










Hygiene

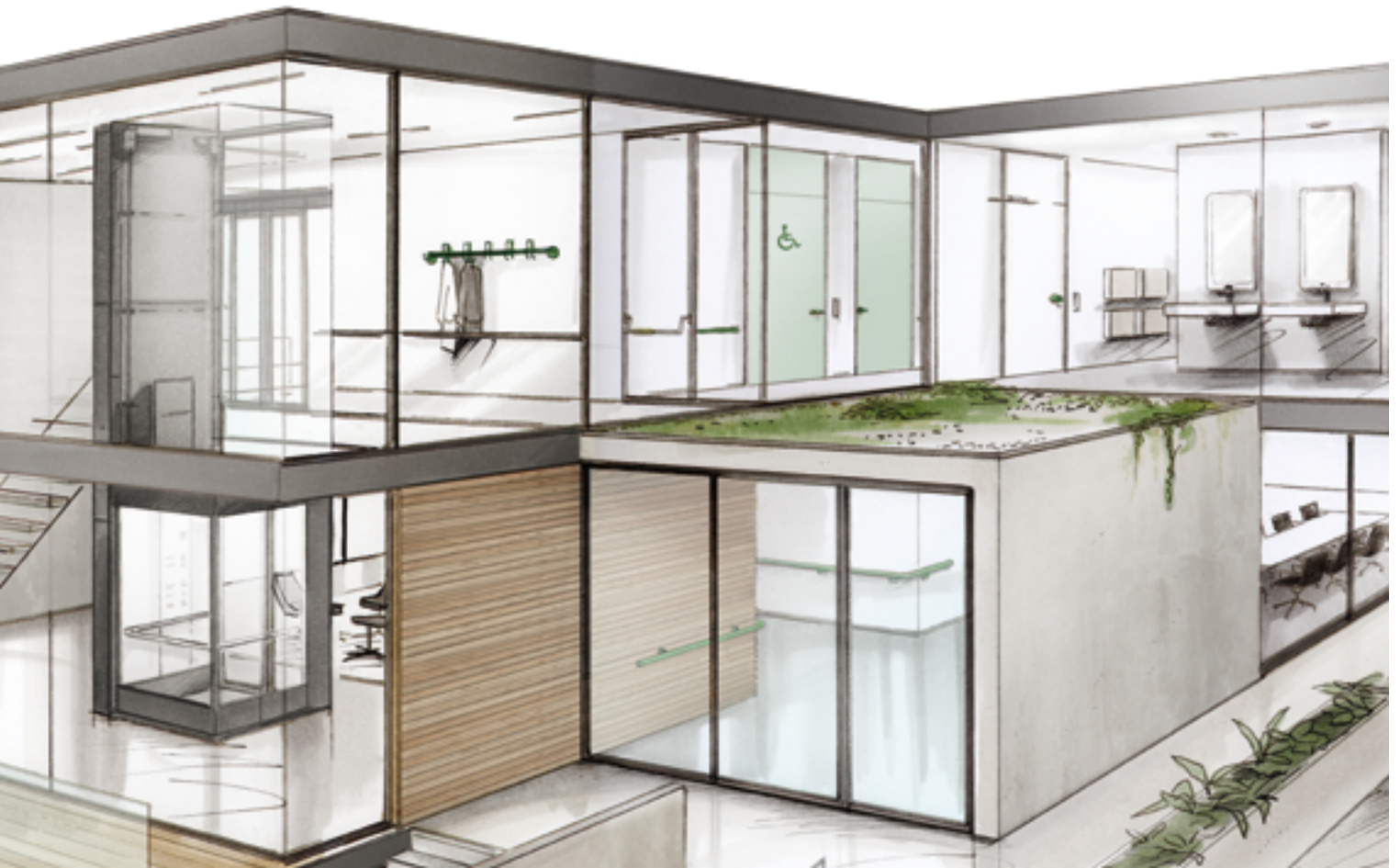


as a task for society

Hygiene as a task for society

How you can already plan rooms and buildings when you consider hygiene aspects

1	Hygiene standards in planning	4	
2	Hygiene: What does that actually mean?	6	
	Hygiene in medicine		
	Hygiene goals		
	Hygiene in times of the Corona crisis		
	Hygiene as a task for society		
	Hygiene in architecture		
	Properties of different materials		
	Briefly explained: Public Health		
3	The role of hygiene in different areas	15	
	3.1 Care area	16	
	Problem: Infection with multi-resistant germs		
	Briefly explained: Danger from siphons		
	Healing architecture		
	Design of the patient's room prevents infections		
	Hygiene in the bathroom		
	Hygiene at the door		
	Briefly explained: Standard for the sealing of interior spaces (DIN 18534-1)		
	Hygiene is a must in the hospital environment -		
	Interview with Rainer Schadow, Dipl.-Ing Architect AKG	27	
	3.2 Public area	30	
	Prevent aerosols		
	Ensure hygiene - and still reduce water consumption		
	3.3 Hotel area	35	
	Disinfection protection in the hotel entrance area		
	Hygiene and good design are not mutually exclusive		
	3.4 Education area	39	
	Briefly explained: Teaching hygiene from an early age		
	Classroom architecture		
	Briefly explained: Positive influence on learning success - thanks to attractive room design		
	Products for hygiene? Missing		
4	References	48	
5	Conclusion	53	
6	Imprint	54	



1 Hygiene standards in planning

1 Hygiene standards in planning

Life without high hygiene standards is hardly imaginable today. Soap, clean tap water, harmless food or disinfectants are standard in our latitudes and have become a matter of course. This topic has received even greater attention, not least due to the Corona pandemic. Current studies, for example from the spring of 2021, show that this is necessary and that clarification is still needed. Despite the numerous tips – for example regarding hand hygiene – according to the study, not even every second person washes their hands for 21 seconds or longer. Only this would be thorough enough to eliminate pathogens on the skin. In addition, only 58 percent of respondents use hand disinfection regularly.¹ Education and awareness-raising are therefore important. Because you can't always rely on every person adhering to basic hygiene rules – such as washing their hands thoroughly.

