



Victoria North HIF Infrastructure and Enabling Works

Red Bank and Plateau Avenue
Stage 1 Road Safety Audit

for Arup

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PROJECT DETAILS

Road Safety Audit (RSA) Title:	Victoria North HIF Infrastructure and Enabling Works Red Bank and Plateau Avenue Stage 1 Road Safety Audit
Stage of Audit:	1
Date of Audit	02.03.2022
Document Reference and Revision:	10030/01/00/02032022/cvl rev 00
Prepared by;	Foster Percival Limited
For:	Arup
On behalf of:	Manchester City Council

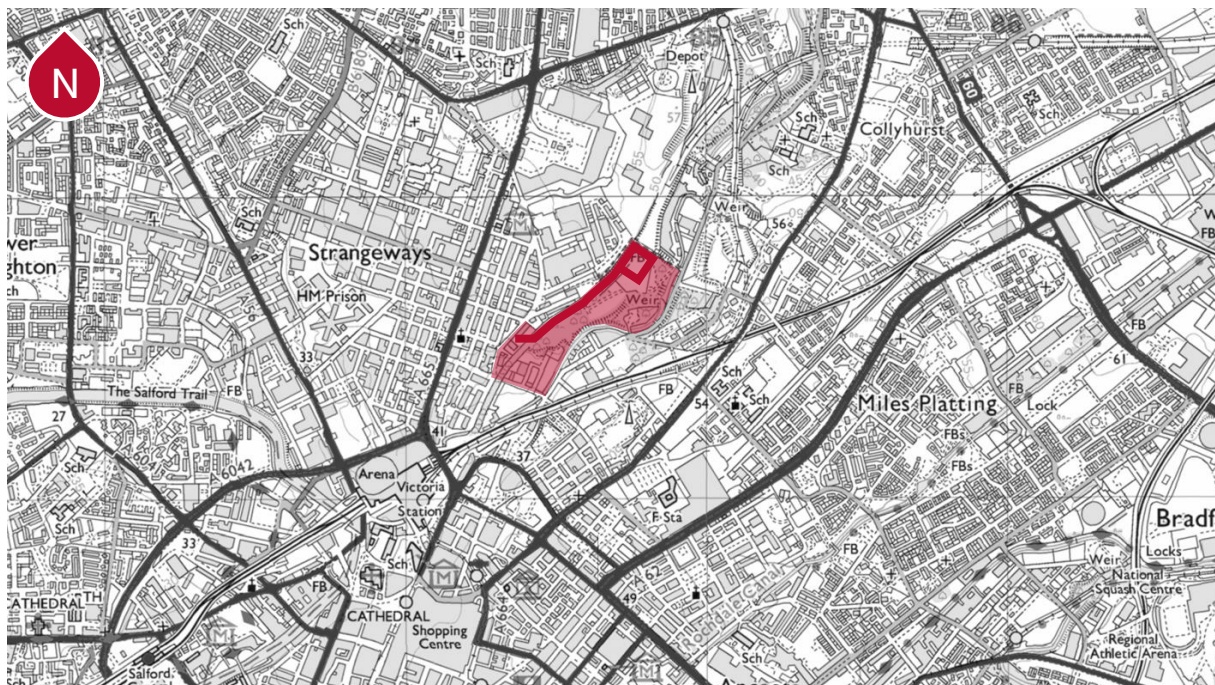
GG119 Table D.1.

1. INTRODUCTION

1.1. Scheme Location, Description and Objectives

1.1.1. Scheme Location

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.'



1.1.2. Scheme Description

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.

1.1.3. Scheme Objectives

The scheme objective is to provide a means of vehicular and pedestrian access to serve the new development.

1.1.4. RSA Scope

The scope of the audit covers the junction and the entire length of Plateau Avenue. No other areas of the scheme (plots, public realm, landscaping etc) beyond the extents of highway are included within this audit.

The RSA comprised a visit to the site (detailed below); and an examination of all the documents provided with the RSA brief. These are listed in Appendix A to this report.

1.1.5. Strategic Decisions

No strategic decisions have been identified to the RSA team.

1.2. Road Safety Audit Brief

This RSA was undertaken in accordance with the RSA brief provided by Richard Scrivener of Arup.

The RSA brief was approved by Matthew Willis of Pell Frischmann acting for Manchester City Council and accepted by the audit team leader.

1.3. Road Safety Audit Team

The RSA team membership approved by Matthew Willis of Pell Frischmann acting for Manchester City Council was as follows:

Team Leader:	Mr C van Lottum MEng (Hons), MCIHT, MSoRSA (Certificate of Competency gained in May 2018)
Organisation:	Foster Percival Limited
Team Member:	Mr K Nicholson BSc, CMaths, MCIHT, FSoRSA (Certificate of Competency gained in May 2015)
Organisation:	Nicholson Sloan Consultancy Limited for Foster Percival Limited

1.4. Site Visit

The RSA team visited the site together on the morning of Thursday 24th February 2022 between 11:30 and 12:00. During the site visit the weather was changeable with wintery showers and the road surface was wet. Traffic conditions were very light with no cyclists and a single pedestrian.

