

# EIGHT-PENNY NEWS

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## OSHA Programs Take a Fall

by Ted Cushman

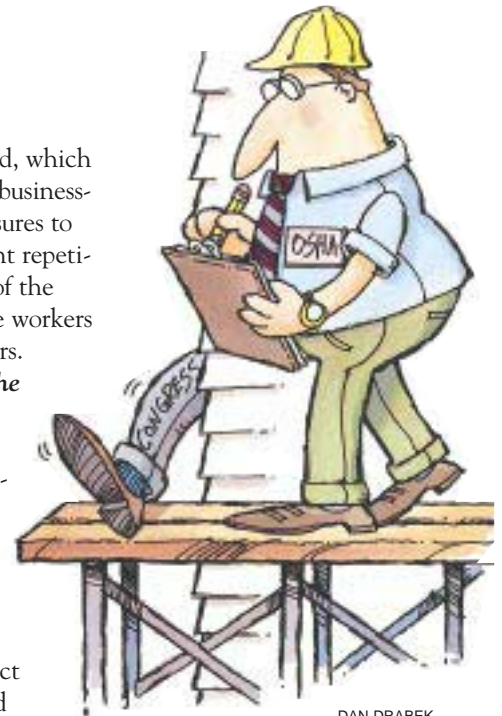
When the Clinton administration took office in 1993, the Occupational Safety and Health Administration (OSHA) got right down to business with an ambitious agenda of new regulations and revamped enforcement schemes. But since the 1994 Congressional elections swept the Democratic majority out of Congress, OSHA has been on the defensive. In fact, the changing tide in Washington threatens to wash away many of OSHA's latest creations.

**Tough new rules.** In the two years following Clinton's inauguration, OSHA pro-

duced extensive new rules that affect builders and remodelers: a revised fall protection standard (*Eight-Penny News*, 1/95), a toughened rule for limiting asbestos exposure (*Eight-Penny News*, 2/95), and a new standard for protecting workers in remodeling from exposure to lead. In addition, OSHA increased the maximum penalty for repeat violations from \$25,000 to \$70,000 per offense, and instituted a new "focused inspection" program intended to increase the agency's cost-effectiveness (*Eight-Penny News*, 4/95). Still to come was a planned

"ergonomics" standard, which would have required businesses to take broad measures to anticipate and prevent repetitive motion injuries of the type suffered by office workers and machine operators.

**Congress applies the brakes.** Last year's midterm elections have changed the picture, however. A House bill restricting federal regulations, passed as part of the House Republicans' "Contract with America," would



DAN DRABEK

*continued*

## Builder Expands Custom Business by Going Modular

by Chris Kidder

If you knew Joe Rhodes, a residential building contractor in Kitty Hawk, N.C., you'd probably ask what a high-end custom builder was

doing selling modular housing to his move-up clients. And Joe Rhodes would tell you it's one of the smartest moves he's made since starting Rhodes and Son General Contractors nine years ago.

Rhodes builds high-end custom vacation homes at a beach resort. He was looking for ways to increase volume and hold costs down without cutting corners and without increasing his overhead. At first, Rhodes was skeptical about the information a factory housing sales rep sent him about custom modular building. But once he understood that the factory was building real wood-frame houses on real foundations —

not mobile homes — he decided to take a closer look.

**Quality construction.** After investigating several manufacturers, Rhodes chose Nationwide Homes in Martinsville, Va. "They build a good house," he says. "There's no question about it."

Rhodes can tick off nearly a dozen ways Nationwide's factory-built houses exceed his own site-built standards. For example, there's 30% more lumber in the frame, the frame is completely glued and nailed, and ceiling drywall is glued without nails to eliminate nail pops.

**Speed, volume, and profit.** The typical Nationwide house

spends eight days on the assembly line, and is almost 90% complete when delivered. Modular builders say they "set" the house rather than build it. Once a house is placed on a foundation, it can be finished in days, although most builders allow at least two weeks.

Rhodes set his first modular house in May 1994. By the end of the year, he'd built 18 houses and set 7, increasing his business 30% compared with 1993. "And I was just getting into it," explains Rhodes. "I expect to double my volume in 1995."

Rhodes added four men to his payroll to handle his

*continued*



DREW WILSON

With the help of a crane, a four-man crew can "set" a custom modular house in one day.

