

ICE East Midlands
East Midlands Merit Awards (EMMAs) 2017
Large Project Category
Submission by Derbyshire County Council
For the
Regeneration of Markham Vale North

EXECUTIVE SUMMARY

Derbyshire County Council's £24m Regeneration of Markham Vale North phase comprises three significant areas of work all with an end target date to coincide with the planned opening of the first new business to invest at the site.

The three significant areas of work comprised a **major earthworks and infrastructure contract**; the **construction of the Seymour Link Road and associated structures**, and the **installation of major new utilities**. Collaborative team working ensured the highest quality was achieved throughout, cost and time savings achieved and the programme date successfully met on a 200 acre site with one single construction access point.

ICE East Midlands
East Midlands Merit Awards (EMMAs) 2017
Large Project Category
Submission by Derbyshire County Council
For the
Regeneration of Markham Vale North

Background

Markham Vale is Derbyshire County Council's largest-ever regeneration project which aims to reverse the unemployment and deprivation which followed the closure of the mining and other heavy industry in north east Derbyshire. The 200 acre Markham Vale business park is strategically located in the heart of the UK's motorway network, located in north east Derbyshire. Covering a total area of 890 acres, some 200 acres is specifically reserved for the business park transforming the area into a major business and industrial location creating 4,100 new jobs and over three million square feet of commercial floor space. The total cost of the project is estimated at £92 million but this will bring in a further £250 million of commercial investment through a significant public – private sector partnership.

It involves substantial improvements to the local transport network including a new M1 motorway junction – 29A, new link roads – notably the Staveley Northern Loop Road and the Seymour Link Road along with several estate roads, utility provisions and sustainable travel infrastructure.

In addition to the ongoing investment in major infrastructure and land remediation, the project includes the creation of new woodlands, improved habitats, water features and significant landscape improvements around the business park to ensure its attractiveness for inward investments.

With work nearing completion on the East and West phases, the work to regenerate Markham Vale North is the latest phase in the overall scheme.

The Project

Under the design and supervision of a small team of Civil Engineers at client Derbyshire County Council, the £24m Regeneration of Markham Vale North phase comprises three significant areas of work all with the aim of achieving an end target date to coincide with the planned opening of the first new business to invest at the site.

The three significant areas of work comprised a **major earthworks and infrastructure contract**; the **construction of the Seymour Link Road and**

associated structures, and the **installation of new utilities** including a £6m primary electricity sub-station.

The Markham Vale North site which comprised a former colliery although immediately adjacent to the M1 motorway had no highway access except for an agricultural track through the relatively quiet village of Woodthorpe in north Derbyshire; hence the need to construct the Seymour Link Road to access the development site. This track – Seymour Lane – was the only access to the site for all construction activity, ensuring that collaboration between all civil engineering and construction teams was given the highest priorities in order to agree effective site management boundaries and responsibilities and specifically CDM. By necessity some of these were shared between the different contractors. Monthly meetings were held between all key personnel to ensure collaboration was effective.

The first 12 month phase started in 2015 with Chesterfield based contractor Fitzwise Ltd undertaking a major earthmoving contract. The contours of the 80 hectare site rise from the floodplain of the Doe lea to the village of Woodthorpe, some 22m in height difference, hence the need for major earthworks to create large level plots for future development. All excavated material was retained for re-use on site, either within the created development plots or road corridor or for use in the construction of screening mounds. The timing of these £8m works was also critical in order to achieve partial completion dates to release the road corridor and the first development plot.



Diversion of the Hawke Brook and construction of a retaining wall to create development plot above.

The key elements of the Fitzwise Ltd contracted works were the;

- excavation, backfilling and compaction of 1.5M m³ of rock and soil
- hauling of 0.4M m³ over 2km to construct a screening mound on the opposite side of the M1 motorway
- 'de-canalisation' improvements and partial diversion of 870 metres of the Hawke Brook to open up the river corridor and create improved habitats.
- construction of three reinforced earth retaining walls up to 7.5m high.
- construction of a 5m high 160 m long pre-cast concrete retaining wall
- capping of two deep mine shafts with future-proof off-set drainage ability to deal with rising mine-water
- installation of 3.5km of surface and foul drainage systems. All surface water is collected and discharged to the local watercourses via a series of purpose built storage ponds.
- construction of 3.2km of off-highway footways/cycleways in order to encourage walking/cycling to and from work journeys.

