

Edition 18 | December 2023

# DC Mag

Magazine of the Data Center Group

## Powering the future

Boosting research,  
innovation and  
sustainability



### Heidelberg Innovation Park

Green data center for innovation hotspot completed



### O<sub>2</sub> Telefónica

Testlab data center for leading telecommunications provider



### Sustainability

We are working jointly on the challenges of the future

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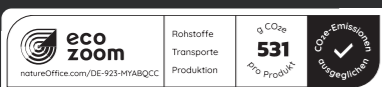
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**Sustainability** is important to us. That's why this magazine is made of renewable raw materials and printed climate-neutral.



## Powering the Future

Dear readers,  
Dear employees  
dear friends of our company,

This year was once again characterized by a tense global economic situation and the associated disruptions to supply chains, material shortages and restrictions in international trade. I am therefore all the more pleased that the Data Center Group (DCG) once again performed very well last year despite this difficult situation. This is only possible thanks to a strong team performance at all levels and synergies across our entire value chain. This enabled us to achieve our goals in 2023 and we can be very proud of that. I would like to take this opportunity to express my special thanks to the entire DCG team and our strong partners.

We also have big plans and goals for the year 2024. We have already set the course for many new projects that will accompany us in the coming year and we have set ourselves some ambitious goals. The bar is set high, but I am confident that we will succeed thanks to our good order backlog. To this end, we are constantly expanding our team and look forward to welcoming new young and experienced employees who, with their expertise, motivation, fun and new perspectives, will ensure that we continue to grow successfully.

I am particularly pleased about the successful progress of our challenging major projects. Find out more about planned data center projects and recent successes in the following pages. In the Frankfurt area, in Schwalbach am Taunus, we have been able to start construction of a new data center that sets new standards in terms of sustainability. In the last issue, we presented the planned high-performance data center for the Johannes Gutenberg University in Mainz. In this issue, you can read all about the current construction progress.

I am particularly pleased to report that we were able to hand over the completed data center for the Heidelberg Innovation Park to the investor and operator at the beginning of November.

In keeping with the spirit of this issue of "Powering the future", we must now take a critical look at what the energy supply of the future will look like. This topic has been on our minds for some time now. Especially as a company in a very energy-intensive industry, we have a great responsibility towards the economy and society. It is already standard practice for us to think sustainably about our projects, long before the Energy Efficiency Act was introduced: we plan our projects with photovoltaic systems, green façades and the use of sustainable or recycled building materials, among other things. We supply data centers with electricity from renewable energies and also create connections to heat recovery solutions to generate additional CO<sub>2</sub>-neutral energy. We have been undercutting the specified maximum value for power usage effectiveness (PUE) for years. In our partner network and in various research projects, we are working together on solutions for more sustainable and efficient data center operation. Find out more on the added value pages of this issue.

In practice, we are also working with our customers to make the protection and operation of digital processes more sustainable. In this issue, you will find an example of considerable energy and cost savings achieved by retrofitting process coolers. In the past year, the DCG team has once again put its full "power" behind the implementation of many other exciting projects of various sizes and from a wide range of industries. You can find a small selection of our successful reference projects in the magazine and further reports on our website [www.datacenter-group.com](http://www.datacenter-group.com).

The entire DCG team wishes you an enjoyable read! We would also like to take this opportunity to thank all our customers and partners for their excellent and trusting cooperation and wish them all the best for the future!



**Ralf Siefen**  
CEO - Managing Director

# NEW at the DCG: Welcome!

Philipp Riemen as new Managing Director Finance



Philipp Riemen, new Chief Financial Officer at DCG.

**In an important phase of development for the Data Center Group, a change has recently taken place at the top of the company. It is with great pleasure and anticipation that we are able to announce that Philipp Riemen from our partner MVV Energie AG will be helping to steer the fortunes of the company as the new Managing Director and CFO (Chief Financial Officer). Mr. Riemen will work closely with the founder, CEO and Managing Director of DCG, Ralf Siefen, and will also take over the responsibilities of the previous Managing Director for Finance, Dr. Ferdinand Höfer.**

"We would like to expressly acknowledge our thanks and appreciation for the achievements and commitment of Dr. Ferdinand Höfer. Over the past few years, Dr. Höfer has managed the finance division for DCG on an interim basis and set the course for the company," says Ralf Siefen, CEO of DCG.

Mr. Philipp Riemen brings significant experience and expertise. After around 15 years in corporate finance and M&A consulting, he has held various management positions at MVV since 2012. In recent years, as Head of Finance and Investor Relations, he has made a significant contribution to positioning MVV on the capital market as a strong player with a strategy consistently focused on sustainability. His entrepreneurial attitude and ability to successfully develop employees and organizations are outstanding qualities. These skills will undoubtedly help to further strengthen DCG's position in the industry and drive our growth.

"I would like to thank you for the trust you have placed in me. In my role as CFO at DCG, I am responsible for finance and HR, among other things, and I look forward to helping shape the future of the company as part of the team. I am enthusiastic about planning, developing and implementing efficient and sustainable solutions in the dynamic data center market. In the first few days, I was able to experience a positive and open corporate culture. I particularly like the hands-on mentality: people here work together pragmatically and with a high level of motivation to develop sustainable solutions," says Philipp Riemen.

Ralf Siefen expressed his delight at the new appointment and emphasized that Mr. Riemen's expertise and leadership skills are a perfect fit with DCG's long-term goals, strategy and vision. We look forward to continuing our success story together with him. Philipp Riemen, welcome to the DCG team!

# NEW from the DCG: Follow us on Instagram!



[www.instagram.com/datacentergroup/](https://www.instagram.com/datacentergroup/)

## 👁 Discover the DCG on Instagram!

Our new social media channel regularly shows insights into the exciting projects and personalities of DCG and provides an overview of the career opportunities with us.

### What you can expect on the channel:

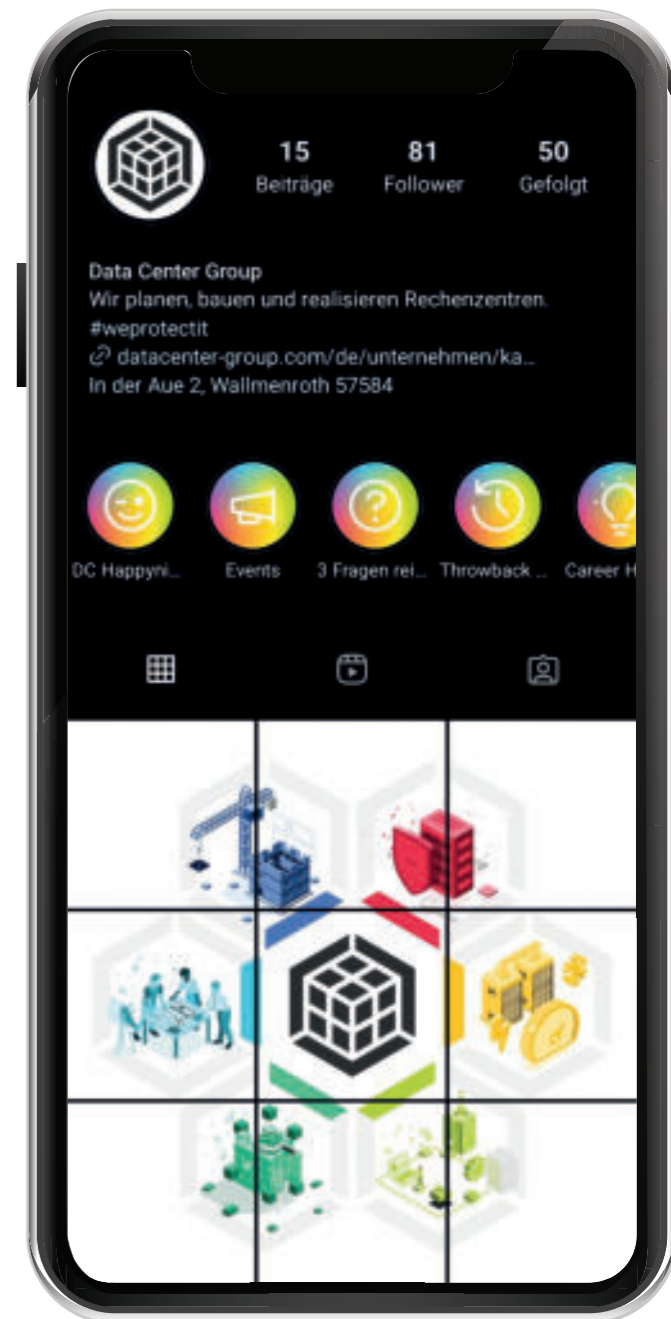
🔍 **Data Center Insights:** Experience the most exciting projects and challenges that our team is working on. We show how we use technology and innovation to work on the issues of the future.

