

STRUCTURAL BUILDING COMPONENTS MAGAZINE (FORMERLY WOODWORDS)

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NAHB RESEARCH CENTER RESOURCES:

Striving for Increased Durability

Housing continues to be one of the wisest and most significant investments most consumers make today. It should, therefore, come as no surprise that the durability of that housing and all of its building components receives a lot of attention from housing experts, consumers, builders, manufacturers and insurers.

Builders and homebuyers particularly worry about which materials, components and designs to choose for their houses, and they worry about how to make those decisions in an informed way. According to Liza Bowles, NAHB Research Center President, "It is vital for the housing industry to find ways to lower maintenance and repair costs and give builders and homeowners a basis for making educated judgments when choosing products."

Interest in housing durability always peaks dramatically when news of widespread problems surface, such as was the case with moisture and rotting problems associated with exterior insulation finish systems (EIFS). Today there are new concerns being raised about durability because of concern over termites in the southern region of the United States.

Fortunately, help is on the way for consumers and builders. This past summer, experts from government and the building industry initiated a research program that will help to allay durability concerns and to facilitate educated choices. Part of the U.S. Department of Housing and Urban Development's PATH (Partnership for Advancing Technology in Housing) program, this new research program is aimed at providing information on the service life of materials and components to designers and builders. Another goal of the program is to enable consumers to evaluate housing plans from a durability perspective. The multi-year PATH Durability Research Program, called PATH-D, supports one of PATH's key goals of improving housing durability and reducing maintenance costs by 50 percent by 2010. A competing goal of reducing housing costs makes the program particularly challenging.

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-- Liza Bowles, President, NAHB Research Center*

Durability, for purposes of this article, represents the capability to reliably serve an intended function over a specified service life under reasonable conditions of use. During a National

Forum on Durability Research in March 1999, more than 30 builders, trade contractors, manufacturers, insurers, and public and private sector researchers met to focus on durability issues directly related to the exterior envelope of a house, and specifically to roof and wall systems. (Common durability problems associated with exterior envelopes, according to a background paper sent to Forum participants, include deterioration of paint and joint sealants, roofing shingles and membranes, concrete slabs, wooden components, window seals and steel ties in masonry walls.) The objective of the Forum on Durability Research was to identify near-term projects that might significantly contribute to the improvement of a house's durability. The Forum's recommendations were as follows:

- Determine the durability performance of current components, materials and systems.
- Define a durability rating system concept.
- Develop a framework for a wall and roof system model.
- Develop methods for characterizing service life performance of sealants used in residential construction.
- Develop a method for evaluating service life of asphalt shingles used in residential construction.

In support of the consensus research agenda, the NAHB Research Center has begun work to help answer questions such as: What is the baseline for durability? How are components performing? Is there a durability problem that needs to be fixed?

A random sampling of 200 single- and multi-family homes in Anne Arundel County, Maryland, is already in process. The sampling of homes, which will range in age from new homes to homes that are 40 years old, will provide information about the durability of various products and building components in the field over time. It will also go a long way to developing a system or a model for accurately assessing durability. The report will be completed by Fall of 2000.

The NAHB Research Center is also developing a Durability Guide—essentially a best practices guide for making homes last longer. It will contain state-of-the-art, practical information about how to minimize defects and improve durability. This will enable builders and consumers to make informed decisions about products and designs they choose. Cost considerations and comparisons will not be included in this guide, which is due to be complete by October 1, 2000. The Durability Guide is expected to address site and foundation drainage, control of termites and other wood-destroying pests, siding systems, flashing, sealants, paints and coatings, roof overhangs, and roof systems.

Also in support of PATH's durability agenda, a multi-year interagency agreement between PATH and the U.S. Forest Service's Forest Products Laboratory (FPL) calls for the development of a national durability conference and implementation of three residential construction research projects over the next four years. The 1999 Forest Products Research Conference, "Durability and Disaster Mitigation in Wood Frame Housing," was held November 1-3, 1999, in Madison, Wisconsin.

FPL-PATH research projects are designed to develop:

- Improved design of wood frame houses subject to high winds and severe storms.
- A grading standard for lumber from existing buildings to increase its marketability and reuse by the construction industry.
- Greater understanding of the susceptibility of wood products to decay when subjected to repeated wetting and drying.

After some of the preliminary research work is done to establish a baseline for durability, future research can be better directed. According to HUD, the National Institute of Standards and Technology (NIST) will use the preliminary research data to develop durability evaluation tools, methods of analysis and a computer integrated knowledge system (CIKS) for the housing components. Demonstration projects will showcase the results of the program. Eventually consumers, designers and builders will be able to use the CIKS to evaluate various housing components and make better informed decisions concerning building products. It will allow the selection of the best set of components to get the longest life from a house.

For more information on the NAHB Research Center's activities regarding housing durability, call the Hotline at 800/898-2842, or visit www.nahbrc.org. The NAHB Research Center is the not-for-profit research arm of the National Association of Home Builders.

WTCA Members,

Thank you for your support of the Partnership for Advancing Technology in Housing (PATH) program during the last year. The Wood Truss Council of America has been a critical partner in the program's success. Every day the PATH program is picking up more momentum and moving forward because of the commitment and support of organizations and companies such as yours.

PATH is an ambitious program—it seeks to improve the way Americans live by changing the way they think about and build housing. PATH's mission is to speed the creation, development and widespread use of technologies that will increase housing affordability; improve housing quality, durability, energy efficiency, and environmental performance; and reduce construction costs, disaster losses and construction injuries.

The PATH program is a true partnership between the federal government and industry. PATH looks to industry to take the lead in identifying research and product development needs as well as the best avenue for implementation. It is leadership from the home building, product manufacturing, insurance and financial industries—private sector members such as WTCA—that gives PATH special vitality and keeps its programs sharp and relevant.

As a key partner in PATH, WTCA has been involved in the Certified Framing Contractor™ program, which looks at improving cost effectiveness of job sites, quality assurance to prevent construction defects, reduce premature product failure, and assure building product performance and durability. WTCA is a major contributor on developing a quality framing manual, training materials, builder job site procedures/lists. This project will benefit framers, builders and homeowners through quicker construction, less intrusive inspection and higher

quality products.

In addition, PATH, through its partner the USDA Forests Products Laboratory, is working with your executive director Kirk Grundahl and WTCA on the Urban Housing Research Center. This Center will develop new technologies that will further the advancement of wood frame housing in areas related to design efficiency, affordability and durability.

As we begin our second year of operation, PATH looks forward to working ever more closely with WTCA. Together we will tackle the critical issues facing the housing industry, identify research gaps and remove barriers to innovation. I hope that you take advantage of this program and become involved.

Elizabeth Burdock
PATH Executive Director

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