Few can forget the horrific images from Hurricane Katrina. In 2005, the hurricane’s storm surge broke through the levees protecting New Orleans, Louisiana, flooding 80 percent of the city. More than 4,000 homes were destroyed in the city’s Lower Ninth Ward. When actor and activist Brad Pitt toured the parish two years later, little progress had been made on rebuilding. Together with architecture firm William McDonough + Partners, Pitt founded Make It Right with the goal of rebuilding 150 homes inspired by Cradle to Cradle thinking, using sustainable designs and materials like structural insulated panels.
Shortly after founding Make It Right, Pitt and McDonough solicited home designs from a number of leading architectural firms. Architects around the world donated their services to produce 27 designs meeting the organization’s criteria for storm resilience, sustainability, and affordability. Although Make It Right had mechanisms in place to assist with financing, the homes had to be affordable for the Lower Ninth Ward’s previous residents.

Make It Right’s focus on affordability transformed the building process into an experiment in motion – designs and material selections were constantly being modified as the homes were constructed to further reduce costs. Halfway through their goal of constructing 150 homes, Make It Right succeeded in lowering home prices from $200,000 to $150,000, constructing the LEED Platinum homes for an average of just $130 per sq. ft.

After experimenting with several framing systems, including advanced framing with spray foam insulation, modular construction, and steel-faced insulated panels, Make It Right has currently settled on structural insulated panels (SIPs) from SIPS Team USA as their building system of choice.
“We consider ourselves a building laboratory, and we have explored just about every type of construction for a raised floor foundation system for residential, affordable design,” said Jordan Pollard, Research, Design and Development Manager for Make It Right. “At this point, we have settled on using oriented strand board SIPs.”

SIPs consist of a rigid insulating foam core sandwiched between two structural facings of oriented strand board. The continuous core of insulating foam greatly reduces both thermal bridging and air leakage, helping Make It Right lower the amount of energy required for heating and cooling.

Energy analysis revealed that with the addition of onsite solar generation the SIP homes repeatedly reached HERS Indexes ranging from 17 to 24, roughly 80 percent more energy-efficient than a home built to today’s building codes. After testing more than 90 homes, Make It Right found that the SIP homes achieved higher levels of energy efficiency and did so more consistently than site-built or modular construction methods.

Building with prefabricated SIPs also created several advantages on the construction site. The SIPs are fabricated offsite to match the specific design of each home and shipped to the jobsite for fast installation with less opportunity for construction errors.

“From the construction side, because the majority of the exterior shell is prefabricated, the house goes up quickly and the dry-in process can happen at a very rapid rate,” said Pollard. “It also allows for a tighter envelope, straighter walls, and less thermal bridging.”

**Storm Resistance**

On all Make It Right homes, the SIP building enclosure is engineered to meet the 160 mph winds of a category 5 hurricane. Fiber cement siding and durable metal roofing protect the homes against harsh winds and flying debris. All the windows include...
pre-fitted hurricane fabric, a nylon mesh that attaches to permanent anchors to shield windows from flying projectiles. And the homes are elevated a minimum of five feet off the ground on concrete piers—two feet above the FEMA requirements—to prevent damage from the type of catastrophic flooding that wiped out the parish during Katrina.

**Sustainability**

For Make It Right, affordability does not end with the purchase price. Homeowners also pay significantly less on their utility bills thanks to the organization’s commitment to sustainable construction. Designers complemented the energy-efficient SIP building enclosure with high performance ENERGY STAR windows to further reduce heating and cooling costs. The storm-resistant metal roofing has a reflective coating that limits solar heat gain and each home has a 4 kW solar array to generate energy onsite.

In New Orleans’ hot humid climate, maintaining healthy indoor air quality was another top priority for Make It Right. After testing geothermal systems, Make It Right went with a high velocity small duct air handler to provide ventilation and a 16 SEER air source heat pump for heating and cooling. The homes also use low or no VOC paints and carpeting, along with formaldehyde-free cabinets and mold-resistant drywall.

All the homes are certified LEED Platinum, the highest level under the U.S. Green Building Council’s popular green building rating system. Homes meeting such a high sustainability standard are often much more expensive than conventional construction, but by continually improving their construction methods Make It Right has demonstrated that LEED Platinum homes can be built for reasonable prices.

With over 90 new homes already built, Make It Right has transformed the flood-ravaged Lower Ninth Ward into a small but vibrant neighborhood filled with modern interpretations of traditional New Orleans architecture. Displaced residents are returning to find their homes replaced by cutting edge sustainable housing that is healthy, storm-resistant, and affordable for working class families.

*SIPs, photovoltaics, and other measures help residents save 80 percent or more on utility costs.*