

# Building detective finds what brought the house down

By FRANK RUIZ  
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CLEARWATER — When the roof caved in at Corona Brush Co. four years ago, the person who was called in to find out why it collapsed was Charles Brandt Goldsmith, the area's Quincy of wood.

Goldsmith is a forensic architect, one in a rare group of specialists scattered across the nation who study the reasons why building materials such as wood sometimes don't hold up in construction.

Like Jack Klugman's character on the television show "Quincy, M.E.," Goldsmith often finds himself playing the part of a detective, scientifically ferreting out architectural reasons why structures collapsed.

He also studies materials such as fire-retardant plywood and the controversial use of that material in roofing. He is a consultant to the National Home Builders Association and is working with the U.S. Department of Agriculture's Forestry Division to investigate cases in which fire-retardant plywood collapsed.

"We're really building detectives," he said in a recent interview as he sifted through stacks of photographs of the area's worst headaches: collapsed buildings and roofs.

"Here's one that made the papers," Goldsmith said, pointing to a photograph of the collapsed recreation center of a St. Petersburg condominium. The picture shows the collapsed building, with card tables and chairs sticking out of the mess of wood, dirt and roofing material.

Elsewhere, Hurricane Keith blew the roof off the Sonesta Hotel near Sanibel Island. Again, Goldsmith was called in to investigate. The building, still under construction, is being repaired under Goldsmith's watchful eyes.

At Corona Brush, it turned out to be poor welding in the metallic roof structure that caused the cave-in, Goldsmith said. No one was injured.

The list of cases and problems he has been involved with seems endless.

Goldsmith regularly testifies in cases involving shoddy construction or improper construction methods.

He served as an editor in the writing of "Architectural Graphic Standards," a trade book published by the American Institute of Architects and John Wiley.

Locally, Goldsmith founded the firm or C. B. Goldsmith and Associates Inc. in 1958 after moving here from Chicago.

Forensic architecture is a specialty the firm developed.

Goldsmith said he became fascinated with the field after investigating roof complaints as an architect. Today, most of the company's work

## Resume

### CHARLES BRANDT GOLDSMITH

- **Position:** Forensic architect, architect and roofing consultant.

- **Mission:** Standards for fire-retardant plywood will have to be set. New materials will reach the market, some of which may also meet with problems.

- **Background:** Graduate of the Institute of Design, Chicago, Ill.

- **Outlook:** "There will continue to be four Mondays in all of my weeks. I think, because of the complexities of architecture, that more people will go into areas of specialty" such as forensic architecture.

involves finding out why problems occur in buildings rather than in the design of new buildings.

Fees in forensic architecture can range from \$2,000 to as high as \$55,000 for some complicated cases.

Goldsmith said he still "sees" every job the company lands, although there is a staff of three chemical engineers and one structural engineer to handle much of the case-load. The company handles 80 to 100 cases a year, ranging from structural failures to design and development of new construction projects.

"Most of our stuff does not make the papers," he said. "What it does, is aggravate a lot of people."

### Never a dull week

Just as TV's Quincy often has to point the finger at culprits, Goldsmith finds himself testifying professionally in legal cases involving structures that collapsed.