Hygiene cannot be imposed by the state. Every individual must make his/her own contribution to hygiene in public and in private.

And this is exactly where planners, architects and hygiene managers can start. Even if many people act on their own responsibility, it is evident that, due to the human factor, hygiene measures alone are not sufficient to contain diseases. But there are ways to improve hygiene. Because already during the planning of buildings, architects and planners can take this issue into account. But: How do you implement safe hygiene concepts with the help of suitable products in the sanitary and building hardware sector?

This e-book shows planners, architects, as well as those responsible for hygiene, possible solutions.

The following questions are answered:

- What does hygiene actually mean?
- What is the situation in Germany with regard to hygiene in the areas of care, hotel, public and education?
- Where are there opportunities for optimisation?
- Which products reduce the risk of infection?
- How can companies, hotels, schools, daycare centres and operators of public buildings support visitors in hygiene?

¹ Cf. <https://www.presseportal.de/pm/139186/4904590>.



2 Hygiene: What does that actually mean?



Hygiene

The word hygiene comes from ancient Greek (hygíeia, "health" or hygieiné, "art serving health"). This is the doctrine of maintaining the health of the individual and the community. It is also about improving health, increasing well-being and reducing infectious diseases and epidemics or to combat their spread. In the meantime, however, hygiene is also understood to mean keeping things clean – such as personal hygiene and protection against infection (e.g. through disinfection). Hygiene encompasses various areas, some of which overlap:

- **Aspects of infection control (food safety, water hygiene)**
- **Waste disposal**
- **Environmental hygiene (avoidance of environmental toxins)**
- **Occupational safety and health**
- **Building and housing hygiene**
- **Social and mental hygiene**

Hygiene measures, for example in relation to clean drinking water, can be traced worldwide from the earliest times. However, over the course of time, the social standard for cleanliness and personal hygiene changed. The Romans, for example, were already familiar with basic hygiene rules in the first century BC and endeavoured to contain infections – for example, through quarantine measures. But there were also darker times in Europe as far as hygiene was concerned, because in the European Middle Ages in particular, life was rather unhygienic from today's perspective, especially the cleanliness of public spaces. There were no sewers or waste systems yet. People squatted in cramped spaces and discharged their waste unhindered into rivers, which they also used for personal hygiene. The cities therefore not only spread very strong, unpleasant odours, but at the same time represented potential sources of infection. The spread of diseases such as plague or cholera is not surprising.



Hygiene in medicine

For a long time, people in medicine did not work hygienically – at least measured by today's standards. Until the first half of the 19th century, cleanliness and disinfection were considered to be not useful for medicine. For example, clothing or medical equipment were not cleaned or disinfected.

Women died of puerperal fever, as doctors did not clean their hands before giving birth. This meant that sickness pathogens spread quickly. However, hygiene in the medical has experienced a new upswing thanks to some pioneers:

Ignaz Semmelweis, for example, proved through a study conducted in 1847/48 that diseases can be controlled by means of disinfection. The first German chair of hygiene took place in 1865 under the leadership of Max von Pettenkofer. Other researchers such as Robert Koch, Johann Peter Frank and Franz Ballner were also important pioneers for today's hygiene concepts.

The issue also gained importance for governments from the mid-19th century onwards – public health care began to be developed, urban hygiene improved and water purification and sewage systems designed.



System 900 | Soap dispenser

Hygiene goals

Essentially, hygiene pursues several goals.

It should:

- **preserve people's health,**
- **prevent the spread of existing diseases and**
- **avoid infection and contamination of healthy people.**

One of the other objectives of hygiene is also to ensure the use and consumption of hygienically safe products. Maintaining a high level of hygiene is not only important in the health sector, but is also becoming increasingly important in the public, semi-public and private sectors.

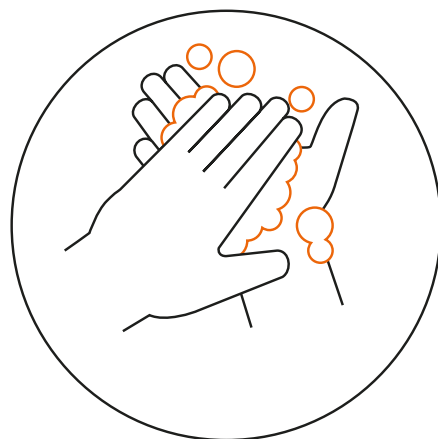
Hygiene in times of the Corona crisis

The Corona pandemic in particular has led to a caesura in the field of hygiene. Hand washing became even more important to prevent infections due to COVID-19. But it is not only Corona that makes this important for hygiene and the protection of all.

The World Health Organisation (WHO) designated the 15th October as International Hand Washing Day back in 2008. For hygienic hand washing, it is necessary to soap the hands thoroughly for at least 21 seconds – also between the fingers – and then rinse and dry them thoroughly.

In 2020, the motto of Hand Washing Day was "Hand Hygiene for All" to once again raise people's awareness of the topic. Similarly, World Hand Hygiene Day is held annually on the 5th May. This is also intended to underline how important this topic is in protecting oneself and others from disease.

**Hand washing
is infection control.**



International Hand Washing Day

15th October 2020

"Hand hygiene for all"



Hygiene as a social task

Hygiene is not just the responsibility of individuals – rather, it is an issue of high societal interest.

In public and semi-public buildings, hygiene and infection control are increasingly becoming determining factors – also for architecture. Because even if cleaners clean surfaces, handrails or door handles regularly, they still form a breeding ground for pathogens – and thus pose a risk of infection. This is because, in addition to infection through the air we breathe, viruses and bacteria are particularly easy to transmit via the hands. In fact, they are the second most common source of infection.

2 Hygiene: What does that actually mean?



Franz Jordan House, Warburg

Hygiene in architecture

Architects design, plan and construct the future. In doing so, they pursue the goal of always achieving the best possible condition for people through their work – and always being user-oriented.

Aspects such as bad air, noise or lack of privacy all have a negative impact on people's well-being. Open, bright rooms with good light and air conditions create a much more pleasant ambience. Architecture is essential for recovery. Architects should create the basic structural framework for this.

