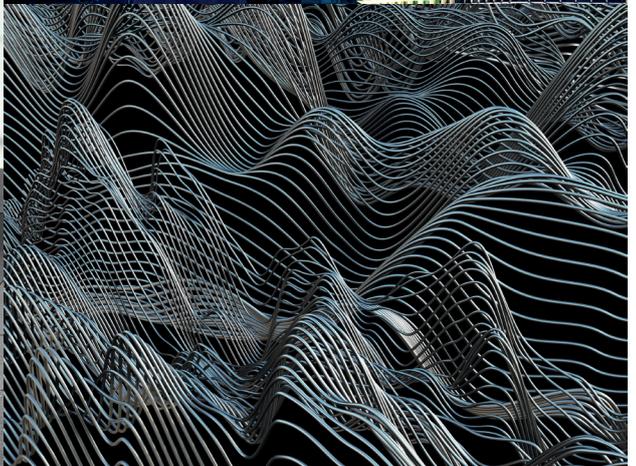
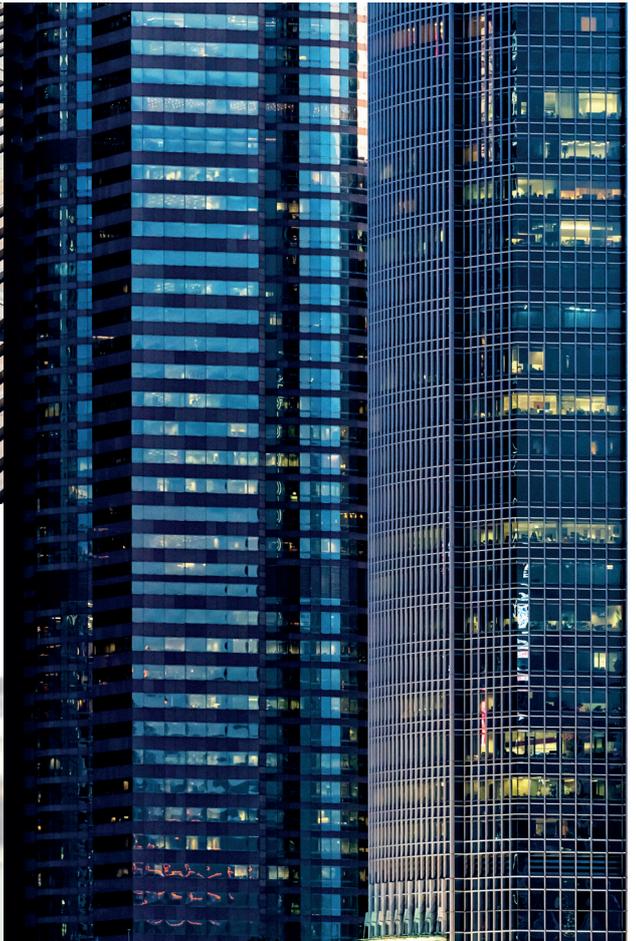
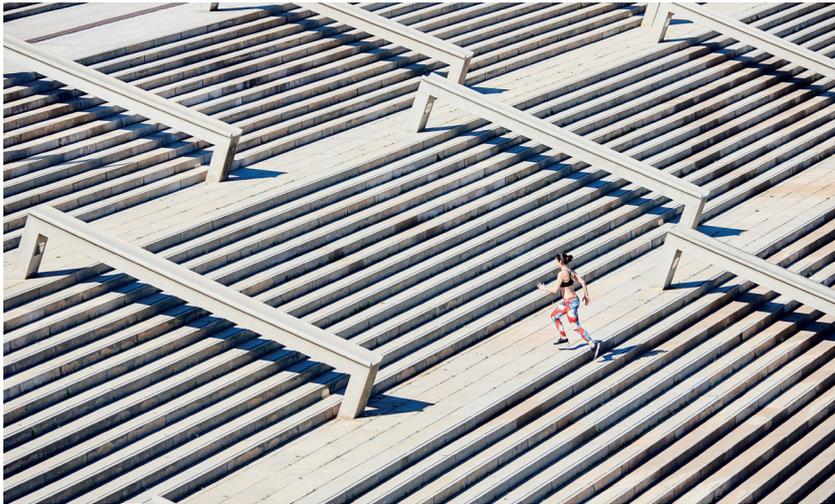


Creating better washrooms

HOW TO IMPROVE USER EXPERIENCE AND WELLBEING
THROUGH EVIDENCE-BASED COMMERCIAL WASHROOM DESIGN



Ideal Standard

PART OF THE IDEAL STANDARD GROUP



Contents

Introduction	04
Executive summary	06
Changing society and shifting challenges for washroom design	12
Employee wellbeing and commercial gain	16
What end users want vs. what designers provide	18
How gender and accessibility impact washroom design	22
Sustainability: a balancing act for designers	26
Technology in the washroom	30
Social media's impact on washroom design	32
The future of commercial washrooms	34
Conclusion	36
Appendix	
• Research and design methodology	38
• References	40

Armitage Shanks

Armitage Shanks is a market leading provider of innovative bathroom solutions and has been welcomed into UK hospitals, businesses and homes for over 200 years. The brand has unparalleled healthcare and commercial washroom expertise, working at the forefront of sanitaryware manufacture as part of the Ideal Standard Group's family of brands.

Introduction

Whether it's at work, at the gym, in hotels or on the road, we're spending more time than ever outside of the home. As a result, we're expecting much more from public spaces, including washrooms, where we're becoming ever more conscious of how components such as hygiene, comfort and aesthetics combine to impact our overall experience.

When it comes to the workplace, the humble washroom naturally has a significant role to play in supporting employees' wellbeing. However, it goes beyond basic health and hygiene. A washroom designed based on evidence of end users' wants and needs has the power to impact employees' morale and workplace satisfaction which can in turn improve productivity. The same principle also applies to other commercial sectors too, such as hospitality, retail and leisure: a positive experience of facilities can improve a consumer's connection with a brand and encourage repeat custom.

The commercial impact of effective washroom design isn't confined to business owners, though. Investors, too, can reap the rewards when selling or renting office space. Such units are typically empty except for the washrooms, making these facilities a key differentiator when it comes to businesses selecting their new 'home'.

Despite the overwhelming consensus in favour of investing in quality washrooms, there is a severe lack of insight available to architects, specifiers and employers in terms of what end users really want and the value they attribute to the various elements that make up the washroom experience. Then there's the future to consider: how will technological advances support end users while helping to satisfy commercial and environmental objectives? And what can designers do to ensure their washrooms will stand the test of time?

For this unique study, in collaboration with Dr Saul M Golden of Ulster University, we surveyed 2,000 end users and 400 design professionals across Europe to understand what constitutes better commercial washroom design. The study highlights the measures we must take as an industry to meet current and future demands, so that we can create more effective and impactful spaces for people to use, choose and share, day in, day out.



This report reviews how changing social-work life patterns, demographics, and technological innovation already impact on commercial washroom design globally, and – through the research findings – sets out what this means, more locally, for EMEA professionals.



FOREWORD DR SAUL M GOLDEN, ULSTER UNIVERSITY

With commercial washroom quality increasingly acknowledged as an important contributor to people's workplace satisfaction and consumer choice, this research provides timely lessons for washroom designers to better adapt their projects from short-term trends to longer-term shifts in user demand. The research, carried out in collaboration with Armitage Shanks and Ideal Standard Group, compares worldwide studies on commercial workplaces and washroom design with the results from a unique Europe-wide survey of commercial washroom end users and designers.

This report reviews how changing social-work life patterns, demographics, and technological innovation already impact on commercial washroom design globally, and – through the research findings – sets out what this means, more locally, for EMEA professionals. The findings offer new insights into people's views on washroom hygiene, health, and comfort. They aim to help designers improve their projects and support earlier added-value discussions with clients on investment priorities. The report also illustrates key areas where designers and specifiers can collaborate more effectively with manufacturers and suppliers across the full washroom supply chain, to holistically consider the whole-life human, environmental and economic aspects of future washroom projects and deliver better outcomes for the benefit of all.

Executive summary

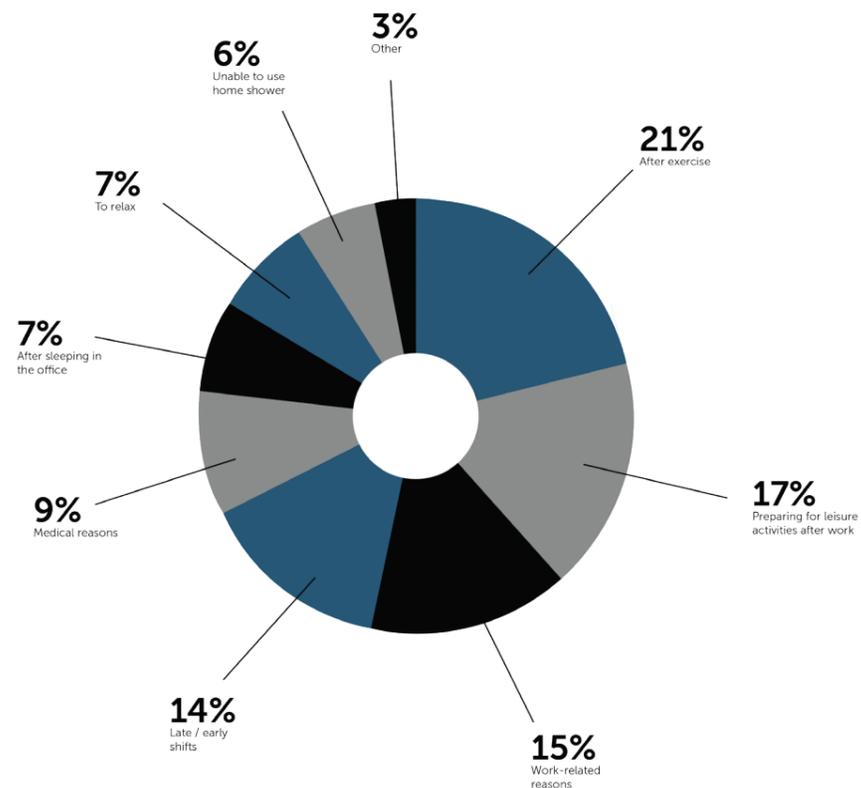
The design of washrooms now rivals that of lobby space as a legitimate investment in the quest for improved employee and customer satisfaction, and overall brand perception. With that in mind, this report highlights the huge opportunity that exists for designers, contractors and architects to expand their frame of reference for design decisions to include genuine evidence-based knowledge on this topic. Not only this, but it demonstrates how designers can use this evidence to support their arguments for investment and innovation in new and improved products, and prove their benefit in reducing the whole-life costs of a building.

With increased competition in the commercial sector, organisations must invest more of their budgets into creating better spaces with higher Indoor Environmental Quality (IEQ) – whether it be in places of work or within retail and leisure facilities. The findings in this report emphasise why professionals who design and specify for washrooms in such buildings are key to helping companies make value-added choices and improve their competitive edge.

Societal shifts are changing the way we use commercial washrooms

Changing urban demographics and the blurring of traditional living and working boundaries have changed people's needs and attitudes towards greater wellbeing and comfort out of the home, with workplace washrooms playing a more important part than ever in our daily lives. We're more aware of our personal hygiene and appearance, and have greater expectations when it comes to facilities that support our personal and business social patterns, such as the way we commute to work, seek stress relief, exercise and prepare for after-work socialising. We can see evidence of this simply by analysing the multiple reasons people now use workplace showers.

THE MULTIPLE USES OF WORKPLACE SHOWERS



As attitudes and expectations around inclusivity in the workplace evolve, there is an increasing need for inclusive and flexible washroom facilities for all. Innovative design has the power to exceed, or even help to improve, industry and government standards for accessibility, while delivering similar levels of comfort and wellbeing to all users, regardless of mobility, age, gender identity or culture.



83%

83% of workplaces have gender-specific washrooms, while 21% have mixed washrooms



7/10

7/10 people expect the same quality and experience from their workplace washroom as from their bathroom at home



50%

50% of people use their workplace washroom to check their appearance



1/5

1/5 of workers use their workplace washroom more than three times a day

Strong design boosts wellbeing and commercial performance

This research demonstrates a strong link between commercial washrooms and employee health and wellbeing, which is an increasingly vital asset for any organisation that wants to enhance its ability to hire and retain the best employees, and ultimately improve its brand image. In addition to providing more competitive comfort-driven, accessible and inclusive spaces, value-added washrooms are increasingly linked to company brand status and potential return on investment.



