Crossrail C430 Advanced Works
Farringdon, London

Presented By: Colin Murphy
Director
Tel: Office: +44 (0)20 3178 6644
Mobile: +44 (0)79 4410 0891
Email: cmurphy@murphysurveys.co.uk
Key Facts:

Client: Laing O’Rourke STRABAG JV

Sector: Infrastructure

Value: £1million +

Project Type: Surveying & Control of Ground Movements

Project Duration: 18 months – August 2011 +

Scope of Works:

- Geotechnical Instrumentation (To Design, Supply, Install, maintain and modify the monitoring equipment)
- ATS (Automatic Monitoring Systems) – GeoRobot
  - 3D prisms, Inclinometers, Piezometers, Extensometers, Strain Gauges, Crack meters, E-Level Beams
- Manual Monitoring
  - Precise Levelling, Precise Total Station Surveying, Ground Level Studs, Wall Sockets, Trackside Monitoring
- Personnel Service
- Track monitoring
- Kronos Tunnel Information System
- Construction/Engineering Surveying
  - Site Control, Topographic, 3D Laser Scanning, 3D modelling, As-Built, Setting Out, Reporting

The project:

CROSSRAIL LIMITED (CRL) is tasked with promoting and developing a new railway route called Crossrail through London (West-East) from Maidenhead and Heathrow via Paddington, Liverpool Street and Stratford to Shenfield, and via Canary Wharf to Woolwich ending at Abbey Wood. The JV Laing O’Rourke and Strabag have been commissioned for the C430 Farringdon Station works which will include earthworks (excavation and infill), modification of existing and installation of new ventilation infrastructure, associated civils works, secant piles and installation of a temporary construction platform including piled foundations.

Farringdon Crossrail station is being delivered in conjunction with Network Rail, who are leading on the wider redevelopment of Farringdon as part of the Thameslink scheme. The Crossrail contract includes construction of both the eastern and western integrated ticket halls, providing access to Crossrail, London Underground and Thameslink services.
Location of the Works:

The Site for the new Farringdon Crossrail Station is located in the London Borough of Islington and comprises two worksites, the Eastern Ticket Hall (ETH) and the Western Ticket Hall (WTH). Both worksites are surrounded by residential properties and offices. They are located in an area heavily frequented by pedestrians and vehicles visiting and servicing the vast array of commercial properties located within easy reach of the worksites.

“When complete, it is planned that over 140 trains per hour will flow through the Farringdon interchange when it becomes a link between Thameslink, Crossrail and London Underground services. Farringdon will be the only station from which passengers will be able to access all three networks. Farringdon will become one of Britain’s busiest train stations, and will be a key link in bringing passengers from outer London to the business hubs in the City and Canary Wharf.”

Survey specifications:

MSG JV is responsible for providing a monitoring system and database for the duration of the works. As part of this system, we are responsible for calibration, quality assurance, installation, commissioning, maintenance and monitoring of the instrumentation. We collect, process, store, interpret and report the data to our client on a daily basis and the data is supplied in a specified format for inclusion in the Employers Database. All work on site must be carried out with due regard to the condition of surrounding structures. MSG JV continually monitors and maintains the instrumentation and must supply a manual specifying the instrumentation system and its mode of operation and maintenance for use by the employer. MSG JV has a full time Project manager on site to liaise with the client and coordinate the works. We have multiple survey crews on site carrying out the manual monitoring and reporting on a daily basis.

All work is being carried out in accordance with Crossrail and Laing O’Rourke/ Strabag’s strict Health & Safety Standards and Specifications. All staff on site is appropriately trained and has been inducted for work on site.

“The Crossrail Vision is to deliver a world-class and affordable railway, safely, that meets the ever growing transport needs of London in the 21st Century and beyond. Sitting right at the heart of the London network, Farringdon Station is fundamental to Crossrail meeting this aspiration” Crossrail Ltd.
The company: MSG JV (Murphy Surveys UK Ltd Geodata Group Joint Venture)

Since our inception in 1983, Murphy Surveys have been committed to providing our clients with a cost-effective project solution through the combination of highly experienced personnel, decades of experience and using the right tools and technology for the task at hand. The foundation of our success is based upon our maintaining of our professionalism & integrity, client centered consultancy and high levels of quality control.

Murphy Surveys currently offer over 25 different survey services, which fulfill any survey requirement, both above and below the ground, as well as aerial. With offices throughout the UK and Ireland and a staff of over 100 full-time highly qualified surveying professionals, we can provide an unrivalled service.

Geometrical Monitoring is considered to be one of the most diverse survey disciplines. Murphy Surveys have combined their years of experience and knowledge with identifying market leading partners to enable the provision of a vast range of state of the art monitoring services to all areas of the construction industry, hence our relationship with GEODATA.

Since its foundation in 1987, Geodata’s focus has been in underground construction. The close relationship with the Mining University of Leoben and the significant role Austria is playing in tunnel construction explain why company has been a leader in the introduction and innovation of new technology in this field since day one. The scope of their services continuously expanded thanks to the dedicated cooperation between the sciences, engineering firms and construction companies.

Today, Geodata is a global leader in the field of geotechnical measurements and all measuring tasks required for underground construction and subsurface mining. With more than 250 successfully completed projects on 5 continents they are continuing to prove their expertise in this field. The Geodata group is an innovative international supplier of integrated, IT-based solutions and services in the test and measurement field and in engineering surveys.

MSG JV concentrates on selected areas of application:
- Infrastructure projects like roads and railways, subways, hydro-power stations, tunnelling and underground construction, demolition
- Land slides and slope protections
- Geotechnical measurements, automatic monitoring systems, alarm systems
- Machine guidance
- Plant construction, industry and manufacturing

Employee numbers (both companies): 200 +

2012 Projected Turnover (both companies): £18million +
**Some Relevant Current and Past Projects:**

- Cityringen Copenhagen (Denmark)
- Metro Thessaloniki (Greece)
- Koralm Tunnel (Austria)
- Metro Santiago (Chile)
- CERN (Switzerland/France)
- Tyne Tunnel (UK)
- Tyson Corner Tunnel Washington (US)
- Pudding Mill Lane Portal (Crossrail, London)
- Bond Street/Hanover Square (Crossrail, London)
- Royal Victoria & Custom House, DLR – Track monitoring (London)
- Balham Hill LUL access shaft – monitoring (London)
- Liverpool MSCP – I&M 2 railway tunnels – (UK)
- RPA Metro North (Ireland)
- Various Projects for Network Rail (UK)
- Various Projects for Irish Rail (Ireland)

**Relevant Future & Currently Tendered Projects (London):**

- C410 SCL Tunnel Construction Surveying and Monitoring (BFK JV): Decision March 2012
- C435 Farringdon Station Instrumentation and Monitoring (BFK JV): Decision March 2012
- C502 Liverpool Street for LOR, Dragados SISK JV
- C422 Tottenham Court Road Station for LOR, Dragados SISK
- Edf Welliclose Square Deep Cable Tunnels to Murphy International
- Bridgewater Track Monitoring to LOR
- London Gateway Monitoring to LOR