

California Construction Recycling & Reuse

Recycling/Reuse Programs at construction and demolition sites benefiting builders

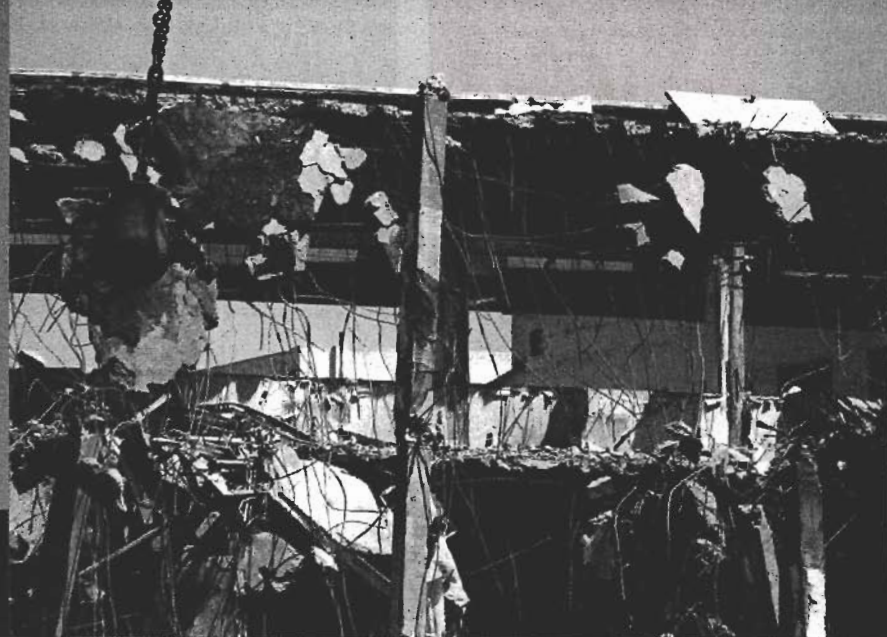
By Michelle Leonard



As Southern California's building community continues to embrace environmentally responsible construction methods and practices, the recycling and reuse of materials at construction and demolition (C&D) sites has steadily grown in popularity and for several good reasons.

C&D debris comprises a large portion of the waste stream. Debris can encompass inert materials, such as asphalt, brick, concrete, glass, metals, and dirt; organic materials, such as dimensional lumber, roofing material, ceiling tiles, insulation, and cardboard; and composites, such as carpeting, gypsum wallboard and fixtures. Residential construction generates an average of 4.4 pounds of debris per square foot, while non-residential accumulates an average of 3.9 pounds per square foot.

The primary benefits of recycling and reusing C&D materials are resource conservation and economic viability. In addition, C&D debris recycling is being encouraged and/or required by a growing number of regulatory groups, from California's Integrated Waste Management Board, to city and county ordinances, to local building specifications. Progress in this arena is even being made on the federal level. The U.S. Environmental Protection Agency (EPA), as part of its WasteWise Program, is encouraging builders to rehabilitate structures where possible; utilize deconstruction instead of demolition; return unused construction materials; and salvage C&D debris for sale and reuse.



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Common Reuse Methods

In general, three major methods are used for C&D reuse and recycling:

1. Deconstruction. This involves salvaging building contents and components and finding viable markets and outlets for materials. This method is generally contingent upon the availability of labor for the deconstruction process.

2. On-site source separation. This method requires site workers to place each type of recyclable (i.e., metals, wood, cardboard) into a separate container. One benefit of this method is the increased potential for revenue from the sale of recyclables to a local recycled materials manufacturer. Another benefit is the reduced risk of contamination of materials.

On the down side, source separation is time consuming, inconvenient, receives a lower rate of public participation, and is prone to frequent mistakes. This method also may involve additional costs to purchase multiple containers, additional labor costs and add to space constraints.

3. Mixed waste processing facilities. With this method, C&D debris is sent to a separate facility to be processed. While this can lower material value, it also reduces labor requirements.

Determining which method is most feasible for a particular site depends on the scope and nature of a project, its location, and available resources and labor. Consulting with a qualified C&D environmental professional may prove helpful in determining which method will work best.

Case Studies

C&D reuse is being incorporated into both private and public sector projects. One recent private sector project was the deconstruction of the Pacific Regency Theatre in Lakewood, Calif. The 2,200-seat theater was deconstructed to make way for a new Kohl's Department Store. SCS Engineers prepared a comprehensive deconstruction analysis and materials management plan for the theater, in support of the city of Lakewood's overall solid waste program. SCS Engineers also served as the main liaison between engineers, contractors, subcontractors, and architects for the deconstruction analysis and materials management plan.

Of the 14,000 tons of waste generated from deconstruction of the Pacific Regency Theater, 97 percent was successfully salvaged for reuse. Among the items diverted were all 2,200 theater seats, 500 pounds of drapes and 59 palm trees. The California Integrated Waste Management Board presented general contractor for the five-week-long deconstruction project, CLC Group of Murrieta, Calif., with a city of Lakewood "Recycler of the Year" award for volunteering to divert the waste stream generated at the deconstruction site.

Another example is the recent deconstruction of a 220,000-square-foot Montgomery Wards store to make way for a new Target store. This project was unique in that it was not precipitated by a local ordinance, giving the developer less incentive to choose deconstruction over

demolition. By the end of the deconstruction process, 144 tons of scrap metal were recycled, while 6,650 cubic yards of asphalt, concrete and brick were reused on-site.

Public Mindsets Changing

Ironically, the most common challenge in encouraging C&D debris recycling and reuse is clarifying misconceptions about the allegedly high costs involved. What some may not realize is that the costs often are comparatively less than deconstruction and traditional waste disposal.

Another challenge is changing public attitudes and behavior about recycling. While people want to do their part to improve the environment, the proposal of a program at a large construction or demolition site tends to be met with some initial resistance.

Still, once certain "myths" are dispelled, builders and property owners in large part are open to incorporating C&D reuse plans. Experienced environmental consultants can guide builders and owners through the process and simplify it for them, as well as develop cost-effective programs that are tailored to address the unique aspects of a particular project. ■

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