

# NOTEBOOK

APRIL 1999 EDITED BY PETE YOUNG

## Energy Efficient — Guaranteed

Combining energy-code compliance with marketing, insulation manufacturers have begun to offer energy cost guarantees to homeowners through new home builders. The first such program, called *Engineered For Life*, is a joint venture of cellulose manufacturer Greenstone Industries, installation trainer Advanced Energy Corporation, and Building Science Corporation, an energy-efficient design company. For homes built by participating builders, Greenstone provides the homeowner with a maximum heating and cooling energy-use guarantee for the life of the home. If energy consumption exceeds the guaranteed amount, the insulation manufacturer will pay the difference. Since Greenstone became the first manufacturer to offer such a guarantee, others have begun to set up similar programs.

Builders can participate in the *Engineered For Life* program at various levels, beginning with a "Silver" guarantee based on square footage and minimum cellulose R-values. Although the guarantee is set fairly high, it offers builders a fixed number that they can discuss with potential homebuyers.

Beyond energy use, the program also requires carbon monoxide detectors and continuous, controlled mechanical fresh-air ventilation; it prohibits vent-free fireplaces.

At higher levels of participation, the guaranteed energy use is lower, but the builder must obtain and pay for both pre-construction plan analysis (\$200) and post-construction inspection (\$175 to \$250). The "Gold" plan requires R-6 insulated ducts, a maximum 5% duct leakage, proper wall and attic insulation, and overall airtightness. The "Platinum" plan additionally requires that all ducts be located inside the insulated building space. Both the gold and platinum guarantees require "zero-tolerance" thermal envelopes (no gaps, no voids, no compression), and thermal boundaries that line up with the air barriers at all times.

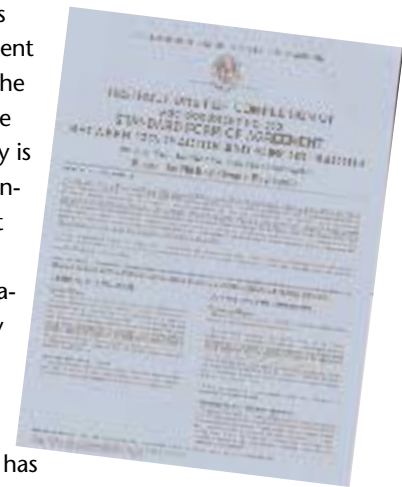
So far, the one-year-old *Engineered For Life* program has issued 100 guarantees and analyzed more than 300 plans. For more information, contact Greenstone (6500 Rock Spring Dr., Suite 400, Bethesda, MD 20817; 888/592-7684).



**Greenstone Industries, manufacturer of Cocoon blown-cellulose insulation, is the first company to offer energy cost guarantees when contractors use their product and follow installation procedures. The best guarantees require pre-construction plan analysis, certified training on energy-efficient building practices, and post-construction testing.**

## AGC Adopts Pay-If-Paid Subcontract

The December unveiling of two new model contracts by the Associated General Contractors of America (AGC) has rekindled a long-standing dispute between general contractors and subcontractors over payment terms. At the heart of the controversy is contract language that controls a GC's obligation to pay subcontractors in the event the owner has



withheld payment from the GC. One of the new documents — *AGC650 Pay-When-Paid* — is relatively benign, requiring the GC to pay subcontractors within a reasonable period of time following the completion of the sub's work, whether or not the GC has been paid by the owner. The other new document, however — *AGC655 Pay-If-Paid* — is perceived by subcontractors to be much more one-sided. It relieves the GC of any obligation to pay subs until the GC is paid, whether or not the sub's work is tied to the owner's withholding of payment (see "Pay-If-Paid Clause," at right). If the GC never gets paid, neither do the subs.

Although both contracts are intended primarily for use in commercial construction, residential contractors are not exempt from disputes with

subs that arise out of an owner's failure to make a scheduled payment. Even the simplest contract should address how the risk of non-payment by the owner will be distributed between the parties.

