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A series on how to overcome wasteful practices that negatively impact builders' bottom lines

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JOBSITE RECYCLING HAS MANY CHALLENGES

Because it generally costs more to recycle construction waste than to take it to the dump, builders must decide if it's worth it.

By [Joe Bousquin](#)



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Getting a handle on waste in the construction industry is messy business.

Troy Johns discovered that painful truth when he first tried to cut down on the amount of waste generated at his home sites six years ago. As owner of Vancouver, Wash.-based Urban NW Homes, builder of 120 homes a year, he wanted to reduce his waste by at least half to earn points for National Green Building Standard (NGBS) certification.

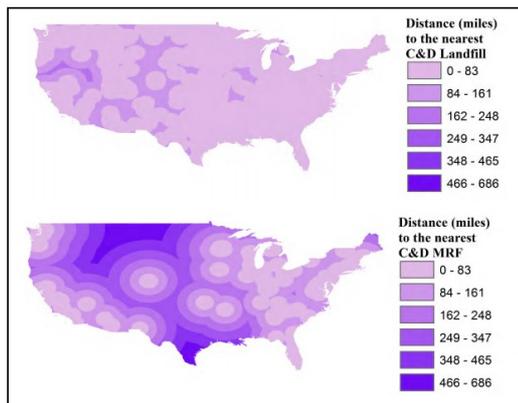
He started by identifying what could easily be recycled—wood scrap, metal, plastic—and got after his subs to use the color-coded boxes he put out to sort materials onsite. But then his local waste hauler “wanted to charge us through the nose to pick up our makeshift separation boxes,” Johns says. Worse, he then found out that the hauler wasn’t recycling it at all, but instead just throwing his carefully sorted materials in with the rest of the trash. “It was very discouraging,” he says.

While Urban NW Homes’ experience trying to cut down on its waste seems baffling, it’s not an uncommon scenario for builders who want to do the right thing with excess materials produced at a home site, of which there are literally tons—about 8,000 pounds for every 2,000-square-foot home, according to the NAHB. In fact, even as U.S. home builders have put the energy savings of their highly efficient homes front and center in the American psyche in the last 15 years, the waste that’s created building them—and what happens to it—gets far less attention.

“Nobody really looks at trash, because trash just isn’t sexy,” says Richard Ludt, director of environmental affairs at South Gate, Calif.-based Interior Removal Specialists, and a board member of the Los Angeles chapter of the U.S. Green Building Council (USGBC). “There are all of these different things that make you think we’re moving in the right direction with construction waste, but in many instances, that’s just not the case.”

Even as curbside recycling has become the norm in U.S. cities for household trash, recycling for construction and demolition (C&D) waste, which accounts for more than twice the volume in America’s landfills, still just happens in fits and starts. It’s highly dependent on various state and municipal regulations that vary drastically, and boils down to the availability of C&D recycling facilities in local markets. On average, it costs builders more to recycle than to simply take their loads to the dump. What’s more, in the age of data science, it’s maddeningly difficult to ascertain consistent metrics on what exactly is being thrown out, and what’s being recycled.

“Construction and demolition debris is a big black box,” says Bill Bradley, owner of Denver-based hauler and recycler 5280 Waste Solutions, as well as waste and recycling software platform company Starlight. “Nobody really knows what’s in there.”



Distance in miles to the nearest C&D landfill (top) and mixed C&D material recovery facility (bottom)

U.S. EPA

According to the EPA, 548 million tons of waste were generated in the U.S. in 2015, the latest period for which data is available. (By comparison, household waste accounted for just 262 million tons.) When road and bridge construction is

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removed from the overall 2015 number, however, buildings accounted for 169 million tons of C&D waste, or about 30% of the total.

But citing state and regional differences in recovery practices, regulations and lack of data, an [exhaustive 2017 EPA study](#) couldn't put a specific number on how much of that C&D waste was recycled, instead opting for a range of 30% to 70%.

