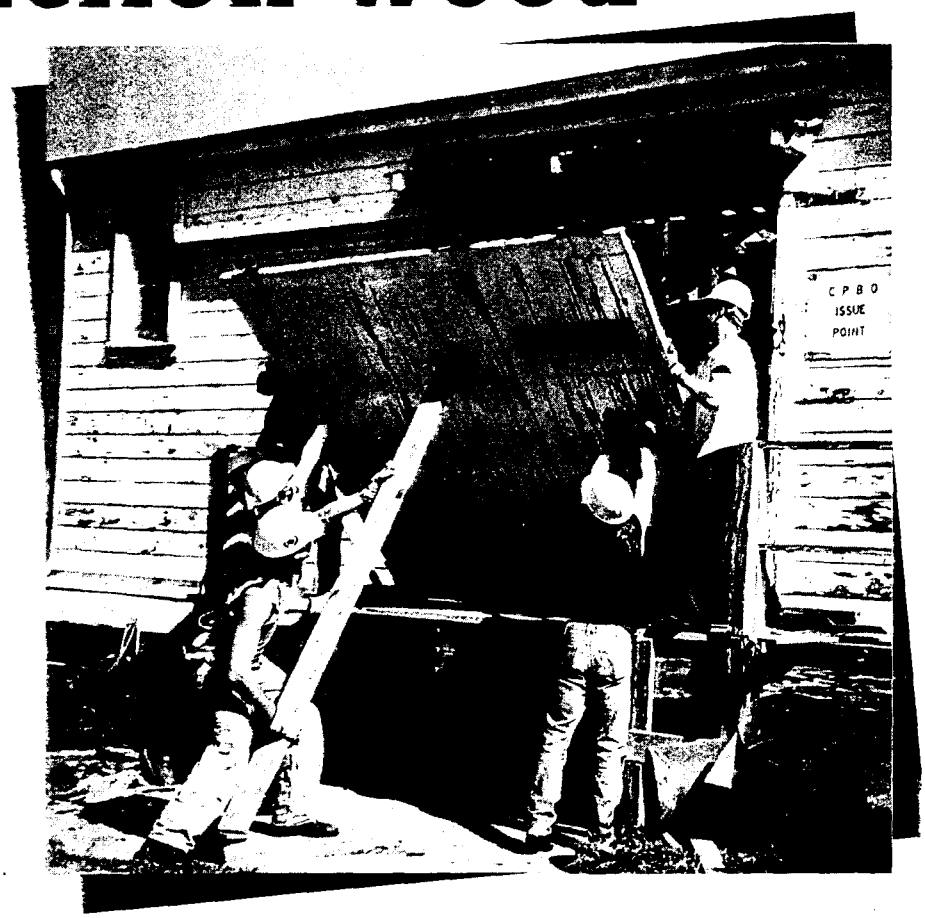
High-value markets for deconstruction wood

Markets for reusing reclaimed lumber are becoming sustainable and wide-ranging.



by Lisa Geller

The reclaimed lumber industry is expanding rapidly due to intensifying urgency of waste management issues, the rising cost of waste disposal, growing environmental awareness and interest in recycling. A recent two-part series in *Resource Recycling* provided an overview of the key trends in wood waste recovery and a description of the potential applications for recycled wood waste and residuals, with a focus on processing recovered wood into feedstock for kraft and linerboard manufacture. This article examines a small, but growing segment of the recovered wood market, the value-added reuse and remanufacturing market. Although the focus of the article is the San Francisco Bay Area, many of the trends identified are national as well.

Deconstruction for reuse

The rising cost of landfill space and state mandates to reduce waste have encouraged wood waste recovery strategies. Although the dominant trend is recovery for use as mulch and fuel, recovery for higher value applications is gaining prominence due to an increasing demand for reclaimed lumber in the market. This developing industry, called deconstruction by some practitioners and advocates, has been gaining momentum since the early 1980s, when large-scale reuse of West Coast softwoods began. At that time, most demolition contractors preferred to burn or implode wooden structures after salvaging the usable wire, pipe and electrical fixtures. In many cases, it was not possible to purchase lumber from a demolition site at any cost.

That dynamic changed as demand for the larger wood members (6" x 6" and larger) became greater and consumers became willing to pay for the full costs of deconstruction. Increase in demand for recovered wood continues, encouraged by many factors, including growing environmental awareness, demand for aesthetic applications and the diminishing quality of new lumber. Although in some cases slow to catch on, most demolition contractors now actively participate in the wood reuse market to some extent. Many in the Pacific Northwest have based their business on deconstruction, and some demolition contractors have even begun to market their own line of reclaimed lumber products.

Rising demand for reclaimed lumber

These changes in wood salvage and recovery practices have had a significant impact on the reclaimed lumber market. When the demand for reclaimed timbers was weak, prices were low and unstable. Consequently, deconstruction was a relatively unattractive option for demolition contractors. This resulted in the destruction of millions of board feet of excess wood. As the demand increased, most demolition contractors raised their prices in response. The price of rough reclaimed timbers has effectively tripled in the past five years, resulting in a dramatic drop in the disposal of large timbers from industrial demolition projects.

