

# INSTITUTE FOR BUSINESS & HOME SAFETY RESEARCH CENTER

The Institute for Business & Home Safety (IBHS) has created a unique, state-of-the-art, multi-risk applied research and training facility on a 90-acre parcel of land in Chester County, South Carolina, about 45 minutes south of the Charlotte Airport. This facility will significantly advance building science by enabling researchers to more fully and accurately evaluate various residential and commercial construction materials and systems.

The new lab is a tangible, very public demonstration of the property insurance industry's deep commitment to reducing and preventing losses that disrupt the lives of millions of home and business owners each year.

IBHS' scientific research will influence residential and commercial structural design and construction for decades to come. Resulting savings on natural disaster-related losses – which totaled more than \$26 billion across the U.S. in 2009 alone, and are expected to double every decade – will “pay for” the lab many times over.



The primary lab structure is a specially designed wind tunnel with an exceptionally large chamber: 145' wide by 145' long, with a clear interior height of 60'. The lab's dimensions, long-span steel structure, and 105 nearly 6' diameter fans at the end of a contraction inlet combine to create proper aerodynamic flows necessary to create realistic Category 1, 2, and 3 hurricanes, extra-tropical windstorms, thunderstorm frontal winds, wildfires, and hailstorms. The test chamber contains a custom-built turntable so that complete rotation of structural specimens without human intervention can occur during testing. Hailstones, burning embers and various types of “debris” also can be introduced into the wind stream via a series of special ducts and other mechanical systems.

## Research Center Overview

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- Wholly funded by the property insurance industry
- Focus on catastrophe-related issues, including wind, wind-driven fire, wind-driven water intrusion and hail
- Multi-faceted research includes testing of
  - full-scale, 1- and 2-story residential, commercial and agricultural structures
  - individual structural components and integrated building systems
  - existing/potential test methods and metrics
- Transparent, objective research methodology
- Coordination and partnerships with manufacturers, trade groups, and other research organizations
- Campus includes large lab, exhibit area, meeting facilities and office space, as well as outdoor specimen aging area
- Capital campaign of \$40 million to cover construction and initial equipment costs

## Research Applications

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- Demonstrate effectiveness and affordability of better-built structures
- Enhance property risk modeling by strengthening the critical relationship between theoretical and actual building performance
- Provide a scientific basis for improving the quality of building products and components in practical applications
- Increase availability of reliable, affordable retrofit options for existing homes and businesses
- Strengthen and improve building codes and land use policies
- Establish clear, scientifically sound benchmarks for disaster-resistant construction
- Improve current product and system testing standards

## Research Program

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Initial research at the IBHS campus will focus on improved roofing performance. This will include developing relationships between current test standards and performance in simulated windstorms; identifying effective methods to provide back-up water intrusion protection when primary cover is damaged; initiating research into short- and long-term aging effects; and, developing cost-effective methods to retrofit various systems to reduce damage and losses. Because roof covers are replaced more frequently than any other building component, changes in roofing products and installation requirements can produce significant paybacks within a short period of time.

Research Center testing also will enable stakeholders in the insurance and construction industries to learn more about “green” building components and techniques. Research will focus on the durability and resiliency of sustainable building technology, with particular emphasis on the potential for a technology to *reduce* or *increase* property losses.

For further information:  
Write [info@ibhs.org](mailto:info@ibhs.org) or call 866-657-4247  
Institute for Business & Home Safety  
4775 E. Fowler Avenue, Tampa, FL 33617  
[www.DisasterSafety.org](http://www.DisasterSafety.org)



## MAJOR FUNDERS (as of October 14, 2010)

AAA - The Auto Club Group  
AAA Insurance -  
Auto Club Insurance Company of Florida  
AAA Mid-Atlantic Insurance Group  
AAA Northern California, Nevada & Utah  
ACE Tempest Re  
Alfa Insurance Companies  
Allstate Insurance Company  
American Agricultural Insurance Company  
American Family Insurance  
American Insurance Association  
American Modern Insurance Group  
Amica Mutual Insurance Company  
The Andover Companies  
Aon Benfield  
Aspen Re  
Auto-Owners Insurance Company  
Bankers Insurance Group  
California FAIR Plan Association  
COUNTRY® Financial  
Enumclaw Insurance Group  
Erie Insurance  
Farm Bureau Property & Casualty  
Insurance Company  
Farmers Insurance  
Florida Farm Bureau Casualty Insurance Company  
FM Global  
Gen Re  
Guy Carpenter  
The Hartford Steam Boiler Inspection and  
Insurance Company  
Holborn Corporation  
HomeWise  
Insurance Information Institute  
Interinsurance Exchange of the Automobile Club  
IPCRe Limited  
Liberty Mutual Insurance Group  
The Main Street America Group  
MetLife Auto & Home  
Mississippi Farm Bureau Casualty  
Insurance Company  
Munich Re  
Mutual Assurance Society of Virginia Fund of The  
Community Foundation  
National Association of Mutual Insurance Companies  
Nationwide Insurance  
The Norfolk & Dedham Group®  
OneBeacon Insurance  
Property Casualty Insurers Association of America  
(PCI)  
Quincy Mutual Group  
Reinsurance Association of America  
RenaissanceRe Risk Sciences Foundation, Inc.  
Rhode Island Joint Reinsurance Association  
South Carolina Farm Bureau Mutual  
Insurance Company  
South Carolina Wind & Hail Underwriting Association  
State Farm Insurance Companies  
Swiss Re  
Travelers Companies, Inc.  
USAA  
Verisk Insurance Solutions  
Virginia Farm Bureau Mutual Insurance Companies  
Willis Research Network  
XL Group