Notebook...

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"Orphaned" Water Heaters Prompt Lawsuit

Charging a risk to homeowner property and health, Michigan attorney E. Powell Miller has launched a class-action lawsuit against the Michigan Consolidated Gas Company (MichCon) on behalf of 45,000 Michigan homeowners who participated in a utility-sponsored furnace-replacement program. According to Miller, thousands of chimneys may have been damaged by "orphaned" water heaters: heaters left alone on flues that had previously been shared by furnaces.

Homeowners who replaced inefficient gas furnaces with high-efficiency sidewall-vented models received low-interest financing and a $300 rebate from the gas utility. Miller charges that MichCon encouraged homeowners to make the change without warning them about the risks posed by orphaned water heaters. Where water heaters were left connected to a flue that had been sized to serve both the furnace and the water heater, says Miller, exhaust has been condensing in chimneys, forming an acidic solution that subjects the masonry to chemical attack and freeze-thaw damage. Ice and deteriorating masonry can block the flue, the attorney contends, creating a carbon monoxide hazard. Now, Miller wants MichCon to inform all 45,000 rebate recipients of the potential for problems, and to pay for relining of chimneys.

Michigan attorney E. Powell Miller says homeowners should have been warned of possible damage like this from orphaned water heaters.

A recognized problem. The scenario Miller describes appears to be a familiar one, and *JLC* inquiries on the Internet drew numerous responses. Home inspectors and chimney technicians told us that the problem occurs not only with orphaned water heaters but also when low-efficiency furnaces are replaced by more efficient units. Provisions of the *National Fuel Gas Code, NFPA 54 and NFPA 211*, call for chimneys to be inspected, cleaned, and repaired, and sizing reevaluated, whenever venting arrangements change.

Determining whether a particular appliance change requires resizing is a case-by-case process, explains Jim Brewer, of Magic Sweep Corporation in Norfolk, Va.: "There are many factors that need to be known in order to perform a sizing calculation of the overall system to determine if the venting system is suitable for continued use." They include

- Btu input of the water heater
- Flue collar size of the water heater
- Size, type, and configuration of the connector pipe between the water heater and the chimney
- Location of chimney (interior or exterior)
- Internal size of the chimney
- Height of the chimney

Installation of a flue liner is the best method to correct an oversized venting system, said Brewer.

Case in point. Grand Rapids, Mich., home inspector Mike Holcomb told *JLC* of encountering chimney damage that was directly traceable to a stranded water heater: "Two years ago we inspected a home that had a high-efficiency furnace vented through the sidewall rim joist. The water heater was still vented in the old

continued

In Search of Ancient Architects

Roman Empire's Building Science Has a Familiar Ring

Here in North America, with our relatively brief history, it's easy to forget that the tradition of building science dates back to ancient times. In Europe, by contrast, structures and methods that have endured for generations frequently remind people of the past.

JOHNNY WATT/KEN TOMPKINS

This close-up of a model medieval peasant house shows the interwoven willow branches ("wattle") plastered with clay and straw ("daub"). The technique has been practiced since prehistoric times, despite the durability and finish concerns mentioned by the Roman Vitruvius.

At moments, in fact, people in Europe can feel as if no time has passed at all. The following quotation was penned by the Roman architect Vitruvius in the year 50 B.C. as part of his *Ten Books of Architecture*, which served as the Roman Empire's building code. We found the excerpt in the April issue of *Salvo*, an English publication devoted to antique and reclaimed materials. The ancient author's discussion of "wattle and daub," a wall in-fill made with woven sticks and clay, could have been written yesterday:

I wish it [wattle and daub] *had never been invented. The more it saves in time and gains in space, the greater and more general is the disaster that it may cause; for it is made to catch fire, like torches. It seems better therefore to spend on walls of burnt brick and be at expense, than to save with wattle and daub and be in danger. And in the stucco covering too it makes cracks from the inside by the arrangement of its studs and girts. For these swell with moisture as they are daubed, and then contract as they dry, and by their shrinking, cause the solid stucco to split. But since some are obliged to use it either to save time or money, or for partitions on an unsupported span, the proper method is to give it a high foundation so that it may nowhere come into contact with the broken stonework composing the floor; for if it is sunk in this, it rots through in the course of time.*

Vitruvius's scorn notwithstanding, European restorationists are still maintaining wattle-and-daub walls built into centuries-old timber buildings. Still, it's a reasonable guess that faulty examples of the technique have long since crumbled away. So read the writing on the wall, people: If you mess around with wattle and daub and get into trouble, don't say you weren't warned.

Offcuts ...

Remodelers have their work cut out for them, according to recent United States census figures. Almost 24 million U.S. homes are between 16 and 25 years old, and another 61 million are older than 25, the government says. Figuring that most of these older homes could stand to be worked on, the National Association of the Remodeling Industry reads the figures to mean continuing growth for the industry.

Exhaust-only ventilation systems add about $60 a year to a typical home's heating costs, says a report in April's *Energy Source Builder* from Iris Communications (541/484-9353). The rough estimate is based on the cost of heating the air that is drawn in to replace exhausted air ($47), plus the cost of running the fan continuously ($13). Your actual outlay may vary, notes the newsletter, but ventilation costs look small next to typical heating expenses.

