Harvard Kitchen/Servery Renovation: 96% Recycling and Reuse

Over the summer of 2005, Harvard started and finished a 100% gut and renovation of its 35,000 sq ft Dunster-Mather kitchen and serving areas. IRN provided construction waste management oversight, working with demolition contractor Nova and GC Shawmut to achieve a recycling rate over 96%.

The project included three phases: 1) disposition of all kitchen and serving equipment and supplies; 2) demolition to the shell (all interior walls and doors, ceilings, floors, and MEP); and 3) complete reconstruction and fit-out. The project was made even more complicated by its urban Cambridge location (with site and access limitations), and outrageous schedule – all work had to be completed between student move-out on May 27 and move-in on September 1.

Not one load from this project was sent to a disposal facility, and most were recycled as source-separated wastes. Recycling included 222 tons of aggregate, 25 tons of metal, just over a ton of carpet, and 60 tons of mixed debris (the only waste ultimately disposed was about 12 tons of residuals from mixed debris recycling). In addition, IRN arranged for the removal and donation of more than 41 tons of kitchen equipment and supplies to needy homes and organizations in the Caribbean. In total, 339 tons were recycled or reused, and just over 12 tons of mixed debris residuals were disposed of, for a recycling rate of 96.5%.

Assuring that kitchen and serving equipment was reused was important to Harvard in this project. Not just for social and environmental values, but because managing for reuse was less expensive than simply throwing the stuff away. IRN coordinated moving crews to shuttle all movable equipment and supplies to IRN’s warehouse in Everett, and brought in riggers to pull out a 5-ton commercial bakery oven, industrial kettles, and refrigeration equipment. We also removed cartons and pallets of miscellaneous gear – everything from tablecloths, serving dishes, and cutting boards to cutlery and china. From IRN’s warehouse, we assembled loads into shipping containers that were sent to Spanish Town, Jamaica, where they are being distributed in relief efforts by Food for the Poor, one of IRN’s charitable partners.

After equipment and supplies were gone, Nova’s demolition crews removed all interior walls, ceilings, ceramic tile floors, doors, and all mechanical systems (electricity, HVAC, plumbing), leaving a bare 2-story shell. Nova separated almost all aggregate (about 175 tons) and metals (about 25 tons), along with additional fixed assets for reuse, leaving only some 50 tons in mixed debris. With strong positive revenues in metals, and aggregate recycled at about one-fourth the cost of mixed debris, cost savings attributable to source separation of these wastes amounts to about $13,000 compared to the cost of mixed debris recycling alone, and nearly $17,000 compared to the cost if all materials were disposed.

As demolition was completed, Shawmut’s Supervisor Dennis Riley and his crews rebuilt a loading dock and constructed a new shaft and elevator, new walls, floors, and ceilings, and installed all new mechanicals. An additional 60-odd tons of wastes came from new construction, mostly recycled as source-separated aggregate and metals. The project wound up with the installation of all new kitchen and serving equipment; new supplies were ordered and stocked, and the kitchen and serveries reopened by September 1.
The project demonstrated the importance of good teamwork to maximize the economic, social, and environmental benefits of recycling. Harvard’s Head of Dining Services, Bob Leandro, was particularly important in advocating and facilitating reuse of kitchen equipment and supplies (which are being distributed in communities where purchasing new equipment, or even acquiring basic supplies like cutlery and chinaware) is simply not a possibility. Harvard’s PM Jack DeMelo championed a source-separation plan that optimized recycling’s cost-benefit balance, and great cooperation Shawmut’s Super, Dennis Riley made the plan a reality. With a committed and cooperating owner and contractor, the project demonstrates that neither site nor schedule need to dilute the benefits of source separating wastes and minimizing disposal.