

Foundation Flaws Spark Buffalo Brouhaha

New York papers have a field day with a story that's as old as dirt

United States senators don't usually pay attention to basement repair. But in the Buffalo, N.Y., suburb of Amherst, cracked and buckled basements have drawn the notice of Senators Hillary Rodham Clinton and Charles Schumer, U.S. Representative Thomas Reynolds, and, urged on by the politicians, the Army Corps of Engineers.

The *Buffalo News* says 500 basements in Amherst are in trouble. In February, the *New York Times* treated the story like a natural disaster. "Hundreds of houses here are sinking into the earth," said the *Times*. "The effect is that of a slow-motion earthquake: Basement floors heave upward, supporting beams twist perilously and rooms list to one side. No one knows who or what to blame."

The *Times* repeated speculation that developers draining wetlands may have caused deep glacial clay

deposits to shrink. But if the reason for the problem is "murky," said the *Times*, the solution is clear: Jack up every house with 40-foot steel piers to bedrock.

The *Buffalo News* points a finger at developers and town officials. Amherst encouraged development for years, said the *News*, while leaving homeowners in the dark about U.S. Department of Agriculture warnings that the area's ancient lakebed clays posed "severe limitations" for home building.

Unreinforced concrete. But engineers and town officials directly involved with the problems tell a more mundane story. Few of the foundations they've investigated show any structural damage, they say, and the ones that do aren't so hard to explain: They're plain concrete basements suitable for good sand or gravel soils, placed in sites with wet, heavy clay.

"These houses average 34 years old," says town building commissioner Thomas Ketchum. "And we have not found one house with a

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AMHERST, N.Y., BUILDING DEPARTMENT

An unreinforced concrete basement sited in clay soil shows severe cracking in this photo from the Amherst, N.Y., Building Department. Amherst now requires reinforced concrete for every house foundation under New York State's new residential code, but some older basements in the town have suffered major damage caused by soil consolidation beneath footings or lateral soil pressure against walls.

Soggy Season Damps Down Strong Housing Market

The stalled weather pattern that brought seemingly endless rains to the eastern U.S. this spring and summer has taken some of the sizzle out of the year for builders. But with overall conditions still very favorable, market watchers expect a strong finish for 2003.

On the heels of heavy late winter snows, spring and early summer rains added inches of extra water to already sodden job sites. Few areas east of the Mississippi were spared the soaking, and papers all over the country noted setbacks for building contractors.

Charlotte, N.C., got 8 inches of rain in April and 10 in May, compared to a normal rainfall of 3 inches in each month, reported the *Charlotte Business Journal*: "The soaked earth has simply been too wet to grade. Trenches dug for utility lines fill with water, and a solid base for paving has been nearly impossible to find."

After clouds dumped 8 inches of rain on Atlanta in 18 days, a landscaper told the *Journal-Constitution*, "We're just trying to stop the mud."

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Foundation Flaws

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problem that has any steel in the walls. Every single one is unreinforced concrete."

There's little doubt that soil movement is affecting some homes, Ketchum says. But he also reports, "We just went through a batch of 377 inspections. A good half of those are no problem at all — your typical hairline cracks. Some of the rest have minor cracks and leaking, some need major structural repairs. But I'm guessing maybe 1% of our parcels have significant problems."

Most of the severe problems are wall failures resulting from lateral soil pressure, according to Ketchum — not surprising for unreinforced basements in clay soils. But what of the homes that have settlement issues? Ketchum says, "The major theory of the soils scientists I talk to is that the change in the moisture content of the clay over decades is resulting in long-term consolidation. My opinion is that in many cases,

the perimeter drains and sump pumps and mature trees are drying the soils in a narrow band right near the foundations."

And the idea that town officials failed to warn about soil map data? "Totally ridiculous," says area soil engineer Stan Blas. "Those USDA maps go down to 4 or 5 feet. Our basements are at 8 feet. Nobody knew what was down there."

