Eight-Penny Nail

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Swedes Seek Joint Venture

The Swedes were in Cambridge, Mass., recently to show their wares and maybe interest a partner or two in a joint venture producing Swedish manufactured homes. Two Swedish promotional consortiums—SWEBO and SWEBEX—tried to woo U.S. builders, building manufacturers, and public housing officials with an explanation of the Swedish technology and a field trip to a site where their homes were being erected. Ideally, the sponsoring companies would like to set up plants in the U.S. to use domestic materials and labor with Swedish technology and special components. There are no joint ventures currently operating.

Most home manufacturers in Sweden are an outgrowth of sawmills looking to increase sales. The larger companies typically do all the work on their own units, from logging the lumber for all components, to erection and finish work. Almost all new housing in Sweden is factory housing. There were 20,000 total homes built in Sweden last year, maybe 2 percent of the U.S. figure.

The Swedish market has declined steadily over the last 13 years. Now, these companies want new markets. They currently export to Scandinavia, Germany, and Britain, but they are well aware that the U.S. market dwarfs all of these combined. Their export capacity is small (1,500 to 2,000 units), and they are seeking to increase capacity by opening plants here in the U.S.

Compared to a similar conference held several years ago at MIT, the Swedish product hasn't changed much, but their marketing approach has. The Swedes used to claim they could produce housing more affordably than U.S. stick-building methods. Now they say they can produce a higher quality house for a competitive price. Perhaps shipping and import-related costs have driven the Swedes into the luxury market.

The Swedish factory homes do have some advantages. They have beautiful framing and finish materials. Yet, oddly, their brochures claim that their "raw lumber is dried thoroughly, to only a 12-percent moisture content. . .as compared to the typical 65 to 85 percent moisture in U.S. construction lumber." Where does this information come from? The kiln-dried studs used for many manufactured homes—including Acorn Structures where I work—regularly measure 11-percent moisture content.

The Swedes almost exclusively use pine for finish work, but U.S. customers currently are interested in a wider variety of species: cedar siding, oak interior trim, or mahogany doors, for example.

There is a mystique surrounding Swedish craftsmanship. Furniture and factory homes in Sweden are finely crafted products. This is because they are built by people who know their products intimately. But it is impractical to import the Swedish construction crews, so Swedish homes built here are only as good as the crew putting them together. Good training and explicit details are essential.

At the Swedish factory-home site we visited, builders were astounded at the poor quality of the detailing on units that were selling for $100 to $110 per square foot. Corner boards sat on top of clapboard siding and roof-flashing details leaked. Many felt the buildings looked ordinary.

The Swedish homes *are* energy efficient. They use 50 percent or less fuel than new American homes. (The Swedes cite figures of 3.3 Btus per finished square foot per Fahrenheit degree day.) Their marketing highlights this feature. But the homes' simple boxy shapes and small glass areas are how this efficiency is partially achieved. The Swedes, whose house designs may suit their northern climate, are still struggling to create designs interesting to Americans. Some builders said the Swedes' design looked dated and wondered about its appeal.

The Swedes tout unique materials: high R-value insulation, age-resistant vapor barriers, rubber gaskets at virtually all framing joints, and interlocking lifetime concrete roof tiles. But these are the same items they had several years ago, suggesting that product development has plateaued. (For example, they still use triple glazing, not low-e glass.)

As for construction, the uniqueness of the building system requires some training. The foreman at the demonstration site claimed that the first unit took 600 hours to build, the 23rd—with the crews finally up to optimum speed—took 400 hours.

An American builder who had built a Swedish manufactured home pointed out that an uneven building site will not lend itself to building with the Swedish system economically because the Swedes use large (8x12-foot) panels that require a crane to erect.

There were code and customer-acceptance problems as well. For instance, stair treads were too narrow to meet code, doors to back decks had no exterior handles, windows were center-pivot, and thus could not be screened, garage doors were too small for American cars, and they recommended air-to-air heat exchangers be installed to draw air through the stove vent, which violates code.

The logistical problems of getting technical support from Sweden during construction were not addressed in any depth. In fact, construction-detail instructions and drawings were in short supply at the demonstration site. One builder joked that you probably needed a fax machine to build one of these houses. Until problems like these are addressed and solved, potential partners in a Swedish-U.S. joint venture may be hard to find.

