



Art of Concealment

HOW CISTERN INTEGRATION IS
TRANSFORMING BATHROOM DESIGN

CAROMA

Made For Life



Contura by Caroma Wall Faced Suite

Introduction

The bathroom has evolved far beyond a space for personal hygiene, transforming into a sanctuary for relaxation and rejuvenation. Concealed cisterns play a pivotal role in this transformation by contributing to a calm and clutter-free environment. This minimalist approach creates an ambiance that promotes relaxation and self-care, in addition to improving the aesthetic appeal and functionality of the space.

Smart concepts and environmentally conscious ideas are driving the current trends in bathroom design, which are a reflection of a larger movement towards environmental responsibility and efficiency. These trends are well supported by concealed cisterns, which feature advanced flushing mechanisms that use water more efficiently. The addition of smart technologies, like sensor-activated operation, to these systems further increases their attractiveness.

In this whitepaper, we explore the benefits of concealed cisterns and how they support current bathroom design trends. As awareness of the benefits of this design increases and perceived challenges in relation to installation are overcome, it is expected that concealed cisterns will become a standard feature in Australian bathrooms, mirroring the trends observed in other parts of the world.

Urbane II Wall Faced Bidet Suite



"A concealed cistern maximises bathroom space by hiding the large cistern inside cabinets, behind walls, beneath benchtops or even within ceiling spaces."

What is a concealed cistern?

A concealed cistern is a kind of cistern that is installed within a cabinet or vanity unit, behind a wall, inside duct work, or within the ceiling cavity. Concealed cisterns often have a thin profile to enable them to fit into tight spaces.

While their aesthetics are markedly different from exposed ones, concealed cisterns work as efficiently as regular cisterns due to improvements in toilet flushing technology. Traditional cisterns operate using mechanical actuators; concealed cisterns may utilise the same technology or can have Bowden cables that allow the flush plate to be installed in a location away from the cistern.

The key feature of concealed toilet suites is that the majority of the unit is hidden from view and the toilet pan sits flush against the wall. The toilet pan can be wall-faced, where the pan is mounted directly onto the floor, or wall-hung, where the pan is installed onto the wall with a gap between the floor and the pan.

Usually, the flush panels on concealed cisterns are the only components visible. They are available in a range of designs and colours to go with practically any bathroom decor.



Contura Collection by Caroma

Navigating the latest bathroom design trends

Although concealed cisterns have long been the standard option in commercial architecture, their advantages and attractive design are currently making them increasingly desirable for use in residential bathrooms.

Current design trends highlight a demand for bathroom spaces that deliver efficiency, comfort, health and sustainability within a smaller and smaller footprint. Style, particularly an emphasis on minimalism, is also a primary consideration. As we discuss below, concealed cisterns offer the right design aspects that are sought after in homes and apartments around the country.

Space-saving design

Space comes at a premium in today's property market. Under the weight of record population growth,¹ there is a trend towards high-density living. At the same time, increased living areas can enhance the overall living experience. Using a concealed cistern to achieve floor space savings can translate to higher property values.

According to reports, the average Australian bathroom size is 3m x 2m, whereas larger-sized bathrooms are generally 4m x 5m or more.² Bathrooms in new apartment builds tend to be smaller. Bathrooms of these sizes will fit a toilet, shower, and vanity, but designers need to carefully consider the best ways to optimise the layout of the space.

A concealed cistern maximises bathroom space by hiding the cistern inside cabinets, behind walls, beneath benchtops or even within ceiling spaces. This not only reduces the amount of floorspace needed for the toilet, but it also gives the appearance of a cleaner, more streamlined bathroom, thus creating the perception of a larger space.

Concealed cisterns can be tailored to fit particular bathroom layouts and are available in a variety of sizes, styles and configurations. They can be positioned at various depths and heights to suit various wall configurations and plumbing needs.

“While increasing demand is driving down prices, there are other benefits, such as space optimisation, water savings and ease of cleaning, that should also be considered in the overall cost-benefit analysis.”

Support for independent living

The Australian population is rapidly getting older and this is impacting how we design living spaces today. Estimates suggest that the percentage of Australians over 65 will rise from 16 percent in 2020 to over 22 percent by 2026. Furthermore, surveys repeatedly demonstrate that the overwhelming majority of older Australians wish to age in their own homes.

Accordingly, accessible and supportive bathroom designs are imperative for any new build or renovation to ensure they provide value to homeowners in the long term.

A concealed cistern toilet is ideal for older users and those with disability. Compared to a regular toilet, it is simpler to operate, and flush buttons can be designed to be used by people of all shapes, sizes and physical ability. You can also position the cistern button anywhere, based on comfort and range of motion.

