

CAIRN CROSS

Wheel Lathe Experience



Cairn Cross are a multi-disciplined design and build specialist main contractor for rail depots and bespoke projects.

Our promise is complete client satisfaction, every project, every time.

Get in touch

www.cairncross.uk.com

Info: info@cairncross.uk.com

Careers: careers@cairncross.uk.com

Cairn Cross,
1 Cadman Court,
Morley, Leeds,
LS27 0RX



0113 284 2415

Services we provide

As a multi-discipline Design and Build specialist, we deliver a wide range of services across all sectors for public and private sectors.



Rail Infrastructure

From modifications to complete new depot facilities, including wheel lathes, carriage washes, bogie drop facilities, fuelling, CET and AdBlue.



Rail Depots

Our complete design and build capabilities allow Cairn Cross to undertake all works as the main contractor, from pre-construction to complete depot construction completion.

Full services & capabilities include:

- ▶ Mechanical & Electrical
- ▶ Product Innovation
- ▶ Fabrication
- ▶ Pollution Control
- ▶ Water
- ▶ Design & Build

Milestones

10+

Carriage Wash Installations

9

Wheel Lathe Installations

15+

Bridges

20+

CET Installations

50+

Rail Depots

50+

Nationwide team

Previous clients



Accreditations and awards

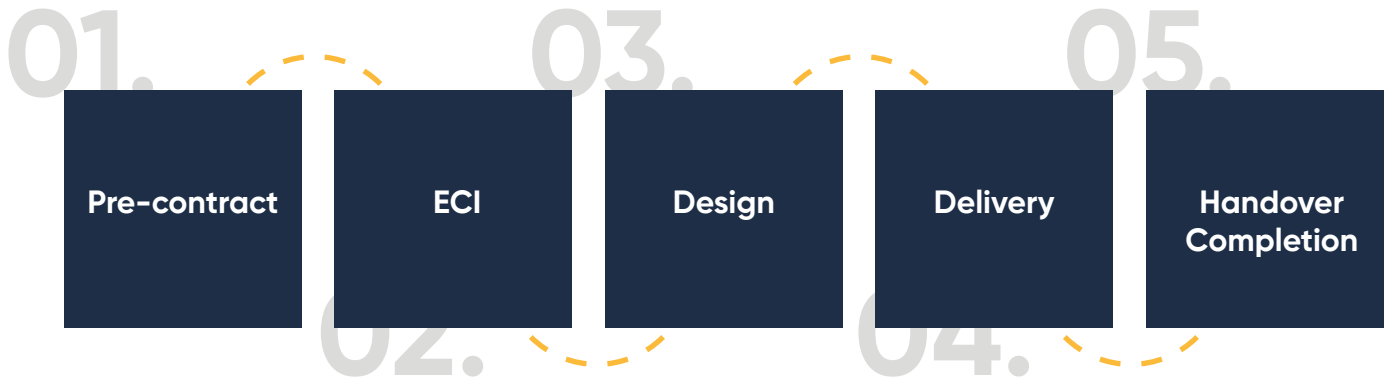


We're a design & build main contractor

For over a decade, Cairn Cross has developed our specialist, dedicated in-house design team to ensure we can complete a project from the initial pen sketch to the delivery of the finished build. This commitment to having one source of contact for your whole project ensures a more seamless and transparent approach, which enhances efficiency.



Our Process



Design services

Consultancy & Design Management Services	Topographical & Cloud Point Surveys	Pre-construction services
Desktop Studies & Feasibility Reports	Calculation & Temporary Works Design Packages	Outline & Detailed Design

Our values

Our promise is complete client satisfaction, every project, every time.

Our core values focus on the people, planet and our performance of works. Everyone strives together to serve employees, clients, and the broader community to the best of our abilities.

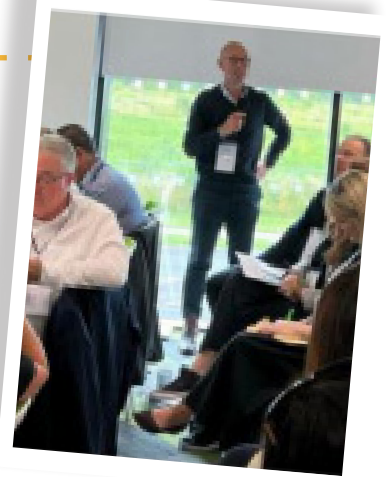


Our Work Safe Live Safe strategy for the Health and Safety of our workforce is driven by our desire to create a positive safety culture and ensuring all levels of staff and supply chain are incorporated into our efforts. This strategy looks to go beyond the traditional health and safety role of preventing harm and promote a vigilant and proactive culture towards everyone's health and safety in the workplace.



