Case Study

CUBIS SYSTEMS
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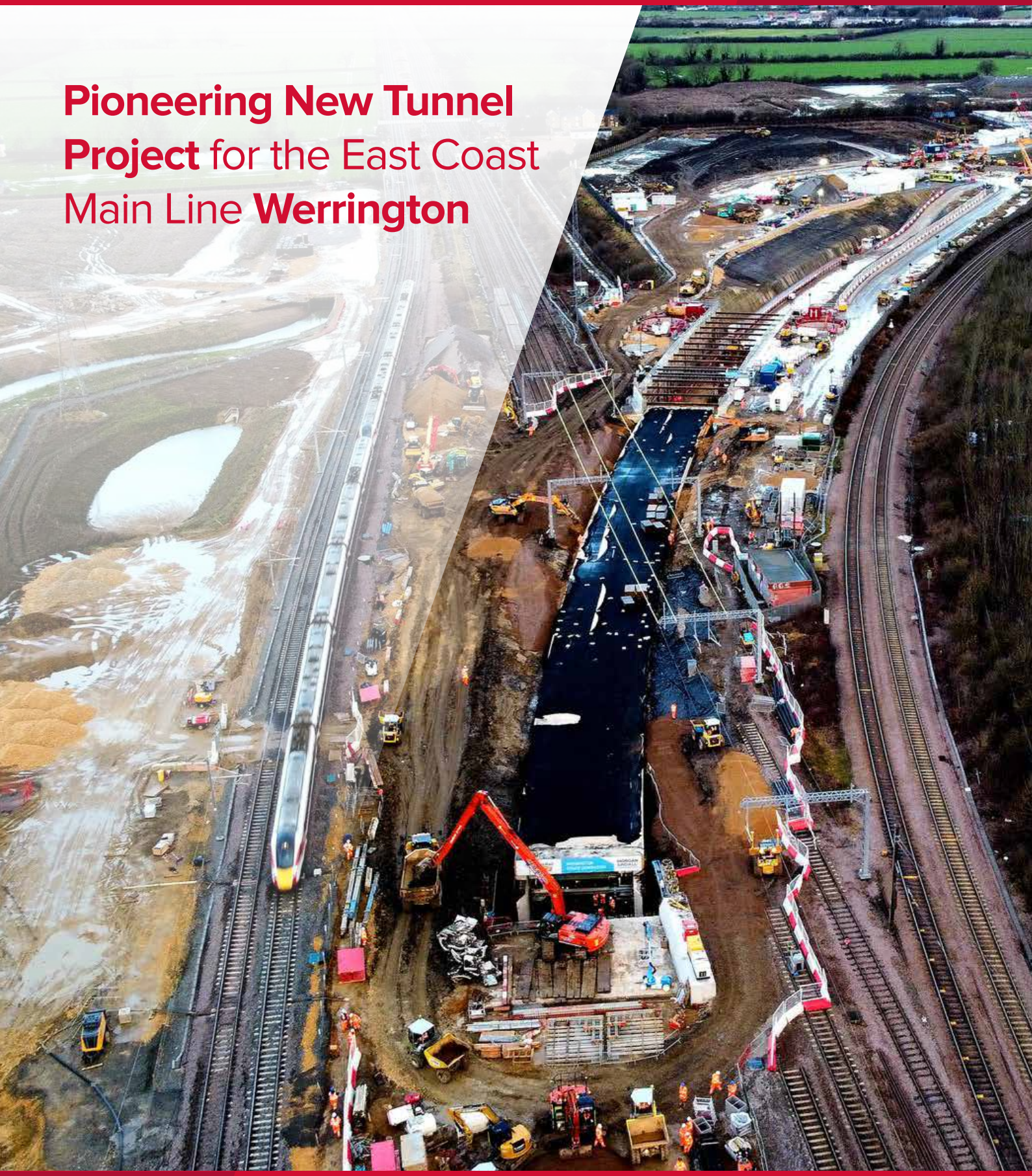
Pioneering New Tunnel Project for the East Coast Main Line **Werrington**



Drainage Catch Pit | FLEXI Pit

Cubis' Drainage Catchpits Support the Delivery of a Pioneering New Tunnel Project for the East Coast Main Line Werrington

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Working with Principle Contractor Morgan Sindall and Designers Mott Macdonald, Cubis' were selected to support the trackside drainage system of the new dive under project on the East Coast Main Line (ECML).

