

NORTHERN EXPRESSWAY

MAIN CONSTRUCTION COMPANY : York Civil
LENGTH : 23km
PROJECT END VALUE : \$520 Million
COMPLETION : December 2010

EXPRESS DELIVERY

With more than 400 000 construction hours logged, York Civil Pty Ltd have recently completed one of the most ambitious, not to mention the largest infrastructure projects that Adelaide has seen in decades. The \$564 million Northern Expressway is 23km of new motorway linking the Gawler Bypass with Port Wakefield Road. A joint initiative of the Australian and South Australian governments.

The Northern Expressway is a commuters dream. The expressway has four lanes, five grade-separated interchanges, a bridge above rail lines, bridges above Gawler River and Gawler diversion channel and a high-speed fly over the interchange at Port Wakefield Road. However, this development is not just for the motorists, the project also includes a recreational cycle and pedestrian pathway.

York Civil was well and truly put to the test in a rigorous selection process during the tender of the Northern Expressway. Based on price, appropriateness of design and factors such as team, project outcomes and delivery, York Civil, as part of the Fulton Hogan York Civil joint venture, was awarded the Design and Construct.

“York and Fulton’s in a joint venture, brought together a number of complementing assets, including local and national knowledge, strengths in asphalt from Fulton Hogan and strengths in formwork and concrete works from York Civil. These combined to produce an excellent working relationship,” says Project Director, Dallas Keane.

Site works on this highly anticipated infrastructure project commenced in September 2008 with the expectation works would be completed in December 2010. The project finished a three months earlier than scheduled, a rarity for a project of this scale. The team puts this down to hard work and dedication from all involved and a close collaboration with the client and designers ensuring that everyone was working in the same direction.

As the principal design and construction team, York Civil provided a number of services throughout the project from complete engineering through to construction and project management services. “We had up to 500 people on site at peak construction. We sourced subcontractors locally, which was our preference,

and nationally based on their merits and requirements. We had a large management team, including engineers, supervisors, traffic controllers and administrators to ensure the works were carried out safely and with a high level of quality.”

York Civil is proud of the fact that the project holds an impeccable safety record. The team also prides itself on finding solutions to complex sites and unusual project requirements. Their work on the Northern Expressway required a well-coordinated management team to deal with challenges such as managing road closures, ensuring traffic continued to move during these closures, keeping the community informed and minimising the impact on the surrounding environment.

“A dedicated environmental management team led the entire project and implemented best practice methods to minimise the impact. The team carried out audits and a compliance role as well as assisted in training staff, supervisors and workers to ensure the control measures were implemented and to empower workers to think about the surrounding environment.”



Operating Australia wide, York Civil’s previous projects include Christies Beach Waste Water Treatment Plant Upgrade, Environmental Flow regulator on Chowilla Creek, Yaamba Road Pedestrian Overpass, Cathedral Rocks Wind Farm, Port River Expressway Stages 2 and 3 and the River Murray Improvement project.

York Civil were involved in hosting the community celebration day to officially open the Northern Expressway on September 12, highlighting that they certainly do live by their core values of putting the wellbeing of their local community first.

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A MORE THAN CAPABLE CONTRACTOR

With a combined 85 years of experience in the earthmoving and civil construction industry, AR Contracting Services Pty Ltd is a South Australian company with a track record of delivering quality services. Established in 2003 the company has since expanded and today employs approximately 40 staff and reaches an annual turnover to \$20 million.

With a wide range of expertise under their belt AR Contracting provides services to engineering and project management consultants, private developers, state and local Government authorities. Subcontracted to York Civil in 2009 and 2010, AR Contracting provided two experienced teams to carry out works for the Northern Expressway. The teams were supported by company plant and equipment and backed up by local plant hire subcontractors.

A total of 11 employees carried out the work from February to August 2009 and January to May 2010. The teams consisted of a Supervisor, Foreman, Construction workers, Excavators, Watercart, Grader and Loader.

The experienced staff and professional plant operators were involved in the construction of stormwater systems including excavation, pipe and culvert laying, backfill and testing on the Northern Expressway. They also carried out detailed excavation for reinforced earth wall construction, backfilling and compaction of bridge abutments and alterations and relocation of water mains.

On previous projects, AR Contracting has carried out bulk and detailed earthworks, road and pavement construction, stormwater retention

and reticulation, concrete structures and underground services, sewer, water, gas, electrical and communications.

The Supervisor and site personnel performed regular quality control checks during work on the Northern Expressway including compaction testing of the completed earthworks and "as constructed" survey checks to ensure compliance. Pressure testing of the water mains was a standard requirement.

