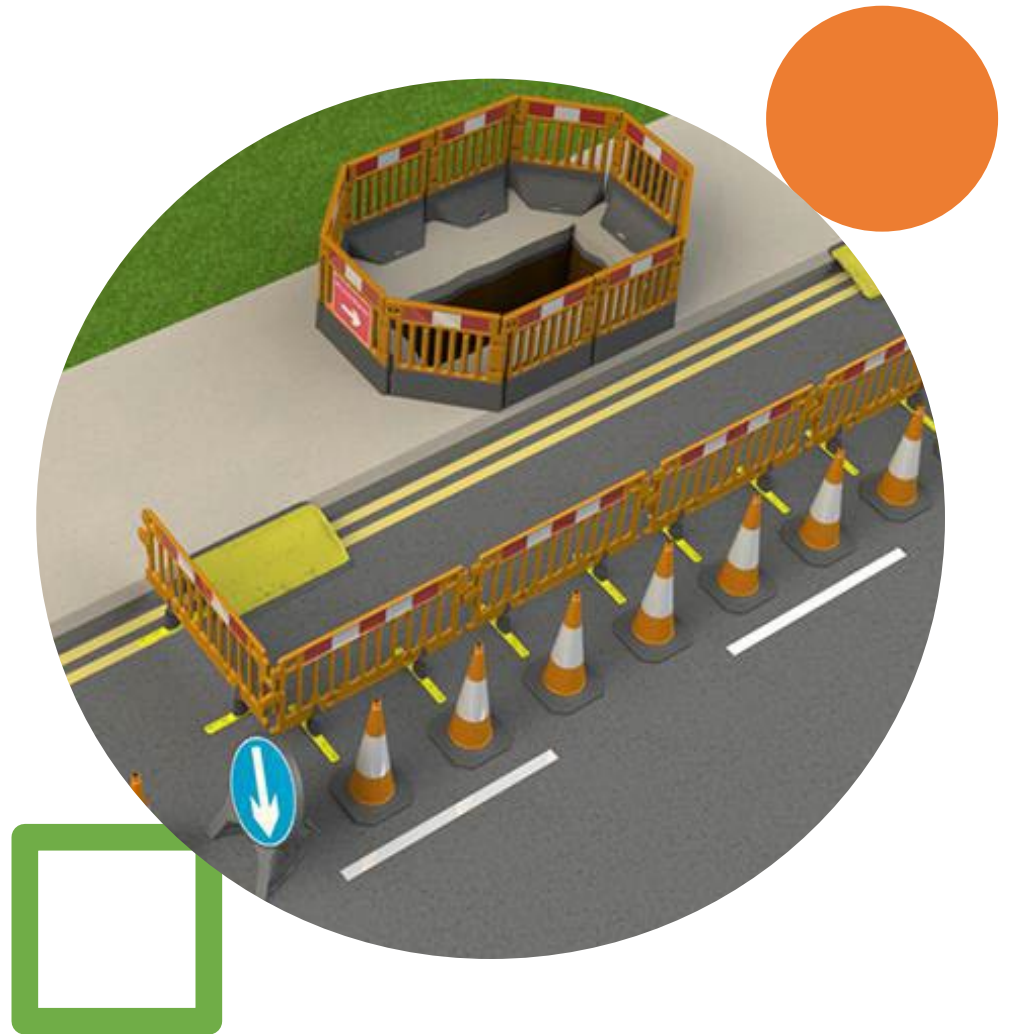




Footway Ramp Trial

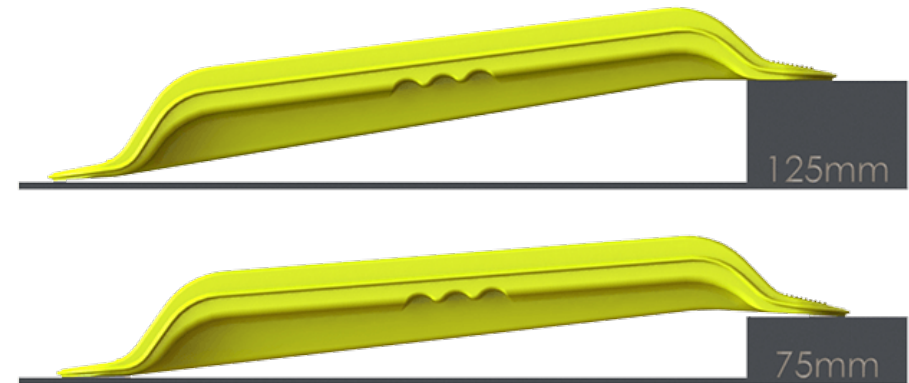
UKPN Lane Rental Industry Publication



Ramp Trial

When roadworks are undertaken on a footway, preventing safe passage; ramps are installed to enable the public to pass via a temporary walkway in the road. Traditionally plank style ramps are used, however, they are not ideal given they must be approached head on, have the potential to move if provided with incorrect fixings and can be unstable under load, causing them to flex. These can be particularly challenging for vulnerable road users.

UK Power Networks, in collaboration with street furniture supplier, Melba Swintex, the University of East Anglia and the Charity Purple Reach produced a prototype to address these challenges with a view to providing a safer alternative. This involved an interactive design and feedback process. The next stage of the project was to manufacture a working prototype and undertake both off and on street trials.



The project

Using a plastic injection moulding technique, the aim was to produce a single form prototype. There was an element of risk to this manufacturing method, as it may not have been suitable and the mould would have to be redesigned, proving costly; however, this was mitigated by the decision to use an interactive design and feedback process between all parties.

A disability evaluation, with the UEA and Purple Reach conducting 2 days of mixed panel testing (as seen in Table I). This was performed on empty roads with kerbs of about 120mm high in Norwich, and 100mm high in London, with UK Power Networks present for support.

The final component was on-site trials, which occurred in January 2019, over sites in London. Feedback was gathered from field staff over a two month period.

Table I: Disability evaluation panel make up

Impairments & Aids Used	Participants in Norwich	Participants in London
Mobility, manual wheelchair	3	1
Mobility, electric wheelchair	3	4
Mobility, scooter	3	0
Mobility, crutches	1	0
Mobility, rollator	1	0
Mobility, walking sticks	1	0
Visual impairment, walking stick & carer	2	0
Visual impairment, cane	0	4
Visual impairment, assistance dog	1	0
Visual impairment (partially sighted), no aids	0	2
Deaf, no aids	1	1
Autistic (and pushed partner's wheelchair)	1	0
Carers – of visually impaired person / wheelchair users	2	0
Total on Panel	16	12

