in the past decade that are stern teachers. Two of the most thorough taskmasters are 9/11 and Katrina. One lesson from these tragedies is that green building materials and practices can reduce the magnitude of disasters, for both first responders and survivors.

First the story from 9/11. The Patrolmen's Benevolent Association has brought suit in New York State Supreme Court to compel New York City to pay the medical expenses of a police officer who claims his sarcoidosis (a systemic disease with inflammatory nodules in the lung often associated with reduced lung function) was caused by the 100-plus hours he spent in the immediate aftermath of the attacks on the World Trade Center. He claims that he wasn't given proper respiratory gear and that he was exposed to over 400 toxic chemicals, including benzene, asbestos, mercury, and PCBs.

While the New York Police Department argues that this condition can't be scientifically linked to the scramble of detritus at the World Trade Center, the city has paid for the medical expenses of 20 firemen who were first responders and have developed sarcoidosis. Much will be made of the lack of respiratory equipment for first responders (essential to prevent inhalation of concrete dust, an alkaline irritant), but almost nobody has mentioned that if the World Trade Center had been built

without all the toxic chemicals these heroes would not now be suffering the double insult of illness and denial of benefits.

Second story: the aftermath of Hurricane Katrina. The Federal Emergency Management Agency provided 24,000 trailers to people left homeless in Mississippi by the hurricane. These mobile homes are making people sick because they are loaded with formaldehyde, a known toxicant.

In February a Mississippi congressman asked the Centers for Disease Control and Prevention to investigate the nexus of formaldehyde and the respiratory problems of hurricane victims housed in the trailers. The agency tested the trailers and found formaldehyde at levels that "cause irritation to eyes, nose, and/or throat" but also said that the irritation would likely be transient. All other agencies, including EPA, deny any authority or ability to address the situation.

Back in 1984, the World Health Organization issued a report that said 30 percent of new and remodeled buildings worldwide may produce health complaints associated with air quality. New construction may off-gas an array of toxic chemicals. According to EPA, the most significant sources of formaldehyde in homes "are likely to be pressed wood products made using adhesives that contain urea-formaldehyde (UF) resins. . . . Medium density fiberboard contains a higher resin-to-wood ratio than any other UF pressed wood product and is generally recognized as being the highest formaldehyde emitting pressed wood product."

The alternative is clear: it is time we mandated building green. All levels of government need to act, but so does the private sector. The starting point for any institution seeking to build green is the nonprofit U.S. Green Building Council, which has developed green building standards known as the LEED Rating System. The LEED

standard is based on five areas: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. The USGBC declares its core purpose is "to transform the way buildings and communities are designed, built, and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life." Given this charter, it should come as no surprise that USGBC adopted the precautionary approach as one of its guiding principles.

"The USGBC's approach is fair, wise, necessary, and ultimately cost effective because prevention usually costs less than remediation, with more equitable distribution of costs and benefits," according to my colleague Dr.

Ted Schettler. And that is the crux of the matter: preventing harm is considerably cheaper than paying for sarcoidosis and formaldehyde-induced illness.

Washington has become the first state to require new publicly funded buildings, including prisons, offices, and schools,

to meet the LEED standard. This law is expected to affect billions of dollars' worth of construction projects over the next few years.

In the end, green building is part of good disaster planning and prevention, but it is even more. Describing the state's initiative in the *Seattle Post Intelligencer*, Debera Harrell said, "Thirty-two buildings in Seattle have a secret identity: They've been placed among us to help save the planet." Imagine buildings among us that don't poison our rescuers or survivors but instead allow us to live gracefully on the planet, even when we have tornadoes in Iowa or fires in Georgia or hurricanes in Louisiana.

Carolyn Raffensperger is Executive Director of the Science and Environmental Health Network in Ames, Iowa. She can be reached at raffenspergerc@cs.com.

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