'Total cost of ownership' must be adopted

More direct commercial advantages can be realised through the widespread adoption of the concept of 'total cost of ownership' (TCO). Rated highly by professional designers in this study, TCO offers a more holistic view of the financial impact of product choices and is key to understanding design decisions for washrooms beyond the initial cost for design and procurement. Less obvious factors, such as specialist cleaning regimes, warranty considerations and tying new systems to old, can be addressed upfront through supply chain data sharing, delivering benefits in the long term for both clients and end users.

Designers could do more to align with end users' requirements

Another clear conclusion from the research is that end-user expectations and behaviours with respect to commercial washrooms have undoubtedly changed over time. While there are broad similarities between end users' wants and

needs and those elements that professional designers find important, there were some significant differences in certain areas, such as the importance of privacy and space in the washroom. Keeping abreast of end users' needs will enable designers to provide washrooms that continue to deliver on both wellbeing and commercial objectives.



Only 50% of designers think it's extremely important for the washroom to fit with end users' needs



Privacy, availability of facilities and space are more important to end users than designers think



While still in their top 10, toilet flushing performance is not as big a concern for end users as designers expect

Sustainability is a balancing act for designers

Sustainability continues to be of major importance to professional washroom designers, not just in terms of the methods and materials used in product manufacture, but also the eco-friendly performance of products and the logistics surrounding their maintenance and ultimate disposal. This shows that designers are in a strong position to lead the way in encouraging the development of 'greener' technology and the ultimate uptake of more sustainable products, systems and procedures. However, this will likely prove to be a case of negotiation for many working with commercial clients and the associated restrictions.

Designers must also consider the balance between end users' growing desire for sustainable options and their enduring need for comfort, cleanliness and convenience. It seems that people do want sustainable washrooms, but only if the features do not compromise their washroom experience. More signposting of sustainable features may be the key to overcoming this – if users know a product is environmentally-friendly, they may be more accepting of any shortcomings in terms of performance. The implications for professional designers therefore go beyond decisions about which water or energy saving devices to specify – relevance to end users must also be considered early in the project planning and design process.



Sustainability will be the 2nd most influential factor in commercial washroom design over the next five years, according to designers



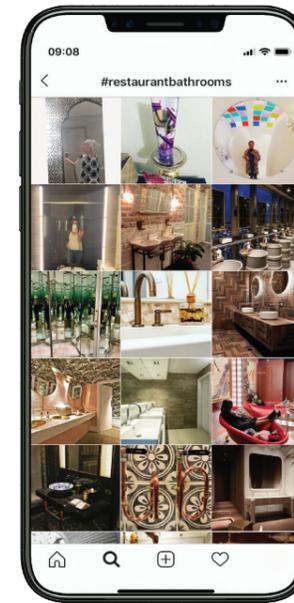
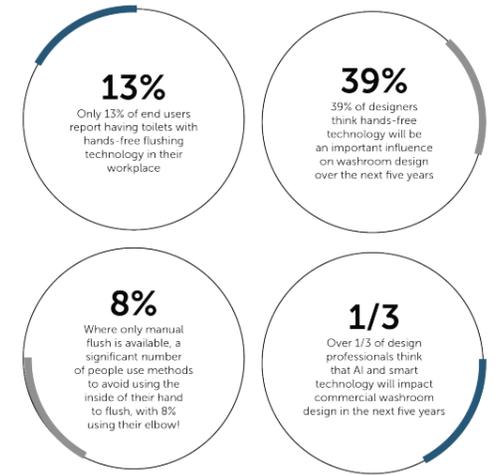
84% of design professionals feel sustainability is an extremely or very important consideration when specifying commercial washrooms



2/3 of end users think sustainability is extremely or very important, yet it is not in their top 10, which includes more practical factors such as cleanliness, hygiene and ventilation

Technology will be key to improving the washroom experience

What can be confidently forecast about washrooms, from the responses and wider findings throughout this report, is that designers must embrace new technologies as they will continue to dominate product development for sustainability, hygiene, wellbeing and cost reduction purposes. Such developments are driven in part by end users increasingly wanting technology that has practical benefits, such as hands-free technology and self-cleaning toilets – and even completely 'touchless' washrooms. They also look for technology that gives them greater control over their environment, including lighting, heating and water temperature. Meanwhile, smart technology is starting to be employed to provide bespoke, interactive washroom experiences for end users' socialising and sharing online.



4/10

people have posted online about a washroom experience at a restaurant, bar or shopping centre

Social media is increasingly influential

Beyond office areas – in restaurants and hotels, for example – the washroom experience of employees and members of the public can have important business impacts, especially given the rise of social media as a ubiquitous and instantaneous means of sharing bathroom experiences and designs. The #bathroomselfie phenomenon, which is fuelled by photogenic commercial washrooms, is one that professional designers would be unwise to ignore.



Changing society and shifting challenges for washroom design

Moving from hygiene to comfort

The Western concept of hygiene has its roots in the industrial revolution of the 19th century and, once established in European housing in the mid-1900s, changed little until the late 20th to early 21st century. At that time, the contemporary notion of 'healthy buildings', linking hygiene with personal wellbeing, emerged. The World Health Organisation concept promoted places "free from hazardous materials and capable of fostering health and comfort of occupants during [their] entire life cycle, supporting social needs and enhancing productivity".

Since then, there have been notable moves away from design that focuses solely on 'hygiene and efficiency of ablutions', or too-narrowly refers to the key features of office toilets as functional/operational spaces that meet minimum building regulation standards. Although hygiene is still an important concern in 21st century washroom design, as the survey findings demonstrate, it is no longer as dominant, with professionals considering, and end users expecting, a wide range of features and benefits including greater levels of personal comfort, design and other elements that support wellbeing.

How urbanisation and modern lifestyles are impacting washroom design

Since the mid-1990s, Europe's working environments have been heavily affected by a global trend toward urbanisation and a society increasingly centred on city-based living, working and leisure activities. Space is therefore at an unprecedented premium. In light of this, designers need to develop innovative new proposals for commercial washrooms – proposals that still meet ever-increasing and ever-changing functional, technological and regulatory requirements, while supporting diverse activities for an even more diverse range of ages, genders, cultures and physical abilities.

In addition, changing urban demographics and the blurring of traditional living and working boundaries have changed people's needs and attitudes towards greater wellbeing and comfort, particularly amongst millennials and younger people just entering the workplace. Seven out of 10 (69%) end users in our survey agreed that they expect the same quality and experience from their workplace washroom as from their washroom at home, with this being highest in France (80%) and Germany (74%). This represents one of the greatest challenges for both designers and builders across Europe's major cities who need to adapt to these changes and deliver suitable solutions.

Robin Levien, who leads Studio Levien, an international product design studio, agrees that modern lifestyles are having an impact on washroom design. He said: "As people continue to expect more from the workplace and other places they visit when out of the home, we're seeing more and more domestic comforts being brought into commercial environments. When it comes to washrooms, this includes everything from full-length mirrors, adjustable lighting and music, to luxury towel dispensers, soft furnishings and trendy wall coverings."



7/10

7/10 people expect the same quality and experience from their workplace washroom as from their bathroom at home



1/5

1/5 of workers use their workplace washroom more than three times a day

The workplace washroom as a 'backstage microspace'

People now share a greater awareness of their personal hygiene and appearance. A study in the Journal of Industrial Ecology reports on the rise of image consciousness and the increased amount of time people are spending in so-called 'backstage spaces' in order to prepare for their 'front stage appearance'.

Washrooms are one of these backstage microspaces in the workplace environment and are playing an increasingly important part in end users' personal and business social patterns and morale. This survey found that 71% of end users visit their workplace washroom more than twice per day, while a fifth (21%) go more than three times a day, highlighting its significance in employees' daily lives.

People are also expecting more bespoke features and additional facilities for showering and changing clothes, in line with shifts in the way they commute to work, seek stress relief, exercise during and after work, and prepare for after-work socialising.

- End users from Italy are most likely to use the workplace washroom for washing and cleaning themselves
- End users from Germany and the UK are most likely to use the washroom to check their appearance and change their clothes
- More than any other country in the survey, end users in the UK are the most likely to use the washroom for privacy, as a place to escape from the office environment, to speak with colleagues or use a mobile phone



THE MULTIPLE USES OF THE WORKPLACE WASHROOM

	Average	Italy	France	UK	Germany
 Going to the toilet	93%	95%	96%	90%	92%
 Speaking to colleagues	14%	5%	7%	25%	19%
 Washing/cleaning myself	59%	70%	55%	46%	65%
 Checking appearance	50%	42%	42%	58%	58%
 Using mobile devices	15%	9%	9%	26%	17%
 Privacy	16%	12%	15%	20%	18%
 Escaping from office environment	17%	6%	12%	28%	22%
 Changing clothes	20%	11%	12%	30%	28%

- Female end users reported a significantly lower incidence of showers in their workplace (48% reporting none, versus 38% of men)
- Where showers were present, women were significantly less likely to use them – despite the fact that levels of satisfaction with their workplace shower were similar to those of their male counterparts

When it comes to showers, just over half (57%) of end-user respondents have a shower facility in their workplace. The highest incidence of showers was reported by people working in companies with between 250 and 499 employees (65%), and between 500 and 999 (63%), demonstrating the potential for growth in this area, particularly in the smaller (50-249) and larger (over 1,000) brackets.

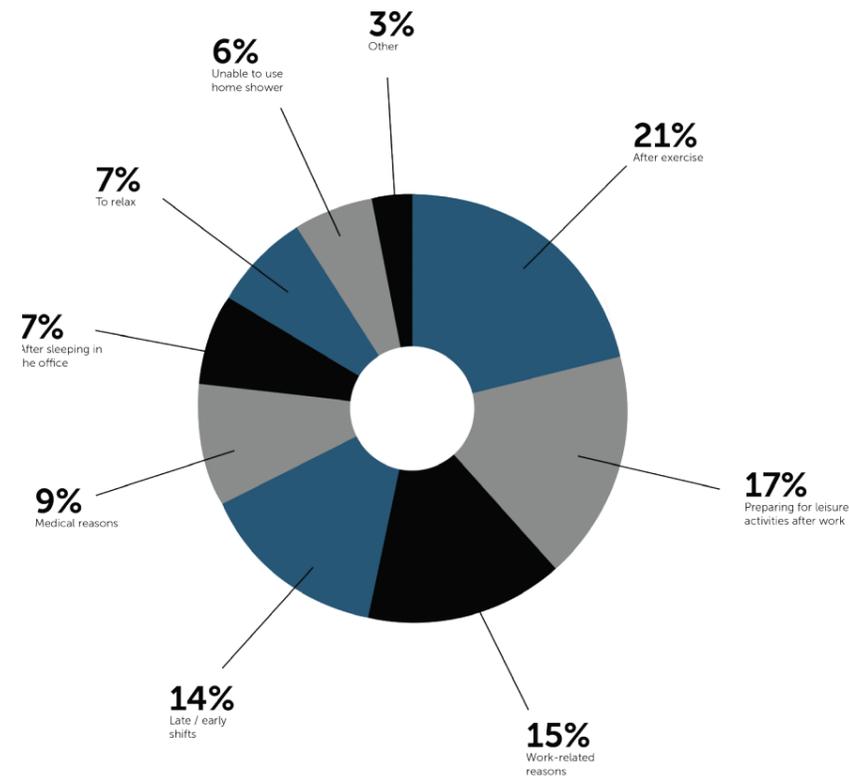
Where provided, satisfaction with shower facilities was higher than for washrooms generally, with 72% of users being very or quite satisfied with both the décor and the design. This could potentially be because fewer people actually use the showers (38% said they

don't use the facilities provided). Alternatively, it may be that since showers are amenities, rather than health and safety requirements, they are installed to different standards of finish than washrooms.

Of those people who had a shower in the workplace and used it, 29% did so for work-related reasons. The most common usage, over four in 10 (42%), relates to showering after exercise, either before or during work hours, or in order to prepare for leisure activities after work (33%). 18% cite medical reasons.

Finally, in terms of location, more than twice as many people (15%) stated they would like a shower separate from the main washroom than those who prefer it to be part of the washroom (6%).

THE MULTIPLE USES OF WORKPLACE SHOWERS



Key takeout

Whatever the constraints of a washroom's size or location, in a new or existing structure, commercial washroom designers will be expected to deliver a multi-functional backstage microspace to satisfy modern urbanites, whilst balancing a complex range of regulatory and client requirements.

