September 2003

Visit www.pwmag.com

PublicWorks

ENGINEERING, CONSTRUCTION & MAINTENANCE

Published by Hanley-Wood, LLC

Recycling in Concert

Tackling Snow and Ice Removal

APWA's Top 10 Leaders

Leslie Lukacs and Keith McTague work to make L.A.'s Music Center onsite recycling program a success.

A Harmonious Recycling Effort

A performance arts complex seamlessly integrates environmental concerns into its recycling program.

By Amara Rozgus

While critics often dismiss some modern music as mere "trash," the Music Center in Los Angeles is being decidedly more constructive in cleaning up its act. Amid the glitz and glamour of its high-visibility performing arts schedule, the Center has seamlessly incorporated a rigorous, high-tech onsite recycling operation that is first class in its own right.

One of the world's premier cultural organizations and among the largest performing arts centers in the United States, the Music Center includes the Dorothy Chandler Pavilion, the Mark Taper Forum, and the Ahmanson Theater. They play home to the Los Angeles Philharmonic, the Center Theatre Group, the Los Angeles Opera, and the Los Angeles Master Chorale. This fall, architect Frank Gehry's dazzling new Walt Disney Concert Hall also is scheduled to open, which will expand the complex to 11 acres. In all, the Music Center employs more than 150 people, enough to staff three restaurants, a café, two concession stands, two portable bars, and a Founders' Room.

Credit: Tariq Kamal

Culture aside, the site's prominent profile also makes it a perfect platform to educate the public on the importance of recycling. The Music Center has more than four million visitors and generates large amounts of waste annually. An informal waste audit in June 2001 revealed that much of the waste generated at performances is recyclable.

Enter Leslie Lukacs, a program manager for SCS Engineers, Long Beach, Calif. The Music Center hired SCS Engineers to design and implement an onsite recycling program, which would recycle everything from bottles and cans to cardboard and paper.

"It was easy to implement a source-separated recycling program because of the ease of collection and a high level of participation," says Lukacs. Other materials recycled include pallets, plastic, and green waste.

Victor Ventura, recycling attendant at the Music Center, is one of the many staff members who collects, separates, and then recycles materials.

COVER ARTICLE

Top: Leslie Lukacs and Keith McTague have implemented an onsite recycling program at L.A.'s Music Center to help lower costs and increase environmental awareness among visitors and staff members.

Bottom: All outdoor receptacles located in the Music Center's plaza are concrete with recycling arrows etched in so employees, event attendees, and tourists can easily distinguish the recycling bins.

Credit: Tariq Kamal

PUZZLE PIECES FALL INTO PLACE

The Music Center received two $65,000 grants from the California Department of Conservation to use for the recycling program's start-up costs. The first grant was received in January 2002 and the second grant was received in July of the same year. The funding was provided and managed through the City of Los Angeles' Bureau of Sanitation, Solid Resources Citywide Recycling Division. Grant funding paid for equipment, labor, and education and outreach materials.

"On a daily basis, the recycling attendant removes all the recyclables from the recycling bins located in all the performance halls and the staff areas," says Keith McTague, director and chief engineer of building services at the Music Center. "The recyclables are taken to their designated locations. Then a recycling hauler picks up all the cardboard and paper bins and the Los Angeles Conservation Corps collects all the bottles and cans."

To gather and process all the recyclable materials, the facility has several strategically placed pieces of equipment. All such outdoor receptacles located in the plaza are concrete with recycling arrows etched in so employees, event attendees, and tourists can easily distinguish the recycling bins. Blue recycling bins are located throughout all the offices and backstage so employees and performers can easily differentiate them from other trash containers.

Inside, recycling bins are placed intentionally beside traditional containers throughout to convey a clear environmental message. Due to strict aesthetic requirements, these indoor recycling bins are not blue, but gold or silver metallic to match the décor of each of the performance hall facilities. Additional white and mixed paper bins and beverage container bins are placed throughout offices and backstage so employees and performers can also recycle. All bartenders and concessionaire staff have beverage container recycling bins for bottles and cans.

