

Retrofitting of crash barriers to rural bridges and case studies

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Belgium has one of Europe's densest highway networks. Belgium has many bridges, most were built between 1970 and 1990 before the emergence of European Standard for Vehicle Restraint Systems.

The bridges now require rehabilitation, including upgrading the vehicle restraint systems (crash barriers) to current standards. Belgium's problem in 2014 was, that the use of the then current approved safety barriers systems would mean, that the bridge decks would need expansive reinforcement work to support these structures. DESAMI started work in 2015 on an alternative design.

To refine the engineering ideas, in 2016 numerical modelling was used to develop and evolve the engineering concepts. The solution that was found halved the transmitted horizontal loads to the bridge deck. A crash testing program was developed to verify the numerical modelling and engineering.

The resultant range of bridge parapets, DESAMI and their technical collaborators refer to as "DOLRE". The financial, engineering and safety benefits arising from this DOLRE family of parapet designs can now be realised in Australia.