

**Experts to Meet  
for Modular  
Housing/HVAC  
Summit**

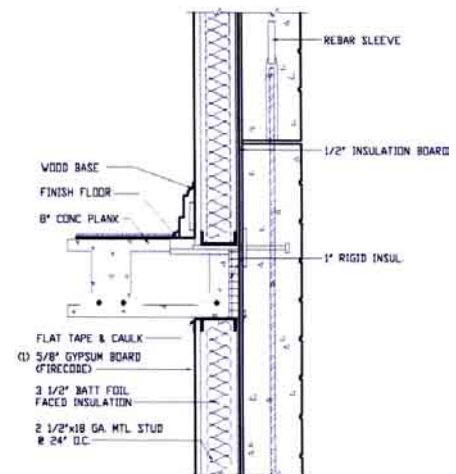
In an effort to bring some of the best and brightest in the housing industry together for some bodacious brainstorming, **Building America** has asked its teams to present a series of "Expert Meetings" that will focus on various housing research issues. This spring, CARB will convene such a gathering on "Modular Housing HVAC Systems." Prior CARB research has revealed that because modular housing producers rarely install any or much of a home's heating/cooling system (leaving it to the builder/dealer), they have little control over its design or operation. Yet if the HVAC system is inefficient, uncomfortable, expensive, or unhealthy it will surely reflect on the manufacturer's reputation. Recently CARB worked with **Wausau Homes** of Madison, Wisconsin (see *CARB News*, December 2002) to develop a "factory authorized" HVAC system that is designed to operate in lock-step with the house, even though it is site-installed by others. Construction and testing has proven its efficiency and cost-effectiveness. This and other modular/HVAC topics, such as ENERGY STAR, state rebates, OEM accounts, and HVAC risks/pitfalls will be subjects of the Expert Meeting, which is tentatively scheduled for May 21, in connection with the **NAHB Building Systems Council's** tour of modular plants in Pennsylvania and New York. Contact us if you are interested in attending or want more information.



**Who dictates HVAC in modular homes: manufacturer? builder?**

**Saves Energy, and  
More Affordable,  
Too**

Typically, affordable housing in New York City is built with regard to first cost only, resulting in maintenance and energy costs that can become burdensome to homebuyers. CARB's Melrose II project, 30 three-family homes in the South Bronx developed by **MC II Associates** and constructed by **Blue Sea Construction**, is the first ENERGY STAR affordable housing project in New York State. The homes were not only designed for low first-cost, but also for low maintenance and energy bills, resulting in units that are truly affordable. The homes' energy efficiency and tightness are due in part to the use of precast concrete panels manufactured by OldCastle Precast. CARB conducted a THERM analysis on these exterior wall panels and found that a significant amount of thermal bridging would occur between the concrete exterior and the metal studs to which they are attached. To reduce this potential short-circuiting of R-value, CARB suggested using 1/2" XPS board between the exterior wall panel and the metal studs, which was specified for the entire building, except for a rear section of the building due to a city code issue (see details). Blower door tests performed at Melrose II for the buildings' ENERGY STAR ratings demonstrated that there was no significant difference in building tightness between the homes that had the exterior walls finished with painted sheetrock on the interior, and those that did not yet have the sheetrock installed. This revealed that the concrete panels were the principal reason for building tightness.



**Wall at floor**

REBAR SLEEVE  
1/2" INSULATION BOARD  
1" RIGID INSUL.  
WOOD BASE  
FINISH FLOOR  
8" CONC. PLANK  
FLAT TAPE & CAULK  
(1) 5/8" GYPSUM BOARD (FIRECODE)  
3 1/2" BATT FOIL FACED INSULATION  
2 1/2"x18 GA. MTL STUD @ 24" O.C.  
REBAR SLEEVE

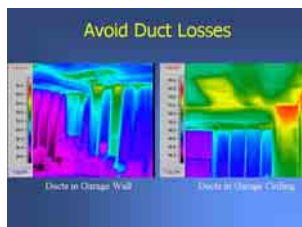
## Looking at the Role of Retrofits in Energy Conservation

