

Making Job-Site Recycling Work

Once you find recyclers and set up procedures on site,
construction waste takes care of itself

by Jon Alexander

A few years ago, the contractor who was finishing up a job across the street from mine stopped by and asked if he could throw a couple of bags of trash into our dumpster. I told him it depended on what was in them because we were doing full-line job site recycling. He looked at me a little funny and then asked, "You're doing what?"

I explained that we were separating all the demolition debris and other construction waste for recycling. Only material that couldn't be recycled was going into the dumpster. I showed him how to separate out his bags of trash — also known as "unseparated recyclables" — into the appropriate piles. Then he asked the obvious question: "Why are you doing all this?"

Why Recycle?

Recycling makes sense environmentally, and it's beginning to make economic sense in many parts of the country. Construction and demolition (C/D) waste makes up roughly 25% of what goes into municipal landfills in the U.S. If you include state, federal, and private landfills, C/D waste amounts to about 100 million tons a year, 90% of which can be recycled.

How much recyclable waste is that? Well, in Los Angeles in 1990, for example, 400,000 tons of wood waste alone were taken to landfills. Translate that to a *per capita* basis and apply it to the entire country, and you're looking at enough wood being thrown away in one year to provide the studs, joists, and rafters to frame 200,000 homes (see Figure 1).

What does it cost? Some recycling is free. For materials like cardboard, paper, and glass, we use the curbside recycling pickup provided by the city of Seattle and surrounding towns. And we recently found a wood crate builder who takes wood for reuse regardless of whether it's painted or treated.

However, depending on how well developed your local facilities and markets are, recycling will probably be more expensive at first than hauling everything to the dump. But by starting a recycling program for your company now, you're making an investment that is sure to pay you back in the future.

For example, when we first started recycling wood, it cost \$165 per 10 cubic yards (cu. yd.). At the landfill, it cost \$82/ton, which converts to about \$100/10 cu. yd. So we were spending an extra \$65 to recycle wood. But as



Most of the scrap wood carted off to landfills can be reused or recycled.

more and more builders began to recycle wood, the price went down. We now pay only about \$60/10 cu. yd., a \$40 savings over the landfill price. We save even more on concrete, which costs \$8/cu. yd. to recycle and \$100/cu. yd. to dump.

Better still, we get paid to recycle certain materials. Recently my laborer went on a recycling run with a moderately sized pile of aluminum (from gutters and siding) and a bit of copper piping. He returned with \$100 cash. You can also get cash for scrap steel and iron, old plumbing fixtures in good shape, doors and windows, and cardboard in quantity.

There are also indirect savings. When we first started recycling, we had jobs where we filled only half of one 30-cubic-yard dumpster instead of the three we'd budgeted for.

A marketing advantage. Even when it costs more, job site recycling

can give you a marketing advantage with customers who are environmentally conscious. As public concern for the environment increases, builders who recycle are looked on favorably by many homeowners. According to the NAHB Research Center, "The American public is now willing to incur some additional costs to make environmentally sound choices." And when recycling facilities become more commonplace and the cost of recycling drops, builders who already have a job site recycling program in place will be ahead of the game.

How to Recycle

The first step to job site recycling is to do a waste audit to find out what kind of waste your jobs are producing, then look for recyclers for each type of material.

Finding recyclers. I initially found recyclers through a state toll-free recy-

cling number. It's not so easy in every state, but all fifty states have an agency that can help. (You will find a list of addresses and phone numbers for recycling assistance in the NAHB booklet *Builders Guide to Residential Construction Waste Management*. See "Recycling Resources," page 36, for other helpful resources.) If your state doesn't have a dedicated recycling division, try the state Department of Health or other government agency whose title contains words like "environmental conservation," "natural resources," or "solid waste." Many of these offices can provide an extensive list of C/D waste recyclers; others may be familiar only with recyclers for residential and office waste.

Local municipal governments, solid waste utilities, landfill operators, haulers, and scrap yards can also help you find places to recycle C/D waste. Many of the first phone numbers I called came from yellow pages listings under "recycling," "demolition," or "junk." It took me several hours to find what I needed the first time out. But as I've become more experienced in job site recycling, I've developed a list of recyclers in my area whom I've worked with in the past and who give me the best prices.

What to ask. When calling around to recyclers, you'll save yourself a lot of trouble if you get the right kind of information the first time. Be sure to ask every recycler exactly what materials they take, and what they pay or what they charge for each kind of material. Also find out what condition the materials need to be in. Few recyclers will take mixed debris. The value of material to the recycler is largely based on the degree to which it is free of contaminants. For example, while most recyclers will take wood with nails in it, some take only unpainted, untreated wood. The same is true of drywall: Some want it clean; others, like the recycler I use, accept painted drywall because their equipment removes the paper before grinding up the gypsum for reuse.

