

# Highways – adopting a flexible approach

## OGC Case Study

### Upfront evaluation and consultation key to delivering new coastal access improvements in Lincolnshire

Lincolnshire County Council is working with Jacobs Babbie and May Gurney to deliver £23.6 million of coastal access improvement works.

The first phase of the project was the Partney by-pass, which was completed in August 2005. The highway works at Partney were delivered three months ahead of contract programme, saving about £260K. This was achieved despite encountering numerous issues with the geology, ecology and archaeology of the site. The achievements of the project can, in many ways, be attributed to a bespoke framework, developed by the council to better procure its construction projects.

### Achievements and benefits

- Lincolnshire County Council developed an overarching bespoke framework. **Benefits:** The project delivery team was committed and involved from an early stage, resulting in continuity and ownership through to completion
- Start on site date for the Partney by-pass project was brought forward by more than a year. **Benefits:** This facilitated upfront consultation, allowing time for innovation and provision of best value solutions. It made the programme more flexible, facilitating the resolution of major issues that arose during the project works

- The Partney by-pass project was completed three months ahead of schedule. **Benefits:** This saved about £260K and more than 21,000 man-hours. The by-passed route was open and operational during the busy summer holiday period, helping to ease traffic flows and improve the quality and times of journeys
- Target cost and value management procedures were adopted throughout the project. **Benefits:** The project is approximately 500K<sup>1</sup> under budget with no loss of quality
- A safety culture was embedded throughout the contractors team. In total one workshop and sixty seven safety meetings were held. **Benefits:** 110,000 man-hours worked, no accidents reported
- There was good planning and signage throughout the works. **Benefits:** No road traffic accidents during construction
- Emphasis was placed on engaging with the local community. **Benefits:** There was full support and involvement by the local community
- Lincolnshire County Council funded archaeological excavation in advance of the construction of Partney by-pass. **Benefits:** This has ensured that the history of the village is preserved, benefiting both the county's people and its heritage.



Opening ceremony of the Partney by-pass

<sup>1</sup> Current figure at the time of print



# Highways – adopting a flexible approach



■ Satellite shot of Partney - red dotted line outlines superimposed by-pass route

## Introduction

Following Egan's *Rethinking Construction* report Lincolnshire County Council sought to adopt a framework contracting approach to its construction projects. This shortened the length of the procurement process for its construction projects, providing more time upfront to consider innovative solutions as well as the mitigation of risks.

The objectives for the framework were to demonstrate:

- Innovation
- Cost efficiency
- Best value
- Continuous improvement.

The council developed an overarching bespoke framework with core principles of quality and rates submissions. Two contractors – Morgan est and May Gurney – were awarded the framework in February 2004 (to run for seven years until 2011). By appointing two contractors, risk is reduced, comparison allowed and idea generation facilitated. The contractual structure of the framework also permits the council to enter into further professional and construction services contracts under NEC.

The framework was first used on the initial coastal access improvement scheme – the Partney by-pass project – which was allocated to May Gurney.

Works were scheduled to start in June 2005, but as a result of the framework agreement, the programme was brought forward to March 2004.

## Project Background

Partney is a small village on the southeastern edge of the Lincolnshire Wolds. The village's importance is highlighted by the fact that two major medieval roads (now the A16 and A158) once met at a T-junction in the centre of the village.

In recent years the amount of traffic passing through has been increasing, especially during the summer holidays, when people visit coastal resorts. The A16 is the main north-south route from Grimsby to Boston and the A158 is the east-west route from Lincoln to Skegness.

Traffic accidents and congestion problems have resulted in the need for a by-pass around Partney. The by-pass consists of two new roads that skirt around the east and west of the present village.

## Principles and objectives

The council made quality a priority for the delivery of the Partney by-pass project. This issue is reflected in their Local Transport Plan overall objectives:

- To create an economically successful county
- To develop inclusive communities
- To improve quality of life.

These high level objectives were to be facilitated through the framework agreement, which placed great emphasis on best value and innovation. The strategic emphasis on quality is reflected in the project specific objectives of the coastal access improvement plan:

- To improve the environment for residents (access, safety, noise and air pollution)
- To improve safety and reduce delays for through traffic
- To reduce accidents
- To improve journey time and reliability for tourists, bus services and tour operators
- To help boost the tourism industry on the coast by further reducing the area's periphery and, in turn, benefit the area's economy
- To reduce severance and community impact caused by existing high traffic levels through the villages.

There was a further key target for the Partney by-pass to be open to holiday traffic in August 2005. This was a high priority, as the route has heavy traffic during the summer months, particularly to and from Skegness.

## Major issues

At the project concept stage, the major issues were to:

- Start one year early
- Minimise the works for new structures.

The consultation phase identified further potential issues with archaeology, geology and ecology. Therefore it was necessary for the project team to:

- Manage known and unknown archaeology
- Manage the existing ecology
- Consider the geology.

As the project progressed to construction in July 2004, problems were faced with heavy rain and adverse weather. This was unexpected for the time of year and posed a major risk to the programme of works. In total, 6 weeks were lost to adverse weather conditions.



■ Archaeological digs on site - a medieval burial ground

## Successful initiatives

### Local community

Lincolnshire is home to about 657,000 people, spread over a wide area.

The project team conducted surveys before starting the works at Partney and found that 88 per cent of the public wanted the by-pass. This was a major factor for the team, as it highlighted that the majority of the public supported the works. It provided the team with the opportunity to engage with the local residents to ensure that their needs were met.

