

Styling the Touchless Commercial Bathroom

How to choose touchless bathroom fixtures for hygiene, function and design consistency



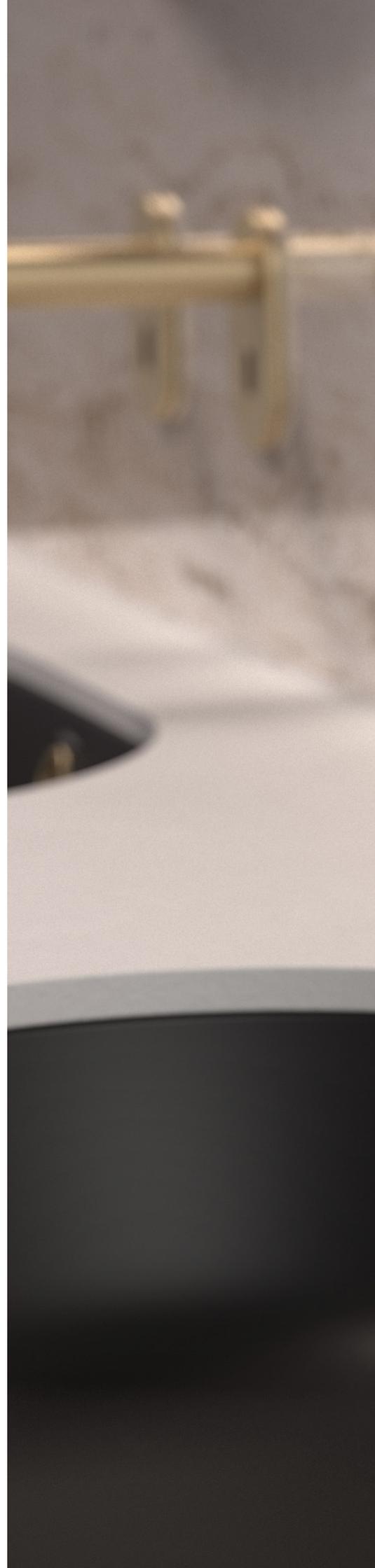
Sensor-operated taps—which enable users to wash their hands without actually touching the tap handle—have been increasingly adopted as a way to minimise cross-contamination and create a perception of safety and confidence in commercial spaces.

Introduction

With the increased demand for hygiene in the post-COVID world, touchless interfaces continue to become more prevalent in homes and commercial buildings. Traditional toilet and tap activation require the user to use their hands, increasing the risk of spreading virus and bacteria through touching infected surfaces. New hands-free technology is now available for all bathroom functions, including flushing the toilet and opening doors, to eliminate shared touchpoints and protect users from infection.

Modern commercial bathrooms have undergone a transformation in recent decades. The tendency for sterile aesthetics and a purely functional design has given way to cohesive elements that work together to create a calm, relaxing atmosphere. As commercial spaces adapt to the multifaceted needs of tenants and users, bathrooms have evolved into areas that are more concerned with an individual's overall health and wellness and less with the singular notion of personal hygiene.

The idea that aesthetics and functionality come together in a perfect balance to craft a space where one can feel comfortable lies at the heart of contemporary bathroom design. With the proliferation of touchless technology—from taps and soap dispensers to toilets—designers and specifiers have been grappling with how to integrate these new solutions into the most private of spaces, while maintaining consistency of colours, lines and finishes.





How touchless technology improves hygiene

Due to the risk of viral transmission, handwashing has become one of the more closely monitored bathroom activities since the COVID-19 pandemic started. Sensor-operated taps—which enable users to wash their hands without actually touching the tap handle—have been increasingly adopted as a way to minimise cross-contamination and create a perception of safety and confidence in commercial spaces.

Tap handles are among the most contaminated surfaces in any bathroom, as found by a 2011 study by global public health and safety organisation NSF International, with 27% of handles testing positive for yeast and mould, 9% for coliform and 5% for staph. Surface transmission is not just a risk for bathrooms. According to a study by Kimberly-Clark Professional, 75% of break room tap handles tested across a range of office buildings were also found to have high levels of contamination.

Touchless tapware can offer you the most effective solution if you are looking for ways to reduce the spread of germs and bacteria. In 2008, the Nordic Water and Materials Institute carried out research on the impact of faucets on hospital hygiene, finding that touchless electronic faucets had significantly less microbial biomass on the surfaces than lever faucets. Fast forward to today, and these lessons can be applied to a range of commercial environments, including bathrooms, break-out rooms, and kitchens.

