

ACCESS ASSESSMENT

**CHANGE OF USE OF LAND
TO TRAVELLER SITE WITH 4 PITCHES
AT
STRYT Y BYDDEN
NEW BROUGHTON WREXHAM**



**FOR
PATRICK BERRY**

REPORT VERIFICATION

SITE ADDRESS	Stryt Y Bydden New Broughton Wrexham LL11 6SN
REPORT TITLE	Access Assessment
JOB NUMBER	963-24
PREPARED BY	JRS

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INDEX

DESCRIPTION	PAGE
1. Brief	3
2. Site Information	3
3. Visibility Splays	3
4. Site Proposals	5
5. Conclusion	5

APPENDICES

Appendix 1	Site Location Plan
Appendix 2	Trevor Mennell Planning Proposed Block Plan with detailed Drainage drawing 71353:1001
Appendix 3	Speed & Visibility Splay Calculations
Appendix 4	Visibility Splays drawing 963-24-05
Appendix 5	Photographs

1. BRIEF

- 1.1. Sumner Consultancy has been appointed by Patrick Berry to carry out an access assessment for his proposal change of use of his land to a traveller site with 4 pitches.

2. SITE INFORMATION

- 2.1. The Site is located to the southern extremity of New Broughton and along the north-eastern side of Stryt Y Bydden, Wrexham at grid reference X331258 Y351019 with the nearest post code of LL11 6SN. The Site Location Plan is in Appendix 1.
- 2.2. Adjoining the Site Stryt Y Bydden is 3.9m wide with a 0.9m wide verge on the eastern side and a 1.4m wide verge measured to the front face of the boundary hedge on the western side.
- 2.3. From the proposed access for a distance of 96.0m to the north-west and 73.0m to the south-east the average road width is 3.9m, with an average verge width of 1.0m on the eastern side and 1.6m wide verge on the western side measured to the front face of the hedge.
- 2.4. At the junction of Bersham Road and Stryt Y Bydden to the north-west is the start of a 20mph speed limit along Stryt Y Bydden. However, there are no signs along Stryt Y Bydden for the end of the 20mph speed limit and the start of another limit. At this stage it can only be assumed that the 20mph speed limit was intended to terminate at the limit of the houses on the eastern side of the road, 200m to the south-east of the Bersham Road junction. At this location is the north-western boundary to the Site.
- 2.5. There are no streetlights or road markings along Stryt Y Bydden.
- 2.6. The Site road frontage is 90.5m long, with an existing splayed entrance approximately halfway along the Site. The access proposals are shown on Trevor Mennell Planning Proposed Block Plan with detailed Drainage drawing 71353:1001 in Appendix 2.
- 2.7. The accident data within 450m of the Site has been checked from CrashMap and over a 3 year period between 2020 and 2022 and there no accidents recorded.

3. VISIBILITY SPLAYS

- 3.1. Measurement of visibility splays:
- 3.1.1. Measurements for visibility splays are generally taken from a point where the centreline of the minor road meets the channel of the major road, Point W. This is normally at the 'give way' line (or an imaginary 'give way' line if no such markings are provided). The distance back along the minor arm to Point X, from which visibility is measured is known as the X distance. This distance is normally measured along the centreline of the minor arm for simplicity, but in some circumstances (for example where there is a wide splitter island on the minor arm) it will be more appropriate to measure it from the actual position of the driver.
- 3.1.2. The Y distance represents the distance that a driver who is about to exit from the minor arm can see to their left and right along the main alignment. For simplicity it is measured along the nearside kerb line of the main arm to Point Y, although vehicles will normally be travelling a distance from the kerb line. Therefore, a more accurate assessment of visibility splays is made by measuring to the nearside edge of the vehicle track. The measurement is taken from the point where this line intersects the centreline of the minor arm, Point X, (unless, as above, there is a splitter island in the minor arm).
- 3.2. Currently there are two standards for determining visibility splays, which are defined in Manual for Streets (MfS) and Design Manual for Roads and Bridges (DMRB) CD 123 – Geometric Design of At-Grade Priority and Signal-Controlled Junctions.

