

# \$\$\$\$\$EEING GREEN

FROM SOLAR TO RECYCLING, FROM COMPOSTING TO CLEANING, FROM LIGHTING TO LAUNDRY, WHEREVER A CORRECTIONAL FACILITY CAN GO GREEN IT CAN SAVE GREEN.

**JUST** this spring for the first time the American Jail Association conference dedicated space to an Eco Aisle to promote sustainability. The growth in interest continues as green practices are shown to save costs as well as the environment. With a 24/7/365 conglomerate there is no embodiment that more readily shows results from even small changes apparent to the bottom line and ecology.

There is a misconception among some practitioners and others that pursuing a sustainable or “green” approach to management of a correctional facility requires large, up front expenditures, says Tommy Norris, owner and operator of Green Prisons.org, a veteran prison administrator. “Nothing could be further from the truth. In fact some of the most effective sustainable initiatives are ‘no cost’ and in some cases can

actually produce revenue.” He cites a specific example: recycling.

“By recycling commodities that regularly come into the institution administrators can create work opportunities for offenders, thus reducing idleness. Recycling also can eliminate trash hauling, tipping, landfill fees as a result of the reduction of these recycled commodities in the waste stream.” He adds, “Some agencies have expanded their recycling operations beyond just their own waste materials to include similar recyclable items from other government agencies, road crew pick up, etc. As a result these savings and revenues go to support expanded recycling efforts, equipment and other program-related expenses.” Other green measures Norris cites include solar (detailed below) and two types of composting: windrow, which is free but requires labor, and in-vessel which is expounded on below as well. Directing interested traffic to Green Prisons.org’s

webinars, Norris surmises: “Management must do their homework to determine what initiatives/programs make sense for their facility, establish clear goals for the program and communicate them effectively.” And, “staff must be open to change and see themselves as willing collaborators on the new way of doing business.”

As for a progressive way of doing business, ozone helps to reduce overall operating costs and provides an ROI or payback for its purchase, asserts Jack Reiff, president, Wet-Tech. And, “all of the attributes fit the functionality and green sustainability category.”

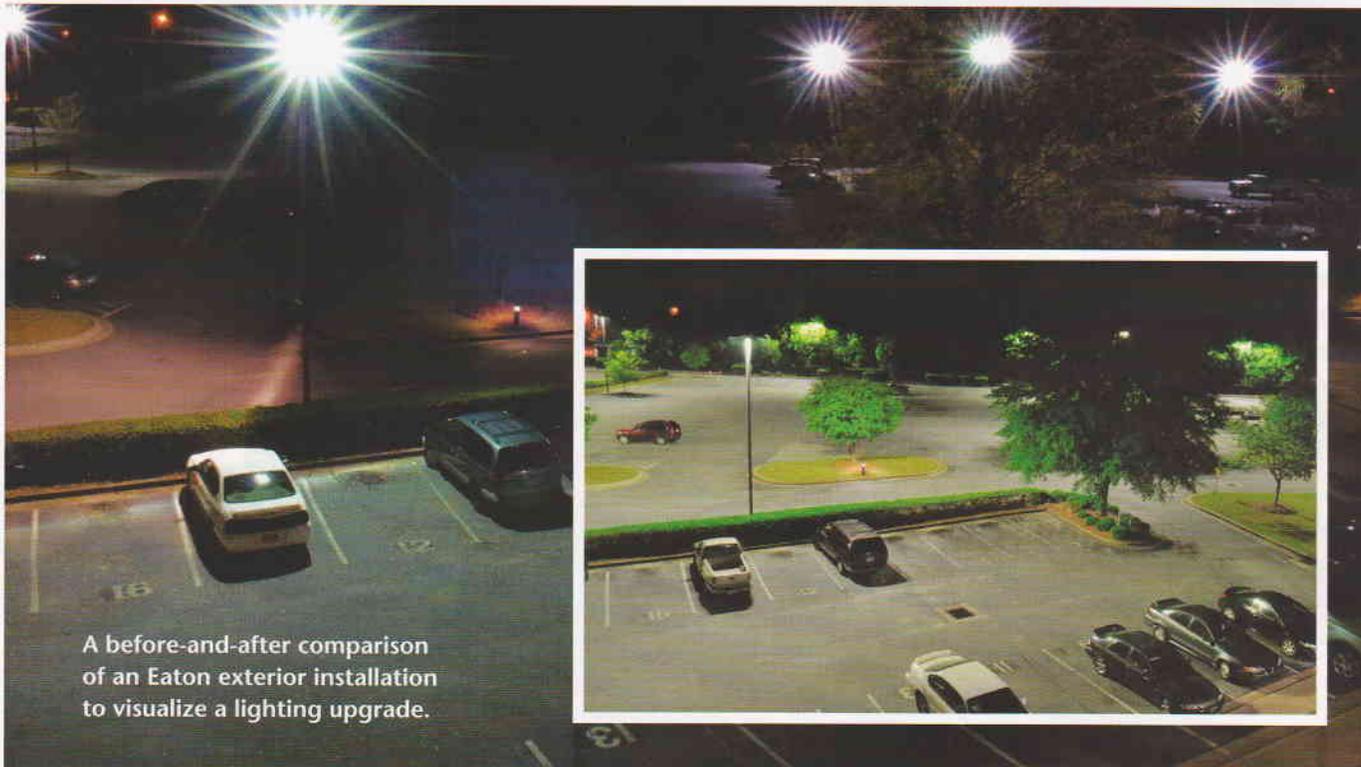
Ozone has a unique characteristic since it is made from air (oxygen) and readily converts back to air, without leaving any contaminating ingredients behind, he says. Used properly, it can help to reach or maintain a green environment. “Ozone is a disinfectant and destroys most bacteria and viruses on contact, helping to