Designs appropriate to the building help to reduce the spread of germs to a minimum. Not only in the area of care, but also in public buildings and hotels. Regarding infrastructure, pipes, shafts or heating elements,

for example, are better planned concealed – this also makes cleaning easier. When planning a building, planners and architects should also pay attention to the choice of suitable materials.

For: Even if there are restrictions in some areas due to standards such as DIN specifications, the choice of materials offers the chance to realise ideas and concepts. The material has a high influence on hygienic product design. And this in turn makes people feel good, which means that recovery is much faster.

Properties of different Materials

For use in sanitary areas, the wet room resistance of the materials must therefore be tested. For example, through a condensation water test or through a climate change test. The latter shows how the material changes under constantly changing climatic stress. Depending on the properties, thermal expansion, etc., can then lead to cracks in the material, which would make the product unsuitable for use in the sanitary sector. The best choice are materials that have a smooth, closed surface. Products should have no joints, so that no dirt, limescale or grime can accumulate in joints etc. in the first place.

An example of a suitable material is high-gloss polyamide, which has optimal cleaning properties thanks to its non-porous surface and is also insensitive to harsh cleaning agents and disinfectants.

Thanks to its non-porous surface, stainless steel is particularly hygienic. Even minimal care is sufficient to prevent microorganisms such as viruses and bacteria or other dirt from accumulating there. Stainless steel is also extremely robust and insensitive to scratches. In use, it is an advantage that stainless steel is resistant to cleaning agents and disinfectants. It is also corrosion-resistant. Stainless steel is available in many different alloys. However, the coarser it is ground, the more dirt or deposits can get stuck in the material.

Briefly explained: Public Health

Public health is a population- or system-based approach that aims to develop the health system in a sustainable way.

The aim is to reduce health inequalities within the population. Globally, there are numerous health challenges to overcome – which is why public health is indispensable. Within Germany, the high importance of public health is often insufficiently reflected institutionally because it is not sufficiently represented, especially in research and teaching, in the public health service, etc. In this context, public health has a variety of functions: It is about recognising and mastering health crises – such as pandemics. Especially in the case of disease outbreaks, it is essential to react in a timely and flexible manner. Furthermore, public health should protect health and promote it. In addition, the concept strengthens the health of individuals and society and fosters dialogue between science, practice, politics and citizens.²

² More information on this topic in the free white paper:
<https://www.thieme-connect.de/products/ejournals/pdf/10.1055/s-0042-116192.pdf?update=true&update=true&update=true>.



3 The role of hygiene in different areas

3.1 Care area



3.1 Care area



In Germany, there are about 18 million people who need full inpatient treatment every year. In addition, there are outpatient medical measures and more than 700,000 residents in old people's and care homes, and the trend is rising. Depending on the institution, there are both endogenous as well as exogenous infection risks. In accordance with Section 23 of the Infection Protection Act (iFSG), hospital hygiene and infection prevention is located at the Robert Koch Institute (RKI). The Commission for Hospital Hygiene and Infection Prevention (KRINKO) develops guidelines on hospital hygiene and infection prevention, which are published by the RKI. The scientific office of the KRINKO is located at the RKI.

The implementation of basic hygiene measures (i.e. hand hygiene, for example) is the cornerstone for preventing infections. Proper hand disinfection is therefore essential, especially in the health sector. In 2017, the KRINKO stipulated that every

hospital with 300 beds or more must have a specialist in hygiene. The challenge here, however, is that these experts often do not work permanently in the hospital and look after several hospitals at the same time.

Current studies show how important such an institution is. Actually, the Corona pandemic should have led to a higher awareness of hand hygiene. But the result of a study proves³that hand hygiene compliance had significantly decreased over time once management stopped providing feedback on the recorded data.

The pandemic has therefore not necessarily led to an improvement in hand hygiene. Old Routines of the employees resurface as soon as management stops the improvement initiatives. It is therefore recommended to keep the level of hand hygiene permanently high – and to constantly remind employees of this.

³ Cf. <https://www.management-krankenhaus.de/restricted-files/149393>.

Problem: Infection with multiresistant germs

The Corona virus has pushed the issue of so-called hospital germs somewhat into the background. As a rule, these are methicillin-resistant *Staphylococcus aureus* strains - better known as MRSA.

A distinction is made between different types of MRSA (HA-MRSA - healthcare associated MRSA, CA-MRSA - community acquired MRSA and LA-MRSA, livestock associated MRSA). Staphylococci are bacteria that are very common and colonise the skin and mucous membranes in particular. This is not a cause for concern at first, because the MRSA germ is not immediately harmful per se. However, it becomes problematic when it penetrates into the body and encounters a weakened immune system. Treatment is then very difficult because these germs are resistant to the antibiotic methicillin. In hospitals, patients regularly suffer from such infections. The danger is omnipresent: Every year, between 400,000 and 600,000 people fall ill with these germs, and about 10,000 to 20,000 die from them. Hygiene is therefore of enormous relevance, especially in the health sector.



Briefly explained: Danger from siphons

An often underestimated danger are siphons located in the washbasin. These contain biofilms – complex, resistant associations of bacteria. The flow of water directly into the drain can spread these germs in the air and on the hands.

In hospitals, it has been proven in intensive care units that infections can break out due to the flow of water.⁴ Multi-resistant germs accumulate in these areas if contaminated water is disposed of there, for example from washing patients.

In order to reduce this danger, the KRINKO published "Hygiene requirements for wastewater-carrying systems in medical facilities" in March 2020.⁵ This concerns washbasins, WCs and shower trays as well as bathtub drains, spittoons in dental units, sinks, bedpan flushers and wastewater drains in kitchens. The requirements include useful tips, for example, that patients' personal utensils should be sufficiently far away from the washbasin, that the distance between the washbasin and the bed should be at least one metre and washbasins should not be used in patients' rooms when planning new rooms. Toilet bowls should be free of flushing rims – and the lid should remain closed during flushing.

⁴ Cf. <https://www.krankenhaushygiene.de/informationen/hygiene-tipp/hygienetipp2019/708>.

⁵ Cf. <https://www.krankenhaushygiene.de/informationen/hygiene-tipp/hygienetipp2020/780>.



