

Designing for People

Integrating Technology Into
Your Next Bathroom Design



DESIGN
MEETS
FUNCTION

Introduction

The driving force behind this generation's most advanced computers, phones and televisions, smart technology is now revolutionising bathroom design. From smart toilets and sensor-operated taps to Google Home enabled bathroom accessories, technology has the potential to change how we experience the built environment, including spaces as personal as the bathroom.

However, the prospect of a highly-digitised personal life may be daunting for some. While the market is growing, Australians are still hesitant about adopting smart home technology. Research by Accenture found that nearly half of Australians (48%) surveyed find technology at home intrusive,¹ yet the majority recognise that it can make their lives easier and more comfortable.

With Australians now spending more time at home than ever before, smart bathroom technology has the potential to transform and enrich our lives – but it will require thoughtful and considered design to seamlessly integrate these new solutions into the most private of spaces.

The architect's goal will be to select the ideal bathroom technology that will meet user needs and deliver the best experience over many years. Rather than a far-fetched futuristic fantasy, smart bathrooms will be made of several advanced, yet realistic components that fulfil the following criteria:

- **User experience.** Delivering a real functional benefit, rather than just “bells and whistles”.
- **Design.** Solutions that do not detract from the overall bathroom design.
- **Timelessness.** Technology that will remain relevant and useful now and into the future.
- **Reliability.** A trusted brand and product that delivers on quality and support.

In this white paper, we take a closer look at emerging bathroom technologies and how they can be integrated into bathrooms that will be loved by users for many years to come.



What Does a Smart Bathroom Look Like?

Technology has already made its way into every other room in the house, including smart televisions in the family lounge, automated lighting and window controls, and advanced home-security systems. With voice recognition technology, Bluetooth, smart devices and home automation platforms now readily available on the market, the conditions are in place for bathrooms to become smarter.

One of the more talked about innovations are smart toilets. While bidets are common in Asia and European regions, they are yet to become commonplace for the rest of the world. A bidet is a bowl or receptacle designed to be sat on for the purpose of washing one's self after using the toilet. They promote personal hygiene, and are gentler to use than toilet paper.

Inspired by traditional bidets, smart toilets are incorporating washlet functionality, a combination of a standard style toilet and a bidet, but with added conveniences. Washlet functionality eliminates the hassle of using toilet paper or moving to a separate bidet, and incorporates air nozzles that dry off the user after cleansing. Other common features in smart toilets include adjustable water temperature and pressure, adjustable air drying temperature and pressure, and soft closing seats. Some leading smart toilet models take it a step further, offering sensor-activation, odour extraction technology, orientation lights and the ability to program settings using a mobile app.

Beyond the toilet, smart technology is also infiltrating other common bathroom fixtures. Showers are being

designed with digital shower controls that allow users to control the shower system, and set up showering preferences using a mobile app. Users can adjust spray patterns, water flow and temperature with control panels that can store the user's preferences. Even the bathroom mirror is being transformed into a digital hub, with new solutions offering the ability to display emails, weather information, calendar updates and the daily news while the user is brushing their teeth or hair.

Touchless technology is being deployed to give users a cleaner (and more convenient) bathroom experience. Since 2020, the focus on handwashing has made it one of the more frequent bathroom functions. This has expedited the adoption of sensor-operated taps that enable users to complete handwashing procedures without physically touching the tap. Recent advancements in technology have made sensors more reliable and easier to use for those with mobility issues. Manufacturers are also combining touchless operation with more sophisticated temperature control options and water-saving features, and extending touchless technology to other functions such as toilet flushing.

Some smart bathroom products can integrate with home automation apps and digital assistants like Alexa and Google Home to deliver an interconnected bathroom experience. This offers additional control and functionality, such as enabling voice commands, personalised space settings and automation of specific bathroom functions. Users can pre-warm their toilet seat, activate aroma diffusers and start their morning shower, all from a central control hub.

“Too often, smart technologies are specified for the sheer number of features on offer, rather than whether they deliver a real functional benefit.”

Barriers to Entry

Despite the potential benefits offered by smart bathroom technologies, the Australian market remains relatively conservative when it comes to integrating technology into new homes. The Australian smart home market is expected to have an annual growth rate 11.77% compared to 14.89% in Europe and 16.56% in the United Kingdom.² In terms of household penetration, Australia sits at 32.7% in 2021, compared to over 40% in both the United Kingdom and the United States.³ Historically, Australia typically sees delays in the release of new technology from Europe, Asia and the United States, making it more difficult to obtain the latest release of many new home automation devices and services.

