

TECHNICAL NOTE 3						 ASHLEY HELME ASSOCIATES
Project	Land at Bangor Road, Johnstown, Wrexham			Project No	1232	
Contact		Originator	IDC	Date	10.01.20	

1.0 Introduction

- 1.1 Ashley Helme Associates (AHA) has been appointed by Gladman Developments to prepare a Technical Note to support a S.73 application for a change of access arrangements at the former Hafod Tileries, Bangor Road, Wrexham, henceforth referred to as the Site.
- 1.2 The Site has outline planning permission (ref P/2013/0545) for a mixed-use development comprising up to 300 residential dwellings, 465sm business, industrial, storage and distribution units, 235 sm retail, ecological enhancement, landscape, open space, highway improvements and associated works.
- 1.3 AHA prepared a Transport Assessment (ref 1232/2/C) to accompany the outline planning application.
- 1.4 This S.73 application relates to a change of access arrangements, from a single roundabout junction permitted under outline permission ref P/2013/0545, to a single priority controlled junction. This Technical Note provides technical justification for the proposed change to the Site access arrangements.

2.0 Permitted Site Access Arrangements

- 2.1 The Site access arrangements consented as part of the outline planning permission are shown on Drg 1232/13/B and comprise;
 - Roundabout junction,
 - 30m diameter,
 - 7.3m Site access carriageway width,
 - 2.0m footway on the north side of Bangor Road, and on both sides of the Site access,
 - 160m forward visibility on the Bangor Road approaches to the roundabout.
- 2.2 The existing Site access arrangements are designed in accordance with DMRB standards for an 85kph design speed. This is based on speeds recorded in March 2012, and converted to 85%ile Wet Weather Journey Speeds, as reported in TA ref 1232/2/C. The speed limit on Bangor Road at the time of the March 2012 survey was derestricted (60mph).

3.0 Speed Survey

- 3.1 There has been a change of speed limit along the Site frontage on Bangor Road from to 50mph since TA ref 1232/2/C was undertaken. AHA commissioned an ATC in the vicinity of the Site access in order to determine the whether the change in speed limit has resulted in a change of 85%ile Wet Weather Journey Speed.
- 3.2 The ATC recorded speeds and traffic volumes on Bangor Road from 20 June 2019 to 26 June 2019 inclusive, and recorded data over the full 24-hour period of each day. The recorded average 85%ile speeds on Bangor Road are;
 - Eastbound: 48.4mph,
 - Westbound: 48.5mph.

3.3 In accordance with advice in DMRB TA20/81 the design of the Site access junction design should be based on the Wet Weather Journey Speed. This is calculated by deduction of 4kph (2.5mph) from the recorded spot speeds. The Wet Weather Journey speeds are:

- Eastbound: 45.9mph,
- Westbound: 46.0mph.

3.4 The Wet Weather journey speeds are slightly below the 50mph speed limit. However they are well above 40mph. This therefore suggests that the design speed of the junction should be based on 50mph. The appropriate design speed, based on guidance in DMRB is therefore still 85kph.

4.0 Proposed Site Access Arrangements

4.1 It is proposed that the Site access arrangements comprise a priority controlled junction with ghost island right turn lane, as shown on Drg 1232/21/B.

4.2 The geometry of the priority controlled access arrangement shown on Drg 1232/21/B is based on standards in DMRB for a design speed on 85kph. The main geometric features of the proposed Site access junction comprise:

- 5.5m wide Site access road,
- 3.0m wide shared footway/cycleway on both sides of the road,
- 15.0m corner radii,
- Introduce pedestrian refuge at Site access,
- 2.4m x 160m visibility splays in both directions for vehicles emerging from the Site access,
- 3.2m wide through lanes in both directions on Bangor Road,
- 3.2m wide ghost island right turn lane,
- 15m direct taper length,
- 55m deceleration length,
- 10m turning length,
- Introduce kerbed islands at both ends of ghost island right turn lane.

4.3 The above geometry is suitable for the Site access junction based on existing recorded speeds on Bangor Road.

5.0 Proposed Speed Limit Change

5.1 AHA undertook pre-application discussions with Wrexham CBC highways, who proposed introducing a 30mph speed limit in the vicinity of the Site access. The justification is that there have been preliminary discussions within the council to extend the 20mph speed limit on Bangor Road to the railway bridge to the west of the Site. It is not desirable to have a speed limit change from 20mph to 50mph. A 30mph zone in the vicinity of the Site access would provide a transition zone between 20mph and 50mph, and provide an environment more conducive to walking and cycling.

5.2 It is proposed that the 30mph zone is introduced and reinforced using the following traffic calming measures, as indicated on Drg 1232/21/B;

- Gateway feature and dragons teeth markings at the proposed speed limit change,
- 'Slow/Araf' markings on carriageway,
- Vehicle activated signage,
- Extend existing street lighting over the entire length of the proposed 30mph speed limit.

5.3 The above measures have been agreed in principle with Wrexham CBC as part of pre-application discussions.

5.4 For the avoidance of doubt, and notwithstanding the proposed speed limit change, the proposed Site access is designed based on existing recorded speeds on Bangor Road. The proposed Site access arrangements are therefore not dependent on implementation of the proposed speed limit change to 30mph.

6.0 Proposed Pedestrian/Cycle Provision

- 6.1 It is proposed to introduce 3.0m wide shared footway/cycleway along the Site frontage on Bangor Road, and a pedestrian refuge at the Site access junction, as shown on Drg 1232/21/B. This is similar to the provision for pedestrians/cycles agreed as part of the permitted Site access arrangements.