Outcomes: Objectives

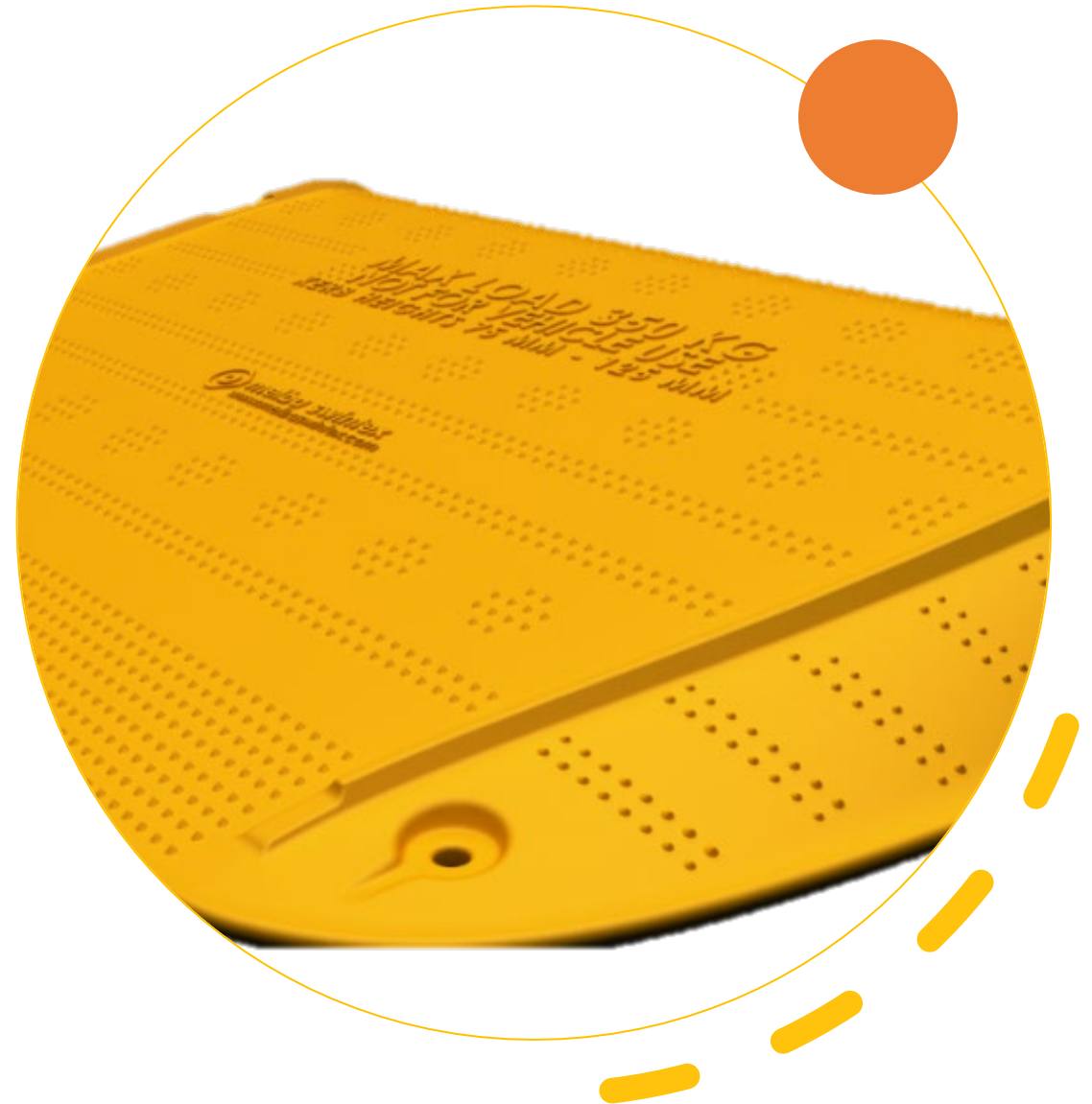
Overall, the project sought to design, test, and deploy a safer and improved kerb ramp. From the panel's review (listed in Table I), it has been shown that the ramp is indeed safer and more accessible for all users involved in the following ways.

- **Stability:** the panel found the ramp to be stable, with no observed flex or bending under load. Everyone felt confident in using the ramp.
- **Gradient:** the plank style ramps can be steeper (about 1:5) than the new style ramp (about 1:6), That being said a less steep ramp is preferable, but the panel admit that there is a limit to how large the ramp can be considering space limitations.
- **Wider entry and departure angle:** It was also noted that the chamfered shoulders of the ramp allowed users to enter and exit from wider angles as opposed to the plank style ramps, which need a perpendicular line of approach.
- **Reduced trip hazard:** The ramp does not have a void underneath, and its 9mm high tap rails (used by visually impaired persons with a cane) are not so high to be a trip hazard to other users.
- **Increased visual fidelity:** in the second panel review, the partially sighted visually impaired reviewers found that the black grip tape on the ramp aids in visual fidelity, and they could identify it better than a plank style ramp without the black tape.

Outcomes: Benefits

Given that the ramps have been deployed on 32 sites in the first 2 months of 2019, it is still somewhat early to realise the benefits in a quantifiable manner. UK Power Networks will carry on using the ramps as part of business as usual, and will perform yearly updates on the benefits that the ramp brings.

