IN THE NEWS

Radiant-Floor Study Sparks Controversy

The radiant industry questions figures on fuel consumption

Preliminary data from an ongoing study comparing the performance of radiant-floor heat to hot-air heat has generated plenty of heat from radiant-floor advocates but so far has shed relatively little light on its intended subject. The study in question, undertaken by the NAHB Research Center for the Partnership for Advancing Technology in Housing (PATH), involves a two-story, 1,344-square-foot house built by Habitat for Humanity in Schenectady, N.Y. The house includes independent gas-fired hydronic and hot-air heating systems, which were used alternately for two-week periods during the winter of 2001-02. Throughout the heating season, the researchers collected data on floor and room-air temperature as well as gas and electrical consumption.

Although a final report has not yet been issued, a preliminary report posted on the NAHB website contained surprising numbers: When the data was adjusted to compensate for variations in outdoor temperature, the tube-and-plate staple-up radiant system was found to have used 22% more fuel per heating degree-day than the hot-air system connected to conventional sheet-metal ducts.

Not exactly what we had in mind. That came as a shock to radiant-heat advocates, who have long maintained that radiant is both more comfortable and more energy efficient than forced air. Despite a

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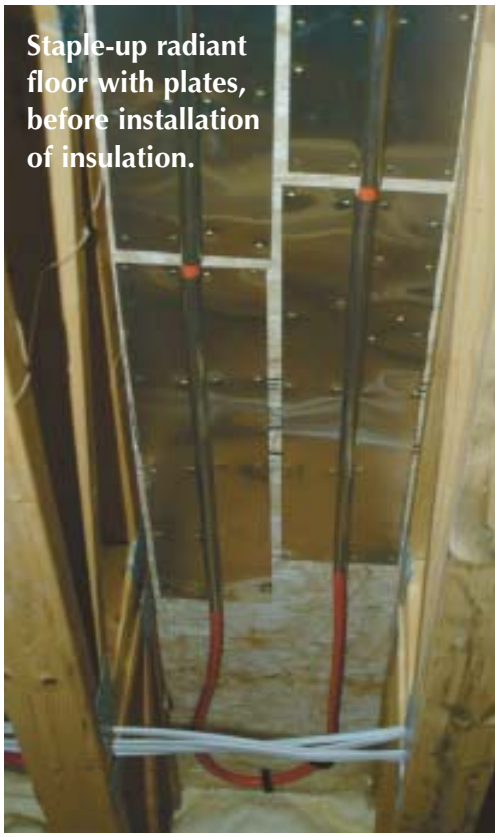

Staple-up radiant floor with plates, before installation of insulation.

Builder Not Liable for Nasty Neighbor

If a builder sells a new home without telling the buyer about an angry, abusive next-door neighbor, can he or she be held legally accountable for the buyer's resulting emotional distress? In a precedent-setting decision, a New Jersey appeals court recently concluded that such problems are not the builder's responsibility.

The decision concerned events dating back to June of 1994, when Marlboro, N.J., residents Mark and Linda Levine moved into a new house in a development called Charter Club at the Hampton. On the day they moved in, their new next-door neighbor, a 48-year-old stockbroker named Richard Sofo, greeted them by delivering two envelopes. The first contained copies of a series of furious letters he had written to the builder and town officials protesting the construction of the Levines' new house — which Sofo described as a "monolithic abomination" — while the second contained an abusive, obscenity-laced five-page letter addressed to the Levines themselves. Referring to the Levines as "loathsome creatures" and "lowly scum," Sofo's letter stated, "You people have fired an eternal flame of contempt that has burned within me throughout all of these months. Now that you have arrived, I want you to understand right out of the starting-gate, in plain English, that I hate

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Radiant-Floor Study

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shortage of hard evidence to back up either claim, the radiant community has always been confident that the data needed to confirm its view would eventually emerge.

In October of 2001, for example, the Radiant Panel Association (RPA) newsletter, *Radiant Panel Report*, appealed to readers who might be able to provide data that could be used as "the supporting evidence needed to show the world that radiant heating is, in fact, the winning heat distribution system." Not surprisingly, the RPA was quick to take issue with the Schenectady study. In a letter to the NAHBRC dated December 10, 2002, RPA technical director John Fantauzzi outlined several objections with the way the parallel heating systems had been designed and operated:

• Although the preliminary report noted that the radiant system made use of two zones, it was not made clear whether the hot-air system was zoned as well. The zoned radiant system might have caused short-cycling of the boiler when only one zone was calling for heat, resulting in reduced fuel efficiency relative to the possibly single-zone hot-air system.