While pay-if-paid clauses are legal in most states, the language will not hold up in some areas of the country, according to Bill Ernstrom, vice chair of AGC's contract committee. North Carolina and Maryland, for example, have legislated against pay-if-paid contract language, and recent rulings in California and New York have invalidated this type of clause. General contractors should investigate state laws before considering the use of a pay-if-paid contract.

More important, general contractors should consider how pay-if-paid contract language will affect the working relationships they have with their subcontractors. Not surprisingly, pay-if-paid clauses are opposed by subcontractor organizations, such as the Associated Specialty Contractors. In fact, the American Subcontractor Association (ASA) is fighting back with an addendum subcontractors can use to neutralize AGC's pay-if-paid language (see "ASA Addendum," above right). The substitute clause specifically breaks the link between subcontractor payment and the owner's payment to the GC, and requires partial payments to subcontractors within seven days of scheduled payment release dates and final payment within 30 days of substantial completion.

**Pay-when-paid.** Although the battlefield for this issue has historically been confined

### Pay-If-Paid Clause

**Time of Payment:** Receipt of payment by the Contractor from the Owner for the Subcontract Work is a condition precedent to payment by the Contractor to the Subcontractor. The Subcontractor hereby acknowledges that it relies on the credit of the Owner, not the Contractor, for payment of Subcontract Work. Progress payments received from the Owner for the Subcontractor for satisfactory performance of the Subcontract Work shall be made no later than seven (7) days after receipt by the Contractor of payment from the Owner for the Subcontract Work.

**Subcontractors who agree to these payment terms in the new AGC655 Pay-If-Paid contract may not get paid for their work if the owner withholds payment from the general contractor. Pay-if-paid contracts are outlawed in about 20 states.**

### ASA Addendum

No provision of this agreement shall serve to deny Subcontractor's entitlement to full payment each calendar month for properly performed work or suitable stored materials. Payments shall be due seven (7) days after payment is received or should have been received by Contractor from Owner. Final payment, including release of retainage, shall be due within 30 days after substantial completion of Subcontractor's Work, less the reasonable value of uncompleted Subcontract Work.

**The American Subcontractor Association has provided this addendum to its members in response to the new AGC655 Pay-If-Paid contract.**

to large industrial or institutional projects, residential contractors who model their own contracts after those used by larger companies can easily be drawn into the controversy by adopting pay-if-paid language. Pay-when-paid language, on the other hand, may prove to be less provocative. Depending on the actual payment terms in the contract, pay-when-paid contracts can satisfy the desire of subs to be paid promptly for completed work, but

can also give a general contractor some leeway with sub payments in the event a client falls behind or stops payments (see *Notebook*, 6/98). Where general contractors and subcontractors agree to share the risk of owner non-payment, a negotiated pay-when-paid agreement may fit the bill. "The key," says ASA's Brian Pallasch, "is defining the word *when*."

## ONE CODE FITS ALL

Say goodbye to the days of competing residential building codes. The International Code Council (ICC) has announced the first-draft version of the International Building Code (IBC). When released in its final form, the year-2000 edition will replace all three existing model codes, Building Officials & Code Administrators (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International (SBCCI).

Because the IBC is based on these existing codes, "There will not be a lot of dramatic or substantive changes," says Ken Schoonover, BOCA's vice president of codes and standards. One change that will be monitored, however, is the allowable rise and run of residential stairs, which BOCA adopted in 1996 over the objections of construction industry groups who argued it would substantially increase the cost of new homes (see "BOCA Stair Rule Changes," *Eight-Penny News*, 12/96). "In the current draft, the stair geometry is 7:11," says NAHB codes and standards specialist Charles Cottrell. "We will be fighting very hard to get back to 8 1/4:9, which it had been for years."

Before the IBC 2000 edition is released, three draft versions of the code will be subject to public input and revision. For more information, contact BOCA International, 708/799-2300.



## Green Building at the Lumberyard

BY BILL ROBINSON

In most parts of the country, it's difficult to find a lumberyard that doesn't sneer when you ask for green products. Yards that do stock one or two token green products have a poor selection, and there's rarely a knowledgeable person at the counter available to answer your questions. Until now, the only other option has been "green boutiques" specializing in products that are good for the earth but cost an arm and a leg.

