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**BUILDING HOMES**  
**BUILDING PROBLEMS**

# 'Good enough' work means shoddy homes

**PART 2**

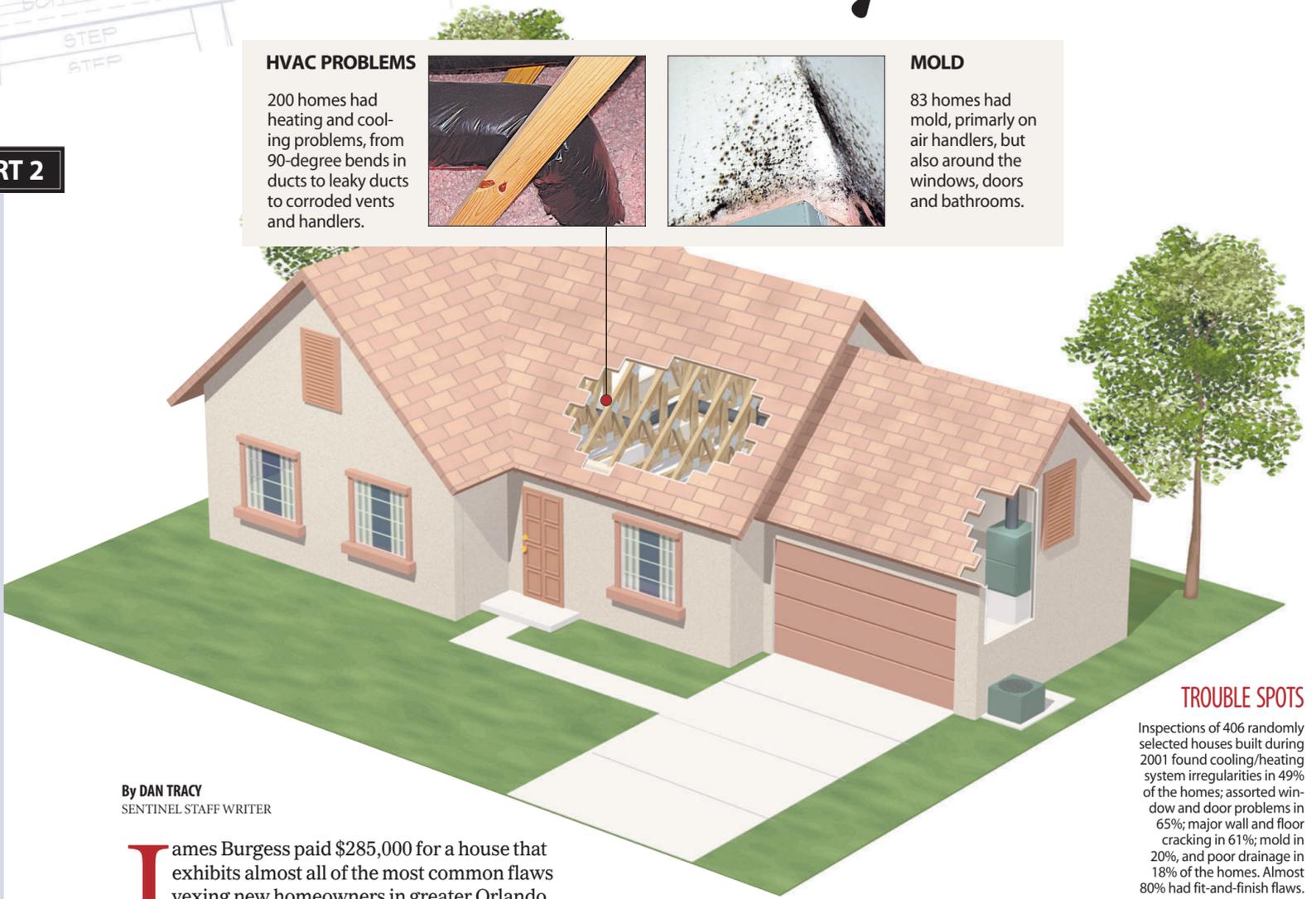
**HVAC PROBLEMS**

200 homes had heating and cooling problems, from 90-degree bends in ducts to leaky ducts to corroded vents and handlers.



**MOLD**

83 homes had mold, primarily on air handlers, but also around the windows, doors and bathrooms.



**TROUBLE SPOTS**

Inspections of 406 randomly selected houses built during 2001 found cooling/heating system irregularities in 49% of the homes; assorted window and door problems in 65%; major wall and floor cracking in 61%; mold in 20%, and poor drainage in 18% of the homes. Almost 80% had fit-and-finish flaws.

By **DAN TRACY**  
SENTINEL STAFF WRITER

**J**ames Burgess paid \$285,000 for a house that exhibits almost all of the most common flaws vexing new homeowners in greater Orlando. Like 61 percent of the owners of Central Florida houses built in 2001, he has lived with cracked walls, floors and decking. He had complaints about air conditioning (49 percent); roof and window problems (more than 50 percent); continual puddles in his yard (18 percent); and an unanchored toilet that seeps water (13 percent).

Not to mention shoddy workmanship of the sort that turned up in nearly four out of five houses. He even had two unique flaws: a balcony that could fall and an open, 2-by-4-foot trench in the concrete pad that had been filled with trash and covered with carpet.

"If I had no problems, I would love this house," said Burgess, a 55-year-old retired firefighter. Instead, he said, the past two years have been filled with fights with his builder about repairs.

Burgess owns what could be the poster house for a yearlong investigation of new-home construction in Central Florida by the *Orlando Sentinel* and WESH-NewsChannel 2.