—John Slote is a Quality Engineer for Acorn Structures, which designs and manufactures panelized homes, in Concord, Mass.

Dial-A-Name

Does your brain turn to quick set concrete when it comes to naming your condo development? Same here. Well, a Laguna Hills, Ca., company called Ad Man offers a device called "Dial-A-Name" which can create up to a million different name combinations. Simply spin any of three wheels and line up words for lyric combinations like "blue flower shores," or clunkers like "red walnut dolphin." ■

Timber Framers' Guild Holds "Barn-Raising"

On May 18, 400 members of the Timber Framers' Guild of North America converged on Hanover, Pa., to frame two houses for Habitat for Humanity, the nonprofit organization that builds housing for low-income families (see JLC, 2/89). The houses were completely finished and ready for occupation in three and a half days.

The Timber Framers' Guild, which formed in 1985 to promote nailless post-and-beam framing techniques, put the frames up before beginning its annual meeting at nearby Millersville State College. Timber framers came from 33 states, 5 Canadian provinces, and Japan, France, Germany, and England. Each brought a timber to be used in the house.

Timber framers from 33 states and 5 Canadian provinces assisted in building two homes for Habitat for Humanity. The homes were completed and ready for occupation in 70 hours.

"Ever since our first meeting, we've wanted to have all our members get together and build something," said Jeff Arvin, who was elected as the Guild's president during the weekend. "The problem was coordination, but that was solved when we got together with Habitat for Humanity."

Jean Shipman of the York, Pa., Habitat for Humanity office handled the massive organizational job. She coordinated not only the Guild's efforts, but those of over 500 other volunteers and of several businesses that donated labor and 90 percent of the materials. The plans for the 1,200-square-foot, two-story, modified Capes came from Catherine Cartrette of Minneapolis, who won a design contest held by the Guild.

Incredibly, the houses went up without a hitch. The timbers reached the site at 7 a.m. Thursday, and the Guild had raised the frames by early afternoon. When the framers stepped aside, more than 500 Habitat volunteers began working round the clock. By the time of the dedication ceremonies Sunday afternoon, the houses were finished except for some minor punch-list items.

"They hit the ground running," Arvin said of the volunteers. "There wasn't even a blink in the momentum the framers had built up. I went by Friday around midnight, and the front yards looked like a chopsaw parking lot. There were five of them, and they were going all the time. A carpenter would run out, chop a piece, and as he headed back in another would be coming out. It was truly remarkable."

Working alongside the other volunteers were the soon-to-be owners and their families. Neither family could have afforded a house on the open market. They earned their good luck by meeting rigorous selection criteria and by contributing 500 hours of their time to Habitat projects. They will pay for the houses with interest-free $40,000 mortgages supplied by Habitat.

Along with the Guild's efforts, Habitat also received help from the York County Builder's Association, from local suppliers, and from scores of tradespeople.

Shipman hopes such efforts will encourage other building and trade associations to pitch in on Habitat projects. "Maybe some local builder's association will see this and think, 'Hey, let's get together and build one of the Habitat houses some weekend,'" she said. "Everyone involved had an incredible time. It's just impossible to describe how much fun this thing was."

Of course, no one was more pleased than the new homeowners. "I can't believe," Darlene Mathis told a local reporter, "that people would come from all over the United States and Canada to build me a house. I don't want to wake up from this dream."—*David Dobbs*

Legislation on Global Warming Heats Up

Last year saw intense weather extremes. It was the hottest year of the hottest decade in this century. Is the world's climate already changing? Many scientists think so, but leaders at the National Center for Atmospheric research say it may be another 10 years or more before temperature data will provide an unmistakable message about global climate change. One thing's for sure: the political climate is already changing.

Proposed Bills

At present, several pieces of major legislation aim to cut back on the alarming buildup in heat-trapping greenhouse gases. The Global Warming Prevention Act (HR-1078) and the National Energy Policy Act (S324) are omnibus bills introduced for a second year in a row by Rep. Claudine Schneider (R-R.I.) and Sen. Tim Wirth (D-Colo.) respectively. Their principal common goal: cut CO_2 emissions by 20 percent by the year 2000.