In addition, concealed cisterns provide more space around the toilet, making it easier to navigate the bathroom space.

Designing for better hygiene

Health and wellness are now the top priorities for clients who are buying homes and remodeling, according to research by the American Society of Interior Designers.⁵ In this context, hygiene now plays an even more decisive role in bathroom design, especially since the pandemic.

The effects of these trends are evident in bathroom design. Contact-free technologies for fittings or flushing the toilet, which were once solutions found only in commercial properties, are making their way into residential spaces. Bathroom materials are evolving too, with special coatings and anti-microbial surfaces becoming popular to reduce the spread of germs and bacteria.

Since there are no exposed surfaces to dust or wipe down, cleaning is made easier in a bathroom with a concealed cistern. Wall-hung toilet pans are a game changer in this respect, as they make cleaning around the pan very straightforward. In fact, wall-hung pans are the preferred solution for many commercial environments, such as health and aged care facilities, hotels and retail

spaces, due to their cleanability, ease of maintenance and streamlined aesthetics—all factors that can also benefit a residential build.

Quiet luxury and minimalism

In terms of broader design trends that are making their way into the bathroom, none are more evident than the “quiet luxury” trend. “Quiet luxury” describes a low-key approach to luxury where people favour subtlety, minimalism and high quality over loud, cluttered or gaudy designs. A recent study by Forbes Research on the preferences of luxury consumers revealed that 63% of participants thought that subtle luxury pieces were more appealing than overtly luxurious ones.⁶

In keeping with current trends, concealing the cistern reduces visual clutter in the bathroom. With the focus being on other components like tiles, fixtures, or vanity units, there is greater creative freedom to create a harmonious and visually continuous space.

Sustainability

One in four consumers is willing to pay extra for brands that are dedicated to ethical and environmentally friendly business practices, according to Deloitte.⁷ As a large proportion of household water use occurs in the bathroom, toilets that conserve water are in high demand.

These days, concealed cisterns are WELS-rated and have dual-flush mechanisms that lower water usage. The dual-flush is an Australian invention by Caroma, who developed the world’s first dual-flush toilet in 1980. When initial trials demonstrated a net saving of 32,000 litres of water per year per household with the dual-flush, legislation was soon passed to require dual flush toilets in all new buildings. Caroma subsequently made further refinements to their toilets to use even less water.

Modern cisterns also use state-of-the-art technology and parts, as well as high-quality materials, to give users reliable and long-lasting operation. This allows users to benefit from exceptional durability that can last for decades, minimising the need for replacement, in addition to seamless system operation and minimal downtime.

Simple design for performance and reliability

The common misconception is that concealed cisterns are invariably more expensive or complex to install than exposed cisterns but this is often not the case. In many cases, the installation costs will be similar to what you would expect from an exposed cistern, particularly given advancements in design and the extensive installation support provided by the leading manufacturers.

Another misconception is that because concealed cisterns are built into the wall, they will be harder to access and maintain than regular cisterns. Again, this is largely untrue, especially if you are purchasing from a leading brand. Concealed cisterns are often built with removable covers

or access panels. This feature eliminates the need to take down walls or cabinets in order for plumbers to quickly access the cistern for maintenance or repairs. These cisterns are compliant with Australian standards and designed with a focus on ease of servicing, with removable access panels and minimal internal parts.

It is true that concealed cisterns can be more expensive to purchase than a conventional cistern. While increasing demand is driving down prices, there are other benefits, such as space optimisation, water savings and ease of cleaning, that should also be considered in the overall cost-benefit analysis.

Making concealing cisterns easy

Arguably Australia's most recognised manufacturer of premium bathroom products, Caroma's vast experience in sanitaryware over 80 years has led to industry specification innovations in concealed cistern technology to ensure their products are easy to install and maintain and minimise any perceived installation risks.

Caroma has partnered with Geberit (global leaders in concealed technology) to create the perfect system for Australian and New Zealand conditions and construction environment. Some of the innovations include:

- Adjustable flushpipe provides vertical adjustability of the cistern-pan connection that allows for variations in finished floor height. Not only does this eliminate the risk of leaks caused by misaligned flush pipes, but it also eliminates costly rectification work.
- Uni-orbital connectors overcome many common installation issues by providing increased set-out flexibility that enables the decrease of pan projection while maintaining generous set-out ranges.
- Caroma's Modular Frame Installation Solution (CAMFIS) can be utilised to enable prefabrication of the cistern rough-in. This enables plumbers to install bathrooms in commercial applications with reduced time on site improving efficiency, safety and reliability.
- Integration with Smart Command enables remote automatic flush activations and the ability to monitor toilet usage. The Smart Invisi flush panel utilises infrared sensing to detect users as they enter while also enabling touchless flush activations.