Within months of the earthworks starting a £5.5m contract was awarded through the Midlands Highways Alliance framework for the construction of the Seymour Link Road and associated structures; Eurovia Contracting were the appointed contractor. Eurovia Contracting were brought on board through an 'Early Contractor Involvement (ECI) process to assist with the final design preparation and to identify possibilities of cost savings. This process enabled some highway earthworks elements to be 'moved' to the Fitzwise contract with further cost and time savings achieved through redesign of elements of the two structures. Both Eurovia Contracting and Fitzwise Ltd worked closely together throughout the construction stages maintaining quality and programme; this resulted in using the same sub-contractors for similar works and utilising each other's resources when appropriate.

The key elements of the Eurovia Contracting contracted works were the;

- demolition of redundant structures over two watercourses.
- construction of 1.8km of new highway – the Seymour Link Road including drainage, lighting and a combined footway/cycleway.
- construction of the Doe Lea Bridge and a reinforced concrete culvert over the Hawke Brook – both carrying the Seymour Link Road. Both structures incorporate ledges to protect the foraging routes of mammals
- refurbishment of 0.5km of Seymour Lane
- project management for the installation of utilities
- extension of a flood relief by-pass structure in the Doe Lea flood plain.



The new Seymour Link Road bridge over the Doe Lea river

Throughout the above phases a number of off-site improvement works were undertaken to both the local highway network and also to reinforce the utility provision to the site. The off-site highway works were undertaken by the County Council's in-house highway construction team whilst gas, telecom, sewer, broadband and water service reinforcements were commissioned in conjunction with the various utility companies.

The key elements of the Infrastructure and Utility phase works were the;

- demolition of a 'bailey' type bridge which crossed Erin Road and the disused Bolsover Branch Line.
- Improvements to 1.1 mile of Erin Road and the construction of the junction to the new link Road.
- The commissioning of new and reinforced utilities to serve the new development from the various utility companies, comprising;
 - a £6.3m 30MVA primary substation all to serve the new developments.
 - new gas, electricity, telecoms, broadband and water supply
 - foul sewer diversions, connections and a pumping station



Demolition of a redundant 'bailey bridge' over Erin Road and the disused Bolsover branch line

The earthworks were successfully completed in mid-2016; the Seymour Link Road along with all the necessary utility works were completed towards the end of 2016. All target dates were met in advance of the German owners of the new development taking possession of their advanced logistics centre in January 2017.

The final element of the works will involve a £0.3m landscaping scheme to be implemented over the coming months.

As one would expect, land assembly and planning approvals were secured well in advance of the works having started. However, it was the trigger actions of securing grant funding that enabled the civil engineering works to start. Whilst the possibility of securing agreement with a prospective occupier was known, the project team rallied to the challenge of a very a tight completion deadline which was only finalised when the commercial legal agreements were completed. The construction of the planned 220,000 sq. ft. logistics centre was programmed with the same end date as the road opening date – the client wanted to start using the road as soon as he took possession of the building and with no alternative access the timing of the civil engineering works became crucial. Furthermore, last minute changes to the layout of the commercial development necessitated further design and programme changes to the civil engineering works but without any time increases.

The successful outcome of the project is a testament to the quality of design and construction and the collaboration between all teams – whether client, design, construction or third parties.

The completion of the civil engineering works to high standards and agreed programme dates has led to the commercial market taking further interest in the site. Agreement was reached with a second occupier for 0.5M Square foot warehouse before the Seymour Link Road was completed to the extent that construction of the new facility was allowed to start before Eurovia Contracting left the site and construction of a third facility is due to start in early 2017.



Earthworks, road construction and development building contractors all working together.

Project Team

Client	Derbyshire County Council
Designers	Derbyshire County council
Earthworks Contractor	Fitzwise Ltd
Highways Contractor	Eurovia Ltd