🔧 **Career Hacks:** We share valuable tips, tricks and advice to promote professional development: From application tips to successful career paths.

🎉 **DC Happyning:** Get to know our teams and our culture with exclusive insights into various activities and events.

??? **The 3 questions are enough:** Meet our current trainees and young professionals in short interviews who share their stories and experiences.

🚀 Whether you are already starting out in the world of work or still looking for the perfect start - our Instagram channel offers the the right inspiration. Follow us today, to become part of our up-and-coming community and discover the exciting world of DCG!



nexspace

# Hip hip hurray – Green Data Center completed on schedule



A new green colocation data center opened its doors on the hip site in Heidelberg at the beginning of November. With a data center on the site, the Innovation Park has gained another important building block for strengthening itself as a hotspot for innovations in the fields of IT, AI and digital technology for research institutions, start-ups and international companies.

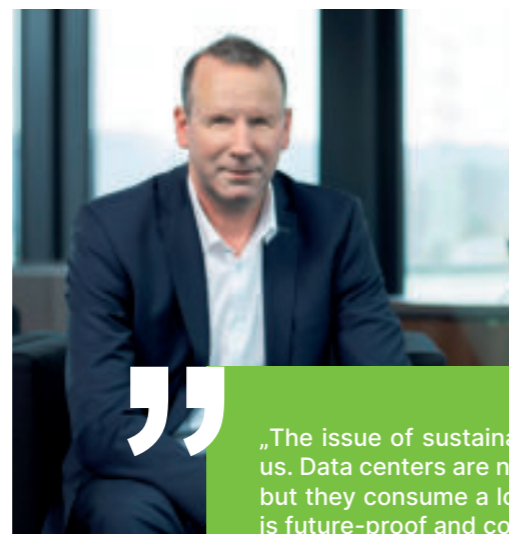
In a record time of just 11 months - one month faster than planned - the project was implemented by the Data Center Group (DCG) as general contractor for the operator nexspace, together with DCC Data Center Security GmbH (DCC) and InfraRed Capital Partners.

The data center takes a future-proof approach to the use of sustainable electricity, innovative cooling and heat recovery. The opening was attended by neighbors from the Heidelberg Innovation Park (hip) as well as contacts from the worlds of politics and business and the Mayor of Heidelberg, Eckart Würzner, who ceremoniously handed over the building to the operator together with the project participants.

### A special team effort

In November 2022, the official groundbreaking ceremony marked the start of construction work and the data center was ready for occupancy in October 2023. The 11 months in between were characterized by a team effort that was second to none. Once the building applications had been submitted and all supply connections ordered, the

team led by Christian Tigges (Head of Major Projects) began with the shell construction. This culminated in the topping-out ceremony in May 2023. Under the leadership of Stefan Krämer (Head of Technical Building Services), the cooling, ventilation, heating technology, electrical engineering and emergency power supply and UPS systems were then tackled. At the same time, the supply connections, doors and facades were installed. These parallel work steps can only be carried out in a perfectly organized manner thanks to a meticulously drawn up construction schedule. Each work step is documented and its progress recorded. The better the construction schedule and the organization at the headquarters in Wallmenroth are coordinated, the easier it is for the colleagues on site at the construction site.









„The issue of sustainability is very important to us. Data centers are necessary for digitalization, but they consume a lot of energy. This property is future-proof and conserves resources.“

Ralf Siefen, founder and CEO of the Data Center Group

The smooth cooperation of all those involved, from the planners and architects to the craftsmen and contractors, has led to a remarkable result. The high quality of the construction work, on-time completion and adherence to the budget are particularly noteworthy. The new building is not only functionally in line with the requirements for a secure and highly available Green Data Center, but also blends in aesthetically with its surroundings. The project serves as an inspiring example of what can be achieved through teamwork, expertise and commitment.

Markus Böhmer, Head of Project Business at the Data Center Group, agrees: "Working together as a team is always a great experience. Working with the various experts and specialists, who deliver high-quality work in all areas, is a lot of fun."

### Facts & Figures

-  2,000 m<sup>2</sup> of technical, administrative and data center space on 3 floors
-  Connected load 2 MVA
-  PUE value 1.25 (Power Usage Effectiveness)
-  Several IT halls with space for approx. 250 racks
-  Photovoltaics and façade greening
-  Realized according to the latest standards such as DIN EN 50600, ISO 27001, LEED Platinum and ISO 50001



**Secure and highly available with innovative technology**

The data center, which complies with current standards such as DIN EN 50600, ISO 27001, LEED Platinum and ISO 50001, is designed to be redundant and highly available. It has a total area of 2,000 m<sup>2</sup> (data halls, technical and administrative space) for approx. 250 racks. The energy consumption efficiency is below a PUE value of 1.25 with an IT load of 1,150 kW and approx. 2 MVA connected load, thus complying with the new Energy Efficiency Act. Although the project was planned well before the new law came into force, it meets all the necessary criteria and even contributes to more climate-friendly digitalization. Among other things, this is only possible with the use of highly efficient, state-of-the-art systems.

**Climate-friendly electricity and cooling generation**

100% of the electricity we purchase comes from renewable energy sources. The electricity requirement is covered by the purchase of directly generated green electricity from wind and solar energy from our own group of companies and with certificates of origin from Germany and Europe. In addition, photovoltaic systems on the roof ensure reduced electricity consumption, as 100% of this self-generated electricity is used for the operation of the Data Center. Not only the roof, but also the exterior walls are used sensibly. A generous green façade serves as a natural air conditioning system and for additional CO<sub>2</sub> absorption.

The cooling energy required for the data center is provided by the district cooling supply from Stadtwerke Heidelberg. This is generated from renewable sources in the power plant and the heat that returns is then reused accordingly. "This is a highly innovative data center project. In close cooperation with Stadtwerke Heidelberg, an unprecedented concept has been developed that sets standards in the field of sustainable cooling supply," says Ralf Siefen, CEO Data Center Group.

The redundant air conditioning system is made possible by generating cooling with thermally driven chillers that convert excess heat from the district heating network into cooling. The refrigeration system is so efficient that the required power consumption is very low and can be covered 100% by self-generated PV power from the Heidelberg municipal utility

company. In addition, an ice storage system is used to relieve the grid in the event of load or price fluctuations. On the other hand, surplus energy from the grid can be used to fill the ice store. This cooling concept automatically provides a waste heat consumer. This is because the heat returning from the data center is reused by the municipal utilities and is therefore not lost. An additional highlight: no external air conditioning units are required at the data center itself. Overall, this innovative concept significantly reduces CO<sub>2</sub> emissions through the central cooling of the data center in Heidelberg compared to conventional systems on the market.



**nexspace: High performance for a sustainable future**

The Made in Germany Data Center is operated independently by nexspace, a data center operator that focuses on edge markets in the DACH region and is supported by the investor InfraRed Capital Partners. The employees and partners of nexspace have more than 30 years of combined experience in the successful management and operation of data centers.

"The data center is future-oriented because it is very energy-efficient and enables customers to make their own operations more environmentally sustainable. We thus offer low-CO<sub>2</sub> data center capacity for digital processes, automation and the use of AI. Data centers are an important part of the energy transition. After all, this is not possible without digitalization and digitalization is not possible without data centers," says Ralf Siefen.

The investment in this state-of-the-art data center by those involved in the project not only reflects the region's growing demand in the field of digitalization, but also the commitment of those involved in terms of environmental sustainability.



„This project shows once again what a good team effort is all about. All business units worked hand in hand to get the Data Center in Heidelberg up and running.“

Markus Böhmer, Head of Project Business at the Data Center Group



**Groundbreaking ceremony**

03.11.2022

The starting signal for the digital future in Heidelberg with all project participants and Lord Mayor Eckart Würzner.



**Topping-out ceremony**

16.05.2023

The completion of the shell is a first milestone for the data center and the basis for further work.



**Expansion of the TBE**

04.– 09.2023

Whether air conditioning technology, grid replacement or switchgear - the right design and optimization of technical systems contributes to maximum energy efficiency.



**Implementation of the supply connections**

05.–09.2023

Lightning protection, cooling lines, civil engineering, medium-voltage cables - essential installations for the Green Data Center.



**Project completion**

30.09.2023

The finish line is reached - the data center is ready to move in. Final finishing touches are made, such as fencing and paving work on the site.



**Grand opening**

10.11.2023

Just one year after breaking ground, the doors are opened to new and future tenants.