7.0 Junction Capacity

- 7.1 TA ref 1232/21/B includes modelling of the permitted Site access junction in the 2019 AM & PM peak hour with development situation. The traffic flows used in the junction modelling were based on 2012 ATC surveys on Bangor Road, with NTM traffic growth to 2019 applied to the traffic count data.
- 7.2 As set out in para 3.2, AHA commissioned an ATC on Bangor Road from 20 June 2019 to 26 June 2019 inclusive. The recorded traffic volumes on are compared with the recorded 2012 flows used in the TA are as follows:

	2019 recorded flows (VEH)			2012 recorded flows (VEH)		
	Eastbound	Westbound	2-Way	Eastbound	Westbound	2-Way
AM	262	104	366	329	114	443
PM	133	208	341	163	303	466

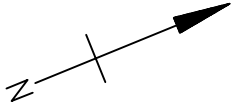
- 7.3 The above data suggests that there has been no traffic growth on Bangor Road between 2012 and 2019, and indeed there appears to be a marked reduction in the AM eastbound flow and the PM westbound flow since the 2012 survey. Therefore, the 2019 growthed traffic flows that were used as the basis for the TA modelling are based on observed flows that were higher than the 2019 observed flows, and include an additional 5.7% traffic growth. These traffic flows therefore provide a robust basis for assessing the capacity of the proposed Site access arrangements, and provides a consistent basis for comparison with the consented access arrangements.
- 7.4 Junction modelling is undertaken for the proposed Site access junction in the AM and PM peak hours using PICADY. The PICADY modelling uses the 2019 With Development traffic flows presented in TA ref 1232/2/C, and included in Appendix C herein.
- 7.5 Table 1, Appendix D presents the junction modelling results for the AM and PM peak hour With Development situations. Review of Table 1 confirms that the junction is predicted operate with high levels of spare capacity, with negligible queues and delay, in both the AM and PM peak hours.

8.0 Summary and Conclusions

- 8.1 This S.73 application relates to a change of access arrangements, from a single roundabout junction permitted under outline permission ref P/2013/0545, to a single priority controlled junction.
- 8.2 The proposed priority controlled Site access junction had been designed to standards in DMRB, and a design speed of 85kph, which is suitable based on recorded speeds in the vicinity of the Site access.
- 8.3 It is proposed to introduce a 30mph speed limit in the vicinity of the Site access in order to provide a transition between a 50mph speed limit, and a potential future 20mph speed limit to the west of the Site. This also aims to provide a better environment for pedestrians and cycles. However, the proposed Site access arrangements are not reliant on the implementation of the 30mph speed limit, as sufficient geometry is provided for existing recorded speeds.

- 8.4 The proposed pedestrian and cycle provision is similar to that provided as part of the permitted Site access arrangements.
- 8.5 It is demonstrated that the proposed Site access arrangements have sufficient capacity to serve the permitted development.
- 8.6 It is concluded that the proposed Site access arrangements provide a suitable means of access to the permitted development, and there is no highways reason for the S.73 application not to be permitted.

Appendix A: Permitted Site Access Arrangements



Widen existing footway along Site frontage
to form 3.0m wide shared footway/cycleway

Proposed Site Access

B5426 BANGOR ROAD

Drain

1.22m RH
Aberderfyn

Def

1.22m RH

Cg

11

HAFOD ROAD

Introduce 3.0m wide shared footway/cycleway
along Site frontage on Hafod Road

Maintain existing landfill access

Based upon/Reproduced from the Ordnance Survey
Map of Great Britain, 1:50,000 scale. Crown copyright
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Ashley Helme Associates Ltd, 76 Washway Road, Sale

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guaranteed until checked with topographical survey

KEY
160m forward visibility

Rev	Description	Date
B	Introduce 3.0m wide footway/cycleway	10.12.14

GLADMAN

Project
JOHNSTOWN, WREXHAM

Title
PROPOSED
ACCESS ARRANGEMENTS

Date
OCTOBER 2012

Scale
1:1,000@A2

ashleyhelme
a s s o c i a t e s
76 washway road, sale, manchester, m33 7re
email: ahi@ashleyhelme.co.uk web: 0161 971 0525 fax: 0161 971 0533

Drawing No
1232/13

Revision
B

Appendix B: Proposed Site Access Arrangements

Notes:

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Rev	Description	Date
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GLADMAN DEVELOPMENTS

Project
JOHNSTOWN, WREXHAM

PROPOSED ACCESS ARRANGEMENTS

Date: SEPTEMBER 2019
 Scdfile: 1:1250@A2
 ashleyhelme
 associates
 76 washway road, sale, manchester, m33 7re
 email: info@ashleyhelme.co.uk tel: 0161 972 4557 fax: 0161 972 6553

Appendix C: Traffic Flows

Appendix D: PICADY Modelling Results

MOVEMENT	AM PEAK HOUR			PM PEAK HOUR		
	RFC	QUEUE (pcu)	DELAY (mins/veh)	RFC	QUEUE (pcu)	DELAY (mins/veh)

With Development						
Site Access Left	0.25	0.3	0.13	0.14	0.2	0.11
Site Access Right	0.06	0.1	0.16	0.04	0.0	0.17
B5420 Bangor Road	0.09	0.1	0.10	0.20	0.2	0.10

- Notes:
- Refer Drg No 1232/21/B for proposed Site access drawing.
 - Refer Appendix C for traffic flows.

Table 1
PICADY RESULTS
SJ1 Proposed Site Access/B5420 Bangor Road