



DATACENTER COLOCATION
Flexible, Secure and Connected

Flexible Solutions for Your Requirements

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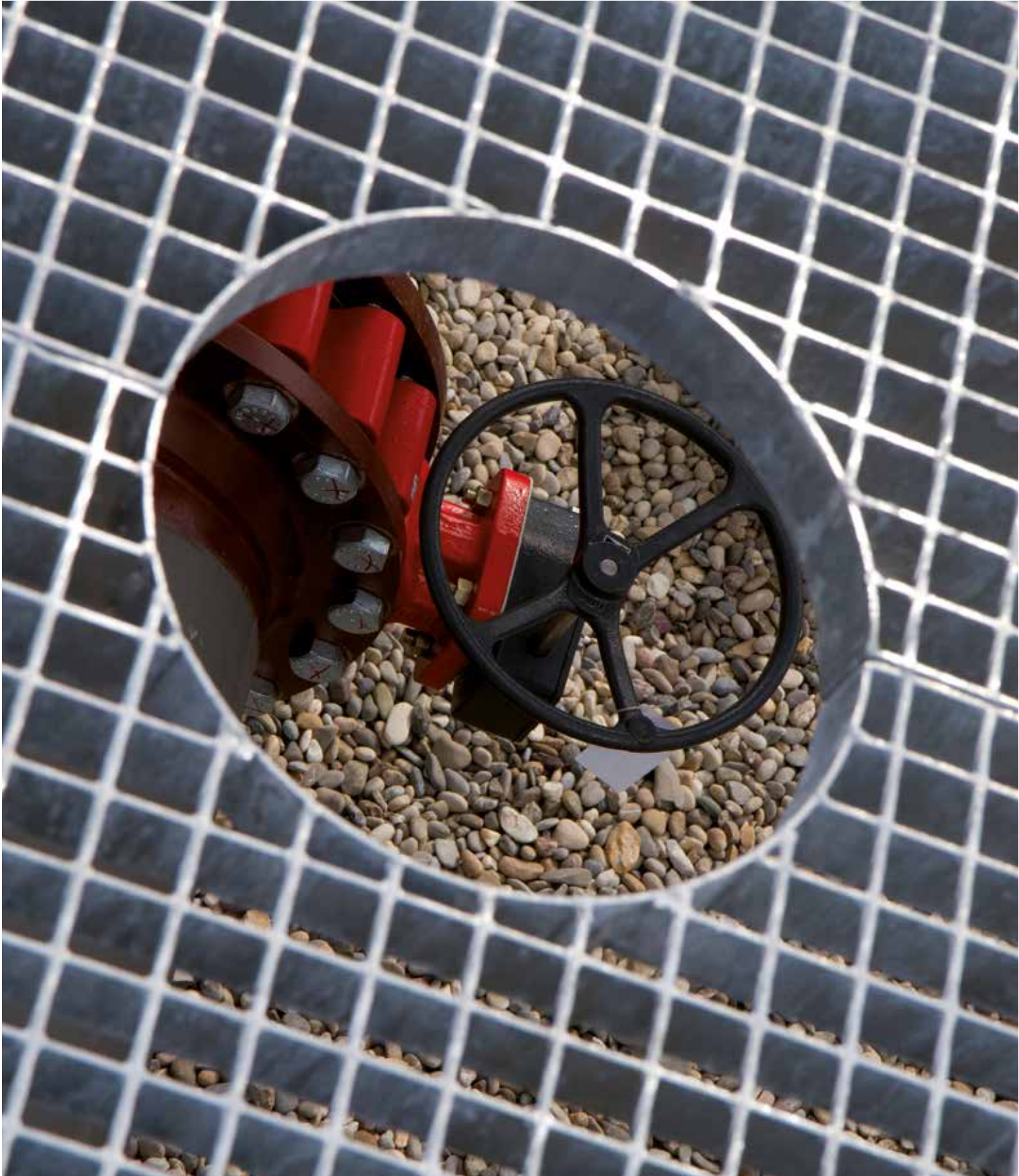
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Being Aware of the Risks Today

The challenges for IT are continuously changing through new technical developments and the new possibilities which are offered by the communications and network infrastructure – and therefore the requirements and goals of your organisation. To be able to achieve these goals, not only are financial means required, but also adequate planning to be well positioned for the future. That is why recognising, evaluating and minimizing risks is vital.

We can offer you the possibility of ensuring your IT systems are continuously available in an optimum environment – whether for short term projects or for a scheme that will be implemented in a few years' time. This brochure shows the possibilities and advantages of outsourcing IT and network systems to an external data center, whilst retaining full control of your IT – we simply provide the best possible environment.

e-shelter colocation operates high-available data center infrastructure at three central locations in Germany providing operational reliability through state of the art redundand systems to meet the highest requirements of security and availability. Further e-shelter locations are situated in Berlin, Bonn, Hamburg, Munich Rüsselsheim, Vienna and Zurich.



