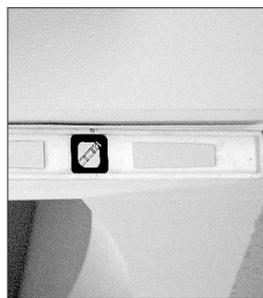
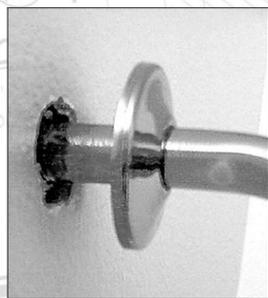




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BUILDING HOMES BUILDING PROBLEMS



Loose shower heads, bent ductwork and ceiling lines that weren't level were representative of the problems found in the investigation.

PART 1

The new homes of greater Orlando are riddled with problems large and small — everything from major cracks in the exterior walls to leaky windows and roofs; rooms that are too hot; and toilets that aren't even anchored to the floor.

A yearlong investigation by the *Orlando Sentinel* and WESH-NewsChannel 2 into new-housing construction in the region uncovered a systemic lack of quality control by builders who are producing too many homes too fast, with not enough trained workers and inadequate oversight.

"They're falling behind, and they're doing the work quickly, without any real thought to it," said Ron Resch, a private home inspector with nearly 40 years' experience in residential construction and a paid consultant to the *Sentinel* and WESH.

The investigation's findings are based in large part on the first statistically valid assessment of new-home construction ever done in Florida and likely the nation. Engineering students at the University of Central Florida, trained by Resch, inspected 406 homes built in 2001, randomly selected from the nearly 18,000 new homes sold in six Central Florida counties that year.

Those inspections found leaks, cracks and bad weatherstripping around windows and doors in 64 percent of the houses; major wall, floor and deck cracking in 61 percent; significant cooling/heating system problems in 50 percent; mold in 20 percent; and poor drainage in 18 percent.

Just as bad, in the eyes of many homeowners, the inspections found a consistent lack of attention to detail, fit and finish. Almost 80 percent of the houses had flaws such as corners that weren't square; interior walls with cracks and nails popping out; rooflines that sag; sliding screen doors that fall off their tracks; and cabinets with shelves that bow because proper supports were not installed.

"It's pretty sad. You look from the exterior, it looks nice. But it's disturbing [on the inside]," said Henry Wright of his \$107,000 house in Winter Garden.

Region's new homes riddled with flaws

Story by DAN TRACY || *Orlando Sentinel* staff writer

Continued on 3



ROBERTO GONZALEZ/ORLANDO SENTINEL

New homes go up explosion. Residential construction has boomed in Central Florida since the late 1990s, and as many as 23,000 houses could be built this year. Builders must constantly push laborers to work quickly so that they can meet the customers' demands. Speed sometimes causes problems such as these bathroom vents (below) that don't have exits to the outside of the house. The unconnected vents end in the attic.



BUILDING HOMES BUILDING PROBLEMS



ROBERTO GONZALEZ/ORLANDO SENTINEL

Skilled workers in demand. With new homes going up at a frantic pace, builders struggle to find enough workers and properly supervise the crews they do assemble. Many turn to illegal migrants to do the work.

While these homes are not collapsing or likely to blow over in a hurricane, their condition leaves some experts wondering what they'll look like in 10 or 20 years, as cracks inevitably widen and systems begin to age.

"Obviously, the future looks somewhat bleak for these homes," said Don Rattner, an architect, educator and master planner based in New York City.

"A fine wine gets better with age," said Resch, the son of a home builder who followed his father into the business. "These homes will not age well."

Given the area's furious, record-setting pace of residential construction since the late 1990s — as many as 23,000 houses will be built this year — there is little to suggest that houses built before or after the sample year studied by the *Sentinel* and WESH are any different.

Builders largely discount the findings of the *Sentinel*/WESH inspection, saying most of the problems uncovered are of little consequence or the result of poor maintenance by homeowners.

Alan Parrow is director of marketing, sales and design for Pringle Development, a Leesburg builder of active-retirement communities. After reviewing inspection reports of 11 of his company's homes, he said of the problems: "By and large, they were cosmetics."

and custom homes. But there were not enough custom homes in the survey to draw statistically valid conclusions about the quality of the work.