The same phenomenon is occurring now with smaller, dimensional lumber. The salvaging of lumber four inches in depth and smaller is just beginning to take place on a large scale. Similar to the beginning of the trend to salvage larger timbers, only the most profitable structures currently are being deconstructed. However, the quantities of smaller- dimension lumber bought and sold in the national and in-

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ternational reclaimed wood markets are growing almost weekly. As prices rise to meet this demand, the salvage of smaller dimensional lumber will increase.

Additional trends affecting the market

The most significant trend in the reclaimed lumber products market is "green building" and the expanding environmental awareness among building materials consumers. A high percentage of the reclaimed lumber supply is very suitable for this market if two large obstacles can be addressed: distribution and cost. The bulk of this market is currently made up of those wealthy enough to pay extra to buy lumber from a very inefficient distribution and manufacturing system. Unfortunately, the vast majority of those who identify with the green building concept currently cannot afford reclaimed lumber. However, increased efficiency in the reclaimed lumber distribution systems may reduce costs enough to reach this market.

In addition, the reclaimed lumber market faces the expectation that reclaimed lumber is always of higher quality than new lumber. In the past, only wood of the highest quality was recovered, putting a disproportionate quantity of high quality material on the market. In order to fully utilize the resource and meet the growing demand for environmentally sound building materials, a broader range of material is now being brought to market. Although the bulk of reclaimed lumber is of good quality, only about 25 percent of the reclaimed lumber supply is of a quality unavailable on today's new lumber market. In general, buyers who purchase reclaimed lumber for its high quality must be ready to pay the actual costs of sorting an entire inventory and removing its highest quality stock.

A final trend that should be noted is the growth of the sustainably harvested wood market. This industry has emerged at a pace similar to the reclaimed lumber industry, and affects the reclaimed lumber market in several ways. First, outlets that sell sustainably harvested wood are often interested in offering reclaimed wood to augment their softwood products, since more sustainably harvested hardwood is available than softwood. The sustainably harvested wood industry also helps to spread awareness about the importance of buying wood that is ecologically low-impact. Occasionally, the two products compete with each other, and sustainably harvested wood does offer the customer the advantage of long-term sourcing for ongoing projects and products unblemished with fastener marks. However, since sustainably harvested wood is often second-growth, the overall quality of reclaimed lumber is usually superior.

Specific markets for reclaimed wood

A number of strong markets exist or have excellent potential for specific reclaimed wood products. The following list provides a brief overview of the potential for value-added reuse

of recovered wood.

Re-milled timbers and beams. This market is one of the older markets in the West Coast reclaimed lumber industry. As far back as 10 years ago, there was an active market for large timbers based on their high density, clarity and low moisture content. Demand for the larger timbers has increased to the point where rough milling stock prices are extremely volatile.

Re-milled timbers and beams typically are used in structural applications. The average project using re-milled timbers is a custom, high-end, large-square-footage residence. There is also a thriving niche market for re-milled timbers and beams in post-and-beam, traditional joinery-style construction.

In addition, some re-milled beams and timbers are used in commercial applications, usually for appearance in non-structural applications. Other, lower-volume uses include the sale of particularly clear large, free-of-heart timbers to the wooden boat-building industry for mast stock and the sale of particularly dense, clear material to makers of wooden musical instruments. Both of these markets are very limited, but they are willing to pay very high prices to buy the best stock.

A recent trend is mid-sized new lumber mills beginning to take interest in reclaimed lumber. Widespread use of production milling capability drops the price of re-milled timbers and beams, drops the quality by a much lesser margin and transforms the market to be more compatible with the new-lumber market. Since the entire construction market is, at its core, very price sensitive, this trend will significantly affect the construction market.

Re-milled dimensional lumber. This is perhaps the broadest and most promising market in the reclaimed lumber industry today. Di-

Recovered wood brings new VISTAs

In 1995, the National Recycling Coalition (Alexandria, Virginia) and the Corporation for National Service (Washington) partnered to create the Recycling to Build Community VISTA project. Currently, 19 such VISTA volunteers serve at 11 sites across the U.S., increasing recycling and job opportunities in rural and urban low-income communities. Three of the RBC VISTA sites are working on projects to reuse old wood and provide job opportunities for disadvantaged communities.

VISTA workers are creating WoodWins through the St. Paul Neighborhood Energy Consortium in Minnesota. WoodWins will be a small business employing welfare-to-work recipients and disabled individuals to manufacture outdoor garden products from discarded pallets. The WoodWins idea was born three years ago with NEC's first VISTA workers and business research was continued by the second year's VISTAs. Market research is being completed for business start-up by next spring.

In the second project, the Materials for the Future Foundation in San Francisco awarded a $5,000 Enterprise Development grant to the National Foundation for Teaching Entrepreneurship for a project called It's All Wood. Four inner-city, at-risk youth completed market research and product design for products made from reclaimed lumber such as CD racks, picture frames and planter boxes. It's All Wood will use the expertise of these youth and train other inner-city youth to make and sell their products. MFF's grant program is administered by VISTA volunteers.