The support of the local community was encouraged by the production of monthly progress reports. Representatives from the project team would also attend parish council meetings, ensuring any issues were addressed. The senior project leader personally informed landowners about the programme of works, explaining all issues to them. All local residents were openly invited to visit the site as often as they liked during the works process. This was a huge success. About 500 people visited during the construction phase. A local school produced a project about the works and visited the site, encouraging the children to take an active interest in their local environment.

The project team were also conscious about engaging with local sub contractors. This benefited both the local community and the project. It supported the local economy and ensured that those employed on the project provided a high quality end-product. By using local resources, it enabled the project team to have a quick response to any issues that arose, as the workforce resided in the area.

## Upfront consultation

The Partney by-pass project was due to start in June 2005. However the procurement framework had been developed by the council and awarded to two contractors in February 2004. This allowed the project (with advanced works) to start more than a year earlier, in March 2004, with the main works scheduled to start in July 2004. Therefore four months were provided for upfront consultation and evaluation before the main works were due to start.

The consultation phase allowed the project delivery team to become involved with the works from an early stage. This provided continuity and facilitated ownership of the project. It also meant the site and surroundings were fully assessed before the main works began. This enabled a full understanding of the major risks and issues associated with the project site. By July 2004, the site had been cleared, with risks both identified and managed. This made the timescale and costs more certain and brought forward the start of the main works on site.

The framework and upfront consultation also assisted the project team in managing the adverse weather experienced in August and October 2004.

All parties were quickly able to meet and decide on the best course of action. They sought to find an economic way of delivering the programme that would still enable them to finish on time. In total, 14 changes were made to the programme within the first year. This was due to the fact that the team had acted proactively at the consultation phase, identifying all issues and courses of action. Therefore the project team had a central,

informed knowledge store, from which they could respond quickly and flexibly to any problems.

## Archaeology

The importance of archaeology in the Partney area was highlighted during the consultation phase. Lincolnshire County Council had funded archaeological excavation in advance of the construction works. The first stage in 2002 was an assessment of the proposed by-pass route, which looked at old documentary records, including maps of the area, previous archaeological work and aerial photographs.

Between 2003 and 2004, excavations by archaeologists from Cambridgeshire County Council Archaeological Field Unit targeted the interesting sites. An English Heritage inspector decreed that two sites were of national importance.

Upfront funding and targeting sites of archaeological importance helped to inform the project team about the Partney area. It facilitated the identification of potential risks and enabled programmes to be created. The project team believe that by identifying potential problems, it gave them more options later to change the programme and mitigate risks.

In partnership with Cambridgeshire County Council, the team produced a 16-page booklet on the archaeological excavations at Partney. This is a valuable public resource and current proposals are to publish a book about the site.



■ Construction of the by-pass over a water way with built in wildlife route

## Ecology

The project team appointed an ecological clerk of works to lead on all environmental matters. A number of issues were identified during the consultation phase as having an impact on the site:

- Badgers
- Water voles
- Nesting birds
- Bats
- Diversion of a stream.

Of these five key ecological issues, the location of two badger sets posed the greatest risk and interruption to the project. To resolve the situation with one badger set, the proposed route of the southern road was moved by 20 metres.

However the second set was located on the proposed north-south road, which was flanked by archaeological sites. Therefore the project team, in consultation with English Nature, built a new set to accommodate the badgers. This was successful and preserved both the badgers and archaeological findings on the site.

All ecological developments were tracked in an environmental action plan. This beneficial source of lessons learnt can be used for future improvement work projects.

## Geology

The site at Partney is located on the edge of the Lincolnshire Wolds. Along the 4km route of the new bypass, the geology has four distinct areas:

- Alluvium over clay



- Combating water-logged soil on site with lime stabilisation

- Clay over sandstone
- Sand
- Sandstone.

To reduce earthworks costs, the scheme was designed to use the better quality sand in the main embankments and the marginal clay in the environmental bunds. There was no requirement for off-site disposal.

Due to the adverse weather, areas of the site very quickly became water-logged, making construction works almost impossible. The project team evaluated the effect on the programme and considered cost-effective solutions. This was to add lime to areas of saturated silty clay. This allowed works to continue and ensured that the programme was kept on track.

## Lessons learnt

### ■ Upfront consultation

This allowed the project team time to identify and manage risks at the beginning of the project. This provided flexibility in the programme to manage issues as they arose. Thus the project was delivered three months ahead of schedule, saving about £260K

### ■ Focus on quality

The project team wanted to provide a quality product. They engaged with locals to understand their needs. As a result, average house prices have risen and the streets are safer for children to ride bikes to school. The general quality of life has improved

### ■ Framework

This was developed with one objective in mind – to better procure construction projects. The Partney project has shown the true value of the framework agreement. It provides an open forum for all parties to proactively confront and solve problems. Without the framework, traditional tender routes would have been followed. This potentially would have delayed the project by about 12 months, as the earthwork season would have been missed. Over this period, costs would have risen in line with inflation<sup>2</sup>, potentially costing the project<sup>3</sup> an extra £204K. The framework has an added benefit of keeping the project team together so the lessons learnt from Partney can be taken forward to other schemes.

<sup>2</sup> Inflation calculated at 3%

<sup>3</sup> Based on £6.8M construction costs only



## Contacts

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