



Wesley Avenue, Netherthong

Road Safety Audit Stage 1 / 2

March 2023

Project number 2128(A)

Paragon Highways
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Document Control

Project Name

Wesley Avenue, Netherthong – Road Safety Audit Stage 1 / 2 (Internal adoptable road).

Audit Ref No.

2023 – 2128A

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On Behalf Of

Heywood Homes

Local Authority

Kirklees Council

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Quality Management

	First Issue	Revision 1	Revision 2	Revision 3
	Final Report			
Date	March 2023			
Prepared by	RSA Team Leader Leigh Ogden FIHE MCIHT			
Checked by	RSA Team Member Paul Howarth MCIHT MIHE			

Contents

1.0	Introduction – Commissioning and Scope.....	5
2.0	Items Raised in Stage 1 / 2 Road Safety Audit	9
3.0	Audit Team Statement	13

1.0 Introduction – Commissioning and Scope

Scheme Description

- 1.1 Paragon Highways have been appointed to carry out a combined Stage 1/ 2 Road Safety Audit of the proposals to provide a new adoptable residential road at the end of Wesley Avenue, Netherthong, Holmfirth. The internal road(s) will serve 35 new dwellings and would take the form of a traditional estate road. The Road Safety Audit brief was provided by the Designer's Haigh Huddleston & Associates. The Audit Team was approved by the designers.
- 1.2 The Audit Team Membership is given within the Quality Management Section of this report and immediately below. The terms of reference of this Road Safety Audit are as described in GG119 Road Safety Audit (rev 2) which forms part of Volume 5 of the Design Manual for Roads and Bridges (formerly HD19/15). It comprised an examination of the drawings and documents as provided with the audit brief. The Audit 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 designs to any other criteria.

The Audit Team

Leigh Ogden FIHE MCIHT – Road Safety Team Leader

Paul Howarth MCIHT MIHE – Road Safety Team Member

- 1.3 Each of the auditors' responses is classified as a 'Problem' that is likely to result in a significant road safety hazard. All comments and recommendations are referenced to the detailed design drawings and the locations have been indicated on the plan at the end of the report.

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- 1.4 Where recommendations are made, these do not comprise design decisions, and it remains the responsibility of the Design Team to incorporate any changes into the scheme and consider any interactions between design elements.
- 1.5 The Audit Team has not been made aware of any departures from standards.
- 1.6 The site visit was undertaken on the 21st of February 2023 and the weather conditions were dry road surface conditions with broken cloud.
- 1.7 Wesley Avenue was noted to be very lightly trafficked at the time of the site visit, although pedestrian movement along the route was noted. Vehicles were also noted to be parked adjacent to the existing properties along Wesley Avenue – see photograph at Figure 1.1.



Figure 1.1

- 1.8 The plans were analysed in more detail at the offices of Paragon Highways. The road safety audit was carried out by Road Safety Engineers approved by the designer who have not been involved in the design / development process.

- 1.9 The proposed development is for the construction of 35 dwellings off Wesley Avenue, Netherthong. The internal road includes footways on both sides and around the turning head, providing a continuation of Wesley Avenue. A shared driveway spurs off the turning head to serve 4 dwellings. The development also involves pedestrian links to Miry Lane to the north. The scope of the Audit is limited to the internal adoptable roads and the connection with Wesley Avenue.

Supporting Information

- 1.10 The following information was submitted to the Audit Team by the Designers:

- Main Road & Sewer Plan 7931_004D
- Road & Sewer Long Sections 7931_005_01B
- Road & Sewer Long Sections 7931_005_02
- Manhole Schedules 7931_007B
- Road Construction Details 7931_009
- External Works Plan 7931_021B
- Temporary Works Plan 7931_029B
- Vehicle Tracking Plan 7931_034B
- Section 104 Agreement Plan 7931_024A

The Audit Team has not been made aware of any departures from standards.

Additional Comments

The Auditors have been made aware that a Stage 1 Road Safety Audit has not been undertaken.

It was noted at the time of the site visit that the surface course of the majority of Wesley Avenue had cracking and areas of crazing with several potholes forming along both the carriageway and footway - see photograph at Figure 1.2. This will obviously have significant implications when tying into the proposals i.e., the 278 scheme.