Healing Architecture

In addition to the best possible patient care by the nursing staff, the central quality criteria of a hospital or care facility also include the environment and the furnishings. The so-called "Healing Architecture" is an [architectural concept](#), that includes not only the patients but also their relatives and the staff. Healing architecture is capable of effectively supporting the recovery process.

Hospitals and care facilities are there to restore or maintain a person's health. The WHO defines health as the state of complete physical, mental and social well-being – and not merely the absence of disease or infirmity. In public institutions today, however, health is still often referred to purely physical condition.

Since the 1970s, a new way of thinking can be observed that has found its way into environmental psychology and continues to gain in importance – Healing Architecture. Numerous studies that have investigated the influences of space on interaction and behaviour on physical as well as psychological well-being support the thesis that architecture makes its healing contribution.

The well-being of patients is only one factor – safety and hygiene issues are equally important.



Design of the patient's room prevents infections

A study conducted by the Technical University of Braunschweig together with molecular biologists and physicians from the Charité Hospital in Berlin shows that interior design can prevent infections in addition to increasing well-being. Since 2016, the team has been investigating as part of **KARMIN project** (Hospital, Architecture, Microbiome and Infection) , the extent to which architecture affects the hygiene and recovery of hospital patients. This has resulted in a model patient room that reduces the risk of infection for patients.

The project's investigations have shown that handrails, door handles or sanitary facilities in particular are predestined to transmit viruses or bacteria – even with good cleaning intervals. Only a combination of high-quality materials, hygienic processing techniques and innovative functions can support hygiene and reduce infection risks to a minimum. Products, especially in the sanitary area, should therefore have as few joints as possible so that no water and/or dirt can collect there. The following recommendations exist with regard to the architecture of infection-preventive patient rooms⁶:

⁶ Cf. <https://karmin.info/das-patientenzimmer/der-grundriss>.



The division into an entrance, nursing, patient and visitor area is recommended.

Zoning

In each room, there should be a division into four different zones, each assigned to a specific purpose. This avoids too intensive use of different user indoor groups. The division into an entrance, nursing, patient and visitor area is recommended.

The entrance area

The entrance area is funnel-shaped towards the beds. This ensures a better view from the door into the patient area. On the control panel on the wall practitioners can select the right light.

The patient area

This is in the middle of the room. This allows proximity to the bathroom and windows. Next to each bed there is a patient wardrobe and a table with chair and reading light.

The care sector

The area for the nursing staff is located directly next to the bed. It should include an integrated worktop, a glove and disinfectant dispenser, a waste bucket and a nursing work cabinet.

3.1 Care area

The visitors' area

Visitors can find a seat directly at the window – on an integrated bench. There is also a patient table and a chair for each patient.

Privacy

Ideally, patients' rooms will in future also have two separate bathrooms, each assigned to one patient. This allows cross-contamination to be ruled out.

Detailed solutions ensure better cleaning possibilities

To make cleaning quick and easy, the bench is free-floating. Underneath, there is a cove of the floor in the transition to the wall, so that cleanliness is guaranteed. Cupboards should be flush with the ceiling so that dust cannot collect there.

So it turns out:

Healing architecture and hygiene stand in line. The two together do not only ensure a better well-being of patients, but at the same time reduce contagion risks.

Further information on the project and the results of the investigations can be found here (please click).



Bischofshofen Retirement Home



Washbasin with surge edge

Hygiene in the bathroom

A particularly sensitive place for hygiene in hospitals and care homes is the bathroom. Even if the **KARMIN project** shows that for hygienic reasons a separate bathroom would be ideal for each patient, the reality in many clinics is different. Because usually three to four people have to share a bathroom. Single or double rooms are rather the exception.

It is therefore all the more important that the products used in the bathroom meet the highest hygiene standards, are easy to care for and therefore also easy to clean. They should also be insensitive to wound treatment or cleaning agents, which are often very aggressive. The portfolio of **HEWI** includes **washbasins** suitable for hospitals. The washbasins with overflow combine purist design, a high-gloss yet easy-care surface and

functional design. The models have a surge edge that is raised towards the wall. This prevents water from accumulating in silicone joints.

Comfort and hygiene are thus ensured in the patient bathroom. HEWI manufactures its washbasins from high-quality mineral composite, which is considered particularly hygienic. Even high temperatures, such as those encountered during thermal disinfection of fittings (DVGW guideline W 551), are no challenge for the material. The gelcoat enables the high-gloss, non-porous surface – for easy cleaning.

A seat in the shower should not be missing in many patients' rooms and especially in old people's and care homes. **HEWI shower seats** not only increase comfort and safety, but also offer

3.1 Care area



hygiene. Some of the products have a hygiene opening in the seat so that the water can drain off easily.

From the **HEWI Series 477/801** comes a practical shower stool made of high-quality polyamide, which enables safe sitting in the bathroom. The seat slats also ensure that the water runs off. All HEWI shower seats can support loads of up to 150 kilograms. In addition, HEWI introduces an **obesity line** which makes products for the shower suitable for loads of up to 300 or 350 kilograms.

Different shapes and sizes ensure that HEWI shower seats fit into every shower.



Hygiene at the door

In the design of hospitals or care homes, the choice of **the right door fitting** is important. The door handle represents one of the most frequent transmission routes of bacteria and/or viruses to humans. It is helpful if the door handle can be opened comfortably with the elbow.

On request, HEWI works with an antimicrobial protection, the so-called active+ surface, on its lever handles and in the sanitary range. It is not only useful in hospitals or care homes, but also in the public sector.

Due to the antimicrobial effect, the number of germs on the product surface can be reduced. This is achieved through the use of Microsilver, which releases silver ions and thus inhibits the growth of bacteria and other germs. Within 24 hours undesirable pathogens on the surface of products are reduced, so that 99.9 percent of the bacteria disappear within this period. This also makes active+ ideal for minimising the risk of transmitting multi-resistant germs.

More information about active+ (please click)

► To the film

Standard for the sealing of indoor spaces (DIN 18534-1)

Sanitary systems must be sealed in accordance with DIN 18534-1. In order to comply with the standard, built-in parts that interrupt or penetrate the waterproofing layer must be safely connectable to the waterproofing layer. Water must not be able to get behind the waterproofing layer through the built-in parts themselves."