Caroma's Invisi Series II in-duct, in-wall and in-ceiling cisterns are among the best examples of how modern

technology can make cistern maintenance easier. The single, blow-moulded construction of the unit mitigates the risk of leaks. The unit consists of three components, simplifying maintenance and repairs. Recent in-market testing demonstrates that Caroma in-wall cisterns can be fully disassembled and reassembled in the wall in under one minute.

All these unique design features have been incorporated based on decades of experience in the plumbing industry in Australia and deep collaboration with the plumbing community, to deliver the ideal concealed solutions for Australian consumers



Urbane II Compact Cleanflush Suite

Caroma products and services

Invisi II

Invisi II is a 4.5-3-liter dual flush plastic cistern suitable for in-wall, under counter, in-duct and in-ceiling applications. The cistern features a number of contemporary button design options with concealed fixings that are pneumatically operated for ease of operation and installation. The push buttons can be activated remotely up to 4 metres from the cistern, making them ideal for care and custom applications.

All Caroma's in-wall cisterns for wall faced pans incorporate their unique adjustable flushpipe that allows for variations in finished floor heights. It enables plumbers to quickly realign the water inlet without causing visible damage to bathroom walls. This reduces the risk of rectification works to accommodate misalignment and eliminates strain on the water connection, which could otherwise be a source of leaks.

Benefits

- Cistern incorporates Caroma Smartflush water-saving technology.
- Can be installed in a standard 90mm metal or timber stud wall application.
- WELS 4 star rated, 4.5/3L.
- Adjustable to 6/3-litre dual flush.
- Guaranteed not to leak when installed by a certified plumber in accordance with installation instructions.

State-of-the-art testing facilities

Caroma tests their toilet suites well beyond Australian standards in their world-class NATA approved testing, research and development centre in Prestons, New South Wales. For example, Australian standards call for a toilet pan load rating of 400kg while Caroma tests their pans up to 800kg.

Installation Training and Support

Caroma offers installation and maintenance training services for plumbers, as well as extensive resources through their online plumber support platform, Caroma Plumber's Hub and technical hotline. An extensive range of spare parts are available through all plumbing merchants, supplied by local Caroma distribution centres, to ensure maintenance is quick, affordable and hassle-free.

Premium aesthetics and design options

Caroma's range of in-wall toilet suites provides a plethora of design options to suit the chosen style, design aesthetic or compliance requirements of any bathroom. To



Contura Collection by Caroma

enhance visual harmony, their collection of suites all have complimentary basins, tapware, showers and bathroom accessories that complement the design aesthetic.

With their clean lines and low-maintenance design, Liano II Wall Hung toilet suites are ideal for sleek, modern styles. The Easy Height Wall Faced version can be used in ambulant or independent living situations, while the Junior Wall Faced suite provides lower height option for child care and schools.

Designed for the modern Australian home, the Luna Wall Faced concealed suite pairs seamlessly with Caroma's most popular Luna Collection.

For a sculptural design with organic simplicity, Caroma's latest Contura Wall Hung and Wall Faced suites bring a sense of subtle indulgence to the bathroom.

Urbane II Wall Face and Wall Hung suites, as well as the Urbane II Compact Wall Faced suite, provide modern style and even greater space optimisation. As with other models, Urbane II comes in an easy height version for independent living and ambulant compliant bathrooms.

For the ultimate bathroom experience, the Urbane II Concealed Bidet suite offers gender-specific washes, drying options and a self-cleaning nozzle as well as LED nightlight, ambient lighting, auto-open and auto-close seat, heating and a remote for full control.

In addition to delivering high levels of hygiene and performance, the Care 800 Wall Faced suite is compatible with a wide variety of mobility devices making them ideal in independent living situations. When combined with backrests and grab rails they become suitable for AS1428.1 Accessible compliance.



Liano Wall Hung Suite with Smart Command Flush Panel

Caroma's concealed cisterns represent a perfect blend of form and function, offering a modern solution to bathroom design that caters to both aesthetic and practical needs. With their space-saving design, enhanced hygiene features, and support for independent living, these systems are becoming increasingly popular in residential settings. The move towards minimalist design, coupled with the demand for sustainability and efficiency, positions concealed cisterns as a forward-thinking choice for contemporary bathrooms. As homeowners and designers continue to seek out innovative solutions that maximise space and provide long-term value, the concealed cistern stands out as an exemplary feature for any modern bathroom.

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