



Environmental Stewardship Awards

The Christ Hospital

In 2008, The Christ Hospital received a Governor's Award for Outstanding Achievement in Environmental Stewardship. The award recognizes Ohio companies and organizations committed to environmental compliance and reducing pollution.

The Christ Hospital is a 555-bed, not-for-profit acute care hospital in Cincinnati, employing 1,280 physicians, 3,250 staff and 300 volunteers.

Environmental Health Mission Statement

Guided by an environmental health mission statement, The Christ Hospital has become a leader in environmental stewardship. For example, a chiller optimization project resulted in a 2 million kilowatt hour (kWhs) reduction in the first year of operation. In Phase I of a lighting retrofit, the hospital saved 58,000 kWhs per month with a capital investment payback of less than a year. In phase II, payback was 1.7 years and consumption savings was 51,000 kWhs per month. By using waterless urinals and drought tolerant/native landscaping, the hospital reduced water consumption by 9 million gallons per year. Since 2003, the hospital has decreased its solid waste by 35 tons and increased its recycling by 265 tons. Other projects include green purchasing, air quality improvements and enhancing spill prevention capabilities.

Chiller Optimization Project

Over the years, The Christ Hospital has undertaken major expansion and renovation projects, including three medical office buildings, a nursing college and a heart center wing. As a result of these projects, the efficiencies of the chilled water system serving the hospital had been slowly eroded through modifications to the chilled water production and distribution systems. The hospital had difficulty accurately measuring or directing the flow of chilled water to various areas of the growing (1.5 million square foot) campus. The system also required manual intervention by operating staff to throttle and direct the flow of chilled water. To address these inefficiencies, the hospital installed an Optimized Chiller Plant Control Network, consisting of:

- Automated condenser water flow and pumping optimization;
- Advisory chiller start/stop cycle control and sequencing; and
- Chilled water distribution optimization.

The Christ Hospital is recognized for:

- Its chiller optimization project, which reduced kilowatt hours (kWhs) used by more than 2 million from the prior year with similar cooling load requirements.
- Its lighting retrofit - in phase I, the hospital saved 58 thousand kWhs per month with a capital investment payback of less than a year. In phase II, payback was 1.7 years and consumption savings was 51 thousand kWhs per month.
- Using waterless urinals and drought tolerant/native landscaping, that reduced water consumption by 9 million gallons per year.
- Decreasing its solid waste by 35 tons and increasing its recycling by 265 tons since 2003.

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Distribution of chilled water is now automated and optimized to more efficiently meet demands. In addition, operating personnel now have the data necessary to make informed decisions relative to chilled water production versus consumption. The hospital realized a payback from the system during the first year of operation. The measured kWh use was a decrease of more than 2 million kWhs from the prior year with similar cooling load requirements. Peak summer cooling demand was reduced by 1,000 tons of cooling units.

Lighting Retrofits

In 2004, with a desire to conserve energy by converting the lighting to more energy efficient fixtures, the hospital hired contractors to survey the facility and present a plan to replace lamps/fixtures based on life of the proposed lamps, energy efficiency and cost. Based on the survey, it was decided to perform the retrofit in two phases. Each phase consisted of replacing lamps with more efficient lamps, cleaning the fixtures, and replacing the ballasts with electronic ballasts, where needed. In Phase I, the hospital saved more than 58,000 kWhs per month with a capital investment payback of less than a year. In phase II, payback was 1.7 years and consumption savings was 51,000 kWhs per month.

Water Use Reduction

The hospital implemented several water conservation projects, to reduce water consumption by 9 million gallons per year. Highlights include:

- Waterless Urinals - During 2005-2006, the hospital replaced 50 percent of the urinals in the facility with waterless urinals. The remaining urinals were later converted.
- Extensive use of native plants and drought tolerant plantings to decrease water use associated with landscaping - The hospital is set in an urban campus setting and has won awards for its green spaces and landscaping. A green roof with drought tolerant plants helps to reduce power demand and storm water management, while providing scenic views.

Waste Management

Since 2003, the hospital decreased its solid waste by 35 tons and increased its recycling by 265 tons. Their waste management program includes:

- Recycling paper, cardboard, glass, light bulbs, batteries, motor oils, cooking oils, computer monitors, TVs, ceiling tiles, wood skids, phone books, and scrap metal;
- Construction recycling program, including recycling of carpet, paints/solvents, cardboard, scrap metals, ceiling tiles, light bulbs;
- Infectious waste program, processing its infectious waste onsite to render it non-infectious, and shredding and compacting the processed waste before leaving the campus;
- Furniture/equipment reuse program, donating used furniture, building materials and equipment to various local agencies for reuse; and
- Medical device reuse program, reprocessing medical instruments that would otherwise be thrown into the solid waste stream.

Material Use

The hospital uses a national buying group through the Hospitals for a Healthy Environment (H2E) program. Products that may contain mercury are screened by the buying group prior to purchasing. Products that contain mercury are reported to the hospital for review.

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Furniture purchased at the hospital is selected based upon need as well as environmental performance. Most furniture is purchased through a manufacturer which has a policy of "Cradle to Cradle." The majority of furniture is highly recyclable at the end of its useful life, constructed of recycled content, and "Green Guard" certified.

Standardized product lines of carpeting were used. The manufacturer meets the requirements of EPA Final Guidance and ISO 14000 for Resource Conservation, Product Manufacturing, Product Performance, and Extended Product Responsibility. All carpeting removed from the hospital is recycled through this program. During 2005, 8.6 tons of carpeting was recycled, and in 2006 6.5 tons was recycled.

For more information

The Christ Hospital, 2139 Auburn Avenue, Cincinnati, Ohio 45219, Rick Perkinson, (513) 585-2726
perkinsr@healthall.com

If you would like additional information about Ohio EPA's environmental stewardship award program, contact the Office of Compliance Assistance and Pollution Prevention (OCAPP) at 800-329-7518, or visit OCAPP's website at www.epa.ohio.gov/ocapp/ohioe3.aspx.