Dramatically improving energy efficiency in all sectors of our economy is a cornerstone element of each bill. Both would encourage the use of solar energy in homes and require the establishment of home energy rating systems for new and existing homes. Home energy ratings would also be required by narrower pieces of legislation introduced this year by Rep. Phil Sharp (D-Ind.) and Sen. Dale Bumpers (D-Ark.).

Increased Pressure

The political focus on energy issues is increasing rapidly because of all its geopolitical, economic, and environmental baggage: the Alaskan oil spill, our growing reliance on imported oil, the growing cost of imported oil ($40 to $50 billion per year), projected energy price (and energy tax) increases, and the battle over cleaning up urban air. When all these are lined up beside global warming, they make a compelling case.

In addition to domestic motivations, there are new international pressures. European leaders, especially prime Ministers Margaret Thatcher of Great Britain and Gro Brundtland of Norway, have taken the lead. The Bush administration, after trying to alter testimony on global warming in the Senate, did an about-face and agreed to host an international conference on global warming this November.

Another international push behind these bills is the U.N.'s stated intention of having a global warming treaty ready to sign in 1992. Is that realistic? The only international example we have for comparison is the movement to ban CFCs. In 1987, after a two-year process, most developed countries signed the Montreal protocol which requires a cut in their CFC production by 50 percent by the year 2000. Yet just 18 months later, President Bush agreed to join the growing international efforts to eliminate all CFC use by the year 2000. Legislation currently under development might even push that timetable closer to 1995.

Future Directions

Whatever the eventual format, builders will be asked, if not required, to improve the energy-efficiency of new homes. Demand for better windows, more south-facing glass, thicker insulation, tighter construction, and testing for quality control are likely to increase in the future. The move towards more efficient lighting and appliances should continue. Don't be surprised if some voluntary type of uniform national home-energy rating system goes into effect by 1991.

Utilities are likely to get into the act too. Support is increasing among policy makers for least-cost energy planning (part of S-234 and HR-1078). One possible result is that utilities will reward energy-conscious builders with lower hook-up fees.

While first costs for buyers of more efficient homes would increase, policy makers are aware that lists of do's and don'ts are not the best and cheapest way to achieve energy miser homes. Performance-based approaches are more likely to win favor. Policy makers want to use energy features as a way to make homes more, not less, affordable.

Government regulations are never greeted with excitement, but the news isn't all bad for knowledgeable and responsive builders. If you already build in energy efficient features, expect more government backing and market acceptance. If energy reduction isn't one of your strengths, you have an opportunity to gain knowledge and experience before legislation—and the market—force you to play catch-up.

—Steve Andrews

Computer Bits:

Mechanical contractors get instruction on the use of computers in their business…at the Mechanical Contractors Association of America's Institute for Project Management. For more information, contact MCAA, 5140 Grosvenor Lane, Suite 120, Bethesday, MD 20814-2122; 301/897-0770.

Low-cost cost control…designed for small to mid-size builders is available with "Builder's Mate," a fully-integrated accounting and job costing system. For info contact Builder's Mate, 4985 Palm Avenue, Suite 115, Winter Park, FL 332792; 407/657-8557.

Pavement design is computerized…with a new program from the National Concrete Masonry Association. PAVECHEK runs on IBM and compatible PCs, and is based on the 1986 Guide for the Design of Pavement Structures. For more information, contact NCMA, P.O. Box 781, Herndon, VA 22070-0781; 703/435-4900.

Roofing consultants using AutoCAD…can use Syenergy Plate Bonded and SyernerWeld roofing details via PrismCAD. For architects and specifiers, contact Syenergy Methods, P.O. Box 119, Danielson, CT 06239; 203/774-3354.