Most of the large companies have dominated markets across the country, just as they have become the major players in greater Orlando since entering the area during the late 1970s and early 1980s.

Among the prominent national or regional builders represented in the *Sentinel*/WESH investigation are Cambridge Homes, Centex Homes, David Weekley Homes, Engle Homes, DR Horton, Landstar Homes, Lennar Corp., Maronda Homes, M.I. Homes, Morrison Homes, Ryland Group and U.S. Home.

Those 12 built 185, or 46 percent, of the homes in the *Sentinel*/WESH database. Although several custom builders discussed the survey with the paper and station, these production companies refused repeated requests for comment.

Cambridge executive William Orosz, in a letter, termed "inaccurate" two flaws found by inspectors and said none of the owners of the 12 houses inspected had sought warranty repairs for the faults noted by the *Sentinel*/WESH inspectors.

After reviewing the reports, Orosz added, "We . . . find most to be issues of homeowner maintenance, often the arbitrary opinion of the inspector or items that are traditionally not covered by a homebuilder's warranty."

Ron Pecora, whose public-relations firm represents the homebuilders' association, described the attitude of the other builders: "They're mad. They don't believe they'd get a fair shot."

Price didn't matter

The *Sentinel*/WESH inspections, conducted over six months by specially trained industrial-engineering students at UCF, found the price of the house mattered little. Defects were found in the cheapest house in the survey, \$69,000, and the most expensive, \$1.9 million. Both had leaky windows and cracks in the walls.

The students' detailed reports, each a minimum of 12 pages, were fed into a computerized database that aggregated results for the 406-house sample. Findings included:

- More than six in 10 of the houses checked — 247 overall — had major cracks in the walls, the garage floor, concrete decking around the house, driveway or sidewalks. Wall cracks can allow water and moisture into a house, leading to mold, termites and rotted wood. Decking and driveway cracking are unsightly and, eventually, can require expensive refinishing.

Experts say the most common causes of exterior cracks are building on foundation pads before they have thoroughly dried; poor compaction of the underlying soil; laying block walls with little or no mortar in the seams; and applying too thin a layer of stucco. Driveway and decking cracks could be the result of poor compaction or watered-down concrete.

- More than 60 percent of the houses had at least one window or door problem, typically a leak, cracking around the frame or bad weather-stripping.

Continued on 4

PART 1

*'A fine wine gets better with age.
These homes will not age well.'*

— RON RESCH
BUILDING INSPECTOR

Parrow dismissed leaky air handlers in five homes as "acceptable" — but promised to fix significant cracks in the stucco of one.

The newspaper and television station also turned over to the Home Builders Association of Metro Orlando on Sept. 18 its inspection records from 157 homes built by the region's 10 largest builders, a week in advance of a scheduled interview. But the builders canceled — and subsequently refused to answer any questions about the inspections.

"They don't see what the problem is," said Susan Blehrud, a spokeswoman hired by the Maitland-based association.

Coping with flaws

Starting with Thursday night's newscasts and today's story, the television station and newspaper will offer a series of independent reports about new-home construction in Orange, Seminole, Lake, Osceola and parts of Polk and Volusia counties.

The series will show that most new-home buyers are forced to contend with myriad flaws when they take possession of the biggest investment most of them will ever make.

The buyers count on their builders to provide them with a solid, problem-free home — and that does happen. There are dedicated builders and construction workers plying their trade every day in Central Florida. They shake their heads at what they see happening in their industry.

"Nobody has any pride in their work anymore," said Bill Lang, a small custom builder who works largely in Lake County.

The problems invariably can be attributed to builders overwhelmed by demand and relying on a labor force that is mostly unskilled — many are undocumented Mexican migrants — as well as poorly supervised and overworked, according to the *Sentinel*/WESH inspections and interviews with homeowners and dozens of tradesmen and public officials.

"There is not the quality control that needs to be there. . . .

There's too much pressure to get stuff done immediately," said Jeff DeBoer, director of Osceola County's Building Department.

