

Garage doors called soft spot

• Weak home construction opened the doors to Saturday's tornadoes, an architect says, adding that there ought to be some laws.

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Stronger garage doors might have shielded some mid-Pinellas houses from the destructive power of last weekend's tornadoes, a wind expert said Monday.

"Garage doors blew in all over Autumn Run," said Largo architect Charles Goldsmith. "And once the garage doors went in and let the wind in, the roof not only took a suctional effect from the top, but also pressure from the underside. The roof didn't stand a chance."

As chairman of a roofing industry committee on wind resistance, Goldsmith has been busy of late.

After Hurricane Andrew, he and others combed through the remains of south Dade County, trying to determine what construction methods hold up best in killer winds.

Sunday, he made a similar tour of Pinellas County neighborhoods.

"We saw exactly what we saw in Miami, except the area was obviously narrower and more limited geographically," Goldsmith said. "Destruction was actually more intense in some areas. These houses, some of them, were built rather well, but the weakest links went first."

Judging by the damage, he said, winds Saturday probably hit 150 mph in Pinellas Park — similar to a catastrophic hurricane. Though wind of that magnitude could wreak havoc even on solid construction, Goldsmith said, many Autumn Run homes showed signs of weakness that left them vulnerable.



Supporting beams over the top of garage doors — called lintels — sometimes were not anchored strongly, Goldsmith said. The best way to anchor beams is to run steel rods from the foundation up through the columns that support the lintel and then tie the lintel to the rods.

For many years, the Southern Standard Building Code has called for such anchoring of lintels, Goldsmith said. But he declined to speculate whether builders had violated the code, saying he didn't know when Autumn Run was built.

Goldsmith said he also saw roof sheathing — the plywood fastened over supporting beams — that had been anchored by staples instead of nails, and roof trusses that were

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Garage from 1B

not anchored solidly into concrete supporting elements.

"If the houses had been built under more stringent conditions, where you don't use staples to attach plywood sheathing, where the truss anchors and the trusses themselves were secured against the wind, there would have been less damage," Goldsmith said.

Based on Andrew and the Pinellas tornadoes, Goldsmith said, he will recommend that the roofing industry adopt a new standard for securing roofs in hurricane-prone areas. Staples would be outlawed in favor of galvanized nails with half-inch heads.

Two weeks ago, Homestead banned staples for new construction and required that roof sheathing be 5/8-inch-thick plywood covered with 30-pound felt before shingles are applied. Previously, the sheathing could be half-inch plywood or particle board covered by 15-pound roofing felt.

"It would add to the cost (of a house), but it certainly would be worth the difference between destruction of the house because of a weak link," he said.

Besides recommending new construction standards, Goldsmith suggested that existing homes be modified to strengthen them against storms. One strengthening modification would be hurricane shutters over windows.

"It's done in the Caribbean islands all the time. But you need to have some warning," he said.

Homeowners also should consider ways to strengthen their garage doors, he said. Thin metal doors cannot withstand tornado or hurricane winds.

One solution would be to build anchorages on either side of the door, just inside, he said. They could hold "two-by-something" lumber, backed by plywood, that could stretch behind the door in an emergency.

"A lot of home brews could be invented to prevent these doors from caving in," he said.