



# Data Centre Services

Efficiency and  
resilience delivered  
at high pace





# About Deerns

**Deerns gathers leading experts in data centre design, technologies, concepts and execution.**

Our international teams of over 500 professionals located in 9 countries, develop projects globally. Our data centre specialists have an in-depth understanding of the business models informing a clients' business case for their data centre. Our international and entrepreneurial culture focuses on providing our clients with high quality services and the best advice in over 60 countries.

**We operate in 6 market segments**



Airports



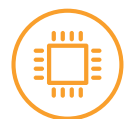
Real Estate



Health Care



Life Sciences



Electronics



Data Centres

Data Centre Services

Data Centre Services

## International Capacity

**Perfect balance between local delivery and global coordination**

Deerns is an international consulting and Engineering firm specialised in building physics, MEP design, Sustainability and Smart Buildings consultancy. The result of our design is reliable, energy-efficient and cost effective data centres. Deerns has extensive experience in designing data centre facilities of large financial institutions, large internet service and colocation providers and telecommunication companies

### Offices in 9 countries

Local offices established in Brazil, France, Germany, Italy, Kuwait, Spain, The Netherlands and the United Kingdom with resident Building Physics and MEP

engineers, data centre specialists and project managers. Partnerships established in India and S.E Asia to serve local requirements.

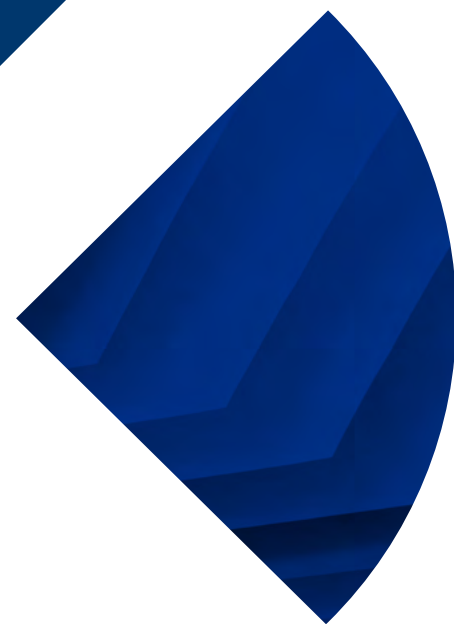
**Deerns Data Centre teams connect and consolidate our expertise globally. We deliver:**

- a consistent, resilient, reliable response to data centre project design
- market Intelligence on engineering trends
- state of the art solutions for the data centre industry
- best practice design and cost expertise leading to optimization of the data centre business case.

● Deerns Offices  
● Deerns Partnerships



# What defines us



## Proudly Confident

We stand by our convictions,  
based on decades of expertise.

## Forward Thinking

Looking ahead with an entrepreneurial  
mindset, Deerns pulses with ideas &  
opportunities that make a difference.

## Boldly Daring

We take on challenges, pushing  
ourselves and others to transform  
ambitions into reality and concepts  
into tangible outcomes.



# Our Confirmed Experience



Enhance your Data Centre Business with 90+ years of Cost-effective Design Experience:

## 1928

Founded in 1928, Deerns is a highly experienced multinational engineering consulting firm designing state-of-the-art building systems and manufacturing facilities

## €65 Mln+

We've successfully delivered over €65mln per year in services and products to our clients, with 14% revenue from Data Centre projects

## 500+

Deerns has developed over 500 data centre designs and concepts:

- >2.5GW of IT power in buildings ranging from 250KW to 64MW >500MW of IT power with PUE <1.2
- >1,000,000m<sup>2</sup> of white space, from 100m<sup>2</sup> up to Hyperscale DCs
- <1.2PUE DC - our first data centre delivered in 2007

# Effective Teams

Fast, responsive and reliable teams of Data Centre specialists

## Over 100 full-time consulting

Specialised in data centre business and technical challenges, our teams are responsive and resource based. Our data centre (DC) specialists have a strong track record of work on DC projects at any life-cycle stage in locations across the globe:

- overseeing the entire production cycle
- going beyond the project boundaries
- quickly understand business needs ensuring rapid project execution.

Our consultants and engineers manage the specific, innovative and critical nature of data centre projects. In addition they ensure these match business and technological developments.