Also ask recyclers if they require a minimum quantity of material, and whether they make pick ups. When I've had trouble finding a recycler to come to my sites, I've had good luck hiring a drywall scrapper and a small hauling service to transport materials (Figure 2). Or you can ask your regular waste hauler to deliver your dumpster to the recycler. As a last resort, there's always the company pickup truck.

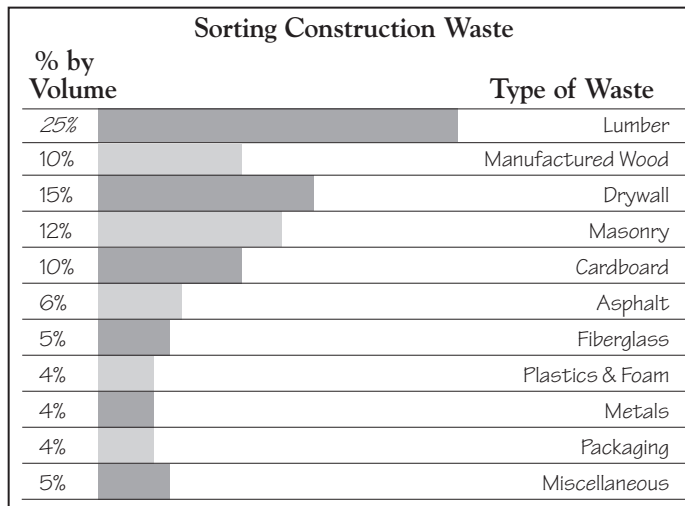


Figure 1. About four tons of waste are generated during construction of an average single-family home. Wood, drywall, paper products, and masonry — which are all recyclable — make up over 60% of the volume of construction waste.

Builders Who Recycle

Marv Kotek of Frerichs Construction in St. Paul, Minn., saved \$16,000 on the first job where he used job site recycling. It was a 200-unit apartment building, and he recycled 400 tons of wood and 180 tons of drywall. Now Kotek recycles on all his jobs, and has reduced his waste management budget by between 20% and 50%. However, he cautions that "job site recycling is like any other part of a project. If you don't run it efficiently, it won't work well. You've got to have total job site enforcement." Kotek uses a regular dumpster company to provide containers for each recyclable material and to haul them away. He says the exposure recycling gives his company has translated directly into additional work.

Pick Up Sticks

In Portland, Ore., Mark McGregor's business — called Clean It Up Mark — is to pick up, sort, and haul away construction waste for recycling. Contractors leave their C/D waste in one big pile, and Mark and his crew sort the materials before they load their

trucks. McGregor says he can save contractors 25% on their waste by recycling for them. In one recent month, his company sorted and hauled 160 tons of waste at a savings to builders of \$10,000 in landfill tipping fees. McGregor says that in the three years he's been in business, "the economics for recycling have improved greatly. Now it takes very little marketing."

Remodeling Recycler

Hawley Construction, of Portland, Ore., does primarily residential remodeling. On jobs over \$20,000, owner Bill Hawley says he saves between 10% and 15% of his waste budget by recycling. For on-site containers, he uses dumpsters as well as his own trash trailers.

Hawley says recycling helps elevate his company's image in the eyes of potential customers. He recommends that "every contractor, big or little, should get involved in recycling. And not only for ethical reasons: Tipping fees are going out of sight."

— J.A.



Figure 2. *If you can't find a recycling company that will make pickups at residential sites, try a small, independent hauler. Some will not only deliver your load to a transfer station, but will sort recyclables from an unseparated trash pile.*



Figure 3. *Instead of buying or renting a different container for each type of recyclable material, you can build a partition inside a standard dumpster to segregate your waste.*



Figure 4. *There's plenty of reusable and recyclable material in this disorganized pile of construction debris, but it's difficult to find what you need. It's also unsightly and presents a hazard to children in a residential neighborhood.*

Finally, ask potential recyclers if they provide containers for on-site collection. On larger jobs, a single container with separate bins for each major type of material is best. Another option is to use scrap material to divide a standard dumpster into sections (Figure 3).

On small jobs, simply making separate piles can work well, even when space is limited. The key is to keep the piles separated and to haul them away regularly before they begin to sprawl.

You can also build your own containers out of plywood, or use barrier fencing held up by stakes to enclose the piles of waste material. Another option is to buy a used trailer for each major category of material — one for drywall, for example, and one for wood — and simply haul them away and empty them when they get full.

Making Recycling Work

Finding markets for the waste you generate and arranging for containers and transportation are the biggest part of getting job-site recycling started. But you also need to set up a system on site.

Source separation. Job-site recycling won't work if you don't separate the materials at the source (Figure 4). The toughest hurdle is getting your employees and subcontractors to cooperate. When I first started recycling, I designated our laborer as the "Site Recycling Coordinator" with the responsibility of making sure everything was put in the right containers. At first he was the butt of quite a few jokes. But as recycling coordinator, he also had the authority to give co-workers and subs a hard time when they didn't follow the program. With encouragement, he became enthusiastic in this role and has done quite a good job. It took a lot of badgering to keep the crew and subs from putting trash like lunch bags and caulk tubes into the recycling piles. But over time, the system has

Recycling Resources

These publications and services can help you get started with your own job site recycling program.

