



**ECOLOGICAL ASSESSMENT AND BAT SURVEY AT
DOWLAIS PRIMARY SCHOOL, MERTHYR TYDFIL**

JULY 2024

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DOWLAIS PRIMARY SCHOOL, MERTHYR TYDFIL

Survey of Dowlais Primary School

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NON-TECHNICAL SUMMARY

An ecological assessment was undertaken of a playing field at Dowlais Primary School, Merthyr Tydfil.

The area was considered as being of low potential for bats and a single evening activity survey was undertaken. The area was considered as being of negligible potential for reptiles due to intense management, disturbance

There are no buildings within the land development application boundary that could offer bat roosting habitat.

Only a single bat species was found to be present on site (common pipistrelle).

Due to the small number of bats, the low number of common species present at the site, the lack of roosting features present at the site, the fact that the MUGA will only be used infrequently, with the lights on during use only and the fact that there will be restrictions on timings, it is considered that any impacts on bats will be minor.

It is considered that the proposed development is unlikely to affect any other species groups.

1 INTRODUCTION

1.1 OBJECTIVE

The objectives of this report are to:

- identify the potential for protected species to be present on site;
- undertake species specific assessments and surveys as necessary;
- using the information gathered to determine whether there will be any impacts (both positive and negative) on bat species present;
- provide recommendations for further survey as necessary; and
- suggest outline mitigation and enhancement ideas and principles

1.2 METHODOLOGY

To achieve the objectives set out above, the following actions were taken:

- Field based assessments in respect of
 1. Bats;
 2. Reptiles
 3. Birds
 4. Invertebrates

1.3 SITE DESCRIPTION

The site is located to the north of Dowlais Primary School in Merthyr Tydfil. The red line boundary comprises of an area of managed amenity grassland made up of by perennial ryegrass, cock's-foot and fescues. There is an area of sycamore and ash woodland to the north east of the site. The site is bounded to the south west by Gwernllwyn Road, the south by the school with houses and associated infrastructure beyond this. There is a line of trees planted along the sites south western boundary. The trees are young and thin stemmed and were planted as part of mitigation for a previous development of the site. The trees will be transplanted as part of the current proposals.

Figure 1 – Detailed view of the site (MUGA arrowed red) (Google Maps, 2024)

