

Grohe AG
Feldmühleplatz 15
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Germany

GROHE PROJECT SPECIAL ISSUE

ARCHITECTURAL SOLUTIONS
FOR THE HEALTHCARE SECTOR



Title: MRT-Forschungsgebäude, Berlin; Picture: Werner Huthmacher, Berlin

GROHE
ENJOY WATER®

MRT-FORSCHUNGSGEBÄUDE, BERLIN

TOPIC: SCALDING PROTECTION



WALDKRANKENHAUS SPANDAU, BERLIN

TOPIC: HYGIENE



HANSE-KLINIKUM STRALSUND, STRALSUND

TOPIC: ERGONOMICS



VIVANTES HUMBOLDT-KLINIKUM, BERLIN

TOPIC: DESIGN



QUALITY AT WORK IN HEALTHCARE



High functionality, aesthetics and quality plus an excellent price-performance ratio - these are the common denominators in our extensive range of faucets and fittings, showers and sanitary systems for hospitals, clinics and surgeries as well as nursing and retirement homes. GROHE can draw on decades of experience specifying healthcare facilities with reliable products that meet the most stringent requirements and standards. These include, in particular, safety and hygiene standards. Our product developers therefore broaden their experience continuously in order to offer state-of-the-art solutions at any time.

In cooperation with our partners, we strive to deliver the highest standards of quality, technology and design in the sanitary industry. GROHE products are easy to operate, ergonomically designed and built for high performance. Building on this fundamental design philosophy, we will continue to set global benchmarks for the use of sanitary products going forward.

GROHE products are backed up by a variety of services to facilitate their specification and inclusion in invitations to tender. Architects, planners and operators of healthcare facilities can confidently invest in proven technologies and durable high-quality products made in Germany to offer maximum convenience at reasonable running costs.

Sincerely yours,

Michael Rauterkus
President Europe
GROHE AG

RESEARCH IN A WHITE CUBE

The new MRT research building in Berlin designed by Glass Kramer Löbbert Architekten houses three high-field magnetic resonance tomographs and has been constructed to promote the scientific exchange between doctors, physicists, molecular biologists and engineers.

Picture: Glass Kramer Löbbert Architekten, Berlin



Johannes Löbbert (left) and Johan Kramer (right)

Glass Kramer Löbbert Architekten was founded in Berlin in 2006 and is today managed by Johan Kramer and Johannes Löbbert who both worked for Staab Architekten before. The concept and planning activities of the architecture firm focus on competition entries for universities, research institutions, residential and cultural buildings as well as furniture and master plans. The firm works on projects across Germany, currently including amongst others: envihab, a new experimental building for Cologne's Institute of Aerospace Medicine.

Mr Löbbert, what was the brief for the architectural competition?

The building to be planned was to form the first block of a new institute for experimental and clinical research. The project on the Berlin campus of the Max Delbrück Centre (MDC) for Molecular Medicine was initiated by the MDC in cooperation with the Physikalisch-Technische Bundesanstalt, Charité Universitätsmedizin Berlin and the Siemens company. The task was to develop a functional, organisational solution for the new MRT Research Building which provided a total floor space of about 340 m² in a compact building with the option to approximately double the floor space in the future. This option was in fact already realised and even exceeded during the planning phase.

In addition to the specific organisation of the MRT examination unit, a number of analysis rooms and offices had to be fitted in. The requirements of the stray magnetic field and the special structural requirements for the positioning of the system

made this project very special. At the time of the competition, there existed only a very small number of installed human MRT units with a field strength of 7 tesla worldwide and as a result there was little concrete experience with the optimum positioning of the other rooms.

How is the interior of the new building organised?