Washrooms in general, and shower facilities where provided, are being used for a wide range of work, social and leisure-related reasons. While further research may examine out-of-office-hours uses in more detail, other studies have already identified how our 24/7 society has produced so-called 'bleisure (business/leisure)' spaces. Such spaces further blur work-home boundaries and encourage more working, playing and even living in workplaces by integrating the features of hotels, sport clubs, restaurants and civic amenities for employees within office spaces. This further demonstrates the need for design professionals to pay close attention to end users' higher expectations when they create commercial washrooms.

Employee wellbeing and commercial gain

Many studies have demonstrated that there is a strong relationship between indoor environmental quality (IEQ) and occupants' mental and physical wellbeing. For example, Bluysen et al's Assessment of Wellbeing in an Indoor Office Environment found that the type of office and its condition combine with personal factors in and outside the workplace to affect actual and perceived levels of health and job satisfaction.

While extensive studies of workspaces pre- and post-refurbishment have provided evidence of the impacts of interior design, ergonomics and IEQ on office workers, there has been very little previous reference to the washroom and its specific contribution to wellbeing, job satisfaction and commercial results.

Washrooms' effect on wellbeing and job satisfaction

In this study, around nine in 10 design professionals who mostly specify washrooms in offices agree that the washroom can have an impact on employees' personal comfort and wellbeing (92%) and job satisfaction (89%). In fact, professionals rated wellbeing as the most influential work and/or social factor that will impact commercial washrooms in the next five years, ahead of sustainability and digital interaction.

This belief was shared by end users, nearly three-quarters of whom (73%) agreed that the quality of their workplace washroom has an effect on their personal comfort and wellbeing at work, while 64% believed it had an effect on their job satisfaction. This is not to mention the more obvious health impacts of using, or not using, the workplace washroom – which is a concern considering the finding that 46% of end users have actually limited their use of their workplace washroom because it is not clean or hygienic enough (18%), or it lacks a pleasant atmosphere (15%).

Commercial impact

In commercial sectors, efficiency, productivity and ROI are paramount and can often be overriding factors in office and building development. As a result, pushback can be expected from clients when designers propose increasing budgets for 'softer' qualitative add-ons versus more quantifiable utilitarian washroom features. However, there is a growing consensus that all aspects of interior design can be measured and valued in commercial terms.

According to Edwards and Gueasley's study on absences from work, annual losses from poor employee morale and health-

driven absenteeism are estimated at 3-6% of working time, or approximately 2.5% of national GDPs in Europe. Given the evidence linking washrooms to improved job satisfaction and productivity, a small uplift in washroom quality could therefore contribute to higher ROI and long-term savings for companies thanks to happier and healthier employees.

There are various standards that reward clients and designers for innovative approaches to health and wellbeing, including the WELL Building Standard (WELL) certification, which parallels more environmental certifications, such as LEED (Leadership in Energy and Environmental Design, US) and BREEAM (the UK-based Building Research Establishment's Environmental Assessment Method, also used in Europe).

What differentiates WELL and other interior environment-focused research systems such as The Sense Lab at TU Delft is their focus on assisting designers and manufacturers with evidence-based research to improve interior building attributes such as air, thermal, light and acoustical qualities, in addition to behaviour linked aspects of workplace wellbeing that include nourishment, fitness, comfort, and mind.

These systems link to demonstrable increases in property values and returns on investment. For example, US studies on the benefits of healthier buildings for client/owner ROI found that "57% of US owners most frequently ranked improved employee satisfaction among the top three benefits". Meanwhile, findings from Canada-based studies show that other, more direct financial benefits can include "increased rent and the ability to lease space more quickly".

While it is unrealistic to expect design in the washroom microspace to act as a panacea for all employee psychosocial pressures, there is little disputing the evidence that even small adjustments and elements of control over IEQ can improve wellbeing and show how a company proactively supports its employees and customers.

There are accepted links between employee satisfaction and productivity in the commercial workplace, and the survey findings demonstrate the relationship between better washroom design, end-user experience and employee satisfaction. There is therefore a strong argument that designers can make for leveraging a small percentage of commercial design and construction costs upfront, in areas like the washroom, to generate added value in the long term in the form of raised productivity.

Key takeout

Despite clear evidence linking even small IEQ improvements to higher employee satisfaction, design professionals do not seem to capitalise enough on these benefits in their commercial projects. Design professionals therefore have an opportunity to use more evidence-based knowledge to inform their creative and aesthetic proposals at earlier stages to create more successful, value-added washroom projects and benefit employee/tenant satisfaction. They can use this evidence, together with existing tools and standards, to guide discussions with clients on the value of investment and innovation in the design of commercial washrooms.



What end users want vs what designers provide

How a washroom is ultimately used by people, whether they be office workers, gym-goers or hotel-stayers, is of course a crucial consideration when it comes to designing commercial washrooms. However, this study shows that just half of designers feel it is extremely important for the washroom to fit with the needs of the end user, suggesting more could be done in the industry to understand the wider benefits of aligning with end users and delivering facilities that suit their desires. Here, we take a look at what factors designers across Europe consider important when creating commercial washrooms. These are then contrasted with end users' priorities to see whether they're on the same page and highlight any areas for improvement when it comes to boosting satisfaction ratings in future projects.

What are the most important factors for designers when creating a commercial washroom?

When asked how important certain benefits are when specifying for commercial washrooms, there was unanimous agreement that both cleanliness and hygiene were important, with 66% of respondents citing them both as extremely important.

In addition, the issue of space was deemed important by nearly all design professionals: available space in the whole washroom (98% important, 47% extremely important), in the toilet cubicle (96%, 44%) and around the sinks and taps (96%, 37%).

In terms of elements rated as extremely important, a whole range of other factors were considered, including product quality (57%), privacy (55%), smell control (55%), overall design and layout (51%), flushing performance of the toilet (50%) and ventilation (50%).

Over half felt it was extremely important for the washroom to fit with the client's needs (52%) and the needs of the end user (51%). Interestingly, fit with their own personal vision was rated as extremely important by four in 10 (40%).

Sustainability and total cost of ownership were both deemed extremely important by 42%, behind flushing performance of urinals (48%), lighting (46%) and comfort (43%).

The lowest levels of importance were placed on durability (38%), decoration (32%) and smart technologies that make their job easier and save money (34%).

Robin Levien, owner and designer at Studio Levien, explained why this may be the case: "Durability is likely to be taken as a given among designers, in that all ceramics appear to be and should be durable, wherever they come from. Meanwhile, decoration can be seen as superfluous and inappropriate in a washroom environment, and can quickly become dated. Likewise, expensive smart technologies can often appear gimmicky, and designers may simply see them as another opportunity for something to go wrong."

Total cost of ownership: Value-added washroom specification

The concept of total cost of ownership (TCO) was highlighted as an extremely important factor to be considered in specifying a workplace washroom by more than four in 10 professional designers. Offering a more holistic view of the financial impact of product choices, TCO is key to understanding design decisions for washrooms beyond the initial cost for design and procurement.

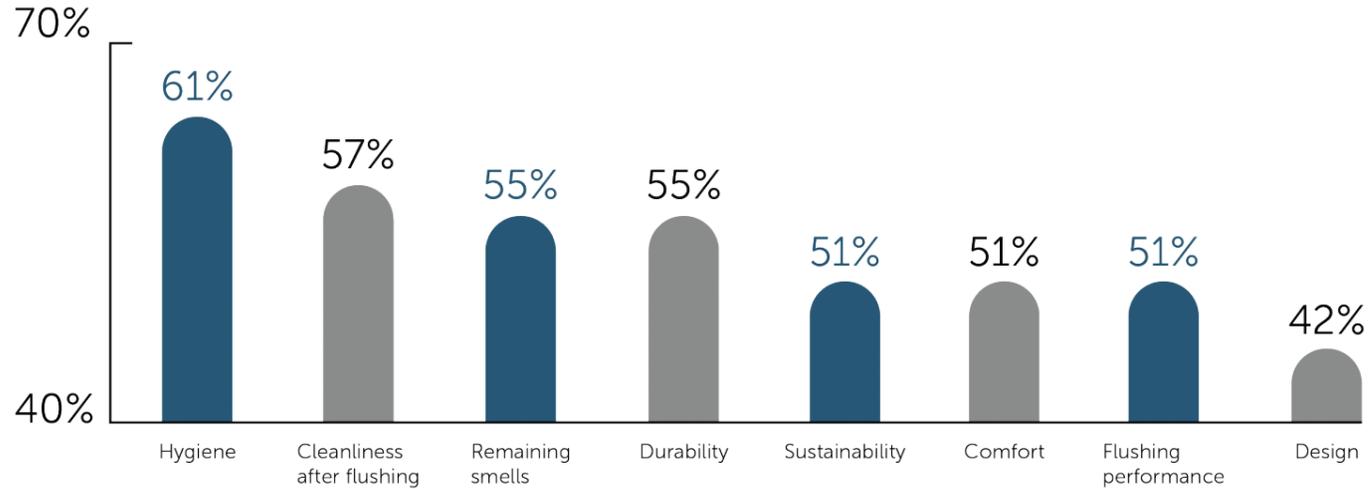
High washroom usage per day impacts on how long fixtures can be expected to last (their durability) and what resources they consume (their use of electricity and water primarily), as well as whole-life and personnel cost considerations. TCO recognises this, incorporating less obvious elements such as the requirement for specialist cleaning products or regimes, warranty considerations, training, tying new systems to old and replacement timeframes. Such factors can be addressed

upfront through early awareness and supply chain data sharing. As Peter Barker, managing director of the BIM Academy, said, the design community – regionally and globally – can connect with suppliers and manufacturers to "recognise efficiency gains through the adoption of smart tools to visualise, coordinate and analyse design" in ways that can help maximise fee margins while providing an "enhanced service to clients and end users".

Cleanliness and hygiene naturally top the list for both designers and end users in terms of what they deem important. However, beyond this there are some key differences. For example, end users find privacy, ventilation, availability of facilities and space more important than designers think. Meanwhile, elements like toilet flushing performance and noise control are not as important for end users in comparison to designers' expectations. These differences may explain the degree of dissatisfaction reported by end users with their current workplace washrooms, with one third of end users not rating their workplace washroom positively overall.

- Three out of 10 men desire more use of privacy dividers at urinals
- 44% of women would like to see more odour-masking products

THE FACTORS PROFESSIONAL DESIGNERS FIND EXTREMELY IMPORTANT IN THE TOILET AREA



- Nearly half (47%) of respondents who mostly specify washrooms in offices said that liquid splashing is extremely important when specifying commercial washrooms. This is compared to 35% of respondents who mostly specify washrooms in shopping centres
- Seven in 10 (71%) design professionals who mostly specify washrooms in offices think that cleanliness is extremely important for end users, compared with 55% of respondents who mostly specify washrooms in shopping centres
- Eight in 10 (82%) design professionals in Italy think that cleanliness is extremely important for end users in commercial washrooms, compared with 55% of respondents in France



Do design professionals understand what end users find important?

The survey demonstrated that design professionals do broadly anticipate current end users' expectations, but there were some significant areas of difference.