1.5. Terms of Reference

The RSA team members meet the training and experience requirements set out in the Terms of Reference GG 119 'Road Safety Audit'. The RSA team have performed their duties in accordance with the Terms of Reference unless stated in the Audit Team Statement. The RSA team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria. However, to clearly explain a problem or recommendation the RSA team may occasionally refer to design standards.

All problems and recommendations identified by this RSA are referenced to the design drawings and the locations have been indicated on the figures(s) included in Appendix B to this report.

Other issues which the RSA team wishes to draw to the attention of the Highway Authority are set out in separate correspondence. These may include safety issues excluded from the RSA by the Terms of Reference or the RSA brief.

2. PREVIOUS ROAD SAFETY AUDIT(S)

It is understood that no previous RSAs have been conducted on this scheme.

End of list of problems identified and recommendations offered in the previous RSA.

3. ITEMS RAISED IN THIS ROAD SAFETY AUDIT

3.1. Problem – High vehicle speeds

Location: A (See Figure 1)	Plateau Avenue, junction with Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
Summary:	High vehicle speeds leading to turning collisions
Problem:	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.
Photograph:	 View northeast on Red Bank showing the approach gradient [P2241709.jpg]
Recommendation:	It is recommended that the designer introduce additional traffic calming to reduce traffic speeds on Red Bank.

3.2. Problem – Missing informal crossing facilities

Location: A (See Figure 1)	Plateau Avenue, junction with Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
Summary:	Missing informal crossing facilities leading to pedestrian injuries
Problem:	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."
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.

3.3. Problem – Undefined development plot accesses

Location: A through K	Plateau Avenue
Drawing:	282022/TN/001 & VNIF-ARP-00-YYY-DR-CH-0001
Summary:	Undefined development plot accesses leading to road user injuries
Problem:	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.
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.

3.4. Problem – Narrow carriageway

Location: B (See Figure 1)	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001 & VNIF-ARP-00-YYY-DR-CH-0002
Summary:	Narrow carriageway leading to sideswipe collisions
Problem:	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.
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.

3.5. Problem – Carriageway narrowing

Location: C (See Figure 1)	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
Summary:	Carriageway narrowing leading to pedestrian injuries
Problem:	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.
Recommendation:	It is recommended that the designer provide a consistent carriageway width over the full width of the raised table.

3.6. Problem – Missing tactile paving surfaces

Location: C (See Figure 1)	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
Summary:	Missing tactile paving surfaces leading to pedestrian injuries
Problem:	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.
Recommendation:	It is recommended that the designer provide tactile paving surfaces to assist the movement of mobility impaired pedestrians over the raised table.

3.7. Problem – Missing road markings

Location: C through K (See Figure 1)	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
Summary:	Missing road markings leading to loss of control collisions
Problem:	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.
Recommendation:	It is recommended that the designer provides appropriate markings on the faces of the ramps.

3.8. Problem – Reduced crossing visibility

Location: D through G (See Figure 1)	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
Summary:	Reduced crossing visibility leading to pedestrian injuries
Problem:	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.
Recommendation:	It is recommended that the designer improve visibility for/of pedestrians at the crossings.

3.9. Problem – Missing informal crossing facilities

Location: H (See Figure 1)	Plateau Avenue
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
Summary:	Missing informal crossing facilities leading to pedestrian injuries
Problem:	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.
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.

3.10. Problem – Poor carriageway definition at bends

Location: I through K (See Figure 1)	Plot RB05a
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
Summary:	Poor carriageway definition at bends leading to pedestrian injuries
Problem:	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.
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.

3.11. Problem – Inadequate carriageway width

Location: H to I, I to J & K to H (See Figure 1)	Plot RB05a
Drawing:	VNIF-ARP-00-YYY-DR-CH-0001
Summary:	Inadequate carriageway width leading to vehicle damage
Problem:	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.
Recommendation:	It is recommended that the designer increase the carriageway width to allow drivers to safely access the perpendicular parking bays.

3.12. Problem – Inadequate carriageway width

Location: H through K (See Figure 1)	Plot RB05a
Drawing:	VNIF-ARP-00-YYY-DR-CH-0002
Summary:	Inadequate carriageway width leading to vehicle and street furniture damage
Problem:	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.
Recommendation:	It is recommended that the designer provides appropriate carriageway width for expected vehicle types.

End of list of problems identified and recommendations offered in this RSA.

4. ROAD SAFETY AUDIT STATEMENT

We certify that this RSA has been carried out in accordance with GG 119.

