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Small-Town Questions Spark Big Wind Research Effort

by Chris Kidder

Recent decades have seen millions of new homes built in coastal areas that often get hit by major storms. Many of these homes contain custom design elements that aren't covered in the building codes — ambitious architectural creations backed up by complex engineering analyses. Cay Cross, manager of the small town of Southern Shores on North Carolina's windswept Outer Banks, worried that her building inspectors weren't equipped to evaluate such plans or to ensure that contractors put the structures together properly. And she feared the town might still be held liable if it allowed construction of homes that later failed under high winds and heavy surf.

Searching for technical help for her building officials, Cross found plenty of questions but few answers. When she complained to a Federal Emergency Management Agency (FEMA) administrator at a conference, he told her to go home and come up with a workable plan. And that's what she did.

PHILIP S. RUCKLE, JR.

Engineering students from Clemson University expose the structure of a Southern Shores test home. The study is part of Project Blue Sky, a national program exploring storm-resistant construction.

From proposal to program. Cross's search for help and information for her town's building inspectors has grown into Project Blue Sky, a major public and private partnership to create a national research program, training center, and information clearinghouse for storm-resistant construction. Blue Sky "aims to transform the way coastal homes are designed and built," says Cross. It is certain to produce a wealth of new information for contractors trying to build structures to withstand rough coastal weather.

An ambitious agenda. Blue Sky participants are attacking the problem on all

continued

Recycling Sub Offers Curbside Service

by Kathleen O'Brien

Builders in the Seattle area can get the benefits of recycling without the hassle, thanks to Shawn Doherty of Construction Waste Management in Mt. Lake Terrace, Wash. Doherty says he runs "the only company [in the area] that goes on site and recycles everything possible" — and all for a single fee.

Seattle builders are a captive audience for a recycling sub, ever since area landfills started turning away construction debris. From modest beginnings hauling gypsum for Doherty's brothers, who own a drywalling business, Construction Waste Management has grown into a full-service jobsite recycling subcontractor that organizes and hauls away any recyclable material, including asphalt, concrete, cardboard, loose soil, metals, and gypsum. The company's fleet of small trucks serves more than 50 residential and commercial construction companies.

Because Construction Waste Management hauls so much material, Doherty gets volume discounts at recycling facilities — discounts he passes on to his larger clients. Jerry Berg, vice-president of William Sherman & Co., a large-volume residential construction firm in Bellevue, Wash., says Doherty's service has cut his disposal costs in half. And, says Berg, Construction Waste Management provides a "good, clean image of recycling. We use the service as a marketing tool."

But it's the time savings and convenience that appeal to smaller builders like Jeff Christopherson of Stone Creek Homes in Bellevue. Christopherson says, "It's not the cheapest way to deal with waste disposal, but it is

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STATE BY STATE

New York. The State Assembly has passed legislation forbidding the state to borrow from the State Insurance Fund, the largest workers comp carrier in New York. According to a report in the *Empire State Builder*, the state has raided the fund five times since 1982, raking off a total of $1.3 billion and costing the fund $700 million in investment earnings from its lost assets.

Connecticut. Republican Governor John Rowland has signed into law a measure that establishes a workers compensation premium credits program for high-wage construction contractors. The program is intended to lower comp costs for construction employers with good safety records, who often pay more to insure each employee because comp premiums are figured as a percent of payroll.

Rhode Island. New regulations set forth by the Coastal Resources Management Council will exempt single-family home construction from some stormwater management requirements, while simplifying the permitting process. However, impervious driveways built in coastal areas will have to include measures to control storm runoff.

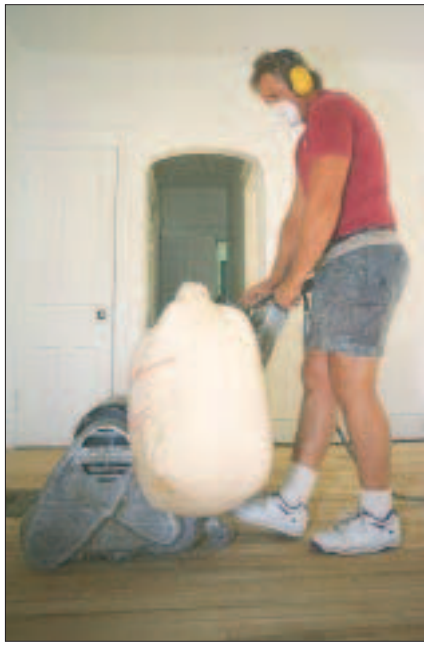
New Hampshire. Workers comp insurance rates dropped by 1.1% effective January 1, the first rate reduction the state has seen in 20 years.

MSDS for Wood Dust

Wood dust can cause cancer in humans, according to a report from a working group of the International Agency for Research on Cancer (IARC). The group reached its conclusion after reviewing studies that found an increased risk of a rare form of nasal cancer among workers exposed to wood dust.

If your employees are exposed to wood dust, OSHA Hazard Communication (HazCom) rules require you to update the warning labels and Material Safety Data Sheets (MSDSs) at the workplace to reflect the IARC classification. For instance, a container of sawdust should be labeled as containing a carcinogen, and you should have an MSDS for sawdust on hand that explains the cancer risk.

