



GREEN
BUILDING
DESIGN

25 YEARS OF ENGINEERING EXCELLENCE

SPECIALIST LOW CARBON ENGINEERS FOR DATA CENTRES & CRITICAL ENVIRONMENTS



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Low
Carbon
Consultant

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ABOUT US

Green Building Design is a multidisciplinary building services consultancy with 25 years of engineering excellence, delivering resilient, energy-efficient and future-ready data centre environments across the UK.

Data centres demand absolute certainty - in uptime, resilience, scalability, compliance and operational performance. At Green Building Design, we bring the specialist engineering expertise and practical delivery mindset required to support these mission-critical

facilities at every stage: from early feasibility and site selection through to detailed design, plant replacement, fit-out, technical due diligence and expert witnessing.

We understand that a modern data centre is no longer just a building - it is essential national infrastructure, supporting the digital economy and public services, and requiring engineering solutions that balance performance, reliability, sustainability and cost.



THE UK DATA CENTRE MARKET

The UK's data centre market is entering one of its most significant growth phases in decades, driven by AI, cloud adoption and increasing digital resilience requirements.

- Data centres were designated as Critical National Infrastructure (CNI) in 2024, placing them alongside sectors such as energy, water and emergency services.
- Around 80% of the UK's data centre capacity is concentrated in London
- UK data centre take-up in 2025 reached 183MW, exceeding previous highs and reflecting accelerated demand.
- UK data centre investment is projected to rise dramatically, with spend expected to surge to £10bn per year by 2029 as demand accelerates nationwide.

This growth creates new pressures on design teams: grid capacity constraints, planning and permitting complexity, efficiency and carbon reporting expectations, and the need to future-proof facilities against evolving technology and resilience standards.

At Green Building Design, we are positioned to help clients navigate these challenges with engineering clarity and confidence.

OUR DATA CENTRE EXPERTISE

We provide specialist building services engineering for data centres and critical environments, supporting projects across both new-build and live operational sites.

Data centres operate under a different set of rules to conventional buildings. Every decision can affect uptime, resilience, maintainability and operational continuity. That's why we design with a mission-critical mindset from day one, balancing performance and compliance with the real-world demands of construction delivery, commissioning and long-term operations.

We bring a practical, solutions-led approach that combines deep technical expertise with strong commercial awareness - ensuring engineering designs are not only robust, but buildable, maintainable, scalable and aligned to business risk.



25 YEARS OF ENGINEERING EXCELLENCE

WHY ARE WE DIFFERENT?

Mission-Critical Focus

We understand the operational pressures and risk profile of data centres, where reliability is paramount and engineering must support continuous operation.

Low Energy, High Resilience

As specialist low carbon and low energy engineers, we look beyond standard engineering approaches to reduce waste, optimise efficiency and support sustainability goals, without compromising resilience.

Collaborative Delivery

We work proactively with client teams, architects, cost consultants and contractors to ensure fully coordinated designs that are practical, buildable and aligned with programme requirements.

Trusted, Experienced Engineers

Our team has decades of experience delivering technically complex, high-performance building services solutions for facilities that operate 24/7, with zero tolerance for failure.



OUR DATA CENTRE SERVICES INCLUDE:

Feasibility & Strategy

- Feasibility studies for new data centres and expansion of existing operational facilities.
- Early-stage masterplanning support to unlock scalable and phased delivery.
- Engineering option appraisals focused on resilience, energy performance and CAPEX/OPEX optimisation.

Site Selection (Greenfield & Brownfield)

- Greenfield and brownfield site assessments to confirm suitability for critical infrastructure.
- Site constraint reviews including power availability, access, risk profile and capacity planning.
- Support for selecting locations aligned to operational objectives and future expansion.

Technical Due Diligence (TDD)

- Technical Due Diligence surveys on existing data centre sites.
- Engineering risk identification and lifecycle planning for upgrades or acquisition decisions.
- Performance, resilience and compliance reviews of existing MEP infrastructure.

Detailed Design

- Full detailed design for data centres, including critical MEP systems integration.
- Plant sizing, redundancy strategy and maintainability planning.
- Design coordination with architects, project managers & construction teams to support real-world delivery.

Plant Replacement & Fit-Outs

- Live-site plant replacement strategies with controlled risk and continuity of operations.
- Fit-outs and infrastructure upgrades to support increased load, new technology or tenant requirements.
- Solutions that improve reliability while reducing energy waste and long-term operational cost.

Expert Witnessing

- Expert witnessing services for data centre engineering and technical disputes.
- Support across independent verification, reporting and professional opinion.

Our data centre designs are developed in accordance with **Uptime Institute Tier III and Tier IV requirements**, ensuring robust engineering that supports high availability operations and resilient infrastructure principles.

Where clients require formal certification pathways or Tier-aligned delivery, we provide the engineering detail and discipline needed to ensure design intent translates into operational reality.



TRUSTED BY LEADING CLIENTS

We have delivered services within data centre and critical infrastructure environments for a wide range of major operators, enterprise clients, telecommunications providers and financial institutions, including:



J.P.Morgan



TelecityGroup



FACTSET



GoDaddy



ARK



VISA

GLOBAL SWITCH



rackspace
technology



This experience gives us a deep understanding of the differing expectations between colocation, enterprise and financial-sector environment; including security, resilience and compliance-driven design.