In terms of solutions, bathrooms have been neglected by smart technology trends until relatively recently. Consequently, smart bathroom technology is not yet standard, and is generally considered 'showpiece design' by Architects and Designers. This means that when smart technology is being integrated into a bathroom design, it is often treated as the centrepiece of the space and the rest of the bathroom is designed in a way that matches the look and feel of a 'high-

tech' or 'futuristic' bathroom. This goes against current trends that indicate that the bathroom has become less a practical space, but more a 'private spa' – a place where users seek relaxation, with calming aesthetics suited to their tastes.

This approach reinforces the negative perception that emerging bathroom technologies are gimmicks or fads that will not stand the test of time. Costs are already a barrier to smart home adoption, and users are not enthusiastic about upgrading or replacing bathroom technology if it does not meet their needs.

Other factors have limited the uptake of smart technology in Australian homes. There are concerns about data security and compatibility across the wide range of smart devices available on the market. There is also the perception that installing smart technology can be expensive, time-consuming and complicated, or that it requires a significant investment of time and effort to figure out how to 'save time' through home automation. It is likely that the complexity and the sheer volume of features and functionality in some new bathroom technologies may seem overwhelming to some users.



Designing for People, Not Technology

Ultimately, a successful smart bathroom design is one that meets the needs and preferences of the user. Key to achieving this goal is reducing complexity in how the user interacts with the bathroom. The features offered by your chosen smart bathroom technologies should be those that will be used regularly by all users, and should minimise the chances of product failure, misuse or confusion. They should also be designed for reliability and ease of maintenance, all while maintaining the desired aesthetic and mood of the bathroom space.

Some new bathroom technologies are guilty of being too technology-focused, rather than user-focused. Architects and Designers can ensure that bathroom technology is integrated in a way that does not compromise or complicate the bathroom design. Below are some of the key considerations when designing a smart bathroom.

DOES THE TECHNOLOGY DELIVER A REAL BENEFIT?

When assessing the features of different smart bathroom technologies, it is important to ensure that they address 'real' needs and pain points. Too often, smart technologies are specified for the sheer number of features on offer, rather than whether they deliver a real functional benefit. Designers can consider how the technology will improve the user's bathroom experience, framed by a realistic understanding of how the user wants to use the bathroom.

To support this, smart bathroom technologies should be easy to operate by all expected users. For example, if the user is comfortable using a smart phone, Designers can utilise technologies that can be controlled and managed from a smart phone app. The solution should also be easy to install, repair and maintain, to minimise user frustration over its lifetime.

DOES THE TECHNOLOGY DETRACT FROM THE BATHROOM DESIGN?

The aesthetics of a bathroom design is vital to its success. Smart technologies that are visually incongruent with the overall bathroom design are more likely to undermine the mood that the designer wants to achieve.

Some smart systems can be hidden from view (e.g., smart toilet technology that is hidden behind the wall or flush button), thus not disrupting the desired look of the bathroom. If the solution cannot be hidden from view, some brands offer a range of colours and finishes that allow designers to achieve visual consistency with other parts of the bathroom.

IS THE TECHNOLOGY FUTURE-PROOF?

Bathrooms are expected to last for a long time, potentially decades. Designers can carefully assess whether the selected technology will remain relevant for years to come, rather than succumbing to the latest gimmicks or fads. Equally important is how long the manufacturer will offer support for the product, ensuring all spare parts are readily available and the product itself can be repaired easily. Some brands have undertaken to make spare parts available for over 20 years.

IS THE TECHNOLOGY RELIABLE?

As the bathroom is one of the most used spaces in any home or facility, smart bathroom technology that is prone to malfunction or failure will cause increased frustration. Excessive add-on features can compromise design as well as the usability and reliability of the product. Designers should select products from a trusted brand, with extensive customer support and warranties. When something does break or fail, companies that have local technical support will ensure any user frustrations are quickly addressed.

“Ultimately, a successful smart bathroom design is one that meets the needs and preferences of the user. Key to achieving this goal is reducing complexity in how the user interacts with the bathroom.”

Bathroom Technology That Delivers Real Value

GEBERIT DUOFRESH

Geberit's concealed cistern technology combines aesthetic beauty with reliability and water efficiency. The Geberit DuoFresh Odour Extraction unit is integrated directly into the toilet cistern and extracts unpleasant odours straight from the source.

ADDRESSES A REAL BATHROOM PROBLEM – BAD ODOURS:

Bathroom smells have long been tolerated rather than tackled, with only temporary solutions such as air fresheners and burning candles available. Geberit DuoFresh neither masks bad odours nor distributes it around the room; the advanced odour extraction unit removes the unpleasant air directly from the toilet pan, purifies it using an integrated ceramic honeycomb filter and releases the filtered air back into the room.

INTUITIVE USE, DELIVERS COMFORT AND INCREASED HYGIENE:

The DuoFresh features a proximity sensor that detects whenever someone approaches the toilet and automatically activates the odour extraction. The discreet LED orientation light gives additional comfort as it turns on automatically based on day/night detection. For added hygiene, the DuoFresh unit also comes with a DuoFresh stick that enhances bowl cleanliness with every flush.