However, the need to address surface transmission risks goes beyond the bathroom and kitchen tap. Microbes can

be transmitted to the toilet seat and flush button, but they can also be deposited across the bathroom due to the aerosol effect when you flush the toilet. An international review of the risks of bacterial and viral transmission in public bathrooms found that bioaerosols can be transmitted throughout a multi-storey building simply by leaving toilet lids open after flushing.

Many people use the handwashing and hand-drying amenities in public restrooms under the assumption that they are hygienic. But these places could also serve as hubs for harmful pathogens. In one study, fifty-two bacterial species were identified from 55 investigated sites, suggesting that hand-drying facilities in public washrooms can act as reservoirs of drug-resistant bacteria.

Even drying your hands can spread bacteria, with a 2018 study finding hot-air hand dryers collect bacteria from the air and then spread those germs onto freshly washed hands. A 2015 study also noted that jet-air dryers spread 60 times more bacteria than warm dryers and 1,300 times more than paper towels.

Manufacturers are extending touchless technology to carry out extra functions like soap dispensing and toilet flushing in addition to combining touchless operation with more sophisticated water-saving features and the ability to capture fixture usage data. Everyone is more aware that bacteria and viruses can survive on surfaces for months now than they were before the global pandemic, so even a toilet cover that closes by itself is becoming a sought-after feature.





Choosing touchless fixtures

When selecting the best touchless taps for your commercial bathroom, there are a few factors to consider, including the type of sensor, the flow rate, energy, consumption and maintenance costs. Some sensors detect hand movement to turn water on, while others require that something be placed directly beneath the tap. When a touchless tap is activated, water flows for a set period of time before automatically switching off, which reduces water use significantly.

In some cases, you can find similar-looking soap dispensers to complement the tap's aesthetic. Battery-powered or hardwired models are available for both taps and soap dispensers. Periodic battery replacement is required, which increases the need for maintenance. Installing battery -powered models is simpler and less expensive, especially when retrofitting existing spaces, but hardwired solutions require less maintenance.

Touchless hand-drying options include paper towel dispensers that offer individual towels, electric-powered paper roll dispensers, and electric air dryers. Paper towel dispensers must be regularly monitored and refilled when necessary, which may be burdensome to employees in high-volume establishments. However, as noted above, there is evidence that air dryers spread bacteria significantly more than paper towels.

Accordingly, touchless paper towel dispensers are the safest option provided the used paper is responsibly recycled after use.

Over the past few years, touchless urinals and toilets have seen an increase in market share. Touchless flush buttons operate entirely without the user coming into contact with them, making them particularly hygienic and easy to clean. As with other touchless fixtures, touchless flush is available in hardwired and battery-powered forms. Hardwiring is currently the most reliable and sustainable way to flush toilets, with batteries used as a back-up in the event of a power outage. This is because the power required to actuate a flush is relatively high compared to other functions, so battery-powered flush options would have a short battery-replacement cycle.

Electronic bidets are an effective hygiene solution and are also easier to operate for individuals with limited mobility. Many models come with fully adjustable nozzles that can be placed in various positions. The use of toilet paper can be completely eliminated by adding a warm air dryer feature. By using less toilet paper, waste can be flushed more efficiently, which reduces the chance of toilet blockages. Some higher-end models are available with electronic toilet seats that open and close automatically to provide an even greater hygiene experience.

Matching your bathroom aesthetic

Now that we know how practical and hygienic touchless bathroom fixtures are, there is one more important factor that designers must consider when designing a commercial bathroom: the aesthetics of the overall space, which could be compromised by specifying the wrong fixtures.

When choosing bathroom products, it is important to make sure that all of the elements work together to provide a harmonious and cohesive experience. Mixing and matching different bathroom fixtures from multiple brands can result in a disjointed look that runs counter to the calming aesthetics preferred in modern bathroom design.

In the past, this was an issue for new bathroom technologies, which were generally available in a limited number of “futuristic” finishes or treated as one-off “showpieces”. Manufacturers tended to position touchless

fixtures as individual products instead of grouping them within a suite of bathroom solutions with matching aesthetics. Therefore, it was more likely that designers would choose these fixtures as singular items rather than specifying them within a more holistic design approach.