Chooosen for Security

e-shelter colocation provides in it's data centers in Frankfurt, Hamburg and Munich altogether round 5,000 sqm fully fitted and functional tenant technical areas and about 500 sqm of office space.

The buildings were selected on the basis of a comprehensive risk analysis in order to satisfy the demanding requirements surrounding the safety and availability of the infrastructure. In this context we paid special attention to the provision of electricity, connections to the data networks as well as protection against environmental risks.

Operating e-shelter data centers we draw from 17 years experience in the field of managing data centers:

- All external and internal installations and extensions are constructed with high quality materials according to industry standards
- To increase energy efficiency, we use proven technologies which we continuously develop ourselves in conjunction with manufacturers
- All operations follow the principle of finding the right balance between availability, energy efficiency and cost effectiveness
- The building's basic concept is flexible in order to adapt to future needs as they evolve and to ensure scalability



Security in the Best of Hands

The security of the buildings and systems is one of the key risks that need to be managed properly. For this reason, we do not entrust this task with anyone but our own security personnel. e-shelter own security officers monitor the security compound around the clock, 24 hours a day, 7 days a week.

Our colocation spaces in Hamburg, Frankfurt and Munich are equipped with state-of-the-art security systems that offer maximum protection for your IT systems:

INTRUDER ALARM SYSTEMS

- Perimeter protection
- Partial interior surveillance
- Connection to the 24/7 Security Command and Control Center (SCC) of e-shelter security GmbH

CENTRAL ACCESS CONTROL

- All doors to the leased areas are equipped with a personal, contact-free access control system
- Emergency exit doors are monitored by means of escape route terminals
- Optionally, the card readers can be equipped with PIN code keypads or biometric readers can be installed

VIDEO SURVEILLANCE

- Perimeter protection
- Interior surveillance of the entrances and corridors
- Lock monitoring
- Building surveillance up to the leased unit (including access door and the required exit doors from the leased unit)

We also offer optional additional security services:

- Regular and special patrols of security personnel through the leased area
- Monitoring of the work of companies that are active on your behalf within the leased area
- Installation and connection of surveillance cameras within the leased area (e.g. rack rows)



Systems that You Can Count On

The technical infrastructure, particularly the power supply, is the heart of every data center. e-shelter has developed and implemented a comprehensive concept to ensure the highest degree of availability of the power supply facilities.

POWER SUPPLY

The power supply and emergency power supply in the three e-shelter colocation centers run in an uninterrupted manner. In case of a public power supply outage, the leased units and technical supply systems will run on a static UPS (Uninterrupted Power Supply) system until the diesel generators can take over the supply. The UPS system and its battery systems are designed to be redundant and can bridge the power supply for at least 15 minutes at maximum load. The Diesel generators are controlled automatically, so if the power fails, the respective generator starts on its own without delay.

The power supply's performance data meets all of the requirements for high availability:

- Medium-voltage feed from the European grid via a local power supplier (3 x 1,000 kVA transformer station; 2 x 800 kVA in Hamburg)
- UPS (UPS - Power supply: 3 + 1 module x 400 kVA, 1,200 kVA; 300 kVA modules in Hamburg, 900 kVA)
- n + 1 redundant bridging time minimum 15 minutes at full load
- Emergency generators (2 x 1,400 kVA; 1 x 1,400 kVA in Hamburg)
- Fuel storage for 48 hours at full load

CARRIER CONNECTION

e-shelter operates as a carrier-neutral provider and allows access to different network carriers. e-shelter offers you the flexibility to choose among the variety of carriers and independently negotiate a contract with the provider that meets your requirements. In this environment you can benefit from carrier competition within e-shelter.

FIRE SAFETY AND FIRE EXTINGUISHING SYSTEMS

For the interior configuration of the rental units, specialist non-combustible and/or fire-resistant materials were used only. The individual data center areas are divided into separate fire safety zones, with comprehensive fire- and very early smoke detection systems:

- Comprehensive fire detection system
- Direct fire alarm link to fire patrol
- Acoustic and optical signals
- Maintenance group specific sequence control
- Fire protection walls with fire resistance 90 minutes
- Mobile gas extinguishing systems and hand-held fire extinguishers for first fire fighting actions

CLIMATE CONTROL AND AIR CONDITIONING

The air conditioning and refrigeration systems in the e-shelter colocation datacenters are designed to meet the requirements for high-availability redundant systems to ensure the maximum level of reliability:

- Redundant (n + 1) cooling equipment for the buildings
- Cold air supply from “bottom to top” via raised floor
- Star-shaped chilled water pipes to CRAC units with redundant pumps
- Economic operation of chiller plant via chillers with free cooling
- Pipe routes run outside the data center space in the maintenance corridors, which are protected by tubs and equipped with leak detection

A Solution for Every Requirement

Your needs are at the heart of our service offering. We provide highly available rack space in a specially equipped and secure colocation environment or lockable steel mesh security units all the way to self-contained, locked and monitored facilities.

