

Toward zero-landfill

Lessons in construction waste reduction



In the center of the plant, we created a collection area with clearly labeled container for the unusual materials we hoped to collect in enough volume to recycle.

□ By Leigha Dickens □

It's ugly, but true: building something out of raw materials inevitably results in waste. According to the U.S. Green Building Council, a typical new home produces four pounds of waste per square foot of living space. Green building is about building energy efficient, healthy, and durable end products, but by definition it should also focus on using resources wisely, finding methods to reduce construction waste and reuse or recycle those materials.

As a manufacturing facility here in Asheville, we know this struggle well. We prefabricate panelized home packages – wall panels, floor and roof trusses – and ship them all over the country, with a focus on durable and energy efficient construction. We build green homes, but we also want to make our process as sustainable as we can. We are actively working toward the ambitious goal of zero-landfill production by 2016.

Zero-landfill is a challenging aspiration. We're well on our way, but we haven't reached that finish

line quite yet. The journey over the past few years to reduce waste and increase the amount of material we can divert from the landfill has been fascinating. We have gathered some resources and best practices along the way that can help other manufacturers and builders alike in their own quests to reduce construction waste.

Lesson 1: A Central Cutting Area

Lumber is the most common waste material in a project built with wood, but fortunately it is also an easy material to divert from the landfill. The GreenBuilt North Carolina green certification program offers credits for reducing construction waste, and one of the recommended strategies is to create a central lumber cutting and storage area on a jobsite. This creates opportunities to find a preexisting piece for a specific need rather than cutting a new one.

As a manufacturing facility our process naturally dictates a central cutting area, with computerized

saws to help us use our raw materials optimally. Yet by cutting and keeping all of our scrap material in one place, we discovered an easy supply of nine-inch long 2x6 blocks, key components of our floor trusses. Now our saw looks for opportunities to cut any excess lumber from a project into nine-inch lengths, greatly reducing the amount of waste material.

Even if you're not a manufacturer with a fancy saw, keeping your scrap in one place allows you to exploit your lumber supply to its fullest. And once your project is done, dimensional lumber doesn't have to be landfilled: as long as it is not pressure treated, you can

take all of scrap you saved to the local stump dump to be mulched or turned into boiler fuel.

Lesson 2: Create Opportunities by Collecting and Sorting

Good jobsite waste management means creating a central location to collect the most common materials produced. I've been to too many jobsites that didn't even have a regular blue recycling bin! The power of jobsite collecting and sorting goes much deeper than the odd plastic bottle or soda can: it offers education on just how

Local Construction Waste Resources

- The Riverside Stump Dump can take assorted dimensional lumber scrap (non-pressure treated.) www.riversidestumpdump.com.
- Habitat for Humanity will often accept building material donations for their housing projects and their Re-Store. www.ashevillehabitat.org.
- Curbie, Inc handles municipal recycling for the City of Asheville, but they also have a commercial collection program. www.curbie.com.
- Waste Reduction Partners is a program of the Land of Sky regional council. They offer audits, consulting, and are a resource for finding other companies also trying to recycle a similar product. www.wastereductionpartners.org.

much of each material your process is creating – the results may surprise you. Collecting and sorting can also offer interesting re-use opportunities all on its own, and of course, if you collect enough volume of a material, there's a chance you can find a recycling market for it.

Create a collection point on your jobsite with easily accessible and clearly labeled containers. Implement a "culture of sorting" by emphasizing that extra step of bringing a material to its designated container. Make it fun: have friendly competitions, reward successful reductions in dumpster volume from job to job.

We realized several benefits of collecting and sorting a few years ago when we began collecting scrap house wrap, plastic wrapping and plastic pallet strapping. These materials were periodically picked up by a company that takes various types of recyclables to be baled and sold on large-scale markets. The program went along well until trouble struck last year, when our recycling company reluctantly announced that it could no longer find a viable market for all of the materials they had been taking.

Ongoing research continues to look for new markets, in the meantime we have decided to continue collecting and sorting these materials anyway, as we've found we're able to re-use some of the plastic wrapping and plastic strapping in our own processes. Having those materials on hand in collection boxes – rather than buried in a dumpster – makes reuse possible, and keeping the momentum of the culture of sorting that we've developed has benefitted us in other ways. When a new opportunity to recycle our scrap vinyl siding came along late last year, we were able to im-



(left) A typical new construction can produce four pounds of waste per square foot. Green building aims both to reduce how much waste is produced and to divert excess material from the landfill. (right) We devised a method of insulating our headers by filling them with chipped up scraps of leftover polystyrene insulation board. Leigha Dickens photos

plement with ease because we had already accustomed ourselves to collection.

Lesson 3: Team Up With Others

Sometimes volume is a key variable in determining if recycling a material is cost-effective. Teaming up with others who also produce a similar scrap material can improve that cost-benefit analysis. In my previous story, though our recycler stopped taking some of the materials we had been giving them; we did find a growing community of other local facilities who were also interested in recycling plastic strapping. All of us, together, create enough volume to keep plastic strapping worth their while to collect.

Teaming up with a charity can

also offer opportunities. We have worked with local charities such as Habitat for Humanity, as well as international charities such as World Mission, to donate scrap plywood, foam board insulation and sizeable pieces of fiber cement siding.

Lesson 4: Flexibility and Creativity

If many of the strategies in this article are simple common sense, we've also had to be creative and willing to embark on projects just to see how they would turn out. After donating our larger scrap polystyrene, we were left with small pieces not easily usable by someone else in construction. We chip up those small pieces into even smaller pieces and use those to fill our header boxes – simultaneously

re-using a waste material and providing insulation to a key location. This year we're trying some new projects indeed, such as working with Wild South to save small and odd-shaped plywood scraps for a squirrel box building night.

Institutionalized solutions, one-off projects, collaborations with other companies and adaptation when markets change – it has taken all of those approaches to get us where we are today, an 80 percent landfill diversion rate.

Leigha Dickens is the Green Building Coordinator for Deltec Homes, an Asheville company that panelizes hurricane-resistant, energy-efficient and net-zero homes. She is a RESNET HERS Rater and studied physics at UNCA. Others interested in teaming up for recycling opportunities should contact her at ldickens@deltechomes.com

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