Community committed

We engage with our local working communities from school activities, university lectures and sustainable donations.



We pledge to plant over 200 trees in 2024

Cairn Cross is committed to sustainability and practices to offset and lower our carbon footprint



Wheel Lathes

Cairn Cross has extensive experience and capabilities in installing wheel lathes and associated civil engineering requirements on a design and build basis.

cairncross.uk.com/wheel-lathes

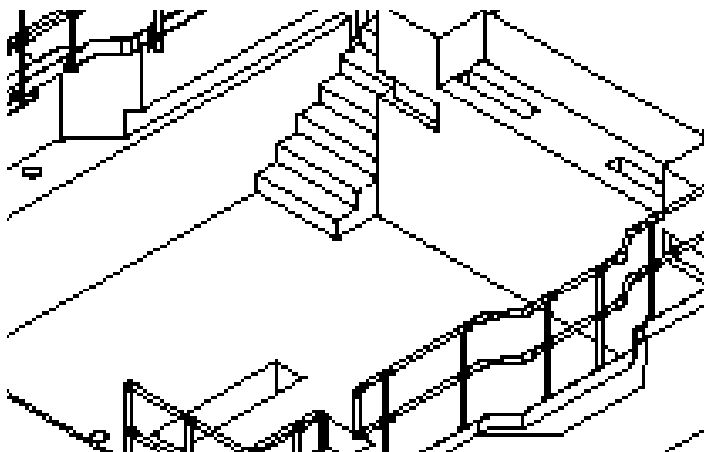


Experienced

Cairn Cross has designed and delivered several wheel lathes and associated civil engineering requirements across the UK's rail network for TOCs, FOCs and light rail. We work with all key stakeholders to ensure minimal disruption to your live depot and workforce while installing your new facility.

Design and Build

Combining our extensive civil engineering knowledge with our specialised structural engineering design consultancy, we can deliver pre-construction, design, and technical services tailored to your project.



Civils Capabilities

To undertake the project, as main contractor and designer, we offer all associated civil works to install your wheel lathe. These civil engineering abilities include but not limited to:

- ▶ Concrete Foundations and bases
- ▶ Design and Build
- ▶ Electrical Supply
- ▶ Feasibility Studies
- ▶ Gantries
- ▶ Steel Structures
- ▶ TrackPans
- ▶ Wheel Lathe Installation

Central Rivers Wheel Lathe

A Design & Build project to supply a brand new tandem wheel lathe facility with new building and new p-way siding



Customer
Bombardier/Alstom Rail

Date Completed
2022

Location
Burton-on-Trent

PROJECT OVERVIEW

- ▶ Design & Build
- ▶ Principal Contractor
- ▶ Mechanical & Electrical
- ▶ Portal Frame Building
- ▶ Tandem Wheel Lathe
- ▶ S & C Automated Points
- ▶ New Power Supply
- ▶ New P-Way Siding
- ▶ Swarf Conveyor
- ▶ Fume Extraction System
- ▶ Depot Protection System

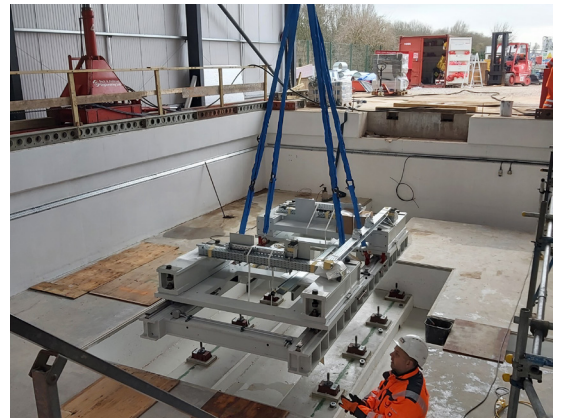


The Challenge

A brand new wheel lathe facility was required at the Central Rivers Depot in Burton-on-Trent to provide an enhanced facility for tyre-turning at the depot for the newly introduced fleet of Bombardier Flexity Swift vehicles in the network. The wheel lathe was to be housed within a new portal steel frame building, accessed via a new p-way siding, controlled by new automated points.

