

KEEPING AN EYE OUT

“Green” improvement possibilities for correctional facilities

BY ROBERT BRECKENRIDGE II

For decades, the world has been shifting towards practices that reduce the negative impacts that are being placed on the environment on a daily basis. This involves creating new technologies that are not only efficient and long lasting, but also reduce the amount of pollution being produced. The term “sustainability” has been used since the creation of this movement; a word defined by the National Law Enforcement and Corrections Technology Center as “all technologies that improve efficiency of natural resource use, reduce negative impacts on natural environments and social systems, mimic natural processes and systems and restores the balance between human systems and natural resources.” Throughout the years, multiple federal state mandates have been made to increase energy efficiency.



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Correctional facilities have been on the leading edge of adopting sustainable practices, through both state and federal laws and collaboration with universities and grassroots organizations, in order to create more energy-efficient and environmentally friendly communities. A focused effort has been made on state and federal levels to create cost-effective strategies that maximize efficiency while cutting down on the cost of the day-to-day energy and utility usage that is used in prisons and jails. Throughout the country, “going green” has first and foremost been shown to have a positive impact on the environment. In addition to that, implementing energy-efficient standards and practices has substantial potential for inmates to learn valuable skills that can lead to employment upon re-entry. Correctional facilities also yield major benefits from adopting more sustainable practices. Adopting “green” practices and standards have shown to lower operating costs and promote collaboration with local organizations to constantly find new environmentally sound technologies that are energy efficient.

Reducing the impact that correctional facilities have on the environment is paramount. All correctional facilities run 24 hours a day, which requires a constant usage of water, a heating ventilation and cooling (HVAC) system, as well as electricity to accommodate for a rising prison population. In addition to the rising utility use, the output of food and other waste products have increased as well, creating a need to find environmentally-sound alternatives that are sustainable, cost efficient and are also beneficial to inmates.

Recycling and composting

Recycling materials is a basic practice that can easily be implemented in all correctional facilities. Every day, a significant amount of materials that could be reused or recycled, such as paper materials, food waste and electronics, are thrown in the garbage. Implementing a comprehensive plan that reduces the amount of waste that is sent to landfills would create a remarkably positive impact on the environment, and would also reduce the cost of waste disposal. Correctional facilities that have



Composting is a process that breaks down every day food wastes and turns it into materials for gardening.

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adopted sound recycling practices have proven to yield excellent results. For example, the Oregon Department of Corrections (ODOC) created a comprehensive sustainability plan that provides goals for the immediate future as well as a plan for the long term. Just this year alone, ODOC has recovered over 730,000 pounds of material, ranging from wood to batteries, to be recycled.

In addition to recycling, composting is a highly-effective practice that turns waste products into mulch used for gardens and flower beds. Composting significantly cuts down on the cost of waste disposal, and offers educational benefits for inmates to learn the process of breaking down food scraps and other materials to create materials for landscaping and gardening. For example, the Virginia Department of Corrections (VADOC) has operated a compost program for the past 10 years at the State Farm Correctional Complex in Powhatan, Virginia. The program at State Farm is comprised of three in-vessel units where pre and post-consumer food waste is mixed with shredded pallets to produce mulch that is used on flower beds and gardens throughout prisons in the area. According to the VADOC, in 2017, the State Farm compost program processed over 140 tons of raw food waste saving \$7,500 in landfill fees. →



Compost piles at the Augusta Correctional Center.

Photo courtesy Virginia DOC

According to the VADOC, food-waste diversion programs have expanded to different parts of the Commonwealth and with new and unique methods within the past two years. Traditional and vermicomposting, which is composting using various species of worms, programs have popped up in prisons in the eastern and western portions of Virginia. Food dehydrators have brought a new method of managing waste and two of these units were installed at Augusta Correctional Center. According to VADOC, the machines have processed between five and six tons of food waste per month and the dehydrated material is being used as a soil amendment in facility gardens. The prison has seen a reduction in garbage pickups each month and has fewer pest issues in its trash and kitchen areas.

LED lighting

As stated earlier, correctional facilities are run 24 hours a day, every day. The amount of electricity used on indoor/outdoor lighting has a major impact on a facilities' monthly energy bill. According to the U.S. Energy Information Administration, lighting alone constitutes 33 percent of electricity used in correctional facilities. Replacing old light fixtures with energy efficient lighting has shown to have an immediate effect on utility bills.

Light-emitting diodes (LED) lighting has been readily available for decades now, and are a durable and efficient alternative to traditional lighting. According to Frank Gonzales in his article "Going Green with LEDs," LED lighting lasts longer than fluorescent and other traditional lighting (on average between 50,000 and 100,000 hours), and requires very little maintenance.

Water management

The way that different correctional facilities manage their water efficiency is highly dependent on where they are located and the type of climate that they are in. However, no matter the climate, water reuse and reduction is a major cost-effective strategy that can be implemented in several ways. Low-flow toilets are a great way to reduce water consumption and usually produce an immediate return on investment. Low-flow shower heads, urinals, dishwaters and others are also available. Using low-flow technology, accompanied with methods to collect water from the natural environment, can minimize water usage considerably. Using basins to collect storm water runoff is a practice that can be easily implemented and can be used for gardens. Many new technologies that have been produced are centered on using water more efficiently in order to cut down on the costs of high-water usage.