The rush to finish one job and move on to the next has resulted in countless homeowner requests for repairs. Of the 100-plus homeowners interviewed by *Sentinel* and WESH reporters, most said their builders had returned one or more times to fix faults. Almost all owners, however, said they had to complain numerous times — and many remained unhappy with the repairs.

Similar problems

Almost 80 percent of the houses in the survey were constructed by what's known in the industry as production, or tract, builders. The rest were produced by small custom firms with local ties.

Generally, the same problems showed up in both production



ROBERTO GONZALEZ/ORLANDO SENTINEL

Home inspection. Ron Resch, who led the home-construction survey, checks Henry Wright's (left) new home in Winter Garden. Wright said the exterior of his new home looked fine, but gradually he began to realize the house was full of flaws. As Wright walked from room to room in his home, he noticed that the temperatures varied, indicating a problem with the air conditioning.



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4

BUILDING HOMES BUILDING PROBLEMS

UCF team did inspections for 6 months

Building inspector helped train 15 students

By DAN TRACY
SENTINEL STAFF WRITER

Industrial-engineering students from the University of Central Florida inspected 406 houses for the *Orlando Sentinel*/WESH-NewsChannel 2 investigation of the quality of new-home construction in the region.

The 15 students were trained by Ron Resch, a 56-year-old former general contractor and certified building inspector from Lake County, and two UCF associate professors, Mike Mullens and Ahmad Elshennawy.

The university was paid \$30,000 for the project; Resch, \$2,500. The first house was checked April 4, and the last was inspected Oct. 4.

As part of their major, the students participate in the Housing Constructability Lab, run by Mullens and Elshennawy, and study production techniques.

Quality consultants

The professors consult about quality-control and production issues for a dozen companies that manufacture housing components and ship them to builders for assembly on site, primarily in the Mid-Atlantic and Northeast.

Resch, whose Total Building Consultants and Inspectors Inc. was retained to check out 1,200 new and used homes in 2002, began working with the students in February.

Along with Mullens and Elshennawy, Resch took groups of students through new houses in the Avalon Park community in southeast Orange County.

With the students in tow, Resch climbed onto roofs, crawled through attics, tramped around yards and walked through interiors,



ROBERTO GONZALEZ/ORLANDO SENTINEL

Giving it the once-over. John Teffner (left) receives a home inspection recently in Altamonte Springs from UCF industrial-engineering student Julio Lujambio (standing) with help from Nick Dawson and Brian Knobb. The trio documented problems with photos and a checklist. A total of 15 UCF students checked houses in 6 counties from April 4 to Oct. 4.

pointing out what was right and wrong in the houses, all built in 2001 or 2002.

He also showed the students how to fill out an inspection form, based on the one he uses in his private business.

The practice homes showed many of the same problems found in the 406-house sample: cracked foundations and walls; leaky windows and air handlers; rooms that were too hot or too cold; and poor craftsmanship, such as corners that were not square and archways out of round.

After the initial training, Resch and the professors turned the students loose for practice inspections.

Resch and the professors also checked the houses, then compared notes with the students.

'They were conscientious'

By April, the students were deemed ready to go. But Resch and the professors remained deeply involved, meeting with the students regularly to check

their findings for errors and to answer questions.

Resch also gave his cell-phone number to the students, allowing them to call him with concerns while they were going over a home.

"They did find a lot of significant problems in the homes," Resch said. "They took their job seriously. They were conscientious in what they were doing."

The 406 houses inspected by the students were all built in 2001, the last full year for which data was available before the project was conceived in 2002.

The owners were contacted by phone from a list of names and addresses selected at random from the databases of property appraisers in Orange, Osceola, Seminole, Lake, Volusia and Polk counties.

Zack Haeussner, a 22-year-old UCF senior, conducted the first inspection, of a house in Oviedo. He found a shaky staircase railing, trim around

the attic door falling off, a garage ceiling with a large hole in it and a wavy ceiling.

Homeowners ask: Why?

Such discoveries, he said, quickly became common. And homeowners, he said, often asked the same question: "Why? Why would they [the builders] do it that way?"

Mullens said he expected to find some flaws — "These are done by people" — but was surprised that only 1 percent of the houses, four in all, were found to be problem-free.

Buyers, Mullens said, are partly to blame. While they will reject a product in Wal-Mart because its wrapping is torn, they will not object when their house has bowed walls.