The Solution

Existing bunded area cleared and new p-way siding constructed with vehicle crossing and track drainage. Dewatering system put in place to enable pit excavation and main foundation formation in challenging conditions. Tandem wheel lathe procured and installed. Portal steel frame building constructed with insulated cladding panels and skylights. Power supply routed from existing building. Fume extraction system installed. Swarf conveyor constructed with reinforced external slab for waste skip.



The Result

Despite challenging ground conditions, a brand new wheel lathe facility was delivered, comprising a new p-way siding, a tandem wheel lathe and a new building with administration office, plant room and kitchen area. Bombardier/Alstom were provided with a modern and upgraded depot and associated works to facilitate their continued maintenance work.



Toton, Nottingham, Wheel Lathe

DB Schenker required a new U2000-400 underfloor wheel lathe at Toton to replace the ageing Lathe currently in use.



Customer
DB Cargo UK

Date Completed
2014

Location
Toton, Nottingham

PROJECT OVERVIEW

- ▶ Crane
- ▶ Concrete Base & Footpath
- ▶ Electrics
- ▶ Floor Painting
- ▶ Lighting Installation
- ▶ Principal Contractor
- ▶ P-Way
- ▶ Structural Work
- ▶ Wheel Lathe



1. The Challenge

The project set out to replace an existing wheel lathe, construct an insulated clad interior dividing wall and install a Swarf Conveyor System.

2. The Solution

Cairn Cross implemented the dividing wall first, then uninstalled and electrically isolated the wheel lathe. A temporary A-frame crane lifted the existing lathing machine out of the pit. The lathe base pit was reinforced, and new longitudinal and lateral walls were formed. A Swarf Conveyor system and job crane was installed with associated electrical work. Finally, the rail was relaid throughout the depot.



3. The Result

The works included decommissioning the wheel lathe and pit and replaced with more modern, efficient solutions. Cairn Cross delivered the project ahead of schedule with minimal disruption to the depot.



Craigentiny Underfloor Wheel Lathe

Turnkey design and build contract to install a new single headed Hegenscheidt CNC wheel lathe.



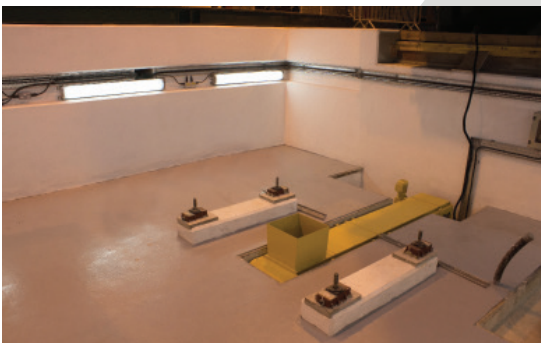
Customer
Network Rail

Date Completed
2013

Location
Craigentiny, Edinburgh

PROJECT OVERVIEW

- ▶ Cable Installation
- ▶ Concrete Bases
- ▶ Depot Modifications
- ▶ Electrics
- ▶ Floor Painting
- ▶ Principal Contractor
- ▶ Principal Designer
- ▶ P-Way
- ▶ Wheel Lathe



1. The Challenge

The scheme involved the removal of the old Lathe, demolition of the concrete foundations and significant re-modelling of the structure within the existing building.

The new Lathe pit is 8.3 metres long, 7 metres wide and 4 metres deep. A new section of the concrete floor was required within the building spanning 50 metres.

The Solution

The first stage of the project was the removal of the current wheel lathe, which would be used in a different depot facility. The existing pit was demolished and replaced with a new, more supportive concrete base pit. The new Hegenscheidt CNC wheel lathe was lowered into place by a Megalift system and finalised by associated mechanical and electrical works.



3. The Result

The scheme was handed back to the operator (East Coast) 6 weeks ahead of schedule.



Neville Hill Wheel Lathe

Project to deliver the civils and foundations for the installation of the Network Rail owned Wheel Lathe.