purify the air we breathe and disinfect our linens." As an oxidizer it reduces the organic contaminants that are flushed to the sewer system, thereby helping to reduce water pollution, and while cleaning up wash water reduces the number of washes saving water.

Ozone as a strong oxygen gas contributes to a wash formula so that chemicals used are greatly reduced because the consumed oxygen is replenished and allows the chemistry to work

ket as a way to dramatically reduce emissions and cut hot water and space heating energy consumption." On average, over half of the energy consumed by a correctional facility is for hot water and space heat, he says. "Our solar thermal system saves 50 percent and more on energy for heat production and extends existing boiler life. Our collectors work from Ultra-Violet (UV) rays so we create heat even on cloudy days. This is particularly attrac-

ability and make it their daily task to keep food waste out of landfills, explains Eskill Eriksson, president, EC ALL Ltd. "Food waste handling in a prison/jail is no longer a 'punishment,' but instead an opportunity, both there and then to give some meaning to life in prison, but also for a future after release," he says. "And the possibility of involving the community in the recycling process—food waste collection, compost use etc.—



A before-and-after comparison of an Eaton exterior installation to visualize a lighting upgrade.

more efficiently. "Reduction of wash time also helps to reduce the use of electrical energy for motor operation and through its water-conditioning properties makes the wash water slicker, enhancing water extraction and thereby reduces dryer time, thus gas and electricity," he says. Ozone as a wash chemical enhancer also allows for reduced wash-water temperatures which contribute to reducing greenhouse gas emissions.

Additionally, when it comes to emissions, Charlie Slavik, vice president, Marketing & Sales, Solar America Solutions reports, "Our solar thermal technology is emerging in the correctional mar-

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gives prisons and jails a place in society besides keeping 'criminals' inside a fence." Since 2010 EC ALL Ltd. offers Big Hanna composting solutions in cooperation with Swedish company Susteco AB, owner of Big Hanna trademarks and manufacturing. "In the case of in-vessel composting, an example is the Ohio Department of Rehabilitation and Correction where use of Pulpers and In-vessel Composters generate significant savings. A 'typical' 2,500-inmate prison can save \$1,000 or more per week with this type of system and see pay-back periods of three to five years for a complete system," notes Eriksson.

### Inmates on board

"In my work with corrections, it is the greatest joy to see how inmates grasp the idea of sustain-

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"While composting is 'old technology,'" he continues, "the use of in-vessel technology opens new doors—we can now compost food waste on-site in a dense urban environment, enclosing and controlling both leakages and odors. Corrections are a perfect fit for in-vessel composting technology with significant savings, work force availability, inmate work and training opportunities, community involvement possibilities, and environmental benefits."

Often the most visible initiatives to save money and "go green" are ones that require large upfront capital investments such as composting, solar or geothermal, remarks Ron Farkas, CorrectPac division manager, PortionPac Chemical Corporation. "Though somewhat less exciting, small modifications to operations that affect water use and waste production, are budget-friendly ways to affect measurable outcomes while advancing sustainable, or green, goals. Those that make the greatest impact over time, are the easiest to implement, and the least expensive are typically found in the daily operation of a facility."

It is worth the effort to examine everyday maintenance procedures, he says, and one such area is cleaning and sanitation. Traditionally, cleaning programs were designed to employ Ready-To-Use (RTU) detergents which are comprised mostly of water, and shipping them to a facility inherently consumes more energy for transportation, uses more packaging per ounce of cleaning material, and in turn, produces more waste than a similar pre-measured product, Farkas contends.

"The PortionPac CorrectPac System is designed to reduce environmental impact from delivery to use. Instead of shipping water, CorrectPac detergents are concentrated and pre-measured to be diluted on site in reusable color-coded containers.

## GREEN ADVICE

"All facilities would like to have the ability to be completely sustainable. Unfortunately, this is not feasible with the multitude of demands on the corrections industry. My suggestion is to first look to the products that provide a defined, measurable ROI. Also, look to options that offer multiple benefits." —Ralph Daniels CEO/President Aquawing Ozone Laundry Systems

"The best chance for success begins with identifying and setting easily obtainable goals. Daily operations typically provide the most opportunity for sustainable initiatives in facilities of any size. Rather than look at individual projects, the most impact will be realized when there is a big picture plan for the facility. Reach out to other facilities that have implemented similar initiatives and learn from their experiences." —Ron Farkas, CorrectPac Division Manager, PortionPac Chemical Corporation

"'Going green' is great for the environment, but it's got to be cost-effective and easy to install, too. It's not good to have to rip out an existing system and start from scratch—especially if the existing infrastructure has useful life left. Green and sustainable products should pay for themselves in a reasonable amount of time, and, most importantly, integrate seamlessly into existing infrastructure."

