



Rebuild Green Expo
Build your healthy, low-carbon future

Friday, February 22, 11-7
Santa Rosa Veterans Memorial Building
FREE to the public

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Rebuilding After Disasters

Learning what works for your climate and ecosystem by looking at what already works

By Sarah King, Managing Director, Ecological Building Network

Earthquakes, hurricanes, flooding, fires, tornados – when disaster strikes, communities are faced with monumental challenges of rebuilding. What is the best way to rebuild? What lessons have we learned from previous events?

In California, a group of green building professionals created the Rebuild Green Coalition after the North Bay fires in October 2017. They coalesced around a common desire to make it easier to rebuild sustainably and with greater resilience. The group hosted the Rebuild Green Expo in Santa Rosa In February 2018, and the EXPO will be back by popular demand on February 22, 2019 at the Veterans Memorial Building in Santa Rosa.

In addition to the Expo, the group shares ideas, questions and suggestions via an online forum. One recent post sparked a discussion on the best ways to rebuild in any particular climate or ecosystem. The Bay Area is home to eminent experts in green building, and the discussion is a testament to the collective brain trust, as well as a good primer for how to approach the rebuild.

It started when Ann Edminster of Design AVEnues shared a blog by building scientist Allison Bailes entitled “NOLA’s Make It Right Homes Go Wrong” (energyvanguard.com September 12, 2018)

Bailes described how well-intentioned homes built by Brad Pitt’s Make It Right organization in New Orleans’ 9th Ward after Hurricane Katrina are failing; owners have moved out and many homes will have to be torn down. The reasons are many, but boil down to design and construction that failed to incorporate basic building science principles. Water damage - primarily from rain - is the main culprit, and the problems might have been avoided by taking into account such basic climate considerations as the need to shed water and handle the heat.

The main problem with the homes was that the architects (many of them big, splashy names in commercial building design) appeared to put flash before function, and the construction crews were likely unaware of the extra measures required to make them work in that particular setting. Avant-garde design catches the eye, but will succeed only if built to accommodate local conditions. It’s a real shame, because the intentions of all involved were good.

“The architecture profession is now premised on originality, to our great detriment, says Berkeley CA architect Bob Theis. “If it is not unique, it’s derivative, and this creates prejudice against traditional structures.”

But traditional homes in any region have valuable lessons to offer as inspiration for rebuilding. Those are the structures that have made peace with their particular circumstances. The very fact that they have survived and become cultural touchpoints speaks to their overall appropriateness in their regions.

David Arkin AIA, of Arkin Tilt Architects in Berkeley, commented, “Architecture is complex.” It requires paying careful attention to dozens of things all at once. But when you do, amazing things are possible. Generations of people building in particular places have devised systems and details that are a good fit to those climates and circumstances. They’re a good place to start, even if one is pursuing avant-garde solutions.”

For Louisiana, Arkin would stress:

- Tall ceilings (warmest air can sit up near the ceiling);
- Porches that help shed water away from walls and windows;
- Shutters that close to protect from hurricane debris;
- Raised floors with flood vents;
- Metal roofs that won’t blow off;
- Light colors that don’t absorb heat;
- Vertical proportions.

“It’s never *all* about performance, or the other way around. The more that’s factored in, the better it is,” he adds.

But this isn’t where the discussion ends. “Buildings of the past have worked well for generations and have a lot to teach us about what works in a given area, climate or ecosystem,” says Larry Strain, of Siegel & Strain Architects in Emeryville. “Unfortunately, the climate and ecosystems are changing, so we also need to look at other climates and ecosystems that may be more appropriate to where we’re heading.”

What does this mean for California? Our climate and disasters differ significantly from Louisiana and other southern states, but some key points apply. Rebuild Green Coalition members have several projects that survived fires in 2017 and 2018, and the group offers eight basic design suggestions that can improve buildings’ sustainability and resilience:

1. Generous overhangs or porches – shed water, provide shade where needed, use non-combustible or heavy timber construction to reduce fire risk.
2. Thermal mass within the insulation.
3. Careful attention to orientation and seasonal shading, with trees or shade to the west and northwest.
4. Metal roofs (or other noncombustible materials that don’t so readily build up with leaves or needles).

5. Ventilated roof or attic with “Vulcan vents” or other systems that prevent entry of flames and burning embers.
6. Breezeways, high clerestory windows, or other forms of natural ventilation for night cooling.
7. Careful attention to quality windows, air sealing and insulation.
8. Consideration of the carbon impact of both the material choices and operating energy needs.

Innovative designs will still be built and will continue to attract attention, no doubt. But basic green building principles can help with any structure’s ability to perform well, cost less to operate, ensure the occupants’ comfort (even in case of power outages), and perhaps survive the next disaster.

About the Rebuild Green EXPO

Come get answers on how to build more sustainably, with an eye towards resilience at the Rebuild Green EXPO, February 22, 2019, at the Santa Rosa Veterans Memorial Building. The Expo will be open from 11 am to 7 pm. See the possibilities, meet the professionals, and learn about green made easy. There will be something for everyone, from homeowners seeking clarity about what green building is, to professionals looking to learn more about the nuts and bolts.

For more information about the Expo visit: www.rebuildgreenexpo.com

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Photo - Sophia Germer, The New Orleans Advocate, Sept. 13, 2018

Make It Right Foundation home in New Orleans illustrates what happens when design and construction ignore basic building science principles for the region.



Photo – Sarah King
Historic Petaluma adobe with porches and generous overhangs.



Photo – Ed Doody, taken the morning after it survived a wildfire.
This Redwood Valley home, designed by Arkin-Tilt Architects, illustrates several basic principles of resilient green building: steel roof, wide porches, and generous overhangs. The primary wall material - straw bales - has low carbon impact, and its heating and cooling costs are low. It survived the October 2017 fires while many of its neighbors did not. Proper landscape management also contributed to its survival.



Photo – Bruce King

This newly built California adobe home incorporates many of the traditional details of its historic predecessors, and its earthen walls and ceramic tile roof provide a good measure of fire resistance.