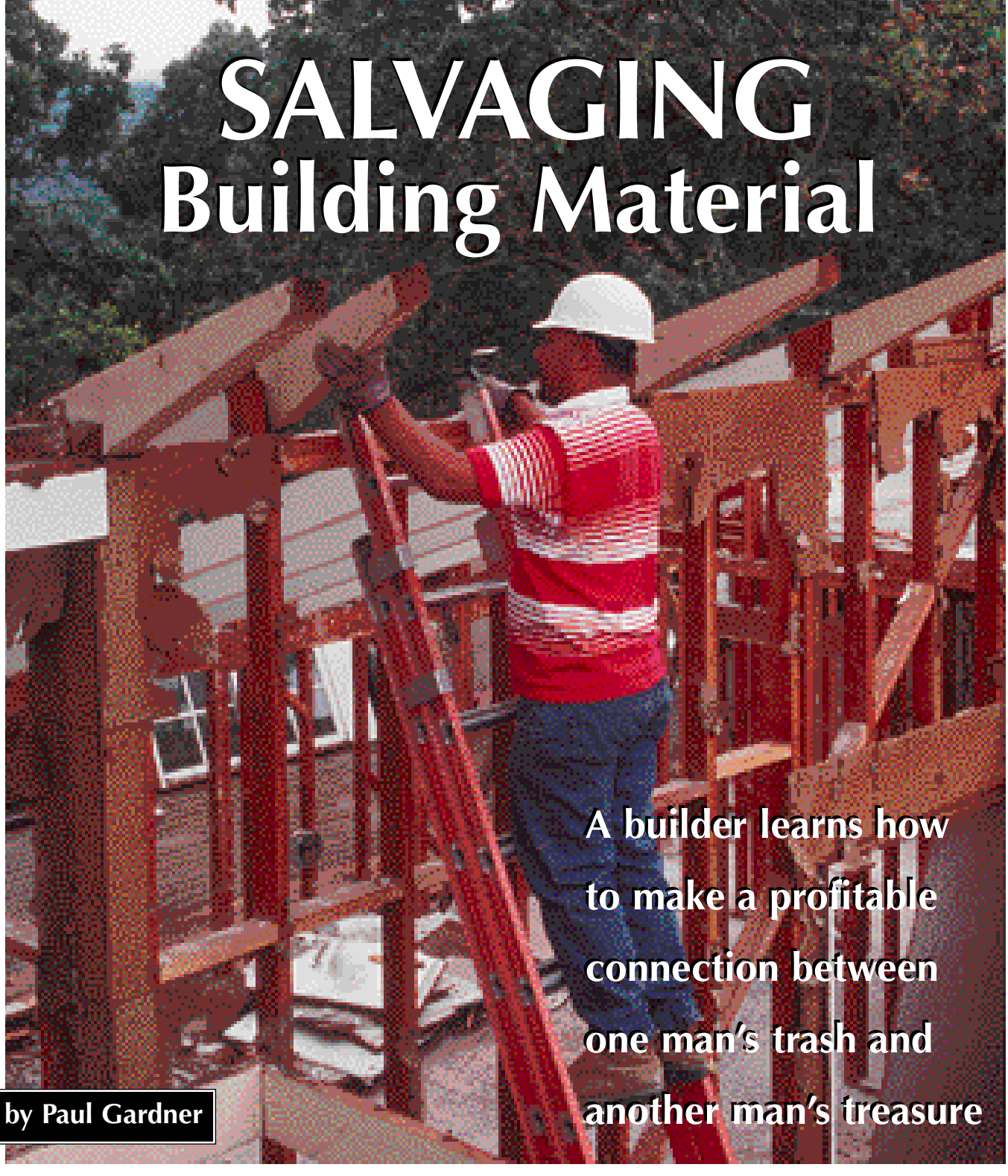
# SALVAGING Building Material



**A builder learns how to make a profitable connection between one man's trash and another man's treasure**

by Paul Gardner

I've always hated waste. When I was working as a carpenter here in the San Francisco Bay area, it bothered me to see doors, redwood lumber, and quality cabinets go into the dumpster during the demolition phase of a remodeling job. "Teardown" projects — which involve demolishing an existing house to make way for a new one — bothered me even more.

There wasn't much I could do about it when I was working for other contractors, but when I started my own construction company in 1991, I was determined to prevent good material from turning into trash. I started by publishing a local newsletter that advertised the availability of materials at various job sites around town.

The newsletter never attracted more than a few hundred subscribers. Even so, it became my entry into the world of salvage. People would call me whenever a building was about to be torn down, and I started stockpiling salvaged material in friends' backyards, sheds, and garages and selling it to

customers by appointment. This worked for a while, but it wasn't a very cost-effective way to sell material. Also, my friends got tired of tripping over my stuff. It was time to try something else.