"We're extremely accepting because we don't think we have the right to do better," he said. "I think we should have a better understanding of what we want and should have in a house. We should have the conviction that goes along with that."

FINDINGS

PART 1

Builders reluctant to make fixes, some say

From page 3

Of the houses with faulty windows, almost half had cracks in the exterior wall or in the interior drywall surrounding at least one window. An additional 39 percent had windows with caulking that was cracked, dried or thinly applied. Twenty houses had windows with active leaks.

Resch maintains the window problem is largely the result of hurried workers jamming hardware into openings that aren't square, or failing to caulk them properly.

"They just stick them in there and move on," he said.

- Almost 80 percent of the houses had at least one finishing/workmanship flaw, ranging from unanchored toilets (25) to cabinets without middle supports (68); smoke detectors that did not work or were not properly positioned (42); and unsightly air-handler disconnect switches installed in the living area, usually a hallway (122), rather than being concealed.

Brenda DiTullio has several bowed walls in her \$152,000 Centex home in south Orange County. A schoolteacher, DiTullio said she wished she had paid more attention to the finish details of the house before moving in.

"You don't see everything on the walk-through," she said. "You're all excited, 'Oh, the new house.'"

- Five in 10 houses had a problem with the heating and cooling system, ranging from leaky and crimped ductwork to corroded vents and air handlers. Often, that resulted in one or more rooms being at least 5 degrees warmer or cooler than the rest of the house. A difference of 10 degrees was a common complaint.

Twenty percent of the homes with spotty cooling and heating had at least one duct with major bends, including 17 with curves of more than 90 degrees. Such major crimps greatly reduce the amount of cooled or heated air that is pumped into a room.

Henry Wright said he can go from hot to cold just by leaving one bedroom and going to another in his Winter Garden house built by Maronda.

"It's pretty sad," he said.

- Mold, which can cause respiratory problems, was in 20 percent of the houses. It was found most often on the exterior ductwork of the air handler that moves cooled or heated air through the house; near windows and doors; or in bathrooms. One house even had mushrooms growing on the carpet near a leaky sliding-glass door.

- One in five houses had roof flaws, ranging from leaks to "shiners," or nails not covered by the shingles, to wavy rooflines caused by warped decking or incorrectly installed trusses. Shiners can lead to leaks if left uncovered by a shingle or tar. Wavy roofs can cut years off the life of shingles, most of which carry a 20- to 25-year warranty. Fifteen houses had roofs with active leaks.

- Eighteen percent of the houses had poor drainage, meaning there often was standing water in the yard, the driveway or patios. Some lots allowed rainwater to run toward the house rather than away, an apparent building-code violation.

- The price of the house made little difference. Houses in the *Sentinel*/WESH database were divided into three categories: \$125,000 and less; \$126,000 to \$225,000; and \$226,000 and more. Mistakes, both in number and severity, were almost equally divided among the three groups.

The cumulative effect of such shoddiness can, over time, result in higher maintenance costs, lower resale values and a worn and faded-looking housing stock, industry experts say.

"It's almost like a planned obsolescence," said Rattner, the architect.

Adding to the problem is that new owners are less likely to maintain a house riddled with faults than one in good shape, said Stephen Roulac, a strategy adviser to builders and developers worldwide and the author of the forthcoming book *362 Housing Mistakes and How To Avoid Them*. According to Roulac, a new homeowner will not take as much pride in a poorly built house and is more likely to neglect it, thus making an already bad situation worse.

But Roulac, Rattner and others say homeowners are partly to blame — for tolerating shoddy construction. New-home buyers, they say, worry too much about the price per square foot rather than quality, leading to the "big box, small lot" layout that characterizes many new subdivisions.

"If you want a lot of space [at a low per-square-foot price], you end up having less quality," Roulac said.