Credit: Tariq Kamal

Onsite waste disposal equipment was converted to accept recyclable disposals. The Music Center originally had two 40-cubic-yard containers and six 3-cubic-yard containers for trash. One of the 40-cubic-yard

TRICKS OF THE RECYCLING TRADE

McTague and Lukacs offer some items to consider if you'd like to implement an onsite recycling program in your facility:

- Plan ahead—and do it early;
- Appoint a recycling/waste management coordinator;
- Evaluate waste stream prior to the design of a recycling program;
- Assess and understand the local recycling markets;
- Collect purchasing records to understand waste generation;
- Design collection, sorting, and transportation system for all diverted recyclables;
- Select equipment (bins, tilts, baler, etc.);
- Organize a recycling task force committee that includes a representative from facilities management, cleaning, and/or food services;
- Incorporate education and outreach for both employees and the visiting public.

Reaping the 'Green' Benefits

Have you ever thought about how much waste you produce while attending an event at a stadium, convention center, performing arts center, or fairground? Imagine the waste you produce, and multiply it by the millions of people who also attend those events.

Across the United States, public venues are left with a substantial amount of waste generated in a short period of time. To get a handle on the problem, a growing number of facilities are reaping the "green" benefits of implementing onsite refuse reduction and recycling programs.

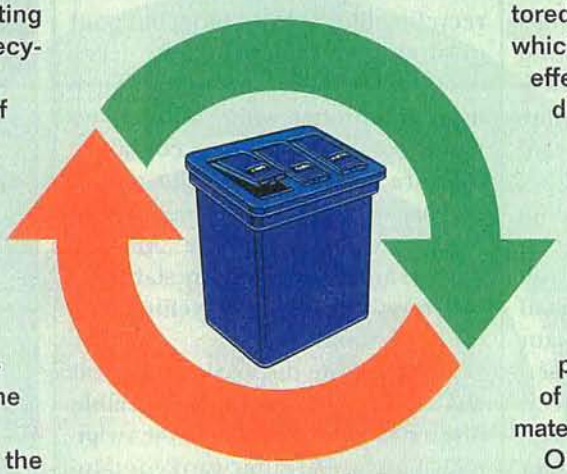
In the past, implementation of recycling programs at these sites has posed immense challenges that have deterred facility managers from incorporating them. First and foremost, the collection, separation, recycling, and disposal of solid waste have long been considered by facility managers some of the most costly services.

Another deterrent has been the sheer amplitude of waste generated annually by large public gatherings. Some facility managers have viewed the development of a recycling program to handle such a tremendous amount of waste as an overwhelming and time-consuming task.

However, times are changing, as are the facts about recycling and our attitudes as well. Refuse reduction and recycling programs now are being implemented that not only have significant environmental value, but also reduce waste hauling costs. Many programs can even generate revenue through the sale of recyclables.

By Leslie Lukacs

Also, facility managers now can work directly with environmental consultants that specialize in developing programs specifically for large public venues. The consultants can guide facility managers through the process and simplify it for them, as well as develop cost-effective programs tailored to address the unique aspects of each venue.



DOING THE HOMEWORK

One of the first steps in developing a recycling program is to conduct an onsite waste generation study to understand where the waste is coming from, who is creating it, and what percentage of it can be recycled. To get started, we recommend that a crew visits the venue and sorts through all refuse created by a particular event, or within a typical day, in order to identify "waste generators" (i.e., food vendors, exhibitors, spectators).

The crew then determines the type and quantity of waste produced by each generator category, as well as the percentage of recyclable waste in each category. For instance, trash is separated into material types such as aluminum, cardboard, paper, and construction debris. Any detected hazardous waste is documented. Each category then is weighed and the totals are used to project how much is recyclable and how much will need to be sent to a landfill.

Information gathered from the waste generation study can be factored into a cost/benefit analysis, which determines the most cost-effective and convenient refuse diversion method.