The reporting included the first-ever statistically valid assessment of construction quality in Florida and perhaps the nation: inspections of 406 homes randomly selected from the nearly 18,000 homes built in the region during 2001. Burgess' home in Kissimmee was one of them.

Those examinations turned up literally thousands of problems, an average of 7.5 per house. They dramatically underscored the systemic problems in the region's residential-construction industry — homes being built too fast, with not enough skilled workers or oversight — that almost assure a buyer will encounter quality problems in a new house.



**FAULTY DOORS AND WINDOWS**

262 houses had window or door problems — a leak or cracking around frame, or bad weatherstripping.



**MAJOR CRACKING**

247 houses had major cracks in walls, garage floors, driveways, side-walks or decking.



**BAD CRAFTSMANSHIP**

312 homes had at least 1 finishing flaw: shaky toilet, bad smoke detectors, cabinets without middle supports or disconnected switches in living areas.

Continued on 7

PHOTOS FROM UCF HOUSING CONSTRUCTABILITY LAB  
GRAPHIC BY INGRID PECCA/ORLANDO SENTINEL



## BUILDING HOMES BUILDING PROBLEMS



ED SACKETT/ORLANDO SENTINEL

**Repair check.** James Burgess checks work done recently to fix the balcony on his Kissimmee home. He said the builder pledged to put new support beams under the balcony, which opens off of his 2nd-floor master bedroom. The original beams are cracked, and an independent inspector hired by the builder urged that they be replaced.

In general, builders refused requests for interviews, contending through spokesmen that they would not be treated fairly. They also argued that many of the problems were minor maintenance matters a homeowner could and should remedy. Serious, legitimate flaws, the builders said, are handled promptly.

The *Sentinel*/WESH survey, as well as interviews with more than 100 homeowners, found many examples of builders returning to make repairs during the typical one-year warranty period. But in most cases, owners said that getting the work done was a difficult and time-consuming process — and left them wondering how their homes would hold up as they age.

“It’s really scary,” Burgess said, “when you see your house falling down around you.”

The *Sentinel*/WESH investigation found:

- A shortage of the skilled workers needed to hammer the nails, set the block and lay the roof shingles. That has opened opportunities for thousands of self-taught carpenters and masons and roofers — and has lured thousands of undocumented migrants from Mexico to work construction here. Mexicans now constitute a majority of the region’s residential-construction workers.

“You get what comes off the streets. They learn on the job,” said Tom Lagomarsino, executive director of the Home Builders Association of Metro Orlando.

- A building code requiring that city and county inspectors examine only the structural integrity and safety of the home they are hired to check. The code prohibits them from checking the quality of work or craftsmanship of a house — the very aspects that owners value so highly and that many assume the inspectors are reviewing.

“The truth is you can have some things that aren’t very nice, but they meet the code,” said Larry Goldman, Seminole County’s chief building official.

- Building inspectors who — like the contractors whose work they are supposed to check — are often overworked and uncritical. *Sentinel*/WESH reporters found numerous examples of inspectors checking 60 houses a day — triple what’s considered a reasonable workload. One inspector in Lake County approves more than 99 percent of his inspections the first time; for Osceola County, the average for its inspectors is 94 percent.

“You can’t get away from the fact that they are not taking as much time as they should. You can’t run away from that,” said Mike Rhodes, Orlando’s chief building official.

### ‘Concerned about quantity’

Production, or tract, companies built nearly 80 percent of the houses in the computerized study — at least 312 — including the one Burgess bought.

The remaining 94 were built by a variety of companies, many of them custom builders, which typically are local businesses that construct fewer — but more costly — houses. Generally, custom homes had the same problems as production houses. But there were not enough custom homes in the database to draw statistically valid conclusions.

Complaints about shoddy construction, particularly by production builders, do not surprise Ron Resch, a veteran private building inspector, former general contractor and paid consultant to the *Sentinel* and WESH.

“They’re not concerned about quality; they’re concerned about quantity,” he said.

With the exception of Pringle Development, which builds “active retirement” communities in Lake County, the top production builders in the *Sentinel*/WESH survey declined repeated requests for comment, as did other builders mentioned in this story.

Those builders, through a spokesman, questioned the validity of the inspections because they were not conducted by professionals, but by industrial-engineering students at the University of Central Florida. The students were trained and supervised by Resch and two UCF professors who research quality and process issues for manufacturers of home components in the Mid-Atlantic states.

Alex Hannigan, president of the Home Builders Association of Metro Orlando and himself a custom builder, acknowledged that production builders — some of which build hundreds of homes each year in the Central Florida market — can have quality-control problems. But he said they’re not deliberate.

“I don’t think they’re out there to say, ‘Listen, let’s see how we can screw a homeowner,’” Hannigan said. “I think it’s something that’s falling through the cracks. I can’t believe that their corporate philosophy is, ‘Let’s see what we can get away with.’”

Alan Parrow, Pringle Development’s director of marketing,

sales and design, said his company works hard at constructing a well-built house and reacts promptly when a homeowner complains.

“We’re proud of what we do,” he said.

Resch and other critics say the production builders, as well as many custom builders, are overwhelmed by demand sparked by Central Florida’s growth and low interest rates. In 2001 alone, about 18,000 new homes were built in the six-county Central Florida region; this year, as many as 23,000 are projected to be built.

With a largely unskilled work force that is rushing to keep pace, the builders make continual mistakes.

“It’s ‘Hurry up and get this done. Don’t worry about what it looks like,’” Resch said.

That explanation sounds plausible to Burgess, who lived in LaBelle in South Florida with his family while their house was being built and was unable to check its progress very often.

