

INTERNAL MEMORANDUM

Your Ref.: P/21/0358

Our Ref.: 21/0358

To: Town Planning Division – Development Control Section

FAO: David Cross

From: Engineering and Highways Division – Highway Development Control Section

Please ask for: Martyn Tanner

Date: 24/08/2022

OBSERVATIONS BY THE ENGINEERING AND HIGHWAYS DIVISION IN RESPECT OF DEVELOPMENT AFFECTING EXISTING OR PROPOSED PUBLICLY MAINTAINED HIGHWAY

PROPOSED DEVELOPMENT

Residential development and associated engineering, access and landscaping works | Land Off Elm Tree Grove Twynyrodyn Merthyr Tydfil.

PLANNING HISTORY

None.

HIGHWAY ASSESSMENT

The proposal is for a residential development of 121 dwellings on land off Elm Tree Grove, Twynyrodyn.

Access

The proposed development is served off Elm Tree Grove, Twynyrodyn via a priority junction. Access to the wider highway network is via the existing mini roundabout junction between Penheolferthyr and Elm Tree Grove.

It was highlighted during pre-planning consultations that there were concerns regarding the amount of traffic the proposal would generate and the impact it would have on the existing highway network. To address these concerns a Transport Assessment (TA) was submitted in support of the application. The TA includes junction capacity studies and considers future traffic growth into 2024, 2029 and 2034.

Transport Assessment

Modal Split

Based off census data, the TA notes that 67% of residents that live within the vicinity of the site travel to work by private motor vehicle, with a further 11% travelling as a passenger. The TA also notes that 15% walk and 5% utilise public transport.

Walking and Cycling

The TA includes figure 3.2 which identifies the location of facilities and amenities within 1.2km of the proposed development, as below:

