

case studies.

SECTOR: RAIL MANUFACTURING AND CONSTRUCTION



Street

Supporting the Rail Industry for over 70 years



Hitachi Rail Europe

Sectors: Rail, Manufacturing

Street's overhead cranes are playing an essential role in the manufacture of high-speed, commuter and metro trains.

The challenge

Hitachi Rail's manufacturing and assembly plant in Newton Aycliffe, County Durham, has been developed to support the DFT-led Intercity Express Programme and future Hitachi Rail projects.

Following an £82m investment, the factory has the capability to produce high-speed, commuter, and metro trains for use across the UK and Europe.

Hitachi Rail required safe and reliable overhead cranes as part of its production process, to support the manufacture of up to 35 vehicles every month.

These cranes had to be supplied and installed within a specific timeframe, ensuring the factory's construction programme was not delayed.

The solution

As the contract was "time-critical", Street worked closely with the main contractor, Shepherd Construction, to manufacture and deliver the cranes within the required delivery schedule. This meant installing the crane beams before the roof was added to the building and ensuring that they were protected from the elements.

Street supplied and installed two special 40-tonne overhead cranes for offloading train carriages, which are made off site. The carriages are fitted to high-lift bogies, which enables them to be safely and easily moved around the factory.

Street also supplied fixed gantries along the production lines, so that technicians can easily access the carriages for fitting out.

A further seven cranes with the capacity to lift 10 or 15 tonnes have been fitted to bring materials and components to workstations around the facility.

The benefits:

Leading levels of reliability and safety:

- Optimised crane speeds ensure efficient product flow, load safety and stability.
- Where multiple cranes share the same track, anti-collision systems have been fitted.
- All cranes feature Street's ZX wire rope hoists, which have been designed to maximise safety and reliability, and minimise maintenance.

Durable

- The cranes sited outdoors feature an all-weather paint system & fully enclosed canopy over the hoists providing extra protection against the elements.

Maintenance & Facilities Manager at Hitachi Rail in Newton Aycliffe Chris Evans said:

"Street worked in partnership with our architects during the pre-construction stage of our rail vehicle manufacturing facility to design bespoke cranes matched to the specific requirements of our operation. Delivered and installed on time, and in line with our construction schedule, the Street cranes are an essential part of our train manufacturing process. They play a vital role in ensuring carriages are built as quickly, safely and efficiently as possible."



Crossrail

Sectors: Construction

Street Crane supports Crossrail project

The challenge

Crossrail has been set up to build the new railway that will become known as the "Elizabeth line" when it opens through central London in 2018.

BFK, a joint venture between BAM, Ferrovial Agroman and Kier Construction, is the main contractor for the tunnelling work from Royal Oak to Farringdon.

The company need to source a crane manufacturer that could supply and install high-performance lifting equipment for various elements of the Crossrail project.

The solution

A total of ten cranes have been installed by Street Crane, including a 40-tonne double girder Goliath crane on Oxford Street.

The 40 tonne crane is used to lift spoil skips and lower tunnel segments and other precast elements for the Crossrail tunnel and the construction of the new Tottenham Court Road Western Ticket Hall. It features twin custom-built VX hoists, each capable of lifting 20 tonnes. The crane has a total height of lift of 37 metres with a maximum speed of 15 m/min. The hoisting speeds can be boosted to 23 m/min for lighter loads of two tonnes or less designed specifically for handling empty skips.

The crane has a 5.1 metre cantilever at one end, to enable skips to be offloaded onto trucks outside the protected excavation area. The rectangular frame legs of the double girder Goliath crane have been designed to allow the spoil skips to pass between them.

A further six 10-tonne single girder cranes are used on the Old Oak Common site for de-moulding and transporting the cast tunnel segments. The site's curing yard has 3 rail-running Goliath cranes, each with full outdoor specification. These will be used to position & store tunnel segments to allow them to cure and reach full strength.

The benefits:

Flexible lifting:

- Twin hoists provide maximum flexibility as they can be used singly or in tandem depending on the weight and shape of the load to be moved.

Optimum safety:

- A cab located on the crane bridge provides the driver clear visibility of the entire site.

Maximum reliability:

- VX open winch hoists are more robust and durable than standard hoists.
- Unique hoist design with braked gearbox provides significantly enhanced safety, reliability and maintainability compared to braked motor hoists.





Centrum Pile

Sectors: Industrial, Manufacturing

Street's Goliath crane is giving specialist precast manufacturer a lift.

The challenge

Part of the Aarsleff Group, Centrum Pile is the UK's leading and most advanced manufacturer of precast concrete piles. Located in Newark, Nottinghamshire, its UK production facility has been developed to manufacture its high quality, reinforced concrete pile system.

Centrum Pile needed a heavy duty crane offering maximum stability and strength to lift precast sections outside of its Newark factory.

The solution

Street installed a goliath crane for Centrum Pile, capable of lifting 20 tonnes and spanning 30 metres.

The goliath crane is used to lift precast sections that vary in length from 4 to 18 metres and may be stacked up to 15 metres high. The products are lifted off the stacks by the crane and loaded onto vehicles for onward distribution to customers.

It features twin heavy-duty Street ZX wire rope hoists and is controlled by remote radio joystick handset.

Eamonn Walsh, Centrum's factory manager:

"We've worked with Street Crane for around 15 years, relying on its products to help lift and move reinforced precast concrete piles. The goliath crane is responsible for handling 34,000 metres of product every week, so durability, reliability and safety is essential."

The benefits:

Weather covers, additional travel and braking capacity plus a special structural paint system ensure that the crane can be used outdoors safely with minimal maintenance and long life expectancy.

Flexible lifting:

- Unique crane design means there's no need for a supporting structure, so the crane is ideal for outdoor use.
- Twin hoists give maximum flexibility and load stability as they may be used independently or in tandem according to the weight and shape of the load to be moved.

Leading safety levels:

- The crane has been installed with a number of additional features, including audible and visual alarms, which operate continuously during travel operation.
- Remote radio controls allow the crane operator to select the position that gives the best view for lifting, moving and load placement.





Bombardier

Sectors: Rolling Stock Manufacturing

Street is ensuring safe and reliable lifting for Bombardier

The challenge

Bombardier's Derby factory is a global centre of excellence for rail engineering. The site is the only facility in the UK able to design, manufacture, assemble, and test new trains for domestic and export markets.

The company required overhead cranes to support the final assembly of Eurostar overground trains in its intensive production environment. The cranes had to ensure the production process was as safe and efficient as possible.

The solution

Street supplied and installed two 20-tonne safe working load overhead cranes. Each has been fitted with two 10 tonne ZX8 wire rope hoists for assured lifting and handling.

The cranes are used independently during the assembly of the trains, but have also been designed for use in tandem when lifting and moving complete train bodies.

To ensure efficient production, the cranes can transport loads at speeds of 40 m/min along the 180-metre workshop. Cross travel speeds of 20 m/min can be obtained and hoist speeds of up to 4 m/min.

The benefits:

Leading levels of reliability and safety:

- Audible alarms have been fitted which operate when the cranes travel up and down the workshop.
- Anti-collision devices provide a safeguard when the two cranes are operated and moving independently.
- For tandem crane lifts and transportation, a radio control system interlocks overhead crane operations and ensures movements are synchronised.
- Both cranes feature Street's ZX hoists, which have been designed to maximise safety and reliability, and minimise maintenance.

Precise handling

- All crane travel motions are inverter controlled, ensuring safe acceleration and deceleration for load stability and precise low speed final placement.





Street

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