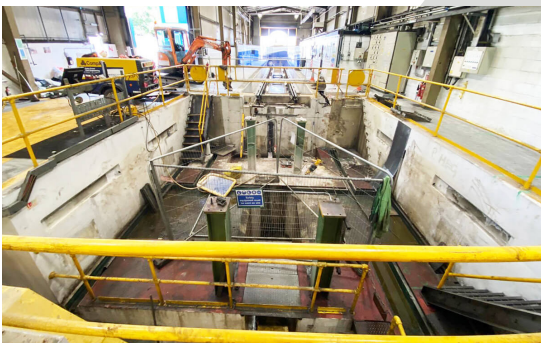
Customer
RTMS

Date Completed
2020

Location
Neville Hill, Leeds

PROJECT OVERVIEW

- ▶ Cable Installation
- ▶ Concrete Bases
- ▶ Depot Modifications
- ▶ Electrics
- ▶ Floor Painting
- ▶ Principal Contractor
- ▶ Principal Designer
- ▶ P-Way
- ▶ Wheel Lathe

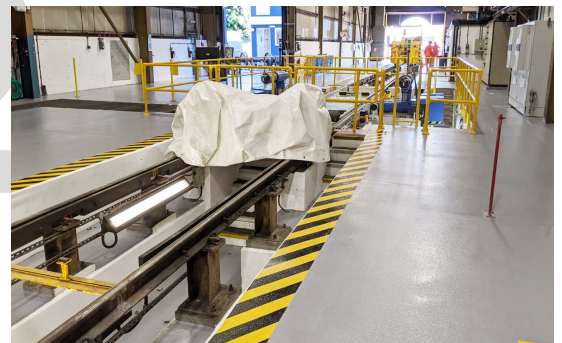


1 The Challenge

This project was to provide the construction works associated with the installation of the Hegenscheidt Wheel Lathe at Neville Hill, Leeds. The work included undertaking the role of Principal Contractor and Principal Designer and providing a supervisory role for the Wheel Lathe provider to Site Acceptance Testing (SAT) (including training).

The Solution

Work undertaken included the draining and safe disposal of operating fluids, disconnection and disassembly of electrical power supply and existing 106 Underfloor Wheel lathe ready for reuse later and removal from site. We constructed a new maintenance pit including stairs, safety handrails, paintwork and electrical works.



2 The Result

Following the supervision of the Wheel Lathe installation and maintaining full client compliance, the wheel lathe was successfully installed and operating within the project time frame.



3.



Trafford Wheel Lathe

A Design & Build project to install a new Wheel Lathe, swarf conveyor and associated works.



Customer
**Transport for Greater
Manchester**

Date Completed
2017

Location
Trafford, Manchester

PROJECT OVERVIEW

- ▶ Access Steps
- ▶ Concrete Bases
- ▶ Crane
- ▶ Design & Build
- ▶ LED Lighting
- ▶ Maintenance Pit
- ▶ Principal Contractor
- ▶ P-Way
- ▶ Wheel Lathe



The Challenge

A new KOLTECH underfloor Wheel Lathe model TUP 650 was required within the maintenance facility at the Metrolink depot in Trafford, South Manchester, to provide an enhanced facility for tyre-turning at the depot for the newly introduced fleet of Bombardier Flexity Swift vehicles in the network.

The Solution

Cairn Cross made alterations to the existing pit within the depot to facilitate the new lathe and all other services as the principal contractor. Requirements included raising the pit floor, creating formwork for reinforced concrete plinths, drainage, and the wheel lathe installation.



The Result

The upgraded depot allows more capacity and maintenance within the facility. In addition, the completed pit alterations have enhanced safety measures, including our Luminaire Lighting solution improving lighting and durability.

Stoke-on-Trent Wheel Lathe

Depot upgrades including a new Wheel Lathe, foundations and external concrete access roads.



Customer
DB Cargo UK

Date Completed
2014

Location
**Whieldon Road,
Stoke-on-Trent**

PROJECT OVERVIEW

- ▶ Concrete Access Road
- ▶ Concrete Foundations
- ▶ Design & Build
- ▶ LV Electrical System
- ▶ Pit Modifications
- ▶ Principal Contractor
- ▶ Rolling Shutter Doors
- ▶ Stakeholder Management
- ▶ Wheel Lathe Pit



1 The Challenge

DB Schenker required their depot to be upgraded with the installation of a new road way from the existing car park up to the overhead crane where wheel sets can be transported to and from site. Inside the depot, the expired wheel lathe pit needs breaking out and a new pit needs forming to house the accommodate the new machinery.

The Solution

Work included breaking out of the life expired wheel lathe pit and construction of a new reinforced wheel lathe pit. New steel reinforced concrete foundations were constructed and recesses to accommodate new machinery. Construction of a new wheel balancer pit. Foundation works to road 19 overhead crane. Installation of new insulated roller shutter doors. Complete overhaul of existing LV Electrical system



3 The Result

The project was delivered back to the client on time and was fully operational without disruption the rest of the depot.