Factors end users find less important than designers think they do



Toilet flushing performance
Noise control

Factors end users find more important than designers think they do



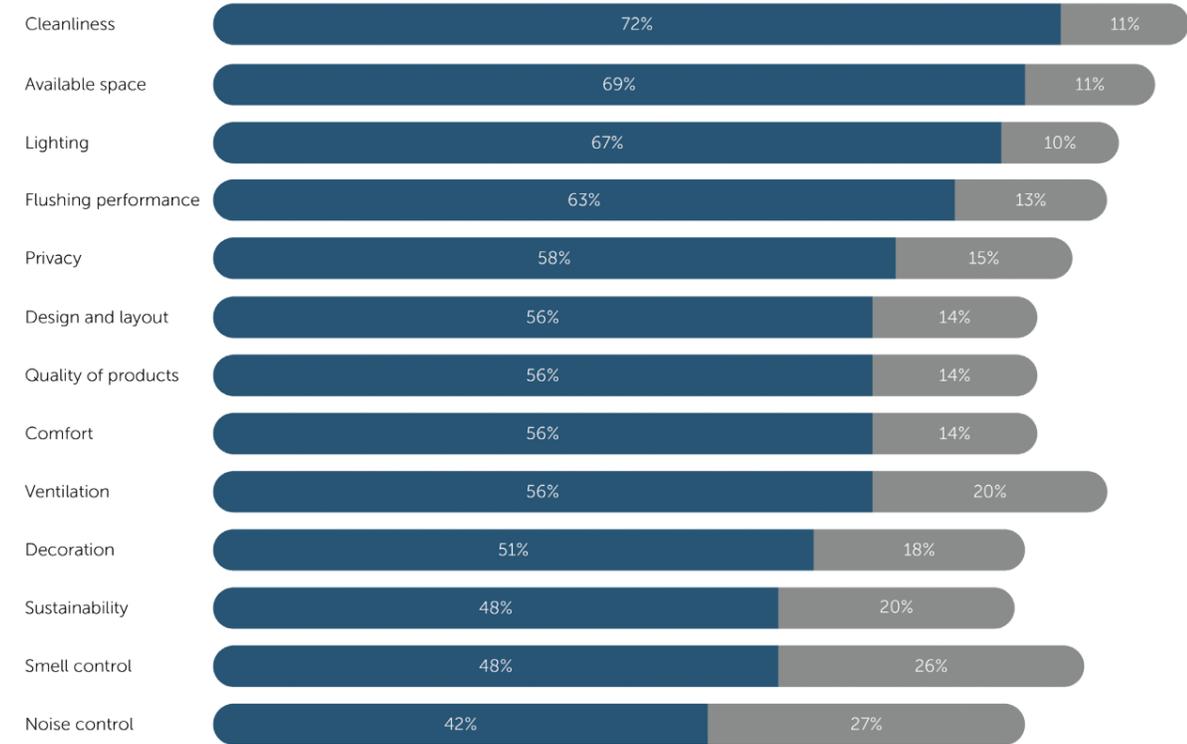
Privacy
Ventilation
Urinal flushing
Availability of facilities
Space in cubicle
Space in washroom

Factors designers and end users agree are the most important



Cleanliness
Hygiene

LEVELS OF WORKPLACE WASHROOM SATISFACTION AMONG END USERS



Key:

■ Satisfied

■ Dissatisfied

Robin Levien, senior partner at Studio Levien, commented: "It's incredibly important for designers to make sure the needs of end users are reflected in their designs. 'Think twice, design once' is a good motto to adopt – it's all about doing as much research as possible upfront by consulting all stakeholders, including potential end users, to find out their requirements and gather feedback on initial concepts. This can be done through focus groups or online surveys and will give the final product or design the best possible chance of serving its users effectively and standing the test of time."

Key takeout

Both design professionals and end users agree on the top two most important factors in commercial washrooms: cleanliness and hygiene. However, end users are more concerned with privacy, ventilation and space in the cubicle and the washroom overall than design professionals think. Resolving differences like these could go a long way to improving satisfaction ratings among users, which is shown to boost wellbeing and productivity.



How gender and accessibility impact washroom design

As attitudes and expectations around inclusivity in the workplace evolve, there is an increasing need for inclusive and flexible washroom facilities for all. Innovative design has the power to exceed, or even help to improve, industry and government standards for accessibility, while delivering similar levels of comfort and wellbeing to all users, regardless of mobility, age, gender identity or culture.

Gender inclusivity

Gender-related issues often make headline news and the issue of gender-specific versus gender-neutral spaces in the workplace is the subject of hot debate. However, this study found that only one in five (20%) design professionals thought this would be an influential factor in the design of commercial washrooms in the next five years.

In the survey, end-user respondents were evenly split between female (49.4%) and male (50.4%); only 0.2% did not respond or did not identify with either gender. And when it came to their workplace facilities, more than 8 out of 10 (83%) end users reported having separate gender-specific washrooms available. Offices with additional gender-neutral facilities remain in the minority (21% overall) and where neutral washrooms are provided, only 15% of all end users reported using them. This lower provision and usage of neutral washrooms suggests that, while pressure is growing for companies to take greater account of different types of facilities for men and women and people who identify as transgender, gender-neutral or questioning identity, social shifts have had minimal impact in offices in Europe to date. End-user resistance to this may also be a factor, with people preferring the privacy and other facilities provided by gender-specific washrooms.

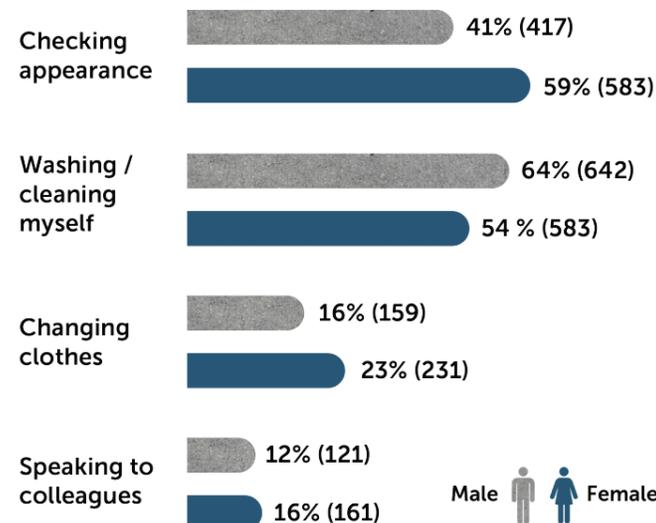
- Italy and Germany have the highest proportion of gender-specific washrooms (87% and 85% respectively)
- 29% of end users from France report having gender-neutral washrooms, more than any of the other countries surveyed

How do men and women's washroom behaviours differ?

Looking at male versus female behaviours, women tend to use washrooms more frequently than men (49% go more than three times per day, versus 36% of men) and are also more likely to use mixed washrooms that both genders use (17% versus 13% of men). Women also use workplace washrooms in slightly different

ways to men. As well as going to the toilet (94%), more women report that they use the space to check their appearance (59%) and change their clothes (23%). By contrast, men are more likely to use the washroom to wash or clean themselves.

THE DIFFERENCES BETWEEN MEN AND WOMEN'S USE OF WASHROOMS



- Female end users show the lowest rates of satisfaction, with over a third (35%) not positively satisfied with their washroom overall, while a significant proportion were unimpressed with the toiletries (40%) and even more (42%) with the sanitary bins

The study also found that women have higher expectations of workplace washrooms and would like to see more toiletries (48%), taps with hands-free controls (46%), odour masking products and

sanitary bins (44%). Meanwhile, 40% of men expect to see urinals in their workplace washrooms – something that might explain why they're less likely to use gender-neutral facilities than women.

Accessibility

Accessible washrooms are present in around 30-40% of respondents' workplaces, but only 12% share a location with washrooms for all employees. The challenge for designers is how to plan for larger washroom spaces, where accessible spaces are integrated, with suitable durability and flexibility to be adapted to meet requirements and comply with legislation in the future.

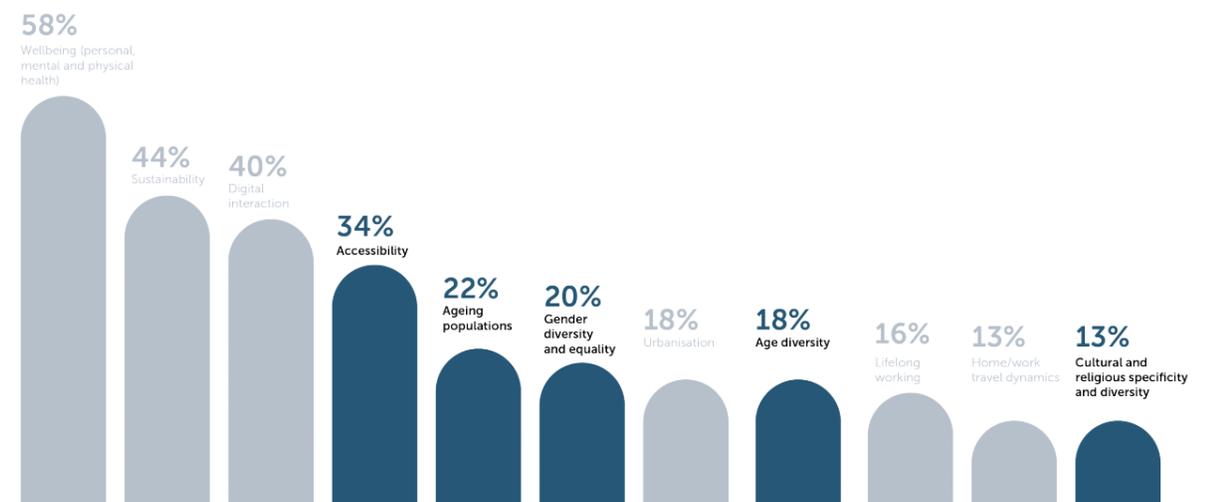
Over a third (34%) of design professionals surveyed thought that accessibility (defined as adjustable and inclusive spaces for all users, including those with limited mobility; a range of body sizes and shapes; sight sensitivity, impairment or blindness; and hearing sensitivity or impairment) would be a big influence on commercial washroom design in the next five years – a bigger issue for them than gender diversity and equality (20%).

Cultural inclusivity

According to design professionals, the ageing population and gender diversity and equality will be more influential social factors on commercial washroom design in the next five years than cultural and religious specificity and diversity. End users also put a low priority on cultural considerations (5%) when asked what technologies, functionalities and benefits they would like to find significantly more of in workspace washrooms of the future.

- Fewer German end users reported the presence of separate disabled facilities (29%) or facilities for the disabled within main washrooms (11%)
- The UK reported the highest number of separate disabled facilities (44%) and the least number of separate disabled facilities within another washroom (9%). This is likely due to the enforcement of UK Building Regulations (Document M), which requires all new commercial building to have accessible washrooms

FIVE OF THE WORK AND SOCIAL FACTORS DESIGNERS THINK WILL BE MOST INFLUENTIAL OVER THE NEXT FIVE YEARS RELATE TO ACCESSIBILITY AND DIVERSITY



Response from Libby Sellers, design curator and author of Women Design

Is using the bathroom really about gender? Or, is it about amenity and function?

The report's findings suggest that both the end-user respondents and design professionals prioritised quality of provision over an adherence to equality. Regardless of what the signage above the door depicts (or how evenly distributed the floor space), if the facility is inaccessible, ill-equipped, unclean, or – at worse – unsafe, it serves nobody, irrespective of their needs, gender or beliefs.

The current low-level provision of gender-neutral facilities within workspaces is potentially indicative of a nascent appreciation of arguments in favour of their inclusion coupled by the complications of change enforced by contemporary building and plumbing regulations. Any latent personal prejudices might speak more to a need for increased privacy, security and hygiene standards generally rather than any real concern over sharing space. After all, we share toilet facilities on planes, trains and in other public spaces which are usually single-occupancy, self-contained, lockable and with regular maintenance regimes.

The public bathroom, or lack thereof, has long been a battleground of systemic social discrimination for a wide range of marginalised people – from women first entering the workplace in the 19th century, to people of colour facing segregation, to individuals with physical disabilities. The transgender and non-binary community are only the most recent in a list of groups fighting for 'potty parity'. Even if they currently represent a small percentage of the demography, this group should not be denied. As we tackle all forms of workplace discrimination and face an aging population, design professionals have a great opportunity to go beyond the traditional gender binary of bathrooms.

Though if, as the study revealed, accessible bathrooms are deemed more important to design professionals than



Libby Sellers

gender-neutral bathrooms, it is worth highlighting that 75% of carers in the UK are women and many carers (be they for the disabled, elderly or children) are not the same gender as their dependants. Consequently, mixed-sex accessible facilities might further enable this group.

Understanding that bathroom design is historically contingent, and that its evolution mirrors changing cultural attitudes about privacy and access, will allow design professionals to challenge preconceptions and champion alternatives that serve all users. This will ultimately help to realise the importance of wellbeing (personal, mental and physical health), which 58% of designers perceived as the most influential factor in coming years.

Key takeout

Different genders do have specific needs and expectations of washrooms, and design professionals must be aware of these when considering design and allocation of space within the washroom itself and in other facilities, such as showers. The provision of gender-neutral versus gender-specific washrooms will likely remain a relevant topic requiring further study.

Technology, social awareness, legislation and improved support systems will enable people with disabilities to integrate more fully into organisations' workforces and mean that physically accessible washrooms will continue to become increasingly commonplace.

In terms of actual toilet and basin fixtures, technological developments to date include voice-command controls, assistive robotics and emergency recognition. These features aim to reduce stress and retain employees by reducing physical and time demands, while improving hygiene, comfort and personal control. However, as our survey shows, these are currently far from the norm.