- 3.3. MfS focuses on lightly trafficked residential streets, but many of its key principles may be applicable to other types of streets, for example high streets and lightly trafficked lanes in rural areas. Generally, this is limited to locations with traffic speeds less than 40mph. MfS does not apply to the Trunk Road Network.
- 3.4. CD 123 is generally applicable to trunk roads where traffic speeds are 40mph and above.
- 3.5. However, there are some Highway Authorities, one of which is Shropshire who are prepared to consider visibility splays derived by Dorset County Council for speeds in excess of 40mph. These visibility splays are based on the formula outlined in MfS.
- 3.6. It's understood that the Planning Inspectorate is also allowing appeals for visibility splays for speeds in excess of 40mph based on the formula outlined in MfS.
- 3.7. The determination of the Y distance for the visibility splays is generally based on the actual speed of vehicles along the road and not the speed limit.
- 3.8. The assessment of Vehicle speeds is generally done by an Automatic Traffic Count (ATC). An ATC speed survey is normally carried out by fixing rubber tubes to the road surface which are connected to a road side recorder box. These tubes can measure both speed and number of vehicle movements and in some cases the weight of vehicles passing over, e.g. cars or HGV's.
- 3.9. An ATC is generally done over the period of a week. They are therefore inconspicuous to drivers of vehicles, and provide more detailed information than a manual survey, which is generally only over a number of hours or at most a day and involves the survey being carried out by someone on the side of the road with a radar gun, sometimes in a high visibility jacket.
- 3.10. Due to the time factor the speeds along Stryt Y Bydden adjoining the Site were therefore assessed by driving along the road, and it is considered that the 85th Percentile speed for north-west bound traffic is 22.0mph due to the width of the road and bend adjoining the south-eastern Site boundary. For south-east bound traffic the 85th Percentile speed is 30.0mph or less as it will depend on where the extent of the 20mph speed limit is.
- 3.11. For a vehicle speed of 22.0mph the visibility splay requirement as outlined in MfS is 28.1m, and for a speed of 30.0mph it is 43.0m. A copy of the Speed & Visibility Splay Calculations is in Appendix 3.
- 3.12. The achievable visibility splays from the Site from 2.4m are 28.1m to the left (south-east) and 43.0m to the right (north-west) measured to the nearside edge of the vehicle track as stated in Manual for Streets, which is taken to be 0.5m from the channel.
- 3.13. To achieve the visibility splays the existing fence and "hedge" need to be removed for the approximate distance of 15m to the north-west and 8m to the south-east and any new hedge or fence to be set back along the line of the visibility splay.
- 3.14. For the appropriate X distance MfS states that:
 - a) An X distance of 2.4m should normally be used in most built-up situations, as this represents a reasonable maximum distance between the front of a car and the driver's eye.
 - b) Longer X distances enable drivers to look for gaps as they approach the junction. This increases junction capacity for the minor arm, and so may be justified in some circumstances, but it also increases the possibility that drivers on the minor approach will fail to take account of other road users, particularly pedestrians and cyclists.
 - c) Longer X distances may also result in more shunt collisions on the minor arm. TRL Report No. 18468 found that collision risk increased with greater minor-road sight distance.

- d) A minimum X distance of 2m may be considered in some slow-speed situations when flows on the minor arm are low, but using this value will mean that the front of some vehicles will protrude slightly into the running carriageway of the major arm, and many drivers will tend to cautiously nose out into traffic. The ability of drivers and cyclists to see this overhang from a reasonable distance, and to manoeuvre around it without undue difficulty, should be considered. This also applies in lightly-trafficked rural lanes.
- 3.15. For the Access onto Stryt Y Bydden, it is considered that an X distance of 2.4m is appropriate. The visibility splays are shown on the Visibility Splays drawing 963-24-05 in Appendix 4.
- 3.16. Photographs 1 & 2 in Appendix 5 show the location of the access, Photographs 3 & 4 along the road channel and Photographs 5 & 6 the visibility splays in both directions from 2.4m.
- 3.17. There are no issues with the vertical visibility from an eye height of 1.05m to a point 0.6m above carriageway in both directions.

4. SITE PROPOSALS

- 4.1. The Site and access proposals are shown on Trevor Mennell Planning Proposed Block Plan with detailed Drainage drawing 71353:1001 in Appendix 2.
- 4.2. In a memorandum from the Chief Officer, Environmental & Technical dated 20-02-24, the following comment was made:
"Due to the increase in traffic this application introduces, and narrow width of the road, the need for passing places is increased. If the only location for this within the control of the applicant is along the site frontage, then this should be provided. Creation of a wider highway on the bend and a widened layby/passing place could be combined."
- 4.3. From measurements taken along Stryt Y Bydden, the road width at 96.0m from the Site access in a north-westerly direction is 4.5m, which is considered wide enough for vehicles to pass each other, Photograph 7.
- 4.4. From the Site access in a south-easterly direction at 73.0m there is an informal passing place where the road width is 4.5m which is considered suitable as a passing place, Photograph 8.
- 4.5. The width of the proposed access as shown on Trevor Mennell Planning Proposed Block Plan with detailed Drainage drawing 71353:1001 in Appendix 2, will also be wide enough to be used as a passing place.