But builders on the central coast of California looking for green building materials need look no further than Hayward Mill and Lumber. While most lumberyards cite a lack of demand for green products, Hayward noticed a growth trend in 1997 and launched a Green Building Materials Division, headed by Michelle Randall. She soon discovered that the company was "selling about \$90,000 a year just by accident." Since then, the supplier has developed a line of products suitable for most green construction demands. More important, Hayward is committed to providing the customer service needed to support its green product sales to mainstream contractors.

Since there is no universal standard for determining what is and is not green, Hayward's staff evaluates potential green products on several grounds. According to Randall, the toxicity, recycled content, and recycling potential are examined, as are the resource efficiency, source material sustainability, and impact on alternative locally-produced materials. In the end, these factors are balanced against cost. "We offer environmentally preferable products that have been evaluated by our staff," says Randall, "through

**Hayward Mill and Lumber now offers contractors a full line of green building products along with the customer service to back it up. The "sustainable" Cedar Valley siding shown here is made from shorts and "shops" that would otherwise be burned or chipped.**

research and discussion with the vendor and the green building community."

Being able to buy "green" from a regular contact at the lumberyard is key to the success of the program. All of the sales agents at Hayward are trained in the green products they offer, and when special needs arise, front-line counter reps know where to look for answers.

Some green-minded home buyers are willing to pay a premium, but evaluating the cost benefit of green products is complex. The materials run the gamut from those that are actually cheaper than their mainstream counterpart (Homasote vs. Gypcrete, for example), to those that cost more initially but less after lifetime maintenance costs are added (Trex vs. redwood decking), to those that clearly cost more from beginning to end.

A word of caution: Some green products, such as borate-treated mud sills, might not be approved by your local building department and projects might not pass inspection if the code official has not given prior approval. To avoid that kind of problem, Randall works with building officials to get code approval before the products are purchased and installed.

For more information, check out Hayward's Web site at [www.haywardlumber.com/greenbldg.html](http://www.haywardlumber.com/greenbldg.html).

*Bill Robinson is a building contractor in central California and a contributing editor to the Journal of Light Construction.*

### OFFCUTS

**Watch your step.** Nearly one million people fell down the stairs in 1990, sustaining injuries serious enough to require emergency room care. Daniel Johnson, who reported the statistic in an article in last October's *Ergonomics in Design*, identified common stair design defects as variations in step dimensions within a flight, inadequate handrail location, excessively slippery finish surfaces, and poor area illumination.

### There goes the neighborhood.

Planners are scrambling for ways to solve noise problems created by airport expansion. *USA Today* reports that an entire neighborhood of 1,700 people in Louisville, Ky., was relocated to a newly built subdivision, while Minneapolis officials have decided to pay for soundproofing in as many as 14,000 homes that will be affected by a new runway.

### Clear-cutting of lots has been prohibited

in DeKalb County, the *Atlanta Journal-Constitution* reports. For every acre developed, builders must leave 25% of the trees, or a cumulative 120 inches of tree trunks (for example, ten 12-inch diameter trees). Homeowners can cut no more than five trees per year, unless the trees are diseased or are less than 8 inches in diameter.



## November '98 Ballot Wrap-Up

Suburban development and open space preservation issues dominated construction-related ballot items in last November's elections. The NAHB's *State and Local Reporter* tallied six states (Alabama, Arizona, Florida, Minnesota, New Jersey, and Rhode Island) that passed funding measures for the public acquisition of open land. Arizona voters earmarked \$220 million, but turned back an earlier growth regulation by prohibiting cities and counties from adopting urban growth boundaries. New Jersey voters approved a plan to preserve 1 million acres of open space, representing half of the state's remaining undeveloped land. By contrast, Georgia voters turned down an initiative to fund preservation via an increase in real estate transfer taxes.

Many localities also had growth-related issues on their ballots. According to the *State & Local Reporter* story, more localities supported open space preservation than opposed it. Jefferson County, Colo., for example, passed a \$160 million bond initiative for the acquisition of open space, while Bozeman, Mont., raised impact fees from \$2,900 to \$6,500 to offset the cost of providing infrastructure to new subdivisions. On the other side of the issue, an initiative aimed at purchasing development rights was voted down in Washtenaw County, Mich., and San Diego, Calif., voters turned down a rezoning ballot item intended to protect 600,000 acres of land.