# The digital future in Schwalbach am Taunus is moving forward

Data Center Group implements flagship project for DATA CASTLE in the greater Frankfurt area

As digitalization progresses, the demand for data centers continues to rise, especially in Frankfurt, the leading data center location for Germany and Europe. The city of Frankfurt combines unique advantages such as its central location and perfect connections to international markets via the DE-CIX internet hub, making it an attractive location for enterprise customers and DAX companies from the financial and business sectors as well as for global cloud service providers.

In order to meet the increasing demand of these companies in a resource-efficient manner, a state-of-the-art and energy-efficient data center is being built in Schwalbach am Taunus, not far from the interconnection node. This offers perfect connectivity with the advantages of a location outside the city, such as better accessibility and without the

inner-city constraints. The innovative data center in the Taunus offers reliable, ultra-fast data transmission, low latency times, carrier neutrality, maximum data sovereignty and security as well as perspectives for the region. Access to large cloud platforms and the greatest possible flexibility for different customer requirements complete the offering perfectly. This project will help to further expand the digital infrastructure in the Hesse region and meet the requirements of a rapidly developing digital world.

The plans include a total of three floors, each with 2,178 m<sup>2</sup>, for a total of 6,534 m<sup>2</sup>. The total output, i.e. the power connection, is estimated at 25 MVA for an IT load of 18 MW. There is also 1,001 m<sup>2</sup> of office space. The green data center impresses with an above-average energy efficiency value, a

PUE value of 1.25. Individual concepts were developed for the implementation in order to make the data center ecologically compatible and operate it in an energy-saving manner. For example, the waste heat generated by IT components and cooling units is to be used to generate heat. The data center, which is powered by green electricity, will also be equipped with solar panels on the façade and other parts of the property to generate fossil-free electricity. In cooperation with the town of Schwalbach am Taunus, charging stations for electric cars will also be installed in the vicinity of the data center - for sustainable mobility in the region. A wooden façade and other green areas of the façade provide additional natural cooling and harmonious integration into the landscape. The Schwalbach site was a convincing choice for the location of the data center with an attractive plot of land and the necessary infrastructure already in place.







"We are excited to have the opportunity to realize this flagship project for our client DATA CASTLE. This ultra-modern, smart and sustainably designed data center is an investment in the future and an important milestone for the region," emphasizes Ralf Siefen, founder and CEO of the Data Center Group.

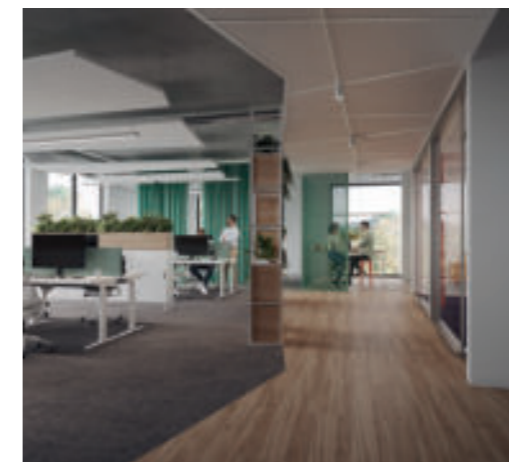
Completion of the first construction phase is scheduled for mid-2025. The Data Center Group is implementing the project as general contractor for its client DATA CASTLE: The German company, based near Munich, plans, builds and operates sustainable colocation and hyperscale data centers at strategically important locations in Germany.

The data center meets the latest standards and strict criteria in accordance with DIN EN 50600 (VK 3), Uptime Institute (Tier III) and LEED certifications in order to meet customer requirements for future-proof and highly available IT infrastructures.

Construction work is due to start shortly. The planned commissioning date is the end of 2025. The data center thus represents another important block in the establishment of the Green Data Center platform, which includes further data centers in and around major cities.

### Facts & Figures

-  25 MVA Capacity
-  6,500 square meters of IT space
-  PUE 1.25
-  100% renewable energy
-  Photovoltaics and façade greening
-  Certification according to EN 50600 (VK3), Uptime (Tier III), LEED



# Groundbreaking for excellence in research

Data Center Group (DCG) builds a sustainable data centre for the expansion of the research location of the University of Mainz



With more than 100 institutes and clinics, Johannes Gutenberg University Mainz (JGU) is one of the largest and most diverse universities in Germany. JGU is the only German university of its size to house almost all of its institutes on a campus close to the city centre. On this campus, a new building for the data centre is to be constructed by the university itself.

Data Center Group will realise and hand over the new data centre as general contractor, including implementation planning. With a team of architects, planners and specialists for IT infrastructures, the company is responsible for conception, design and construction.

The planned compact building is to be realised as a high-quality and modern structure that at the same time blends harmoniously into the existing complex. The building will also have a high-quality visual appearance thanks to a surrounding curtain façade and screen cladding for the external air-conditioning system.

The groundbreaking ceremony for the new data centre building at JGU took place on 30 May 2023 and marks an important milestone for the further expansion of the research strength at the Mainz site.

### Milestone for cutting-edge research

In future, the Data Center will not only house the university's IT infrastructure for its own academic operations and administrative tasks, but also the systems and services needed for the Rhineland-Palatinate Science Network and Computing Centre Alliance Rhineland-Palatinate (RARP). In addition, the Data Center will contribute to the National High Performance Computing (NHR). In this NHR network, resources and competences of university high-performance computing are bundled and made available to scientists of German universities for free. In this way, the Data Center contributes to the expansion of research opportunities and strengthens JGU's position in the field of high-performance computing.

### Sustainable with certainty

"The data center is planned as an ecologically future-oriented building, which thus contributes to the energy transition.", confirms Christian Tigges, Head of Major Projects at DCG. "Certified according to EN 50600, the standard for planning, construction and high-security operation of data centres, it meets the highest requirements for critical infrastructures in availability up to VK3 and security up to SK3."

An uninterruptible power supply (UPS), gas extinguishing system, emergency power generator and the corresponding security technology provide sufficient protection. This means that digital applications and services remain available to researchers, teachers and students at all times. Furthermore, data protection is guaranteed by an appropriate access control system with lock function, intrusion alarm system and video surveillance.







"The new building is particularly important for us in order to be able to meet the increased demands in the area of high-performance computing in the future and to be able to operate the applications for research, teaching, studies and administration of the university

at a current technical security and availability standard," explains Carsten Allendörfer, technical manager ZDV of the University of Mainz.

For smooth operation, the servers must be protected from overheating and cooled continuously. For this purpose, an energy-saving cooling system with a closed water circuit is used, which is also prepared for the planned use of waste heat, so that additional resources can be conserved. Parts of the roof area will also be equipped with photovoltaics in order to keep the share of purchased electricity as low as possible.

Extensive roof greening serves to reduce the CO<sub>2</sub> content and the ambient temperature in summer. In addition, attention was paid to keeping surface sealing as low as possible and to using seepage-capable paving. The planning of the planting of the area was carried out in close coordination with the green and environmental office of the city of Mainz. With a power usage effectiveness (PUE) of ≤ 1.15, the data centre is one of the most energy-efficient.

### Facts and figures:

-  Total area of the building: 1,870 m<sup>2</sup>
-  Construction costs: 29 million euros
-  PUE value: ≤ 1.15 (Power Usage Effectiveness)
-  112 server cabinets in the HPC area
-  Maximum IT load: 3,600 kW
-  Certified according to DIN EN 50600

„We are pleased that as a Rhineland-Palatinate company we are able to contribute to the development of this renowned location and will hand over the new data centre ready for use as early as the beginning of 2025.“

Ralf Siefen, CEO DCG







# Challenging Solution in the Trafo Building

Interim Data Center for the University of Potsdam

The University of Potsdam is a teaching institution at 3 locations and the largest university in the state of Brandenburg. Currently, approximately 22,000 students are registered at the university, spread over 170 different courses of study. The university places particular emphasis on internationality and maintains partnerships with institutions around the world. Research

focuses on cognitive sciences, data sciences, earth and environmental sciences, and evolutionary biology. Both the administration of the university and the smooth running of numerous research and teaching applications of the faculties and the resulting data volumes require a functioning and highly available IT infrastructure.



Strict separation of hot and cold air through cold aisle containment.



The roof of the transformer building accommodates refrigeration components and supply lines find their place.



Refrigeration center of the data center on the Mezzanine floor.



Exterior view of the former transformer building.



Since the IT infrastructure had previously been located at different sites and had outgrown the requirements, Data Center Group (DCG) was commissioned as general planner for the technical building equipment (TGA) of a new data center and IT infrastructure under one roof. Under the client, the state of Brandenburg, an interim data center was to be implemented to bridge the gap for a large-scale data center.

