DRIVE SAVINGS, SAFETY, AND SUSTAINABILITY

THROUGH SMART PLUMBING SOLUTIONS

BY PAUL NELSON

The capacity to do more with less has never been more relevant on campus than today. Administrators facing enrollment pressure need to set their schools apart with safe student experiences and commitment to sustainable practices. At the same time, maintenance teams facing staff shortages need innovative ways to improve efficiency and keep costs under control. Ensuring students' safety through campus restroom cleanliness and uptime is also an important aspect of meeting these higher ed goals.

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Smart restrooms have become a key higher ed solution for improving safety, reducing costs, and enhancing sustainability in campus buildings. Some of the first smart plumbing products are restroom faucets, flush valves, and backflow preventers. Connected faucets and connected flush valves enable maintenance managers to align cleaning schedules with traffic volume, predict maintenance needs, and respond faster to unanticipated issues. Connected backflow preventers make it easier, faster, and less costly to reduce flood risk and to better understand water use. With these smart finish and rough plumbing solutions, universities and colleges become more data-driven in building operations and can leverage water- and energy-saving opportunities.

Gaining Real-Time Insights

Smart plumbing products deliver real-time insights securely to a desktop or mobile dashboard.

- Sensors on the product gather data on water activations and water usage, detecting anomalies
- The data is communicated through a secure connection to cloud data storage
- Software analyzes the data and delivers real-time insights to the dashboard

Advanced smart plumbing applications such as plumbSMART™ powered by Zurn can deliver analytics at the device, room, and building levels. Campus facilities managers use these insights to anticipate and manage maintenance more efficiently and clean more effectively. When an unexpected issue arises, they become aware of it more quickly and respond with the right solution because they understand the problem sooner.

Smart Restroom Essentials

Touchless smart faucets and touchless smart flush valves are central components of a smart restroom. Smart products enable cleaning and maintenance based on actual usage data instead of guesswork and set-time intervals, so universities can deliver more restroom uptime and a more hygienic and satisfactory user experience.

As with all smart plumbing products, the value is in the data. Campus facilities managers and maintenance teams have access to real-time data and analytics on usage and activations, as well as solenoid and battery life. They can see more of their facilities, be in more places virtually, and identify areas to concentrate efforts for efficiency, improvement, and conservation. With a smart plumbing platform, they also receive real-time handwashing scores, which can help promote hand hygiene best practices.

Smart restroom products enable campus building managers to

- Rapidly detect and proactively respond to restroom issues and abnormalities, so students, staff, and campus visitors enjoy a cleaner, safe, and stocked restroom experience.

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- Remotely monitor 24/7 to locate and confirm issues before sending staff. When maintenance teams are stretched, this oversight is an important benefit. Remote monitoring can eliminate daily walkaround testing of faucets and flush valves and reduce the need for after-hours and weekend plumbing maintenance.
- Predict maintenance tasks through data analytics such as battery life monitoring and alerts. With actual use data, campus facilities managers can optimize maintenance team productivity, which reduces cost.
- Efficiently manage cleaning schedules to match actual use and traffic volumes. Restroom downtime is reduced, as is the work, cost, and waste from unnecessary cleanings.

Remote Purging for Legionella Control

Some smart plumbing platforms also have a purge feature that allows maintenance teams to accomplish purges remotely across campus, such as those required for legionella control. Teams can also remotely monitor when fixtures were last used, and how long they ran, to identify which fixtures require purging. Reporting within the platform provides documentation and visibility to ensure efficient and compliant purge completion.

Smart Backflow Preventers Provide Visibility

Smart backflow preventers give universities and colleges more data and control over this essential part of building water systems. The original purpose of backflow preventers—to protect the water supply against back siphonage and backpressure of contaminated water into the system—is still in force.

Smart features add remote monitoring and real-time alerts when water pressure falls outside of set parameters or when discharge events surpass customized tolerances. Remote monitoring enables campus facilities managers to know that a discharge event is happening and take appropriate action sooner, which is important since an 8-inch backflow preventer can discharge 33,000 gallons in one hour.

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Smart features of connected backflow preventers include:

- Pressure readings
- Relief discharge tracking
- Automatic water shut-off
- Flow meter
- Historical analytics

In addition, with flow monitoring by smart backflow preventers, higher ed institutions can better understand water consumption campus wide. This tracking enables the deployment of water conservation plans based on historical data and evaluation of use against consumption reduction plans.

The Smart Plumbing Dashboard

The smart plumbing application is the hub for all smart plumbing devices. Smart plumbing products deliver sensor insights securely in real time to mobile and desktop applications. The most

advanced solutions offer sophisticated features that enable campus facilities managers to do more to increase safety, savings, and sustainability.

These features include:

- Customizable maintenance alerts for battery life, run-ons, and more
- Viewing peak traffic and historical usage patterns
- Viewing water consumption trends by device, room, and building to identify opportunities for improvement
- AI analytics of normal use and deviations to alert teams of anomalies
- Plumbing ecosystem remote viewing and management through one platform, on mobile and desktop
- Secure and encrypted wireless and cloud data transmission
- Data-push and -pull application programming interfaces for convenient data exchange and building systems integrations

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Smart plumbing products enable universities and colleges to meet multiple and sometimes competing goals for savings, safety, and sustainability. The transition to smart plumbing products managed with a single system campus-wide opens the door to more efficient use of the maintenance and water resources universities have today.

ABOUT THE AUTHOR: Paul Nelson is the Product Manager for Connected Products at Zurn Elkay Water Solutions. His focus is directing engineering and sales teams at Zurn Elkay to integrate plumbing solutions into a digital management platform like plumbSMART™ powered by Zurn. With years of experience in the plumbing industry, he is excited to see more restrooms and commercial plumbing equipment gather useful data for building owners and facility managers to be more efficient and sustainable. He is based in Milwaukee, Wisconsin.

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