

NAHB Research Center, Inc.
2007 Annual Report

January 30, 2008

A. Overview/Summary

The NAHB Research Center, located about 25 miles from Washington, DC, in Upper Marlboro, Md., was established in 1964 as a separately incorporated, wholly-owned subsidiary of the National Association of Home Builders (NAHB). The 235,000 individual members of the NAHB and the 800 state and local home builder associations are involved in the construction of over 80% of U.S. homes. The Research Center's staff includes engineers, economists, architects, planners, market demographers, and other professionals in related disciplines. The Research Center provides product commercialization consulting services to a wide variety of housing industry stakeholders, provides third-party quality assurance verification and testing services to building product manufacturers, builders, and trade contractors, and conducts a wide range of dissemination and training activities for builders, remodelers, and other housing industry service purveyors. Our research is sponsored by NAHB, public agencies, and private-sector clients.

Mission Statement: The NAHB Research Center's mission is to promote innovation in housing technology to improve the quality, durability, affordability, and environmental performance of homes and home building products.

B. Activities of 2007

- **NAHB's Green Building Program:** The original launch, which resulted in the Green Building Guidelines, has recently broadened in scope to support a new effort of the National Association of Home Builders (NAHB) and International Code Council (ICC) to create a voluntary green building standard. The Research Center has organized an ANSI consensus committee for the standard development process. This program features a web-based scoring tool for rating homes, and a certification/verification program.
- **Disaster Relief Housing Alternatives:** The U.S. Department of Housing and Urban Development has awarded the NAHB Research Center a \$2.9 million grant to conduct extensive research and provide recommendation on effective post-disaster housing alternatives in areas affected by Hurricane Katrina.
- **Rail Climbability Study:** The National Ornamental & Miscellaneous Metals Association (NOMMA) has entered into an agreement with the NAHB Research Center, the research arm of the National Association of Home Builders (NAHB), to conduct an independent study on (hand) guard (railing) safety in relation to young children.
- **Builders' Expectations for Manufacturers in Soft Housing Market:** A study to help manufacturers navigate the changes occurring within the current soft housing market. The NAHB Research Center conducted an in-depth study of builders' changing expectations for product manufacturers and how that could affect the way those manufacturers do business.
- **Study of Corrugated Stainless Steel Fuel Gas Tubing:** Investigate the development of CSST gas piping for the residential market and outline the technical requirements for installation of CSST from its inception to current practice. Research the phenomenon of CSST's electrical transient response to lightning strikes in proximity to CSST installations.

- **Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus:** Construction has been completed recently of a large, calibrated hot box per the requirements of ASTM C1363. This hot box 1) can accept test assemblies measuring up to 9' x 16'; 2) is rotatable; and 3) can be oriented in vertical, horizontal, or inclined positions. The operating temperature range of the box is 150 degrees F to 0 degrees F. The Research Center recently completed its regular assessment as a thermal test lab by NVLAP (National Voluntary Laboratory Accreditation Program by NIST) and also is being accredited by NVLAP to run ASTM C1363.
- **Green Home Trade School (Lancaster, PA):** PATH-sponsored Field Evaluation conducted by the Research Center investigates students in the vocational school's Building and Construction program build a home as an applied learning project. The goal is to accelerate knowledge of advanced technologies to improve home performance while creating a technologically advanced workforce, new markets and resources in the local economy, and meeting academic science standards.
- **Fire Sprinkler Installation Cost Survey:** The Fire Safety Working Group of the Construction, Codes and Standards Committee is evaluating options and approaches to minimizing cost for complying with residential fire suppression system requirements. As background for their assessment of the current situation, a study of residential fire sprinkler systems was undertaken to better understand their costs and installation in jurisdictions where they are mandated.
- **Raised Wood Foundation Time and Cost Study in the Gulf Coast Region of the United States:** The overall objective of this study is to provide detailed information on all costs and labor requirements to build foundation/floor systems for new single-family houses in the Gulf Coast region of the United States.
- **Forest Products Lab Wall-Moisture Performance Research Program:** The objective of this research is to identify moisture-tolerant design rules and construction practices for exterior walls that contain wood based material and clad with an absorptive siding material.
- **Ductless Heat Pump Market Research and Analysis:** The barriers to adoption of DHPs are neither fully defined, nor understood on a national or regional basis. NEEA seeks to understand the barriers to adoption and to identify which stakeholders are most likely to adopt DHPs for heating and/or cooling, primarily in the Northwest.
- **DOE - Feedback on the Building America Challenge from Builders and Consumers:** This is a project designed to learn from builders and consumers how they 1) view the importance of energy efficient homes and 2) how each target audience describes energy efficiency. The primary objective of this project is to identify a common language and measurement tool of energy efficient homes that builders and consumers can easily understand and use.