## Unvented Fireplaces Compromise Indoor Air Quality

When your clients ask if unvented, or so-called "vent-free," gas fireplaces are safe, what will you tell them? If you ask the Gas Research Institute (GRI), an industry group, the levels of carbon monoxide, carbon dioxide, and nitrogen dioxide produced by these increasingly popular appliances don't create unhealthy indoor air.

However, an independent review commissioned by New York State recommended that GRI's limit for nitrogen dioxide (NO<sub>2</sub>), which has been linked to respiratory problems with chronic exposures at high concentrations, be cut in half. And when *Consumer Reports* tested two unvented gas fireplaces, NO<sub>2</sub> levels reached the recommended lower limit in just a few hours. An additional problem is that combustion by-products include large amounts of moisture, which can cause heavy

condensation on cold wall and window surfaces or, worse, inside exterior walls (see "Vent-Free Gas Heaters — How Safe?" 7/97).

The best practice is to steer clients toward vented appliances, which only require a small pipe to carry off toxic exhaust. If they insist on going vent-free, however, *Consumer Reports* has these suggestions:

- Observe GRI guidelines for sizing the fireplace to the room.
- Limit use of the fireplace to two hours at a stretch.
- Leave at least one window open in rooms with operating fireplaces.
- Make sure the two components of an unvented fireplace — the firebox and logset, which are often sold separately — are compatible.
- Use a battery-powered carbon monoxide alarm for added safety.

## I-Joist Standard Recognized



Correctly spec'ing I-joists and later getting them approved during structural building inspections is complicated by the number of different products on the market. In 1995, APA—The Engineered Wood Association (253/565-6600; [www.apawood.org](http://www.apawood.org)) began to promote PRI-400, an industry-wide performance standard covering I-joists in four common depths, with sawn or composite flanges, and with plywood or OSB webs (see Eight-Penny News, 5/95). The goal of the program was to combine the various manufacturers' specs into a single set of load/span tables and installation details (see PRI-400 guide, at left).

Four years after its conception, PRI-400 has gained recognition by SBCCI, BOCA, and ICBO, as well as by a growing number of states and cities. APA has also published a related performance standard (PRI-401) for engineered wood rimboards. Because solid-sawn lumber is not recommended for use as rimboards with I-joist floor systems, the APA hopes that a single engineered rimboard standard will further simplify the decision to use I-joist floor systems.

**OFFCUTS**

**Asphalt shingles rule the roof,** according to a survey by *RSI* magazine. Fiberglass-asphalt shingles accounted for 41% of 1998 residential roofing sales, despite recent performance problems reported by 30% of survey respondents. Next were roofing laminates (27%) and organic asphalt shingles (16%). Market share dropped off considerably for wood shakes and metal (3% each), and clay and fiber-cement (2% combined). Other roofing materials accounted for 8%.

**Risky business.** Construction trails only mining and agriculture in workplace fatalities, based on 1997 Bureau of Labor Statistics figures. Fatality rates per 100,000 workers are reported annually, with mining at 25, agriculture at 24, and construction at 14.

**The average sale price of a new home was \$226,680,** according to a 1998 NAHB survey conducted in 42 metropolitan areas. The cost breakdown for a typical 2,150-square-foot house with three or four bedrooms was 9.2% profit (\$20,837), 23.6% lot costs (\$53,516 for 7,500 to 10,000 sq. ft. lots), and 54.8% for construction (\$124,276). Other average costs included financing (1.9%), overhead (5.7%), marketing (1.4%), and sales commission (3.4%).

**A kinder, friendlier OSHA.** Two OSHA reform bills have passed both houses of Congress and now await President Clinton's signature. One, the OSHA Compliance Assistance Act (HR 2864), would allow state safety regulators to offer remodelers compliance advice and assistance without having to issue citations. The other (HR 2877) would prohibit OSHA supervisors from requiring inspectors to meet quotas for citations and fines.