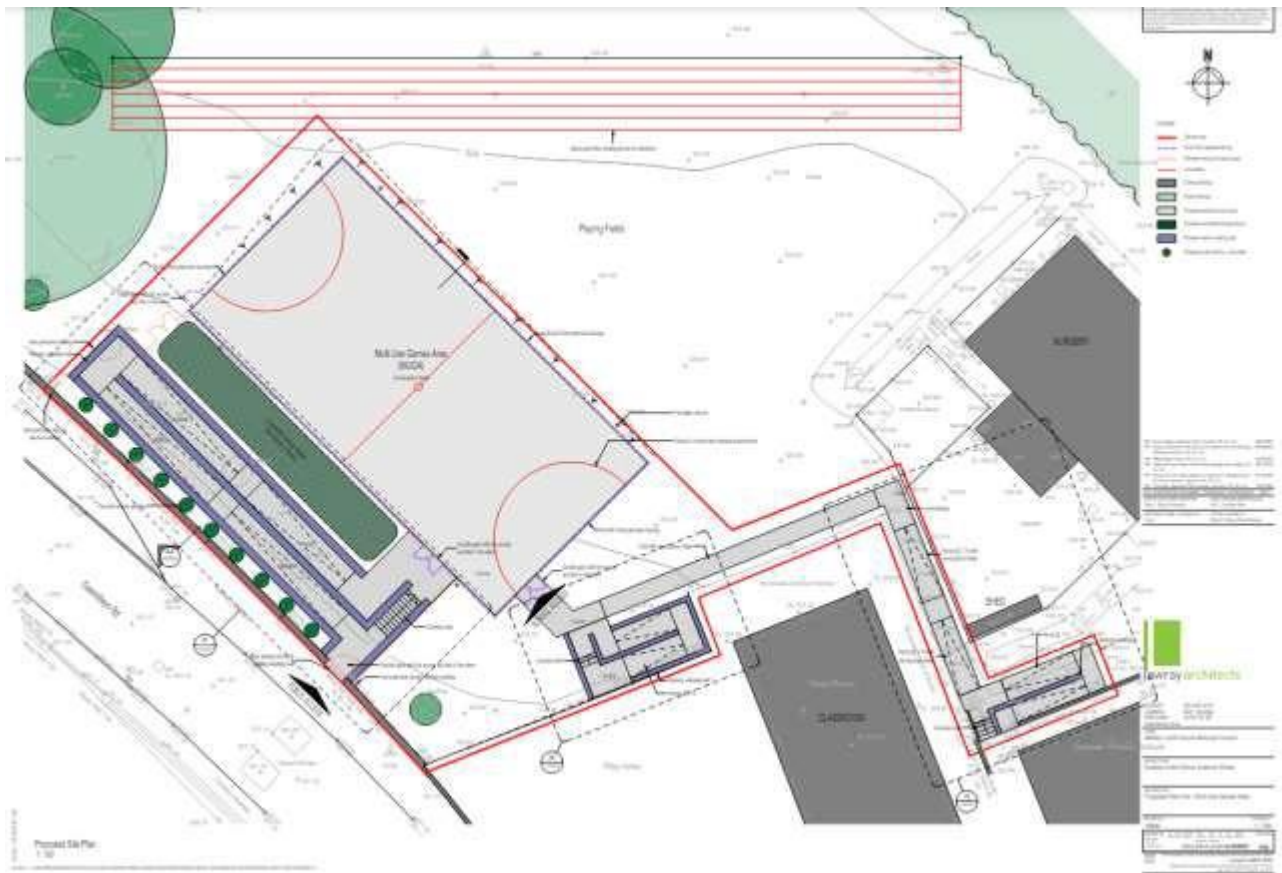


1.4 PROPOSED DEVELOPMENT

It is proposed to create a Multi Unit Games Arena with associated lighting.

1.5 STUDY AREA

The field survey looked at the red line development area itself. Plans for the site are as follows.



2 REGULATORY FRAMEWORK

2.1 INTERNATIONAL

European Union legislation requires that member states designate sites for the protection of habitats and species included in the annexes of both Council Directive 92/43/EC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the Habitats Directive) and Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). This legislation is implemented in the UK by the Conservation of Habitats and Species Regulations 2017 ("the Habitat Regulations"). This results in sites being designated as Special Areas of Conservation (SACs) and Special Protection Areas respectively (SPAs).

2.2 NATIONAL (UK)

The Wildlife and Countryside Act 1981 (as amended) allows sites to be designated as Sites of Special Scientific Interest (SSSI) for one or all of the following categories:

- Flora;
- Fauna;
- Habitat; and
- Geological importance.

European designated sites are automatically designated as SSSIs prior to their designation.

The relevant legislation includes:

- The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (as amended);
- The Conservation of Habitats and Species Regulations 2017
- The Wildlife and Countryside Act 1981 (as amended);
- Countryside and Rights of Way Act 2000;
- Environment (Wales) Act 2016
- Wild Mammals (Protection) Act 1996;
- The Protection of Badgers Act 1992; and
- The Hedgerow Regulations 1997.

Section 40 of the Natural Environment and Rural Communities Act 2006 (as amended) requires all public bodies to have regard wherever possible to conserving biodiversity. Section 42 of the Act requires that a list of habitats and species of Principle Importance for the Conservation of Biological Diversity in Wales be produced.

The Environment (Wales) Act 2016 requires that all public authorities, when carrying out their functions in Wales, seek to "maintain and enhance biodiversity" where it is within the proper exercise of their functions. In doing so, public authorities must also seek to "promote the resilience of ecosystems".

This ensures that biodiversity is an integral part of the decisions that public authorities take in relation to Wales. It also links biodiversity with the long term health and functioning of our ecosystems, therefore helping to align the biodiversity duty with the framework for sustainable natural resource management provided in the Act.

