

NOTEBOOK

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Lumbering Toward Better Wood

by David Dobbs

Len Guss, a lumber-industry market analyst who usually thinks about millions of board feet of lumber, recently found himself at a lumberyard looking for just a few good boards.

"I needed a few 2x6s for pasture fencing for my horses," recalls Guss. "But I had to cherry-pick through an entire unit just to get 8 or 10 boards that would hold their own weight." For Guss, this hunt in twisted-board land merely confirmed what he already knew from his 40 years of work in the industry: "Lumber," he says, "is quite definitely not what it used to be."

This isn't news to builders, of course, who for over two decades have been compensating for declining lumber quality by hand-picking through lumber piles and finding alternative products. The question is not whether lumber has gotten worse, but how steep this falling quality curve is now and where it's headed from here. Will lumber get even worse? Or are industry and builder adjustments making up for the quality decline? Might lumber itself actually improve again?

Answering these questions requires understanding not only why and how lumber quality slid, but how the industry — including builders — has responded to the decline.

When Younger Isn't Better

Lumber has declined first and foremost because we're making lumber from younger trees than we did 20 or 30 years ago. For several decades following World War II, we cut our North American forests (and many others) at unprecedented rates. By

the 1970s we had cut most of the best, oldest stands, and by the mid-1980s, declining supply and public concern over the remaining older forests were steering our saws toward ever younger trees. In the 1980s and early 1990s, strong Asian and European economies aggravated the situation by pulling some of the best wood off the continent. Of the prime stuff left stateside, much went to value-added manufacturers — furniture makers, window, cabinet, and millwork manufacturers, builders of violins and jewelry boxes — who were willing to outbid lumber mills.

That left North American mills with a younger, more inconsistent stock of lumber. This juvenile wood is inherently more finicky, far more likely to warp or twist in response to moisture changes. These flaws have exposed shortcomings in our milling and processing. Milling, drying, shipping, and quality-control procedures that created good lumber from great logs did less well with mediocre raw material.

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Although lumber quality has declined sharply in the past few decades, experts see reason to hope that we've already bottomed out and can look forward to modest improvements in the years ahead.

GFCI Receptacles Failing Widely

Fifteen percent of installed GFCI receptacles no longer work, according to a study funded by Leviton Corp., a manufacturer of electrical equipment. The study, which was based on data collected by inspectors from the American Society of Home Inspectors, attributes the failure of GFCI receptacles to voltage surges from utility companies and lightning. In regions where lightning strikes are most common, the percentage of failed GFCIs in inspected homes ranges between 23% and 58%. Since many GFCIs can continue to deliver power even when they no longer provide ground-fault protection, homeowners are often unaware of problems with their GFCI outlets.



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In addition — and probably more important to builder perception of wood quality — the declining quality exposed the breadth of our lumber grades. Lumber grades that were once filled with wood near the top of the grade specifications now became dominated by pieces nearer the bottom of the range — a sort of grade deflation.

“That’s one reason builders feel the grades have slipped,” says Lloyd Irland, a wood-products industry analyst from Maine. “Technically, the wood makes the grade, but it’s worse and uglier than the wood they used to get at that grade.”

For contractors ordering truckloads of framing lumber or searching for a good bundle of flooring or siding, all this means younger, more inconsistent lumber to choose from, both overall and within each grade. In other words, more knots, knobs, wane, cracks, warping, twisting, crowning, and dimensionally inconsistent lumber.

Adjustment Reaction

Builders have responded the best way they could — with more nails, more culling, more wrestling, and more curses — to deal with the lumber they get, and by increasingly searching for alternative products. The more agile parts of the lumber industry have responded as well. The first adjustments were the many new alternative products, such as I-joists, laminated and strand-lumber beams, and trusses to replace big dimension lumber. Edge-glued and finger-jointed boards and millwork — and even plastic — were used in place of knotty casing, trim, soffit, and siding materials.

The lumber industry has increased imports, a move that has become easier over the last decade as our economy has grown stronger relative to the European and Asian economies.