Against that backdrop, the Chicago-based Construction and Demolition Recyclers Association (CDRA), a trade group of C&D haulers and processors, estimates that [73% of all C&D materials were recycled in 2014](#). That overall rate belies the even higher recycling rates of concrete and brick (85%) and asphalt (99%) generated by bridge and road construction.

But when looking at "mixed" C&D waste – the portion generated from building construction sites--the recovery rate drops to just 38%.

"That sounds low, but it really depends on where you are in the country," says William Turley, executive director of CDRA, who notes that states like [California](#) have more C&D processing plants, and thus, provide more opportunity for contractors to recycle building waste. He also points out that the current mixed C&D recycling rate is up dramatically from the single digits of 25 years ago, when he founded CDRA to bring more attention to this issue. All that said, however, he concedes that when it comes to home builders trying to recycle waste from their building sites today, "in some parts of the country, it still just doesn't make economic sense."

A Local Approach

Part of the challenge of dialing in C&D recycling data comes from the various federal and state benchmarks applied to this waste stream. The federal goal is to recycle 50% of C&D waste, including that from road and bridge construction, and according to CDRA's numbers, that goal is being met, and even surpassed.

But in California, state regulations written into the building code require that at least 65% of materials from jobsites get recycled. [Florida](#) has a 75% goal; [Colorado](#), 60%. In [Massachusetts](#), it's 50%, but the state's actual rate has plateaued at around 30%, according to a [2016 study posted by the Northeast Recycling Council](#). And another study by the [Northeast Waste Management Officials' Association](#) found that only 19% of C&D materials were actually recycled in eight Northeast states in 2013.

Even a comprehensive listing of federal and state rules and recycling goals for C&D is hard to come by. CDRA maintains a proprietary database for its members, but the EPA's 2017 report only provided a sampling of general recycling requirements – many of which didn't single out C&D – from a few states. A [2011 report](#) by the Northeast Recycling Council found that only 13 states (of 49 surveyed) had some form of C&D recycling requirements or material bans at that time.

That data disparity is a big part of the problem when it comes to understanding what happens to mixed C&D waste, and how to increase its recycling rates.

"There's a patchwork of C&D recycling requirements around the country," says Wes Sellens, director, codes technical development at the [Washington, D.C.-based USGBC](#). "You've got some places with nothing, others with a 75% requirement. It's all over the map." Adds Bradley, "You can't make a dent in diversion until you understand it and profile it."

For Chris Batterson, C&D accounts lead at Atlanta-based Rubicon Global, which provides cloud-based waste and recycling software to various industries, much of what happens to C&D waste comes down to the choices individual builders make.

"Some markets regulate how much waste from C&D work has to be diverted from the landfill, but other places have no regulation and no infrastructure to recycle it," Batterson says. "Builders who have established sustainability goals and practices try to do the right thing and divert materials. But the ones who choose not to recycle typically just throw it all in one container, and it goes to the landfill."

Access is Everything

Even if the numbers were less opaque, though, it would still take a Herculean effort by many builders to recycle more of what's generated at their worksites. Consider the initial challenge Urban NW Homes faced, getting subcontractors to sort materials onsite. One of the reasons for doing so is because haulers will give discounts for "clean" recyclables that are pre-sorted.

But another is because there's a big difference between C&D landfills that accept pre-sorted recyclables such as metals and drywall, and C&D Material Recovery Facilities (MRFs) that are set up to do the automated sorting, using conveyor belts, shakers, magnets and hoppers to sift, separate and categorize co-mingled materials.

In other words, it's much easier, and requires less onsite labor, space, and diligence to simply supply a co-mingled box that workers can throw everything into, to be separated at a sorting facility later.

But the problem is, there aren't that many recycling centers capable of doing that kind of sorting. According to the EPA's 2017 C&D report, while there are more than 1,500 C&D-specific disposal facilities in the U.S., and thousands of other non-C&D oriented landfills that accept C&D waste, there were only 512 C&D MRF facilities as of 2012. The report drolly concludes, "there are regions of the country where reaching a C&D MRF requires hundreds of miles of additional transport."