C. Sample Continuing Activities

- **New Product Development and Commercialization Tools:** This study continues into dissemination with an upcoming fourth Tool planned for development during summer 2008 <<http://www.housing-commercialization-tools.org/>>
- Analysis of the impact of green building program certification on in situ houses in various climate zones for production builders and the NAHB in an effort to quantify the constructability and affordability of program initiatives.
- **Housing Award Programs:** Continued to administer two national awards programs—the EnergyValue Housing Award and the National Housing Quality Award.
- **National Housing Quality Program:** More than 451 trade contractors have already achieved NHQ-Certification and nearly 2,200 additional companies have completed the training

requirements and are working toward certification. Additionally, 45 builders have earned NHQ Certification since the Home Builder program was launched in January 2005.

D. Sample Publications for 2007

- ***Preliminary Planning in Hurricane Katrina Reconstruction: Strategic Roadmaps for Addressing Identified Barriers.*** Cantrell, R.; Martin, S.; Heitzmann, R.; Fuller, R.; and A. Duran (2007). U.S. Department of Housing and Urban Development Office of Policy Development & Research and the Partnership for Advancing Technology in Housing, Washington, D.C. (May), 80 pages.
- ***Factory-Built Construction and the American Homebuyer: Perceptions & Opportunities.*** Temkin, K.; Hudson, E.; Cantrell, R.; and G. Hong (2007). U.S. Department of Housing and Urban Development Office of Policy Development & Research and the Partnership for Advancing Technology in Housing, Washington, D.C. (April), 131 pages.
- ***Technical Assistance to the Steel Framing Alliance.*** A multi-year project to provide technical assistance for rebuilding in the Gulf Coast for the Steel Framing Alliance developed a range of educational pieces designed to support builders seeking to use steel framing. Specific pieces developed this year were *MEP Trades Guide to Steel Framing* and *Steel and the Environment*, a sustainable look at how framing with steel measures up in green building programs.
- ***Design Guide for Residential PEX Water Supply Plumbing Systems:*** A new resource to increase the acceptance and proper use of cross-linked polyethylene (PEX) water supply plumbing systems.
- ***Directory of Accessible Building Products:*** To assist the home building industry in meeting the independent-living needs of the nation's aging population, the NAHB Research Center released its 17th edition of the *Directory of Accessible Building Products* at the 2007 International Builders' Show.

E. Other Dissemination Activities

- **Seminars for Smaller and Startup Eastern Hardwood Manufacturers:** U.S. Forest Service funded series of one-day seminars to help hardwood manufacturers learn about emerging product-demand trends in the building-products industry and how to respond effectively to these trends.
- **2008 EnergyValue Housing Awards:** Bob Jones, Vice President/Secretary of the National Association of Home Builders (NAHB) and leading industry spokesman on green building, will be the keynote speaker at its 2008 EnergyValue Housing Awards (EVHA) ceremony. Thirteen builders have been selected as finalists.
- **Energy & Environmental Building Association (EEBA) Honors:** In recognition of the organization's 25th Anniversary, EEBA named the Research Center's EnergyValue Housing Award (EVHA) program as one of 25 Legacy Award winners at its annual Excellence in Building Conference on Oct. 10.