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Los Angeles Ponders Huge Seismic Retrofit

City officials in Los Angeles, Calif., are preparing a move to require extensive strengthening of homes, high-rises, and commercial low-rise buildings, according to a recent report in the L.A. Times (November 26, 1995).

Officials say the upgrades are needed to prevent severe damage in the next major earthquake (which scientists warn could strike anytime).

Studies of the January 17, 1994, Northridge quake showed that California's seismic code had saved lives but allowed major destruction of property. The new program reflects an attempt to limit the cost of rebuilding after the next major quake hits, and it would also save more

lives, officials say.

Retrofit strategies. The cost and extent of the proposed repairs varies for different building types. Single-family homes similar to those that fell off their foundations in the 1994 quake may need only some anchor bolts attaching them to their foundations and plywood reinforcement of the short cripple walls they stand on — improvements with an estimated cost of between \$3,000 and \$5,000 per house. Three-story and higher apartment buildings, like the one that collapsed and killed 16 people in the Northridge quake, would need to have stucco and dry-wall removed so that stud



Earthquake damage like this could be prevented with a structural retrofit costing a few thousand dollars per apartment, say Los Angeles engineers.

walls could be reinforced with plywood, at a cost of up to \$5,000 per apartment.

Larger structures also need to be fixed, officials said.

continued

Lawyers Press More Suits on Siding Makers



Hardboard siding exposed to moisture sometimes deteriorates. Manufacturers blame faulty installation and maintenance, but attorneys suing the companies say the siding material itself is defective.

This time, the target is hardboard

Manufacturers of hardboard siding can look forward to lengthy court proceedings if class-action lawsuits filed recently in Alabama are allowed to continue. Three major manufacturers of the product are being sued in the state: ABT Co., Georgia-Pacific, and Masonite.

Charges leveled by unhappy homeowners are similar to those made in the recently settled multimillion-dollar suit against Louisiana-Pacific's Inner-Seal composite siding

(Eight-Penny News, 2/96).

"This material is inherently defective," says Richard Dorman, the Mobile, Ala., attorney who is leading the charge against Masonite and Georgia-Pacific. "If it is subjected to any amount of moisture — rain, dew, whatever — it is going to fail." Dorman says he wants the manufacturers to pay aggrieved homeowners enough money to replace hardboard on their homes with another type of siding.

Masonite to fight.

Homeowners who join the lawsuits shouldn't expect an early result. Errol Savoie, a

continued

STATE BY STATE

Colorado. Builders in Jefferson County who use radon-resistant construction techniques qualify for a \$100 rebate under a new county program, reports the *Rocky Mountain News*. Jefferson County has been identified as being in a high-radon zone, the paper says.

California. A proposed agreement in Orange County may create peace between developers and a threatened bird species, the California gnatcatcher. Under the plan, a large system of reserves will be set aside to protect the endangered bird and any other species that share its habitat. In return for donating land to the reserve, developers will be allowed to build in other parts of the bird's range without having to deal with complex environmental paperwork.

Alaska. Recent meetings have clarified portions of Anchorage's building code, reports the *Alaska Builder*. All roofs below a 3/12 pitch must have a self-adhering eaves membrane placed from the eaves to a point 36 inches inside the exterior wall, while roofs with steeper pitches must have the material placed from the eaves to a point 24 inches inside the wall. Full-headed nails, not staples, must be used for fastening asphalt shingles on roofs.

Delaware. A new law toughens the penalties for people who commit home improvement fraud. Cases involving elderly victims are treated more severely under the law.

The News Is Boring: Drillers Get Horizontal

If you've ever had to move tons of rock and soil to make room for plumbing lines and electrical conduit, you'll be interested in the latest development in excavation: trenchless technology. A new generation of equipment lets operators drill horizontally through soil or rock, boring holes of almost any size without disturbing the surface.

The state of the art in horizontal drilling includes big directional-boring rigs that can create large tunnels for industrial steam or gas lines, tunneling over long distances with pinpoint accuracy. But

companies like Ditch Witch (800/654-6481) have developed small horizontal-drilling equipment that can economically do the job on smaller sites (see photo, below).

For a simple job where there's nothing important in your way, a simple trencher or backhoe is still cheaper to hire than a horizontal drilling rig. But if you want to install a sprinkler system in a valuable existing landscape, or run power and water lines under an existing driveway or road, chances are the new equipment will do the job at a lower final cost.

To locate a contractor

with horizontal drilling capabilities, a Ditch Witch representative suggested starting with your local Yellow Pages. But if that doesn't work, she said, equipment manufacturers should be able to put you in touch with area distributors, who could then help locate operators in your area.