Customized estimates of the optimal level of insulation…are available with ZIP. The program runs on a PC, and is contained on a single floppy disk. Contact the National technical Information Service, Springfield, VA 22161; or call 703/487-4600. ■

Deck Wood Deserves Closer Look

Port Orford cedar is an unusually strong and beautiful wood that New England builders can try on outdoor decks. In the past it has been difficult to purchase construction-grade Port Orford cedar because the Japanese, who cover the wood for the construction and repair of the Shinto temples, have commandeered the market. They regularly pay $3,500 per thousand board-feet for logs over 2 feet in diameter. This is much more than Americans pay for any domestic hardwood. Recently, however, the smaller logs have been harvested and milled for the U.S. construction market and are available at prices cheaper than all-heart redwood and the better grades of western red cedar. Port Orford cedar may be worth considering for your next deck. It is a light, buttery yellow when freshly cut and weathers to a silvery gray. It is straight-grained and reportedly does not splinter easily. Most important, Port Orford cedar is extremely strong. Steve Jones of Princeton Forest Products (P.O. Box 677, Princeton, MA 01541-0677; 508-464-5925), who distributes the wood to lumber dealers in the Northeast, claims it has the highest weight to strength ratio of any wood he has seen. Its strength is comparable to douglas fir.

While Port Orford cedar is strongly promoted by distributors as an alternative to western red cedar, redwood, and pressure-treated decking materials, there may be some cause for hesitation. As with western red cedar, an all-heart grade is not available, so you'll be buying some sapwood, which is not as decay-resistant as heartwood. Therefore, all-heart construction-grade redwood may still be a longer lasting product. But according to Bob King of Coastal Forest Products in Hooksett, N.H., the sapwood of Port Orford cedar is still more decay-resistant than the sapwood of either western red cedar or redwood.

There is also a high percentage of compression wood in the smaller "throw away" logs that are harvested for the domestic market. Thus, there is a fair amount of what Bob King calls "squirrley wood" in the Port Orford stacks. Compression wood comes from trees growing on slopes or from uprooted stumps that continue to grow. This causes eccentric grain which can cause extreme warping, checking, and loss of strength. Chances are, however, that you can select out the worst pieces at the lumberyard.

—Clayton DeKorne

Softwood Demand and Price Mirror Market

In 1988, U.S. demand for softwood lumber was 47.3 billion board feet; about 6.5 percent below the record high demand of 50.6 billion board feet in 1987. Approximately 29 percent of the 1988 figure was imported from Canada.

Softwood lumber is widely used in the construction, shipping, and manufacturing industries, although during years of average activity, new residential construction dominates the demand.

The demand for softwood lumber is correlated not only with the level of housing starts, but with the type of housing starts (i.e. single family versus multifamily), as well as the size of new homes being built. For instance, lumber demand declined from 42.6 billion board feet in 1978 to 31.2 billion board feet in 1982 (a drop of 27 percent). This reflects a drop in housing starts of 47 percent and a decline in the number in finished area in single-family homes from 1,755 square feet to 1,710 square feet.

The Product Price Index for softwood lumber increased by over 3 percent in 1988 and over 7 percent in 1987. The composite price of framing lumber rose from $214 per 1,000 board feet in August 1988 to $242 in February 1989. During the same period, composite plywood prices rose from $199 to $216 per 1,000 board feet.—*Gopal Ahluwalia. Adapted by permission from NAHB's Housing Economics.*

Cogeneration in Public Housing

Innovative financing has made it possible for a Burlington (Vt.) Housing Authority (BHA) public housing project to generate its own electricity.
Instead of electric water heaters, this 160-unit high-rise building fro the elderly now has a congeneration module which runs on natural gas. The unit simultaneously provides the building's hot water as well as heat for meeting rooms, offices, and common areas. Annual energy savings will be $26,000. This energy-saving solution and the method of financing may become a model for other public housing projects across the country.

Traditionally the U.S. Department of Housing and Urban Development (HUD) determines the operating costs of a housing project on an average annual basis. HUD allocates the necessary funds to the local housing authorities who pay the bills. The weakness in this system is that there is no incentive to operate a building more efficiently. Additionally, local housing authorities have neither the funds to invest nor the authority to borrow money to upgrade their units.

BHA in cooperation with Vermont Energy Investment Corporation (VEIC), devised an innovative financing package to purchase and install the energy-efficient cogeneration system.