In 1995, I came up with the idea of holding a building materials sale at a house that was about to be torn down. I advertised the sale in my newsletter and in the classified section of the local newspaper. We had a heck of a turnout and sold the hardwood flooring and even the wood shingles on the roof. It wasn't long before I got out of the construction business and started doing salvage and deconstruction for a living. Today, my company sells salvaged building materials to both homeowners and contractors and holds regular salvage sales at houses that are slated for demolition.

**Figure 1.** Items like this interior door are individually priced at home demolition sales. Potential buyers sign in when they arrive at the site, providing a constantly updated database of customers, who receive e-mail notifications of later sales.

## Cash and Carry

Before a demolition sale, we put price tags on saleable items such as doors, cabinets, plumbing fixtures, hardwood flooring, siding, and redwood decking (see Figure 1). We also draw up an itemized price list, which we hand to customers as they arrive.

***Tools and liability.*** When potential customers arrive at the sale, they're required to sign a waiver before they enter the building. I'm not sure how much legal protection this would provide in the event of an accident, and I hope I never have to find out. But it does put people on notice that they need to be careful.

Customers who aren't professional builders are welcome to use hand tools to remove specified items, but they are not allowed to use power tools or remove anything structural. A few of my employees are always on site to supervise; for a fee, they will do any removals that require power tools. Contractors are allowed to use power tools if they provide written proof that they're covered by liability insurance and workers' comp.

***Payment and damages.*** Customers pay in advance, but we're fairly lenient about refunding their money if they break something in the process of getting it out. Some materials, such as tile, can be difficult to remove intact. But if something gets destroyed purely through carelessness — which happens rarely — we may ask the customer to pay for the damage.

Sales usually take place on weekends to make it easier for customers to come by. Prices are negotiable and tend to drop toward the end of the sale. We sometimes offer materials for free just to keep them out of the landfill.

## What Sells, What Doesn't

Many of the buildings we salvage are perfectly good houses that are being torn down and replaced with larger, fancier structures. The house that's being torn down is often in very good shape, with many new components inside.

***Fixtures and appliances.*** There's always strong demand for newer sinks, toilets, faucets, and shower fixtures. But there's also a market for older fixtures that have historic value or can be used to match the style of an existing structure. We can sell used appliances

**Figure 2.** It's not economical to salvage short pieces of framing lumber or sheathing, but longer material readily finds buyers. This 1x4 skip sheathing was sold from the site, along with most of the 2-by framing stock.

if they are relatively new. Expensive high-end kitchen appliances, especially European imports, are always strong sellers. We've found that we can even sell antique gas stoves if they're in good shape. But there's no demand for electric stoves, old furnaces, or fluorescent light fixtures.

***Cabinets.*** Vanities and kitchen cabinets are big sellers. High-end cabinets might be incorporated into remodeling projects, while low-end cabinets are often reused as garage storage units. We can sell just about anything made out of redwood, so we never leave it behind. Architectural embellishments such as wide molding, hand-painted tile, and wrought iron are highly sought after. We've even had some success removing and selling stone counters.

***Millwork and lumber.*** High-value items like doors, windows, siding, hardwood flooring, and redwood decking are obviously worth saving, but there's also a good market in this area for some of the structural members we pull out of old buildings. We'll salvage 2-by lumber if it's 8 feet or longer and structurally sound. It's not uncommon to take a building down and end up with a lot of dry, knot-free 2-by lumber that's 16 or 20 feet long.

On one recent teardown job, a customer actually bought the entire frame of a house. We dismantled it in sections, and they were loaded onto a flatbed truck and hauled to another part of the state to be reassembled as a spec house.

We also sell plenty of $1^1/_2$-inch T&G roof decking, heavy posts, and structural beams (Figure 2). Around here, there's a big demand for old clay roofing tiles that can be used for repairs or additions to existing structures. Patio bricks and pavers are also easy to sell.

## Removal Tips

Over the years we've learned a lot about removing material so that it can be reused. Doors are easy: Just pop off the casing and use a recip saw to cut the nails that hold the jamb to the frame. Pop a nail through the jamb to hold the door shut and you have a prehung door unit (Figure 3). The same goes for removing windows.

***Trim, siding, and flooring.*** Removing molding, even brittle redwood molding, is easy once you get the hang of it. If the molding is caulked in place, score it with a knife, because the old caulk may be stronger than the wood you're trying to remove. To remove door and window casings, I drive a flat bar in from the long point of the miter and lift both pieces at the same time. Wiggle the bar slowly and stop if you hear cracking, which tells you that you're going too fast or applying uneven pressure.