One diversion option is source separation of recyclables, which requires employees and visitors to place each type of recyclable 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.

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 require higher costs to purchase multiple containers, additional labor, and to promote the program via public education and outreach.

Another diversion method usually considered is co-mingled separation, which would collect all recyclables into one container. Recyclables then are taken to a material recovery facility, where they are separated and processed. Co-mingled separation is very con-

(cont. on p. 30)

(cont. from p. 28)

venient and generates higher participation. However, this method is labor-intensive, requires the use and availability of a separate facility, and has a lower potential for revenue than source separation. Therefore, a combination of both diversion methods often is recommended, depending on the type of facility and results of the waste generation study.

DEVELOPMENT AND IMPLEMENTATION

The final step is the actual development and implementation of a refuse reduction and recycling program. The development phase entails the incorporation of diversion methods identified in the cost/benefit analysis; identification of other recycling and source reduction opportunities (i.e., encouraging double-sided photocopying, use of e-mail instead of hard copies, giving employees reusable mugs to minimize use of Styrofoam cups); recommendation of recycling equipment and techniques; employee education, which involves development of recycling procedure manuals and program brochures; and public outreach, which involves incorporating signage and information to make the program highly visible.

The development phase is followed by onsite coordination and program implementation. This often includes the installation of a database that can track the amount of waste and recyclables generated each month, how much waste is being diverted from a landfill, and revenue earned from the sale of recyclables.

Implementing refuse reduction and recycling programs can result in several "green" benefits for public venues. One benefit is obvious: recycling programs help the environment. They save valuable landfill space, reduce the use of natural resources, and help to support recycling markets.

Another "green" benefit is the money saved and earned through recycling programs. Recycling reduces garbage removal and hauling expenses, while offering the potential to gain revenue from sold recyclables. For example, the Los Angeles Convention Center, visited by three million people every year, implemented an onsite recycling program. Within one year, the venue saved $60,000 in waste-hauling costs and generated $13,000 in the sale of recyclables-a net savings of $73,000.

Ironically, the most common challenge in encouraging refuse reduction and recycling programs is clarifying misconceptions about the allegedly high costs involved. What some may not realize is that the opportunity for long-term costs-saving and extra revenue often far exceeds the cost of implementing a program.

Another challenge is changing public attitudes and behavior about recycling. While most people want to do their part to improve the environment, the proposal of a program at a large venue tends to be met with a skeptical "that'll-never-work-here" attitude. Meanwhile, others have the desire to develop a program, but simply don't know where to start.

Again, an experienced environmental consultant knows where and how to begin. By first working to create and enforce "green" habits, a consultant can work to change attitudes and behavior over time. Once people get accustomed to participating in recycling programs, they begin to look for them wherever they go, and within time the culture of waste disposal will change. Many people recycle at home and the workplace. It's time to give people the option to recycle where they go to play.

—Lukacs is a project manager with SCS Engineers, Long Beach, Calif.

"It was easy to implement a source-separated recycling program because of the ease of collection and a high level of participation."

containers has been converted to accept cardboard and mixed paper and one of the 3-cubic-yard containers has been converted to accept white paper.

"The Music Center has diverted more than 80 tons of material since the start of the program in December 2002," says Lukacs. "The facility has saved $20,000 in waste disposal fees since that time."

WORKING IN CONCERT

"The biggest challenges in setting up a permanent recycling program were to establish funding for initial start-up costs and hiring a consulting firm to design and implement the program," says McTague. "SCS Engineers has been instrumental in developing the program logistics and outreach."

Once the initial hurdles were overcome, day-to-day operations became smoother, primarily due to staff involvement. "It was important to educate the staff because they are an integral part in making the program successful," says Lukacs.

And educating the staff and public about the benefits of recycling has promoted the program and aided its continued success. Employees receive educational materials and training, and visitors can read about what they can do to help—in no less than six different languages.

To date, the program has been so successful that it's being implemented in the new Walt Disney Concert Hall. An additional $50,000 in DOC grant funding has been provided by the city to implement that expansion. PW