TECHNOLOGY THAT IS EASY TO OPERATE:

DuoFresh can be simply operated from the Geberit Home App which can be downloaded to your smart phone, with the ability to adjust the intensity of the odour extraction, unit run-times, brightness of the LED orientation light, and more. The DuoFresh unit is easy to install and compatible with Geberit Sigma01 and Sigma50 flush buttons and all Sigma8 cisterns.

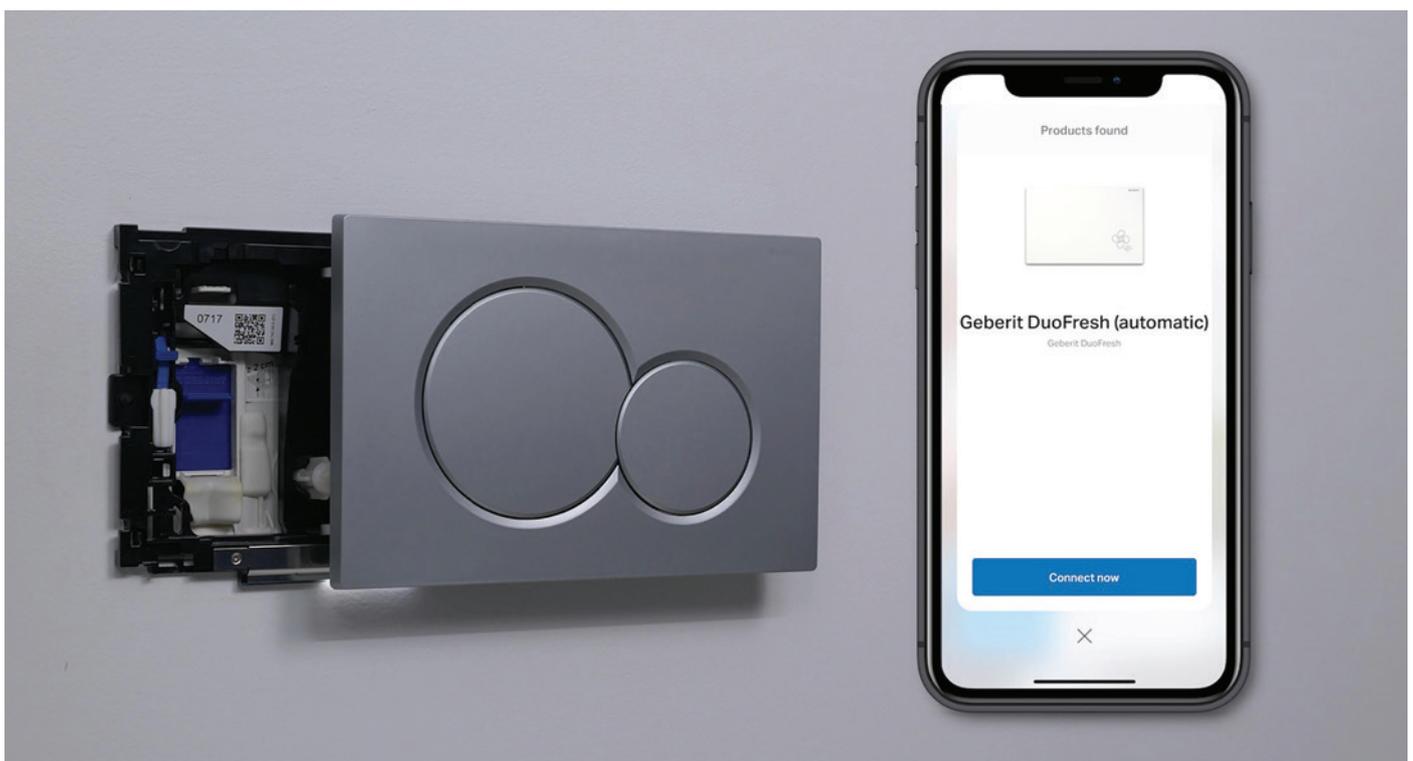
Making it easy to maintain optimum hygiene and performance, the Geberit Home App will remind the user when it is time to change the filter. Geberit DuoFresh filter units last around 12 months and are available at any Reece bathroom store.