VEIC, a non-profit organization, borrowed money for the new equipment from the Vermont Housing Finance Agency at a rate reduction of five percent. The reduction was made possible by funds from the Vermont Department of Public Service which had received monies from Exxon because of oil overcharges.

With the necessary capital, VEIC then had to secure a waiver from HUD. HUD agreed to allocate the same funds as it had in the past, although Beth Sachs, executive director of VEIC, points out, "securing the waiver took over a year."

The money saved by switching to cogeneration will go to VEIC to pay off the loan, and to BHA to finance other energy-efficient improvements to the building.

—Mary Twitchell

From What We Gather

Sealed insulating glass accounted for 83 percent of all windows in residential construction in 1988, up from 68 percent in 1982. Penetration should reach 87 percent by 1991, according to the American Architectural Manufacturers Association.

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Good news to remodelers is that 3.6 million existing homes were sold in 1988, the highest level since 1979. Almost two out of 10 Americans changed their address last year, according to the Census Bureau. Numerous studies indicate that homes are often remodeled just after resale. Source: NAHB Remodelors Council.

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Homes got bigger in 1988 for the sixth year in a row, despite higher interest rates. New homes in 1988 averaged 1,995 square feet, up from 1,905 square feet in 1987.

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You think Boston's expensive? Try buying in Tokyo, where the average condo goes for $502,000. This is over ten times the salary of a typical Japanese worker, who earns about $49,000. Source: Metropolitan Title Company Forecast.

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Storm windows saved little or no energy in a weatherization study of over 300 homes in Michigan. The study found the most cost-effective approach to weatherization combined retrofit sidewall insulation with sealing major air leaks. Source: Energy Design Update.

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The best insulated houses are in Vermont, where 95 percent of new homes are built with at least R-19 walls. New Hampshire follows with 76 percent having R-19, followed by North Dakota, Minnesota, Maine, and Montana. Source: NAHB Research Institute.

Tax Talk: Real Estate Tax-Free Exchanges

by Irving Blackman

Hands down, my favorite tax word is "tax-free." It has special meaning when selling real estate, either commercial or residential. Let's take a look at a typical example. Joe Owner owns investment real estate (it could be a warehouse, apartment building, or any other investment property) that cost $500,000 in 1979. It has been depreciated down to $300,000 and is worth $1,000,000. Joe has a buyer. The $700,000 profit will cost Joe $196,000 ($700,000 x 28%) in tax.

What can Joe do to save the $196,000 in tax? A tax-free exchange is the answer. Joe must identify the new real-estate investment within 45 days of the sale of the old property. Joe must close on the new property within 180 days. Tax-free exchanges are tricky and require the help of an expert from the beginning of the transaction.

If you intend to stay in real estate, a tax-free exchange is the way to go. Here's another reason: the step-up-in-basis rule. Let's continue the example to show you how it works. Suppose you trade the $1,000,000 property for new property worth $1,500,000, assuming an additional mortgage of $500,000. For tax purposes, you only paid $800,000 for the property ($1,500,000 less the $700,000 tax-free profit). The years go by and the new property is depreciated down to $300,000, but is worth $2,000,000. You die leaving the property to your heirs.

Your heirs take the property with a new $2,000,000 tax basis, just as if they had purchased the property for that amount on the day you died. Who pays tax on the $1,700,000 in profit (the difference between its value of $2,000,000 and $300,000 tax basis)? The answer: nobody—not you, not your estate, not your heirs. This raised-basis rule should be part of every taxpayer's lifetime tax plan and estate plan.

Talk to your professional advisor about how to use these two rules—tax-free exchange and raised basis—to save a bundle in taxes. When used in tandem, they can be the backbone for your personal tax plan. ■

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Fiber Optic Service Installed

A development of middle-priced homes outside Princeton, N.J., is the first in the nation to get telephone service by fiber optic cable rather than copper wire. For now, fiber optics will provide improved clarity and will eliminate voltage surges that can trigger false burglar alarms. In the future, their greater capacity will allow home automation, data retrieval, improved alarm systems, and video transmission, depending on the development of federal regulations.