Contractors who want to be ready for OSHA should keep their MSDSs current, and make workers aware of jobsite hazards. But the wood dust/cancer link relates mainly to workers in poorly ventilated cabinet shops: The studies that prompted the IARC listing were of Scandinavian furniture workers exposed over many years to high concentrations of fine dust from certain species of oak. Carpenters on well-ventilated construction sites have no particular reason to worry, but they should wear adequate protection anytime dust irritates their noses or throats. □



CAROL'YN BATES

Workers should be protected from prolonged exposure to fine wood dust.

Fiber-Lam Research Continues

by Phil Crandlemire

Glue-laminated timbers can be made stronger and lighter when a reinforcing layer of fiber and resin is built into the lower part of the beam. Already, engineers in Oregon have built demonstration bridges using fiber-reinforced beams ("Innovative Glulam Uses Less Lumber," *Eight-Penny News*, 2/95). Now, East Coast engineers are weighing in with their version of the new technology.

Using plentiful, low-grade red maple from the Maine woods, engineering professor Habib Dagher of the University of Maine in Orono has created a "fiber-lam" beam he says is 50% stronger than steel. To demonstrate the beam's potential in construction, Dagher supervised the building of a 120-foot pier at the Bar Harbor Yacht club.

At $35,000, Dagher says the maple-and-fiber pier structure was 25% cheaper than an equivalent steel pier. And he predicts that the pier will last 70 years, well beyond the 20- to 30-year expected lifespan of a typical exposed steel structure.

Dagher expects to build four bridges with the red maple fiber-lams in the next two years. If the technology can be commercialized, previously ignored tree species like red maple should provide a plentiful source of low-cost, high-strength structural beams for the future. □

Freelance writer Phil Crandlemire lives in Waterville, Maine.

PETE TRAVERS

Composite beams built of red maple and reinforcing fiber are a durable, inexpensive alternative to steel.

Referral Networks for Insurance Work

Who You Gonna Call?

There's so much insurance repair work to be done year in and year out that large companies have sprung up to connect homeowners and their insurance companies with contractors who can reliably accomplish emergency repairs. Two such outfits, the Cross Country Home Assistance Service and the AccuPro system run by Marshall and Swift, are recruiting qualified contractors to fill their expanding nationwide networks.

Insurance repair work is a lucrative niche market for those who specialize in it. If your company is willing to respond quickly to calls, equipped to handle detailed estimating, competent at a variety of repair tasks, and able to manage specialty subs, insurance repair would probably be profitable. And the big referral networks could be a good source of leads.

G.W. SAVAGE

AccuPro. Marshall and Swift's nationwide system is built around its new computer software, AccuPro, which guides the contractor through a step-by-step routine designed to produce a detailed estimate insurers are likely to approve. Participating contractors submit their estimates electronically for speedy consideration.

Marshall and Swift provides training to bring contractors' computer estimating skills up to speed. The aim is to save insurance companies the cost of sending an adjuster to small jobs — in routine cases, contractors can perform estimates unaided.

For information about the AccuPro system, call John Wentt at 800/767-6065.

Cross Country. A spinoff of a large firm that handles emergency auto-service calls nationwide for insurers and auto clubs, Cross Country Home Assistance Services aims to handle everything from emergency plumbing or heating service calls to bigger problems like wind or fire damage. Contractors referred by the network negotiate directly with the homeowner about payment and scope of work. As with the AccuPro service, contractors are free to sell homeowners further repair or remodeling work on their own terms.

Unlike AccuPro, Cross Country does not provide estimating guidance; but the company does expect contractors to offer their services at a discount. For more information on Cross Country, call 617/393-9300. □

FROM WHAT WE GATHER

Working out of state can be risky. The American Subcontractors Association (ASA) warns that "a range of unfortunate outcomes" lurks for contractors who aren't hip to state and local licensing laws. For instance, without the proper license, you may not have the right to get paid. You can learn the rules by reading *Reference Guide to Licensing and Registration Requirements in the 50 States and the District,* by Philadelphia construction lawyer Robert Korn. The book costs $46.50 ($32.50 for ASA members), which includes shipping and handling. To order, write to the American Subcontractors Association, 1004 Duke St., Alexandria, VA 22314 or call 703/684-3450.

While you're studying, browse through the updated *Independent Contractor Guide* from the National Association of the Remodeling Industry (NARI). If the IRS decides your "subs" are really employees, the back taxes and penalties can hurt. Knowing the rules will help you stay in compliance with IRS reporting and withholding requirements. The book costs $28.50 ($18.50 for NARI members) from NARI, 4301 N. Fairfax Dr., Suite 310, Arlington, VA 22203-1627.

A new aerosol-based duct-sealing system sealed gaps up to 1/4 inch wide and cut duct leakage by 60% to 85% in preliminary tests, according to June's Demand-Side Technology Report. The method, which involves blowing a sticky sealant into the ducts under pressure, promises to cut the cost and labor time required to reduce energy-wasting duct leaks. Utilities plan further field tests this year, while Lawrence Berkeley Laboratory scientist Mark Modera, who led the development work on the new process, is now working on technical improvements. Consultant Tom Oday of Today Associates (315/426-7843) has been hired to work on commercializing the technique.