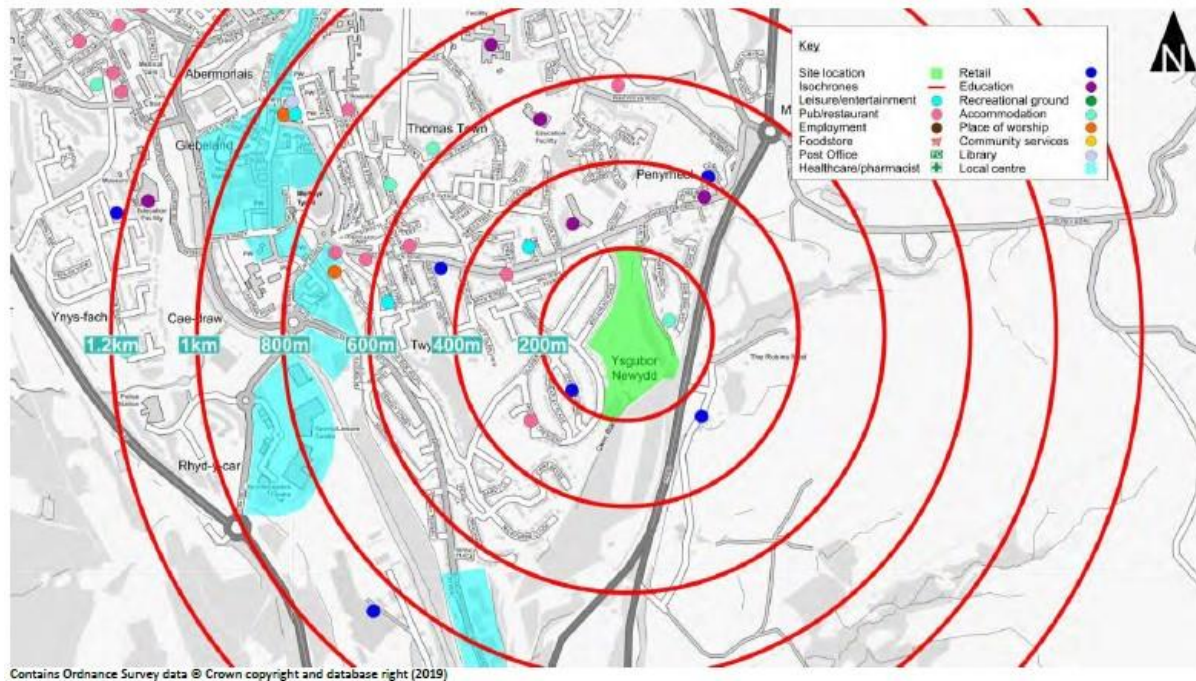


Figure 3.2 Location of facilities and amenities within 1.2km of the site

The above indicates various distances from the site 'as the crow flies' and not via available walking routes. Nevertheless, there are numerous facilities and amenities located within an acceptable walking distance from the proposed development and the local highway network includes sufficient pedestrian facilities to encourage trips to such facilities and amenities on foot.

The TA includes figure 3.5 which identifies the location of designated cycle routes, a number of which form part of the National Cycle Network (NCN), as below:

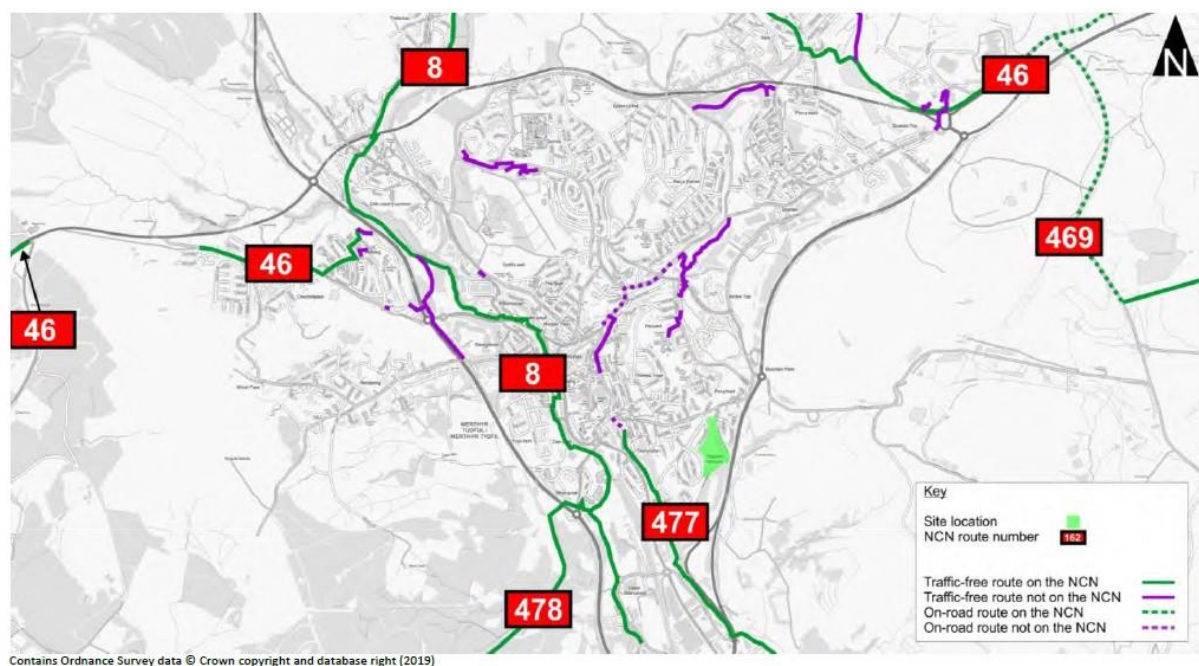


Figure 3.5 Local cycle routes in the vicinity of the site

As can be seen from the above, the site is within easy cycling distance of numerous designated cycling routes. Although no designated routes connect directly to the proposed development the local highway network within the vicinity of the development is sufficient to accommodate on-street cycling. As such, the facilities and amenities identified on figure 3.2 above are also readily accessible by cycle and the available designated cycle routes, particularly those that form part of the NCN, encourage trips further afield.