Sustainability: A balancing act for designers

Existing buildings account for 40% of the EU's overall energy consumption, 36% of its carbon dioxide emissions and 55% of its electricity consumption. Therefore, in order to meet the EU's climate and energy targets, building emissions, energy use and the resources used across the entire infrastructure industry all need to be addressed.

In line with this, EU policies are placing ever more stringent requirements on the production processes, monitoring and labelling associated with commercial washroom products, as well as on Green Public Procurement (GPP) criteria for the wider design, construction and management of office buildings. Methods for assessing the sustainability of buildings, such as BREEAM, are also becoming increasingly implemented across the continent. For designers and manufacturers, this means there are increasingly tighter regulations for safety, sustainability, water use, energy use, and sourcing and disposal of materials.

However, the issues around tackling sustainability can become very complex. As many studies point out, while a product may meet buildings regulations for performance, including sustainable targets, if it is not used by people due to other subjective factors – such as comfort, cleanliness and convenience – that product may not turn out to be sustainable nor contribute positively to end users' wellbeing and satisfaction. For sustainability measures to be effective, designers must therefore strike the right balance between environmental benefit and feasibility in practice.

A major motivator for washroom designers

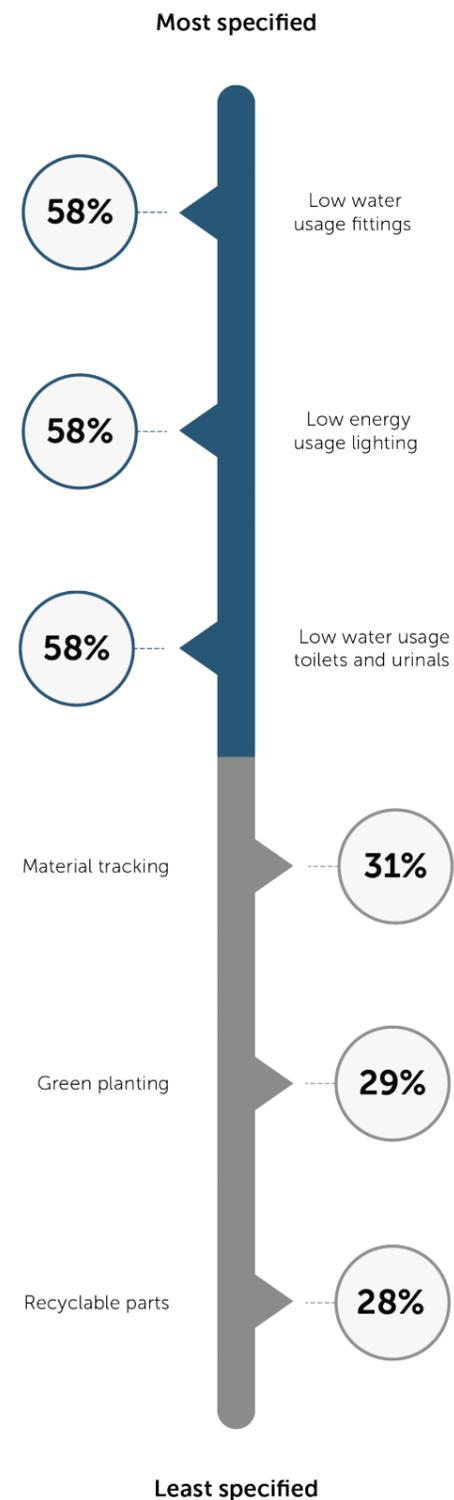
In this study, 84% of design professionals rated sustainability as an extremely or very important consideration when specifying commercial washrooms. In terms of impact on the design of commercial washroom in the next five years, sustainability was second most influential work-related factor, identified by 44% of design professionals, behind wellbeing (58%).

Material tracking and recycling are two key areas of opportunity that could be improved upon through greater cross-supply chain collaboration and IoT data sharing, and could link to product labelling for both specification purposes and facilities management.

Meanwhile, labelling is an area where design decisions can perhaps be influenced most readily as, according to research by National Building Specification (NBS), "around half of specifiers want to know whether products are manufactured in a way that is environmentally sustainable, and their sustainability credentials in use".

There is good evidence to support claims that information provided by manufacturers is a factor influencing which products are typically specified. For example, surveys by Dodge Data & Analytics found that, for around three quarters of architects (73%) and interior designers (81%), "healthy product labels have at least a medium level of impact on their product decisions". In addition, over three quarters of specifiers (78%) responded to an NBS survey stating that their choice of products is informed partly from previous experience with a manufacturer or particular product.

ELEMENTS THAT DESIGNERS SPECIFY TO IMPROVE SUSTAINABLE DESIGN



- More than 6 in 10 (64%) designers of office washrooms regularly specify low-water-usage toilets and urinals, while only 50% of designers of shopping centre washrooms do the same, suggesting that office buildings are more advanced in their uptake of such sustainable products
- Almost 7 in 10 (68%) design professionals in Italy regularly specify low energy usage lighting, compared to 50% of respondents in France

A more complex picture among end users

As a society, we're becoming increasingly conscious of the environmental impact of our own decisions and those of our employers and the brands we engage with. However, when it comes to commercial washrooms, sustainability efforts aren't always evident to end users. European and Scandinavian studies have shown that many sustainability-related design choices for commercial washrooms are behind the scenes – inside walls, ceilings and fixtures – meaning people use them every day without recognising their environmental importance or impact on workplace quality. As such, designers, building owners and tenants could be missing a trick by not explicitly signposting the sustainability credentials of certain pieces of technology or equipment.

In our survey, two thirds (66%) of end users consider sustainability extremely or very important. However, it didn't feature in their top 10, which was occupied by more standard factors such as cleanliness, hygiene, smell control and flushing performance. These findings suggest that people do want sustainable washrooms, but only if the features do not compromise their washroom experience in terms of comfort, cleanliness and convenience. For example, low-water or non-water usage toilets and urinals may not be acceptable to end users if it meant more smells and stains. Similarly, too many controls and buttons or unseen water or energy saving

sensors may not be welcomed if they cause difficulties in flushing, washing hands or operating hand dryers.

Rather than contributing to higher washroom satisfaction, such technology can cause frustration and raise end-user stress, making them less sustainable in reality. For example, automatic single-flush toilet cisterns pre-determine patterns of water consumption that may not satisfy users' requirements for cleanliness – meaning more water is actually wasted by multiple flushes. In fact, research in Austria on user satisfaction and wellbeing in energy efficient office buildings found that satisfaction in 'green' buildings was not necessarily higher than in conventional ones. In order to increase wellbeing and energy performance in offices, both materials and social considerations must be addressed.

The solution may lie in increased signposting of environmentally friendly functionality in washrooms: given the current gravity of the green agenda, being made aware that a certain product or process is contributing to a more sustainable world may encourage people to use it as intended. This will become even more important as time goes on, with almost half of end users (47%) indicating that they would like to find significantly more sustainability technologies, functionalities and benefits in workspace washrooms of the future.

Lead designer at Studio Levien, Robin Levien, agrees with signposting of sustainable functionality but warns against 'greenwashing': "Making users aware of the sustainability credentials of the products they use could indeed lead to a greater appreciation of their function and have a positive impact on their efficacy. However, it would need to be done carefully so as to avoid appearing preachy. Instead, messages should remain positive and be communicated in fun ways. For example, awards could be given out to the 'greenest' washrooms, which could be signposted to the public via location-based apps."



Sustainability will be the 2nd most influential factor in commercial washroom design over the next five years, according to designers



84% of design professionals feel sustainability is an extremely or very important consideration when specifying commercial washrooms



2/3 of end users think sustainability is extremely or very important, yet it is not in their top 10, which includes more practical factors such as cleanliness, hygiene and ventilation

Key takeout

Sustainability will remain one of the biggest concerns for the construction industry in upcoming years, becoming even more important as global debates about climate change and resource management increase, and as cities adopt more greening policies that will continue to intensify across the EMEA region.

Professional designers, as well as those people across the entire manufacturing process, will be integral in tackling climate change and resource management, by helping to increase use of ethically sourced materials, manage waste, and reduce energy and water usage. There is therefore a huge opportunity for designers to lead the way in encouraging uptake of sustainable products and systems – which will also help to reduce total cost of ownership. However, this will likely prove to be a balancing act for many working with commercial clients and the associated restrictions.

When it comes to end users, there is a slight tension between their desire for sustainable options and the importance they place on practical drivers such as cleanliness and ease of use. The implications for professional designers therefore go beyond decisions about which water or energy saving devices to specify; relevance to end users and the three Cs – comfort, cleanliness and convenience – must also be considered early in the project planning and design process, along with appropriate signposting of sustainable functionality.



Technology in the washroom

Technology is being put to good use in innovative and successful washrooms across all commercial sectors, for reasons ranging from sustainability and cost reduction to end-user hygiene and comfort. Some of these are more recognised by end users than others, such as features that assist with flushing toilets and urinals, and washing and drying hands. Other technology works in the background, such as automatic controls for lighting, ventilation and smell controls, as well as monitoring devices for water usage.

Three quarters (74%) of design professionals surveyed said they expected to specify significantly more water, energy and material saving technology in the next decade. Specifically, 39% thought that hands-free technology for flushing and dispensing would be an important influence on commercial washroom design in the next five years.

Flushing and cleaning technology

Only 13% of end users report having fully automatic toilets with hands-free technology for flushing. The norm (83%) remains the manual flush option. Although the majority of users (59%) use the inside of their hand to flush the toilet, a significant number use a variety of methods that avoid this: 17% use the back of their hand, 12% flush with a paper towel in their hand and 8% use their elbow. These touch-avoidance tactics were most pronounced amongst 25 to 34-year-olds.

We can hypothesise that much of this behaviour echoes the importance that end users place on cleanliness and hygiene, demonstrated earlier, and would be alleviated by greater adoption of automatic flushing technology. Building on this theme, 36% of end users across all age groups would also like to see significantly more self-cleaning technology, such as automated toilet brushing, in workspace washrooms of the future (second only to sustainability technology at 47%).

Environmental control

Another area of technology that is more obvious to end users, and which has been linked to employee satisfaction and wellbeing, is the integration of features that offer users greater environmental control within their workplace, such as manual or hands-free controls for lighting, heating and water temperature. This is corroborated by end users in our survey, who had significantly higher levels of satisfaction with taps that have manual controls for both on/off and hot/cold (63%) versus taps that allow you only to turn water on or off (55%).

Smart technology

Digital integration and user-responsive technology – referring to spaces and services such as lighting and temperature that are digitally connected to end users via employee ID cards, phone apps or other wearable technology – was highlighted by design professionals as the third most influential factor in the next five years, behind wellbeing and sustainability.

More than a third (36%) of design professionals believe that AI and smart technology, such as digital service features that interact with management systems and the Internet of Things (IoT), will impact commercial washroom design in the next five years. As part of management features, these devices can add value to clients by monitoring product use (frequency and resource consumption) or flagging maintenance issues.

HOW PEOPLE FLUSH MANUAL TOILETS



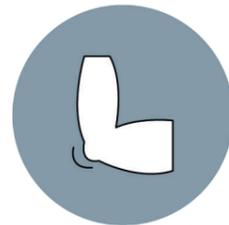
59%
With the inside
of their hand



17%
With the back
of their hand



12%
With a paper
towel in their
hand



8%
With their
elbow

Current and emerging trends

There is already a large number of products and features available that enhance the more functional aspects of the washroom – for example, for toilets, urinals and showers. Additionally, sink and mirror areas can be specified with added lighting functions that do more than meet minimum regulations; they also act as more decorative stand-out features, have practical uses to aid personal appearance and can increase environmental health qualities with seasonal or day/night level adjustments.

Features with entertainment and marketing purposes are also on the rise. Recent trends include video and touch screens, digital advertising and 'selfie mirrors' with built-in touch sensors and cameras for people to take, animate and share photos. Of course, these forms of technological integration, with cameras and personal data collection, will need particular care when it comes to ensuring both physical and virtual personal privacy.

In our survey, end users were interested in these kinds of innovations, albeit at a relatively low level.

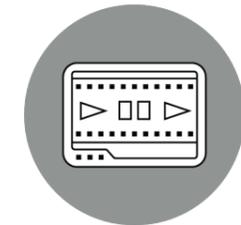
Unsurprisingly, these technologies were most welcomed by younger users (under-34s).