New Take on Steel Houses

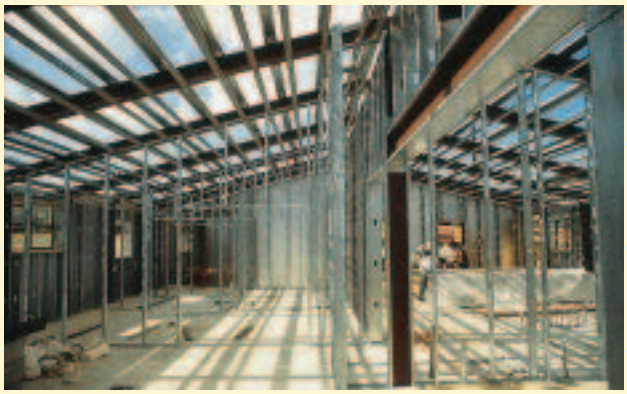
Most steel house-framing methods use light-gauge steel, substituting a steel stud, joist, or rafter for each wood member. But some single-family builders are trying out a method adapted from commercial and industrial steel construction: using heavier-gauge "red iron" members for the building's basic structure, with light-gauge steel serving only for nonstructural fill-in.

Classic Steel Homes, Inc., of Houston, Texas, has started full-scale production of red-iron house packages that come with all the necessary steel members, including the nonbearing studs for the building's skin and partition walls. Pieces are numbered and labeled for easy assembly. "We've made it one-stop shopping for the builder," says company president Bruce Brown.

The red-iron framing makes full use of steel's strength, says Brown. "It's the strongest weight-to-strength material we have," he notes. "Columns that weigh less than seven pounds per foot hold up the structure."

And unlike wood, which is much stronger in compression than in tension, steel has a tensile strength equal to its compressive strength — making for long bearing beams. One-story Classic Homes designs can have up to a 36-foot clear span, with a 24-foot clear span possible in two-story structures.

The Classic Homes design book offers 85 different house plans, and the company can also produce house packages from custom plans. For builders unfamiliar with the technique, Classic Homes offers a two-day training course twice a month, and provides a construction manual with a 3 1/2-hour training tape. For more information, contact Classic Homes at 800/624-4663.



Red-iron framing defines the building's structure (top), while light-gauge members fill in partitions and skin (above).

Except for the unusually long clear spans, home interiors and exteriors look like conventionally built homes.

Offcuts ...

Japanese scientists have learned how to clone lauan trees from small tissue samples, according to Tokyo's *Nikkei Weekly*. The paper says the new technique should help with accelerated replanting of the Asian hardwood, which has been heavily overharvested for use as underlayment and veneer.

Don't be surprised if you don't receive a surprise visit from federal OSHA. Budget cuts pushed the total of work-site inspections for fiscal 1996 to 24,024, down 17% from 1995. And an official at the agency's "construction outreach" program told *JLC* that because of the "new OSHA's" preference for education and cooperation, random inspections of small-volume builders accounted for "a grand total of nine" site visits in fiscal 1996.

masonry chimney that was sized for the old furnace and the water heater. Two months ago, our client called to say her chimney needed to be rebuilt. On reinspection I determined that the chimney deteriorated as a result of condensing flue gases from the water heater. Once the liners spalled to the point that the mortar joints failed, the softer brick followed suit. The estimate to repair the chimney is $7,000."

Who's to blame? Experts we heard from generally reserved judgment on fault in the Michigan cases, noting that codes and practices are in a state of change. Grand Rapids codes, for instance, do not require resizing or relining in a furnace changeout, according to Mike Holcomb, although he always recommends it.

But the Michigan lawsuit raises the legal question of who is responsible for the unintended consequences of energy-efficiency improvements made in response to utility incentives. In this case, attorney Miller contends the gas company has taken on a duty: "Where a gas company has a reason to believe that there is a problem, it should inspect and warn — particularly under circumstances where it encouraged, promoted, and financed the change in appliances that gave rise to the problem." And Miller insists that the gas company knew of the potential for chimney damage from its own inspection reports.

MichCon, however, does not accept any responsibility for damage resulting from furnace changeouts in the program, according to a company spokesperson. "We were just the bank for this program," said MichCon's Mary Sileski. "We didn't do any of the work." Currently, MichCon is fighting the lawsuit's class-action status, arguing that individual homeowners should take their complaints to individual heating contractors on a case-by-case basis, not sue the gas utility as a group.

Sources of Information

E. Powell Miller
Mantese, Miller, and Mantese
2855 Coolidge Highway, Suite 107
Troy, MI 48084
810/649-1300
e-mail: emiller335@aol.com

Michigan Consolidated Gas Co.
500 Griswold
Detroit, MI 48226
313/256-5087

Chimney Professional online
Accolade Group Internet Publishing
P.O. Box 276
Franklin, MA 02038
508/966-0238
www.chimney.com

Tax Talk: Employee or Sub?

by Len Pytlak, C.P.A.

The Small Business Act of 1996, which took effect January 1, 1997, has expanded the "safe harbor" category that protects employers who classify workers as subs. Previously, the safe harbor rule allowed you to

- Reasonably rely on published IRS rulings or court decisions.
- Rely on how the IRS treated the same class of worker on previous IRS audits of your company.
- Rely on how a significant segment of your industry treats similar workers, if the industry has historically followed a consistent practice for more than 10 years.

The new rules modify the third part of the "safe harbor" rule, allowing employers to follow any practice shared by 25% or more of the industry, without any 10-year history requirement.

Under the new rules, if the IRS audits a worker's subcontractor or employee status, it must give written notice before that section of the audit begins.

The new rules also shift the burden of proof to the government: Instead of the employer needing to prove that a reasonable basis existed to classify the worker as reported, it is the IRS who must prove that the employer lacked a reasonable basis for its determination. The employer need only cooperate with the IRS, and present a prima facie case that the treatment of the worker's status was reasonable. (Unfortunately, what constitutes a "prima facie case" has yet to be defined.)

Finally, the new rules provide that changing the way a worker is classified will not affect the worker's allowable status for previous tax years.

Len Pytlak, C.P.A., practices and teaches accounting in Ann Arbor, Mich.