HEWI's seals for shower walls in bathrooms meet this standard. They also facilitate assembly and ensure better hygiene. This is because, as a rule, conventional fixing rosettes do not lie completely flat on the wall due to unevenness in the wall. The **HEWI sealing strips and tapes** adapt to the respective surface, however. So if shower seats, support systems or folding support handles are to be fitted, the respective surface is sealed. This means that neither water nor moisture can penetrate.

The sealing rods and tapes certified by the Institute for Wall and Floor Coverings (Säurefliesner-Vereinigung e. V.) are suitable for application areas of water action class W 1-I and W2-I according to DIN 18534-1. This standard for shower walls exists in the bathrooms of hospitals, care facilities as well as educational buildings. HEWI complies with these standards and uses the sealing elements for shower seats as standard in all series and systems.

Interview with Rainer Schadow,
Dipl.-Ing Architect AKG

Rainer Schadow is an architect with his own office in Hanover. For more than 25 years, he has worked almost exclusively in the field of hospital construction and healthcare and has specialised in consulting services, target planning as well as refurbishment projects.



Hygiene in the hospital environment is a must

Planning a hospital without considering the issue of hygiene? Unimaginable for Rainer Schadow. The qualified architect has been working almost exclusively in the field of hospital planning for over 25 years. In this interview, he reveals the importance of hygiene and what planners and architects should consider when planning buildings.

***HEWI:** Mr Schadow, what do you think is the importance of hygiene in the field of architecture?*

Rainer Schadow: Hygiene is generally in architecture an important topic in many building projects. Be it in the planning of kindergartens and schools or other public buildings. When it comes to hospital planning, hygiene is a particularly important issue. Hygiene is omnipresent in this area. Last but not least, there are numerous legal regulations or directives to fulfil, such as the RKI guidelines on hospital hygiene.

***HEWI:** You have been working almost exclusively for the hospital planning sector for many years.*

What is particularly important in terms of hygiene?

Rainer Schadow: Hygiene is a very comprehensive field. For this reason, there are also a wide variety of areas in hospital planning on which hygiene has an influence. Hygiene includes, for example, building services, i.e. air-conditioning technology, such as ventilation concepts, mechanical ventilation, etc., each with different intensities. But it is also about structures and processes. For example, how often is an object touched? Every person who enters a hospital – whether as a patient, visitor or staff member – has a great need for protection. At the same time, each person also brings individual germs with them. This means that



as an architect it is enormously important here to pay attention to precisely this need for protection and to question things. Is it wise to hang a disinfectant dispenser outside a room if the door handle has to be touched immediately afterwards? Is it perhaps useful to have such dispensers hanging or standing in several places in a patient's room? Ultimately, the question also concerns the organisation of care, such as walking routes, work processes, the setting up and leaving of workplaces, etc. Equally important is the choice of materials. In the operating theatre stainless steel is a must, while in other areas nylon, for example, can also be a good solution.

HEWI: *What current topics regarding hygiene are you currently concerned with?*

Rainer Schadow: Well, the topic of Corona is certainly omnipresent. However, the topic of hygiene, i.e. avoiding the transmission of pathogens, was already enormously important before and will remain so in the future.

My focus at the moment is on the completion of a psychiatric clinic. This area is certainly to be assessed differently from a somatic hospital with regard to hospital hygiene. Here it is often the case that pre-existing physical illnesses lead to mental illnesses.

So we may be dealing with patients who are at high risk. I would say that one should deal with the issue of hygiene – despite Corona – in a largely normal way. Because an excess of cleaning has exactly the opposite effect. Regular hand washing is a must. Because due to illnesses and the risk to some patients, it is not possible to hang hand disinfection dispensers everywhere. Washing lotion and paper towel dispensers are therefore found in bathrooms and patients' rooms.

HEWI: *Are there defined hygiene procedures in the clinic?*

Rainer Schadow: Yes, there are different processes. There is clearly defined area clothing for the different functions, which is worn from the central changing room onwards. The entire house cleaning team pays extreme attention to hygiene. Furniture, all surfaces, floors, kitchens, worktops, kitchen appliances and telephones are regularly disinfected. It is important to stay on top of the issue of hygiene and to take appropriate measures for staff. For the planning of a building, this means that, for example, care products should be placed next to hand disinfection. These in turn must be of high quality and, for example, be compatible with the gloves used. Periodically, there are trainings and follow-up trainings for staff members on the topic. And of course there are instructions everywhere regarding Corona rules (sufficient distance etc.). In psychiatry, the special feature – in contrast to a somatic clinic – is certainly that patients are very much on the move in the clinic. Different

therapies are offered, which live from the exchange with other patients. Therefore, especially at the current time, it is very important to regularly ventilate, clean and disinfect moderately.

HEWI: *Finally, do you have any advice for our readers on the subject of hygiene?*

Rainer Schadow: In the end, all I can say is that every patient is a human being. We could all become patients tomorrow. And then we want to be healed. Our task – on the clinic side, on the architecture side and also on your side – is to create a good environment for this extraordinary situation. One that has a healing effect and in which one feels in good hands. Many different components play a role in this – including your products. Hygiene offers the greatest possible protection. It is not a friendly aspect, it is a must that we must give to every human being.

HEWI: *Thank you very much for taking the time, Mr Schadow.*

Schadow Architecture
Rainer Schadow
Dipl.-Ing. Architect AKG
Kleefelder Str. 24
30175 Hanover
Phone: +49 0 511 12260489
E-mail: info@schadow-architektur.de



3 The role of hygiene in different areas

3.2 Public area



3.2 Public area



For these buildings, too, the hygiene aspect can be taken into account as early as the planning phase.

Hygiene is also of high importance in public buildings or facilities. These are usually areas where very large numbers of people congregate, such as railway stations, airports, shopping centres, administrative buildings or sports facilities.

Regular cleaning or disinfection is essential for hygiene and also for the maintenance of the buildings. In recent years, the requirements for sustainability, robustness and economic efficiency have risen sharply. For many operators of such facilities, it is important that products used – for example in the area of sanitation or building fittings – can withstand many years of use and, if necessary, also vandalism, and that they are easy to clean.