Renowned designer Robin Levien has some other predictions for the future of technology in the washroom: “The possibilities are all but endless when it comes to the application of technology within a washroom setting. Think ultraviolet light and ionized water; proximity sensors to open and lock doors; automatic height-adjusting urinals; self-cleaning sinks, floors, mirrors; even virtual reality cubicles with images, sounds and smells. Of course, it’s a case of balancing all of this with budgets and genuine user demand, but the most plausible concept we’re moving towards – and already seeing develop – is the totally touchless washroom. This satisfies the desire for the futuristic, while having legitimate health and wellbeing benefits.”

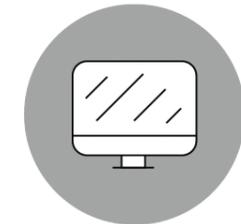
THE PERCENTAGE OF END USERS WHO WANT MORE FEATURES WITH ENTERTAINMENT AND MARKETING PURPOSES



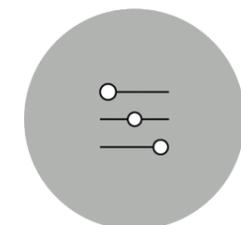
17%
Touchscreen
functionality



10%
Entertainment



10%
Displays



8%
Digital
interactive
controls

Key takeout

In all areas of the washroom, it is clear that options once considered more domestic or bespoke – such as beauty lighting, hands-free controls and smart technology – are being increasingly tailored to commercial washrooms as designers respond to user preferences and recognise their cost-effectiveness in a commercial setting.

Social media's impact on commercial washroom design

The ever-increasing use of online platforms to share images, videos and opinions now impacts every aspect of our everyday life and contemporary culture – including the use of commercial washrooms.

Sharing experiences

It's a given that user satisfaction across all commercial sectors has a profound effect on repeat custom, purchasing patterns and, for property owners and landlords, rental values and vacancy rates. The same can be said of commercial washrooms.

In this survey, 90% of end users agreed that their washroom experience, either positive or negative, would have an effect on their likelihood to return to a restaurant, bar or shopping centre. But it was the positive experiences that had the most impact, with 77% of end users reporting that a positive washroom experience would make them more likely to go back, versus only 13% who said a negative one would put them off.

More and more experiences, of all kinds, are being shared online. Almost four in 10 (38%) end users in our survey have posted online about a washroom experience at a restaurant, bar or shopping centre.

Popular online consumer review sites, as well as being used by consumers to help inform their purchasing and travel decisions, have also become important tools for business owners who understand the value of positive rating, and the potential economic damage of negative content. The Centre for Hospitality Research found that "higher scores on online travel advisory sites allow hotels to charge up to 11.2% more while maintaining occupancy rates". With washroom images and comments featuring frequently on these sites, their design and decoration should form a central part of such businesses' commercial plans.

#bathroomselfie

Individual and group photos, 'selfies', often instantaneously shared to a growing global audience, are used by people of all ages and backgrounds.

Popular social media hashtags, like #bathroomselfie among others, have brought unprecedented publicity for washroom spaces. As a result, washroom design has been shown to have an even greater impact, on business brands, consumer travel and shopping choices. New tools have been created specifically to trawl social media and IoT data for images and trends that businesses can use to help them adapt their marketing and operations.

Washroom designs that stand out in this area – mainly non-office examples at present – are the antithesis of bland, neutral spaces as they vie for engagement via sharing sites or trending hashtags such as #placesyoupee and #washroomgoals. The washroom spaces most often shared and recommended online now feature bolder colours and patterns or extreme décor, employing tongue-in-cheek style, unusual fixture shapes and "glamour" finishes in taps and toilet pods, as well as ornate mirrors, marquetry and so forth. Although white ceramic sinks

and traditional toilet fixtures remain most prevalent, with greater recognition of the economic benefit of positive or shocking images posted online, more bar, restaurant and hotel owners seem confident in allowing designers to create washrooms spaces that are altogether more exotic, risqué and, ultimately, photogenic.

As an example, one of the most unexpectedly – and unintentionally – popular recent images of a washroom was a 2018 'selfie' that was re-shared thousands of times by other users, with comments focusing almost entirely on toilet design issues rather than on the photo-taker. This shared image gave new meaning to the idea of the viral toilet, highlighting, more seriously, how social media can impact on perceptions of washrooms, and the commercial businesses and brands that own them, particularly as they are one of the most popular places for individual and group selfies.

The informal and, by and large, unregulated nature of social media means it is difficult to rely on the accuracy and veracity of all content; however, with over 200 million online reviews posted in a given month to just one of the leading online travel sites – a tenfold increase in 10 years – the economic influence is undeniable.

4/10

people have posted online about a washroom experience at a restaurant, bar or shopping centre



Key takeout

As awareness of social media's impact has increased, the implications for designers across all commercial sectors is to adapt and learn to tailor their projects – including bespoke washrooms – to maximise the positive benefits of such sites through designs and specified fixtures that entice and keep customers visiting and sharing .

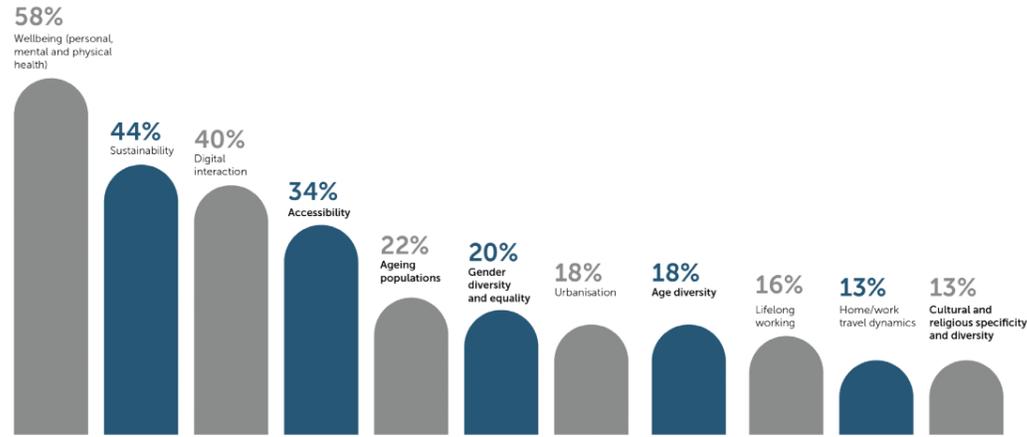
Washroom design professionals are the future trendsetters across all commercial sectors and, understanding the impact of social media and marketing, they can tailor projects to maximise positive opportunities for their clients to attract and retain customers.

The future of commercial washrooms

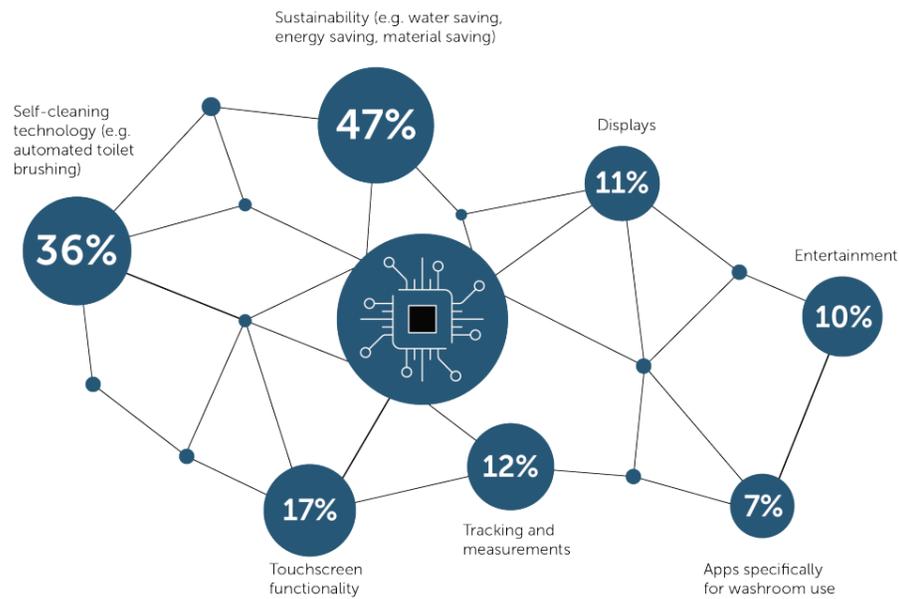
To provide insight into where the next decade will take us in the world of commercial washroom design, design professionals were asked what they think the most influential work and social factors to impact this field will be over the next five years, and what fixtures, finishes and other washroom

elements they might be most likely to specify over the next decade. End users were asked what they would like to see more of in their workplace washrooms in the future.

THE MOST INFLUENTIAL WORK AND SOCIAL FACTORS IN THE NEXT FIVE YEARS, ACCORDING TO DESIGN PROFESSIONALS



THE TECHNOLOGIES, FUNCTIONALITIES AND BENEFITS END USERS WOULD LIKE TO FIND SIGNIFICANTLY MORE OF IN WORKSPACE WASHROOMS OF THE FUTURE



Design professionals and end users' views are well aligned when it comes to thinking about the future of commercial washrooms, with wellbeing and sustainability being of paramount importance. These are the top two factors professionals think will influence washroom design over the next five years and this is mirrored in the type of products they're likely to start specifying more of.

More than 7 in 10 respondents expect to specify more products associated with water, energy and material saving, which is probably due to it becoming increasingly vital for building owners to meet tightening sustainability regulations and

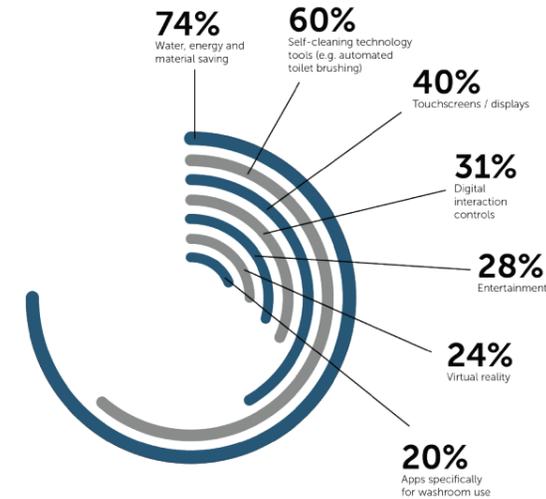
certification criteria – something that's likely to please end users, almost half of whom would like to see more sustainability features included in their future workplace washrooms.

As for wellbeing – encompassing matters of personal, mental and physical health – on average, 60% of designers believe they will be specifying more self-cleaning technology tools in the future, and this jumps as high as 77% among designers working in transport stations, where there are large volumes of washroom users, day and night. Self-cleaning technology is also the second most-desired feature among end users.

Not all designers believe digital technology will have a solely positive impact, however: a quarter (24%) think it will intrude on what should be a private, functional space, and 12% went so far as to say that over-connectivity within commercial washrooms would increase people's stress levels. With this mention of connectivity, it's possible that the negative associations could be in relation to virtual reality and apps in particular, rather than digital technology as a whole; after all, these two items were the least popular among

end users, chosen by just 7%, and the least expected to be specified more by professionals, at 24% and 20% respectively. However, as with self-cleaning fixtures, a significantly larger number (35%) of transport area design professionals indicated they would specify such personal applications, suggesting further research is needed to more accurately reflect washroom trends in this sector.

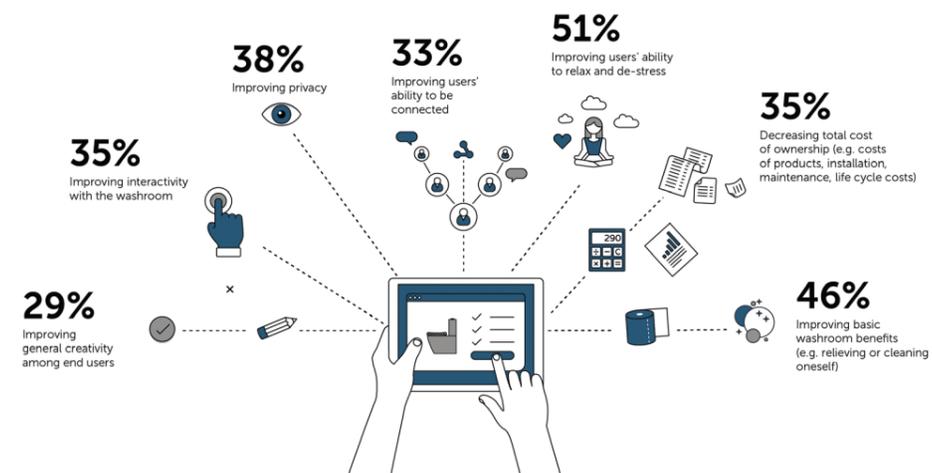
THE TYPES OF PRODUCTS PROFESSIONALS EXPECT TO SPECIFY SIGNIFICANTLY MORE OF IN THE NEXT 10 YEARS



When it comes to digital technology, which is the third most prevalent topic across both design professionals and end users when considering washrooms of the future, the most popular products forecast for inclusion are those thought to have the most benefit for end user experience and that support wellbeing. Digital interaction was chosen by 40% of designers as an influential factor, with the same proportion expecting to

specify more touchscreens and displays in future. While a smaller proportion of end users showed a preference for touchscreens and displays, at 17% and 11% respectively, designers think such digital aids will improve users' ability to relax and de-stress (51%), improve basic washroom benefits (46%) and improve privacy (38%) – factors all positively associated with wellbeing.