With an emphasis on safety and safe working systems being of prime consideration during the project AR personnel, in compliance with the project requirements and in accordance with internal company systems maintained an incident free and zero time lost to injury record on the project.

Capable of handling the most difficult and sensitive areas, AR Contracting understand that acute environmental awareness and good public and neighbour relations are essential to any project. A straightforward approach to environmental issues allowed the team to tackle their main environmental concern on the Northern Expressway, dust control. The team is also well versed in implementing projects in established areas, including road works under traffic, car park construction, street scaping projects and site remediation projects where careful consideration needs to be taken to ensure minimum impact on the surrounding environment.

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A FAMILY AFFAIR

Cavco Earthmoving Pty Ltd demonstrate the type of commitment you often only find in a family run business. With a core team of professional staff and a customer centred approach to all aspects of the business the team foster relationships formed with clients, the community and their subcontractors.

South Australian owned, the company has been servicing Adelaide with earthmoving and construction services since 2005. John and Larry Cavallaro were urged to start up the business due to the growing needs of the community and the construction industry. Since then, the company has been steadily growing and now boasts an impressive list of plant and equipment from loaders through to excavators.

Cavco specialises in engineering, construction and remedial works and delivers projects in a wide range of industry sectors: civil engineering, road construction, structures and facilities, earthworks, storm water and drainage, trenching for communications and electrical,

sewer and water, demolition, dam construction and concrete and bitumen work. Through the employment of local personnel and consultants the team are committed to delivering all of their projects intelligently, practically and in a timely manner.

Their involvement with the Northern Expressway started from day one. "Being a local business in the Northern area it was a fantastic achievement to be involved in this joint venture with York Civil and Fulton Hogan" says Managing Director John Cavallaro.

Cavco was involved in various detailed civil works on the Northern Expressway. "The fact that Cavco laid the majority of all the stormwater pipes from Gawler to Port Wakefield, the whole length of the expressway is a huge accomplishment and one we are very proud of" enthuses John.

The team worked on the completion of head walls and box culverts, the stormwater drainage to the Two Wells underpass, electrical cable pipes for lighting and traffic signals. They also implemented the first stage stormwater drainage at the Angle Vale Road Bridge which allows a full interchange with north and south entry and exit, allowing traffic to flow uninterrupted over the expressway. A project of this scale also called for the implementation of new and improved technologies in the form of a Concrete Pipe grab and a fleet of new vehicles, excavators and trailers. The team were regularly put to the test during the construction period often overcoming challenges

such as extreme temperatures coupled with windy conditions and complications such as gaining access to difficult areas along the alignment. Also, at a time when the construction industry is booming, John explains "We often found there were staff shortages which meant that to meet tight time schedules the need to engage labour hire to fulfil our needs was a challenge."

A company who pride themselves on safety, Cavco ensures the highest level of safety, quality and environmental management systems are in place. "The Northern Expressway was a challenge to ensure all labour hire personnel were adequately qualified or had the core competencies for the tasks they were hired to perform. We needed to implement our own rigorous induction procedure to ensure they were all well versed with OHS&W requirements," explains John.

With an impressive portfolio, the Managing Directors draw on years of local knowledge and experience. Previous projects include drainage works at Business Park at Adelaide Airport, Bakewell Road underpass with stormwater works, road widening and service pipes for electricity, Telstra and water.

Cavco are currently working on a number of new projects such as the GP Super Clinic with Watpak on Peachy Road, north of Curtis Road at a new 330ha development at Munno Para West. The team have recently started a 14-month project with BMD Constructions at the RAAF base.

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Allterrain Lifting Services are specialists in any type of lifting. As their name suggests they are not adverse to a challenge and will tackle the hardest of sites and conditions to get the job done. The team at Allterrain claim to have a crane for any job, anywhere, anytime. This is no small statement, but then again Allterrain doesn't do things in halves.

Established in 1999, Allterrain offers their clients experienced personnel from Crane Operators, EWP + Telescopic Handler Operators, Dogmen, Riggers, Boilermakers to Truck drivers. Available anywhere anytime, 24hours, 7 days a week Allterrain provide up to date technology and the latest in mobile cranes. All of their cranes come complete with computerised lift analysis. Worksites are pre programmed and the highly trained crews, with experience ranging from 11 years to 32 years, have a wealth of knowledge and advanced skill level.

With the construction industry booming in Adelaide they were spurred on to add to their collection of cranes due to the need to provide something unique to the lifting industry. With the addition of the new 500T Liebherr Crane they can certainly rise to any lifting challenge. Allterrain now have a total of five of these impressive new cranes worth a sum of \$8 million.