• If the same thermostat was used to control both systems and anticipator settings were not adjusted for each, the radiant system might have had a tendency to overshoot the thermostat setpoint.

• When the systems were switched from radiant to forced air, the forced-air system would have benefited from the gradual release of heat stored in the OSB subfloor. At the transition back to radiant, the radiant system would have had to use additional energy to bring the floor system back up to operating temperature.

Fantauzzi is also critical of what he feels is an overall negative tone to the report. "The authors seem to have a predisposition against radiant," he says, and expresses frustration that the preliminary version of the report was made public. "The conclusions in the final report may be very different," he says, "but a lot of people are only going to remember hearing that 'radiant heat is 22% less efficient than hot air.'"

Efficiency questions. NAHBRC spokesperson Margo Thompson concedes that it might have been better to delay releasing the report until it had reached its final form, but she denies any anti-radiant bias. "We're carefully going through the data and looking for possible problems," she says.

One particular area the NAHBRC will be examining has to do with the efficiencies of the two heating plants: The sealed-combustion boiler used with the radiant system has an 86% AFUE rating, while the hot-air furnace — also sealed-combustion — has a 90% rating. The researchers also have yet to determine whether both systems actually performed at their rated efficiencies for the duration of last winter's test.

"We're checking the calibration of flow meters and checking actual operating efficiencies now," Thompson says. "If they weren't performing close to their rated efficiencies, we want to know why not."

The NAHBRC hopes to release the complete study by late this winter. Meanwhile, it will be conducting a similar test in a house in Idaho.

Builder Not Liable for Nasty Neighbor

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you, and your whole family…."

Sofo continued to send abusive letters, prompting the Levines to file a harassment complaint against him. He was eventually convicted of four counts of harassment and ordered to stop contacting the Levines. He left the area in 1998.

The Levines then filed a civil suit against the builder, the developer, and the development, claiming that they should have been told about their neighbor's history of troubling behavior.

The court, however, failed to accept the Levines' argument. Although a 1995 decision by the state supreme court found that builders and developers do have a duty to advise builders of off-site conditions that could affect property values, such as the existence of a nearby landfill, the appeals court concluded that an irate neighbor is not an off-site condition. "Sofo falls under the category of a social condition, which [the builders] were under no duty to disclose," the decision stated.

The builder's lawyer, West Orange attorney Andrew Epstein, summarized the case briefly for the *Newark Star-Ledger*: "Builders are experts in building, not human behavior," he said.

OFFCUTS

A Vermont man faces a heavy fine and possible jail time for illegal asbestos removal. Edward Carroll of Ludlow, Vt., was arrested in October of 2002 and charged with violating the Clean Air Act for partially demolishing an old mill building in Plainfield, Conn., that he knew contained asbestos. Carroll allegedly failed to remove all asbestos-containing roofing material and improperly bagged and handled material that was removed. If convicted, he faces up to five years in prison and/or a $250,000 fine for each count of a six-count indictment.

The ongoing debate over urban sprawl may have a bright side, according to Fannie Mae chief economist David Berson. Speaking to an audience of builders at the American Housing Conference in Chicago last October, Berson noted that although community opposition makes it more difficult to build new residential developments today, that opposition also tends to support high prices by holding down the inventory of houses for sale.

Massachusetts may ease its septic-system requirements by replacing the current 30-minutes-per-inch percolation standard with a more generous 60-minutes-per-inch standard, according to the *Boston Globe*. Supporters of the change say that it would bring the Bay State in line with prevailing national standards (Massachusetts is one of only two states with such a restrictive standard), while critics maintain that it will open thousands of acres to development and worsen urban sprawl.