THE TYPES OF IMPACT SPECIFIERS THINK DIGITAL TECHNOLOGIES (E.G. VR, AI, DIGITAL INTERACTION) WILL HAVE ON COMMERCIAL WASHROOMS



Key takeout

We can confidently forecast from the responses and wider findings throughout this report is that technology will continue to dominate product development for sustainability, hygiene and wellbeing purposes, as well as to provide bespoke interactive washroom experiences for end users' socialising and sharing online.

Conclusion

The way people interact with washrooms in commercial spaces, and the external factors governing their design, are constantly evolving. From a heightened awareness of wellbeing in an age where the boundaries between work and leisure continue to merge, to a growing insistence on inclusive, comfortable spaces that feature sustainable user-focused technologies, designers are faced with more challenges than ever when it comes to delivering effective commercial washrooms.

At all times, designers must of course comply with spatial and regulatory constraints, but they must also ensure that every single design decision they make is inextricably linked to the end user's current and future requirements in order to encourage a positive ultimate experience. This, in turn, can help to deliver commercial advantages and is even more critical given the ubiquity of social media and its power in altering a brand or employer's reputation in the click of a button.

The key to achieving this balance lies in evidence-based design and sustained collaboration – not only with end users to better understand and respond to their shifting needs, but with stakeholders at every stage of the supply chain to give a project the best chance of supporting financial objectives throughout its lifetime. Only through such a commitment will we be able to deliver impactful washrooms that go beyond mere function to rightfully play a central role in both improving wellbeing and enhancing the lives of those who use these vital everyday spaces.

Together for better

Ideal Standard Group and Armitage Shanks

As a leading manufacturer of private and public bathroom solutions, Ideal Standard looks forward to continuing to work with architects, designers, construction firms and research partners through its UK commercial brand, Armitage Shanks. Together, they will create washroom solutions that make life better for customers and shape the future of modern living.



Appendix

Research design and methodology

This study samples data from four EMEA countries (France, Germany, Italy, United Kingdom), using two online surveys to gather information from the following sample profile:

- End-users, office workers from companies with 50+ employees: 2000 responses (500 per country)
- Professionals (architects, interior designers, specifiers with workplace washroom experience): 417 responses (101-108 per country).

Workplace employees were asked to answer 20 questions on general satisfaction with workplace washrooms and specific areas including toilets and showers to expectations and importance of key services and products, to the influence of washroom design on end-users experience/sharing of experiences through social media.

Designer/Specifiers were asked to answer 10 questions on different types of commercial workplaces, design and specification considerations and priorities, and views on future developments in washroom design and technology.

The survey questions and analysis were underpinned by an independent systematic literature review on commercial workplaces and commercial bathroom design carried out by the author.

Gender breakdown of end-user respondents

The average proportion of respondents, who each indicated gender preference of male or female, was statistically even (female, 49.4%; male, 50.4%).

Breakdown of End-user respondents per sample country:

- France: female, 51%; male, 49%
- Germany: female, 44.5%; male, 55.6%
- Italy: female, 45%; male, 55%
- UK: female, 57%; male 42%

Age of end-user respondents

The majority of respondents were in the 25-44 age bracket (>60% in each region), followed by 55+ year olds (>35% in Germany, Italy and the UK; 26.4% in France).

18-24 year olds comprised <= 4% of respondents.

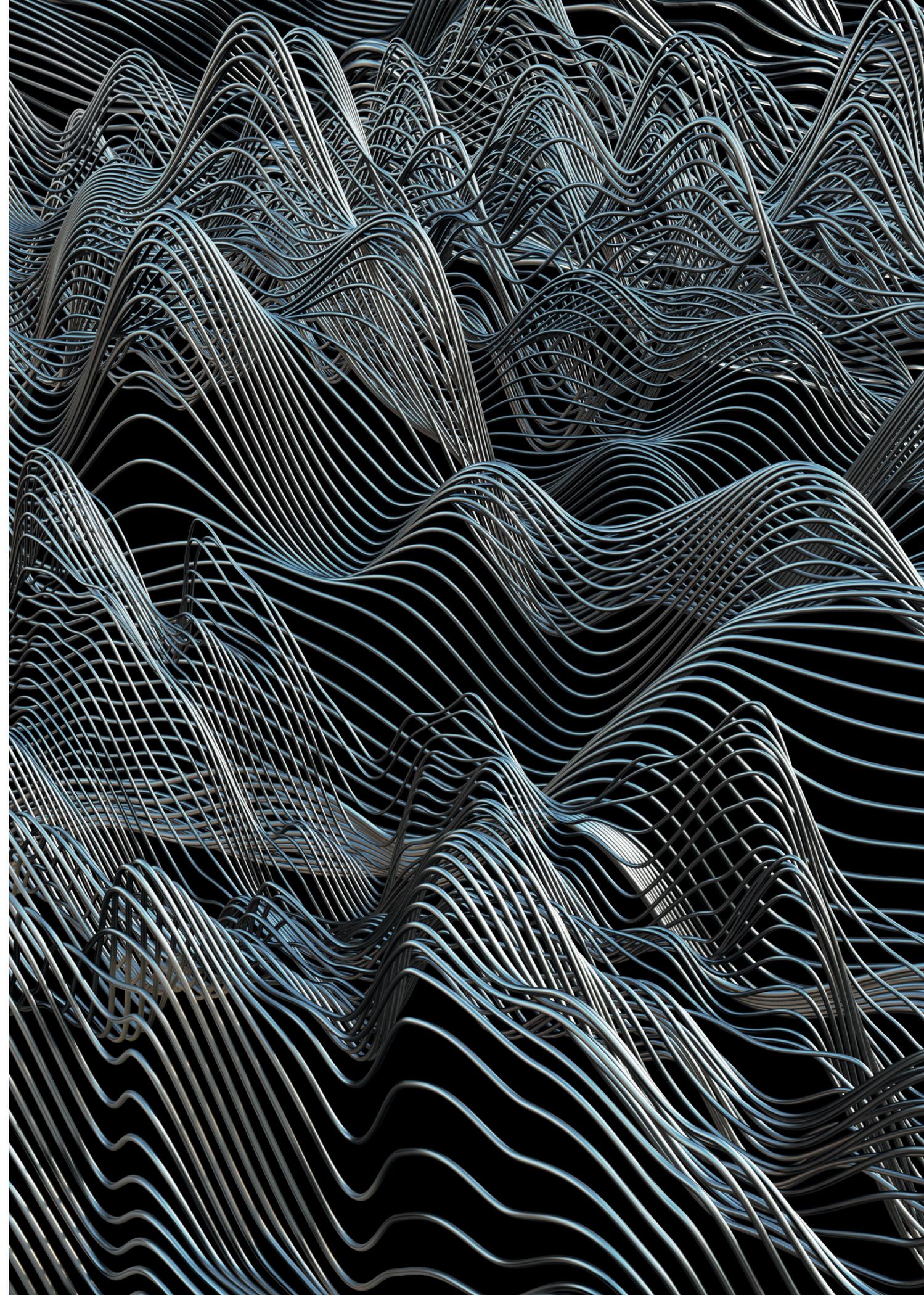
Service experience of professional designer/specifier respondents

In each region the majority of respondents had over 8 years' experience with their current company, followed by 2-8 years typically except in the UK where the number of respondents in their current job for 2-5 years nearly equalled those with 8+ years in the same company.

Commercial washroom scope

Traditional commercial spaces in this research include the following sectors:

- Offices (primary focus of end-user and professional surveys) including all workspaces - individual or open-plan - with amenity/support spaces, and social and meeting areas.
- Retail and Leisure (secondary focus for end-users and professionals) including Bars and Restaurants, Shopping centres, Gyms/ Sports centres, Event spaces/ concert arenas.
- Transport spaces (tertiary focus for professionals) including airports, train stations, etc.



References

AMA Research Ltd. 2017. 'Bathroom Market Report UK 2017-2021 Analysis'. <https://www.amaresearch.co.uk/products/bathroom-2017>.

Anderson, Chris. 2012. 'The Impact of Social Media on Lodging Performance'. Center for Hospitality Research Publications, November. <https://scholarship.sha.cornell.edu/chrpubs/5>.

Anguelovski, Isabelle. 2018. 'Green Trajectories: An Analysis of Urban Greening Policy in 99 Cities in Europe, Canada and USA'. Barcelona Lab for Urban Environmental Justice and Sustainability (blog). 23 April 2018. <http://www.bcnuej.org/2018/04/23/a-new-book-analyzes-the-trajectory-of-greening-policy-in-99-cities/>.

Anna Roberts. 2018. 'People Stunned by Woman's Barmy Bathroom Setup - Can You Spot What's Wrong?' The Sun, 31 May 2018. <https://www.thesun.co.uk/fabulous/6417432/womans-bathroom-selfie-sends-social-media-into-meltdown-can-you-spot-whats-wrong-with-it/>.

Artola, Irati, Koen Rademakers, Rob Williams, and Jessica Yearwood. 2016. 'Boosting Building Renovation: What Potential and Value for Europe?' PE 587.326. Industry, Research and Energy. European Parliament Directorate General for Internal Policies.

Bain, David. 2016. 'The Impact of BIM on Product Selection throughout the Project Timeline'. National BIM Report for Manufacturers 2016, 18 July 2016.

———. 2017. 'Understanding Need: How NBS Can Help Manufacturers Build Lasting Relationships'. NBS: What Specifiers Want 2017, 2017.

Barker, J., and M. V. Jones. 2005. 'The Potential Spread of Infection Caused by Aerosol Contamination of Surfaces after Flushing a Domestic Toilet'. *Journal of Applied Microbiology* 99 (2): 339–47. <https://doi.org/10.1111/j.1365-2672.2005.02610.x>.

Barker, Peter. 2018. 'From UK to the World - Making BIM Work Internationally'. National BIM Report for Manufacturers 2018, 2018.

BBC News. 2017. 'Berlin's New Toilets: Would You Use a Women's Urinal?'. 11 August 2017, sec. Europe.

Bluysen, Philomena M. 2010. 'Towards New Methods and Ways to Create Healthy and Comfortable Buildings'. *Building and Environment* 45 (4): 808–18. <https://doi.org/10.1016/j.buildenv.2009.08.020>.

Bluysen, Philomena M., Sabine Janssen, Linde H. van den Brink, and Yvonne de Kluizenaar. 2011. 'Assessment of Wellbeing in an Indoor Office Environment'. *Building and Environment* 46 (12): 2632–40. <https://doi.org/10.1016/j.buildenv.2011.06.026>.

Bluysen, Philomena M., Freek van Zeist, Stanley Kurvers, Martin Tenpierik, Sylvia Pont, Bart Wolters, Luuk van Hulst, and Darell Meertins. 2018. 'The Creation of SenseLab: A Laboratory for Testing and Experiencing Single and Combinations of Indoor Environmental Conditions'. *Intelligent Buildings International* 10 (1): 5–18. <https://doi.org/10.1080/17508975.2017.1330187>.

Delos. 2014. 'WELL Building Standard'. V.1. Delos Living LLC. <https://www.wellcertified.com/sites/default/files/resources/>.

Dodd, Nicholas, Elena Garbarino, and Miguel Gama Caldas. 2016. 'Green Public Procurement Criteria for Office Building Design, Construction and Management: Technical Background Report and Final Criteria.' JRC Science for Policy Report. Luxembourg: European Commission. <http://dx.publications.europa.eu/10.2791/28566>.

Duron, Alexandra. 2012. '6 Ways to Have Good Gym Hygiene'. *Women's Health* (blog). 18 December 2012. <https://www.womenshealthmag.com/fitness/a19932171/6-ways-to-have-good-gym-hygiene/>.