Due to the credentials of this new member of the family, the team can get in to tight places and difficult sites where other cranes just can not. With all wheel steer, six wheel drive and a total lifting height of 72m, this crane has enabled Allterrain to contract larger more difficult jobs and to keep ahead of their competitors.

The Company comprises of 11 staff and all these members of staff have worked as a core team to complete the Northern Expressway. Allterrain were approached to work on the Northern Expressway job as they are known for thinking outside the square. Managing Director Steve Martin worked together with York Civil to ensure they came up with an easier, more efficient way to complete the job. "We wanted to make sure we got the job spot on. We were able to work out ways to get rid of manual handling. By only using the one crane on the job we were also able to cut down on excess machinery."

For a complex job, such as the Northern Expressway, the team employed the 200T crane to lift the bridge beams for 11 bridges on the job. One of these bridges, the Port Wakefield Road Channel Bridge comprised of 34 Precast Concrete Prestressed 1500mm deep T-off Beams up to 56 tonne and 29m in length. All were positioned in to place with the 200T crane.

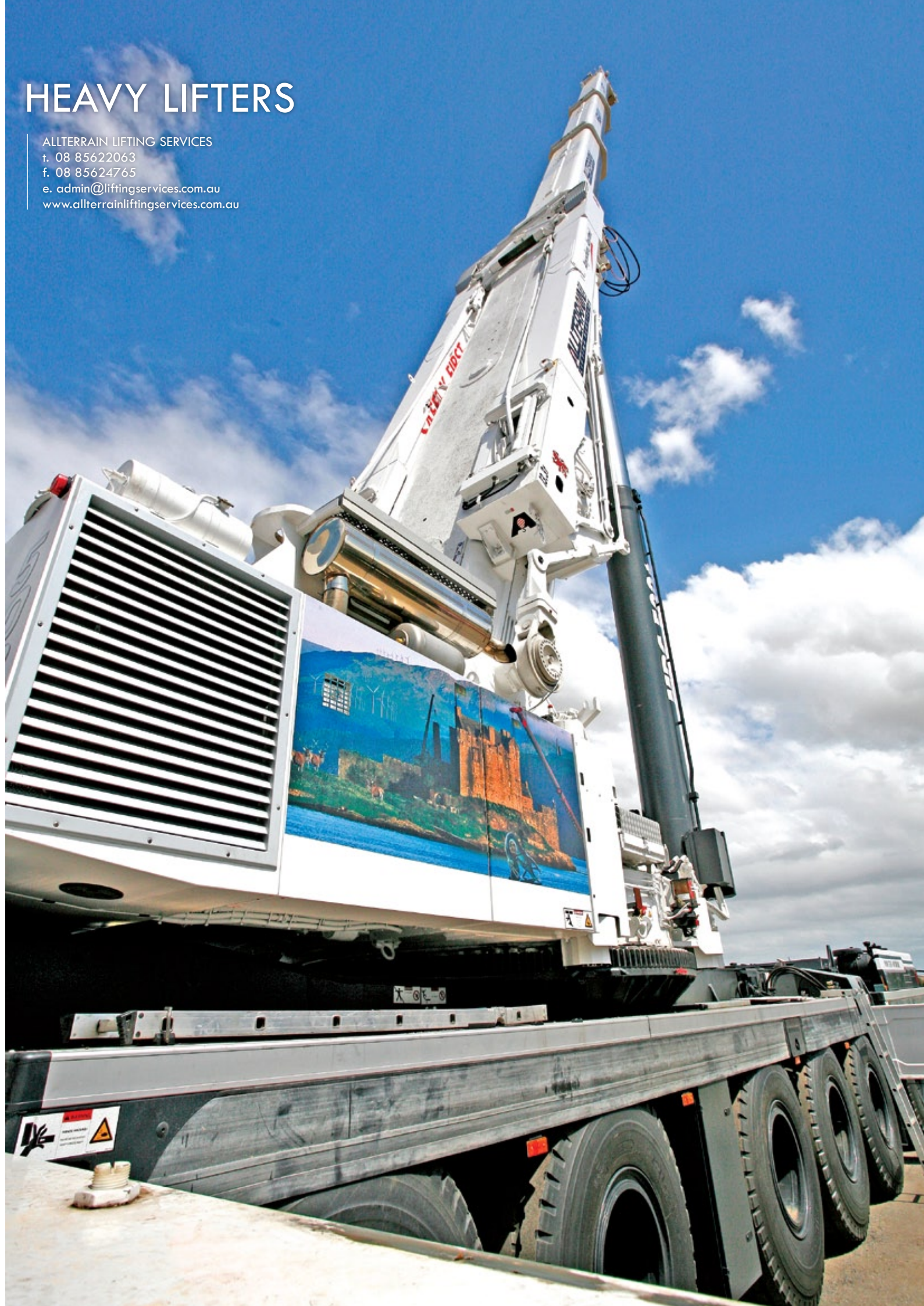
There are always challenges on a job of this scale and the team faced many during their year on site, on which they were employed full time. "The main difficulties on the job were basically getting in to tight areas and working to exact and minimal radiuses. We were working to the limits."