Blas has been drilling Amherst soils for 25 years, mostly for commercial jobs. "We have more data than anyone," he says. "There are some very disturbing soils in town — layers below 10 feet where the blow count is zero, where the rods drop in of their own weight down to 30 or 40 feet." Those sites may require expensive piercing, says Blas, but they are few and isolated: "You can use good standard construction methods for residential foundations in most places in Amherst."

Blas scoffs at press coverage of the basement issues. "Reporters have talked to everybody but the engineers. Those 500 reported houses —

most of them just have minor cracks. Maybe 10% of the problems have anything to do with soils."

New code takes hold. Under New York's new residential code, effective January 1, sites with problem soils must have soil tests done. That means every site in Amherst, says Thomas Ketchum — and his department is requiring reinforced concrete for every basement. "Most people are getting in tune with it," he says. "The builders are on board. We have a pretty good handle on new construction."

But the repairs are another story. "I have been telling people to hire a geotechnical engineer so they can really understand what is causing the problem. If you just guess at it, the repair may not take care of the long-term situation. I don't want people going out and spending \$30,000 on a foundation repair, only to have to do it again five years from now."

Ketchum hopes the ongoing Corps of Engineers study will provide general repair advice. But that could take 18 months to complete.

Habitat for Humanity volunteers worked 12-hour days despite daily downpours to complete 92 homes in one week during June's Jimmy Carter Work Project. An unusually rainy spring and early summer have wreaked havoc on construction schedules throughout the eastern United States.



HABITAT FOR HUMANITY

Soggy Season Damps Down Strong Housing Market

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The rain brought Virginia contractor Geoff McKenzie extra work repairing rotted wooden doors and decks, reported the *Hampton Roads Daily News*, but McKenzie lost three quarters of his expected cash flow to delays. He had to paint one deck rail four times because the rain kept washing his paint away.

On the other hand, rain didn't stop Habitat for Humanity volunteers who flocked to the Jimmy Carter Work Project in LaGrange, Ga. Despite ankle-deep mud and repeated drenching storms, the group finished its planned 22 homes in one week and joined other Habitat volunteers in a simulcast celebration of a successful 92-home project spread through Alabama and Georgia.

OFFCUTS

Building owners should be skeptical of companies promising energy savings from Transient Voltage Surge Suppressor (TVSS) equipment, says electrical educator Mike Holt. The Federal Trade Commission has taken action in the past against companies making energy savings claims about the devices. However, TVSS devices from reputable companies are useful to protect sensitive electronic equipment from damaging voltage spikes.

With the travel industry lagging and condo prices surging, hotel owners and developers have taken to selling hotel suites as condominiums, reports the *Wall Street Journal*. Hotel construction loans are easier to obtain if some up-front equity is provided by condo sales, says the paper, and condos in buildings with hotel services can fetch 40% to 60% higher prices than regular condo units.

California lawmakers are moving to save ancient trees still standing in the state, says the *Ukiah Daily Journal*. The Heritage Tree Preservation Act, which passed the state Senate and moved to the House in June, would bar anyone from cutting down any tree that was alive in 1850, the year California joined the U.S. as a state. Fewer than 1% of the state's trees would be affected by the proposed law. But preservationists say the remaining trees are important for habitat, while logging interests say the law would harm their operations.

Double Duty: "Winsulator" Interior Storms Add Blast Screen Rating

Ed VerVane, the inventor of the Winsulator interior insulating window liner (www.winsulator.com), has known for years that his tough acrylic product provides a measure of physical security along with the energy savings. But VerVane prefers to downplay that property.

"I get calls from people in banks or department stores thanking me because it saved somebody from getting hurt by flying glass, or it saved the building from an intrusion. I tell everybody, 'I'm glad it helped you, but I'm not making any claims.' Maybe it won't ever do that again, so I don't want people to count on it."