Wimbledon Wheel Lathe

Replacing rail depot pit and wheel lathe



Customer
South West Trains

Date Completed
2015

Location
Wimbledon, London

PROJECT OVERVIEW

- ▶ Cladding
- ▶ Demolition
- ▶ Design and Build
- ▶ Endurance Luminaire
- ▶ Pit Maintenance
- ▶ Principal Contractor
- ▶ Rail
- ▶ Swarf Conveyor
- ▶ Wheel Lathe



1 The Challenge

This project was delivered as a design and build contract with Cairn Cross Civil Engineering as the Principal Contractor to install a new Hegenscheidt CNC underfloor wheel lathe.

The Solution

The existing machinery was removed and the original pit was demolished. A new maintenance wheel lathe pit was constructed and a new wheel lathe and Swarf Conveyor was installed. New sub mains, distribution units and small power was supplied to the depot.



3 The Result

The project was delivered back to the client on time and includes the installation of the Cairn Cross Solutions Endurance Luminaire – a robust lighting solution for maintenance pits

Longsight Wheel Lathe

Replacement wheel lathe and maintenance pit reconstruction



Customer
Alstom Rail

Date Completed
2012

Location
Longsight, Manchester

PROJECT OVERVIEW

- ▶ Cable Installation
- ▶ Concrete Bases
- ▶ Demolition
- ▶ Depot Modifications
- ▶ Design & Build
- ▶ Luminaire Lighting
- ▶ Maintenance Pit
- ▶ Mechanical & Electrical
- ▶ Principal Contractor
- ▶ P-way
- ▶ Wheel Lathe

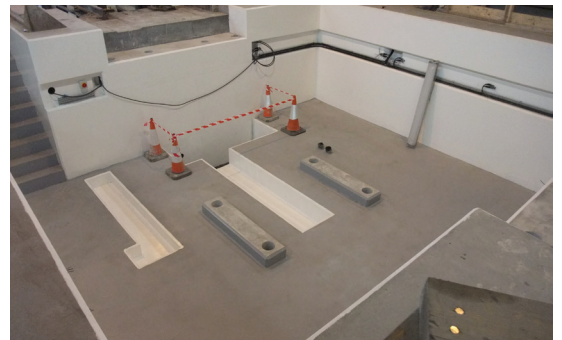


The Challenge

This project was delivered as a design and build contract with Cairn Cross as the main contract to install a new Hegenscheidt CNC under floor wheel lathe replacing the retiring machine.

The Solution

To complete the works, Cairn Cross removed the existing wheel lathe and demolished the existing maintenance pit. A new maintenance pit was formed and constructed with associated mechanical and electric fit out. The new wheel lathe was installed.



The Result

The extension to the building and wheel lathe facility now allows Alstom to maintain the upkeep and maintenance of their rolling stock.



Wembley Wheel Lathe

Replacement wheel lathe and maintenance pit reconstruction



Customer
Alstom Rail

Date Completed
2013

Location
Wembley, London

PROJECT OVERVIEW

- ▶ Cable Installation
- ▶ Concrete Bases
- ▶ Demolition
- ▶ Depot Modifications
- ▶ Design & Build
- ▶ Luminaire Lighting
- ▶ Maintenance Pit
- ▶ Mechanical & Electrical
- ▶ Principal Contractor
- ▶ P-way
- ▶ Wheel Lathe



The Challenge

This project was delivered as a design and build contract with Cairn Cross as the main contract to install a new Hegenscheidt CNC double headed under floor wheel lathe replacing the existing single headed wheel lathe.

The Solution

To complete the works, Cairn Cross removed the existing wheel lathe and demolished the existing maintenance pit. A new maintenance pit was formed and constructed with associated mechanical and electric fit out. The new double headed wheel lathe was installed.



The Result

The extension to the building and wheel lathe facility now allows Alstom to accommodate the new 11 car Pendolino train rolling stock within their fleet.



Cairn Cross are a collaborative, progressive and innovative multi-disciplined engineering company that are shaping future infrastructure. We design and deliver significant infrastructure projects across the UK as main contractor and with in-house design capabilities.

CAIRNCROSS

1 Cadman Court, Morley, Leeds, LS27 0RX
+44 (0)113 284 2415 ▶ info@cairncross.uk.com ▶ www.cairncross.uk.com

Cairn Cross Civil Engineering Limited. Registered in England and Wales 03110217 ▶ VAT No566419417

