Notebook...

JUNE 1998 EDITED BY DAVID DOBBS

Hold On to Your Dirt

Erosion problems create new laws — and new solutions

by Kathy Price-Robinson

On a construction site, dirt is usually the last thing anyone thinks about. Of course, you need soil stable enough to hold up the building, but beyond that, who cares?

The answer is: Lots of people — and plants and animals — especially during the rainy season. Every year, rain sweeps millions of cubic yards of topsoil off construction sites, creating flooding problems, sending mud or silt onto down-gradient properties, and contributing to the sedimentation and silting of streams, bays, estuaries, reservoirs, and other water bodies. This excess soil can cause numerous environmental problems, such as disrupting fish spawning grounds and triggering blooms of algae that steal oxygen from other plants and animals.

Not surprisingly, construction-site erosion is getting increasing attention from regulatory agencies. In 1990, for instance, the Environmental Protection Agency created stringent laws requiring protection of exposed topsoil during wintertime grading and construction on sites five acres or larger; in the year 2000, this law will expand to include sites as small as one acre. In addition, the 1992 reauthorization of the Clean Water Act created new water-quality performance standards for states, leading many states to create erosion-related standards or regulations.

Indiana, for example, recently identified erosion-caused sedimentation as the largest single pollutant (by volume) of the state's water resources, and cited erosion at construction sites as a major concern. And in California, regulators have found that runoff into bays and estuaries has increased as building projects have started crawling up the hills.

All this has led some states to expand regulatory oversight of erosion to even single-lot building projects. In fact, builders in many states cannot secure a building permit without providing a plan for sediment retention. And as mentioned above, federal erosion-control standards will apply to lots an acre or larger beginning in 2000 — with penalties of up to $10,000 and two years in jail for scofflaws.

Fortunately, the increase in regulation has been accompanied by an increase in tools and resources to prevent erosion. The Friends of the San Francisco Estuary (510/286-0769), for instance, have produced a video called: "Hold On to Your Dirt: Preventing Erosion from Construction Sites." The methods described range

Soil washing away from construction sites (left) has become a large problem across the country. Drain inlet protection (right) is one solution for keeping sediment out of the waterways.

Lack of erosion control at a construction site causes a familiar scene — loose dirt washing into the drain system after a rainstorm.

in price and complexity from $200 for seeding an acre with quick-sprouting annual grasses, up to $8,000 an acre for installing double-netted, straw/coconut erosion control blankets that last two years. Most methods fall somewhere in between. A few examples:

- Temporary silt fence, installed parallel to the contour of the land and with no more than 1/4 acre of drainage area per 100 feet of fence.

- Sedimentation catchers, also known as silt ponds, which allow the moving dirt to soak into the on-site pond before it washes away into the surrounding area.

- Temporary slope stabilization, which can be as simple as blown straw with a binder, and can also involve blown seed and fertilizer.

- Drain inlet protection, which allows water but not soil to enter storm drains. One method is to cover cinder blocks with strong geotextile material, then surround the drain with the blocks turned so that water can approach from the street, pass through the cells, and into the drain. The entire assembly should be surrounded with gravel. As storm water approaches, the gravel and fabric filter out the soil, allowing clear water to pass.

For more information, contact your regional water quality control district and/or state environmental agency; check out the EPA site at www.epa.gov (for other Web sites, search on the string "construction site erosion control"); or order the *Erosion and Sediment Control Field Manual* ($25) from the Friends of the San Francisco Estuary (2101 Webster St., Suite 500, Oakland, CA 94612-3060).

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Offcuts ...

Baby Boomers find large homes more appealing, according to the American Housing Survey. Boomers between the ages of 35 and 54 are buying 65% of new homes with 3,000 square feet or more. Most of the buyers in this upscale category are married, too.

American-style pre-fabs are capturing more of the housing market in the Japan. Dalwa Danchi Co. sells its imported "American Avenue" apartment houses (said to resemble typical Seattle, Wash., homes) for prices starting at about $108 per square foot — excluding land. The two-story buildings each contain four or six apartments.

A condensed version of the OSHA regs relating to the construction industry is available by calling 202/219-4667; ask for "Selected Construction Regulations for the Home Building Industry." This free, 186-page manual is fairly readable and will probably tell you more than you want to know about safety requirements. If you still need more, look for the full text of all OSHA construction regs online at *www.osha.gov/*.