Now, manufacturers like Caroma are offering touch-free components in families with complementary aesthetics. The colour palette of these products has expanded significantly while the underlying technology has also improved. Finishing options now include warmer tones such as brushed brass, brushed gunmetal and brushed nickel, in addition to black and chrome. The shape and size of touchless fixtures have also evolved to include both modern and traditional designs, straight and curved profiles, and other decorative details.

Mixing and matching different bathroom fixtures from multiple brands can result in a disjointed look that runs counter to the calming aesthetics preferred in modern bathroom design.



Combine cleanliness and style with Caroma's touchless technology

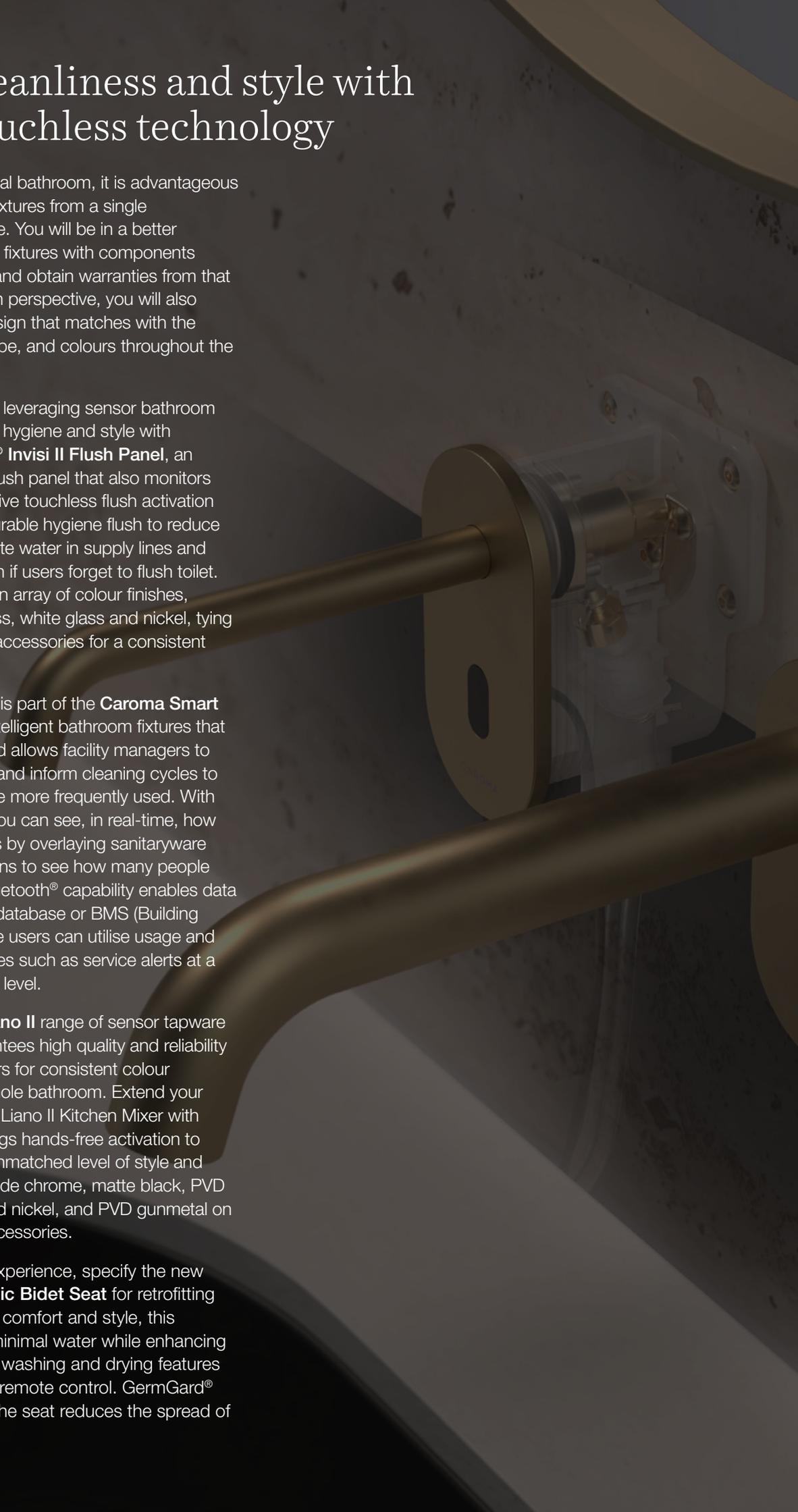
When fitting out a commercial bathroom, it is advantageous to select all your touchless fixtures from a single manufacturer where possible. You will be in a better position if you can repair the fixtures with components from a single manufacturer and obtain warranties from that manufacturer. From a design perspective, you will also benefit from harmonised design that matches with the material, design, layout, shape, and colours throughout the whole bathroom.