But with terrorism topping the national agenda, VerVane's government customers have noticed the rumors. When the U.S. Navy ordered 5,000 panels for its East Coast facilities but urged VerVane to have the Winsulator certified in a blast mitigation test, he found it hard to say no.

"I took three panels to a blast testing chamber in Texas and tested them just the way we install them, over an existing glass window," says VerVane. "It blew my Winsulator off, but it didn't harm the Winsulator. We could snap it right back on."

But the Winsulator didn't stop enough flying glass from hitting the rear wall of the test chamber to earn the "low hazard" rating. So VerVane's engineers added an aluminum frame over the standard magnetic gasket. "With that, it worked," he says. "The glass that hit the wall was minimum."

So far, says VerVane, no one has ordered the beefed-up version. "I'm not marketing it like crazy," he says. "My whole idea is to stay on track with energy and acoustics." For those purposes, VerVane is not too shy to brag: "It surpasses anything on the planet for actual performance, in my opinion."



MIKE JONES, U.S. NAVY

Darek VerVane installs a Winsulator unit at a naval facility in Florida. In addition to conserving energy and dampening sound, modified Winsulator panels can protect building occupants against flying glass in the event of an explosion.

Builder Bets Big on Sealed Crawlspace

When it comes to crawlspaces, codes haven't caught up with building science. Many building departments still require foundation vents in crawlspace walls, even though studies show that the vents cause more problems than they solve.

But one production builder in an area prone to damp-crawlspace problems has decided to get ahead of the curve. In July, Parker and Orleans Homebuilders began installing sealed and conditioned crawlspaces for its homes in Virginia and North Carolina, according to sealed-crawlspace expert Jeff Tooley. Parker and Orleans has contracted with Tooley to manage construction of sealed crawlspaces in as many as 300 homes a year.

The International Code Council is considering modifying the *International Residential Code* to allow sealed crawlspaces in the 2006 edition. Tooley applauds the change, but he's concerned about the details. "The building science is good," he says, "but there's not a lot of field experience to go with it."

Tooley is one of the few contractors in the nation who has installed more than a handful of sealed crawlspaces, and he says the details are important.

"An unvented crawlspace isn't the same thing as a sealed crawlspace," says Tooley. "If you eliminate the vents, it's very important to have an effective soil vapor barrier." The ground cover has to go down early in construction, says Tooley: He places "sacrificial" poly on the soil before the deck is built, then replaces it later with the permanent ground cover. "I looked at a custom home recently where there were no vents and no ground cover during construction, and it caused a major fun-gus problem," he says.

Tooley has started training Parker and Orleans supervisors on the construction sequence for sealed-crawl installations. "They deserve some recognition for taking this step," he says. And done right, Tooley expects the sealed crawlspaces to be a big improvement. While typical vented crawlspaces in the region often fluctuate above 90% relative humidity, Tooley says none of his sealed crawlspaces has ever triggered the RH alarm he routinely installs, set at 50% RH.



Crawlspace expert Jeff Tooley points out the code-required termite "vision strip" as he works on an air- and vapor-sealed conditioned crawlspace for a custom home in North Carolina. Tooley is currently training supervisors and crews to construct 300 sealed crawls a year for production builder Parker and Orleans.

OFFCUTS

Colorado lobbyists Freda Poundstone and Charles Ford want voters to repeal the state's new law that limits home-defect lawsuits, according to the *Aspen Times*. The pair are planning a campaign to gather 67,000 signatures on a petition to place a referendum revoking the law on the state's November ballot. The law limits punitive damages in defect suits to \$250,000 and requires any homeowner with a complaint to give the builder notice and allow a set window of time to make repairs before a suit can be filed.

Wisconsin builders are backing efforts to tighten up building code enforcement in rural areas, according to press reports. Currently, towns with fewer than 2,500 residents are not required to inspect new houses for code compliance. Legislation supported by the Wisconsin Builders Association would require towns without any building inspector to contract with certified private inspectors to verify code compliance during construction.