Figure 1.2

2.0 Items Raised in Stage 1 / 2 Road Safety Audit

B1 Local Alignment

New / Existing Road Interface

B1 – 01 Problem 1

Location: Wesley Avenue – Existing Turning Head

Summary

It is unclear what is proposed for the existing turning head. The footways appear to continue through to create a continuation of the traditional estate road. This may lead to a level difference between the rear of the footway and existing turning head level providing a trip hazard for pedestrians. Furthermore, these areas may be used by neighbouring properties for parking, which given the depth from the rear of the proposed footway, would lead to a parking vehicle obstructing the footway resulting in pedestrians negotiating the carriageway increasing the risk of a vehicle colliding with a pedestrian.

Recommendation

The proposals include details on how the redundant turning head areas are to be removed.

B2 General**Access****B2 – 01 Problem 2****Location: Proposed Turning Head****Summary**

The turning head should ideally have a maximum gradient of 1 in 20. Steeper gradients within turning heads can cause loss of control type collisions when carrying out tight turning movements increasing the risk of a turning HGV (such as large refuse vehicle) inadvertently overrunning the adjacent footway and colliding with a pedestrian or other object leading to injury.

Recommendation

The turning head gradient be reduced to a minimum of 1 in 20.

B2 – 02 Problem 3**Location: Proposed Driveway Plot 6 – Junction with Adoptable Road****Summary**

It is unclear if boundary treatment at either side of the driveway as it meets the adoptable road would obstruct intervisibility between other road users or pedestrians when emerging from the driveway. Failure to provide suitable visibility at the access could lead to a vehicle emerging into the path of an oncoming car or pedestrian resulting in a collision or sudden braking and loss of control type collisions.

Recommendation

The visibility splay provision and confirmation low boundary treatment should be provided where the access meets the adoptable road.

B2 – 03 Problem 4**Location: Proposed Adoptable Road – Full Length****Summary**

It is unclear if car parking can be fully accommodated off street to serve each dwelling having regard to the requirement for 3 spaces for 4-bedroom dwellings. Failure to provide suitable off-street parking could lead to excessive parking on street, which could lead to obstructions for larger vehicles (such as refuse vehicles or emergency vehicles). This would increase the risk of larger vehicles either colliding with other vehicles when attempting to negotiate parked vehicles injuring occupants, or lengthy reversing movements increasing the risk of a reversing vehicle colliding with an NMU.

Recommendation

Details should be provided confirming suitable parking provision for each dwelling in accordance with KMC requirements.

Emergency Vehicles**B2 – 04 Problem 5****Location: Access to Plot 6****Summary**

It is not clear if the plot is located within pump distance for a fire appliance. Failure to provide suitable fire tender access could lead to lengthy reversing movements along the access and within the proposed adoptable road increasing the risk of a vulnerable road user.

Recommendation

Confirmation should be provided that the dwelling is within 45m of the adoptable road. If not, then a swept path analysis should be submitted to the Audit Team demonstrating that these vehicles can either access the site without reversing more than 20m.

B4 Walking, Cycling, and Horse Riding

Pedestrians

B4 – 01 Problem 6

Location: Proposed Adoptable Road – Adjacent to Plots 3 and 8

Summary

The scheme proposes driveways to the front of the dwellings inevitably resulting in a long dropped vehicular crossing. Overly long footway crossings and low kerbs can excessively expose pedestrians to multiple turning / reversing movements increasing the risk of a vehicle colliding with a pedestrian.

Recommendation

The parking is reconfigured so that some separation is provided between dropped kerbs so that a full-face kerb can be provided reducing the length of uninterrupted dropped kerbs.

B5 Traffic Signs, Carriageway Markings, and Lighting

Lighting

B5 – 01 Problem 7

Location: Proposed Adoptable Road

Summary

No detailed information has been provided in relation to the provision of street lighting on the adoptable road. Inadequate street lighting can lead to pedestrian trip type incidents during the hours of darkness and reduces intervisibility between motorised traffic and vulnerable road users, increasing the risk of a collision.

Recommendation

A street lighting scheme for the whole of the development should be submitted to the Audit Team for consideration.

