

BAM Nutall Ltd

Victoria North HIF Infrastructure and Enabling Works

Stage 1 Road Safety Audit Designer's Response

Reference: VNIF-ARP-00-YYY-RP-CH-0005

P02 | 4 April 2022

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Job number 282022-00

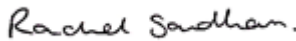
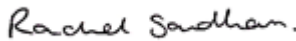
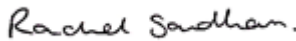
Ove Arup & Partners Limited

Admiral House Rose Wharf
78 East Street

Leeds
LS9 8EE
United Kingdom
arup.com

Document Verification

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Figures

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Drawings

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Pictures

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Photographs

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Attachments

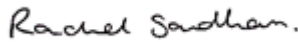
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1. Project Details

Table 1 Project Details (GG 119 Table F.1)

Report Title:	Victoria North HIF Infrastructure and Enabling Works, Stage 1 Road Safety Audit Designer's Response
Date:	24/03/2022
Document Reference and Revision:	Draft Issue
Prepared by:	Arup
On Behalf of:	Manchester City Council

Table 2 Authorisation Sheet (GG 119 Table F.2)

Project:	Victoria North HIF Infrastructure and Enabling Works,
Report title:	Stage 1 Road Safety Audit Designer's Response
Prepared by:	
Name:	Iain Dillon
Position:	Civil Engineer
Signed:	
Organisation:	Arup
Date:	24/03/22
Approved by:	
Name:	Rachel Sandham
Position:	Project Director
Signed:	
Organisation:	Arup
Date:	24/03/22

2. Introduction

This document provides the designers response to the Stage 1 Road Safety Audit report, dated 2 March 2022 (included in Appendix A). The Road Safety Audit Stage 1 has been undertaken on the proposed highway access, known as Plateau Avenue for the Victoria North Infrastructure project.

The proposed development is located within an area of land to the northeast of Victoria Station and to the south of Red Bank. The site is immediately adjacent to Manchester city centre and is referred to as the ‘Red Bank Neighbourhood.’

Plateau Avenue would be a cul-de-sac providing access to development plots RB01-RB05 and RB12b. The road would form a priority-controlled T-junction with Red Bank at the existing access into the former Creamline Dairies site. The carriageway would be 7.3m wide at the junction narrowing to 6.0m along the plateau, reducing to 4.5m in a one-way loop road around plot RB05A. Footways are proposed as 3.0m wide.

The new access road descends into the site at a gradient of 2% for the first 15m, before increasing to 3.5% along the centreline. On-street parking bays would be provided along Plateau Avenue with 129 bays in total (10% of which will be accessible).

The development proposals for Plots RB01-RB05 and RB12b currently comprise 2,083 one to three-bed apartments. An additional 159 parking spaces are proposed for these residential units. A small number of commercial units are also proposed.

This report has been prepared by Arup, as the design organisation. Details of the key personnel are included in the table below.

Table 3 Key Personnel (GG 119 Table F.3)

Overseeing Organisation:	Andrew Crompton, Highways Service, Manchester City Council
RSA Team:	Mr C van Lottum, RSA Team Leader, Foster Percival Ltd Mr K Nicholson, RSA Team Member, Nicholson Sloan Consultancy Limited
Design Organisation:	Iain Dillon, Civil Engineer, Arup Richard Scrivener, Senior Civil Engineer, Arup Rachel Sandham, Project Director, Arup

Section 3 provides the Road Safety Audit Decision Log. Reference to the designer’s response are as agreed with Manchester City Council’s technical advisor, Pell Frischmann, on the 7th March 2022.

3. Road Safety Audit Decision Log

3.1 Problem – High Vehicle Speeds

Location:	Plateau Avenue, junction with Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	High vehicle speeds leading to turning collisions High traffic speeds were observed on Red Bank, particularly vehicles travelling south-west (downhill). High traffic speeds through the junction could lead to misjudgements when turning into or across the traffic streams resulting in collisions between vehicles at the junction. Excess speed for a vehicle turning into the junction could lead to loss of control collisions.
RSA recommendation:	It is recommended that the designer introduce additional traffic calming to reduce traffic speeds on Red Bank.
Design organisation response:	Suitability of road humps are to be assessed in further detail with Manchester City Council, particularly in the context of the existing traffic frequency and speeds.
Overseeing Organisation response:	
Agreed RSA action:	

