

Innovation and Business Improvement at Balfour Beatty

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Idea owner:



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 Project: **A46**
 Client: **Highways Agency**

Case study summary:

Name: **Salix Rock Mattresses**
(What is it called?)

Case study type: **Good Practice / Lean / Innovation**
(Lean / Good practice / Innovation?)

Description:
(What is it and why was it needed? What does it do? How does it improve current practice?)

Rock Roll Mattresses are a tubular revetment consisting of small stones retained within a high strength polyethylene net. Rock Roll Mattresses are used in all areas where vegetation alone will not provide sufficient erosion control. The mattress is formed from smaller units joined together to create a 2m x 2m unit capable of resisting high velocities and shear stress up to 1200kN in high energy river situations. They also accrete silt due to small stone size and can be fully vegetated allowing for habitat creation for small invertebrates. This is not possible with rock armour and large rip rap.

The Section Team on the A46 looked for a faster more robust construction method when installing standard wire cage hand filled Reno Mattresses as well as a reduction in manual handling and working within water of live attenuation ponds. Due to the pre filled nature of the mattress movement of materials within the rope cage was prevented and waste of expensive gabian stone was removed.

Rock rolls mattresses provided an instant flexible solution to scour problems particularly below low water level at the front of the headwalls outlets whilst their construction allowed for flexible installation.

Who is involved:

Division: **Balfour Beatty CSUK**
 Business Unit / Opco: **Major Projects**
 Geography: **Nottingham**
 Sector: **Civil Engineering**



Applications: *(How does it work? Ideas for application elsewhere i.e. if applicable to any other function or business unit)*

Revetment and ditch reinforcement, scour protection, flora and fauna habitat establishment, shoreline defence.

Recognition and rewards: *(What prizes, awards grants or publicity has this received?)*

Benefits:

	Zero Harm	Time	Reduce Cost	Quality	Sustainability	Increase Revenue
To BB	Faster construction lower risk to workforce	Installation in 1hr compared to 2 days	A reduction in labour & plant required to build	Offsite fabrication leading to better quality	Less waste of materials and resources	Saving in overhead costs
To client	Increased safety statistics	Construction 95% quicker than hand filled method	Construction savings	Higher quality factory product	Assists in sustaining flora and fauna	
To industry / society	Safer working	Massive time savings			Less wastage of quarried materials	
Other benefits	Instant flexible solution, can be installed in functional ponds without the need for overpumping					