

-
- Dedicated cycleway kerb segregation
 - Cycle-safe profile & transitions to standard kerb products
 - Minimal intervention retrofit installation
 - Reduced fitting time & traffic disruption
-

SAFER CYCLEWAYS LONDON & NOTTINGHAM



INTRODUCTION

Precast concrete kerbs are the unsung heroes of our roads and streets, ensuring the safety of road users and pedestrians, and contributing to the paved environment over many years.

Precast concrete products, including kerbs, are by their nature manufactured off-site under factory conditions. On site, precast concrete kerbs are mechanically handled and laid, to optimise efficiency, quality and installer safety. They are best known for the extensive range of well-used 'BS' profiles given in the latest British Standard. The full, extensive range of components and accessories is available in precast concrete covering almost all the highway features needed today.

However, new versions of the kerb solution continue to be developed to meet changing demands. For example, high containment kerbs offer a simple, cost-effective system for passive traffic control, contributing towards better road safety and protecting pedestrians. Other precast concrete kerb products have been developed to facilitate access by wheelchair users, people with prams, the ambulant disabled and others onto buses.

Meeting New Demands

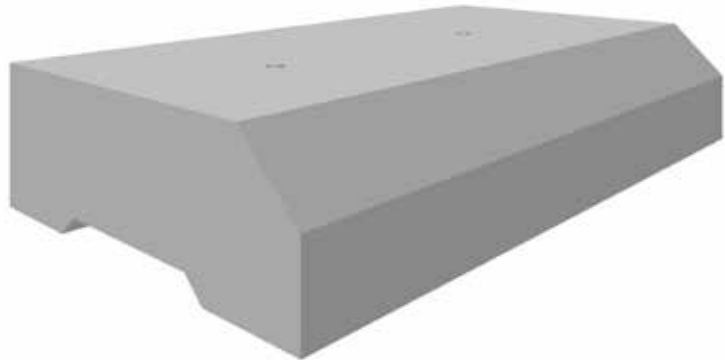
The extensive, established UK precast concrete kerb industry has the resources to continue meeting new demands. Unlike other materials, developments in precast concrete kerbs are simplified by manufacturing techniques that enable bespoke products to be produced without expensive tooling. This case study examines the latest innovation in kerbs developed by an Interpave member, designed to protect cyclists in cities.



CYCLEWAY SEGREGATION KERBS

The latest generation of precast concrete cycleway segregation kerb units was developed by an Interpave member for the London CS2 extension.

Transport for London's brief was to save lives and substantially improve safety for cyclists and other road users, following a significant number of cycle related incidents on the CS2 route. This was achieved by effective segregation of cyclists from passing traffic, particularly on the 'blind side' of commercial vehicles and buses. However, an alternative was needed to the imported Chinese granite standard kerb configuration with block paving inlay previously used for segregation 'islands'.



Reducing On-site Work

The solution was based on a 500mm width segregation zone formed using a single element precast concrete unit, reducing on-site installation time and consequently traffic disruption. With a 125mm height above the road surface, the unit has a special splayed cross-section to one side, reducing the possibility of cyclists catching a pedal, and can accommodate vertical or other standard profiles to the vehicle side. Standard kerb thicknesses with the same splayed profile are used for raised footpaths and wider islands. Various end units and transition kerbs from the new profile to other standard sections were also developed.



LONDON CS2

The new precast concrete cycleway segregation kerb units were first used on an upgrade to Cycle Superhighway 2 (CS2) between Bow and Aldgate.

Cycle Superhighways are cycle routes running from outer London into and across central London. A substantial upgrade of Cycle Superhighway 2 (CS2) forms part of plans by the Mayor and Transport for London to improve cycling safety in the capital.

The upgrade, which received 90% support in consultation, will deliver a world-class fully and semi-segregated cycle route – between Aldgate and Bow Roundabout, linking to the already segregated CS2 from Bow to Stratford. In addition to cycleway segregation, the project included improved pedestrian crossings and pioneering cycle priority junctions.

The new precast concrete cycleway segregation kerb units and related products – totalling some 24,000 linear metres – were used to create safe cycleways on both sides of the carriageway for the CS2 extension. The Interpave manufacturer member won the 'Innovation of the Year – Materials' category at the 2016 London Construction Awards, recognising an innovative, bespoke hard landscaping solution that would serve as a safe and sustainable segregation system.