3.0 Audit Team Statement

3.1 I certify that this Audit has been carried out in accordance with GG 119 (Rev 2).

Audit Team Leader

Leigh Ogden FIHE MCIHT

Managing Director

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20/21 The Walled Garden

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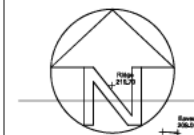
Wakefield WF4 1AB

Date

3rd March 2023

Appendix A

Problem Location Plan



1. ALL ADAPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH "CODES FOR ADOPTION" THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATER'S STANDARDS/REQUIREMENTS/ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED.
2. MANHOLE COVERS SHALL HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAYS.
3. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
4. YORKSHIRE WATER IS NOT OBLIGED TO ACCEPT FILTER DRAINAGE AND DRAINAGE RUNOFF INTO THE PUBLIC SEWER NETWORK OR ADAPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY). AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUNOFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO LIAISE WITH THE LOCAL AUTHORITY, LAND DRAINAGE SECTION WITH REGARD TO THE DISPOSAL OF THE FILTER DRAINAGE DRAINAGE RUNOFF.
5. COVER SLABS MUST CARRY THE BS KITEMARK OR WILL BE REJECTED BY YORKSHIRE WATER INSPECTOR, WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME. A LOADING BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO 600x600mm THE YORKSHIRE WATER SPECIFIED COVER SIZE. PLEASE REFER TO CONCRETE PIPE SYSTEMS ASSOCIATION (CPSA), TECHNICAL BULLETIN ISSUED AUTUMN 2004 FOR KITEMARKED COVER SLAB OPENING SIZES.
6. SULPHATE RESISTANT CEMENT (C20-0C2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
7. THE ADAPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.5m FROM KERB FACES AND MARGINS.
8. SEWERS MUST HAVE 5m CLEARANCE FROM TREES AND HEDGES (PLEASE ALSO REFER TO FIGURE 2.3 ON PAGE 33 IN "CODES FOR ADOPTION" FOR RESTRICTION ON TREE PLANTING ADJACENT TO SEWERS).
9. SEWERS TO BE LAID IN CLASS "S" BEDDING (150mm GRANULAR BED AND SURROUND), WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.2m IN HIGHWAYS AND VERGES (OR LESS THAN 900mm IN NON-VEHICULAR ACCESS AREAS) THEN A CONCRETE SLAB OVER SEWER SHALL BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
10. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-06-02 (TABLE A2).
11. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
12. YORKSHIRE WATER POLICY IS NOT TO ACCEPT TYPE "C" BRICK MANHOLES AND 1050mm DIAM. MANHOLE RINGS. INSTEAD IT IS PREFERRED THAT YOU USE A TYPE "B" MANHOLE WITH 1200mm DIAM. OR 1500mm DIAM. RINGS, WITH THE OPENING SIGHTED OVER THE CHANNEL WHERE DEPTH OF COVER TO PIPE SOFFIT IS >1.5m.
13. ADAPTABLE PLASTIC SEWER PIPES TO BE BS KITEMARKED (CERTIFIED TO WS 4-35-01 AND BS EN 13476). ADAPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND YORKSHIRE WATER WOULD PREFER CLAYWARE CHANNELS IN MANHOLES. WE HAVE FOUND THAT PLASTIC CHANNELS ARE DIFFICULT TO SET IN CONCRETE BECAUSE THEY FLOAT AND A SATISFACTORY FINISH CANNOT BE OBTAINED ON THE BENCHING.
14. THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS: 100mm DIA. 40KN/m, 150mm DIA. 40KN/m, 225mm DIA. 45KN/m AND 300mm DIA. 72KN/m. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE - CLASS 120 TO EN 1916/BS5911-1:2002. PLASTIC PIPES SHOULD CONFORM TO WS 4-35-01 AND BS EN 13476.
15. WHERE A B125 COVER AND FRAME HAS BEEN APPROVED, THIS MUST NOT BE COATED IN PLASTIC AND MUST HAVE LIFTING EYES SUITABLY SIZED TO ACCOMMODATE STANDARD LIFTING KEYS, SCREW DOWN COVERS ARE NOT ACCEPTABLE.
16. ALL HIGHWAY WORKS AND MATERIAL TO CONFORM WITH KIRKLEES MDC SPECIFICATION.
17. GULLY COVER AND FRAMES SHALL BE D400 DUCTILE IRON AND COMPLY WITH EUROPEAN STANDARD BS EN 124. THOSE SIGHTED IN ACCESSWAYS AND NEWS COURTS MUST BE SUITABLE FOR USE IN PEDESTRIAN AREAS.