## STATE BY STATE

**New York.** Republican Governor Pataki has imposed a moratorium on all new rule-making by state agencies. The legislature is also considering proposals to cut state regs. At legislative hearings, A New York State Builders Association spokesman recommended scrapping state wetlands rules, since wetlands are already federally protected, but that idea faces considerable opposition.

**Massachusetts.** The state's "Get Out the Lead" program is making zero-interest lead-abatement loans available to qualified homeowners. Loans need not be repaid until the home is resold or refinanced. Nonprofits and landlords who rent to low-income tenants can also receive favorable loan terms. To qualify, renters or owners must earn less than \$50,000. For information, contact the state Housing Finance Agency at 617/854-1000.

**Vermont.** The legislature adjourned without taking action on a bill to adopt the CABO Model Energy Code statewide. Supporters of Act 250, Vermont's environmental law, are concerned that some of CABO-MEC's energy requirements are less stringent than measures enforced under Act 250. However, adopting the code would extend energy standards to many building projects not affected by Act 250.

## Is It Real or Is It Visualization?

Ever wish you could see what that addition would look like before you built it? With modern computer technology, maybe you can. Computer imaging techniques have gotten so sophisticated that they now allow designers to show customers a "virtual reality" vision of a completed project — before the project starts.

The technique is called "visualization." It works like this: First, photos of the original site or building are taken from several different angles. Next, the photos are "digitized" — converted into electronic data in a computer's memory. Special software

then creates a three-dimensional image that designers can manipulate, inserting different features into the picture to show the customer what the finished project would "really" look like from all sides.

Erdman Anthony Consulting Engineers, in Rochester, N.Y., has been using the visualization technique for "visual impact assessments," which allow communities to get a sneak preview of proposed public works projects. "Most people can't understand engineering drawings," notes Erdman Anthony's Robert Farrell, "but they can relate to a picture."

Ron Lloyd Associates is a Seattle, Wash., firm that specializes in design visualizations of building projects. One danger the designers must guard against, according to Lloyd visual artist Alex Bennett, is that a computer could easily create a picture of a building that is physically impossible to construct. "One of our few sacred rules is that the architecture must be valid," he says. Even so, there is still the possibility of raising the customer's expectations too high — the buyer must realize, for example, that the beautiful trees in the "photograph" may take decades to reach that size.

But as Bennett points out, old-fashioned pen and ink can also be deceptive. And the visualization team goes to great lengths to be accurate; for example, they use a computer program that matches screen color to real paint chips. In fact, Bennett says, many customers prefer the computer-generated images because of their realism: "A photo-realistic image goes a long way with a planning board," he notes.

A full-color still image from Ron Lloyd costs from \$1,000 to \$5,000, and more sophisticated three-dimensional animated versions can cost much more. At such prices, the market is limited, but Bennett says technology advances will soon make his kind of service commonplace. Although his company's computers have gigabytes of memory and use expensive software, "you can get pretty close to what we are doing now with a \$150 program running on an ordinary personal computer," he says. "Someday, everyone who buys a building will get a picture first." □



On the top is a scanned-in photo of a real building site in Seattle. The image at the bottom, created by Ron Lloyd Associates, is a computer-generated "visualization" of a planned project there.

# A Dim Idea Whose Time Has Come

In 1981, C.R. Stevens and William Alling invented a dimmable solid-state fluorescent ballast they thought would revolutionize the lighting industry. The ballast allowed any fluorescent bulb to be dimmed down to 10% of its full brightness, without flickering. More important, this dimmer could be made for only a fraction of the cost of other available technologies.

Stevens and Alling sold the patent for their new technology to Universal Manufacturing Corporation (now known as Magnatek), a large fluorescent lamp manufacturer, and sat back to watch the results. But their idea's immediate future turned out to be, well, dimmer than they had hoped. Magnatek kept the idea under wraps for 13 years, producing only a handful of the new dimmers and sticking instead to its own old technology.

This year, Stevens and Alling won a lawsuit filed under U.S. patent law. A federal court awarded the two inventors \$96 million, and gave them back the rights to their invention. This August, their affordable dimmers will come onto the U.S. market as part of a line of 220 lighting fixtures produced by CSL Lighting Mfg., Inc., of Valencia, Calif. Using a GE-produced compact fluorescent bulb, CSL's Luminoptics Alta line includes residential and commercial fixtures. Alta fixtures containing the new dimmer will be sold through lighting showrooms, home centers, and electrical suppliers around the country.