HVAC systems

Another sustainable practice that correctional facilities can adopt is upgrading their HVAC systems. An energy efficient HVAC system, along with proper insulation throughout the building, is cost efficient and has considerable health benefits. According to Paul Sheldon, if not properly attended to, HVAC systems can become major pathways for the distribution of diseases, germs, viruses, mold, mites and toxins. In addition to creating an environment free of potential toxins, proper HVAC maintenance ensures that facilities have proper heat transfer and cooling, which translates to a more comfortable environment for inmates and correctional staff. Making changes to an existing HVAC system to improve efficiency has shown to save money and have a significant impact on reducing the amount of toxins in the air.

Implementation and cost efficiency

Correctional facilities seeking to become more energy efficient should not feel like they have to start from the beginning in order to create a sustainability plan. There is a large amount of literature on how to “go green” and adopt policies and standards that are highly efficient and cost saving. According to their website, Leadership in Energy and Environmental Design (LEED) is the most widely-used green building rating system in the world. LEED provides resources and a framework to create more “green” buildings. Developed by the U.S. Green Building Council, LEED can be used to evaluate how efficient the building currently is, and shows areas for improvement. According to the LEED for existing buildings operations and maintenance guidebook, these six categories are used to evaluate how green a facility currently is:

1. Sustainable sites
2. Water efficiency
3. Energy and atmosphere
4. Materials and resources
5. Environmental quality
6. Innovation in operations

After completing the evaluation, this criterion can be used as a baseline in the process of becoming a more sustainable facility. Developing a long-term sustainability plan, based off LEED standards that includes efficient

water, lighting and other utility use, is necessary in adopting practices that are energy efficient and sustainable for the future.

As a result of becoming more energy efficient in the practices that a correctional facility adopts, becoming more cost efficient is a major added bonus in adopting sustainable policies and standards. Due to the rising inmate population, correctional facilities are producing more waste and energy than ever before, creating a need to implement policies that not only accommodate for the rising number of inmates, but also deal with the lasting impact that these facilities have on the environment. Reducing costs by adopting green practices provides a facility with the opportunity to use the money saved for things such as employment opportunities, vocational programs for inmates and more.

Collaboration between correctional facilities and local universities and organizations are important in ensuring that facilities stay on the cutting edge of sustainability practices and standards.

Career and vocational training for inmates

Large numbers of inmates are released from jails and prisons yearly, many without jobs waiting for them upon re-entry. Gaining employment upon release is critical in lowering the chance of reoffending. Limited opportunities for employment are available due to the fact that most employers are unwilling to hire someone with a prior conviction, and those that are available are often entry-level and pay minimum wage. However, adopting sustainable practices provides an opportunity for inmates to participate in vocational training for an emerging job market involving businesses that are adopting green practices.

Programs that offer training in recycling, gardening and habitat and species restoration have been on the rise and offer inmates a chance to learn invaluable skills that not only provide job experience that can lead to long-term and full-time employment, but also provide a sense of belonging for those who participate. Placing inmates in job programs while they are incarcerated is an excellent way to provide work experience and skills that can be used for job placement upon re-entry. According to the National Institute of Corrections, these job programs offer an opportunity of employment in an industry that has substantial room for growth and potential career pathway.

According to the National Institute of Corrections, major areas of employment for green vocational training programs are:

- Renewable energy generation.
- Transportation and alternative fuels.
- Energy efficiency-green construction and buildings.
- Manufacturing.
- Agriculture and forestry.
- Environmental protection.

Gardening specifically has shown to result in various benefits. Daily exposure to nature has been shown to reduce symptoms of anxiety, stress and depression in inmates. In addition, giving inmates the responsibility of tending to and growing plants and food may provide a sense of purpose and could spark personal change. Spending an extended period of time outside is very effective in offering a sense of community re-engagement that is important for re-entry.

Collaboration between correctional facilities and local universities and organizations are important in ensuring that facilities stay on the cutting edge of sustainability practices and standards. The Sustainability in Prisons Project (SPP) Network, a joint effort between correctional departments from different states with the common goal of bringing science and nature into correctional facilities, was created by the Washington State Department of Corrections and has been the leading force in creating educational and conservation opportunities for inmates. In 2012, ODOC joined the SPP and since then, all 14 of Oregon's prisons, as well as the two youth facilities, have joined and now offer a wide range of programs including conservation efforts, gardening and education. According

to ODOC, all of their facilities have gardens, providing inmates with the opportunity to learn vocational training skills centering on sustainability and organic gardening from master gardeners. ODOC worked with Oregon State University for the creation of a sustainable gardening course that inmates take to earn a certificate of home horticulture, an excellent tool for employment upon re-entry into society. According to the Oregon Department of Corrections, through the implementation of this program, ODOC prisons have produced over 1,257,000 pounds of produce since 2013.



Photo courtesy Oregon DOC

Oregon DOC inmates planting lupine flowers.

A cost-efficient and positive environmental impact

Green and sustainable practices are becoming a staple of correctional facilities. Adopting these practices and standards has shown to yield major benefits for inmates, correctional facilities and most importantly the environment. Vocational training and green job placement opportunities for inmates is vital in reducing recidivism by placing inmates with an entry-level job opportunity with substantial room for growth. Though many states have implemented federal and state mandates to create more sustainable practices, collaboration between facilities and local organizations or universities has been important in keeping up to date with the latest practices that not only are cost efficient, but have a positive impact on the environment as well.

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