The U.S. began pulling more softwood from Canada (which still has more old trees than the U.S. does) and yellow pine from South America. Buyers have gone to South America and New Zealand and brought back radiata pine, a fast-growing but clear pine, not terribly strong but of clean appearance, that has replaced much of our domestic Ponderosa and white pine in casings, baseboards, and other trim and millwork.

In addition, beginning in the 1990s, the North American industry’s more progressive mills upgraded both technology and practices. They began using more efficient saw blades and planers, and installed computerized milling equipment that scans and analyzes each log so that it not only cuts more boards from each log, but produces lumber less likely to warp or crown. The better mills also upgraded kilns and drying practices, such as drying smaller lots and drying each species separately at its optimum rate. These measures produce more consistent moisture levels in outgoing products, reducing moisture-related warping. To preserve these levels, more processors now ship wood wrapped instead of exposed.

Finally, a few mills and wholesalers, such as Winton Lumber Sales of British Columbia, have worked to offset “grade deflation” by providing lumberyards a higher-end category of #2-and-better framing lumber. Known in many areas as “Winton stock,” these premium packets of framing lumber contain at least 40% #1-and-better lumber — lumber that many other wholesalers divert to “J” grade (the Japanese and Asian market). Costing 10% to 15% more than ordinary #2-and-better framing packets, Winton stock and similar #2-and-better products contain a cleaner, less knotty selection of lumber than standard #2-and-better. They essentially hop a half-grade up. “It costs more,”

says Dave Carroll, sales manager at Rice Lumber in Shelburne, Vt., which carries Winton stock for its contractor customer base, “but for a lot of custom builders and their clients, it’s a premium they’re happy to pay.”

Better Soon, with Luck

Nothing will bring back the huge supplies of old, fine-grained wood. But with luck, the changes the industry is making should bring a modest improvement in lumber quality that will contrast nicely with the decline of the last two decades. What with milling and other changes and the many alternative products, builders already have a wider choice of materials than ever; even if the lumber is mediocre, the overall menu is wider and arguably better than before. As to lumber itself, many observers believe that the flattening age curve of the trees being cut should reverse the slide in quality. Over the next 20 years, many stands planted in the 1950s — many of them intensively managed, with branches pruned to produce clean, knot-free lumber — will come to maturity. Maturing supplies of imported radiata should also help. If the North American market stays strong enough to keep the better wood here, these developments should bring slow but real improvement to the offerings at your local yard.

Despite his experience cherry-picking fence rails, Len Guss is among those who see modest improvement ahead.

“We’re not going to see yesterday’s lumber,” he says. “But with the stabilizing stock and all the industry adjustments, there’s good reason to believe things will get better.”

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Putting Wastewater to use in Santa Fe

Builders in Santa Fe, N.M. — like others in the dry regions of the West — have learned to live with air-quality standards that require periodic wetting of exposed soil to control airborne dust. At the peak of last summer's building season, Santa Fe builders were siphoning 9 million gallons from the city's water mains each month. By late August, concerned about running out of water in the face of an ongoing drought, the city council sprang into action: It banned the use of drinking water for soil compaction and dust control and required builders to begin using treated effluent from the city's sewage treatment plant instead.

That might seem to raise air-quality issues of its own. But so far at least, the change has been uncontroversial. City water programs administrator Craig O'Hare notes that the wastewater is thoroughly treated and meets strict state environmental standards. "It's pretty good quality water," O'Hare says. "It's ordinarily discharged into the Santa Fe River."

The new rules were meant to be temporary, but O'Hare sees no reason not to adopt them as a permanent conservation measure. Given their effect on cash flow, builders are likely to agree: The recycled water sells for \$1.18 per thousand gallons, compared to \$3.81 for drinking water.



Fill 'er up. A construction tank truck takes on a load of recycled water at Santa Fe's main sewage treatment plant. Under water-conservation rules adopted last summer, contractors must use treated wastewater rather than potable water for job-site dust control.

OFFCUTS

A new code describing federal requirements for accessible housing has been published. The code book, called *Code Requirements for Housing Accessibility (CRHA)*, addresses long-standing complaints from builders that accessibility requirements for housing were unclear. HUD Secretary Andrew Cuomo announced, "If a builder follows provisions in the *CRHA* without waivers or exceptions, HUD will view the builder's compliance with the code as an affirmative defense against complaints alleging violations of the Fair Housing Act's accessibility requirements." The *CRHA* is published by the International Code Council and is available from the three model code organizations (BOCA, ICBO, and SBCCI) for \$22.