A VISTA volunteer with the City of Tampa (Florida) solid waste department, is working with at-risk youth to make chairs and tables from discarded pallets. He goes to six recreation centers throughout the city to teach youth ages five to 17 to make the furniture. The kids keep their furniture, but the volunteer estimates that an unfinished chair could sell for $25 to $30. The value of a discarded pallet is $4. – Leana Schelvan

mensional lumber typically refers to lumber four inches in depth and smaller. It is the largest solid-wood market in the new lumber industry, but has been only a small part of the overall reclaimed market until recently. The demand for dimensional, reclaimed lumber is demonstrated and still relatively untapped.

Re-milled dimensional lumber shares many of the same qualities as re-milled timbers and beams. It is dense, usually dry and is often clearer than available new lumber. Price considerations still prevent the manufacture of re-milled, small dimensional lumber in many cases. However, if a better system of distribution can be put in place, demand should facilitate a leap in technology similar to the one taking place in the timber market.

Millwork. Millwork includes flooring, paneling, siding and any product that is run with a shaped pattern. However, architectural millwork (molding, rails, etc.) is discussed below as a separate category because the stock, production and market have some specific characteristics.

Manufacturers buying stock for their millwork shops are often very particular about quality and safety. Flooring manufacturers, in particular, are reluctant to risk their equipment or waste time running reclaimed wood unless market demand is very strong. The successful existing reclaimed flooring manufacturers use exclusively reclaimed wood in their operation and run integrated, mid-sized facilities. Flooring can be produced from material ranging from clear, vertical grain, to naily grade, flat grain if marketed and priced appropriately. A very durable parquet flooring can even be produced from properly dried and milled cross sections of waste end cuts. Lengths as short as three feet can be utilized if the millwork equipment is sufficiently modern. This range of usable material allows a great deal of otherwise difficult-to-use stock to be made into a fast-selling, value-added product.

Paneling and siding products can be produced with a very average grade of lumber and are also fast-selling items when made available through good distribution. Siding is generally produced from longer lengths, but paneling can have shorts mixed in a random-length package or be produced entirely from shorts. They, too, are universally used in construction and can be produced from a wide variety of material. All three of these products can be manufactured by a less than state-of-the-art facility using standard knife patterns. Consequently, they can be inexpensive to produce, relative to the value added.

Architectural millwork. Architectural millwork includes all types of molding, rail patterns, trim and sill patterns. Producers of architectural millwork are looking for very clear stock with a minimum of defect. This includes knots, checking and any type of fastener marks. At first glance, this seems to make reclaimed lumber an unlikely candidate for use. However, manufacturers are also looking for dry, dense old-growth material that is increasingly difficult to come by on the new market. Aggressive grading of the rough and re-milled stock to pull out the clearest pieces, plus use of technology such as finger jointing could make this a marketable and lucrative product. Providing manufacturers with blanks is also a very viable market for a primary processor.

Furniture. Custom furniture manufacturers provide a limited market because they are low volume by definition and often prefer to work in hardwoods. However, particularly in the Bay Area, a growing specialty market exists for custom furniture manufacturers who specifically seek out reclaimed wood as a selling point for the end product.

A sub-category of the custom furniture market, the fixture market is a growing market, providing retail stores and other commercial buildings with wooden fixtures.

With a few exceptions, the only production furniture makers using reclaimed wood are also primary manufacturers of reclaimed wood. Interest in the Bay Area among established production furniture makers is restricted to species other than Douglas fir and dampened by the cost and convenience limitations of the current market. The savings in shop labor time, waste and shipping weight solved by fiber-based sheet goods makes it difficult for many production manufacturers to justify the use of any type of solid wood for some products. Price in the fur-

niture market is so sensitive due to imports of inexpensive furniture from Asia and Mexico that production manufacturers are hesitant to deviate from industry standards.

Small-item manufacturing. Small-item manufacturing can encompass an endless variety of products. Traditionally, items that require small pieces of wood use scrap from the primary and larger secondary manufacturing sector of the lumber industry whenever possible. This material is much more difficult to use if it is not uniform. Uniform scrap increases the efficiency of the manufacturing process, which translates into fewer labor-hours and less need for highly skilled labor and supervision.

These factors make small-item manufacturing a good complementary activity to capture what would otherwise be part of the waste flow from a reuse mill. If the manufacturing is done in-house, then uniform scrap generation can be matched to meet the needs of specific orders with high efficiency. This type of co-manufacturing is industry standard in new lumber mills, reducing wood waste and increasing profit.

Outlook for value-adding businesses

In examining the market possibilities for reclaimed wood in the Bay Area, the least-resolved issue remains product accessibility to the end user. Although new lumber channels of distribution are extensive and efficient, reclaimed lumber producers have made few inroads into these distribution networks in California. Nationally, the most successful producers of reclaimed lumber have been forced to be creative, particularly when it comes to product distribution. This has included setting up reclaimed lumber yards offering varying degrees of service and product ranges. Some operations have been paired with new lumber yards to get the broadest possible customer base.

As the reclaimed lumber industry continues to expand, it is certain we will see a growing number of value-adding enterprises emerge to meet the demand. **RR**