Home sellers in the Golden State are reinvesting in local real estate, according to the L.A. *Times*. A seven-year record 60% of Californians selling their abodes are plowing those profits back into another in-state home; in 1995, the number of turnaround buyers was 50%. Rising property values are said to be responsible for the sales uptick.

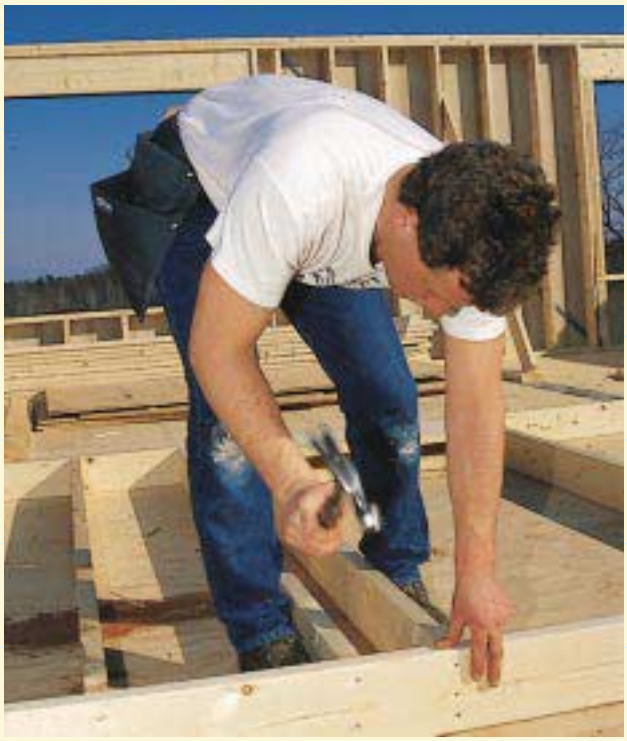
Two-By Debate Continues

Thicker is not better, new study finds

A recent study has added fuel to the long-running debate over whether 2x6 exterior walls offer significant advantages over 2x4 walls. Walls framed with 2x6s may be losing out, especially for those willing to sheathe with foam board. As reported in the February 1998 issue of *Energy Design Update*, increases in wood prices, along with relatively inexpensive fuel and increasing effective insulation, are closing the energy performance gap between 4-inch and 6-inch walls.

The article cites a 1997 study done for the Polyisocyanurate Insulation Manufacturers' Association (PIMA) that modeled framing and energy costs for both 2x4 and 2x6 wall construction in a fairly standard 2,000-square-foot home in six locations around the country. While the homes with 2x6 exterior walls sheathed with plywood cost an average of $1907 more to frame than similarly sheathed 2x4 homes (an average of $11,501, as opposed to $9,144 for the 2x4 homes), they saved only about $30 a year in energy costs, even in the coldest climate considered (Minneapolis). At current energy rates, payback time to recover the costs of the fatter studs would be 78 years; even if energy rates rise, payback would be much longer than most consumers are willing to bear.

The more sensible path, the study found, was to use 2x4 exterior walls sheathed with 1-inch foam board instead of plywood. Because this wall breaks the thermal bridging provided by studs, it actually gave a higher effective R-value (18.7 versus 15.2) than the 2x6 wall, but cost $1,143 less, or about $762 more than a 2x4 wall sheathed in plywood.



Walls framed with 2x4s and sheathed with an inch of rigid foam have a higher R-value and cost less than 2x6 walls sheathed with plywood.

For more information, contact PIMA (1001 Pennsylvania Ave NW, Washington, DC 20004; 202/624-2709; fax 202/628-3856; www.pima.org).

Offcuts ...

Afternoon naps are better than coffee at keeping people perky at work, according to an unsubstantiated report. A nap of about 40 minutes is supposed to be ideal; less sack time doesn't give the desired "recharge" effect, and longer siestas lead to grogginess. Laugh if you like, but don't be surprised if one day OSHA enforces a mandatory naptime rule on your sites.