3.2 Problem – Missing informal crossing facilities

Location:	Plateau Avenue, junction with Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	Missing informal crossing facilities leading to pedestrian injuries There are no pedestrian facilities proposed for the junction of Plateau Avenue with Red Bank. Full height kerbs can present a trip hazard for pedestrians, leading to trip and fall injuries. The mobility impaired use tactile paving surfaces to assist their navigation of the built environment and identify appropriate crossing locations. Missing tactile paving surfaces could result in injudicious crossing movements resulting in injuries to mobility impaired pedestrians."
RSA recommendation:	It is recommended that the designer provide dropped crossings with tactile paving surfaces to assist the movement of mobility impaired pedestrians at the junction.
Design organisation response:	Agreed, drop crossing to be incorporated into design.
Overseeing Organisation response:	
Agreed RSA action:	

3.3 Problem – Undefined development plot accesses

Location:	Plateau Avenue
Drawing:	282022/TN/001 & VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	Undefined development plot accesses leading to road user injuries The Site Access Junction Assessment refers to 159 additional parking spaced to be accommodated on development plots RB01 to RB05 and RB12b. The proposals do not provide any indication as to how vehicle access to these sites will be achieved. The provision of site accesses from Plateau Avenue could result in collisions with pedestrians and other road users on Plateau Avenue if appropriate visibility envelopes are not provided.
RSA recommendation:	It is recommended that the designer incorporate the individual development site accesses into the proposed layout for Plateau Avenue and the revised layout provided for road safety audit.
Design organisation response:	Outside scope of audit – access to plots is not required at this stage. Suitability of plot access and configuration is to be considered as part of future scheme.
Overseeing Organisation response:	
Agreed RSA action:	

3.4 Problem – Narrow carriageway

Location:	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001 & VNIF-ARP-00-YYY-DR-CH-0002
RSA problem:	Narrow carriageway leading to sideswipe collisions The 7.3m wide carriageway of Plateau Avenue turns through a 30m radius bend on the approach to the junction with Red Bank. A standard carriageway width will not be able to safely accommodate HGVs on a low radius bend. This could lead to large vehicles overrunning the adjacent footway placing pedestrians at risk of collision injury.
RSA recommendation:	It is recommended that the designer undertake swept path analysis to determine any localised widening required and extend the centreline marking around the full extent of the bend to reduce the risk of collisions.
Design organisation response:	Accepted, the carriageway width has been sized to allow for a FTA 10m Design HGV Rigid vehicles to pass using swept path analysis software. It is noted that this interaction will be very infrequent given that HGV access to vehicles is anticipated to be <1 per day. The design has been developed in collaboration with the proposed developer to provide a layout which seeks to encourage low vehicle speeds whilst allowing safe passage for the anticipated vehicles. Additional widening of the carriageway is therefore not to be incorporated.
Overseeing Organisation response:	
Agreed RSA action:	

3.5 Problem – Carriageway narrowing

Location:	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	Carriageway narrowing leading to pedestrian injuries The 7.3m wide carriageway of Plateau Avenue narrows to 6.0 over a raised table provided as an informal crossing point for pedestrians. This could lead to large vehicles overrunning the adjacent footway at the choke point placing pedestrians at risk of collision injury.
RSA recommendation:	It is recommended that the designer provide a consistent carriageway width over the full width of the raised table.
Design organisation response:	Outside scope of audit – no pedestrian crossing / raised tables are to be constructed as part of the HIF works. Final locations and detailing of crossings are to be defined as part of the future scheme. The risks identified are to be passed onto the developer of the future scheme.
Overseeing Organisation response:	
Agreed RSA action:	

3.6 Problem – Missing tactile paving surfaces

Location:	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	Missing tactile paving surfaces leading to pedestrian injuries There are no tactile paving surfaces shown at the raised table uncontrolled crossing between plots RB01 and RB12b. The mobility impaired use tactile paving surfaces to assist their navigation of the built environment and identify appropriate crossing locations. Missing tactile paving surfaces could result in injudicious crossing movements resulting in injuries to mobility impaired pedestrians.
RSA recommendation:	It is recommended that the designer provide tactile paving surfaces to assist the movement of mobility impaired pedestrians over the raised table.
Design organisation response:	Outside scope of audit – no pedestrian crossing / raised tables are to be constructed as part of the HIF works. The risks identified are to be passed onto the developer of the future scheme.
Overseeing Organisation response:	
Agreed RSA action:	

3.7 Problem – Missing road markings

Location:	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	Missing road markings leading to loss of control collisions The crossings, junction and low radius bends on Plateau Avenue are all located on raised tables. There are no shark tooth markings shown on the ramps to the raised tables. Sharks tooth markings are used to identify the ramps and encourage motorists to reduce their approach speed. In their absence, drivers and riders could fail to notice the tables, strike them at speed or brake suddenly and lose control.
RSA recommendation:	It is recommended that the designer provides appropriate markings on the faces of the ramps.
Design organisation response:	Outside scope of audit – final road surfacing and road markings are not are to be constructed as part of the HIF works. The risks identified are to be passed onto the developer of the future scheme.
Overseeing Organisation response:	
Agreed RSA action:	

