

LIFE SAVERS

Processes that help staffing become more effective and extend equipment's longevity.

Deferring maintenance on prisons and jails—which may solve short-term funding issues—can have an adverse effect on the ultimate life of a facility. Postponing maintenance and repairs, like putting off a regular check-up with the dentist, often costs more in the long run, say industry experts. Boilers, HVACs, security systems, computers and other modern technologies need routine maintenance, and withholding it may quicken their demise, resulting in a major repair or requiring a full replacement.

In fact, according to a CGL white paper titled *Deferred Maintenance Crisis*, the practice of deferring preventive maintenance has led to a crisis in local jails and state correctional facilities

across the country valued somewhere between \$16 billion and \$32.5 billion. And if left unchecked, without proper funding and a policy correction, the paper proclaims that "the cost of deferred maintenance will double every five years."

Part of this crisis stems from the fact that so many of our jails and prisons are timeworn. As far as overall construction, the largest building boom in U.S. history occurred from 1980-2000. Fifty-four percent of the prisons in operation today were built during that period, according to Joe E. Lee, PE, CEO, Facility Management with CGL. Currently about 965 major state correctional institutions are in operation. Of them, at least 522 active state prisons opened between 1980 and 2000 (about 54 percent). Therefore, in total, more than 80 percent of U.S. state prisons are 20 years old or older, representing about \$69 billion in replacement costs, according to the white paper.

The Detriments of Deferred Maintenance

In their evaluations, one of the biggest issues that CGL, an experienced provider of outsourced facility maintenance services for state and local criminal justice facilities, has found is: that the core underlying maintenance doesn't get integrated into the maintenance plan, says Greg Westbrook, president, Facility Management, CGL. "The facility winds up with a substantial backlog of deferred maintenance, which impacts the life of the equipment, increasing your cost and operations and eventually impacting the safety of staff and inmates."

One of the most basic, but important, actions for an owner is preventative maintenance, adds Lee. That is simply changing the filters, etc., services that the equipment manufacturer recommends. If left undone, utility costs may rise; if equipment doesn't function properly, greater

manpower may be required; and if it falls into disrepair, it may need to be replaced sooner than its average lifespan.

Indeed many of our aging state prisons are at a point where they need to be replaced, continues Lee. It's unfortunate that any routine maintenance that agencies may have been done early on was cut short when funding was slashed during the recession in 2008. It left many in a state of disrepair, he says. According to estimates predicted by CGL, it could cost the U.S. prison system \$16 billion to as high as \$100 billion to handle the accrued deferred maintenance costs.

Aging Issues

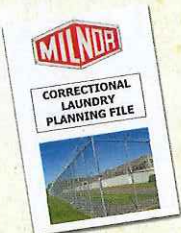
A lot can go wrong with aging prison facilities, just as much can go wrong with an old house. Let's take a prison built in 1980 as an example. It is 38 years old. The underground pipes, for instance, could fail because of age and nor-