Luminoptics executive Gil Sperry sees a bright



future for the new dimmer. Long a friend of the inventors, he shares their enthusiasm for a technology that court testimony indicated would have saved billions of dollars worth of electricity during the 1980s if it had not been suppressed. Fluorescent lights use only a fraction of the power of incandescent bulbs, and when dimmed to 10%, use even less. According to Sperry, the dimmer will add only \$10 to the cost of a typical Alta fixture.

Stevens' and Alling's invention has also proved able to dim a type of bulb once thought to be undimmable — the ultra-compact, super-efficient Philips Lighting PL-T lamp.

Sperry notes that the solid-state dimmers can run on electrical power of various voltages, enabling them to work in Europe or Japan without modification. "I'm pushing hard to have this product manufactured in the United States," says Sperry. "I want this to be a technology the U. S. can export all over the globe."

For product information, contact CSL Lighting Mfg., Inc., 27615 Avenue Hopkins, Valencia, CA 91355; 805/257-4155. □

## FROM WHAT WE GATHER

**Looking for steel studs?** The Carpenter's Steel Stud, developed by HL Stud for use with wood wall plates and ordinary nails, is now exclusively available from Georgia-Pacific. Steel-maker Unimast has joined forces with G-P to provide on-site technical support to builders using the product. For information, call 800/284-5347.

**Some 306,000 military service members need a job.** Employers looking for good help should check out the Department of Defense's "Operation Transition," a central clearinghouse set up to put employers in touch with service personnel who will be demobilized as part of the upcoming peace dividend. The typical ex-serviceman or woman is in good physical shape and is used to regular work habits. Virtually all are high school graduates, and many have advanced degrees or specialized training and are experienced leaders. To receive resumes of people seeking work in your area, or to place a help-wanted ad, call the Operation Transition Help Desk at 800/727-3677 (6 a.m. to 6 p.m., Pacific time). All services to employers are free of charge.

**The Homeowner's Warranty Corporation (HOW) is paying 40¢ on the dollar** to homeowners filing claims. The financially troubled warranty insurer is under state receivership in its home state of Virginia (*Eight-Penny News*, 1/95). Around 3,000 claims are said to be filed each year. The 1.6 million-plus insured homeowners who are not currently filing claims have not been officially informed of the current payment policy, according to the *Los Angeles Times*.

**The bugs have landed (again).** Another new termite species is reported to have just made its first U.S. appearance in Miami's Little Haiti, according to an article in the April 2 Fort Lauderdale *Sun-Sentinel*. The subterranean termite, known as *Heterotermes*, is native to the West Indies. Scientists speculate that the bug sneaked in on a shipment of furniture, building materials, or plants. *Heterotermes* is no more destructive than the termites we already have, but it may be harder to kill: Scientists say it can survive longer in above-ground wood before returning below ground for water.

**Wood siding has declined in popularity** since the 1980s, according to the NAHB publication *Housing Economics*. With a 28% share of new homes, vinyl is the most common choice of siding material. Wood places second at 27% (down from 40% during the '80s). Brick is the third most popular choice at 21%.

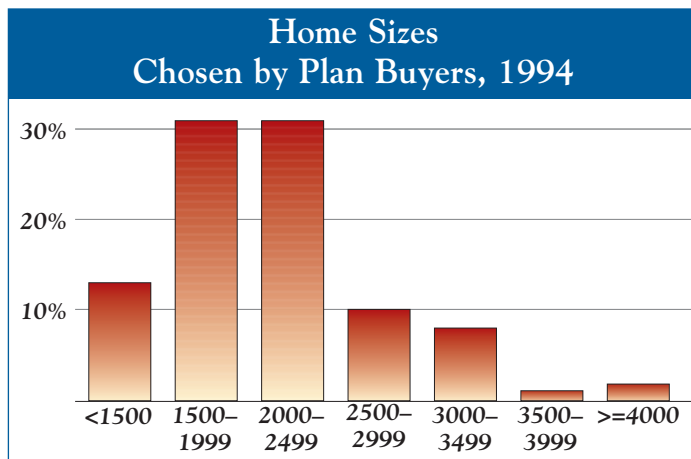
**Homeowners in Canada are changing out their furnaces** in response to reports of exhaust vent pipe defects (*Eight-Penny News*, 2/95). Under a deal organized by the Ontario provincial government, heating appliance manufacturers, builders, and the builders' warranty insurance company are covering as much as two-thirds of the cost of a new furnace in cases where the suspect pipe is considered a possible risk.