In terms of actual costs, and UKPN sees no significant cost difference between a plank style ramp and this ramp, although the benefits are expected to outweigh the costs.



Lessons Learnt

Early stakeholder engagement goes a long way. As the UEA and Purple Reach were engaged early on in the project, design changes to the final ramp were kept to a minimum and avoided additional costs.

Designing a one-size fit all approach was a challenge. Early engagement with UEA, Purple Reach and Melba helped to take a wide spectrum of needs into consideration, to create a design that would fit most. For instance, the raised tap rails are about 9mm high, just high enough for white cane users to detect them but not too tall that they become a trip hazard to others. A compromise was the ramp gradient, as a less steep ramp would have had to be larger, and bulkier.

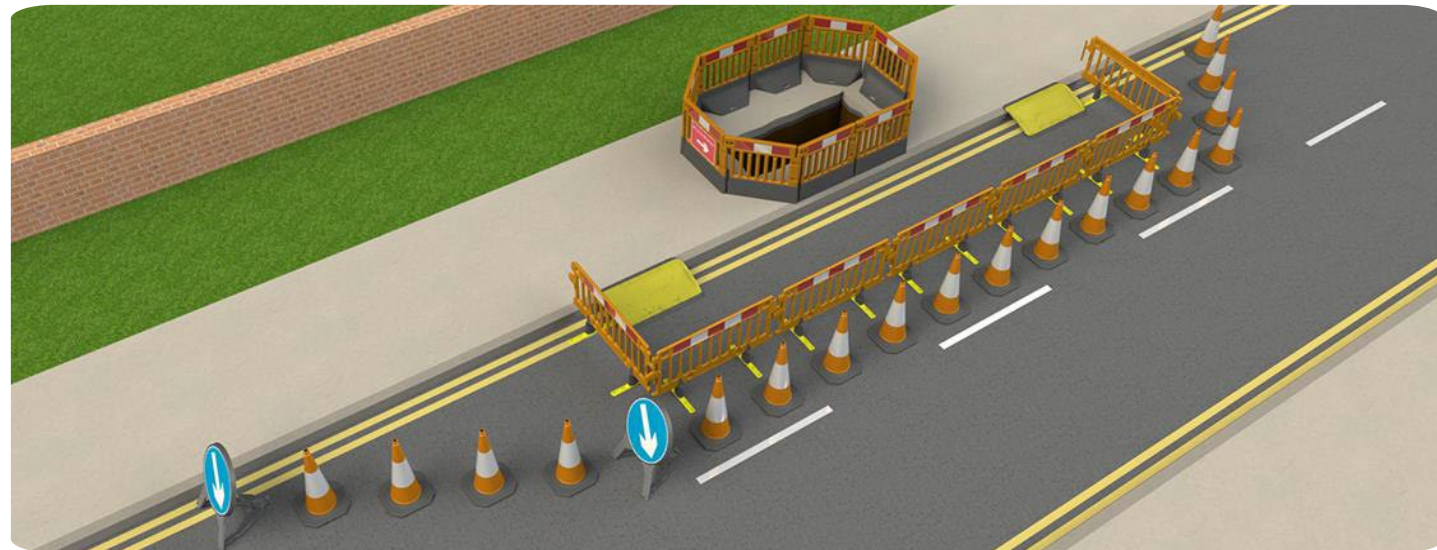


Conclusion/ Recommendations

In conclusion, the project has been successful in achieving its outcomes. It is hoped that other utilities will make use of the ramp in their works, and consider the impact that works can have on vulnerable road users.

Defining a uniformed kerb height or a smaller height range across the country, would ensure a much wider deployment of innovative designed street works equipment.

Consultation is key when undertaking larger projects; this methodology helped to gather input from various sources and aided greatly in development.



TfL Lane Rental Scheme

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



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Date Created: February 2019

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