



CONTINUING IMPROVEMENTS IN SANITATION, MAINTENANCE, EFFICIENCY, AND COST SAVINGS



FROM THE END USER TO JANITORIAL STAFF TO BUILDING MANAGER, EVERYONE WANTS TO HAVE A CLEAN, SANITARY BATHROOM EXPERIENCE. FROM TOILETS, TO LAVATORIES, TO BACTERIA-RESISTANT FINISHES, NEW AND EVER-IMPROVING TECHNOLOGIES ARE MAKING THE COMMERCIAL RESTROOM MORE HYGIENIC, MORE WATER CONSERVING, ENERGY SAVING AND EVEN SIMPLIFYING MAINTENANCE.



he Wisconsin P-H-C Contractor Magazine asked several industry leaders to talk about the latest improvements. They included Jeff Wells, Senior Product Manager, Moen Commercial; Gray Uhl, Director of Design, American Standard; Jason Renner, Senior Product Manager, Commercial Plumbing Group, Bradley Corp.; Michael Wandschneider, Commercial Marketing Manager, Kohler Co.; and Jim Bauman, Commercial Manager, Mansfield Plumbing Products.

Q. WHAT'S NEW IN COMMERCIAL RESTROOM FAUCET AND FLUSH VALVE INNOVATIONS/ADVANCEMENTS THAT ARE (1) MAKING IT MORE SANITARY AND MORE EFFICIENT FOR THE USER AND (2) PROVIDING ENERGY EFFICIENCY/ MAINTENANCE SAVINGS TO THE BUILDING OWNER?

Jeff Wells, Moen: Piston flush valve technology is the most exciting innovation currently within the marketplace. It's a superior option for those seeking to reduce water usage and the costs of repair/replacement when diaphragm flush valves fail. Piston technology functions at varying water pressure levels and eliminates the need to reset or replace parts, like diaphragm models. This reduced servicing and purchasing of parts puts money back into maintenance budgets as the products work more efficiently and reliably. A great option is the new M•Dura™ manual flush valves from Moen Commercial. Engineered to provide substantially lower lifetime costs than existing products in the marketplace, the MoDura AccuSet™ piston technology was designed with cost-savings in mind. It's versatile and therefore ideal for all commercial applications, regardless of water pressure variances and usage rates.

Piston technology is also extremely accurate at maintaining flush rates over the life of the fixture; there's no lost elasticity as they age, like diaphragms. Diaphragms that have lost their elasticity flow longer than originally intended and it becomes very expensive for the facility as the flush valve flows many more gallons per minute. Installing a piston flush valve eliminates this problem, providing worry-free performance for building owners and operators, as not many people look into the water closet close enough to realize the leak is happening.

Gray Uhl. American Standard: There are a lot of engineering advances for commercial restrooms here at American Standard. First we have the EverClean surface on many of our commercial chinaware products. This permanent surface is fired into the glaze and will never wear off. It inhibits the growth of stain and odor causing bacteria, mold and mildew on the surface. This super smooth surface keeps fixtures cleaner longer, which is more sanitary and helps to reduce cleaning costs. Second, we have engineered our chinaware fixtures and our flush valves to work together as a "system" to deliver the maximum allowable performance while reducing the amount of water and energy used. We have developed both wall hung and floor mounted bowls that flush on just 1.1 gallons per flush (GPF) and, when used with our flush valves, delivers a MaP score of 800 grams. We have also designed urinal systems that perform on just 0.5 GPF.

Jason Renner, Bradley Corp.: In general, today's commercial restrooms feature forward-thinking products and materials that have durable, attractive, hygienic, safety, sustainable, low-maintenance, and water- and energy-saving qualities.

In particular, we've seen a strong continued preference among both consumers and building owners for touchless restroom fixtures. Handsfree fixtures are convenient and easy for users to activate – and easier for facility owners to clean and maintain. They also cut down on the touchpoints in the restroom, thereby reducing the transmission of germs and bacteria from users' hands.

One of the most exciting examples of new innovations that illustrate the benefits listed above is the completely touchless Advocate AV-Series Lavatory System, recently introduced by Bradley. The Advocate is the very first touchless hand washing fixture to provide a sink, soap, faucet and dual-sided dryer all in one sleek unit.

Bradley's innovative "all-in-one" touchless design simplifies the art of hand washing – as users conveniently and intuitively move their hands from left to right using soap, faucet and hand dryer. The design eliminates dripping water on the floor and promotes safety in commercial restrooms since the user's hands stay within the sink area until they are dried. In effect, water goes down the drain – not on the floor or down the walls.

One final note on restroom hygiene: Aside from touchless fixtures, washroom accessories coated with antimicrobial protection are also creating healthier washroom environments. These antimicrobial washroom accessories, including grab bars, shower curtains, shower seats, and partition door pulls and latches, are designed to inhibit the growth of bacteria, mold, mildew and fungus, and other microbes, beginning when they first come into contact with the product's surface.