The cubic architecture of this high-tech building has been developed from the inside out: In order to make the organisation as compact and coherent as possible, we placed the big magnet with its hall-like room in the centre of the building. Different functional layers are positioned like shells around it from the inside to the outside: The magnet is directly surrounded by the magnetic shield consisting of up to 35 cm thick solid steel walls and ceilings weighing a total of some 250 t as well as a high-frequency cabin serving as a Faraday cage. This is followed by the technical access



The front consists of white coated expanded metal which serves as a sunscreen and lets evenly filtered light stream through its fine pores into the workspaces.

zone and the circular corridor with its connected vertical access routes. The analysis and consulting rooms are located on the outside at two sides of the building – with adjustable interfaces to the outdoor environment. The design of the outermost layer as an encircling balcony with an outer shell of filigree floor-to-ceiling elements made of expanded metal can then be individually opened and closed in front of the windows. In addition to the 7 tesla MRT used only for research purposes, the building meanwhile also houses a clinically tried 3 tesla MRT for the necessary reference measurements as well as a 9.4 tesla MRT for the examination of small animals. The three MRT units complement each other and make for a very versatile research facility.

How is the front structured and what materials were used?

The floor-to-ceiling windows of all outer rooms open to the outside onto the balcony which encircles all three floors. The balcony is made of grates and its front is covered by expanded metal elements which are clamped into frames and have floor-to-ceiling folding-sliding inserts which can be opened and closed manually. This allows individual adjust of the sunscreen and the room's interface with the outdoor environment. We wanted to create a structure that is as simple as possible as well as intuitively and permanently easy to operate. The solid structural members are single-leaf Poroton brick walls with floor-to-ceiling cut-out windows and solid-coloured plaster. The expanded metal front with movable frames is made of white coated aluminium profiles and connected to the solid structure via a substructure made of galvanised steel.

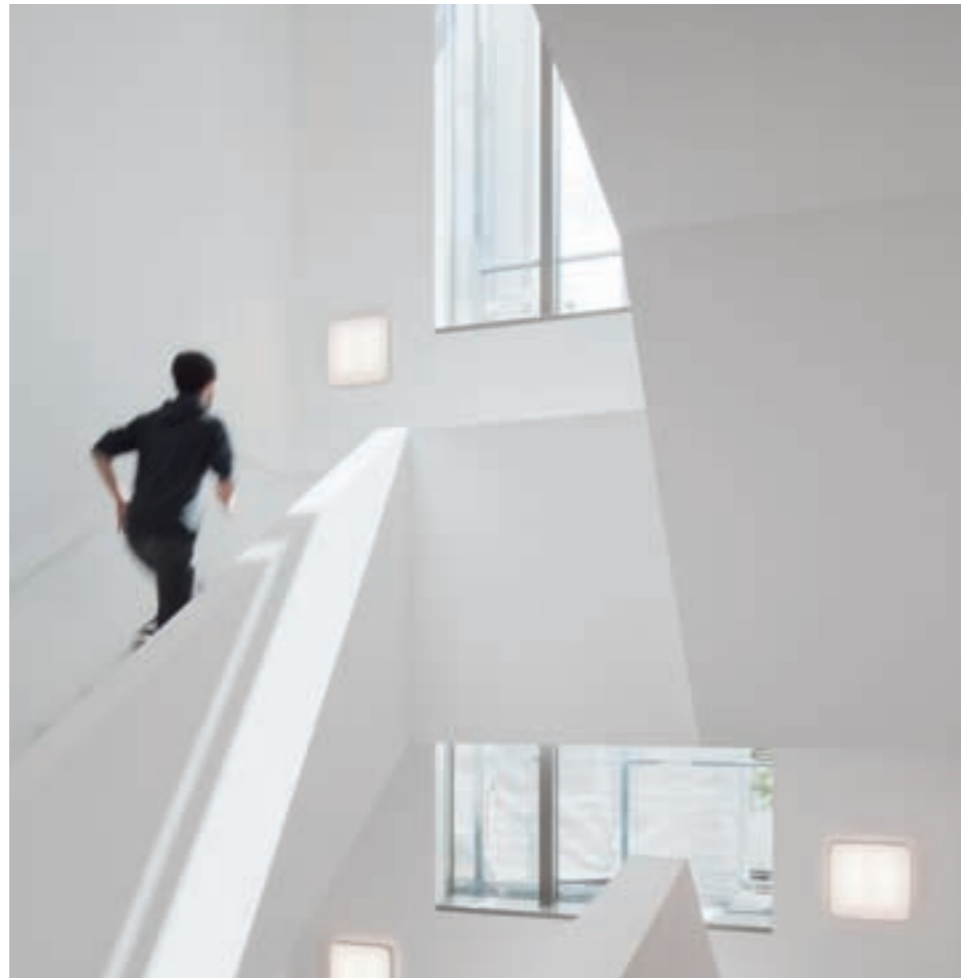
Large openings in the front make allow light to flood the white access zones

What visual effect is to be created by the exterior shell on the inside and outside of the building?