Committed to raising the standards of safety within the crane and lifting industries, Allterrain's operators and personnel are fully accredited and put through rigorous induction training prior to commencing any work. This is then followed up with debriefing sessions during and after the completion of the project. All equipment and plant is tested and inspected regularly in house with strict procedures adhered to at all times.

Allterrain has worked on some of the countries largest projects. In previous years they were contracted for lifting the roof on to the Sydney Olympic Stadium, works to the Wharf Harbour, Berth 7. They looked after the barges on the Murray Water project and worked on the Mt Todd Gold Mine and the Adelaide Airport. The team are extremely versatile and are well versed with smaller scale projects too having completed a number of multi-stories in Adelaide.

HEAVY LIFTERS

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CUTTING EDGE FABRICATION

Once a two man, one machine operation, Adelaide Profile Services (APS) have expanded to employ a team of thirty-six who operate out of a purpose built 6,000 square metre factory at Lonsdale, South Australia.

The steel processing specialists were responsible for the fabrication and profiling of the monumental Snake Wall for the Northern Expressway. An architectural masterpiece inspired by local industrial history and rich indigenous culture, the feature wall winds its way along 500m of the Expressway.

APS profiled 190 snake scaled wall panels, 2.4 metres in width and 5 metres in height. The wall panels were rolled off site to achieve the varying radii required. The team also supplied 380 bases for the steel walls, 380 fins to support the vertical steel plates and 380 gussets used to strengthen the fins and base. Over two hundred tonnes of XLERPLATE® Steel was used to create the cultural landmark.

WR350 grade XLERPLATE® steel was selected due to its availability locally, and the consistency, quality and reliability of the material. Its unique weathering to a uniform patina and its non-corrosive qualities were deciding factors in the selection of this material.

Nine cad cam computer operated cutting machines allow APS to complete projects of any shape and magnitude. With the recent addition of the K5000 plate processing machine, APS are able to ensure precision, accuracy and achieve a cleaner cut. The machine performs dual head, high definition plasma cutting, multi-head oxy cutting and is equipped with a twenty-four tool turret for drilling and machining. The processing machine profile beds have a capacity of up to 7 metres wide and 30 metres in length.

The teamwork between APS, engineers, architects and the construction team on the Northern Expressway was seamless. It is with this same “service first” attitude that APS successfully delivers projects time and again for the construction, heavy engineering, automotive, agricultural and ship building industries.

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INTELLIGENT OPERATORS

In delivering the Intelligent Transport Systems (ITS) associated with Northern Expressway 3 months ahead of schedule and within Civil Contractor's allocated budget whilst simultaneously satisfying the SA Department of Energy and Infrastructure's exacting technical requirements, SAGE has reaffirmed its capability and reputation in delivering certainty to its Clients.

SAGE is Australia's leading Independent Systems Integrator, specialising in industrial automation, control and communications systems and the application of these and allied technologies across a broad spectrum of industries, ranging from manufacturing, through food and beverage to water and transport infrastructure.

“Being independent gives us the freedom to select the very best technology from the wider market place to create tailored solutions for our customers” explains Communications and Marketing Officer Rachael Oates. SAGE has a \$50 Million turnover and is the only Australian company to be accredited to the global quality benchmark of the Control System Integrators Association (CSIA).

SAGE was contracted by the Fulton Hogan York Civil joint venture (FHYJV) using an innovative incentivized risk sharing commercial model to develop the concept level system design to a fully constructible level whilst establishing and managing the key third

party hardware procurement and installation processes. Through the adoption of this model the project risks were significantly mitigated.

Building further on their enviable track record for proactive collaboration, SAGE provided an Infrastructure Sector Engineering Manager, Senior Electrical and Communications Systems Engineers, On Site Project Manager, Electrical Installation Site Supervisor, System Test and Commissioning Team in addition to CAD Drafters and manufacturing workshop personnel. The fully integrated team worked with both FHYJV's designers (the SMEC Maunsell/AECOM Design JV) and their construction delivery team on site.

SAGE has four main business areas; SAGE Automation creating intelligent automation and control solutions; SAGE Didatic offering technical training in these technologies; SAGE Capital working collaboratively to generate performance-driven business solutions; SAGE Racing demonstrating their keen competitive spirit.

To find out more, ask for the SAGE Infrastructure Sector Specialist when you call.

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