

# Construction of the A590 High and Low Newton Bypass



*This case study involved the construction of a bypass to the A590 in the Lake District National Park. The client, designers and contractors worked together to incorporate very effective resource efficiency measures in this highway construction project.*

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## Summary

This case study illustrates how resource efficiency can be successfully incorporated into a highway construction project. It provides examples of good practice resource management techniques, including the use of recycled, secondary and local materials. Material remaining at the end of the project was used by local farmers instead of being sent to landfill. The project team worked together to incorporate sustainability right from the initial stages of the project whilst also ensuring that disruption to the local community was minimised. The project was awarded a CEEQUAL rating of excellent as a result of its overall approach to sustainability, resource efficiency and efforts undertaken to minimise the environmental and social impacts of the scheme.

## The project team

This project was commissioned by the Highways Agency under an Early Contractor Involvement (ECI) contract. This contract enabled the project team to incorporate the environmental and social aspects of the construction right from the initial stages of the project. This approach is more cost effective and leads to better buy-in with the project aims of all involved. The parties participating in the project were:

- n Highways Agency (Client)
- n Jacobs (Client Representative)
- n Pell Frischmann (Contractor's Designer)
- n Laing O'Rourke (Contractor)
- n Golder Associates (Designer's Environmental Sub-consultants)

## Description of the project

The project involved the construction of a new bypass for the A590 in Cumbria. The A590 links Junction 36 of the M6 to Barrow-in-Furness and South Lakeland and is a main link for tourists. The new bypass is located 300 m west of the existing A590 and diverts through traffic away from the villages of High Newton, Low Newton and Ayside. The bypass opened in April 2008 and has a traffic flow of around 12,500 vehicles a day.

The project comprised the construction of 3.8 km of dual two-lane carriageway, five structures for crossing the carriageway, two grade-separated junctions at the northern and southern tie-ins, false-cutting and earth-mounding to mitigate the visual intrusion and a number of wildlife protection measures.

### How the resource efficiency issues were addressed

The project team focussed on minimising the consumption of virgin materials, reusing existing materials on site, using local materials where ever possible and minimising the amount of waste produced by the site. This is in line with the HA's aim for sustainable construction to minimise resource use and waste. Activities taken to enhance the resource efficiency of the case study included:

- Prior to the start of construction, production of a document called "The A590 High and Low Newton Construction Contractors Guide to some of the locally available resources" by Furness Enterprise Ltd for use by the main contractors to encourage them to source their goods and services locally thus supporting the local community and economy.
- Construction waste was minimised throughout the project by reusing existing material where possible. This included road planings, walling stones, gate posts, topsoil and subsoil.
- Material was sourced locally where possible and a large proportion of material came from a secondary aggregate source.
- Earthworks were balanced with only a minimal import of 12,000 m<sup>3</sup>, which was brought in under waste management exemptions from local demolition sites.
- Reuse of materials already on site and use of locally sourced secondary aggregate, reduced the use of virgin materials, and kept lorry journeys to a minimum thus reducing carbon emissions and disruption to the local community.
- Slate, as a local material, was used for wall capping and structural backfill. Its high permeability also made it suitable for use in conjunction with multi-cellular back-of-wall drainage on the structures, instead of traditional blockwork.
- Upon decommissioning of the site compound, materials were not sent to landfill, but were re-used by local farmers under waste management exemptions.

## Economic benefits of resource efficiency

Using locally sourced materials and services will have resulted in potential cost savings for the project, as well as leading to economic benefits for the local economy. These benefits were not formally evaluated in terms of cost savings as part of the project.

## Conclusions

This case study of the A590 bypass illustrates the wide range of resource efficiency activities that can be undertaken to minimise waste and maximise resource efficiency. These activities included: reusing existing materials such as road planings, sourcing locally available secondary aggregates, minimising the use of virgin materials and making use of local goods and services (as flagged up in a guide to locally available resources). By making use of local materials at every opportunity, the local economy will have benefited while the disruption to the local community was minimised in terms of disruption, lorry movements and carbon emissions.