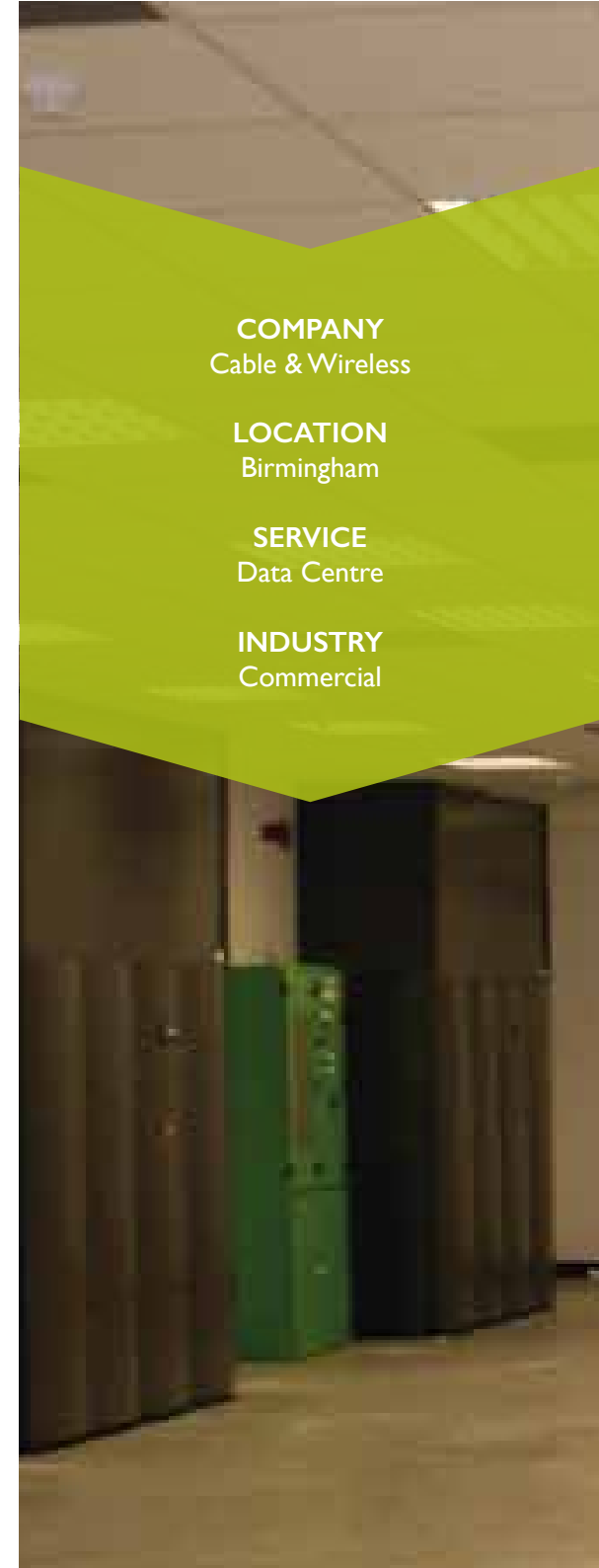
CASE STUDY

BIRMINGHAM DATA CENTRE

Green Building Design redeveloped two spaces at an existing data centre to create two new Tier III data halls. The works took place while the rest of the data centre was live, including working around live busbars running below the floor and installing 16 new downflow units for cooling to the data halls.

Key Features:

- Expansion of existing data centre through the creation of two new Tier III data halls with a total useable area of 430m² (4600ft²)
- Design load for new data halls of 1000W/m² at 0.8 power factor
- Data centre remained live throughout the duration of the works and new data halls are integrated with the rest of the data centre
- Two new 480kVA UPSs to support new data halls
- Ten minute battery bank supporting the new data halls
- Two separately fed transformer supplies to data centre
- Each cabinet is fed by two fully independent supplies so that no cabinet has a single point of failure



COMPANY
Cable & Wireless

LOCATION
Birmingham

SERVICE
Data Centre

INDUSTRY
Commercial



CASE STUDY

WEST LONDON DATA CENTRE

Green Building Design has worked with this major telecommunications company since 2009, improving the efficiency and reliability of their data centres.

For one of their largest data centres, it was running close to capacity and there was a risk of failure of PDUs, which had the potential to impact the entire data centre.

The GBD team calculated a rebalance analysis, stripped out over 500 redundant cables, and produced a new model which incorporated every circuit in the data centre so that future loads could be monitored by the client.

The data centre is operating today with a much improved resilience and no risk of complete outages.

Key Features:

- Strip out of over 500 redundant cables simplified system reducing risk of errors in future
- Rebalancing of loads across PDUs reduced risk of power failure to data cabinets



COMPANY
Major telecommunications
company

LOCATION
London

SERVICE
Data Centre

INDUSTRY
Commercial

CASE STUDY

INTERNATIONAL TELECOM COMPANY

A long-standing international telecoms client is investing over £5m on energy saving measures to further reduce the environmental impact of their data centres throughout the UK.

This investment in projects managed by Green Building Design is set to pay back within 3 years through reduced electricity consumption. Whilst the client operates some of the most efficient data centres in the industry, these enhancements will further improve performance by actively managing heating and cooling to meet fluctuating demands on a daily basis.

Green Building Design has extensive experience in this area and have developed a unique design and build service, which the client is currently implementing at 10 separate projects across the UK.

Key Features:

- Systems were originally designed with limited control for cooling, based on a theoretical load
- Energy consumption is reduced by installing new control equipment to adjust heat transfer as required locally throughout the data centre
- The data centres are used by a wide range of companies on a co-location basis, benefiting from a low Power Usage Effectiveness (PUE) value of 1.25
- Green Building Design measure energy usage before every project and estimate potential cost savings
- Energy consumption is reduced by installing new control equipment to adjust heat transfer as required locally throughout the data centre
- The company has been carrying out these projects for over 10 years and even though external temperature can affect results, the forecasts have been accurate to within a 10% margin

COMPANY
International Telecom Company

LOCATION
UK

SERVICE
Data Centre

INDUSTRY
Commercial



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