5. CONCLUSION

- 5.1. At the junction of Bersham Road and Stryt Y Bydden is the start of a 20mph speed limit along Stryt Y Bydden. However, there are no signs along Stryt Y Bydden for the end of the 20mph speed limit and the start of another limit. At this stage it can only be assumed that the 20mph speed limit was intended to terminate at the limit of the houses on the eastern side of the road, 200m to the south-east of the Bersham Road junction. At this location is the north-western boundary to the Site.
- 5.2. Due to the time factor the speeds along Stryt Y Bydden adjoining the Site were assessed by driving along the road, and it is considered that the 85th Percentile speed for north-west bound traffic is 22.0mph due to the width of the road and bend adjoining the south-eastern Site boundary. For south-east bound traffic the 85th Percentile speed is 30.0mph or less as it will depend on where the extent of the 20mph speed limit.
- 5.3. For a vehicle speed of 22.0mph the visibility splay requirement as outlined in MfS is 28.1m, and for a speed of 30.0mph it is 43.0m.
- 5.4. For the Access onto Stryt Y Bydden, it is considered that an X distance of 2.4m is appropriate.

- 5.5. The achievable visibility splays from the Site from 2.4m are 28.1m to the left (south-east) and 43.0m to the right (north-west) measured to the nearside edge of the vehicle track as stated in Manual for Streets, which is taken to be 0.5m from the channel.
- 5.6. To achieve the visibility splays the existing fence and “hedge” need to be removed for the approximate distance of 15m to the north-west and 8m to the south-east and any new hedge or fence to be set back along the line of the visibility splay.
- 5.7. There are no issues with the vertical visibility from an eye height of 1.05m to a point 0.6m above carriageway in both directions.
- 5.8. The accident data within 450m of the Site has been checked from CrashMap and over a 3 year period between 2020 and 2022 and there no accidents recorded.
- 5.9. It is considered that there is enough room along Stryt Y Bydden approaching the north-western side of the Site for vehicles to pass each other, where the road is 4.5m wide, and in a south-easterly direction at the informal passing place where the road is also 4.5m wide. The width of the proposed access is also wide enough to be used as a passing place.
- 5.10. It is therefore considered that there are sufficient passing places along Stryt Y Bydden and the Site proposals will not be detrimental to the free flow of traffic along Stryt Y Bydden.