Public Transport

The TA includes figure 3.6 which indicates the locations and routes of numerous bus services within the vicinity of the proposed development, as below:

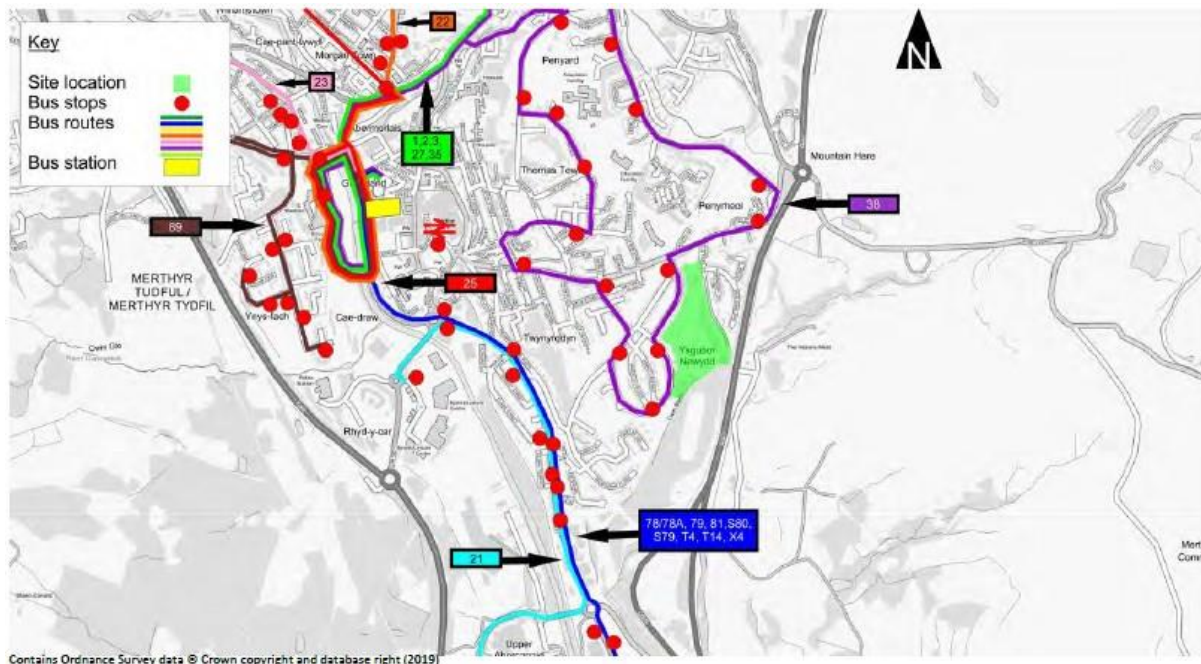


Figure 3.6 Public transport infrastructure in the vicinity of the site

The nearest bus stop is located on Glasier Road and is within easy walking distance to the proposed development. The bus service on this route connects to the Bus Station in Merthyr Tydfil Town Centre, from which numerous other services are available. Merthyr Tydfil Train Station is also within easy walking distance. As such, the proposed is considered to be sufficiently served by public transport.

Private Motor Vehicles

The local highway network within the vicinity of the site is generally considered safe. The TA identifies 9 Road Traffic Collisions (RTCs) within the 5 year period between 2016 and 2020 (inclusive) that resulted in a total of 19 slight injuries. Only 1 collision occurred at the mini roundabout junction between Penheolferthyr and Elm Tree Grove. The majority of collisions occurred at the A4060 roundabout. The A4060 falls under the responsibility of welsh Government, outside the remit of MTCBC. As such, there are no identified collision hot spots on the local highway network.