Greenpeace cofounder Patrick Moore is publicly calling for North Americans to use more wood, which he describes as a more environmentally sound choice than materials such as steel, concrete, and plastic. Moore's remarks have been widely publicized by the Wood Information Bureau, which has managed the popular "Be Constructive" pro-wood media campaign. Moore's former colleagues, however, are unconvinced: A Greenpeace forest campaigner stated that Moore, who is now a spokesperson for the British Columbia timber industry, "has gone from being the guard dog of the environment to the lap dog of industry."

Asphalt Fumes Not Harmful, Study Finds

Although radiant-floor advocates have warned for years that asphalt felt under hardwood flooring heated by radiant coils can cause a faint but persistent asphalt odor that some have speculated could have possible health effects, two recent studies of industrial asphalt-fume exposure would seem to lay that speculation to rest.

The studies, conducted by Owens Corning and reported on in the November 2002 issue of *Professional Roofing*, examined the incidence of illness and death from nonmalignant respiratory disease (NMRD) among workers at its asphalt and asphalt-shingle manufacturing plants between 1977 and 1999. After comparing workers' health histories to their work histories and known fume levels in the workplace, the studies concluded that cigarette smoking was the strongest predictor of death in workers, increasing the risk of NMRD by nearly seven times and lung cancer by ten times. Neither study found a significant effect on worker health that could be attributed to asphalt-fume exposure.

The findings are significant because asphalt-fume exposures in the Owens Corning plants were relatively high through the early 1980s compared to other studies. If asphalt fumes were harmful, it would likely have been evident among the Owens Corning workers. The International Agency for Research on Cancer (IARC) is expected to consider the studies in the next few years as it reevaluates asphalt's safety classification; it is now termed a Group E agent, "not classifiable as to its carcinogenicity" in humans.

High-Tech Pigments Broaden Cool-Roof Palette

Reflective roofing can block out solar heat gain and cut cooling costs in hot, sunny climates, but most homeowners aren't drawn to the idea of blinding white roofs on their houses. Now they have another option, thanks to a new generation of pigments with "selective" absorption and reflection characteristics. The new coloring agents reflect almost all of the sun's invisible infrared energy, which is about half the energy in sunlight. But each color reflects and absorbs a different set of wavelengths in the visible spectrum, giving the material a unique visible color while still rejecting between 25% and 65% of the sun's total energy.

Ohio's Ferro Corporation introduced a line of selective pigments in 1999. Ken Loye, a technical manager for Ferro, says the colors have found their way into a wide range of products, including exterior coatings produced by Life Paint, Textured Coatings of America, and UltraKote. "Almost all the dark-colored vinyl sidings have it," says Loye. "We get a lot of orders for the black pigments for window extrusions."

Ferro colors range from a bright pastel yellow that reflects 65% of the sun's energy, through various greens, reds, and blues, down to deep browns that still reflect around 25% — enough to qualify for Energy Star status. The Energy Star standard was set low enough to let all-white asphalt shingles pass, and roofing coated brown or black with a Ferro pigment rejects as much energy as a "white" asphalt shingle roof.

Les Deal

The recently developed reflective finish on these aluminum shingles comes in a wide selection of standard and custom colors.

At least two roofing makers are now offering Ferro colors: MCA Tile (www.mca-tile.com) and Classic Products (www.classicroof.com). Classic Products' Joe Knife says, "As inventory turns over, we're working it into all our products. Our roofing is already perceived as environmentally friendly, and this way all our products can get into the Energy Star program."

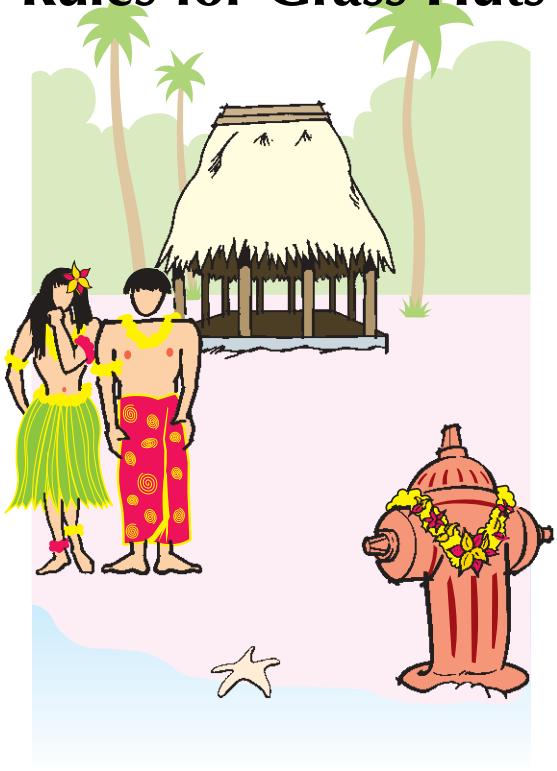
Remodeler Les Deal has been using Classic aluminum shingles for 13 years, mostly for reroofs and often over existing asphalt shingles. He says the Classic shingles are extremely durable: "I like them because they can't rust. Hail up to golf ball size that would decimate an asphalt roof barely makes a dent in them. I've been back to look at my earliest roofs, and I can't see that they have aged at all." Classic shingles carry a lifetime warranty for the original owner and a 50-year transferable warranty.