Just years ago, the expectation for the lifecycle of some restroom fixtures were about five to seven











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High-quality durable products typically have superior design, making them more aesthetically appealing to end-users. This attractiveness and feeling of quality, in turn, helps create a good impression of management and the overall business.

Investing in high-quality durable restroom furnishings, such as lavatories, partitions, toilets and other washroom accessories, will pay back over time in a number of ways. Sturdier and higher-quality washroom fixtures translate to less upkeep and maintenance. This saves costs on maintenance, repairs, parts and replacement products and frees up time for staff to focus on other more value-added duties.

Durable fixtures also discourage vandalism, accrue less wear and tear from everyday usage, and don't break down as much as their cheaper counterparts. Encountering graffiti on lav counters and partitions, or clogged drains or toilets can be frustrating and disturbing for a consumer, and even raise concerns about a facility's security.

From an efficiency standpoint, research has shown that electronic faucets can help reduce water usage because they turn off automatically when a user leaves the sink so water is not left running. Newer hands-free fixtures – like the Advocate Lavatory System – can achieve a greater water savings. The Advocate is equipped with a hygienic hands-free infrared 0.38 gpm faucet that reduces water usage by 24%. It also includes an infrared, high-speed dual-sided hand dryer, which dries hands in 15 seconds or less, and reduces debris and waste in the restroom, the cost of paper, and labor time for cleaning and restocking paper towel dispensers.

Bradley's solid surface composite materials – Terreon and TerreonRE – used for sinks, counters and basins are a beautiful, yet tough, material for lavatories. Solid surface resists stains, chemicals, graffiti, scratches and heat, which reduces the likelihood of repairs and the need for replacements. The smooth lavatory design used with solid surface material eliminates crevices where microbes can hide, and the material is naturally resistant to bacteria.

Evero natural quartz material is another one of the newest durable materials available for lavatory fixtures. Evero can be sculpted into a range of design options and shapes. Evero is a resilient and low-maintenance product known for its variances in color and texture, much like granite, but is less costly and virtually maintenance free, since it does not require sealing, buffing or reconditioning.

Solid plastic toilet partitions made from 100% post-consumer recycled High Density Polyethylene (HDPE) plastic is another example of a durable and sustainable restroom material. The solid plastic material is ideal for heavy usage, especially in wet humid conditions and is easy to clean and maintain.

Michael Wandschneider, Kohler: "Touchless technologies are becoming the norm in public washrooms. They enable the facility to create a more sanitary space, while also mitigating water wasted through vandalism. Durable, long-life products like the Kohler Hybrid energy cell are energy efficient and significantly reduce maintenance costs over the life of the product. Effective sensing technologies in faucets and flushometers such as the Kohler Insight and Tripoint technologies eliminate false flushes and thus save water, as well.

The Hybrid energy system features a Hybrid layered-capacitor, literally collecting the small electrical discharges of the battery. When the flushometer is activated for use, power is drawn from the capacitor, allowing the cell to maintain its superior power storage.

Across the industry, commercial specifiers have asked for easy maintenance, reliable products and lifetime cost savings. The Hybrid technology ensures all of these aspects and has proven to be well received on bathroom faucets. We anticipate the same positive result with flushometers.

Jim Bauman, Mansfield: The biggest thing over the past couple of years is the introduction of high-efficiency urinals and high-efficiency plumbing fixtures in general.

Waterless urinals were popular about 10 years ago but it was found that there was a lot more maintenance needed, plus it wasn't as hygienic as people first thought and there was an odor.

What came out of that were ultra low-efficiency

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Mansfield's ultra-efficiency model is the Brevity, a wash-down urinal that meets the requirements of the EPA WaterSense program. Designed for retrofit and new applications, the larger version can cover the footprint of an existing plumbing fixture and work with existing pipes and flush valves. It uses only one pint (.125 GPF) and is a part of the company's broad line of high-efficiency plumbing fixtures.

In addition to its low water usage and stylish design, the Brevity has many other features that make it a great choice: Traditional urinals use on average, 1 GPF – almost nine times the amount of water used by the Brevity. Depending on usage, this can translate to over 30,000 gallons of wasted water per year.

The other thing we're seeing from a hygienic standpoint – and this applies more to commercial bathrooms in health-care facilities – is addressing water splash in handwashing because of waterborne illnesses.

New standards in health-care design will be coming out next year (Guidelines for Design and Construction in Health, Care, and Support Facilities Draft 2014, published by the American Society of Healthcare Engineers in association with the Facilities Guidelines Institute). The recommendation is that sinks need to have more depth vs. being shallow. In the last four or five years, a lot of design elements in commercial bathrooms, especially in hospitality and healthcare, were very sleek looking, almost flat. The challenge is once the water hits the sink, it splashes up. The finding is, if water isn't cleaned up in time, that water can harbor germs.

Another guideline out of the draft is for sinks to be drop-in lavatories, not undermounts. The reason is that drop-ins can be sealed with caulk to keep water from going into cabinetry. They are also asking for overflows to be sealed so that water cannot collect resulting in bacteria.