The data center was built in the existing building and during ongoing operations in accordance with DIN EN 50600. The new location for the data center presented a particular challenge: An old transformer building was to become the new home for IT. However, since the building's surroundings are protected as historical monuments, a number of things had to be taken into account: For example, the entrances to the building could not be changed, and due to a lack of space and the protection of historical monuments, an emergency diesel generator was placed next to the building as a compact. A steel platform was installed on the roof of the transformer building to accommodate the refrigeration components with redundant refrigeration and supply lines. The adjacent building was also renovated in terms of fire protection in the facade area on

doors and windows, again taking into account the requirements of historic preservation for the entire building ensemble.

The project was handed over to the university on schedule at the end of 2022, despite additional hurdles such as the Corona pandemic and supply bottlenecks.

"Although data center construction challenges such as historic preservation compliance and construction during ongoing operations made the job more difficult, Data Center Group exceeded our expectations. The project was completed within the approved construction cost and on schedule. As a result, we now unite our entire IT infrastructure under one roof," says Rolf Adams, Head of Infrastructure Network at the University of Potsdam.

DCG combined all planning activities with its own staff and was thus able to act holistically as a reliable partner for the project in order to successfully implement the object, structural and technical planning of this very special IT infrastructure. Thus, the University of Potsdam can relax in the future and rely on its optimized, highly available and secure IT infrastructure in the transformer building.

# Optimal data flow for the market leader of nozzle systems

Lechler GmbH is a family-owned company from Metzingen in Baden-Württemberg and the market leader for nozzles and nozzle systems in Europe. Lechler's products are used in environmental technology as well as in the agricultural and steel industries and are thus represented worldwide. Lechler employs around 700 people with production sites in the USA, China, India and Hungary and sales offices throughout Europe.



The company building of Lechler in Metzingen (Baden-Württemberg).



The modular DC IT Safes can be extended as desired.



The firewalls prevent the fire and smoke spread.

As the IT infrastructure had not previously been set up redundantly, the air conditioning technology was outdated and a move to a new building was pending, Lechler turned to Data Center Group (DCG). DC IT Safe exactly met Lechler's requirements for a modular and mobile data center solution, which is why they chose the product. A second safe was built for the smart control of production in the manufacturing hall.

"We host part of the world. We have systems that are accessed by our employees in the USA, India or Malaysia. A failure of the IT infrastructure would lead to considerable delays in our work processes," explains Patrick Schur, who is responsible for Lechler's server infrastructure, emphasising the importance of a redundant setup. "In addition, business process control, virtual machines, the VPN and email security also run via the data center."

The project was completed within only 10 weeks despite delivery bottlenecks. DCG took over the technology as well as project management with a subsequent maintenance and service contract.






With the decision in favour of DC IT Safes, Lechler can now relax and complete the move into the new building complex. The company is also prepared for future developments: if necessary, the DC IT Safe can be easily expanded in a modular way.

"The implementation went smoothly. Lechler did not have any extra work during the repair of the data center. We can now relax and plan our move," adds Patrick Schur.

If you are interested in more details about the project, visit our website:



## Facts & Figures

-  DC IT Safe Duo 62 HE
-  Rack Invert Cooling System ITS-DX-R, 3,3 - 8,1 kW
-  2 x 19"-UPS 10 kVA / 10 kW with Degassing function
-  Automatic rack fire alarm and Fire Extinguishing System NOVEC 1230 TM
-  Project period: 10 weeks

# Future-proof IT infrastructure for the energy transition

WATERKOTTE is an expanding manufacturer of innovative heat pump system solutions and automation. The company employs around 160 people and manufactures heat pumps in the power range from 1 to 1000 kW at its Herne site.

After the offer was accepted at the beginning of 2022 and the order was placed in April, the installation and commissioning of the new IT environment took place as early as June - despite delivery bottlenecks due to the global political situation at the time.

WATERKOTTE was looking for a particularly operationally secure solution that provided fire and burglary protection. Previously, the IT infrastructure consisted of leased hardware. Initial contact was made via the Data Center Group website and agreement was then quickly reached on the appropriate solution.

Special features of the project arose due to the existing, compact infrastructure. Since no structural measures were to be created and a compact and flexible solution was sought, the decision was made to use a micro data center, the DC IT Safe.



"We had the feeling that with the issues of technical development and service availability and the prioritisation on the topic of IT security, the Data Center Group was able to deliver the best overall package," explains Andreas Jung, Technical Director of WATERKOTTE.

A highly available and highly secure IT infrastructure is essential for WATERKOTTE, as an IT failure would have serious and existential consequences. Almost all of WATERKOTTE's business processes are carried out online. The new solution now offers the company "life insurance for IT".

The summary is exceptionally positive: "The project went perfectly from the initial contact to the offer, the professional handling and the finished solutions. I would definitely recommend the product as well. Should the IT be moved, the DC IT Safe can simply be taken along," Andreas Jung sums up.

You can find the full project report on our website:



Heat pumps are one of the key technologies for the energy transition. They will be the dominant heating technology in the energy system of the future. Heat pumps are already in use in numerous types of buildings. They can also be used to process heat from data centres so that this heat can be used to heat residential or public buildings.



### Facts & Figures

- DC IT Safe Single
- Redundant rack inverter cooling system 1.6-4.5 kW
- 19-inch-USV system 4,0 kVA/3,6 kW
- NOVEC1230 fire extinguishing and fire alarm system
- Project period: April-June 2022



# Massive energy savings through replacement of chillers

Consumption optimization for Rechenzentrum Verden GmbH



Rechenzentrum Verden GmbH, short rzv, is the technical service provider of "Vereinigte Informationssysteme Tierhaltung w.V." short vit. vit is the leading information service provider for animal husbandry and breeding and for the operational and breeding management for agricultural organizations. As a service provider, rzv is responsible for the connection of vit's customers and with the help of its employees ensures a trouble-free data exchange and operation.

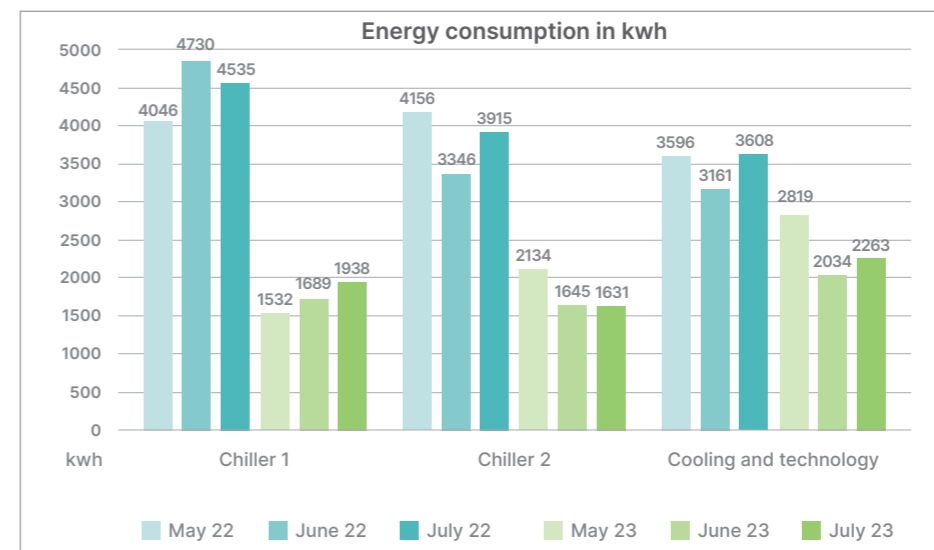
**The services provided by rzv include among others:**

- Administration of applications and program systems for servers, PCs, smartphones and the Internet
- Operation, maintenance and control of networks and approx. 550 physical and virtual servers
- Ensuring availability and fail-safe operation
- Data backup and long-term archiving
- IT consulting and user support

A failure of the IT infrastructure would therefore have a significant impact on numerous agricultural businesses. They would no longer be able to access their databases and business processes, which would lead to delays in operations. For this reason, Data Center Group was commissioned to replace the chillers. The old chillers were no longer energy efficient and caused complications such as breakdowns, overheating and increased consumption during the warm summer months.

The contract was awarded based on positive experience from previous projects that had been successfully completed. The many years of experience and expertise of the Data Center Group's service specialists convinced the customer.

The Data Center Group took over the complete service, such as the planning and realization, as well as the replacement of the two chillers, without any downtime of the data center and within only 10 days during operation. During this period, the lightning protection system was also adapted and the surge protection was modernized.