When we developed the shell, we focused on the ridge between a dress that seems to be transparent from the inside and a shape that can be experienced as a solid cube from the outside. The reduced light colours (off-white for the "fabric" and warm light grey for the underlying plaster) support the high level of abstraction in the building's appearance. We wanted the outer effect to reflect the special, not easily understood content of the new research building. From the outside, the building is characterised by the airiness of its finely woven dress. The light falling onto the building or shining out of it virtually changes its aggregate state: from glossy sleekness to translucent depth. We, too, were surprised by the effect of the different overlapping layers. From the inside, the shell is like a filter. Our objective here was to give the scientists a high level of discretion. The finely woven expanded metal sheets soften the view of the outside and filter the incoming light without shading it too much. At the same time, the folding-sliding shutters in front of all windows can be opened to provide a direct view of the surrounding area. The depth created by the encircling balcony makes the rooms seem even more spacious.



The new building houses three high-field magnetic resonance tomographs



What were your selection criteria for the faucets in the sanitary facilities and disinfection units?

As this is a fundamental research centre rather than a healthcare facility, functionality played a greater role in the selection of the sanitary fittings than hygienic criteria. Durability and natural simplicity were most important for us.

Thank you very much for this interview, Mr Löbbert.

Building owner | Max-Delbrück-Centrum, Berlin
Architects | Glass Kramer Löbbert bda, Gesellschaft v. Architekten mbH, J. Kramer and J. Löbbert, Berlin
Competition | 2007, 1st prize
Build period | November 2007 - May 2010
Photos | Werner Huthmacher, Berlin
GROHE products | Eurostyle wash basin and shower, Rapid SL, Skate Air WC cover plate, Surf urinal cover plate, Tempesta shower

GROHE SCALDING PROTECTION

The DIN EN 806-2 standard requires protection against scalding from hot water or the surfaces of fittings. Scalding protection is a top priority especially in hospitals, clinics, surgeries, nursing homes, retirement centres and other facilities where drinking water has to be heated to about 70° C for hygiene and safety reasons.

Sick and elderly people as well as children in particular often have problems setting the right water temperature with conventional (two-handle) faucets and single-lever mixers due to limited motor skills. Even people without a handicap may scald themselves by mistake.

Thermostats provide maximum protection against scalding. In the shower, GROHE TurboStat® technology ensures that the set water temperature remains constant even in case of pressure variations in the supply pipes. In case of a cold water disruption, the thermostat will even shut off the flow completely. Grohtherm Micro which can, for example, be installed under the wash basin, provides additional thermostatic protection against scalding.

A similar effect is achieved by the temperature limiter of the Grohtherm 2000 Special shower thermostat. It limits the maximum temperature to a value between 35 and 43° C. Moreover, people taking a shower must be protected against scalding themselves by touching the hot surface of fittings. Thermostats with GROHE CoolTouch® technology have shielded bodies and hot water pipes in order to provide optimum protection.



The GROHE CoolTouch® technology protects against scalding from the surface of the fitting

HEALTHCARE IN THE WOODS

Trees are an integral part of the overall patient experience at the out-patient surgery centre of the Evangelisches Waldkrankenhaus Spandau. Specifically created views of the surrounding wood and large-sized photo prints let them forget the real reason for their visits for a moment.

Picture: huber staudt architekten, Berlin



Christian Huber was born in Straubing in 1963 and studied architecture at TU München. Joachim Staudt, born in Limburg/Lahn in 1962, completed his architecture studies at the University of Stuttgart. Their paths crossed for the first time during a DAAD scholarship at London's Polytechnic of the Southbank in 1987/1988. Thereafter, Christian Huber and Joachim Staudt both worked at Foster Associates in London until 1990. In 1994, they co-founded the architecture firm huber Staudt architekten bda in Berlin. The design for the out-patient surgery centre is the result of an invited competition in 2005 which huber Staudt architekten won together with Norbert Riedel.