New Jersey Bell is installing the phone service in 104 single-family homes in the Princeton Gate development of Sam Rieder and Sons in South Brunswick. The fiber optic cable allows transmission of telephone signals by digital light impulses. An electronic box on the exterior of each home converts the light impulses to more conventional analog signals for use by telephones in the home.

New Jersey Bell has been using fiber optic cable between local switching offices and remote equipment. The Princeton Gate project takes the fiber cable from the remote equipment to the homes. New Jersey Bell chose the development because it is near a fiber trunk line that serves commercial customers.

Randy Wright, in charge of marketing at Princeton Gate, is glad it worked out that way. The fiber optics service is just another reminder to customers that they're buying into a prestige development, he says.

Princeton Gate is the trial by which New Jersey Bell hopes to learn how to best use the new technology developed by AT&T Network Systems. Ken Hoffman, loop electronics manager for N.J. Bell, says, "At some point, we expect it to be more economical to install fiber rather than copper wires to serve customers' homes." That may be as near as 1992. ■

Cement Imports on Rise

Cement consumption fell slightly in 1988 following a jump of 3 percent in 1987 over 1986. The decline was primarily in domestic shipments; imported cement has grown significantly from a low of 4 million tons in 1977 to 17.5 million in 1987 and 1988. During the last three years, imports represented about 18 percent of total cement consumption compared to 5 percent in 1977.

The growth of U.S. imports of cement can be attributed to lower prices on imports because of an excessive world-wide capacity and relatively low shipping costs. Still another reason is the internationalization of the U.S. cement industry—according to the Department of Commerce, about 60 percent of U.S. capacity was foreign-owned in 1988.

—*Gopal Ahluwalia*

Adapted by permission from NAHB's Housing Economics.

Gender Hiring Goals: Are They Legal?

In 1986 the City of Burlington, Vt. passed a "Women and Construction Trades Ordinance" which set a hiring goal of 10 percent women in each of the construction trades on all federal projects of $50,000 or more.

The city's ordinance passed after studies showed that a significant percentage of families in the Burlington area—mostly headed by women—couldn't support themselves without welfare assistance. Studies also showed that entry-level salaries in the trades would enable women to make ends meet without government assistance.

By adopting the ordinance, the city hoped to pressure contractors, especially those employing more than 16 people, into making a good faith effort to recruit and train women. However, as a result of a recent U.S. Supreme Court ruling, Burlington's ordinance may be in jeopardy.

Earlier this year, the Supreme Court heard a Richmond, Va. case involving "set asides" for minorities. In hopes of addressing racial imbalance, the Richmond ordinance mandated that 30 percent of government contracts "had to go to minority-owned firms." The Supreme Court's majority opinion, written by Sandra Day O'Connor, stated that the Court found no reason to "justify the use of an unyielding racial quota."

Gretchen Bailey, Assistant Attorney for the city of Burlington, believes that Burlington's ordinance can withstand a legal challenge, but, she adds, it may be necessary to redraft it. "When we drafted the ordinance," Bailey said, "we assumed that gender discrimination in the trades was obvious. To make this assumption stand up in court, we will have to produce a scientific study with numbers and percentages to clearly prove that discrimination does exist." This will take time and money.

The ordinance has already made a difference in local hiring practices. In its first year, Burlington's 10 percent goal led to a dramatic increase from two percent to nine percent in the numbers of women working in trades positions on publicly funded construction projects. Burlington then went even further; it adopted a 20 percent Affirmative Action goal for trades positions within all municipal departments.

Companies affected by the ordinance admit that their ability to reach 10 percent varies from month to month. At Burlington's Munson Earth-Moving Corp., for example, the percentage varies from five to 15 percent depending on the season, but they think the goal is realistic.

In general, however, the ordinance has had a positive impact. Employers more readily think about hiring women, ads in the newspapers now read "women and minorities encouraged to apply," and at least two or three times a week, contractors call to consult the city's Job Bank of qualified tradeswomen. Even small companies not affected by the ordinance have taken advantage of this service.

The timing of the ordinance was extremely fortuitous; the construction boom in Chittenden County, Vermont and the low unemployment rate contributed significantly to its initial success. But in light of the Richmond case, the city may have to reaffirm its commitment to a policy of non-discrimination in the workplace.

—*Mary Twitchell*