

# LHR21 Vantage DC

<b>Client</b>	Vantage Data Centres
<b>Value</b>	Confidential
<b>Completion</b>	October 2025
<b>Form of contract</b>	Design and Build
<b>Architect</b>	NWA
<b>Engineer</b>	Pinnacle

## Project Overview

Glencar delivered LHR21, a six-storey, 194,000 sq ft data centre forming part of Vantage Data Centers' London campus expansion in Park Royal. The project required the construction of a highly serviced, mission-critical facility on one of the most constrained industrial sites in Europe, where access was shared with National Grid and where the sequencing of deliveries, lifting operations and internal trades demanded meticulous coordination.

Designed for uninterrupted 24/7 operation, the building integrates dense technical floors, extensive rooftop plant and a dedicated generator gantry, all supported by a structural steel frame and high-capacity mechanical and electrical systems.

From early technical design through to completion, the project was underpinned by a robust BIM and information-management strategy to maintain accuracy, reduce risk and support commissioning. Delivery encompassed full structural construction, installation of complex MEP systems, integration of Owners Furnished Contractors Installed (OFCI) plant and phased technical fit-out readiness. Practical Completion was achieved in October 2025, providing Vantage with a resilient, operationally efficient facility designed for long-term maintainability and future growth.



## Project Specifications

LHR21 comprises 15,230 m<sup>2</sup> of technical and support accommodation across six floors, each providing a 5.75-metre floor-to-floor zone to accommodate intensive plant and containment requirements. The structure reaches 34 metres to roof level and 40 metres to the top of rooftop equipment. The building is formed of a structural steel frame with light-gauge steel framing and insulated metal panel cladding, complemented by glazed office areas. A screened rooftop plant deck houses fifteen 1.8 MW chillers, and an independently supported gantry accommodates fourteen standby generators and associated HVO fuel storage. Three lifts, including a freight lift, support equipment and personnel access.

## Key Specifications

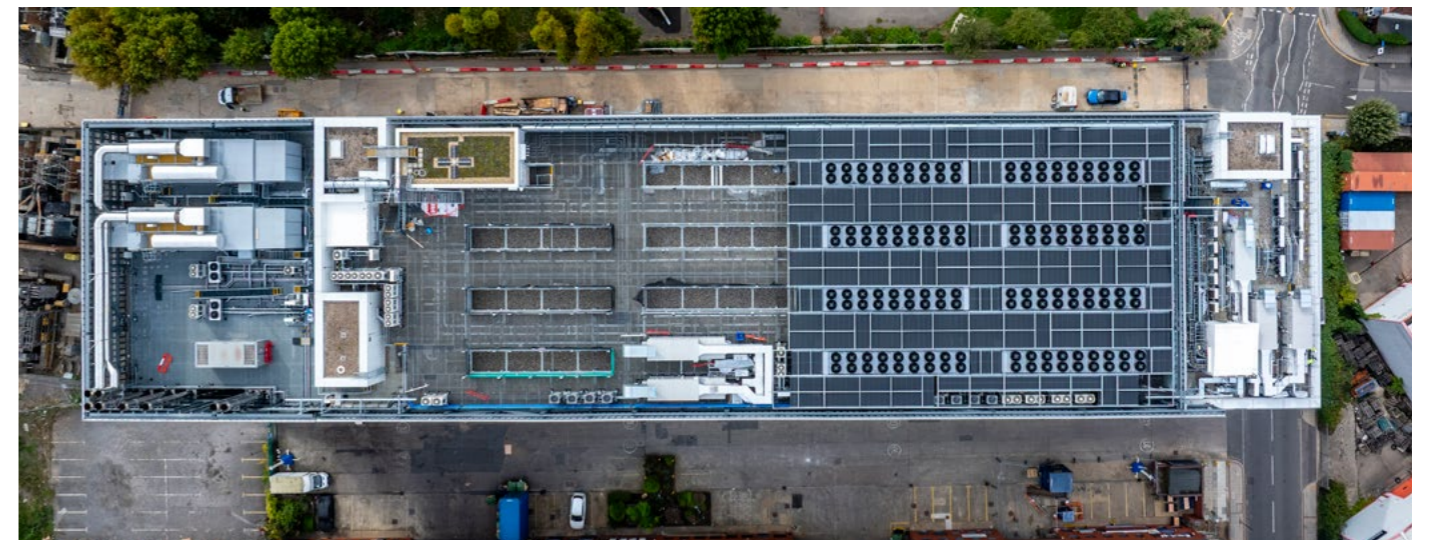
- » Total floor area: 15,230 m<sup>2</sup>
- » Six floors, 5.75 m floor-to-floor; 34 m building height
- » 20 MW IT load (26 MW total building load)
- » 15 air-cooled chillers (1.8 MW each)
- » 14 standby generators on independent gantry
- » Structural steel frame; IMP façade; three lifts