# PLAN PURCHASES REVEAL TASTE TRENDS

Styles change in the housing market just as everywhere else. If you want to know how customer preferences are shifting in the mass market for new houses, you might look at who's buying what in the market for off-the-shelf house plans.

HomeStyles, the leading provider of stock plans nationwide, hired a marketing research firm to profile their 38,000 customers who bought plan sets in 1994. The data revealed that a typical plan buyer is between 30 and 45 years old and earns \$70,000 or more a year. Most are well educated, professionally employed, and have children. About 30% of the plan purchasers went on to build homes within 18 months.

What do these ideal customers want? Most bought plans for mid-size homes, in the 1,500- to 2,500-square-foot range (see chart above). Ranch plans sold best in the West and North-Central regions of the country, while a modified two-story colonial



**Note:** Most buyers chose plans in the mid-size range, but a sizable market remains in larger and smaller homes. (Source: HomeStyles.)

plan sold best in the Northeast, and a "Classic Creole" plan with high ceilings and porch columns was the Southern favorite.

**Quality vs. quantity.** To flesh out the picture, HomeStyles asked a few contributing designers to talk about recent trends. Mark Eglund of LifeStyle HomeDesign Services in Minneapolis, Minn., says magazines, books, and TV have educated buyers about design and building. He sees the emphasis shifting away from

quantity of square footage toward a "less ostentatious" focus on quality: "Buyers are willing to down-size a bit to upgrade the quality of construction and add more bells and whistles."

**Smaller designs.** Dave Drake, of LifeStyle's Des Moines, Iowa, office, sees shrinking lot sizes and rising lot prices as factors pushing house sizes down: "Houses will become narrower with more cost-efficient foundations."

**Informal and combined spaces.** While buyers still ask for formal dining rooms, "formal living rooms are shrinking ... or being merged into an always-used great room," says Eglund. Customers want "informal spaces with kitchen and dining areas opening up to the living room," adds Rick Merrick of Planco Inc., in Minneapolis, Minn. □



This "contemporary Creole" home plan was a top seller in the South-Central region in 1994. It features formal dining and living rooms, and a large family room with a fireplace.

# Salad Days Of Housing Lie Ahead

We may be running out of wood, but not to worry — the home of the future will be made of vegetable oil. So says John Murchie, a Bellingham, Wash., entrepreneur who has built several prototype structures using a welded tubular steel frame, foam insulation, and a shell of Accuflex — a tough plastic synthesized from castor bean oil and gypsum.

Murchie is a man with a mission: providing "shelter with dignity" to people worldwide who can't afford decent housing. He sees factory-produced housing as key to raising the world's standard of living. He also believes his technology can provide emergency housing in disasters: "We can make an A-frame shelter you could drop from a plane for \$2,000 to \$3,000, delivered."

The new plastic Murchie uses was developed by Accuflex Products, Inc., a Vancouver, B.C., firm, and is already being used to make flexible moldings. But the company says they can also formulate the plastic as an insulating foam, a strong adhesive, and an acid-resistant, fireproof exterior coating.

From its origins in Canada, and its test applications in the United States, the veggie plastic is moving southward: Mexico's largest construction firm has ordered two Accuflex-covered townhouses, the first step in a plan to mass-produce the buildings for the Mexican market.

For more information, contact Murchomes, Inc., 164 W. Smith Rd., Bellingham, WA 98226; 206/398-7700. □

## Following Fashion

### What's Hot

- Main-floor laundry/mud rooms
- Main-floor master bedrooms with extra bedrooms upstairs
- Sitting area in the master bedroom
- Screened or 3-season porches
- Home offices
- 3-car garages
- Separate room for TV/stereo

### What's Not

- Small, boxy rooms
- Low-ceilinged basements
- Laundry in basement
- Small windows in basement
- Detached garages

## OSHA Programs, *continued*

prevent any of the more recent regulations from taking effect until after the government completes an exhaustive cost-benefit analysis of each rule. The Senate has so far not passed this provision of the contract, but a compromise measure that did pass the Senate would require Congress to okay each new rule.

