

Notebook

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EDITED BY TED CUSHMAN

Speeding Up Crawlspace Construction

You have to crawl before you can walk. And you have to pour your crawlspace foundation before you can frame the first-floor deck, right? Wrong, says inventor Michael Butler of Fort Bragg, Calif. In Butler's innovative framing and forming system, named Fast Track, the builder first assembles a steel deck skeleton and suspends it in place, adjusting the frame to make sure it's square, level, and right where he wants it. Then he hangs the foundation forms from that skeleton framework, using steel C-channel for the form boards. After pouring the foundation to fit the floor, the builder strips the steel forms and uses them as joists to frame out the remainder of the deck.

After building half a dozen prototype homes using his new method, inventor Butler swears it's the fastest system ever for crawlspace construction. "We eliminate most of the labor," he claims. "There are no strings to stretch out, no forms to clean and cart around. We can build the floor and the crawlspace faster than someone else can do just the floor."

Butler worked in the building trades before he became a consulting engineer. When he turned his attention to steel framing, he said, the immediate problem was obvious: Steel frames are so rigid that fitting them to a foundation with normal irregularities takes



Inventor Michael Butler and his crew assemble a floor frame from lightweight steel C-channel (left). Perimeter forms are hung from the suspended frame (below).



too much time. Butler's breakthrough concept was to build the floor first, then use its rigid structure to establish form locations.

The rest of the system's elements flow from that idea. Instead of wood stakes, the vertical supports are helical "screw-stakes" that can be screwed into the earth in seconds with electric impact wrenches. Adjustable bolts and sliding brackets connect the rods to the skeleton frame, enabling the builder to shift the entire frame

around after assembly, adjusting for square and level.

In the traditional method of forming crawlspaces, the first line the contractor establishes dictates everything to follow, observes Butler. If a problem appears later, it's too much trouble to go back and fix it, so builders live with foundations that are significantly out of square and level. Framing and finish labor throughout the rest of the project often reflects the added cost of

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OFFCUTS

A 4-inch maximum opening between guardrail balusters is now the rule in all nationwide model codes, following a 1996 Southern Building Code Congress International (SBCCI) decision. ICBO and CABO have limited railing openings to 4 inches since 1991, and BOCA adopted the 4-inch rule in 1990.

Supplies of CFC refrigerant are running out, reports the November '96 *Contractor* magazine. Production or importation of the chemical has been banned for more than a year in accordance with an international treaty aimed at preserving the earth's ozone layer. As CFCs disappear from the market, air conditioners and refrigerators that lose their CFC refrigerant will have to be modified to accept CFC substitutes — or be replaced with newer models.

Gas companies will soon be financing energy-efficiency home improvements through a new company, the American Gas Finance Co., or "GasFinCo." The new company will use capital provided by Fannie Mae to loan as much as \$15,000 to owners of existing dwellings. GasFinCo will pay contractors directly for jobs such as installing gas heating systems or water heaters, extending gas mains to the building, or even remodeling kitchens. Utilities will bill customers for payments on the loans. For information, contact the American Gas Association at 703/841-8645.

Colorado Building Officials Teach Contractors

Communication between builders and code officials is an old problem. Recently, the Building Department of La Plata County, Colo., has taken a fresh approach. In cooperation with the newly formed Homebuilders Association of Southwest Colorado, the county has developed a voluntary Contractor Registration Program to educate area builders about the code.

The educational program, developed by building inspector Craig Springe with help from local builder Gino Mapelli and fellow inspector Ray Cornell, provides seven and a half hours of classroom instruction, followed by an open-book test on basic code requirements. Each participating builder must

buy a copy of the La Plata County Building Code. Often, says Springe, it's the first copy they've ever owned.

In a state with no builder licensing requirement and few formal training opportunities, the positive response has surprised even the program's organizers, reports Springe. So far, more than 200 builders have passed the county course, and crowds have flocked to attend supplemental presentations by experts such as Dave Utterback of the Western Wood Products Association. Relations between builders and inspectors have been vastly improved, notes Springe: "Builders used to run and hide, but now they show the inspector around, saying, 'See how I solved this? See how I solved that?'" □

TAX TALK

Section 179 Equipment Writeoff

by Len Pytlak

Contractors typically write off the cost of equipment by depreciating each item over many years. However, the tax law known as "Section 179" lets you deduct some equipment costs in the year the items are purchased.

For 1997, the first \$18,000 spent for equipment, machinery, and vehicles can be deducted in full against income. By the year 2,000, the allowable Section 179 deduction is scheduled to reach \$25,000 a year. (For passenger vehicles under 6,000 pounds gross weight, the cap is lower — only \$4,000 in 1997.)

Technically speaking, Section 179 is an accelerated form of depreciation. To claim the deduction, you must list the asset on IRS Form 4562 (the depreciation schedule). You also should carry the item on your company's balance sheet as a fully depreciated asset.

There are some restrictions on Section 179. First, the deduction cannot create (or increase) a business loss. For example, if your business has a net income of \$4,000 before figuring the Section 179 depreciation, and you purchased \$7,000 worth of equipment this year, you can deduct only \$4,000 of the equipment cost in the current year. The \$3,000 balance can be deducted in subsequent years, as long as it does not create a loss at that time.

Also, not all purchases of business assets are eligible. Buildings, leasehold improvements, and equipment used in residential rental property do not qualify for the Section 179 writeoff. Neither does equipment that you previously owned as an individual, then gave or sold to your own business. □

Certified Public Accountant Len Pytlak practices and teaches accounting in Ann Arbor, Mich.