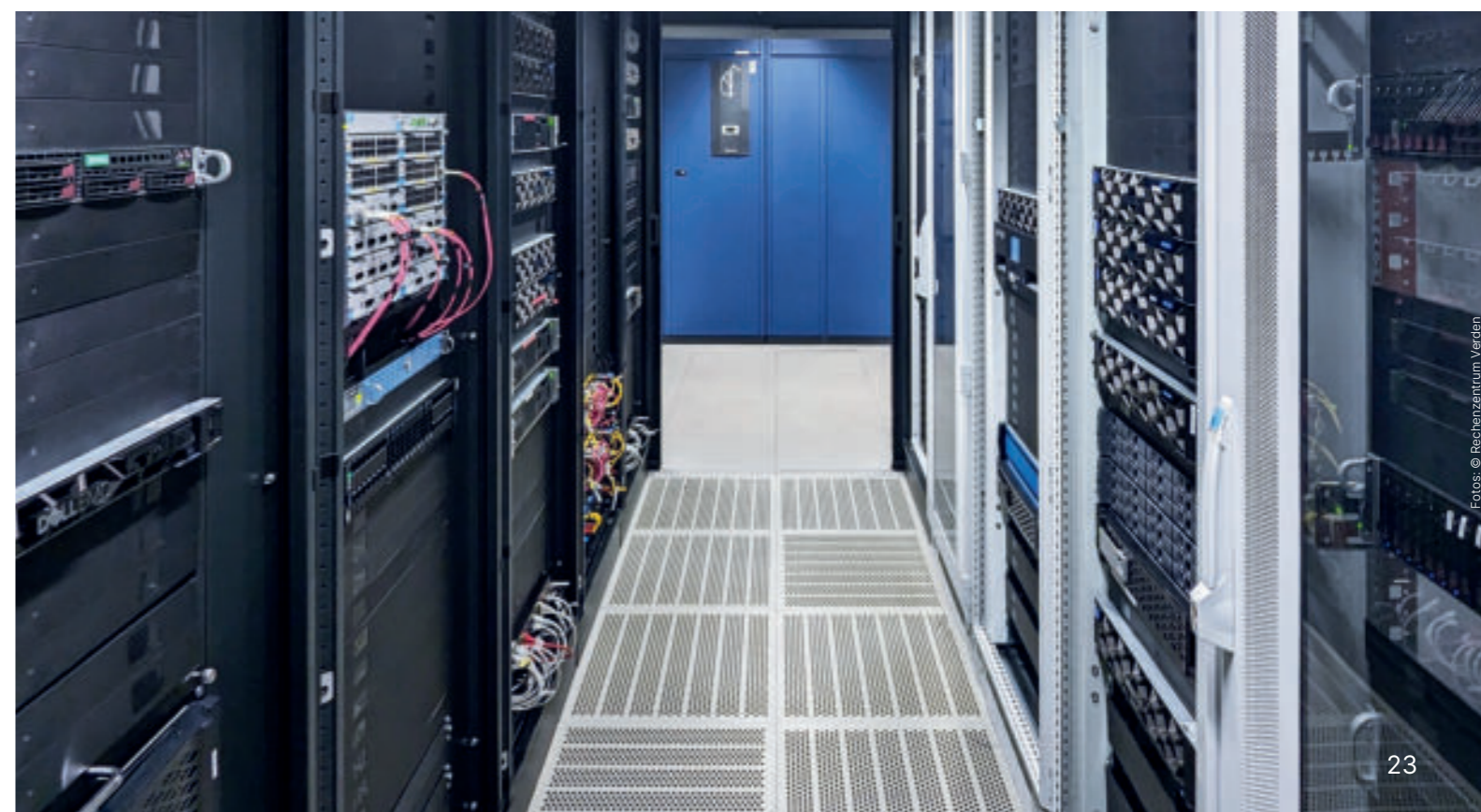
Saved kWh and associated saved costs from May to July 2023 (green) compared to the same period last year (blue).

In addition, rzv saves high repair costs, which previously had to be spent on the old chillers. The new chillers are less susceptible to faults and can be better monitored with the help of a monitoring program. The resulting increased reliability stabilizes the operating processes and minimizes disruptions. On the technical side, the replacement of the old systems enables better visualization and data transmission via SNMP monitoring as well as e-mail and SMS transmission.

The résumé is accordingly positive: "The project to install the chillers had a positive impact on the company's efficiency, operating costs and reliability. This makes it clear that the company has taken a sensible and successful step by replacing the chillers," sums up Jens Koenig, Building Services Engineer

**Facts & Figures**

- ⚡ Installation of surge protection
- 🔍 Targeted monitoring for climate systems
- 🌡️ 100 % free cooling operation up to 12°C outdoor temperature
- 🌡️ Mixed operation from 13 - 16°C outdoor temperature
- 📈 Electrical power consumption old: approx. 3.0 kW
- 📉 Electrical power consumption new: approx. 0.9 kW



# „The heart of our IT must be beating“



Foto: © Kreisstadt Siegburg

## Data Center Group (DCG) implements outdoor data center for the district town of Siegburg



Data Center Group took over the setup and installation of the data center, a DC IT Container developed according to the strictest DIN standards and requirements. The data center was built on the premises of the fire and rescue station. DCG was chosen because they presented a coherent concept for a very specific requirement: a variable, spatially flexible and at the same time very robust container data center.







Spatially flexible because the IT had to be housed elsewhere due to a renovation of the town hall. And variable because it is future-proof and can continue to grow.

Despite delivery bottlenecks, the project was completed on time within six months. The customer is also satisfied: "Sitting next to me is a happy administrator. The process, the implementation as well as the final product

went perfectly. All promises on the part of DCG were kept as promised. DCG's project management deserves special praise here. We were able to achieve a strong increase in the quality of our IT infrastructure," says Bernd Lehmann, Head of Central Services, Digital Affairs, Citizen Services and Order of the district town of Siegburg.

Based on the successful cooperation, DCG will also take over the service and ongoing operation of the container data center so that the digital heart of the city of Siegburg remains constantly beating, powerful, protected and highly available.

### Facts & Figures

-  DC IT Container
-  5x 19-inch rack system with hot aisle containment
-  2x 25 kW (CW) cooling system
-  Early fire detection system
-  2x UPS system á 30 kVA
-  DC IT Monitoring Agent



Server racks and server aisle including security door separating the server room from the technical room.



Early fire detection system including NOVEC 1230 fire extinguishing system with fire alarm system.

With its 550 employees, the district town of Siegburg provides all services for its citizens. Whether it's an identity card, travel documents or construction projects - all of these can now be applied for online. A virtual citizens' office, online consultation hours for the mayor, and live streams of council meetings or committees are further digital services offered by the county seat.

In order to be able to offer these processes and applications in a fail-safe manner and to protect the citizens' sensitive data in the best possible way, a secure and functioning IT infrastructure is indispensable. A

failure of the IT would lead to a complete standstill of the services and the entire work processes, as well as directly affect the citizens in their daily lives. That is why the IT infrastructure of the authority must be redundant and thus able to withstand failures.

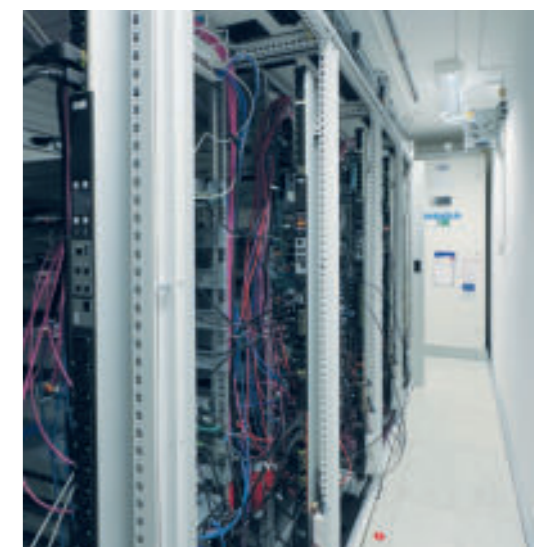
"The data center is the heart of our infrastructure. We can absorb other failures in the periphery. But the heart has to beat," says Thomas Limbach, system administrator of the district town of Siegburg.



Florian Hammer (Area Sales Manager Data Center Group) and Thomas Limbach (System Administrator Kreisstadt Siegburg).



UPS systems provide a constant, uninterruptible power supply.



Rear view of the server racks looking into the server room.



Fotos: © O2 Telefónica

# Testlab data center for the mobile network



O<sub>2</sub> Telefónica is a listed telecommunications company headquartered in Munich. The company employs around 7500 people and is one of the leading German telecommunications providers with a turnover of 8.2 billion euros in the 2022 business year and 44 million mobile phone connections. Data Center Group supported O<sub>2</sub> Telefónica in the relocation and implementation of a new test lab data center for its mobile network. Due to a required move from its old technical location, the telecommunications provider needed a new data center that would meet the increased IT infrastructure requirements for software rollout, live network technology and mobile communications technology. For the new test lab, the project partners chose an IT partitioning system solution because it

can be ideally integrated into the planned location. O<sub>2</sub> Telefónica is implementing a complete real test environment for the mobile network. Through testing, the company ensures that there are no unforeseen effects on the entire mobile network as a result of software changes such as updates or hardware changes. For this reason, all changes to the network are tested in a Service Integration Center (test lab) before they are implemented "live" in the mobile network. For this reason, a new high-performance, secure and highly available data center infrastructure was needed.