Flaws not noticed

Almost all the new homes and subdivisions of Central Florida ooze with curb appeal. They look great from the outside, the

Continued on 5



BUILDING HOMES BUILDING PROBLEMS

The investigation and the findings

Industrial-engineering students from the University of Central Florida inspected 406 homes from April 4 to Oct. 4 for an Orlando Sentinel/WESH-NewsChannel 2 investigation of the quality of new-home construction in the region. The 15 students received training during a period of 3 months from Ron Resch, a 56-year-old former general contractor and certified building inspector from Lake County, and 2 UCF associate professors. The homes were randomly selected from a database of all 18,000 houses built in the region in 2001. The students' findings were double-checked by Resch and the professors, and the problems found were broken down into 3 categories: 'Priority problems,' 'concerns' and 'worth noting.'

THE INSPECTIONS

COLUMNS:

CONDITION:

None NotSealed

WINDOWS:

CONDITION:

OK Broken PaintedEdge ConnCrack MissingPiec

Shewn Loose PoorCosmet

WINDOW TRIM:

MATERIAL:

Wood Metal Brick ConcComp

OK Moisturo StairCrnd CracksMaj StairTub Unoven StairCrack VentsBlock

The students used a 13-page checklist that covered all the major systems of a house — from the foundation pad and the walls to the appliances and the roof. Walking about the house, they jotted notes, took digital photos and marked whether a particular system was in good shape.

THE DATABASE

Description:

Very poor cosmetic makeup of the columns in the rear of the house. The slucco and cement was uncut from the formation of the column and left showing a poor cosmetic

Inspection ID: 2101 Filename: 2101-2.jpg Open Photo

Description:

Again, very poor cosmetic makeup off the back porch of the house.

Inspection ID: 2101 Filename: 2101-3.jpg Open Photo

Description:

Builder has been called out several times to fix the erosion in the backyard, but the ground erodes away into a swamp during rains. A drain was installed and the field was re-

Inspection ID: 2101 Filename: 2101-4.jpg Open Photo

Description:

Same as the ones above.

Once the inspections were complete, the students downloaded their findings into a database created by the Orlando Sentinel and WESH-NewsChannel 2. The database allowed the paper and TV station to collate and analyze tens of thousands of bits of information. This formed the basis of the 1st statistically valid survey of new-home construction done in Florida and likely the nation.

PART 1

PRIORITY PROBLEMS

TOTAL HOMES AFFECTED:
386 OF 406 HOMES

'Priority problems' were the most serious because they pose potential health, structural, operational or safety risks. These include:

Problem	Number of homes with problem
• Corner cracks in exterior windows	192
• Exterior wall stair cracked	188
• Air-handler corrosion	71
• Leaky heating-ventilation air-conditioning air handler	45
• Major cracks in exterior wall	44
• HVAC mold	37
• Ponding	37
• Attic ductwork with bends	37
• Major cracks in garage floor	34
• Loose pipes	34
• Stove not secured to kitchen wall	26
• Major cracks in driveway	27
• Loose toilet	25
• Smoke detector too low	22
• Poor floor drain	21
• Stair rails not secure	16
• Roof nails show	15

CONCERNS

TOTAL HOMES AFFECTED:
337 OF 406 HOMES

'Concerns' were flaws that were easily noticeable and indicative of poor quality control. These include:

Problem	Number of homes with problem
• Poor caulking on interior windows	159
• Poor tub/shower caulk/seal	73
• Loose showerhead	69
• Poor support for counter/cabinets	68
• Damaged floors	33
• Poor driveway slope	27
• Poor caulk on counter/cabinets	26
• Roof not flat	26
• Noisy garage doors	26
• Roof covering vents	21
• Bad toilet flush	19
• Garage walls damaged	15
• Problems with carpet	15
• Cracks in tub/shower	14
• Sink cracked/damaged	13
• Counters/cabinets damaged	9
• Poor cosmetics on exterior windows	8
• Piece of driveway missing	6

WORTH NOTING

TOTAL HOMES AFFECTED:
304 OF 406 HOMES

'Worth noting' were faults that were largely cosmetic. These include:

Problem	Number of homes with problem
• Poor drywall on interior walls	43
• Corner cracks in rear patio windows	39
• Cracks in interior walls	38
• Poor workmanship on floors	36
• Uneven interior walls	34
• Minor cracks in deck	26
• Cracks on interior ceilings	25
• Poor drywall on interior ceilings	21
• Cracked columns	21
• Cracks in pool decking	20
• Uneven interior ceilings	16
• Exterior doors difficult to operate	11
• Garage floor chipped	10
• Interior doors rub/stick	9
• Garage-door sensor on floor	7

SOURCE: Orlando Sentinel/WESH-NewsChannel 2 research

DAVID W. WERSINGER/ORLANDO SENTINEL

yards landscaped, the streets with gentle curves.

