

# PHRC News

**Pennsylvania  
Housing  
Research  
Center**

*The Pennsylvania Housing Research/Resource Center (PHRC) serves the home building industry and the residents of Pennsylvania by improving the quality and affordability of housing. The PHRC conducts applied research, fosters the development and commercialization of innovative technologies, and transfers appropriate technologies to the housing community.*

## Getting in touch

Contact us to find out more about the PHRC or to seek assistance.

[www.engr.psu.edu/phrc/](http://www.engr.psu.edu/phrc/)

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## 8TH ANNUAL PENNSYLVANIA HOUSING CONFERENCE HOME BUILDING FOR THE 21ST CENTURY

We are at the start of a new decade, a new century, and a new millennium. We are likely to see some dramatic changes in the home building business in Pennsylvania: new clients, new expectations, new marketing strategies, and new products and technologies. If you are ready for change and ready to grow your business, the 8th Annual PHRC Housing Conference will let you know what's happening in Pennsylvania, what's happening nationally, what's important and what's not.

The program will address both national trends and issues specific to Pennsylvania. Some of the topics to be presented include:

- > Demographic trends in markets
- > Status of the state-wide building code and the implications
- > Workforce development: supply and training
- > Technical trends
- > The best use of existing technologies for the Northeast
- > Emerging technologies and their adoption
- > Advances that are driven by the shortage of skilled labor to:
  - reduce on-site labor costs
  - reduce the skill level required
- > Marketing approaches to sell homeowners on new technologies

A number of the presenters are partners from the Building America Program, an industry-led initiative to improve the design, the process of delivery, and the quality of new homes and their operation. Some 120 companies are involved, and more than 1,000 houses have been built. The leaders of these Building America teams will each speak about a completed project—what worked and what didn't and why.

For your convenience, the conference will be held at two locations:

### **Monroeville, PA on February 29, 2000**

Note: After the Conference, participants can attend the BAMP Builder Trade Show.

### **Valley Forge, PA on March 1, 2000**

For additional information, please visit our web site at [www.engr.psu.edu/phrc](http://www.engr.psu.edu/phrc) or call Michelle at (814) 865-2341.

## Speakers Include:

### **Steven Winter**

Consortium for Advanced Residential Buildings

### **Brad Oberg**

Integrated Building and Construction Solutions (IBACOS)

### **Joseph Lstiburek**

Building Science Corporation (BSC)

### **Scott Beers**

Federal Home Loan Bank of Pittsburgh

### **Bob Buddenbohn**

Pennsylvania College of Technology

### **George James**

Department of Energy (DOE): Building America Program

### **Mark Fortney**

Pennsylvania Housing Research Center (PHRC)

### **Eric Burnett**

Pennsylvania Housing Research Center (PHRC)

## PHRC Starts Construction Code Training Consortium

On October 30, 1999, the PHRC hosted the first meeting of the Construction Code Training Consortium. Since that time the Pennsylvania Legislature has passed and the Governor has signed into law the Uniform Construction Code (UCC) Act, Act 45 of 1999. The passage of the UCC and the regulations that will be promulgated by the Pennsylvania Department of Labor and Industry will change the way every building is constructed in the Commonwealth. The changes in turn create a need for training for regulators (building code officials and municipal and state administrators) and for the regulated community (builders, remodelers, contractors, design professionals, etc.) to help them understand the new requirements.

The development of the Consortium was first discussed in the PHRC Report No. 61 "*Building Code Training Needs in Pennsylvania*." Its function is to help identify the building-code-related training and educational resources and needs of various groups across the Commonwealth. The consortium's role will be to provide a forum for members in order to coordinate what each of the members is doing; to coordinate training among the members; and to provide training where it is not provided, both geographically and by subject area.