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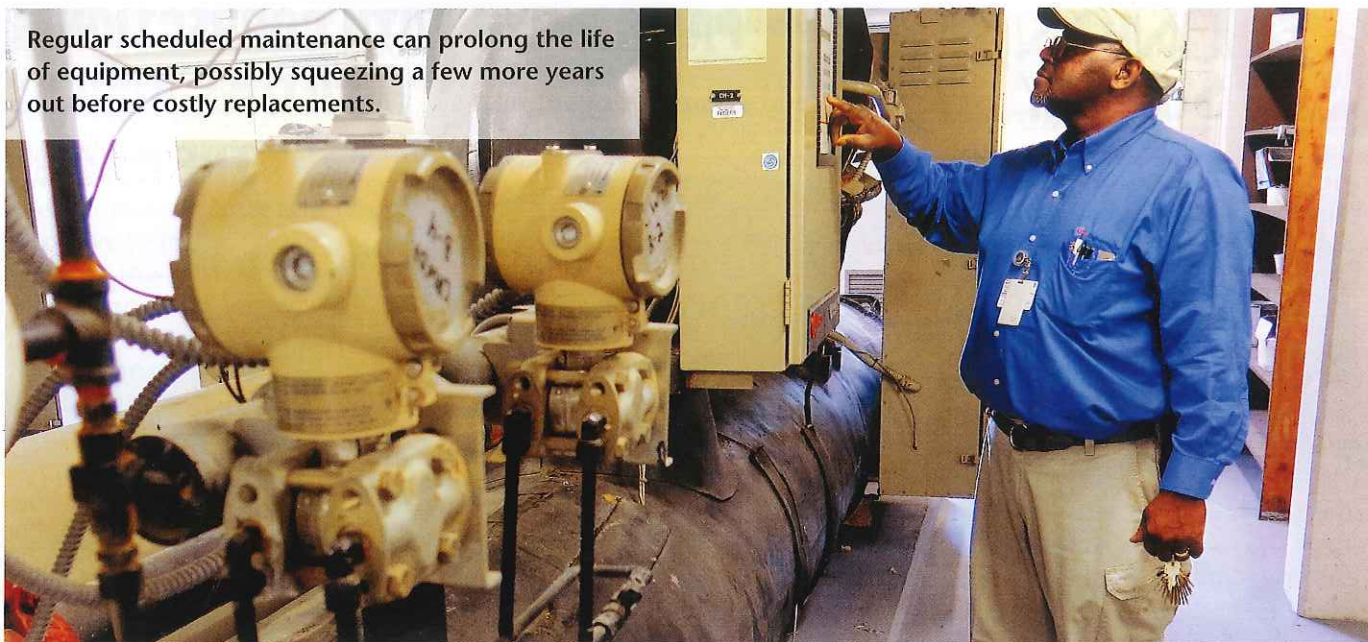


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Regular scheduled maintenance can prolong the life of equipment, possibly squeezing a few more years out before costly replacements.

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mal wear. This situation could be cause for a huge loss of water or sewerage, which could lead to higher utility costs, or contamination. Replacing underground piping, however, is a huge undertaking, and if pipes have been ignored for decades, it may cost more to fully bring them to code and modern standards than to entirely replace the project.

What's worse, having one problem can cause a cascade effect, notes CGL in *Deferred Maintenance*. By postponing work, inflation takes its toll—with an average annual inflation rate of 4% to 6%, maintenance

that was delayed today costs more to catch up with tomorrow. In addition, equipment that is not maintained properly does not perform up to design standards, resulting in operating cost increases of 5% to 10%. There also may be collateral damage; for example, when roofs leak they may damage ceilings, walls and electrical systems, among others. Deferring maintenance can also overburden in-house maintenance staff. When systems break down, it may require that maintenance staff perform more work, and do work they may not be trained to perform.

Finally the true impact of deferred maintenance is in the increased cost to perform standard maintenance activity, furthers the white paper. By putting off maintenance or using subcontractors to perform maintenance, counties/states are actually spending more, especially over the life of the building.

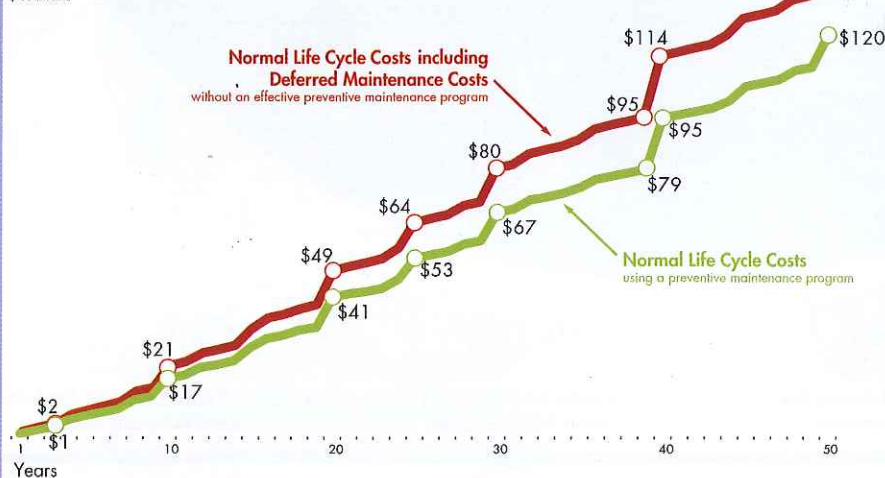
Taking a Holistic View

Planners, such as CGL, frequently look at Total Cost of Ownership (TCO), which is defined by Wikipedia as a financial estimate intended to help buyers and owners determine the direct and indirect costs of a product or system.