But a closer look reveals a different picture, one that their excited new owners often don't see and their builders don't want to talk about.

Nate Young, a retired Army sergeant, was working in his home office earlier this year when he bumped against the front wall, which features a large, rounded window. The wall felt soft to Young and, upon closer inspection, he noticed a pinhole leaking sawdust. Then he saw a small, winged insect on the carpet.

A year and a half after moving into their \$233,700 house in southeast Orange County, Young and his wife, Pam, discovered they had termites. The exterminator told them the insects had come up through a crack in the foundation to feast on wood that was wet because of a leaky window.

"We were pretty mad," said Pam Young, who moved into her home in the Estates at Summer Lakes during September 2001.

Their builder, Landstar, brought in a repair crew that killed the termites, tore out and replaced bad lumber in three walls and caulked the window for leaks.

Just to be safe, the Youngs took a garden hose and soaked more than a dozen other windows in the house. They all leaked.

"In the bedroom, in the top corner, it poured in," Pam Young said. "There was a big gap."

Landstar, which declined repeated requests for comment, stopped the leaks with caulk, Young said. She said she's satisfied with the results.

Wall comes down

David Carrasquillo had an even bigger water surprise. He was showering one day when he sat down on a corner bench in the stall. He leaned against the tile wall — and broke through the wall.

"I didn't do anything rough, just laid back," recalled Carrasquillo, whose \$122,800 house in DeBary was 8 months old at the time.

It turned out the tiles were not sealed properly, causing the wall behind them to become waterlogged. Carrasquillo and his wife had moved into the Springview subdivision in September 2001.

The builder, Cosmopolitan Homes, repaired the damage, though Carrasquillo cites other problems that have gone unfixed. His screened-in back patio often is wet because the yard slopes toward the house, not away from it as specified in the Florida building code. He has loose tiles along the bathtub in his master bathroom, and he had to repaint part of his house because it was badly faded.

"I'm not very happy. I can tell you that much," said Carrasquillo, an electronics repairman. Cosmopolitan Homes did not return repeated calls for comment.

Hard to get repairs

Maureen Amorini also has a water problem. Her builder, Morrison Homes, can't seem to fix the leaky roof in her Lake Mary home.

"Every time we have rain, it gets worse and worse," the homeowner said.

She moved into her \$377,000 house in August 2001. Not long after, she noticed water trickling into her garage, at first discoloring the paint, then causing it to bubble and peel off.

Morrison has tried to repair the leak three times, even applying tar over the suspected hole. The repairs have not taken, said Amorini, who is waiting for Morrison to try a fourth fix.

Amorini's two-story home also has numerous cracks in the exterior walls and pool decking. Several floor tiles in the house have cracked and been replaced, too.

Morrison officials, who would not comment, have told her settling cracks in tiles, walls and the deck are normal and nothing to be worried about.

Amorini echoes a lament heard from virtually every new homeowner interviewed by Sentinel and WESH reporters: She said her builder is reluctant to come back to the house to fix problems. "For the most part," she said, "you really have to fight with them."

New homeowners should not expect a change in attitude or quality until the "equivalent of the California [governor] recall occurs in housing," consultant Roulac said.

For that to happen, he and other experts said, buyers will have to demand better construction and be as particular and informed about their homes and builders as they are about their cars. No one, Resch said, would buy a new car with a scratch down one side, yet people routinely move into homes with numerous faults. If they notice the problems at all, he said, they trust the builder will fix them before the warranty expires.

But in Central Florida's go-go housing market — nearly 18,000 new homes have been built and sold in each of the past three years — builders and their subcontractors are hard-pressed to keep up with construction schedules, let alone go back and fix past mistakes.

"Our whole culture is in for the quickest payback," architect Rattner said. "People want the fastest return they can get. The builders are doing that job. They get in and they get out. . . . It all ultimately boils down to values."