Either version of the legislation would introduce months or even years of delay into the process of implementing new OSHA rules. President Clinton may veto the bill if it reaches his desk, but he may be persuaded to sign a toned-down compromise version.

**OSHA backs off a notch.** OSHA itself, meanwhile, is trimming its sails to the new political winds. A case in point is the new ergonomics standard. After drafting a rule that would have required more than six million busi-

nesses to analyze their work processes looking for repetitive motions that could cause injuries like carpal tunnel syndrome, OSHA finally released a scaled-back proposal that would cover far fewer employers, and that changes the emphasis from enforcement to education. But Congressional Republicans took offense at even the reduced proposal, and responded by passing legislation to take away some of the money appropriated for OSHA by the previous Congress.

**Softer on asbestos.** OSHA has also softened some elements of the new asbestos standard. The agency recently settled a lawsuit with the National Roofing Contractors Association (NRCA) over the application of the standard to asbestos found on roofs. Under the settlement, "incidental" asbestos-containing roofing materials (such as intact roof coatings, mastics, cements, and flashings) will

be treated differently from asbestos-containing built-up roofing or shingles. Also, roofers will be allowed to rely on general NRCA information about asbestos content in making exposure assessments, instead of undertaking costly and time-consuming tests on every roof. In a statement, the NRCA called the revised enforcement conditions "much more reasonable" than the original standard.

**Fall protection may stick.** The roofers admit, however, that rolling back rules like the fall protection standard will not be so easy. OSHA is on firmer ground in toughening fall protection standards, since the agency can clearly establish a high rate of fall-related work-site fatalities in construction. Even so, OSHA has already granted some exceptions to the fall protection standard, such as allowing workers who are only delivering shingles to a job site to climb onto roofs for

short periods without using the harnesses and tie-offs required by the rule.

**COSHRRA is history.** Last year, the Labor Department, OSHA's parent agency, gave a hesitant endorsement to the Comprehensive Occupational Safety and Health Reform Act, known as COSHRRA. However, this package of safety law changes, which never reached a floor vote in the Democratic-controlled Congress during the Bush administration, was eclipsed by the health-care issue and didn't go far under Clinton, either.

COSHRRA would have required many businesses to set up joint labor/management safety committees to monitor job-site working conditions. Labor unions and liberal Democrats were COSHRRA's main supporters; Republicans and business interests generally opposed it. With the new political climate in Washington, COSHRRA in its original form has no chance

## Going Modular, *continued*

modular houses. He also uses them on other jobs when subs are delayed.

A factory-built house costs Rhodes 10% to 15% less than a comparable house built on site. Cost estimates and construction schedules for factory-built houses are practically etched in stone, making profit margins more consistent.

"If you look at my profit margin with modular houses, you think I make less," says Rhodes. "But considering the time and overhead I save, I actually make more."

**Customized designs.** What sold Rhodes on trying modular construction was the factory's promise of the flexibility to turn almost any house design into a modular project. The factory's computerized engineering department divides floor plans into sec-



NATIONWIDE HOMES

*After touring the production line, custom builder Joe Rhodes concluded that Nationwide Homes could build homes better in the factory than he could on site.*

tions that meet highway transport requirements (generally, 14 to 16 feet wide by 60 to 70 feet long).

After setting seven simple modular houses ranging in size from 1,000 to 2,200 square feet, Rhodes finally got his chance to combine on-site and factory construction. His client asked for a site-built house, an investment property with a private swimming pool, to be rented in-season for \$4,250 per week. But what the client

wanted and what the client could afford to pay Rhodes to build didn't match.

Rhodes recommended a hybrid modular and site-built design solution. The client didn't care how the house was built, as long as it was built well, within budget, and was ready on time. For Rhodes, using modular units was the only way he could deliver this job without making compromises.

Rhodes put in the piling foundation, poured a concrete

slab and had his crew build the ground floor. On a windy March day, a two-man crew from the factory joined Rhodes's four-man crew to set the modular units that made up the two upper floors. With a 65-ton crane, the job took about five hours — in better weather, they could have done it in under four.

Custom touches on the home included a cathedral roof for the great room and a fireplace inset his crew had prebuilt on site. By the end of the day, both were in place and the building was dried in, protecting the factory-completed finish work inside.

"It works for me," says Rhodes. "That's the bottom line." □

*Reporter Chris Kidder covers building and real estate on the North Carolina coast.*