Clean Hawaii Center

STATE OF HAWAII
Department of Business, Economic Development & Tourism
Energy, Resources & Technology Division
URL: http://www.hawaii.gov/dbedt/ert/chc/
P.O. Box 2359, Honolulu, HI 96804
Phone: +1.808.587.3802 / 2778
Fax: +1.808.587.3820

Leaders in Reuse and Recycling

John A. Burns School of Medicine
University of Hawaii
Honolulu, Hawaii

October 2004

Diverting Demolition Waste from the Landfill at JABSOM

*The project general contractor **(Hawaiian Dredging/ Kajima)** worked diligently with their demolition subcontractor **(RHS Lee)** to maximize diversion from the landfill through some of the following efforts:*

- *Developing a construction waste management plan prior to demolition.*
- *Crushing concrete waste for reuse onsite.*
- *Finding partners to take and reuse demolition materials.*
- *Creating a system for tracking waste from demolition site to reuse and recycling sites.*
- *Creating an onsite system to efficiently separate materials (e.g. concrete, wood, metal, etc) for later hauling.*

The Results

The team originally set a goal of 50% diversion by weight, focusing on reuse and recycling as a least cost option, not just because it was green.

The team's work paid off with an ***actual 93% diversion of demolition waste.***

Crushing concrete waste for reuse onsite as aggregate.

JABSOM — Maximizing Reuse and Recycling is Good Practice and Good for the Community

The John A. Burns School of Medicine (JABSOM) of the University of Hawaii is building a new education / administration building and a world-class research facility. The $150 million project, about 338,000 square feet, will be complete and ready for students, staff and scientists in mid-2005.

The new campus replaced a Hawaii Department of Agriculture facility with post-war buildings, concrete slabs, and steel-framed warehouses.

Hawaiian Dredging/Kajima and RHS Lee focused on **reuse and recycling** efforts during demolition. Waste reduction was seen as good practice, good for the community and environment, and had the added benefit of being the least cost option, particularly with landfill costs as high as $43/ton (including hauling and tipping fees).

Before demolition, the team developed and implemented a detailed construction waste management plan which focused on reducing waste by:

1. Identifying materials, their approximate tonnage, their reuse onsite, recycling off-site, and haulers.
2. Creating a process to efficiently segregate and collect materials onsite, and track their reuse and recycling offsite.
3. Developing a communication plan for builders and haulers primarily using signage and regular updates at safety meetings.

Clean Hawaii Center
Department of Business, Economic Development & Tourism

www.hawaii.gov/dbedt/ert
P.O. Box 2359, Honolulu, HI 96804-2359
Phone: 1-808-587-3802
Fax: 1-808-587-3820

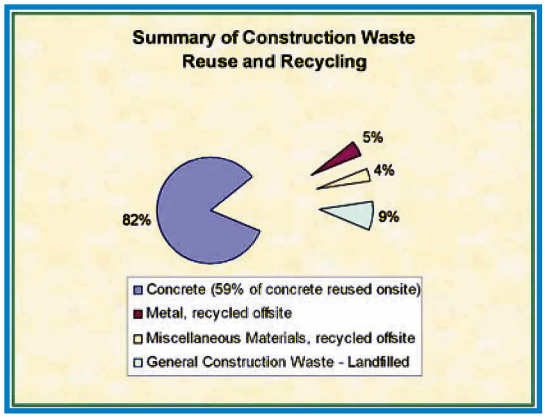
For more information

A Contractor's Waste Management Guide: Best Management Practices and Tools for Job-Site Recycling and Waste Reduction in Hawaii. 1999. DBEDT
www.state.hi.us/dbedt/ert/cwmg/index.html.

Guide to Resource-Efficient Building in Hawaii. 1999. DBEDT and the Hawaii Advanced Building Technologies Training (HABiT) Program.

"Material separation is an extension of good housekeeping and site safety."
James Abeshima, Hawaiian Dredging/Kajima

Separate Material Before You Begin



The project team successfully reused or recycled 91% of total waste.

Concrete pile cutoffs were collected and hauled to a Department of Transportation site for reuse/recycling.

All subcontractors supported material separation and recycling, ensuring little or no contamination in dumpsters.

- The primary demolition waste, **concrete, 82.7% of total waste by weight** (12,607 tons out of 15,242 tons) came from foundations, slabs, and pile cutoffs. Concrete was either crushed and reused onsite as concrete aggregate, or hauled offsite to the demolition contractor's salvage yard, or a State Department of Transportation site for reuse.
- **Metal, 4.6% of total waste by weight** (698 tons) was generated from the steel building structure, reinforcing, and metal siding, and recycled offsite.
- Miscellaneous items including **paving, landscape, cardboard, and paper** waste were collected and separated onsite for offsite recycling. (Total of 614 tons, 4% of total waste by weight)
- Items landfilled included roofing materials, electrical fixtures and conduits, and miscellaneous wood and general construction waste, accounting for ~9% of the total waste by weight.

Team Participation and Commitment = Success

Hawaiian Dredging/Kajima recommends the following for any project with high waste reduction goals:

- Have a construction waste management plan prior to building design..
- Involve trades/subs in waste separation, housekeeping, planning, and monitoring.
- Promote specific waste management requirements, and general reuse/recycling awareness on the jobsite.
- Follow through with routine inspections of containers.
- Give positive feedback to personnel.

And, most of all, ***Keep It Simple!***

Multiple recycling dumpsters, separate garbage containers, and clear signage are crucial for successful reuse and recycling.