In Wales, this legislation replaces and enhances the Natural Environment and Rural Communities Act (2006) which sought to raise the profile of biodiversity and to make sure that it is considered in all local authority decisions by ensuring that "Every public authority must, in

exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.”

Under the Environment (Wales) Act (2016), Section 7 requires biodiversity lists to be produced. These lists include types of habitats which are of "Principle Importance" for the purpose of maintain and enhancing biodiversity in relation to Wales. This list supersedes the duty in Section 42 of the NERC Act 2006

2.3 NATIONAL (WALES)

Planning Policy Wales (Welsh Government,) and Planning Policy Wales Technical Advice Note 5: Nature Conservation and Planning (Welsh Assembly Government, September 2009) set out the protection given to wildlife (sites, habitats and species) by the planning system operational in Wales.

2.4 LOCAL AND REGIONAL

The proposed development is wholly within the Merthyr Tydfil County Borough Council area of responsibility. Therefore, all policies adopted by the Council will apply, including policies which may not be specific to nature conservation or the natural environment that may apply or be relevant and should be considered during the planning process.

2.5 PLANNING FRAMEWORK

The proposed development will be undertaken wholly under the auspices of the Town and Country Planning Act 1990 (as amended).

3 DESK STUDY AND PROTECTED SITES

3.1 SUMMARY

There are no records of any priority or protected species, species of local conservation concern or other species of conservation concern from the site or immediately adjacent to it. The closest records are from 179m away. The record is located at the site but the location is described as a different location. The records are for hedgehog. The next closest record is for western European hedgehog a little further afield.

No SACs or SSSIs were identified within the data search

8 non statutorily designated sites, e.g. Sites of Importance for Nature Conservation were identified within the data search.

3.2 BACKGROUND

A desk study provides background information on historical and current biological data which can identify ecological constraints, mitigation, and biodiversity enhancement opportunities.

3.3 METHODOLOGY

The South East Wales Biodiversity Records Centre (SEWBReC) was consulted in order to provide biological information on the presence of species and sites on or adjacent to the site (0245-256)

A 2000m search buffer was applied to priority and protected species, species of local conservation concern and other species of conservation concern, statutorily designated sites (for nature conservation purposes) and 1000m locally designated sites.

The Multi-Agency Geographical Information System (MAGIC) website (www.magic.gov.uk) and the Local Biodiversity Action Plan (LBAP) for MTCBC were also consulted.

3.4 CONSTRAINTS

There were no constraints to the data search

3.5 RESULTS

3.5.1 Non-statutory designations

The following SINC's are found within 2000m of the site

Pan March and Traed y Milwyr, Llechryd (1497m)

Merthyr Common North (1176m)

Tair Carreg Moor, North West of Fochriw (1806m)

Cefn Gelligaer, West of Deri (1911m)

Morlais Hill (1800m)

Blaenmorlais (877m)

Bryniau (1423m)

Merthyr Common Central (1688m)

There are roads and other infrastructure that separate the site from the SINC's. It is extremely unlikely that these SINC's will be affected by the proposed development and they will therefore not be mentioned further in this report.

3.5.2 Species: SEWBrEC data search

There are no species records for the proposed development site or its immediate vicinity other than

The closest records are of hedgehog, sparrow, herring gull and starling.

3.6 PREVIOUS SURVEYS

A reptile survey was undertaken by Celtic Ecology and Conservation Ltd in 2021. No reptiles were found on the site.

4 PHASE 1 HABITAT SURVEY

4.1 SUMMARY

A number of habitats were recorded across and adjacent to the survey area. These included:

- Amenity grassland
- woodland

The potential for a number of protected species was recorded, including habitats suitable for:

- Bats;
- Breeding birds;
- Reptiles;
- Invertebrates

The habitats are shown on **the phase 1 map located in the appendix.**

4.2 BACKGROUND

The Phase 1 habitat survey was carried out to assess the existing habitats, identify any protected habitats or species that may be present, determine the impact of the proposed works on them, and identify any mitigation measures that may be necessary. This was done by undertaking both a desk study and field survey.