One of the times he did visit, however, he saw the 2-foot-by-4-foot-by-5-inch-deep trench in the concrete pad, running from the dining room to the kitchen. It was chiseled into the pad, Burgess said, because electrical wires initially were misplaced and had to be rerouted.

He asked that it be filled in before he, his wife and three children moved in during November 2001 — and was told it would be taken care of.

Continued on 8



### Dangling problem

A UCF team of students also found a loose smoke detector in James and Noreen Burgess’ Kissimmee home recently. Some builders said many problems that the team discovered in various homes were minor maintenance matters that owners could and should remedy by themselves.

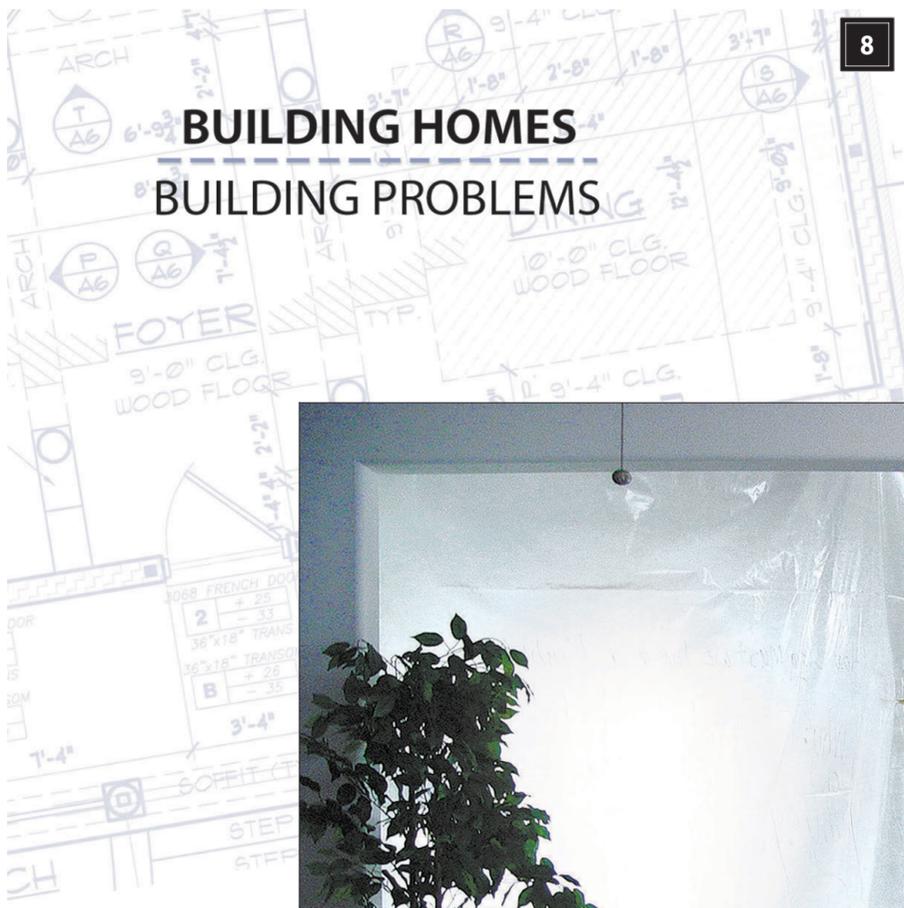


### Stucco issue

A team of UCF industrial-engineering students documented cracked stucco at James and Noreen Burgess’ Kissimmee home, which they moved into in 2001. Like 61% of the owners of Central Florida houses built that year, \*the\* Burgesses have cracked walls, floors and decking.



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## BUILDING HOMES BUILDING PROBLEMS

### PART 2



UCF HOUSING CONSTRUCTABILITY LAB

**Repairs.** A photo by a UCF inspection team shows plastic sheeting the builder put up to temporarily block off the Burgesses' dining room, where the builder was filling in a 'trench' that the Burgesses said was left in the floor during construction.

# In survey, each home averages 7.5 problems

From page 7

### Trench full of trash

It was not. After Burgess moved in, he pulled up the carpet and the foam pad beneath it to see whether the repairs had been made, and saw the trench was filled with wadded-up cigarette packs, discarded butts and crushed aluminum cans.

He called his builder, U.S. Home, for repairs, triggering a drawn-out series of warranty requests that continue to this day. The builder, he said, did not get really serious about his problems until June, when he told it that an inspector from the *Sentinel*/WESH was going to look at the house in the Hawk's Nest subdivision.

The trench — now filled with a concretelike material — was one of the less significant flaws he encountered with the house.

More worrisome to him have been the roof and window leaks; two upstairs toilets that dripped water and damaged the ceilings in two first-floor rooms; varying temperatures in his second-floor bedrooms; and cracking stucco on his second story.

All those issues, except the stucco, have been repaired or soon will be, he said. The stucco is so thin and badly applied that it is falling off in small chunks, largely around a crack running along one side of the house that starts as a hairline but widens enough to hold two quarters.

Burgess fears that much of the stucco may come off eventually, as he said happened to the house next door. An attempted fix of the neighbor's house has languished for more than four months, with much of one wall still swathed in plastic wrap. U.S. Home has not yet offered Burgess a plan for what will be done for him.

But the builder has, he said, pledged to put new support beams under the balcony that opens off of his second-floor master bedroom. The original beams are cracked, and an independent inspector hired by U.S. Home recommended they be replaced for fear the balcony might collapse if too many people stood on it.

The builder also put extra drains in his neighborhood to reduce the constant puddling, Burgess said. The work has helped, but he said his yard and many others in the subdivision remain almost constantly wet.