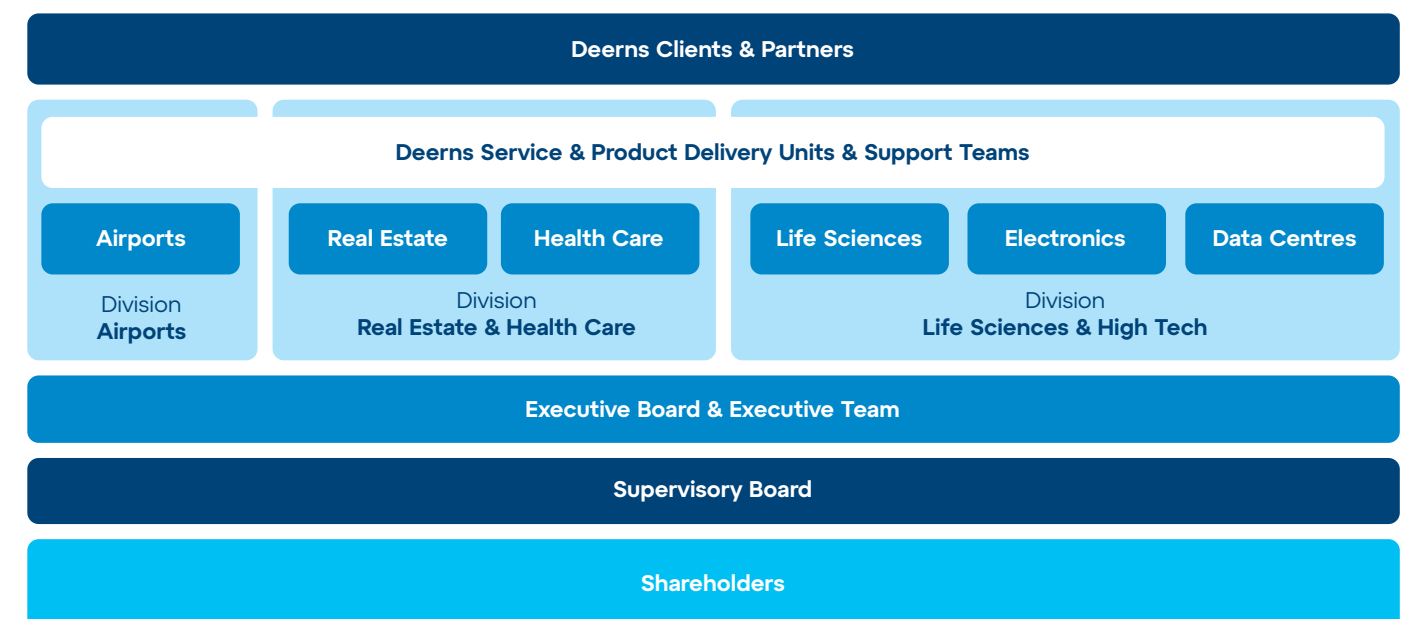
## Lean Engineering and PRINCE2 Certified Project Managers

Deerns Lean Engineering processes minimise damage repair and increase process control. Our data centre managers are certified to the PRINCE2 project management approach.

## BIM - Building Information Modeling

Our BIM designs enable integral engineering and full clash control. Our BIM models offer a complete virtual model prior to construction, providing real-time insight of design changes to every team member. Our complete design approach to projects in BIM is critical for successful facility -, change -, asset - and maintenance management in the operational phase of a building.

## Deerns Delivery & Support Teams



# Our Services

We design highly modular innovative and reliable data centres with minimum CAPEX & OPEX, high ROI and low PUE

A holistic data centre life cycle approach is critical in the highly competitive data centre market. A strong focus on the CAPEX at the start of the projects could lead to high OPEX costs over the life span of the data centre. Consequently

the risk, return of investment (ROI) and Power Usage Effectiveness (PUE) need to align, alongside other critical business priorities such as sustainability targets. At Deerns we step up to this challenge, balancing these critical aspects.

Our consultancy and design services respond to your challenges

Deerns has a full service portfolio which provides data centre clients with a single point of contact for the entire data centre life-cycle stages and consultancy. We provide design, construction management, operations support

and expert services (modelling and analysis) as well as overall project management.

The image below details the services Deerns provides in response to critical business challenges.

Data Centre Strategy >

Data Centre Implementation >

Business Optimisation (ROI, Reliability, Adaptability) >

## REALISATION

### Consultancy

- Data Centre Roadmap
- Site Requirements
- Budget Cost
- Due Diligence
  - Technical
  - Site Selection
- Site Master Planning
- Utility availability sites

### Design & Engineering

- Technology selection
- Scenario planning & modelling
- Select & develop best concept
- Detailed design documents
- End-to-end tender management
- BIM

### Assurance

- Construction phase support
- Testing & commissioning
- Staff Training: ops & maintenance
- Develop procedures & protocols
- Operational excellence programmes

## EXCELLENT OPERATIONS

### OPEX

- Maintenance planning & management
- PUE, WUE, EUE, CO<sup>2</sup>
- TCO & Investment – prioritising
- Building system characteristics
- Airflow management
- CFD modelling
- Building Physics
- Thermal Analysis

### Reliability

- Reliability simulation & analysis
- Audits, second opinions
- Tier & TIA audits
- SPOF analysis
- Security audit
- Fire Safety
- Procedures & protocol
- Staff Training
- Change management