Trip Generation and Growth Rates

The initial TA considers a development of 131 dwellings. During the planning process the number of dwellings has been reduced to 121 and 2 Technical Notes (TN(s)) have subsequently been submitted which take into account revised traffic volumes arising from the proposed development. The initial TA and subsequent TNs were reviewed by Redstart on behalf of MTCBC.

In terms of trip generation and growth rates, the review of the TA undertaken by Redstart raises no significant concerns and the trip generation and growth rates are generally considered representative of the proposed development. The review concludes that further capacity analysis of the junctions agreed with MTCBC at the scoping stage of the development should be undertaken. Of the junctions in question, the 2 junctions of particular concern are the roundabout junction between Lower High Street, High Street, the A4102 and the A4054 Avenue de Clichy and the priority junction between the A4102 Goat Mill Road and Penheolferthyr.

TN ref. TN01 includes revised trip generation figures resultant from the reduction in the proposed number of dwelling from 131 to 121. The review undertaken by redstart again does not raise any significant concern with regard to trip generation and growth rates. As such, the trip generation figures contained within TN of 82 2-way vehicular trips in the AM Peak (0800 to 0900) and 98 2-way vehicular trips in the PM Peak (1700 to 1800) are considered representative of the proposed development.

Junction Capacity Analysis

TN ref. TN02 provides junction capacity analysis at the 2 worst affected junctions initially assessed within the TA, namely the roundabout junction between Lower High Street, High Street, the A4102 and the A4054 Avenue de Clichy and the priority junction between the A4102 Goat Mill Road and Penheolferthyr. The TN identifies a percentage increase at each junction due to the development in 2024 of 1.2% and 2.72% respectively.

The TN review undertaken by Redstart advises that the roundabout junction between Lower High Street, High Street, the A4102 and the A4054 Avenue de Clichy is already over capacity, with queues on the A4102 of 15 and 18 vehicles respectively. The review also advises that the maximum increase in queue length on any arm of the junction is 1 vehicle and concludes that, whilst the junction is over capacity, the impact of the proposed development is minor. The base 2022 queue lengths at this junction and with the base plus development 2024 queue lengths along with future growth estimates for 2029 and 2034 are shown in table 2.4 below:

Table 2.3 Junction capacity results - Lower High Street, High Street, A4102 and A4054 Avenue De Clichy roundabout

Arm	Base				Base + development			
	8am-9am		5pm-6pm		8am-9am		5pm-6pm	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
2022								
A4054 High St	1.01	10	1.00	10				
A4102	1.20	15	1.15	18				
A4054	0.96	7	1.13	17				
Lower High St	0.88	6	0.97	7				
2024								
A4054 High St	1.04	11	1.03	12	1.05	12	1.03	12
A4102	1.22	16	1.16	20	1.23	17	1.17	21
A4054	0.96	7	1.16	20	0.99	8	1.15	19
Lower High St	0.90	6	0.99	8	0.92	7	1.01	9
2029								
A4054 High St	1.10	15	1.08	18	1.11	16	1.08	18
A4102	1.28	20	1.24	29	1.28	20	1.23	29
A4054	1.03	9	1.21	28	1.03	10	1.20	26
Lower High St	0.94	8	1.04	11	0.97	10	1.05	13
2034								
A4054 High St	1.17	20	1.14	26	1.18	21	1.14	26
A4102	1.34	27	1.29	38	1.35	27	1.29	38
A4054	1.09	12	1.26	37	1.10	12	1.26	37
Lower High St	0.99	11	1.09	17	1.01	14	1.10	19

With regard the priority junction between the A4102 Goat Mill Road and Penheolferthyr, the review undertaken by Redstart advises of a significant increase in queue lengths on Penheolferthyr with the proposed development and retention of the existing junction layout in 2024. Queues are forecast to increase by 23 vehicles in the left turn lane and 24 vehicles in the right turn lane in the AM Peak (0800 to 0900). The base 2022 queue lengths at this junction and with the base plus development 2024 queue lengths along with future growth estimates for 2029 and 2034 are shown in table 2.5 below:

Table 2.5 Junction capacity results - Penheolferthyr and Goat Mill Road A4102 priority junction

Arm	Base				Base + development			
	8am-9am		5pm-6pm		8am-9am		5pm-6pm	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
2022								
Penheolferthyr (left)	0.91	7	0.93	9				
Penheolferthyr (right)	0.90	7	0.93	9				
Goat Mill Road	0.47	2	0.39	2				
2024								
Penheolferthyr (left)	0.95	10	0.97	11	1.05	33	1.01	20
Penheolferthyr (right)	0.94	11	0.96	13	1.05	35	1.01	23
Goat Mill Road	0.48	2	0.40	1	0.50	2	0.43	1
2029								
Penheolferthyr (left)	1.01	22	1.03	24	1.13	57	1.09	39
Penheolferthyr (right)	1.02	24	1.03	28	1.13	61	1.09	45
Goat Mill Road	0.52	2	0.43	1	0.54	2	0.47	2
2034								
Penheolferthyr (left)	1.05	45	1.12	47	1.22	87	1.18	66
Penheolferthyr (right)	1.05	48	1.12	55	1.22	92	1.18	77
Goat Mill Road	0.56	2	0.46	2	0.59	2	0.50	2

As can be seen from the above table, as a result of the proposed development, in 2024 the estimated total queueing vehicles (for both the left and right lanes) on Penheolferthyr would increase from 21 to 68 as a result of the proposed development, a percentage increase of 223.8%. In 2029 the

percentage increase as a result of the proposed development is estimated to be 156.5% and by 2034, 92.5%.

The TN advises that excluding the proposed development, the junction is predicted to be over capacity during the AM and PM peaks by 2029. The TN also acknowledges the proposed development deteriorates the situation further, with the proposed development resulting in the junction becoming over capacity by 2024.

The TN includes a potential mitigation measure in the form of a mini roundabout that this junction and provides a junction capacity assessment suggesting that a mini roundabout has sufficient capacity to accommodate traffic in all future year scenarios.

However, the review of the TN undertaken by Redstart advises that the A4102 approach from east arm of the mini roundabout would experience unequal lane use with 33% and 35% in the AM and PM peaks respectively turning left onto Penheolferthyr, and 67% and 65% AM and PM peaks respectively continuing straight on the A4102 Goat Mill Road. With only 34m between the mini roundabout and A4060 roundabout there is only an available queueing capacity for 6 vehicles, which coupled with the unequal lane use would make blocking of the A4060 roundabout circulatory carriageway probable. This would give rise to significant highway safety concerns being raised by Welsh Government.

Notwithstanding the issues identified, the development would only amount to a 2.72% increase in the overall traffic volumes at the priority junction between the A4102 Goat Mill Road and Penheolferthyr. As such, it would not be reasonable for the applicant to undertake mitigation measures to resolve a pre-existing highway issue, as this would not be commensurate to the impact of the increase in traffic flows as a result of the development. Instead, this would be an issue for the Highway Authority to address as part of a wider strategy to manage traffic along Penheolferthyr.

Given the size of the proposed development, the applicant would be required to make a considerable financial contribution as a result of the Community Infrastructure Levy (CIL). This contribution could be utilised in part to improve the junction to mitigate the impact of the increased traffic volumes arising from the proposed development.

Internal Circulation

Vehicular circulation

Vehicular circulation is catered for by a 5.5m wide carriageway width. The internal layout includes sufficient turning areas to allow vehicles to enter and exit the development in a forward gear. Numerous dwelling are served via private shared accesses. The no. of dwelling served off each private access do not exceed 5 and sufficient turning areas are provided.

There are 2 no. rain gardens that protrude into the carriageway alongside plots 51-52 and 65, narrowing the available carriageway width to 3.5m. Rain gardens that protrude into the carriageway are limited to these locations and give no significant cause for concern.