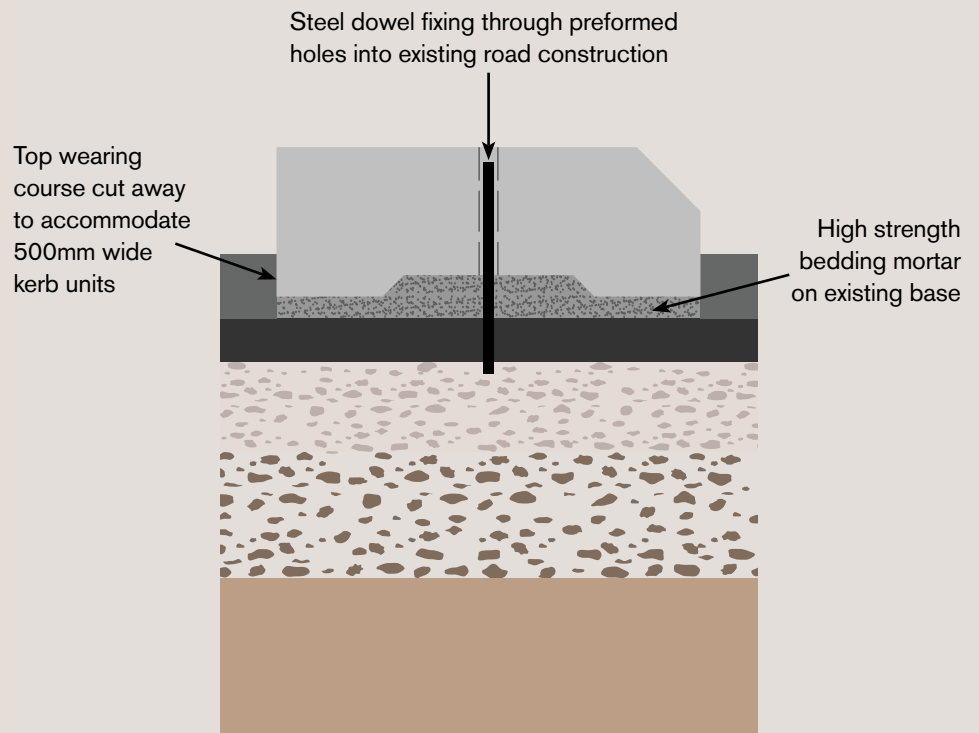
Sustainable Precast Concrete

The new precast concrete kerb system was developed with a shot-blasted granite appearance for CS2, replicating the solid granite kerbs used previously. However, being manufactured in the UK, the precast concrete products provide a 33% carbon footprint reduction over the Chinese granite kerbs and also utilise 82% recycled and secondary material content in their manufacture.

Safe & Convenient Installation

A fresh, low intervention approach to retrofit installation formed a key part of the new system's development. This involved cutting and removing the carriageway surface course only, to suit the kerb footprint. The precast concrete units were then simply laid onto a high strength bedding mortar on the existing base and secured with steel dowels vertically through preformed holes.

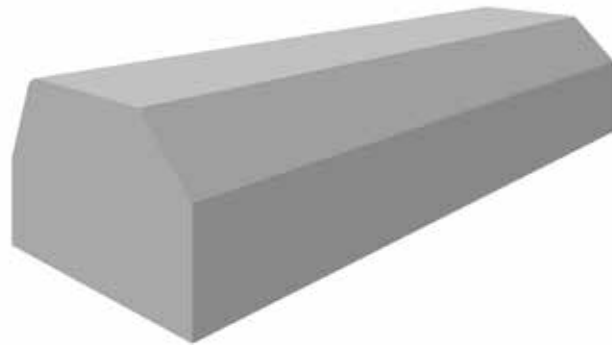
As a result, installation time for construction of the cycle route was reduced by 50%. This, in turn, lowered the cost of contract 'Preliminaries' and traffic management, and also reduced traffic congestion and exposure of the workforce to in situ risks. The installed kerb units provide a durable and strong restraint for heavy vehicles.



NOTTINGHAM WESTERN CORRIDOR

Following its role on London's CS2, the new precast concrete cycleway segregation kerb system is being used for a similar programme in Nottingham.

As part of the Nottingham Cycle City Ambition Programme, high quality north–south and east–west, cross city cycle corridors are being developed. The cycle corridors and their delivery will be closely aligned to Inner Ring Road, Creative Quarter, Broadmarsh and Connecting Eastside schemes. Improvements are planned in all of these schemes to ensure that the cycle corridors link up, take people to key destinations and do not abandon cyclists at major junctions on the highway network.



This impressive programme has been heralded by the first phase of the Western Cycle Corridor along Castle Boulevard, incorporating some 400 linear metres of the innovative precast concrete cycleway segregation kerb system. Here, a smooth finish bespoke kerb unit is being used, with a 290mm wide section to suit the limited space availability. This single unit replaces two kerbs 'back-to-back', avoiding in situ jointing and delays, and is conventionally installed with haunching. It comprises a standard 'half-batter' profile facing the vehicular side and the special splayed cross-section to the cycleway (to reduce the possibility of cyclists catching a pedal).



Paving Essentials

Precast concrete paving and kerbs offer distinct, modular units and designed variations in colour, texture and shape. They can break up areas, adding visual interest and a human scale not possible with monotonous, formless materials such as asphalt.

Interpave manufacturers continue to develop a growing palette of styles, shapes, colours and textures to meet current demands in urban design, matching – and often exceeding – the visual qualities of materials such as stone. It is generally unrealistic on cost, availability and accessibility grounds to specify locally extracted stone that may have been used in the past, while imported stone fails to meet sustainability criteria. In contrast, precast concrete paving from Interpave manufacturers can meet requirements for 'local materials', both in terms of aesthetics and sustainability.

Essential requirements for paving materials, from the Manual for Streets and other guidelines, can be summarised as follows:

- visually attractive and able to deliver distinctive local character
- capability for visual or tactile differentiation between distinct areas
- durable and maintainable with reliable product supply
- accessible to all with consistent slip and skid resistance
- well drained to avoid standing water and compatible with SuDS
- sustainable – in the widest sense.

More information on how precast concrete paving is uniquely placed to satisfy all these requirements can be found in *Planning with Paving*, via www.paving.org.uk.

Case study prepared by Hodsons.
www.hodsons.com



Interpave

THE PRECAST CONCRETE PAVING
AND KERB ASSOCIATION



www.paving.org.uk

The Old Rectory, Main Street, Glenfield, Leicester LE3 8DG United Kingdom
e: info@paving.org.uk t: 0116 232 5170 f: 0116 232 5197

INTERPAVE IS A PRODUCT ASSOCIATION OF THE BRITISH PRECAST CONCRETE FEDERATION LTD



t: 0116 232 5170
f: 0116 232 5197
e: info@britishprecast.org
www.britishprecast.org

Interlay
THE ASSOCIATION OF
PAVING CONTRACTORS



t: 0116 232 5191
f: 0116 232 5197
e: info@interlay.org.uk
www.interlay.org.uk