Kim Mulligan has faced some of the same problems that plague Burgess. But she's satisfied that her builder — Morrison Homes — has addressed the flaws in her \$269,000 house in Heathrow in Seminole County.

Her roof sprang a leak earlier this year in a bad storm, staining a corner of her living room. Morrison has plugged it and soon will repair the interior damage as well, said Mulligan, 43, a medical/legal consultant.

"They've lived up to their promises," Mulligan said of Morrison, "but it's just disturbing when you have a new house and you have a roof leak."

She also has had plenty of cracking of her exterior walls and a large crack in her garage floor. Again, Morrison has filled, caulked or painted over the flaws, she said.

Mulligan's biggest concern now is that some of the nails that were hammered into the drywall are popping out. She thinks the house is settling, or shifting, as the ground adjusts to the weight of the concrete pad.

Thomas Fisher's foundation seems OK; it's the interior finish of his \$277,000 house in Waterford Lakes that upsets him. Some walls are not flat, a fact he learned when he tried to install chair rails in the dining room.

He wanted to glue the rails on, but the gap was too big in some areas because of the wall's "wavy" undulations. He resorted to screwing them into the metal studs.

Fisher, a 63-year-old retired steel-plant manager, found one advantage to uneven walls. He figured he would have to drill holes in the wall to run the wires and plugs that connect and power his entertainment equipment from one shelf to the next. But the "waves" were so pronounced, he said, he could slip everything in the space between the shelves and the walls of his Centex home.

"There's no quality control exercised at all," he said.

### Inspector: Workers lack pride

Alan Mooney, president of Criterium Engineers, a national home-inspection company, hears such criticisms and his employees see similar flaws all the time, locally and nationally.

He blames much of the sloppy work on the loss of personal pride by many workers and the "good enough" attitude of many builders.

Usually, Mooney said, no one is on the job at a house from beginning to end. Even job superintendents, particularly for production builders, come and go, meaning the person in charge of overseeing construction of a house can change several times before completion.

And the workers come in only for a specified task — framing or building block walls, for instance — then leave.

"Good work or bad, individual effort mostly goes unnoticed," said Mooney, whose company operates in Central Florida.

Rushed builders also tend to set lower standards, he said. So if a corner is not perfectly square or a wall is a little out of line, he said, it becomes "good enough."

That attitude could lie behind many of the discoveries in the *Sentinel*/WESH survey, particularly when it comes to the final look and feel of a house. Some findings:

- More than 40 percent of the homes had walls and ceilings that were not straight, had waves in them, were cracked or had drywall nails popping out.

- Bill Braun, a 64-year-old disabled electrician, has drywall in his \$143,000 house in DeBary that was not completely hammered into the wood framing behind it. He can push the drywall in more than an inch and watch it spring back.

"Isn't that something?" he said.

- Seventeen percent of the houses had cabinet shelves missing the middle supports. That can cause the shelves to sag and even break over time.

- "It concerns me," said Jay Miller, a 42-year-old computer-project engineer. "It's one of those things that should have been done."

- He spent \$320,000 for his custom house in Winter Garden. The holes for the support pegs are missing for two long shelves in the kitchen, Miller said, but he figures they are strong enough to hold the items placed there.

- Fifty-two houses had toilets that weren't anchored properly or leaked, just like Burgess'.

- "It's pretty bad," said Alberto Sabat, a 45-year-old immigration agent.

- Sabat, who paid \$117,000 for his house near Kissimmee, said his builder went out of business, leaving him to fix the toilet and lots of other flaws, including soffits that were falling off, a cracked garage floor and driveway and no insulation in the attic.

- "There's nothing critical," he said, "but it's just a lot of stuff."

- An additional 26 houses did not have the stoves attached to the wall, meaning they could tip over accidentally. That is an apparent code violation.

- Ron Ozut, whose grandchildren occasionally visit his \$150,000 house in Clermont, said he intends to call the builder, Levitt and Sons, to secure his stove to the wall.

- "I'll get it done," said Ozut, a retired postal clerk.

- Fifteen homes had carpet that was fraying or lumpy or coming up in the corners.

The effect of all these problems — big and small — is not that houses all over Central Florida soon will collapse, but that they will wear poorly over time.

Without repairs, they will look shabby within a few years and, in some instances, even sag.

Such homes, experts say, will not increase as much in value over time and cost the owners more than a well-constructed house in upkeep and replacement expenses.

"I think they are throwing these things up," said Sharon McLearn, a Winter Park Realtor. "There is no pride. That day is gone."



BUILDING HOMES  
BUILDING PROBLEMS

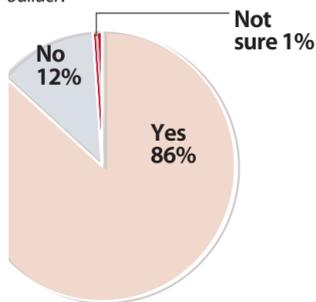
Orlando Sentinel WESH 2 NEWSCHANNEL

POLL: HOMEOWNERS ARE GENERALLY SATISFIED

A 2003 survey of purchasers of single-family homes during 2001 in Central Florida shows that most were satisfied with the construction and builder.

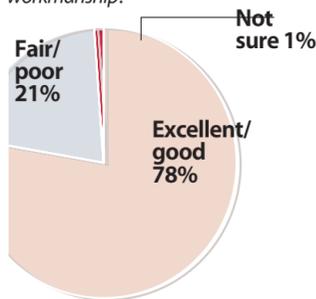
• Satisfaction with builder

In general, were you satisfied with your builder?