There is concern with the centreline radius of the first bend after the proposed priority junction onto Elm Tree Grove. The All Wales Common Standards outline a desirable minimum centreline radius of 30m. The centreline radius as shown on the proposed site layout plan is approximately 9m. The initial site layout plan indicating provision of 131 dwelling included an alternative arrangement which would be considered acceptable. In its current form the 9m centreline radius results in highway safety and traffic flow concerns. The acceptable arrangement from the initial proposed site plan is shown below:



Nevertheless, it is considered that this issue can be addressed as part of the technical approval process associated with the required Section 38 agreement. A condition requiring full engineering design and detail prior to the commencement of works on site and note to this effect is suggested below.

Pedestrian Circulation

The proposal included segregated pedestrian footway facilities varying in width between 2.0m and 2.5m. The proposal also include upgrading of existing and new connections public rights of ways within the development. As such, the proposal give no undue cause for concern regarding pedestrian movements.

Parking

Vehicular Parking

The proposed development consists of 121 residential dwellings, comprising of 7 no. 1 bed dwellings, 27 no. 2 bed dwellings and 87 no. 3+ bedroom dwellings.

Wales Parking Standards 2008 sets out a parking requirement of 1 space per bedroom (maximum requirement of 3 spaces) for residents and 1 space per 5 dwelling for visitors. As such, the proposed development of 7 no. 1 bed dwellings, 27 no. 2 bed dwellings and 87 no. 3+ bedroom dwellings equates to a requirement of 322 spaces for residents plus 24 spaces for visitors.

The development provides for 248 total spaces for residents, a shortfall of 74 spaces, which equates to 77% of the development's requirement. No one individual plot has a shortfall greater than 1 space. Considering the Wales Parking Standards 2008 set out maximum requirements and there are

opportunities available for on-street parking, the shortfall in off-street parking provision for residents of 74 spaces across the entire development gives no significant cause for concern.

No designated visitor spaces are provided; however, there are sufficient opportunities for short term visitor parking to be accommodated on-street.

Cycle parking

Given the proposed development consists of individual dwellings it is considered that cycle parking can be accommodated within the curtilage of each property.

RECOMMENDATION

No highway objection is raised subject to the following condition(s):

1. Notwithstanding the approved plans, development shall not commence until full engineering design and details of the proposed internal highway layout together with its junction onto the existing highway network have been submitted to and approved in writing by the Local Planning Authority.

REASON: to ensure the adequacy of the proposed development, in the interests of highway safety and the free flow of traffic.

2. No Development shall take place, including any works of site clearance, until details have been submitted to and approved in writing by the Local Planning Authority that provide for:
 - a. The means of access into the site for all construction traffic;
 - b. The parking of vehicles of site operatives and visitors;
 - c. The management of vehicular and pedestrian traffic;
 - d. The loading and unloading of plant and materials;
 - e. The storage of plant and materials used in the construction of the development; and
 - f. Wheel cleansing facilities; and

The approved details shall be adhered to through the construction of the development unless agreed otherwise by the Local Planning Authority.

REASON: in the interests of safety and the free flow of traffic.

3. The off-street parking provision indicated on approved drawing number "SP-03-Rev 07" together with garages and carports shall remain for the purpose of vehicular parking only unless agreed otherwise with the Local Planning Authority.

REASON: to ensure vehicles are parked off the public highway, in the interests of highway safety and the free flow of traffic.

4. Surface water run-off from the private areas of the proposed development shall not discharge onto the public highway or connect to any highway drainage system unless agreed otherwise with the Local Planning Authority.

REASON: In the interests of highway safety and to prevent over capacity of the existing highway drainage system.

NOTES

1. The Developer would be required to enter into legally binding agreements (S38 and S278 of Highways Act 1980) to secure the proper design and implementation of the proposed works

to the existing highway and the internal roads, footways and highway drainage, including an appropriate bond and fees.

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