Christian Huber (left) and Joachim Staudt (right)

People having to undergo surgery are grateful for every distraction. The atmosphere in many hospitals, however, does little to lift people's spirits. The corridors hardly get any daylight and there are not enough recreation zones. The out-patient surgery centre of the Evangelisches Waldkrankenhaus Spandau, in contrast, appears cheerful, bright and spacious, almost like an elegant doctor's surgery. To create the surgery centre, house 20 - a cross-wall building with white plastering constructed for the hospital in the 60s - was converted and expanded by a glass extension. The building is located amidst a pinewood, which the architects integrated into their concept and used to great effect. The two-storey entrance hall is accessed via a ramp covered by a filigree fly roof. Floor-to-ceiling windows and rows of skylights let plenty of daylight into the rooms and guide the gaze outside, to the trunks and treetops. A recessed gallery leads from the first floor to a wood planked exterior terrace.

The surgery centre has three operating theatres which are connected to each other via sliding doors. The nurses can oversee all important areas from two interconnected stations. All corridors offer a view of the outdoor environment. Even from the internal preparation room patients can see the treetops through a two-storey recess. Trees also accompany them on the walls: Large-sized black and white photo prints of woods cover the walls from the corridors to the anaesthetic recovery room and provide points of rest for the eye. Dressing cabinets are hidden behind some of the prints. For the floors, the architects selected matching light grey linoleum flooring. A stain-resistant surface finish seals the floor covering. After all, they did not want ugly stains to distract the eye from the treetops.



Ceiling penetrations in the entrance hall create spacious two-storey rooms

GROHE HYGIENE

Hygiene requirements in the healthcare sector impose stringent standards for the sanitary fittings.

These include in particular:

- Gesetz zur Verhütung und Bekämpfung von Infektionskrankheiten beim Menschen (Infektionsschutzgesetz) (Law on the Prevention and Combating of Infectious Human Diseases),
- Verordnung über Arbeitsstätten (Arbeitsstättenverordnung - ArbStättV) (Workplaces Ordinance – ArbStättV),
- Verordnung über die Qualität von Wasser für den menschlichen Gebrauch (Trinkwasserverordnung - TrinkwV 2001) (Regulation on the Quality of Water for Human Consumption (German Drinking Water Regulation – TrinkwV 2001)),
- Technischen Regeln für Trinkwasser-Installationen...; Deutsche Fassung EN 806-1 ...4 (Technical Criteria for Drinking Water Supply Systems...; German Version of EN 806-1 ...4) as well as
- Schutz des Trinkwassers vor Verunreinigungen in Trinkwasserinstallationen und allgemeine Anforderungen an Sicherheitseinrichtungen zur Verhütung von Trinkwasserunreinigungen durch Rückfließen - Technische Regel des DVGW; Deutsche Fassung EN 1717:2000 (Protection of Drinking Water Against Contamination in Drinking Water Installations and General Requirements on Safety Precautions Against Backflow-related Contamination of Drinking Water – Technical Criteria of the DVGW; German Version of EN 1717:2000).

Optimum hygiene is ensured by touch-free faucets and fittings which exclude the transmission of germs to the greatest extent possible. GROHE solutions that use infrared technology like the wall-mounted Europlus E faucets are therefore also frequently installed in operating theatres. The electronic control automatically starts the flow when a user stands at the wash basin and shuts it off automatically when the user leaves. This reliable infrared technology controls various GROHE faucets such as the design-oriented Allure E or Essence E faucets or the new Euroeco Cosmopolitan E and Eurosmart Cosmopolitan E variants. It also allows for particularly hygienic actuation of WC and urinal flushes.