The Consortium consists of interested organizations, associations and state agencies that either provide building code training or represent groups that need access to training. Interest in membership in the Consortium is increasing as the group comes together. At the time this newsletter went to print, the following had expressed interest in participating:

ABC, Pennsylvania Chapters	Mid-Atlantic Building Systems Council
American Institute of Architects, Pennsylvania	National Association of the Remodeling Industry
American Subcontractors Association, Central Pennsylvania Chapter	National Conference of States on Building Codes & Standards
Associated General Contractors of Pennsylvania	Pennsylvania Association of Code Officials
Associated Pennsylvania Constructors	Pennsylvania Association of Plumbing, Heating and Cooling Contractors
BOCA Eastern Regional Office	Pennsylvania Builders Association
BOCA Professional Chapter of Western Pennsylvania	Pennsylvania Building Officials Conference
BOMA Philadelphia	Pennsylvania College of Technology
BOMA Pittsburgh	Pennsylvania Department of Community and Economic Development, Governors' Center for Local Government Services
Building Codes Assistance Program	Pennsylvania Department of Labor and Industry
California University of South Pointe	Pennsylvania Housing Research Center
Commonwealth Building Officials	Pennsylvania Manufactured Housing Association, Inc.
Constructors Association of Western Pennsylvania, AGC	Pennsylvania Society of Professional Engineers
Consulting Engineers Council of Pennsylvania	Pennsylvania State Association of Boroughs
Contractors Association of Eastern Pennsylvania	Pennsylvania State Association of Councils of Government
General Building Contractors Association	Pennsylvania State Association of Township Supervisors
Harrisburg Area Community College	Pennsylvania Vocational Association
Local Government Academy	Pocono Builders Association
Master Builders Association of Western Pennsylvania	The Pennsylvania League of Cities and Municipalities

For additional information, please contact Mark Fortney at mrf106@psu.edu or (814) 863-2366.

## PHRC Fall '99 Workshop Series Gets High Marks

The PHRC held a series of workshops across Pennsylvania for residential contractors, code officials, design professionals and others involved in the construction and renovation of houses. The workshops were co-sponsored by local homebuilder associations and organizations of building code officials across the state.

The topics included:

- Introduction to Building Codes
- Code Compliance Workshop
- Building with Engineered Wood Products
- Designing and Building Homes for Life

These workshops are part of the PHRC's on-going commitment to the housing industry to provide educational and technology transfer services. The PHRC is currently planning its 2000 year programs. For additional information, please contact Mark Fortney at mrf106@psu.edu or (814) 863-2366.

## Site Improvement Standards Report Released

Site improvement and subdivision design standards control how land is developed by establishing minimum standards for infrastructure such as road construction and sizing, parking, storm water management systems, sanitary sewer, water supply, and other utilities. These standards are developed, adopted, and administered by local governments under the state's Municipal Planning Code.

The recently released PHRC Report No. 66, *Residential Site Improvement and Subdivision Design Standards: A Review*, is intended as a discussion document to examine standard practice and how to improve the way land is developed in Pennsylvania. This report reviews the current use of subdivision standards across the state and adjacent states and the current best practices available. The report recommends the formation of a coalition 1) to develop statewide guidelines and 2) to plan and promote training and education for local government officials.

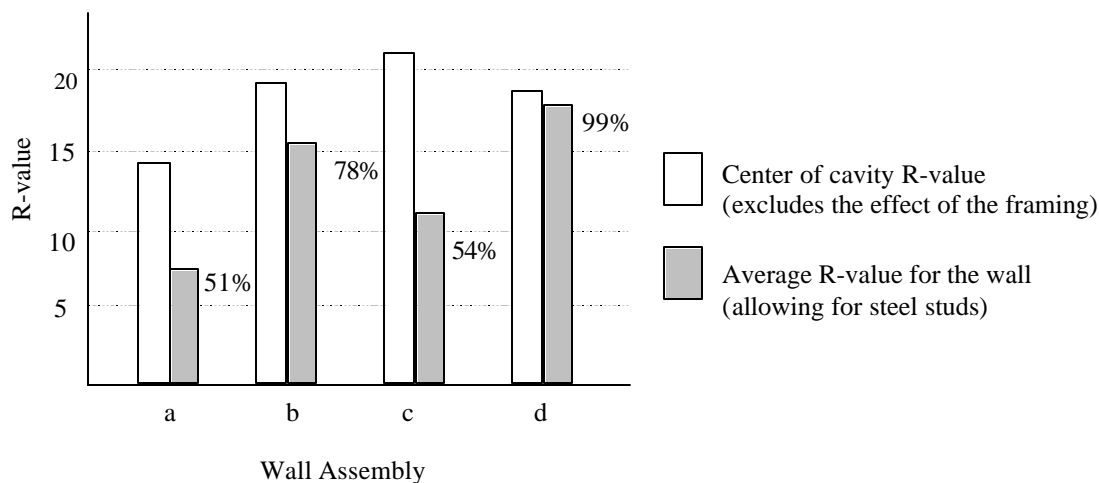
This spring, the PHRC will seek to develop a coalition of local government officials, PennDOT and other state agencies, builders, developers, engineers, architects, landscape architects, planners, environmentalists and other parties interested in improving residential development practices. The purpose of the coalition will be to support and participate in the development of residential site improvement guidelines or "best practices."

