

# Cycle Highway Trench Bridge

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Cadent Lane Rental Industry Publication



# Introduction

Cycle highways are commuter cycle routes that link outer London with central, with their introduction, key to increasing the number of trips made by bike and enable these vulnerable road users to feel safe while out on the road network.

Work promoters will sometimes need to undertake maintenance, replacement or lay apparatus within them, so it's always preferable to keep them as close to their normal route of travel as possible and avoid any unnecessary diversions, especially into the main carriageway, where the risk to safety is increased during peak traffic periods. It is therefore essential to explore new solutions that deliver optimum safety conditions for all road users, while mitigating congestion caused by works.



# The Project

It was therefore proposed to develop a lightweight yet robust plate, that could be used on cycle lanes to assist cyclists traverse over open excavations during peak periods, while having the ability to hold the weight of emergency vehicles should the need arise.

From a concept sketch diagram, a prototype 'excavation bridge' was manufactured in partnership with TfL and Oxford Plastics. The design was chosen for its ability to maintain cycle flows during peak hours and improve the safety of road users over roadworks excavations, encourage cycling.

The composite structure, would have to comprise of interlocking sections, withstand the weight of emergency vehicles, while being practical enough for site operatives to manoeuvre. It would need to be applicable for cycle lanes up to 4 metres width (trench width 1metre) and be stacked in sections on site when not in use, to ensure the minimum amount of road space would be used for storage purposes. Adequately profiled and anti-skid coated, the excavation bridge had to mitigate safety risks to cyclists as well as withstanding constant impact from cyclists, all while remaining securely in place.

Once built, representatives from London Cycle Campaign (LCC) and Wheels for Wellbeing appraised the prototype, in addition to an online public survey and use of social media. The trials were carried out with a selection of different bicycle styles including a recumbent trike, race bikes, Brompton folding bike, cargo bike and a wheelchair hand cycle.

A photograph showing a person's legs and feet on a bicycle, riding over a white, curved road plate on a grey pavement. The person is wearing dark clothing and a helmet.

# Trials

## Trail 1

This prototype design received positive survey feedback from public/cycle groups, with 84% saying they travelled over it with ease and 71% reporting low impact when riding over the plate. Comments included reference to the benefit of using a ramp instead of diversions into traffic and some mentioned the colour of the plate needing to be more obvious without black edging so less like a speed hump and additional warning signage requested.

## Trial 2

A second trial was carried out in spring of 2018 using a different prototype. General feedback from the panel agreed to the positive application of the road plate. Comments concluded that the road signage was clearer than the first trial so cyclists slowed on approach and that funnelling the cyclists across the ramp with the use of cones prevented cyclists possibly choosing detours. The panel reiterated that the colour of the edging needed to be more visible to draw attention to the approaching ramp as there was a slight bump on entering it as you would expect from a change in ground levels but that it did not compromise safety or cause discomfort.