Once you have the casing far enough off the wall, slip your fingers or a second flat bar behind it and pull from both edges of the trim at the same time. You want to pull from both edges because uneven pressure cracks wood. Stock that's wide, thin, or soft

**Figure 4.** Although there's a lot of metal in an old house, little of it is salvageable. But if it's all collected in one place, at least you don't have to pay to get rid of it. The author collects metal in a separate dumpster that a metal recycling company hauls away for free.

**Figure 3.** Interior doors are always in strong demand. They're easily freed by removing the casing and cutting the nails with a recip saw. Driving a nail through the jamb holds the door closed and leaves it ready for a new life in another house.

like redwood is the hardest to remove. One of our guys likes to hose down exterior redwood siding before removing it — he claims it makes the wood less brittle.

***Glass, ceramics, and stone.*** The same basic techniques used to remove wood also apply to materials like mirrors, granite, and marble. The trick is to maintain even pressure and avoid creating fracture lines. After losing several glued-on mirrors, we found a way to get them off the wall without breaking them. We cut wood wedges that taper from 3/4 inch to a feather edge and drive them between the mirror and the wall. The wedges are typically about 12 inches long, but longer wedges may be needed if the mirror is very wide. We insert them every 8 inches along the long edge of the mirror and tap them in simultaneously. If you do it right, the mirror will start to pull away from the wall and you can peel it off the rest of the way by hand. To be on the safe side, we always wear gloves and goggles when we do this.

Marble and granite slabs can be removed similarly. The difference is that you need to use steel or iron wedges. We bought a bunch of cheap flat bars to use as wedges in this application. We've had good results, even when the stone is held in place with epoxy.

Every so often we salvage a building that contains unusual handmade tiles, but we haven't had great luck removing them. One salvage operator I know has been pretty successful by using a grinding wheel to remove all the grout around the tile before lifting from the back with a pry bar.

The most successful tile salvage I ever did was a shower wall with hand-painted tiles that went together to make a tree of life. The tiles were set in mud, and I got them off intact by removing the entire wall, mortar and all. The shower wall is currently attached to a plywood backer with a redwood frame and is on display in my warehouse.

## Tools of the Trade

Our favorite tool for removing wide pieces of flooring, trim, and siding was developed by my friend Ed, who runs most of our demolition sales. He took a section of tapered leaf spring from an old vehicle and gave it a handle by welding a piece of black iron pipe to one end. The leaf-spring blade is thin enough to slip behind trim and long enough to maintain even pressure across the back of wide material. It works better than a regular bar because its shape allows you to drive it all the way behind the delicate piece of wood you're trying to remove.

When you remove hardwood flooring with this or any other tool, it's important to pry from the tongue side, because that's where the nails are. If you pry from the groove side, the tongue will break off. If you can't make one of these removal bars for yourself, you can remove the handle from a common garden hoe and use the blade to pry up thin stock enough to get your fingers behind it.

Rubber mallets allow you to pound on things without damaging them. Different size mallets are needed for different jobs; I even have a large rubber sledgehammer that I use to remove large posts and beams. If you're going to be removing big pieces of heavy material, it's worth investing in some big pry bars. Some guys will try to remove 2x6 redwood decking with a flat bar, but it's faster, easier, and less damaging to the material to pry it up with a long bar. Likewise, it's easier to

**A rugged and versatile tool for removing board siding and flooring can be made by welding a length of black iron pipe to a section of tapered automotive leaf spring (left). To prevent damage to tongue-and-groove flooring, one worker drives the tool beneath the material from the tongue side with a rubber mallet, while another worker opens an initial gap by prying from the end with a flat bar (right).**

Many people have asked me to sell it, but I can't bear to part with it.

## Finding Jobs

We hear about jobs from city officials, historic preservationists, recyclers, solid-waste haulers, and anyone else with an interest in removing good material from the waste stream. We also pick up some of our deconstruction work from clients who've seen our signs in front of demolition sales or have been to sales as customers. Every project is different. Depending on the situation, we may work for the demolition contractor, the building contractor, or the owner.

***Cooperative demolition.*** Demolition contractors will bring us in to reduce what they have to spend on dumpster fees. We strip out and sell whatever we can, and the contractor knocks down what's left and hauls it away. We don't charge anything for this service because we make our money from the salvaged material. It's a profitable arrangement from the demolition contractor's standpoint because the more we sell, the less there is to break up and haul away. The volume of material that actually gets salvaged depends on the house. On one recent job, we took away 3,000 bricks and stepping stones, which came to several tons of material. In other cases, we may take only desirable, easy-to-remove materials like crown moldings and cabinets.