The out-patient surgery centre has two fully equipped operating theatres and one procedures room which can be converted into a third operating theatre in the future



Trees as an architectural theme - large window panes integrate the building with its natural environment



Property | Ev. Waldkrankenhaus Spandau, out-patient surgery centre, Berlin

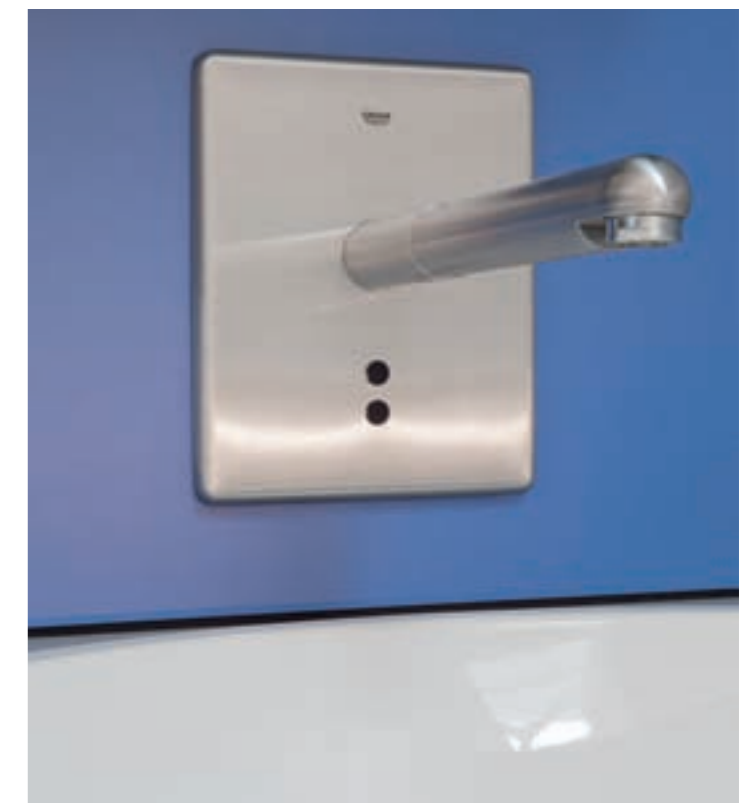
Building owner | Ev. Waldkrankenhaus Spandau GmbH

Architects | huber Staudt architekten BDA, Berlin in cooperation with Riedel Architekten, Hamburg

Team | Christian Huber, Leander Moom, Norbert Riedel, Joachim Staudt, Grzegorz Tracz

Photos | Werner Huthmacher, Berlin

GROHE products | Europlus E infrared electronics for stainless steel wash basin, Euroeco Special



Electronically controlled stainless steel Europlus E faucets are designed to prevent the transmission of germs



Picture: Hanse-Klinikum Stralsund, Stralsund

The glassed walkway connects the new and the old building

GROHE ERGONOMICS

Ergonomics in the fundamental sense of simple operation means that products have to be intuitive in order to rule out the risk of faulty operation to the extent possible. Moreover, the operating controls should be easy to reach and handle.

GROHE single-lever mixers are particularly easy to operate. The GROHE range of special fittings comprises many different lever lengths. Some lever variants – for example in the Euroeco Special and Euroeco SMB lines - are angled upwards in order to improve their ergonomics. Loop-shaped levers additionally facilitate the handling.

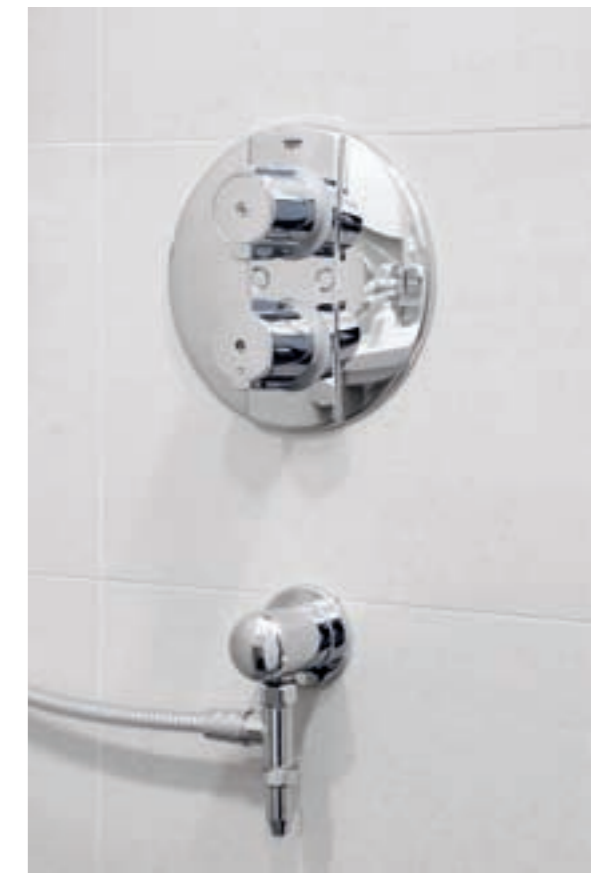
The GROHE SilkMove® technology ensures smooth and precise control. Thanks to state-of-the-art technology, the high-quality cartridges used in all GROHE single-lever mixers guarantee reliable, wear-free and effortless operation over many years. Shower thermostats safely maintain the set temperature and are also very ergonomic. GROHE thermostats follow a simple logic and are equipped with easily readable markings for convenient control.

