

**Lamington Viaduct**  
**Lamington, South Lanarkshire, Scotland**  
**Amalgamated Construction Ltd / Network Rail**

**BIG Biodiversity Challenge Award category:** Medium Scale Permanent Award

**Project overview**

- Total Scheme Value - £5M
- People Involved – 17
- Location - Lamington, South Lanarkshire, Scotland

**Overview**

Lamington viaduct is a four span 101-metre bridge, the largest of 4 railway bridges that crosses the River Clyde. On December 30<sup>th</sup> 2015 Storm Frank led to the undermining of the viaduct and the erosion of the upstream embankments and ultimately led to the closure of the railway. As part of the scheme AMCO had to reinstate the embankments under a complex CAR Licence. A hard engineering solution was required to protect the Client's infrastructure, but through working with AMCO's designer JBA a more ecologically sensitive solution was achieved by overlaying the installed rock armour with soil and biodegradable geotextiles impregnated with a wildflower-grass seed mix.

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

Storm Frank had caused areas along the embankment to be scoured leading to a loss of vegetation.

**Were there any specific reasons that led to this project?**

On 30 December 2015, storm Frank brought widespread flooding and disruption to Scotland. The undermining of Pier 2 of the viaduct led to settlement of the railway and ultimately the closure of the west coast mainline for 7 weeks. Emergency Remedial works involving the pumping of 300 cubic metres of concrete were required to stabilise the viaduct. As part of the remedial works the upstream embankments, which had been severely eroded by the River required to be reinstated and protected.



*Photo Description: Lamington Viaduct, January 2016. Prior to construction works commencing. Scour of the embankment evident*

### What were the biodiversity measures taken?

A hard engineering solution using rock armour was required to protect 320m of embankment and our Client, Network Rail's, infrastructure against future erosion by the River Clyde. Working with our designer JBA, the AMCO Project team softened the engineering approach to allow greater integration with the surrounding landscape and improve the biodiversity benefit. Gaps between the rock armour were filled with soil and covered with pre-seeded coir matting which were then sown with a suitable national provenance wildflower-grass seed mix. The grassland mix provided a range of plants typical of a species-rich grassland found in Scotland. There were 16 wildflower and 6 grass species in this mix, which were suitable for pollinators.

Additionally, as part of the reinstatement work, existing river gravels removed when the work commenced, were also reinstated where the bed had been reinforced under the bridge and along the toe of the embankment. This reuse of existing river gravels allowed the river bed to be restored to habitat similar to that which was present pre-construction.



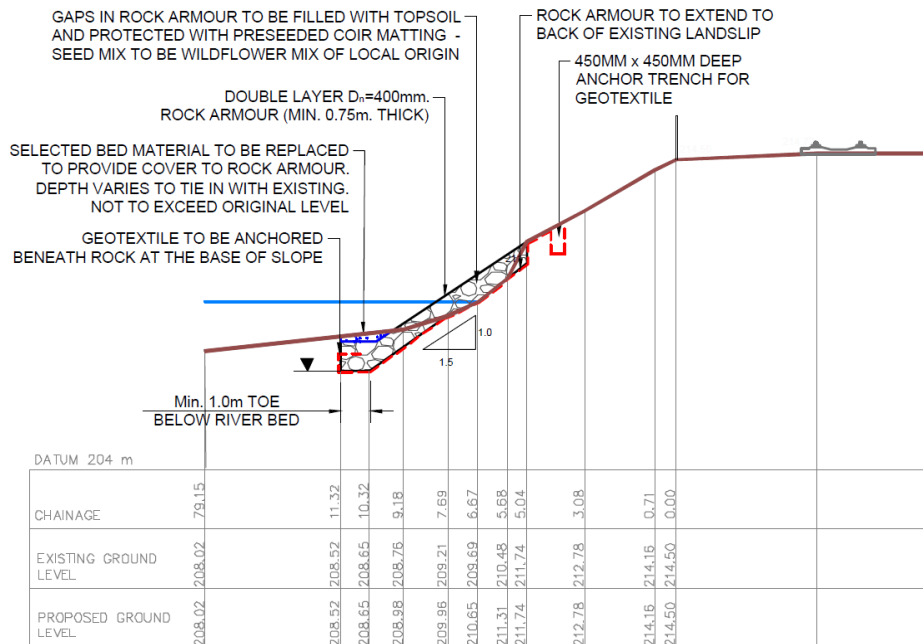
*Photo Description: Construction of the embankment - July 2016*

## How would you best describe the project?

Enhancement

## Further information

The drawing below shows a typical cross section through the embankment.



**SECTION S02**

Scale 1:150



Photo Description: Lamington Viaduct Embankment – May 2017.

## What was your personal motivation for carrying out the enhancement?

To design a solution in response to the damage caused by Storm Frank that protected the Client's assets, whilst reinstating the embankment in sympathy with the surrounding environment and enhancing biodiversity.