As that becomes the standard in health care, you will probably see that extend to hospitality and other commercial restrooms.

# Q. HOW ARE RETROFITS AFFECTED BY NEW TECHNOLOGY - ARE THEY FINANCIALLY EFFICIENT?

Jeff Wells, Moen: Retrofits are an excellent way to bring the newest technology to existing facilities. Installing new plumbing fixtures can help to maximize energy efficiency and reduce maintenance costs. Replacing faucets with wornout, compression cartridges with newer, ceramicdisc cartridge models can make an impact on the facility's overall functionality and user experience. Newer models are engineered for lower flow conditions in order to save water and can lessen repairs.

Gray Uhl, American Standard: In most cases these new chinaware/flush valve systems can be retrofitted to existing restrooms. You can achieve a 31% water saving compared to a 1.6 GPF and a 14% water saving compared to a 1.28 GPF. The payback time for the upgrade varies depending on the cost of water and energy in your area. When purchased as a system, they come with an enhanced 5-year warranty on both the chinaware and the flush valve.

Jason Renner, Bradley Corp.: There is no doubt that technology has made advancements in the commercial restroom. Although there will be some costs associated with retrofits and renovations, many of today's restroom technology can help to offset costs. High-performance hand dryers that eliminate the need for messy and costly paper towels is one of the fastest growing areas of restroom technology. Hands-free electronic faucets can save thousands of gallons of water annually as well as consume less hot water than traditional commercial faucets. How do you like that? Restroom products that actually offer a return on your investment. Soap dispensers with smart electronics will notify maintenance when the soap level is getting low. This keeps end users satisfied and eliminates the guesswork on refilling.

Michael Wandschneider, Kohler: Retrofits in existing washrooms can have a reasonably quick. positive ROI. Faucets are the easiest fix, but the biggest impact will come from installing highefficiency fixtures and flushometers.

Jim Bauman, Mansfield: Typically, especially if you have an older facility with spud bowls, they are probably flushing at 3.5 GPF. But changing them out to 1.28 GPF you are saving almost 67 percent of water. Depends on the part of country you are in, and how water prices have gone up and how scarce water is.

### Q. DO WE NOW HAVE THE "RESTROOM OF THE FUTURE." OR IS THERE EVEN MORE ON THE HORIZON?

Jeff Wells, Moen: Design is becoming more and more important for commercial restrooms. The availability to utilize designer finishes, like brushed nickel, creates a more "home-like" atmosphere. helping public environments look more current and up-to-date. Moen Commercial recently announced the availability of this new finish for its line of medium-duty M•Bition™ lavatory faucets and shower systems. LifeShine® Classic Brushed Nickel is now available, which is a perfect match to stainless steel accessories commonly found in commercial facilities. The new finish is designed specifically for high-traffic commercial facilities, providing the designer look of classic stainless. Restroom designs will continue to evolve into more hygienic environments with increased use of sensor-operated faucets and flush valves.

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We have the restroom of today that addresses current concerns of building operators and owners, like replacement costs or construction budgets. In the future, we'll see a shift as these decision makers begin to assess the net-present value of saved maintenance costs delivered by products; how users' perception of the facility impacts design; initial investment versus total cost of ownership in a new or retrofitted space; and of course, how to optimize water usage.

#### **Gray Uhl, American Standard:**

At the American Standard Research & Design Center we have power tools that are allowing us to deliver incredible advances in performance while reaching for a new level of water conservation. You will see amazing improvements to public restrooms in the near future.

Jason Renner, Bradley Corp: Building the restroom of the future is an evolutionary process. In some ways, the "future" is here because today's newest technologies, designs, materials and product selections are so sophisticated and advanced. The industry will continue to raise the bar with regard to designing for the future to meet financial, sustainable and customerdriven demands.

Currently, the Advocate Lavatory stands out as one of Bradley's most futuristic and innovative products on the market because it is the very first touchless "all-in-one" hand washing fixture of its kind. We view the Advocate Lavatory as a true paradigm shift in the science of hand washing, offering benefits to both users and building owners.

However, even a decade makes a huge difference in terms of technological advancements. In the future, I expect we'll see more emphasis on the integration of technology into all restroom related components that ties into the building's systems. Also watch for better diagnostics or

indicators on components that will give building staff more information as to what is happening with the restroom equipment.

#### Michael Wandschneider, Kohler:

Washrooms of the future will certainly be touchless, clean, low-maintenance and highly efficient. Kohler's efforts are to continue improvement in all these areas.

Jim Bauman, Mansfield: We have technology to flush less than 1.28 gal., but it's just a matter of making sure they can work with existing plumbing systems. Plumbing design standards 40 years ago could handle 3.5 toilets and 1.5 gal. urinals and 2.5 or 3.0 gal. aerators. There was a lot more water designed to go into the system. The challenge moving forward in existing applications is how far you can push the outside of the envelope in water reduction. New construction is a lot easier because mechanical engineers can design the system to work that way, but in older applications expect some more challenges.



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