With its slim body and long lever, GROHE Euroeco Special fits perfectly between soap dispensers and is particularly easy to operate with the elbow.

MODERNISED WITH FORESIGHT

The HANSE-Klinikum Stralsund is spread over two scenic and architecturally striking locations: The Krankenhaus West houses the psychiatric clinics on the premises of the former IV. Pommersche Heil- und Pflegeanstalten, while the somatic departments are located in the Krankenhaus Am Sund.

The HANSE-Klinikum Stralsund consists of 12 clinics and three institutes. It has over 841 beds in total and treats some 50,000 patients and out-patients per year. Renovated with funds from the 2nd German economic stimulus package, House 4 of the HANSE-Klinikum Stralsund was opened at the end of 2010. The building belongs to the Krankenhaus West and is now part of the clinic and polyclinic for psychiatry and psychotherapy of Ernst Moritz Arndt University. Renovation began in 2009 under stringent monument conservation and environmental protection requirements. The pavilion-like character of the building opened in 1912 had to be preserved. After the building had been gutted, two wards with room for 20 patients each were created on the ground floor and first floor. The Krankenhaus West redevelopment also includes the construction of a new clinic for child and youth psychiatry, psychotherapy and psychosomatic medicine.



The design of the GROHE SMB mixer (left) is particularly ergonomic. The Grohtherm 2000 special thermostat shown here (right) automatically drains the shower hose

The clinic welcomes its patients in an elegant hotel atmosphere rather than a bleak hospital environment



GROHE DESIGN

The design of modern hospital wards is increasingly inspired by the hotel sector. Even luxury furniture and fittings are commonplace. This is due to the fact that in addition to the patients, relatives and other people increasingly stay temporarily at such facilities. Many hospitals have started to use upscale appointments as a differentiating factor in an increasingly competitive healthcare market.

Stylish sanitary products with designer features complete the concept of high-end equipment. GROHE design perfectly meets the different requirements with respect to aesthetics, functionality, ease of operation, durability and sustainability. GROHE offers a comprehensive product range for all contemporary interior decoration styles. From the rather straightforward, purist shapes of Atrio, Concetto and Essence to the sensual, minimalist designs of Veris and GROHE Ondus® to the exciting geometrical combinations of Allure, Quadra and Lineare - each collection offers a consistent design throughout the line. This allows for coordinated shapes, colours and materials from the wash basin to the bathtub and shower to the bidet and WC actuation plate.

DESIGN TREND LUXURY CLINIC

Comfort, quality, service and privacy are the most important criteria of the new trend in luxury hospitals. They target the new market of "first-class" patients, i.e. privately insured patients or patients prepared to pay their bills themselves (e.g. foreigners).

Since 2010, the Vivantes Humboldt-Klinikum in Berlin also offers its patients a special comfort section with so-called selectable service rooms which offer first-class furniture and fittings as well as special service. This 96-bed section is located in a new two-storey building. In view of growing patient numbers and higher patient demands, the latter are to enjoy their stay and be reminded as little as possible of a hospital while getting the best possible medical care.

The new building of the Vivantes Humboldt-Klinikum has only air-conditioned single and double rooms with comfortable beds, spacious modern bathrooms and a safe. The rooms are equipped with furniture and walls in warm colours and wood flooring. Some rooms additionally offer multimedia terminals next to the beds. Hotel service staff attend to patients' needs. The building has its own driveway as well as two lounge areas and restaurants.



Distraction from hospital routines in a comfortable single room



The Allure line of faucets combines attractive shapes with easy operation