In that kind of scenario, even builders who want to recycle are faced with a conundrum. "For the smaller builders, it's a lot easier to be diligent in keeping waste to a minimum in the first place then to try to recycle it after the fact," says Chris Lombardi, president of Brick, N.J.-based home builder Lombardi Residential. "But unfortunately, it's just more economical to move quickly and turn over projects than spend time trying to figure out what to do with the waste that's left over. It's like keeping food in your refrigerator a little too long. You can sometimes figure out a way to save what you have and use it, but a lot of times, it just makes more sense to toss it."

Paying Extra

Yet, even for builders who do have access to C&D MRF locations in their markets, it may still not make sense to recycle their C&D waste. That's because, on average, tipping fees at C&D MRF facilities are \$77 per short ton, compared to just \$43 at a C&D landfill, according to the EPA. Other landfills not specializing in C&D may accept C&D waste for as little as \$30 a ton.

"Landfills make their money off of volume," says Damon Fogley, owner of JDog Junk Removal & Hauling of Hays County in the Austin, [Texas](#) area. "If you're doing a construction project and you're getting Dumpsters dirt cheap because you're close to that landfill and their drivers don't have to go very far, it doesn't make economic sense to sort it or recycle it."

For builders who make the choice to pay that higher price anyway, though, their C&D waste still may not get recycled, as Johns experienced at Urban NW Homes when he first tried to improve his own waste management by separating his materials.

"This may come as a shock to you, but sometimes, waste guys lie," says the CDRA's Turley. "You really have to make sure it gets recycled after it leaves your site."

To do that, builders can look for certification from the [Recycling Certification Institute](#), which audits the books of haulers and

C&D facilities to make sure they're actually doing what they claim. Those audits can be especially important when trying to qualify for green building program points, or, in areas where C&D diversion is mandated, proving to an inspector that you've fulfilled the requirements of your building permit.

Then, there's the software that Bradley's Starlight company offers, which keeps a running tally for builders on exactly how much of their waste has been diverted on a project, in real time. "It gives them up-to-the minute materials management views so they can run their own diversion reports," Bradley says. "It'll give individual builders the opportunity to see where they are on recycling as of the very last Dumpster that just left their site an hour ago."

And still, despite all these hurdles, there are builders like Johns at Urban NW Homes who put in the time, effort, and money to make sure their C&D waste isn't adding to the problem.

Johns says that after experiencing some initial frustrations, he was able to convince his local trash hauler not to charge him more for recycling, since he went to the trouble to sort it himself. And by using pre-cut lumber and framing packages to avoid waste, while also taking other steps like making sure his subs completely emptied their caulking tubes so the cardboard hulls could be recycled, he was able to cut down on the trash his homes generate by as much as 80 percent, or 6,400 pounds of garbage per house. Not only does that help him qualify for NGBS points, it resonates with his eco-conscious customers in the Pacific Northwest.

Beyond that, it also actually saves him money. By reducing his overall waste, Johns has been able to cut his total trash hauling bills by almost \$400, to just \$510 per home, down from the \$900 he would have paid if he sent everything to the dump.

So there is a good economic reason for him to do what he's doing. But he has what he thinks is an even better reason for cutting down on his C&D waste.

"You know, it's everybody's planet," Johns says. "Not just mine, not just yours, not just the guy buying that house. This is everybody's responsibility."

ABOUT THE AUTHOR



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Joe Bousquin has been covering construction since 2004. A former reporter for the Wall Street Journal and TheStreet.com, Bousquin focuses on the technology and trends shaping the future of construction, development, and real estate. An honors graduate of Columbia University's Graduate School of Journalism, he resides in a highly efficient, new construction home designed for multigenerational living with his wife, mother-in-law, and dog in Chico, California.

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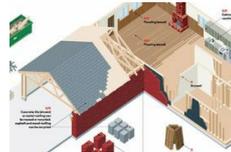
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