## Construction Metrics

Construction was managed under a detailed planning and reporting framework, with a Primavera P6 programme governing critical path activities, OFCI interfaces, high-risk operations and multi-trade sequencing. The project recorded approximately 1.19 million man-hours, with workforce levels peaking at around 475 personnel during intensive MEP phases.

A defining component of the construction phase was the coordination and execution of complex mobile crane lifts required for OFCI plant and equipment. Operating on a postage-stamp site with a single shared access route, these lifts demanded early engagement with local authorities, National Grid, specialist lifting contractors and neighbouring occupiers. Detailed lift plans, phased delivery windows and community communication ensured that major operations could be completed safely and without disruption, while maintaining programme continuity. This collaborative approach enabled the controlled installation of generators, rooftop chillers and large-scale MEP assemblies within some of the tightest logistical constraints in London.

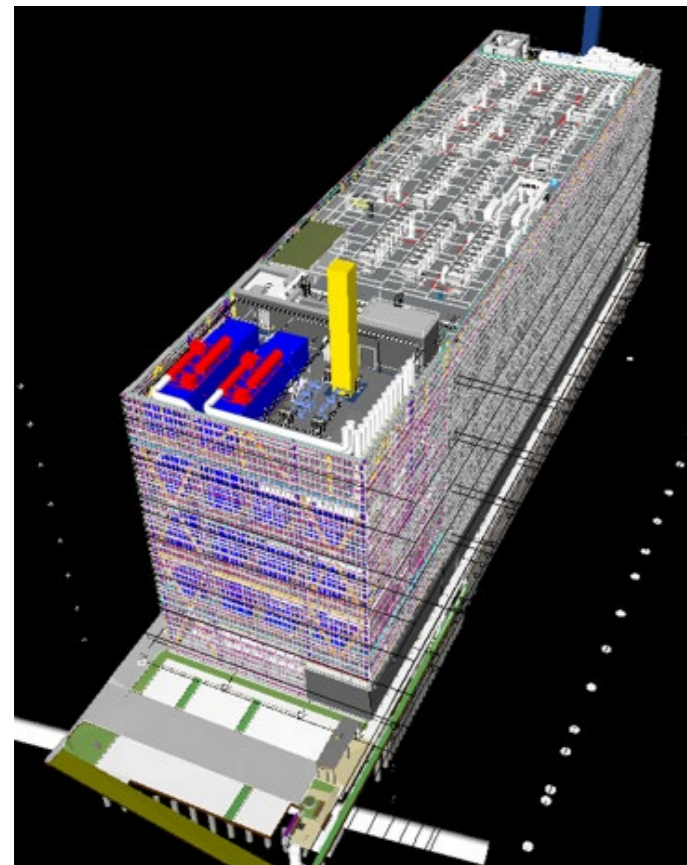
Commercially, early procurement of critical packages based on Stage 3 design information allowed specialist subcontractors to contribute to buildability reviews, long-lead forecasting and logistics planning. Change control was overseen through continuous QS involvement in design coordination, ensuring clarity around scope development and accurate reporting to the client throughout delivery.