"TCO impacts everything," says Lee. CGL, with a staff that includes planners, architects, engineers, and operational experts who formerly served as managers in the correctional field, is able to offer planning advice "not just from a technical maintenance point of view, but from the operations side to give them a holistic view."

It doesn't matter which point in the process agencies consult with planner—it can be advantageous to plan a preventative maintenance program for a 30 to 40 year old building as it is to get support with buildings in the

Cumulative Life Cycle Costs
with and without preventive maintenance programs
for 800,000 square feet
\$ Millions



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Equipment that is not maintained properly does not perform up to design standards, resulting in operating cost increases of 5% to 10%.

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planning and design stages. Obviously beginning earlier in the planning phase will offer greater savings over the long-term.

In another example, CGL planners saved one county significant energy dollars. The county's jail and courthouse, situated across the street from one another, utilized separate energy supplies. By designing a central energy feed for both to draw from, they cut the energy plan nearly in half and saved an estimated \$2.2 million over the course of the life of the buildings. They also helped to establish utility rights, negotiating a better rate structure from the utility. In total, the projected savings over a projected 20-year building life was about \$24 million.

CGL notes that in an independent study Whitestone Research concluded that performing effective maintenance saves agencies on average more than \$4 million over 10 years on a 300,000-square-foot justice or correctional building, when compared to not providing adequate staffing or preventive maintenance.

Overall, lack of adequate staffing or preventative maintenance can prevent an agency from gaining the full investment of their hard earned money. It can shorten the life of the equipment and make the environment unsafe for occupants. One example is a fire alarm that may not work. The prison can still be occupied, but occupants may be in danger. Or, in another example, a lock could fail, and officers may padlock that cell and use that lock to cannibalize other locks. It works in the short run, but it doesn't meet standards, Lee notes. "Air changes, lighting levels, other services that don't meet basic standards ACA established... When you don't meet those standards, you're putting the state at risk. It's a public safety issue."

Because you haven't maintained a proper facility, Lee furthers, "You can argue that the ultimate conclusion is you have

to empty that prison and release people." He adds: "It's a serious issue across the U.S."

For instance, he says, Kansas is doing a major replacement, because they couldn't maintain their older facilities. Utah, Alabama, Florida and Arkansas are others that in recent years are lacking a much-needed infusion of capital to build. "They are struggling with older prisons and at risk for lawsuits, or to meet conditions of confinement."

Dearth of Skilled Labor

One area that is inhibiting agencies, says Westbrook, is that they are "woefully short on a skilled trades technical workforce to do good preventive maintenance to begin with." Factors like pay scale and an aging workforce contribute to their struggle. A second area that's inhibiting agencies is they often don't have the subject matter expertise to tackle complex issues like establishing a preventive

maintenance program or introducing a computerized maintenance management system (CMMS), he adds. And "even if they had that expertise, it is too much to take care of while putting out fires." Therefore, it's important that prison management plan for and budget for routine maintenance and replacement costs. Finally, "To move the needle on changing that culture, a change must occur in their workflow and their daily processes."

It seems the experts see a glimmer of hope and the building maintenance climate is beginning to change, Lee details. The state of California is looking to make serious changes in how they manage their maintenance, and two other states are taking a major step in employing a CMMS to help professionally manage their assets.

Notably, Alabama passed a law in 2017 called the Alabama Prison Transformation Initiative, which requires an \$800 million bond issue for a period of 30 years. It will consolidate 14 of 16 maximum and medium custody level prisons into four large-scale, state-of-the-art regional facilities. Three men's facilities will have 4,000 bed capacity and one women's facility will have 1,200-beds.

An August 2016 staffing study was conducted in Alabama through the National Institute of Corrections on the new proposed male prisons. It results in a net reduction in 352 staff positions (3,857-3,505). The monetary equivalent of the reduction of 352 employees is \$17.5 million in annual savings. The staffing requirements reflected in this analysis not only reflect substantial operational savings, they confirm ADOC is operating at fully staffed levels, ensuring the safety of both officers and inmates.

Much work still needs to be done to get today's prison and jail facilities up to speed. Effecting a well-run operation requires an integrated long-term plan—so that both equipment and personnel maximize their full potential. ☼




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