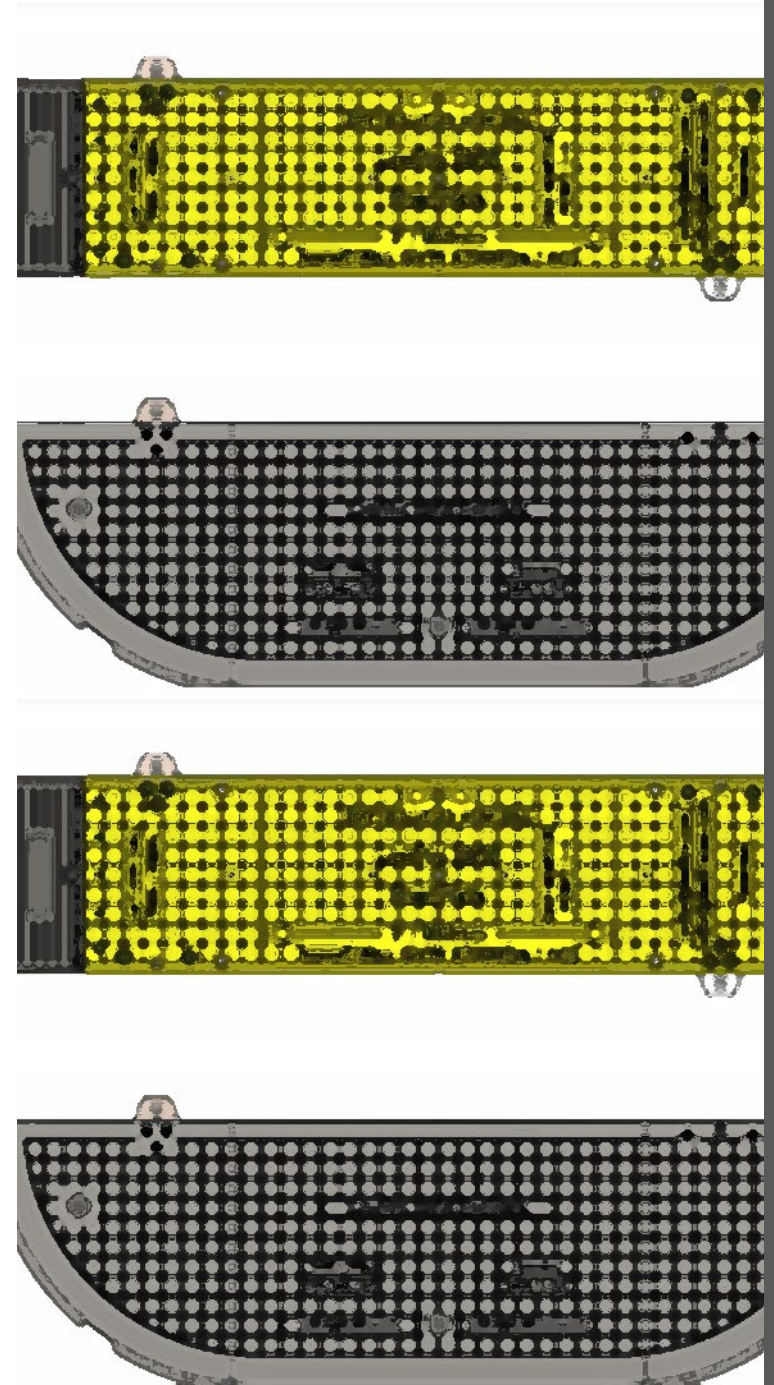


# Outcomes

The objective of the project was to maintain cycle flows where there an excavation in the cycle lane during peak periods. The project successfully delivered a ramp rather than a bridge as originally suggested. This was due to the space required to create a bridge being impractical for the majority of roadworks thus creating more disruption than the actual roadworks and discounted as an option at an early stage.

The ramp design, easily manoeuvred during the course of works provides a practical and economical solution to promoters. In meeting cyclist expectations around levels of safety and disruption, it has the potential to change public perception.

The prototype is suitable for 44 tonnes vehicles over a 900mm trench which means it is also suitable for carriageway works and spans wider than any similar composite product. It can be easily be placed into position by two operatives and stacked for storage.



# Lessons Learnt

The original prototype design was found to be so flush to the ground that the cyclists didn't slow down on the approach posing a safety risk. This was addressed in the second solution trialled with additional signage, adjusted camber and additional/available colour options.

Uniting with the London Cycle Campaign and Wheels for Wellbeing ensured the true customer need was identified, recognised and considered in the design, build and operation of the road plate.





# Conclusion/ Recommendations

The Cycle Highway Trench Bridge project was extremely successful in communicating requirements between promoter works and cyclists, as well as physically bridging excavations.

The project demonstrated promoters can be encouraged to use economically viable innovative tools which consider cyclists and other road users to avoid disruption and in doing so, change public perceptions.

It was suggested by the cycling groups that the colour of the road plate be changed to improve visibility on the approach. To mitigate this, it is recommended that improved warning signage including 'slow' and 'ramp', as set out in trial 2, could be used as an alternative.



# TfL Lane Rental Scheme

## Author

Cadent Gas

Date Created: August 2018

Email: [LaneRentalFunding@tfl.gov.uk](mailto:LaneRentalFunding@tfl.gov.uk)

Optimising customer journeys through the  
delivery of safer, innovative and sustainable  
roadworks

