

# Light and water solutions to save \$907k a year



Efficient lighting and water solutions from Centrica Business Solutions projected to save \$907k a year for the Tennessee Department of Correction



## Creating a safer and brighter space

With more than 6,500 employees, the Tennessee Department of Correction (TDOC) is responsible for 10 prisons, housing some 21,000 inmates.

Since the prison service run by TDOC is funded by tax dollars, the emphasis is on reducing operating costs while also maintaining environmentally sound standards. Consequently, TDOC has recently embarked on a government-funded project to update lighting and introduce water conservation solutions in three of its facilities. These were the Lois M. DeBerry Special Needs Facility in Nashville, Northeast Correctional Complex (NECX) near Mountain City and Northwest Correctional Complex (NWCX) in Tiptonville.

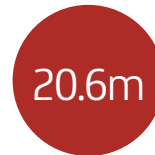
“These institutions date back to the eighties so there was a mix of incandescent and fluorescent lamps that were old and not energy efficient. Staff spent a great deal of time replacing them,” explains Ken Scalf, Director, Office of Facilities, Planning and Construction at TDOC. “We also wanted to prevent the intentional waste of water by the inmates.”

## The right solutions for the right job

After researching the market, TDOC chose Centrica Business Solutions to carry out the work because its proposal represented the best value for money. The three-year contract period started in 2017, with the Centrica Business Solutions teams working within the tight security restrictions of the prison environments and more recently, dealing with further restrictions implemented because of the COVID-19 pandemic.



predicted savings  
from lighting and  
water upgrades



gallons of water  
saved each year



would use the same  
energy as these  
projects save yearly

“

Centrica Business Solutions has done an admirable job. The team worked with our institutions to move across the compounds safely, as space became available, or worked in close proximity to inmates with the appropriate measures in place for everyone to remain safe. We were very happy with their work.”

**Ken Scalf, Director, Office of Facilities, Planning and Construction, Tennessee Department of Correction**

Tool inventory was checked both in and out of the facility every day and Centrica Business Solutions also had to provide samples of the proposed technological components for TDOC tests, to ensure that they were impact resistant and tamper-proof, both very important features within the secure space of a correction facility.

“The main mission is the safety of the public while also keeping our inmates safe and where they are supposed to be. We also need to keep contraband out of the prison and proper lighting gives us confidence that nothing is getting past our inspections,” says Scalf.

#### Technical overview

The old lighting fixtures in all three facilities were replaced with light-emitting diode (LED) lamps, drivers and chipsets. At the DeBerry location, more than 1,300 toilet, shower, sink, urinal and combination water valves were replaced with I-CON water conservation valves to regulate water usage. After being operated once, these valves prevent toilets from being flushed or showers used within a prescribed period of time.

#### Customer results

The measures implemented by Centrica Business Solutions will bring considerable and continued savings for TDOC.

By using the typical industry means of calculation, it is predicted that total annual savings will be \$907,109. Water conservation measures at the DeBerry facility are forecast to save 20,618,704 gallons a year with a value of \$172,579, while total lighting costs, including power and maintenance, will be 38.8% lower.

At NECX projections show that total lighting costs will be 50% lower, a saving of \$150,526 a year and at NWCX they will reduce by 34.5%, saving \$267,663.

Using the US Environmental Protection Agency’s gas equivalence calculator, CO2 emission savings across the three projects equate to 605 cars being driven for one year, more than 6.9 million miles driven by one car, 313,259 gallons of gasoline consumed or the annual energy use of 335 homes.

The need to replace equipment has also been reduced. The lighting installed in correction facilities is required to be on 24 hours a day, seven days a week. The average rated life for fluorescent lamps with this constant use is just beyond one year. But for an LED fixture, it is ten years. The new lighting is also considered safer both for inmates and for prison officers with fewer dark corners and fewer light failures or flickering. The modern lighting has also improved the aesthetics of the prison environments.

“

Obviously, the main mission when undertaking work of this kind is the safety of the public and keeping our inmates where they are supposed to be. If things happen and we have a lockdown then that is a day lost, so it is difficult for suppliers like Centrica Business Solutions.”

**Ken Scalf, Director, Office of Facilities, Planning and Construction, Tennessee Department of Correction**