The survey was undertaken in June 2023 and again in July 2024.

Phase 1 habitat survey is a way of recording the basic habitat data to form a baseline level of knowledge of the ecology of a site and provide recommendations for future surveys if considered necessary.

4.3 METHODOLOGY

4.3.1 *Desk study:*

A biological data search was undertaken. Refer to section 3 above.

4.3.2 *Field survey:*

Experienced surveyors from BE Ecological Ltd carried out a habitat assessment and mapping exercise in June 2023 and July 2024 using the Phase 1 habitat survey technique. Nomenclature follows Stace (1997)¹. The survey was carried out by Beth Evans.

Features of note are assigned Target Notes (TN) and referenced accordingly

¹ Stace, C (1997). *New Flora of the British Isles* (2nd Ed.). Cambridge University Press

4.4 CONSTRAINTS

There were no constraints.

4.5 RESULTS

4.5.1 *Habitats*

The following habitats were found on the site and are mapped at Appendix C.

- Amenity grassland
- woodland

Photos are located at **Appendix A**

4.5.1.1 *Amenity grassland*

This habitat is found across the main body of the site. The grassland is species poor and well managed with a short sward. A small amount of this will be lost as a result of the footprint of the MUGA.

4.5.1.2 *Woodland*

There is broad-leaved woodland present to the north east of the site. The woodland is largely made up of sycamore and ash. This area will not be impacted by the current proposals.

4.5.2 *Protected species assessment*

4.5.2.1 *Bats*

It is likely that bats will use the site for foraging.

This group will be considered further in this report.

4.5.2.2 *Dormouse*

There are no records of dormice within the data search. There are no suitable habitats on site it is considered unlikely that dormice will pose a constraint on the development.

4.5.2.3 *Badgers*

The closest record of badger is from approximately 800m from the site.

There is suitable habitat for foraging but due to the location, openness and nature of the site, the land is unlikely to be suitable for sett excavation.. There was no sign of badger throughout the survey.

This species will not be mentioned further in this report.

4.5.2.4 Breeding birds

There are multiple records for members of this group within the data search but none from the site.

Birds heard and seen on and adjacent to the site include crow and pigeon.

There is suitable habitat in the onsite scrub for nesting birds. There are no gaps big enough for nesting birds within the onsite building.

The habitats on the site are not considered to be suitable for ground nesting birds given the small overlooked nature of the site, the high levels of disturbance on the site (horses), the availability of avian predator perches and the presence of predators.

There is no suitable nesting bird habitat to be removed as part of the development. The trees to be translocated are young and thin and unlikely to be suitable for nesting. Lighting is unlikely to impact invertebrate groups providing that timings are controlled and areas of better quality habitat remain unlit (woodland and site boundaries).

4.5.2.5 Reptiles

There are records of slow worm and common lizard within 2km of the development site.

The site offers some habitat for this species for foraging, basking, sheltering and hibernation purposes and it should be assumed that slow worm (*Anguis fragilis*), common lizard (*Lacerta vivipara*) and grass snake (*Natrix natrix*) use the site. It is likely that the population densities of these species are at perhaps lower levels given the amount of disturbance at the site (management) and due to the fact that the grass sward is so short. It is likely that small numbers of reptiles may be present on the interfaces between grassland habitat and longer vegetation, not within the areas of the red line boundary. The site is mown frequently due to it being used by pupils from the school.

This group will not be considered further in this report.

4.5.2.6 Invertebrates

It is likely that common and widespread invertebrates will utilise the site. It is possible that some Section 7 species will use the site. There are records of section 7 species within the data search. However, again invertebrates are likely to be limited due to the area being under intense management. Lighting is unlikely to impact invertebrate groups providing that timings are controlled and areas of better quality habitat remain unlit (woodland and site boundaries).