For more information on directional drilling, contact the Trenchless Technology Center at Louisiana Tech Univ., in Ruston, La. (318/257-4072), or the North American Society for Trenchless Technology (NASTT), in Chicago, Ill. (312/644-0828). □



New equipment like this Ditch Witch model JT820, introduced in 1995, can drill holes through soil or rock for utility lines without disturbing the landscape surface.

TAX TALK: DEDUCTING MILEAGE

by Martha Myron

There are several ways to treat vehicle expenses on your tax return, but most contractors use a straight mileage deduction. In 1995, the law allows you to deduct 30¢ per mile for business use of your truck or car. You can also deduct the cost of tolls, parking, and interest on your vehicle purchase loan.

If your business office is in

your home and you qualify for the home office deduction, you can deduct all business-related mileage from the moment you pull out of the driveway (side trips for personal reasons don't count). If your home office doesn't qualify, you can only deduct the mileage you run up while driving between different job sites — the trip to the job in

the morning and home at the end of the day are considered an ordinary commute and are not deductible. The home-office determination is a tough call for most contractors, so confer with your accountant.

Martha Myron is a certified public accountant practicing in Concord, N.H.

Acrylic Coatings Prolong Shingle Life

Replacing a shingle roof can get expensive, especially if the existing shingles have to be torn off and disposed of. One way to postpone the cost is to coat the existing shingles with an elastomeric acrylic sealant.

Researchers at Rohm and Haas recently reported impressive results from a ten-year experiment on a test roof near the company's Pennsylvania research laboratory. The roof was coated with an acrylic sealant much like commercial formulations made with Rohm and Haas-supplied ingredients. After ten years of exposure to the weather, an uncoated section of shingles was badly

the shingle from ultraviolet rays of the sun.

The coating also turns a water-shedding shingle roof into a waterproofing roof, said Kern. The acrylic sealant prevents water from carrying away volatile asphalt components that give shingles their flexibility, he noted, and keeping water off the shingles also helps to prevent deterioration of their organic fiber reinforcing mat.

Because Rohm and Haas is the major supplier of acrylics to the coatings industry, practically any commercially available elastomeric acrylic coating containing titanium dioxide should give results similar to those observed on



Shingles deteriorate badly over time, but a pigmented elastomeric acrylic coating can give many years of protection.

deteriorated, but the coated section looked almost new (see photo, above).

Electron microscopy and sophisticated chemical testing showed that the coating preserved not just the roof's appearance but its physical integrity as well, the research team reported. Rohm and Haas's William Kern explains that the titanium dioxide pigment in the coating protects

the test roof, Kern said. The material has to be applied in two coats with a brush, roller, or squeegee, he noted, and the cost may be more than re-roofing with cheap shingles if there is no tear-off involved. But compared with a high-end shingle replacement or a reroof that includes tear-off and disposal of old shingles, the recoating is more economical. □

FROM WHAT WE GATHER

Many appliances must now carry energy-efficiency labels. But who verifies the label claims? Soon, it will be Underwriters Laboratories (UL), according to *Demand-Side Technology Reports*. UL will work with manufacturers the same way it currently works for safety labeling, visiting plants periodically to inspect records and test units.

Damage from frozen pipes is a bigger problem in the South than in the North, reports the Insurance Institute for Property Loss Reduction. Southern builders are more likely to install water pipes in vulnerable locations near outside walls, in exposed crawlspaces, or in the attic. And southern homeowners unused to cold winters often don't think of protecting pipes during the region's occasional cold snaps. Insurance companies pay out an average \$450 million a year to repair damage caused by frozen pipes.

Don't expect a shortage of oriented strand board.

Executives at APA - The Engineered Wood Association are planning a major sales campaign to increase demand for the panel products in anticipation of a planned 30% increase in production by the industry in the next three years. If producers can't expand sales by the same amount, says association president David Rogoway, "painful times" are ahead for some companies. Ten new OSB plants came online in 1994-95, and 14 more will start up in 1996-97, according to APA, increasing production by 9 billion square feet.

Learn all about eco-friendly building materials at Green Building Materials '96, a forum of manufacturers, specifiers, architects, and builders planned for June 24 and 25 in Gainesville, Fla. For program content information, contact Dr. Charles J. Kibert, Univ. of Fla. Center for Construction and Environment, at 904/392-7502. For registration information, contact Michelle LeNeave, Office of Conferences, at 904/392-5930.

