Building AMERICA U.S. Department of Energy

CARBNEWS

A MONTHLY UPDATE ON SWA'S PARTICIPATION IN THE U.S. DEPARTMENT OF ENERGY'S BUILDING AMERICA PROGRAM

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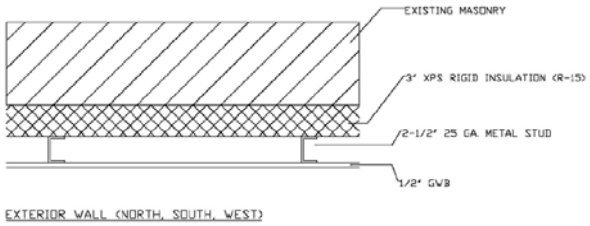
CARB Homes Stand Up to Florida's Big Blow

After Hurricanes Frances and Jeanne passed over Melbourne, Florida, knocking down what stood in their way, the concrete homes designed and built as part of the **U.S. Department of Energy's Building America** program by Steven Winter Associates, Inc. (SWA) and CARB member **Mercedes Homes** were still standing. These homes, which also received research support from the **U.S. Department of Housing and Urban Development's PATH** program, were constructed with poured-in-place concrete walls in lieu of the concrete block and wood-frame walls commonly used. Concrete walls have the ability to withstand dynamic wind loads due to the reinforced monolithic material's continuity. The hip roofs of the homes faired particularly well, and typically perform better than gabled roofs in high winds. Bill Zoeller of SWA recently surveyed several homes that reported water intrusion--a common form of damage not addressed in the residential hurricane code but a major factor in insurance claims. Zoeller's investigation revealed where construction can be cost-effectively improved to reduce the possibility of water damage. These improvements, coupled with a structurally sound building, should bring construction to a new level of hurricane resistance.

It's Official: More Savings in Newburgh

Energy-saving and sustainable strategies made through the **U.S. Department of Energy's Existing Residential Buildings Program** have "officially" paid off. At left, Srikanth Puttagunta of SWA presents the owner, Josefina Flores of 85 Nicoll Street in Newburgh, New York and president of local Habitat for Humanity affiliate Dave McTamaney, with an ENERGY STAR Certificate. The home received a HERS score of 89.7, with a projected annual savings of $233 in heating and cooling costs, compared to the HERS reference home. The two-story, semi-attached home is one of more than 12 being rehabilitated by **Habitat for Humanity of Greater Newburgh (HFHGN)**, with SWA's technical assistance. The rehab strategies presented a challenge due to historical requirements of the homes. The rehabbed units now include mechanical ventilation (which results in better indoor air quality), advanced air sealing techniques (creating a tighter envelope), energy-efficient lighting and appliances (all ENERGY STAR labeled), and more efficient insulation. The exterior walls of row houses in this Newburgh neighborhood are typically brick with no cavity insulation. SWA developed a wall detail (above) that allowed HFHGN to use rigid insulation to increase the R-value of the envelope. Unlike fiberglass batt insulation, closed-cell foam insulation resists moisture and maintains its R-value even if wet. The rigid insulation, which was donated by **Dow Chemical Company**, is placed directly against the brick. Each piece is cut to fit around the joists, rafters, and penetrations. Metal studs hold the insulation tightly against the brick and provide an anchor for the gypboard. Air movement behind the insulation and between layers is thwarted by caulking around the seams between each board, all penetrations, and the perimeter of each wall.



EXTERIOR WALL (NORTH, SOUTH, WEST)

Cornhuskers Get the Word on Advanced Framing

Advanced framing is taking form in the state of Nebraska with help from the **Nebraska Energy Office** and **Building America**. SWA, which manages Building America's CARB team, just completed an in-the-field training session on advanced framing techniques that took place at the construction site of a prototype home that will be used as a benchmark for energy-efficient housing in the state. Builders and framing sub-contractors learned such techniques as 24-inch-on-center construction, headers correctly sized for the load, and trusses placed inline with the wall studs. Additional training throughout the state is to be provided by SWA. As designed, the home complies with the **Nebraska Green Building Program** and features a tight envelope, a building recycling center, high-efficiency cooling and heating systems, low-flow shower heads, and ENERGY STAR appliances. Testing and monitoring of the home's overall energy performance will begin after completion this fall.

Take the Tour, Hear the Talk

Next month, the **Citizens Housing Corporation (CHC)** in San Francisco is hosting a "Talk and Tour" of the Folsom/Dore Apartments, which has benefited from the lessons learned by CARB through **Building America**. Geared to developers, designers, and contractors, the event will highlight the myriad of sustainable design features that help make Folsom/Dore an excellent example of how to make new multifamily buildings sustainable. Part of the **U.S. Department of Housing and Urban Development's Partnership for Advancing Technology in Housing (PATH)** program, the home features several CARB hallmarks, such as a high-efficiency HVAC system, low-or-no-VOC paints, and energy-efficient lighting. The project is located in San Francisco's South of Market neighborhood--an area comprised of a diverse mix of residential, commercial, and light industrial uses. The site for this four- and five-story apartment building was selected for its proximity to public transportation (as part of a transit-oriented design strategy). Funded through the State of California Multifamily Housing Program, tax credits, tax-exempt bonds credit-enhanced by Citibank, the Federal Home Loan Bank Affordable Housing Program grant, and local gap financing provided by the Mayor's Office of Housing in San Francisco, this project brings affordable, sustainable housing to one of the highest priced housing markets in the country. The Talk and Tour is scheduled for December 8. For more information contact SWA's Bambi Tran at btran@swinter.com, or at 202-628-6100, ext. 206.

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