The project, led by Dennis Spies, was initiated within a year and completed on time. With the help of its Service and Solutions business unit, the Data Center Group is taking over site management and maintenance of the entire electrical and air-conditioning technology. As a result, O<sub>2</sub> Telefónica can concentrate on its own day-to-day business and is future-proofed.

"With the Data Center Group, we have been able to gain an experienced and reliable partner. Our partnership is based on numerous projects that we have successfully implemented in recent years", underlines Axel Kindermann, Lead Testing & Accreditation of Telefónica.

**Facts & Figures**

-  Hall size: 2000 m<sup>2</sup>
-  3 DC IT Rooms to accommodate approx. 500-600 IT racks
-  Total connected load: 3000 kW
-  Comprehensive fire protection monitoring



The test lab is located in Munich, just like the headquarters of O<sub>2</sub> Telefónica - the O<sub>2</sub> Tower - in Munich.



The refrigeration system ensures adequate cooling of the IT infrastructure.

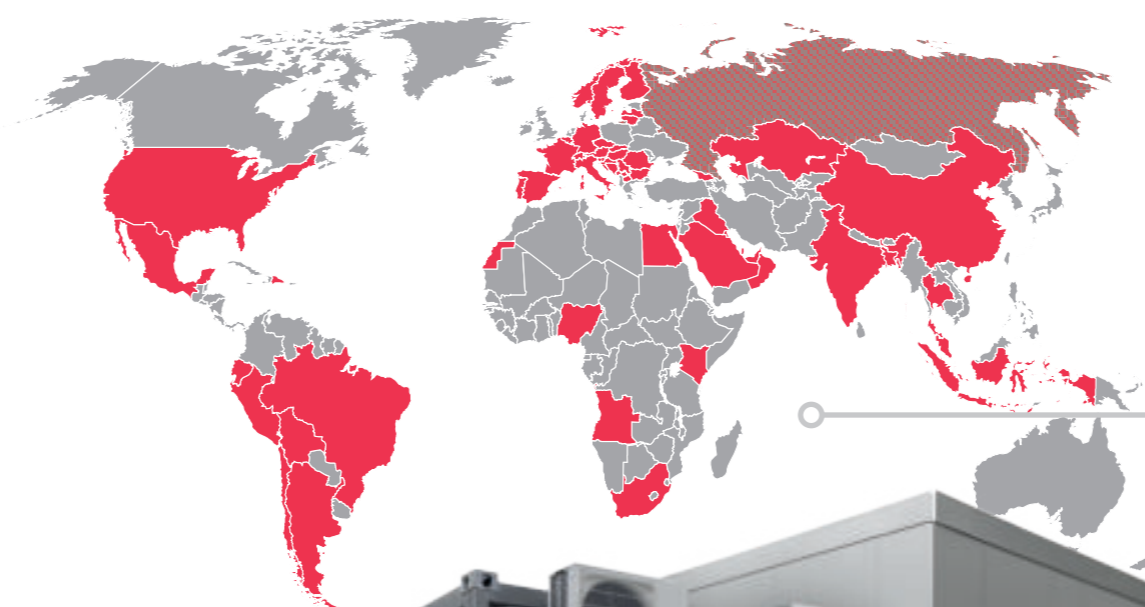


Cold aisle containment of the o2 Telefónica test lab data center in Munich.

# Maximize uptime, minimize risks

Our high security products to protect your IT

Foto: © anony/stock.adobe.com



### Locally produced, in use worldwide

Our customers can rely on receiving master-engineered products "Made in Germany". We are in action for you worldwide.

### DC IT Container

Container Our all-in-one container data centers are the perfect solution for decentralized edge data centers. Modular, plug-and-play ready to use, secure and energy efficient.

See for yourself on page 24-25.



„Through the latest technologies, our entire product portfolio leaves a reduced carbon footprint and makes a statement in terms of sustainability.“

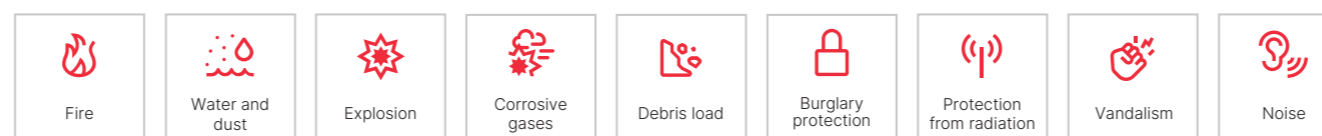
Martin Hüsch, Technical Director  
DC-Products

### DC IT Safe

Our highly secure Micro Data Center (MDC) is used worldwide by well-known companies that require the highest possible protection for their servers on site in combination with Green IT.

See for yourself on page 18-21.

Get the highest protection for your IT infrastructure against all physical threats with our patented, energy-efficient security solutions



### DC IT Room

Modular security rooms deliver the highest level of physical protection around your critical IT infrastructure. Customized and made to measure, these modular systems offer the highest possible protection.

Have a look for yourself on page 26-27.

# Joint research on the topics of the future

## "Bytes 2 Heat" delivers solutions for green (waste) heat from data centers

The topic of waste heat utilization for data centers is more topical than ever. Due to the increasing performance of data centers, there is more and more (unused) waste heat, digitalization and energy scarcity is increasing and progressing. Waste heat from data centers can automatically deliver green heat to consumers. In the course of this, the pressure to use waste heat from data centers continues to increase. For example, the European Green Deal, the EU's EED, as well as national climate targets and legislation in Germany such as the announced Energy Efficiency Act, all address waste heat utilization.

This is where Bytes 2 Heat comes in to unlock this potential. A competent team consisting of a project consortium (DENEFF, the institutes IVR and IER of the University of Stuttgart and IWN), a network of experts as well as project partners (BFE Institute for Energy and Environment, Danfoss, ENGIE Germany, E.ON Energy Solutions) has come together for this purpose. Another of these partners is the Data Center Group, represented by Senior Consultant Dr. Dieter Thiel. The project is funded by the German Federal Ministry of Economics and Climate Protection based on a resolution of the German Bundestag.

The goal of the project is to harness waste heat from data centers and resolve existing challenges. On the technical side, low waste heat temperatures as well as the need for constant heat extraction 24 hours a day, 365 days a year cause problems for many data centers, but with a best practice overview Bytes 2 Heat shows how even low temperatures can be used. From a business point of view, a high investment requirement away from the actual core business leads to obstacles, which a quick-check cost-effectiveness removes. A lack of communication between stakeholders is counteracted by the Bytes2Heat matching tool, which brings together data centers and heat consumers. In addition, close cooperation and the openness and interest of stakeholders provide a remedy.

Numerous examples from industry, building services and agriculture show promising uses for waste heat. The first results were presented in November at the annual Data Center Roundtable and further projects are already being planned and implemented.



Dr. Dieter Thiel, Senior Consultant (Data Center Group).

DCG is active in several research collaborations and is involved in the latest developments in the field of data centers. So that the digital future can be shaped in a sustainable and resource-saving way, Bytes2Heat and MERU are doing valuable work in this area.

## MERU develops guidelines for avoiding rebound effects

The project "Holistic Management of Energy and Resource Efficiency in Companies" (MERU), with Data Center Group as a joint partner, has developed a guide to identify rebound effects in companies and promote measures to reduce them. Rebound effects occur when savings are generated in one part of the business, but then cannot be fully utilized in reality. These impact deficits can be categorized into different rebound effect types and differentiated from rebound-like effects:

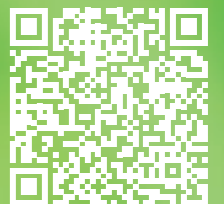
### Management and mitigation of rebound effects

To counter rebound effects, several milestones need to be set. First, a strategy should be developed. Absolute reduction targets for energy and material consumption should be anchored and conflicting targets should be made aware. In the area of organization, responsibilities and incentives should be created and employees should be involved so that they participate in the implementation of the measures. Efficiency implementations are prioritized in hotspots, and possible positive and negative side effects must be considered. Once the means have been selected, they must be planned and implemented. A data basis for evaluating success should be created, rebound effects should be anticipated and nipped in the bud, and a policy for dealing with financial savings

should be developed. These measures should also be monitored accordingly in the future. For this purpose, short-term after-measurements, medium-term and systemic monitoring should be established, corrective instruments applied and reinforcement effects targeted.