***Deconstruction.*** A couple of years ago we got into the deconstruction business, which means taking buildings apart by hand all the way down to the foundation. Clients have to pay for this service because it requires us to salvage low-value items and dispose of waste material. We can't save everything, but we do try to minimize what goes into the dumpster.

Items like drywall, composition roofing, and built-in-place cabinets can't be salvaged. Saving chimney brick is difficult if the mortar is in good shape. Pieces of trim and framing go into the

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remove frame blocking with a single whack of a sledge than to hit it 50 times with a smaller hammer.

About the only electric power tool we use is a recip saw. We just wish someone would produce blades 2 or 3 feet long so we could use a recip saw to snip the screws that hold cabinets to the wall.

***Removing nails.*** To prevent material from being scratched and workers from being injured, we remove protruding nails as soon as possible. Interior trim is usually put on with finish nails, which can be pulled through the back side of the material with a pair of nippers, leaving the face side intact. We like to stack and clean as we go to maintain a safe work site.

A few years back, a company called ReConnX (888/447-3873, www.reconnx.com) introduced the Nail Kicker, a pneumatic denailing gun that allows you to remove nails four times faster than you can with a pry bar or hammer. We now own two of them and use them to remove nails from framing stock after we pull it off the building. To use the tool, you stick the hollow shaft of the gun over the protruding point of the nail and squeeze the trigger, and it drives the nail out the other side.

The Nail Kicker does have some limitations. It only works on nails that stick completely through a piece of lumber. Once the worker with the Nail Kicker has removed as many nails as possible, a second worker with a hammer, cat's-paw, or pry bar has to pull the rest by hand. We also find that the Nail Kicker has a lot of down time because the O-rings don't last very long. But when it's working, it's a great time saver.

**Pulling nails from used lumber is an especially time-consuming aspect of building salvage, but a Nail Kicker denailing gun speeds the process dramatically. The hollow shaft of the tool slips over a protruding nail, and pulling the trigger activates a pneumatic piston that shoots the nail back out the way it went in. Working over a trash can or similar container makes it easy to collect the nails for recycling.**

dumpster if they're too short, too full of nails, or too damaged to sell. We put metal such as plumbing pipes, electrical wire, ductwork, flashings, and aluminum window frames in a separate dumpster that a recycling company hauls away for free (Figure 4, page 3).

***Paperwork and red tape.*** The State of California requires municipalities to divert at least 50% of all waste from landfills. As a result, many towns and cities in this area have ordinances that require contractors to divert 50% of the waste generated on construction projects. They can do this by recycling or by getting a company like ours to salvage buildings slated for demolition.

In some areas, a builder can't get a construction or demolition permit without posting a deposit based on the expected tonnage of waste. The deposit is refunded based on the amount of waste that's diverted. In those cases, our client is responsible for dealing with the municipality; our involvement is limited to providing the client with a "tonnage report" that lists the amount of material kept out of the landfill. This is simply a matter of adding up the approximate weights of the salvaged items. For example, we figure that toilets weigh 35 pounds apiece and cabinets weigh 10 pounds per lineal foot. Standard bricks are 6 pounds each, and so on.

## Sales and Marketing

After doing demolition sales for several years, we opened a combination store and warehouse in East Palo Alto so we'd have a place to bring stuff that we couldn't sell on site. We sell as much as we can on site because it's expensive to transport and store used material, but leftover salvage is sold from the warehouse; we've even sold items on eBay.

***Tax benefits.*** We also have relationships with several local nonprofit agencies. People can donate used construction items to these groups and we sell them in return for a portion of the proceeds. Homeowners sometimes donate a house slated for demolition to one of the nonprofits and get a tax deduction based on the appraised salvage value of the building.


**Figure 5.** The author's website contains listings of upcoming salvage sales, as well as a listing of salvaged materials in the company's inventory.

***Using the Internet.*** Eight years ago, we had staff members who would call customers to tell them about upcoming sales. As you can imagine, that took a lot of time and effort. We tried faxing notices to customers who had fax machines, but the results were mixed. Now that most people have e-mail, we use the Internet to contact customers. These days, we send out over 4,000 e-mail messages before each sale. We ask for e-mail addresses when people sign in at a construction sale, so our customer list is growing all the time. Each sale adds about 100 new addresses to our database.

The messages are linked to our website, where customers can preview the house we're going to salvage (Figure 5). The website preview contains a list of materials that will be available at the sale, as well as digital photos of selected items. The website also provides a partial list of materials available at our warehouse.

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### For More Information

**Used Building Materials Association**
303/440-0703
http://bcn.boulder.co.us/environment/ubma/index.html