## Design Issues with Steel-Stud Wall Systems

If you were asked to build a house with steel-stud framed exterior walls, how would you construct the wall systems to provide adequate comfort in the house and avoid moisture problems or ghosting marks on the walls? Would you choose to:

- Use 2x4 studs spaced at 16" OC with R-13 between the studs.
- Use 2x4 studs spaced at 16" OC with R-13 between the studs and 1" insulated sheathing.
- Use 2x6 studs at 24" OC and increase insulation between the studs to R-19.
- Forget about the insulation between the studs and use 2" of insulated sheathing.

If you choose b or d, you are on the right track. The figure below shows the center of cavity of R-values and average R-values for the various wall assemblies described above. It is easy to see the thermal impact that highly conductive steel studs can have on a wall assembly and that wood and steel walls must be designed differently.



To help design professionals and builders understand and address some of the thermal and moisture issues associated with the use of light-gauge steel-stud framing, the PHRC recently released Report No. 58 "*Steel-Stud Framed Wall Systems*." It provides readers with detailed information on the heat flow through wall assemblies and explains how to control heat air and moisture flow. Guidance is provided for designing wall assemblies that will satisfy a targeted R-value and avoid moisture within the stud space for specific interior and exterior design conditions. This report was recently summarized in the December 1999 and January 2000 issues of *Energy Design Update (EDU)*, a widely distributed trade publication.

Additional information on the report is available at [www.engr.psu.edu/phrc](http://www.engr.psu.edu/phrc) or, to order a copy for \$25, call Michelle at (814) 865-2341.

**We're on the Web**  
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## **PHRC @ Penn College Kicks Off MHTI**

The PHRC @ Penn College has opened the doors to the Modular Housing Training Institute (MHTI). The initial 2-day MHTI course covers the following four elements that are critical to the successful on-site completion of a modular home:

- Site and Foundation Preparation
- Overview of Optimal Scheduling
- Complete Modular Home Set
- Finishing a Modular Home

Classes are currently scheduled through March 2000. For addition information visit the web site at [www.pct.edu/mhti](http://www.pct.edu/mhti) or call Bill Van der Meer at (570) 327-4768 ext. 3301.

## **Membership**

A portion of the financial support for the PHRC is obtained from membership fees. Financial and other forms of support for the PHRC are very important. Industry-based funding, individual or corporate or association, is critical for our continued operation. We warmly welcome the new members of the PHRC. We thank new and existing members for their support of the PHRC and its efforts to serve the home building industry in PA.

### **New Members**

All Star Homes ~ Sentry Management Co., Inc.  
HBA of the Alleghenies ~ Pocono Builders Association

### **Current Members**

#### **COMPANIES**

ACCADIA  
Armstrong World Industries, Inc.  
Cedar Knoll Associates  
Celotex Corporation  
CertainTeed Corporation  
Comfort Home Corporation  
Carl R. Flohr  
Curtis E. Schneck, Inc.  
Dow Chemical Company  
DuPont Nonwovens  
Elam Stoltzfus  
Edward B. Walsh & Assoc. Inc.  
Liberty Homes Custom Builders  
NVR Homes, Inc.  
Raycore, Inc.

Ryland Group, Inc.

S&A Custom Built Homes, Inc.

#### **ASSOCIATIONS**

Builders Association of Central PA  
Franklin County Builders Association  
HBA of Chester and Delaware Counties  
HBA of Metro Harrisburg  
Lackawanna Home Builders Association  
Lebanon County Builders Association  
Lehigh Valley Builders Association  
Mid-Atlantic Building Systems Council  
Pennsylvania Builders Association  
Pennsylvania Concrete Masonry Association  
PA Dept of Community & Economic Development  
Pennsylvania Manufactured Housing Association  
York County Builders Association