**TAX TALK**

## Self-Insured Medical Plans

BY MILTON ZALL

**A**s the cost of health insurance continues to rise, businesses are on the lookout for ways to reduce the cost of coverage. One option is a self-insured medical reimbursement plan, which is easy to set up to cover not only employees, but the owners of a C-corporation who are also employees. Under the plan, the business reimburses employees for costs incurred for medical care, based on receipts for treatment from a doctor, hospital, dentist, optometrist, and so on. Because you can limit the amount you will reimburse, you can use a reimbursement plan to reduce the cost of regular health insurance.

Say, for example, that you set up a reimbursement plan with an annual limit of \$500. If your company also has a health insurance plan with a \$500 deductible, by increasing the deductible to \$1,000, you may save money in several ways. First, your cost per employee for health insurance premiums may decline by more than the \$500 limit on your medical reimbursement plan. In addition, not every employee will use up the \$500 from the reimbursement plan — for some employees, you may not have to pay a cent.

Whether you set up a reimbursement plan to supplement an existing health insurance plan or as a stand-alone plan, to take a tax deduction the plan can't discriminate as to eligibility. In other words, it can't be set up to benefit just employee-owners or highly paid employees. You can exclude some employees, however — for

example, those who have not worked for you for at least three years, and part-time employees. The plan will be not considered discriminatory if it benefits 70% or more of all employees (80% or more of eligible employees if at least 70% of all employees are eli-



**For C-corporations, a medical reimbursement plan can reduce the cost of regular health insurance**

gible to benefit). Ask your tax advisor for additional details.

These rules apply only to regular corporations, not S-corporations, partnerships, or sole proprietorships. Sole proprietors can, however, participate if their spouse is an employee of the business: The spouse can be covered under the reimbursement plan and the sole proprietor can be covered through the spouse as a family member.

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# Preserved Wood Now Classified According to Use

The American Wood Preservers' Association, which writes standards for preservative and fire retardant treatment of wood, is changing its standards from a commodity-based system of specification to one where the intended use will dictate appropriate treatment. The so-called Use Category System should make it far simpler for those with little technical knowledge of wood treatment to specify treated-wood products. Each of the seven new categories has a different degree of biodegradation hazard or product service life expectation, ranging from "weather-protected" to "saltwater marine" and "fire retardant." The new system will be compatible with that of the International Standards Organization.

## Treated Wood Use Selection Guide

Use Category	Service Conditions	Typical Applications
UC1	Above ground interior construction	Interior construction and furnishings
UC2	Above ground exterior construction	Coated millwork
UC3	Above ground exterior construction	Decking
UC4	Ground or fresh water contact	Privacy fence posts, structural lumber & timbers, guardrail posts, utility poles in regions of low decay potential
UC5A	Ground or fresh water contact or important construction components	Permanent wood foundations, utility poles in regions of moderate to severe potential for decay or economic loss, building poles, horticultural posts
UC5B	Ground or fresh water contact or critical structural components	Land or fresh water pilings, foundation pilings, utility poles with a severe potential for decay
UC6	Salt or brackish water and adjacent mud zone	Pilings, bulkheads, bracing
UC7A	Fire protection as required by codes. Above ground interior construction	Interior roof sheathing, roof trusses, studs, joists, paneling
UC7B	Fire protection as required by codes. Above ground exterior construction	Vertical exterior walls, inclined roof surfaces or other types of construction that allow water to quickly drain from surface

### WEBSITE

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Technical and management training opportunities at this site are the same quality curriculum that BOCA offers annually at more than 200 seminars, workshops, institutes, symposiums and conferences.

## Online BOCA Training

Building Officials and Code Administrators International (BOCA) has made it possible for anyone in the construction industry to take a training course anytime, anywhere. The new Web site ([www.uol.com/boca](http://www.uol.com/boca)) is handy if you are a builder, engineer, architect, or code or fire official who can't attend classes during normal working hours. Initially, nine courses are offered at a cost of \$10 each. Within a year, BOCA plans to complete an extensive online curriculum and establish a partnership with an accredited university that will confer a bachelor's degree for online study. For more information, call 708/799-2300 ext. 716.