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## **A new stream of thought: A sustainable approach to construction waste stream management**

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As construction managers, it is crucial that we begin to examine our role and the level of influence we play in the creation of sustainable building programs. Yes, in many cases, we are simply called upon to execute an owner and design team's green program, but beyond the plans and specifications, we must begin to build a greater understanding of what sustainable construction is currently, what it can be, and how we can incorporate it into our standard building practices.

Among the several areas that we can influence during construction, I would like to take this opportunity to talk about construction waste management - one of the few areas in the construction process where CM's have control.

Why is this important?

Recycling is the easiest and most visible ways that a project can demonstrate its commitment to being a sustainable one. About 25% (130 million tons) of solid waste in the United States is derived from construction and demolition per year, while nearly all of this material is recyclable.

Also Mass. recently initiated legislation that requires all construction projects to have a recycling plan for materials such as wood, concrete, brick, and steel, which are banned from landfills.

Bovis Lend Lease Boston requires a recycling plan as part of all of our project's administration. We record and track the type, the quantities, and the method of disposal on every recycled material. This information is then entered into our project database and tracked throughout the duration of the project.

Largest "obstacles" to recyclingâ€™"It costs more"

Recycling is a competitive market, and in many cases the cost to recycle is actually cheaper than it is to dispose of the material to a landfill. The cost of labor for separation of material is also a concern; however this will always be true if recycling is thought of as an afterthought. If built into the subcontractor scope of work at the beginning of the project, this component will be accounted for at the time of contract.

"I have no room on my job site for the extra containers"

The key to overcoming this is to minimize the amount of containers that you have on site by matching the containers to the material being deposited for that phase of the project. i.e. Have only steel containers on site during steel erection versus steel, wood, and concrete containers. Also, an advantage of source separation is having the ability to place these containers near the areas that the work is being done if it is possible. This makes recycling much easier and reduces the amount of labor required.

If space is really and truly an issue - then consider commingled recycling (where this is available). Although source separated recycling yields higher recycling rates, commingled rates are competitive. Initiate discussions with your waste haulers; ask them about their commingling recycle

rates. Share with them the goals that you are seeking regarding recycling rates and the challenges that you face regarding space limitations. Most often they will work with you to help you achieve your project goals.

#### Not understanding the process

It is important to make this a team effort, to incorporate all of the people working on the project as partners in achieving your recycling goals. Include these goals in the site orientation meetings, and perhaps also in the weekly foreman meetings. It might prove to be beneficial to offer some sort of competition/incentive between the trades to see who can recycle the most, or come up with the most creative ways to see the project achieve the waste recycling goals.

#### Construction Waste Management Plan Specifications

Each plan should define the demolition waste and construction waste to be recycled and salvaged. CM's should outline the submittals that will be required of the subcontractor. Along with each application for payment include: Recycling plan, waste management plan, waste reports and if the project is seeking LEED certification the LEED letter templates for Credit MR 2.1 and 2.2, and any other LEED documentation that could be associated with construction waste (i.e. refrigerant recover, reused materials etc.).

#### What to include in your Construction Waste Management Plan

Your plan should include identification of waste types, quantities, a work plan for waste reduction - indicating how the material was disposed, how was the waste generated, how was it recovered, how was it handled, what method of transportation was used, disposal cost - showing a base line of cost for waste disposal if there was no waste management plan versus the cost with the waste management plan in effect, and the implementation plan.

#### Other important notes:

- \* Any waste management plan should be built into the infrastructure at the very beginning and all stakeholders should be in full support of the goals in order to insure success and mitigate any extra costs that may occur.
- \* Initiate a monetary fine for those firms that contaminate a container by not respecting the recycling mandates of the site.
- \* During construction or demolition specify or select materials that have little or no packaging if at all possible
- \* When ordering materials, only order what you need, and in the dimensions that you need so as to minimize waste from the outset
- \* If materials are separated on site, clearly marked containers should be provided for the materials. These bins should be monitored in order to insure that there is no contamination and remove such material if it is found.
- \* Stockpiled processed materials should be shaped and graded to drain any surface water as well as covered to prevent any dust to be windblown. They should be stored away from the construction area and not within any tree drip lines.
- \* Monitor, monitor, monitor - track the waste and measure it from the goals that were set at the beginning of the project.

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