

HEXAGON

Case Study

Holgate Feasibility

Hexagon was engaged to undertake a feasibility study for a proposed new facility at Holgate Rail Depot.



Customer
Cairn Cross/Network Rail

Completion Date
June 2023

Location
Holgate

ABOUT US

HEXAGON formerly Epsilon Design Engineers, is a design consultancy providing engineering expertise and services, specialising in rail depots and designs relating to train facility infrastructure works.

Working closely with developers, contractors, and other stakeholders to ensure that your project's structures are safe, stable, and structurally sound.

Hexagon's construction heritage ensures that they understand construction compliance and real-world situations to provide you with trusted, reliable and workable designs.

DESCRIPTION

Hexagon was appointed by Cairn Cross Civil Engineering on behalf of Network Rail to undertake a feasibility study for a proposed new facility at Holgate Depot. The facility was designed to accommodate an under-floor wheel lathe, bogie drop and wash-down facilities, alongside welfare facilities and associated pedestrian and vehicle access.

As part of the feasibility study, Hexagon completed a range of surveys, assessments and design activities to understand the existing site conditions and determine the viability of the proposed facility. This included ground investigation and core sampling, ecological and flood risk assessments, existing utilities assessment and a 3D point cloud survey.

Hexagon also provided a high-level programme and budget pricing for the delivery of the project, enabling informed decision-making and helping to establish the project's overall feasibility, timescales and anticipated costs.

The team also developed permanent way assessments, foundation layout plans, steelwork details, swept path analysis, drainage strategy and electrical power supply calculations. General arrangements, UXO and lighting assessments were also completed.

A 3D visualisation and full facility fly-through were produced to clearly communicate the proposals and demonstrate how the new facility could integrate with the existing Network Rail infrastructure.



Pre-Construction
Services

Outline & Detailed
Design

Consultancy & Design
Management Services

Topographical &
Cloud Point Services

Desktop Studies
Feasibility Reports

REQUIREMENTS

The feasibility study required a detailed assessment of the proposed facility to ensure it could be safely integrated within the existing operational depot environment. The design works included:

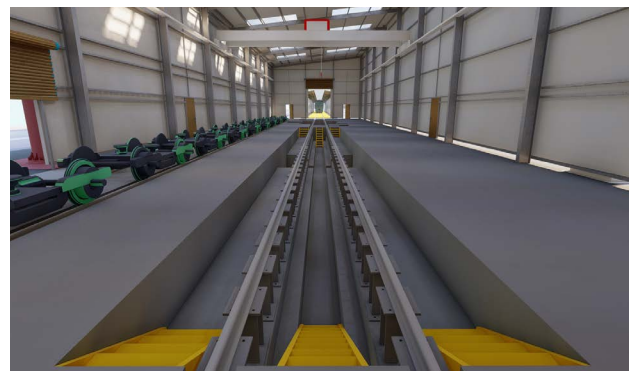
- Ecological Assessment – reviewing environmental considerations associated with the proposed development.
- Ground Investigation – assessing existing ground conditions, including core sampling, to inform the design.
- General Arrangement – developing the proposed facility layout and infrastructure.
- UXO Assessment – assessing potential unexploded ordnance risks.
- Existing Utilities – identifying and assessing existing services and infrastructure.
- Flood Risk Assessment – assessing flood risk and informing the drainage strategy.
- Electrical Power Supply – checking existing capacity and calculating requirements for the proposed equipment.
- Permanent Way Assessment – assessing the existing railway infrastructure and maintenance requirements.
- 3D Visualisation – producing a 3D model and full facility fly-through to communicate the proposals.
- Foundation & Steelwork – developing foundation layouts and steelwork details for the proposed facility.
- Swept Path Analysis – assessing vehicle movements, access and manoeuvrability.
- Drainage Strategy – developing drainage proposals based on the site conditions and assessments.
- 3D Point Cloud Survey – creating an accurate digital model of the existing infrastructure.

OUTCOME

The overall objective was to establish a viable solution for the wheel lathe facility, considering stakeholder requirements, existing infrastructure, power capacity, access, drainage and operational needs.environment. Key considerations included:

- Location Optioneering – identifying the most suitable location for the facility.
- Stakeholder Engagement – supporting early engagement with key stakeholders.
- Infrastructure Integration – integrating the facility within the existing Network Rail environment.
- Power Capacity – assessing the existing electrical supply.
- Access & Parking – providing suitable vehicular access and parking facilities.
- Wash-Down Area – incorporating an external wash-down facility.

The feasibility study provided the client with a clear understanding of the site constraints and requirements, supporting informed decision-making and the future development of the proposed facility.



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