It is advantageous if the products are made of robust, easy-care materials and are durable. An example of this can be found at HEWI in the **Range 805** which the company has designed specifically for use in public sanitary rooms. High quality and easy maintenance of the products ensure that hygiene and cleanliness are guaranteed.



Prevent aerosols

Hygiene is very important in public areas to prevent the spread of diseases. Viruses and bacteria spread – apart from via hands – also through invisible droplets, so-called aerosols. Studies show⁷ that hand dryers, for example in public toilets, spread significantly more germs and bacteria than paper towels. The so-called jet air dryers are to be regarded as particularly critical. In many cases, this is because most people only hold their hands briefly under running water and do not use soap. There is no such thing as being 100 per cent germ-free, even if you follow the recommendations of the Robert Koch Institute on hand hygiene.⁸ 8. Hand dryers – due to their electronic air flow – blow germs, bacteria and loose skin flakes into the ambient air.

⁷ Cf. <https://sfamjournals.onlinelibrary.wiley.com/doi/full/10.1111/jam.13014>.

<https://europeantissue.com/de/blog/dryers-many-germs-air-published-ndr-germany-monday-november-14/>.

⁸ Cf. https://www.rki.de/DE/Content/Infekt/Krankenhaushygiene/Kommission/Downloads/Haendehyg_Rili.pdf?__blob=publicationFile.

3.2 Public area

Therefore, it is more advisable to dry your hands with paper towels. This is because they also remove pathogens that have remained on the skin after washing. And what's more, they do not spread germs in the ambient air. Paper towels are therefore recommended for hospitals – and not electronic hand dryers. The RKI has also found that drying with paper or textile towels removes significantly more residual flora on the hands than hot air dryers.⁹

Therefore, in public sanitary rooms, dispenser systems are recommended that are particularly effective in ensuring cleanliness and hygiene. When choosing suitable dispenser products, you should not only pay attention to the quality, but also to the appearance. A reduced design, for example, blends easily into any room. In addition, there is often a great variety of designs due to different materials.

An example of this are **HEWI dispenser products**. In addition to a manually operated version, these are also available as electronically controlled, non-contact models. They are also maintenance-free, hard-wearing and easy to clean. It is also advantageous if dispenser products have a lock so that they are protected against theft or misuse.

With **System 900** there are matching soap and disinfectant dispensers as well as paper towel dispensers for use in public buildings.

⁹ Cf. https://www.rki.de/DE/Content/Infekt/Krankenhaushygiene/Kommission/Downloads/Haendehyg_Rili.pdf%3F__blob%3DpublicationFile.

Ensure hygiene - and still reduce water consumption

Despite all the hygiene, environmental protection should not be forgotten, especially in heavily frequented areas: Since the Corona pandemic, the water consumption in a survey ¹⁰ increased by 10 per cent (cold water) and 11 per cent (hot water) in March and April compared to 2019. The reason, which is actually positive, is that people have been washing their hands more frequently since the beginning of the Corona pandemic.

In order to save water – for the sake of the environment – touchless taps are an option. The built-in, intelligent sensor technology of these fittings reduces consumption.

HEWI SENSORIC fittings for example, only trigger when the sensor is activated. The water stops automatically after a short time. With the HEWI app, users can also keep track of their water consumption and user frequency. However, the taps not only save precious drinking water, but

also ensure greater hygiene, as no touching of the fitting is necessary, which means that no pathogens can be transmitted. In addition, users can set intervals according to their needs, at which the tap automatically runs water through in the form of a hygiene rinse, so that it does not remain in the pipe for too long, which could lead to the accumulation of germs – for example during longer absences due to holidays etc. The water temperature is also preset at 30-36 degrees so that no one can burn themselves.

Further information on this topic can be found in our HEWI MAG: <https://www.hewi.com/de/mag/beruehrungslose-armaturen-schonem-ressourcen>



¹⁰ Cf. <https://www.techem.com/de/de/ueber-uns/newsroom/zahl-des-tages-hoeherer-wasserverbrauch-in-zeiten-von-corona>.



3 The role of hygiene in different areas

3.3 Hotel area



3.3 Hotel area



H4 Hotel Borussiapark Mönchengladbach

Hygiene should be a matter of course in every hotel business. But since the Corona pandemic, this issue has also changed in this area. Face masks, gloves and minimum distances have led to changed processes in hotels and gastronomy.

According to Statista, there are a total of just under 50,000 accommodation establishments in Germany – of which around 12,300 are hotels.¹¹ In addition, there are around 180,000 businesses in the gastronomy sector.¹² These must ensure hygiene not only in the hotel rooms, but in the entire public area. The hotels had to extend their – in part already quite high – hygiene and safety standards once again and adapt them to the current events. In the hotel and catering sector, it is not only about the health of employees and guests, but also about trust and well-being.

¹¹ Cf. <https://de.statista.com/statistik/daten/studie/252723/umfrage/geoeffnete-hotels-in-deutschland/>.

¹² Cf. <https://de.statista.com/statistik/daten/studie/155685/umfrage/anzahl-der-umsatzsteuerpflichtigen-restaurants-seit-2002/>.



Disinfection protection in the hotel entrance area

An important factor is to ensure hygiene already at the entrance area: Hotels or restaurants should already offer their visitors the possibility to disinfect their hands. Because active protection against infection should be possible exactly in those places where it is urgently needed.

Particularly suitable for this are **Disinfection dispenser columns**. They increase hygiene in entrance areas and fit into any room concept thanks to their aesthetics and different colour options, as they not only meet hygiene requirements but also look particularly beautiful.

The disinfectant is dispensed as a spray and without contact. Where there is not much space available, wall models are a suitable alternative. They are easily accessible and can be attached to walls as well as pillars in the entrance area or even in front of the lift. At the same time, it is possible to mount them at different heights, so that they are easily accessible by both taller and shorter people.

