

COMMITMENT TO WATER SAFETY IN OHIO STATE CORRECTIONAL FACILITIES PROJECT AT-A-GLANCE

Location:

Ohio Department of Rehabilitation and Correction (ODRC)

Contractor:

MG Energy, Mansfield, OH

Lead:

David Metzger P.E., C.E.M

Product Focus:

LEGIOMIX®

Challenge:

Consistent water temperatures and DHW disinfection

**“MY WHOLE COMPANY IS ABSOLUTELY 100%
SOLD ON THE LEGIOMIX. IT IS A GAME CHANGER!”**

~DAVID A. METZGER P.E., C.E.M, PRESIDENT, MG ENERGY~



Overview:

When MG Energy, an industry leader in the mechanical contracting field, was awarded an energy and water saving performance contract for approximately \$9 million for two state correctional facilities, they entrusted Caleffi’s LEGIOMIX electronic mixing valves to provide a highly reliable, low-maintenance thermal solution for control of safe and sanitary domestic hot water as well as highly accurate mixed water temperatures for their customer.

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ORDC INVESTS APPROXIMATELY \$17 MILLION

Servicing the commercial, institutional, and industrial market since 1999, MG Energy (Mansfield, OH) is a full service mechanical firm with a dedicated team of highly skilled engineering and construction trade professionals. Their many certifications include licensed professional engineers, LEED AP, certification of state of Ohio HVAC/Plumbing, EPA certification, master plumbers, and certified energy managers.

Their foremost expert is at the helm. David Metzger P.E., C.E.M., president, has over 40 years of experience in mechanical design and construction as well as energy efficiency commercial and industrial projects.

Winning their first performance based energy upgrade contract with the ORDC in January 2018, Metzger and his team completed the approximately \$8 million, Phase I project replacing boilers, chillers, and pumps. New system design included a transition to indirect water heaters and LED lighting. Within the next 18 months, they were awarded a second contract at the same facilities.

This time, MG Energy was tasked with implementing a series of energy and water conservation and safety measures. The Phase II, energy saving performance contract was awarded for enhancements at two Ohio state prisons located in close proximity to one another, Mansfield Correctional Institution and Richland Correctional Institution.

After being impressed by the new LEGIOMIX 6000 series electronic mixing valve technology at the AHR Expo in 2018, Metzger and his team recognized an outstanding opportunity to incorporate them into Phase II of the project.

A total of 15 LEGIOMIX mixing valves were installed in all control points for the major building domestic water systems, including those that supply tempered hot water to all the cell block areas and dormitories.

MORE RELIABILITY, LESS MAINTENANCE

“The prison facility had their fill of non-working, gummed up thermostatic mixing valves. The equipment we replaced required maintenance and cleaning biweekly,” Metzger explained. “It was only until I was introduced to the Caleffi digital mixing valve with its self-cleaning ball valve design that I was actually confident enough to propose them.”



“I knew the LEGIOMIX’s maintenance savings alone would be a massive plus for the client.”

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SAFE AND SANITARY DOMESTIC HOT WATER SYSTEMS

“We are committed to the health and safety of the offenders and staff. We wanted to find ways to reduce the risk of Legionella within our facilities,” -Richard Shaffer
(Project Manager Supervisor, ORDC.)

Considering that there are upwards of 5,200 mixed security inmates and nearly 1,000 staff members that occupy a total of 50 buildings on this project, it was imperative that a first rate control method be implemented for safe and sanitary water. According to the CDC, the rate of Legionnaires’ disease in the U.S. has increased nearly four and a half times over the past 20 years.

One of the many compelling functions of the LEGIOMIX digital mixing valve is its calendar-based automatic thermal disinfection program—the only one of its kind in North America. Although the LEGIOMIX offers the ability to start the disinfection process on-demand, at the touch of a button, in this case, they choose to operate with the more meticulous automatic, preprogrammed method. Throughout both facilities, the disinfection process runs nightly without the need for technicians to initiate the process. The digital mixing valves deliver a thermal shock, disinfecting the recirculation systems, elevating the recirculating water to 150° F or 160° F for a specific and measured period of time. This control method is robust, breaking through biofilm, scale, and sediment to destroy

harmful bacteria. Point-of-use anti-scald valves ensure safety during the process.

WATER SAFETY CONTROLS MEASURE WITH DATA LOGGING

According to Shaffer, another compelling reason for the ODRC to select the LEGIOMIX is “because it allows for monitoring by the building automation system and records water temperatures.”



The digital recording capacity is comprehensive. All the parameters are updated daily and logged, with temperatures recorded every hour.

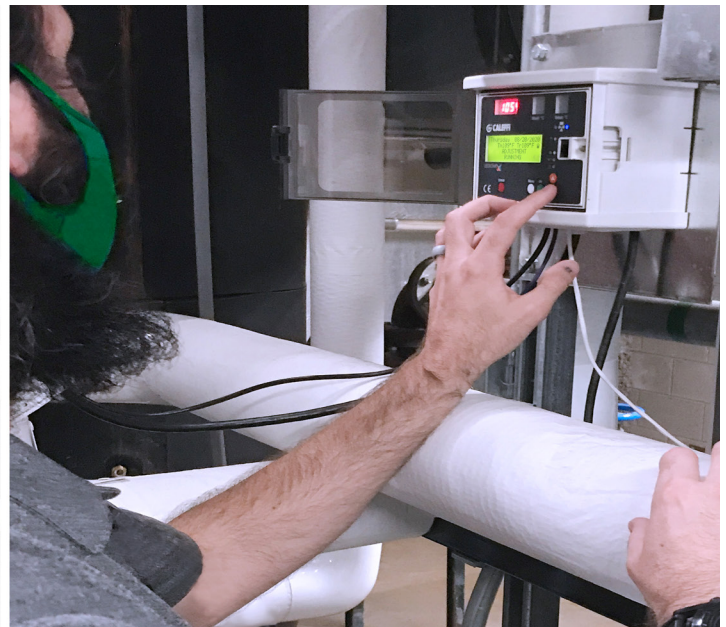
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The recorded data is capable of being connected to a building automation system for remote monitoring and access. Integral Modbus is standard with the Modbus-BACnet gateway available to order based on the specific project needs.

Having a consistent record of data at his fingertips means that Shaffer and the on-site maintenance staff can be 100% assured that “the LEGIOMIX mixing valves are delivering properly controlled water temperature,” as he confirms. After all, the key function of a mixing valve is controlling water temperatures. The LEGIOMIX delivers highly accurate mixed water temperatures, at all times,

with variations limited to less than one-half of a degree. Having a record for verification and reference brings peace of mind.

Reflecting on the project, Metzger explains, “The State of Ohio had no extensive experience with digital mixing valves and the concept of precise control, reduced maintenance, temperature data logging, and prevention of Legionnaires’ disease was so welcomed that the final decision to was really a ‘no brainer.’ My whole company is absolutely, 100% sold on the LEGIOMIX. It is a game changer!”



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