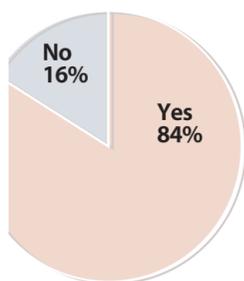
• Quality of home

How would you rate the quality of the workmanship?



• Timeliness

Was your home completed on time?

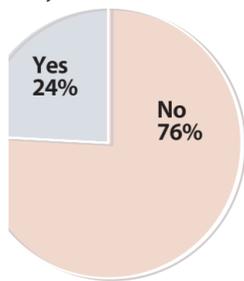


If your home was not completed on time, how late was your builder in finishing it?\*

1 week or less	2%
10 days to 2 weeks	17%
3-4 weeks	17%
1-2 months	33%
More than 2 months	27%
Not sure	4%

• Disagreements with builder

Did you have problems or disagreements with your builder?



• Problem areas

Did you have problems in any of the following areas?

	Yes	No
Roof	6%	94%
Foundation	6%	94%
A/C or heating unit	7%	93%
Windows or door water leaks	9%	91%
Interior walls	11%	89%
Electrical/wiring	7%	93%
Plumbing	7%	93%
Floors/carpet	13%	87%
Appliances	5%	95%

NOTE: Poll was conducted Jan. 28-31, 2003, with 600 people who had bought single-family homes in 2001 in Central Florida. The margin of error is no more than 4 percentage points. Totals may not equal 100% because of rounding.  
\*Subset was 96 out of 600.  
\*\*Subset was 144 out of 600.

SOURCE: Mason-Dixon Polling & Research Inc.

ORLANDO SENTINEL

# Angry builders object to new-homes survey

After learning of the complaints, most refused to talk. Others criticized the inspectors' qualifications.

By DAN TRACY  
SENTINEL STAFF WRITER

Production builders disagree so heatedly with the findings of the Orlando Sentinel/WESH-NewsChannel 2 survey of new-home construction that they refused to talk to the paper and television station.

"They're mad," said Ron Pecora, a public-relations consultant hired by the Home Builders Association of Metro Orlando.

Several custom builders and one Leesburg-based production company did talk to the Sentinel and WESH, but they were careful to draw a distinction between their work and the construction practices of larger-scale builders. Another, Cambridge Homes, sent a letter defending the quality of the company's work.

Production, or tract, builders built nearly 80 percent of the 406 houses randomly selected for the equivalent of a final home inspection.

The survey, the first statistically valid examination of new-home construction in the state and perhaps the nation, found widespread problems, including cracking, leaks, mold and a pervasive inattention to details.

The tract builders who declined repeated requests for comment were Centex, Cosmopolitan, David Weekley, DR Horton, Engle, Landstar, Lennar, Maronda, M.I. Homes, Morrison and U.S. Home.

Together, they built 166, or 41 percent, of the homes inspected.

After he met for 90 minutes with representatives of eight of these builders, Pecora said they had "concerns" about the Sentinel/WESH survey because "certified people" didn't conduct the inspections.

The inspections were done by graduate and undergraduate industrial-en-



STEPHEN M. DOWELL/ORLANDO SENTINEL  
**Alan Parrow.** The executive with Pringle Development of Leesburg said the flaws in homes built by his company 'by and large . . . were cosmetics.' He promised to repair cracks in 1 home.

gineering students at the University of Central Florida.

They were trained and supervised by a certified private building inspector and two associate professors who run UCF's Housing-Constructability Lab and do research for national home-building companies.

The Sentinel and WESH approached UCF because the university is not involved in the area's home-building industry and could offer an unbiased, balanced look at local construction practices.

Pecora also said the builders thought they would not be fairly represented on WESH — because the stories are running during a sweeps period when viewership is tracked by rating agencies — and would not get "a fair shot" in the Orlando Sentinel.

Asked to elaborate, he said, "They don't believe they've ever gotten a fair shot with the Orlando Sentinel."

In contrast to production builders,

which typically operate in several states and build thousands of homes a year, custom builders usually are local and construct fewer, but more expensive, houses.

Alex Hannigan, a custom builder who is president of the Home Builders Association, said many of the flaws uncovered during the Sentinel/WESH investigation are a matter of owner maintenance or should have been taken care of during the one-year warranty period that comes with virtually all houses.

"After" service is the key. People have to come in after the fact and tweak and torque," added custom builder Charles Clayton, a past president of the Home Builders Association.

Told that one of the biggest complaints of owners in the survey was sloppy workmanship marked by wavy walls and rounded corners, Hannigan said, "You should have a square-and-plumb house, regardless of what you pay for it."

The custom builders also conceded there are some companies that do not construct very good houses, though they would not name them.

"There's some people out there who might not do what's in the best interest of the consumer," said Stephen Gidus, a custom builder from Winter Park.

Hannigan, Gidus and Clayton were surprised by many of the Sentinel/WESH findings, particularly that almost 70 percent of the houses had windows that leaked, cracks around the exterior or interior framing, or dried or cracked caulking.

"I would like to think that shouldn't happen," Hannigan said.

None of the three had homes in the survey, which did not inspect enough custom-built houses to draw statistically valid conclusions.

Alan Parrow, an executive with Pringle Development of Leesburg, said he was "very proud of our quality" and said flaws noted in 11 homes built by his company "by and large . . . were cosmetics."

He promised to repair wall cracks in one home but dismissed remarks by inspectors that several air handlers in Pringle homes had leaks as being within the "tolerance" level of the systems.

PART 2

# Poll finds owners happy with homes, efforts of builders

By DAN TRACY  
SENTINEL STAFF WRITER

A January poll found an overwhelming majority of homeowners in metro Orlando like their new homes. The survey — Mason-Dixon Polling & Research Inc. interviewed 600 buyers of 2001 homes — found that 30 percent rated their houses as "excellent" and 48 percent as "good."

