

HEXAGON

Case Study

Peterborough Maintenance Hub

Hexagon was engaged under a design contract to design a wagon maintenance hub for maintenance of several wagon fleet



Customer
Cairn Cross Civil Engineering
on behalf of GBRf

Completion Date
May 2024

Location
Peterborough

ABOUT US

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

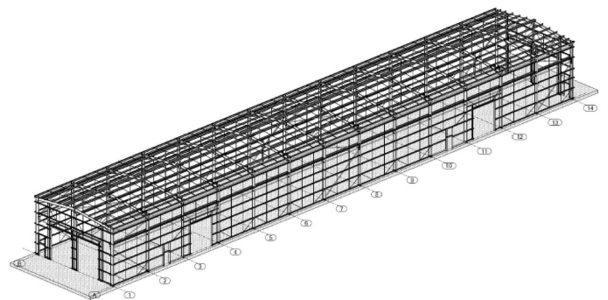
Working closely with developers, contractors, and other stakeholders to ensure that your project's structures are safe, stable, and structurally sound.

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 Design Consultancy, in partnership with Cairn Cross Civil Engineering, designed a new 95-metre-long wagon maintenance hub for GB Railfreight (GBRf) at Peterborough. The project included feasibility studies, outline design and detailed design specifications for a modern, sustainable facility capable of supporting the maintenance of several wagon fleets.

The facility was designed with a focus on operational efficiency, safety and reducing carbon emissions, incorporating electric-powered equipment, natural lighting and dedicated fume extraction.





Outline & Detailed
Design

Calculation & Temp Works
Design Package

Desktop Studies &
Feasibility Reports

Calculation & Design
Management Services

Pre-Construction
Services

Topographical & Point
Cloud Surveys

REQUIREMENTS

The design requirements included a range of structural, civil, permanent way and M&E elements to support the facility's operation:

- **Sustainable Facility** – Designed to reduce carbon emissions through full electric power for shunt engines and forklifts.
- **Monolithic Slab** – A robust raft foundation incorporating full-length jacking provisions on both maintenance roads.
- **Embedded Track** – Full-length embedded track within the maintenance hub to support efficient movement of materials and rolling stock.
- **Gantry Crane** – A 6.3-tonne overhead gantry crane supported by the steel portal frame.
- **Natural Lighting** – Triple-skin roof lights covering approximately 10% of the roof area.
- **Permanent Way** – Alterations including S&C and plain line track to optimise railway operations.
- **Wheel Set Storage** – Dedicated storage area with suitable access road provision.
- **Drainage** – Foul drainage, attenuation and associated drainage infrastructure

- **Fume Extraction** – A dedicated system designed to provide a safe working environment within the maintenance facility.
- **M&E Design** – Mechanical and electrical systems designed to support the facility's operational requirements.



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