



PROJECT PROFILE

Title	Experimental and numerical characterisation of low-cost roadside barrier solutions	
Contractor	University of Ulster, Jordanstown	
Contact details	Ciaran Simms School of Engineering Trinity College Dublin Dublin 2 csimms@tcd.ie	
NRA Mentor	Alastair De Beer	
Start date	Jan-11	
End date	Apr-13	
Status	On-going	
Type of project	NRA Research Project	
Project reference	NRA/04/250/LCRB	

Description	<p>The NRA currently requires safety barriers be used to protect the motorist from hazards alongside the national road network where the design speed is 85km/h and above. Many National Secondary Roads are located in tourist areas of outstanding natural beauty, where the existing roadside boundary is generally hedgerows and stone walls. Concerns exist with regard to the extent of safety barrier required on these road realignment projects routes: current requirements are specified in NRA standard TD 19. There is a requirement to develop a low cost low maintenance alternative to existing proprietary products currently on the market. There are also concerns that the current barrier products are inappropriate for use on these roads and that it would be desirable to develop more environmentally sensitive, aesthetically pleasing solutions without compromising road safety. The alternative product or works could be incorporated into the NRA Standard Details. As part of the research, it is anticipated that an earth bund would be investigated as a possible low cost alternative to existing barriers. The proposed system would have to comply with existing European Standards, in particular EN 1317 Part 2.</p>  <p style="text-align: center;">Example of aesthetic barrier</p>
Objectives	The research involves the investigation of the safety barriers used on the Irish National Secondary roads. The objective is to achieve low cost and more aesthetically pleasing options to existing proprietary safety barriers for National Roads upgrade projects located in scenic areas. The edge protection solutions must comply with the relevant European Standards, namely, EN 1317 Part 2 and the performance standards required in NRA DMRB standard NRA TD 19/09.
Benefits	The cost of installation and maintenance of roadside barriers is high. In view of future upgrade programmes for National Secondary Roads, it is desirable to find alternative solutions to conventional barrier systems that have lower initial and maintenance costs. For road upgrade programmes in tourist areas of high scenic beauty, it is appropriate to find alternative solutions which are more aesthetically pleasing and blend in better with the local terrain and environment.
Outputs	The expected project output of this research project is the development of edge protection systems which comply with EN 1317 Part 2 and NRA TD 19/09 and which can be installed at low cost, with minimal land take and which are aesthetically pleasing in the context of the Irish landscape.