

“Raising the Barrier”

BarrierGuard Protects Bridge Deck

BarrierGuard steel safety barrier has recently been installed along the sides of a lifting bridge over the Gloucester and Sharpness Canal. St Ann Way Bridge is part of the redevelopment taking place at the Gloucester Docks & Quayside. BarrierGuard, a high performance, economical steel barrier solution was chosen by consultant engineers White Young Green of Bristol for this prestigious project. White Young Green was looking for a solid sided barrier to provide vehicle containment and to protect and separate pedestrians from vehicular traffic. A solid barrier was preferred to compliment the bridge design and BarrierGuard was chosen as it blended with the bridge design and the surroundings. The bridge links two retail areas (one existing and one proposed).

BarrierGuard has provided the ideal solution due to its smooth continuous surface and low deflection. Highway Care provided detailed drawings and subsequently installed the barrier, manufactured in bespoke sections, to the bridge deck as a permanent application. The barrier has been attached so it lifts with the bridge deck when the bridge is lifted. The client Gloucestershire County Council required the barrier to be painted white to match the bridge. The main contractor was *Alun Griffiths Contractors Ltd.*



By deploying a proper system of protection (i.e. a strong, continuous barrier), the tragedy of the loss of life/serious injury can be easily avoided. The crash dynamics of steel, compared with concrete, carry much lower occupant risk. BarrierGuard's smooth, solid face will safely redirect errant motorists along their intended path of travel at an extremely low exit angle, minimizing the risk of secondary incidents. As the barrier has a continuous surface and no posts, this reduces the risk to motorcyclists from becoming entangled with the barrier and hence any collision injuries are substantially reduced.

The additional feature of the BarrierGuard stepped profile redirects the tyres of an errant vehicle avoiding 'pocketing' that can often occur with 'post & rail' systems and hence, offers a considerable reduction in bodywork damage from glancing nuisance impacts. Due to the lightweight and robust design of the barrier, up to 216m can be carried per lorry load which enables rapid deployment and installation, which can be carried out easily due to the barrier's unique 'quick-mount' connection design.



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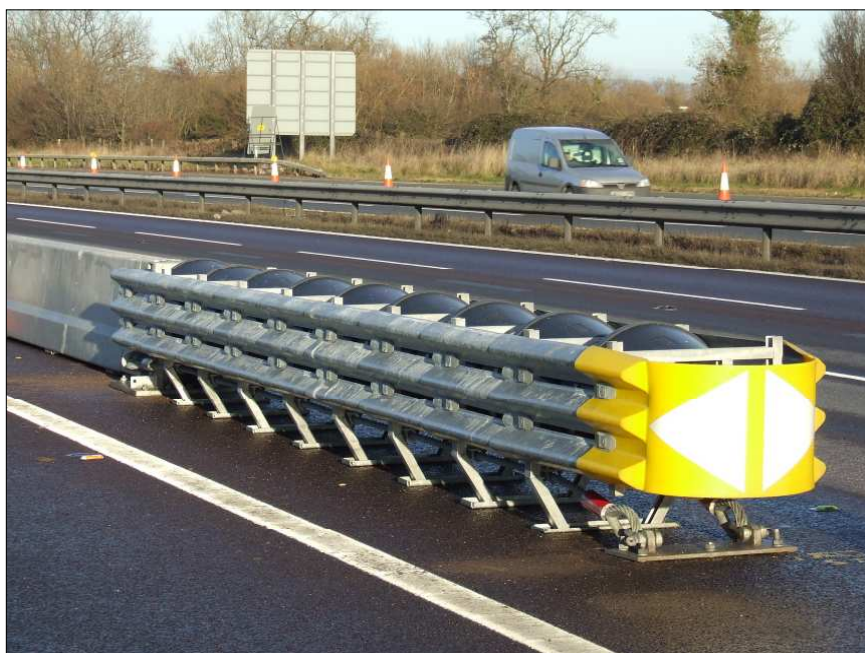
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The barrier performs to provide low deflection (only one metre for 1,500kg car travelling at 110 km/h at a 20° angle) and very high containment (13,000kg bus travelling at 70km/h at a 20° angle is contained). BarrierGuard's low deflection and high containment is demonstrated through it meeting the requirements of both EN1317 - 2 (containment levels N2 and H2) and NCHRP 350 (TL 4). These properties combine to make a safe and economic protection solution for situations ranging between short, 'emergency' barrier needs and those of longer term permanent applications.

The high level of safety offered by Highway Care's BarrierGuard system can now be significantly increased by the addition of fully approved bi-directional, re-directive crash cushions. The TAU crash cushion system recently approved by the Highways Agency for use on UK roads can be installed as an alternative to the barrier ramped terminal providing full protection to errant motorists by preventing ramping incidents.

When impacted from the front, the system telescopes rearwards to absorb the energy and captures the errant vehicle to prevent secondary accidents. If impacted from the side the system redirects the vehicle safely at a shallow angle. The system is highly reusable following an impact and can be repaired on site typically in less than 2 hours.

The TAU crash cushion system can also be used in locations where motorists need to be protected from other roadside hazards. The crash cushion systems are available in widths of 3100mm (2900mm hazard width), 2550mm (2350mm hazard width) and 955mm (755mm hazard width) for velocity ratings of 100km/h and 80 km/h and also 2600mm (2400mm hazard width) and 900mm (700mm hazard width) for velocity rating 110km/h.



TAU Crash Cushion in use along the M5 at Gloucester