Construction Materials Recycling Guidebook (Metropolitan Council, Data Center, Mears Park Centre, 230 East 5th Street, St. Paul, MN 55101; 612/291-8140. Free.) This is one of the best "how to" guides to job site recycling. It includes worksheets for determining the economics of recycling for a specific job, plus lots of other practical suggestions.

Builders Guide to Residential Construction Waste Management (NAHB Research Center, 400 Prince George's Blvd., Upper Marlboro, MD 20772; 301/249-4000. \$7.) This booklet provides a list of state recycling offices for all 50 states, as well as a good general discussion of construction waste management.

National Materials Exchange Network (1522 N. Washington St., Suite 202, Spokane, WA 99201; 509/325-0507. Free.) A relatively new but growing national clearing-

house for information, the network also includes regional and local exchanges who regularly publish directories of recyclers. The network's electronic bulletin board (800/858-6625 by modem) can rapidly link contractors with recyclers and waste-reusers.

Wood You Recycle: Construction and Demolition Waste Recycling (Board of Public Works, Integrated Solid Waste Management, 200 N. Main St., Room 580, City Hall East, Los Angeles, CA 90012; 213/237-1444. Free.) *Construction Site Recycling* (Metro, 600 NE Grand Ave., Portland, OR 97232; 503/234-3000. Free.) The first publication deals only with wood recycling; the second deals with everything else.

Making a Molehill Out of a Mountain II (Toronto Home Builder Assoc., 20 Upjohn Rd., North York, ON, Canada M3B 2V9; 416/391-3445. \$20.) This 28-page booklet provides good in-depth coverage of residential recycling, including tips for reusing materials. A video is available for \$25.

tract requirement for subs to recycle their waste. This is easier than it sounds because many subs — especially plumbers and electricians — already recycle copper and aluminum, both of which fetch a good price. Also consider offering a cash incentive to subs if disposal costs are reduced.

Inform your customer. In many parts of the country, people are already recycling in their households, so job-site recycling makes sense to them. After all, it's an opportunity to recycle the equivalent of several years of household waste in the course of a few weeks or months. If increased cost is a factor, explain the environmental benefits of recycling and let them make their own decision. I know builders who give two prices for every job, one with recycling and one without. Others simply incorporate recycling into their price for the job.

The most common customer worry is about the messy appearance our piles of scrap materials will create on their property. In cases like this, we make a special effort to keep our recycling collection neat and to have it hauled often.

Before You Recycle

Recycling alone can work, but it's the last step in the process. The first step is to reduce waste whenever you can. Tighten up your estimates to make sure the correct amount of material is brought to the site. Then improve your efficiency by making sure the materials are used for the proper task. This will both reduce waste and prevent extra material runs.

Also work with suppliers to reduce packaging — by making bulk purchases, for example. If your supplier is accustomed to using metal banding or pallets when delivering certain types of materials, ask them if you can return the banding and pallets after you've restacked the materials. Pallets can also be broken down and reused as layout stakes.

Reuse whatever you can. When possible, centralize cutting operations and sort 2x cutoffs by size so carpenters can quickly find the length needed for blocking. Non-returnable lumber that's still usable is worth taking to the next job.

Finally, what you can't reuse, pass on to others. Often your employees can use scraps for a home project, and on-site yard sales can work for items salvaged during demolition. Some materials left at curbside with a "free" sign will just grow legs and be gone (Figure 5). There are also businesses and non-profit groups who collect used materials for resale. Some of these groups will even provide on-site pick up and a tax break for the donation. ■

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Figure 5. The general public will help you get rid of scrap wood if you let them know it's available.

worked increasingly well. Now, most workers take pride in recycling a high percentage of the waste our jobs produce.

Be sure to locate your bins, piles, or trailers in a convenient place. Mark each of them clearly with a large sign that lists exactly what should and shouldn't be put there. If you're working at an existing residence, you need to coordinate with the homeowner about where to put the recycling bins and how to prevent them from being contaminated at night by the general public. In new construction and on larger jobs, it's a good idea to set up the bins in a lockable area and to cover them at night to prevent contamination. If you're working on a job site with several other contractors, cooperate with them. The economies

of scale will help everyone's bottom line.

Getting subs to help. As with your employees, it takes time and attention to change your subs' old habits. The first thing to do is to explain your recycling program to your subs before the job begins. Then check with them regularly when they first start working on site. On my jobs, the recycling coordinator checks the recycling piles several times every day for contaminants. He can usually tell who the source of the problem is — for example, a big ball of stripped wire casing is a dead giveaway to a problem with the electrician. My experience has been that once everyone gets used to the new system, it works pretty smoothly. Still, consider making it a con-