Texas Community Limits Small Homes

Despite a sluggish national economy and a slowdown in luxury-home sales that has many builders thinking small, one Texas municipality has passed an ordinance that will require local builders to think a little bigger. In November, the city of Arlington adopted a new housing standards ordinance that increases the minimum size of new single-family homes from 1,000 to 1,500 square feet of living space.

According to city council members, the new law is designed to attract larger homes, which are expected to generate more tax dollars. Officials said that about 35% of the existing houses in the Fort Worth suburb have less than 1,500 square feet of living space, which some believe do not generate enough revenue to pay for their share of police and other municipal services. "I think we've raised the bar and come in line with what other cities require," city council member Sheri Capehart told the *Dallas Morning News*. "What this will do is level the playing field."

Hawaiian Code Officials Develop Rules for Grass Huts



Traditional Hawaiian grass huts, once the predominant type of housing in the islands, could be due for a resurgence under the terms of a proposed code change now being considered on Maui. For years, the grass huts, known as *hale*, have existed in a sort of legal twilight zone. To the frustration of professional hale builders, constructing one legally required working through a time-consuming "alternative styles" section of the building code. "I found that offensive," native Hawaiian master builder Francis Sinenci told the *Honolulu Advertiser*. "This is Hawaii. It is not an alternative style. It *is* the style."

The new hale-friendly code drawn up by a Maui County advisory committee would allow the construction of four different kinds of Hawaiian grass huts using material mainly grown on the islands. It is the first such proposal in the state and could set a pattern for builders of traditional structures elsewhere. Hale would be permitted anywhere on Maui, subject to lot size and setback requirements.

In line with the traditional nature of the structures, wiring would not be permitted nor would standard plumbing. However, the new code would require builders to install sprinkler systems in grass huts that are larger than 30 by 60 feet or located within 100 feet of other dwellings.

The proposed rules also formalize the use of some nontraditional building materials, including nylon cord for lashings, and the use of some woods — including ironwood, eucalyptus, strawberry guava, and keawe — that are now common in the islands but didn't exist before the arrival of Europeans in the 18th century. According to Maui County Codes administrator Ralph Nagamine, the county will be seeking $23,000 from the state legislature to conduct strength tests of the alternative woods.

OFFCUTS

Augusta, Georgia, has endorsed a proposal for vehicle stickers that would make it easier for city inspectors to see who legally belongs on a construction site, according to the *Augusta Chronicle*. Although Georgia is one of a handful of states that does not specifically license builders, the proposal would require both general contractors and subs to display the $1 decals on their work vehicles. Only employers with county business licenses — which require proof of liability insurance and bonding — would be able to buy the decals.

New Jersey voters are willing to pay for open space. The *Newark Star-Ledger* reports that in last November's election, 25 of 31 local initiatives to raise money for land conservation met with voter approval. That continuing trend has caused concern among builders, who fear that the state's purchases of open land — which have totaled 260,000 acres in the past four years — will drive up land costs and price potential buyers out of the housing market.

The Steel Framing Alliance has launched a new quarterly journal. The new periodical, *Framework, A Journal of the Steel Framing Alliance*, will contain information on equipment, framing systems, fasteners, connectors, and other areas of interest to steel framers. For subscription information, contact the Alliance at 202/785-2022 or at its website, www.steelframingalliance.com.