3.8 Problem – Reduced crossing visibility

Location:	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	Reduced crossing visibility leading to pedestrian injuries There are trees and parking bays located within the visibility envelopes for the raised table uncontrolled pedestrian crossings opposite plots RB01, RB02, PR03, RB04 and RB05a. Inadequate visibility for/of pedestrians at could lead to collisions between pedestrians and vehicles.
RSA recommendation:	It is recommended that the designer improve visibility for/of pedestrians at the crossings.
Design organisation response:	Agreed, proposed planting is to designed to ensure visibility of crossings are not impaired.
Overseeing Organisation response:	
Agreed RSA action:	

3.9 Problem – Missing informal crossing facilities

Location:	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	Missing informal crossing facilities leading to pedestrian injuries There are no pedestrian facilities proposed for the junction between the two sections of Plateau Avenue. The mobility impaired use tactile paving surfaces to assist their navigation of the built environment and identify appropriate crossing locations. Missing tactile paving surfaces could result in injudicious crossing movements resulting in injuries to visually impaired pedestrians.
RSA recommendation:	It is recommended that the designer provide tactile paving surfaces and provide a contrasting carriageway surface to better define the pedestrian and vehicle environments to assist the movement of visually impaired pedestrians at the junction.
Design organisation response:	Outside scope of audit – no pedestrian crossing / raised tables are to be constructed as part of the HIF works. The risks identified are to be passed onto the developer of the future scheme.
Overseeing Organisation response:	
Agreed RSA action:	

3.10 Problem – Poor carriageway definition at bends

Location:	Plot RB05a
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	Poor carriageway definition at bends leading to pedestrian injuries There is no carriageway definition proposed for the three bends on the one-way section of Plateau Avenue. The mobility impaired use the kerb edge to assist their navigation of the built environment and remain within pedestrian areas. The lack of kerb edge could result in injudicious pedestrian movements resulting in collision injuries to visually impaired pedestrians.
RSA recommendation:	It is recommended that the designer provide physical delineation of the carriageway around the bends and provide a contrasting carriageway surface to better define the pedestrian and vehicle environments for the visually impaired.
Design organisation response:	Outside scope of audit – no pedestrian crossing / raised tables are to be constructed as part of the enabling works. A kerb shall be installed as part of the HIF works. However, the final surface treatments are to be provided by the developer. The risks identified are to be passed onto the developer of the future scheme.
Overseeing Organisation response:	
Agreed RSA action:	

3.11 Problem – Poor carriageway definition at bends

Location:	Plot RB05a
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
RSA problem:	Inadequate carriageway width leading to vehicle damage The one-way section Plateau Avenue has a carriageway width of 4.5m adjacent to a number of perpendicular parking bays. The 4.5m carriageway width is insufficient for most vehicles to turn into and out of a perpendicular parking bay without encroaching on adjacent bays or the opposing verge. This is likely to result in damage to vehicles or street furniture.
RSA recommendation:	It is recommended that the designer increase the carriageway width to allow drivers to safely access the perpendicular parking bays.
Design organisation response:	Agreed. Perpendicular parking bays have been replaced with echelon parking bays which require a reduced width - 3.6m as per Manual for Streets (Section 8.3.51)
Overseeing Organisation response:	
Agreed RSA action:	

3.12 Problem – Poor carriageway definition at bends

Location:	Plot RB05a
Drawing:	VNIF-ARP-00-YYY-DR-CH-0002
RSA problem:	Inadequate carriageway width leading to vehicle and street furniture damage The swept path analysis shows an HGV overrunning the kerb at the junction between the two sections of Plateau Avenue. This could lead to large vehicles overrunning the adjacent footway placing pedestrians at risk of collision injury.
RSA recommendation:	It is recommended that the designer provides appropriate carriageway width for expected vehicle types.
Design organisation response:	Agreed, swept path analysis and the proposed carriageway kerbline is to be updated.
Overseeing Organisation response:	
Agreed RSA action:	

4. Design Organisation and Overseeing Organisation statements

Table 4 Design organisation statement (GG 119 Table F.5)

On behalf of the design organisation I certify that:	
1) the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.	
Prepared by:	
Name:	
Position:	
Signed:	
Organisation:	
Date:	

Table 5 Overseeing Organisation statement (GG 119 Table F.6)

On behalf of the Overseeing Organisation I certify that:	
1) the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the design organisation; and	
2) the agreed RSA actions will be progressed.	
Prepared by:	
Name:	
Position:	
Signed:	
Organisation:	
Date:	

Appendix A

- Road Safety Audit Report