Builders point to the poll, which had a margin of error of 4 percentage points, as proof they are doing a good job.

"How many industries can say they have an 80 percent customer-satisfaction rate?" said Charles Clayton, a small custom builder and past president of the Home Builders Association of Metro Orlando.

But the people who allowed the Orlando Sentinel-WESH NewsChannel 2 to inspect their houses were equally positive: 33 percent rated their homes excellent and 46 percent good — before the inspectors checked them for flaws.

The inspections revealed a dramatic disconnect between what homeowners said about their homes and what they really have.

The inspections of 406 randomly selected homes showed new-home owners are likely to have cracks in the walls, leaky windows, air-conditioning problems and multiple "fit and finish" problems including wavy roofs, out-of-plumb walls and even unanchored toilets.

Pollster Brad Coker, who did the survey for the Sentinel and WESH, offered a theory on why a house often rated higher in its owner's mind than it did in an inspection: People form an emotional attachment and do not want to

talk badly about the place they call home.

"It's an integral part of your everyday life, as much as your spouse or children," he said.

Hefty mortgages — the median price of a new house in greater Orlando is \$175,000 — play a role, too, said Mike Mullens, a University of Central Florida associate professor. He helped train and supervise the team of 15 industrial-engineering students who conducted the inspections.

"When you pay that amount of money for a house, you want to think that it's a good house," Mullens said.

Nearly half of the homeowners told the students they had been unaware of the problems that turned up during the inspections — which likely was true as well for the respondents in the Mason-Dixon poll.

A prime example: Half of the inspected houses had some sort of problem with the heating and air-conditioning system, everything from mold to leaky ducts to rooms that were too hot or too cold. But only 7 percent of the Mason-Dixon respondents said they'd had an HVAC problem.

Also in the Mason-Dixon poll, almost eight out of 10 of the buyers said they would recommend their builder to a friend. Only 12 percent said they'd had problems that needed the builder's attention. Of that amount, 50 percent said the builder was cooperative.

But many of the more than 100 homeowners interviewed by Sentinel and WESH reporters — all of whom had complained about problems with their homes — felt otherwise. A sizable majority complained the builders were reluctant to fix problems, and several likened the experience to "pulling teeth."





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## BUILDING HOMES BUILDING PROBLEMS

### PART 2



JULIE FLETCHER/ORLANDO SENTINEL

**Damp environs.** Flooded areas border new construction at Avalon Park, an east Orange subdivision, recently. Dry land is getting scarce, especially in Orange and Osceola, forcing builders into historically wet areas.

# Many find new subdivisions are all wet

## Nearly 18% of 406 houses inspected had drainage problem

By DAN TRACY  
SENTINEL STAFF WRITER

When Jennifer Shanley moved into her new \$289,000 home in southeast Orange, she didn't know the history of the land.

If she had, she would have understood why small streams of water often flow between her house and her neighbors' in the Eastwood development.

Shanley's home, as well as thousands of others near the Alafaya Trail corridor, is built on what used to be soggy lowlands owned largely by cattle ranchers and dairy farmers.

To keep the houses dry, builders have installed extensive drainage systems and dumped thousands of loads of fill dirt to raise the foundation pads above natural water levels.

The result is that yards, particularly on either side of the houses, can be as much as a foot or two lower than the foundation, making them a natural collection point for rainwater.

"I hate to walk between the houses because it's always wet. It's a nuisance," said Shanley, a 31-year-old homemaker.

Her complaint is common throughout Central Florida. Almost 18 percent of the 406 homes inspected by the *Orlando Sentinel* and WESH-NewsChannel 2 had drainage problems.

Some were annoyances: puddling on patios or driveways and occasional flooded streets.

But others were more serious: standing water in side and back yards; washouts; and water running toward the house during a storm, rather than away from it as specified by Florida building codes.

### Uplands becoming rare

The reason for the drainage problems is simple: High-and-dry property is getting scarce, especially in Orange and Osceola counties, forcing builders into historically wet areas.

"The land is more and more marginal," said Charles Lee, senior vice president of Audubon of Florida in Maitland.

Lee worries about the consequences of continuing to build in these low-lying areas. A major hurricane, or the fabled

100-year storm, would inundate thousands of new homes.

And perhaps worse, Lee and others fear, drainage systems that are adequate in subdivisions today could be overwhelmed and fail because of new houses being built nearby. That's one of the problems facing flood-plagued Deltona.

There are many parts of Central Florida prone to holding water. More than half of Osceola County is in what the federal government designates as a 100-year flood plain, as are parts of east Orange. That means the area has at least a 1 percent chance to be covered with water in any given year.

And the popular Four Corners area — where Osceola, Orange, Lake and Polk counties come together — tends to flood because of several lakes that are straining to hold all the rain of two consecutive wet years.

More than 25 percent of the new homes built in the region during the past five years are in east and south Orange, Osceola and Four Corners, according to MetroStudy Corp., a national housing-research company. Those areas may see more new houses than ever this year.

### Never fear, officials say

City and county officials say new homeowners should not worry about flooding. New subdivisions must have drainage plans that require foundation pads be at least 1 foot above the 100-year flood-plain levels. Excess water is supposed to be retained by ponds and swales before being carried off by drains and sewers.

"It's all, in my opinion, the engineering. You won't find the [drainage] prob-

lem if the engineering is good," said M. Krishnamurthy, Orange County's stormwater-division manager.

That may be true for individual subdivisions, but what effect do they have on neighboring homes? Krishnamurthy says none, but Audubon's Lee and many residents of flood-prone Deltona disagree.