## Engineering & Systems

Engineering delivery centred on integrating high-density mechanical and electrical services across a multi-storey building while maintaining safe access for installation, commissioning and future maintenance. Large risers and constrained corridor routes required coordinated trade sequencing and continuous monitoring to prevent congestion and protect programme flow. The mechanical system consists of fifteen air-cooled chillers and a resilient cooling network serving several technical floors, supported by engineered plant areas designed for clear access and future replacement.

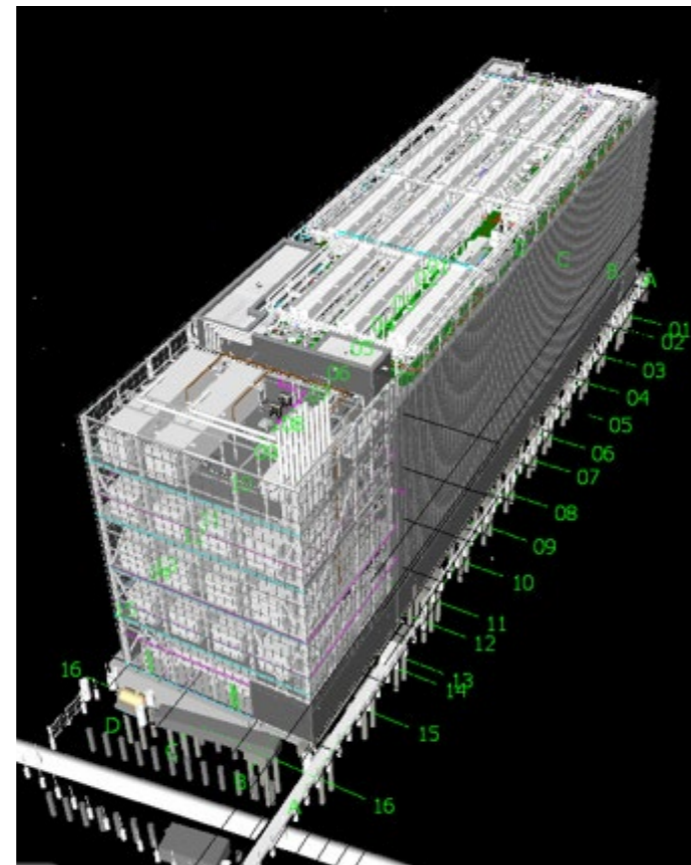
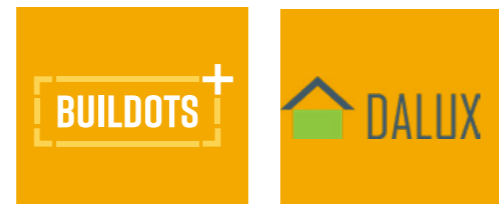
Electrical systems deliver a 20 MW IT load within a total building load of 26 MW, backed by fourteen 2.6 MW generators fed from 120 m<sup>3</sup> of underground HVO storage. The fire strategy was coordinated through regular workshops with the fire engineer, building control and specialist contractors, supported by BIM visualisations to validate compartmentation, penetrations and compliance pathways. Parallel engineering solutions accommodated underground services beneath external areas, enabling construction of the yard and car park without impacting existing infrastructure.



## Technological Integrations & Innovation

Digital engineering formed the backbone of delivery. Glencar implemented an ISO 19650-aligned BIM process from tender through RIBA Stage 6, supported by a clear BIM Execution Plan and strict information standards across all disciplines. Regular model audits, clash coordination workshops and structured review cycles reduced rework risk and maintained a reliable single source of truth for the project team. Dalux was used extensively for field quality management, issue tracking and installation verification, while Buildots provided AI-driven progress assessment to support programme assurance.