NAHB Program Certifies Insulation Contractors



Recognizing that quality installation is critical to insulation performance, the NAHB Research Center has started a new program to certify insulation contractors. To qualify, a contractor has to complete a training program as well as pass a business audit and job-site inspection by NAHB. To keep the certification, the contractor must continue to pass unannounced job-site and office inspections each year. For information and a list of certified contractors, call NAHB Research at 800/638-8556. □

NAHB insulation audits examine onsite quality control as well as business practices.

Crawlspace

adjusting to a crooked foundation.

By contrast, claims Butler, his system results in a near-perfect foundation every time. He says panelized and modular builders are particularly interested in his new method, because adjusting to foundation irregularities can be the biggest problem with their prepackaged systems. For those who don't like steel, Butler has adapted his method to wood I-joists (this version, however, doesn't allow floor members to do double duty as foundation forms).

Butler says his next challenge is to perfect computer software that will enable steel plants to produce entire floor and form packages directly from builders' blueprints. He's also working on a system to enable pre-engineered steel builders to use their girts as slab forms, obtaining the same efficiencies found in the Fast Track crawlspace system.

For more information, contact Fast Track Foundation Systems, 31078 Turner Rd., Fort Bragg, CA 95437; 707/961-1891. □



Stripped from the foundation wall, C-channel members are ready for duty as joists.

OFFCUTS

Changing the basement plumbing? Consider installing fire-sprinkler heads where local codes allow it, advises Garry Singel of Singel Plumbing Co. in Troy, Mich. When Singel replaces a water heater, he always installs a sprinkler head on the supply line to the heater. When he repipes a basement, he puts sprinkler heads along the main pipe. He says customers appreciate the inexpensive safety boost.

BOCA International staff can now be reached by e-mail. Each staff member's address consists of the person's first initial and last name (up to eight letters total), then @bocai.org. For instance, Bill Campbell's e-mail address would be bcampbel@bocai.org. BOCA also has a Web site at www.bocai.org.

An attached garage may be the culprit in mystery carbon monoxide alerts, the Minnesota Gas Company has discovered. When technicians couldn't find any indoor CO source, they looked into the garage connection. Starting up a cold car, they found, sent garage CO levels soaring in seconds. The poison gas seeped into the house over several hours, triggering alarms after the car was long gone and the garage clear of fumes. Solutions under study include providing passive ventilation to the garage and leaving the garage door open after backing out the car. Idling a car inside an attached garage can kill people in the home, health officials warn.

R_x for Freezing Pipes: Pressure Relief

In southern states, where builders sometimes leave pipes unprotected, cold snaps can be calamitous: In rare hard freezes, epidemics of burst pipes affecting entire southern towns occasionally take on the dimensions of a natural disaster.

Now, University of Illinois researchers may have uncovered a solution. Jeff Gordon and Bill Rose, of the university's Building Research Council in Champaign-Urbana, reported recently that simple devices to relieve excess water pressure could prevent the costly damage frozen pipes inflict each year. Their research sheds new light on the mechanisms of freezing and bursting.

Weak link. Pipes usually don't burst at the point where the ice forms, the pair observed. Instead, damage occurs after ice has completely blocked a pipe and begins to expand along the pipe's length. Since water cannot compress, the expanding ice rapidly pumps up the water pressure in the line, from the usual 40 to 50 pounds per square inch (psi) to



This section of copper pipe split along a weak seam.

as high as 4,000 psi. The mounting pressure finally ruptures the plumbing assembly at its weakest point — a soldered elbow joint, a faucet connection, or, in some types of pipe, a seam along the pipe's length.

Cheap solutions. To prevent the bursting, council researchers are working on several simple pressure-relief devices they hope to patent. Ideas include a pressure-absorbing air chamber that could be installed anywhere along a run of pipe,

and a special washer for faucets that would let water trickle through whenever pressure gets too high.

But there's already a low-tech solution at hand, the report notes: When threatened by freezing, open each faucet just enough to create a steady drip. Any expanding ice blockage will force water through the faucet to relieve the strain.

Low freezing threshold. The researchers found that pipes did not start to freeze until water temperatures dropped to well below freezing, around 20°F. Once freezing began, however, it progressed rapidly as the water temperature rose back to the 32°F level we commonly think of as water's freezing point. This implies that pipes are generally safe even at temperatures slightly below freezing — but homeowners should take preventive measures when temperatures drop toward 20°F.

For a free copy of the report, contact the Insurance Institute for Property Loss Reduction 617/722-0200. □

Save the Cactus: Salvaging Rare Plants from Building Sites

When the costs of developing building lots are figured up, one item that often goes overlooked is the destruction of natural plants on site. But some builders around the country are learning that an effort to preserve rare natural plant species can pay off in community goodwill — and in a better bottom line.

In Tigard, Ore., Roy Beatty of Willowell Nursery, which specializes in native plant species, has been salvaging plants from sites under development since last year. Portland landscape architects Kathleen Holman and Gretchen Vadnais, who are Beatty's clients, have recently involved Habitat for Humanity in the salvage effort. They say the native plants are in demand from community groups as well as from private customers. Even multifamily developers can learn to appreciate the virtues of native-plant

landscaping, says Holman: In addition to being naturally hardy and requiring less care, plants salvaged from a development site and replanted are usually cheaper than plants purchased off site.

In parts of Arizona, reports the October 24, 1996, *Arizona Business Gazette*, demand for the giant saguaro cactus and other native plants has spawned a whole plant-salvage industry. The boom is partly fueled by new city ordinances requiring disturbed desert sites to be returned to the same condition as the surrounding area. But some builders are exceeding even the strictest requirements by saving plants they don't have to. Their incentive: Salvaged plants cut the homeowner's maintenance costs, and they reduce the \$20,000 to \$30,000 tab for revegetating a building site. □



A giant saguaro like this specimen can fetch over \$1,000 on the open market.