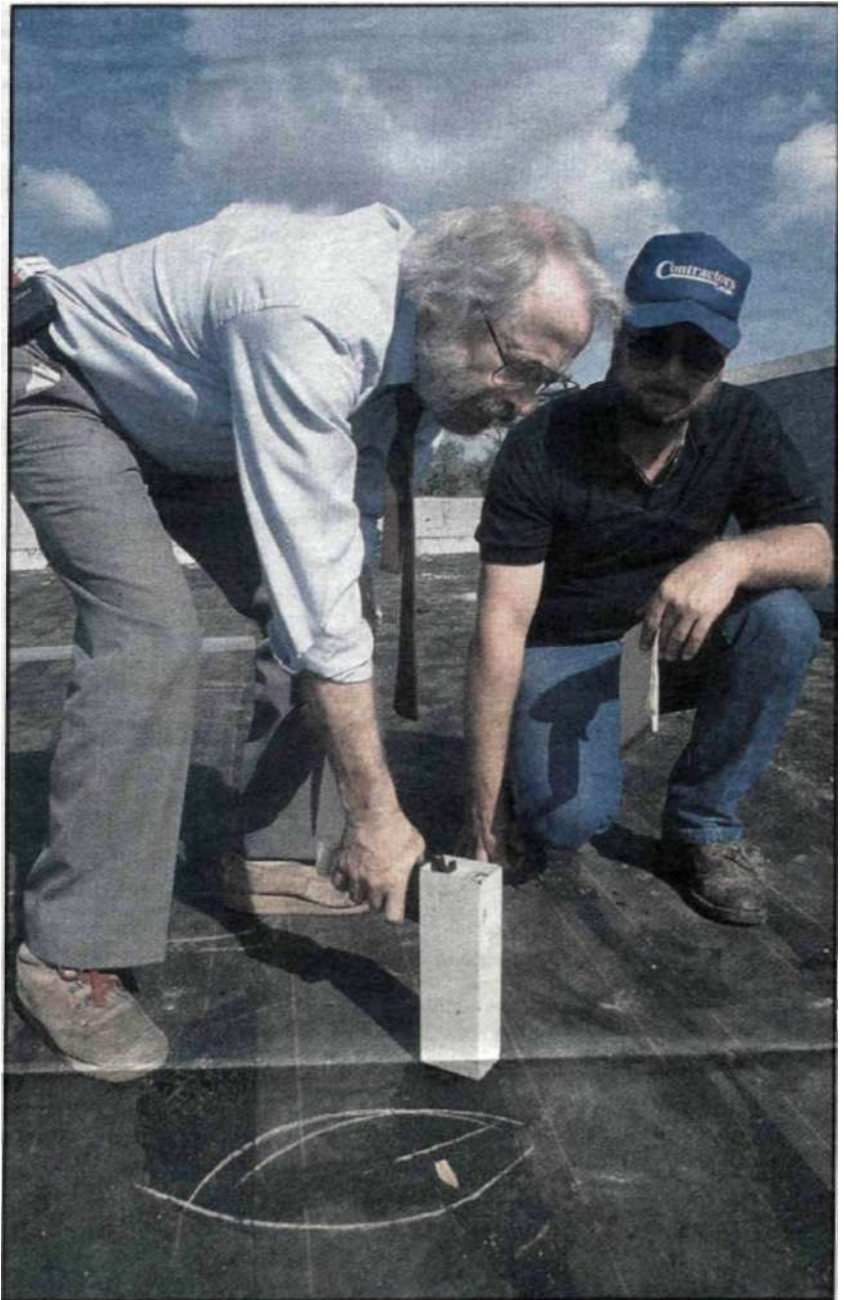
By its very nature, the job sometimes makes people angry, especially if Goldsmith determines that a contractor's workmanship was at fault.

"There are times when people would like to throw you off the job," he said.

He has recently been called in to investigate roof problems where fire-retardant plywood was used. It's a national problem that is just surfacing.

Scientists at the American Plywood Association in Tacoma, Wash., have determined that certain chemicals used in some fire-retardant plywood cause the material to collapse after exposure to high heat and moisture.

The APA no longer recommends



Tribune photograph by FRED FOX

Founder Chuck Goldsmith, left, and field supervisor Dave Kelly of C. B. Goldsmith and Associates use a moisture meter to inspect a roof at Northwood Commons.

the use of fire-retardant chemicals to treat plywood because some of those chemicals undermine the strength of the wood.

While not all fire-retardant chemicals are suspect, roof problems across the nation have caused the building industry to review its use of the plywood. And the industry is trying to establish new standards for fire-retardant-treated plywood.

The Forestry Division has launched two studies involving

more than 6,000 experiments to help set standards for the use of such plywood in construction.

"It's only the tip of the iceberg," Goldsmith said.

In Florida, fire-retardant plywood has caused roofs to leak, crack, and sometime collapse, Goldsmith said. He declined to be more specific.

But the problem is particularly strong in townhouses, where fire-retardant has been used heavily to comply with building codes con-

cerning common walls between residences, he said.

There seems never a dull week at C. B. and Associates, Goldsmith said. The work is interesting, the jobs are never the same.

There's always some contractor somewhere who didn't build by the book, who didn't follow all the rules, he said. That keeps roof consultants in work.

Roofs don't have to collapse before Goldsmith gets involved. All it has to do is rain hard and the phones start ringing.