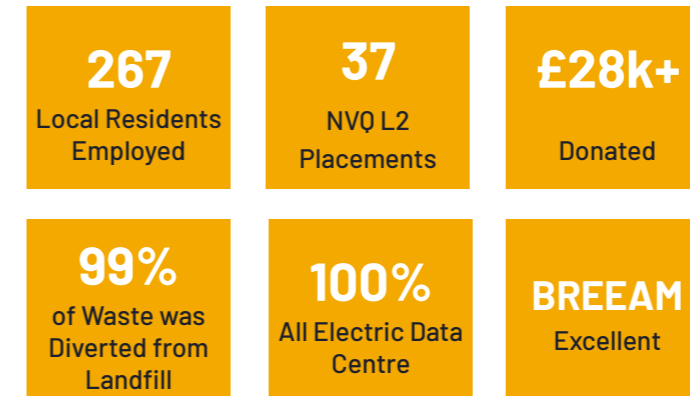
During commissioning, digital workflows ensured that as-built models, COBie datasets and asset information were complete, validated and uploaded to the Common Data Environment. This provided the client with a fully traceable, information-rich digital asset to support FM operations from day one.



## Performance, Sustainability & ESG

LHR21 is an all-electric facility with no fossil-fuel heating, supported by HVO-fuelled standby generation. The building includes infrastructure for waste-heat recovery and features efficient cooling and water management systems designed for high-density IT environments. During construction, 99% of waste was diverted from landfill, achieving a low waste generation rate of 3.4 tonnes per 100 m<sup>2</sup>. The project achieved a BREEAM Data Centre Excellent rating and is designed to operate at Net Zero carbon.

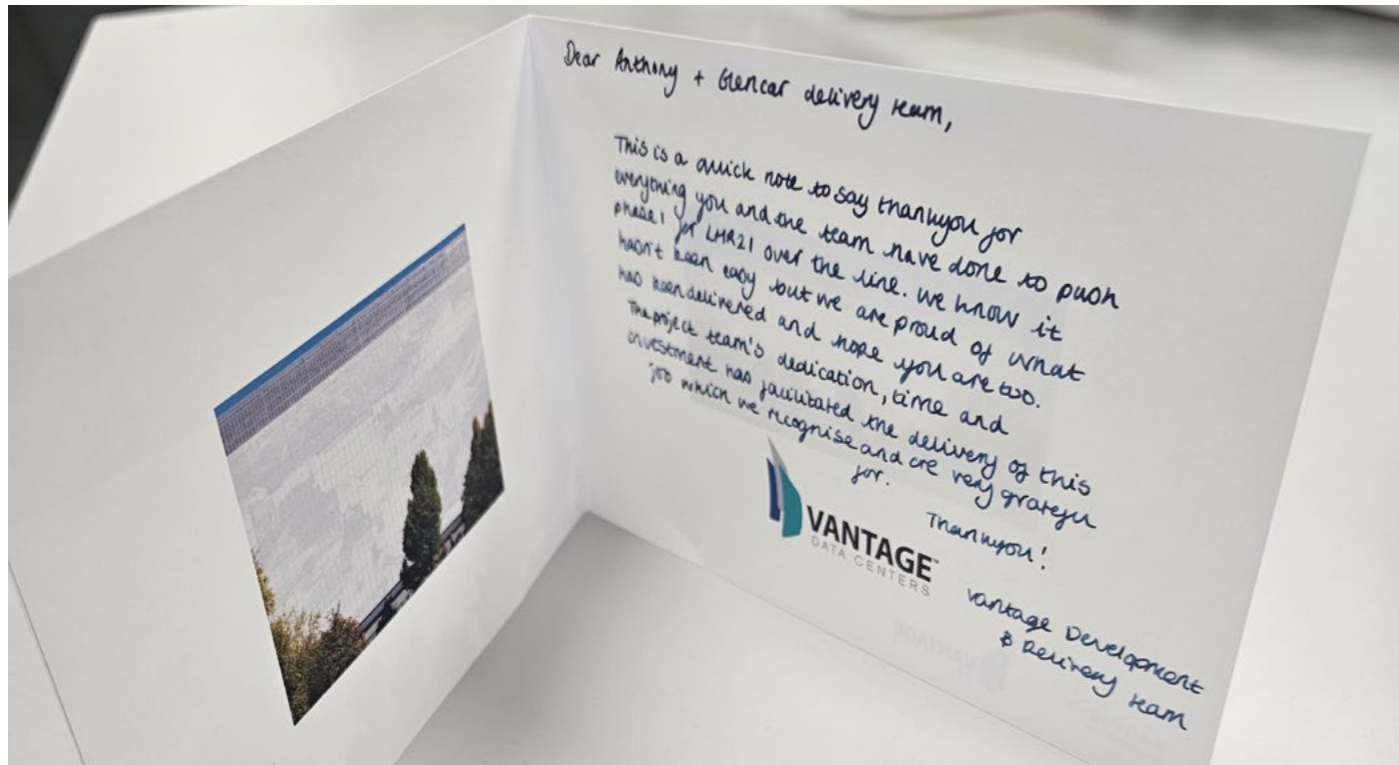
The project also delivered measurable social value. Local labour represented 21.4% of the workforce and 37 apprenticeships and accredited training placements were supported throughout delivery. Engagement activities reached more than 1,700 students through workshops, career talks and site visits, while volunteering and charitable contributions exceeded £28,000. The façade artwork, 11 Million Dots, reflects the project's collaborative approach with the local community.