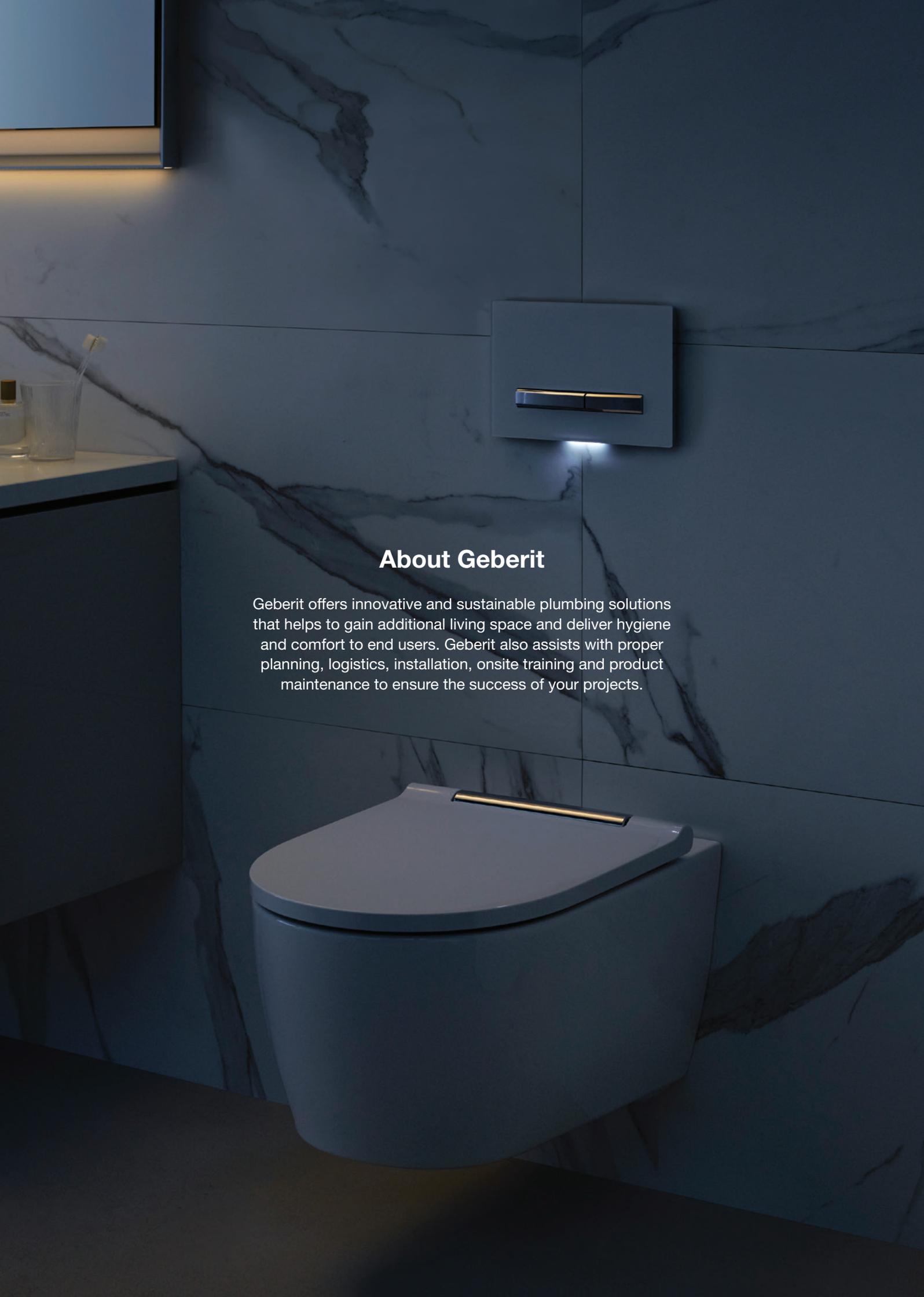
INTEGRATES SEAMLESSLY WITH THE BATHROOM DESIGN:

The DuoFresh technology is completely hidden from view behind the flush button where it will not detract from the bathroom's look. Sigma50 and Sigma01 flush buttons are available in many colours, finishes and materials to suit any modern bathroom design.

FUTURE-PROOF AND RELIABLE:

Geberit combines passion for quality and technology with almost 150 years of sanitary knowledge to offer reliable products and services that truly make life easier. Geberit DuoFresh comes with a 2-year warranty and 25 years spare parts availability. Geberit's after sales and service team is available to assist and support all product and installation queries.





About Geberit

Geberit offers innovative and sustainable plumbing solutions that helps to gain additional living space and deliver hygiene and comfort to end users. Geberit also assists with proper planning, logistics, installation, onsite training and product maintenance to ensure the success of your projects.

REFERENCES

- ¹ Dinham, Peter. "Australians still hesitant about adopting smart home technology: report." IT Wire. <https://www.itwire.com/home-it/australians-still-hesitant-about-adopting-smart-home-technology-report.html> (accessed 20 October 2021).
- ² Statista. "Digital Markets: Smart Home." Statista. <https://www.statista.com> (accessed 20 October 2021).
- ³ Ibid.

All information provided correct as of October 2021