Hygiene and good design are not mutually exclusive

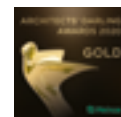
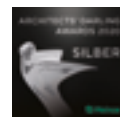


Matt surfaces are currently very popular in the field of architecture, as they set sensual accents. They not only underline a style direction, but can also create exciting counterpoints. Many HEWI products are available with a matt surface that appeals to all the senses but also creates space for individuality. This is especially important in the hotel industry if you want to stand out from other hoteliers.

HEWI fittings are also made of polyamide, among other materials. Polyamide has interesting properties: It is abrasion-resistant, antistatic, chemically resistant, easy to clean and therefore hygienic. In addition to the glossy version, these products are also available in a matt finish, which does not have any effect on the hygiene of the door handles. Matt powder coating in the hotel is always a design highlight, such as the **lever handle 111** in matt black. Good design, comfort and hygiene do not have to be mutually exclusive.

This is also reflected in the fact that HEWI has won numerous renowned design awards, including:

- **Architects' Darling**, for the categories **Accessibility and Hardware**
- **German Design Award**, for the **modular washbasin concept**
- **Iconic Award** for the **innovative dispenser systems**





3 The role of hygiene in different areas

3.4 Education area



3.4 Education area



There were around 11 million pupils at general and vocational schools in Germany in the school year 2020/21.¹³ In addition, there are almost 3 million students at German universities and 3.7 million children in day-care centres. It is therefore not surprising that there are also some challenges in the area of education with regard to hygiene to be mastered.

For many years now, there have been various hygiene requirements that schools, day-care centres and universities have to fulfil. In 2008, for example, the Federal Environment Agency published a guide for indoor hygiene in school buildings.¹⁴ However, since Corona, the situation has increasingly worsened. The Hessian Ministry of Education and Cultural Affairs, for example, has published a Corona hygiene plan for schools in Hesse, which is updated on an ongoing basis.¹⁵ This contains instructions on how schools should behave in order to minimise the risk of infection. Hygiene measures include topics such as room hygiene, personal hygiene and hygiene in the sanitary area.

¹³Cf. <https://de.statista.com/statistik/daten/studie/981823/umfrage/anzahl-der-schueler-an-allgemeinbildenden-schulen/>.

¹⁴ Cf. <https://www.umweltbundesamt.de/sites/default/files/medien/publikation/long/3689.pdf>

¹⁵ Cf. <https://kultusministerium.hessen.de/Schulsystem/Corona/Dokumente-zur-Unterrichtsorganisation>.

3.4 Education area

Child protection and hygiene measures were also implemented in daycare centres to a greater extent than before Corona.

This is the conclusion of the Corona-KiTa-Study, in which the German Youth Institute (DJI) and the Robert Koch Institute (RKI) researched the consequences of the virus for daycare centres, children, caregivers and parents from a sociological and medical-epidemiological perspective.¹⁶

For example, many daycare centres were able to reduce contact opportunities even more by consistently separating groups and defining certain walking routes. Restrictions on access for parents bringing their children to daycare or picking them up have also improved the infection situation. Care was also taken to ventilate regularly. Hygiene measures therefore help to reduce the spread of diseases.



Series 477/801 | Soap dispenser

¹⁶ Cf. <https://corona-kita-studie.de/quartalsberichte-der-corona-kita-studie>.

Teaching hygiene from an early age

Hygiene is something that not every child is born with: Hygienic aspects have to be learned by children. How are diseases transmitted? How do I care for and cleanse my body? Why is hand washing so important? How do I brush my teeth so that they are really clean?

and why should I do that after every meal? Even at an early age, children should understand why hygiene is so important – also for their own health. Well-founded rules of behaviour can be ritualised in the children's environment so that they become a matter of course in everyday life. An important contribution to this is made by kindergartens and schools where the topic of hygiene is also part of the pedagogy. However, useful tips on how to do this can also be found on the website "Hygiene Tips for Kids", a concept launched by the University of Bonn that outlines scientifically based rules of conduct to avoid infectious diseases.

For more information, see:

<https://hygiene-tipps-fuer-kids.de/>.



As high as the demands on hygiene are (such as regular ventilation, cleaning, wearing masks, disinfecting, etc.), so are the demands on the equipment solutions. The products must permanently withstand high loads and therefore have a particularly robust design. When planning or renovating, planners and architects should ensure that the architectural structure of the building is adapted to the needs of the respective users (young children, schoolchildren, adolescents, young adults).

Modern school construction faces a number of challenges. There are many new approaches to linking modern pedagogy with modern architecture. At the same time, formal requirements have to be fulfilled, for example with regard to fire protection and escape routes. The Corona pandemic has once again highlighted the precarious situation in which many schools find themselves.

KfW, for example, has estimated the investment backlog of German schools at 44.2 billion euros in 2020. Municipalities have to postpone the construction of new schools again and again because of the tight financial situation.

For students, it makes a significant difference whether they learn in an outdated building from

the 70s, which tends to leave a dark, unwelcoming impression. Open, light-flooded rooms, on the other hand, have a positive effect on children's learning. The space often functions as a "third educator".¹⁷

In connection with the Corona pandemic, for example, the Institute of Hygiene and Public Health has received numerous questions about the reasons why hand-washing sinks are no longer common in many classrooms today.

More and more (new) buildings are getting smartboards instead of blackboards, making the washbasin obsolete at first glance. Hand washing is a basic hygiene measure – and not only necessary to keep hands chalk-free.

3.4 Education area



There are no binding guidelines regarding the equipment of classrooms with washbasins. However, there are numerous general guidelines, recommendations and standards. Depending on the federal state, there are also different state building regulations (BauO) for schools.

For example, if there is no washbasin in the classroom, it should be clarified where the next washing place is – and how many children can clean their hands there at the same time.¹⁸ The use of disinfectant dispensers is not recommended in classrooms of very young children, as there is a risk that the children will drink the disinfectant.

The situation is similar in day-care centres or kindergartens. This makes it all the more important to ensure that children can wash their hands in several places when planning school buildings or day-care centres.

¹⁸ Cf. <https://hygiene-tipps-fuer-kids.de/fragen-und-antworten>.

Positive influence on learning success – thanks to attractive room design

Schools and universities are increasingly competing to win the favour of new generations of students.

