CASE STUDY AECOM | 1.1b) – Jul 23'- Sep 23'
A63 Castle St – VRS P1 Terminal Location Safety in Design Observation

Introduction

A63 Castle Street scheme is currently at PCF Stage 6 construction phase. The AECOM team work on site full time, and have a requirement to ensure that all the works constructed on site are in line with the works information, specification for highways works and safe for use once released to the public. The A63 is a dual carriageway A-road, with the requirement for Vehicle Restraint Systems (VRS) at isolated locations along the pedestrian footpaths to protect the general public and structures that are not designed for impact loading.

Overview

AECOM were asked to complete an inspection of the new paving laid on a pedestrian footpath adjacent to the A63. This area of paving included large granite paving blocks that were laid around various obstructions, one of these obstructions was the 50m length of Vehicle Restraint System (VRS). The paving slabs had been cut to fit around the permanent VRS.

A P1 terminal had been designed and constructed on a footpath adjacent to the A63. A P1 terminal is a standard detail used throughout the UK, where the VRS simply ties directly into the ground (*Figure 1*). P1 terminals are mainly used on A Roads and Motorways in the verge, and not at locations that include footpaths.

AECOM identified the installed P1 terminal as a potential trip hazard for pedestrians using this footpath. This hazard was identified as siginficant, as the VRS was adjacent to a main dual carriageway. This detail was specified by the Designer, and therefore an issue with Safety In Design. The AECOM Engineer also recognised that the P1 terminal would get flagged in a Road Safety Audit, which could cause a delay to completion and handover of the area to the public.

This failure in design was raised to both the Contractor and the Client to resolve the issue before any negative impact arose from the failure.

Challenges

- Ensuring all parties involved understood the potential safety hazard to the general public using the pedestrian footpath adjcent to an A-Road with the trip hazard present.
- Ensure that a change of design and solution can be agreed between all parties (Contractor, Desginer and Customer/Client).
- Avoiding the issue being raised with a Road Safety Audit and delaying the completion/handover of the area to the general public for use.
- Ensuring that lessons were learnt due to this failure, and mitigation meansures were put in place to avoid reoccurance.

Action Taken

- AECOM raised the issue with the Contractor's Engineers on site, and the issue was agreed by all parties present. AECOM took the action to raise this further.
- An AECOM Engineer took high quality photos of the issue, marked it up with comments explaining the issue and shared this with the National Highways (Client) Project Manager and SES via a client meeting safety moment and a formal email.
- An AECOM Engineer requested that the Contractor then raise a Request For Information (RFI) to the Designer to ensure that a more suitable terminal can be installed within this area, and also to check for other areas of the permanent design that may need to be amended to avoid the same issue occuring again.
- All of the above actions were completed on the same day as the issue being identified on site. This ensured that the remediation of the Failure In Design could be completed whilst the Contractor still had access to this area , and avoided the issue being flagged in a Road Safety Audit.

Results

Following the above actions, the National Highways Project Manager spoke directly with the Contractors Project Director (PD), who also agreed that the P1 terminal did not look correct in that location and posed a significant Safety Risk due to the trip hazard directly next to the dual carriageway. The Contractor followed the advice of both AECOM and their PD by raising an RFI to the Designer for the Failure in Design. The Designer responded and suggested that the P1 terminal be replaced with a P4 terminal (*Figure 2*), and also identified other areas of the design that would require the same amendment/change of design.

As a result of AECOM identifying the safety in design issue and taking the action on the same day, raising this with all parties and ensuring that the correct processes were followed, the P1 terminal which posed a trip hazard directly next to the dual carriageway was replaced with a more suitable P4 terminal. Furthermore, P1 terminals were replaced at two other locations, negating the same issue arising. This result allows for the safe movement of pedestrians along this footpath, no issues regarding the VRS in a road safety audit and reduce the likelihood of an issue with delayed programme down the line. This also eliminates the potential reputational risk to the Client.

Contact: 07425 334969
Name: Simon Long

Email:
Simon.long@aecom.com

home safe and well

Images

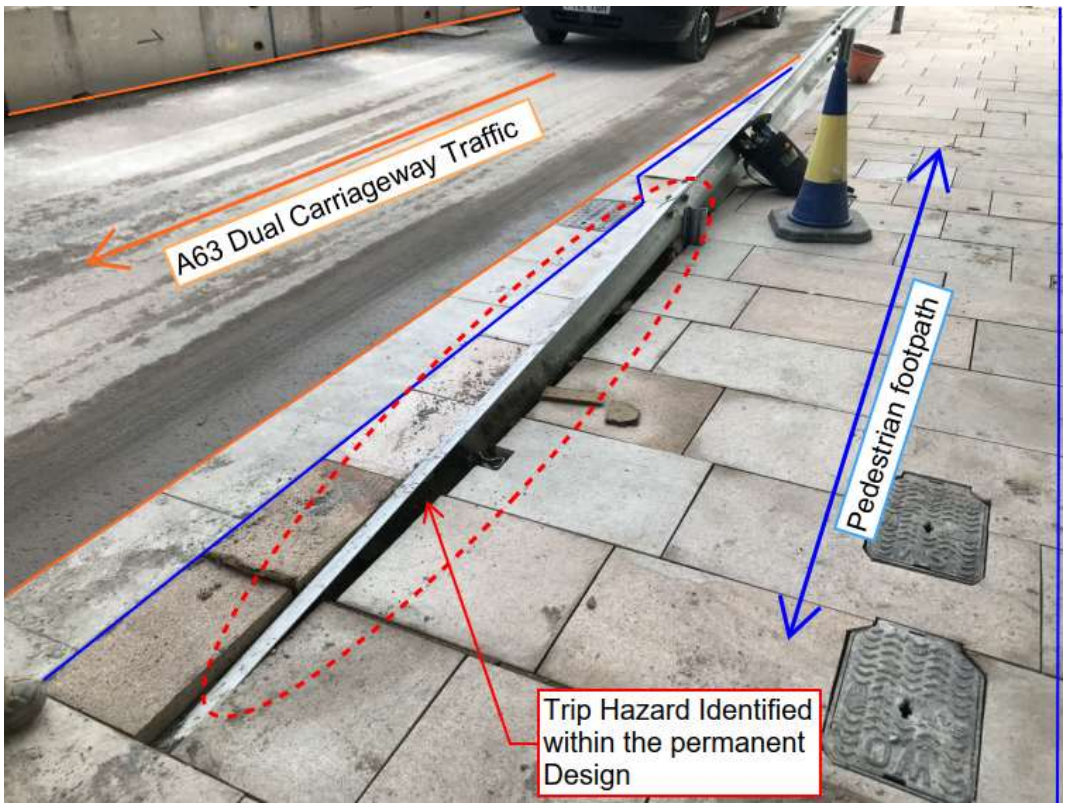

Figure 1- Identified P1 Terminal Trip Hazard in Permanent Design

Figure 2 – Proposed P4 terminal to replace the P1 terminal