As an extension of its work under **DOE/NREL's Building America** program, CARB recently commenced a new project, "Fast Track Initiation of Systems Engineering Approach to Energy System Retrofits in Existing Residential Buildings." Under this contract, CARB will conduct retrofit systems engineering research that is national in scope and diverse in climate and location. The projects include different housing types and different facets of building systems and technologies co-sponsored by such organizations as **Habitat for Humanity**, the **Wisconsin Division of Energy**, and **Connecticut Light & Power Co.** CARB's retrofit housing research will include: equipment/systems initiatives in Connecticut, focusing on retrofitting housing with innovative HVAC and DHW systems; whole-house initiatives in various regions with a focus on rehabilitation of detached and attached housing; and community-scale initiatives in Wisconsin, including the development and implementation of housing retrofit guidelines for remodeling contractors. Stay tuned for updates on this project.



Old steel boiler retrofitted to a new high efficiency steam boiler

## CARB at the International Builders' Show



Presentations included computer analysis of duct losses

More than 92,000 people descended on this year's International Builders' Show in Las Vegas, and once again CARB organized and presented the educational seminar "Providing a More Comfortable Home without Spending More Money." This year's seminar was moderated by Steven Winter and included presentations by Steven Winter Associates' Dianne Griffiths, with Brad Oberg (IBACOS), Ed Carroll (WESH), and Frank Opatik (Wausau Homes). Several of the presentations featured the work performed with **Don Simon Homes** and **Wausau Homes** as part of the cooperative **Building America** initiative with the **Wisconsin ENERGY STAR Homes** (WESH) program. The program concluded with a panel discussion that included the speakers as well as Marty Ryan (**William Ryan Homes**) and Ric Guilbert (SWA). CARB also toured approximately 16 acres of exhibits looking for innovative, affordable new technologies and products that show promise for the residential market. Among the nuggets: a sprayed-on fiberglass insulation that fills open wall cavities without a net, using very little water (**Ultra-Fit DS** by **Guardian Fiberglass**); light-gauge steel overlays for wood I-joists that conduct stresses around oversized holes or notched joist flanges (**Joist Reinforcers** by **Metwood Inc.**); a peel-and-stick heavy-duty polymer with a stucco-like finish that can be applied over exposed exterior foam insulation near the foundation wall and over the top of the foundation itself (**Protecto Bond Insulation Wrap** by **Protecto Wrap**); a quick-install steel suspension system for dropped gypsum ceilings (**Drywall Suspension System** by **USG**); and corrugated plastic battens for tile roofs that allow water and air flow (**Flow-Thru Battens** by **Trimline Products**). CARB will be examining the likelihood of incorporating these and other products into future homes.

## CARBNews will be online only!

Starting this April, *CARBNews* will be available online only. Fax distribution will cease. Email notices will continue to be sent out alerting you to the availability of the latest issue. If you are currently receiving a fax copy of *CARBNews* and would like to continue to receive the newsletter, you must email [swinter@carb-swa.com](mailto:swinter@carb-swa.com) from the email account to which you would like *CARBNews* forwarded each month. Please include "Subscribe *CARBNews*" in the Subject line.

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*CARBNews* is published monthly by the **Consortium for Advanced Residential Buildings (CARB)**, part of the **Building America** program, sponsored in part by the **U.S. Department of Energy** through the **National Renewable Energy Laboratory**. For further information and suggestions for inclusion in *CARBNews*, please contact Michael J. Crosbie, Steven Winter Associates, Inc., 50 Washington St., Norwalk, CT 06854; 203-857-0200, 203-852-0741 (fax); [swinter@carb-swa.com](mailto:swinter@carb-swa.com) (e-mail). **CARB** Primary Team Members are: Steven Winter Associates, Ryan Homes, Del Webb Corp., Beazer Homes USA, Crosswinds Communities, Mitchell Homes, Mercedes Homes, McStain Enterprises, Cambridge Homes, D.R. Horton, Unibilt Industries, Don Simon Homes, Tindall Homes, Wausau Homes, and William Ryan Homes. Also Weyerhaeuser, Andersen Windows, Owens Corning, Honeywell, Whirlpool Corp., DuPont, Simpson Strong-Tie, Steel Floors, LLC, CertainTeed Corp., and Trus Joist MacMillan. More **CARB** information and an archive of past issues is available on its web site: [www.carb-swa.com](http://www.carb-swa.com).