5 PROTECTED SPECIES

5.1 BATS

5.1.1 Summary

The following bat surveys were undertaken at the site:

- walked transects (one transect)

The only bat species recorded using the site was common pipistrelle

5.1.2 Bat Ecology

British bats are small flying nocturnal mammals that feed exclusively upon insects. There are 17 species resident in Britain, ranging in size from the small pipistrelle species (*Pipistrellus* sp.) weighing in at approximately 5 g up to the larger noctule (*Nyctalus noctula*) weighing approximately 35 g. Bats are active from April through to October and hibernate when insects are in short supply in the winter months. Bats generally emerge from hibernation in late March - early April and move into transition roosts before the female bats move to maternity sites by the beginning of May where they give birth to a single baby between June and early July. The baby is reared solely by the mother and is weaned and independent by end of August. After breeding, bats move to transition roosts and females will visit males at mating roosts. During the autumn, bats feed intensively to gain sufficient weight for hibernation.

Although traditionally trees, caves and rock faces were used by roosting bats and are still used, many different structures are used nowadays by bats, which take advantage of readymade (manmade) roosts. Structures used frequently include bridges, ice-houses, pillboxes, disused railway tunnels, houses and barns etc. Bats do not hold territories but have foraging ranges which vary in size between species: from just 3-4km from the roost for the smaller bats while noctules may fly 20km or more. Threats to bats include habitat destruction and the severance of commuting routes, use of agricultural pesticides, intensification of farming methods and deliberate persecution by man. Bats have few natural predators; the domestic cat probably accounts for most losses.

5.1.3 METHODOLOGY

5.1.3.1 Activity surveys – personnel

Activity surveys were undertaken by Stephen Shutt.

5.1.3.2 Activity surveys – walked transects

A single walked bat activity transect was undertaken. A dusk transect was undertaken on 5th June 2023.

The surveys were designed to determine the bat species present on the site and whether any parts of the site were preferred (of a greater importance) by them for foraging and / or commuting.

The transect routes (Figure 3) were chosen to achieve good overall coverage of the site. Transects were carried out during periods of peak foraging, starting twenty minutes before dusk and continuing for up to 2.5 hours after dusk. A number of fixed point stops were also incorporated into the survey, interspersed along the chosen route. Each stop was between two and five minutes in length.

The survey on 19th July was walked in a clockwise direction.



Figure 3- Transect routes (arrowed red)

5.1.4 Results

5.1.4.1 Activity surveys – walked transects

The surveys were undertaken on the dates and under the conditions listed in Table 3 below.

Table 3 - Summary details of walked activity transects

Date	Survey time	Sunset/sunrise	Timing	Weather
19 th July 2023	Dusk	21:22	Twenty minutes prior to sunset, up to 2.5 hours post sunset	Start: 14C; end: 12°C. 60% cloud, dry. No wind.

Transect 1 – 19th July 2023

A total of ten bats were seen throughout the course of the survey, all of which were common pipistrelle. The first bat call heard was a common pipistrelle at 22:00. The last bat call heard was a common pipistrelle at 22:51. Activity between these calls was intermittent, calls were heard between those bats seen, however, bats were not observed.

Both commuting and foraging activity was noted at the site, with activity mainly focused along the vegetated boundaries of the site. All bats commuted from the north.

No further bats were seen throughout the course of the survey.



Figure 4: Location of common pipistrelle activity

5.1.5 Bats - evaluation

Bats are protected by international and domestic legislation, a reflection of their increasingly threatened status; bats are therefore of **high international** value.

A small number of bat calls were heard at the site (nine). Only 10 bats were seen and heard by the surveyor. Other calls were heard but not seen.

Overall, within the context of the surrounding land use, it is considered that the proposed development site is of **low-moderate** value at a **local** level to and for bats.

5.1.6 Bats - impact characterisation and mitigation

Providing that the lighting is in line with relevant bat guidance, it is considered unlikely that the proposed MUGA will have any impact on bats.

It has been agreed that the lighting will only likely be required until 6pm over the winter months.

