Edinburgh Glasgow Improvement Project - Alliance Development Agreement (EGIP - ADA) – Central Belt, Scotland

Morgan Sindall plc

BIG Challenge 2015 submission category: Most Innovative

Project overview

The Edinburgh Glasgow Improvement Project (EGIP) is a multi-disciplined project for Network Rail.

Morgan Sindall were involved in the Alliance Development Agreement (ADA) which was the development stage of the project which included the survey, contract negotiation and preliminary design for the scheme and was concluded in November 2014.

The Project Alliance Agreement (PAA) contract, which is the construction phase of the works, is currently on-going and is due to complete in the first half of 2017.

The core of the EGIP scheme is to provide an electrified service with longer trains between the two cities , in turn reducing journey times. This covers both rural and urban areas.

Morgan Sindall in recognition of the need to communicate biodiversity risk to the workforce and stakeholder developed a Google Earth formatted database.

Photo: Google Earth showing earthworks lay out

This 'in house' development allows access to ecology information in the field utilising tablets with GPS capabilities.

What were the biodiversity conditions on site, prior to the enhancement?

The ecology conditions along the line of the route were largely unknown prior to the ADA and survey works.

There are very limited opportunities to access and survey this section of rail corridor due to its narrow footprint and busy train schedule.

The ADA provided an opportunity to gain information on the biodiversity conditions along the rail corridor and inform the risks to the project going forwards.

This information can now be made available to local records centres to help build the understanding of the railway corridor as habitat.

Were there any specific conditions that led to you carrying out this work?

There are legislative drivers which require project to undertake survey work prior to commencement, as well as company management systems.

From experience we understand that communicating biodiversity risk to designers, project managers and workforce is not easy.

During either the Early Contractor Involvement (ECI) stage of a scheme or during design and development, it is not easy to visual large complex schemes and their impact on the surrounding landscape, habitats and species. The Google Earth solutions helps solve this.

What were the biodiversity measures taken?

The EGIP team used Google earth and scheme overlays to easily visualise and manage site risks.

Scheme overlays are easily converted into a format known as a .kml file which is then uploaded into Google earth and the file shared with others on the scheme. This has already allowed clash detection with existing landscaping and water features to be retained.

Further to this, any survey data i.e. ecology surveys or asset condition surveys etc can be overlain with these layers using gridreferencefinder.com to convert the GPS co-ordinates into a .kml file for Google earth.

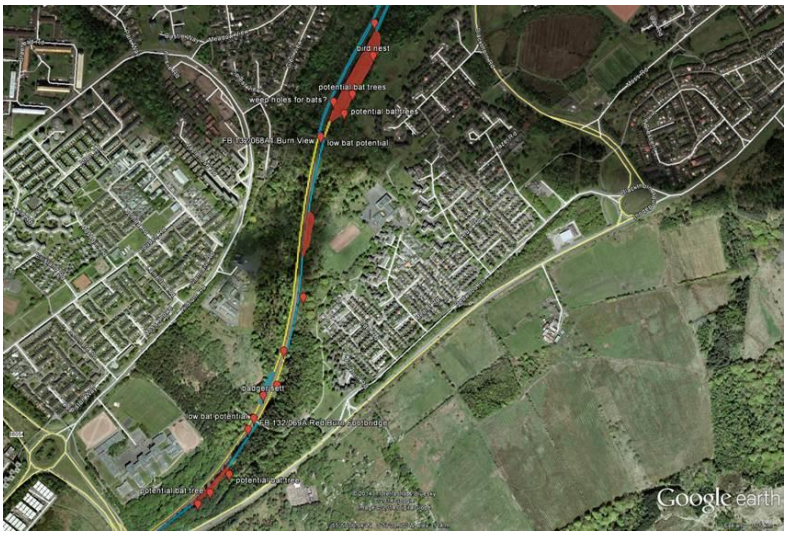

Photo: Google Earth showing some biodiversity risks and bird nesting zones

This then allows you to understand where the existing site risks are in relation to the proposed scheme allowing for mitigation measures to be designed with confidence. This method has been brilliant for liaison with numerous stakeholders.

How would you best describe the project?

Mitigation.

Further information

The use of this technology has been a success as it is easily used and understood by a wide audience.

The long term benefits are that it will allow Network Rail and local authorities to build up a picture of the importance of the railway corridor as both a habitat and migration route.

We are now looking at developing this system of working with a bespoke Geographical Information System (GIS) which can communicate more than just environment risks on a secure platform.

What was your personal motivation for carrying out the enhancement?

By introducing this platform which can also be used with the GPS chip in mobile devices it allows the workforce to see and understand the risks before they enter a given work area.

This has helped result in a zero reported near miss or incident relating to biodiversity on the project to date.