Fully fitted:	e-rack™ e-power-rack e-carrier-rack	Separate space, Server and network cabinet including infrastructure
	e-cage™	Separate lockable space from 20 sqm
	e-suite	Separate locked room with a size from 300 sqm
Shell and Core:	e-area™	Provision of constructed shell and core space from 1,000 sqm
Land:	e-site	Provision of land with upstream grid connection and planning

e-rack™/e-power-rack/e-carrier-rack

Lockable 19" standard server and network cabinet, 800 x 1,200 mm, 47 height units, including redundant power connection (A- and B-supply). Standard server power available from 2 to 6 kW per e-power-rack.

e-cage™

Lockable steel mesh security unit. The individual steel mesh units are equipped with sneak-by protection in the raised floor. Available space from 20 sqm to be built according to your individual needs and operated within a larger data center space with other e-cages™.

e-suite

Self-contained, locked and monitored space with an area from 80 sqm. Each e-suite represents a separate fire fighting section in the F 90 class. Layout, operational parameters and security features can be customized to your needs.



Good Reasons for Security with e-shelter

e-shelter currently employs over 400 staff. They are drawn from an exceptionally wide range of sectors and they all have one goal: finding the best possible solutions for your challenges at all times.

SUSTAINABILITY AND ENERGY EFFICIENCY

We continually strive to enhance the energy efficiency of our data centers. We gain the know-how to master these challenges from the empirical analyses of existing data centers. We familiarise ourselves with the latest technologies on the basis of a close collaboration with research institutes and industrial associations. We already use optimised and coordinated cooling technologies such as free cooling, newly developed high temperature heat pumps, adiabatic cooling and cold aisle containment systems. Exhaust heat is used to heat the adjacent buildings.

EXPERIENCE AND SUSTAINABILITY

With 17 years of experience operating data centers that run over approx. 90,000 sqm of space, our engineers have considerable experience in the development of new, and always more efficient, systems. You will benefit from the know-how and experience of our specialists: we plan, build and operate data centers using all of our energy and dedication.

e-shelter is certified according to DIN EN ISO 9001.



Infrastructure and Technical Services

INTERNET CONNECTION

In cooperation with a global telecommunications provider, e-shelter offers optional high-performance Internet connections in all e-shelter locations.

The bundling of high-quality data center space (e-power-rack) with a high-performance Internet connection from a global Tier 1 supplier offers an advantage for you as a tenant.

The contracted bandwidth can always be extended to the next billing period with a lead time of ten business days.

- Access to a high-performance global IP network
- Possible connection bandwidth (port range): Gigabit Ethernet or 10 Gigabit Ethernet
- Choice of 100 Mbit/s to 10 Gb/s effective bandwidth/Flatrate
- High availability: 99.98% unprotected and 99.99% protected



Additional Services:

We are pleased to assist you throughout the implementation phase. From planning your move to supporting you during operations, our specialized staff is here to help you.

PLANNING PHASE

- Close co-operation in the preparation of the requirement profile of the data center area, such as power supply to the rack, SAN, LAN and WAN cabling and high-density solutions
- Support and coordination of outside planners
- Assistance with relocation planning

IMPLEMENTATION PHASE

- Coordination of the partners involved in the implementation of the data center
- Relocation support of the IT systems
- Monitoring of the delivery of systems and components
- Construction, reconstruction and adaptation of the racks
- Electric power supply to the rack, SAN, LAN and WAN cabling and high-density solutions
- Labeling and detailed inventory of delivered systems

OPERATION PHASE (24/7 First-Level Support/Remote Hands and Eyes)

- Exchange of customer components, such as hot-plug hard drives
- Conducting hardware-based tests, such as restarting components
- Check of externally visible status of components
- Conducting and organizing cable installations, plugging of loop connectors
- Inserting, changing and storage of data carriers (DVDs, floppy disks, tapes)
- Documentation, labeling or marking of equipment
- Creation of schematic technical drawings

OFFICE SPACE

We also offer modern office spaces, which lie in the immediate vicinity of the data center areas. As with our data center areas, you have the ability to adapt your office or work spaces and their installations to suit your needs.

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The information in this brochure contains only general descriptions which may not apply for each individual case or may change as products and service levels are adapted to new technological development. The required service elements are only binding when explicitly stated in a service contract. Technical specifications may be subject to alterations.

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