This will prevent impacts in the summer months as bats will emerge much later and will be able to continue to use the site undisturbed. In the autumn, bat activity will reduce going into winter, with levels starting to increase towards spring.

The MUGA will not be used every night, only when events are scheduled in the evening.

5.1.7 Bats - impact without mitigation

It is considered that without mitigation there would be a **low** impact at a **local** (site) level.

5.1.8 Bats - impact with mitigation

It is considered that with mitigation there would be a low/negligible impact at a local (site) level.

6 CONCLUSION AND RECOMMENDATIONS

Overall the site appears to be of little importance to bats both in terms of roosting and foraging/commuting.

During the bat transect surveys, only one species (common pipistrelle) were identified on site and in low numbers only.

It is anticipated that the increased duration of lighting at the site will not have any adverse impact on foraging, commuting or roosting bats providing the mitigation stated in the various sections is implemented throughout the site. In addition to this, the lighting is unlikely to impact invertebrates and birds providing that it is controlled and areas of interest (boundaries of the site are kept dark).

There will be no lighting of retained habitats, dark corridors will need to be implemented throughout the development to allow light intolerant species to continue using the site should they wish. Any new lighting (internal or external) will conform to the following guidelines: <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>.

A wildflower meadow will be planted within the grounds to benefit invertebrates. The wildflower areas will be seeded with Emorsgate EM3 <https://wildseed.co.uk/mixtures/view/4/special-general-purpose-meadow-mixture>.

The wildflower area will be managed as follows:

Preparation of ground

A seed bed will be created by first removing any weeds via manual cultivation. The bed will be dug to bury any surface vegetation, the area will then be raked and compacted to form a firm surface.

Sowing

The seeds will be sown either in autumn or spring. The seeds will be sown by hand at a rate of 4g/m². The seed will be sown on the surface and firmed down but not covered.

Year 1 management

Weeds will not be removed until mid to late summer, in order to provide shelter for seedlings. In late summer (early August), the weeds will be cut, removed and placed in compost piles around the wider site. Perennial weeds such as dock will be dug out by hand. The young meadow will then be strimmed short (50mm) through to the end of March the next year.

Management once established (years 2-5)

The grass cutting regime would be designed to allow wildflowers to seed the area for the following season. The wildflower strip will be cut twice per year for at least five years using hand tools once in March/April and again no earlier than 15th July in order to mimic hay meadow management. The cut following the 15th July will reduce the height of the meadow to approximately 50mm, arisings will be left in place on site to dry and seed for at least 3 days but no more than 7 before being removed from the area. Re-growth will be strimmed back to 50mm through to late autumn/winter and again in spring if required.

The following sparrow terrace or similar will be attached to the existing school <https://www.nhbs.com/vivara-pro-woodstone-house-sparrow-nest-box>. The box will be erected on a north or western elevation at a height of no less than 3m.

The line of trees planted as part of a previous application will be translocated above the ramp to the south west. Additional native trees will be planted at this location. The trees will be of as local a provenance as possible. The sapling and the rain garden/swale on drawing (DIS-LAW-X-X-DR-A-069001 Revision P05) will be planted with native species as local a provenance as possible

7 REFERENCES

Battersby, J. (Edited and compiled), (2005), *UK Mammals: Species Status and Population Trends*, JNCC/Tracking Mammals Partnership.

Battersby, J. (Ed) & Tracking Mammals Partnership. (2005). *UK Mammals: Species Status and Population Trends. First Report by the Tracking Mammals Partnership*. JNCC/Tracking Mammals Partnership.

Collins, J (Ed). *Bat Surveys for Professional Ecologists - Good Practice Guidelines* (BCT, 2016).

City and County of Swansea Council. *Local Biodiversity Action Plan*.

DEFRA (2007) *Hedgerow Survey Handbook. A standard procedure for local surveys in the UK*. DEFRA.

EC Directive 92/43/EEC (The Habitats Directive) (1992). Annexes II and V.

Joint Nature Conservation Committee (2001) *Handbook for phase 1 habitat survey: A technique for environmental audit*. JNCC.