A shrewd Los Angeles–area buyer spent all of $1 on a 2½-story house and a guest house. The catch was that both structures, dating to the late 19th century, had to be moved to make way for a parking lot. These buildings were moved once before, in 1906, making them the only known examples of Victorian mobile homes.

"Talking Trash: On-Site Residential Construction Waste Management," a new video and field guide, is available from the NAHB's Research Center. The kit can help contractors find materials that generate less waste, as well as dispose of construction waste cost effectively. For information, call 800/638-8556.

California Rejects "Pay-If-Paid" Contract

by Sid Hymes

California has now joined the growing number of states that have rejected "pay-if-paid" provisions in construction contracts. In a 4-3 decision, the California Supreme Court held that pay-if-paid provisions, which allow general contractors to withhold payment to subs until the GC is paid by the client, are void and unenforceable, and against the public policy of that state. The decision adds considerable momentum to the erosion over the last few years of a policy that contractors value for its protection, but which many subcontractors say leaves them holding the bag for poorly run jobs.

The Second District Court of California agreed with the subs, in essence, by ruling that pay-if-paid provisions violated the state's public policy because such clauses constitute a forfeiture of the right to payment, and amount to a waiver of a subcontractor's right to file a mechanic's lien. Under California law, mechanic's lien rights are constitutionally protected. Until this decision, "pay-if-paid" provisions were believed valid and enforceable in California, even though the courts had not directly ruled on the point.

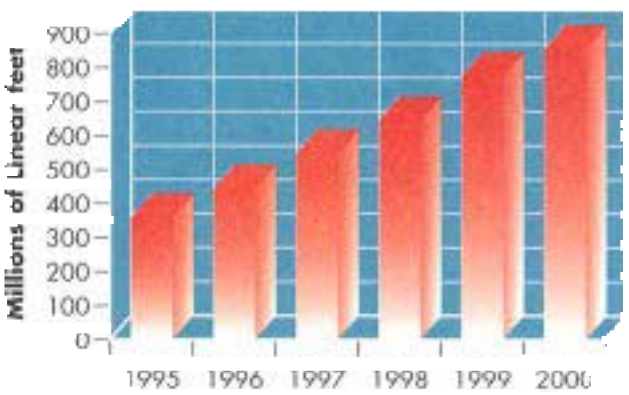
A changing tide. The decision follows similar judicial and legislative annulments of pay-if-paid clauses in other states over the last few years. The New York Court of Appeals declared pay-if-paid clauses invalid in 1995, and legislatures in Illinois, North Carolina, Maryland, Missouri, and Wisconsin have recently outlawed such provisions.

These decisions represent a significant victory for trade organizations representing subcontractors, which have been lobbying hard for laws outlawing "pay-if-paid" provisions. And while these groups primarily represent large commercial subs, the court decisions will affect small contractors as well, obligating them in most circumstances (and in the affected states) to pay subs in cases where the GC may be struggling, for whatever reason, to collect from the client.

Some protection left. Subtle wrinkles in these laws and rulings, however, probably leave contractors — especially residential contractors — some protection in cases where payment from the client is lagging. The protection stems from the legal distinction between "pay-if-paid" and "pay-when-paid" clauses. The former is increasingly seen as forfeiting a sub's right to payment. The latter, however, can arguably allow a contractor to delay payment to subs until the contractor gets paid. For instance, Minnesota recently enacted legislation requiring GCs to pay subcontractors promptly when payment is received. The new law does not mention "pay-if-paid" provisions and, more important, exempts most residential builders and remodeling contractors from the prompt payment requirement..A number of other states, including California, have passed similar laws that require prompt payment of subs once a contractor is himself paid.

Thus, though the apparent difference in wording between the two types of clauses is subtle, the effective difference is substantial. In most places, a "pay-when-paid" clause will continue to protect contractors who are legitimately having trouble getting payment from clients.

Wood I-Joist Production 1995-2000



Engineered Joist Use Continues Climb

As engineered wood continues its rapid growth, I-joist usage has been particularly strong. According to the American Plywood Association, I-joist production increased by more than 100 million linear feet per year over the last three years, and APA projects similar gains through the year 2000. At that rate, I-joists, which in 1997 accounted for nearly a third of all residential floor joists installed in the U.S., would command 50% to 60% in another five years or so.