European Bathroom Forum. 2017. 'The European Bathroom Forum Promotes the Creation of an Environmental Label for the Bathroom Space'. <http://cerameunie.eu/topics/cerame-unie->

[sectors/sectors/the-european-bathroom-forum-promotes-the-creation-of-an-environmental-label-for-the-bathroom-space/](http://cerameunie.eu/topics/cerame-unie-sectors/sectors/the-european-bathroom-forum-promotes-the-creation-of-an-environmental-label-for-the-bathroom-space/).

Fuller, Sieglinde. 2016. 'Life-Cycle Cost Analysis (LCCA)'. WBDG: Whole Building Design Guide. 19 September 2016. <https://www.wbdg.org/resources/life-cycle-cost-analysis-lcca>.

Gardner, Mark. 2013. 'Total Cost of Ownership'. Life cycle analysis of facilities. The Builder's Association.

Gensler. 2016. '2016 Workplace Survey Reveals Workplace Secrets of the Most Creative and Innovative Companies'. <https://www.gensler.com/news/press-releases/us-workplace-survey-2016-findings>.

———. 2018. '10 Ways Workplace Design Keeps Talent Engaged'. *Design Forecast*. Gensler Research Institute. <https://www.gensler.com/design-forecast-10-ways-workplace-design-keeps-talent>.

Genty, Aurélien, Malgorzata Kowalska, Oliver Wolf, and Institute for Prospective Technological Studies. 2013. Development of EU Ecolabel and GPP Criteria for Flushing Toilets and Urinals: Technical Report. Luxembourg: Publications Office. <http://dx.publications.europa.eu/10.2791/52507>.

Goldhammer, Kirsten A., David P. Dooley, Eleanor Ayala, Wendy Zera, and Bonnie L. Hill. 2006. 'Prospective Study of Bacterial and Viral Contamination of Exercise Equipment'. *Clinical Journal of Sport Medicine: Official Journal of the Canadian Academy of Sport Medicine* 16 (1): 34–38.

Gray, Emily, and Fran Hazel. 2018. '15 of the Most Instagrammable Loos in London'. *The Handbook* (blog). 13 February 2018. <https://www.thehandbook.com/london-guidebook/15-instagrammable-loos-london/>.

Hongisto, Valtteri, Annu Haapakangas, Johanna Varjo, Riikka Helenius, and Hannu Koskela. 2016. 'Refurbishment of an Open-Plan Office – Environmental and Job Satisfaction'. *Journal of Environmental Psychology* 45 (March): 176–91.

Iqani, Mehita, and Jonathan E. Schroeder. 2016. '#selfie: Digital Self-Portraits as Commodity Form and Consumption Practice'. *Consumption Markets & Culture* 19 (5): 405–15.

Jenkins, Dan, and Lisa Baker. 2015. 'The Importance of Evidence-Based Design'. *Design Council* (blog). 8 December 2015. <https://www.designcouncil.org.uk/news-opinion/importance-evidence-based-design>.

Johnson, David, Robert Lynch, Charles Marshall, Kenneth Mead, and Deborah Hirst. 2013. 'Aerosol Generation by Modern Flush Toilets'. *Aerosol Science and Technology* 47 (9): 1047–57.

Jones, Lee. 2016. 'BIM and the Manufacturer: Ideal Standard'. NBS. 28 April 2016. <https://www.thenbs.com/knowledge/bim-and-the-manufacturer-ideal-standard>.

Jones, Stephen A. 2016. 'The Drive Toward Healthier Buildings 2016: Tactical Intelligence to Transform Building Design and Construction'. *Smart Market Report*. Dodge Data & Analytics.

Kensek, Karen, and Douglas Noble. 2014. *Building Information Modeling: BIM in Current and Future Practice*. John Wiley & Sons.

Lawson, Bryan. 2002. 'Healing Architecture'. *The Architectural Review* 211 (1261): 72–75.

MacMillan, Douglas, and Eizabeth Dwoskin. 2014. 'Smile! Marketing Firms Are Mining Your Selfies'. *Wall Street Journal*, 9 October 2014, sec. Tech.

McShane, Asher. 2016. 'Hygiene Fears Raised as One in 12 Workers Eat and Drink in Office Toilets'. *Evening Standard*, 15 October 2016, sec. Health.

Moezzi, Mithra, and John Goins. 2011. 'Text Mining for Occupant Perspectives on the Physical Workplace'. *Building Research & Information* 39 (2): 169–82.

Neo Metro. 2018. 'The Four Most Important Design Trends for Commercial Restrooms - Neo Metro'. 28 March 2018. <https://www.neo-metro.com/blog/post/2018/03/28/commercial-restroom-design-trends.aspx>.

Nwaogu, Tobe, Vania Simittchieva, Mark Whittle, and Michael Richardson. 2014. 'Study on Online Consumer Reviews in the Hotel Sector'. European Commission, Risk Policy Analysts Ltd. DOI 10.2772/32129.

Ornetzeder, Michael, Magdalena Wicher, and Jürgen Suschek-Berger. 2016. 'User Satisfaction and Well-Being in Energy Efficient Office Buildings: Evidence from Cutting-Edge Projects in Austria'. *Energy and Buildings* 118 (April): 18–26.

Panek, P., and P. Mayer. 2016. 'Applying ICT to Ease the Toilet Usage'. *Gerontology* 15 (0): 22.

Parida, Shweta. 2018a. 'Bathroom Design Is Getting Bolder in Its Choice of Colours, Textures, Materials and Technology'. *Design Middle East* (blog). 22 February 2018. <http://www.designmena.com/specify/bathroom-design-is-getting-bolder-in-its-choice-of-colours-textures-materials-and-technology>.

———. 2018b. 'Research and Technology Are Driving Commercial Bathroom and Kitchen Design'. *Design Middle East* (blog). 22 February 2018. <http://www.designmena.com/voices/research-and-technology-are-driving-commercial-bathroom-and-kitchen-design>.

Quitza, Maj-Britt, and Inge Røpke. 2008. 'The Construction of Normal Expectations: Consumption Drivers for the Danish Bathroom Boom'. *Journal of Industrial Ecology* 12 (2): 186–206.

———. 2009. 'Bathroom Transformation: From Hygiene to Well-Being?'. *Home Cultures* 6 (3): 219–242.

Saner, Emine. 2017. 'Are You Finished in There yet? How the Bathroom Selfie Became so Huge'. *The Guardian*, 24 January 2017, sec. Media. <https://www.theguardian.com/media/shortcuts/2017/jan/24/finished-in-there-yet-how-bathroom-selfie-became-huge>.

Scott, Susan V., and Wanda J. Orlikowski. 2009. "'Getting the Truth": Exploring the Material Grounds of Institutional Dynamics in Social Media'. Working Paper Series 177. Department of Management, Information Systems Group, London School of Economics and Political Science. <http://www.lse.ac.uk/collections/informationSystems/>.

Sev, Aysin. 2009. 'How Can the Construction Industry Contribute to Sustainable Development? A Conceptual Framework'. *Sustainable Development* 17 (3): 161–173.

Shove, Elizabeth. 2003. 'Users, Technologies and Expectations of Comfort, Cleanliness and Convenience'. *Innovation: The European Journal of Social Science Research* 16 (2): 193–206.

Spanne, Autumn. 2015. 'The Phantom Flush: Why High-Tech Toilets Waste so Much Water'. *The Guardian*, 20

February 2015, sec. Guardian Sustainable Business. <https://www.theguardian.com/sustainable-business/2015/feb/20/automatic-toilets-water-efficiency-flush-tech-business>.

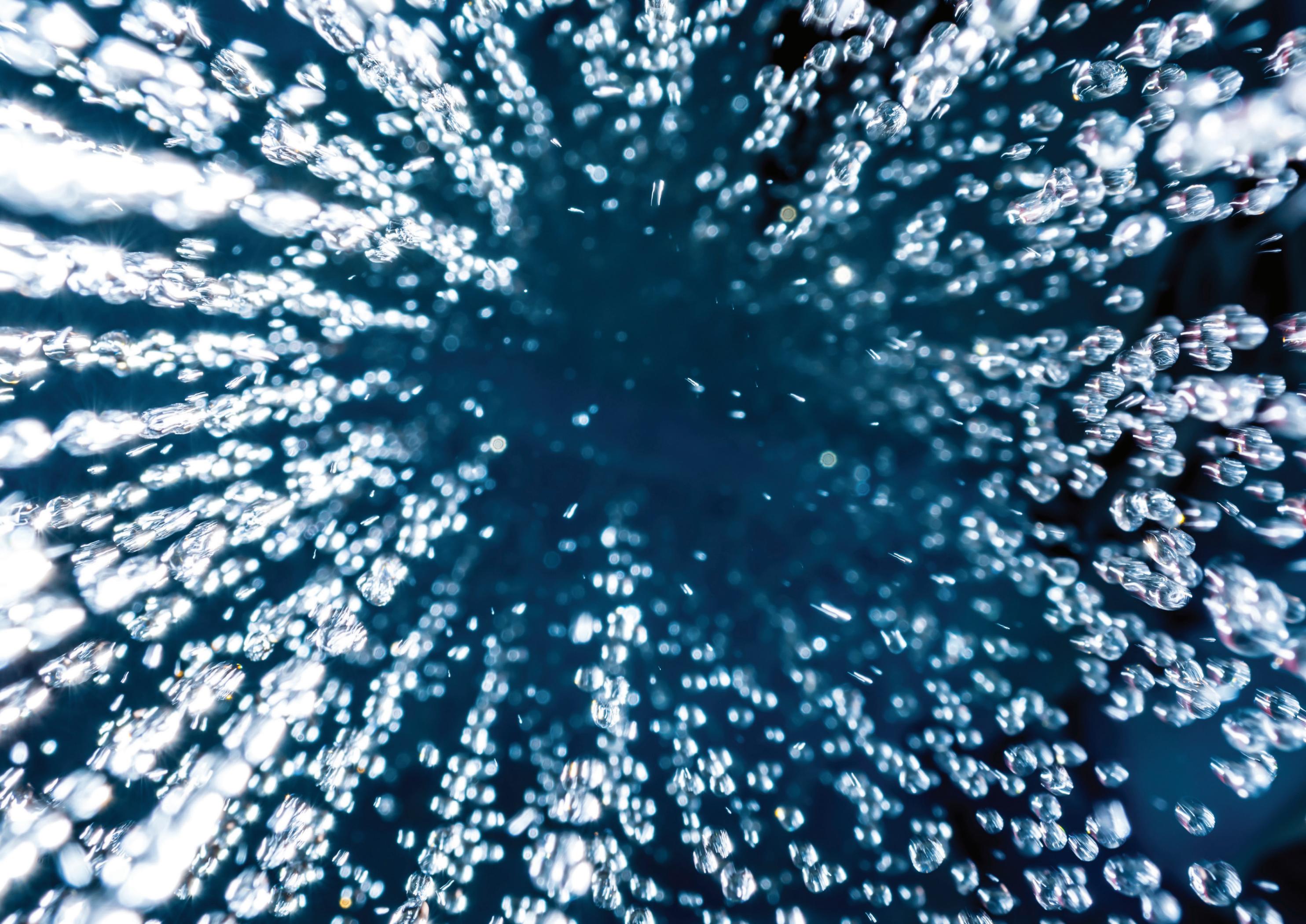
The Future Laboratory. 2018. 'The Future of the Workplace'. London: Morey Smith.

Vincent, Pollyana. 2015. 'Managing Your Online Reputation'. Denmark, May.

WBDG. 2016. 'Private Toilet'. National Institute of Building Sciences. *Whole Building Design Guide: Design Recommendations - Space Types* (blog). 5 September 2016. <https://www.wbdg.org/space-types/private-toilet>.

Winters, Meghan, Michael Brauer, Eleanor M. Setton, and Kay Teschke. 2010. 'Built Environment Influences on Healthy Transportation Choices: Bicycling versus Driving'. *Journal of Urban Health : Bulletin of the New York Academy of Medicine* 87 (6): 969–93. <https://doi.org/10.1007/s11524-010-9509-6>.

Wiseman, Eva. 2018. 'Night on the Tiles: Decoding the Power of the Bathroom Selfie'. *The Guardian*, 13 September 2018, sec. Fashion.



*Armitage
Shanks*

Armitage Shanks
Armitage
Rugeley
Staffordshire
WS15 4BT

Tel 01543 490253
Fax 01543 491677



Ideal Standard