Caroma is at the forefront of leveraging sensor bathroom technology for sustainability, hygiene and style with **Caroma Smart Command® Invisi II Flush Panel**, an infrared sensing electronic flush panel that also monitors real-time water use. Its intuitive touchless flush activation is complemented by configurable hygiene flush to reduce risks associated with stagnate water in supply lines and automatic flush configuration if users forget to flush toilet. This product is available in an array of colour finishes, including chrome, black glass, white glass and nickel, tying into matching tapware and accessories for a consistent look and feel.

This Smart Invisi flush panel is part of the **Caroma Smart Command** ecosystem of intelligent bathroom fixtures that tracks fixture usage data and allows facility managers to understand usage patterns and inform cleaning cycles to focus efforts in areas that are more frequently used. With Caroma Smart Command you can see, in real-time, how hygienic a given bathroom is by overlaying sanitaryware activations with tap activations to see how many people are washing their hands. Bluetooth® capability enables data to be sent to either a cloud database or BMS (Building Management System) where users can utilise usage and water data and micro services such as service alerts at a fixture, bathroom or building level.

Caroma's **Urbane II** and **Liano II** range of sensor tapware and soap dispensers guarantees high quality and reliability along with five unique colours for consistent colour matching throughout the whole bathroom. Extend your design to other spaces with Liano II Kitchen Mixer with sensor functionality that brings hands-free activation to the kitchen. To provide an unmatched level of style and luxury, Caroma finishes include chrome, matte black, PVD brushed brass, PVD brushed nickel, and PVD gunmetal on all bathroom fixtures and accessories.

For a heightened hygiene experience, specify the new **Caroma LiveWell Electronic Bidet Seat** for retrofitting toilets. Designed to provide comfort and style, this electronic bidet seat uses minimal water while enhancing your hygiene with thorough washing and drying features all controlled by an intuitive remote control. GermGard® antibacterial protection on the seat reduces the spread of harmful bacteria.



REFERENCES

- ¹ Trevino, Julissa. "The Germiest Place in Your Bathroom Isn't Your Toilet." TIME. <https://time.com/5514669/bacteria-germs-bathroom> (accessed 25 January 2023).
- ² Kimberly-Clark Professional. "Where the Germs Are: New Study Finds Office Kitchens and Break Rooms are Crawling with Bacteria." Kimberly-Clark. <https://investor.kimberly-clark.com/static-files/f491f68c-37fc-4018-8b67-c2fa7e7861f1> (accessed 25 January 2023).
- ³ Makinen, Riika. "Hospital study: less microbes in touchless faucets compared to lever faucets." Oras. <https://stories.oras.com/en/hospital-study-less-microbes-in-touchless-faucets-compared-to-lever-faucets> (accessed 25 January 2023).
- ⁴ University of South Australia. "Public washrooms are flush with germs but there are simple ways to reduce your risk of infections." UniSA. <https://www.unisa.edu.au/media-centre/Releases/2021/public-washrooms-are-flush-with-germs-but-there-are-simple-ways-to-reduce-your-risk-of-infections> (accessed 25 January 2023).
- ⁵ Suen, LKP, Gilman KH Siu, Yue Ping Guo, Simon KW Yeung, Kiki YK Lo and Margaret O'Donoghue. "The public washroom - friend or foe? An observational study of washroom cleanliness combined with microbiological investigation of hand hygiene facilities." *Antimicrobial Resistance & Infection Control*, Vol.8, No. 47 (2019).
- ⁶ Huesca-Espitia, Luz del Carmen, Jaber Aslanzadeh, Richard Feinn, Gabrielle Joseph, Thomas S. Murray, Peter Setlow. "Deposition of Bacteria and Bacterial Spores by Bathroom Hot-Air Hand Dryers." *Applied & Environmental Microbiology*, Vol. 84, No. 8 (2018).
- ⁷ Kimmitt, PT and KF Redway. "Evaluation of the potential for virus dispersal during hand drying: a comparison of three methods." *Journal of Applied Microbiology*, Vol. 120, Issue 2 (2016): 478-486.

All information provided correct as of February 2023