Volusia County Council member Pat Northey said she has standing water in the back yard of her Deltona home whenever it rains, even though she never had wet spots before.

She blames her problem, minor compared with many in Deltona, on nonstop construction. Almost 700 homes were built in Deltona in the past year alone, according to MetroStudy.

Each lot that is transformed from Florida scrub into a house, she said, changes the drainage in an area, rerouting water to somewhere else — such as her back yard. Deltona is spending \$12.5 million to alleviate flooding, but Northey is not convinced money is the solution.

"As long as we permit housing in low-lying areas, it's not going to get any better," Northey said.

Lee said a Deltona-like problem could happen on a larger scale, in places such as southeast Orange, Osceola or Four Corners. The water displaced when wetlands are covered with fill dirt, concrete and asphalt has to go somewhere, Lee said.

"We'll see whether Deltona is an isolated case or if some areas — southeast Orange, for example — replicate Deltona as the water comes up," Lee said.

"There will be a reckoning, and the rising water will tell the tale."

*"There will be a reckoning, and the rising water will tell the tale."*

— CHARLES LEE  
SENIOR VICE PRESIDENT OF AUDUBON



**BUILDING HOMES**  
**BUILDING PROBLEMS**

# Inspected houses' ducts often leak

*Nearly half of 406 homes had heating- and cooling-system flaws, which waste energy and boost bills.*

By **DAN TRACY**  
SENTINEL STAFF WRITER

Every night, Deborah Gorman turns on two fans in her bedroom, the big one on the ceiling and a smaller one by her bed.

But she's still hot.

Though the rest of her \$199,000 Caselberry house stays at the relatively cool 79 degrees set on the thermostat, the room she shares with her husband can be as much as 10 degrees warmer.

"It's noticeable," the 52-year-old preschool administrator said of the temperature difference.

Gorman has plenty of company.

An inspection of 406 homes by the *Orlando Sentinel* and WESH-News-Channel 2 found a total of 200 that had some sort of flaw in the heating and cooling systems.

The most common problems were leaky ductwork and poorly sealed air handlers (64 houses), and ducts that were bent more than 90 degrees (21 homes) or crunched to go around or through a roof truss in the attic.

An additional 19 had insulation that was skimpy or unevenly distributed.

Insulation is not part of the HVAC system, but it is crucial to keeping cooled and heated air inside the house.

A special energy-efficiency test done on 25 homes by University of Central Florida industrial-engineering students found all of them were tightly sealed, allowing little air to escape.

But six — almost 25 percent — had ducts that leaked, spilling cooled or heated air into attics and garages.

It was not unusual for inspectors to place a hand over a junction and feel cold air pouring out, said Zach Haeussner, a UCF student who conducted many of the house exams.

The key to airtight ducts is correctly applying enough of a white, mudlike adhesive around the joints, said UCF Professor Mike Mullens, who supervised the student inspectors.

Almost all the leaky ducts had too little "mud" around the joints.

The upshot of HVAC defects is rooms that are too hot or too cold — and higher utility bills.

Leaky ducts can boost electric bills 20 percent to 30 percent, Orlando Utilities Commission energy experts said.

The temperature difference in Gorman's home, the *Sentinel*/WESH inspectors discovered, was the result of a 90-



DENNIS WALL/ORLANDO SENTINEL

**Duct work.** Ron Resch, who led the home construction survey, finds moisture around the air conditioning ducts of a home in Lake Mary.

degree bend in a duct, which crimped it to the point that much of the cooled air was cut off.

Gorman, who moved into her house in January 2002, said she hasn't found the time to ask her builder, Beazer Homes, to fix the duct: "I have [five] kids and a ton of work."

Patricia Breeding did not even realize

Still, Breeding immediately called her builder, a custom company called Signature Homes.

"They were very concerned to do the right thing for me," said the 61-year-old homemaker, adding that the problems were corrected within a few days.

John Tooley, an energy-efficiency consultant, said he is not surprised by the findings of the *Sentinel*/WESH survey.

Virtually every new homeowner calls the builder about a heating and cooling concern at least once during his or her first year in the house, he said; leaky ducts, crimped ductwork and badly sealed air handlers are common problems throughout the country.

All too often, he said, builders just cram the ducts into the attic with little thought as to how the layout affects the rooms below.

"It all starts with the design," said Tooley, who is based in Raleigh, N.C., but has clients in Florida.

Generally, Tooley said, the systems perform best when the ductwork is laid straight and the bends are gradual.

But the real key to heating and cooling a house correctly, said Dan Seabrook, an OUC commercial-account manager, is even more basic: "You need to get it right the first time."

*A special energy-efficiency test done on 25 homes by University of Central Florida industrial-engineering students found all of them were tightly sealed, allowing little air to escape. But six — almost 25 percent — had ducts that leaked, spilling cooled or heated air into attics and garages.*

she had a problem in her \$876,000 house west of Sanford until a *Sentinel*/WESH inspector found leaky ducts in the attic and a bad seal on the air handler.

The exterior of the air handler was covered with mold, growing in the moisture condensed by the leaking cold air.

Though unsightly, experts say the mold typically stays on the exterior and does not get inside the duct.

**PART 2**





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**BUILDING HOMES  
BUILDING PROBLEMS**

# When mold slips in, owners of house leave

*Leaks allowed mold to grow in the house; residents said they had breathing problems.*

By **DAN TRACY**  
SENTINEL STAFF WRITER

**PART 2**

His wife was losing her balance, his son was wheezing and his dog wouldn't eat. What's going on? thought Richard Ruiz, who was short of breath himself.