Audit Team Leader

Name:	Mr C van Lottum MEng (Hons), MCIHT, MSoRSA
Signed:	
Position:	Director
Organisation:	Foster Percival Limited
Date:	02.03.2022

Audit Team Member(s)

Name:	Mr K Nicholson BSc, CMaths, MCIHT, FSoRSA
Signed:	
Position:	Director
Organisation:	Nicholson Sloan Consultancy Limited for Foster Percival Limited
Date:	02.03.2022

Appendix A - Documents and Drawings

The following documents and drawings were supplied to the RSA team by the Design Organisation and have been examined in the course of conducting this audit.

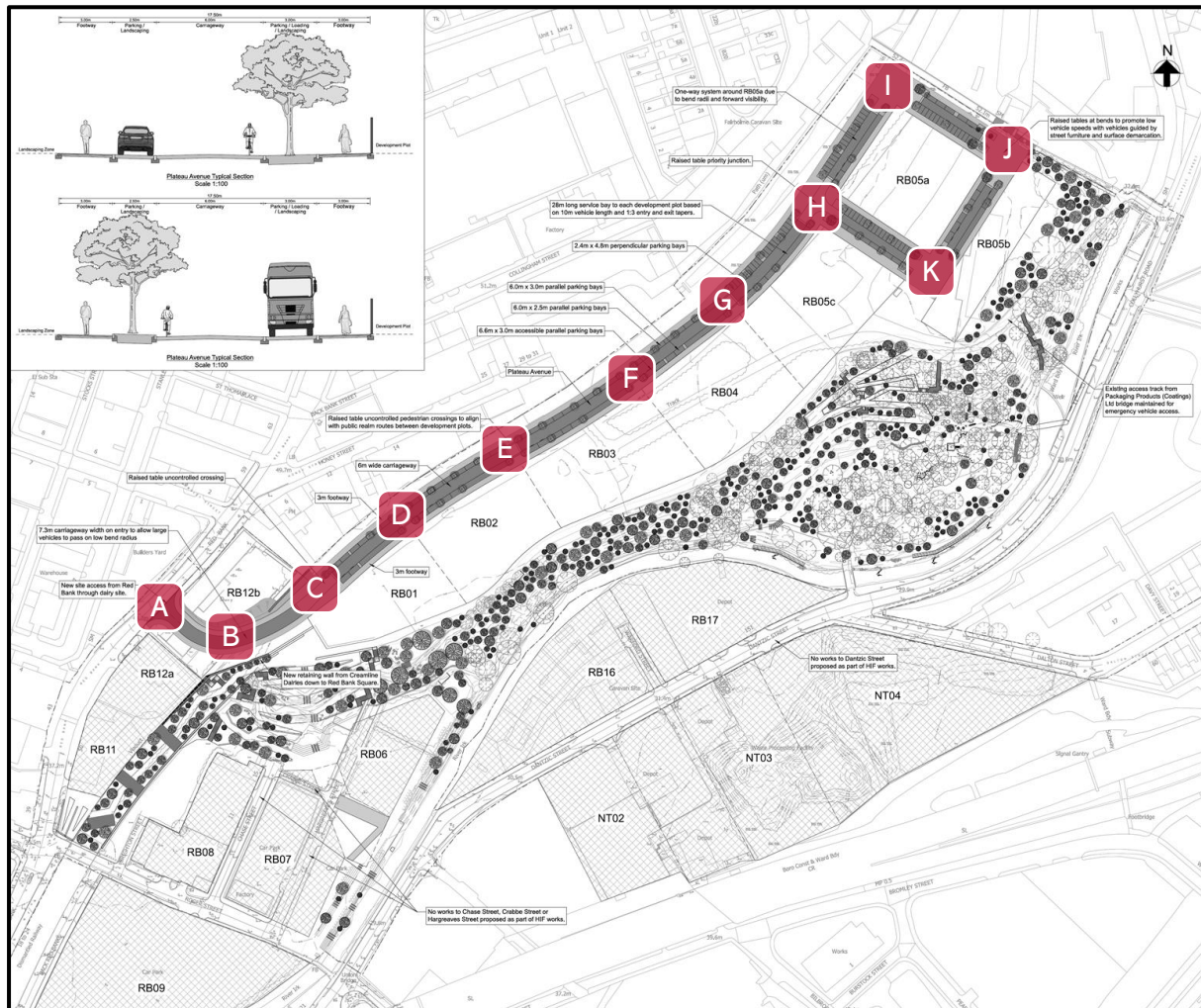
Documents

Title	Reference	Revision
Stage 1 Road Safety Audit Brief	VNIF-ARP-00-YYY-RP-CH-0004	1
Red Bank Neighbourhood, Victoria North – Site Access Junction Assessment	282022/TN/001	Draft

Drawings

Title	Reference	Revision
Highway General Arrangement	VNIF-ARP-00-YYY-DR-CH-0001	P05
Plateau Avenue General Arrangement	VNIF-ARP-00-YYY-DR-CH-0002	P04
Red Bank Junction Swept Paths	VNIF-ARP-00-YYY-DR-CH-0002	P01

Appendix B – Problem Location Plan(s)



Problem Location Plan 1 of 1