### Asset Utilisation

- Virtual DC model
- Digital twins
- Digital record documentation
- IT capacity control metering & DCIM
- Site & strategic planning
- Migration & expansion
- Life cycle analysis
- Structured cabling review

Time to Market

Zero Downtime

Business Agility

Cost Effectiveness

Assurance

Our services

Your challenges

We build our full data centre service package on our exceptional understanding of the clients' business model and requirements



# Our Reliable Innovation Capacity

Our Designs generate  
high value: low PUE,  
low risk, modularity  
and ease of maintenance

## Our efficient design provides you with strategic advantage and added value

### Best concept definition

Our teams deliver full analysis of available technologies, effective concepts and layouts for your data centre, allowing you to select the best systems for your business case. We achieve this through thorough awareness of current market and supplier developments, and through and expert translation of customer needs and business drivers.

### Doubling Down on Decarbonisation

Digitalisation is triggering global demand of data centres at a consequential moment in the race to net zero carbon. From site selection to decommissioning Deerns is weighing in with major global players in accelerating the journey together. We are Doubling Down on Decarbonisation by translating the principles of decarbonisation into reality.

### CAPEX, OPEX, TCO and PUE calculations for decision-making

Deerns designs reliable and efficient concepts, selecting the combination that will yield the highest value for the client, in terms of Total Cost of Ownership (TCO), low PUE, low risk, modularity and lease of maintenance.

### Best Practice Process for Design & Build Data Centres

With an integrated holistic data centre approach, our teams can make joint identification of best concept design. Thereby, we meet and outperform international best practices, serving as the basis for one Design & Build contract, with detailed design and engineering, construction and testing.





# Development of tailored solutions for your business cases

Deerns has developed and patented several data centre solutions based on tailored concepts that were specifically designed for our clients' business cases.



## Equinix, ML5, Greenfield Colocation, Italy

Deerns provided greenfield colocation (GC) with MEP activities during construction of ML5.1 from design phase (RIBA stage 4c, 5 & 6) to O&M Manual at the handover of construction phase, including T&C activities. Deerns also supported GC and Equinix to review the 2-floor design for TIA 942 Rate 4 certification. The scope of work included supporting GC in the LEED certification process during construction and to be LEED silver certified.

## Cloud House - Dock Water Cooling Design, DRT, United Kingdom

Refurbishment of an existing shell & core building into 11,127m<sup>2</sup> data centre with 4.5MW capacity over 7 floors. The cooling of the white space's and associated electrical rooms are provided by sustainable, and concurrently maintainable dock water cooling installation, located in the heart of Docklands area of London's financial district.

## Two Mega Data Centres, Confidential Client, Brazil

As lead designer for two separate greenfield data centre campus sites in Brazil, Deerns provided the designs and permitting requirements for a 60MW and a 40MW data centre project simultaneously. We led architectural, civil & structural duties; provided via sub-contractor partners in the UK and Brazil.

## Rainwater Harvesting, Confidential Client, Brazil

At a hyper scale data centre, using evaporative cooling, a rainwater capture and storage system could become cost neutral 5 years after the initial capex investment.

## Waste Heat reuse, maximising Data Centre output

Deerns designs and implements waste heat recovery for heating office buildings and district heating, an economically attractive solution for to meet demand for low value heat.

## Sea Water Air Conditioning to use Nature best

Implemented in several Deerns projects, this uncomplicated system allows for a data centre free of chillers, dry coolers and cooling towers, thereby generating low PUE, low CAPEX and low OPEX.





# We provide “Best In Class” Data Centre performance and consultancy

We design Data  
Centres with  
TIER IV reliability  
and TIER III costs

## Uptime Institute Certification

Supporting you in the management of the entire Tier Certification process, we offer independent certification of reliable operational performance. Our teams comprise accredited:

- TIER Designers (ATD)
- TIER Specialists (ATS)
- Operational Specialists (AOS)

## Sustainability Consultancy: LEED, BREEAM, HQE, Energy Star

Deerns sets up, executes and monitors the certification procedure aligning with data centre schedules and adds priorities and provides credit analyses for cost-efficient certification. Our consultants provide support for LEED, BREEAM, HQE and Energy Star philosophy and certification.

## DCIM, instrumentation & Control

Deerns is at the forefront of Data Centre Infrastructure Management (DCIM) design, providing the entire scope of availability and reliability analyses and simulations. Deerns prescribes, evaluates and validates each component through to full facility integrated performance for all fault scenarios.

## TIA Certification

You can rely on our TIA accredited professional to support you in the management of the certification process. Our independent certification teams comprise:

- Certified DC Professionals (CDCP)
- Certified TIA-942 Design Consultant Professionals (CTDC)

UptimeInstitute®



BREEAM®







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