### Rebound effects in data centers

Rebound effects can also occur when optimizing data center infrastructures. New data centers offer some potential for savings and more sustainable concepts. However, it is important to avoid that these do not take effect and are wasted elsewhere. Our consultants support you in planning and analyzing your IT infrastructure so that rebound effects can be counteracted. We are also the right partner for selecting, planning and implementing measures. Our Service Business Unit takes care of monitoring and evaluating your measures. The complete article with further examples of rebound effects and the link to the complete guide can be found on our website:





# Waste heat recovery in data centers

Opportunities and potential uses for more sustainable data center operations

**Data centers generate considerable amounts of waste heat, which up to now has hardly been used and discharged into the atmosphere. In the coming years, the task will be to make this waste heat usable for the heating sector. In the future, its use can be an important lever for data center operators to achieve greater climate protection, while customers benefit from CO<sub>2</sub>-free heat.**

## Barely tapped potential

In the search for sustainable heating solutions from renewable energies, waste heat is considered an important option. In addition to the use of industrial waste heat for heat supply, waste heat from data centers is another potential source. The CO<sub>2</sub>-free heat generated there can be used to heat office, commercial and residential buildings, save energy and reduce heating costs. At present, however, it is still often released unused into the environment.

## Waste heat utilization receives political support

In order to harness the potential of digitization for greater sustainability, data centers in Germany are to be geared toward ecological sustainability and climate protection, partly through the use of waste heat. The coalition agreement between the governing parties provides for this. The current draft of the Energy Efficiency Act (EnEfG) formulates corresponding requirements for data centers. It is expected that new data centers built from 2027 onwards will be required to use waste heat.

## Potential of waste heat

Although the efficiency of German data centers has increased six-fold in recent years, their energy consumption continues to rise. The reason is in particular the increasing expansion of cloud services. While the energy requirement in 2012 was still 11 billion kilowatt hours, it has risen to 18 billion kilowatt hours by 2022, according to Bitkom - that is around 0.55 percent of total energy consumption in Germany.

According to Bitkom calculations, the use of waste heat from data centers could supply around 350,000 homes a year, which is almost equivalent to the stock in the city state of Bremen. This potential will continue to rise: By 2030, energy demand is forecast to rise to between 27 and 34 billion kilowatt hours. This means that more and more potential waste heat is available from data centers that has not yet been used.

## Air or liquid cooling

Waste heat is generated in data centers during server cooling. Recirculating air cooling, which is heated to around 35 degrees by the waste heat from the servers, still dominates. The circulating air is then exchanged for the medium water via a circulating air cooling unit. This water, which has a temperature of around 25 to 27 degrees, can then be made available for waste heat recovery. In contrast, with liquid cooling - usually with water - the waste heat is usually dissipated directly from the processor (CPU) and other relevant components. The waste heat temperature here can vary between 55 and 60 degrees. Instead of discharging the heat directly (air cooling) or via a chiller (liquid cooling) to the environment, it could be used for heating or for heating water in buildings by connecting it to a district or local heating network. This usually requires individual solutions.

## Temperatures must be raised

The waste heat from data centers cannot be used directly in a district heating network. The temperatures are too low for this. A district or local heating network is usually operated with flow temperatures of 70 to 130 degrees. The temperature of the exhaust air (air cooling) or the hot water (liquid cooling) must therefore be raised with the aid of special, highly efficient heat pumps so that it reaches the level of the heat network and fluctuations in the amount of waste heat are compensated. Liquid cooling offers technically better conditions here, since the heat is already available in liquid form.

## Contractor secures long-term heat supply

In order to bring together the different interests (heat producers/heat consumers) in a target-oriented manner, it makes sense to organize the refinement process and the transfer of heat via a contractor who ensures a long-term, continuous supply of heat. Missing heat quantities can be compensated for by appropriate redundancy systems, for example a gas or waste-fired power plant in the case of large heat networks or heat pumps with a

different source in smaller local heat networks. This saves the operators of data centers expensive investment costs and allows them to make their waste heat available to customers in an uncomplicated manner. Another advantage is that the contractor also takes care of the necessary maintenance and safety measures.

## Solutions for efficient and sustainable waste heat utilization

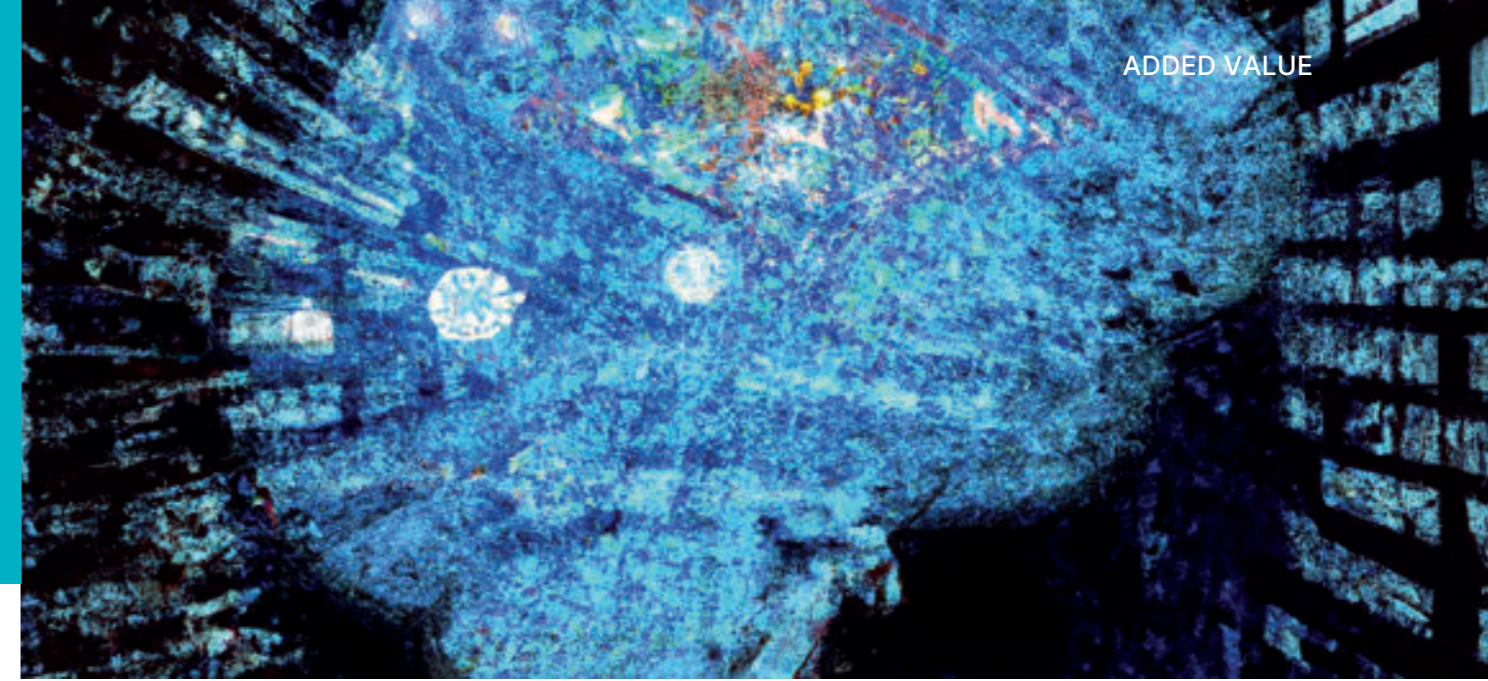
The Data Center Group, together with its partner companies MVV Enamic and BFE Institute for Energy and Environment, is a competent partner for the climate-friendly and efficient use of waste heat in data centers. As a data center specialist, we use our comprehensive expertise for an energy-efficient and economical use of waste heat and realize the technical interface for the release of waste heat to a customer. BFE is responsible for the holistic consulting of potential users on site. For more than 40 years, the consulting company has been accompanying customers and partners on their way to a climate-neutral supply and showing them ways to achieve greater energy and resource efficiency. MVV Enamic offers business customers holistic energy solutions from a single source, including economical contracting solutions. Together with its solution house partners, the company supports its customers on their way to a sustainable data center or a sustainable heat supply.



The waste heat can, for example, be fed into a heat network for the municipal heat supply.

# The code of the future?

An interview with expert Prof. Dr. Patrick Glauner on the limits and potential of artificial intelligence



An AI-generated graphic on the topic of artificial intelligence. (Source: DALL-E)



KI-Expert Prof. Dr. Patrick Glauner. (Foto: private)

**Sonja Philipp (Data Center Group): Good afternoon Professor Glauner. Let's start with the question: What is AI? What defines it?**

**Prof. Dr. Patrick Glauner:** There is no single definition of artificial intelligence. Just as you ask 2 lawyers about a topic and get 3 different answers, it is the same with AI experts. For me, artificial intelligence means automating human decision-making behaviour. A human being makes decisions about 30,000 times a day. This is what we want to automate with AI with the aim of making these decisions faster, cheaper and better.