John Sumner IEng MICE
Director
Sumner Consultancy Ltd
September 2024

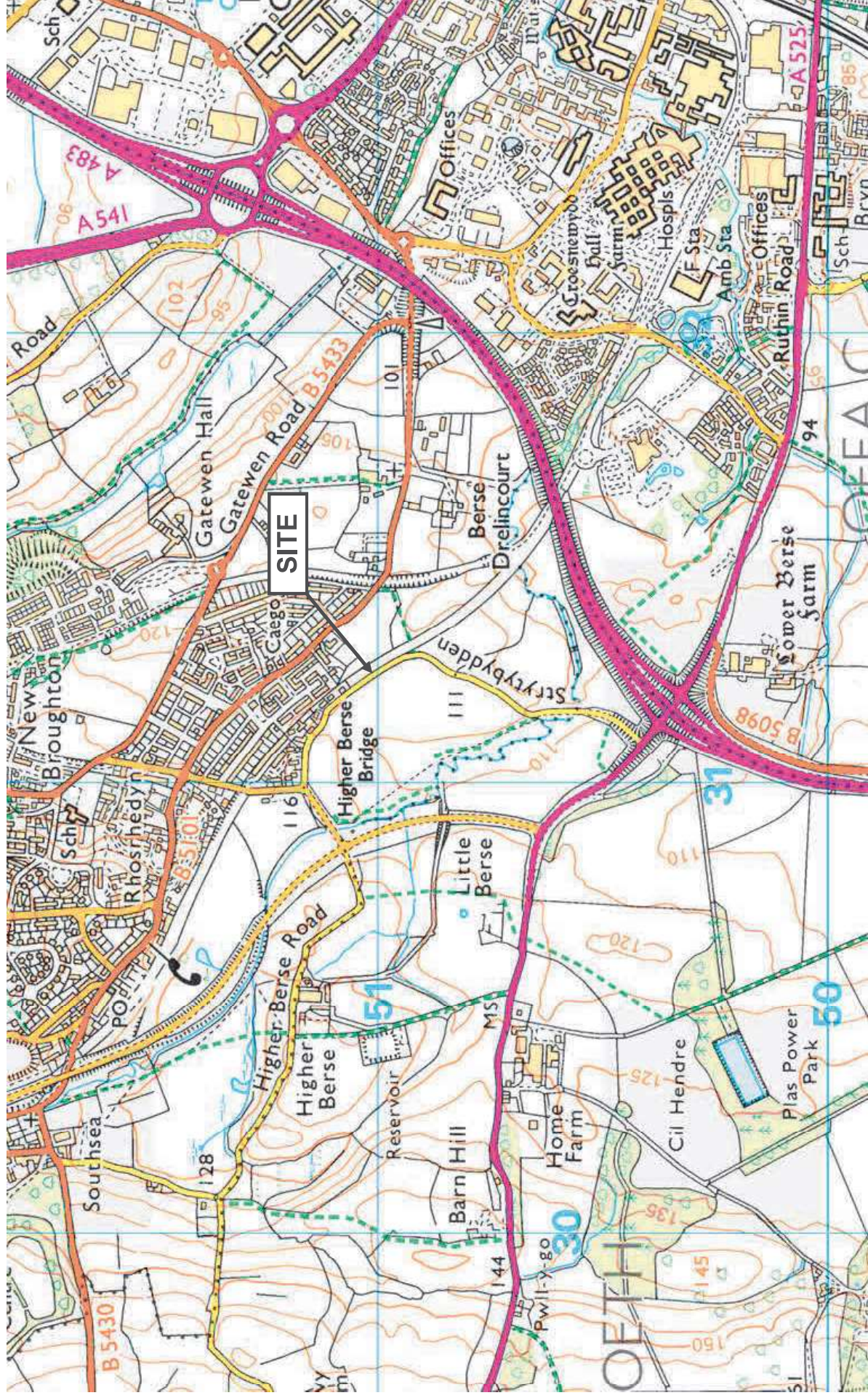
APPENDIX 1

SITE LOCATION PLAN

SITE LOCATION PLAN

Nearest Post Code LL11 6SN

Grid Reference X331258 Y351019



APPENDIX 2

**TREVOR MENNELL PLANNING PROPOSED
BLOCK PLAN WITH DETAILED DRAINAGE
DRAWING 71353:1001**

APPENDIX 3

SPEED & VISIBILITY SPLAY CALCULATIONS

SPEED & VISIBILITY SPLAY CALCULATIONS

Manual for Streets (MfS)



Site Location **STRYT Y BYDDEN NEW BROUGHTON WREXHAM**

Grid Reference **X331258 Y351019**

Nearest Post Code **LL11 6SN**

Speed Limit **Possibly 60 mph by site entrance**

Speed assessment was done on 21/08/2024 by driving along the road

Traffic Direction SE bound mph
85th Percentile 30.0

Traffic Direction NW bound mph
85th Percentile 22.0

Speed in wet weather

CA 185 Vehicle Speed Measurement

Speed increase for wet weather 0 mph (4 kph for AP Single Carriageways)

Traffic Direction SE bound mph
85th Percentile 30.0

Traffic Direction NW bound mph
85th Percentile 22.0

Visibility Distances From Manual for Streets

SPEED	Km/h	16	20	24	25	30	32	40	45	48	50	60
	mph	10	12	15	16	19	20	25	28	30	31	37
SSD (metres)		9	12	15	16	20	22	31	36	40	43	56
SSD adjusted for bonnet length		11	14	17	18	23	25	33	39	43	45	59

Traffic Direction SE bound
85th Percentile Visibility Splay 42.9 m

Traffic Direction NW bound
85th Percentile Visibility Splay 28.1 m

Where:

Stopping Sight Distance = $vt + \frac{v^2}{2(d+0.1a)}$

v = Speed (m/s)

t = Reaction Time (s) =

d = Deceleration Time (g) =

g = Gravity (m/s^2) =

Bonnet Length (m) =

a = Longitudinal Gradient (%)

SE bound Gradient (%) =

NW bound Gradient (%) =

SE bound NW bound

1.5 1.5

0.450 0.450

9.81 9.81

2.4 2.4

0.0%

0.0%

Note: The calculations above are based on the formula in Manual for Streets 2 for determining the Stopping Sight Distance

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APPENDIX 4

VISIBILITY SPLAYS DRAWING 963-24-05

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Cell Engineering & Maintenance Limited			
Client:	PATRICK BERRY		
Project:	STRYT Y BYDDEN NEW BROUGHTON WREXHAM		
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Drawn by: JRS	Date: September 2024		
Drawing Number: 963-24-05	Revision:		

APPENDIX 5

PHOTOGRAPHS



PHOTOGRAPH 1
Site access looking in a north-easterly direction



PHOTOGRAPH 2
Site access looking in a northerly direction



PHOTOGRAPH 3
Road channel at the access looking in a north-westerly direction



PHOTOGRAPH 4
Road channel at the access looking in a south-easterly direction



PHOTOGRAPH 5
Access from 2.4m looking to the right (north-westerly direction)



PHOTOGRAPH 6
Access from 2.4m looking to the left (south-easterly direction)



PHOTOGRAPH 7
The red line is 96.0m from the access where the road width is 4.5m



PHOTOGRAPH 8
Informal passing place 73.0m from the access