The dive under was designed to increase capacity of passenger trains by creating an alternative route for the slow freight trains that historically have had to cross the busy main line at a flat crossing, causing passenger timetable constraints on the Great North Great Eastern (GNGE) and East Coast Main Line routes.

A new two track railway was designed to run underneath the East Coast Main Line, through the dive under, separating the freight trains from high speed passenger traffic removing any stoppages for either services and increasing capacity for passenger trains in the future.

The dive under structure for the new track was the UK's first "Curved "Box", an industry-leading engineering technique that saw nine, interconnected sections pushed under the East Coast Main Line. The structure was 155m long, 9.5m wide and 5.1m high, with 1m thick walls, weighing over 11,000 tones.

With the site situated on a flood plain, drainage was a major concern. Cubis' was approached early in the design stage by Mott Macdonald with a key focus on the range of drainage catchpit sizes available, to suit minimum internal dimensions required to satisfy Network Rail standards and to give the structural integrity required across the project with there being varying amounts of locations and applications that would require bespoke installations.

Cubis' specification and technical teams worked closely with Morgan Sindall's engineering team to provide a suite of detailed technical drawings to act as a library to choose from for the more standard chambers making the selection and ordering process much easier.

The Rail team at Cubis worked closely with Morgan Sindall throughout the project especially in regards to the more intricate design elements. Cubis' FLEXI Pit drainage catchpit system was installed in a range of sizes from 1200 x 675mm to 1350 x 1350mm.

The lightweight modular and structural access chamber system allowed for a quick and easy installation with its unique sliding backfill barrier enabling easy adjustment to inlet and outlet pipe levels on-site. This provided time and cost savings for the contractor and the STAKKAbox™ chamber system removed any need for a concrete surround that would normally be required by other products.

Cubis' Rail team supported Morgan Sindall throughout the design, specification, delivery and installation ensuring a carbon-friendly trackside drainage system was installed for the 1.2 billion East Coast upgrade.

Available in a range of sizes that are adaptable, lightweight and easy to install

"Cubis' helpful and friendly design engineers responded both quickly and professionally to our technical enquiries for detailed calculations and test results, required to support the use of the different draining catchpits in a variety of applications across the scheme. The variety of catchpit sizes that could be created within the STAKKAbox™ range allowed us to meet the internal dimensions required by Network Rail standards. Cubis' FLEXI Pit system provided the ability to mix and match different cover types depending on the application. We largely specified grated covers for the cess and sixfoot but also specified part grated and part solid covers where catchpits where located within the cess walkway and solid concrete covers within the dive-under to meet fire resistance requirements. All the covers solutions sat on the same catchpit construction."

- Edward Foweather - Civil Engineer – Mott Macdonald

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Driven by Innovation

Innovation is the engine that has driven Cubis Systems to its position as global leader in the design and manufacture of access chambers and cable ducting systems.

Inspired by innovation, we have developed quality products that replace traditional construction materials like bricks and concrete. Our lightweight plastics, incorporating intelligent design features, are used in the construction of infrastructure networks for the rail, telecoms, water, construction and power markets worldwide. Cubis products can be installed much faster than traditional methods and therefore save our customers both time and money.

Cubis manufactures the preformed STAKKAbox™ network access chamber systems, the AX-S™ access covers range, a MULTIduct™ multiple duct system and the PROtrough cable troughing system at sites throughout the UK and Ireland. These innovative products are exported to more than 25 countries throughout the world.

At Cubis we are committed to ongoing innovation and dedicated to delivering absolute product quality, detailed technical customer support and the highest levels of customer satisfaction.

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