—Charlie Slavik, Vice President Marketing & Sales, Solar America Solutions

"I think the basic message I hope correctional administrators take away from this discussion is that the inclusion of sustainable practices, technology and products can save the institution significant dollars, in many cases provide offenders jobs and training and help the institution become a more responsible member of the community in which their facility is located." —Tommy Norris, Owner and Operator of Green Prisons.org

An on-site approach to dilution allows for a reduction in the resources used during manufacturing, conserves energy from transportation and distribution, and drastically reduces packaging waste." He adds that the CorrectPac system also promotes proper use, reducing the amount of wasted detergents entering landfills and wastewater.

Adding to the ozone advantage mentioned earlier, Ralph Daniels CEO/president Aquawing Ozone Laundry Systems expounds, "What is often overlooked in the corrections industry is the laundry, where 20 percent to 40 percent of the utilities are consumed. There are a multitude of energy-saving and conservation measures that can be taken to save massive amounts of resources within a laundry," says the Green Prisons.org board member. An installation of an Aquawing system "will typically yield an ROI in 14 to 24 months. In addition, energy-efficient washing and drying equipment would be next on the list; however, that can be a budget challenge if the current equipment is functioning."

Aquawing reduces hot water usage "by as much as 100 percent," he notes, which directly correlates to energy and utility savings. "Total water reduction is typically about 20 percent and the Aquawing product line also allows dryers to be more effective, reducing their energy consumption by as much as 20 percent."

With such an ozone system installation, he furthers, nothing changes in the workflow of the correctional facility. "The system is 100 percent automatic and seamless. The laundry personnel are not required to do any additional steps, or to alter the way they currently operate the laundry. The product is easily retrofitted to the existing washers without any additional plumbing and without any downtime in the laundry."



Big Hanna from EC ALL Ltd. is an on-site, in-vessel, aerobic composting machine. It produces pathogen free, ready compost from food wastes.

## Shedding Light on the Subject

Similarly, LED lighting fixtures offer the promise of long life and reduced maintenance cost, attests Steve Guarracino, source market specialist, Eaton. "Exterior lighting is certainly an area that needs to be a priority," he notes. "Retrofitting outdoor lighting from HID (high-intensity discharge) to LED offers not only an opportunity to save energy but also improve the overall quality of lighting in the application. A typical 400-watt HID area site lighting fixture consumes on average 458 watts, which can easily be replaced by a much lower wattage LED fixture resulting in an over 60 percent energy savings, while actually improving the quality of the lighting. An additional 30 percent to 50 percent energy savings can be achieved by implementing a controls strategy that could include simple on/off motion sensing,

dimming and daylighting. These types of controls are really not feasible in an application utiliz-

**PortionPac Chemical Corporation's CorrectPac cleaning system vs. ready-to-use saves on shipping and packaging, eliminating waste and energy to transport.**



CorrectPac®

ing HID sources," he explains.

"The rapid adoption of energy-efficient LED lighting fixtures with a factory-installed integrated control system is gaining momentum," details Guarracino. "Integrated controls offer simple

installation and a stable platform. This type of control strategy also allows individuals the ability to have the right amount of light at the right time, avoiding over lighting an application that results in increased energy savings."

Whether energy savings, reduced waste or just a more attuned approach to the environment, correctional facilities can "see green" when it comes to the possibilities available to continue the momentum to go green.

*For more information:*

*EC ALL Ltd., [www.ec-all-ltd.com](http://www.ec-all-ltd.com), 612-237-0831 (cell), [eskil.eriksson@ec-all-ltd.com](mailto:eskil.eriksson@ec-all-ltd.com)*

*Solar America Solutions, [www.solaramericasolutions.com](http://www.solaramericasolutions.com), 317.688.8581, [Charlie@solarameri-](mailto:Charlie@solarameri-)*



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*Aquawing Ozone Laundry Systems, [www.aquawingozone.com](http://www.aquawingozone.com), 1.888.296.4777, [info@aquawingozone.com](mailto:info@aquawingozone.com)*

*Eaton, [www.eaton.com/lighting](http://www.eaton.com/lighting), 770.486.4800,*

*[TalkToUs@Eaton.com](mailto:TalkToUs@Eaton.com)*

*PortionPac Chemical Corporation, [www.correctpac.com](http://www.correctpac.com), 312-226-0400, [rfarkas@portionpaccorp.com](mailto:rfarkas@portionpaccorp.com)*

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<http://www.seia.org/policy/solar-technology/solar-heating-cooling>

<http://www.epa.gov/solidwaste/nonhaz/municipal/hierarchy.htm>

<http://www.epa.gov/foodrecovery/>

<http://compostingcouncil.org/>

<http://www.peopleandplanetandprofit.com/>

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