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Construction industry labors to reduce landfill debris

Awareness has grown rapidly about green construction practices and projects certified by the Leadership in Energy and Environmental Design (LEED) program, but less publicity has been given to the construction waste that is generated by demolition, new construction and renovation.

The industry has addressed this matter in recent years, and there are many opportunities for materials that were once systematically dumped into landfills to be put to more productive uses.

It not only makes good environmental sense to recycle construction and demolition waste, but economic sense as well. A growing number of general and specialty contractors are recycling, often saving money while they are at it. Increasingly, towns in northern New England are either encouraging the recycling of construction materials or, in some cases, requiring it as a condition of project approval.

Sorting and saving materials for recycling on a construction site requires a plan for what will be recycled and where the materials will be placed. To make the best use out of concrete, wood, roofing materials and wallboard that has been collected also requires a network such as the Institutional Recycling Network (IRN), a Concord, NH-based cooperative that has become one of the Northeast's most active recyclers of building materials.

Economics and a growing awareness of the importance of being green drive these plans, according to Mark Lennon, principal of IRN. Certain building materials such as concrete blocks could be recycled for far less than the cost of disposing of them in a landfill, Lennon said.

The simplest method for recycling waste building materials is to have a series of dumpsters at a work site with different bins designated for each material to be recycled, said Lennon. Wood, metal, plasterboard and concrete blocks will each have a separate destination after being removed from the site. If the materials are sent off-site as mixed debris, the cost of separation can be in the $70 per ton range, while on-site separation can often be achieved for as little as $10 per ton.

Another New Hampshire company, ERRCO of Epping, processes construction waste at its plants in Epping and Salem. The company operates 45 tractor-trailer trucks that pick up construction waste from many parts of New England, said Jonathan Hixon, company vice president.

Founded in the early 1990s, ERRCO accepts both sorted and mixed waste from demolition and construction sites. "We can take in the materials, from the shingles on a roof to the concrete at ground level, in a tear-down," said Hixon.

After an extensive sorting process using screens, magnets and water to help separate the

different building materials, ERRCO processes much of the material into products for re-use. The company receives between 300,000 to 350,000 tons of such waste annually. Wood may wind up as woodchips to be burned as a bio-fuel, or for the manufacture of new products.

“We produce a host of products, including pressboard for furniture and aggregate that is used for roads, into landfills,” Hixon added. Metals are processed into a marketable form for a variety of ultimate uses. In some cases, landfill operators contact ERRCO to salvage construction waste that has been delivered to the landfill for reuse.

The state of Vermont has been active in encouraging recycling and reuse of construction and demolition (C & D) waste. The Agency of Natural Resources and Vermont Department of Environmental Conservation estimate such waste generates more than 20 percent of the state’s annual trash – a staggering 90,000 tons of waste that could potentially load up landfills.

On top of that, Vermont has some of the highest waste disposal costs in the country, with fees ranging from $65 to $100 per ton. “In essence, C&D waste reduction is not as mature as for regular consumer trash, but we see great opportunities,” said James “Buzz” Surwilo of the Solid Waste Management Program of the Vermont Department of Environmental Conservation.

“At this time, most markets for this material are either not established, too volatile or too far from Vermont to offer the best alternatives,” he added. In recent months, he said, the enthusiasm for green building has helped, but the recession has hurt plans to quickly grow the recycling and reuse of construction and demolition waste in the Green Mountain State.

By all accounts, the majority of contractors and construction workers said they are enthusiastic about taking the steps necessary to reduce the waste going into landfills.

Most, but not all, materials can be constructively recycled. Success rates in recycling these materials vary, depending on a series of factors including the type and quantity of waste that is generated on the work site, the location of the site and its distance from a recycling destination that will accept such material.

In some cases, the percentage of materials recycled is surprisingly high. At the recently completed AVA Gallery and Art Center project in Lebanon, NH, wood, metal, gypsum, brick and cardboard were among the materials recycled, achieving a 97-percent recycling rate, according to Lennon. Trumbull-Nelson Construction Company of Hanover, NH was the general contractor for the $2 million conversion project of a 30,000-square-foot old factory building.

Another Trumbull-Nelson project at the Proctor Academy in Andover had a 96-percent recycling rate. It included flooring materials, windows and doors as well as more common components.

When the Thayer School at Dartmouth College was renovated and expanded in a $12 million, 25,000-square-foot LEED certified project, an estimated 93 percent of the materials salvaged were recycled. For the $10 million LEED gold renovation project of 46 Blackstone at Harvard College, 99.6 percent of the materials were recycled.

With landfills across the nation filling up and proposed locations for future landfills often being controversial due to potential disturbances to adjacent development or other environmental concerns, it makes good sense to address incoming trash and materials from all sources. Waste that is produced by construction and demolition activities is substantial,

and many of the materials within that waste stream have some potential value for future uses. ?