Then he remembered the leaky roof and the black mold the repairmen found in his dining room, where rainwater had poured in after a tropical storm.

It was the mold, he decided — a conclusion reinforced by environmental testing that found high concentrations of fungi, including *Penicillium*. That's one of several dozen molds known to cause allergic reactions.

Ruiz, 47, his 45-year-old wife and 15-year-old son recovered, he said, but only after they reluctantly left the \$260,000 home they had built in Umatilla in 2001 and moved into a smaller place in Lake County.

"A couple of months later," Ruiz said, "we were better."

Mold has become the worry of countless homeowners from California to Florida.

In Central Florida, an investigation by the *Orlando Sentinel* and WESH-NewsChannel 2 found that in a sample of 406 houses built during 2001 one-fifth had some form of mold present, often on the air handler that circulates cooled and heated air through the house. Almost six in 10 had at least one window that did not fit right, or porous caulking or cracks in the surrounding walls, all of which can result in leaks that can lead to mold.

One Seminole County home even had tiny mushrooms growing out of the carpet near a sliding-glass door. They were feeding on water leaking from the poorly fitted door.

"Definitely not something I'd like to see," said the owner, John Kroll, a 27-year-old chemical salesman who has suffered from asthma since before he moved into the Lake Mary house. Kroll hadn't noticed the growth until an inspector pointed it out.

Private building inspector Ron Resch, a paid consultant to the *Sentinel* and WESH, said he increasingly is finding mold in new homes, because of leaks in windows, doors or roofs.

But builders say worries about mold are being blown out of proportion. Most of the time, they say, some bleach to wipe away the mold and a little bit of caulk to fix the leak take care of the problem.

"The shell [of the house] must be kept tight," said Tom Lagomarsino, chief executive officer of the Home Builders Association of Metro Orlando. "Many first-time homeowners don't realize that."

Some people, such as Ruiz and high-profile celebrity Ed McMahon — who sued his insurance company for \$20 million after claiming that mold in his Beverly Hills mansion killed his dog — find the effects of the fungus so onerous that they move out of their homes and sue. Others see the mold and follow Lagomarsino's advice: Put bleach on it and move on.

And that's what makes mold such a quandary: What may make some people ill is harmless to others, and no one is sure why. The reaction, experts say, depends entirely on the person.

"This is the frontier out there right now. It's clouded in confusion," said Jim Ray Managbanag, director of microbiology for EMSL Analytical Inc. in Greensboro, N.C. EMSL operates 22 laboratories specializing in mold and environmental testing across the country.

Mold is virtually omnipresent, with an estimated 1.4 million varieties in the world. Only 70,000 have been identified. Each is potentially toxic — or harmless, depending on the person, Managbanag said.

Microscopic mold spores grow outdoors as well as indoors. Given water, they turn into visible splotches of black or green



PHOTOS BY DENNIS WALL/ORLANDO SENTINEL

**Not what he wanted to see.** John Kroll stares at small mushrooms growing in the carpet in his Lake Mary home. Kroll had not noticed the growth until a home inspector pointed it out. Many homeowners are battling similar water-related woes.



**Unwelcome growth.** The carpet in John Kroll's house in Lake Mary has mushrooms growing in it. The fungi were feeding on water leaking from the poorly fitted sliding door. Inspectors found many cases of mold during the homes survey.

scum. That's why windows, doors and bathrooms — all places where water is found — are common sites for mold. Leaky seams in air handlers also create condensation on the mudlike substance used to seal ductwork, making them a prime spot for mold.

Once the mold spores feed on the damp area, they grow wildly, sometimes branching out to gorge on wood, drywall, plaster, carpet, food, paper. And the more they grow, the more spores are released into the air.

If inhaled, the spores can cause a number of respiratory and health problems. That's what may have happened to the Ruiz family, Kroll and McMahon, who alleges his dog died and he was constantly congested because of mold in his Beverly Hills mansion. He settled with his insurance company for more than \$7 million in May.

The Ruizes left their home, too, and haven't been back in more than a year.

Now saddled with two mortgages, Ruiz has sued Dibarco Builders of Wildwood and AAA Roofing Inc. in Crystal River for more than \$15,000, alleging their poor construction led to water leaks that triggered the mold growth. Dibarco and AAA have denied responsibility. Ruiz's insurance company, Florida Family Insurance, denied his claim but later paid him an undisclosed amount to avoid a court battle.

Insurers often fight mold claims, arguing that the problem is a result of poor maintenance. Still, the Insurance Information Institute reported that insurers ended up paying \$2.5 billion nationwide last year for repairs and litigation related to mold.

Florida's largest home insurer, State Farm, is asking state regulators to approve an average 6.9 percent increase in homeowners insurance, in part because of mold claims. Regulators also agreed to allow State Farm to remove mold coverage from its basic policies and charge extra for it, as many other insurers already do.

New houses are more susceptible to mold than older houses because they generally are tighter and more energy-efficient. That means that once moisture gets into a home, it has less of a chance to escape, forcing it to feed on the interior.

Perhaps the biggest obstacle to resolving mold claims is the lack of an accepted standard for what are dangerous levels.

U.S. Rep. John Conyers, D-Mich., has introduced a bill directing the federal Environmental Protection Agency and the Centers for Disease Control and Prevention in Atlanta to study the health effects of indoor molds and establish guidelines for what is acceptable. It has received little support, an aide said.

But if insurance claims keep rising and more residents fall sick, that could change.

"You can't just discount these people," Managbanag said. "Those illnesses are not imaginary."

*Builders say worries about mold are being blown out of proportion. Most of the time, they say, some bleach to wipe away the mold and a little bit of caulk to fix the leak take care of the problem.*