Federal Reserve interest rate cuts have produced an uptick in home sales. The interest rate on 30-year fixed-rate mortgages averaged hit a 15-month low of 7.51% this summer, down from 9.25% last December. In response, sales of new homes have risen each month since February, with a corresponding drop in the supply of unsold homes on the market. Economists are not predicting a recession any time soon, but with the overall economy losing steam, the Fed is expected to maintain a moderate easy-money interest policy for now — unless lawmakers allow the federal budget deficit to rise.

Burnt garbage may be the concrete of the future, say scientists at the Argonne National Laboratory. The researchers were looking for a way to dispose of the ash from garbage incinerators, which often contains toxic metals. They found that when mixed with magnesium oxide and phosphoric acid, the ash forms a workable paste that hardens in 30 minutes. The end product is hard and nonporous, the researchers say.

Small-Town Questions,
continued

fronts. The project includes eight different "packages:"

• Field-testing of Southern Shores structures by a team of engineering faculty and students from Clemson University, to define how well building envelopes resist wind forces.

• Construction of training centers as models for new construction.

• Retrofit projects to demonstrate storm-resistant materials and construction methods for existing buildings. Both the training center and retrofit projects will be open to the public, with important structural details left exposed to view.

• A national information clearinghouse, run by North Carolina State University and the University of West Virginia, complete with a toll-free phone number.

• Training programs at N.C. State and U.-W.Va. for architects, engineers, residential designers, and material suppliers, along with a "Certified Builder" program for contractors.

• A consumer handbook for hazard-resistant house construction.

• Consumer incentives for safer building, devised by a working group of government, bank, and insurance company representatives.

• A set of pre-approved, pre-engineered Acceptable Alternative Materials and Methods (AAMMs) and Improved Designs and Construction Practices (IDCPs), which will serve as voluntary guidelines for the building industry. AAMMs will address problems that the building community has in meeting code standards, while IDCPs will go beyond the code to offer options for improved building.

Choices, not rules. Project engineer Ralph Calfee emphasizes that Blue Sky "is not meant to create a body of regulations for builders." Cross concurs: "Project Blue Sky is an effort to address the problems and give people choices, not new rules."

The results "can't be ivory tower stuff," says Cross. "We've got to come up with things that work in the real world."

Clemson engineering professor Scott Schiff welcomes Blue Sky's realistic focus: "This gives us a chance to take [the hurricane research] we've been doing and put it into practice."

Corporations pitch in. A long list of corporate sponsors has committed over $800,000 to the project so far, but Blue Sky organizers want more than money. "We want real participation," says Calfee, and he's pleased with the corporate response. Simpson Strong-Tie, for instance, will donate both materials and technical assistance to the Blue Sky demonstration and training center, according to Simpson research engineer Randy Shackleford. Shackleford plans to help in the building's design and construction. Senior research engineer Richard Hauer of Andersen Windows plans to work with the Clemson team on testing window openings.

Federal help. FEMA has committed more than $1 million to Project Blue Sky, and sees the private/public partnership as "an important model for other areas in the country," says Richard T. Moore, FEMA's Associate Director for Mitigation. After looking at the huge cost of recent hurricanes, FEMA — like the insurance industry — has concluded that the nation needs to focus more on preventing storm losses, not just on reacting after the fact. FEMA official Robert Shea told project participants at the group's first meeting, "We hope that through this kind of partnership you'll need FEMA less."

As for Southern Shores, the town just wants houses that don't blow away. "Modern technology has allowed us to build some beautiful homes on our shoreline. That same technology allows us to build those houses to stand up to the wind," says Mayor Kern Pitts. "And that's what we're after. It's as simple as that."

For more information, write to Project Blue Sky, 6 Skyline Rd., Southern Shores, NC 27949. □

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

Recycling Sub,
continued

the most efficient. I have a small crew and don't have the extra laborer to deal with this material."

Convenience and thoroughness are keys to the recycling sub's success. Construction Waste Management supplies neat, white recycling bins, complete with company logo and professionally painted signs designating which material goes in which bin. The company's matching trucks are small enough to get into tight spaces, so bins can be located close to where the trash is generated. Doherty and his crews run regular checks of the job site to see if bins need to be emptied, moved, or re-sorted. Materials mistakenly thrown in the wrong bin are removed, and Doherty has a talk with the sub or laborer responsible. At the end of the job, Doherty hands the builder a computerized spreadsheet that makes it easy to document savings.

Construction Waste Management employees sort and haul away recyclable debris on a Seattle-area job site.

For builders considering subbing out their recycling, builder Christopherson warns that Doherty's company may be unique. "Some haulers are not very dependable and go in and out of service, but he's been around a while and has good business sense." Like every other good idea, though, there are bound to be more full-service companies like Construction Waste Management cropping up. Check their references, and you may be looking at one less headache. □

Kathleen O'Brien provides communication and consulting services to builders from offices on Bainbridge Island, Wash.