You won't have polybutylene (PB) to kick around any more. Shell Chemical Co., the last remaining manufacturer of PB for the U.S. market, is ceasing production due to lawsuits over plumbing leaks. But Vanguard Industries of McPherson, Kan., a major supplier of PB pipe and "Manabloc" manifold-based plumbing systems, says stockpiles of PB pipe will last through the summer. After the PB runs out, Vanguard says customers can still use the manifold systems with cross-linked polyethylene tubing. For information, call Vanguard at 800/775-5039.

Another "sick building" suspect is in custody. Georgia Tech researchers have found numerous molds and fungi that off-gas the same VOCs traced to many building products, according to January's *Indoor Air Review*. The microbes produce things like hexane, methylene, chloride, benzene, and acetone. Moisture control is the key to preventing their growth. Scientists say the next step is to learn what each microbe smells like so they can easily diagnose problems.

Siding Suit, *continued*

spokesman for Masonite's southern division, says an out-of-court settlement is "not in the cards." Masonite is currently working to get the case removed to a federal court and hopes to have the suit dismissed.

Inherent defects? An expert familiar with the siding lawsuits said that although hardboard siding is manufactured differently from Inner-Seal (which has a core of oriented strand board), the root causes of failure are similar. "The Inner-Seal is made of coarser fibers, but both are manufactured under heat and pressure," said this expert, who asked not to be identified because he might be called to testify. "There is a whole family of these products, and they all have the same problem."

Unlike wood, which swells when wet but returns to its original size as it dries, composite siding materials made of compressed fibers stay swelled up after they dry, the expert explained. In his opinion, this creates cracks in finishes and at joints and makes these materials particularly vulnerable to water intrusion, deterioration, and eventual decay.

This expert discounted the manufacturers' contention that proper painting and maintenance can prevent the problem. In his view, the movement of individual boards in response to moisture creates cracks in any paint job, and once water enters, the paint just makes matters worse by preventing surface drying. He advised builders to avoid composite siding materials altogether.

For information on the class-action suits, contact Richard Dorman's law office (McRight, Jackson, Dorman, Myrick, & Moore, P.O. Box 2846, Mobile, AL 36652; 334/432-3444). □

Seismic Retrofit, *continued*

Many tilt-up concrete buildings — including stores, warehouses, offices, and factories — should have their wall-to-roof connections reinforced, at a cost of 60¢ to \$2.50 per square foot.

And over a thousand mid-rise office buildings, hotels, and parking garages built of

reinforced concrete may need to have poured-concrete shear walls installed between their columns, or they could even need an entire new concrete exterior structure built to support them. No cost estimate was given for such jobs, but officials say it's a high priority: These structures are similar to buildings that failed disas-



This home shifted and dropped 2 feet in the Northridge quake. Los Angeles officials want homeowners to reinforce cripple walls to prevent damage like this in future earthquakes.

DAN FRIEDMAN

trously in last year's Kobe, Japan, earthquake.

Costs and benefits. In the cash-strapped Southern California economy, support for new spending requirements is thin. But city officials say the estimated outlay for their proposal is far outweighed by the stupendous repair cost the city will have to bear if the retrofits are not done. As an example, they point to a block of homes in Hollywood where one homeowner paid a contractor \$3,500 to beef up his bungalow. The quake left the home unscathed except for a damaged chimney, while eight neighboring homes were ripped from their foundations, and two had to be demolished. Overall, the block suffered almost \$1 million worth of damage. In the next major quake — which could make the Northridge event look small by comparison — officials say such examples of destruction could be multiplied manyfold if upgrades are not made now. □

Business Slow? Try Russia

In a sign of the changing times, American builders will likely be setting up shop in the former Soviet Union soon, according to the NAHB Research Center. The Ministry of Construction of the Russian federation is inviting U.S. developers to bid on parcels in 1,420 acres of improved land in five Russian cities.

Financing for both builders and buyers will be made available through loans from the World Bank, a development arm of the United Nations. Home designs must be modestly sized and energy efficient.

Russian authorities also

want U.S. manufacturers to produce construction materials in Russia, say NAHB researchers.

If you do go to Russia, be prepared for extreme conditions. A building technician who returned from an international project there last year said his sponsors advised him to bring along lots of basic necessities, including:

- toilet paper
- a can of pepper spray (guns can't be brought in)
- a gamma dosimeter in case of a brush with radioactive waste
- as many weeks of clean underwear as possible
- knife, fork, and spoon

- iodine tablets for water purification
- lots of cash (U.S. bills dated after 1989, no rips, no marks)

"Then there's the corruption and crime," said this traveler. "The situation is like the Wild West — what laws exist are enforced only sporadically."

Still, he noted, crime levels in Russia are probably lower than in many U.S. cities. And he said Russians he met and worked with were "just like you and me" — friendly and civilized, despite the poor economy and uncertainty about the future. □