Joint Nature Conservation Committee (2003). *Herpetofauna Workers' Manual* JNCC

Mitchell-Jones, A.J. & McLeish, A.P. (2004) *The bat workers' manual (3rd Edition)*. Joint Nature Conservation Committee.

Natural Environment & Rural Communities Act 2006: *Section 42 List of Species of Principal Importance for Conservation of Biological Diversity in Wales*. Welsh Assembly Government

Planning Policy Wales

Protection of Badgers Act (1992).

Stace, C A (1997) *New Flora of the British Isles* (2nd Ed) Cambridge University Press

The Conservation of Habitats and Species Regulations 2017.

The Hedgerow Regulations (1997).

The Natural Environment and Rural Communities Act (2006) (as amended) (HMSO).
The Wildlife and Countryside Act 1981 (as amended).

Welsh Assembly Government (2007). Planning Policy Wales Technical Advice Note 5: *Nature Conservation and Planning*.

APPENDIX A - PHOTOS

Plate 1- Tree line adjacent to site



Plate 2- location of MUGA



Plate 3- photograph of planted trees



Plate 4- view looking south east



ASSESSMENT AGAINST POLICY -PLANNING POLICY WALES: STEPWISE APPROACH AND GREEN INFRASTRUCTURE STATEMENT

On the 11th October 2023, ahead of PPW12 being published, the new Chapter 6 came into force with immediate effect.

Net benefit must be secured via planning applications using the step-wise approach, including the acknowledgement of off-site compensation measures and the need to consider enhancement and long-term management. Green Infrastructure Statements will be used to demonstrate the step wise approach. The following information will be used in order to show compliance with policy.

Proposed Development: Dowlais Primary School

Site description: Intensely managed school field adjacent to broad-leaved woodland.

Surrounding Area description: The site is immediately adjacent to a primary school with grasslands and patches of broad-leaved woodland further afield. The wider landscape is made up of further residential development, associated infrastructure, again intertwined with grassland and broad-leaved woodland.

Development Impacts: Loss of vegetation (amenity grassland). External lighting proposed.

Step wise approach

Step 1- Avoidance- Impacts cannot be avoided on existing habitats due to small size of site and due to the requirement of a MUGA for the school.

Step 2- Minimise- Impacts cannot be minimised on existing habitats due to small size of site and due to the requirement of a MUGA for the school. Tree planting that was planted as part of the previous development at the site will be translocated rather than lost.

Step 3- Mitigate/Restore- Any site lighting will conform to the following guidance to prevent any indirect impacts on foraging bats <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/> .

Step 4- Compensation on site- An Emorsgate EM2 Wildflower area will be added to the design. The inclusion of these habitats within the development will allow a stepping stone habitat to the wider habitat, whilst allowing continued use of the site for a number of species. All lighting will be controlled.

Biodiversity Enhancements Proposed

Enhancement will then include maintenance and management of the wildflower area to benefit both reptiles and invertebrates. A cut will be undertaken once or twice a year. Cuttings would be removed and used to create onsite compost areas (to benefit reptiles). The grass cutting regime would be designed to allow grasses and wildflowers to seed the area for the following season. These habitats will be cut twice per year using hand tools once in March/April and again no earlier than 15th July in order to mimic hay meadow management.

A Vivara Pro house sparrow nest boxes <https://www.nhbs.com/vivara-pro-woodstone-house-sparrow-nest-box> will be attached to the north or western elevation of the existing school. The bat box will be positioned away from windows and at least 3m in height.

Additional tree planting will be carried out at the site. Species used will be native and as local a provenance as possible.

It is considered that subject to the above, that the proposed development would maintain and / or enhance biodiversity, build resilient ecological networks and deliver net benefits for biodiversity by providing additional connectivity, a more species diverse grassland with appropriate management, whilst providing new nesting opportunities within the development. The above will ensure that any adverse environmental effects are mitigated and compensated for where avoidance and minimization have not been possible.

APPENDIX C- PHASE 1 MAP