American Family Mutual Insurance must pay to replace mismatched vinyl siding, under a ruling issued by a court in Hennepin County, Minn. After hundreds of area homes were damaged by a hailstorm in 1998, the company had agreed to replace only siding panels that had actually been damaged by hail, resulting in evident differences between old and new materials. "Consumers do not pay their premiums to live in a two-tone house or have a checkerboard roof," said Minnesota Attorney General Mike Hatch.

Special anti-vibration bed frames have been provided to some North End residents by officials with Boston's multibillion-dollar Big Dig highway project, according to the Associated Press. The move is intended to counteract vibrations from a section of Interstate 93 — which is supported by a rigid temporary structure — that has interfered with residents' sleep. "It's a prudent use of taxpayer money to go this route," said Stephen Collins, public relations manager for the project, which has been plagued by cost overruns.

Testing Program Points Up Problems with Forced-Air Systems

Bryce Johnson, an hvac contractor in Scottsdale, Ariz., is increasingly focusing his business on diagnostics. His company, Digital Air, performs testing and balancing of forced-air heating and air-conditioning systems for builders and hvac contractors. One reason that the diagnostic side of his business is growing rapidly, says Johnson, is the poor quality of most forced-air installations.

"Forced-air systems are particularly subject to poor quality workmanship," says Johnson. "You can get away with doing an awful lot of things wrong, and it's hard to recognize. These systems are behind walls, in areas that never get looked at. If you had a plumbing leak, you'd have damage pretty quickly. But air is less tangible."

Digital Air uses tens of thousands of dollars worth of diagnostic equipment, including Duct Blasters, air-balancing equipment, and an infrared camera, to find problems that most hvac installers miss.

"A lot of the problems are related to the fact that performance is usually not measured," says Johnson. Digital Air charges about \$300 to balance and commission a new forced-air system. Among the problems they routinely uncover are disconnected and crushed ducts. But the most common problem is equipment oversizing.

Johnson, who was profiled in the August 2000 issue of *Energy Design Update*, is not alone in reaching these conclusions. According to an article by Steve Andrews in *HomeBuilder* magazine, a recent study of 80 new homes in Fort Collins, Colo., conducted by Doug Swartz of Fort Collins Utilities, found that the average heating system is



A Digital Air technician uses a supply hood to measure the air flow, temperature, and humidity of the air flowing from a supply register. In homes with poorly installed ductwork, many supply registers fail to deliver enough cfm of conditioned air.

oversized by 60%, and the average air-conditioning system is oversized by 110%.

Johnson feels that it is only a matter of time before builders get caught by a wave of construction-defect litigation focusing on forced-air system installations. "If we wanted to pursue construction-defect litigation, we could spin a dial and go in any direction and find a subdivision and start the process," says Johnson. "We are sitting on a powder keg. Builders are relying too heavily on subs to perform their engineering. That's a dangerous practice, because ultimately the builders are responsible."



Defective Switches Prompt Recall

Bosch, Makita, and Milwaukee have announced the recall of about 180,000 power tools, including drills, rotary hammers, and variable-speed band saws. The switches on the recalled tools, which were manufactured by Eaton, of Cleveland, Ohio, can stick in the "on" position, increasing the risk of injury to the user. The affected tools — which were sold from January of 2000 through September 2000 — are listed here.

Manufacturer	Recalled Tools	Model Numbers	Phone Number
S-B Power Tool	Bosch brand drills	1011VSR, 1012VSR, 1013VSR, 1014VSR, 1030VSR, 1031VSR, 1032VSR, 1033VSR, 1034VSR, 1035VSR	800/661-5398
Makita U.S.A.	Rotary hammers, hammer drills, drills, screwdrivers	HR2410, HR2420, HP2040, HP1501K, 6407, 6408, 6408K, 6410, 6821	800/462-5482
Milwaukee Electric Tool	Variable-speed band saws	6227, 6230, 6232-6, 6234	800/274-9804