

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
TII Mentor	Alastair De Beer
Start date	Jan-11
End date	Apr-13
Status	Complete
Type of project	TII Research Project
Project reference	TII/04/250/LCRB

Description	<p>TII require 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: at that time the prevailing requirements were specified in TII standard TD 19. TII had a requirement to develop a low cost low maintenance alternative to existing proprietary products currently on the market. There were also concerns that the current barrier products were 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 TII 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 involved the investigation of the safety barriers used on the Irish National Secondary roads. The objective was 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 were to comply with the relevant European Standards, namely, EN 1317 Part 2 and the performance standards required in the DMRB standard 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 was 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 was appropriate to find alternative solutions which are more aesthetically pleasing and blend in better with the local terrain and environment.
Outputs	The project output of this research project was the development of edge protection systems which comply with EN 1317 Part 2 and TII 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.