

Roof expert has designs on hurricanes

• Wind damage from Hurricane Hugo persuaded the roofing industry to study how to make buildings sturdier.

By **BILL ADAIR**
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Charles Goldsmith worries about details.

When asked about potential roof damage from a hurricane in the Tampa Bay area, Goldsmith didn't use words such as *horrible* or *disastrous*. Instead, he grabbed his calculator and figured out how many pounds of pressure per square foot would push on a typical roof.

His conclusion, after a few seconds of calculations: It's difficult to predict the damage because many building materials have not been adequately tested for severe winds.

Goldsmith, a Largo architect and specialist in roof design, wants to change that. He is chairman of a national task force studying wind effects on roofs.

Because many roofing materials have not



Times photo-JOAN KADEL FENTON

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been tested. Goldsmith said architects and builders don't know whether a typical asphalt shingle will withstand a hurricane with 120-mph winds.

Goldsmith's task force is part of the Roofing Industry Committee on Wind Issues, which was formed after Hurricane Hugo last year. The hurricane tore off roofs that were not designed to withstand Hugo-force winds.

Goldsmith said the failure of those roofs indicates that current testing methods may not provide a realistic simulation of the typical wear and tear on a roof.

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"Hugo was the straw that broke the camel's back," he said. "There was a lot of dollar damage and it was time for the industry to do something."

The task force has three main goals: to study how roof construction can be improved, to set standards so roof materials will withstand hurricane winds and to evaluate methods companies use to test their products.

Building codes have not required enough testing, said Dale Perry, a member of the task force and chairman of the construction science department at Texas A&M University. "It's a national problem."

The 22-member task force is being coordinated by the Oak Ridge National Laboratory, a branch of the federal Energy Department that does research in energy and construction. Sponsors of the task force include roofing and construction industry groups.

Perry of Texas A&M said he is encouraged by the roofing industry's willingness to take a hard look at itself. The task force's recommendations should show up in building codes around the nation in several years, Perry said.

Goldsmith appears to be an ideal person to lead the task force because he specializes in forensic architecture — the science of conducting an "autopsy" on a damaged building to determine what went wrong.

"What Quincy does to dead bodies we do to dead buildings," he said, referring to the television show about a medical examiner.

He can look at the wreckage of a roof and quickly determine the culprit. Usually, it's a combination of mistakes that led to the breakdown.

Goldsmith, 63, is a dry, serious man who seems like a college professor whose mind is going three ways at once. "I work 80 hours a week and love it. I used to sleep in the office, but my wife has made me stop that."

He moved to Florida from Chicago 32 years ago because of job opportunities and family members here.

Goldsmith says tiny details — such as the precise location of a nail in a shingle — can make a big difference in a roof.

"Somebody has to do the nitty-gritty," he said. "We get into little details because we see that's where things fail."