RenaissanceRe wall of wind

Leading weather risk research

Back in 2004, RenaissanceRe began investigating the damage patterns and economic impact of catastrophic storms in the field. We joined forces with the International Hurricane Research Center (IHRC) at Florida International University to create the RenaissanceRe Wall of Wind: a full-scale repeatable testing facility, able to generate the data required to understand wind-induced property losses. In the light of increased hurricane activity predictions by leading scientists, we remain more convinced than ever of the tremendous contribution of a facility such as this to regions vulnerable to severe storms. RenaissanceRe is committed to investing in and supporting cutting-edge weather risk research like the Wall of Wind, so that we may help both our clients and storm-exposed communities to gain a better understanding of their vulnerabilities to storm hazards, and ultimately to build safer, more resilient communities.

The RenaissanceRe Wall of Wind consists of six modular steel rectangular frame units housing fully-assembled Chevrolet ZZ502 Big Block crate engines. Each engine drives two counter-rotating 80" propellers. This produces an estimated output velocity of at least 130 mph, the force of a Category 4 Hurricane. The six-fan array provides a cross-sectional wind field area of 24' wide and 16' high. A controlled water-injection system allows the simulation to test how water penetrates a structure in severe wind-driven rain conditions.

Testing section of one-story house

Clay roof tiles failing during testing

Roof damage after testing at 130mph

The RenaissanceRe Wall of Wind

The first of its kind, the RenaissanceRe Wall of Wind revolutionizes wind engineering research by replicating full scale hurricane effects on residential structures and building components. The RenaissanceRe Wall of Wind subjects actual structures to both severe wind and rain conditions in a laboratory environment. The valuable scientific data collected from this destructive testing will help storm-exposed regions identify superior construction designs, materials, and techniques, to enhance building construction and retrofitting practices. Through this innovative technology, communities will become more resilient and able to mitigate catastrophic losses. The state-of-the-art testing facility is housed at Florida International University's Engineering Center, and was designed and built in conjunction with the International Hurricane Research Center.

The RenaissanceRe Wall of Wind generates a wide range of crucial scientific findings including:

- **Roof Uplift Pressure Reduction:** Using aerodynamically-shaped roof edge modifications to reduce roof uplift forces by suppressing vortices that form in severe winds, thereby creating economical loss reduction techniques for use in existing structures
- **Roof To Wall Connection Assessment:** Providing the capability to test interactions between building components under severe wind forces to aid in the development of new building codes
- **Tile Roof Performance:** Testing actual roofing materials in full-scale to provide the basis for improved installation of concrete and clay roof tiles
- **Roof-Top Equipment Wind Load Assessment:** Developing techniques to mitigate wind-loading on roof-top equipment to reduce the chance of failure, water infiltration, and other associated damage

About RenaissanceRe

RenaissanceRe is a leading provider of catastrophe reinsurance and insurance worldwide. Founded in Bermuda in 1993, the Company has gained recognition for excellence in the industry through disciplined underwriting, capital management expertise, sophisticated risk modeling and responsive client service. For more information, visit www.renre.com.

About the International Hurricane Research Center

The International Hurricane Research Center is an interdisciplinary research center focused on the mitigation of hurricane damage to people, the economy, and the built and natural environment. Established by the State Legislature in 1995, the IHRC at Florida International University is the Type 1 Center for hurricane research in the State of Florida.

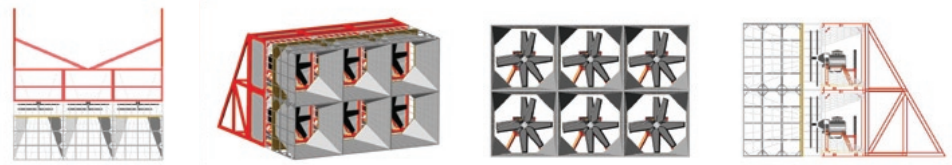
About WeatherPredict Consulting Inc.

WeatherPredict Consulting Inc., a US affiliate of RenaissanceRe Holdings Ltd., focuses on predicting and modeling atmospheric hazards and vulnerability. Our business is to provide intelligence on atmospheric perils to entities that need to anticipate the occurrence and outcome of weather events. Our dedicated team of advanced scientists draws upon expertise in oceanography, meteorology, wind engineering, aerodynamics and computer simulation. Our clients manage atmospheric risk in the insurance/reinsurance, financial, energy and agribusiness sectors.

WeatherPredict develops and employs a range of technologies in:

- Weather forecasting with the Patented SuperEnsemble™ technology
- Numerical Weather Prediction (NWP) modeling of tropical cyclones
- Ocean modeling for predicting offshore currents, waves and winds
- Statistical forecasting of climate-adjusted severe weather patterns
- Wind vulnerability and damage mitigation for residential and commercial construction.

Diagrams of the RenaissanceRe Wall of Wind



Launch of the RenaissanceRe Wall of Wind in Miami, 27 June 2007.

1. Neill Currie

2. Craig Tillman

3. Dr. Stephen Leatherman

"This ground-breaking destruction testing facility will provide invaluable data for the construction, building material manufacturing, public utilities, insurance and reinsurance industries."

Neill Currie, Chief Executive Officer, RenaissanceRe Holdings Ltd.

"While substantial resources have been devoted to testing in wind-tunnels, this is the first ever device that can test actual buildings and the interaction of different building components at full-scale, all in a destructive test environment. This is not possible in a wind-tunnel where scaling and other limitations make these types of experiments difficult or impossible."

Craig Tillman, President, WeatherPredict Consulting Inc., a U.S. affiliate of RenaissanceRe

"We are delighted that RenaissanceRe and WeatherPredict Consulting Inc. are continuing to support us, the residents of Florida and all vulnerable communities by sponsoring the new six fan array."

Dr. Stephen Leatherman, Director, International Hurricane Research Center

"There is a lack of knowledge that people have about the hurricane issue and what it means to the man on the street. The answer is not with the insurance companies, it is clearly with the mitigation of damages and what we can do to build a better structure."

Robert Epling, Chairman, International Hurricane Research Center

"Public-private partnerships like the RenaissanceRe Wall of Wind foster the very best in research efforts. This collaboration is already generating data to improve catastrophic storm mitigation techniques."

Leslie Chapman-Henderson, President and CEO, Federal Alliance for Safe Homes - FLASH®

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