RISK ASSESSMENT: SIGNIFICANT RISKS THAT CANNOT BE DERIVED OUT		
RISK	LEVEL OF RISK	SUGGESTED ACTION
DEEP EXCAVATIONS ASSOCIATED WITH NEW DRAINAGE WORKS	HIGH	ENSURE ALL EXCAVATIONS HAVE ADEQUATE TRENCH SUPPORTS
HANDLING LARGE DIAMETER MANHOLE RINGS AND CIRCULAR PIPES	HIGH	USE CORRECT LIFTING EQUIPMENT AND ENSURE OPERATIVES WEAR APPROPRIATE PROTECTIVE CLOTHING AND RESCUE CORRECT PPE
CONTACT WITH SEWAGE	MED	OPERATIVES TO USE CORRECT BREATHING EQUIPMENT/CORRECT PPE
NOISE	MED	OPERATIVES TO USE CORRECT EAR PROTECTION/CORRECT PPE
DRAINAGE EXCAVATIONS ADJACENT TO EXISTING BOUNDARY STRUCTURES	HIGH	ENSURE CORRECT SUPPORTS ARE PROVIDED TO TRENCHES AND BUILDINGS WHERE REQUIRED
DRAINAGE EXCAVATION IN PUBLIC HIGHWAY	HIGH	ENSURE CORRECT USE OF TRENCH SUPPORTS IN EXCAVATION AND SCREEN BARRIERS TO PROTECT MEMBERS OF THE PUBLIC
MAINTAIN ACCESS TO ADJACENT PROPERTIES AND OCCUPERS	HIGH	ENSURE WORKS ARE PROTECTED WITH BARRIERS AND SIGNS TO GUIDE THE PUBLIC AWAY FROM THE WORKS
DRAINAGE EXCAVATIONS NEAR TO EXISTING SERVICES	HIGH	ENSURE WORKS ARE PROTECTED WITH BARRIERS AND SIGNS TO GUIDE MEMBERS OF THE PUBLIC AWAY FROM THE AREA
WORKING IN CONFINED SPACES, WORKING IN DRAINAGE AND MANHOLES	HIGH	CONFINED SPACES WORKING TRAINED PERSONS ONLY TO CARRY OUT WORKS UNDER A PERMIT TO WORK SCHEME IMPLEMENTED BY CONTRACTOR, AND TRYING TO TAKE PLACE BEFORE ALL ENTRIES TO CONFINED SPACES
WORKING IN HIGHWAYS / RISKS FROM VEHICLES AND PLANT	HIGH	ALL WORKERS TO BE WEARED AND TRAINED FROM HIGHWAYS TO BE AWARE OF TRAFFIC, ALL WORKERS TO WEAR HIGH VISIBILITY CLOTHING, ALL PLANT TO HAVE VERBAL AND AUDIO VISUAL WARNING SYSTEMS
ROAD AND DRAINAGE CONSTRUCTION	HIGH	ALL EXCAVATIONS TO BE ADEQUATELY FENCED OFF AND SUPPORTED DURING CONSTRUCTION, ALL OPERATIVES TO BE TRAINED IN CORRECT METHODS OF SETTING AND WORKING IN ACCORDANCE WITH L1611 REGS

IT IS ASSUMED THAT WORKS ASSOCIATED WITH THIS DESIGN WILL BE UNDERTAKEN BY A PERSON OR PERSONS WHO ARE COMPETENT AND HAVE THE REQUIRED LEVEL OF EXPERIENCE AND EXPERTISE.

B	Road position amended to suit latest planning layout.	02.03.23	JF
A	Plot positions amended to suit latest planning layout.	15.02.23	JM
Rev	Description	Date	Initials

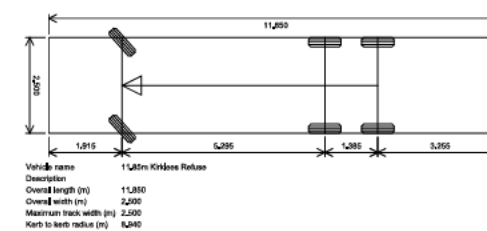


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Client	HEYWOOD DEVELOPMENTS
Project	WESLEY AVENUE, NETHERTHONG
Detail	VEHICLE TRACKING PLAN
Dwg No.	E22/7931/034B
Date	JAN'2023
Scale	1/250 @A1
Drawn	JM
Checked	MH



Vehicle name
Description
Overall length (m)
Overall width (m)
Maximum track width (m)
Kerb to kerb radius (m)