A bill in the U.S. House of Representatives could help small contractors afford health insurance benefits for their employees, according to a press release from the National Association of Home Builders (NAHB). The bill, H.R. 660, would let small employers band together to purchase health insurance as a group, giving them access to lower rates and administrative efficiencies currently available only to larger companies, says NAHB.

New York Builders Tackle Scaffold Law (Yet Again)

All 50 states have liability insurance issues, but New York may be unique. “We not only have the prop-



New York State builders are supporting changes in the state’s Section 240 “Scaffold Law,” which holds builders strictly liable for any gravity-related on-site injury.

erty defect issues that other states have,” says New York State Builders Association president Phil LaRocque, “we have a third-party bodily injury absolute liability law.”

LaRocque is referring to Labor Law Section 240, New York’s “Scaffold Law.” Dating back to the 1890s, language in the statute requires site owners and general contractors to provide ladders, scaffolds, or other safety gear and makes them strictly liable for any worker injury caused by a fall.

Broad court interpretations in the 1970s and 1980s expanded the law’s scope, and today precedents leave GCs and owners vulnerable to multimillion-dollar suits for almost any injury. “You don’t have to prove anything except that it was a construction site and it was an accident,” says LaRocque. “We’ve had cases on level ground, or cases that aren’t on construction sites. It depends on the judge. And the insurance company has to weigh whether it’s worth the money to defend it. For the trial lawyers, it’s a

gold mine — they don’t have to do any work.”

Builders have fought Section 240 for years, and they’re backing this year’s Republican bill to modify the law. Some court precedents support a “recalcitrant worker” defense, under which an employee who disobeyed safety orders might share some of the liability. “We want to codify those precedents,” says LaRocque.

The New York State Bar Association is backing the change, but the better-organized state trial lawyers are united against it. And in Albany, where Republicans dominate the Senate and Democrats rule the Assembly, trial lawyer opposition is a major obstacle. Party leaders run both houses in closed meetings, and, according to a New York Public Interest Research Group (NYPIRG) report, trial lawyers gave the parties more than \$800,000 in 2002, second only to the teacher’s union among the top 13 cash donors.

Builders did not make NYPIRG’s list. Says Phil LaRocque, “It’s an uphill struggle.”

Feds Suspect Eco-Freaks in Michigan Spec-House Fires

A shadowy “domestic terrorist group” called the Earth Liberation Front, or ELF, may have inspired four arson fires that destroyed homes nearing completion outside Detroit in March and June. Area newspapers say police linked the two March fires to eco-terrorism because of graffiti on a nearby house reading, “ELF — No sprawl.” Similar scrawls have appeared before at fire sites involving lumberyards and auto dealers, and an FBI agent told reporters the signature is the group’s trademark.

But investigators acknowledge that anyone could use “ELF” graffiti hoping to mislead them. And police offer no solid evidence to link the Michigan fires to ELF, or even to demonstrate that the group exists as anything more than an “earthliberationfront.com” website — although press accounts blame ELF for fires in half a dozen states in recent years, causing an estimated \$37 million or more in total damage.

The website encourages fire setting to fight development,

and it posts reports on fires where the “ELF” graffiti is seen. But an anonymous ELF spokesperson has told reporters via e-mail that the group has no formal membership and does not plan or organize crimes. Instead, anyone who acts on the website’s urgings is considered to be part of the movement.

If it’s attention the activists want, some politicians at least say they believe in ELF: Fourteen House members have cosponsored a congressional bill recognizing ELF as a domestic terrorism threat and urging the FBI and the Justice Department to pursue the group.

Organized or not, fires blamed on ELF don’t add up to much next to the billion-plus dollars in damage and up to 200 deaths caused annually by garden-variety nonpolitical firebugs (more than half of whom are juveniles, experts say). “Normal” arson costs \$220 million in Michigan alone each year, according to the Michigan Arson Prevention Committee — and that’s just the direct costs.