*"The Glencar team have worked tirelessly over the last two years to deliver a very challenging and complex data centre build, in close collaboration with the client and project team and with a focus on maintaining strong relationships with all parties involved"*

**Brian Taylor, BCS Consultancy**





### Outcome & Impact

LHR21 was delivered as a resilient, high-performance data centre capable of supporting dense IT installations and continuous operation. The coordinated integration of MEP systems, OFCI plant, digital engineering and controlled logistics ensured predictable delivery in one of the most restricted industrial environments in London. At handover, the client received a robust, fully commissioned facility with validated asset information and clear pathways for future expansion. The project also delivered strong community and environmental benefits, creating a positive legacy beyond the immediate operational requirements of the building.



“ We acted as architect on Glencar’s LHR21 scheme, delivered on a highly constrained site. They brought professionalism, a forward thinking attitude and strong problem solving to the challenges. Glencar proved to be reliable, positive and highly collaborative and we would be glad to work with them again. ”

Jonathon Stockdale, Director - NWA



# LHR21, Vantage DC, London

Six-storey, 20 MW data centre.

## Project Overview

- » 194,000 sq ft facility designed for 24/7 mission-critical operation
- » Integrated delivery of structure, MEP, OFCI and technical fit-out
- » Precise logistics sequencing due to shared National Grid access

## Digital Engineering

- » ISO 19650-compliant BIM from RIBA 4 to handover
- » Federated model used for coordination, clash avoidance and audit
- » Dalux for design/quality verification; Buildots AI for installation accuracy
- » Structured COBie and asset data supporting FM from day one

## Engineering & MEP Integration

- » High-density systems coordinated through digital and physical sequencing
- » Complex risers, switchrooms and main corridor managed through detailed planning
- » Early engagement with generator and chiller suppliers to secure lead times
- » Benchmarking, ITPs and W3/W4 walkdowns set clear quality expectations

## Logistics & Programme

- » Logistics solutions built around restricted access and OFCI plant movement
- » One-hour contingency windows for crane operations due to National Grid road
- » Holding area used to maintain flow and avoid congestion
- » P6 programme reporting: critical path, drop lines, SPI and S-curves

## ESG & Community

- » 21.4% local labour; 37 apprenticeships; 304 volunteering hours
- » 1,702 students supported through education outreach
- » 99% waste diverted from landfill; Net Zero carbon in operation
- » Public façade artwork created with local residents

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