The focus of school and university education is therefore shifting more and more from "teaching" towards "learning". This change is increasingly driven by digitalisation and the development of new technologies. Multimedia information is available at all times.

There is also a growing recognition of the benefits of collaborative learning. One consequence of this development is that these changes are also reflected in the design of classrooms and university spaces.

A study by the University of Munich, for example, has shown that learning behaviour, group work as well as the process of decision-making improve when the room layout is adapted to the tasks of the pupils and students.¹⁹

¹⁹ Cf. <https://www.steelcase.com/eu-de/forschung/artikel/themen/bildung/wie-die-raumgestaltung-den-lernerfolg-beeinflusst/?pdf=1&images=0>.



Products for hygiene? Missing

In fact, there is a great need to catch up in terms of hygiene, especially in schools and day-care centres. Because sanitary facilities often lack even the simplest things, such as soap or paper towel dispensers.

For older children, for example, **disinfectant dispensers** can be planned. Especially in the washing areas, which have high hygienic requirements, the necessary inventory to be able to establish or maintain hygiene is missing. In 2020, the Federal Government has launched a number of economic stimulus packages – including for education. It would be advisable to use these to improve the hygienic conditions in schools and day-care centres. HEWI offers the right range for schools, nurseries and universities.

3.4 Education area



Design and function are of paramount importance here. Thus the **paper towel and soap dispensers from series 477/801** – thanks to colourful accents – offer a friendly, child-friendly ambience. HEWI offers products whose materials are particularly easy to clean, especially for schools and daycare centres. This not only supports children in their daily hygiene routine, but also makes it easier to clean precisely those surfaces that are predestined to transmit diseases – such as washbasins, taps or soap dispensers.

This is because measures to reduce the risk of contact transmission are an important component of basic hygiene in the childcare sector. This applies, for example, in the case of transmission by touching contaminated surfaces and then touching the hands with the mouth, etc.

This was also found in the 4th quarterly report of the Corona-KiTa study.²⁰ The risk of infection can therefore be reduced by choosing appropriate infection-inhibiting surfaces.

For example, the paper towel and soap dispensers are also available in the **active+** variant, which ensures even greater protection against infection.



4 References in the sectors Hotel & Education





© HEWI Heinrich Wike GmbH

Lighthouse Hotel & Spa | Büsum



Aesthetics, design, accessibility and hygiene do not have to be mutually exclusive – quite the opposite.

This is demonstrated by the Lighthouse Hotel & Spa in Büsum. The popular holiday destination Büsum is famous for its sea, beach and wind. The North Sea likes to show its rough side here. This is reflected in the hotel's interior design. Because the diverse coastal landscape has been incorporated by the architectural firm into the designs for the hotel. This has since become a stylish design hotel with 111 rooms and flats.

Used in the modern bathrooms is the innovative **System 900** from HEWI. This is not only chic to look at, but also offers users safety and hygiene. The products are designed to be barrier-free and are made of easy-care, high-quality materials. With only a few connection points, the products in the system are easy to clean – which benefits hygiene. In addition, thanks to the dark powder coating, the matt black elements match the red brick industrial design perfectly.



© HEWI Heinrich Wilke GmbH

Hans-Thoma-School Oberursel



With the new construction of the Hans-Thoma-Schule, the Hessian city of Oberursel wanted to create another inclusive educational offer.

The Taunus Mountains are located just outside Frankfurt. Oberursel lies on its southern slope and is home to around 43,000 inhabitants. A pedagogical learning concept is pursued here that is intended to give each child an optimal opportunity for development.

For the new building, the focus of the clients and architects was therefore on providing the 200 pupils with the best possible support in their physical and motor development as well as in their learning. The result can be found in a new building, a school living space that supports children with disabilities in their learning – both motor and mental.

Particularly in the sanitary rooms of the educational institution, the focus was on comfort and individual usage options. For example, the HEWI washbasin and WC modules can be adapted to the size of each pupil thanks to remote control – simply at the touch of a button.

Cleaning staff also benefit from the good cleaning properties of HEWI products. The cleanliness of the sanitary facility is thus ensured very quickly. The school thus offers its students a place of safety, hygiene and security.



Conclusion

One thing is certain – hygiene will continue to be an important issue. Corona has once again made it clear to many people that hygiene, especially hand hygiene, is infection control. Only those who behave hygienically protect themselves and others. But you can't rely on people alone.

For: Ultimately, hygiene recommendations can only be made and not prescribed. This makes it all the more important to equip buildings with appropriate products that ensure better hygiene. Be it because the products themselves reduce bacteria and viruses – for example through silver ions – or because they are particularly easy to clean and hygienic.

Certainly, the topic of disinfection with UV light will also become more relevant in the future. In future building planning, it is therefore advisable for architects and planners to pay close attention to surfaces, sensory properties, care properties, etc. when selecting furnishings, especially in the sanitary and building hardware sector. Because hygiene saves lives.



Imprint

Publisher

HEWI Heinrich Wilke GmbH
PO Box 12 60
D-34442 Bad Arolsen
Phone: +49 5691 82-0
Fax: +49 5691 82-319
info@hewi.de
www.hewi.de

Managing Director: Thorsten Mare
Registered at Korbach Local Court, HRB 1004
VAT identification number: DE 113144861

Image sources

Pictures page 18/19/21:

© Project KARMIN | <https://www.hewi.com/de/mag/architektur-verhindert-infektionen>

© HEWI Heinrich Wilke GmbH

Issue 1

The contents of this e-book have been prepared with the utmost care. However, we cannot assume any liability for the correctness, completeness and topicality.

© 2022 HEWI Heinrich Wilke GmbH

All rights reserved – including those which permit the reproduction, adaptation, distribution and any kind of exploitation of the contents of this document or parts thereof outside the limits of copyright law. Actions in this sense require the written consent of HEWI Heinrich Wilke GmbH.

HEWI Heinrich Wilke GmbH reserves the right to update and change the contents. All data and content visible on screenshots, graphics and other visual material are for demonstration purposes only. HEWI Heinrich Wilke GmbH accepts no responsibility for the content of this presentation.



HEWI