**S. Philipp: In which everyday situations do we already encounter artificial intelligence?**

**P. Glauner:** Currently, ChatGPT is omnipresent, a chatbot that uses artificial intelligence to communicate with users via text-based messages. We also regularly use speech and object recognition on our smartphone and spam filters are also part of it. We often deal

with AI hundreds of times a day in our everyday lives without perceiving it as such, as it is often part of a larger hardware or software system.

**S. Philipp: What role does AI play in SMEs, especially in industry, and what are the potentials?**

**P. Glauner:** Decisions are made everywhere. Customer enquiries are answered, offers are written, solutions are calculated or designed. Customers expect answers and service around the clock. Chatbots can help massively here, for example, so that the customer gets his answer on Saturday morning and doesn't have to wait until Monday. Things and tasks can be implemented faster, cheaper and better through AI.

**S. Philipp: The Data Center Group builds data centres and implements IT infrastructures. What influence does AI have in relation to these?**

**P. Glauner:** AI can help in the planning of data centres. Whether in resource conservation, space-saving construction and generation of faster offers. The hardware for data centres is also changing. For example, more GPUs<sup>2</sup> are being used for AI, as well as more quantum computing in the future. (Editor's note: This means greater power densities per rack with an impact on air conditioning and power consumption). Various dimensions in the data centre sector are thus affected by AI.

<sup>1)</sup>GPU: Graphic processor unit; processing unit with improved mathematical computational capability, for use in computer graphics and machine learning tasks.

Prof. Dr Patrick Glauner is Professor of Artificial Intelligence at the Technical University of Deggendorf. As an expert, he has advised the parliaments of Germany, France and Luxembourg. He is listed by CDO Magazine as one of the world's leading professors in the field of data.

**S. Philipp: Keyword sustainability: Computing power in Germany has doubled within the last 10 years. Forecasts show that power consumption will continue to rise sharply. The use of AI consumes a lot of computing capacity for training or optimizing neural networks. What potential does AI have to move from problem to solution?**

**P. Glauner:** AI offers a great opportunity to make better use of resources, especially in the area of the energy transition. Smart grids are a good example. AI also creates new additional power consumption. For example, in recent years there has been progress through so-called "deep learning", i.e. deep neural networks. A lot of nonsense has also come out of this, because these are not needed for all problems. Smaller models that require less energy are often sufficient. Building bigger and bigger neural networks that then consume more and more data and power is not the future. Instead, we should methodically think through how we can learn even better with less power and less data. The journey must go there.

**S. Philipp: AI can also help to streamline code and save computing capacity there as well.**

**P. Glauner:** Yes, of course. One example of many is a recent paper by Google Deepmind: using new AI-designed algorithms, values could be sorted faster.<sup>3</sup> If such sorting takes place billions of times a day and an AI simplifies these processes, this has a significant positive contribution to resource consumption.

**S. Philipp: Do you have a favourite use case for AI? Where have you been most positively impressed by an application that uses AI?**

**P. Glauner:** Through my advisory work, I always see a lot of exciting things. Unfortunately, I often can't talk about them publicly.

In the case of mechanical engineering and AI, however, I was allowed to publish something. When you think of AI in mechanical engineering, you often only think of predictive maintenance<sup>4</sup>, but there are also many developments in the areas of special machine construction or automated planning. On my website you can also find a publication on this topic [Digitalization in Mechanical Engineering] ([www.glauner.info](http://www.glauner.info)).

**S. Philipp: Where do you yourself use AI privately? Have you trained your smart home or do you let Alexa assist you?**

**P. Glauner:** (laughs) In my house from the late 70s, there is certainly still potential in the smart home sector. I like to use applications with voice recognition. And of course ChatGPT to improve and optimise my texts. I don't see that as objectionable at all, but rather as an opportunity to be more productive.

**S. Philipp: Thank you very much for the interview.**

This text is only an excerpt. Read the full interview on our website:



<sup>2)</sup>Deepmind: New AI-generated algorithms provide less computing capacity and therefore lower energy consumption (source: Google Deepmind, [www.deepmind.com/blog/alphadev-discovers-faster-sorting-algorithms](http://www.deepmind.com/blog/alphadev-discovers-faster-sorting-algorithms))

<sup>3)</sup>Predictive Maintenance: Forecasts based on historical and real-time maintenance-related data



Summer,  
sun,  
summer  
party!

Bright sunshine and a great location attracted numerous employees and their families to our annual DCG summer party in early July.

On the beautiful Berghof in Dauersberg, with a nice beer garden and a fantastic view into the valley, a great program was offered: For the physical well-being, a rich grill buffet offered numerous specialties for all tastes. Good mood was also provided: A DJ provided the background music and animated the guests to dance and the large bouncy castle provided a lot of fun for all the little guests.

A photo box, equipped with numerous props, was very popular for funny snapshots.

CEO Ralf Siefen used the occasion to bid farewell to the former CEO of our partner MVV Enamic GmbH, Dr. Joachim Hofmann, and to welcome his successor, Dr. Johannes Werhahn, to the partner network. In his entertaining speech he also praised the commitment of the entire DCG team in the business year so far and took the opportunity to honor long-time employees on their anniversary.

We would like to thank all the helpers as well as the numerous guests and are already looking forward to the next summer party in 2024!



\* Many thanks at this point to the Techniker Krankenkasse, which again provided us with this attraction.

# Welcome to the team

We are continuing to expand our expertise and welcome the following new colleagues

### Since March 2023

Kira Schnell	Commercial clerk
Florian Evangelista	Project coordinator

### Since April 2023

Jessika Jäschke	Area Sales Manager
Daniel Schneider	Safety engineering planner
Denise Zöller	Financial accountant
Catja Penk	Assistant Office Berlin

### Since May 2023

Thomas Kozmann	Assembler
Andreas Köhn	Site Manager Munich

### Since June 2023

Georg Kießling	Project manager
Alexander Fritz	Project manager msr
Florian Trüstedt	Architect

### Since July 2023

Luis López Lázaro	Specialist planner TBE
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### Since August 2023

Teresa Chatzidimitriou	Apprentice Industrial clerk
Leni Kohlhaas	Apprentice Industrial clerk
Daniel Büdenhölzer	Apprentice technical product designer
Paul Bliemel	Apprentice electronics technician

### Since October 2023

Philipp Riemen	Managing director/CFO
Michaela Grab	Purchasing clerk
Lukas Klein	Service technician
Steffen von Eiff	Project manager network technology/electrical
Romina Friedrich	Draftswoman
Moritz Kohlhas	Media designer
Marco Grimm	Object observer

### Since November 2023

Holger Meier	Senior Consultant TBE
Frank Riede	Office manager Frankfurt and Project Manager Building Construction
Yi-An Lin	Student temp
David Berberich	Technical system planner supply engineering

### Since December 2023

Lea Zimmermann	Financial accountant
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### 10 years

Berthold Graben  
Björn Wäschenbach  
Jaqueline Schnorr  
Torsten Kessler  
Julia Kohlhaas  
Carla Hölzemann  
Dustin Vor  
Joachim Brenner

### 15 years

Hans-Jürgen Grabe  
Marcus Braun  
Jan Rogowicz  
Dennis Spies  
Dominik Spies

The Data Center Group team says thank you for the great commitment and wishes you continued success!



### Got married

Ina Reifenrath (née Nauroth) & Jan Reifenrath  
Nicole Grisse (née Ullmann) & Stefan Grisse  
Katharina Hain-Artz (née Artz) & Daniel Hain  
Christine Menges (née Krause) & Axel Menges  
Lisa Blecker (née Kray) & Sascha Blecker  
Laura Christin Zimmermann (née Rosenbauer) & Sebastian Zimmermann  
Laura Gerhardus (née Mockenhaupt) & Peter Gerhardus  
Stephanie Heidrich (née Engels) & Stefan Heidrich  
Yvonne Schneider (née Heuser) & Daniel Schneider

### New citizens

Jolina Tilinski	Finn & Henri Schneider
Kalle Schnorr	Mathilda Spies
Theda Isack	Henry Birkenheuer
Lena Schlösser	Sophie Gras
Mathilda Hüsch	Toni & Theo Wäschenbach
Liesel Reifenrath	Leni Blecker

# Imprint

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Responsible for the editorial content	DC-Datacenter-Group GmbH Sonja Philipp
---------------------------------------	---

Text and concept	Fabian Heinz Sonja Philipp
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